

**CONTRACT AND BONDS  
FOR HIGHWAY CONSTRUCTION**

**OREGON DEPARTMENT OF TRANSPORTATION  
SALEM, OREGON**



**GRADING, DRAINAGE, STRUCTURES, PAVING, SIGNING,  
ILLUMINATION, & SIGNAL**

**OR569: BELTLINE HWY @ COBURG RD INTERCHANGE  
(EUGENE) SECTION**

**BELTLINE HIGHWAY**

**LANE COUNTY**

**CONTRACT NUMBER** 13997

**EXPENDITURE ACCOUNT NUMBER** CON02811

**CLASS OF PROJECT** X-IM-OTIA-S069(009)

**CONTRACTOR** \_\_\_\_\_

**DATE OF AWARD** \_\_\_\_\_

**SPECIFIED COMPLETION** DECEMBER 31, 2009

**Training**

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### DESCRIPTIONS OF PARTS OF CONTRACT WHICH ARE NOT BOUND HEREIN

#### **(1) Standard Specifications**

The "2008 Oregon Standard Specifications for Construction," Volume 1, which contain Part 00100 "General Conditions" and Volume 2, which contain Parts 00200 through 03000 "Technical Specifications" as published by the Oregon Department of Transportation.

Copies of the published "2008 Oregon Standard Specifications for Construction, Volume 1 and Volume 2 may be purchased from the Oregon Department of Transportation; 355 Capitol Street NE, Room 28; Salem, Oregon 97301-3871.

#### **(2) Plans**

Applicable Plans, either separate from the Special Provisions or included within the Special Provisions.

Copies of plans will be furnished upon request from the Oregon Department of Transportation; 355 Capitol Street NE, Room 28; Salem, Oregon 97301-3871.

## SECTION I. SPECIAL PROVISIONS

On the attached or inserted sheets which follow is given a description of the work to be performed under this Contract, together with required provisions, supplemental standard specifications, special provisions and instructions which supplement and modify the published "Oregon Standard Specifications for Construction," book and published "Supplemental Oregon Standard Specifications for Construction" book (if any) making them applicable to the particular work to be done.

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**REQUIRED CONTRACT PROVISIONS  
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ATTACHMENTS

- A. Employment Preference for Appalachian Contracts  
(included in Appalachian contracts only)

**I. GENERAL**

1. These contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.
2. Except as otherwise provided for in each section, the contractor shall insert in each subcontract all of the stipulations contained in these Required Contract Provisions, and further require their inclusion in any lower tier subcontract or purchase order that may in turn be made. The Required Contract Provisions shall not be incorporated by reference in any case. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with these Required Contract Provisions.
3. A breach of any of the stipulations contained in these Required Contract Provisions shall be sufficient grounds for termination of the contract.
4. A breach of the following clauses of the Required Contract Provisions may also be grounds for debarment as provided in 29 CFR 5.12:

Section I, paragraph 2;  
Section IV, paragraphs 1, 2, 3, 4, and 7;  
Section V, paragraphs 1 and 2a through 2g.

5. Disputes arising out of the labor standards provisions of Section IV (except paragraph 5) and Section V of these Required Contract Provisions shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the U.S. Department of Labor (DOL) as set forth in 29 CFR 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the DOL, or the contractor's employees or their representatives.
6. **Selection of Labor:** During the performance of this contract, the contractor shall not:
  - a. discriminate against labor from any other State, possession, or territory of the United States (except for employment preference for Appalachian contracts, when applicable, as specified in Attachment A), or
  - b. employ convict labor for any purpose within the limits of the project unless it is labor performed by convicts who are on parole, supervised release, or probation.

## II. NONDISCRIMINATION

(Applicable to all Federal-aid construction contracts and to all related subcontracts of \$10,000 or more.)

1. **Equal Employment Opportunity:** Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630 and 41 CFR 60) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The Equal Opportunity Construction Contract Specifications set forth under 41 CFR 60-4.3 and the provisions of the American Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:
  - a. The contractor will work with the State highway agency (SHA) and the Federal Government in carrying out EEO obligations and in their review of his/her activities under the contract.
  - b. The contractor will accept as his operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, preapprenticeship, and/or on-the-job training."

2. **EEO Officer:** The contractor will designate and make known to the SHA contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active contractor program of EEO and who must be assigned adequate authority and responsibility to do so.
3. **Dissemination of Policy:** All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:
  - a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.
  - b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.
  - c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minority group employees.
  - d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.
  - e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.
4. **Recruitment:** When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minority groups in the area from which the project work force would normally be derived.
  - a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minority group applicants. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority group applicants may be referred to the contractor for employment consideration.

- b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, he is expected to observe the provisions of that agreement to the extent that the system permits the contractor's compliance with EEO contract provisions. (The DOL has held that where implementation of such agreements have the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Executive Order 11246, as amended.)
  - c. The contractor will encourage his present employees to refer minority group applicants for employment. Information and procedures with regard to referring minority group applicants will be discussed with employees.
5. **Personnel Actions:** Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:
- a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.
  - b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.
  - c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.
  - d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with his obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of his avenues of appeal.

6. **Training and Promotion:**

- a. The contractor will assist in locating, qualifying, and increasing the skills of minority group and women employees, and applicants for employment.

- b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision.
  - c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.
  - d. The contractor will periodically review the training and promotion potential of minority group and women employees and will encourage eligible employees to apply for such training and promotion.
7. **Unions:** If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use his/her best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women within the unions, and to effect referrals by such unions of minority and female employees. Actions by the contractor either directly or through a contractor's association acting as agent will include the procedures set forth below:
- a. The contractor will use best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group employees and women so that they may qualify for higher paying employment.
  - b. The contractor will use best efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.
  - c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the SHA and shall set forth what efforts have been made to obtain such information.
  - d. In the event the union is unable to provide the contractor with a reasonable flow of minority and women referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minority group persons and women. (The DOL has held that it shall be no excuse that the union with which the contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees.) In the event the union referral practice prevents the

contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the SHA.

8. **Selection of Subcontractors, Procurement of Materials and Leasing of Equipment:** The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment.
- a. The contractor shall notify all potential subcontractors and suppliers of his/her EEO obligations under this contract.
  - b. Disadvantaged business enterprises (DBE), as defined in 49 CFR 23, shall have equal opportunity to compete for and perform subcontracts which the contractor enters into pursuant to this contract. The contractor will use his best efforts to solicit bids from and to utilize DBE subcontractors or subcontractors with meaningful minority group and female representation among their employees. Contractors shall obtain lists of DBE construction firms from SHA personnel.
  - c. The contractor will use his best efforts to ensure subcontractor compliance with their EEO obligations.
9. **Records and Reports:** The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the SHA and the FHWA.
- a. The records kept by the contractor shall document the following:
    - (1) The number of minority and non-minority group members and women employed in each work classification on the project;
    - (2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women;
    - (3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees; and
    - (4) The progress and efforts being made in securing the services of DBE subcontractors or subcontractors with meaningful minority and female representation among their employees.
  - b. The contractors will submit an annual report to the SHA each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. If on-the-job training is being required by

special provision, the contractor will be required to collect and report training data.

### **III. NONSEGREGATED FACILITIES**

(Applicable to all Federal-aid construction contracts and to all related subcontracts of \$10,000 or more.)

- a. By submission of this bid, the execution of this contract or subcontract, or the consummation of this material supply agreement or purchase order, as appropriate, the bidder, Federal-aid construction contractor, subcontractor, material supplier, or vendor, as appropriate, certifies that the firm does not maintain or provide for its employees any segregated facilities at any of its establishments, and that the firm does not permit its employees to perform their services at any location, under its control, where segregated facilities are maintained. The firm agrees that a breach of this certification is a violation of the EEO provisions of this contract. The firm further certifies that no employee will be denied access to adequate facilities on the basis of sex or disability.
- b. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, timeclocks, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive, or are, in fact, segregated on the basis of race, color, religion, national origin, age or disability, because of habit, local custom, or otherwise. The only exception will be for the disabled when the demands for accessibility override (e.g. disabled parking).
- c. The contractor agrees that it has obtained or will obtain identical certification from proposed subcontractors or material suppliers prior to award of subcontracts or consummation of material supply agreements of \$10,000 or more and that it will retain such certifications in its files.

### **IV. PAYMENT OF PREDETERMINED MINIMUM WAGE**

(Applicable to all Federal-aid construction contracts exceeding \$2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural minor collectors, which are exempt.)

#### **1. General:**

- a. All mechanics and laborers employed or working upon the site of the work will be paid unconditionally and not less often than once a week and without subsequent deduction or rebate on any account [except such payroll deductions as are permitted by regulations (29 CFR 3) issued by the Secretary of Labor under the Copeland Act (40 U.S.C. 276c)] the full amounts of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment. The payment shall be computed at wage rates not less than those contained in the wage determination of the Secretary of Labor (hereinafter "the wage determination") which is attached hereto and

made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor or its subcontractors and such laborers and mechanics. The wage determination (including any additional classifications and wage rates conformed under paragraph 2 of this Section IV and the DOL poster (WH-1321) or Form FHWA-1495) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers. For the purpose of this Section, contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act (40 U.S.C. 276a) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of Section IV, paragraph 3b, hereof. Also, for the purpose of this Section, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in paragraphs 4 and 5 of this Section IV.

- b. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein, provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed.
- c. All rulings and interpretations of the Davis-Bacon Act and related acts contained in 29 CFR 1, 3, and 5 are herein incorporated by reference in this contract.

**2. Classification:**

- a. The SHA contracting officer shall require that any class of laborers or mechanics employed under the contract, which is not listed in the wage determination, shall be classified in conformance with the wage determination.
- b. The contracting officer shall approve an additional classification, wage rate and fringe benefits only when the following criteria have been met:
  - (1) the work to be performed by the additional classification requested is not performed by a classification in the wage determination;
  - (2) the additional classification is utilized in the area by the construction industry;
  - (3) the proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination; and

- (4) with respect to helpers, when such a classification prevails in the area in which the work is performed.
  - c. If the contractor or subcontractors, as appropriate, the laborers and mechanics (if known) to be employed in the additional classification or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the DOL, Administrator of the Wage and Hour Division, Employment Standards Administration, Washington, D.C. 20210. The Wage and Hour Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.
  - d. In the event the contractor or subcontractors, as appropriate, the laborers or mechanics to be employed in the additional classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. Said Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.
  - e. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 2c or 2d of this Section IV shall be paid to all workers performing work in the additional classification from the first day on which work is performed in the classification.
- 3. Payment of Fringe Benefits:**
- a. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor or subcontractors, as appropriate, shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly case equivalent thereof.
  - b. If the contractor or subcontractor, as appropriate, does not make payments to a trustee or other third person, he/she may consider as a part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided, that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

**4. Apprentices and Trainees (Programs of the U.S. DOL) and Helpers:**

a. Apprentices:

- (1) Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the DOL, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau, or if a person is employed in his/her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State apprenticeship agency (where appropriate) to be eligible for probationary employment as an apprentice.
- (2) The allowable ratio of apprentices to journeyman-level employees on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any employee listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate listed in the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor or subcontractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman-level hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.
- (3) Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator for the Wage and Hour Division determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.
- (4) In the event the Bureau of Apprenticeship and Training, or a State apprenticeship agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor or subcontractor will no longer be permitted to utilize apprentices at

less than the applicable predetermined rate for the comparable work performed by regular employees until an acceptable program is approved.

b. Trainees:

- (1) Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the DOL, Employment and Training Administration.
- (2) The ratio of trainees to journeyman-level employees on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.
- (3) Every trainee must be paid at not less than the rate specified in the approved program for his/her level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman-level wage rate on the wage determination which provides for less than full fringe benefits for apprentices, in which case such trainees shall receive the same fringe benefits as apprentices.
- (4) In the event the Employment and Training Administration withdraws approval of a training program, the contractor or subcontractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Helpers:

Helpers will be permitted to work on a project if the helper classification is specified and defined on the applicable wage determination or is approved pursuant to the conformance procedure set forth in Section IV.2. Any worker listed on a payroll at a helper wage rate, who is not a helper under an

approved definition, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed.

**5. Apprentices and Trainees (Programs of the U.S. DOT):**

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

**6. Withholding:**

The SHA shall upon its own action or upon written request of an authorized representative of the DOL withhold, or cause to be withheld, from the contractor or subcontractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements which is held by the same prime contractor, as much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the SHA contracting officer may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

**7. Overtime Requirements:**

No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers, mechanics, watchmen, or guards (including apprentices, trainees, and helpers described in paragraphs 4 and 5 above) shall require or permit any laborer, mechanic, watchman, or guard in any workweek in which he/she is employed on such work, to work in excess of 40 hours in such workweek unless such laborer, mechanic, watchman, or guard receives compensation at a rate not less than one-and-one-half times his/her basic rate of pay for all hours worked in excess of 40 hours in such workweek.

**8. Violation:**

Liability for Unpaid Wages; Liquidated Damages: In the event of any violation of the clause set forth in paragraph 7 above, the contractor and any subcontractor responsible thereof shall be liable to the affected employee for his/her unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory) for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer,

mechanic, watchman, or guard employed in violation of the clause set forth in paragraph 7, in the sum of \$10 for each calendar day on which such employee was required or permitted to work in excess of the standard work week of 40 hours without payment of the overtime wages required by the clause set forth in paragraph 7.

**9. Withholding for Unpaid Wages and Liquidated Damages:**

The SHA shall upon its own action or upon written request of any authorized representative of the DOL withhold, or cause to be withheld, from any monies payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph 8 above.

**V. STATEMENTS AND PAYROLLS**

(Applicable to all Federal-aid construction contracts exceeding \$2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural collectors, which are exempt.)

**1. Compliance with Copeland Regulations (29 CFR 3):**

The contractor shall comply with the Copeland Regulations of the Secretary of Labor which are herein incorporated by reference.

**2. Payrolls and Payroll Records:**

- a. Payrolls and basic records relating thereto shall be maintained by the contractor and each subcontractor during the course of the work and preserved for a period of 3 years from the date of completion of the contract for all laborers, mechanics, apprentices, trainees, watchmen, helpers, and guards working at the site of the work.
- b. The payroll records shall contain the name, social security number, and address of each such employee; his or her correct classification; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalent thereof the types described in Section 1(b)(2)(B) of the Davis Bacon Act); daily and weekly number of hours worked; deductions made; and actual wages paid. In addition, for Appalachian contracts, the payroll records shall contain a notation indicating whether the employee does, or does not, normally reside in the labor area as defined in Attachment A, paragraph 1. Whenever the Secretary of Labor, pursuant to Section IV, paragraph 3b, has found that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis Bacon Act, the contractor and each subcontractor shall maintain records which show that the commitment to provide such benefits is

enforceable, that the plan or program is financially responsible, that the plan or program has been communicated in writing to the laborers or mechanics affected, and show the cost anticipated or the actual cost incurred in providing benefits. Contractors or subcontractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprentices and trainees, and ratios and wage rates prescribed in the applicable programs.

- c. Each contractor and subcontractor shall furnish, each week in which any contract work is performed, to the SHA resident engineer a payroll of wages paid each of its employees (including apprentices, trainees, and helpers, described in Section IV, paragraphs 4 and 5, and watchmen and guards engaged on work during the preceding weekly payroll period). The payroll submitted shall set out accurately and completely all of the information required to be maintained under paragraph 2b of this Section V. This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal stock number 029-005-0014-1), U.S. Government Printing Office, Washington, D.C. 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors.
- d. Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his/her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:
  - (1) that the payroll for the payroll period contains the information required to be maintained under paragraph 2b of this Section V and that such information is correct and complete;
  - (2) that such laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in the Regulations, 29 CFR 3;
  - (3) that each laborer or mechanic has been paid not less than the applicable wage rate and fringe benefits or cash equivalent for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.
- e. The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 2d of this Section V.
- f. The falsification of any of the above certifications may subject the contractor to civil or criminal prosecution under 18 U.S.C. 1001 and 31 U.S.C. 231.

- g. The contractor or subcontractor shall make the records required under paragraph 2b of this Section V available for inspection, copying, or transcription by authorized representatives of the SHA, the FHWA, or the DOL, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the SHA, the FHWA, the DOL, or all may, after written notice to the contractor, sponsor, applicant, or owner, take such actions as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

## **VI. RECORD OF MATERIALS, SUPPLIES, AND LABOR**

1. In all Federal-aid contracts on the National Highway System, except those which provide solely for the installation of protective devices at railroad grade crossings, those which are constructed on a force account or direct labor basis, highway beautification contracts, and contracts for which the total final construction cost for roadway and bridge is less than \$1,000,000 (23 CFR 635) the contractor shall:
  - a. Become familiar with the list of specific materials and supplies contained in Form FHWA-47, "Statement of Materials and Labor Used by Contractor of Highway Construction Involving Federal Funds," prior to the commencement of work under this contract.
  - b. Maintain a record of the total cost of all materials and supplies purchased for and incorporated in the work, and also of the quantities of those specific materials and supplies listed on Form FHWA-47, and in the units shown on Form FHWA-47.
  - c. Furnish, upon the completion of the contract, to the SHA resident engineer on Form FHWA-47 together with the data required in paragraph 1b relative to materials and supplies, a final labor summary of all contract work indicating the total hours worked and the total amount earned.
2. At the prime contractor's option, either a single report covering all contract work or separate reports for the contractor and for each subcontract shall be submitted.

## **VII. SUBLETTING OR ASSIGNING THE CONTRACT**

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the State. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635).
  - a. "Its own organization" shall be construed to include only workers employed and paid directly by the prime contractor and equipment owned or rented by the prime contractor, with or without operators. Such term does not include

employees or equipment of a subcontractor, assignee, or agent of the prime contractor.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph 1 of Section VII is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.
3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the SHA contracting officer determines is necessary to assure the performance of the contract.
4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the SHA contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the SHA has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

#### **VIII. SAFETY: ACCIDENT PREVENTION**

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the SHA contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.
2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).
3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of

contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

## **IX. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS**

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, the following notice shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

### **NOTICE TO ALL PERSONNEL ENGAGED ON FEDERAL-AID HIGHWAY PROJECTS**

18 U.S.C. 1020 reads as follows:

*"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or*

*Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or*

*Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;*

*Shall be fined not more than \$10,000 or imprisoned not more than 5 years or both."*

## **X. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT**

(Applicable to all Federal-aid construction contracts and to all related subcontracts of \$100,000 or more.)

By submission of this bid or the execution of this contract, or subcontract, as appropriate, the bidder, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any facility that is or will be utilized in the performance of this contract, unless such contract is exempt under the Clean Air Act, as amended (42 U.S.C. 1857 et seq., as amended by Pub.L. 91-604), and under the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq., as amended by Pub.L. 92-500), Executive Order 11738, and regulations in implementation thereof (40 CFR 15) is not listed, on the date of contract award, on the U.S. Environmental Protection Agency (EPA) List of Violating Facilities pursuant to 40 CFR 15.20.
2. That the firm agrees to comply and remain in compliance with all the requirements of Section 114 of the Clean Air Act and Section 308 of the Federal Water Pollution Control Act and all regulations and guidelines listed thereunder.
3. That the firm shall promptly notify the SHA of the receipt of any communication from the Director, Office of Federal Activities, EPA, indicating that a facility that is or will be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.
4. That the firm agrees to include or cause to be included the requirements of paragraph 1 through 4 of this Section X in every nonexempt subcontract, and further agrees to take such action as the government may direct as a means of enforcing such requirements.

#### **XI. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION**

1. **Instructions for Certification - Primary Covered Transactions:**  
(Applicable to all Federal-aid contracts - 49 CFR 29)
  - a. By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.
  - b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.
  - c. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause of default.
  - d. The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is submitted if any time the prospective primary participant learns that its certification was erroneous

when submitted or has become erroneous by reason of changed circumstances.

- e. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is submitted for assistance in obtaining a copy of those regulations.
- f. The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.
- g. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
- h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the nonprocurement portion of the "Lists of Parties Excluded From Federal Procurement or Nonprocurement Programs" (Nonprocurement List) which is compiled by the General Services Administration.
- i. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
- j. Except for transactions authorized under paragraph f of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

\* \* \* \* \*

## **Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Primary Covered Transactions**

1. The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:
  - a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
  - b. Have not within a 3-year period preceding this proposal been convicted of or had a civil judgement rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
  - c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph 1b of this certification; and
  - d. Have not within a 3-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.
2. Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

\* \* \* \* \*

## **2. Instructions for Certification - Lower Tier Covered Transactions:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions of \$25,000 or more - 49 CFR 29)

- a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.
- b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

- c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.
- d. The terms "covered transaction," "debarred," "suspended," "ineligible," "primary covered transaction," "participant," "person," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.
- e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.
- f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
- g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.
- h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
- i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

\* \* \* \* \*

**Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Covered Transactions:**

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

\* \* \* \* \*

**XII. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING**

(Applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 - 49 CFR 20)

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:
  - a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
  - b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

3. The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

Training

## **NOTICE TO ALL BIDDERS**

To report bid rigging activities call:

1-800-424-9071

the U.S. Department of Transportation (DOT) operates the above toll-free "hotline" Monday through Friday, 8:00 a.m. to 5:00 p.m., eastern time. anyone with knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should use the "Hotline" to report such activities.

The "hotline" is part of the DOT's continuing effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

Training

**ON-SITE WORKFORCE AFFIRMATIVE ACTION REQUIREMENTS  
FOR WOMEN AND MINORITIES ON FEDERAL-AID CONTRACTS**

Pursuant to 41 CFR 60-4.6 (see also 41 CFR 60-4.2(a)) the following notice concerning Affirmative Action Requirements for Women and Minorities shall be included in, and shall be a part of, all solicitations for offers and bids on all Federal and federally assisted construction contracts or subcontracts in excess of \$10,000 to be performed in geographical areas designated by the United States Department of Labor (USDOL) Director. The USDOL, Office of Federal Contract Compliance Programs (OFCCP) has made the following statement concerning Goals, Timetables and Good Faith Efforts:

"Numerical goals are established based on the availability of qualified applicants in the job market or qualified candidates in the employer's work force. Executive Order [E.O. 11246] numerical goals do not create set-asides for specific groups, nor are they designed to achieve proportional representation or equal results. Rather, the goal-setting process in affirmative action planning is used to target and measure the effectiveness of affirmative action efforts to eradicate and prevent discrimination. The Executive Order and its supporting regulations do not authorize OFCCP to penalize contractors for not meeting goals. The regulations at 41 CFR 60-2.12(e), 60-2.30 and 60-2.15, specifically prohibit quota and preferential hiring and promotions under the guise of affirmative action numerical goals. In other words, discrimination in the selection decision is prohibited."

For purposes of these "On-Site Workforce Affirmative Action Requirements for Women and Minorities on Federal-Aid Contracts", "Good Faith Effort" means affirmative action measures designed to implement the established objectives of an Affirmative Action Plan 23 CFR 230.407(o).

**A. AFFIRMATIVE ACTION REQUIREMENTS**

**Notice of Requirement for Affirmative Action To Ensure Equal Employment Opportunity (Executive Order 11246)**

1. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

**Goal and Timetable for Female Utilization Statewide**

<b>Timetable</b>	<b>Goal (Percent)</b>
From Apr. 1, 1980 until further notice.....	6.9

## Goals for Minority Utilization by County

### Goal (Percent)

Clackamas, Multnomah, and Washington Counties....	4.5
Marion and Polk Counties .....	2.9
Benton, Clatsop, Columbia, Crook, Deschutes, Hood River, Jefferson, Lincoln, Linn, Sherman, Tillamook, Wasco, and Yamhill Counties .....	3.8
Lane, Coos, Curry, Douglas, Jackson, Josephine, Klamath, and Lake Counties .....	2.4
Baker, Gilliam, Grant, Morrow, Umatilla, Union, Wallowa, and Wheeler Counties .....	3.6
Harney and Malheur Counties.....	4.4

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and non-federally involved construction.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

**2.** The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.

**3.** As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is the county or counties shown in the Solicitation Documents. In cases where the work is two or more counties covered by different percentage goals, the highest percentage will govern.

## **B. STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS (EXECUTIVE ORDER 11246)**

### **1. As used in these specifications:**

**a.** "Covered area" means the geographical area, described in the solicitation from which this contract resulted;

**b.** "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;

**c.** "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.

**d.** "Minority" includes:

**(i)** Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);

**(ii)** Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);

**(iii)** Asian American and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and

**(iv)** American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

**2.** Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitation from which this contract resulted.

**3.** A contractor participating, either individually or through an association, in an approved Hometown Plan (including heavy highway affirmative action plans) shall comply with its affirmative action obligations under Executive Order 11246 by complying with its obligations under the plan; provided, that each contractor or subcontractor participating in an approved plan is individually required to comply with the equal opportunity clause set forth in 41 CFR 60-1.4; to make a good faith effort to achieve the goals for each trade participating in the plan in which it has employees; and that the overall good performance by other contractors or subcontractors toward a goal in an approved plan does not excuse any covered contractor's or subcontractor's failure to take good faith efforts to achieve the plan's goals and timetables.

**4.** The Contractor shall implement the specific affirmative action standards provided in paragraphs 7a through 7p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minorities and female utilization the Contractor should

reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction contractors performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is performed. Goals are published periodically in the Federal Register in notice form, and such notices maybe obtained from any Federal Contract Compliance Programs office or from Federal procurement contracting officers. The Contractor is expected to make substantially uniform progress toward its goals in each craft during the period specified.

**5.** Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.

**6.** In order for the non-working training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

**7.** The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

**a.** Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minorities and female individuals working at such sites or in such facilities.

**b.** Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organization's responses.

**c.** Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source, or a community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefore, along with whatever additional actions the Contractor may have taken.

**d.** Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the

Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

**e.** Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 7b above.

**f.** Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc., by specific review of the policy with all management personnel and with all minority and female employees at least once a year, and by posting the Contractor's EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

**g.** Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with on-site supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

**h.** Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.

**i.** Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

**j.** Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's work force.

**k.** Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

**l.** Conduct, at least annually, an inventory and evaluation at least of all minority and female employees for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

**m.** Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

**n.** Ensure that all facilities and Contractor's activities are non-segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

**o.** Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

**p.** Conduct a review, at least annually, of all supervisor's adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

**8.** Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through 7p). The efforts of a contractor association, joint contractor union, contractor-community; or other similar group of which the Contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through 7p of these specifications provided that the Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female work force participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

**9.** A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).

**10.** The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex or national origin.

**11.** The Contractor shall not enter into any subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

**12.** The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

**13.** The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

**14.** The contractor will designate an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active contractor program of EEO and who must be assigned adequate authority and responsibility to do so. Additionally, the contractor EEO Officer shall ensure that the company EEO policy is being carried out, to submit reports relating to the specifications hereof as may be required by the Agency and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, Contractors shall not be required to maintain separate records.

**15.** Nothing herein provided shall be construed as a limitation upon the application of other laws, which establish different standards of compliance, or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

**16.** The Office of Federal Contract Compliance Programs (OFCCP) may conduct compliance evaluations to determine if the contractor maintains nondiscriminatory hiring and employment practices and is taking affirmative action to ensure that applicants are employed and that employees are placed, trained, upgraded, promoted, and otherwise treated during employment without regard to race, color, religion, sex, or national origin. In the event of the contractor's non-compliance with the nondiscrimination clauses of this contract or with any of such rules, regulations, or orders, this contract may be canceled, terminated or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

**Training**

## **EQUAL EMPLOYMENT OPPORTUNITY PROVISIONS**

As used in these provisions, "Engineer" means the Chief Engineer of the Oregon Department of Transportation acting either directly or through his authorized representatives. "Good Faith Effort" means "affirmative action measures designed to implement the established objectives of an Affirmative Action Plan" 23 CFR 230.407(o).

Section 140 of Title 23, United States Code, EQUAL EMPLOYMENT OPPORTUNITY, as in effect on May 1, 1982, is incorporated by this reference and made a part of these provisions.

### **Written Notification**

The Contractor shall provide written notification to the Engineer within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor; employer identification number; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.

In addition to the notification required in item 7d in the "On-Site Workforce Affirmative Action Requirements For Women and Minorities on Federal-Aid Contracts" the Contractor shall provide immediate written notification to the Engineer when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor minorities or women sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its equal opportunity obligations.

### **Monthly Report**

The Contractor and each Subcontractor (\$10,000 or more) shall submit to the Engineer a "Monthly Employment Utilization Report" (MEUR), Form 731-0394, by the 5th of each month.

### **Annual Report**

Each July for the duration of the project, contracts in the amount of \$10,000 or more and on each subcontract, not including material suppliers, in the amount of \$10,000 or more, the contractor and each subcontractor shall submit Form PR-1391. This report shall be sent directly to ODOT Office of Civil Rights.

PURSUANT TO 23 CFR PART 230, SUBPART D, THE STATE HIGHWAY AGENCY HAS A RESPONSIBILITY TO ASSURE COMPLIANCE BY CONTRACTORS WITH THE REQUIREMENTS OF FEDERAL-AID CONSTRUCTION CONTRACTS, 23 CFR 230.405(b). THEREFORE, THE STATE HIGHWAY AGENCY HAS THE FOLLOWING OBLIGATIONS CONCERNING MONITORING AND COMPLIANCE, INCLUDING SHOW CAUSE NOTICE REQUIREMENTS.

### **Monitoring And Compliance**

The Agency will maintain a vigorous monitoring process to ensure nondiscrimination and affirmative action in federal-aid and federally-assisted highway construction projects. Monitoring shall include at a minimum, monthly meetings to review MEUR submittals with Contractor's Equal Employment Opportunity (EEO) Officer and quarterly reviews of Contractor's good faith efforts as outlined in FHWA 1273.

The Agency shall determine contractor's compliance with equal opportunity requirements including:

- Non-discrimination in selection and retention of subcontractors, material suppliers and vendors;
- Maintenance of nonsegregated facilities;
- Adequate representation and utilization of minorities an workforce (by craft/trade) in the contractor's workforce;
- Good faith efforts (GFE) on meeting on-the-job training (OJT) and training special provisions (TSP) contained in FHWA 1273;
- Fair treatment in all terms and conditions of employment; and,
- Adherence (where applicable) to preference in Indian preference provisions.

If the agency or the FHWA becomes aware of any possible violations of Executive Order 11246 or 41 CFR 60, each has the authority and the responsibility to notify the Office of Federal Contract Compliance Programs. The Contractor has the responsibility to meet all the craft goals set forth in the applicable "Covered Area" of "On-Site Workforce Affirmative Action Requirements for Women and Minorities on Federal-Aid Contracts", or can demonstrate good faith efforts to meet these goals (as specified in paragraphs 7a through 7p of the "On-Site Workforce Affirmative Action Requirements for Women and Minorities on Federal-Aid Contracts").

### **Show Cause Notice**

If an investigation or review reveals that a construction Contractor or Subcontractor has not complied with these Special Provisions, the Agency shall issue a show cause notice to initiate efforts to bring the Contractor or Subcontractor into compliance. This written notice shall state the deficiencies found during the review, and shall advise the Contractor or Subcontractor to show cause within 30 days why the Agency shall not impose administrative sanctions. Within 30 days the Contractor or Subcontractor must show good cause or must provide an acceptable agreement for corrective action.

If the Contractor or Subcontractor does not provide this information by the end of the 30 days, the Engineer shall withhold all project progress payments in process as of the date the show cause notice was issued and will continue to withhold project progress payments until the Contractor or Subcontractor responds in an acceptable manner. If the Contractor or Subcontractor fails to meet the conditions of the corrective action agreement, no further show cause notice is required; the Agency shall immediately initiate enforcement proceedings.

If a Contractor's prequalification certification is revoked and/or disqualified because the Contractor has been found on at least two occasions to be in breach of these EEO Provisions of Federal-Aid highway construction contracts, the Contractor must be determined to be in compliance with these EEO Provisions prior to the Contractor's prequalification certificate being reinstated.

Training

**Training**

**OR569: Beltline Hwy. @ Coburg Rd. Interchange (Eugene) Section  
Grading, Drainage, Structures, Paving, Signing, Illumination, & Signal**

**EQUAL EMPLOYMENT OPPORTUNITY-ASPIRATIONAL TARGET PROVISIONS**

As used in these provisions, "Engineer" means the Chief Engineer of the Oregon Department of Transportation acting either directly or through his authorized representatives.

Section 140 of Title 23, United States Code, EQUAL EMPLOYMENT OPPORTUNITY, as in effect on May 1, 1982, is incorporated by this reference and made a part of these provisions.

**Written Notification**

The Contractor shall provide written notification to the Engineer within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor; employer identification number; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.

In addition to the notification required in item 7d in the "On-Site Workforce Affirmative Action Requirements for Women and Minorities on Federal-Aid Contracts", the Contractor shall provide immediate written notification to the Engineer when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor minorities or women sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its equal opportunity obligations.

**Aspirational Diversity Targets**

**ODOT Aspirational Diversity Targets** - While Aspirational Diversity Targets are not requirements for this contract and are not binding on the contractor, ODOT desires to encourage the highest possible participation of minorities and women in the work force. Therefore, ODOT has established aspirational targets on OTIA III contracts statewide and all ODOT construction contracts in Multnomah, Clackamas, and Washington counties as follows:

**Covered Areas**

<b>Area</b>	<b>Aspirational</b>
ODOT Region 1	Women 14% - Minority 20%
ODOT Region 2, 3, 4, & 5	Women 14% - Minority 14%

Neither Contractor nor its subcontractors are under any obligation to meet any aspirational targets.

**OR569: Beltline Hwy. @ Coburg Rd. Interchange (Eugene) Section  
Grading, Drainage, Structures, Paving, Signing, Illumination, & Signal**

**Monthly Report**

The Contractor and each Subcontractor (\$10,000 or more) shall submit to the Engineer a "Monthly Employment and Apprenticeship Utilization Report" (MEaur), Form 731-0505, by the 5th of each month.

**Annual Report**

Each July for the duration of the project, contracts in the amount of \$10,000 or more and on each subcontract, not including material suppliers, in the amount of \$10,000 or more, the contractor and each subcontractor shall submit Form PR-1391. This report shall be sent directly to ODOT Office of Civil Rights.

Training

**DBE AND MWESB PROVISIONS**

DISADVANTAGED BUSINESS ENTERPRISE (DBE)  
SUPPLEMENTAL REQUIRED CONTRACT PROVISIONS

MINORITY BUSINESS ENTERPRISE, WOMEN BUSINESS ENTERPRISE  
AND EMERGING SMALL BUSINESS (MWESB)  
SUPPLEMENTAL ASPIRATIONAL CONTRACT PROVISIONS

Training

**Training**

## **DISADVANTAGED BUSINESS ENTERPRISE (DBE) SUPPLEMENTAL REQUIRED CONTRACT PROVISIONS**

### **01.00 DBE Policy and Authorities**

**(a) DBE Policy, Obligation, and Applicability** - As required by 49 CFR Part 26, ODOT and the Contractor agree to abide by and take all necessary and reasonable steps to comply with the policy set out below:

**(1) DBE Policy** - It is the policy of the United States Department of Transportation (USDOT) to practice nondiscrimination on the basis of race, color, sex and/or national origin in the award and administration of USDOT assisted contracts. Consequently, the Disadvantaged Business Enterprise (DBE) requirements of 49 CFR 26 apply to this agreement.

**(2) DBE Obligation** - The Oregon Department of Transportation (ODOT) and its Contractor agree to ensure that disadvantaged business enterprises as defined in 49 CFR 26 have the opportunity to participate in the performance of contracts and subcontracts financed in whole or in part with federal funds provided by Federal Highway Administration (FHWA), Federal Transit Administration (FTA) and Federal Aviation Administration (FAA) under this agreement. ODOT and its contractors shall take all necessary and reasonable steps in accordance with 49 CFR 26 to ensure that disadvantaged business enterprises have the opportunity to compete for and perform contracts. Neither ODOT nor its contractors shall discriminate on the basis of race, color, sex and/or national origin in the award and performance of Federal-Aid contracts.

**(3) DBE Applicability** - This applies to all public improvement projects financed in whole or in part with federal funds received from FHWA, FTA and FAA through the ODOT. The ODOT and its contractors shall conform to all applicable civil rights laws, orders, and regulations. ODOT and its contractors shall not discriminate on the basis of race, age, sex, color, religion, national origin, mental or physical disability, political affiliation, or marital status in the award and performance of ODOT contracts.

**(b) Authorities** - These Disadvantaged Business Enterprise (DBE) Supplemental Required Contract Provisions are authorized by the following laws, rules, regulations and guidelines, which, in conjunction with any pertinent policy memoranda or procedures issued by the FHWA, all of which are incorporated by reference into the provisions, govern the ODOT's administration of the DBE Program:

The USDOT Regulations (49 CFR Part 26) published in the Federal Register, effective March 4, 1999, established a requirement that all recipients of USDOT funds establish a DBE Program. The regulations are applicable both to ODOT's Federal-aid construction and to its non-construction activities.

The USDOT's legal authority for its DBE regulations includes Executive Order 11625 (October 13, 1971), which required that federal executive agencies develop comprehensive plans and programs to encourage minority business participation. USDOT requires ODOT to establish a DBE Program as a condition for receiving USDOT federal funds.

Title VI, Civil Rights Act of 1964. This Act concerns non-discrimination in federally assisted programs or activities on the grounds of race, color, sex or national origin.

The Program is also subject to the following laws: Section 30 of the Airport and Airway Development Act of 1970 and Section 520 of the Airport and Airway Improvement Act of 1982, as amended by the Airport and Airway Safety Capacity Expansion Act of 1987; Section 905 of the Railroad Act of 1978 (45 USC 903); and Section 19 of the Urban Mass Transportation Act of 1964, as amended (Public Law 95-599).

Oregon Revised Statutes, Chapters 200 and 279.

Oregon Administrative Rules, Chapter 121, Division 50, MBE/WBE Certification.

The Contractor agrees that these Disadvantaged Business Enterprise (DBE) Supplemental Required Contract Provisions (including references therein) shall be incorporated into all subcontracts (regardless of tier) describing the work to be performed by DBE firms on this project.

## **02.00 Abbreviations and Definitions:**

Abbreviations and definitions of words and phrases used in connection with the DBE Program are as follows:

**AFDBE** - African American owned Certified Disadvantaged Business Enterprise Contractor or Subcontractor.

**ASDBE** - Subcontinent Asian and Asian Pacific together referred to as "Asian American", owned Certified Disadvantaged Business Enterprise Contractor or Subcontractor.

**FAA** - Federal Aviation Administration

**FHWA** - Federal Highway Administration

**FTA** - Federal Transit Administration

**ODOT** - Oregon Department of Transportation

**OMWESB** - The Office of Minority, Women and Emerging Small Business, which is authorized to certify DBE firms in accordance with federal regulations.

**USDOT** - United States Department of Transportation

**Broker** - A business firm that provides a bona fide service, such as professional, technical, consultant or managerial services and assistance in the procurement of essential personnel, facilities, equipment, materials, or supplies required for the performance of the contract.

**Certified Disadvantaged Business Enterprise** - A business firm certified by the OMWESB, indicating that it: (a) meets the criteria outlined in 49 CFR 26 regarding certification as a DBE; and (b) possesses the required resources and expertise to perform designated types of work.

**Commercially Useful Function** - Commercially useful function is defined as follows:

49 CFR 26.55(c) defines commercial useful function as: *a DBE is considered to perform a commercially useful function when it is responsible for execution of a distinct element of the work of a contract and carrying out its responsibilities by actually performing, managing, and supervising the work involved.* To determine whether a DBE is performing a commercially useful function, the recipient or Contractor shall evaluate the amount of work subcontracted, industry practices, and other relevant factors.

**Commodity Codes** - Code(s) assigned by the OMWESB to indicate the standard type(s) of work the DBE provides.

**Contractor's DBE Liaison Officer** - The individual designated by the Contractor to assist the Contractor in meeting the Contractor's responsibility of compliance with the legal requirements of the DBE program and with the contractual obligations imposed by these supplementary provisions including but not limited to assuring that the DBE subcontractors on this project perform a commercially useful function.

**Contractor/Subcontractor** - A licensed business participating in a contract, subcontract, or other agreement which ODOT has awarded or to which ODOT has consented.

**DBE Directory of Certified Firms** - A publication (available in paper, disk copies, or Internet) listing all Disadvantaged Business Enterprises which are currently certified by the OMWESB. The Directory is provided to the Contractor for use in identifying DBE firms whose participation on a contract may be counted toward achievement of the assigned DBE participation goal.

**DBE Eligibility** - A firm is eligible to participate as a Disadvantaged Business if it meets the criteria as established by regulation and enforced by the certifying agency. A firm will no longer be able to participate as a DBE on current or future contracts when it receives notification of decertification, denial of recertification, or notice of graduation by the certifying agency.

**Equipment** - All machinery, tools, and apparatus needed to complete the contract.

**Federal-Aid Contract** - Any contract including consultant agreements or modifications of a contract between ODOT and a Contractor which is paid for in whole or in part with USDOT financial assistance from FHWA, FTA or FAA.

**Goal** - An assigned numerical percentage value of the total dollar amount of a contract award for DBE participation which, based on the waiver granted by the United States Secretary of Transportation, dated September 9, 2008, allowing group specific goals, is allocated solely for AFDDBE and ASDDBE participation.

**Good Faith Efforts** - Efforts required to obtain and support DBE participation that could reasonably be expected to produce and maintain a level of DBE participation sufficient to meet the contract goal. Good faith efforts are required before bid opening, upon contract award, and continue throughout the performance of the contract to maximize DBE participation.

**Joint Venture (DBE)** - An ODOT certified enterprise consisting of two or more businesses formed to jointly carry out a single highway construction project, one or more of which is a certified DBE (see Section 8.00 of these Supplemental Provisions).

**Managerial Control** - Consistent with normal industry practice, management shall include scheduling work operations, ordering equipment and materials (if materials are part of the contract), preparing and submitting payrolls and all other required reports and forms, and hiring and firing employees, including supervisory employees.

**Manufacturer** - A firm that operates or maintains a factory or establishment that produces on the premises the materials or supplies obtained by the Contractor.

**Operational Control** - Consistent with normal industry practice, the DBE shall supervise the daily operations of the work contracted. There are only two acceptable ways for the DBE to supervise the daily operations. The DBE owner may act as superintendent and directly supervise the work or a skilled and knowledgeable superintendent employed by and paid wages by the DBE shall directly supervise the work. If the latter is used, the DBE owner shall be actively involved in making the operational and managerial decisions of the firm.

**Regular Dealer** - A DBE firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials or supplies required for the performance of a contract are bought, kept in stock, and regularly sold to the public in the usual course of business. To be a regular dealer, the DBE firm shall engage in, as its principal business and in its own name, the purchase and sale of the products in question. A regular dealer in such items as steel, cement, gravel, stone, and petroleum products need not keep such products in stock if it owns or operates distribution equipment. Brokers and packagers shall not be regarded as regular dealers within the meaning of this definition.

**Subcontract** - A subcontracting arrangement is generally considered to exist when a person or firm assumes an obligation to perform a part of the contract work and the following conditions are present:

- Compensation for performance of work is on a unit price or lump sum basis.
- The subcontractor exercises full control and authority over the subcontracted work, including the furnishing of labor and equipment and choice of work methods, with only general supervision being exercised by the prime Contractor.
- Personnel involved in the operation are under the direct supervision of the subcontractor and are included on the subcontractor's payroll.
- The ODOT has provided written consent to the subcontract arrangement, regardless of tier.

All conditions involved should be considered and no one condition alone will normally determine whether a subcontract actually exists.

**Type of Work** - Specific descriptions of work which the DBE is certified in the DBE Directory as having the expertise and resources necessary to perform.

**03.00 Assigned Contract Goal** - In order to increase AFDBE and ASDBE participation on ODOT contracts, the project is assigned a DBE goal for AFDBE and ASDBE participation.. The Contractor is required to select a portion of work available on the project for AFDBE and ASDBE participation. The Contractor may use AFDBE or ASDBE subcontractors, suppliers, manufacturers or professional service providers to fulfill the goal. The contract goal on the project remains in effect throughout the life of the contract. Dollar values of participation shall be credited toward meeting the goal based on AFDBE and ASDBE gross earnings.

(According to 49 CFR 26.87(j)(2), if a prime Contractor has executed a subcontract with a firm before the ODOT notifies the firm of its ineligibility, the prime Contractor may continue to use the firm on the contract and may continue to receive credit toward its DBE contract goal for the firm's work. If the ODOT awards the contract to a DBE prime Contractor that is later ruled ineligible, the portion of the ineligible firm's performance of the contract remaining after ODOT issued the notice of ineligibility shall not count toward the ODOT overall goal, but may count toward the contract goal. 49 CFR 26.87(j)(3) Exception: If the DBE's ineligibility is caused solely by its having exceeded the size standard during the performance of the contract, the ODOT may continue to count its participation on the contract toward overall and contract goals.)

In determining whether an AFDBE or ASDBE prime Contractor has met a contract goal, only the work the AFDBE or ASDBE has committed with its own forces as well as the work that it has committed to be performed by AFDBE or ASDBE subcontractors or suppliers will be counted.

The goal for the project is listed on a sheet titled "DBE Assigned Contract Goal for AFDBE and ASDBEs" immediately following these supplemental required contract provisions.

The provisions in these Disadvantaged Business Enterprise (DBE) Supplemental Required Contract Provisions concerning the use of DBEs will apply equally to AFDBEs and ASDBEs committed to meet the DBE goal for AFDBE and ASDBE participation, as well as to other committed DBEs. References to DBE contractors and to DBE subcontractors throughout the provisions shall apply to such committed DBEs, and AFDBEs and ASDBEs.

#### **04.00 Subcontracting Limitations:**

**(a) DBE Subcontractors** - All DBE subcontractors committed to perform a function or service as a condition of contract award, or for replacing the performance of a committed DBE, shall perform a commercially useful function as defined in Section 09.00. If it is determined by ODOT that the DBE subcontractor is unable to perform a commercially useful function, ODOT will notify the Contractor prior to subcontract approval. The prime Contractor shall either provide evidence that the DBE subcontractor is able to perform a commercially useful function, or replace the DBE subcontractor with another DBE who has been certified to perform the bid item subcontracted as outlined in section 10.00 (c). If the Contractor cannot provide sufficient evidence the DBE subcontractor has the ability to perform a CUF, and/or refuses to replace the DBE, the prime Contractor may be declared in default and the contract could be terminated according to subsection 00180.90(a) of the Oregon Standard Specifications for Construction.

**(b) Second Tier DBE Subcontracts** - Second tier DBE subcontracts may be counted toward the prime Contractor's DBE goal provided it was listed in the original DBE commitment prior to bid award.

**05.00 DBE Subcontract and Sub-Subcontract Documents** - All work committed to DBE firms toward meeting the assigned participation goal and as a condition of contract award, including work to be performed by DBE firms substituting for DBE firms committed as a condition of contract award, shall be performed under a written subcontract agreement, regardless of the description of work to be performed by either the committed or substituting DBE firm. The subcontract agreement shall fully describe any partial bid item work committed to be performed by DBE firms.

In accordance with Oregon Standard Specifications for Construction subsection 00180.21, the Contractor shall submit written request for consent from ODOT to subcontract any portion of the work at any tier, using form 734-1964, "Contractor's Request for Subcontract Consent," available from the Project Manager. Written consent for the subcontract shall be obtained before the subcontractor is allowed to commence any work on the project.

**06.00 Good Faith Efforts Requirements** - The Contractor is required to exercise good faith efforts during the entire life of the contract to meet the assigned goal and to maximize DBE participation and performance on the contract. Good faith efforts shall be made to secure DBE participation sufficient to meet the assigned goal. The Contractor shall also make every reasonable effort during the course of the project to enable DBE firms to perform those portions of the contract work for which they have been committed.

The Contractor shall make good faith efforts to replace with another DBE, a DBE who is unable or unwilling to perform, unable to perform a commercially useful function, or has changed its ownership and/or control. Section 10.00 discusses the procedures that shall be followed to terminate a committed DBE and replace the firm with a substitute.

The Project Manager may request the Contractor to submit evidence of Good Faith Efforts at any time during the course of the contract and the Contractor shall promptly submit such evidence.

**07.00 DBE Work Plan Proposal Form and DBE Sub-Subcontract Work Plan Proposal Form** - The DBE Work Plan Proposal Form shall be completed by all DBE firms participating as subcontractors. The DBE Sub-Subcontract Work Plan Proposal Form shall be completed by all DBE firms participating as sub-subcontractors and is being used by the awarded Contractor to meet the DBE goal. Both forms are available by contacting the Office of Civil Rights at 503-986-4350. The forms are also included in the Contractor's Pre-construction Conference Packet.

The DBE Field Coordinator and Project Manager will review the proposals and provide written comments as to whether the activities identified in the proposals comply with program regulations. In those instances where proposed activity violates applicable regulations, written comments will be offered as to corrective action required in order to comply with the regulations.

**(a) Disadvantaged Business Enterprise Work Plan Proposal Form** - DBE firms shall submit their Work Plan Proposal Form to the Contractor in time for the Contractor to deliver same to the Project Manager at the pre-construction conference. The DBE Work Plan Proposal specifically solicits information regarding the following:

**(1) Personnel Required** - List the names and/or craft classifications for personnel who will perform. Indicate whether the individual is regularly employed by the DBE, and/or the source from which the individual was or is to be recruited.

**(2) Equipment Required** - List the items of equipment that will be used on the project. Indicate whether the equipment is owned, rented or leased. If rented or leased, consent to the rental or lease shall be obtained from ODOT prior to beginning of the work.

**(3) Supplies and Materials Required** - List the supplies and materials that will be used on the project. Indicate the source, by name, address, and phone number, from which supplies and materials will be obtained.

**(4) Prime Contractor Resources** - Discuss any plans for the DBE to share any resources of the prime Contractor, e.g. personnel, equipment, tools, facilities, etc.

**(5) Additional Information** - Provide comments or explanation of any of the information provided above.

**(b) Disadvantaged Business Enterprise Sub-Subcontract Work Plan Proposal Form** - DBE firms shall submit their Sub-Subcontract Work Plan Proposal Form to the Contractor in time for the Contractor to deliver same to the Project Manager at the pre-construction conference. The DBE Sub-Subcontract Plan Proposal specifically solicits information regarding the following:

**(1) Personnel Required** - List the craft classifications of personnel who will perform the work under the sub-subcontract.

**(2) Equipment Required** - List the items of equipment the sub-subcontractor will use to perform the work. Indicate whether the required equipment will be rented or leased by the sub-subcontractor, and if so, from whom.

**(3) Supplies and Materials Required** - List the supplies and materials to be used on the project by the sub-subcontractor and their source.

**(4) DBE Management** - List the name(s) of the person(s) (either owners of the DBE firm or employed by the firm), who will be responsible for the continuous direction and control of the work to be performed under the sub-subcontract. Indicate the action planned, and steps to be taken to assure DBE management, direction and control of the sub-subcontract work activities.

**(5) Additional Information** - Provide comments or explanation of any of the information provided above.

**08.00 Contractor Pre-construction Conference Reporting** - The Contractor shall deliver the following information to the Project Manager at the Pre-construction Conference:

- The name of the DBE liaison officer who will administer the Contractor's DBE program. Said officer or the officer's designee shall attend the conference.
- Contractor's project schedule showing the work commencement date and estimated completion date for each DBE that will perform work on the project.
- Disadvantaged Business Enterprise Work Plan Proposal Form for all DBE's that are performing work on the project regardless of contracting tier or if used to meet the DBE goal.

**09.00 Commercially Useful Function** - The Contractor is responsible for ensuring that DBE firms working on the project perform a commercially useful function (CUF). The Contractor shall receive credit toward meeting the assigned DBE goal and payment for DBE commercially useful function performed work only.

An on-site review will be used to ascertain whether the DBE is actively performing, managing, and supervising the work. It shall employ a labor force which is separate and apart from that employed by the prime, and which is independently recruited by the DBE in accordance with standard industry practice. The DBE shall supervise and manage the work or independently hire a supervisor, who may not be a supervisor employed by the prime or any other subcontractor on the project.

With regard to the Federal-aid share, if an investigation reveals that there has been a violation of the CUF provisions, that portion of the work found to be in violation would not be counted toward goal achievement for either the Contractor or ODOT.

When a DBE is presumed not to be performing a CUF as described in this section, the DBE may present evidence through the Contractor to ODOT to rebut that presumption.

**(a) The DBE (and Not Some Other Business Entity) Shall Actually Perform the Subcontract** - The DBE's utilization of labor, supervisory personnel, equipment and material in the performance of the subcontract shall be consistent with industry standards and shall demonstrate that the DBE and not some other business entity is actually performing the subcontract. For example, if a DBE associates itself too closely with another business entity or entities, in acquiring a labor force, supervisors, equipment or materials to an extent inconsistent with industry standards, the DBE can no longer be said to be actually performing the subcontract. Instead a partnership or joint venture of which the DBE is a member is the actual performer of the subcontract.

**(b) DBE's Work Force** - The DBE shall solicit, hire, place on its payroll, direct, and control all workers performing work under its contract. The DBE owner or its superintendent shall, on a full-time basis, supervise and control the work of the contract. The DBE may with the prior written consent of the Project Manager augment its work force with personnel of another firm. The Project Manager shall approve the request only when:

- Specialized skills are required, and
- The use of such personnel is for a limited time period.

**(c) DBE Equipment** - The DBE is expected to perform the work with equipment that is owned, being purchased, or leased by the DBE under a written lease agreement that has been consented to by the Project Manager prior to the DBE starting work. No credit will be given, nor payment made for the cost of equipment leased or rented and used in the DBE firm's work when payment for those costs is made by a deduction from the prime Contractor's payment(s) to the DBE firm.

The DBE may lease specialized equipment, provided a written rental agreement, separate from the subcontract specifying the terms of the lease arrangement, is consented to by the ODOT Project Manager prior to the DBE starting work. The Project Manager will consent to the lease agreement only when:

- The equipment is of a specialized nature,
- The equipment is readily available at the job site,
- The operation of the equipment is under the full control of the DBE,
- The lease arrangement is for a short term,
- The lease arrangement for the specialized equipment in question is a normal industry practice, and
- The DBE shall hire, direct, supervise, control and carry the operator of the equipment on the DBE payroll.

**(d) DBE Trucking Firms** - The following factors will be used to determine if a DBE Trucking firm is performing a CUF:

- The DBE shall be responsible for the management and supervision of the entire trucking operation for which it is responsible on a particular contract, and there cannot be a contrived arrangement for the purpose of meeting DBE goals.
- The DBE shall itself own and operate at least one fully licensed, insured and operational truck used on the contract.
- The DBE receives credit for the total value of the transportation services it provides on the contract using trucks it owns, insures, and operates using drivers it employs.
- The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the contract.
- According to 49 CFR 26.55(d)(5) the DBE may also lease trucks from a non-DBE firm, including an owner-operator. The DBE who leases trucks from a non-DBE is entitled to credit for the total value of the transportation services provided by the non-DBE lessees not to exceed the value of transportation services provided by DBE-owned trucks on the contract. Additional participation by non-DBE lessees receives credit only for the fee or commission it receives as a result of the lease arrangements.
- For the purposes of this paragraph, a lease shall indicate that the DBE has exclusive use of and control over the truck. This does not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, so long as the lease gives the DBE absolute priority for use of the leased truck. Leased trucks shall display the name and identification number of the DBE.

**(e) DBE Flagging Firms** - DBE flagging firms will be credited at 100% if the DBE furnishes 100% of the equipment (in this case, paddles and radios) to perform the committed work. If the DBE uses employees' equipment for any part of the work, the DBE will be credited as a broker as defined in 02.00 above. This credit will equal the DBE labor broker's commission for supplying personnel to the job.

