

SCOPE OF WORK

April 28, 2011

CONSTRUCTION MANAGEMENT & CONSTRUCTION INSPECTION SERVICES

Project IM 0252-387 SA 15790

Project CC C010-095 SA17098

Description and Overview of Project & Required Services

Services are requested to provide Construction Management and Construction Inspection to support the referenced CDOT Projects, as follows.

I-25 Southbound: Speer Boulevard to 20th Street

IM 0252-387 (15790) is proposing to add adjacent auxiliary lanes onto southbound (SB) Interstate 25 from 20th Street to Speer Boulevard, and replace one existing bridge (Structure E-16-EP), over I-25 at 15th Street (MP 211.648) in the City and County of Denver (CCD). The proposed auxiliary lanes are two lanes wide, plus shoulders. The new 15th Street bridge will span over both directions of I-25 and the new auxiliary lanes, while maintaining or improving vertical clearance over I-25. The new 15th Street bridge will also accommodate four 11-foot lanes and a 6-foot sidewalk along each side and will meet or exceed all Interstate Standards. In addition to the 15th Street Bridge being replaced, this project will also improve the HOV lane entrance onto I-25 at 20th Street by extending the acceleration lane by 1000 ft. This project will also include re-striping southbound (SB) I-25 from the BNSF railroad bridge (E-16-EM) to 20th Street to improve southbound I-25 lane balance. The ultimate goal for the project is to improve safety, reduce access deficiencies, improve traffic flow on SB I-25, and replace the 15th Street over I-25 bridge structure.

Central Street Promenade: 16th Street to 20th Street

CC C010-095 (17098) is a City and County of Denver (CCD) local agency project with CDOT oversight. This project will construct a 10-foot or wider multi-use path along Central Street from 16th Street to 20th Street and bulb-outs on Central Street at 17th and 18th Streets. This project will also provide a minimum of 20 bicycle racks and improved pedestrian lighting. Due to construction timing and overlapping vicinity with the I-25 Southbound Interim project, this project has been combined with the aforementioned project to minimize construction throw away and consolidate costs.

The two projects above are combined under one bidding/contractor.

Construction Services

Interested consultant firms are strongly encouraged to visit the project site in advance of preparing a proposal to perform this work. The selected Consultant will have strong experience in developing and analyzing critical path scheduling, public relations, bridge construction, roadway construction, utilities, environmental work and compliance, and retaining walls.

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The requested construction service is for the above project and includes an Assistant Project Engineer and three **Inspectors** to be utilized on the I-25/Central St. project. The consultant will also supply scheduling analysis and evaluation. General Requirements are outlined in **Section 1**.

The Assistant Project Engineer shall have sufficient education, training, and experience to meet the minimum qualifications comparable to CDOT's Civil Engineer Project Manager I level employee, and be experienced and competent in all aspects of highway construction within the scope of this project. Assistant Project Engineer's Requirements are outlined in **Section 2**.

The Inspectors shall have sufficient education, training, and experience to meet the minimum qualification comparable to CDOT's Engineer/Physical Science Tech I level employee, and be experienced and competent in all aspects of highway construction within the scope of this project. Inspector's Requirements are outlined in **Section 3**.

The Materials Tester shall have sufficient education and experience to meet the minimum qualifications comparable to CDOT's Engineer/Physical Science Tech I level employee, and be experienced and competent in all aspects of material and testing within the scope of the project. Materials Tester's requirements are outlined in **Section 4**.

The Consultant shall provide services, as requested by CDOT, to periodically review Contractor schedules and method statements for reasonability and compliance with contract requirements, as well as perform delay analysis on time requests. Schedule Analysis Requirements are outlined in **Section 5**.

Full time services are anticipated from approximately October 2011 through October 2013 (includes the duration of the construction, potential adjustments to construction contract time, plus pre and post construction activities as required). Work may be required night and/or day, on weekends, holidays, and/or on a split shift basis. Work weeks may be in excess of or less than the standard 40-hour week.