**10.00 Termination and Substitution of DBE** - The Contractor shall notify ODOT in writing and shall obtain written consent before terminating and/or replacing the DBE that was committed as a condition of contract award or otherwise being used or represented to fulfill DBE contract obligations during the contract performance period. Written consent for terminating the performance of any DBE will be granted only where the Contractor can demonstrate that the DBE is unable, unwilling or ineligible to perform. Such written consent to terminate any DBE shall concurrently constitute written consent to substitute or replace the terminated DBE. Termination or replacement of a DBE will not be consented to based solely on a Contractor's ability to negotiate a more advantageous contract with another subcontractor.

**(a) Contractor Written Request to Terminate DBE** - All Contractor requests to terminate, substitute or replace a DBE shall be in writing and shall include the following information:

- Date the Contractor determined the DBE to be unwilling, unable or ineligible to perform.
- Projected date Contractor will require substitution or replacement DBE to commence work if consent is granted to the request.
- Brief statement of facts describing and citing specific actions or inaction by the DBE giving rise to the Contractor's assertion that the DBE is unwilling, unable or ineligible to perform.
- Brief statement of the affected DBE's capacity and ability to perform the work as determined by Contractor.
- Brief statement of facts regarding actions taken by Contractor that are believed to constitute good faith efforts toward enabling the DBE to perform.
- To date percentage of work completed on each bid item by the DBE.
- The total dollar amount paid, per bid item, to date for work performed by the DBE.
- The total dollar amount, per bid item, remaining to be paid to the committed DBE for work completed, but for which the DBE has not received payment and with which the Contractor has no dispute.
- The total dollar amount, per bid item, remaining to be paid to the DBE for work completed, but for which the DBE has not received payment and over which the Contractor and/or the DBE have dispute.
- A written, signed statement from the DBE, provided the DBE concurs with request to terminate, indicating its unwillingness or inability to perform.

**(b) Contractor Written Notice to DBE of Pending Request to Terminate and Substitute with Another DBE** - The Contractor shall send a copy of the request to terminate and substitute letter to the affected committed DBE firm, in conjunction to submitting the request to the Project Manager. The affected DBE firm may submit a

response letter to the Project Manager within five calendar days of receiving the notice from the Contractor. The affected DBE firm may explain its position concerning performance on the committed work. The Project Manager will consider both the Contractor's request and DBE's response and explanation before approving the Contractor's termination and substitution request. If the Contractor is unsuccessful in notifying the affected DBE firm, after trying its best to deliver a copy of its request letter, ODOT may determine that the affected (committed) DBE firm is unable or unwilling to continue the contract and a substitution will be immediately approved by the Project Manager.

**(c) Proposed Substitution of Another Certified DBE** - When a DBE substitution shall occur, the Contractor may submit another certified DBE firm to replace the original committed firm in writing. The Contractor shall submit the name of the DBE firm, the proposed work to be performed, and the dollar amount of the work. The Contractor shall give pertinent information including bid item, item description, bid quantity & unit, unit price, and total price. In addition, the Contractor shall submit a written DBE Work Plan for the requested substitute DBE as described in Section 07.00. The dollar value of work to be performed by the substitute DBE shall be in an amount equal to the dollar value of the terminated DBE, minus the value of work performed to date by the DBE, prior to the request for substitution. Should the Contractor be unable to commit the required dollar value to the substitute DBE, the Contractor shall provide written evidence of good faith efforts made to obtain the substitute value requirement. ODOT will review the quality and intensity of those efforts. Efforts that are merely superficial are not good faith efforts to meet the goal. The Contractor shall document the steps taken to obtain participation which demonstrate the good faith efforts outlined below:

- Evidence that the Contractor attended any pre-solicitation or prebid meetings that were scheduled by ODOT to inform DBE firms of contracting and subcontracting or material supply opportunities available on the project;
- Evidence that the Contractor identified and selected specific economically feasible units of the project to be performed by DBE firms in order to increase the likelihood of participation by DBE firms;
- Evidence that the Contractor advertised in general circulation, trade association, minority and trade oriented, women-focus publications, concerning the subcontracting or supply opportunities;
- Evidence that the Contractor provided written notice to a reasonable number of specific DBE firms, identified from the DBE Directory of Certified Firms for the selected subcontracting or material supply work, in sufficient time to allow the enterprises to participate effectively;
- Evidence that the Contractor followed up initial solicitations of interest by contacting the enterprises to determine with certainty whether the enterprises were interested. Provide the following information:
  - The names, addresses, and telephone numbers of DBE firms who were contacted, the dates of initial contact and whether initial solicitations of interest were followed up by contacting the DBE firms to determine with certainty whether the DBE firms were interested;
  - A description of the information provided to the DBE firms regarding the plans and specifications and estimated quantities for portions of the work to be performed;

- Documentation of each DBE contacted, but rejected and the reasons for the rejection.
- Evidence that the Contractor provided interested DBE firms with adequate information about the plans, specifications and requirements for the selected subcontracting or material supply work;
- Evidence that the Contractor negotiated in good faith with the enterprises, and did not without justifiable reason reject as unsatisfactory bids prepared by any DBE;
- Evidence that the Contractor advised and made efforts to assist interested DBE firms in obtaining bonding, lines of credit, or insurance required by ODOT or Contractor;
- Evidence that the Contractor's efforts to obtain DBE participation were reasonably expected to produce a level of participation sufficient to meet the goal or requirements of ODOT;
- Evidence that the Contractor used the services of minority community organizations, minority organizations identified by the Advocate for Minority and Women Business that provide assistance in the recruitment and placement of disadvantaged, minority, or women business enterprises; and
- Evidence that the Contractor used the services of ODOT's Supportive Services Contractor(s).

**11.00 Changes in Work Committed to DBE** - ODOT will consider the impact on DBE participation in instances where ODOT changes, reduces, or deletes work committed to the DBE at the time of contract award. In such instances, the contractor shall not be required to replace the work but is encouraged to do so. If the prime Contractor proposes any changes that involve a committed DBE, the Contractor shall notify the DBE of the proposed change, reduction, or deletion of any work committed at the time of contract award prior to executing the change order. The Contractor shall enable the affected DBE to participate in the change order request and will make every effort to maintain the committed DBE percentage that was the condition of contract award. Documentation of this effort and a letter from the DBE agreeing to the change shall be included with the request.

**12.00 Contractor Payments to Subcontractors** - The Contractor shall maintain records of all subcontracts entered into with DBE firms and records of materials purchased from DBE suppliers. Such records shall show the name and business address of each DBE subcontractor or vendor and the total dollar amount actually paid to each DBE subcontractor or vendor. The Contractor shall pay each subcontractor for satisfactory performance of its contract no later than 10 (ten) days from receipt of each payment the Contractor receives from the ODOT. The Contractor shall also return retainage payments to each subcontractor within 10 (ten) days after the subcontractor's work is satisfactorily completed. Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of the Project Manager. This policy applies to both DBE and non-DBE contractors. The Contractor shall submit a completed, signed original "Subcontractors Paid - Summary Report" form 734-2536, available from the Office of Civil Rights at 503-986-4350, to the Project Manager certifying that payment was made to each subcontractor or supplier. Submit the form when a progress or final payment has been made to each subcontractor or supplier or when any held retainage is returned to a subcontractor or supplier. Submit the form no later than the fifth day of the month following the date that payment was made to a subcontractor or

supplier. At the completion of the project, submit a final form indicating the total amounts paid to all subcontractors and suppliers. *The participation of a DBE subcontractor will not be credited towards the prime Contractor's DBE achievements, or the overall goal, until the amount being counted toward the goal, and any retainage held by the prime Contractor has been paid to the DBE.*

**13.00 Remedies** - Failure of any Contractor to meet the DBE Supplemental Required Contract Provisions and program authorities cited in Section 01.00 (b) of these provisions constitutes a breach of contract for which the imposition of the following sanctions could occur: Temporarily withholding progress payments until the Contractor complies with these contract provisions through future performance.

Permanently withholding payment for work already performed in a manner that constitutes a breach of contract.

Suspension of work for cause as provided under the Oregon Standard Specifications for Construction, subsections 00150.00 and 00180.70.

Any bidder or Contractor or subcontractor on a public contract that violates the provisions of ORS 200.075 shall have its right to bid on or participate in any public contract suspended for up to 90 days for a first violation, up to one year for a second violation and up to five years for a third violation.

Each violation shall remain on record for five years. After five years, the violation shall no longer be considered in reviewing future violations.

Failure of a bidder, Contractor, or subcontractor to comply with the DBE Supplemental Required Contract Provisions and other authorities cited in Section 01.00 (b) of these provisions wherein there appears to be evidence of criminal conduct shall be referred to the Oregon Department of Justice and/or the FHWA Inspector General for criminal investigation, and if warranted, prosecution.

**14.00 Records and Reports** - The Contractor shall keep such project records as are necessary to determine compliance with these DBE Supplemental Required Contract Provisions. Such records shall include written reports from the DBE Liaison Officer to the Contractor as to the performance of the committed DBE and its performance of a commercially useful function.

**15.00 Further Information** - The DBE Supplemental Required Contract Provisions shall be incorporated into and attached to all agreements and contracts on projects financed in whole or in part with federal funds.

For further information concerning Disadvantaged Business Enterprise participation, contact:

Oregon Department of Transportation  
Office of Civil Rights  
355 Capitol Street NE, Room 504  
Salem, OR 97301-3871  
Phone: 503-986-4350  
Fax: 503-986-6382

**MINORITY BUSINESS ENTERPRISE, WOMEN BUSINESS ENTERPRISE  
AND EMERGING SMALL BUSINESS (MWESB)  
SUPPLEMENTAL ASPIRATIONAL CONTRACT PROVISIONS**

**ODOT Policies and Actions** - It is the policy of the ODOT that Contractors shall take reasonable steps to ensure that Minority Business Enterprises (MBE), Women Business Enterprises (WBE) and Emerging Small Businesses (ESB) have the opportunity to participate on Federal funded highway construction projects.

The ODOT adopted Aspirational Targets on formal construction projects to include MBE, WBE and ESB (collectively referred to as MWESB) firms. The Aspirational Target for the project is listed on a sheet titled "Assigned MWESB Aspirational Targets" immediately following these supplemental required contract provisions.

**01.0 Definitions:**

**Aspirational Target** - A target of intended utilization of MBE, WBE and ESB firms that a contractor has no contractual obligation to meet.

**Minority Business Enterprise, Women Business Enterprise, and Emerging Small Business, (MWESB) Eligibility** - A firm is eligible to participate as a Minority Business Enterprise, Women Business Enterprise or Emerging Small Business (collectively referred to as "MWESB") if it meets the criteria as established by Office of Minority Women and Emerging Small Business in the State of Oregon. A firm will no longer be able to participate as MWESB on current or future contracts when it receives notification of decertification, denial of recertification, or notice of graduation by the certifying agency.

**Aspirational MWESB Participation Target** - If a bidding firm chooses to submit a proposed Aspirational Target, that firm shall state its proposed Aspirational Target, estimated in total dollars, for Minority Business Enterprise, Women Business Enterprise and Emerging Small Business firms along with the divisions of work in which it intends to subcontract work, on the MWESB submittal forms.

**02.0 MWESB Work Plan Proposal Form and MWESB Sub-Subcontract Work Plan Proposal Form** - The MWESB Work Plan Proposal Form shall be completed by all MWESB firms participating as sub-subcontractors and is being used by the awarded Contractor to reach the MWESB Aspirational Target. Forms are available by contacting the Office of Civil Rights at 503-986-4350 or at:

<http://www.oregon.gov/ODOT/CS/CIVILRIGHTS/forms.shtml>.

The forms are also included in the Contractor's Pre-construction Conference Packet. The DBE Field Coordinator and Project Manager will review the proposals for completeness. In those instances where the proposed activities would inhibit participation by MBE, WBE and ESB firms, the DBE Field Coordinator and Project Manager may suggest actions to alleviate that effect.

**03.0 Contractor Pre-construction Conference Reporting** - If a contractor has voluntarily chosen to participate in the MWESB Aspirational Target the Contractor shall deliver the following information to the Project Manager at the Pre-construction Conference:

- The name of the MWESB liaison officer who will administer the Contractor's MWESB program. Said officer or the officer's designee may be the DBE liaison officer.
- Contractor's project schedule showing the work commencement date and estimated completion date for each MWESB that will perform work on the project.
- MWESB Work Plan Proposal Form for all MWESB firms that are performing work on the project regardless of contracting tier and estimated contract dollars amount used to reach the aspirational target.

**04.0 Termination and Substitution of MWESB** - The Contractor shall notify ODOT in writing and confer with ODOT before terminating or replacing a MWESB that has a signed contract with the contractor.

**05.0 Changes in Work Committed to MWESB** - ODOT will consider the impact on MWESB participation in instances where ODOT changes, reduces, or deletes work contracted to MWESB firms at the time of contract award. In such instances, the contractor shall not be required to replace the work but is encouraged to do so. If the prime Contractor proposes any changes that involve a contracted MWESB, the Contractor shall notify the MWESB of the proposed change, reduction, or deletion of any work committed at the time of contract award prior to executing the change order. The Contractor can choose to enable the affected MWESB to participate in the change order request and is requested to make every effort to maintain the contracted MWESB percentage.

**06.0 Contractor Payments to Subcontractors** - The Contractor shall maintain records of all subcontracts entered into with MWESB firms and records of materials purchased from MWESB suppliers. Such records shall show the name and business address of each MWESB subcontractor or vendor and the total dollar amount actually paid to each MWESB subcontractor or vendor. The Contractor shall pay each subcontractor for satisfactory performance of its contract no later than ten Calendar Days from receipt of each payment the Contractor receives from the ODOT. The Contractor shall also return retainage payments to each subcontractor within ten Calendar Days after the subcontractor's work is satisfactorily completed. Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of the Project Manager. This policy applies to both DBE, MWESB and non-DBE contractors. The Contractor shall submit a completed, signed original "Subcontractors Paid - Summary Report" form 731-0506, available from the Office of Civil Rights at 503-986-4350 or a <http://www.oregon.gov/ODOT/CS/CIVILRIGHTS/forms.shtml> , to the Project Manager certifying that payment was made to each subcontractor or supplier. Submit the form when a progress or final payment has been made to each subcontractor or supplier or when any held retainage is returned to a subcontractor or supplier. Submit the form no later than the fifth day of each month. At the completion of the project, submit a final form indicating the total amounts paid to all subcontractors and suppliers. *The participation of a MWESB subcontractor will not be credited towards the prime Contractor's MWESB achievements, or the overall Aspirational Target, until the amount being counted toward the target, and any retainage held by the prime Contractor has been paid to the MWESB.*

**07.0 Further Information** - The Minority Business Enterprise, Women Business Enterprise and Emerging Small Business (MWESB) Supplemental Aspirational Contract Provisions shall be incorporated into and attached to all agreements and contracts on projects financed in whole or in part with federal funds.

For further information concerning Minority, Women and Emerging Small Business participation, contact:

Oregon Department of Transportation  
Office of Civil Rights  
355 Capitol Street NE, Room 504  
Salem, OR 97301-3871  
Phone: 503-986-4350  
Fax: 503-986-6382

Training

**ASSIGNED DBE CONTRACT GOAL  
FOR AFDBE AND ASDBE**

The assigned minimum DBE goal for this Project is as follows:

**DBE 0%**

(This goal is only a part of the overall Statewide DBE program.)

A DBE Directory is available from the Office of Minority, Women and Emerging Small Business (OMWESB) web site at <http://www4.cbs.state.or.us/ex/dir/omwesb/> or by telephone at (503) 947-7924.

**Training**

**OR569: Beltline Hwy. @ Coburg Rd. Interchange (Eugene) Section  
Grading, Drainage, Structures, Paving, Signing, Illumination, & Signal**

**ASSIGNED MWESB ASPIRATIONAL TARGETS**

The assigned MWESB aspirational target for this Project is as follows:

**MWESB 8%**

Training

An MWESB Directory is available from the Office of Minority, Women and Emerging Small Business (OMWESB) web site at <http://www4.cbs.state.or.us/ex/dir/omwesb/> or by telephone at (503) 947-7924.

**Training**

**OR569: Beltline Hwy. @ Coburg Rd. Interchange (Eugene) Section  
Grading, Drainage, Structures, Paving, Signing, Illumination, & Signal**

**FEDERAL ON-THE-JOB TRAINING SPECIAL PROVISIONS**

This On-the-Job Training (OJT) special provision supersedes subparagraph 7e of the "On-Site Workforce Affirmative Action Requirements for Women and Minorities on Federal-Aid Contracts" and is in implementation of 23 U.S.C. 140(a). All other provisions apply.

**Section 1: On-the-Job Training Policy Statement**

The Contractor shall take all necessary and reasonable steps to ensure that minorities and women have the opportunity to compete for and participate as trainees or apprentices and to develop as journey-level workers in the type of trade or job classification employed. Contractors may use either a Bureau of Labor and Industries (BOLI) apprenticeship or training program, or develop their own on-the-job training program approved by Oregon Department of Transportation (ODOT) and Federal Highway Administration (FHWA) to satisfy this OJT requirement.

**Section 2: Affirmative Action Requirement**

Training and upgrading minorities and women in highway construction trades is the primary goal of these special provisions. This shall be accomplished by making systematic and direct recruitment efforts through public and private sources that are likely to yield minorities and women available for training on the work under this contract.

When filling these training positions, Contractors and subcontractors are encouraged to hire women and minorities who have previously been approved to participate in the On-the-Job Training Program and have not yet completed their training, or who are currently registered in a BOLI-approved apprenticeship or training program.

Whenever minorities or women are not placed in training positions specified in these special provisions, the Contractor shall provide documented evidence of its affirmative action recruitment efforts. ODOT will review the Contractor's recruitment efforts to determine whether the Contractor has satisfied the Good Faith criteria specified in the "On Site Workforce Affirmative Action Requirements for Women and Minorities on Federal-Aid Contracts".

Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, nor any agreement the Contractor has with a joint apprenticeship and training committee, shall excuse the Contractor's obligations under these special provisions.

This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether members of a minority group or not.

Whenever trainees or apprentices are terminated, the Contractor shall provide documented evidence to the Project Manager that shows cause for the termination or voluntary separation.

**OR569: Beltline Hwy. @ Coburg Rd. Interchange (Eugene) Section  
Grading, Drainage, Structures, Paving, Signing, Illumination, & Signal**

**Section 3: Assigned On-the-Job Training Positions**

The number of on-the-job training positions required under these special provisions is **two**. The ratio of apprentices to journey level workers shall be in accordance with the accepted standards for the particular craft or occupation. For OJT programs developed by the Contractor, the ratio of trainees to journey level workers shall be spelled out in the training program and are subject to approval by ODOT and FHWA.

Whenever a portion of the contract work is subcontracted, the Contractor shall determine how many, if any, of the trainees or apprentices are to be trained by the subcontractor. The Contractor, however, shall retain the responsibility for meeting the training requirements of these special provisions and shall also ensure that these provisions apply to each subcontract to which training positions are assigned.

A Contractor's request to substitute an on-the-job training position from one craft to another craft must be approved by ODOT's Office of Civil Rights.

**Section 4: Training Requirements**

The intent of these provisions is to provide real and meaningful training in the construction crafts rather than clerical or secretarial positions. Training in classifications such as flagger, bookkeeper, clerk/typist or secretary is not permissible. Training is permissible in lower level management positions such as office engineers, estimators, etc., where the training is oriented toward construction applications and is approved by the Federal Highway Administration. Off-site training is permissible only when it is an integral part of an approved training program, meets the criteria under Section 8, paragraph 4 of these special provisions, and does not comprise a significant part of the overall training.

The Contractor must have and maintain at all times sufficient equipment and fully trained journey level workers to train apprentices or trainees in the work processes and comply with these special provisions. A valid certification by an appropriate apprenticeship committee that the Contractor is an approved training agent shall be prima facie proof of compliance with this requirement.

**Section 5: Training/Apprenticeship Programs**

Training under these provisions shall be conducted in accordance with a training program submitted by the Contractor and approved by ODOT's Office of Civil Rights and the Federal Highway Administration (FHWA). OJT programs for which the Contractor has obtained approval of BOLI's Oregon State Apprenticeship and Training Council shall be accepted under these provisions.

Training Programs (ODOT Form 731-0335) shall be submitted at the pre-construction conference. ODOT will track training activities provided by the Contractor to trainees working under an approved training program. The Contractor shall provide ODOT with monthly progress reports for all trainees working under an approved training program.

Trainees shall be paid at least 60% of the appropriate minimum journey level rate specified in the contract for the first half of the training period, 75% for the third quarter of the training period, and 90% for the last quarter of the training period. If apprentices are enrolled in BOLI-registered program, the appropriate rates approved by the Department of Labor or in

**OR569: Beltline Hwy. @ Coburg Rd. Interchange (Eugene) Section  
Grading, Drainage, Structures, Paving, Signing, Illumination, & Signal**

connection with the apprenticeship program shall apply to all trainees being trained for the same classification who are covered by this special provision.

Each individual Training Program must be approved by ODOT's Office of Civil Rights prior to commencing work in the craft in which the trainee will be trained. The Contractor or subcontractor who is training an individual not enrolled in an apprenticeship program must be able to certify in some manner that the trainee has completed an on-the-job training program. This certification will be provided to the trainee and a copy to ODOT's Office of Civil Rights upon completion of the training program.

**Section 6: Reports**

The Contractor and each subcontractor training under these provisions shall complete and submit to the appropriate ODOT Project Manager the following reports:

- Upon attending pre-construction conference, the Training Program (Form 731-0335) completed and signed by the Contractor stating the types of training to be provided on the contract.
- Prior to beginning work, an Apprentice/Trainee Approval Request (Form 731-0294) completed and signed by the Contractor stating who will be trained, the estimated date the training is to begin on the project, and the estimated number of hours of training for each person to be trained.
- By the 10th of each month, an Apprentice/Trainee Monthly Progress Record (Form 731-0332) for each person participating in the On-the-Job Training Program, completed and signed by the trainee. The Monthly Progress Record that a Contractor or subcontractor routinely sends to an apprenticeship program may be used in lieu of the ODOT Apprentice/Trainee Monthly Progress Record.
- By the 10th of each month, an Employment Utilization Report (Form 731-0394). This report reflects work hours by craft, race and gender. This report is required of all Contractors and subcontractors on contracts valued \$10,000 and above, regardless of their participation in the OJT Program.
- Upon completion of the contract, document to trainee and ODOT the amount and type of training completed.

All required forms will be sent to the Contractor and ODOT Project Manager by the Office of Civil Rights at the time of contract award. Additional forms may be obtained from the Office of Civil Rights by calling (503) 986-4350.

**OR569: Beltline Hwy. @ Coburg Rd. Interchange (Eugene) Section  
Grading, Drainage, Structures, Paving, Signing, Illumination, & Signal**

**Section 7: Monitoring and Compliance**

ODOT will monitor the Contractor's actions for compliance with these special provisions. Actions, which will be monitored, include:

- Employment of trainees as required for this contract.
- Demonstration of Good Faith Efforts when contractually required training provisions are not filled with affirmative action candidates.
- Maintenance of the records and submission of the reports required by these provisions.

If the Contractor does not comply with these special provisions, ODOT may withhold progress payments until compliance with the above is achieved, or impose other lawful remedies, including holding the Contractor in breach. Two breaches of contract exposes the Contractor to revocation of ODOT's prequalification status and/or disqualification from all State of Oregon public contracting opportunities.

If subcontractors participate in the OJT Program, the Contractor will be responsible for the subcontractor's compliance with the requirements of these special provisions in accordance with Section 00180.10 of the Supplemental Specifications.

**Section 8: Measurement and Payment**

The pay quantity for On-the-Job Training will be measured by the actual number of hours of training provided, measured to the nearest one-half hour.

Except as otherwise noted below, the Contractor will be paid training provided to an employee approved by ODOT and trained in accordance with an approved training program. The Contractor must obtain approval from ODOT to overrun OJT bid item hours beyond the quantity shown in the bid schedule in order to be eligible for reimbursement. Payment may be made for training persons in excess of the number specified in Section 3, provided the following has been approved by ODOT prior to the date that excess training commences.

- The number, names, gender and race of additional trainees.
- The craft(s) in which training is to be provided.
- A training program for each trainee.
- If not minority or female, documentation of good faith efforts to recruit minorities and women in proposed positions.

Payment for training under these provisions will be made even though the Contractor receives additional training program funds from other sources, provided such other sources do not specifically prohibit the Contractor from receiving other reimbursement. Reimbursement for off-site training will only be made where the Contractor does one or more of the following and the trainees/apprentices are concurrently employed in a Federal-aid project:

- Contributes to the cost of the training.
- Provides the instruction to the trainee/apprentice.
- Pays the trainee's/apprentice's wage during the off-site training period.

**OR569: Beltline Hwy. @ Coburg Rd. Interchange (Eugene) Section  
Grading, Drainage, Structures, Paving, Signing, Illumination, & Signal**

Payments made to the Contractor may be recalled if either the failure to provide the required training, or the failure to hire the trainee/apprentice upon completion of the contractor's OJT program is caused by the Contractor's lack of Good Faith Efforts in meeting the requirements of the special provisions. Such lack of Good Faith Efforts shall constitute non-compliance and may lead to Breach of Contract.

The item "On-the-Job Training" will be paid in full for training provided and properly documented, in conformance with these provisions.

No payment for training will be made until the Contractor has submitted all required documentation and approved by ODOT.

The item "On-the-Job Training" is intended to cover the Contractor's additional costs associated with administering the On-the-Job Training provisions of this contract. The On-the-Job Training bid item is not intended to reimburse the Contractor for actual costs nor for the hourly wage or fringe benefits of the trainee.

\*\*\*\*\*

Training

June 2006

**Training**

A decorative border of small blue stars surrounds the entire page content.

# *Davis - Bacon*

**WAGE DETERMINATIONS**

**for**

**HIGHWAY**

**Construction Projects**

*Oregon*

**Training**

## PREFACE

The "Davis-Bacon Wage Determinations" **and** the Oregon Bureau of Labor and Industries (BOLI) "Prevailing Wage Rates for Public Works Contracts in Oregon subject to BOTH the State PWR and federal Davis-Bacon Act" apply to this Project.

The wage rate and fringe benefits listed in this "Davis-Bacon Wage Determinations for Highway Construction Projects" shall be paid unless a higher wage rate and fringe benefits is listed in the Oregon Bureau of Labor and Industries (BOLI) "Prevailing Wage Rates for Public Works Contracts in Oregon subject to BOTH the State PWR and federal Davis-Bacon Act", in which case, the higher wage rate and fringe benefits shall be paid (see ORS 279C.838). The BOLI publication is a separate document and is incorporated into this Project by reference.

Training

**Training**

GENERAL DECISION: OR20080002 03/20/2009 OR2

Date: March 20, 2009

General Decision Number: OR20080002 03/20/2009

Superseded General Decision Number: OR20070002

State: Oregon

Construction Types: Heavy (Heavy and Dredging) and Highway

Counties: Oregon Statewide.

DREDGING, HEAVY AND HIGHWAY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	02/08/2008
1	02/15/2008
2	03/07/2008
3	04/04/2008
4	04/18/2008
5	04/25/2008
6	06/06/2008
7	06/13/2008
8	06/20/2008
9	07/04/2008
10	09/19/2008
11	10/03/2008
12	11/07/2008
13	11/21/2008
14	01/02/2009
15	02/06/2009
16	03/13/2009
17	03/20/2009

BOIL0500-001 10/01/2007

	Rates	Fringes
BOILERMAKER.....	\$ 31.56	19.01

BROR0001-006 06/01/2008

BAKER, BENTON (NORTH), CLACKAMAS, CLATSOP, COLUMBIA, GILLIAM, HARNEY, HOOD RIVER, LINCOLN (NORTH), LINN (NORTH), MALHEUR (NORTH), MARION, MORROW, MULTNOMAH, POLK, SHERMAN, TILLAMOOK, UMATILLA, UNION, WALLOWA, WASCO (NORTH), WASHINGTON AND YAMHILL COUNTIES

	Rates	Fringes
BRICKLAYER.....	\$ 31.12	13.80

BROR0001-007 06/01/2008

BENTON (SOUTH), CROOK, DESCHUTES, GRANT, JACKSON, JEFFERSON,  
 KLAMATH, LAKE, LANE, LINCOLN (SOUTH), LINN (SOUTH), MALHEUR  
 (SOUTH), WASCO (SOUTH) AND WHEELER COUNTIES

	Rates	Fringes
BRICKLAYER.....	\$ 29.90	13.45
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CARP9001-001 06/01/2007		

ZONE 1:

	Rates	Fringes
Carpenters:		
CARPENTERS.....	\$ 27.56	13.30
DIVER STANDBY.....	\$ 34.42	13.30
DIVERS TENDERS.....	\$ 30.28	13.30
DIVERS.....	\$ 68.84	13.30
MANIFOLD AND/OR DECOMPRESSION CHAMBER		
OPERATORS.....	\$ 30.28	13.30
MILLWRIGHTS.....	\$ 28.04	13.30
PILEDRIVERS.....	\$ 28.04	13.30

DEPTH PAY:

50 to 100 feet \$1.00 per foot over 50 feet  
 101 to 150 feet 1.50 per foot over 101 feet  
 151 to 200 feet 2.00 per foot over 151 feet

Zone Differential (Add to Zone 1 rates):

Zone 2 - \$0.85  
 Zone 3 - 1.25  
 Zone 4 - 1.70  
 Zone 5 - 2.00  
 Zone 6 - 3.00

ZONE 1 - All jobs or projects located within 30 miles of the  
 respective City Hall

ZONE 2 - More than 30 miles and less than 40 miles from the  
 respective City Hall

ZONE 3 - More than 40 miles and less than 50 miles from the  
 respective City Hall

ZONE 4 - More than 50 miles and less than 60 miles from the  
 respective City Hall

ZONE 5 - More than 60 miles and less than 70 miles from the  
 respective City Hall

ZONE 6 - More than 70 miles from the respective City Hall.

BASEPOINTS CITIES FOR CARPENTERS (EXCLUDING MILLWRIGHTS,  
 PILEDRIVERS AND DIVERS)

ALBANY	ASTORIA	BAKER
BEND	BROOKINGS	BURNS
COOS BAY	CORVALLIS	EUGENE
GOLDENDALE	GRANTS PASS	HERMISTON
HOOD RIVER	KLAMATH FALLS	LAGRANDE
LAKEVIEW	LONGVIEW	MADRAS
MEDFORD	McMINNVILLE	NEWPORT
OREGON CITY	ONTARIO	PENDLETON
PORTLAND	PORT ORFORD	REEDSPORT
ROSEBURG	SALEM	ST. HELENS
THE DALLES	TILLAMOOK	VANCOUVER

BASEPOINTS FOR MILLWRIGHTS

EUGENE	NORTH BEND	LONGVIEW
PORTLAND	MEDFORD	THE DALLES
VANCOUVER		

BASEPOINTS FOR PILEDRIVERS AND DIVERS

ASTORIA	BEND	COOS BAY
EUGENE	KLAMATH FALLS	LONGVIEW
MEDFORD	NEWPORT	PORTLAND
ROSEBURG	SALEM	THE DALLES

\* ELEC0048-006 01/01/2009

CLACKAMAS, CLATSOP, COLUMBIA, HOOD RIVER, MULTNOMAH, TILLAMOOK, WASCO, WASHINGTON, SHERMAN AND YAMHILL (NORTH) COUNTIES

	Rates	Fringes
CABLE SPLICER.....	\$ 34.40	3%+\$14.85
ELECTRICIAN.....	\$ 35.65	3%+\$15.35

HOURLY ZONE PAY:

Hourly Zone Pay shall be paid on jobs located outside of the free zone computed from the city center of the following listed cities:

Portland, The Dalles, Hood River, Tillamook, Seaside and Astoria

Zone Pay:

Zone 1: 31-50 miles \$1.50/hour  
 Zone 2: 51-70 miles \$3.50/hour  
 Zone 3: 71-90 miles \$5.50/hour  
 Zone 4: Beyond 90 miles \$9.00/hour

\*These are not miles driven. Zones are based on Delorme Street Atlas USA 2006 plus.

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 ELEC0112-001 12/01/2008

BAKER, GILLIAM, GRANT, MORROW, UMATILLA, UNION, WALLOWA, AND  
WHEELER COUNTIES

	Rates	Fringes
CABLE SPLICER.....	\$ 35.39	3%+13.48
ELECTRICIAN.....	\$ 33.70	3%+13.48

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ELEC0125-001 02/01/2007

	Rates	Fringes
Line Construction:		
CABLE SPLICER.....	\$ 42.09	3.875%+10.60
GROUNDMAN.....	\$ 26.31	3.875%+8.60
LINE EQUIPMENT MAN.....	\$ 32.32	3.875%+8.70
LINEMAN, POLE SPRAYER, HEAVY LINE EQUIPMENT MAN....	\$ 37.58	3.875%+10.60
POWDERMAN, JACKHAMMERMAN....	\$ 28.19	3.875%+8.60
TREE TRIMMER.....	\$ 22.04	3%+8.79

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ELEC0280-003 01/01/2009

BENTON, CROOK, DESCHUTES, JEFFERSON, LANE (EAST OF A LINE  
RUNNING NORTH AND SOUTH FROM THE NORTHEAST CORNER OF COOS  
COUNTY TO THE SOUTHEAST CORNER OF LINCOLN COUNTY), LINN,  
MARION, POLK AND YAMHILL (SOUTHERN HALF) COUNTIES

	Rates	Fringes
CABLE SPLICER.....	\$ 37.46	3%+14.08
ELECTRICIAN.....	\$ 34.05	3%+14.08

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ELEC0291-006 01/01/2009

MALHEUR COUNTY

	Rates	Fringes
CABLE SPLICER.....	\$ 32.50	3%+\$10.00
ELECTRICIAN.....	\$ 29.54	3%+\$10.00

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\* ELEC0659-004 01/01/2009

DOUGLAS (EAST OF A LINE RUNNING NORTH AND SOUTH FROM THE NE  
CORNER OF COOS COUNTY TO THE SE CORNER OF LINCOLN COUNTY),  
HARNEY, JACKSON, JOSEPHINE, KLAMATH AND LAKE COUNTIES

	Rates	Fringes
CABLE SPLICER.....	\$ 29.78	3%+\$13.05
ELECTRICIAN.....	\$ 29.78	3%+\$13.05

ZONE PAY: BASE POINTS ARE FROM THE DOWNTOWN POST OFFICE IN

GRANTS PASS, KLAMATH FALLS, ROSEBURG AND MEDFORD.

ZONE 1:	0-20 MILES	\$0.00 PER HOUR
ZONE 2:	21-30 MILES	\$1.00 PER HOUR
ZONE 3:	31-40 MILES	\$2.80 PER HOUR
ZONE 4:	41-50 MILES	\$4.50 PER HOUR
ZONE 5:	51-60 MILES	\$6.30 PER HOUR
ZONE 6:	BEYOND 60 MILES	\$9.00 PER HOUR

\*THESE ARE NOT MILES DRIVEN. ZONES ARE BASED ON DELORNE STREET ATLAS USA 5.0.

ELEC0932-004 07/01/2008

COOS, CURRY, LINCOLN, DOUGLAS AND LANE COUNTIES (AREA LYING WEST OF A LINE NORTH AND SOUTH FROM THE N.E. CORNER OF COOS COUNTY TO THE S.E. CORNER OF LINCOLN COUNTY)

	Rates	Fringes
ELECTRICIAN.....	\$ 31.47	3%+12.30

\* ENGI0701-004 01/01/2009

	Rates	Fringes
Dredging:		
ZONE A		
ASSISTANT ENGINEER.....	\$ 37.30	10.80
ASSISTANT MATE.....	\$ 32.96	10.80
LEVERMAN, DIPPER, FLOATING CLAMSHELL.....	\$ 39.88	10.80
LEVERMAN, HYDRAULIC.....	\$ 39.88	10.80
TENDERMAN.....	\$ 36.12	10.80
ZONE B		
ASSISTANT ENGINEER.....	\$ 39.80	10.80
ASSISTANT MATE.....	\$ 35.46	10.80
LEVERMAN, DIPPER FLOATING CLAMSHELL.....	\$ 42.38	10.80
LEVERMAN, HYDRAULIC.....	\$ 42.38	10.80
TENDERMAN.....	\$ 38.62	10.80
ZONE C		
ASSISTANT ENGINEER.....	\$ 41.30	10.80
ASSISTANT MATE.....	\$ 36.96	10.80
LEVERMAN, DIPPER FLOATING CLAMSHELL.....	\$ 43.88	10.80
LEVERMAN, HYDRAULIC.....	\$ 43.88	10.80
TENDERMAN.....	\$ 40.12	10.80

ZONE DESCRIPTION FOR DREDGING

- ZONE A - All jobs or projects located within 30 road miles of Portland City Hall.
- ZONE B - Over 30-60 road miles from Portland City Hall.
- ZONE C - Over 60 road miles from Portland City Hall.

\*All jobs or projects shall be computed from the city hall by the shortest route to the geographical center of the project.

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ENGI0701-005 01/01/2009

ZONE 1:

POWER EQUIPMENT OPERATORS (See Footnote C)

	Rates	Fringes
Power equipment operators:		
GROUP 1.....	\$ 36.22	10.90
GROUP 1A.....	\$ 38.03	10.90
GROUP 1B.....	\$ 39.84	10.90
GROUP 2.....	\$ 34.65	10.90
GROUP 3.....	\$ 33.69	10.90
GROUP 4.....	\$ 32.78	10.90
GROUP 5.....	\$ 31.71	10.90
GROUP 6.....	\$ 28.82	10.90

Zone Differential (add to Zone 1 rates):

Zone 2 - \$2.50

Zone 3 - \$5.00

For the following metropolitan counties: MULTNOMAH;  
CLACKAMAS; MARION; WASHINGTON; YAMHILL; AND COLUMBIA;  
CLARK; AND COWLITZ COUNTY, WASHINGTON WITH MODIFICATIONS AS  
INDICATED:

All jobs or projects located in Multnomah, Clackamas and Marion Counties, West of the western boundary of Mt. Hood National Forest and West of Mile Post 30 on Interstate 84 and West of Mile Post 30 on State Highway 26 and West of Mile Post 30 on Highway 22 and all jobs or projects located in Yamhill County, Washington County and Columbia County and all jobs or projects located in Clark & Cowlitz County, Washington except that portion of Cowlitz County in the Mt. St. Helens "Blast Zone" shall receive Zone I pay for all classifications.

All jobs or projects located in the area outside the identified boundary above, but less than 50 miles from the Portland City Hall shall receive Zone II pay for all classifications.

All jobs or projects located more than 50 miles from the Portland City Hall, but outside the identified border above, shall receive Zone III pay for all classifications.

For the following cities: ALBANY; BEND; COOS BAY; EUGENE;  
GRANTS PASS; KLAMATH FALLS; MEDFORD; ROSEBURG

All jobs or projects located within 30 miles of the respective city hall of the above mentioned cities shall receive Zone I pay for all classifications.

All jobs or projects located more than 30 miles and less than 50 miles from the respective city hall of the above mentioned cities shall receive Zone II pay for all classifications.

All jobs or projects located more than 50 miles from the respective city hall of the above mentioned cities shall receive Zone III pay for all classifications.

#### POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: CONCRETE: Batch Plant and/or Wet Mix Operator, three units or more; CRANE: Helicopter Operator, when used in erecting work; Whirley Operator, 90 ton and over; LATTICE BOOM CRANE: Operator 200 tons through 299 tons, and/or over 200 feet boom; HYDRAULIC CRANE: Hydraulic Crane Operator 90 tons through 199 tons with luffing or tower attachments; FLOATING EQUIPMENT: Floating Crane, 150 ton but less than 250 ton

GROUP 1A: HYDRAULIC CRANE: Hydraulic Operator, 200 tons and over (with luffing or tower attachment); LATTICE BOOM CRANE: Operator, 200 tons through 299 tons, with over 200 feet boom; FLOATING EQUIPMENT: Floating Crane 250 ton and over

GROUP 1B: LATTICE BOOM CRANE: Operator, 300 tons through 399 tons with over 200 feet boom; Operator 400 tons and over; FLOATING EQUIPMENT: Floating Crane 350 ton and over

GROUP 2: ASPHALT: Asphalt Plant Operator (any type); Roto Mill, pavement profiler, operator, 6 foot lateral cut and over; BLADE: Auto Grader or "Trimmer" (Grade Checker required); Blade Operator, Robotic; BULLDOZERS: Bulldozer operator over 120,000 lbs and above; Bulldozer operator, twin engine; Bulldozer Operator, tandem, quadnine, D10, D11, and similar type; Bulldozere Robotic Equipment (any type; CONCRETE: Batch Plant and/or Wet Mix Operator, one and two drum; Automatic Concrete Slip Form Paver Operator; Concrete Canal Line Operator; Concrete Profiler, Diamond Head; CRANE: Cableway Operator, 25 tons and over; HYDRAULIC CRANE: Hydraulic crane operator 90 tons through 199 tons (without luffing or tower attachment); TOWER/WHIRLEY OPERATOR: Tower Crane Operator; Whirley Operator, under 90 tons; LATTICE BOOM CRANE: 90 through 199 tons and/or 150 to 200 feet boom; CRUSHER: Crusher Plant Operator; FLOATING EQUIPMENT: Floating Clamshell, etc.operator, 3 cu. yds. and over; Floating Crane (derrick barge) Operator, 30 tons but less than 150 tons; LOADERS: Loader operator, 120,000 lbs. and above; REMOTE CONTROL: Remote controlled earth-moving equipment; RUBBER-TIRED SCRAPERS: Rubber-tired scraper operator, with tandem scrapers, multi-engine; SHOVEL, DRAGLINE, CLAMSHELL, SKOOPER OPERATOR: Shovel, Dragline, Clamshell, operator 5 cu. yds and over; TRENCHING MACHINE: Wheel Excavator, under 750 cu. yds. per hour (Grade Oiler required); Canal Trimmer (Grade Oiler

required); Wheel Excavator, over 750 cu. yds. per hour;  
Band Wagon (in conjunction with wheel excavator);  
UNDERWATER EQUIPMENT: Underwater Equipment Operator, remote  
or otherwise; HYDRAULIC HOES-EXCAVATOR: Excavator over  
130,000 lbs.; HYDRAULIC CRANE: Hydraulic crane operator, 50  
tons through 89 tons (with luffing or tower attachment);

GROUP 3: BULLDOZERS: Bulldozer operator, over 70,000 lbs. up  
to and including 120,000 lbs.; HYDRAULIC CRANE: Hydraulic  
crane operator, 50 tons through 89 tons (without luffing or  
tower attachment); LATTICE BOOM CRANES: Lattice Boom  
Crane-50 through 89 tons (and less than 150 feet boom);  
FORKLIFT: Rock Hound Operator; HYDRAULIC HOES-EXCAVATOR:  
excavator over 80,000 lbs. through 130,000 lbs.; LOADERS:  
Loader operator 60,000 and less than 120,000; RUBBER-TIRED  
SCRAPERS: Scraper Operator, with tandem scrapers;  
Self-loading, paddle wheel, auger type, finish and/or 2 or  
more units; SHOVEL, DRAGLINE, CLAMSHELL, SKOOPER OPERATOR:  
Shovel, Dragline, Clamshell operators 3 cu. yds. but less  
than 5 cu yds.

GROUP 4: ASPHALT: Screed Operator; Asphalt Paver operator  
(screeman required); BLADE: Blade operator; Blade operator,  
finish; Blade operator, externally controlled by  
electronic, mechanical hydraulic means; Blade operator,  
multi-engine; BULLDOZERS: Bulldozer Operator over 20,000  
lbs and more than 100 horse up to 70,000 lbs; Drill Cat  
Operator; Side-boom Operator; Cable-Flow Operator (any  
type); CLEARING: Log Skidders; Chippers; Incinerator; Stump  
Splitter (loader mounted or similar type); Stump Grinder  
(loader mounted or similar type); Tub Grinder; Land Clearing  
Machine (Track mounted forestry mowing & grinding machine);  
Hydro Axe (loader mounted or similar type); COMPACTORS  
SELF-PROPELLED: Compactor Operator, with blade; Compactor  
Operator, multi-engine; Compactor Operator, robotic;  
CONCRETE: Mixer Mobile Operator; Screed Operator; Concrete  
Cooling Machine Operator; Concrete Paving Road Mixer;  
Concrete Breaker; Reinforced Tank Banding Machine (K-17 or  
similar types); Laser Screed; CRANE: Chicago boom and  
similar types; Lift Slab Machine Operator; Boom type  
lifting device, 5 ton capacity or less; Hoist Operator, two  
(2) drum; Hoist Operator, three (3) or more drums; Derrick  
Operator, under 100 ton; Hoist Operator, stiff leg, guy  
derrick or similar type, 50 ton and over; Cableway Operator  
up to twenty (25) ton; Bridge Crane Operator, Locomotive,  
Gantry, Overhead; Cherry Picker or similar type crane hoist  
five (5) ton capacity or less; Hydraulic Crane Operator,  
under 50 tons; LATTICE BOOM CRANE OPERATOR: Lattice Boom  
Crane Operator, under 50 tons; CRUSHER: Generator Operator;  
Diesel- Electric Engineer; Grizzley Operator; DRILLING:  
Drill Doctor; Boring Machine Operator; Driller-Percussion,  
Diamond, Core, Cable, Rotary and similar type; Cat Drill  
(John Henry); Directional Drill Operator over 20,000 lbs  
pullback; FLOATING EQUIPMENT: Diesel-electric Engineer;  
Jack Operator, elevating barges, Barge Operator,  
self-unloading; Piledriver Operator (not crane type)  
(Deckhand required); Floating Clamshell, etc. Operator,

under 3 cu. yds. (Fireman or Diesel-Electric Engineer required); Floating Crane (derrick barge) Operator, less than 30 tons; GENERATORS: Generator Operator; Diesel-electric Engineer; GUARDRAIL EQUIPMENT: Guardrail Punch Operator (all types); Guardrail Auger Operator (all types); Combination Guardrail machines, i.e., punch auger, etc.; HEATING PLANT: Surface Heater and Planer Operator; HYDRAULIC HOES EXCAVATOR: Robotic Hydraulic backhoe operator, track and wheel type up to and including 20,000 lbs. with any or all attachments; Excavator Operator over 20,000 lbs through 80,000 lbs.; LOADERS: Belt Loaders, Kolman and Ko Cal types; Loaders Operator, front end and overhead, 25,000 lbs and less than 60,000 lbs; Elevating Grader Operator by Tractor operator, Sierra, Euclid or similar types; PILEDRIERS: Hammer Operator; Piledriver Operator (not crane type); PIPELINE, SEWER WATER: Pipe Cleaning Machine Operator; Pipe Doping Machine Operator; Pipe Bending Machine Operator; Pipe Wrapping Machine Operator; Boring Machine Operator; Back Filling Machine Operator; REMOTE CONTROL: Concrete Cleaning Decontamination Machine Operator; Ultra High Pressure Water Jet Cutting Tool System Operator/Mechanic; Vacuum Blasting Machine Operator/mechanic; REPAIRMEN, HEAVY DUTY: Diesel Electric Engineer (Plant or Floating); Bolt Threading Machine operator; Drill Doctor (Bit Grinder); H.D. Mechanic; Machine Tool Operator; RUBBER-TIRED SCRAPERS: Rubber-tired Scraper Operator, single engine, single scraper; Self-loading, paddle wheel, auger type under 15 cu. yds.; Rubber-tired Scraper Operator, twin engine; Rubber-tired Scraper Operator, with push-pull attachments; Self Loading, paddle wheel, auger type 15 cu. yds. and over, single engine; Water pulls, water wagons; SHOVEL, DRAGLINE, CLAMSHELL, SKOOPER OPERATOR: Diesel Electric Engineer; Stationary Drag Scraper Operator; Shovel, Dragline, Clamshell, Operator under 3 cy yds.; Grade-all Operator; SURFACE (BASE) MATERIAL: Blade mounted spreaders, Ulrich and similar types; TRACTOR-RUBBERED TIRED: Tractor operator, rubber-tired, over 50 hp flywheel; Tractor operator, with boom attachment; Rubber-tired dozers and pushers (Michigan, Cat, Hough type); Skip Loader, Drag Box; TRENCHING MACHINE: Trenching Machine operator, digging capacity over 3 ft depth; Back filling machine operator; TUNNEL: Mucking machine operator

GROUP 5: ASPHALT: Extrusion Machine Operator; Roller Operator (any asphalt mix); Asphalt Burner and Reconditioner Operator (any type); Roto-Mill, pavement profiler, ground man; BULLDOZERS: Bulldozer operator, 20,000 lbs. or less or 100 horse or less; COMPRESSORS: Compressor Operator (any power), over 1,250 cu. ft. total capacity; COMPACTORS: Compactor Operator, including vibratory; Wagner Pactor Operator or similar type (without blade); CONCRETE: Combination mixer and Compressor Operator, gunite work; Concrete Batch Plant Quality Control Operator; Beltcrete Operator; Pumpcrete Operator (any type); Pavement Grinder and/or Grooving Machine Operator (riding type); Cement Pump Operator, Fuller-Kenyon and

similar; Concrete Pump Operator; Grouting Machine Operator; Concrete mixer operator, single drum, under (5) bag capacity; Cast in place pipe laying machine; maginnis Internal Full slab vibrator operator; Concrete finishing mahine operator, Clary, Johnson, Bidwell, Burgess Bridge deck or similar type; Curb Machine Operator, mechanical Berm, Curb and/or Curb and Gutter; Concrete Joint Machine Operator; Concrete Planer Operator; Tower Mobile Operator; Power Jumbo Operator setting slip forms in tunnels; Slip Form Pumps, power driven hydraulic lifting device for concrete forms; Concrete Paving Machine Operator; Concrete Finishing Machine Operator; Concrete Spreader Operator; CRANE: Helicopter Hoist Operator; Hoist Operator, single drum; Elevator Operator; A-frame Truck Operator, Double drum; Boom Truck Operator; HYDRAULIC CRANE OPERATOR: Hydraulic Boom Truck, Pittman; DRILLING: Churm Drill and Earth Boring Machine Operator; Directional Drill Operator over 20,000 lbs pullback; FLOATING EQUIPMENT: Fireman; FORKLIFT: Lull Hi-Lift Operator or similar type; Fork Lift, over 5 ton and/or robotic; HYDRAULIC HOES EXCAVATORS: Hydraulic Backhoe Operator, wheel type (Ford, John Deere, Case type); Hydraulic Backhoe Operator track type up to and including 20,000 lbs.; LOADERS: Loaders, rubber-tired type, less than 25,000 lbs; Elevating Grader Operator, Tractor Towed requiring Operator or Grader; Elevating loader oeprator, Athey and similar types; OILERS: Service Oiler (Greaser); PIPELINE-SEWER WATER: Hydra hammer or simialr types; Pavement Breaker Operator; PUMPS: Pump Operator, more than 5 (any size); Pot Rammer Operator; RAILROAD EQUIPMENT: Locomotive Operator, under 40 tons; Ballast Regulator Operator; Ballast Tamper Multi-Purpose Operator; Track Liner Operator; Tie Spacer Operator; Shuttle Car Operator; Locomotive Operator, 40 tons and over; MATERIAL HAULRS: Cat wagon DJB's Volvo similar types; Conveyored material hauler; SURFACING (BASE) MATERIAL: Rock Spreaders, self-propelled; Pulva-mixer or similar types; Chiip Spreading machine operator; Lime spreading operator, construction job siter; SWEEPERS: Sweeper operator (Wayne type) self-propelled construction job site; TRACTOR-RUBBER TIRED: Tractor operator, rubber-tired, 50 hp flywheel and under; Trenching machine operator, maximum digging capacity 3 ft depth; TUNNEL: Dinkey

GROUP 6: ASPHALT: Plant Oiler; Plant Fireman; Pugmill Operator (any type); Truck mounted asphalt spreader, with screed; COMPRESSORS: Compressor Operator (any power), under 1,250 cu. ft. total capacity; CONCRETE: Plant Oiler, Assistant Conveyor Operator; Conveyor Operator; Mixer Box Operator (C.T.B., dry batch, etc.); Cement Hog Operator; Concrete Saw Operator; Concrete Curing Machine Operator (riding type); Wire Mat or Brooming Machine Operator; CRANE: Oiler; Fireman, all equipment; Truck Crane Oiler Driver; A-frame Truck Operator, single drum; Tugger or Coffin Type Hoist Operator; CRUSHER: Crusher Oiler; Crusher Feederman; CRUSHER: Crusher oiler; Crusher feederman; DRILLING: Drill Tender; Auger Oiler; FLOATING EQUIPMENT:

Deckhand; Boatman; FORKLIFT: Self-propelled Scaffolding Operator, construction job site (excluding working platform); Fork Lift or Lumber Stacker Operator, construction job site; Ross Carrier Operator, construction job site; GUARDRAIL EQUIPMENT: Oiler; Auger Oiler; Oiler, combination guardrail machines; Guardrail Punch Oiler; HEATING PLANT: Temporary Heating Plant Operator; LOADERS: Bobcat, skid steer (less than 1 cu yd.); Bucket Elevator Loader Operator, BarberGreene and similar types; OILERS: Oiler; Guardrail Punch Oiler; Truck Crane Oiler- Driver; Auger Oiler; Grade Oiler, required to check grade; Grade Checker; PIPELINE-SEWER WATER: Tar Pot Fireman; Tar Pot Fireman (power agitated); PUMPS: Pump Operator (any power); Hydrostatic Pump Operator; RAILROAD EQUIPMENT: Brakeman; Oiler; Switchman; Motorman; Ballast Jack Tamper Operator; SHOVEL, DRAGLINE, CLAMSHELL, SKOOPER, ETC. OPERATOR: Oiler, Grade Oiler (required to check grade); Grade Checker; Fireman; SWEEPER: Broom operator, self propelled, construction job site; SURFACING (BASE) MATERIAL: Roller Operator, grading of base rock (not asphalt); Tamping Machine operator, mechanical, self-propelled; Hydrographic Seeder Machine Operator; TRENCHING MACHINE: Oiler; Grade Oiler; TUNNEL: Conveyor operator; Air filtration equipment operator

FOOTNOTE C:

HANDLING OF HAZARDOUS WAST MATERIALS - Personnel in all craft classifications subject to working inside a federally designated Hazardous Waste perimeter shall be eligible for compensation in accordance with the following group schedule relative to the level of Hazardous Waste as outline in the specific Hazardous Waste Project Site Safety Plan:

- H-1 Base Wage Rate when on a hazardous waste site when not outfitted with protective clothing.
- H-2 Class "C" Suit - Basic hourly wage rate plus \$1.00 per hour, fringes plus \$0.15.
- H-3 Class "B" Suit - Basic hourly wage rate plus \$1.50 per hour, fringes plus \$0.15.
- H-4 Class "A" Suit -Basic hourly wage rate plus \$2.00 per hour, fringes plus \$0.15.

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IRON0029-004 07/01/2008

	Rates	Fringes
IRONWORKER.....	\$ 31.65	17.87

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LABO0001-006 06/01/2007

	Rates	Fringes
Mason Tender/Hod Carrier Tenders to Bricklayers, Tile Setters, Marble		

Setters and Terrazzo  
 Workers, Topping for  
 Cement Finishers and  
 Mortar Mixers.....\$ 25.14 11.07

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 LABO0003-003 06/01/2007

ZONE 1:

LABORERS (SEE FOOTNOTE C)

	Rates	Fringes
Laborers:		
GROUP 1.....	\$ 23.12	11.07
GROUP 2.....	\$ 23.72	11.07
GROUP 3.....	\$ 24.16	11.07
GROUP 4.....	\$ 24.54	11.07
GROUP 5.....	\$ 20.12	11.07

Zone Differential (Add to Zone 1 rates):

Zone 2 - \$0.65  
 Zone 3 - 1.15  
 Zone 4 - 1.70  
 Zone 5 - 2.75

ZONE 1 - All jobs or projects located within 30 miles of the  
 respective City Hall

ZONE 2 - More than 30 miles and less than 40 miles from the  
 respective City Hall

ZONE 3 - More than 40 miles and less than 50 miles from the  
 respective City Hall

ZONE 4 - More than 50 miles and less than 80 miles from the  
 respective City Hall

ZONE 5 - More than 80 miles from the respective City Hall.

BASEPOINTS:

ALBANY	ASTORIA	BAKER CITY
BEND	BURNS	COOS BAY
EUGENE	GRANTS PASS	HERMISTON
KLAMATH FALLS	MEDFORD	PENDLETON
PORTLAND	ROSEBURG	SALEM
THE DALLES		

LABORER CLASSIFICATIONS

GROUP 1: Asphalt Spreaders; Asphalt Plant Laborers; Batch  
 Weighman; Broomers; Brush Burners and Cutters; Car and  
 Truck Loaders; Carpenter Tender; Change-House Man or Dry  
 Shack Man; Choke Setter; Cleanup Laborers; Curing,  
 Concrete; Demolition, Wrecking, and Moving Laborers;  
 Dumpers, road oiling crew; Dumpmen (for grading crew);  
 Elevator Feeders; Fine Graders; Fence Builders; Form

Strippers (not swinging stages); Guard Rail, Median Rail, Guide Post; Reference Post, Right-of-way Marker; Hazardous Waste Laborers; Landscaping or Planting Laborer; Leverman or Aggregate Spreader (Flaherty and similar types); Loading Spotters; Material Yard Man (including electrical); Pittsburgh Chipper Operator or similar types; Railroad Track Laborers; Ribbon Setters (including steel forms); Rip Rap Man (hand placed); Road Pump Tender; Sewer Labor; Signalman; Skipman; Slopers; Spraymen; Stake Chaser; Stockpiler; Tie Back Shoring; Timber Faller and Bucker (hand labor); Toolroom Man (at jobsite); Weight-Man-Crusher (aggregate when used); General Laborer

GROUP 2: Applicator (including Pot Tender for same), applying protective material by hand or nozzle on utility lines or storage tanks on project; Brush Cutters (power saw); Burners; Choker Splicer; Clary Power Spreader and similar types; Clean-up Nozzleman-Green-Cutter (concrete, rock, etc.); Concrete Laborer; Concrete Power Buggyman; Crusher Feeder; Demolition and Wrecking Charred Materials; Dropping and Wrapping Pipe; Gunitite Nozzleman Tender; Gunitite or Sand Blasting Pot Tender; Handlers or Mixers of all materials of an irritating nature (including cement and lime); Post Hole Diggers, Air, Gas or Electric; Sand Blasting (wet); Tampers; Tool Operators (includes but not limited to: Dry Pack Machine, Jackhammer, Chipping Guns, Paving Breakers)

GROUP 3: Asbestos removal (structural removal only); Bit Grinder; Concrete Saw Operator; Drill Doctor; Drill Operators (Air Tracks, Cat Drills, Wagon Drills, Rubber-mounted Drills, and other similar types, including at crusher plants); Manhole Builder; Nippers and Timbermen; Power Saw Operators (bucking and falling); Sand Blasting (dry); Sewer Timberman; Track Liners, Anchor Machines, Ballast Regulators, Multiple Tampers, Power Jacks; Tugger Operator; Vibrator-all types; Vibrating Screed; Water Blaster

GROUP 4: Asphalt Rakers; Concrete Nozzleman; Grade Checker; Gunitite Nozzleman; High Scalars, Strippers and Drillers (covers work in swinging stages, chairs or belts, under extreme conditions unusual to normal drilling, blasting, barring-down, or sloping and stripping); Pipe Layers-All types; Powdermen; Pumpcrete Nozzlemen; Loop Installation; Tunnel-miner; Tunner- powderman; Motorman-Dinky Locomotive; Shield Operator; Tunnel Bullgang (above ground); Tunnel Chuck Tenders; Tunnel-Muckers, Brakemen, Concrete Crew, Bull Gang (underground)

GROUP 5: Traffic Flaggers

FOOTNOTE C:

HANDLING OF HAZARDOUS WAST MATERIALS - Personnel in all craft classifications subject to working inside a federally designated Hazardous Waste perimeter shall be eligible for

compensation in accordance with the following group schedule relative to the level of Hazardous Waste as outline in the specific Hazardous Waste Project Site Safety Plan:

H-1 Base Wage Rate when on a hazardous waste site when not outfitted with protective clothing.

H-2 Class "C" Suit - Basic hourly wage rate plus \$1.00 per hour, fringes plus \$0.15.

H-3 Class "B" Suit - Basic hourly wage rate plus \$1.50 per hour, fringes plus \$0.15.

H-4 Class "A" Suit -Basic hourly wage rate plus \$2.00 per hour, fringes plus \$0.15.

PAIN0055-001 10/01/2008

	Rates	Fringes
Painters: Commercial		
BAKER, BENTON, CLATSOP, CROOK, DESCHUTES, GRANT, GILLIAM, HARNEY, JEFFERSON, LAKE, LANE, LINN, LINCOLN, MALHEUR, MARION, POLK, TILLAMOOK, SHERMAN, UNION, WHEELER AND YAMHILL COUNTIES		
High work-All work 60 feet or higher.....	\$ 19.44	7.14
Painters.....	\$ 18.69	7.14
CLACKAMAS, COLUMBIA, HOOD RIVER, MULTNOMAH, MORROW, UMATILLA, WALLOWA, WASCO AND WASHINGTON COUNTIES		
High work-All work 60 feet or higher.....	\$ 20.44	7.14
Painters.....	\$ 19.69	7.14
JACKSON AND KLAMATH COUNTIES		
High Work-All Work 60 feet or higher.....	\$ 17.44	7.14
Painters.....	\$ 16.69	7.14
Painters: Industrial		
BAKER, BENTON, CLATSOP, CROOK, DESCHUTES, GRANT, GILLIAM, HARNEY, JEFFERSON, LAKE, LANE, LINN, LINCOLN, MALHEUR, MARION, POLK, TILLAMOOK, SHERMAN, UNION, WHEELER AND YAMHILL COUNTIES		
Brush and Roller.....	\$ 19.29	7.14
High work - All work 60 feet or higher.....	\$ 20.04	7.14

Spray and Sandblasting.....	\$ 19.89	7.14
CLACKAMAS, COLUMBIA, HOOD RIVER, MULTNOMAH, MORROW, UMATILLA, WALLOWA, WASCO AND WASHINGTON COUNTIES		
Brush and Roller.....	\$ 20.29	7.14
High work-All work 60 feet or higher.....	\$ 21.04	7.14
Spray & Sandblasting.....	\$ 20.89	7.14
JACKSON AND KLAMATH COUNTIES		
Brush & Roller.....	\$ 17.29	7.14
High work-All work 60 feet or higher.....	\$ 18.04	7.14
Spray, Sandblasting.....	\$ 17.89	7.14

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PAIN0055-005 06/01/2007

	Rates	Fringes
Painters:		
HIGHWAY & PARKING LOT STRIPER.....	\$ 28.27	8.27

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PLAS0555-001 06/01/2008

ZONE 1:

	Rates	Fringes
Cement Masons: (ZONE 1)		
CEMENT MASONS DOING BOTH COMPOSITION/POWER MACHINERY AND SUSPENDED/HANGING SCAFFOLD..	\$ 27.87	14.83
CEMENT MASONS ON SUSPENDED, SWINGING AND/OR HANGING SCAFFOLD.....	\$ 27.34	14.83
CEMENT MASONS.....	\$ 26.80	14.83
COMPOSITION WORKERS AND POWER MACHINERY OPERATORS...	\$ 27.34	14.83

Zone Differential (Add To Zone 1 Rates):

Zone 2 - \$0.65  
Zone 3 - 1.15  
Zone 4 - 1.70  
Zone 5 - 3.00

BASE POINTS: BEND, CORVALLIS, EUGENE, MEDFORD, PORTLAND,  
SALEM, THE DALLES, VANCOUVER

ZONE 1: Projects within 30 miles of the respective city hall

ZONE 2: More than 30 miles but less than 40 miles from the  
respective city hall.

ZONE 3: More than 40 miles but less than 50 miles from the

respective city hall.

ZONE 4: More than 50 miles but less than 80 miles from the respective city hall.

ZONE 5: More than 80 miles from the respective city hall

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PLUM0290-005 10/01/2008

BENTON, CLACKAMAS, CLATSOP, COLUMBIA, COOS, CROOK, CURRY, DESCHUTES, DOUGLAS, GILLIAM, GRANT AND HARNEY (those portions which lies north and west of a north-south line drawn from the town of John Day to a point five miles east of the town of Burns and three miles south of Burns thence on an airline through the town of Wagontire west to the County lines), HOOD RIVER, JACKSON, JEFFERSON, JOSEPHINE, KLAMATH, LAKE, LANE, LINCOLN, LINN, MARION, MULTNOMAH, POLK, SHERMAN, TILLAMOOK, WASCO, WASHINGTON, WHEELER AND YAMHILL COUNTIES

	Rates	Fringes
Plumbers and Pipefitters.....	\$ 35.69	16.99

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PLUM0296-004 01/01/2009

BAKER, HARNEY (Remainder of County) AND MALHEUR COUNTIES

	Rates	Fringes
Plumbers and Pipefitters.....	\$ 26.70	10.65

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PLUM0598-008 06/01/2008

GRANT (Remainder of County), MORROW, UMATILLA, UNION AND WALLOWA COUNTIES

	Rates	Fringes
Plumbers and Pipefitters.....	\$ 38.64	19.10

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SUOR1991-003 04/01/1991

	Rates	Fringes
Timber Sales Roads:		
LABORERS.....	\$ 8.35	4.30
OPERATING ENGINEERS.....	\$ 10.37	4.15
POWER SAW, DRILLER, POWDERMAN.....	\$ 9.12	4.30
TEAMSTERS.....	\$ 9.74	3.74

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TEAM0037-004 06/01/2008

ZONE 1:

TRUCK DRIVERS (See Footnote C):

	Rates	Fringes
Truck drivers:		
GROUP 1.....	\$ 26.40	11.91
GROUP 2.....	\$ 26.52	11.91
GROUP 3.....	\$ 26.65	11.91
GROUP 4.....	\$ 26.91	11.91
GROUP 5.....	\$ 27.13	11.91
GROUP 6.....	\$ 27.29	11.91
GROUP 7.....	\$ 27.49	11.91

Zone Differential (add to Zone 1 rates):

Zone 2 - \$0.65  
 Zone 3 - 1.15  
 Zone 4 - 1.70  
 Zone 5 - 2.75

Zone 1 - All jobs or projects located within 30 miles of the respective City Hall

Zone 2 - More than 30 miles and less than 40 miles from the respective City Hall

Zone 3 - More than 40 miles and less than 50 miles from the respective City Hall

Zone 4 - More than 50 miles and less than 80 miles from the respective City Hall

Zone 5 - More than 80 miles from the respective City Hall

BASEPOINTS:

ALBANY	ASTORIA	BAKER
BEND	BINGEN	BROOKINGS
BURNS	COOS BAY	CORVALLIS
EUGENE	GOLDENDALE	GRANTS PASS
HERMISTON	HOOD RIVER	KLAMATH FALLS
LAGRANDE	LAKEVIEW	LONGVIEW
MADRAS	MEDFORD	MCMINNVILLE
OREGON CITY	NEWPORT	ONTARIO
PENDLETON	PORTLAND	PORT ORFORD
REEDSPORT	ROSEBURG	SALEM
THE DALLES	TILLAMOOK	VANCOUVER

TRUCK DRIVER CLASSIFICATIONS

GROUP 1: A-frame or hydra-lift truck w/load bearing surface; Articulated dump truck; Battery rebuilders; Bus or manhaul driver; Concrete buggies (power operated); Concrete pump truck; Dump trucks, side, end and bottom dumps, including semi-trucks and trains or combinations thereof: up to and including 10 cu. yds.; Lift jitneys, fork lifts (all sizes in loading, unloading and transporting material on job site); Loader and/or leverman on concrete dry batch plant (manually operated); Lubrication man, fuel truck driver,

tireman, wash rack, steam cleaner or combination; Pilot car; Pickup truck; Slurry truck driver or leverman; Solo flat bed and misc. body truck, 0-10 tons; Team drivers; Tireman; Transit mix and wet or dry mix trucks: 5 cu yds. and under; Water wagons (rated capacity) up to 3,000 gallons

GROUP 2: Boom truck/hydra-lift or retracting crane; Challenger; Dumpsters or similar equipment-all sizes; Dump trucks/articulated dumps 6 cu to 10 cu.; Flaherty spreader driver or leverman; Low bed equipment, flat bed semi-truck and trailer or doubles transporting equipment or wet or dry materials; Lumber carrier, driver-straddle carrier (used in loading, unloading and transporting of materials on job site); Oil distributor driver or leverman; Transit mix and wet or dry mix trucks: over 5 cy yds and including 7 cu. yds; Vacuum trucks; Water Wagons (rated capacity) over 3,000 to 5,000 gallons

GROUP 3: Ammonia nitrate distributor driver; Dump trucks, side, end and bottom dumps, including semi-trucks and trains or combinations thereof: over 10 cu. yds. and including 30 cu. yds., includes articulated dump trucks; Self-Propelled street sweeper; Transit mix and wet or dry mix trucks, over 7 cu. yds. and including 11 cu. yds.; truck mechanic-Welder-Body repairman; Utility and clean-up truck; Water wagons (rated capacity) 5,000 to 10,000 gallons.

GROUP 4: Asphalt Bruner; Dump trucks, side, end and bottom dumps, including semi-trucks and trains or combinations thereof: over 30 cu. yds. and including 50 cu. yds. includes articulated dump trucks; Fire guard; Transit Mix and Wet or Dry Mix Trucks, over 11 cu. yds. and including 15 cu. yds.; Water Wagon (rated capacity) over 10,000 gallons to 15,000 gallons

GROUP 5: Composite Crewman; Dump trucks, side, end and bottom dumps, including semi-trucks and trains or combinations thereof: over 50 cu. yds. and including 60 cu. yds., includes articulated dump trucks

GROUP 6: Bulk cement spreader w/o auger; Dry Pre-Batch concrete mix trucks; Dump trucks, side, end and bottom dumps, including semi-trucks and trains of combinations thereof: over 60 cu. yds. and including 80 cu. yds. and includes articulated dump trucks; Skid truck

GROUP 7: Dump trucks, side, end and bottom dumps, including semi-trucks and trains or combinations thereof: over 80 cu. yds. and including 100 cu. yds. includes articulated dump trucks; Industrial lift truck (mechanical tailgate)

FOOTNOTE C:

HANDLING OF HAZARDOUS WAST MATERIALS -(LABORERS, POWER EQUIPMENT OPERATORS, AND TRUCK DRIVERS): Personnel in all craft classifications subject to working inside a federally

designated Hazardous Waste perimeter shall be eligible for compensation in accordance with the following group schedule relative to the level of Hazardous Waste as outline in the specific Hazardous Waste Project Site Safety Plan:

H-1 Base Wage Rate when on a hazardous waste site when not outfitted with protective clothing.

H-2 Class "C" Suit - Basic hourly wage rate plus \$1.00 per hour, fringes plus \$0.15.

H-3 Class "B" Suit - Basic hourly wage rate plus \$1.50 per hour, fringes plus \$0.15.

H-4 Class "A" Suit -Basic hourly wage rate plus \$2.00 per hour, fringes plus \$0.15.

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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.  
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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

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In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.  
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#### WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on a wage determination matter
- \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

**WEB SITE ADDRESSES**

**Addenda Letters (00120.30):**

[http://www.oregon.gov/ODOT/CS/CONSTRUCTION/Bid\\_Award.shtml](http://www.oregon.gov/ODOT/CS/CONSTRUCTION/Bid_Award.shtml)

**Notice of Intent to Award (00130.10):**

[http://www.oregon.gov/ODOT/CS/CONSTRUCTION/Notice\\_of\\_Intent.shtml](http://www.oregon.gov/ODOT/CS/CONSTRUCTION/Notice_of_Intent.shtml)

Training

**Training**

OREGON DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISIONS

FOR

Grading, Drainage, Structures, Paving, Signing, Illumination, & Signal  
OR569: Beltline Hwy. @ Coburg Rd. Interchange (Eugene) Section  
Beltline Highway  
Lane County

**CONSOLIDATED SPECIAL PROVISIONS**

As the preparer of the consolidated specifications for this Project I acknowledge compliance with the "Modified Exemption from DOJ Legal Sufficiency Review and Approval for ODOT Highway Construction Contracts" dated July 11, 2008.

By: Bobby D. Stagg Date: 2/4/09

**Training**


OREGON DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISIONS

FOR

Grading, Drainage, Structures, Paving, Signing, Illumination, & Signal  
OR569: Beltline Hwy. @ Coburg Rd. Interchange (Eugene) Section  
Beltline Highway  
Lane County

PROFESSIONAL OF RECORD CERTIFICATION(s):

<p>Seal w/signature</p>  <p>Expiration Date <u>6/30/09</u></p>	<p>I certify the Special Provision Sections listed below were prepared by me or under my supervision:</p> <p>Section 00220, 00225, 00905, 00910, 00940, 02910</p> <p>(Traffic Control and Signing)</p>
<p>Signature <u>Angela J. Kargel</u></p>	<p>I also acknowledge compliance with Part 2(b) and Part 2(e) of the "Modified Exemption from DOJ Legal Sufficiency Review and Approval for ODOT Highway Construction Contracts" dated July 11, 2008.</p>

**Training**


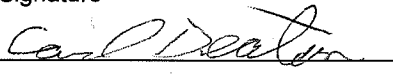
OREGON DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISIONS

FOR

Grading, Drainage, Structures, Paving, Signing, Illumination, & Signal  
OR569: Beltline Hwy. @ Coburg Rd. Interchange (Eugene) Section  
Beltline Highway  
Lane County

PROFESSIONAL OF RECORD CERTIFICATION:

 <p>RENEWAL DATE: 12-31-2009</p>	<p>I certify the Special Provision Sections listed below were prepared by me or under my supervision:</p> <p>Sections 00280, 00310, 00320, 00330, 00340, 00390, 00405, 00440, 00442, 00445, 00480, 00620, 00810, 00861, 01070, 02110</p> <p>(Roadway)</p>
<p>Signature</p> 	<p>I also acknowledge compliance with Part 2(b) and Part 2(e) of the "Modified Exemption from DOJ Legal Sufficiency Review and Approval for ODOT Highway Construction Contracts" dated July 11, 2008.</p>

**Training**


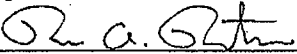
OREGON DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISIONS

FOR

Grading, Drainage, Structures, Paving, Signing, Illumination, & Signal  
OR569: Beltline Hwy. @ Coburg Rd. Interchange (Eugene) Section  
Beltline Highway  
Lane County

PROFESSIONAL OF RECORD CERTIFICATION:

<p>Seal w/signature</p>  <p>REGISTERED PROFESSIONAL ENGINEER 14483PE OREGON JULY 26 1989 RENE A. RENTERIA EXPIRES: 12-31-10</p>	<p>I certify the Special Provision Sections listed below were prepared by me or under my supervision:</p> <p>Section 00331, 00350, 00620, 00641, 00730, 00745, 00748, 00749</p> <p>(Pavements)</p>
<p>Signature</p> 	<p>I also acknowledge compliance with Part 2(b) and Part 2(e) of the "Modified Exemption from DOJ Legal Sufficiency Review and Approval for ODOT Highway Construction Contracts" dated July 11, 2008..</p>

**Training**


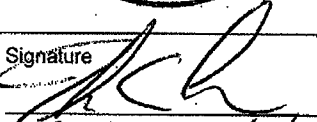
OREGON DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISIONS

FOR

Grading, Drainage, Structures, Paving, Signing, Illumination, & Signal  
OR569: Beltline Hwy. @ Coburg Rd. Interchange (Eugene) Section  
Beltline Highway  
Lane County

PROFESSIONAL OF RECORD CERTIFICATION(s):

<p>Seal w/signature</p> 	<p>I certify the Special Provision Sections listed below were prepared by me or under my supervision:</p> <p>Section 00960, 00962, 00963, 00990, 02925 (Traffic Signals)</p>
<p>Signature</p>  <p>TC Larsen 12/31/10</p>	<p>I also acknowledge compliance with Part 2(b) and Part 2(e) of the "Modified Exemption from DOJ Legal Sufficiency Review and Approval for ODOT Highway Construction Contracts" dated July 11, 2008.</p>

**Training**

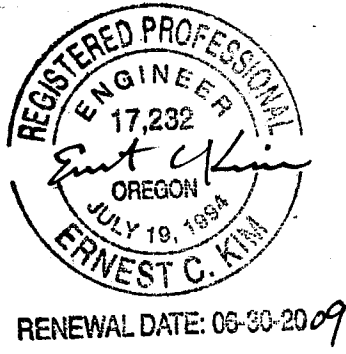
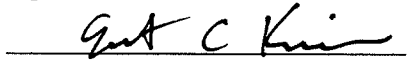
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SPECIAL PROVISIONS

FOR

Grading, Drainage, Structures, Paving, Signing, Illumination, & Signal  
OR569: Beltline Hwy. @ Coburg Rd. Interchange (Eugene) Section  
Beltline Highway  
Lane County

PROFESSIONAL OF RECORD CERTIFICATION(s):

<p>Seal w/signature</p>  <p>REGISTERED PROFESSIONAL ENGINEER 17,232 OREGON JULY 19, 1994 ERNEST C. KIM RENEWAL DATE: 06-30-2009</p>	<p>I certify the Special Provision Sections listed below were prepared by me or under my supervision:</p> <p>Section 00950, 00960, 00962, 00970, 02926 (Traffic Illumination)</p>
<p>Signature</p> 	<p>I also acknowledge compliance with Part 2(b) and Part 2(e) of the "Modified Exemption from DOJ Legal Sufficiency Review and Approval for ODOT Highway Construction Contracts" dated July 11, 2008.</p>

**Training**

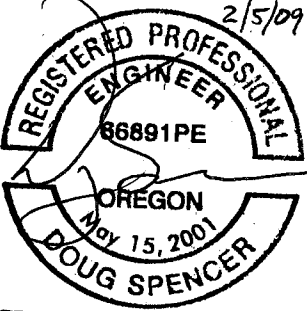
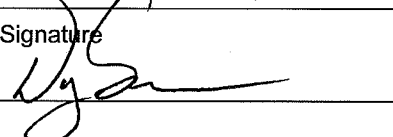
OREGON DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISIONS

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Grading, Drainage, Structures, Paving, Signing, Illumination, & Signal  
OR569: Beltline Hwy. @ Coburg Rd. Interchange (Eugene) Section  
Beltline Highway  
Lane County

PROFESSIONAL OF RECORD CERTIFICATION(s):

<p>Seal w/signature</p> <p>2/5/09</p>  <p>REGISTERED PROFESSIONAL ENGINEER 88891PE OREGON NOV 15, 2001 DOUG SPENCER</p> <p>EXPIRES: 06/30/2010</p>	<p>I certify the Special Provision Sections listed below were prepared by me or under my supervision:</p> <p>Section 00996 (ITS)</p>
<p>Signature</p> 	<p>I also acknowledge compliance with Part 2(b) and Part 2(e) of the "Modified Exemption from DOJ Legal Sufficiency Review and Approval for ODOT Highway Construction Contracts" dated July 11, 2008.</p>

**Training**

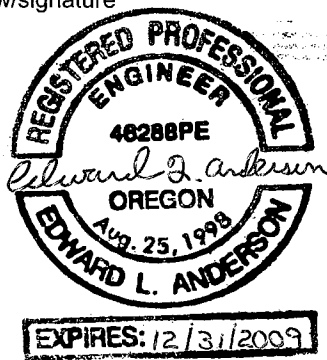
OREGON DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISIONS

FOR

Grading, Drainage, Structures, Paving, Signing, Illumination, & Signal  
OR569: Beltline Hwy. @ Coburg Rd. Interchange (Eugene) Section  
Beltline Highway  
Lane County

PROFESSIONAL OF RECORD CERTIFICATION(s):

<p>Seal w/signature</p>  <p>REGISTERED PROFESSIONAL ENGINEER 46288PE <i>Edward L. Anderson</i> OREGON Aug. 25, 1998 EDWARD L. ANDERSON EXPIRES: 12/31/2009</p>	<p>I certify the Special Provision Sections listed below were prepared by me or under my supervision:</p> <p>Sections 00440, 00530, 00965 (CCTV Pole and Foundation)</p>
<p>Signature</p> <p><i>Ed A</i></p>	<p>I also acknowledge compliance with Part 2(b) and Part 2(e) of the "Modified Exemption from DOJ Legal Sufficiency Review and Approval for ODOT Highway Construction Contracts" dated July 11, 2008.</p>

**Training**

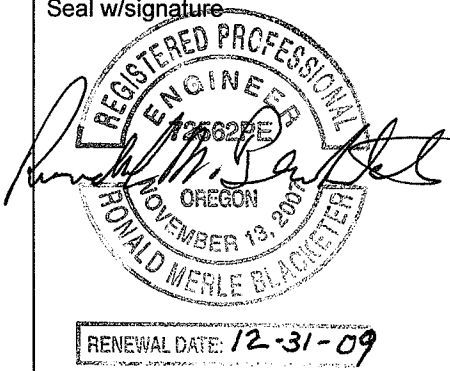
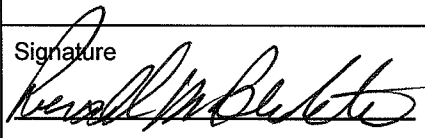
OREGON DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISIONS

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Grading, Drainage, Structures, Paving, Signing, Illumination, & Signal  
OR569: Beltline Hwy. @ Coburg Rd. Interchange (Eugene) Section  
Beltline Highway  
Lane County

PROFESSIONAL OF RECORD CERTIFICATION(s):

<p>Seal w/signature</p>  <p>RENEWAL DATE: 12-31-09</p>	<p>I certify the Special Provision Sections listed below were prepared by me or under my supervision:</p> <p>Section 00597, 02050 (Soundwall)</p>
<p>Signature</p> 	<p>I also acknowledge compliance with Part 2(b) and Part 2(e) of the "Modified Exemption from DOJ Legal Sufficiency Review and Approval for ODOT Highway Construction Contracts" dated July 11, 2008.</p>

**Training**

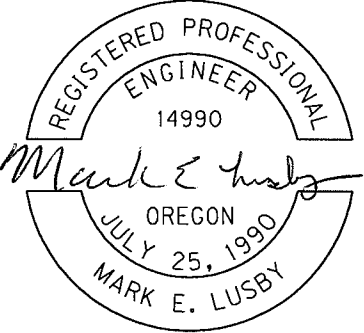

OREGON DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISIONS

FOR

Grading, Drainage, Structures, Paving, Signing, Illumination, & Signal  
OR569: Beltline Hwy. @ Coburg Rd. Interchange (Eugene) Section  
Beltline Highway  
Lane County

PROFESSIONAL OF RECORD CERTIFICATION(s):

<p>Seal w/signature</p>  <p>RENEWAL DATE: 12-31-2010</p>	<p>I certify the Special Provision Sections listed below were prepared by me or under my supervision:</p> <p>Section 00920, 00930 (Cantilever Sign)</p>
<p>Signature</p> 	<p>I also acknowledge compliance with Part 2(b) and Part 2(e) of the "Modified Exemption from DOJ Legal Sufficiency Review and Approval for ODOT Highway Construction Contracts" dated July 11, 2008.</p>

**Training**

**OR569: Beltline Hwy. @ Coburg Rd. Interchange (Eugene) Section  
Grading, Drainage, Structures, Paving, Signing, Illumination, & Signal**

**SPECIAL PROVISIONS**

**WORK TO BE DONE**

The Work to be done under this Contract consists of the following on the OR569: Beltline Hwy @ Coburg Rd. Interchange (Eugene) Section of the Beltline Highway in Lane County:

1. Construct earthwork and drainage.
2. Construct soundwall.
3. Construct aggregate base and HMAC paving.
4. Construct sign bridge and install permanent signing.
5. Install illumination, traffic signals, and traffic cameras.
6. Perform additional and incidental Work as called for by the Specifications and Plans.

**APPLICABLE SPECIFICATIONS**

The Specification that is applicable to the Work on this Project is the 2008 edition of the "Oregon Standard Specifications for Construction".

All number references in these Special Provisions shall be understood to refer to the Sections and subsections of the Standard Specifications and Supplemental Specifications bearing like numbers and to Sections and subsections contained in these Special Provisions in their entirety.

**CLASS OF PROJECT**

This is a Federal-Aid Project.

**OR569: Beltline Hwy. @ Coburg Rd. Interchange (Eugene) Section  
Grading, Drainage, Structures, Paving, Signing, Illumination, & Signal**

**SECTION 00110 - ORGANIZATION, CONVENTIONS,  
ABBREVIATIONS AND DEFINITIONS**

Comply with Section 00110 of the Standard Specifications.

**SECTION 00120 - BIDDING REQUIREMENTS AND PROCEDURES**

Comply with Section 00120 of the Standard Specifications modified as follows:

**00120.05 Request for Solicitation Documents** - Add the following to the end of this subsection:

The Plans, which are applicable to the Work to be performed under the Contract, bear title and date as follows:

"Grading, Drainage, Structures, Paving, Signing, Illumination, & Signal  
OR569: Beltline Hwy. @ Coburg Rd. Interchange (Eugene) Sec.  
Beltline Highway  
Lane County  
April 2009"

**00120.70 Rejection of Nonresponsive Bids** - Add the following bullet to the end of the bullet list:

- The Agency determines that any Pay Item is significantly unbalanced to the potential detriment of the Agency.

**SECTION 00130 - AWARD AND EXECUTION OF CONTRACT**

Comply with Section 00130 of the Standard Specifications.

**SECTION 00140 - SCOPE OF WORK**

Comply with Section 00140 of the Standard Specifications.

**OR569: Beltline Hwy. @ Coburg Rd. Interchange (Eugene) Section  
Grading, Drainage, Structures, Paving, Signing, Illumination, & Signal**

**SECTION 00150 - CONTROL OF WORK**

Comply with Section 00150 of the Standard Specifications modified as follows:

**00150.15(b) Agency Responsibilities** - Replace this subsection, except for the subsection number and title, with the following:

The Engineer will perform the responsibilities described in 00305.04.

**00150.15(c) Contractor Responsibilities** - Replace this subsection, except for the subsection number and title, with the following:

The Contractor shall perform the responsibilities described in 00305.05.

**00150.50 Cooperation with Utilities** - Add the following subsection:

**(f) Utility Information:**

There are no anticipated conflicts with the Utilities listed below. Contact those Utilities having buried facilities and request that they locate and mark them for their protection prior to construction.

<b>Utility</b>	<b>Contact Person's Name and Phone Number</b>
1. City of Eugene	David Starns (541) 682-8306
2. EWEB - water	Jay Bozievich (541) 684-4759
3. EWEB - fiber	Karen Horejs (541) 984-4710
4. NW Natural Gas	Dave Shore (541) 954-1996
5. Qwest Communications	Susan Clark (541) 484-8435

The following organizations may be adjusting Utilities within the limits of the Project during the period of the Contract with relocation Work estimated to be completed by the following dates:

<b>Utility</b>	<b>Estimated Completion Date</b>
1. Comcast Tom Henerty (541) 431-3605	May 1, 2009
2. EWEB - electric Transmission Rod Price (541) 684-5827	May 1, 2009
EWEB - electric Distribution Rich DeLuna (541) 341-8522	May 1, 2009

**OR569: Beltline Hwy. @ Coburg Rd. Interchange (Eugene) Section  
Grading, Drainage, Structures, Paving, Signing, Illumination, & Signal**

In the immediate area of the high pressure gas lines, when moving any equipment, excavating, driving piles, boring, or other road construction activities, increase the Reasonable Accuracy Zone from 24 inches, as defined in OAR 952-001-010, to 10 feet. Exceptions require written approval from the "Gas Company" and may require an On-Site safety watcher, at no cost to the Contractor.

Energized power lines overhang portions of the Work with a minimum vertical clearance of 18 feet. Contractor shall maintain at least 10 feet of safety clearance.

This Project is located within the Oregon Utility Notification Center area which is a Utilities notification system for notifying owners of Utilities about Work being performed in the vicinity of their facilities. The Utilities notification system telephone number is 811 (or use the old number which is 1-800-332-2344).

**SECTION 00160 - SOURCE OF MATERIALS**

Comply with Section 00160 of the Standard Specifications.

**SECTION 00165 - QUALITY OF MATERIALS**

Comply with Section 00165 of the Standard Specifications.

**SECTION 00170 - LEGAL RELATIONS AND RESPONSIBILITIES**

Comply with Section 00170 of the Standard Specifications modified as follows:

Add the following subsection:

**00170.06 Federal-Aid Participation** - This Project is to be conducted according to the regulations applying to Federal-Aid Highway Projects.

Add the following subsection:

**00170.67 Fees** - The fee required by ORS 279C.825(1) will be paid by the Agency to the Commissioner of the Oregon Bureau of Labor and Industries under the administrative rules of the Commissioner.

**00170.70(a) Insurance Coverages** - The following insurance coverages and dollar amounts are required pursuant to this subsection:

<b>Insurance Coverages</b>	<b>Combined Single Limit per Occurrence</b>	<b>Annual Aggregate Limit</b>
Commercial General Liability	\$2,000,000	\$5,000,000

**OR569: Beltline Hwy. @ Coburg Rd. Interchange (Eugene) Section  
Grading, Drainage, Structures, Paving, Signing, Illumination, & Signal**

Commercial Automobile Liability            \$1,000,000            (aggregate limit not required)

Training

**SECTION 00180 - PROSECUTION AND PROGRESS**

Comply with Section 00180 of the Standard Specifications modified as follows:

Add the following subsection:

**00180.21(g) Mentor-Protégé Agreement** - If the Contractor enters into a subcontract with an Emerging Small Business (ESB) subcontractor, the Agency may offer the Contractor and its ESB subcontractor an opportunity to enter into a project specific Mentor-Protégé Agreement.

The project specific Mentor-Protégé Agreement will be paid for and specified by Change Order.

Add the following subsection:

**00180.40(c) Specific Limitations** - Limitations of operations specified in these Special Provisions include, but are not limited to, the following:

<b>Limitations</b>	<b>Subsection</b>
Cooperation with Utilities .....	00150.50
Contract Completion Time .....	00180.50(h)
Traffic Lane Restrictions .....	00220.40(e)
Special Events .....	00220.40(e)

Be aware of and subject to schedule limitations in the Standard Specifications that are not listed in this subsection.

**00180.41 Project Work Schedules** - After the paragraph that begins "Contractor's activity..." add the following paragraphs:

The Contractor shall submit a supplemental "look ahead" Project Work schedule each week to the Engineer. The "look ahead" Project Work schedule is supplemental to the Type A, B, or C schedule specified below. The supplemental "look ahead" Project Work schedule shall:

- Identify the sequencing of activities and time required for prosecution of the Work.
- Provide for orderly, timely, and efficient prosecution of the Work.
- Contain sufficient detail to enable both the Contractor and the Engineer to plan, coordinate, analyze, document, and control their respective Contract responsibilities.

The supplemental "look ahead" Project Work schedule shall be written in common terminology and show the planned Work activities broken down into logical, separate activities by area, stage, and size and include the following information:

- The resources the Contractor, subcontractors, or services will use.
- The locations of each activity that will be done including the limits of the work by mile posts, stations, or other indicators.
- The time frames of each activity by Calendar Days, shifts, and hours.

**OR569: Beltline Hwy. @ Coburg Rd. Interchange (Eugene) Section  
Grading, Drainage, Structures, Paving, Signing, Illumination, & Signal**

- All anticipated shoulder, lane, and road closures.

At a minimum, the Contractor shall prepare a bar chart that:

- Shows at least three weeks of activity including the week the bar chart is issued.
- Uses a largest time scale unit of one Calendar Day. Smaller time scale units may be used if needed.
- Is appropriate to the activities.
- Identifies each Calendar Day by month and day.

Include the Contract name, Contract number, Contractor's name, and date of issue on each page of the bar chart.

The Contractor shall submit the supplemental "look ahead" Project Work schedule starting at First Notification and continuing each week until Second Notification has been issued and all punch list items and final trimming and clean up has been completed. The Contractor shall meet with the Engineer each week to review the supplemental "look ahead" Project Work schedule. If the Engineer or the Contractor determines that the current supplemental "look ahead" Project Work schedule requires changes or additions, either notations can be made on the current schedule or the Engineer may require the submittal of a revised supplemental "look ahead" Project Work schedule. Review of the current and subsequent supplemental "look ahead" Project Work schedules does not relieve the Contractor of responsibility for timely and efficient execution of the Contract.

In addition to the "look ahead" Project Work schedule, a Type "B" schedule as detailed in the Standard Specifications is required on this Contract.

**00180.41(b-2) Detailed Schedule** - Replace the paragraph that begins "In addition to the above requirements..." with the following two paragraphs:

In addition to the above requirements, and within 30 Calendar Days after the Notice to Proceed, the Contractor shall provide the Engineer one digital copy and four paper copies of a detailed time-scaled bar chart Project Work schedule indicating the critical course of the Work. The digital copy shall be compatible with MS Project 2003, Primavera P3, SureTrak Project Manager 3.0, or another scheduling program approved by the Engineer.

Detailed work schedule activities shall including the following:

Replace the paragraph that begins "Within 10 Calendar Days..." with the following paragraph:

Within 10 Calendar Days after submission of the Project schedule the Engineer and the Contractor shall meet to review the Project schedule as submitted. Within 10 Days of the review meeting the Contractor shall resubmit to the Engineer one digital and four paper copies of the Project schedule, including required revisions.

**OR569: Beltline Hwy. @ Coburg Rd. Interchange (Eugene) Section  
Grading, Drainage, Structures, Paving, Signing, Illumination, & Signal**

**00180.41(b-3-a) Review with the Engineer** - In the paragraph that begins "The Contractor shall evaluate...", replace the sentence that begins "The Contractor shall submit..." with the following sentence:

The Contractor shall submit one digital and four paper copies of the updated bar chart to the Engineer within seven Days after the progress meeting, along with a progress report as required by "b." below.

**00180.42 Preconstruction Conference** - Add the following paragraph to the end of this subsection:

Before meeting with the Engineer for the preconstruction conference, hold a group utilities scheduling meeting with representatives from the utility companies involved with this project. Incorporate the utilities time needs into the Contractor's schedule submitted at the preconstruction conference.

Add the following subsection:

**00180.50(h) Contract Time** - Complete all Work to be done under the Contract not later than December 31, 2009.

**00180.85(b) Liquidated Damages** - Add the following paragraph:

The liquidated damages for failure to complete the Work on time is \$1,100 per Calendar Day \*.

\* Calendar Day amounts are applicable when the Contract time is expressed on the Calendar Day or fixed date basis.

Add the following subsection:

**00180.85(c) Lane Closures and Road Closures** - Lane closures and road closures beyond the limits specified will inconvenience the traveling public and will be a cost to the Agency.

**(1) Lane Closures** - It is impractical to determine the actual damages the Agency will sustain in the event traffic lanes are closed beyond the limits listed in 00220.40(e). Therefore, the Contractor shall pay to the Agency, not as a penalty, but as liquidated damages, \$500 per 15 minutes, or for a portion of 15 minutes, per lane, for any lane closure beyond the limits listed in 00220.40(e). In addition to the liquidated damages, all added cost for traffic control measures, including flagging, required to maintain the lane closures beyond the allowed time limits, will be at no additional cost to the Agency. The required traffic control measures will be as determined by the Engineer.

The Engineer will determine when it is safe to reopen lanes to traffic. Assessment of liquidated damages will stop when all lanes have been safely reopened. Any liquidated damages assessed under these provisions will be in addition to those listed in 00180.85(b).

**SECTION 00190 - MEASUREMENT OF PAY QUANTITIES**

Comply with Section 00190 of the Standard Specifications modified as follows:

**00190.20(f-2) Scale Without Automatic Printer** - Add the following sentence after the first paragraph:

Pay costs for the weigh witness at \$35.00 per hour.

**00190.20(g) Agency-Provided Weigh Technician** - Add the following paragraph after the bullet list:

Pay costs for the weigh technician at \$35.00 per hour.

**SECTION 00195 - PAYMENT**

Comply with Section 00195 of the Standard Specifications modified as follows:

**00195.10 Payment for Changes in Materials Costs** - Replace this subsection with the following subsection:

**00195.10 Asphalt Cement Material Price Escalation/De-escalation** - An asphalt cement escalation/de-escalation clause will be in effect during the life of the Contract.

The Agency reserves all of its rights under the Contract, including, but not limited to, its rights for suspension of the Work under 00180.70 and its rights for termination of the Contract under 00180.90, and this escalation/de-escalation provision shall not limit those rights.

**(a) Monthly Asphalt Cement Material Price (MACMP)** - The Monthly Asphalt Cement Material Price (MACMP) will be established by the Agency each month. For information regarding the calculation of the MACMP, and for the actual MACMP, go to the Agency website at:

[http://www.oregon.gov/ODOT/HWY/ESTIMATING/asphalt\\_fuel.shtm](http://www.oregon.gov/ODOT/HWY/ESTIMATING/asphalt_fuel.shtm)

If the Agency selected index ceases to be available for any reason, the Agency in its discretion will select and begin using a substitute price source or index to establish the MACMP each month. The MACMP will apply to all asphalt cement including but not limited to paving grade, polymer modified, and emulsified asphalts, and recycling agents. The Agency does not guarantee that asphalt cement will be available at the MACMP.

**(b) Base Asphalt Cement Material Price (Base)** - The Base asphalt cement material price for this Project is the MACMP published on the Agency website for the month immediately preceding the bid opening date.

**OR569: Beltline Hwy. @ Coburg Rd. Interchange (Eugene) Section  
Grading, Drainage, Structures, Paving, Signing, Illumination, & Signal**

**(c) Monthly Asphalt Cement Adjustment Factor** - The Monthly Asphalt Cement Adjustment Factor will be determined each month as follows:

- If the MACMP is within  $\pm 5\%$  of the Base, there will be no adjustment.
- If the MACMP is more than 105% of the Base, then:
  - Adjustment Factor =  $(\text{MACMP}) - (1.05 \times \text{Base})$
- If the MACMP is less than 95% of the Base, then:
  - Adjustment Factor =  $(\text{MACMP}) - (0.95 \times \text{Base})$

**(d) Asphalt Cement Price Adjustment** - A price adjustment will be made for the items containing asphalt cement listed below. The price adjustment as calculated in (c) above will use the MACMP for the month the asphalt is incorporated into the Project. The price adjustment will be determined by multiplying the asphalt incorporated during the month for subject Pay Items by the Adjustment Factor.

The Pay Item for which price adjustments will be made is:

**Pay Item**

PG 70-22 Asphalt in HMA/C

**00195.12(d) Steel Materials Pay Item Selection** - Add the following to this subsection:

No Pay Items under this Contract qualify for the steel escalation/de-escalation program for this Project.

**00195.50(c-1) Cash, Alternate A** - In the paragraph that begins "Any retainage withheld on...", replace "00195.90(d)" with "00195.50(d)".

**SECTION 00196 - PAYMENT FOR EXTRA WORK**

Comply with Section 00196 of the Standard Specifications.

**SECTION 00197 - PAYMENT FOR FORCE ACCOUNT WORK**

Comply with Section 00197 of the Standard Specifications.

**SECTION 00199 - DISAGREEMENTS, PROTESTS, AND CLAIMS**

Comply with Section 00199 of the Standard Specifications.

**SECTION 00210 - MOBILIZATION**

Comply with Section 00210 of the Standard Specifications.

**SECTION 00220 - ACCOMMODATIONS FOR PUBLIC TRAFFIC**

Comply with Section 00220 of the Standard Specifications modified as follows:

**00220.02 Public Safety and Mobility** - Add the following bullets to the end of the bullet list:

- When an abrupt edge is created by excavation, protect traffic according to the "Excavation Abrupt Edge Detail" and the "Typical Excavation Abrupt Edge Signing Detail" configurations shown on Standard Drawing TM700. Modify the "Typical Excavation Abrupt Edge Signing Detail" configuration by replacing the tubular markers temporary plastic drums on 40 foot maximum spacing along the abrupt edge.
- Protect pedestrians in pole base excavation areas by placing approved covers over all pole base excavations. Place a minimum of two B(II)LR barricades adjacent to and on either side of the excavated area, facing incoming pedestrian traffic, or place covers and barricades, as directed.
- When construction equipment is operating in the closed lane, protect traffic using a truck mounted impact attenuator (TMA). Place the TMA in the closed lane in advance of the equipment, located as recommended by the manufacturer and approved by the Engineer. If the TMA is not available when the work requires its use, postpone the work until the TMA is available.
- Before implementing the operation of a modified traffic signal or the installation or removal of a "STOP" sign, protect traffic by installing "Traffic Control Change Ahead" signing according to 00225.02. These signs shall remain in place for approximately 30 calendar days after completion of the modifications to the traffic signal or traffic control device.
- Do not place work zone signs or supports that will block existing walkways or existing bikeways.
- When Flagger Station Lighting is used, delineate each location by placing and maintaining a minimum of 6 tubular markers, at 10 foot centers, adjacent to and immediately in front of the portion of the flagger station lighting unit exposed to incoming traffic.

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**00220.40(e) Lane Restrictions** - Replace the paragraph that begins "Do not close any..." with the following paragraph:

Do not close any traffic lanes and remove all barricades and objects from the roadway during the following periods:

Replace subsections (1) and (2) with the following:

**(1) Weekdays:**

- (a) Beltline Highway (OR569), mainline both directions:
  - Between 6:00 a.m. and 8:00 p.m. Monday through Thursday
- (b) Eastbound Beltline Highway off-ramp to Coburg Road:
  - Between 6:00 a.m. and 9:00 p.m. Monday through Thursday
  - Maintain a minimum of 1-lane open to traffic at all other times
- (c) Westbound Beltline Highway off-ramp to Coburg Road:
  - Between 7:00 a.m. and 7:00 p.m. Monday through Thursday
  - Maintain a minimum of 1-lane open to traffic at all times
- (d) Eastbound Beltline Highway on-ramp from Coburg Road:
  - Between 7:00 a.m. and 7:00 p.m. Monday through Thursday
  - Maintain a minimum of 1-lane open to traffic at all times
- (e) Westbound Beltline Highway on-ramp from Coburg Road:
  - Between 6:00 a.m. and 9:00 p.m. Monday through Thursday
  - Maintain a minimum of 1-lane open to traffic at all other times
- (f) Coburg Road, both directions of travel:
  - Between 7:00 a.m. and 7:00 p.m. Monday through Thursday

**(2) Weekends** - All roadways, between 6:00 a.m. on Friday and midnight on Sunday throughout the project interchange area.

**(4) Special Events** - Add the following to the end of this subsection:

Any University of Oregon 2009 home football game, as listed, but not limited to, the dates below:

- Saturday, September 12<sup>th</sup>
- Saturday, September 19<sup>th</sup>
- Saturday, September 26<sup>th</sup>
- Saturday, October 3<sup>rd</sup>
- Saturday, October 31<sup>st</sup>
- Saturday, November 14<sup>th</sup>
- Saturday, November 28<sup>th</sup>

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Add the following subsections:

**00220.40(f) Limited Duration Coburg Road Closure** - The Contractor will be permitted to close all travel lanes in one direction at any one time for periods not to exceed 20 minutes in duration during traffic signal mast arm installation over the travel lanes. This work will only be permitted between the hours of 11:30 p.m. and 5:00 a.m., daily.

Succeeding roadway closures will not be allowed until traffic clears from a preceding closure.

**00220.40(g) Road Closure Using Rolling Slowdown Method (RSM)** - The Contractor will be permitted to use a RSM for slowing traffic and closing all travel lanes on the Beltline Highway (OR569), for periods not to exceed 20 minutes in duration, while removing the existing sign bridge structure over both eastbound lanes. This work will be allowed only between 11:30 p.m. and 5:00 a.m.

Provide written notification to the Engineer and all affected emergency services at least 14 days before using the RSM. Calculate the location where the pilot cars will begin the RSM and the speed at which the pilot cars will travel to accommodate the needed time to complete the work within 20 minutes.

Perform a RSM by using one pilot car for each lane to be slowed. Use only pilot cars to control the flow of traffic on the freeway. Use one additional pilot car as a chase vehicle to follow the last free-flowing vehicle ahead of the blockade. The pilot cars shall enter the roadway, form a moving blockade, and reduce traffic speeds to create a gap in traffic to accomplish the work without completely stopping traffic.

When using the RSM, place a PCMS a minimum of 2,500 feet in advance of each point where the pilot cars enter the freeway. Place flagger(s), accompanied by appropriate devices and signing, at the terminal of all closed on-ramps within the controlled delay area. Establish and utilize radio communications to adjust the speed of the blockade, as necessary. Maintain radio communications at all times among the pilot cars, flaggers, and the construction crew.

The Contractor may begin work immediately after the chase vehicle has passed the work area. If the work within the work area is not completed when the moving blockade reaches it, immediately cease all work except what is necessary to clear the roadway and reopen the roadway to traffic. Succeeding RSM will not be allowed until traffic clears from a preceding RSM.

**SECTION 00225 - WORK ZONE TRAFFIC CONTROL**

Comply with Section 00225 of the Standard Specifications modified as follows:

**00225.02 General Requirements** - Add the following after the last paragraph of this subsection:

Protect all forms of traffic and all work zone areas by installing temporary signage and other TCD as shown on Standard Drawings TM700, TM705, TM710, TM720, TM770 and TM780.

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Install a Type "W8" "PROJECT IDENTIFICATION" (CG20-8-48) sign with a "KEEPING OREGON ON THE MOVE" top rider on the Beltline Highway (OR569), as shown in the plans, following the "ROAD WORK AHEAD" and "FINES DOUBLE" sign set at each end of the Project, facing incoming traffic. The Engineer will determine the sign legend.

Install a Type "W8" "PROJECT IDENTIFICATION" (CG20-8-54) sign with a "ODOT" top rider on Coburg Road, as shown in the plans in advance of the "ROAD WORK AHEAD" and "FINES DOUBLE" sign set, at each end of the Project, facing incoming traffic. The Engineer will determine the sign legend.

Install two "ROAD WORK AHEAD" signs, a (W20-1-48) sign on the right shoulder and a (W20-1-36) sign on the median barrier, each with a "FINES DOUBLE" (R2-6-36) bottom rider on the Beltline Highway (OR569), as shown on the plans, in advance of each end of the project. Install the median sign approximately 30 feet ahead of the shoulder sign.

Install a "ROAD WORK AHEAD" (W20-1-48) sign with a "FINES DOUBLE" (R2-6-36) bottom rider on Coburg Road, as shown on the plans, in advance of each end of the project.

Install an "END ROAD WORK" (CG20-2A-24) sign on the right shoulder of Beltline Highway (OR569), as shown in the plans, beyond each end of the Project, facing outgoing traffic.

Install an "END ROAD WORK" (CG20-2A-24) sign on Coburg Road, as shown in the plans, beyond each end of the Project, facing outgoing traffic.

Install a "CONSTRUCTION VEHICLE DO NOT FOLLOW" (CW23-14-24) sign on rigid substrate on the back of all material or equipment delivery vehicles.

Install a "TRAFFIC CONTROL CHANGE AHEAD" (CW20-10-48) sign approximately 500 feet in advance of the Beltline Highway (OR569) eastbound off-ramp signal at its intersection with Coburg Road, facing off-ramp traffic approaching the signal.

Install a "TRAFFIC CONTROL CHANGE AHEAD" (CW20-10-48) sign approximately 500 feet in advance of the Beltline Highway (OR569) westbound off-ramp signal at its intersection with Coburg Road, facing off-ramp traffic approaching the signal.

Install a "TRAFFIC CONTROL CHANGE AHEAD" (CW20-10-48) sign on Coburg Road approximately 350 feet north of the signalized intersection on the north side of Beltline Highway (OR569), facing southbound incoming traffic.

Install a "TRAFFIC CONTROL CHANGE AHEAD" (CW20-10-48) sign on Coburg Road approximately 350 feet south of the signalized intersection on the south side of Beltline Highway (OR569), facing northbound incoming traffic.

Provide two copies of a sketch map of the Project showing all existing tourist-oriented directional (TOD) and business logo signs and a written narrative describing how these signs will be kept in service and protected throughout all the construction stages.

**00225.05 Contractor Traffic Control Plan** - Delete the bullet that begins "Two copies of a sketch map...".

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**00225.06(c-2) Cold Plane Pavement Removal** - Replace the first sentence of this subsection with the following:

**00225.06(c-2) Cold Plane Pavement Removal** - Complete the pavement removal according to 00620.40 and not allowing traffic on cold planed pavement surfaces for more than 24 hours.

Add the following subsection:

**00225.11(a-5) Light-Weight Sign Substrate** - Use light-weight sign substrates from the QPL.

**00225.12(d) Impact Attenuators** - Add the following to the end of this subsection:

Furnish NCHRP 350 TL-3 truck mounted impact attenuators (TMA) from the QPL.

When the pre-construction posted speed is greater than 45 MPH, the support vehicle for the TMA shall have a minimum weight of 15,000 pounds and a maximum weight of 35,000 pounds. When a TMA support vehicle is in place, set the parking brake and transmission, as recommended by the manufacturer.

**00225.13(d) Plastic Drums** - Replace the sentence that begins "Provide drums with..." with the following sentence:

Use retroreflective drum sheeting meeting the requirements of ASTM D 4956 Type III or Type IV.

Add the following subsection:

**00225.18 Pole Base Excavation Covers** - Use pole base excavation covers meeting the following requirements:

- Utility grade plywood
- 3/4 inch minimum thickness
- New or in like new condition

**00225.43(f-1) Temporary Removable Tape** - Add the following to the end of this subsection:

Temporary removable tape will be allowed for marking stop lines and cross walks, if the Contractor maintains the removable tape in an acceptable condition. Place and maintain 12 inch wide white tape across the travel lane, as shown or directed.

**00225.62(b) Temporary Impact Attenuators** - Replace the paragraph that begins "When impact attenuator..." with the following paragraph:

When impact attenuator, truck mounted attenuator, or narrow site attenuator systems are used, have enough modules, cartridges, components, and replacement parts on-site to replace one complete installation or have on-site a complete replacement attenuator. Re-stock replacement items or complete replacement attenuators within 24 hours of use.

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All modules, cartridges, components, and replacement parts, and replacement attenuators not used remain the property of the Contractor.

Add the following paragraph to the end of this subsection:

Repair of damage to vehicles utilizing truck mounted attenuators will be at no additional cost to the Agency.

Add the following subsection:

**00225.82(e) Temporary Impact Attenuator Repair** - Temporary impact attenuator repair will be measured on the unit basis.

**00225.90(a-1) Pay Quantities** - Replace the paragraph that begins "All TCD damaged by..." with the following paragraph:

All TCD damaged by public traffic and replaced by the Contractor, except temporary signing, temporary electrical signs, and portable temporary traffic signals, will be paid for at the Contract price for the pay items listed in the Contract Schedule of Items or in approved Contract change orders, unless otherwise specified. Payment for replacing damaged TCD will only be made when:

**00225.90(a-2) Temporary Protection and Direction of Traffic** - Add the following bullet to the end of the bullet list:

- Furnishing, placing, maintaining, moving, and removing pole base excavation covers.

**00225.92 Temporary Barricades, Guardrail, Barrier, and Attenuators** - Add the following pay item to the end of the pay item list and add the following paragraph:

(n) Repair Temporary Impact Attenuator, \_\_\_\_\_Each

In item (n), the type of attenuator, if applicable, will be inserted in the blank. Item (n) includes repair or complete replacement of impact attenuators damaged by public traffic.

Replace the paragraph that begins "No separate or additional..." with the following paragraph:

No separate or additional payment will be made for temporary impact attenuator replacements, replacement modules, cartridges, components, or replacements parts that are required to be on-site according to 00225.62(b).

Add the following to the end of this subsection:

No separate or additional payment will be made for moving truck mounted impact attenuators or for truck mounted attenuator vehicle damage.

**SECTION 00280 - EROSION AND SEDIMENT CONTROL**

Comply with Section 00280 of the Standard Specifications.

**SECTION 00290 - ENVIRONMENTAL PROTECTION**

Comply with Section 00290 of the Standard Specifications modified as follows:

**00290.20(c-3) Reuse, Recycle, and Dispose of Materials** - Replace the sentence that begins "Waste materials become..." with the following sentence:

No waste generated on the Project, except for wastes that are reusable and recyclable during the period of the Contract, become the property of the Contractor.

Replace the bullet that begins "Reuse demolition..." with the following bullet:

- Reuse demolition debris.

**00290.20(c-3-d) Concrete and Masonry** - Replace the paragraph that begins "Concrete and masonry..." with the following paragraph:

Concrete and masonry, that is not recycled and does not contain hazardous substances, may be reused to fill basements or be buried in embankments on-site, provided that the materials are broken into pieces not exceeding 15 inches in any dimension, and places so that:

**00290.20(d) Hazardous Waste Management** - In the paragraph that begins "In addition to current Laws...", replace the two bullets that begin "If the quantity of hazardous waste projected to be..." with the following three bullets:

- If the quantity of hazardous waste projected to be generated meets the requirements for a LQG, prepare a full Hazardous Waste Contingency Plan according to 40 CFR 265 Subpart D. Maintain a copy of the Contingency Plan on-site at all times during construction activities, readily available to employees and inspectors.
- If the quantity of hazardous waste projected to be generated meets the requirements for a SQG, prepare a modified Hazardous Waste Contingency Plan according to 40 CFR 262.34(d)(5) and 40 CFR 265 Subpart C. Maintain a copy of the modified Contingency Plan on-site at all times during construction activities, readily available to employees and inspectors.
- If the quantity of hazardous waste projected to be generated meets the requirements for a CEG, follow the contingency planning and storage requirements of the SQG unless the only potentially hazardous waste is aerosol cans smaller than 20 ounces. Limit storage to 180 days and 2,200 pounds. Prepare a modified

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Hazardous Waste Contingency Plan and keep a copy on-site with emergency response procedures and contact information.

**00290.20(g) Spills and Releases** - Replace the lead-in paragraph that begins "In the event...", with the following lead-in paragraph:

In the event of a spill or release of a hazardous substance or hazardous waste or the release of any other material that has the potential to harm human health or the environment, do the following:

**00290.30(a) Pollution Control Measures** - Add the following subsection and bullets:

**(7) Water Quality:**

- Do not discharge contaminated or sediment-laden water, including drilling fluids and waste, or water contained within a work area isolation, directly into any waters of the State or U.S. until it has been satisfactorily treated (for example: bioswale, filter, settlement pond, pumping to vegetated upland location, bio-bags, dirt-bags). Treatment shall meet the turbidity requirements below.
- Do not cause turbidity in waters of the State or U.S. greater than 10% above background reading (up to 100 feet upstream of the Project), as measured 100 feet downstream of the Project.
- During construction, monitor in-stream turbidity and inspect all erosion controls daily during the rainy season and weekly during the dry season, or more often as necessary, to ensure the erosion controls are working adequately meeting treatment requirements.
- If construction discharge water is released using an outfall or diffuser port, do not exceed velocities more than 4 feet per second, and do not exceed an aperture size of 1 inch.
- If monitoring or inspection shows that the erosion and sediment controls are ineffective, mobilize work crews immediately to make repairs, install replacements, or install additional controls as necessary.
- Underwater blasting is not allowed.
- Implement containment measures adequate to prevent pollutants or construction and demolition materials, such as waste spoils, fuel or petroleum products, concrete cured less than 24 hours, concrete cure water, silt, welding slag and grindings, concrete saw cutting by-products and sandblasting abrasives, from entering waters of the state or U.S.
- Cease project operations under high flow conditions that may result in inundation of the project area, except for efforts to avoid or minimize resource damage.
- The Project Manager retains the authority to temporarily halt or modify the Project in case of excessive turbidity or damage to natural resources.

**00290.34 Protection of Fish and Fish Habitat** - Add the following paragraph:

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Meet with the Agency Environmental Coordinator, Project Manager, and inspector on site, before moving equipment on-site or beginning any work, to ensure that all parties understand the locations of sensitive biological sites and the measures that are required to be taken to protect them.

Add the following subsection:

**00290.34(a) Fish Protection Measures Required by Environmental Permits:**

**(1) General Equipment Requirements** - Use heavy equipment as follows:

- Before operations begin and as often as necessary during operation, steam clean all equipment that will be used below the regulated work area until all visible oil, grease, mud, and other visible contaminants are removed. Complete all cleaning in approved staging areas.
- Secure absorbent material around all stationary power equipment ( for example: generators, cranes, drilling equipment) operated within 150 feet of wetlands, waters of the State and U. S., drainage ditches, or water quality facilities to prevent leaks, unless suitable containment is provided to prevent spills from entering waters of the state and U.S.
- Do not cross directly through a stream for construction access, unless shown or approved.
- Do not apply surface fertilizer within 50 feet of any stream channel.

**00290.41(b) Disturbing Wetlands** - Add the following to the end of this subsection:

A permit has been obtained for this project from the US Army Corps of Engineers (Corps). Keep a copy of the Corps permit at the project site during construction. This permit authorizes the placement of 50.0 cubic yards of fill within wetlands located at Sta. "EBO" 105+43. A total of 0.0099 acres of wetlands will be permanently filled and 0.0 acres will be temporarily impacted. Changes to the project that may increase the amount of fill placed in wetlands or the acreage of wetlands impacted are not authorized.

## **SECTION 00305 - CONSTRUCTION SURVEY WORK**

Section 00305, which is not a Standard Specification, is included for this Project by Special Provision.

### **Description**

**00305.00 Scope** - This work consists of all surveying activities necessary to control the many phases of work required to construct the Project to the lines and grades as shown, specified, or established.

Make all supporting computations and field notes required for control of the work and as necessary to establish the exact position, orientation, and elevation of the work from control stations, including furnishing and setting construction stakes and marks, reference marks, and additional control stations.

Plans, specifications and other data necessary to lay out the work will be available for inspection at the Project Manager's office.

### **00305.01 Definitions:**

**Confidence Points** - Random points measured in the field within the boundary of a digital terrain model (DTM), the purposes of which are to verify the accuracy of the DTM and to provide evidence just prior to construction that the DTM is a reasonable representation of the original ground for computation of volumes and pay quantities. Similarly, confidence points are used to verify that a constructed grade has been built according to the design DTM. Additional information is available from the Engineer.

Confidence point locations follow these guidelines:

- Randomly selected without regard for the location of DTM points or triangles
- Evenly distributed over the entire DTM area to be validated
- Proportionately distributed between confidence point classifications as applicable
- At a density sufficient to validate the surface, generally ten per instrument location as used in collecting DTM data or if not applicable, as in data collected photogrammetrically, 2% of DTM points

**Control Network** - An array of control stations either established by the Contractor or provided by the Agency.

**Control Station** - Any item identified in the Project records as having a position and/or elevation on the Project datum and intended to be used to control the many phases of the construction work.

**Digital Terrain Model (DTM)** - An electronic computer model of the shape of the ground.

**Reference Stakes** - Stakes set away from but with information relating back to the intended location and/or grade.

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**Slope Catch** - The location where a design slope intersects the existing ground and where excavation or embankment work should begin to provide the intended earthwork.

**Slope Staking** - The process of using measurements and calculations in the field to determine the slope catch. Slope staking shall normally include setting stakes to mark the slope catch and setting a reference stake for every catch stake.

**Stakes** - Stakes, nails, marks, string lines, or other devices or mechanisms set or established for the purpose of indicating or controlling the location, orientation, or grade of any feature intended for construction, or for the purpose of limiting or influencing the construction work.

**Staking** - The act of placing stakes.

**Survey Marker** - Any survey monument, control station, or stake.

**Survey Monument** - Any natural or man-made item specified or identified in a property deed, boundary survey, government document, or other instrument of public record, when the purpose of said item is to mark or reference a property boundary, geographical location, elevation, or other position.

**Surveyor** - The individual designated by the Contractor and licensed in the state of Oregon as a Professional Land Surveyor and placed in "responsible charge" of the survey work as defined in ORS 672.002(6)(b).

**Temporary Bench Mark (TBM)** - A control station established for the purpose of providing vertical control for the Project. A TBM may or may not have an established horizontal position.

**00305.02 Mandatory Pre-Survey Conference** - The prime Contractor, subcontractors, surveyor, survey crew leader, and all surveying personnel who are to be involved in the survey work shall meet with the Project Manager two weeks prior to beginning survey work. The purpose of this meeting will be to discuss methods and practices of accomplishing required survey work.

**00305.03 Review by the Engineer** - The Engineer may periodically review the notes, calculations and layout work, including field locations, for compliance with these specifications. Survey work that does not meet the tolerances in 00305.40 may be rejected, and the work redone at the Contractors expense to meet the tolerances.

Review by the Engineer does not constitute approval or acceptance of the work, nor does it relieve the Contractor of responsibility for performing work in conformance with the plans and specifications.

**00305.04 Agency Responsibilities:**

- Provide copies of plans and specifications.
- Establish initial horizontal and vertical control stations in the proximity of the Project.
- Provide horizontal and vertical alignment data.
- Provide cross section finish grade elevations.
- Perform measurements and calculations for pay quantities.

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- Perform final "as constructed" measurements.
- Perform slope staking necessary for construction of earthwork including intersections and matchlines.
- Pipes, manholes, inlets, weirs, settlement basins and other drainage and water quality structures and facilities \*

**00305.05 Contractor Responsibilities** - Perform or provide the following items of work:

- Make calculations, field notes and survey drawings for the layout and control of the work as are necessary to construct the Project as specified.
- Provide original or copies of notes, calculations and drawings as requested.
- Preserve survey monuments and control stations according to 00305.70 and as governed by applicable law.
- Replace and augment control stations as necessary to control the Project.
- Establish additional control stations as necessary to control the Project.
- Set stakes defining limits for clearing. Set stakes defining approximate right-of-way and easements.
- Set stakes to define construction centerline, centerline offsets, detour lines, or other lines necessary for control of the Project work.
- Set stakes to define the work, that may include but is not limited to the following:
  - Roadway location and grade.
  - Fences and gates.
  - Guardrail, barrier, barricades, and associated features.
  - Traffic delineators, reflectors, and guide devices.
  - Temporary and permanent signing \*
  - Temporary and permanent pavement striping and pavement marking devices.
  - Poles and footings, cabinets, junction boxes, sensors, and other features associated with illumination and signal facilities \*
  - Curbs, walks, stairs, walls, mailboxes, and other miscellaneous structures \*
  - Landscaping items.
  - Earthwork features including guardrail flares and mounds, berms, and mounds
  - Buildings and other structures and facilities.
  - Environmental impact mitigation features.

\* Including field verification of fit and functionality or as instructed by the Engineer.

- Remove and dispose of all flagging, lath, stakes and other temporary staking material after the Project is completed

**00305.06 Survey Methods** - Survey procedures shall be appropriate for the equipment being used and be according to current Agency practices.

New survey procedures that are not according to current Agency practices shall be submitted to the Engineer for review 21 days prior to conducting the work. The surveyor may be required to demonstrate the capabilities, accuracy, and reliability of the intended procedure. The Engineer will evaluate the procedure and intended application and provide approval or rejection within 21 days. Work may proceed immediately upon approval of procedures by the Engineer.

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Test and adjust survey equipment according to Agency's procedures and maintain records of test results and submit copies to the Engineer upon request. Information on Agency test procedures may be obtained from the Engineer.

**00305.07 Survey Work Records** - Contractor's survey personnel shall maintain a Project daily record of work performed by the survey crew. The daily record shall contain the date, crew names, type and location of work, and work accomplished. Upon request, furnish a copy of diary entries to the Engineer. Furnish a final copy of the diary when the Project is complete.

Contractor's survey personnel shall make all field notes and calculations in a manner consistent with current Agency practices and on forms provided or approved by the Engineer. Computations, survey notes and other records necessary to accomplish the work shall be neat, legible and complete. Furnish copies of computations, notes and other records when requested by the Engineer.

When a Project affects any permanent change to vertical clearances within the traveled way, complete and submit a Standard Vertical Clearance form (Form No. 734-2614) within 30 days of the change to the vertical clearance.

When a Project temporarily restricts any vertical clearances, complete and submit a Standard Vertical Clearance form (Form No. 734-2614) 28 days before the restriction takes effect.

For bridges, furnish computations, layout notes, and drawings of the structure to the Engineer for review 7 days before beginning construction.

Upon completion of construction staking and prior to final acceptance of the Contract, furnish to the Engineer, computations, survey notes, Project records and other data used to accomplish the work. Include an itemized list of the data.

All data and original documentation associated with this Project will become the property of the Agency.

**00305.08 Communication With the Surveyor** - The Engineer has the right to communicate directly with the surveyor.

**00305.09 Electronic Data** - The Engineer will not be responsible for any data translations. Compressed data provided by the Engineer or the Contractor will be in a "self-expanding executable" format. The method of exchange of electronic data will be mutually agreed upon at the pre-survey conference.

**(a) Data Formats Provided by the Engineer:**

- **CAD (graphics) Files** - Microstation Design File (.DGN) format.
- **Horizontal Control Coordinates** - ASCII Coordinate File format.
- **Elevations** - ASCII Elevation File format.
- **Horizontal Alignments** - Intergraph Inroads ASCII Horizontal Alignment format.
- **Vertical Alignments** - Intergraph Inroads ASCII Vertical Alignment format.
- **DTM Data** - Intergraph DTM or Microstation Design File (.DGN) format.

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- **Cross Section Data** - Cross Section or Station, Offset and Elevation (SOE) File Format.

**(b) Data Formats Provided by the Contractor:**

- **DTM Data** - Intergraph DTM or Microstation Design File (.DGN) format.
- **CAD (graphics) Files** - Microstation Design File (.DGN) format.
- **"As Staked" Coordinate Data** - ASCII Coordinate File format.
- **Confidence Points** - ASCII Coordinate File format.
- **Vertical Control Point Elevations** - ASCII Elevation File format.
- **Coordinates of Miscellaneous Survey Points Set** - ASCII Coordinate File format.

**(c) Data Format Details** - Data exchanged between the Agency and the Contractor will be in the following formats as referred to in this subsection:

**(1) ASCII Coordinate File Format:**

Point ID	Northing	Easting	Elevation	Feature	Description
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- Point IDs are alphanumeric up to 8 characters long.
- Coordinates/Elevations are decimal numbers in the units required by the Project.
- Feature names are up to 8 character alphanumeric codes.
- Descriptions may be up to 27 characters and may contain any combination of printable ASCII characters.
- Columns may be separated by spaces or commas.
- Name all ASCII coordinate files with an extension of .CRD.

Example: 105 216473.675 576231.905 102.562 SET\_NTW 1/2 inch iron rod

**(2) ASCII Elevation File Format:**

Point ID	Elevation	Description
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- Point IDs are alphanumeric up to 8 characters long.
- Elevations are decimal numbers in the units required by the Project.
- Descriptions may be up to 27 characters and may contain any combination of printable ASCII characters.
- Columns may be separated by spaces or commas.
- Name all ASCII elevation files with an extension of .ELV.

Example: 425 542.768 TBM12, n.w. bolt on lum.

**(3) Cross Section or Station, Offset and Elevation (SOE) File Format:**

Station	Offset	Elevation	Pen Up (Pen Down)
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- The station values should be in ascending order.
- For each station, the offsets should be in ascending order from left to right.
- The pen up (pen down) column distinguishes one cross section from the next.

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- The first point in each cross section should have a value of 1 in the pen column.
- The final point in each cross section should have a value of 2 in the pen column.
- All intermediate cross section points should have a value of 0 in the pen column.
- Name all cross section data files with an extension of .SOE.

Example (This example shows metric units. Provide data in English units.):

Station	Offset	Elevation	Pen Up (Pen Down)
20+020	- 26.500	260.617	1
20+020	- 10.606	268.664	0
20+020	- 2.500	269.012	0
20+020	0.000	269.045	0
20+020	3.500	269.007	0
20+020	12.650	263.004	0
20+020	25.250	261.005	2

**(4) Intergraph Inroads ASCII Horizontal Alignment Format:**

Records beginning with an "\*" are ignored.

The record beginning with "{" defines the format.

Name all ASCII Horizontal Alignment files with an extension of .HAL.

Example (This example shows metric units. Provide data in English units.):

\* INTERGRAPH HORIZONTAL ALIGNMENT TO ASCII

\*

\* Alignment name: FRS\_CON

\* Alignment description: 409 "FRS" construction centerline

\* Alignment preference: ALI1

\*

{	TYPE	STATION	RADIUS	X_CRD	Y_CRD	DIRECTION	SPI_LENGTH
LIN	0+000.000	0.0000	2299517.9122	160263.0134	320^03'23.5393"	0.0000	
SPI	0+025.455	0.0000	2299501.5693	160282.5292	320^03'23.5393"	25.0000	
CIR	0+050.455	-40.0000	2299483.6919	160299.8495	302^09'05.7873"	0.0000	
SPI	0+090.052	0.0000	2299445.7747	160302.3626	245^25'56.3948"	25.0000	
LIN	0+115.052	0.0000	2299425.7678	160287.5532	227^31'38.6429"	0.0000	
CIR	0+139.727	60.0000	2299407.5675	160270.8918	227^31'38.6429"	0.0000	
LIN	0+206.006	0.0000	2299345.7282	160259.0654	290^49'08.8378"	0.0000	
SPI	0+217.793	0.0000	2299334.7113	160263.2545	290^49'08.8378"	20.0000	
CIR	0+237.793	-45.0000	2299315.5846	160268.9480	278^05'12.2142"	0.0000	
SPI	0+265.317	0.0000	2299288.8537	160264.5055	243^02'29.0797"	20.0000	
LIN	0+285.317	0.0000	2299272.5967	160252.9315	230^18'32.4561"	0.0000	
LIN	0+319.254	0.0000	2299246.4821	160231.2576	230^18'32.4561"	0.0000	

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**(5) Intergraph Inroads ASCII Vertical Alignment Format:**

Records beginning with an "\*" are ignored.  
The record beginning with "{" defines the format.  
Name all ASCII Vertical Alignment files with an extension of .VAL.

Example (This example shows metric units. Provide data in English units.):

\* INTERGRAPH VERTICAL ALIGNMENT TO ASCII

\*

\* Alignment name: b1v1

\* Alignment description: Bikepath Finish Grade

\* Alignment preference: default

\*

{ TYPE	STATION	ELEVATION	SLOPE	VC_LENGTH
LIN	10+006.142	32.6790	-0.002331	0.0000
PAR	10+021.391	32.6435	-0.002331	15.0000
LIN	10+036.391	32.4096	-0.028856	0.0000
PAR	10+058.666	31.7668	-0.028856	20.0000
LIN	10+078.666	31.4983	0.002002	0.0000
PAR	10+123.970	31.5890	0.002002	44.3355
LIN	10+168.305	32.7639	0.051001	0.0000
PAR	10+183.208	33.5239	0.051001	25.0000
LIN	10+208.208	34.1467	-0.001179	0.0000
LIN	10+235.186	34.1149	0.000000	0.0000

**(6) Microstation Design File Format:**

Bentley Systems, Inc. / Intergraph Corporation proprietary format.

**Materials**

**00305.10 Materials** - Furnish all materials including supplies, clothing, and incidentals required to accomplish the work. Use materials of good quality and suitable for the purpose intended. Stakes, hubs, and guinnies are to be of sufficient length to provide a solid set in the ground. Mark the stakes in such a way as to remain legible for the intended duration. Provide and use safety equipment required by State and federal regulations.

**Equipment**

**00305.20 Survey Equipment** - Furnish survey equipment required to accomplish the work that meets the following requirements:

- Components designed to work together.
- Suitable for the purpose intended.
- Capable of achieving specified tolerances.
- In good operating condition.
- Maintained to meet manufacturers specifications.
- Kept in proper adjustment throughout the duration of the Project.

Submit documentation on survey equipment that is new to the industry, to the Engineer for review 21 days prior to its use. The Engineer will evaluate the equipment and intended

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application and provide approval or rejection within 21 days. Equipment may be used immediately upon approval by the Engineer.

**Labor**

**00305.30 Personnel** - Provide technically qualified personnel capable of performing required tasks in a timely and accurate manner. Perform work under the direction and review of the Surveyor.

The Surveyor is responsible for:

- Maintaining registration as a Professional Land Surveyor in the State of Oregon.
- Performing or validating requirements for procedures and testing of equipment.
- Maintaining familiarity with the site conditions and progress of the Project.
- Becoming familiar with the plans and specifications.
- Determining notes and documentation required for types of survey work.
- Determining the accuracy required for each survey stake.
- Using appropriate equipment and methods.
- Keeping close communication with the Project inspector(s), Project Manager, and Agency survey crews working on the Project.
- Being familiar with the varying construction survey requirements of each aspect of the Project, including the various bridge construction techniques when applicable.
- Notifying the Project inspector of conflicts and changes necessary due to utilities, match point variations, design revisions, or other variables.

The survey crew leader is responsible for:

- Becoming familiar with the plans and specifications.
- Keeping close communication with the Project inspector(s), Project Manager, and Agency survey crews working on the Project.
- Notifying the Project inspector of conflicts and changes necessary due to utilities, match point variations, design revisions, or other variables.

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**Construction**

**00305.40 Construction Staking Tolerances** - Set stakes or other devices at an adequate frequency and within the following tolerances:

<b>Item</b>	<b>Horizontal</b>	<b>Vertical</b>
Box Culverts	± 0.10 ft.	± 0.05 ft.
Bridge Substructures	± 0.03 ft.	± 0.03 ft.
Bridge Superstructures	± 0.02 ft.	± 0.02 ft.
Clearing and Grubbing Stakes	± 1.00 ft.	n/a
Construction Centerline Control Points	± 0.05 ft.	n/a
Construction Centerline Station Points	± 0.10 ft.	n/a
Curbs, Walks, and Bikepaths	± 0.03 ft.	± 0.02 ft.
Grade Stakes - Roadway Subgrade	± 0.20 ft.	± 0.05 ft.
Grade Stakes - Top of Rock	± 0.20 ft.	± 0.03 ft.
Grade Stakes - Roadway Finish	± 0.10 ft.	± 0.02 ft.
Manholes, Inlets, and Culverts	± 0.10 ft.	± 0.03 ft.
PCC Pavement	± 0.10 ft.	± 0.02 ft.
Slope Stakes and References	± 0.30 ft.	± 0.10 ft.
Traffic Markings	± 0.20 ft.	n/a
Walls - Retaining, MSE, Sound, etc.	± 0.10 ft.	± 0.05 ft.
Wetland Mitigation Control Stakes	± 0.20 ft.	± 0.20 ft.
Luminaire and Signal Poles (incl. fgs.)	± 0.20 ft.	± 0.03 ft.

Miscellaneous items not listed above will have a horizontal and vertical tolerance of 0.20 foot, unless otherwise directed. Features that are to be constructed flush to another surface should take on the same tolerance as that surface.

Tolerances for special circumstances will be discussed at the pre-survey meeting.

**00305.42 Clearing Limits** - Set clearing limit stakes according to Section 00320. Space clearing limit stakes at intervals not greater than 50 feet or as directed.

**00305.43 Grade Stakes** - Set grade stakes or other control for grade elevation and horizontal alignment. Set grade stakes at each grade break line. Set additional points at intervals, as necessary, not to exceed the width of the grading equipment, or as approved by the Engineer. Set these rows at 50 foot stations or as required in special situations, as in road connections and other areas where conditions require tighter spacing of grade stakes to assure grade and alignment.

Measure and record confidence points upon completion of each course and prior to the placement of the next course. Location and spacing of these confidence points shall be such that they provide a reasonable record of the grade as constructed and placed at a nominal rate of one confidence point for every 2,000 square feet of grade.

Provide confidence point data in the form of an ASCII Coordinate File Format to the Engineer for analysis. The Engineer may request additional confidence points if quantity, distribution, or placement does not meet the stated criteria in this subsection and in the

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confidence point location guidelines in 00305.01. The Engineer may choose to collect additional confidence points using Agency personnel.

The Engineer will evaluate the grade using any combination of industry-standard techniques and the standard Agency confidence point analysis procedure. The confidence point analysis will use the tolerance value defined in 00305.40 for the particular course, and will be deemed unacceptable if less than two-thirds of all confidence points meet the tolerance or if any confidence points exceed the tolerance by a factor of three or more.

The Engineer will evaluate the grade and provide acceptance or rejection before the end of the first business day following receipt of the confidence point data. Do not begin placement of the next course until the Engineer has accepted the grade and approval is given to proceed.

**00305.44 Walls** - Set stakes or other devices to control the location and elevation of walls, including retaining walls, geotextile walls, wing walls, sound walls and other walls as specified. Provide horizontal and vertical control for elements of wall(s) including but not limited to footings, leveling pads, batter slope and direction, and top elevation. Stake drainage facilities, electrical conduits, water pipes and other items shown or identified that are to be integrated into the construction of the wall(s).

**00305.49 Horizontal Control** - Establish horizontal control stations using Theodolite/EDM network or static GPS techniques. Least squares adjustments shall be applied to either method. The use of traverses will be permitted only if approved by the Engineer.

Preserve all Agency provided and Contractor established horizontal control stations for the life of the Project. If the horizontal control network cannot be preserved in its original position during construction or if the Agency provided control stations are not of adequate quantity or location, establish a secondary horizontal control network using the original control as a basis. This secondary control network may then be used by the Contractor to layout all construction items and may be used by the Agency for right-of-way monumentation and for other purposes.

**(a) General Specifications** - Horizontal control networks shall conform to these general requirements in addition to Theodolite/EDM or GPS specifications to follow.

**(1) Equipment:**

- Use tripods for all occupations with theodolite, target, or GPS antenna.
- Test all components and adjust according to manufacturer specifications.

**(2) Procedures:**

- Include in field notes a detailed point description and vicinity sketch for each control station and survey monument established or used.
- Perform a minimally and fully constrained Least Squares adjustment.
- The line used for the basis of bearing shall be greater than 1,000 feet unless approved by the Engineer.
- Prior to using 2 points for the basis of bearing, perform an analysis to verify that the points are actually those indicated in the record.

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- Control station monuments shall conform to the requirements of the Agency "Right-of-Way Monumentation Policy" available from the Engineer.
- If available, include at least three existing control stations in establishing any control network.
- Establish a point identifier for each control point within the range of 1 - 399. Alphanumeric point identifiers up to eight characters may be used. Inscribe the point identifier on the monument.

**(3) Acceptance Standards** - A least squares adjustment shall be accepted base on the following criteria for all specified tolerances.

- Two-thirds of all values shall be within the total tolerance.
- 100% of all values shall be within 3 times the total tolerance.
- Tolerance for confidence regions at the 95% level is 0.05 feet + 50 ppm based on the shortest distance to the nearest unadjusted control station.

**(4) Data Requirements:**

- Field notes containing a detailed point description and vicinity sketch for each control station and survey monument established or used.
- Minimally and fully constrained least squares adjustment reports.

**(b) Theodolite/EDM Networks:**

**(1) Equipment:**

- Use Theodolites with a maximum angular standard of error no greater than  $\pm 6$  seconds.
- Use EDMs with a maximum distance standard error no greater than  $\pm 0.02$  feet  $\pm 5$  ppm.
- All components shall be of compatible accuracy and designed to be used together.

**(2) Field Procedures:**

- Include distance measurements with all observations unless impractical.
- Have at least one redundant observation for every point in the network.
- Triangulation, trilateration, and resection methods are acceptable.

**(3) Acceptance Tolerances:**

- Tolerance for angle residuals is  $\pm 3$  seconds.
- Tolerance for distance residuals is  $\pm 0.02$  feet  $\pm 2$  ppm.

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**(4) Data Requirements** - Provide the following to the Engineer for each network or circuit established:

- **Raw Data Files** - These are electronic data files containing original measurements produced by the Theodolite (total station). The file shall contain:
  - Observation data for each measurement, including:
    - point identifier
    - direction, plate reading, or horizontal angle
    - vertical or zenith angle
    - slope distance
  - Supplemental measurement data, including:
    - distance units recorded
    - angular units recorded
    - curvature and refraction correction applied
    - atmospheric correction applied
    - prism correction applied
  - Codes or instructions to the processing software on how to process the data.
  - Atmospheric conditions at the time of the survey.
  - Angular and distance units recorded, and whether the distance has been corrected for curvature and refraction and/or atmospheric conditions.
- **Set Reduction Report** - This report summarizes the reduction of the angle sets and mean distances.
- **Least Squares Adjustment Reports** - These reports contain details of the least squares adjustment, including a list of all angular and distance residuals, confidence region values at a 95% confidence level, and final adjusted coordinates.

**(c) GPS Networks:**

**(1) Equipment:**

- GPS receivers shall be dual frequency geodetic receivers with a manufacturer-specified accuracy of  $\pm 0.02$  feet  $\pm 1$  ppm or better.
- All components shall be of compatible accuracy and designed to be used together.

**(2) Field Procedures:**

- Ensure that satellite geometry during the field observation phase is sufficient to produce accurate results. The geometric dilution of precision (GDOP) shall not be greater than 8.
- The number of healthy satellites being observed at any time shall be four or more.
- The elevation mask shall be not less than 15 degrees.

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- Horizontal survey measurements, once completed, shall form a closed figure, and shall be connected to at least two existing horizontal control stations.
- Network shall be comprised entirely of independent baselines.
- Adjacent stations shall have direct connections.
- Every station shall be connected to two or more stations.
- Receiver documentation shall be followed for observation times and epoch intervals.
- Each control station shall be occupied no less than twice, of which two occupations shall be separated from each other by time. Separation shall be measured start-time to start-time. Separation shall be 90 minutes or more from initial occupation and 90 minutes or more from any 12 hour multiple thereafter for 30 days. Additional occupations beyond two are not subject to time restrictions.
- Back-to-back occupations of 90 minutes or more shall be separated by off leveling and re-setting the tripod and rotation of the tribrach or leveling equipment by 120 degrees or more.
- Stations closer together than 1,500 feet shall be connected with terrestrial observations.
- Inter-visible stations closer together than 3,000 feet shall be connected with terrestrial observations.

**(3) Acceptance Tolerances:**

- Tolerance for linear residuals in latitude, longitude, and elevation is  $\pm 0.05$  feet.

**(4) Data Requirements** - Provide the following to the Engineer for each network established:

- **Receiver Independent Exchange (RINEX) Data Files** - These are industry-standard non-proprietary electronic data files containing original data collected by the receiver. The provided files shall contain all data supported by both the RINEX file format and the equipment and software employed in the survey. Files provided shall include as a minimum:
  - GPS observation data file
  - GPS navigation message file
- **Observation Log Sheet** - This log includes, for each observation, start and stop times, and antenna height including measurement procedure.
- **Least Squares Adjustment Reports** - These reports contain details of the least squares adjustment, including a list of all latitude, longitude, and height residuals, confidence region values at a 95% confidence level, and final adjusted coordinates.

**(d) Traverses:**

**(1) Equipment:**

- Identical to requirements for Theodolite/EDM networks.

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**(2) Field Procedures:**

- Include distance measurements with all observations unless impractical.
- Close both traverse for angle and distance.

**(3) Acceptance Standards:**

Closure shall be a minimum of 1:20,000 after angular adjustment and prior to coordinate adjustment.

**(4) Data Requirements** - Provide the following to the Engineer for each traverse established:

- **Adjustment Report** - This report contains details of the traverse adjustment, including adjusted coordinates.
- **Other Reports** - All data required for Theodolite/EDM networks except least squares adjustment report.

**00305.50 Vertical Control** - Establish vertical control stations using differential leveling and third order or better equipment and techniques. The development of vertical control by techniques other than differential leveling must be approved by the Engineer. A least squares adjustment shall be applied to each network of acceptable level circuits.

The Agency provided and Contractor established vertical control stations shall be preserved for the life of the Project. If the vertical control network cannot be preserved in its original position during construction or if the Agency provided control stations are not of adequate quantity or location, establish a secondary vertical control network using the original control as a basis. This secondary control network would then be used to layout all construction items and may be used by the Agency for other purposes.

**(a) Field Procedures:**

- Use a compensated (or "automatic") optical level or compensated digital level.
- Use precise non-adjustable rod(s) unless otherwise directed. Do not use "Lenker" or self-computing rods.
- Use a rod level with each rod.
- Include a minimum of two published bench marks in each circuit unless otherwise directed.
- If the circuit between benches does not close within the tolerance stated below, close circuit back to the starting point.
- If the use of one benchmark is approved, close circuit back to the starting point.
- Select turning points that are firm, solid objects with a defined high point. Set a nail, spike, or stake if no existing items are acceptable. Turning plates with a weight of not less than 4.5 pounds may be used.
- Balance backsight and foresight distances to within 30 feet on each setup and to within 30 feet on the entire circuit.
- Make a record of the rod reading(s) and the observation distance on each sighting
- Set TBMs near significant construction items (bridges, intersections, and other locations where elevations will be needed) and not more than 1,000 feet apart throughout the Project.

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- Select TBM monuments that are firm, solid objects with a defined high point, not likely to be moved by human or natural influences, readily identifiable, and out of the path of construction. Do not use fire hydrants, guardrails, highway signs, or nails or spikes in utility poles or fence posts.
- Include detailed point descriptions and vicinity sketch in field notes.
- Take field notes when recording measurements electronically. Include data and information not electronically measured and recorded.
- Apply a vertical least squares adjustment to allowable errors. The use of proportional distribution of error may be used if approved by the Engineer.

**(b) Acceptance Standards** - Each leveling circuit shall be accepted based on the "point-to-point" or "closed-loop" limits described below. A single least squares adjustment shall be applied to the observations in the leveling circuits meeting the acceptance standards

- Accept point to point circuit based on the following. Error of closure shall be no greater than:

$$\text{Allowable Error} = 0.05 \text{ ft. } \sqrt{D}$$

D = Shortest level line distance in miles

- If a closed loop, the error of closure shall be no greater than:

$$\text{Allowable Error} = 0.035 \text{ ft. } \sqrt{E}$$

E = Perimeter of level loop in miles

**(c) Data Requirements** - Provide the following to the Engineer for each network or circuit established:

- **Raw Data** - These are hand written field notes or hand written field notes accompanied by electronic data files containing original measurements produced by the level. The file shall contain:
  - Data for each measurement, including a:
    - point identifier (within a range of 400 - 499 and also inscribed on the monument)
    - rod reading
    - observation distance
  - Supplemental measurement data, including:
    - distance units recorded
    - curvature and refraction correction applied
- **Level Computation Report** - This report contains the computation of unadjusted elevations, observation distance imbalances, computer allowable error, and closure error.

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- **Level Adjustment Report** - This report contains the adjustment details, including residual values, adjusted elevations and standard errors.
- **ASCII Elevation Data File**

**00305.52 Pavements** - Set stakes or other control devices to control the location and elevation of asphalt and PCC pavement as shown. Provide surveying or survey-related activity necessary to control grade, thickness, and smoothness as required.

**00305.53 Signs, Signals, Illumination and Fabricated Items** - Determine the exact location and their relative location to roadway and bridge features as appropriate such as edge of pavement, curbs, islands, sidewalks, sidewalk ramps, lane lines, bridge columns, bridge decks, and other existing features for the following items:

- Posts and poles including foundations.
- Cabinets.
- Junction boxes.
- Detectors.
- Other similar sign, signal, and illumination appurtenances.

Provide the following documentation to the Engineer before submitting working drawings:

- Field verified length of poles, posts, mast arms, and tenon locations.
- Field verified orientation of triangular bases for poles.
- Field verified measurements of all existing features including orientation and relationship to all other new appurtenances and new fabricated items.
- Plan, elevation, and side views.
- Identification of all obstacles.

Field adjustment to the planned location may be required in order to avoid obstacles and to ensure its placement in a functional location. Do not submit working drawings until the Engineer returns the field verified documents. The Engineer will return field verified documents within 21 calendar days after receipt of the documents.

Set a stake referencing the center of the item. Set a guard stake with the following information written on it:

- Description of item (by plan number if applicable).
- Centerline station.
- Centerline offset distance.
- Cut or fill from reference point (and what point the cut or fill is to).
- Intended elevation.

If the orientation of the item is significant and is not clear, establish a reference line for the skew of the item.

Have bridge layout and roadway layout features staked, including referencing, no more than seven calendar days before submitting field verification documents.

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**Temporary**

**00305.60 Temporary Protection and Direction of Traffic** - Provide all work zone signing conforming to "ODOT Signing and Flagging Standards for Short Term Work Zones 1998" and "Short Term Traffic Control Handbook for ODOT Survey Crews 1998".

Signs for use by the survey crew may be constructed of plywood, sheet aluminum or fabric. Signs, flaggers and flagger equipment shall conform to the requirements of Section 00225.

**Maintenance and Monumentation**

**00305.70 Preservation of Survey Markers:**

**(a) Project Control Points Established by the Engineer** - Maintain, relocate or replace existing survey monuments, control points, and stakes, as determined by the Engineer. Perform the work to produce the same level of accuracy as the original monument(s) in a timely manner, and at no additional cost to the Agency.

**(b) Monuments of Record** - Preserve survey monuments according to 00170.82(c), and ORS 209.140 and ORS 209.150. If such monuments are to be disturbed or destroyed, comply with requirements of these ORS at no additional cost to the Agency.

**00305.71 Project Monumentation** - The Contractor will not be responsible for performing right-of-way monumentation.

**Measurement**

**00305.80 Measurement** - No measurement of quantities will be made for construction survey work.

**Payment**

**00305.90 Payment** - The accepted quantities of performing construction survey work will be paid for at the Contract lump sum amount for the item "Construction Survey Work".

Payment will be payment in full for furnishing all material, equipment, labor, and incidentals necessary to complete the work as specified.

No separate or additional payment will be made for all temporary protection and direction of traffic measures including flaggers and signing necessary for the performance of the construction survey work.

No separate or additional payment will be made for preparing surveying documents including but not limited to office time, preparing and checking survey notes, and all other related preparation work.

The amount to be allowed for "Construction Survey Work" in the progress payments will not be in excess of the reasonable value of the surveying work performed under this specification as said reasonable value is estimated by the Engineer.

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Costs incurred as a result of survey errors will be borne by the Contractor. Such costs include price adjustments for failure to meet requirements of the construction specifications, repair or removal and replacement of deficient product, and over-run of material.

**SECTION 00310 - REMOVAL OF STRUCTURES AND OBSTRUCTIONS**

Comply with Section 00310 of the Standard Specifications modified as follows:

**00310.41(a) General** - Replace this subsection, except for the subsection number and title, with the following:

Where an abutting structure or part of a structure is to be left in place, make clean, smooth, vertical cuts with a saw or other approved cutting device. Avoid operations that may damage any portion of the remaining structure.

**00310.41(c) Drainage Structures** - Add the following:

Concrete pipe removal is subject to the requirements of 00290.20(c-3-d).

**00310.43 Disposal of Materials** - Add the following:

The Type CL-6 Fence with Privacy Slats remains the property of the State. Contact Kevin Finch of the Glenwood Maintenance Yard at (541) 686-7626 one week prior to the fence being removed to arrange for maintenance forces to transport this material from the job site.

**SECTION 00320 - CLEARING AND GRUBBING**

Comply with Section 00320 of the Standard Specifications modified as follows:

**00320.42 Ownership and Disposal of Matter** - Replace this subsection with the following subsection:

**00320.42 Disposal of Matter** - Dispose of all matter and debris according to 00290.20.

**SECTION 00330 - EARTHWORK**

Comply with Section 00330 of the Standard Specifications modified as follows:

**00330.03 Basis of Performance** - Add the following paragraph to the end of this subsection:

Due to staging restrictions, earthwork for this project will be performed on both the embankment and excavation basis. It is anticipated that all of Stage 1 will be performed on the embankment basis and all of Stage 2 will be performed on the excavation basis.

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**00330.20 Tamping Foot Rollers** - In the paragraph, replace "115 tons" with "15 tons".

**00330.41(a-4) Excess Materials** - If the quantities of excavated materials are greater than required to construct embankments and to do all filling and backfilling, the remaining materials shall be classed as waste material and disposed of according to 00330.41(a-5).

**00330.41(a-5) Waste Materials** - This subsection is replace with the following:

**00330.41(a-5) Waste Materials** - Waste material under 00330.41(a-3) and 00330.41(a-4) become the property of the contractor at the point of origin. Unless otherwise specifically allowed and subject to the requirements of 00280.03, dispose of materials, classed as waste materials in 00330.41(a-3), outside and beyond the limits of the Project and Agency controlled property according to 00290.20(c). Do not dispose of materials on any wetland, either public or private, or within 300 feet of any river or stream.

**00330.42(c-3) Embankment Slope Protection** - Add the following paragraph:

Construct the outer 12 inches of embankments with suitable materials to establish slope stabilization through permanent seeding. If suitable material is not available, provide suitable materials from a Contractor-provided source which conforms to the requirements of 00330.11 or 00330.13 and provides favorable conditions for germination of seed and growth of grass.

**00330.80 General** - Replace the bullet that begins "Volume basis, computed by...", with the following bullet:

- Volume basis, based on the Agency's digital terrain model (DTM) calculated by End Area) Volume, or by other methods of equivalent accuracy.

**00330.82 Embankment Basis Measurement** - In the paragraph that begins "When measurement of earthwork...", replace the sentence that begins "Measurement will be limited to..." with the following sentence:

Measurement will be limited to the lines, grades, and slopes of the original ground contours established before the Contractor begins any Work on the Project.

In the paragraph that begins "The quantities of embankment measured for payment will not include...", add the following bullet after the second bullet:

**00330.92 Kinds of Incidental Earthwork** - Delete the bullet that reads "If shown on the plans."

Add the following bullets to the end of the bullet list:

- Earthwork required for driveways and road approaches. Earthwork for driveways and road approaches will be that which is outside the neat line limits shown on the typical section(s).
- Additional quantities of materials required due to clearing and grubbing operations and compaction requirements within embankment limits.

**SECTION 00331 - SUBGRADE STABILIZATION**

Comply with Section 00331 of the Standard Specifications.

**SECTION 00340 - WATERING**

Comply with Section 00340 of the Standard Specifications.

**SECTION 00350 - GEOSYNTHETIC INSTALLATION**

Comply with Section 00350 of the Standard Specifications modified as follows:

**00350.10 Materials** - Add the following to the end of this subsection:

Provide manufacturer's certifications complying with 02320.10(c) for the following geosynthetic:

<b>Geotextile</b>	<b>Certification Level B</b>
Subgrade.....	X

**SECTION 00390 - RIPRAP PROTECTION**

Comply with Section 00390 of the Standard Specifications modified as follows:

**00390.11(b) Test Requirements** - Under the "Requirement" column next to "Sediment Height" replace 8" with 8.0".

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**SECTION 00405 - TRENCH EXCAVATION, BEDDING, AND BACKFILL**

Comply with Section 00405 of the Standard Specifications.

**SECTION 00440 - COMMERCIAL GRADE CONCRETE**

Comply with Section 00440 of the Standard Specifications.

**SECTION 00442 - CONTROLLED LOW STRENGTH MATERIALS**

Comply with Section 00442 of the Standard Specifications.

**SECTION 00445 - SANITARY, STORM, CULVERT, SIPHON, AND IRRIGATION PIPE**

Comply with Section 00445 of the Standard Specifications.

**SECTION 00470 - MANHOLES, CATCH BASINS, AND INLETS**

Comply with Section 00470 of the Standard Specifications.

**SECTION 00490 - WORK ON EXISTING SEWERS AND STRUCTURES**

Comply with Section 00490 of the Standard Specifications modified as follows:

**00490.46(b-2) Concrete and Masonry Manholes** - In the paragraph that begins "Precast sections removed...", replace the sentence that begins "Precast items that..." with the following sentence:

Dispose of precast items, not reused on the Project, according to 00290.20.

**SECTION 00530 - STEEL REINFORCEMENT FOR CONCRETE**

Comply with Section 00530 of the Standard Specifications.

**SECTION 00597 - SOUND WALLS**

Comply with Section 00597 of the Standard Specifications supplemented and/or modified as follows:

**00597.00 Scope** - Replace this subsection with the following:

**00597.00 Scope** - This work consists of furnishing and constructing Pre-cast Concrete Panel Walls at the location shown or directed.

Add the following:

This work also includes installing sound wall drains as directed by the Engineer.

**Materials**

Add the following subsection:

**00597.14 Sound Wall Drains** - Provide 4" PVC pipe meeting the requirements of 00430.10. Furnish grout meeting the requirements of 02080.40.

**00597.42 Precast Concrete Panel Sound Walls** - Add the following to the end of this subsection:

Alternative Sound Wall Designs stamped by a Professional Engineer may be submitted to the Construction Office for review. The design must avoid all utilities and follow the layout as shown in the construction drawings. The height must be maintained as shown, but the width of the Precast Wall Panels may fluctuate in width from 14 ft-2 ½ inches (max) to 12 ft-11 ¾ inches (min). The center-to-center spacing of the Pilasters shall be adjusted to accommodate the Wall Panels.

**Construction**

Add the following subsection:

**0597.44 Sound Wall Drains** - Install sound wall drains in locations designated by the Engineer. The drain hole locations may be modified to avoid panel rebar. Utilize a non-impact rotary drill.

**Measurement**

**00597.80 Measurement** - Add the following:

The accepted quantities of the item "Sound Wall Drains" will be measured on a unit basis.

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**Payment**

**00597.90 Payment** - Add the following:

The accepted quantities of the item "Panel and Pilaster Sound Wall" will be paid at the contract price per square foot.

The accepted quantities of the item "Sound Wall Drains" will be paid at the contract price per each.

Payment for sound wall drain includes all elements of the work including preparation, drilling, pipe, grouting, and painting.

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**SECTION 00620 - COLD PLANE PAVEMENT REMOVAL**

Comply with Section 00620 of the Standard Specifications modified as follows:

**00620.40 Pavement Removal** - Replace paragraphs (b), (c), (d), and (e) with the following paragraph (b):

**(b) Removal and Replacement** - Repave all cold-planed areas within 24 hours.

**00620.42 Disposal of Materials** - Replace this subsection, except for the subsection number and title, with the following:

Dispose of all materials according to 00290.20.

**SECTION 00641 - AGGREGATE SUBBASE, BASE, AND SHOULDERS**

Comply with Section 00641 of the Standard Specifications modified as follows:

**00641.10 Materials** - Add the following sentence after the first sentence:

Base aggregate shall be either 1" - 0 or  $\frac{3}{4}$ " - 0 size.

**00641.12 Limits of Mixture** - Replace this subsection, except the subsection number and title, with the following two paragraphs:

Provide a mixture of aggregate and water having a uniform moisture content sufficient to obtain the required compaction. Water may be introduced in a mixing plant or on the grade. Proportions will be in percentages by weight and will be known as the Mix Design. Determine the proportion of aggregate and water according to the MFTP. The amount of water for the Mix Design will be based on the dry weight of the aggregate.

When introducing water at the mixing plant, furnish the mixture with a tolerance of  $\pm 2\%$  of the optimum water content at the time of mixing. If approved, excess percentage of water may be allowed. The Agency will treat excess percentage of water according to 00641.80(d).

**00641.20 Mixing Plant** - Replace the sentence that begins "Mix aggregate and water..." with the following two sentences:

Mix aggregate and water according to paragraph (a) of this subsection. Road mix is not allowed on this Project.

**00641.41 Mixing, Hauling, and Placing** - Replace the sentence that begins "Add water to the aggregate..." with the following two sentences:

Add water to the aggregate while mixing to provide a moisture content according to 00641.12 and paragraph (a) of this subsection. Road mix is not allowed on this Project.

**00641.44(a-1) Dense-graded Aggregates** - In the paragraph, replace "100%" with "95%".

**SECTION 00730 - EMULSIFIED ASPHALT TACK COAT**

Comply with Section 00730 of the Standard Specifications modified as follows:

**00730.90 Payment** - Replace this subsection, except for the subsection number and title, with the following:

No separate or additional payment will be made for emulsified asphalt tack coat. Approximately 6 tons of emulsified asphalt in tack coat will be required on this Project.

**SECTION 00745 - HOT MIXED ASPHALT CONCRETE (HMAC)**

Comply with Section 00745 of the Standard Specifications modified as follows:

**00745.16(a-1) Personnel Requirements** - Add the following bullet to the end of the bullet list:

- Providing at least one CAT-1 full-time at each plant site when producing mixture for the Project.

**00745.16(a-4) Testing Frequency** - Delete the paragraph that begins "After the Mix Design...".

Add the following subsection:

**00745.16(a-5) Plant Calibration** - Calibrate all meters and belt scales at the HMAC mixing plant according to ODOT TM 322 prior to beginning production.

**00745.16(b-1) MDV Quality Control** - Replace this subsection with the following subsection:

**(1) MDV Quality Control:**

**a. General** - Perform MDV testing on projects with Level 2, Level 3, or Level 4 dense graded HMAC. Perform MDV tests on every sublot and as required at start up according to 00745.16(b-1-c) and the MFTP. Perform gradation and asphalt content testing with each MDV test. Calculate the following values for each MDV test.

- Air Voids
- Voids in Mineral Aggregate (VMA)
- Voids Filled with Asphalt (VFA)
- P No. 200 / Effective AC (Pbe) Ratio

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The running averages of four MDV results shall be within the limits given below:

	<b>Average of</b>	<b>Limit</b>
Air Voids	4 samples	JMF Target $\pm$ 1.0%
VMA	4 samples	11.5 - 17.0 (1" Mix) 12.5 - 17.0 (3/4" Mix) 13.5 - 17.0 (1/2" Mix) 14.5 - 17.0 (3/8" Mix)
VFA	4 samples	65 - 75 (3/4" and 1/2" Mix in Level 2, 3 and 4) 65 - 78 (3/8" Mix in Level 2, 3 and 4) 70 - 80 (1/2" and 3/8" Mix in Level 1)
Passing No. 200 / Pbe	4 samples	0.8 - 1.6

The CDT shall provide the results from the initial control strip to the CAT II for evaluation and comparison with the MDV results. If the MDV and density test results are contradictory, initiate an investigation. The CAT II shall recommend a plan to the Engineer for resolving the discrepancy based on the results of the investigation.

Take corrective action when required by the MDV start-up process of 00745.16(b-1-c). After the requirements of 00745.16(b-1-c) have been met, take corrective action if the MDV test results show that two consecutive running average of four samples are outside the above limits for air voids, VMA, VFA, or P No. 200/Pbe ratio. Document the corrective action and notify the Engineer. If test results continue to be outside the tolerance, stop production and make adjustments. Restart production only after the Engineer has approved the proposed adjustments. If the MDV test results are outside tolerance, but the mixture meets the current requirements for gradation and asphalt content, an adjustment to the JMF targets is required. Do not start a new lot as a result of the adjustment.

A request for an adjustment to the JMF targets may be made to the Engineer by the Contractor's CAT-II. The requested change will be reviewed and documented by the Engineer. If acceptable, a revised JMF will be allowed. Clearly document the subplot test for which the adjusted targets are in effect. Adjustments for gradation shall not exceed the tolerances specified for the original JMF limits. Adjustments for AC content shall be within 0.5% of the original JMF. The JMF asphalt content may only be reduced if the production VMA meets or exceeds the above requirements. Adjustments for RAP content shall be within 5% of the original JMF, but shall not exceed the requirements of 00745.03. Regardless of these tolerances, the adjusted JMF shall be within the mixture specification control points of 00745.12. If a redesign of the mixture becomes necessary, submit a new JMF according to the requirements of these specifications.

Perform a Tensile Strength Ratio (TSR) test (AASHTO T 283) on a sample obtained during the first two days of production after QC test results verify that HMAC constituents with a weighting factor greater than one according to 00745.95 are in tolerance. Provide test results to the Engineer within four working days of obtaining

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the sample. Stop production and make adjustments if the TSR is less than 70. Restart production only after the Engineer has approved the proposed adjustments.

**b. Laboratory Compactor Selection** - Use a Gyratory compactor for MDV when a Gyratory compactor is used to develop the JMF. For all other cases, use a Gyratory compactor or Marshall compactor, as selected by the Contractor.

**c. MDV Requirements at Start-Up** - Perform MDV testing at the start-up of the JMF production according to the following process:

1. Obtain a sample during the first 100 tons of production and immediately perform MDV testing.
2. If air voids and VMA are within tolerance, then continue remaining MDV testing at the established random QC subplot interval. If not, then go to step "3".
3. If air voids and/or VMA are out of tolerance according to 00745.16(b-1-a), then make adjustments and immediately obtain another sample and perform MDV testing. Go to step "4".
4. If air voids and VMA from the MDV testing in step "3" are within tolerance, then continue remaining MDV testing at the established random QC subplot interval. If not, go to step "5".
5. If air voids from step "3" are more than  $\pm 1.5\%$  from the target, then stop production immediately and make adjustments. If they are not, then go to step "6". Obtain approval of the Engineer before restarting production. Begin MDV testing again at step "1".
6. If air voids from step "3" are out of tolerance and 1.5% or less from the target, or the VMA from step "3" is out of tolerance, then make adjustments and immediately obtain another sample and perform MDV testing. Go to step "4".

The initial MDV sample shall be used as the first random QC subplot test. Subsequent MDV samples required due to failure of start-up criteria will be used for a subplot QC test if the sample is taken within 100 tons of the scheduled random QC sample location. If not, the MDV testing shall be performed separate from, and not included in, the random QC testing program. Any required MDV testing will be completed at the Contractor's expense.

Add the following subsection:

**00745.16(b-3) MDV for Open Graded HMAC** - Adjust asphalt content and gradation targets for open graded HMAC during production as directed. The Engineer will document the subplot test for which the adjusted targets are in effect.

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**00745.24(a) Steel-Wheeled Rollers** - Replace this subsection with the following subsection:

**(a) Steel-Wheeled Rollers** - Provide steel-wheeled rollers with a minimum gross static weight as follows:

	<b>Level 1 and Level 2</b>	<b>Level 3</b>	<b>Level 4</b>
Breakdown and Intermediate	8 ton	10 ton	12 ton
Finish	6 ton	8 ton	10 ton

**00745.24(b) Vibratory Rollers** - Replace the fourth bullet of the first group of bullets and replace the first bullet of the second group of bullets with the following bullet:

- Have a minimum gross static weight meeting the requirements of 00745.24(a).

**00745.40 Season and Temperature Limitations** In the table, for Surface Temperature of Dense Graded Mixes 2 inches to 2 1/2 inches, replace "50° F" with 40° F".

**00745.46 Control of Line and Grade** - Add the following paragraphs to the end of this subsection:

Establish references at reasonable intervals for line and grade control of placement operations for the following:

- Before placing each leveling lift.
- Before placing the top base course for new construction.

Line and grade for the top base course of new construction and top leveling lift shall be within 1/2 inch of design line and grade.

**00745.48(b) Depositing** - Replace the paragraph that begins "Deposit HMAC from..." with the following paragraph:

Deposit HMAC from the hauling vehicles so segregation is prevented. Do not deliver the HMAC directly into the paving machine for wearing courses where the continuous length of the panel is greater than 500 feet. Deliver the HMAC to the paving machine by either a windrow pick-up machine or an end-dump transfer machine.

**00745.49(b-1) General** - In the paragraph that begins "Compliance with the density...", replace the sentence that begins "Use the MAMD method..." with the following sentence:

Use the MAMD method of compaction measurement.

Replace the paragraph that begins "For Level 3 and Level 4..." with the following two paragraphs:

For Level 2, Level 3, and Level 4 mixes, construct a control strip at the beginning of work on each JMF on the project according to ODOT TM 306. The purpose of the control strip is to determine the maximum density that can be achieved for the JMF, paving conditions, and equipment on the project. Additional control strips are necessary when there is a change in

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compaction equipment or when JMF targets are adjusted according to 00745.16(b-1-a). The Engineer may waive the control strip for irregular areas or areas too small to establish a reasonable roller pattern.

Stop paving if three consecutive control strips fail to achieve the specified density. Take all actions necessary to resolve compaction problems. Do not resume paving until allowed by the Engineer.

**00745.49(b-3) Moving Average Maximum Density (MAMD) Method** - Replace the table showing minimum density for various lifts and HMAC Levels with the following:

Course of Construction	Level 1, Level 2
	Level 3, Level 4 HMAC
Base lift less than 3 inches on aggregate base	91.0
All other lifts	92.0

Also, delete the note that begins "\* If any part of a .....".

**00745.49(b-4) Control Strip Method** - Delete this subsection.

**00745.49(b-5) Test Results** - Renumber this subsection to b-4.

**00745.75(a-2) Wearing Course** - Replace the bullet that begins "Profile to a maximum depth..." with the following bullet:

- Profile to a maximum depth of 0.3 inch with abrasive grinder(s) equipped with a cutting head comprised of multiple diamond blades and apply an emulsified asphalt fog coat as directed.

**00745.80 Measurement** - The quantities of HMAC shown in the Contract Schedule of Items were computed on the basis of aggregates having a Specific Gravity of 2.75.

Add the following sentence to the end of the paragraph that begins "When RAP materials are used...":

For non-RAP mixtures, measurement of the total asphalt quantity will be based on quality control tests averaged to the nearest 0.01% when the Engineer determines that payment by invoice and tank sticking is impractical.

**00745.93 Other Items** - Delete the bullet that begins "Anti-stripping...".

Add the following paragraph to the end of this subsection:

Antistripping additives will be paid for at the Contractor's actual documented costs with no percentage allowance or markup allowed.

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**SECTION 00748 - ASPHALT CONCRETE PAVEMENT REPAIR**

Comply with Section 00748 of the Standard Specifications.

**SECTION 00749 - MISCELLANEOUS ASPHALT CONCRETE STRUCTURES**

Comply with Section 00749 of the Standard Specifications.

**SECTION 00759 - MISCELLANEOUS PORTLAND CEMENT CONCRETE STRUCTURES**

Comply with Section 00759 of the Standard Specifications.

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### **SECTION 00810 - METAL GUARDRAIL**

Comply with Section 00810 of the Standard Specifications.

### **SECTION 00820 - CONCRETE BARRIER**

Comply with Section 00820 of the Standard Specifications.

### **SECTION 00830 - IMPACT ATTENUATORS**

Comply with Section 00830 of the Standard Specifications.

### **SECTION 00840 - DELINEATORS AND MILEPOST MARKER POSTS**

Comply with Section 00840 of the Standard Specifications modified as follows:

**00840.10 Materials** - Replace the "Reflective Sheeting for Delineators" line with the following line:

Delineator Reflective Sheeting (Type III and Type IV).....From QPL

**00840.11(e) Acceptance** - In the paragraph that begins "Acceptance of target...", remove the 02850.20 reference.

### **SECTION 00850 - COMMON PROVISIONS FOR PAVEMENT MARKINGS**

Comply with Section 00850 of the Standard Specifications modified as follows:

**00850.20(b) Equipment for Longitudinal Lines** - Replace the paragraph that begins "Use equipment capable of..." with the following paragraph and bullets:

Provide equipment that can:

- Place two parallel lines simultaneously with 4 inch minimum to 12 inch maximum spacings between the two lines.
- Place the entire width of a line in one pass.

**00850.46 Placement Tolerance** - Replace the bullet that begins "Thickness of lines..." with the following bullet:

- **Thickness of flat, surface applied lines:** + 1/3 of the specified thickness, – 1/10 of the specified thickness

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**00850.47(b) Curing of Material** - Replace the sentence that begins "Rate the line..." with the following sentence:

Rate the line, markings, and pavement marker adhesive at the time of installation to determine if the material has properly cured.

**00850.47(c) Retroreflectivity** - Replace the sentence that begins "Use a retroreflectometer..." with the following sentence:

Use a 30 meter geometry retroreflectometer to measure the retroreflectivity within 48 hours of curing, except for paint applications:

**00850.70 Disposal of Waste** - Replace this subsection with the following subsection:

**00850.70 Disposal of Materials** - Dispose of all materials according to 00290.20.

**SECTION 00851 - PAVEMENT MARKING REMOVAL**

Comply with Section 00851 of the Standard Specifications.

**SECTION 00855 - PAVEMENT MARKERS**

Comply with Section 00855 of the Standard Specifications modified as follows:

**00855.40(c) Installation** - In the paragraph that begins "Do not install...", replace the sentence that begins "Adjust spacing between..." with the following two sentences:

To avoid longitudinal cracks and joints, adjust pavement markers up to one half the width of the marker. To avoid transverse cracks and joints, adjust pavement markers ahead or back on line  $\pm$  5 inches.

**SECTION 00860 - LONGITUDINAL PAVEMENT MARKINGS - PAINT**

Comply with Section 00860 of the Standard Specifications modified as follows:

**00860.45 Installation** - In the bullet that begins "For yellow colored markings...", replace the sentence that begins with "For yellow colored markings..." with the following two sentences:

For yellow colored markings that delineate two-way traffic, apply the second application in the opposite direction of the first application. For yellow colored markings on one-way roadways, apply the second application in the same direction of the first application.

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**SECTION 00865 - LONGITUDINAL PAVEMENT MARKINGS - DURABLE**

Comply with Section 00865 of the Standard Specifications.

**SECTION 00867 - TRANSVERSE PAVEMENT MARKINGS - LEGENDS AND BARS**

Comply with Section 00867 of the Standard Specifications modified as follows:

**00867.90 Payment** - Replace this subsection, except for the subsection number and title, with the following:

The accepted quantities of work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following items:

<b>Pay Item</b>	<b>Unit of Measurement</b>
(a) Pavement Legend, Type ____ : Arrows .....	Each
(b) Pavement Legend, Type ____ : "ONLY" .....	Each
(c) Pavement Legend, Type ____ : "SCHOOL" .....	Each
(d) Pavement Legend, Type ____ : "SCHOOL" Large .....	Each
(e) Pavement Legend, Type ____ : "CROSSING" Large .....	Each
(f) Pavement Legend, Type ____ : "X-ING" .....	Each
(g) Pavement Legend, Type ____ : "BUS" .....	Each
(h) Pavement Legend, Type ____ : Railroad Crossing .....	Each
(i) Pavement Legend, Type ____ : Railroad Crossing, Narrow ..	Each
(j) Pavement Legend, Type ____ : Railroad Crossing, Bike .....	Each
(k) Pavement Legend, Type ____ : HOV Diamond .....	Each
(l) Pavement Legend, Type ____ : Cattle Guard .....	Each
(m) Pavement Legend, Type ____ : Bicycle Lane Stencil .....	Each
(n) Pavement Legend, Type ____ : Disabled Parking .....	Each
(o) Pavement Legend, Type ____ : On-Street Parking .....	Each
(p) Pavement Legend, Type ____ : Yield Line Triangle .....	Each
(q) Pavement Legend, Type ____ : _____ .....	Each
(r) Pavement Bar, Type ____ .....	Square Foot

In items (a) through (r), the type of pavement marking material will be inserted in the first blank.

Item (a) includes single or multiple headed arrows as required.

Item (m) includes the bike lane stencil and arrow.

Item (r) includes all transverse pavement markings that are defined as a "BAR", including but not limited to, stop bars, crosswalk bars, chevron bars, transverse median bars, and transverse shoulder bars.

Payment will be payment in full for furnishing and placing all materials, and for furnishing all equipment, labor, and incidentals necessary to complete the work as specified.

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Payment for work under this Section will be limited to 75% of the amount due until the Agency has received the signed warranty.

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## **SECTION 00903 - BIRD SPIKES**

Section 00903, which is not a Standard Specification, is included for this Project by Special Provision.

**00903.00 Scope** - This work consists of furnishing and installing bird spikes at the locations shown in the plans and as directed by the Engineer.

### **Materials**

**00903.10 Materials** - Provide bird spikes from the current version of the QPL, accessible from the internet at <http://highway.odot.state.or.us/cf/QPLSearch/index.cfm>.

Materials for installing the bird spikes shall meet the following requirements:

- Bolts shall be stainless steel conforming to ASTM F593-01 Group 2 (CW). Nuts shall be stainless steel conforming to ASTM F594-01 Group 2 (CW), and including a nylon insert (aircraft nut).
- Bird spikes shall be 4 inches to 6 inches in height, 4 inches to 6 inches in width and of a length adequate to cover the entire top of the sign. Bird spike bases shall be made of stainless steel. Bird spike tines shall be blunt and made of stainless steel.

### **Construction**

**00903.40 Construction** - Install the bird spikes according to the following:

- Examine the installation area and note any detrimental or hazardous work conditions. Notify inspector of detrimental work conditions.
- Do not proceed with installation until detrimental work conditions are corrected.
- Surface area shall be thoroughly cleaned and free of bird droppings, nesting materials, rust, peeling paint and other debris.
- Remove and repair articles that may damage bird spikes after installation, including overhead foliage, brush and loose structural members.
- Install bird spikes as recommended by the manufacturer.

### **Measurement**

**00903.80 Measurement** - The quantities of bird spikes will be measured on the length basis to the nearest ½ foot.

### **Payment**

**00903.90 Payment** - The accepted quantities of bird spikes will be paid for at the Contract unit price, per foot, for the item "Bird Spikes".

Payment will be made in full for furnishing and placing all materials, and for furnishing all equipment, labor and incidentals necessary to complete the work as specified.

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**SECTION 00905 - REMOVAL AND REINSTALLATION OF EXISTING SIGNS**

Comply with Section 00905 of the Standard Specifications.

**SECTION 00910 - WOOD SIGN POSTS**

Comply with Section 00910 of the Standard Specifications.

**SECTION 00920 - SIGN SUPPORT FOOTINGS**

Comply with Section 00920 of the Standard Specifications modified as follows:

**00920.80 Measurement** - Add the following to the end of this subsection:

The estimated quantities of materials for major sign supports are:

<b>Location</b>	<b>Material</b>	<b>Quantity</b>
Multi-post Breakaway	Concrete	1.2 cu. yd.
Triangular Base Breakaway	Concrete	4.1 cu. yd.
"EBO" 98+46.00 Rt.	Excavation	100 cu. yd.
	Backfill	66 cu. yd.
	Concrete	34 cu. yd.
	Reinforcement	4300 pound
	Miscellaneous Metal	1970 pound

**SECTION 00930 - METAL SIGN SUPPORTS**

Comply with Section 00930 of the Standard Specifications modified as follows:

**00930.01 Definitions and Terms** - Add the following definition to the list of definitions:

**Mast Arm Street Name Sign Mounts** - This group includes the frame members, attachment channel or bracket, steel bands or cables, and fasteners necessary to install a street name sign on a signal mast arm.

**00930.02 Working Drawings** - In the paragraph that begins "Working drawings are not...", delete the "Square Tube Sign Supports" bullet.

**00930.10 Materials** - In the paragraph that begins "Furnish galvanized bolts...", add the words "for Minor Sign Supports" after the words "job site".

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In the paragraph that begins "All components of...", replace the sentence that begins "Galvanizing shall conform to..." with the following sentence:

Except for square tube sign supports, galvanizing shall conform to the requirements of Section 02530. Galvanize square tube sign supports according to ASTM A653 G140.

**00930.80 Measurement** - Add the following to the end of this subsection:

The estimated quantities of structural steel are as follows:

<b>Item</b>	<b>Estimated Quantity (Pound)</b>
Exit Number Sign Mounts	160
Signal Pole Mounts	583
Adjustable Sign Mounts	224
Multi-post Breakaway Sign Support	789
Monotube Cantilever Sign Structures	18,500

**00930.90 Payment** - Replace the paragraph that begins "No separate or additional payment..." with the following paragraph:

No separate or additional payment will be made for route marker frames, wind bracing, pole clamps, stainless steel clamps, mast arm street name sign mounts, or special sign brackets.

**SECTION 00940 - SIGNS**

Comply with Section 00940 of the Standard Specifications modified as follows:

**00940.46 Inspection** - Replace the sentences that begin "Inspection will..." and "Testing for..." with the following sentence:

Inspection will be for conformance to the plans and Specifications, and for conformance to nighttime visibility.

**THE FOLLOWING SPECIAL PROVISION**

**00950**

**ARE FOR "ODOT" AND "CITY OF EUGENE"**

**INSTALLATIONS**

Training

**SECTION 00950 - REMOVAL OF ELECTRICAL SYSTEMS**

Comply with Section 00950 of the Standard Specifications modified as follows:

**00950.02 Definitions** - Add the following after the electrical systems definition:

The electrical system(s) to be removed under this Contract include:

All existing High mast Towers and their appurtenances within project limit (see Illumination Plans).

**00950.41 Removal and Abandonment** - Add the following:

All salvaged material including luminaires, poles, arms, signs, signal heads, pedestrian push buttons, all electronic equipment and cabinets not re-used shall remain the property of the City. Contact the City of Eugene Public Works Traffic Maintenance Signal Shop, 1820 Roosevelt Blvd, on normal working days, between the hours of 7:00 am and 2:00 pm. to arrange for the City of Eugene to haul this material. The Contractor shall call 682-4800, 24 hours prior to removal.

Add the following subsection:

**00950.42 Salvaging and Stockpiling Materials** - Removed High Mast Towers shall become Contractor's property and shall be removed from project limit.

**00950.90 Payment** - Add the following paragraph to the end of this subsection:

No separate or additional payment will be made for salvaging and stockpiling materials.

Payment for removal work of High mast Towers shall be made according to Method "B".

**THE FOLLOWING SPECIAL PROVISIONS**

**00960, 00965, 00970, AND 00996**

**ARE FOR "ODOT"**

**INSTALLATIONS**

Training

## **SECTION 00960 - COMMON PROVISIONS FOR ELECTRICAL SYSTEMS**

Use the following when performing work on the Illumination and Traffic Camera.

Comply with Section 00960 of the Standard Specifications modified as follows:

**00960.41(f) Disposition of Waste Materials** - Replace this subsection with the following subsection:

**00960.41(f) Disposal of Materials** - Dispose of all materials according to 00290.20.

Add the following subsection:

**00960.47 Wood Poles** - Submit wood pole designs according to 00960.02 including proposed ANSI 05.1 wood pole Class, guy anchor and span wire designs, and pole setting depths.

## **SECTION 00965 - CAMERA POLES AND FOUNDATIONS**

Section 00965, which is not a Standard Specification, is included in this Project by Special Provision.

**00965.00 Scope** - This work consists of furnishing and installing the structural portions of camera poles and pole foundations.

**00965.05 Design and Performance:**

**(a) Design** - Design poles and foundations according to the AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals 4th Edition" with all interim revisions. Design factors include:

- Basic wind speed (3 second gust)    110 mph
- Gust factor (G)                            1.14
- Importance Factor (Ir)                  1.0 (50 year recurrence interval)
- Fatigue Category                            II

Galloping and truck gust fatigue checks are not required.

Submit for review before fabrication, all engineered details and drawings which are not prepared by the State, but are required as shown. Submit stamped working drawings according to 00150.35.

Engineered drawings for the camera pole and mounting shall show all material descriptions, dimensioning, member size, and connection details. Include stress analysis calculations documenting that the pole meets all applicable codes, standards, and requirements that are shown.

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**(b) Performance Calculations** - Design the pole to support the specified camera and accessories. Include all portions of the effective projected area of the complete lowering system and camera equipment to be mounted on the pole along with the weight when designing the pole to meet the specified deflection performance criteria. The pole top deflection shall not exceed 1 inch in a 30 mph (non-gust) wind. The calculations shall include a pole, base plate, handhole, and anchor bolt analysis. The pole calculations shall be analyzed at the pole base, at 5 foot pole intervals/segments, hand hole locations, and at any other critical pole section. At each of these locations, provide the following information:

- The pole's diameter, thickness, section modulus, moment of inertia, and cross sectional area.
- The centroid, weight, projected area, drag coefficient, velocity pressure, and wind force of each pole segment.
- The axial force, shear force, primary moment, total moment, axial stress, bending stress, allowable axial stress, allowable bending stress, and combined stress ratio (CSR).
- The pole's angular and linear deflection.

The weight of a slip base pole and its attachments above the anchor plate shall be kept to a minimum and shall not exceed 1,000 pounds. Determine the total weight of the pole with all appurtenances attached to the pole and submit this with the design calculations.

Hand hole design requirements include:

- Calculations for the moment of inertia, section modulus, and area at the hand hole centerline that show that these values are equal to or greater than the full pipe section properties without a hand hole.
- Calculations that show that the net area of bar forming the hand hole frame is not less than 120% of pole cross section removed.
- Calculations that show that the combined stress ratio (CSR) for the steel pole at the centerline elevation of the hand hole is less than or equal to 0.60.

**Materials**

**00965.10 General** - Furnish materials meeting the following requirements:

Commercial Grade Concrete .....	00440
Reinforcement .....	00530

**00965.11 Metal Poles** - Provide metal poles meeting the requirements of 02920.31 except delete the reference to Section 00960.

**00965.12 Anchor Bolts, Nuts, and Washers** - Provide anchor bolts conforming to ASTM F1554 Grade 55 for fixed base foundations and ASTM A449 Type 1 for Slip Base foundations. Provide nuts and washer according to 02560.30. Galvanize anchor bolts, nuts, and washers according to 02560.40(a).

**00965.13 Base Plates** - Provide base plates conforming to ASTM A572. Hot dip galvanize base plates according to 02920.31(c).

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**Construction**

**00965.40 General** - Construct camera poles and foundations as shown or directed.

**00960.41 Foundations** - Construct foundations for camera pole foundations according to Section 00440. Place concrete:

- With a continuous pour.
- To the elevation shown or directed.
- With conduit ends and anchor bolts held securely in proper vertical position, to proper height, with a manufacturer's recommended template until the concrete sets.

Make no adjustment of anchor bolts after concrete has set. Any adjustment made may be cause for rejection of the foundation.

Maintain rebar clearances during concrete pour.

Set forms square and true to line and grade. Construct forms of rigid materials that remain in position until the concrete has set. Use a steel template to accurately locate the anchor bolts and hold them plumb and in proper alignment. Out-of-position anchor bolts and anchor bolts installed more than 1H:40V out of plumb are cause for rejection of the foundation. Field bending of anchor bolts and field modification of the base plate are not allowed.

Finish tops of foundations to roadway, sidewalk or curb grade, or as directed.

Finish exposed concrete foundations to present a smooth, neat appearance. Fill all holes.

Where breakaway bases are specified, the post stub projection shall not exceed the limits shown.

Where obstructions prevent the construction of planned foundations, construct the foundations in the location directed. Any extra cost due to the site change will be paid according to Section 00196.

**00965.42 Metal Camera Poles** - Camera poles include the pole shaft, hand holes, base plate, pole top tenon plate, and anchor bolt assembly. Poles up to 50 feet in length shall be one piece construction. Poles greater than 50 feet in length shall be of two piece construction. Pole shafts shall be round, 8 sided, 12 sided, or 16 sided with a constant linear taper of 0.14 inch per foot, and contain only one longitudinal seam weld. Circumferential welded tube butt splices and laminated tubes are not permitted.

**(a) Welding** - Weld steel structures according to sections 1 through 8 of the American Welding Society (AWS) D1.1 Structural Welding Code. Tackers and welders shall be qualified in accordance with the code. Tube longitudinal seam welds shall be free of cracks and excessive undercut, performed with automatic processes, and be visually inspected. Magnetic particle inspect longitudinal welds that are suspected to contain defects. Ultrasonically or radiographically inspect all circumferential butt-welded pole and arm splices. Longitudinal seam welds within 6 inches of complete penetration pole to base plate welds shall be complete penetration welds.

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**(b) Hand Holes** - The inside dimensions of the hand hole shall be 5 inches wide and 28 inches tall. The hand hole location and all other dimensions shall be as shown. The hand hole shall have a tapped hole for mounting the portable winch.

**(c) Pole Top Tenon** - The pole shall have a custom plate mounted tenon that allows the field modification of the arm/camera orientation up to 360 degrees. The tenon shall have mounting holes and slot as required for the mounting of the camera-lowering system. The tenon shall be of dimensions necessary to facilitate camera lowering device component installation. Each slot shall be parallel to the pole centerline for mounting the lowering device.

**(d) Base Plates** - Integrally weld the base plates to the tubes with a telescopic welded joint or a full penetration butt weld with backup bar.

**(e) Grounding Connection** - For standard four-bolt anchor base poles, provide a 1/2 inch, Type 308, 309 or 310 stainless steel stud on the inside of the shaft. Locate the stud directly opposite and level with the handhole in the pole. Attach grounding electrode conductors and bonding conductors to the stud with a grounding wire clamp, "acorn style".

**(f) Deviation from Straightness** - After the poles are delivered to the jobsite, and before they are erected on the foundations, the Contractor may be required to check any or all poles for deviation from straightness according to the following:

**(1) Deviation in One Plane and One Direction Only** - A straight line joining the surface of the pole at the base and the same surface of the pole at the top shall not be more than 1/2 inch from the surface of the pole for each 10 feet of length from the closest of these points. The opposite surface shall meet the same requirement.

**(2) Deviation in Any Plane** - A straight line connecting the midpoint of the pole at the base, with the midpoint at the top, shall not pass through the surface of the pole at any intermediate point.

Any pole not meeting these requirements will be rejected. If more than 25% of the poles fail to meet these requirements, sufficient cause exists to reject the entire shipment of poles for the Project.

**(g) Repair of Hot-Dip Galvanizing** - Repair damaged hot-dip galvanizing according to ASTM A 780, Annex A1.

**00965.43 Erecting Metal Camera Poles** - Erect metal camera poles on concrete foundations according to the recommendations of the pole manufacturer and as shown. Exercise reasonable care to prevent marking the finish and damaging poles.

Bolt protrusion on slip base poles shall not interfere with the breakaway action of pole. File sharp edges smooth, and paint the top of any steel bolt that has been cut off.

**(a) Pole Alignment** - Erect traffic camera poles at a true vertical.

**(b) Assembly of Supports and Bolt Tightening** - Nuts shall have full thread engagement.

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After foundation concrete strength and curing requirements are satisfied and after inspection of the foundation, pole installation may begin.

Lubricate anchor rods, high-strength bolts, and nuts according to 02560.70. Lubricated fasteners that accumulate dirt shall be cleaned and relubricated according to 02560.70.

**(1) Anchor Bolts for Fixed Base Camera Pole Supports** - Lift the pole into position on the leveling nuts and washers. Make sure all leveling nuts and washers are in full contact with the base plate.

Install washers and lubricated top nuts, and bring to a snug tight condition. Snug tight is defined as the condition when all plies of the connection are in firm contact, and can be obtained by the full effort of a worker on the end of a 12 inch long wrench. Several passes may be required to obtain uniform snug tightness. As a safety measure, provide crane support of the pole until anchor bolt tightening is completed.

Mark the position of each turned element (nut or bolt head) with a felt tip pen or similar marker. Rotate each top nut past snug tight by the amount shown in paragraph "(4)" below. Several passes may be required to obtain uniform final tightness. "Cheater" bars or slugging wrenches are allowed if required for large diameter anchor bolts.

**(2) Anchor Bolts for Slip Base (Break-away) Camera Pole Supports** - Install the anchor plate on the leveling nuts and washers. Make sure all leveling nuts and washers are in full contact with base plate.

Install washers and lubricated top nuts, and bring to a snug tight condition. Snug tight is defined as the condition when all plies of the connection are in firm contact, and can be obtained by the full effort of a worker on the end of a 12 inch long wrench. Several passes may be required to obtain uniform snug tightness.

When all anchor bolts are snug tight, proceed with the "Slip Base Bolting Procedure" as shown. When the "Slip Base Bolting Procedure" is complete, final anchor bolt tightening may begin. As a safety measure, provide crane support of the pole until anchor bolt tightening is complete.

Mark the position of each turned element (nut or bolt head) with a felt tip pen or similar marker. Rotate the top nut of each anchor bolt past snug tight by the amount shown in paragraph "(4)" below. Several passes may be required to obtain uniform final tightness. "Cheater" bars or slugging wrenches are allowed if required for large diameter anchor bolts.

**(3) High-Strength Bolt Connections** - Do not reuse galvanized high strength bolts. Other high strength bolts may be reused, if approved, but not more than once. Retightening previously tightened bolts that may have been loosened by the tightening of adjacent bolts will not be considered a reuse. Provide all high-strength bolts with hardened flat washers under the element turned during tightening.

If arms or appurtenances are attached after pole erection, support them until bolts are snug tight.

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Install high-strength bolts to a snug tight condition. Snug tight is defined as the condition when all plies of the connection are in firm contact, and can be obtained by the full effort of a worker on the end of a 12 inch long wrench. Several passes may be required to obtain uniform snug tightness.

Mark the position of each turned element (nut or bolt head) with a felt tip pen or similar marker. Rotate each top nut past snug tight by the amount shown in paragraph "(4)" below. Several passes may be required to obtain uniform final tightness.

**(4) Final Tightening** - Required final tightening of anchor bolts and high-strength bolts is shown in the following Table:

<b>Connection Type</b>	<b>Rotation Past Snug Tight</b>
ASTM A 449 Type 1 Anchor Bolts	60° (1/6 turn)
ASTM F 1554 Gr. 55 Anchor Bolts	60° (1/6 turn)
ASTM A 325 Arm Connection Bolts	60° (1/6 turn)

**(5) Bolt Inspection** - The Engineer will observe the installation and tightening operations to insure that proper procedures are followed. All inspections will be visual and no testing will be conducted.

**Measurement**

**00965.80 General** - No measurement of quantities will be made for work performed under this Section.

**Payment**

**00965.90 General** - The accepted work performed under this Section will be paid for at the Contract Lump Sum amount for the item "Camera Poles and Foundations".

Payment will be payment in full for furnishing and installing all materials, and for furnishing all equipment, labor, and incidentals necessary to complete the work as specified.

**SECTION 00970 - HIGHWAY ILLUMINATION**

Comply with Section 00970 of the Standard Specifications modified as follows:

Add the following subsection:

**00970.50 Grounding and Bonding** - In addition to the requirements of 00960.50 and 00962.50, ground and bond metal illumination poles and high mast towers according to the following:

Install 1 inch non-metallic conduit from the pole base to the concrete and polymer concrete junction box at each pole. Install a ground rod in each junction box and install No. 6 AWG copper ground wire from the ground stud in the pole base to the ground rod in the junction

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box. The ground rod may be installed in the same junction box that provides illumination circuitry to the pole, however, provide a separate and independent conduit for the ground wire. Bond all metal conduit and metal junction box covers, if used, together to the ground rod.

**00970.80 Measurement** - In the paragraph that begins "The estimated quantities of...", replace the sentence that begins "The estimated quantities of..." with the following sentence:

The quantities of lighting poles and arms are listed on the Project plans.

## **SECTION 00996 - TRAFFIC CAMERA SYSTEM**

Section 00996, which is not in the Standard Specifications, is included in this project by special provision.

**00996.00 Scope** - This work consists of furnishing and installing a new traffic camera, including field equipment such as the camera assembly, pan/tilt units, and lowering device.

**00996.01 Overview** - The traffic surveillance video will enable traffic personnel to remotely monitor the freeway. The video will eventually be transmitted to ODOT's Traffic Operations Center (TOC). The transmission of the video signal back to the TOC is outside the scope of this contract.

### **00996.02 Required Submittals:**

**(a) General** - Within 30 days after the contract is awarded, submit to the Engineer a complete listing of all major components of the system and operational description for approval. Include the manufacturer's name, model numbers, catalog sheets and/or other descriptive literature of proposed materials. The catalog sheets and literature shall include technical data, physical properties and operational description in sufficient detail to demonstrate the equipment meets these specifications. Submit installation details for the camera cabinet and schematic drawings showing all proposed materials, dimensions, part make, model, and quantity.

**00996.03 Quality Assurance** - Except as provided below, each electrical product shall be listed for intended use in one of the following:

- Underwriters Laboratory Electrical Appliance and Utilization Equipment Directory
- Underwriters Laboratory Construction Materials Directory

Each product shall bear the listing organization's label. In the absence of a label, provide documentation verifying product listing.

For products not listed in the above directories, provide evidence that the product has been tested and certified by a nationally recognized laboratory, in accordance with 29 CFR 1910.7. The following are acceptable evidence:

- OSHA documentation that demonstrates recognition

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- Laboratory documentation that verifies testing in accordance with a recognized national code or standard

**00996.04 Regulations, Standards, and Codes** - The following documents and others referenced therein form part of the Contract to the extent designated in this Specification.

Code of Federal Regulations (CFR)

Title 29, Part 1910.7	OSHA Recognition Process for Nationally Recognized Testing Laboratories
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Institute of Electrical and Electronics Engineers, Inc. (IEEE)

C62.41 - 1991	Recommended Practice on Surge Voltages in Low Voltage AC Power Circuits
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National Fire Protection Association (NFPA)

70 - 2008	National Electrical Code
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Underwriters Laboratories (UL)

Electrical Appliance and Utilization Equipment Directory - 1998

Electrical Construction Equipment Directory - 1998

50 - 1996	Enclosures for Electrical Equipment
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489 - 2002	Molded-Case Circuit Breakers, Molded-Case Switches, and Circuit-Breaker Enclosures
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498 - 2001	Attachment Plugs and Receptacles
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508A - 2001	Standard for Industrial Control Panels
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943 - 1993	Standard for Safety for Ground-Fault Circuit Interrupters
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1059 - 1993	Terminal Blocks
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1449 - 1996	Transient Voltage Surge Suppressers
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1950 - 1995	Safety of Information Technology Equipment, Including Business Equipment
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**Materials**

**00996.10 General** - Furnish materials meeting the following requirements:

**00996.11 Video Cable** - Video cable is used between the camera housing and the camera enclosure for the NTSC signal. Provide RG-59 coaxial cable, 75 ohms with 18 AWG solid, bare copper center conductor with 95 percent or greater bare copper braided shield. Video

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cable shall be suitable for wet locations. Video cable may be hybrid type combining the coaxial video cable and multi-conductors meeting 00996.12 and 00996.13 in one single cable assembly. Install nickel plated body, for corrosion resistant, BNC connector on end of cable.

**00996.12 PTZ Cable** - Provide three pair, polyethylene insulated stranded copper 18 AWG twisted shielded pair with a 20 AWG drain wire. Shield material shall be aluminum polyester with a PVC outer jacket.

**00996.13 Camera Power Cable** - Provide one pair of UL 83 14 AWG THHW/THWN, copper stranded conductors of type and size shown, otherwise size per camera manufacturer's recommendations.

**00996.14 Camera Grounding and Bonding** - Provide one 8 AWG bonding conductor.

**00996.15 Fiber Optic Assemblies and Pigtails**

**(a) General** - Fiber optic assemblies and pigtails shall be made of fiber meeting the following performance specifications:

Fiber Characteristic Table

Parameters	SingleMode
Type:	Step Index
Core diameter:	8.3 $\mu\text{m}$ (nominal)
Cladding diameter :	125 $\mu\text{m} \pm 1.0 \mu\text{m}$
Core to cladding offset:	$\leq 1.0 \mu\text{m}$
Coating:	dual layer, UV-cured acrylate strippable mechanically or chemically
without damaging	fibers
Optical fibers:	doped silica core with concentric silica cladding
Coating diameter:	250 $\mu\text{m} \pm 15 \mu\text{m}$
Cladding non-circularity defined as: [1-(min. cladding dia÷max. cladding dia.)]x100	$\leq 2.0\%$
FOP cable:	all dielectric, gel-filled, duct-type
Proof/Tensile Test:	345 MPa, min
Attenuation at 1310 nm and at 1550 nm:	$\leq 0.4 \text{ dB/km}$
Test cable in accordance with:	EIA-455-25 (FOTP-25) EIA-455-33 (FOTP-33 Condition II) EIA-455-41 (FOTP-41) EIA-455-81 (FOTP-81) EIA-455-82 (FOTP-82) EIA-455-104 (FOTP-104 Conditions I and II)
Test optical fiber in accordance with:	EIA-455-3A (FOTP-3)
Attenuation at the Water Peak:	$\leq 2.1 \text{ dB/km @ } 1383 \pm 3 \text{ nm}$
Chromatic Dispersion	
Zero Dispersion Wavelength:	1301.5 to 1321.5 nm
Zero Dispersion Slope:	$\leq 0.092 \text{ ps}/(\text{nm}^2 \cdot \text{km})$
Maximum Dispersion:	$\leq 3.3 \text{ ps}/(\text{nm}^2 \cdot \text{km})$ for 1285 - 1330 nm

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Cut-Off Wavelength:	$\leq 0.092 \text{ ps}/(\text{nm}^2 \cdot \text{km})$ for 1550 nm
Mode Field Diameter (Petermann II)	$< 1250 \text{ nm}$ $9.3 \pm 0.5 \mu\text{m}$ at 1310 nm $10.5 \pm 1.0 \mu\text{m}$ at 1550 nm

**(b) Color Coding** - Each fiber shall be distinguishable from others in the same tube or cable by means of color coding according to the following:

- |                |                 |
|----------------|-----------------|
| 1. Blue (BL)   | 7. Red (RD)     |
| 2. Orange (OR) | 8. Black (BK)   |
| 3. Green (GR)  | 9. Yellow (YL)  |
| 4. Brown (BR)  | 10. Violet (VL) |
| 5. Slate (SL)  | 11. Rose (RS)   |
| 6. White (WT)  | 12. Aqua (AQ)   |

These colors shall be targeted in accordance with the Munsell color shades and shall meet EIA/TIA-598.

The color formulation shall be compatible with the fiber coating and the buffer tube filling compound, and be heat stable. It shall not fade, smear, or be susceptible to migration and it shall not affect the transmission characteristics of the optical fibers and shall not cause the fibers to stick together.

**(c) Pigtails** - Pigtails are a short optical fiber with a connector on a single end. Pigtails shall be of simplex (one fiber) construction in 900  $\mu\text{m}$  tight buffer form surrounded by aramid for strength with a PVC jacket with manufacturer identification information and a nominal outer jacket of 3 mm. Simplex cable jackets shall be yellow in color. All pigtails shall be factory terminated and tested and a least six feet in length. Provide a pigtail cable consisting of twenty four individual fibers for termination at the fiber distribution panel.

Pigtails will be spliced to the backbone fiber optic cable by others.

**(d) Connectors** - Connectors shall be ceramic ferrule LC type for single mode fiber optic cabling. Connector body housing shall be glass reinforced polymer. The associated coupler shall be of the same material as the connector housing. Each connector shall not exceed 0.75 dB loss as specified by EIA/TIA 568-B.3.

**00996.16 Receptacle** - General purpose, UL 498 or NEMA WD 1 5-15R, duplex, white, specification grade, rated 15A, 125 V, 3 wire, grounding type, with screw terminals. Mount within receptacle box and install cover plate. Receptacle is to provide power to the power strip.

### Equipment

**00996.20 Camera, Lens, Housing and Pan/Tilt** - The camera, lens, housing, and pan/tilt assembly shall integrate to form a complete functioning system. The minimum performance specifications for the camera and lens are:

Video Signal Type:	NTSC
Image Sensor:	$\frac{1}{4}$ " CCD
Pixels:	724 min. Horizontal by 494 Vertical

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Horizontal Resolution:	470 TV lines
Lens:	f=4.1~68.4 mm optical minimum
Zoom:	18X optical minimum, 12X digital
Zoom Speed:	5.8 seconds maximum
Horizontal:	47 degrees at 4.0mm wide zoom
Angle of View:	3 degrees at 68.4mm minimum telephoto zoom
Focus:	Automatic with manual override
Max. Sensitivity at 35 IRE:	0.08 lux minimum at 1/2 sec shutter
Shutter Speed:	Automatic with manual override 1/2~1/30,000
Iris Control:	Automatic with manual override
Synchronization:	Internal/AC line lock
Signal to Noise Ratio:	Greater than 48 dB
Gain Control:	Automatic/Off
Video Output:	1.0 Vp-p (75 ohms composite)
Video Connector:	BNC bulkhead on rear of camera
White Balance:	Automatic with manual override
Power:	24V AC, 60 Hz (nominal)
Dome Pendant Construction:	316 SST or Steel (painted)
Finish Color:	White
Lower Dome Construction:	Acrylic
Pan Movement:	360 degrees continuous pan rotation
Vertical Tilt:	Unobstructed 2 degrees to -92 degrees
Manual Pan Speed:	0.1 to 80 degrees per second minimum
Preset Pan Speed:	250 degrees per second minimum
Manual Tilt Speed:	Variable, 0.1 to 200 degrees per second
Present Tilt Speed:	200 degrees per second
PTZ Protocol:	Pelco's P&D
Communication:	RS-485
Light Attenuation:	Clear, zero light loss
Cable Entry:	1-1/2" (nominal) NPT connection
Operating Temperature:	-45 to 50 degrees C
Effective Projected Area:	1.2 ft <sup>2</sup>
Power:	24 VAC, 60 Hz (nominal)
Environmental:	NEMA Type 4X rated, sunshield, fan, and heater included
Interior Pressurization:	Dry nitrogen gas, dual Schraeder valves for purging and pressurization, 8 lb/in <sup>2</sup> minimum
Listings:	UL, FCC Class B
Alarm Inputs:	4

The Camera Housing and Pan/Tilt assembly shall be Pelco's Spectra III, Honeywell/Ultrak's UltraDome KD6-NP or approved equal.

**00996.21 Camera Power Supply** - Provide a power supply for the PTZ and camera. The power supply shall provide surge protection for the camera power, video and PTZ control connections. The supply shall convert the incoming 120V AC, 60 Hz to 24V AC output. The entire assembly shall be housed in a NEMA Type 4 rated enclosure and mounted within the camera cabinet.

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**00996.22 Fiber Distribution Panel:**

**(a) General** - Provide an EIA 19" rack style fiber distribution panel within the traffic camera cabinet. The fiber distribution cabinet shall house at least one splice tray. The fiber distribution panel shall be capable of accepting twenty four LC connectors on the front face. Fiber optic cable access shall have a rubber grommet or similar material to prevent the cable from coming into contact with the fiber distribution panel's frame. The fiber distribution panel shall be hinged or have a coupler plate to provide easy access for maintenance purposes. The fiber distribution panel shall have a storage area for accommodating excess fiber optic cable storage assuring the fibers do not exceed a two inch bend radius.

**(b) Splice Tray** - The fiber distribution panel shall house at least one splice tray capable of accommodating a minimum of twenty four fusion splices and must allow for a minimum bend radius of two inches.

**00996.30 Video Encoder** - The camera cabinet shall come equipped with an MPEG-2/MPEG-4 video encoder for transmitting video over IP/Ethernet networks. The encoder shall also be capable of transmitting serial data, such as pan-tilt-zoom, over the same network. The video encoder shall be capable of streaming multiple video feeds to different IP addresses using multi-unicasting protocol. Each video stream shall be user selectable for varying the resolution. The video encoder shall allow for the transmission of three high quality video streams and one lesser quality video stream.

The encoder/switch shall meet the following minimum requirements:

Video Inputs:	1V peak to peak (75 ohms), NTSC
Video Connector:	BNC
Frame Rate:	30 fps NTSC
Encoding:	MPEG-2 and MPEG-4
Resolution:	H: 720, V: 480
Bit Rate:	Variable, up to 8 Mb/s
Other:	JPEG capture supported
Networking	
Physical:	100Base-TX (IEEE 802.3)
Connector:	RJ-45
Video Transport:	UDP/IP unicast and multicast
Protocols:	SNMP v2, UDP, IP, TCP, HTTP, FTP
Terminal Server	
Data Types:	RS-232, RS-422, RS-485
Number of Data Ports:	2 minimum
Data Connector:	RJ-45
Bit Rate:	Up to 115 kbps
Mounting:	Rack
Operating Temp Range:	-29° to 165° F
Storage Temp Range:	-40° to 165° F
Relative Humidity:	0 to 95% non-condensing
Power:	12V DC from 120V/12V DC converter

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The video encoder shall be Teleste's MPC-E4, Optelecom-nkf's Siquira C-50 E-MC, or approved equivalent.

**00996.31 Video Decoder** - Provide one video decoder and power supply matching the video encoder submitted and approved. Provide the video decoder to the Project Manager to be installed by others.

**00996.32 Surge Protection Device** - Provide parallel type surge protection which complies with UL 1449 on the incoming service into the camera cabinet. The surge protection device shall have a minimum surge current rating of 39,000 amperes minimum. The maximum line to neutral Suppressed Voltage Rating (SVR) shall be 330V. The energy rating of the device shall be 420 joules or more.

**00996.36 Power Strip** - A 19" EIA rack power strip shall be installed in the camera cabinet for providing power to the video encoder equipment and ODOT's networking equipment.

Voltage (nominal):	120 VAC, 60 Hz
Current:	15A
NEMA Receptacles (5-15R):	12 total; 8 rear, 4 on the front (minimum)
Mounting:	Rack mounted, 19"
Listing:	UL

**00996.37 Camera Cabinet** - Furnish and install a ground mounted traffic style (332) cabinet with foundation as shown. The cabinet shall be UL 50 Type 3R listed. The cabinet shall consist of Housing #1 and Mounting #1 Cage assemblies as defined in ODOT's Standard Specification for Microcomputer Signal Controller. Provide the housing requirements listed in Section 2 with the exception of the police panel. The cabinet shall house the video encoder, power strip, fiber distribution panel and associated camera equipment. The camera cabinet assembly shall be assembled and listed by a certified UL 508A panel shop or have the final assembly certified by an approved National Recognized Testing Laboratory.

The cabinet shall come equipped with a filtered, forced air ventilation system.

The cabinet shall have dataline surge protection meeting IEEE C62.41 for the Pan/Tilt/Zoom data signals.

All incoming 120V circuits shall terminate on terminal blocks. All terminal blocks shall be UL 1059 listed. For No. 10 AWG conductors or smaller, use sectional, double terminal, barrier type terminal blocks with binder screw terminals. Terminal ampacities shall be equal to or greater than conductor ampacities. For No. 8 AWG conductors or larger, use either one-piece for factory assembled, sectional, barrier type terminal blocks with box lug terminals having a pressure plate between screw and conductor. Use terminals of the correct size for the conductor to be connected.

Bus bars shall be sized to accommodate required connections and shall be amperage rated for use.

Incoming power shall be protected by circuit breakers sized appropriately. All circuit breakers shall be UL 489 listed. All equipment shall be protected by branch circuit breakers.

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**00996.40 Camera Lowering System:**

**(a) General Description** - The camera lowering system shall be designed to support and lower a traffic surveillance camera, lens, Pan/Tilt mechanism, associated cabling and connectors, and other supporting field components without damage or causing degradation of camera operations. See the Bridge Engineering plans for the description of the camera pole. The lowering system shall consist of a suspension contact unit, divided channel support arm, and a pole adapter for attachment to a pole top junction box and camera connection box. The divided support arm and receiver brackets shall be designed to self align the contact unit with the pole centerline during installation and insure the contact unit cannot twist under high wind conditions.

**(b) Lowering Tool** - The camera lowering system shall be operated by the use of a portable lowering tool. The tool shall consist of a metal frame winch assembly with a cable, a quick release connector, and adjustable clutch and a variable speed heavy duty electric motor. This tool shall be compatible with accessing the support cable through the hand hole of the pole. The lowering tool shall have a reduction gear for ease of service and operation. The tool shall be equipped with a positive braking mechanism to secure the cable reel during raising and lowering operations and to prevent freewheeling.

**(c) Materials** - All pulleys shall have sealed, self lubricating bearings. The lowering cable shall be stainless steel cable with a minimum breaking strength of 1700 lbs.

All electrical and video connections between the fixed assembly and the lowering portion of the connection block shall be protected from exposure to the weather by a waterproof seal. The electrical connections (contacts) shall be designed to minimize loss. The ground wire or pin shall be the last electrical connection to disengage when servicing.

**(d) Suspension Contact Unit** - Provide a suspension contact unit that allows the camera, Pan/Tilt Unit and dome assembly to easily separate from the camera pole for lowering purposes. The only cable permitted to move within the pole or lowering device during lowering or raising shall be the stainless steel lowering cable. There shall be a locking mechanism between the fixed and moveable components. When latched, all weight shall be removed from the lowering cable. The suspension contact unit shall have a heavy duty cast tracking guide to allow latching in the same position every time. The suspension contact unit shall be housed in a weatherproof enclosure with a gasket to seal the interior.

**(e) Factory Assistance** - The camera lowering system manufacturer shall furnish a representative to assist the Contractor with the assembly and testing of the Traffic Camera System. The manufacturer shall submit to the Engineer documentation detailing the Contractor has been instructed on the installation, operation, and performance of the camera lowering system prior to installation. The manufacturer shall also train ODOT maintenance staff on the use of the system.

**Construction**

**00996.50 Installation** - Install materials and equipment as shown on the plans, according to these specifications, and in accordance with the manufacturer's instructions.

**00996.55 Identification and Marking** - All cables and wiring between subsystems shall be clearly and permanently labeled. All conductors shall be marked by means of imprinted

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tubular white or yellow plastic wire markers at termination points within 51 mm of wire terminations. Marker nomenclature shall be visible without moving wires or markers.

**00996.60 Nameplates** - All major components within the cabinet assemblies shall be identified by a nameplate. The nameplates shall be 2 mm thick laminated plastic stock with white surface and black core. Letter height of the inscription shall be 6 mm minimum.

**00996.65 Covers and Guarding** - Provide covers or guarding for live parts of terminations on circuits of 50 V or more to ground.

**00996.70 Site Acceptance Testing** - The Contractor shall demonstrate the Pan/Tilt/Zoom functionality, camera lowering functionality, and video quality performance for each camera site. The Contractor shall present an acceptance test to the Engineer for approval at least 30 days prior to scheduling the test.

**00996.75 Warranty** - Provide a one year Contractor warranty according to 00170.85(b-1). This Contractor warranty does not replace or reduce other warranties, including manufacturer's warranties that are longer than one year.

**Measurement**

**00996.80 Measurement (Lump Sum Basis)** - There will be no separate measurement of work done under this Section.

**Payment**

**00996.90 Payment (Lump Sum Basis)** - The following items will be paid for at the Contractor lump sum amount:

**a) CCTV Camera Cabinet** - Payment for the bid item "CCTV Camera Cabinet", accepted in place, includes video encoder and decoder, camera cabinet, power strip, fiber distribution panel and associated cabling, lights, fan assembly, circuit breakers, receptacles, cabinet assemblies, incidental materials, and installation as shown on the plans.

**b) CCTV Camera Equipment** - Payment for the bid item "CCTV Camera Equipment", accepted in place, includes the PTZ camera, camera lowering device, and acceptance testing.

**c) Electrical Work for CCTV Camera System** - Payment for the bid item "Electrical Work for CCTV Camera System" includes conductors, circuit breakers, junction boxes and hand holes, conduit, horizontal directional drilling and trenching, and any backfill needed. Work shall be completed as shown on the plans, ITS-766 thru ITS-770, and per Special Provision 00960. Payment will be in full for all materials, equipment, tools, labor and incidentals necessary to complete the work.

**THE FOLLOWING SPECIAL PROVISIONS**

**00960, 00962, 00963, AND 00990**

**ARE FOR 'CITY OF EUGENE'**

**INSTALLATIONS**

Training

**SECTION 00960 - COMMON PROVISIONS FOR ELECTRICAL SYSTEMS**

Use the following when performing work on the Traffic Signals.

Section **00960 - Common Provisions for Electrical Systems** has been replaced in its entirety by the following:

**Description**

**00960.00 Scope** - This work consists of furnishing and installing materials for electrical systems and for modifying existing systems.

**00960.01 Regulations, Standards, and Codes** - All electrical materials and workmanship shall conform to the following standards where applicable:

- American National Standards Institute (ANSI)
- International Municipal Signal Association (IMSA)
- Underwriter's Laboratories, Inc. (UL)
- National Electrical Manufacturers Association (NEMA)
- National Electrical Safety Code (NESC)
- National Electrical Code, Oregon Amended (NEC)
- Standards of the American Society for Testing and Materials (ASTM)
- Local laws

Wherever reference is made to any of the standards mentioned above, the reference means the code, order, or standard in effect on the date the Project is advertised unless otherwise shown or specified in the Specials Provisions.

Do not begin installations until all permits are obtained and copies are given to the Engineer.

**00960.02 Equipment List and Drawings** - Within 30 calendar days after execution of the Contract, submit at least three copies of:

- A list of materials the Contractor proposes to install. List all material shown or specified by manufacturer's name, size, and identity number of each item. Supplement the list with other data, including but not limited to, detailed scale drawings.
- Wiring diagrams for all circuits and any nonstandard or special equipment.
- Brochures, technical bulletins, parts lists, service instructions, working drawings and other technical information relative to products proposed for use on the Project.
- Use materials from the current list of acceptable materials. The updated list is available from the Engineer. Mark the list according to the instructions on it. The list eliminates the need for most catalogue cutsheets.

All engineered details and drawings which are not prepared by the Agency, but are required in the Contract Documents, shall be submitted for review prior to fabrication. Submit stamped designs, details, plans, and calculations according to 00150.35.

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Upon completion of the installation, submit six copies of all changes made from the original plans. The information furnished shall include all modifications made and shall represent the material installed and in operation. It shall be sufficiently detailed to enable maintenance forces to replace or repair any part of the Project under routine or emergency maintenance by direct reference.

**Materials**

**00960.10 Materials** - Furnish electrical materials meeting the requirements of Section 02920.

Furnish concrete meeting the requirements of Section 00440.

**MATERIALS INDICATED ON THE PLANS TO BE FURNISHED BY THE CITY SHALL BE PICKED UP AT THE CITY OF EUGENE PUBLIC WORKS TRAFFIC MAINTENANCE SIGNAL SHOP, 1820 ROOSEVELT BLVD. (682-4800) BETWEEN THE HOURS OF 7 A.M. AND 2 P.M. CALL 48 HOURS IN ADVANCE OF DESIRED PICK UP TIME.**

**Labor**

**00960.30 Licensed Electricians** - According to the Oregon Administrative Rule 918-282-0120(1), every person engaged in the installation of electrical equipment and wiring systems shall possess a valid Oregon Electrical Supervising or Journeyman's License, or be registered as an Electrical Apprentice. Every person who installs electrical systems on the Project shall submit a copy of his or her electrical license or apprentice registration to the Engineer prior to performing any work.

**Construction**

**00960.40 General** - The Agency will continue normal maintenance and operations of the existing systems including the furnishing of electrical energy.

**00960.41 Excavation:**

**(a) General** - Remove and replace sidewalks, paved surfaces, and other materials as needed. Place the conduit under curbs without disturbing curbs. Replace and finish all surfaces to correspond with the existing surfaces. Restore all disturbed landscaping and underground systems to original condition. Use hand excavation if directed.

Excavate trenches to lines, grades and cross sections established or approved. Furnish, place, and remove any shoring required to prevent caving of walls.

When excavating in paved areas, cut with an approved pavement cutting saw to a depth of at least 2 inches along the neat boundaries of the area to be removed. Cut sharp and well-defined pavement edges with no evidence of cracking, delaminating, or stressing.

**(b) Excavation for Pedestal and Cabinet Foundations** - Make all excavations to the neat lines of the foundations. Hand excavation may be required. Place the concrete directly against the sides of the excavation in undisturbed or well-compacted material.

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**(c) Excavation for Conduit** - Excavate and backfill conduits as follows:

Minimum cover depth of all conduits is 30" measured from top of conduit to finish grade.

Where possible, conduit shall be pushed under existing curbs, sidewalks or driveways without cutting the concrete. Where conduits have been pushed, backfill shall be approved self-compacting material.

**(d) Conduit under Paved Surfaces** - Install conduit under all paved surfaces by horizontal directional drilling or the open trench method.

**(1) Horizontal Directional Drilling** - Drilling shall not "hump" or deform the pavement and shall be guided. Keep drilling pits at least 2 feet from the edge of pavement unless otherwise authorized in writing. Do not use water to the extent that the pavement might be undermined or subgrade softened. Sand bedding and marking tape are not required with this method.

**(2) Open Trench** - If the open trench method is used, do the following:

**a. Width** - Hold trench width to a practical minimum.

**b. Pavement Cuts** - Cut the existing pavement as required in 00960.41(a).

**(e) Conduit under Railroad Tracks** - Install conduit inside a galvanized, rigid metal conduit at the depth required by the governing railroad company. Construct so that conduit ends are at least 30 feet beyond the centerline of every track or other distance as required by the railroad.

**(f) Disposal of Materials** - Dispose of all materials according to 00290.20 and 00950.41.

**(g) Backfill** - Use an approved sand blanket, selected general backfill meeting the requirements of 00330.13, selected granular backfill meeting the requirements of 00330.14, or concrete meeting the requirements of Section 00440 as follows:

Concrete, conduit or other electrical appurtenances shall not be placed such that they contact existing utilities. Where separation between the installed item and an existing utility is required, install a 1" thick polystyrene thermal insulation separator between the item and the utility. Other methods for separation shall be used as required by the owner of the utility.

**(1) Rigid Nonmetallic Conduit** - For rigid nonmetallic conduit, provide bedding, cover, and backfill according to the following:

**a. Bedding** - Place 2 inches of sand blanket in trench bottom before placing conduit.

**b. Cover** - Cover conduit with 2 inches of additional sand blanket.

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**c. Backfill** - Backfill according to the following:

**1. New Roadway and Shoulder** - Place selected granular backfill material in layers not greater than 6 inches thick. Compact the selected granular backfill material according to 00405.46(c-2).

**2. Existing Roadway and Shoulder** - Backfill all conduit trenches with CLSM according to Section 00442. Place to an elevation 6 inches below the surface of the existing pavement or to the bottom of the existing pavement, whichever is lower. When this method is used the sand blanket may be omitted.

**3. Unpaved Areas** - Place selected granular backfill material in layers not greater than 6 inches thick. Compact the selected granular backfill material according to 00405.46(c-2) to the top of trench, surrounding ground level or upper limit of excavation. The sand blanket requirement of a. and b. above may be deleted as approved when excavated material does not contain large, angular stones that could fracture or dent conduit.

**d. Surface Restoration** - Surface restoration shall be according to Section 00495.

**(2) Rigid Metal Conduit** - For rigid metal conduit, provide backfill according to 00960.41(g-1-c) and 00960.41(g-1-d) except the sand blanket is not required.

**00960.42 Conduit:**

**(a) General** - Conduit runs shown on the plans are for bidding purposes only. Locations may be changed to avoid obstructions. Larger size conduit than specified may be used at the option and cost of the Contractor. Use the same size conduit for the entire length, outlet to outlet.

Use non-metallic or rigid metal conduit as shown or specified. Where rigid metal conduit is shown on the plans, PVC conduit will not be accepted as a substitute.

Non-metallic liquid tight conduit may be used for loop stub outs with lengths of less than 10 feet.

Install a No. 16 AWG THWN stranded copper wire with orange base and blue tracer in all conduits as a locate wire, even if not shown. Extend the wire 2 feet beyond conduit ends and install a wire nut. Do not join multiple locate wires under a common wire nut.

Use rigid metal or intermediate metal conduit elbow when converting from an underground, rigid, nonmetallic conduit to an above-ground run or extension.

In areas to be paved or landscaped, place all conduit before paving or landscaping.

If corrosive soil conditions exist, coat metallic conduit with a non-metallic coating or wrap with corrosion protection tape at least 10 mils thick.

**(b) Conduit on Wood Poles** - Mount conduit on wood poles with two-hole, galvanized, steel conduit straps spaced no more than 3 feet apart. Mount conduit on utility-owned wood poles according to local utility regulations. Stand-off brackets are required.

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**(c) Conduit on Metal Poles** - Mount conduit on metal poles with 3/4 inch, stainless steel straps or a single-hole, galvanized steel strap, drilled and tapped with galvanized bolts. Place straps no more than 3 feet apart. After tightly drawing steel bands, cut and fold under the ends to eliminate protruding edges.

**(d) Conduit in Foundations** - Use rigid metal conduit and extend it as follows:

- 2 inches to 3 inches vertically above the top of the foundation
- 10 inches to 12 inches horizontally beyond edge or vertically below the foundations

Group conduits in foundations so that, with the pole in place, it is possible to place an insulated bushing on each conduit end. On breakaway poles, do not extend the conduit above the slip plane of the base.

Place all conduit in the foundation. Surface-mounted conduit will not be accepted.

When a new conduit is required in an existing signal foundation, install the conduit by cutting a slot in the foundation, without cutting reinforcing steel, or by core drilling, as directed. Install the conduit and patch the opening with grout. Extend the new conduit far enough into the base of the pole to allow attachment of a ground clamp. Ground the new conduit to the ground lug inside the pole with a No. 6 copper ground wire. Do not damage the surrounding foundation or reinforcement during these operations. Do not use pavement-breaking equipment.

**(e) Underground Conduit Installation** - Make conduit runs continuous between any pole, junction box, or cabinet. Do not cover conduit runs until inspected. Permanently mark all underground conduit runs by installing an underground marking tape directly over the conduit.

The underground marking tape shall be:

- Placed 12 inches  $\pm$  1 inch below the surface.
- Continuous between pole bases, junction boxes and cabinet locations.

**(f) Elbows** - Use a standard factory bend where a conduit bend is required, unless factory conduit bend sizes are not commercially available, or a special bend is required. Bends performed on the job or in the shop shall that:

- Has a radius of at least six times the inside diameter of the conduit.
- Is bent without crimping or flattening.
- Be rigid metal conduit conforming to 02920.10(a) if the bend is 45° or more, unless otherwise specifically permitted. At junction boxes containing 120 volt circuits, all conduit sweeps and risers shall be threaded galvanized steel and bonded.

Conduit runs shall be installed with as few bends as possible. The sum of all bends in any single conduit run shall not exceed 270 degrees, unless otherwise approved by the Engineer. Rigid steel factory 90 degree bends will be allowed for conduit risers into

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junction boxes and foundations only. All other bends shall be 45 degrees or less or shall be large radius bends as approved by the Engineer.

**(g) Conduit Ends and Couplings** - Ream the ends of all conduits, whether cut in the shop or field, to remove burrs and rough edges. Make cuts square and true so the ends will fit together for their full circumference. Rigid metal conduit must use threaded fittings. Set screw or compression fittings are not allowed. Slip joints or running threads will not be allowed for coupling conduit. Use an approved threaded union coupling when a standard coupling cannot be used.

Paint the following with rust-preventative coating:

- Threads on all metal conduit before couplings are made up
- Areas where the coating has been damaged so underlying metal is exposed
- Exposed, ungalvanized threads resulting from field cuts

Tighten all couplings until the conduit ends are brought together throughout the entire length of the run.

Cut nonmetallic conduit with a hacksaw or other approved tool, and connect with solvent welds.

Use threaded insulated metallic grounding bushings on all conduit ends, whether metal or PVC. Ground bushings are not allowed in power company service boxes. Grounding bushings are not required on PVC conduit runs from the power company service boxes to the 1<sup>st</sup> City owned box, or from City owned boxes to a direct buried fiberglass street light pole. If grounding bushings are used, they must be bonded to ground. Bond conduit end bushings to the equipment ground wire, and connect the grounding bushings in the metal pole to the pole grounding lug with a jumper. Install insulated bushings on all conduits.

Furnish and install a nonhardening compound or plug/cap that will prevent moisture from entering conduits, whether AC, DC, or combinations. Seal all conduit ends beneath the finished ground line, including those in junction boxes, with this compound or plug/cap, using care to encase individual conductors or cables to achieve a secure seal. Do not use aluminum bushings.

Where conduits have conductors installed, the conduit ends shall be sealed with an approved plastic fiber and duct seal after conductors have been installed.

Where conduits do not have conductors installed, the conduit ends shall be sealed using approved insulated ground bushings and sealed with duct tape.

Use a nonmetallic female threaded connector to connect nonmetallic conduit to metallic conduit.

**(h) Conduit in Junction Boxes:**

**(1) General** - Install conduit in junction boxes according to the following:

- Enter through the bottom of boxes.
- Enter the box from the direction of the run.
- Provide at least 1 inch of clearance around each conduit.
- Terminate conduit 1 inch inside the box wall when entering through the side walls.
- Except in power company boxes and direct buried fiberglass pole sleeves, use factory 90° galvanized rigid metal conduit bends.
- PVC factory 90 degree ells with adaptors, insulated bushings, fiber fill and duct seal are required in power company boxes.
- Conduit ends shall be no closer than 4 inches from the bottom of the box lid, and at least 2 inches above the box gravel fill.

**(2) Cast Iron Junction Boxes** - Cast Iron Junction Boxes are not used unless specifically required.

**(3) Polymer Concrete Junction Boxes** - Install conduit entrances into polymerconcrete junction boxes according to the following:

- Locate conduits near the end walls to leave the major portion of the box clear.
- Orient conduit ends towards the top of the box so that conductors may be pulled out of the conduit from the top of the box without touching the side of the box or other conduits.

**(i) Conduit Installed for Future Use** - If conduit is noted on the plans for future use, with no conductors installed, insert a polyethylene pull line with at least 210 pounds break strength in metal conduit and a No. 14 THWN wire in PVC conduit.

Include 3 feet of slack in the polyethylene pull line within the conduit and 3 feet outside the conduit. Tie the loose end back around conduit to prevent it from being pulled back into the conduit. Seal conduit ends with duct tape above ground and fiber fill and duct seal in junction boxes.

**(j) Existing Conduit** - Use existing conduit only where shown. Clean existing conduit, without conductors, with a mandrel or cylindrical wire brush, and blow out with compressed air before incorporating into the new system. Where new junction boxes are placed in existing conduit runs, fit the conduit as specified in (h) above. Install bushings as required by 00960.42(g).

**(k) Conduit In or On Structures** - Install conduit in or on structures according to the plans and Section 00583. Use approved expansion devices at all expansion joints in or on a structure. Install Type "AX" conduit expansion joints with bonding jumper where conduits cross bridge and other expansion joints. The expansion joints shall permit a 8 inch conduit movement on steel structures and a 4 inch conduit movement on concrete structures.

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Expansion-deflection fittings shall consist of two silicon bronze couplings and a molded neoprene sleeve with a bonding jumper passing through a separate waterproof compartment. Fittings shall permit at least 3/4 inch expansion and contraction and a 3/4 inch deflection without deformation

**(l) Installation by Plowing, Directional Boring** - Where specifically approved for the Project, high-density polyethylene conduit conforming to 02920.11(c) may be used for interconnect conduit runs between controllers. Installation may be by plowing, directional boring or open trench. Use 3 feet minimum cover.

**(m) Conduit Installed in Existing Foundations** - New conduit to be installed in an existing foundation shall be installed by carefully cutting a slot in the foundation, installing the required conduit and patching the opening with grout. As an alternate, the conduit may be installed by lifting the pole or controller cabinet and boring a hole in the foundation with a core drill. The new conduit shall extend far enough into the base to allow attachment of a ground bushing. The new conduit shall be grounded to the ground lug with No. 6 copper ground wire. Care shall be taken not to damage the surrounding foundation and reinforcing during these operations. The use of pavement breaking type equipment will not be permitted.

**00960.43 Foundations:**

**(a) General** - Construct foundations for pedestals, posts, and cabinets according to Section 00440 and the applicable portions of 00540.48(a). Place concrete:

- With a continuous pour.
- To the elevation shown or directed.
- With conduit ends and anchor bolts held securely in proper vertical position, to proper height, using a manufacturer's recommended template until the concrete sets.
- Maintain rebar clearances during concrete pour.

Make no adjustment of anchor bolts after concrete has set.

Set forms square and true to line and grade. Construct forms of rigid materials that remain in position until removed.

Remove forms and place subsequent loading according to Table 00540-1.

Finish tops of foundations to roadway, sidewalk or curb grade, or as directed.

Finish exposed concrete foundations to present a smooth, neat appearance. Fill all holes.

Where breakaway bases are specified, the post stub projection shall not exceed the limits shown.

When utilities are located near the planned location, the contractor may be required to excavate the foundation by hand or vacuum methods. No additional compensation will be paid for these methods.

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**(b) Treatment for Aluminum-Concrete Contact** - Separate the aluminum from the concrete with one layer of 30 pound nonperforated, asphalt-saturated felt. Neatly trim the felt pad to the size and shape of the base contact surface.

**00960.44 Junction Boxes:**

**(a) General** - Install junction boxes at the approximate locations shown, or, if not shown, no more than 300 feet apart. Junction boxes are required on both sides of an intersection when a street is crossed by the conduit run. The Contractor may, at no additional cost to the Agency, install additional junction boxes to facilitate the work.

The tops of junction boxes installed in the ground or in sidewalk areas shall be flush with the surrounding grade or top of curb. Where practical, place pull boxes shown behind curbs against the back of the curb. Junction boxes are not allowed in the roadway. When installed outside roadways or shoulders, install a portland cement concrete apron around the junction box.

In boxes having an open bottom, construct a sump of reasonably well graded 3/4" - 0 crushed gravel, 12 inches deep covering the approximate area of the box. Do not install conductors until the sump has been constructed.

Metal junction boxes shall only be used as part of a bridge structure unless otherwise required. Ground metal junction boxes and covers and make them electrically secure to form a continuous system with metallic conduit, grounding wire, metal standards and controller cabinets. Leave enough slack in the ground wire to the cover to allow complete removal of the cover.

**(b) Junction Box Locations** - Mark the location of all flush-mounted junction boxes installed in unsurfaced areas with a delineator, placed 3 feet behind the box, or as directed. Use white targets with black, 3 inch, series "B" letters reading "JCT. BOX". Reflectors are not required.

**00960.45 Cable and Wire** - Arrange wiring neatly within cabinets and junction boxes. Use electrical lubricants when inserting conductors in conduit. Before pulling wires through underground conduit runs, blow the conduit out with 120 cubic feet per minute compressed air.

Before cable and wire installation, clean all existing and new conduit with cylindrical mandrel of the proper size for that conduit and blow out with compressed air. Mechanical pulling methods may be used for conduit cleaning.

Do not use tapes, straps, ties or other binding materials to bundle single conductors or cables together inside conduits or poles. Bundling of conductors or cables will be allowed at the terminating end points for pulling only.

Pull all wire by hand on a straight line with the conduit opening to prevent damage to wire and cable insulation. Do not exceed maximum tension limits set by the manufacturer. If pulls are made with poles or controller cabinet in place, use a pulley device to achieve a straight pull.

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Use spade-type pressure connectors to connect all traffic signal conductors to terminal screws in cabinets. All conductor connectors shall be compression type and shall be approved by the Engineer.

All splicing shall be done during dry weather. Underground splicing shall be kept to a minimum. Use above ground locations to splice where possible.

Conductor splices shall be insulated with heat shrink tubing or one wrapping of self-fusing rubber splicing tape, half-lapped and three (3) wrappings of vinyl plastic electrical splicing tape, half-lapped. Splices shall be insulated to be moisture and water proof. Use silicon caulk to seal the space between adjacent wires before applying the insulating rubber tape or shrinking the tubing. Tape wrapped around multiple conductors without silicon caulk will not be accepted as water proof.

After splicing into the illumination circuits, the Contractor shall install a watertight "in-line" fuse holder for each underground circuit conductor going up the pole to the luminaire. This fuse holder shall conform to Section 02920.26 and shall be installed in the pole base, accessible from the handhole unless otherwise specified or shown on the plans.

Wire from the splice in the junction box or pole base handhole to the luminaire shall be No. 10 Type XHHW, or Type UF cable, as shown on the plans.

Wire from the control cabinet to the photoelectric relay shall be No. 14 Type XHHW.

The Contractor shall trim tree limbs as required and approved by the Engineer to facilitate required vegetation clearances from overhead cable installations.

**00960.46 Wiring Practices:**

**(a) General** - Install electrical system and electrical system components in a neat and workmanlike manner.

**(b) In-Line Fuse Holder** - Insulate terminal ends using either heat shrink tubing or electrical insulating rubber tape over-wrapped with electrical vinyl plastic tape as specified.

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**00960.47 Wood Poles** - Rake wood poles away from the direction of the service drop and/or opposite the applied load, unless otherwise specified. Compact backfill thoroughly around wood poles. See Table 00960-1 for depth of pole settings.

**ENGLISH**

**Length of Pole (feet) Depth in Soil (feet) Depth in Rock (feet)**

25	5.0	3.5
30	5.5	3.5
35	5.5	4.0
40	6.0	4.0
45	6.5	4.5
50	7.0	5.0
55	7.5	5.0
60	8.0	5.5
65	8.5	6.0
70	9.0	6.5
75	9.5	6.5

Where soil is underlain with rock, the depth of the hole in the rock is to be 70% of the depth required in soil.

Example: Given a 50 foot pole in 2 feet soil over rock,

Required depth of hole for all soil setting (from Table)	=7.0 feet
Actual soil depth	= <u>2.0 feet</u>
Difference	=5.0 feet
Depth of hole required in rock portion	
5 feet x 0.7	=3.5 feet
Depth of hole through soil	= <u>2.0 feet</u>
Total Depth of Hole	=5.5 feet

Where poles are located on other than level areas, measure the setting depths from the low side of the hole.

**00960.48 Coating** - Coatings shall conform to all applicable portions of Section 00594. Do not paint equipment fabricated of aluminum, stainless steel, or hot-dipped galvanized material, except as shown or specified.

Apply 2 coats of aluminum paint to signal head mounting brackets. All ferrous metal, including cut threads, shall be galvanized prior to painting.

**00960.49 Electrical Service:**

**(a) General** - Service points shown on the plans are approximate only. The exact location will be determined in the field. Wiring connections to the terminal screws on the circuit breakers and contactors shall make full contact under the screw head. Size and

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depth of power service conduit shall be as specified by the supplying power company with a minimum cover depth of 30".

Where eyebolts are to be used on signal or illumination poles to receive overhead power service, determine from the local serving utility the direction the eyebolt should face.

Equip each service cabinet with a solid copper neutral bus and the number and size of switches or circuit breakers shown or specified. Install all overcurrent protection and relays as shown and according to the applicable portions of the NEC. Notify the local serving utility before making any contacts to utility poles.

As a part of every service installation, that feeds a traffic signal, furnish and install a meter base approved by the serving utility (with plastic cover and copper jumpers).

Service cabinets shall be mounted at the height as directed in the field by the Engineer.

Couplings will not be allowed for pole entrance fittings. Pole fittings shall be welded, all around, in place and shall be Bonney Forge Co. Thredolet®, a Phoenix Forge Co. Trans-O-Con®, or equivalent. Welds shall be cleaned, wire brushed and painted with a minimum of two coats of zinc paint. In lieu of this, pole fittings may be placed by the manufacturer and hot dipped galvanized with the pole.

The feed (line) circuit shall be electrically and mechanically isolated from all protected (load) circuits. When both feed circuits and protected circuits are to be installed inside the same junction box or pole, the feed circuit shall be isolated by being installed inside an approved waterproof flex conduit.

**(b) Circuit Breakers** - Provide circuit breakers of the rating shown or specified.

**00960.50 Grounding and Bonding:**

**(a) General** - Make all conduit, metal poles, grounding electrode, metallic junction boxes, metallic junction box covers, and cabinets mechanically and electrically secure to form a continuous, effectively grounded and bonded system. Bond together all rigid steel conduit ends that terminate at the same location. Bond the copper grounding equipment electrode conductor between the metal poles to the grounding rod at each foundation. Use stranded conductors for all ground and bond wires.

Preferred location for ground rods are in foundations. The ground rod for signal equipment may be placed in the nearest junction box, when necessary, within 15 feet of a cabinet or pole, or in a separate junction box at least 6 inches from the cabinet or pole foundation. Install a separate PVC conduit and ground wire to the junction box.

**(b) Ground Rods** - Construct accessible grounding conditions with electrodes of at least 5/8 inch x 8 foot nonrusting, copper covered, steel ground rods with bronze grounding wire clamps. Locate ground rods inside of junction boxes and foundations. Drive ground rods into the ground with the top about 6 inches above the surface at the ground rod locations. In a junction box the ground rod tap shall be below the lid and out of the gravel. In a pole or cabinet location the ground rod top shall be such that the ground clamp is accessible. Install a separate ground rod for each electrical system that originates from a separate power source.

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If approved, grounding rods may be driven diagonally. Where rock prevents full length driving, if approved, a buried galvanized iron or copper plate may be installed at the bottom of the concrete foundation hole. The plate shall be at least 2 foot square and 1/4 inch thick.

If resistance to ground is greater than 25  $\Omega$ , furnish and install a second ground rod, at no additional expense to the Agency. Place electrodes at least 6 feet apart.

If resistance to ground is greater than 25  $\Omega$  after a second rod is driven, additional grounding methods, as approved, will be paid as Extra Work according to 00196.

Use No. 6 AWG copper wire or greater if shown or required by the NEC, to connect the ground rod to the electrical system. The wire color shall be solid green or bare.

Push-button posts shall be bonded to the conduit.

**(c) Services and Cabinets** - Ground the neutral conductor, the control cabinets, and the metal base to a ground rod.

Install the ground rod within the cabinet base opening. The top of ground rod shall be centered and extend above the foundation for attachment to the grounding circuit. The top of the ground rod shall be the same elevation as the top of the conduit. Install a second ground rod in a junction box at least 6 ft. away from the service cabinet.

**(d) Structure Mounted Poles and Cabinets** - Ground all poles and cabinets mounted on structures or walls to a common ground rod at the end of the structure. Ground the system at the first convenient acceptable location off the structure.

**(e) Metal Poles** - At all pole foundations, except foundations for slip base poles, the Contractor shall install a ground rod in the excavated foundation, as shown on the plans. The top of ground rod shall be centered and extend above the foundation for attachment to the grounding circuit. The top of the ground rod shall be the same elevation as the top of the conduit.

For metal illumination poles with slip base, install the ground rod for each pole in the junction box at the pole. Install a separate 1 inch non-metallic conduit with No. 6 AWG copper grounding electrode conductor from the pole base to the junction box and ground rod. In sidewalk or other areas where the ground rod cannot be made accessible, the ground rod may be driven diagonally through the foundations of fixed anchor base poles. If this method is used, drive the ground rod at least 4 feet into earth and leave at least 3 inches exposed through the top of the foundation. Bend the rod so that the exposed end is vertical and near the center of the pole. Connect the steel reinforcing cage to the ground rod using a No. 6 AWG copper wire. Securely clamp the wire to the reinforcing steel, through the ground rod clamp, and to the pole grounding lug. Do not use this method on slip base poles.

On the inside of tower shafts, weld a 1/2 inch, Type 308, 309, or 310 threaded stainless steel stud for a grounding lug. Locate the grounding lug 90° from, and level with, the bottom of the handhole.

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For slip base poles, the grounding wire shall not intrude into the slip plane. Instead, run a bond wire from the grounding electrode to a 1/2 inch, Type 308, 309 or 310 threaded stainless steel stud welded to the bottom base slip plate.

For standard four-bolt anchor base poles, provide a 1/2 inch, Type 308, 309 or 310 stainless steel stud on the inside of the shaft. Locate the stud directly opposite and level with the handhole in the pole. Attach grounding electrode conductors and bonding conductors to the stud with a grounding wire clamp, "acorn style", similar to what is used with ground rods in (b) above.

**(f) Wood Poles** - On wood poles, ground all metallic conduit, messenger cable, terminal cabinet, and other equipment.

**(g) Nonmetallic Conduit** - In all nonmetallic type conduit, run a ground/bond wire continuously between all poles, pedestals, posts, and cabinets. Bond/ground wire shall be No. 6 AWG copper wire minimum, or larger as required by NEC.

**00960.70 Electrical Energy** - Obtain the required permits and have the power service inspected by the utility providing power. The Engineer shall then arrange for the utility to make the electrical hookup. When agreeable to the Agency and the local power company, power consumption for traffic signals may be flat-rated.

Electrical energy costs to operate traffic signals and/or illumination will be billed to the Agency or those named in the construction agreement. Do not use for construction purposes electrical energy billed to the Agency or other agencies.

**SECTION 00962 - METAL ILLUMINATION AND TRAFFIC SIGNAL SUPPORTS**

Comply with Section 00962 of the Standard Specifications modified as follows:

**00962.05(c) Illumination Supports** - Add the following to the end of this subsection:

The following standard illumination pole drawings are prequalified for use on the Project:

Ameron Pole Products Division	Drg. OR7, Rev. C, 1/02 Drg. OR8, Rev. C, 1/02 Drg. OR9, Rev. E, 2/02
Union Metal Corp.	Drg. 71049-B18 sh 1, R3, 2/99 Drg. 71049-B18 sh 2, R3, 2/99 Drg. 71049-B19 sh 1, R3, 2/99 Drg. 71049-B19 sh 2, R3, 2/99
Northwest Signal Supply	Drg. NWS2285M, 9/00
Valmont Industries Inc.	Drg. DB00386 sh 1, Rev. B, 3/12/03 Drg. DB00386 sh 2, Rev. B, 3/12/03 Drg. DB00386 sh 3, Rev. B, 3/12/03 Drg. DB00387 sh 1, Rev. B, 3/12/03

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Drg. DB00387 sh 2, Rev. B, 3/12/03

All illumination pole drawings regardless of prequalification status shall be submitted for the review of the Engineer as specified in 00960.02.

**00962.41(b) Disposition of Waste Materials** - Replace this subsection with the following subsection:

**00962.41(b) Disposal of Materials** - Dispose of all materials according to 00290.20 and 00950.42.

**SECTION 00963 - SIGNAL SUPPORT DRILLED SHAFTS**

Comply with Section 00963 of the Standard Specifications modified as follows:

**00963.10 Materials** - Add the following paragraph to the end of this subsection:

Provide the commercial grade concrete mixture with a slump of 8 inches  $\pm$  1 1/2 inches.

**SECTION 00990 - TRAFFIC SIGNALS**

Section 00990 Traffic Signals is replaced in its entirety with the following:

**00990.00 Scope** - In addition to requirements of Section 00960 and Section 00962, install traffic signals according to the following Specifications.

**Materials**

**00990.10 Backer Rod and Loop Sealant** - Furnish backer rod material and hot-melt loop sealant from the QPL.

**Construction**

**00990.40 Cable and Wire:**

**(a) General** - Install wire and cable according to 00960.45 and the following:

Install wire and cable between terminal blocks without splicing, except for loop wire to loop feeder cable.

Tape the ends of unused conductors with insulating vinyl plastic tape.

The pedestrian/bike detector wiring, signal and pedestrian head wiring, illuminated sign wiring and street lighting wiring shall each be in a separate cable through the entire system.

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Wiring for pedestrian or bike push buttons shall be three (3) conductor No. 14 control cable.

Wiring for signal and pedestrian heads shall be control cable as shown on the plans. Wiring from the terminal box on the pole to the signal or pedestrian heads on the same pole shall be No. 14 control cable with the number of conductors, including common conductor, as required. Each vehicle and pedestrian head shall be serviced with a separate cable from the terminal cabinet on the pole.

Wiring for street lighting shall be Type UF cable as shown on the plans.

Wiring for power service shall be Type XHHW conductors.

Slack shall be left in each wire and cable at each junction box, pole, interconnect terminal cabinet, Type 332 controller cabinet, and Type 337 controller cabinet as directed by the Engineer or as follows:

1. Three feet in each wire or cable looped through a Type 1 junction box.
2. Four feet in each wire or cable looped through a Type 2 junction box.
3. Six feet in each wire or cable looped through a Type 3 junction box.
4. Two feet in each street lighting wire or cable in the base of a pole.
5. Six feet in each wire or cable left in each interconnect cabinet.
6. Twelve feet in each wire or cable in each Type 332 controller cabinet. The slack shall be looped around the bottom of the cabinet riser.
7. Six feet in each wire or cable in each Type 337 controller cabinet. The slack shall be looped around the bottom of the cabinet.

In junction boxes where splices are to be made, a minimum of 4 feet of slack shall be provided for each cable or wire in the junction box measured from the end of the cable or wire to the conduit.

System commons shall be provided by the white conductor in each control cable. Signal system commons shall be connected to the AC neutral bus inside the controller cabinet.

Detector commons shall be the white conductor of the three conductor cables used for pedestrian or bike push buttons and shall be connected to the detector common terminal as shown in the cabinet wiring diagram.

**(b) Control Cable Attachment** - Use self-locking cable ties to attach cables to the messenger cable. Tighten to remove gaps between the control cable and the messenger cable. Strap shall be sufficiently tight so as not to move when tested by hand force. After tightening, trim all excess material neatly.

**(c) Messenger Cable** - Install the eyebolts through the entire pole. Pull the shoulder of the eye tight against the front face of the pole.

**(d) Tether and Stabilizer Cable** - Tighten cables to limit signal and sign movement. Install Agency furnished S-hooks between the eyebolt and turnbuckle.

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**(e) Interconnect Cable:**

**(1) Labels** - Label all interconnect cable with approved bronze or plastic labels, permanently and ruggedly attached. The labels shall be embossed with the cable identification number if shown. Additionally, labels used on utility facilities shall bear the legend "TRAFFIC SIGNAL". Label all ends of cables. Label all overhead cable in each direction away from the point of attachment, 2 feet from utility poles. Do not install labels until the Engineer approves the labels and attachment mechanism. Label all cables in the interconnect terminal cabinets and at terminal panel locations.

**(2) Installation** - Use approved cable guides, feeders, shoes and bushings to prevent damage to the cable during installation. Do not pull cable over edges or corners, over or around obstructions or through unnecessary curves or bends.

Cable in trunk runs may be installed by hand or by mechanical methods, as approved. Trunk runs are those lengths of conduit that will have 25 or more pairs of interconnect cable installed. Install all other cable by hand methods only.

Before installing cable, provide the Engineer with one copy of the cable manufacturer's recommended and maximum pulling tensions for each cable type.

When installing cable using a pulling eye, do not exceed the cable manufacturer's maximum recommended pulling tension for pulling from the pulling eye. When installing cable using a pulling sock over the outer jacket, do not exceed the cable manufacturer's maximum recommended pulling tension for pulling by the outer jacket, or 80% of the manufacturer's maximum recommended pulling tension for pulling by a pulling eye, whichever is smaller. Use an approved dynamometer to ensure that the maximum allowable pulling tension is not exceeded during installation.

**(3) Aerial Cable** - Use terminal cabinets for aerial pole entrance of interconnect cable.

Match the sag as closely as possible with wires already on poles to minimize movement in windstorms and conflict with adjacent wires.

Use a cable grip on the jacketed messenger when pulling and tensioning. Pull and tension cable without damaging the jacket. When separating the messenger on figure-8 cable from the jacketed conductor assembly for dead-ending or splicing, split the web using approved tools designed for this task.

At corners and run ends, dead-end the messenger strand with approved automatic dead end connectors. Cut the strand and remove the jacket, exposing enough strand so that the ends of the strands coming through the chucks of both vises can be overlapped and bonded together to form a continuous ground. Use a one-bolt guy clamp to bond the strand ends together. Remove unused strand.

**(4) Underground** - In transition areas from overhead to underground, continue the aerial cable underground to the nearest termination panel. If figure-8 type cable is used for overhead locations, strip the messenger wire from the cable, using approved tools, where the cable is within a conduit, pole or cabinet.

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Pull the necessary length of cable to be installed from pull point to pull point skipping any intermediate junction box, handhole, or other opening in underground system. Carefully store the remaining length of cable to be installed in the next conduit in a manner that is not hazardous to pedestrian or vehicular traffic, and protects the cable from damage. Obtain the Engineer's approval of the storage methods to be used.

**(5)Testing** - Test interconnect cable according to 00990.70(i).

**00990.41 Cabinet:**

**(a) Signal Circuit Overhead Terminal Cabinets** - Mount signal circuit terminal cabinets as shown.

In each cabinet, install the number of sectional terminal blocks needed for the circuits, plus two spare terminal blocks. These spares are not to be used by the Contractor. Divide the number of terminal blocks required as evenly as possible among the mounting brackets in the cabinet.

Terminate only one wire in each termination point. If necessary, add additional terminals of the same capacity to accommodate additional taps. If additional terminals are required, use a factory jumper between the terminals.

Enter on the marking strip the wire number and/or letter as coded at the terminal strips in the controller cabinets. Use only mechanically printed labels.

Use weatherproof compression fittings in the bottom of the cabinets for cable entrances.

For the pole entrance into terminal cabinets, use a 2 1/2 inch Thredolet<sup>®</sup> as manufactured by Bonney Forge Co., a Trans-O-Con<sup>®</sup> as manufactured by Phoenix Forging Co., or equivalent. Weld the fitting all around. The fitting shall be installed by the manufacturer and hot-dip galvanized with the pole.

**(b) Flasher Cabinet** - Cabinets shall contain the devices shown.

**(c) Power Service Cabinet** - Install traffic signal service cabinets so that the meter placement is acceptable to the local power company.

**(d) Cabinet Protection** - Keep interiors of all cabinets clean and free of dust, dirt, moisture, and other foreign matter.

**(e) Interconnect Cabinets** - The Contractor shall furnish and install interconnect cabinets at locations shown on the plans. The interconnect cabinets shall meet the requirements set forth in subsection 02920.40 (a). The cabinet shall be mounted on poles using two stainless steel straps. A 2-1/2-inch conduit shall enter the cabinet from the bottom through an "LB" fitting. The installation of the interconnect terminal cabinets shall be similar to the details shown on the plans for pole mounted controller cabinets. The mounting height of the interconnect cabinets shall be 40-inches from the bottom of the cabinet to sidewalk grade. The mounting orientations of cabinets on poles will be determined in the field and located by the Engineer.

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**00990.42 Indication Equipment:**

**(a) Standard Vehicle Signal Heads** - Standard traffic signal heads shall be one-way, three-section heads, adjustable through 360 degrees about a vertical axis, and designed for the method of mounting shown or specified. Furnish heads complete, including lamps, lenses, LED modules, visors, reflectors, sockets, backboards and mounting appurtenances.

Vehicular signal heads shall be:

- Designed so they can be suspended from mast arms or span wires, or mounted on brackets or pedestals as required.
- Equipped with positive lock rings and fittings designed to prevent the heads from turning due to external forces.
- Equipped with all necessary appurtenances for the type of mounting required.

Tighten all backboards and visors securely against the signal head.

**(b) LED Traffic Signal Modules** - Fit modules into all types of traffic signal heads without the need to modify the head.

- Red ball and red arrow shall be Type1
- All yellow and green indicators shall be Type 1
- Pedestrian indicators to be a single module countdown
- Optically programmed signal heads shall use LED plug-in retrofit kits for all sections

**(c) Optically Programmed Vehicle Signals** - Conform to all applicable portions of 00990.42(a). A complete vehicle signal includes the required number of signal sections with optical components, individual intensity control, cutaway visor, backboard, and mounting hardware.

Optically programmed vehicle signals shall:

- Permit selective programming of the visibility zone of the projected indication anywhere within 15 degrees of the optical axis of each signal section.

When mounted on span wires, install additional washers on the hanger to shoe attachment pin to limit the lateral movement of the hanger.

**(d) Pedestrian Signal Heads** - All relevant portions of 00990.42(a) and 02925.65 apply to pedestrian signal heads.

**(e) Flashing Beacon Signal Heads** - Flashing beacons shall:

- Conform to all applicable portions of this subsection.
- Be of single-section construction and utilize LED light modules
- Be equipped for the type of mounting shown.

Mount single-section heads on span wires as shown for three-section heads.

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**(f) Suspension of Signal Heads** - Suspend vehicle and pedestrian signal heads as shown. Equip all adjustable, multi-directional type signal heads at both top and bottom with brackets, or arms assembled from 1-1/2 inch rigid metal conduit and fittings.

Standard and elevator plumbizers and span wire hangers shall be cast bronze.

All ferrous metal, including cut threads, shall be galvanized prior to painting.

Adjustable traffic signal mounting brackets on mast arms shall be aluminum and shall provide complete adjustability. Wiring shall enter directly from inside the mast arm, through a 1-1/2" entrance hole cut in the mast arm, to the adjustable mounting, and be run inside the mounting to the signal head or interior illuminated sign interior. Exposed wiring will not be allowed. A bushing or other device, as approved by the Engineer, shall be used to protect the wiring from the sharp edges of the wiring entrance hole cut in the mast arm. Caps, plugs, and molding shall be installed to prevent entrance of moisture, birds, and debris. All adjustable brackets shall include a safety strap.

Each mounting bracket terminal compartment shall:

- Be cast bronze only.
- Have a flanged, gasketed door.
- Contain a terminal block with at least 10 pressure type terminals.

Pedestrian signals shall be mounted using bracket assemblies as specified for vehicle signals. The use of the hinged terminal compartment type, of which the terminal compartment is directly attached to the body of the pedestrian head, will not be allowed.

**(g) Signal Head Covers** - Cover mounted vehicle signal heads and pedestrian signal heads at all times until the signal installation is ready for continuous operation.

**(h) Audible Pedestrian Signal (APS)** - Provide a unique APS sound coincidental with the WALK indication. The APS system shall include a solid state electronic board, power supply, enclosure, loudspeaker, and mounting hardware necessary for fulfilling the intended use and the applicable portions of Standard Specification for Microcomputer Signal Controller.

**(1) General** - Provide an actuated delay time button that is adjustable in one-second increments throughout the range of 0 to 15 seconds.

The APS unit shall have a sound inhibit circuit capable of control by an external device.

**(2) Electrical Requirements** - The APS unit shall operate on 95 to 130 VAC, 60Hz,  $\leq 3$  W.

Provide a power protection circuit consisting of both fuse and transient protection.

Provide an optically isolated circuit allowing delayed actuation of the audible signal.

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**(3) Environmental Requirements** - The APS unit shall function properly throughout an ambient air temperature range of -35° F to +165° F.

**(4) Outputs** - Provide voice message, including automatic repeat capability for messages up to 20 seconds in length.

The audible signal shall be self-adjusting based on ambient noise during the WALK period.

The volume level at a distance of 3 feet from the APS enclosure shall be 66 dB typical, with a maximum of 90 dB.

The minimum volume level shall be adjustable proportionally from 66 dB to 90 dB without dismantling the APS unit housing.

Provide two switch-selectable electronic sounds according to the following:

Parameter	Sound No. 1	Sound No. 2
Sound type	"Peep-peep"	"Cuckoo"
Method	Electronic var. frequency tone	Electronic var. frequency tone
Period	1.0 sec. ± 20%	1.5 sec. ± 20%
Duration	0.2 sec. ± 20%	0.6 sec. ± 20%
Frequency Base	2800 Hz ± 20%	1100 Hz ± 20%
Frequency Deviation	- 800 Hz ± 20%	+120 Hz ± 20%

**00990.43 Traffic Signal Detection Devices:**

**(a) Pedestrian Push Buttons** - Mount pedestrian push buttons on a pole, pedestal or post whose foundation directly abuts an asphalt concrete or portland cement concrete landing or walkway. Install push buttons in an H-frame mount having an arrow pointing to the crosswalk for which it is intended.

Signs for alternative holders shall be constructed from sheet aluminum with black symbol or letters on white enamel. Decals will not be accepted.

**(b) Inductive Loop Detectors:**

**(1) Saw Cut** - Make cuts compatible with construction and in the most practical, direct line between loops and junction boxes, except where parallel to, or nearly parallel to, a lane line; then locate cuts under the lane lines.

Make saw cuts at least 1/2 inch wide for loop wire and loop feeder cable. In order to have the bottom of the saw cut smooth without ridges, the saw cuts shall be made using a single blade of the width of the sawcut.

Saw cuts shall have smooth bottoms, with no edges due to differences in cut depth.

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Limit saw cut angles to 90 degrees or less to limit the bend in loop wire. Cuts shall not create islands of pavement less than 2.5 square feet in area.

Saw cuts that span expansion joints and surfaces of different materials, and large cracks will require installation of an eight inch section of ½" PVC conduit encased in loop sealant to prevent the loop wiring from stress and shearing action.

Flush cuts thoroughly with a high-pressure water stream immediately after sawing, and before the cuttings dry. Blow cuts free of water, debris, rock, and grit with high-volume or high-pressure air. Slots may also be cleaned by means of a high-pressure water injection/vacuum extraction system. Remove all cuttings from the Project.

Dry cuts before placing wire. Remove rocks or other material that may be wedged in the cut.

A maximum of two sets of twisted pair loop wires may be installed in a single saw cut, as long as the minimum cover shown is provided (see standard drawings) and adequate pavement depth is available. The Engineer may limit the allowable saw cut depth and width to avoid damage to the pavement.

On new open-graded AC wearing courses install loops in the base lift, or in the existing surfacing if it is to be overlaid, and after milling has been completed.

In an existing open-graded AC surface, the saw cut and installation shall be similar to Standard Drawing TM419 detail, "Loop Wire Installation in Base Lift (or After Grinding). Prior To Placement of Open-Graded Mix for Wearing Surface", except install 5/8 inch deeper and leave loop sealant down 1/2 inch to 5/8 inch from the AC surface. Do not completely fill the saw slot.

**(2) Wire** - Place a permanent plastic label on each loop feeder cable indicating the loop numbers, in indelible ink, as shown on the Loop Detector Wiring Diagram. Place labels within 4 inches of the end of the jacket at each end of the loop feeder cables. At the junction box locations where the loop wires are spliced to the loop feeder cable, in addition to the loop feeder cables, the loop wires shall also be labeled. Clear heat shrink tubing shall be installed over the labels.

Do not remove the outside jacket and shield of loop feeder cables more than 6 inches from the end, inside the controller cabinet. Solder all loop feeder conductor terminations from field wiring in signal controller cabinets after crimp lugs have been installed. Crimp lugs used for loop wire field terminals may be insulated or non-insulated. Terminate loop feeder shield drain wire to the cabinet input panel grounding bus nearest the feeder wire termination points.

**(3) Installation** - The Engineer will mark or approve the center point location of all loops to be installed. Do not place wire in saw cuts until the cuts have been inspected by the Engineer.

After the saw cut is cleaned of debris, place the loop wire by pushing it into the slot with a blunt, nonmetallic object. Use care to avoid damaging the insulation.

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The Contractor shall allow enough loop wire for the run to the junction box plus an additional 5 feet of slack in the box. There shall be no splices in the loop wires. Loop circuit pairs shall be identified and labeled as required in Section 00990.43(b) (2). Loop pairs shall also be identified with start and end wire leads.

Each loop circuit shall also be tested for continuity with resistance readings not to exceed 5 ohms. Saw cut slots shall be filled in accordance to details shown on the plans.

Minimum distances between lead-in saw cuts and any loop side or between lead-in saw cuts shall be 2 feet and 6 inches, respectively.

Unless otherwise approved by the Engineer, detector loops shall be installed within two weeks after final asphalt lift has been placed, after pavement marking layout and before permanent pavement markings are installed.

Use one continuous, unbroken length of loop wire to form a loop of the number of turns required and to reach the loop feeder cable splice point shown or specified. Twist the loop wire pair together 4 to 6 twists for each foot from the exit point of the loop to the splice point of the loop feeder cable or termination point in the controller cabinet as shown. Use one continuous, unbroken length of loop feeder cable from the loop wire splice point to the cabinet.

After loop wire is placed and before the saw slot is sealed, install loop wire hold-downs (backer rods) made of closed-cell polyurethane. Place 1 inch lengths of the hold-down material along the loop perimeter and all other saw slots containing loop wire 6 inches from loop corners and at maximum 12 inch centers. Hold-downs shall fit snugly in saw slots.

After placing the wire, perform loop resistance testing before filling the slots with hot-melt sealant. Install the sealant in slots according to the manufacturer's instructions. Furnish a copy of the manufacturer's specifications including application procedures. The Engineer may order a test run of any application method or material before filling saw cuts.

Sealant shall not protrude above the pavement, nor be more than 1/8 inch below the pavement level after curing. Where cuts are made on a slope and sealant runs or puddles, start at the low end, pour the sealant, and hold it in place with 2 inch duct tape placed on the roadway surface over the cut. If duct tape or other device is used to contain the sealant in the saw cut, remove it on the same day, after the sealant is fully cured.

In order to prevent heat damage to the insulation, do not allow the temperature of the sealant to exceed 410° F during application. Install hot-melt sealants in layers to prevent damage to wire insulation. Allow each layer to cool before the next layer is installed. Do not use water to accelerate cooling.

Sealants that crack or pull away from the saw cuts will be rejected.

**(4) Splice** - Splice loop wires to feeder cable in junction boxes. Loop feeder cables shall be stripped back a minimum amount to facilitate connections. Loop feeder

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cables shall be joined to loop wires by stripping  $\frac{3}{4}$ " off the ends of each wire. The wire ends shall be paired up appropriately and twisted together. Splices shall be soldered using rosin flux and 60/40 solid core solder using a non-open flame heat source. Trim the end of the soldered splices and encase in industry standard UL approved wire nuts. Cover the splice with a two piece plastic enclosure flooded with silicon grease.

Splicing shall be done during dry weather.

**(5) Resistance Testing** - The resistance test between each circuit and ground, using a 500 V Megger tester, shall be not less than 1 gigohm when checked both before placing the sealant and after the sealant has set.

**(6) Loop Sensitivity** - Loops shall be sensitive to bicycles. After installation is complete the Engineer will test each loop.

**00990.44 Traffic Control Signs** - The type of sign and method of mounting will be as shown or specified. Signs shall conform to applicable portions of Section 00940.

**00990.46 Fire Preemption** - Fire preemption systems shall:

- Include all required control modules, detector units, detector feeder cable, wiring harness, interface circuitry and miscellaneous hardware.
- Have cable that runs continuously without splices from the detector unit to the controller cabinet.
- Not include emitter units.

**00990.47 Railroad Interconnect** - Run the circuit conductors in underground electrical conduit of the size shown. Terminate the conduit at the railroad cabinet at the location and in the manner directed by the railroad company. Extend the ends of the wire at least 3 feet beyond the end fitting of the supplied conduit. All other work inside the railroad cabinet is the responsibility of the railroad.

Do not work in the immediate vicinity of the railroad cabinet without first notifying the Engineer and receiving permission. The Agency will obtain supervisory personnel from the railroad company.

Do not place any materials or equipment in the vicinity of the tracks without observing proper clearance (see 00170.01(e)).

### **Finishing**

**00990.70 Testing and Turn-on** - This work includes the testing traffic signal control equipment, testing traffic signal installations, and turning on completed traffic signal installations. Turn on of new traffic signals and major changes to existing traffic signals shall be scheduled on Agency normal working days with the following exceptions: Mondays, Fridays, or days before and after holiday unless approved by the Traffic Engineer.

**(a) Delivery of Control Equipment** - Provide manuals, diagrams, and other documents as required by the Agency. Deliver all traffic signal control equipment, including wiring

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diagrams and operation manuals, in one shipment. Partial shipments will not be accepted and will be returned, at Contractor's cost, to the Contractor. Include the following information with equipment shipments:

- Contractor
- Supplier
- Manufacturer
- Location
- Contract number
- Agency for which the equipment is to be tested. For agencies other than ODOT, include a complete set of plans and specifications to which the equipment is to be tested.

Deliver the traffic signal control equipment and information for testing to:

Oregon Department of Transportation  
Traffic Systems Services Unit  
2445 Liberty St. NE  
Salem, Oregon 97303-6738

The Traffic Control Program will be furnished by the Agency. The Contractor shall deliver a blank Special Memory Module to the Agency Traffic Maintenance Shop, 1820 Roosevelt Blvd., Eugene, OR 97402.

The Agency will install the program on the blank module and deliver the programmed module to the State to be tested with the controller assembly.

**(b) Control Equipment Testing** - The following traffic signal control equipment will be tested by ODOT for conformance with the Contract Documents before being installed:

- Controller unit
- Controller cabinet
- Power supplies
- Input devices
- Output devices
- Conflict monitors
- Flasher units
- Relays
- Preemption devices
- Auxiliary equipment in the cabinet
- Other equipment required for the operation of the installation

Control equipment will be tested at no cost to the Contractor.

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The control equipment will be tested in three categories: physical, functional, and environmental as specified in the Standard Specification for Microcomputer Signal Controller. ODOT will require six weeks for completion and evaluation of the testing.

**(c) Control Equipment Failure** - A traffic signal control equipment failure is any occurrence that results in nonspecified operation of the equipment.

The Contractor will be notified of all control equipment failures, and shall make on-site repairs within five days of receiving the notification.

Following repair of the control equipment, the testing will be resumed at the beginning of the test category in which the failure occurred.

**(d) Control Equipment Rejection** - The traffic signal control equipment will be rejected under either of the following conditions:

**(1) Twice Fail** - The control equipment fails twice in the same testing category.

**(2) Failure to Repair** - The Contractor fails to repair the control equipment within five days of receiving notification of the failure.

Pick up rejected traffic signal control equipment within 10 days of receiving the rejection notice, or it will be returned, at Contractor's cost, to the Contractor.

Replace rejected control equipment with equipment having a different serial number.

Rejected control equipment will not be accepted for testing or installation on any subsequent traffic signal project within the State of Oregon.

**(e) Control Equipment Acceptance** - Traffic signal control equipment that successfully passes the testing procedure will be certified by the Agency as acceptable for installation. Acceptability for installation does not guaranty final acceptance of the completed installation.

The successful completion of the testing does not relieve the Contractor of the responsibility to furnish a complete working signal installation at the time the equipment is placed in operation.

The Contractor will be notified when the testing has been completed. Pick up the controller cabinet at the test facility.

**(f) Control Equipment Installation** - Upon successful testing at the ODOT facility, deliver all control equipment to the Agency Traffic Maintenance Shop for configuration and additional testing. The equipment will be available after 5 days for pick up and installation by the Contractor.

**(g) Field Testing** - Field testing of traffic signal installations will be performed by Agency electrical crews. Notify the Engineer one week in advance of the anticipated signal completion date. The Engineer will notify the Agency's Traffic Systems Services Unit and the Agency's electrical crew of the anticipated completion date. Field testing

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will be performed within one week following the date of completion. The Engineer will notify the Contractor of the test results.

Information on Agency testing procedures is available from the Engineer.

**(h) Traffic Signal Turn-on** - The Engineer will establish the date and time the installation is to be turned on. The Agency will turn on the signal within one week after completion of corrections identified during field testing.

Be present at the Project Site.

After traffic signals are turned on and operating as designed, the agency ultimately responsible for maintenance will assume operation and maintenance of the signal. Turn-on does not constitute final approval. The Contractor is still obligated to finish any incomplete portion of the installation and correct problems with workmanship or replace material that does not meet Specifications. After turn-on, damage to the traffic signal installation caused by conditions beyond the Contractor's control will be the responsibility of the maintaining agency.

**(i) Interconnect System Testing:**

Test each new interconnect cable circuit installed in the system. Test the complete system only when all terminations for each cable circuit are completed from the interconnect or controller cabinet at the beginning of the new cable run to the controller or interconnect cabinet at the end of the new cable run. If any test is failed, repair the circuit and repeat the entire test series for that cable circuit.

Perform all tests in the presence of the Engineer. Document the test results. When the tests are completed, furnish the test results and the test data to the Engineer. Conduct tests, as described below, for all cable conductors, including spares, the cable shield, and all field terminations.

In addition to testing the complete system, perform the following tests for each cable circuit:

**(1) Continuity** - Perform a continuity measurement for each conductor and the cable shield in the system. Conductor resistance shall not be more than 10  $\Omega$  per 1,000 feet for each cable pair and shield of the communications cable. Measure the resistance with an ohmmeter having a minimum input impedance of 10 M $\Omega$ /V. Record the resistance of each pair and furnish to the Engineer as described above.

**(2) Isolation** - Perform an isolation measurement for each conductor and cable shield in the system. Measure the insulation resistance with all connections to the conductor or shield under test removed and all other conductors in the cable grounded. Make the measurement with a DC potential of not less than 360 V nor more than 550 V, continuously applied for one minute. Insulation resistance of each cable conductor and the shield shall exceed 1,000 M $\Omega$  per mile. Use an insulation resistance (Megger) tester with a meter scale for measurements, marked with a range from 100 K $\Omega$  to 100 G $\Omega$ , and with zero and infinity also marked.

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**(j) APD Equipment** - Deliver all equipment to the Agency Traffic Maintenance Shop for configuration and testing. The equipment will be available after 5 days for pick up and installation by the Contractor.

**00990.75 Warranty** - Provide a one year Contractor warranty according to 00170.85(b). This Contractor warranty does not replace or reduce other warranties, including manufacturer's warranties that are longer than one year.

**Measurement**

**00990.80 Measurement** - No measurement of quantities will be made for work performed under this Section.

**Payment**

**00990.90 Payment** - The accepted quantities of work performed under this Section will be paid for at the Contract unit price, per unit of measurement, for the following items:

<b>Pay Item</b>	<b>Unit of Measurement</b>
(a) Traffic Signal Installation	Lump Sum
(b) Traffic Signal Modification	Lump Sum
(c) Loop Detector Installation	Lump Sum
(d) Ramp Meter Signal Installation	Lump Sum
(e) Interconnect System	Lump Sum
(f) Flashing Beacon Installation	Lump Sum
(g) Automatic Traffic Recorder Installation	Lump Sum

Item (a) includes furnishing and installing all items of the traffic signal system, including the fire preemption system, the controller, the controller cabinet equipment, and the detection system.

Item (b) includes furnishing and replacing or installing items for an existing traffic signal installation.

Item (c) includes furnishing and installing a complete traffic loop detector installation for an existing installation, including required controller equipment.

Item (d) includes furnishing all items of the ramp meter signal system, including the controller and controller cabinet equipment.

Item (e) includes furnishing all the interconnect system.

Item (f) includes furnishing and installing all items of the flashing beacon system.

Item (g) includes furnishing and installing all items of the automatic traffic recorder system.

Payment will be payment in full for furnishing and placing all materials, and for furnishing all equipment, labor, and incidentals necessary to complete the work as specified.

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Standard mast arm pole foundations (and standard strain pole foundations) will be paid for according to 00963.90.

No separate or additional payment will be made for replacement of disturbed earthwork, base, and surfacing.

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**SECTION 01030 - SEEDING**

Comply with Section 01030 of the Standard Specifications modified as follows:

**01030.12 Soil Conditioners, Amendments, and Bio-Amendments** - Add the following paragraph to this subsection:

Furnish Endomycorrhizae inoculum in a granular or concentrated powder form for areas to be seeded with permanent seed. The product shall have an OMRI Listed™ seal from the Organic Materials Review Institute. The product shall contain a minimum of four (4) species of Endomycorrhizae fungi, including *Glomus intraradices*, *G. mosseae*, *G. aggregatum*, and *G. etunicatum*. The minimum number of propagules per pound shall be 60,000 for the granular form and 100,000 for the concentrated powder form.

**01030.13(a) Label** - Revise the first sentence of this subsection with the following paragraphs:

**01030.13(a) Label** - Deliver all seed to the job site in standard, sealed containers meeting the requirements of the Oregon Seed Law. See ORS 633.520 and OAR 603-056 for specific labeling requirements.

For native seed collected for direct use on a Project, label containers with the date and field location of collection of each seed type.

**01030.13(a) Label** - Replace the first bulleted item of this subsection with the following:

- The kind and variety of each seed of 0.5% or more in a mixture, by weight. Seed mix labels shall include the words "mixture" or "mixed seed" when the seed is a mixture.

**01030.13(b) Quality** - Delete the last (fourth) bulleted paragraph.

**01030.13(b) Quality** - Add the following bulleted items to this subsection:

- Seed is certified "Weed Free", indicating there are no noxious or nuisance weed seeds.
- Seed species and/or seed mixes identified in 01030.13(f) as "Native" shall meet the following additional requirements:
  - The seed has been tested for viability under the Oregon Seed Law within 12 months of application of the seed.
  - Original (first generation) stock seed and Non-Source Identified seed originated from within the Willamette Valley eco-region as defined by the US Environmental Protection Agency (EPA).
  - Source Identified seed is third generation or younger.
  - Non-Source Identified seed meets or exceeds Oregon State Department of Agriculture Certified Seed Standards.
  - Seed whose origin cannot be traced may not meet the definition of "native".

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- For seeding operations using standard seeding equipment, seeds with awns or pubescence have been cleaned and de-bearded prior to their inclusion into mixtures.

**01030.13(f) Types of Seed Mixes** - Add the following to the end of this subsection:

Provide the following seed mix formulas:

- **Temporary Seed Mix No. 1:**

<b>Botanical Name (Common Name)</b>	<b>PLS (kg/ha) (lb/acre)</b>	<b>÷ (% Purity (minimum)</b>	<b>x % Germination) (minimum)</b>	<b>= Amount (kg/ha) (lb/acre)</b>
Festuca rubra (Creeping Red Fescue)	45			
Lolium multiflorum (Annual Ryegrass)	105			
Lolium perenne (Perennial Ryegrass)	150			

- **Temporary Seed Mix No. 2 (late season sowing):**

<b>Botanical Name (Common Name)</b>	<b>PLS (kg/ha) (lb/acre)</b>	<b>÷ (% Purity (minimum)</b>	<b>x % Germination) (minimum)</b>	<b>= Amount (kg/ha) (lb/acre)</b>
Agrostis palustris 'Viper' (Viper Creeping Bentgrass)	15			
Festuca rubra 'Cindy' (Cindy Creeping Red Fescue)	30			
Lolium perenne 'Essence' (Essence Dwarf Perennial Ryegrass)	60			

- **Permanent Seed Mix:**

The following mix is calculated at a base seeding rate of 120 seeds (PLS) per square foot. Since PLS per pound can vary considerably within a species, the PLS pounds per acre for each species, as listed below, are estimates. Final seed mix calculations are to be made by the seed vendor and based on seed lot characteristics for each species, and to meet or exceed each species' seed mix percentage and the seeding rate per square foot.

<b>Botanical Name (Common Name)</b>	<b>PLS (lb/acre)</b>	<b>÷ (% Purity (minimum)</b>	<b>x % Germination) (minimum)</b>	<b>= Amount (lb/acre)</b>
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Achillea millefolium * (12.5%) (Western Yarrow)	0.46	_____	_____	_____
Clarkia amoena * (3.0%) (Farewell to Spring)	0.15	_____	_____	_____
Clarkia purpurea * (3.5%) (Purple Godetia)	0.10	_____	_____	_____
Collomia grandiflora * (4.0%) (Large-Flowered Collomia)	1.72	_____	_____	_____
Eriophyllum lanatum * (10.0%) (Oregon Sunshine)	0.45	_____	_____	_____
Festuca rubra var. commutata (32.0%) (Chewings Fescue)	2.72	_____	_____	_____
Lolium perenne** (18.0%) (Perennial Ryegrass*)	3.97	_____	_____	_____
Lupinus polycarpus*+ (2.0%) (Annual Lupine)	1.78	_____	_____	_____
Prunella vulgaris var. lanceolata * (15.0%) (Native Self-Heal)	1.06	_____	_____	_____

\* Native species  
 \*\* Dwarf variety  
 + Formerly *Lupinus micranthus*

• **Water Quality Seeding (Native Mix):**

The following seeding rates are based on seeding by broadcasting or hydroseeding. Drill seeding may be as much as 25 percent less PLS pounds per acre of each seed species.

<b>Botanical Name (Common Name)</b>	<b>PLS ÷ (% Purity x % Germination) = (lb/acre) (minimum) (minimum)</b>	<b>Amount (lb/acre)</b>
Beckmannia syzigachne (American Sloughgrass)	0.9	_____
Deschampsia caespitosa (Tufted Hairgrass)	5.2	_____
Elymus glaucus (Blue Wildrye)	20.1	_____

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Festuca rubra ssp. rubra (Native Red Fescue)	16.6	_____	_____	_____
Glyceria occidentalis (Western Mannagrass)	0.9	_____	_____	_____

**01030.15 Mulch** - Replace the first paragraph of this subsection with the following:

**01030.15 Mulch** - Furnish mulch materials free of all weed or plant seeds, plant parts, sawdust, plastic materials and other non-biodegradable substances, and containing no substances detrimental to plant life. The kind of mulch material(s) acceptable for use will be shown on the plans, listed in the Special Provisions, or will be as approved.

**01030.15 Mulch** - Add the following paragraph and bullets to the end of this subsection:

Furnish straw mulch for all roadside erosion control seeding except hydromulch may be used under the following conditions:

- Spring planting west of the Cascades between March 1 and May 15.
- Slopes are steeper than 1V to 1.5H and longer than 16 feet.
- Residential or commercial sites with low erosion potential such as sidewalk, median, or parking lot planter strips.

Projects that have variable slopes may include straw mulch and hydromulch when approved.

**01030.30 General** - Add the following subsection:

**01030.30(c) Seed Installers and Vendors** - Submit certification before application of seeding work begins that all seed installers and vendors have a business license issued by the Oregon State Department of Agriculture with a "seed dealer" endorsement. Upon request, the Contractor shall furnish the Engineer with copies of the applicable licenses and endorsements.

**01030.43(b) Permanent Seeding** - Delete "native plant" from the last sentence in the first paragraph.

**01030.43(b) Permanent Seeding** - Add the following to the bulleted item, "West of the Cascades":

The dates for seed mixes identified as "Native" in Special Provision 01030.13(f) are September 15 through October 31.

**01030.44 Fertilizer** - Add the following subsection:

**(c)** Do not apply fertilizer to areas seeded with native seed mixes, as identified in Special Provision 01030.13(f).

**01030.47 Soil Amendments and Bio-Amendments** - Add the following paragraph:

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For areas to be seeded, apply Endomycorrhizal product as specified in Special Provision 01030.12. Apply product with seeding operations by broadcasting on the bare soil surface, or with hydromulch operations according to Special Provision 01030.48.

If applied by broadcasting, apply granular Endomycorrhizal product to bare soil surface at a rate of sixty (60) pounds per acre.

If applied with hydromulch operations, apply an Endomycorrhizal product in a concentrated powder form at a rate of ten (10) pounds per acre. Thoroughly and uniformly mix the Endomycorrhizal product with the mulch and seed.

**01030.48 Application** - Add the following subsection:

**(f) Seeding of Native Seeds** - Native seed mixes, as identified in Special Provision 01030.13(f), are to be seeded according to the following requirements:

**(1)** Apply seed mixtures using one or both of the following methods:

- **Broadcasting** - Use broadcast equipment suitable for native seeds. Broadcast the seed mixture directly on the soil surface in a uniform distribution. Ensure the seeds have good contact with the soil.

Apply mulch to a maximum, uniform depth of ¼". Allowable mulch material shall be Fine Compost only, according to Special Provision 01040.15(b). If the mulch application exceeds ¼" in depth, fresh seed mix and mulch materials shall be reapplied at no additional cost to the Agency.

- **Hydromulching** - Hydromulch according to Standard Specification 01030.48(a) and this Special Provision. Allowable mulch shall be wood fiber, straw fiber (hydrostraw), or Fine Compost according to Special Provision 01040.15(b).

Mix mulch material with seed mix, Endomycorrhizae according to Special Provision 01030.47, a tackifier according to Standard Specification 01030.48(1)(4), and a green dye for visibility. Mix and calibrate the incorporation of the seed and Endomycorrhizae during the application process. Apply mixture with hydromulch equipment or other equipment such as a pneumatic blower. Apply the complete mixture to a maximum, uniform depth of ¼". An application exceeding ¼" depth shall be reapplied with fresh materials at no additional cost to the Agency.

**01030.60 General** - Add the following sentence after the last bullet:

The minimum living plant coverage for native grass seeding is 80% of ground surface.

**01030.71 Waste Disposal** - Replace this subsection with the following subsection:

**01030.71 Disposal of Materials** - Dispose of all materials according to 00290.20.

**SECTION 01040 - PLANTING**

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Comply with Section 01040 of the Standard Specifications modified as follows:

**01040.15 (b) Composted Yard Debris** - Replace this subsection with the following:

**(b) Compost** - Commercially manufactured material resulting from the biological degradation and transformation of plant- and animal-derived materials under controlled conditions designed to promote aerobic decomposition.

**(1) Material Composition** - The compost products must originate a minimum of 65 percent by volume from recycled plant waste, defined as source-separated yard and garden wastes, wood wastes, agricultural crop residues, wax-coated cardboard, preconsumer vegetative food wastes, and other similar source-separated materials that the jurisdictional health department determines to have a comparable low level of risk in hazardous substances, human pathogens, and physical contaminants. Manure and/or biosolids based composts may also be used, upon approval. The supplier shall provide written verification of compost product sources.

**(2) Compost Properties** - Compost material shall meet the requirements in Tables 1 and 2 below.

**Table 1. Particle Size Requirements**

Compost Type	Sieve	Percent Passing (by Weight)	Particle Length	
Fine	3"	100	98% of material to have maximum particle length of 3 inches	
	3/8"	95 minimum		
Medium	3"	100	98% of material to have maximum particle length of 3 inches	
	1"	90 minimum		
	3/4"	65 minimum		
	1/4"	50 maximum		
Coarse	3"	100	98% of material to have maximum particle length of 6 inches	
	1"	90 minimum		
	3/4"	70 minimum		
	- Filter Sock	1/4"		30 maximum
	- Filter berm	1/4"		50 maximum

**Table 2. Compost Parameters**

Parameter Description	Compost Type		
	Fine	Medium	Coarse
<b>Physical contaminants</b> <sup>1</sup> by weight, determined by TMECC 03.08-A "percent dry weight basis"	< 1.0 percent		

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<b>Organic matter</b> in dry weight basis, determined by TMECC 05.07-A, "Loss-On-Ignition Organic Matter Method"	Minimum 35 percent	
<b>pH</b> , tested in accordance with TMECC 04.11-A, "1:5 Slurry pH"	6.0 – 8.5	
<b>Soluble salt concentration</b> , tested in accordance with TMECC 04.10-A, "1:5 Slurry Method, Mass Basis"	< 5.0 dSm (mmhos/cm)	
<b>Carbon to nitrogen ratio</b>	< 25:1	Not applicable
<b>Stability</b> , in accordance with TMECC 05.08-B, "Carbon Dioxide Evolution Rate"	8 or below	
<b>Maturity</b> , in accordance with TMECC 05.05-A, "Germination and Vigor"	> 80% <i>(Only applicable with erosion control composts to be seeded)</i>	
<b>Moisture content</b>	35-60%	

<sup>1</sup> Manufactured inert material such as plastic, concrete, ceramics, metal, etc.

**(2) Compost Processing** - Compost material shall be processed through proper thermophilic composting, meeting the US Environmental Protection Agency's definition for a "process to further reduce pathogens" (PFRP).

**(3) Compost Testing** - All compost suppliers will participate in the U.S. Composting Council's Seal of Testing Assurance (STA) Program. The compost supplier will test all compost products within 90 calendar days prior to application. Samples will be taken using the STA sample collection protocol. The sample collection protocol can be obtained from the U.S. Composting Council at 4250 Veterans Memorial Highway, Suite 275, Holbrook, NY 11741, Phone: 631-737-4931, <<http://www.compostingcouncil.org/>>.

The compost sample shall be sent to an independent STA Program-approved lab. A complete list of laboratories can be found on the internet at <<http://www.compostingcouncil.org/programs/sta/labs.php>> or by contacting the U.S. Composting Council directly. The compost supplier will pay for the test. A copy of the approved independent STA Program laboratory test report shall be submitted to the Engineer prior to initial installation of the compost. Seven (7) working days prior to installation, the Contractor shall submit a sample of each type of compost to be used on the project to the Engineer.

**(4) Acceptable Compost** - The Contractor shall submit the following information to the Engineer for approval:

- A Request for Approval of Material Source.
- A copy of the Solid Waste Handling Permit issued to the supplier by the Jurisdictional Health Department.
- A list of the compost ingredients by percentage present in the final compost product.

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- A copy of the supplier's Seal of Testing Assurance (STA) analysis certification as issued by the U.S. Composting Council for the compost material. Acceptance of the compost will be based upon a satisfactory Test Report from an independent STA program-certified laboratory and the sample(s) submitted to the Engineer.

**(5) Unacceptable Compost** - Compost not conforming to the above requirements, or taken from a source other than those tested and accepted, shall be immediately removed from the project and replaced at no cost to the Contracting Agency.

**01040.90(f) Mulch** - Add the following:

No separate payment will be made for material produced under subsection 01040.15(b).

**SECTION 01092 - STORMWATER CONTROL FACILITIES**

Section 01092, which is not a Standard Specification, is included for this Project by Special Provision.

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**Description**

**01092.00 Scope** - This work consists of furnishing and installing a water quality swale as shown or directed.

**Materials**

**01092.10 Biofiltration Soil Media** - Furnish, mix, and place materials meeting the requirements in this Section. Materials may include existing, onsite materials, amended if necessary to meet the requirements in this Section, or materials from offsite sources.

**(a) Soil Media Requirements** - Soil media to be a mixture of the composition specified in Table 1.1.

**Table 1.1. Biofiltration soil media composition**

Medium	Description	Percentage of Medium in Filter Layer
<b>Sand</b>	<ul style="list-style-type: none"> <li>Coarse grade with an effective particle size (<math>D_{10}</math>) of 0.012" - 0.20" (0.3-0.5 mm)</li> <li>Uniformity coefficient of less than 4</li> <li>Washed</li> </ul>	40% - 50%
<b>Topsoil</b>	<ul style="list-style-type: none"> <li>Loam or loamy sand texture per USDA Soil Textural Classification</li> <li>Clay content of less than 5%</li> </ul>	30% if loam, or 40% if loamy sand
<b>Compost</b>	Material conforming to Special Provision 01040.15(b)	20% - 30%
<b>Total Composition</b>		100%
<b>Total Organic Matter Content</b>	Measured per ASTM Designation D 2974 (Standard Test Method for Moisture, Ash and Organic Matter of Peat and Other Organic Soils)	Approximately 10% by dry weight

Final biofiltration soil media shall meet the additional following requirements:

- A pH between 5.5 and 7.0.
- Minimum long-term hydraulic conductivity of 1.0 inches/hour per ASTM Designation D 2434 (Standard Test Method for Permeability of Granular Soils) at 80 percent compaction per ASTM Designation D 1557 (Standard Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort). Infiltration rate and hydraulic conductivity are assumed to be approximately the same in a uniform soil mix.
- Uniformly mixed, and free of stones, stumps, roots, or other similar objects larger than two (2) inches.

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- Free of plant or seed material of non-native, invasive species, or noxious weeds as defined in subsection 01030.02.

**(b) Soil Media Preparation** - Soil mix preparation can be performed onsite or offsite and transported to the bioswale facility when ready for installation. The media shall be thoroughly mixed to ensure a uniform distribution in the mix. Onsite soil mixing or placement of soil media shall not be performed during saturated conditions.

**(c) Testing** - Prior to installation, the soil media shall be tested. A minimum of one soil test shall be done for each bioswale. All of the samples shall be tested at the same approved soil testing laboratory. Required tests include sieve analysis, pH, and organic matter tests. The Contractor will pay for the tests. Seven (7) working days prior to placement of the soil mix prepared onsite, or transport of the soil mix prepared offsite, the Contractor shall submit the following to the Engineer:

- A copy of the lab analysis report for each soil sample verifying that the material conforms to the requirements in these specifications.
- A sample of the soil media to be used on the project, for each bioswale.

**(d) Acceptance of Material** - Acceptance of each soil media material will be based upon a satisfactory Test Report from an approved soil testing laboratory for each sample tested and the sample(s) submitted to the Engineer.

**(e) Unacceptable Material** - Soil media not conforming to the criteria specified in this Section, or taken from a source other than those tested and accepted, shall be immediately removed from the project and replaced at no cost to the Contracting Agency.

**01092.12 Plastic Board** - Furnish plastic board meeting the following requirements:

- Is HDPE or LDPE consisting of 75 percent overall recycled content, of which 50 percent is consumer material.
- Does not contain paper, foil, or wood.
- Smooth and free of splinters.
- Includes an ultra-violet inhibitor.
- Is consistent in color from piece to piece.
- Contains no more than 3 percent air voids.

**01092.13 Concrete** - Furnish concrete meeting the requirements of Section 00440.

**01092.14 Stone embankment Material** - Furnish stone embankment material meeting the requirements of 00330.16 except:

- Provide a maximum size between 9 inches and 3 inches.
- No large rock fragments are allowed.

**01092.15 Drainage Geotextile** - Furnish Type 1 drainage geotextile meeting the requirements of Section 02320. Provide "Level B" documentation according to 02320.10(c).

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**01092.16 Riprap Geotextile** - Furnish Type 1 riprap geotextile meeting the requirements of Section 02320. Provide "Level B" documentation according to 02320.10(c).

**01092.17 Riprap** - Furnish riprap meeting the requirements of 00390.11.

**01092.18 Manholes, Catch Basins, and inlets** - Furnish manholes, catch basins, and inlets meeting the requirements of 00470.10.

**01092.19 Storm Sewer Pipe** - Furnish storm sewer pipe meeting the requirements of 00445.11.

**Construction**

**01092.40 General** - Construct water quality swale as shown or directed.

**01092.41 Water Quality Swales:**

**(a) Construction Site Stabilization** - Prevent stormwater runoff from the construction site from entering a water quality swale facility until the area draining to the facility has been permanently stabilized.

**(b) Soil Excavation and Preparation** - Perform according to the following requirements:

- Perform swale excavation work only when the biofiltration swale area is dry.
- Do not stockpile excavated material in the biofiltration swale area.
- Prevent compaction and smearing of the soils in the base and sidewalls of bioswale facilities. Use light equipment only within the facility basin.
- If applicable, install an underdrain.
- If smearing occurs, rake or rototill the smeared areas of the interface before placing backfill material.
- If compaction occurs at the base of a facility, scarify the subsoil a minimum 12 inches deep.
- Scarify soil surface by raking manually.

**(c) Biofiltration Soil Media Placement, Grading, and Compaction** - Perform according to the following requirements:

- After surface scarification, place biofiltration soil media in maximum 12-inch lifts. Compact each lift by saturating it with water. Ensure that the final surface invert and final surface grade are according to the plans.
- Rake soil media to level out.

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**Maintenance**

**01092.70 Cleaning** - If a stormwater control facility is used for erosion and sediment control, remove all accumulated sediment and debris before completing the facility.

**Measurement**

**01092.80 Measurement** - No measurement of quantities will be made for work performed under this Section. The estimated quantities of materials are:

<b>Item</b>	<b>Quantity</b>
Biofiltration Soil Media Mix	172 Cu. Yd.

**Payment**

**01092.90 Payment** - The accepted quantities of work performed under this Section will be paid for at the Contract lump sum amount for the item "General Excavation".

Payment will be payment in full for furnishing and placing all materials, and for furnishing all equipment, labor, and incidentals necessary to complete the work as specified.

Training

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**SECTION 02050 - CURING MATERIALS**

Comply with Section 02050 of the Standard Specifications.

**SECTION 02110 - POSTS, BLOCKS, AND BRACES**

Comply with Section 02110 of the Standard Specifications modified as follows:

**02110.40(a) Grading** - Replace the Douglas Fir and Hem-Fir grading requirements with the following grading requirements:

<b>Species</b>	<b>4" x 4"</b>	<b>4" x 6"</b>	<b>6" x 6" and Larger</b>
Douglas Fir	124-c WCLIB 42.12 WWPA	123-c WCLIB 62.12 WWPA	131-cc WCLIB 80.12 WWPA
Hem-Fir	124-c WCLIB 42.12 WWPA	123-c WCLIB 62.12 WWPA	(not allowed) (not allowed)

**SECTION 02630 - BASE AGGREGATE**

Comply with Section 02630 of the Standard Specifications modified as follows:

**02630.10(a) Grading** - In Table 02630-01, add the following sieve size line before the No. 10 sieve size line and add the following footnote at the end to the table:

•	No. 4 *	-	-	-	--
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\* Report percent passing sieve when no grading requirements are listed

**SECTION 02910 - SIGN MATERIALS**

Comply with Section 02910 of the Standard Specifications modified as follows:

**02910.02 Types of Signs** - Replace the "W9" sign type with the following:

**"W9"** Silver-white Type III or Type IV sheeting background with blue nonreflective screened or cut-out permanent legend.

**THE FOLLOWING SPECIAL PROVISIONS**

**02920 AND 02926**

**ARE FOR 'ODOT'**

**INSTALLATIONS**

Training

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**SECTION 02920 - COMMON ELECTRICAL MATERIALS, ILLUMINATION AND  
CAMERA**

Use the following when performing work on the Illumination and Traffic Camera.

Comply with Section 02920 of the Standard Specifications modified as follows:

**02920.22 Cable** - Add the following sentence to the end of the "Loop Feeder Cable" bullet:

When shown, construct loop feeder circuits of two-conductor No. 18 AWG twisted pair shielded cable with drain wire conforming to IMSA 50-2.

**SECTION 02926 - HIGHWAY ILLUMINATION MATERIALS**

Comply with Section 02926 of the Standard Specifications modified as follows:

**02926.53 High-Intensity Discharge Luminaires:**

Add the following:

**(c) Luminaire Specific Requirements** - The following type of luminaire is required for this project:

Luminaire Description	Lamp watts and Type	Light Distribution*	Photometric Performance
Conventional Roadway (1)	400/250/200 W HPS	M-SC-3	(1.1)

\* See 002920.53(b) for definitions of luminaire light distribution.

**(1) Conventional Roadway Type Luminaire** - The conventional roadway type luminaire shall conform to 002926.53(a) in the Standard Specifications.

**(1.1) Performance of Conventional Roadway Luminaire (M-SC-3)** - When equipped with 50,000 lumen lamp and with a mounting height of 45 feet, each luminaire shall provide the following performance:

A minimum of 41 percent of the lamp lumens shall be transmitted downward on the streetside and a maximum of 30 percent of the lamp lumens shall be transmitted downward on the houseside of the luminaire.

Total efficiency shall be a minimum of 73 percent.

The maximum candelas in any directions shall not exceed 15000 for 400 watt luminaire.

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For the luminaire with 400 watt HPS lamp, minimum initial illuminance on the pavement at the following points shall be:

Point	Longitudinal Spacing	Transverse Spacing	Minimum Illuminance (fc)
A	0.0 M.H.	1.5 M.H.	0.46
B	2.0 M.H.	0.0 M.H.	0.53
C	2.0 M.H.	1.5 M.H.	0.25
D	3.0 M.H.	0.0 M.H.	0.18
E	3.0 M.H.	1.5 M.H.	0.14

Training

**THE FOLLOWING SPECIAL PROVISIONS**

**02920 AND 02925**

**ARE FOR "CITY OF EUGENE"**

**INSTALLATIONS**

Training

**SECTION 02920 - COMMON ELECTRICAL MATERIALS**

Use the following when performing work on the Traffic Signals.

Section 02920 Common Electrical Materials is replaced in its entirety with the following:

**Description**

**02920.00 Scope** - This Section includes the requirements for common electrical systems.

**Materials**

**02920.01 Materials** - Where shown or specified, furnish and install hardware that is hot-dip galvanized or Type 304 or 316 stainless steel screws, bolts, nuts, and washers.

**02920.02 Powder Coating** - Powder coat materials according to Section 00593.

**(a) Galvanized Steel** - After galvanizing light brush blast according to SSPC-SP-7 that removes surface contaminants and provides a profile but does not destroy the integrity of the galvanizing. Hand sand and debur as needed to remove rough areas. Pre heat galvanized steel before powder coating to eliminate off gassing during curing. Electrostatically apply and oven cure a TGIC Polyester powder according to manufacture specifications to achieve a 50 micron minimum dry film thickness. The time from brush blasting to curing shall take no longer than eight hours to reduce surface oxidation. Coated galvanized steel shall have a salt spray resistance of 1,000 hours using ASTM B117 without loss of adhesion. Retap threads as required.

**(b) Aluminum** - Solvent clean according to SSPC-SP-1 followed by a light brush blast according to SSPC-SP-7. Pre heat aluminum before powder coating to eliminate off gassing during curing. Electrostatically apply and oven cure a TGIC Polyester powder according to manufacture specifications to achieve a 50 micron minimum dry film thickness. The time from solvent cleaning to curing shall take no longer than eight hours to reduce surface contamination. Coated aluminum shall have a salt spray resistance of 1,000 hours using ASTM B117 without loss of adhesion. Retap threads as required.

**02920.03 Fiberglass Poles** - Poles shall be fiberglass and shall be rated for 90 M.P.H. 30% gust factor AASHTO wind load.

Post top mounting poles shall be designed for direct burial installation inside a 10 inch inside diameter plastic sleeve as shown on the plans. Post top poles shall provide a 3 inch metal pole top mounting tenon for a nominal post top luminaire mounting height of 20 feet. Poles shall be black in color.

Mast arm 25 foot and greater nominal mounting height poles shall be designed for direct burial installation inside a plastic sleeves as shown on the plans. Manufacture is to specify the inside diameter required in bid document. Manufacture is to allow a minimum of two inches of space for sand between pole and sleeve. Mast arm is to be a bolt on aluminum arm with a length of 8 feet. Mast arm is to be finished so that it is non-corrosive and is aluminum in color. Pole is to be light grey in color so as to match a spun aluminum pole.

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Fiberglass poles shall be round, hollow, and of uniform taper along their entire length. Poles shall be non-conductive and chemically inert.

The pole shall be constructed from continuous fiberglass filaments combined with thermosetting isophthalic polyester resin. The fiberglass and resin ratio of the pole shall contain at least 65% glass, with the balance to be isophthalic polyester resin.

The glass filament shall be helically wound under tension first at a high angle (65-85 degrees) to the longitudinal axis of the pole with alternate layers of filaments in opposite directions for maximum circumferential (compressive) strength.

The outer core section shall be of greater weight than the inner core section, and shall be helically wound by wrapping continuous glass filaments at a low angle (3-15 degrees) to the longitudinal axis of the pole for maximum longitudinal (bending) strength.

The pole shall have a tapered wall increasing in thickness from the top to base in proportion to the load and ground line moment requirements. The pole shall be reinforced in areas of hardware attachments.

The 3 inch post top tenon and/or mast arm attachment shall be metal and shall be bonded to the pole.

A 1-3/8 inch wire entrance hole shall be located 24 inches below ground line.

The surface of the pole shall be uniform and consistent for the entire length. The finish coating shall be pigmented urethane capable of withstanding exposure to ultraviolet light, chemicals, and extreme weather conditions.

The pole finish shall have a textured surface. The surface coating shall be uniformly applied so as to prevent graze lines, bumps, and pin holes. The surface coating shall be a minimum dry film thickness of 1-1/2 mil.

Hand hole entrance is required minimum size of 3" x 5".

**02920.10 Metal Conduit** - Furnish metal conduit meeting the following requirements:

- **Rigid Metal Conduit** - Galvanized rigid metal manufactured of mild steel conforming to UL 6, Rigid Metal Electrical Conduit.
- **Liquid-Tight Flexible Metal Conduit** - Liquid-tight, nonmetallic, sunlight resistant outer jacket over an inner flexible metal core. Conduit shall conform to UL 360 Liquid-Tight Flexible Steel Electrical Conduit.

**02920.11 Nonmetallic Conduit** - Furnish nonmetallic conduit meeting the following requirements:

- **Rigid Nonmetallic Conduit** - Heavy wall, extruded, rigid polyvinyl chloride (PVC) conforming to UL 651, Schedule 40 or 80 Rigid PVC Conduit as shown.
- **Liquid-Tight Flexible Nonmetallic Conduit** - Meet the requirements of Article 351 of the NEC and shall be UL listed.

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- **High Density Polyethylene Conduit (HDPE)** - SDR15 (Schedule 40) equivalent minimum conforming to UL651B. The conduit shall lay flat when unwound.
- **Rigid Nonmetallic Fiberglass Conduit** - Schedule 40 or Schedule 80 reinforced thermosetting resin conforming to UL1684.

**02920.12 Conduit Fittings** - Furnish conduit fittings meeting the following requirements:

- **Expansion Fittings** - Weatherproof, hot dip galvanized malleable iron expansion head and body. Where the plans do not specify an equipment grounding wire in the conduit run, furnish fittings with external bonding jumpers. The expansion fitting shall permit a 4 inch conduit movement minimum.
- **Condulets** - Hot-dip galvanized malleable iron conduit body with corrosion resistant cover and moisture proof gasket.
- **Metallic Bushings** - Galvanized steel or die cast zinc with insulated throat. Include a bonding lug if required.
- **Nonmetallic Bushings** - PVC push on end bell style.

**02920.13 Underground Marking Tape** - Provide underground marking tape that is red polyethylene film, 6 inches wide, 4 mils thick minimum, and imprinted with the following or similar legend:

"CAUTION CAUTION CAUTION BURIED ELECTRIC LINE"

**02920.14 Junction Boxes:**

**(a) General** - Junction box covers in vehicle traffic areas shall be rated for AASHTO H-20 highway loading. Surface-mounted boxes shall have overlapping covers.

Junction box covers shall have the legend "SIGNALS", "STREET LIGHTING", etc stamped or embossed on the cover as appropriate. Letter size shall be no smaller than 1/16 of the box width.

**(b) Metal Junction Boxes** - Construct boxes of cast iron or 1/8 inch nominal welded sheet steel. Make covers from reinforced non-slip steel plate. Hot-dip galvanize boxes and covers after fabrication according to AASHTO M 232 (ASTM A 153). Each box shall have a cover gasket that will, with cover in place, form a NEMA 4 watertight fit. Provide covers with stainless steel hex-head cap screws. Recess screw heads in the cover.

Recessed covers shall fit the box so that when the cover is set in the box, the top of the cover shall be even with the top of the box, with not more than a 1/8 inch gap between any part of the top edge of the cover and the inside lip edge of the box.

Flush-mounted boxes shall be outside-flanged with recessed, checkered steel covers.

**(d) Polymer Concrete Junction Boxes** - Polymer concrete junction boxes shall be precast water meter type. Material shall consist of aggregate bonded with a polyester

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resin and reinforced with fiberglass strands. The box and cover shall be gray in color. Covers shall be capable of withstanding a load of 20,000 pounds over a 10 inch by 10 inch square surface. Covers shall have a skid-resistant surface, and bolt to the junction box with a recessed stainless steel penta. All covers for polymer concrete junction boxes shall be recessed and fit the box so that when the cover is set in the box, the top of the cover shall be even with the top of the box.

**02920.20 Cable and Wire** - Unless otherwise noted, all electrical conductors shall be stranded copper conforming to ASTM B 3 and ASTM B 8, Class B or C. Insulation shall be 600 V plasticized polyvinyl chloride, polyethylene, or chemically cross-linked polyethylene, conforming to ASTM D 2220, ASTM D 1351, ASTM D 2655, and ASTM D 2656. Do not use polyethylene compounds where exposed to sunlight. Tape the ends of unused and spare conductors with insulating vinyl plastic tape.

**02920.21 Wire and Cable Color Coding:**

**(a) General** - Factory supplied stripping of conductors will be accepted when the required color insulation is not available. Color tape will not be accepted as an alternate for insulation color coding.

**(b) Illumination Circuits** - Wire insulation color shall conform to the following:

(a) For 120 volt line distribution, the conductor shall be black.

(b) For two phase 208 or 240 volt line distribution, one conductor shall be black, the other conductor shall be red. When two circuits are run in the same conduit, the second pair of conductors shall be blue and brown. Alternate colors or additional colors for additional circuits may be required with approval of the Engineer.

(c) Neutral conductors shall be white.

(d) Ground conductors shall be green insulated or non-insulated stranded wire.

**(c) Traffic Signal Circuits** - Color coding of traffic signal circuits shall conform to the wiring color code shown or specified.

**02920.22 Cable** - Furnish cable meeting the following requirements:

- **Direct Burial Cable** - All cable shown or specified as direct burial cable shall be:
  - **Underground Service Entrance Cable** - Comprised of a heat and moisture resistant cross-linked polyethylene insulated wire rated for 167° F operation in wet or dry locations and be UL labeled as type USE cable according to the NEC.
  - **Underground Service Entrance Cable** - Comprised of moisture resistant thermoplastic insulated wires and a moisture and sunlight resistant thermoplastic outer covering. Cable shall be rated for 140° F operation in wet or dry locations and be UL labeled as type UF cable according to the NEC.

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- **Messenger Cable** - Galvanized steel seven-strand conforming to ASTM A 475 utility grade with Class A coating.
- **Tether and Stabilizer Cable** - Galvanized steel seven-strand conforming to ASTM A 475 common grade with Class A coating.
- **Loop Feeder Cable** - **Two-conductor** No. 14 AWG twisted pair shielded cable with drain wire conforming to IMSA 50-2. When shown, construct loop feeder circuits of two-conductor No. 18 AWG twisted pair shielded cable with drain wire conforming to IMSA 50-2. When shown, construct loop feeder circuits of two-conductor No. 18 AWG twisted pair shielded cable with drain wire conforming to IMSA 50-2.
- **Interconnect Cable** - REA PE-38 or PE-39 cable consisting of No. 19 AWG stranded or solid individual conductors. The cable shall contain the number of wire pairs shown.
- **Control Cable** - Comply with IMSA 20-1. Outside jacket insulation shall be black in color.
- **Cable Ties** - Heavy-duty UV resistant black plastic self-locking straps approximately 5/16 inch in width, serrated gripping surfaces through a binding buckle, and a minimum tensile strength of 45 pounds.
- **Audible Pedestrian Device Cable** shall be stranded copper 4 conductor 18 AWG with 0.02" Orange XLPE insulation. Reno HR-418 or equal.
- **TC Cable** - XHHW conductors with PVC jacket.
- **Polyethylene Pull Line** - An electrical polyethylene pull rope with a 1,200 pound minimum break strength.

**02920.23 Wire** - Furnish wire meeting the following requirements:

- **THWN Wire** - Insulated stranded copper wire rated for 167° F operation in wet or dry locations and be UL listed as THWN. THWN insulated wire will only be allowed for ground and bond wire, and as signal tracer wire in empty conduits for future use.
- **XHHW Wire** - Insulated stranded copper wire rated for 194° F dry and 167° F wet locations and be UL listed as XHHW.
- **Grounding and Bonding Wire** - Stranded copper wire. Minimum size shall be No. 6 AWG or as shown. When installed in conduit use type THWN that is green in color.
- **Loop Wire** - Insulated stranded copper No. 14 AWG type XHHW conductor inside a polyethylene tube conforming to IMSA Specification No. 51-7. XHHW wire shall be encased in a polyvinyl chloride or a polyethylene tube as specified in Section 7 ENCASING TUBE of IMSA Specification No. 51-5-1985. The color of the encasing tube shall be yellow, orange or red.

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- **Coax Video Detection Wire** - RG59U Coax wire shall be 75 ohm, 20 gauge solid copper wire that is 10.50 ohms or less per 1,000 feet, with a 95% braided copper shield. Insulation shall be PVC with a .242 nominal O.D. All coax wire shall be run un-cut and un-spliced from controller cabinet to the video camera location.

**02920.24 Eyebolts** - Furnish eyebolts meeting the requirements to ASTM A 307.

**02920.25 Electrical Splice Materials** - Furnish electrical splice material meeting the following requirements:

Electrical wire splices shall be made using a high pressure compression type solderless connector to securely join the wires both mechanically and electrically. Splices located in junction boxes, pole bases or other similar locations shall be made moisture and water proof by using either a heat shrink tubing with pre-applied sealant or electrical insulating rubber type tape overwrapped with electrical vinyl plastic tape. Use silicon caulk to seal the space between adjacent wires before applying the insulating rubber tape or shrinking the tubing.

Direct burial splices and splices that may be submersed in water shall be made using a heat shrink tubing with internal sealant, with Thomas and Betts "Klick-it" splices, or other approved method.

- **Heat-Shrink Tubing** - Surface-irradiated tube complying with UL 486, rated at 194° F, with 600 V inner melting wall or liner to provide void-free encapsulated insulation.
- **Insulating Rubber Tape** - Electrical grade, nondrying, rubber based, elastic type conforming to ASTM D 4388.
- **Insulating Vinyl Plastic Tape** - Comply with ASTM D 3005, Type II and UL 510.

**02920.26 In-Line Fuseholder** - An in-line fuse holder shall be placed in the base of all luminaire poles. The in-line fuseholder rated for 30 A at 600 V shall be designed to hold a 13/32 inch by 1 1/2 inch 10 A KTK type fuse. The case shall be rigid plastic with a threaded coupling for joining the two halves. When threaded together, the two halves shall completely enclose the fuse and exert pressure against a neoprene "O" ring to provide a waterproof seal. The load side holder shall hold the fuse securely in place, so when the two halves are disconnected, the load side holder will retain the fuse. The line side contact point shall be spring-loaded to provide pressure between the fuse and the contact points. Wire terminals shall be compression type rated for copper wire.

**02920.27 Ground Rod and Clamp** - Furnish 5/8 inch x 8 foot copper covered steel ground rods with bronze grounding wire clamps.

**02920.28 Conduit Plug** - Furnish conduit plug material used to seal the ends of conduit composed of closed cell polyethylene foam or duct seal meeting the following requirements:

- **Closed Cell Polyethylene Foam** - Consisting of precut sections with a plug length of 3 inch and a plug diameter 1/2 inch larger than the conduit diameter being plugged. Approximately one third of the plug length shall be exposed after installation.

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- **Duct Seal** - UL listed clay putty material designed to seal electrical conduit.

**02920.30 Wood Poles:**

**(a) Scope** - This specification governs minimum acceptable requirements for preservative-treated Douglas Fir poles.

**(b) Reference Standards** - Poles supplied under this specification shall be manufactured and tested according to the latest editions, revisions, and amendments to the applicable standards of ANSI and AWPA, especially ANSI 05/1-1979 and AWPA A3, C4, M2, P8, and P9, except as modified hereafter.

**(c) Shape and Dimension** - Poles shall be of uniform taper from butt to top, and shall be representative of supplier's stock; excessively crooked materials shall be grounds for rejection. All sizes pertain to poles after treatment. The top of the pole shall be cut at a 1:4 slope away from grain before treatment.

**(d) Spiral Grain** - Spiral grain shall not exceed one complete twist in any 30 feet; localized spiral grain shall not exceed a one in four slope in any two-foot section.

**(e) Shake** - Shake in the butt surface extending through an arc of not more than 90 degrees are permitted. Shake extending through an arc of more than 90 degrees are permitted only within a circle, the center of which is the center of the butt surface and the diameter of which is less than the average butt diameter. Shake in the top surface are permitted, provided that the diameter of the shake is less than the diameter of the top.

**(f) Knots** - Maximum permitted sizes are as follows:

POLE LENGTH	DIAMETER OF SINGLE KNOT	SUM OF DIAMETERS IN ANY ONE-FT SECTION
45' and shorter	2.5 inches	8 inches
50' and longer	3.0 inches	10 inches

H Class Poles: The sum of knot diameters in any one-foot section shall not exceed 1/3 of the pole circumference or 14 inches, whichever is the least.

**(g) Incising** - All poles 40 feet class 4 and larger shall be deep incised to a depth of 2-1/2 inches, from 3 feet above to 4 feet below ground line. Incising may be accomplished by using equipment specially designed for that purpose, or drilled to a previously approved pattern. If drilled, a maximum depth of 3 inches with a maximum bit size of 5/16 inch is permitted.

**(h) Marking** - The pole face shall be permanently marked with a 2-inch diameter aluminum tag, recessed 1/4 inch into and securely nailed to the pole. The tag center shall be located 2" plus or minus from a point 10 feet from the butt for poles up to and including 50 feet and 13 feet for poles longer than 50 feet. The tag shall carry manufacturer's identifying symbol, year of manufacture, size and class of pole, and treatment type. A tag with size of pole shall also be nailed to bottom of pole.

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**(i) Treatment Type** - Poles shall be pressure treated with a preservative solution containing not less than 5% penta-chlorophenol by weight per assay AWPA A5. The penta-chlorophenol shall conform to AWPA P8 and be dissolved in heavy hydrocarbon solvent type A per AWPA P9.

**(j) Treatment Retention** - As determined by assay of a 2-1/2" boring, the pressure treatment shall achieve a minimum retention of 0.60 pcf through a depth of 1" from the pole face, and 0.30 pcf from a depth of 2" through 2-1/2".

**(k) Penetration Requirements** - Depth of penetration at any point on the pole shall not be less than 3/4 inch. If the sapwood thickness exceeds 3/4 inch, at least 85% of the sapwood shall be penetrated up to a maximum depth of 1-5/8 inches. Depth of penetration shall not be less than 2-1/2 inches in the deep incised ground line area of poles 40 feet-class 4 and larger.

**(l) Pole Framing** - None allowed. Only holes in poles shall be to attach street light mast arms. Poles that have been pre-framed to other specifications will be rejected.

**(m) Quality Assurance and Inspection** - Manufacturer shall provide written certification that poles delivered are in accordance with these specifications. Any modification or deviations from this specification shall be clearly shown and marked as "Deviation from Specification".

Engineer shall further inspect poles for compliance with these specifications upon delivery to job site. Any poles found not to be in compliance shall be rejected and removed from job site.

**02920.35 Luminaire Arms for Wood Poles** - Luminaire arms for wood poles shall be hot-dipped galvanized steel and shall be constructed in accordance with ASTM specification A-36. Arms shall be upswept and formed from 2-inch steel pipe and shall include a grounding lug. Standard mounting brackets shall fit all wood poles. The arm length shall be as shown on the plans, and shall be designed to support a luminaire with an effective projected area of 4.0 square feet and a weight of 80 pounds.

**02920.36 Ornamental Lighting Standards** - All metal lighting standards shall be hot dip galvanized or anodized aluminum. For cast iron and steel poles that require painting after galvanization, the surface shall be properly prepared to assure paint adhesion.

After installation, all exterior surfaces, except for the City furnished bronze collar, shall be painted with two coats of pigmented, silicone resin modified, long oil synthetic alkyd enamel. The paint shall be applied using the method recommended by the manufacture. Minimum dry film thickness of the exterior enamel shall be 3 mils. The total dry film thickness of paint on exterior surfaces (primer paint plus exterior enamel) shall be 6 mils. The following exterior enamel paint has pre-approval:

RODDA: Powrkote

The City furnished bronze collar shall be left unpainted.

## **SECTION 02925 - TRAFFIC SIGNAL MATERIALS**

**02925.00 Scope** - In addition to Section 02920, this Section includes the requirements for traffic signal installations.

### **Materials**

**02925.01 Materials** - Where shown or specified, hardware shall be furnished and installed with hot-dip galvanized or Type 304 or 316 stainless steel screws, bolts, nuts and washers. Bolts and screws shall have square or hex heads. Allen head fasteners will not be allowed.

### **02925.33 Frangible Bases:**

**(a) General** - Bolts, nuts and washers shall conform to 02560.20 and shall be galvanized according to 02560.40.

**(b) Vehicle Signal Pedestals** - Transformer bases shall be constructed to bolt to shaft flanges. Bases shall be square with rounded corners, tapered from the base to the top and approximately 20 inches in height. They shall be made of cast aluminum, cast iron or steel plate and include a removable access plate. Hot-dip galvanize cast iron and steel plate bases after fabrication.

**(c) Pedestrian Signal Pedestals** - Pedestrian signal pedestal bases shall be a frangible type and constructed of either galvanized cast iron or cast aluminum. Include a removable access plate and a threaded connection to accept a 4 inch nominal steel pipe.

**02925.34 Anchor Bolts** - Anchor bolts shall conform to 02560.30 and to the types and sizes shown. Anchor bolts shall be galvanized full length and according to Section 02560.40. The top shall be threaded a minimum of 6-inches.

### **Cabinets and Control Devices**

**02925.40 Cabinets** - The control cabinet shall be constructed of 10-gauge sheet steel and shall be hot-dip galvanized after fabrication in accordance equipped with ASTM A 385 and ASTM A 386. As an alternate, cabinets may be constructed of 14-gauge 304 stainless steel. All cabinets shall be weatherproof, rated as NEMA type 3R, and be constructed as shown on the plans. The control cabinet shall be suitable for pole mounting, or base mounting, as shown on the plans.

The internal wiring of cabinets shall be done by a UL listed facility. Cabinets shall conform to one or more of the following standards where appropriate:

- UL 50, Cabinets and Boxes
- UL 67, Panel Boards
- UL 869A, Service Equipment

Use a welded conduit hub or screw-on hub to make conduit entrances into cabinets. Welded hubs shall be securely welded to the cabinet before galvanizing.

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Power service cabinets with live parts exposed shall have a dead-front panel installed with cutouts for operating handles. Dead-front panels up to and including 120 square inches in size shall have a minimum of three holding studs. Install panels larger than 120 square inches in size using an adequate number of studs to maintain rigidity of the panel.

Construct the dead-front panels of stainless steel or galvanized steel and treat all cut galvanized steel edges with zinc-rich paint. Prime galvanized steel dead-front panels with vinyl wash primer and finish with exterior polyurethane enamel. The finish color of galvanized steel shall be grey.

Mounting pans or false backs are required for circuit breakers, contactors, relays, switches, transformers or other types of electrical equipment. They shall be securely mounted inside the cabinet.

Label circuit breakers and equipment with an engraved permanent label on the dead-front panel to indicate the circuit controlled.

Provide each cabinet with a latching device for a standard Agency padlock.

Cabinet drawings including electrical circuits shall be submitted to the City for approval prior to construction.

**02925.40 (a) Interconnect Cabinets** - Interconnect cabinets shall be NEMA Type Enclosures designed to house electrical equipment mounted on a plywood back panel. The cabinet shall be designed such that when the door is closed, the cabinet shall be completely weather sealed.

The outside dimensions of the cabinet shall be approximately as follows:

Height of 36 inches  
Width of 20 inches  
Depth of 15 inches

The cabinet and doors shall be constructed of 0.125-inch minimum thickness sheet aluminum.

The cabinet shall be finished in anodized aluminum after fabrication. The inside walls, doors and ceiling of the cabinet shall be anodized the same as the outside after fabrication.

Cabinets shall be designed to provide strong and rigid construction for pole mounting. Rear stiffener plates shall be welded to the top and bottom of inside back wall to accommodate pole mounting plates.

All external seams shall be continuously welded weather tight and ground smooth.

The cabinet shall be provided with a screened roof air vent. The air vent shall be sealed to the cabinet roof by welding, or shall be an integral part of the cabinet body. The use of caulking to seal the roof air vent will not be allowed.

Each cabinet shall be provided with louvered vents in the front door with a removable air filter. The filter shall be polyblue polyester media with a cardboard frame. The filter shall

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cover the vents and shall be held firmly in place by a bottom bracket and an upper spring or spring-loaded clamp. The bottom filter bracket shall be formed into a waterproof sump with drain holes to the outside. The louvered area shall be less than or equal to the filtered area.

Gasketing shall be provided for the full periphery on the door opening and shall be weather and dust-tight. Gaskets shall be 0.25-inch minimum thickness closed cell neoprene and shall be permanently bonded to the metal. The mating surface of the gasketing shall be covered with a silicone lubricant to prevent sticking to the mating surface.

The door opening shall have flanged lips to increase the strength around the opening and to keep dust and liquids from dropping into the cabinet when the door is opened.

The door shall be designed to completely cover the front of the cabinet and shall not be equipped with a police panel door.

The door hinge shall be either continuous hinge or two butt hinges, and shall be constructed from 14 gauge stainless steel. Each hinge shall have a fixed .120 diameter stainless hinge pin. The hinges shall be bolted to the cabinet. The hinge bolts shall not be accessible to vandals.

The door shall be provided with catches to hold the door open at 90 degrees, plus or minus 10 degrees. The catches shall be 0.25-inch diameter, minimum stainless steel. Additionally, provision shall be made to ensure it would require a conscious act on the part of the person opening the door to open it more than 90 degrees.

The cabinet door shall be equipped with a lock. The lock shall be a "Best", or equal, with an interchangeable core. The core supplied shall be a red Contractor core. Two keys shall be furnished with each cabinet. When the door is closed and latched, the door shall be locked and the cabinet shall be weather tight. The latching handles shall have a provision for padlocking in the closed position.

The operating handle shall be aluminum or cadmium plated steel with a 6.5-inch handle and a 0.375-inch minimum shank. The cabinet door frame shall be double-flanged out on all four sides and shall provide strikers to hold tension and form a firm seal between the door gasket and the cabinet door frame.

The latching mechanism shall be a three-point type. The center catch and push-rods shall be stainless steel. The push-rods shall be 0.25-inch diameter minimum and shall be supported within 1.5-inches of their respective striker. The center catch shall be 0.074-inch minimum thickness.

A weather proof plywood back panel at least 3/4" thick shall be permanently attached to the inside back of the cabinet and shall cover the major portion of the inside back of the cabinet.

The cabinet shall be equipped with a convenience receptacle. The convenience receptacle shall be a duplex outlet with built-in ground fault interrupter rated at 15 amps. The convenience receptacle shall be mounted in an accessible location but shall not restrict access to the plywood back panel. The receptacle shall be protected with a 15 amp circuit breaker.

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The cabinet shall be equipped with a porcelain lamp socket. The lamp socket shall accommodate a 150 watt lamp. The lamp circuit shall be controlled and protected by a 15 amp circuit breaker mounted adjacent to the socket. The lamp socket shall be mounted on the side wall of the cabinet near the bottom.

The cabinet base layout shall accommodate a bottom entrance of a 2-1/2 inch conduit mount for pole mounting.

The cabinet shall be supplied with two adjustable stainless steel straps, and all required mounting accessories for mounting the cabinet to standard signal poles and pedestals.

The cabinet shall be furnished with two (2) cable termination blocks installed on the stand off back panel. The termination blocks shall be quick-connect telephone-type blocks, commonly referred to as "Type 66" blocks. The terminal blocks shall be sized for six 25-pair cables.

**02925.41 Circuit Control Devices:**

**(a) General** - Install circuit breakers, the copper neutral block, and contactors as shown.

**(b) Circuit Breakers** - Provide UL489 listed circuit breakers of the rating shown or specified. Circuit breakers shall be of the unenclosed, molded case bolt-on type with end conductor terminals, suitable for surface mounting in the cabinet on a false back or bracket.

**(c) Terminal Blocks** - Provide sectional channel mount 600 V terminal blocks of sufficient size to accommodate the wiring shown.

**02925.42 Traffic Signal Control Devices** - The traffic signal controllers and related equipment shall conform to requirements of the ODOT Standard Specification for Microcomputer Signal Controller dated October 1991, and the ODOT Supplemental dated April 1993, except as supplemented and modified by the following:

**CHAPTER 1 SECTION 1 - GLOSSARY**

(ADD) 1.1 Engineer - The City of Eugene Traffic Engineer

(AMEND) State - The City of Eugene, where the intent is to make reference to the contracting agency.

**CHAPTER 1 SECTION 2 - GENERAL**

(ADD) 1.2.1.1 Model 332 cabinets shall have all input and output files installed and wired complete for eight (8) phase operation. However, only those input and output devices, such as detector sensor units, isolator units, and switch packs necessary to provide the operation required by the plans or specifications shall be furnished.

1.2.1.2 Model 337 cabinets shall have all input and output files installed and wired complete for four (4) phase operation. However, only those input and

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output devices, such as detector sensor units, isolator units, and switch packs necessary to provide the operation required by the plans or specifications shall be furnished.

1.2.3 Input File      Models 224 & 224T

**CHAPTER 1 SECTION 4 - MECHANICAL**

(ADD)      1.4.3.2 224 LOOP SENSOR UNIT (4 CHANNEL)

**CHAPTER 1 SECTION 8 - ELECTRICAL, ENVIRONMENTAL AND TESTING REQUIREMENTS**

(REVISE) 1.8.5.1 After the successful testing of the controller equipment, the vendor shall pick up and deliver all equipment to:

City of Eugene Traffic Maintenance Team Supervisor  
Signal Shop  
1820 Roosevelt Blvd.  
Eugene, OR 97402

The City shall have five complete working days to evaluate and test the control equipment before being picked up and delivered to the project site by the contractor for installation. Successful completion of the test does not relieve the contractor of equipment warranty obligations.

**CHAPTER 2 SECTION 1 - GENERAL**

(REVISE) 2.1.9 The traffic signal control program will be furnished by the City. The traffic signal control PROM module with PROMS shall be furnished by the Contractor.

**CHAPTER 3 SECTION 1 - GENERAL REQUIREMENTS**

(REVISE) 3.1.7 Each switch shall have the capability of switching any current from 0.05 amperes to 15 amperes (AC) of tungsten lamp load or 15 amperes (AC) at a power factor of 0.85 under 120 volts 60 Hertz and a temperature of 70 degrees centigrade.

3.1.9 Each switch shall be designed for a minimum of 300 million operations while switching a tungsten filament load of 1,500 watts at 70 degrees centigrade.

**CHAPTER 5 - SPECIFICATIONS FOR DETECTOR SENSOR UNITS, ELEMENTS, ISOLATORS, AND DISCRIMINATORS**

(ADD)      MODEL 224 FOUR-CHANNEL LOOP DETECTOR SENSOR UNIT

MODEL 224T TIME DELAY FOUR-CHANNEL LOOP DETECTOR SENSOR UNIT

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**CHAPTER 5 SECTION 1 - GENERAL REQUIREMENTS**

- (ADD) 5.1.1 The 4-channel versions shall occupy the space of two 2-channel units.
- (REVISE) 5.1.4 All control switches, gain dials, and channel indicators shall be mounted on the front panel with the exception of the 222T and 224T detectors. Each sensor unit or isolator channel shall have an indicator to provide a visual indication of detection or incoming signal. Presence indicators shall be wide angle, high brightness type LED's suitable for sunlight visibility.

**CHAPTER 5 SECTION 2 - MODEL 222 & 222T LOOP DETECTOR UNIT REQUIREMENTS**

(ADD) MODEL 222, 222T, 224, AND 224T LOOP DETECTOR UNIT REQUIREMENTS

- (REVISE) 5.2.4 The sensor unit shall comply with all performance requirements when connected to an inductance (loop plus lead-in) from 20 to 2,000 microhenries with a Q-parameter as low as 5 at the sensor unit operating frequency.
- (ADD) 5.2.12 Lightning protection shall enable the detector to withstand the discharge of a 10 microfarad capacitor charged to  $\pm 2000$  volts directly across either the detector inputs or from either side of the detector inputs to earth ground.
- (REVISE) 5.2.17 The 222T and 224T units shall offer a selection of switchable DELAY times from 0 to 31 seconds in 1 second increments. When timing is selected and a channel is active, that channel's indicator shall flash at 4 Hz during delay while the output is being delayed, subject to the status of the control input. The delay timer shall be provided with buffer circuitry to disable the timer based on an external input (green gate) signal. The Delay timer shall be reset when a vehicle leaves the loop prior to time out and shall abort when the control input becomes inactive.
- (REVISE) 5.2.18 The 222T and 224T units shall offer a selection of switchable EXTENSION times from 0 to 7.5 seconds in 0.5 second increments. When timing is selected and a channel is active, that channel's indicator shall flash at 12 to 16 Hz during extension to indicate timing is in progress.
- (ADD) 5.2.19 Each detector unit shall sequentially scan (excite and measure) its channel inputs to eliminate cross talk (mutual interference/coupling) between closely spaced large loops in adjacent lanes and/or Lead-ins. in common saw cuts and/or home runs in common conduits.
- (ADD) 5.2.20 Edge Connector/Pin Assignment:

2.20.1 Terminal Assignment:		
Ch. 1 Timing Control Input	1 A	DC Ground
Ch. 2 Timing Control Input	2 B	+24 VDC
*Ch. 3 Timing Control Input	3 C	Remote Reset
Ch. 1 Loop	4 D	Channel 1 Loop
Ch. 1 Loop	5 E	Channel 1 Loop

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No connection (+)	6 F	Channel 1 Output
No connection (-)	7 H	Channel 1 Output
Ch. 2 Loop	8 J	Channel 2 Loop
*Ch. 2 Loop	9 K	Channel 2 Loop
Ch. 4 Timing Control Input	10 L	Chassis Gnd
No connection	11 M	No connection
No connection	12 N	No connection
*Ch. 3 Loop	13 P	*Channel 3 Lp
*Ch. 3 Loop	14 R	*Channel 3 Loop
No connection Output (+)	15 S	*Channel 3
No connection Output (-)	16 T	*Channel 3
*Ch. 4 Loop	17 U	*Channel 4 Loop
*Ch. 4 Loop	18 V	*Channel 4 Lp
No connection (+)	19 W	Channel 2 Output
No connection (-)	20 X	Channel 2 Output
No connection Output (+)	21 Y	*Channel 4
No connection Output (-)	22 Z	*Channel 4

\*Two channel units will not require connections to Pins P, R, S, T, U, V, Y, Z, 3, 10, 13, 14, 17, and 18.

**CHAPTER 5 SECTION 7 - MODEL 205 OPTICOM DETECTOR**

(DELETE) The entire section.

(ADD) 5.7.1 Model 711, 721 or 722 "Opticom" brand detectors and all cable and installation hardware shall be furnished by the 3M Company to provide fire preemption for all Model 170 traffic signal installations as required by the construction plans.

5.7.2 Controller cabinets will be provided with the Opticom Auxiliary Harness installed per the Manufacturers Recommendation.

5.7.2.1 The Auxiliary Harness wires that correspond to Active Phases shall be terminated where the field wires connect to the Output File. They Shall be Crimped into the appropriate insulated ring terminal for the Size Wire and Screws.

5.7.2.2 The Auxiliary Harness wires that correspond to Unused Phases shall be terminated on TB1, with appropriate sized insulated spade terminals.

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5.7.2.3 The Auxiliary Harness wires that correspond to the advance detection signal wires shall be terminated on TB10 with Insulated Spade terminals appropriate for the size wire and screws.

5.7.2.4 The white wire shall be terminated on TB1 with appropriate sized insulated spade connectors. The connections on TB1 corresponding to the Opticom Auxiliary Harness shall be connected via jumper wires to each other and to the AC- Busbar.

5.7.2.5 The Opticom Auxiliary Harnesses shall be Permanently Marked for the appropriate Slot in the Input File.

**CHAPTER 5 SECTION 8 - MODEL 262 OPTICOM DISCRIMINATOR**

(DELETE) The entire section.

(ADD) 5.8.1 Model 752 "Opticom" brand phase selectors and all cable and installation hardware shall be furnished by the 3M Company to provide fire preemption for all Model 170E traffic signal installations as required by the construction plans.

**CHAPTER 6 SECTION 1 - GENERAL REQUIREMENTS & CABINET MODEL COMPOSITION**

(REVISE) 6.1.1.1 Model 332 Cabinet (Panel Termination) shall consist of:

Housing #1	Output File	#1
Mounting Cage #1	C1 Harness	#1
Power Distribution Assembly #2	Service Panel	#1
Input Files I & J	Input Panel	#1
Communications Termination Panel		

(ADD) 6.1.8 Cabinet wiring shall include a harness and C5S connector for an auxiliary output file. An auxiliary output file shall be supplied and installed in the cabinet when specified or if overlap functions are utilized.

**CHAPTER 6 SECTION 2 - HOUSING REQUIREMENTS**

(ADD) 6.2.1 Cabinet Adaptor

(ADD) 6.2.8 The cabinet shall be furnished with a cabinet adaptor as shown on the plans.

6.3.4 The lock for the front door (right hand hinged) shall be a Best Company 5L6RL3-SL-A7559-606, or approved equal, with an interchangeable core. The lock for the back door (left hand hinged) shall be a Best Company 5L6RL4-SL-A7559-606, or approved equal, with an interchangeable core. The cores supplied with the cabinet shall be red contractors cores. Two keys shall be furnished with each cabinet.

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(REVISE) 6.4.1.1 The filter shall be 12 inches high by 16 inches wide by 0.875 inches thick. The filter shall be polyester media, bonded with a crosslinking fire retardant resin (Air Filter Sales & Service Poly or equal).

**CHAPTER 6 SECTION 5 - CABINET WIRING**

(REVISE) 6.5.1.1 The cabinet wiring diagrams for Model 332 cabinets shall be furnished on Drawing No.'s TSS-25 and TSS-26. One set of full-size reproducible master copies of the drawings will be furnished, upon request, for each project. The drawings will be available from the Traffic Engineer.

(REVISE) 6.5.1.6 A heavy-duty, side opening, clear plastic pouch shall be furnished and installed on the inside front door of each cabinet for the storage of the wiring diagrams.

(ADD) 6.5.2.10 Each connection shall be made by using a crimp connector that is soldered after the connector is crimped to the wire. These cables shall be heat shrunk protected, both the drain wire and the foil shield, to prevent shorting against the contacts on the back of the input file.

6.5.7 A porcelain lamp socket shall be installed in each controller cabinet. The lamp socket shall be located under the output file on the left hand side of the cabinet (facing the cabinet front), and shall accommodate a 150 watt traffic signal lamp. The socket shall be controlled from a switch located on the power distribution assembly. Power shall be supplied from the equipment circuit.

6.5.8 A Communications Termination Panel shall be supplied and installed in each controller cabinet as shown on the plans.

**CHAPTER 6 SECTION 6 - POWER LINE PROTECTION**

(ADD) 6.6.1 Two types of power line surge protectors shall be provided between both line conductors (AC+ and AC-) and equipment ground. The protectors shall be installed at the service terminal block.

6.6.2 One type of surge protector shall be the transient surge suppressor type and shall have the following ratings:

A transient voltage surge suppression (TVSS) for 120 volts AC designed to clamp transients to acceptable levels shall be provided between the AC+ and AC- power source and load. The TVSS shall be capable of meeting the following requirements:

1. The TVSS must be listed as approved by the UL.
2. It must accommodate parallel wired installation.
3. Response time to clamping must be five nanoseconds or less.
4. It must operate bi-directional (Protect against transients from either the line or the load).

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5. It must operate bi-polar (suppresses positive and negative transients).
6. Clamping voltage must be 230 volts or less and be constant over time.
7. It must withstand peak pulse power of 10KW or greater and be operational between -30° and +165° F.
8. It must be a solid state high energy circuit containing no spark gap or gas discharge type components.
9. It must incorporate a pilot light which is continuously on indicating that the unit is operational. The light must be visible on the unit without having to move it.
10. The TVSS shall be internally fused to prevent loss of power to the load.

6.6.3 The other type of surge protector shall be Metal Oxide Varistor (MOV). One shall be installed between AC+ and equipment ground and the other between AC- and equipment ground. The MOV shall have the following ratings:

**(ADD) CHAPTER 6 SECTION 7 - COMMUNICATIONS TERMINATION PANEL**

(ADD) 6.7.1 Each Model 332 Cabinet shall be provided with a Communications Termination Panel, which provides a mounting location for communications cable termination blocks, overvoltage protection devices, voice jack, CRT jack and the termination points for the C2P harness and connector.

6.7.2 The panel shall be fabricated from 0.125 inch sheet aluminum, and shall have the dimensions shown on the plans. The panel shall be drilled and tapped, as necessary, to mount the terminal blocks and other attachments described below, as well as to mount the panel to the EIA rack within the cabinet. Sharp edges or burrs caused by the cutting or drilling process shall be removed.

6.7.3 The panel shall be provided with a Communications Cable Termination Block (CTB-1). This shall be a quick connected block consisting of 50 horizontal rows of 6 clips per row, mounted in a molded self-extinguishing plastic case. The block, commonly referred to as a "66B Type" block, shall terminate 25 pairs of 20 through 24 AWG solid unskinned conductors. The blocks shall be equipped with integral fanning strips and an enclosed back to prevent grounding of clips to the panel. The block shall be mounted on the panel as shown on the plans.

6.7.4 The panel shall be provided with an Active Pairs Termination Block (CTB-2). This block shall be a ten position, dual screw closed back barrier strip and shall be mounted on the Communications Termination Panel, as shown on the plans. The strip shall be rated at 15 amperes, and shall be provided with 6-32 X 1/4 inch nickel plated brass binder head screws.

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6.7.5 The panel shall be provided with a Test Point Termination Block (CTB-3). This block shall be an eight position single screw closed back barrier strip and shall be mounted on the Communications Termination Panel, as shown on the plans. The strips shall be rated at 15 amperes and shall be provided with 6-32 X 1/4 inch nickel plated brass binder head screws.

6.7.6 An overvoltage surge protector shall be provided on each of the five active communications cable pairs terminating in each cabinet (CRT-In, CRT-out, Voice, Audio-In and Audio-Out). The protectors shall be installed on the Active Pairs Termination Block (CTB-2). Protectors shall be of a Three-Electrode Gas Tube Type, and shall have the following ratings:

6.7.6.1 Impulse life, (1,000 amp, 10/1000 waveform 1000 surges minimum at one minute intervals each direction, with 2500 surges typical 500 amp on each side to ground simultaneously):

6.7.6.2 AC Discharge Current      400 amp rms  
11 cycles, 60 Hz:                      200 amp each side to ground simultaneously

6.7.6.3 Max. Single Impulse Discharge Current 40 ka maximum  
8/20 Waveform:                              20 ka/side simultaneously

6.7.6.4 Capacitance:                              Line-gnd.: 4pf  
Line-line: 2pf

6.7.6.5 D C Holdover:                              180 vdc typical at 220 ma  
150 volts dc Min

6.7.6.6 DC Arc Voltage:                              30 volts typical  
Glow to Arc Transition Current:      1.0 amp typical

Transition Time:                              0.5 Microseconds Max. Line-Gnd. Impulse Breakdown  
Voltage at:                                      10kv/sec 1000volts maximum average

6.7.6.7 Insulation Resistance:                      1000 Megohms Min at 100 vdc  
(line-gnd.)

6.7.6.8 The protectors shall be encapsulated, and shall be equipped with minimum of 2 inch, spade lug tipped, leads. Maximum size of each protector shall be 2 inch X 2 inch X 2 inch. The grounding lead shall be attached to the panel's grounding stud.

6.7.7 A grounding stud shall be provided on each panel. The stud shall extend through the panel. The overvoltage protection devices' ground leads shall be attached to the stud on the front side of the panel. A No. 8 AWG copper conductor shall be attached to the stud on the back side of the panel, and shall connect to the cabinet's Equipment Grounding Bus.

6.7.8 A twelve-conductor jacketed cable shall be attached to terminal blocks CTB-2 and CTB-3, with ring lugs, as shown in the Plans. The cable shall terminate in a standard C2P connector, and shall be routed through the cabinet

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and be of sufficient length to reach the C2S connector on the back of the 170 Controller Unit, when the unit is installed, or is being installed, in the equipment rack.

6.7.9 A two-conductor twisted, jacketed cable shall be attached to terminal block CTB-2 with ring lugs, as shown on the plans. The cable shall be routed to the voice jack, as shown on the plans.

6.7.10 A four-conductor twisted, jacketed cable shall be attached to terminal block CTB-2 with ring lugs, as shown on the plans. The cable shall be routed to the CRT jack, as shown on the plans.

6.7.11 As shown on the plans, a feed-through opening, complete with protective grommet, shall be provided on the panel, to protect the C2P harness, CRT jack harness and voice jack harness. A strain relief device shall also be provided.

6.7.12 Two 1/4 inch diameter holes shall be provided, as shown on the Plans, for future installation of cable ties.

6.7.13 A Voice Communications Jack shall be installed on the Communications Termination Panel. The jack shall be a three conductor right angle design, with solder lugs extending out the side of the jack housing (Switchcraft Hi-D Jax RN-112B or equivalent). The jack shall be wired as shown on the plans.

6.7.14 A CRT jack shall be installed on the Communications Termination Panel. The jack shall be a 4-conductor modular telephone jack, Western Electric or equivalent.

6.7.15 A legend shall be provided on each termination panel as shown on the plans. The legend shall be in 0.1 inch high block letters which have been silk-screened on to a properly prepared surface.

6.7.16 The panel shall be securely attached to the equipment rack assembly, under the output file and auxiliary output file, as shown in the plans.

6.7.17 The panel shall have a 1" X 4" slot in the top left hand side, as shown on the plans. This slot will facilitate feed cable from the back of the panel to the front for connection.

**CHAPTER 7 SECTION 1 - CABINET CONSTRUCTION REQUIREMENTS**

(ADD) 7.1.4 The cabinet shall have single front and rear doors each equipped with a lock. The lock for the front door (right hand hinged) shall be a Best Company 5L6RL3-SL-A7559-606 or approved equal, with an interchangeable core. The lock for the back door (left hand hinged) shall be a Best Company 5L6RL4-SL-A7559-606, or approved equal, with an interchangeable core. The cores supplied shall be red contractors cores. When each door is closed and latched, the door shall be locked. The latching handles shall have a provision for padlocking in the closed position. Two keys shall be furnished with each cabinet. The operating handle shall be stainless steel with a 6.5 inch handle

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and a 0.375 inch minimum shank. The cabinet door frame shall be double flanged out on all four sides and shall provide strikers to hold tension and form a firm seal between the door gasketing and the cabinet door frame.

- (REVISE) 7.1.13 A bolt-on adaptor for the bottom of the cabinet will not be required.
- (ADD) 7.1.16 A heavy-duty, side opening, clear plastic pouch shall be furnished and installed on the inside front door of each cabinet for the storage of the wiring diagrams.
- 7.1.17 A porcelain lamp socket shall be installed in each controller cabinet. The lamp socket shall be located under the output file on the left hand side of the cabinet (facing the cabinet front), and shall accommodate a 150 watt traffic signal lamp. The socket shall be controlled from a switch located on the power distribution assembly. Power shall be supplied from the equipment circuit.
- 7.1.18 A Communications Termination Panel shall be supplied and installed in each controller cabinet as shown on the plans.
- (REVISE) 7.3.4.4 The auto/flash switch, when placed in the flash position, shall energize the power relay coil and apply stop time to the controller. When the switch is placed in the auto (up) position, the switchpacks shall control the signal indications. The switch shall be a double-pole single-throw switch rated for 20 amperes at 120 volts AC.
- (REVISE) 7.3.4.5 The signals off switch, when placed in the off position (down), shall energize the power relay coil and interrupt power to the flasher. The switch shall be a three-pole double-throw switch rated for 20 amperes at 120 volts AC. Two of the three poles shall be tied in parallel to provide sufficient switching capacity for flasher power.
- (REVISE) 7.3.9.1 The cabinet wiring diagrams for Model 337 cabinets shall be furnished on Drawing No.'s TSS-20, TSS-21, TSS-22, TSS-23, or TSS-24 as appropriate (depending which phases are used). One set of full-size reproducible master copies of the drawings will be furnished, upon request, for each project. The drawings will be available from the Traffic Engineer.
- (ADD) 7.3.11 Communications Termination Panel
- 7.3.11.1 Each Model 337 Cabinet shall be provided with a Communications Termination Panel. The Communications Termination Panel shall conform to Chapter 6 Section 7 "Communications Termination Panel" of these specifications.
- 7.3.11.2 The panel shall be securely attached to the equipment rack, as shown on the plans. The top panel shall be approximately 2 inches below Output File, accessible through the front door of the cabinet.

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**CHAPTER 7 SECTION 4 - CABINET WIRING**

(ADD) 7.4.1.3 Each connection shall be made by using a crimp connector that is soldered after the connector is crimped to the wire.

**CHAPTER 8 SECTION 2 - GENERAL REQUIREMENTS FOR MODEL 496 MODEM  
MODULE**

(ADD) 8.2.1 Interface: Operate in the Model 170E Controller Unit.

8.2.2 Form Factor: Standard Model 400 MODEM

8.2.3 Connector: Printed circuit board edge connector; two rows of 22 bifurcated contacts on 0.156-inch centers (44 pins).

Keyed between pins C and D and between pins H and J.

8.2.4 Connector pin-out: Standard Model 400 MODEM.

8.2.5 Power requirements (Max):

75 mA (+12V)  
75 mA (-12V)  
Maximum noise ripple, 500mV

8.2.6 Environmental Operating Ranges:

Temperature -37° to +74°  
Humidity 95% (non-condensing)

8.2.7 Data Rate and Format:

0 - 9600 baud Serial Asynchronous, by bit (Anisochronous)

8.2.8 Modulation Type and Frequencies:

Phase Coherent FSK  
11200Hz - Mark  
17600Hz - Space  
7800 Hz - Soft carrier

8.2.9 Line Interface:

Private Metallic Wire, Maximum Distance 10 - 20 mile (depending on line facility and loading).

Characteristic Impedance - 600 ohm

8.2.10 Receiver Characteristics:

Dynamic Range - +3dbm to -48dbm

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Carrier Detect Threshold -42±3dbm  
Carrier Detect Hysteresis - 3dB  
Demodulator Distortion <10% peak(1200 bps, -40 dbm, 1:1 data pattern)  
Receiver Frequency Tolerance - ±25Hz (for -40dbm)  
Receiver Bandpass Filter - provides greater than 20 dB/octave active attenuation for frequencies outside operating band.  
Bit Error Rate - Less than 1 bit in 100,000 bits with a signal to noise ratio of 16 dB. (Flat weight 300 - 3000 Hz)

8.2.11 Transmit Level

-8dbm to 0dbm adjustable (potentiometer) factory setting - 0dbm (600 ohm)

8.2.12 Serial Interface:

Meets EIA RS-232C and CCITT V.24

8.2.13 Indicators:

Transmit Data - SMT  
Receive Data - RCV  
Request to Send - RTS  
Clear to Send - CTS  
Receive Carrier - CAR

8.2.14 Timing (Switch Selectable)

RTS-CTS 6/12±2mS  
CAR Delay 4/8±2mS  
(Soft) Carrier Turnoff 5/10±2mS  
Receiver Squelch 3/6.5±2mS

8.2.15 Duplex Mode Options (Switch Selectable)

2 wire Half Duplex or 4 wire Full Duplex

Add the following new Chapter 9:

**CHAPTER 9 - MODEL 2070 CONTROLLER UNIT**

**SECTION 1 - MODEL 2070L CONTROLLER**

9.1.1 Unit Chassis

9.1.1.1 The 2070L Controller shall consist of a 2070 Chassis meeting the following requirements:

1. Lite Cage
2. 2070-1B CPU Module
3. 2070-2A C1 Field I/O Connector Module

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4. 2070-4B Power Supply Module
5. 2070-3B 8x40 LCD Display Module
6. 2070-6A 1200 baud Modem Module
7. 2Mb Data Key

9.1.2 Controller and Module

9.1.2.1 The 2070L Controller and module shall meet the following specifications:

1. Caltrans 2002 TEES
2. TEES Errata 1, October 27, 2003
3. TEES Errata 2. June 8, 2004
4. Caltrans QPL Listing, October 2006
5. OS-9 Operating System version 3.3 (Ethernet Capable)
6. Controller Boot Code Compatible with NW Signal Voyage Controller Firmware and all included features
7. Tested and approved Boot Codes are:
  - a. Econolite - Boot Code 2002 V1.01.08.02b or later
  - b. Simens/Eagle - Boot Code OS0 V3.3.0 Operating System 7.0.0.0.0.15 or later

**02925.51 Traffic Signal Lamps** - Vehicle signal and pedestrian signals shall be illuminated by incandescent bulbs or LED modules as indicated in the Special Provisions.

**(a) Incandescent Lamps** - Incandescent lamps shall be rated for 130 V AC operation with a rated life of at least 8,000 hours. Lamps shall be designed to withstand vibration and intended for use in traffic signal heads.

**(b) Light Emitting Diode (LED) Modules** - Use only prequalified LED modules that are listed in the Traffic Signal Materials "Blue Sheets".

Provide the following LED modules:

**Vehicle Signals**

Indication Color	8 Inch Lens Type	12 Inch Lens Type
Red	LED <sup>1</sup>	LED <sup>1</sup>
Yellow	LED <sup>1</sup>	LED <sup>1</sup>
Green	LED <sup>1</sup>	LED <sup>1</sup>

**Pedestrian Signals <sup>2</sup>**

Indication Color	Side by Side Type	Countdown Type
Hand	LED <sup>3</sup>	LED <sup>4</sup>
Walking Man	LED <sup>3</sup>	LED <sup>4</sup>
Numbers	–	LED <sup>4</sup>

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- <sup>1</sup> Flange mount LED modules.
- <sup>2</sup> Pedestrian signal LED modules may be a combination of indication in one module or single indication in separate modules.
- <sup>3</sup> Side by side LED modules are a combination of indication (both the hand and walking man in one module).
- <sup>4</sup> Countdown LED modules are a combination of indication (both the hand and walking man overlaid on the left with numbers on the right in one module).

**02925.60 Signal Indication Material** - The housings, including doors, and hoods, shall have a smooth homogeneous finish. All parts shall be clean, smooth, and free from flaws, cracks, blow holes, and other imperfections. All fasteners not specifically noted as hot-dip galvanized shall be Type 304 or 316 stainless steel installed with anti-seize compound.

The vehicle signal heads shall have the hole in the bottom plugged with a standard plug and lock nut. Drill a 1/4-inch hole in this plug to provide for drainage.

**02925.62 Signal and Sign Mounting Hardware:**

**(a) General** - All fasteners not specifically noted as hot-dip galvanized shall be Type 304 or 316 stainless steel. All fasteners shall have either square or hex heads.

**(b) Plumbizer** - Provide plumbizers that are constructed of cast bronze. Paint the mounting hardware with two coats of zinc-rich aluminum paint.

**(c) Span Wire Hanger** - Provide span wire hangers that are constructed of cast bronze. Paint the mounting hardware with two coats of zinc-rich aluminum paint.

**(d) Adjustable Bracket** - Attach adjustable brackets to the pole with cables. A safety cable shall be supplied to capture the appurtenance in the event of a failure of the mounting bracket.

**(e) Tri-stud Adapters** - Furnish tri-stud adapters with two backing washers and omit the neoprene washer/gasket. Use silicon caulking to seal between the tri-stud adapter and the signal head.

**02925.64 Vehicle Signal** - Each housing shall be of the one-section expandable type. Each section shall be of one-piece construction. The design shall be such that at any time and without the use of other than simple tools, it shall be possible to convert any housing into a one-, two-, three-, four- or five-section housing by the addition or subtraction of housing sections. The entire housing shall be made dust and water resistant. Vehicle signal heads not utilizing the bottom opening for mounting shall have a screw hole plug installed and shall have a 1/4 inch drain hole drilled in the bottom of the plug. Construct vehicle signal housings and doors of die-cast aluminum alloy. If LED modules are used omit the requirements of (a) and (c) below for that housing section.

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**(a) Lenses** - Vehicular signal lenses shall conform to ITE Specifications and meet the following requirements:

- o Glass.
- o Circular with a nominal diameter as shown or specified.
- o Mounted in a separate door hinged to the signal housing.
- o Mounted in an endless composition rubber gasket that completely encompasses the edge of the lens and provides a cushion and positive seal between the lens and the door. Use at least four lens clips to secure the lens and gasket to the door.

**(b) Doors** - Gasket each door to provide moisture resistant construction.

**(c) Reflectors and Lamp Sockets** - Illuminate each lens independently of any other lens and provide with a parabolic aluminum reflector. Hinge reflector frames to either the door or the housing, so access to the rear of the reflector is allowed without breaking the light circuit. Use suitable clips to hold each reflector firmly to its frame so lamp socket inspection is allowed without removing the reflector. The reflector retaining rings shall be stainless steel, black powder-coated aluminum, or polycarbonate. All lamp sockets shall be brass with a phosphor bronze center contact. The lamp socket mounting shall incorporate the ability to orient the lamp filament after the lamp has been securely seated into the socket.

**(d) Visors** - Construct visors of sheet aluminum alloy 3003-H16 (ASTM B 209), nominal thickness 16 gauge. Visors shall be of one-piece construction and attach to the signal housing doors with Type 304 or 316 stainless steel screws. Provide 8 inch lenses with a 7 inch visor and 12 inch lenses with a 9 1/2 inch visor. Signal housing doors, with visors attached, shall be capable of being opened a minimum of 90 degrees. Use tunnel visors on all vehicular signal indications with the bottom portion open, so the sections light output is visible directly in front of and below the signal head.

**(e) Backboards** - Construct backboards of sheet aluminum alloy 3003-H14 (ASTM B 209), 14 gauge nominal thickness. All backboards shall be louvered. Provide all vehicular signal heads with backboards and include all of the necessary mounting hardware for completing the installation. Backboard dimensions shall fit the signal head housings used, with no gap between backboard and housing. Backboards shall have a border width of 5 inches. Attach backboards with stainless steel screws and washers. Use washers at least 3/8 inch in diameter.

**02925.65 Pedestrian Signal Heads** - Provide single-section pedestrian signal heads meeting the following requirements:

**(a) Light Source:**

- (1) Standard** - The standard light source shall meet the requirements of 02925.51.
- (2) Count Down** - The count down shall meet the requirements of 02925.51.

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**(b) Housing and Door** - The housing and door shall:

- Use a one-piece housing and sealed door constructed of die-cast aluminum alloy that provides a dustproof and weatherproof enclosure.
- Allow easy access for maintenance of the interior components with the door open.

**(c) Visors** - The visor shall:

- Use a one-piece z-crate or egg crate type polycarbonate plastic visor.
- Include vertical (or angled) and horizontal members spaced to provide the required shielding and strength.
- Be held securely to the door assembly.
- Removal of the visor shall not require removal of lens and must be able to be accomplished with common hand tools.

**(d) Mounting** - The mounting shall be designed to use either a bracket assembly or a clamshell mounting as shown.

**02925.66 Pedestrian Push Buttons and Mount:**

**(a) General** - Push buttons shall be:

- Direct contact type.
- Free of levers, handles, or toggle switches externally or internally.

**(b) Contacts** - Push button contacts shall be:

- Entirely insulated from the housings and operating buttons.
- Normally open.
- Closed only when push buttons are operated by pressure.
- Restored immediately to the normal open position when pressure is released.

**(c) Housing** - The housing containing the pedestrian push button shall be made with:

- A one-piece H frame construction assembly of extruded aluminum containing the push button, with the signs placed directly on both sides of the extrusion.
- A sign background of two coats of white enamel with black silk-screened legend conforming to Standard Sign R10-4b.
- An outlet in the back of the housing for rigid conduit.
- A 1/4 inch diameter drain hole in the bottom.

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**(d) External Button** - The external operating button shall:

- Be constructed of durable materials able to withstand the typical abuse inflicted by the general public.
- Be removable from the housing with simple tools.
- Be at least 2 inches in diameter.
- Operate a momentary contact switch by direct contact.
- Contain a guard completely encircling the push button, and extending far enough to prevent prying under the push button. It shall be resistant to damage associated to striking it with an object other than the hand.

**02925.67 Coatings:**

**(a) Signal Heads** - Pedestrian signal heads, vehicle signal heads, beacon heads, visors and backboards shall be powder coated inside and outside to meet Federal Standard 595b-37038 (dull black).

**(b) Signal Controller Cabinets** - Provide signal controller cabinets that are constructed of anodize aluminum.

**(c) Brackets and Hangers** - Apply two coats of aluminum paint to cast bronze type brackets and hangers after they have been primed. All steel shall be hot-dipped galvanized before painting. Threads and any damage to the galvanizing shall be repaired prior to painting.

**02925.68 Audible Pedestrian Device (APD)** - APD are required at all new actuated traffic signals. The APD shall provide unique sounds coincidental with the pedestrian indications. The APD shall include a solid state electronic board(s), power supply, enclosure, loudspeaker and mounting hardware necessary for fulfilling the intended use stated herein and in applicable portions of the Standard Specification for Microcomputer Signal Controller.

**(a) General** - The exterior dimensions of the APD unit shall not exceed 14" h x 5.5" w x 3" d. Polara 4 wire Navigator or approved equal.

The APD shall include a vibro-tactile button and tactile arrow that points in direction of travel.

The mass (weight) of the APDS unit shall not exceed 1 pound.

The button actuated delay time shall be adjustable in one-second increments throughout the range of 0 to 15 seconds.

The APD unit shall have a sound inhibit circuit capable of control by an external device.

**(b) Electrical Requirements** - The APD unit shall operate on 95 to 130 VAC, 60Hz,  $\leq 3$  W.

Provide a power protection circuit consisting of both fuse and transient protection.

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Provide an optically isolated circuit allowing delayed actuation of the audible signal.

**(c) Environmental Requirements** - The APD unit shall function properly throughout an ambient air temperature range of -35° F to 165° F.

**(d) Outputs** - Provide programmable voice messages including automatic repeat capability for messages up to 20 seconds in length.

The audible signal shall be self-adjusting based on ambient noise.

The volume level at a distance of 3 feet from the APD enclosure shall be 66dB typical, with a maximum of 90dB.

The minimum volume level shall be adjustable proportionally from 66dB to 90dB without dismantling the APD unit housing.

Provide two switch-selectable electronic sounds as specified in the following:

<b>Parameter</b>	<b>Sound #1</b>	<b>Sound #2</b>
Sound type	"Peep-peep"	"Cuckoo"
Method	Electronic var. frequency tone	Electronic var. frequency tone
Period	1.0 sec. + 20%	1.5 sec. + 20%
Duration	0.2 sec. + 20%	0.6 sec. + 20%
Frequency Base	2800 Hz + 20%	1100 Hz + 20%
Frequency Deviation	- 800 Hz + 20%	+120 Hz + 20%

Include count down capability during the pedestrian clearance interval.

**02925.69 Signal Head Covers** - Provide signal head covers that:

- Are yellow prefabricated nylon.
- Completely cover the head, visors, and backplate.
- Include a fine mesh insert for signal testing.
- Have integral elastic bands and clips to secure the covers to the signal.

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Training

## SECTION II. SCHEDULE OF ITEMS

Payment for work done under this contract will be made at the unit prices listed on the inserted sheet or sheets which follow. The quantities given are approximate only, and it is neither expressly nor by implication agreed that the actual amounts of work to be done and paid for will be in accord therewith.

Training

SCHEDULE OF ITEMS

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 WILDISH CONSTRUCTION CO.

ITEM NO	ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE (IN FIGURES)	TOTAL (IN FIGURES)
SECTION 0001 TEMPORARY FEATURES AND APPURTENANCES					
0010	0100-0100000T ON-THE-JOB TRAINING	HOUR	1,000.00	0.01	10.00
0020	0210-0100000A MOBILIZATION	LUMP	ALL	230,000.00	230,000.00
0030	0225-0100000A TEMPORARY PROTECTION AND DIRECTION OF TRAFFIC	LUMP	ALL	20,000.00	20,000.00
0040	0225-0102000J TEMPORARY SIGNS	SQFT	1,500.00	12.00	18,000.00
0050	0225-0104000E TEMPORARY BARRICADES, TYPE II	EACH	18.00	50.00	900.00
0060	0225-0105000E TEMPORARY BARRICADES, TYPE III	EACH	20.00	75.00	1,500.00
0070	0225-0126000F TEMPORARY CONCRETE BARRIER, REFLECTORIZED	FOOT	1,296.00	25.00	32,400.00
0080	0225-0133000E TEMPORARY IMPACT ATTENUATOR	EACH	1.00	4,000.00	4,000.00
0090	0225-0138000E TEMPORARY IMPACT ATTENUATOR, TRUCK MOUNTED	EACH	1.00	10,000.00	10,000.00
0100	0225-0141200E REPAIR TEMPORARY IMPACT ATTENUATOR	EACH	1.00	1,500.00	1,500.00
0110	0225-0141400E REPAIR TEMPORARY IMPACT ATTENUATOR, TRUCK MOUNTED	EACH	1.00	2,000.00	2,000.00
0120	0225-0145000E TEMPORARY PLASTIC DRUMS	EACH	134.00	50.00	6,700.00
0130	0225-0149000E TEMPORARY FLEXIBLE PAVEMENT MARKERS	EACH	1,000.00	1.00	1,000.00



SCHEDULE OF ITEMS

OR569: BELTLINE HWY @ COBURG ROAD INTERCHANGE  
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ITEM NO	ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE (IN FIGURES)	TOTAL (IN FIGURES)
0140	0225-0150000F TEMPORARY REMOVABLE TAPE	FOOT	3,000.00	1.40	4,200.00
0150	0225-0153000F TEMPORARY STRIPING	FOOT	6,000.00	0.45	2,700.00
0160	0225-0154000F STRIPE REMOVAL	FOOT	3,000.00	1.10	3,300.00
0170	0225-0155100J LEGEND REMOVAL	SQFT	500.00	6.00	3,000.00
0180	0225-0162000E SEQUENTIAL ARROW SIGNS	EACH	2.00	1,500.00	3,000.00
0190	0225-0164000E PORTABLE CHANGEABLE MESSAGE SIGNS	EACH	2.00	8,000.00	16,000.00
0200	0225-0168000T FLAGGERS	HOURL	3,600.00	0.01	36.00
0210	0225-0168100E FLAGGER STATION LIGHTING	EACH	6.00	500.00	3,000.00
0220	0225-0172000T PILOT CARS	HOURL	20.00	50.00	1,000.00
0230	0280-0100000A EROSION CONTROL	LUMP	ALL	1,000.00	1,000.00
0240	0280-0104000R TEMPORARY MULCHING	ACRE	3.00	1,200.00	3,600.00
0250	0280-0106000E CHECK DAM	EACH	20.00	75.00	1,500.00
0260	0280-0110000E CONSTRUCTION ENTRANCE	EACH	2.00	500.00	1,000.00
0270	0280-0113000F SEDIMENT FENCE, UNSUPPORTED	FOOT	1,000.00	4.00	4,000.00
0280	0280-0114000E INLET PROTECTION	EACH	7.00	100.00	700.00



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ITEM NO	ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE (IN FIGURES)	TOTAL (IN FIGURES)
0290	0290-0100000A POLLUTION CONTROL PLAN	LUMP	ALL	500.00	500.00
SECTION 0002 ROADWORK					
0300	0305-0100000A CONSTRUCTION SURVEY WORK	LUMP	ALL	15,000.00	15,000.00
0310	0310-0106000A REMOVAL OF STRUCTURES AND OBSTRUCTIONS	LUMP	ALL	10,000.00	10,000.00
0320	0320-0100000A CLEARING AND GRUBBING	LUMP	ALL	10,000.00	10,000.00
0330	0330-0101000K DITCH EXCAVATION	CUYD	15.00	35.00	525.00
0340	0330-0105000K GENERAL EXCAVATION	CUYD	11,500.00	9.00	103,500.00
0350	0330-0123000K EMBANKMENT IN PLACE	CUYD	1,725.00	25.00	43,125.00
0360	0331-0109000J 18 INCH SUBGRADE STABILIZATION	SQYD	4,500.00	8.00	36,000.00
0370	0350-0105000J SUBGRADE GEOTEXTILE	SQYD	14,000.00	1.00	14,000.00
0380	0390-0139000E RIPRAP BASINS	EACH	2.00	500.00	1,000.00
SECTION 0003 DRAINAGE AND SEWERS					
0390	0445-010018AF 18 INCH CULVERT PIPE, 5 FT DEPTH	FOOT	70.00	50.00	3,500.00
0400	0445-010036AF 36 INCH CULVERT PIPE, 5 FT DEPTH	FOOT	100.00	100.00	10,000.00
0410	0445-035012AF 12 INCH STORM SEWER PIPE, 5 FT DEPTH	FOOT	90.00	60.00	5,400.00



SCHEDULE OF ITEMS

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ITEM NO	ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE (IN FIGURES)	TOTAL (IN FIGURES)
0420	0445-035018AF 18 INCH STORM SEWER PIPE, 5 FT DEPTH	FOOT	245.00	65.00	15,925.00
0430	0445-0735020E CONCRETE CLOSURE COLLARS	EACH	3.00	1,000.00	3,000.00
0440	0460-0100000J PAVED CULVERT END SLOPES	SQFT	117.00	10.00	1,170.00
0450	0470-0101000E CONCRETE STORM SEWER MANHOLES	EACH	3.00	2,500.00	7,500.00
0460	0470-0105000E CONCRETE MANHOLES, SHALLOW	EACH	1.00	2,500.00	2,500.00
0470	0470-0311000E CONCRETE INLETS, TYPE D	EACH	1.00	1,100.00	1,100.00
0480	0470-0315000E CONCRETE INLETS, TYPE G-2	EACH	1.00	1,200.00	1,200.00
0490	0470-9Z90000E CONCRETE INLETS, TYPE 4A (EUGENE)	EACH	6.00	1,400.00	8,400.00
0500	0490-0105000E ADJUSTING INLETS	EACH	1.00	800.00	800.00
0510	0490-0121000E MAJOR ADJUSTMENT OF MANHOLES	EACH	4.00	1,000.00	4,000.00

SECTION 0004 BRIDGES

0520	0596-9Z90000E SOUND WALL DRAINS	EACH	15.00	150.00	2,250.00
0530	0597-0100000J PANEL AND PILASTER SOUND WALL	SQFT	12,600.00	25.00	315,000.00

SECTION 0005 BASES

0540	0620-0120000J COLD PLANE PAVEMENT REMOVAL, 2 INCHES DEEP	SQYD	11,700.00	1.50	17,550.00
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SCHEDULE OF ITEMS

OR569: BELTLINE HWY @ COBURG ROAD INTERCHANGE  
 WILDISH CONSTRUCTION CO.

ITEM NO	ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE (IN FIGURES)	TOTAL (IN FIGURES)
0550	0641-0102000M AGGREGATE BASE	TON	9,800.00	14.00	137,200.00
SECTION 0006 WEARING SURFACES					
0560	0745-0301000M LEVEL 3, 3/4 INCH DENSE HMAC	TON	3,400.00	50.00	170,000.00
0570	0745-0302000M LEVEL 3, 1/2 INCH DENSE HMAC	TON	1,100.00	56.00	61,600.00
0580	0745-0311000M LEVEL 3, 3/4 INCH OPEN HMAC	TON	1,300.00	46.00	59,800.00
0590	0745-0640000M PG 70-22 ASPHALT IN HMAC	TON	330.00	50.00	16,500.00
0600	0748-0121000J 41 INCH ASPHALT CONCRETE PAVEMENT REPAIR	SQYD	60.00	100.00	6,000.00
0610	0749-0100000E EXTRA FOR ASPHALT APPROACHES	EACH	3.00	750.00	2,250.00
0620	0759-0103000F CONCRETE CURBS, CURB AND GUTTER	FOOT	1,274.00	20.00	25,480.00
0630	0759-0128000J CONCRETE WALKS	SQFT	3,087.00	7.00	21,609.00
SECTION 0007 PERMANENT TRAFFIC SAFETY AND GUIDANCE DEVICES					
0640	0810-0104000F GUARDRAIL, TYPE 2A	FOOT	2,752.00	18.00	49,536.00
0650	0810-0120000E GUARDRAIL ANCHORS, TYPE 1 MODIFIED	EACH	4.00	500.00	2,000.00
0660	0810-0122000E GUARDRAIL END PIECES, TYPE B	EACH	4.00	100.00	400.00
0670	0810-0129000E GUARDRAIL TERMINALS, NON-FLARED	EACH	3.00	2,800.00	8,400.00



SCHEDULE OF ITEMS

OR569: BELTLINE HWY @ COBURG ROAD INTERCHANGE  
 WILDISH CONSTRUCTION CO.

ITEM NO	ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE (IN FIGURES)	TOTAL (IN FIGURES)
0680	0820-0100000F CONCRETE BARRIER	FOOT	25.00	200.00	5,000.00
0690	0830-0124000E IMPACT ATTENUATOR, TYPE K	EACH	1.00	35,000.00	35,000.00
0700	0840-0102000E DELINEATORS, TYPE 2	EACH	35.00	40.00	1,400.00
0710	0851-0101000F PAVEMENT LINE REMOVAL	FOOT	584.00	0.75	438.00
0720	0855-0100000E MONO-DIRECTIONAL WHITE TYPE 1 MARKERS	EACH	141.00	4.50	634.50
0730	0855-0102000E BI-DIRECTIONAL YELLOW TYPE 1 MARKERS	EACH	25.00	4.50	112.50
0740	0860-0200000F LONGITUDINAL PAVEMENT MARKINGS - PAINT	FOOT	9,500.00	0.30	2,850.00
0750	0865-0103000F THERMOPLASTIC, PROFILE, 120 MILS, EXTRUDED	FOOT	8,600.00	1.40	12,040.00
0760	0867-0103000E PAVEMENT LEGEND, TYPE B: ARROWS	EACH	23.00	225.00	5,175.00
0770	0867-0131000E PAVEMENT LEGEND, TYPE B: BICYCLE LANE STENCIL	EACH	11.00	225.00	2,475.00
0780	0867-0145000J PAVEMENT BAR, TYPE B	SQFT	1,077.00	8.00	8,616.00

SECTION 0008 PERMANENT TRAFFIC CONTROL AND ILLUMINATION SYSTEMS

0790	0865-9Z90000F BIRD SPIKES	FOOT	29.00	15.00	435.00
0800	0905-0100000A REMOVE EXISTING SIGNS	LUMP	ALL	6,000.00	6,000.00
0810	0905-0101000A REMOVE AND REINSTALL EXISTING SIGNS	LUMP	ALL	750.00	750.00



SCHEDULE OF ITEMS

OR569: BELTLINE HWY @ COBURG ROAD INTERCHANGE  
 WILDISH CONSTRUCTION CO.

ITEM NO	ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE (IN FIGURES)	TOTAL (IN FIGURES)
0820	0910-0100000K WOOD SIGN POSTS	FBM	612.00	5.85	3,580.20
0830	0920-0100000A SIGN SUPPORT FOOTINGS	LUMP	ALL	15,000.00	15,000.00
0840	0930-0104000A MONOTUBE CANTILEVER SIGN STRUCTURES	LUMP	ALL	70,000.00	70,000.00
0850	0930-0106000A EXIT NUMBER SIGN MOUNTS	LUMP	ALL	800.00	800.00
0860	0930-0107000A SIGNAL POLE MOUNTS	LUMP	ALL	3,000.00	3,000.00
0870	0930-0108000A ADJUSTABLE SIGN MOUNTS	LUMP	ALL	600.00	600.00
0880	0930-0111000A MULTI-POST BREAKAWAY SIGN SUPPORTS	LUMP	ALL	4,500.00	4,500.00
0890	0930-0112000A TRIANGULAR BASE BREAKAWAY SIGN SUPPORTS	LUMP	ALL	9,500.00	9,500.00
0900	0940-0109000J TYPE "F" SIGNS IN PLACE	SQFT	8.00	10.50	84.00
0910	0940-0109100J TYPE "F1" SIGNS IN PLACE	SQFT	13.00	10.50	136.50
0920	0940-0113000J TYPE "G" SIGNS IN PLACE	SQFT	406.00	22.00	8,932.00
0930	0940-0114000J TYPE "G1" SIGNS IN PLACE	SQFT	583.30	25.00	14,582.50
0940	0940-0115000J TYPE "G2" SIGNS IN PLACE	SQFT	26.30	25.00	657.50
0950	0940-0121000J TYPE "R" SIGNS IN PLACE	SQFT	49.50	10.50	519.75
0960	0940-0124000J TYPE "W1" SIGNS IN PLACE	SQFT	78.90	10.50	828.45



SCHEDULE OF ITEMS

OR569: BELTLINE HWY @ COBURG ROAD INTERCHANGE  
 WILDISH CONSTRUCTION CO.

ITEM NO	ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE (IN FIGURES)	TOTAL (IN FIGURES)
0970	0940-0130000J TYPE "W7" SIGNS IN PLACE	SQFT	33.00	10.50	346.50
0980	0940-0135000J TYPE "Y2" SIGNS IN PLACE	SQFT	16.00	10.50	168.00
0990	0950-0101000A REMOVAL OF ELECTRICAL SYSTEMS	LUMP	ALL	18,500.00	18,500.00
1000	0963-0102000F 42 INCH DIAMETER SIGNAL SUPPORT DRILLED SHAFT	FOOT	77.00	450.00	34,650.00
1010	0965-0100000A CAMERA POLES AND FOUNDATIONS	LUMP	ALL	14,500.00	14,500.00
1020	0970-0100000A POLE FOUNDATIONS	LUMP	ALL	10,000.00	10,000.00
1030	0970-0101000A LIGHTING POLES, FIXED BASE	LUMP	ALL	14,500.00	14,500.00
1040	0970-0102000A LIGHTING POLES, SLIP BASE	LUMP	ALL	10,000.00	10,000.00
1050	0970-0103000A LIGHTING POLE ARMS	LUMP	ALL	3,300.00	3,300.00
1060	0970-0104000A LUMINAIRES, LAMPS, AND BALLASTS	LUMP	ALL	2,700.00	2,700.00
1070	0970-0105000A SWITCHING, CONDUIT, AND WIRING	LUMP	ALL	71,500.00	71,500.00
1080	0990-0101000A TRAFFIC SIGNAL INSTALLATION, EASTBOUND RAMP	LUMP	ALL	156,000.00	156,000.00
1090	0990-0101000A TRAFFIC SIGNAL INSTALLATION, WESTBOUND RAMP	LUMP	ALL	158,000.00	158,000.00
1100	0990-0105000A INTERCONNECT SYSTEM	LUMP	ALL	12,500.00	12,500.00
1110	0990-9Z90000A CCTV CAMERA CABINET	LUMP	ALL	3,500.00	3,500.00



SCHEDULE OF ITEMS

OR569: BELTLINE HWY @ COBURG ROAD INTERCHANGE  
 WILDISH CONSTRUCTION CO.

ITEM NO	ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE (IN FIGURES)	TOTAL (IN FIGURES)
1120	0990-9Z90000A CCTV CAMERA EQUIPMENT	LUMP	ALL	31,500.00	31,500.00
1130	0990-9Z90000A ELECTRICAL WORK FOR CCTV CAMERA SYSTEM	LUMP	ALL	16,500.00	16,500.00

SECTION 0009 RIGHT-OF-WAY DEVELOPMENT AND CONTROL

1140	1030-0102000E SEEDING MOBILIZATION	EACH	1.00	500.00	500.00
1150	1030-0103000R TEMPORARY SEEDING	ACRE	3.00	850.00	2,550.00
1160	1030-0109000R PERMANENT SEEDING, MIX NO. 1	ACRE	3.00	1,300.00	3,900.00
1170	1030-0118000R WATER QUALITY SEEDING	ACRE	0.14	14,500.00	2,030.00
1180	1030-0139000R FERTILIZING	ACRE	3.00	100.00	300.00
1190	1030-0140000R MULCHING	ACRE	3.00	1,200.00	3,600.00
1200	1040-0100000E SOIL TESTING	EACH	1.00	100.00	100.00

SECTION 0010 ADDED BID ITEMS

1210	0490-0100000E ADJUSTING BOXES	EACH	2.00	200.00	400.00
1220	0490-0120000E MINOR ADJUSTMENT OF MANHOLES	EACH	3.00	1,000.00	3,000.00
<b>TOTAL BID</b>					<b>2,357,957.40</b>



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SECTION III. CONTRACT

THIS CONTRACT, made and entered into, in duplicate, this

by and between the State of Oregon, by and through its Transportation Commission, hereinafter called "State", and Wildish Construction Co., an Oregon corporation, by and through its corporate officials doing business at 3600 Wildish Lane (PO Box 7428 97401-0428), Eugene OR 97408 (FAX:541-683-7722).

Federal Tax ID No. 93-0491008  
hereinafter called "Contractor",

WITNESSETH:

That the said Contractor, in consideration of the sums to be paid by the State in the manner and at the time herein provided, and in consideration of the other covenants and agreements herein contained, hereby agrees to perform and complete the work herein described and provided for and to furnish all necessary machinery, tools, apparatus, equipment, supplies, materials and labor and do all things in accordance with the applicable plans, the applicable Standard Specifications, the special provisions bound herewith, and in accordance with such alterations or modifications of the same as may be made by the Engineer or the Commission, and according to such directions as may from time to time be made or given by the Engineer under the authority and within the meaning and purpose of this contract. This agreement shall be binding upon the heirs, executors, administrators, successors and assigns of the Contractor.

That the applicable plans, the applicable Standard Specifications, the special provisions bound herewith and the schedule of contract prices bound herewith are hereby specifically referred to and by this reference made a part hereof, and shall by such reference have the same force and effect as though all of the same were fully written or inserted herein.

That the Contractor shall faithfully complete and perform all of the obligations of this contract, and in particular shall promptly, as due, make payment of all just debts, dues, demands and obligations incurred in the performance of said contract; and shall not permit any lien or claim to be filed or prosecuted against the State. It is expressly understood that the laws of the State of Oregon shall govern this contract in all things.

In consideration of the faithful performance of all of the obligations, both general and special, herein set out, and in consideration of the faithful performance of the work as set forth in this contract, the applicable plans, Standard Specifications, special provisions, schedule of contract prices, and all general and detailed specifications and plans which are a part hereof, and in accordance with the directions of the Engineer and to his satisfaction, and, on Federal-Aid Projects, to the satisfaction of the Federal Highway Administration, or its authorized representative, in conformity with the requirements of the Federal-Aid Road Act and all amendments thereto, the State agrees to pay to the said Contractor the amount earned, as determined from the actual quantities of work performed and the prices and other bases of payment specified and taking into consideration any amounts that may be deductible under the terms of the contract, and to make such payments in the manner and at the times provided in the applicable Standard Specifications or special provisions.

OR569: Beltline Hwy @ Coburg Rd Interchange (Eugene) Section, Contract No. 13997

IN WITNESS WHEREOF, the parties hereto have subscribed their names and affixed their respective official seals as of the date first above written.

The Oregon Transportation Commission by duly adopted Delegation Order No. 3 authorizes the Director and Deputy Director of Highways to act on its behalf to approve and award this contract. Subdelegation Order No. 9 authorizes the Support Services Branch Manager to execute the contract on behalf of the Commission. Letters of Authority authorize the Chief Procurement Officer and Construction Manager to execute the contract on behalf of the Commission.

\_\_\_\_\_  
Oregon Department of Transportation

\_\_\_\_\_  
Date

Wildish Construction Co.  
Contractor

695  
(Oregon Contractors Board  
Registration Number)

10/22/11  
(Expiration Date)

By \_\_\_\_\_  
Authorized Official Signature

\_\_\_\_\_  
Date

By \_\_\_\_\_  
Authorized Official Signature

SECTION IV. PERFORMANCE BOND

Bond No. \_\_\_\_\_

KNOW ALL MEN BY THESE PRESENTS: That, Wildish Construction Co., an Oregon corporation, by and through its corporate officials doing business at 3600 Wildish Lane (PO Box 7428 97401-0428), Eugene OR 97408 (FAX:541-683-7722)

as principal, and

as surety, are jointly and severally held and bound unto the State of Oregon, in the sum of

Two Million Three Hundred Fifty-seven Thousand Nine Hundred Fifty-seven Dollars and Forty Cents  
(\$2,357,957.40)

for the payment of which we jointly and severally bind ourselves, our heirs, executors, administrators and assigns or successors and assigns, firmly by these presents.

THE CONDITION OF THIS BOND IS SUCH

That, whereas the said principal herein has made and entered into a certain contract, a copy of which is attached hereto, with the State of Oregon, which contract, together with the applicable plans, Standard Specifications, special provisions, and schedule of contract prices, is by this reference made a part hereof, whereby the said principal agrees to do in accordance with the certain terms conditions, requirements, plans and specifications which set out in said contract and all authorized modifications of the contract which increase the amount of the work and the amount of contract. Notice to the surety of any of the immediately foregoing is waived.

NOW, THEREFORE, if the principal herein shall faithfully and truly observe and comply with the terms, conditions and provisions of the said contract, in all respects, and shall well and truly and fully do and perform all matters and things by him undertaken to be performed under said contract, upon the terms set forth therein, and within the time prescribed therein, or as extended as provided in the contract, and shall indemnify and save harmless the State of Oregon, the Oregon Transportation Commission, and members thereof, its officers, employees, and agents, against any direct or indirect damages of every kind and description that shall be suffered or claimed to be suffered in connection with or arising out of the performance of the said contract by the said Contractor or his subcontractors and shall in all respects perform said contract according to law, then this obligation is to be void, otherwise to remain to full force and effect.

OR569: Beltline Hwy @ Coburg Rd Interchange (Eugene) Section, Contract No. 13997

Nonpayment of the bond premium will not invalidate this bond nor shall the State of Oregon, by and through its Transportation Commission, be obligated for the payment thereof.

Witness our hands this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

Wildish Construction Co.

By \_\_\_\_\_  
Authorized Official Signature

By \_\_\_\_\_  
Authorized Official Signature

\_\_\_\_\_  
Surety

By \_\_\_\_\_  
Attorney in Fact

By \_\_\_\_\_  
Agent (Not required)

\_\_\_\_\_  
Surety's Seal  
Must be affixed

SECTION V. PAYMENT BOND

Bond No. \_\_\_\_\_

KNOW ALL MEN BY THESE PRESENTS: That, Wildish Construction Co., an Oregon corporation, by and through its corporate officials doing business at 3600 Wildish Lane (PO Box 7428 97401-0428), Eugene OR 97408 (FAX:541-683-7722)

as principal, and

as surety, are jointly and severally held and bound unto the State of Oregon, in the sum of

Two Million Three Hundred Fifty-seven Thousand Nine Hundred Fifty-seven Dollars and Forty Cents (\$2,357,957.40)

for the payment of which we jointly and severally bind ourselves, our heirs, executors, administrators and assigns or successors and assigns, firmly by these presents.

THE CONDITION OF THIS BOND IS SUCH

That, whereas the said principal herein has made and entered into a certain contract, a copy of which is attached hereto, with the State of Oregon, which contract, together with the applicable plans, Standard Specifications, special provisions, and schedule of contract prices, is by this reference made a part hereof, whereby the said principal agrees to do in accordance with the certain terms, conditions, requirements, plans and specifications set out in said contract and authorized modifications of the contract which increase the amount of the work and the amount of contract. Notice to the surety of any of the immediately foregoing are waived.

NOW, THEREFORE, if the principal herein shall make payment promptly, as due to all subcontractors and to all persons supplying to the Contractor or his subcontractors, equipment, supplies, labor or materials for the prosecution of the work, or any part thereof, provided for in said contract, and shall pay all contribution of amounts due its workers compensation carrier and the State Unemployment Compensation Trust Fund from such Contractor or subcontractors incurred in the performance of said contract, and pay all sums of money withheld from the Contractor's employees and payable to the Revenue Department; and shall pay all other just debts, dues and demands incurred in the performance of the said contract and shall pay the State of Oregon, by and through its Transportation Commission, such damages as may accrue to the State under said contract, then this obligation is to be void, otherwise to remain in full force and effect.

OR569: Beltline Hwy @ Coburg Rd Interchange (Eugene) Section, Contract No. 13997

Nonpayment of the bond premium will not invalidate this bond nor shall the State of Oregon, by and through its Transportation Commission, be obligated for the payment thereof.

Witness our hands this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

Wildish Construction Co.

By \_\_\_\_\_  
Authorized Official Signature

By \_\_\_\_\_  
Authorized Official Signature

\_\_\_\_\_  
Surety

By \_\_\_\_\_  
Attorney in Fact  
(A Power of Attorney for the Attorney  
in Fact must be attached to this bond)

By \_\_\_\_\_  
Agent (Not required)

\_\_\_\_\_  
Surety's Seal  
Must be affixed

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**SECTION VI. CERTIFICATION OF WORKERS' COMPENSATION COVERAGE**

**OREGON TRANSPORTATION COMMISSION**

The Contractor, for the purposes of this contract, hereby certifies that it is currently providing Oregon Workers' Compensation coverage for all its employees and will maintain coverage throughout the course of the project through one of the following methods:

1.  "Carrier-Insured Employer" (State Accident Insurance Fund Corp. or other authorized insurer)

Insurance Company Name \_\_\_\_\_

ID/Policy Number \_\_\_\_\_

2.  "Self-Insured Employer" (Certified by the Workers' Compensation Division)

ID number as assigned by the  
Workers' Compensation Division \_\_\_\_\_

3.  I am an independent contractor and will perform all work under this contract without the assistance of others.

In the event of cancellation or change in the information above, Contractor certifies that it will immediately notify the Department of said cancellation or change and will obtain alternate coverage.

Dated \_\_\_\_\_ 200\_\_

\_\_\_\_\_  
(Contractor's Signature)

**REMINDER - ADDITIONAL INFORMATION NEEDED**

Has your insurance carrier filed with Oregon Workers' Compensation Division a guaranty contract as proof of coverage for your employees working in Oregon?

For filing information, contact the Workers' Compensation Division at Labor and Industries Building:  
Salem, OR 97301; Phone (503) 947-7810.