The Contract Administrator for this Task Order will be:

Kevin Ryburn, Project Engineer
Region 6, Central Engineering Unit
4670 Holly St.
Denver, CO 80216-5635
303- 298-1555

Active Day-to-Day administration of this contract will be delegated to the assigned Project Engineers/Project Managers as follows:

Kevin Ryburn, Project Engineer
Region 6, Central Engineering Unit
4670 Holly St.
Denver, CO 80216-5635
303- 298-1555

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The following task requirements are not intended to be a definitive listing of every activity required by the Consultant for this project. Refer to the references listed in the **Project Standards** below for more detailed information.

All work shall be performed in accordance with the Basic Contract's Scope of Work (Exhibit A) as supplemented by these task requirements.

Section 1 - General Requirements

A. Project Standards

Construction management and Inspection shall be in accordance with the latest versions of the Colorado Department of Transportation's Construction Manual, Field Materials Manual, Colorado Department of Transportation Inspector's Checklist, Standard Specifications for Road & Bridge Construction, the Supplemental Specifications, if any, Standard and Project Special Provisions, applicable M & S standards, and the plans, permits, and other documents governing the construction of the project. All Consultant activities performed shall be as authorized by the Resident Engineer. All Consultant personnel shall comply with CDOT's Safety, Sexual Harassment, Discrimination, and Workplace Violence Policies and Procedures. For the purposes of this document, Project Management and Inspection shall be known as "the work."

B. Labor, Materials, Vehicles & Equipment

The Consultant shall furnish their personnel, materials, equipment, and transportation required to perform the work. Consultant personnel shall have appropriate vehicles (equipped with flashing amber beacon), cellular phones, computers, and miscellaneous equipment and supplies (printers, calculators, manuals, office supplies, safety equipment, etc.) required to perform the work as approved by the CDOT Resident Engineer. Field Office and Field Laboratory will be provided by CDOT.

The Consultant's work shall be under the direction of, and shall be reviewed by, a Professional Engineer, registered in the State of Colorado, or as appropriate by a Licensed Professional Land Surveyor, registered in the State of Colorado.

The Consultant shall assign personnel for the duration of the Contract, unless otherwise approved by the Resident Engineer.

The Consultant Project Engineer and Consultant Inspector assigned to the project shall be competent in road and bridge construction and must be thoroughly familiar with CDOT's specifications, manuals, forms, and documentation requirements. The level of qualification provided shall be requested and approved by the CDOT Resident Engineer. A copy of work experience and/or proof of Licensing shall be provided before work begins to the CDOT Resident Engineer. Consultant personnel who do not meet all of the specified requirements, or who fail to perform their work in an acceptable manner, shall be removed from the project when determined and directed by the CDOT Resident Engineer.

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C. Project Staffing Authority

The Project Engineer is in direct charge of the work and is responsible for administration of the project contract as defined in the CDOT Standard Specifications and Standard Special Provisions, within the guideline of the Contract. The Project Engineer shall report directly to the Resident Engineer. This includes approving and setting work hours for project construction and the materials sampling, testing, and inspection, as outlined in the Project Specifications. Consultant personnel shall be on the project when the Contractor is working.

D. Submittal of Final Documentation

Final documentation shall be submitted to the CDOT Resident Engineer within 20 working days after project acceptance. A completed CDOT Form 250 shall be submitted to the CDOT Resident Engineer 10 working days after the Consultant has been notified of final quantities. Failure to submit final documentation as required may result in withholding Consultant payments received subsequent to project acceptance until this material is received.

E. Engineer's Certification

The Consultant Engineer, as specified in the Contract, shall certify in writing that all inspection, sampling, and testing activities conform to the plans, specifications, and purpose of the design. The Consultant Engineer shall be available to review work, resolve problems, and make decisions in a timely manner as requested by the CDOT. The CDOT Resident Engineer shall be the final authority regarding acceptance of work not conforming to the plans and specifications.

Task 1.0 Construction Management Support

Provide CDOT Resident Engineer with the following construction inspection support:

- 1.1 Traffic Control: Monitor the Contractor's implementation of traffic signing, barriers, and other traffic control measures.
- 1.2 Daily Quality Control Inspection & Quantity Control: Perform daily quality control inspections of construction activities to document activities performed and assessment of conformance with the contract documents in accordance with Section 2 of this Scope. Inspection items will include, but may not be limited to, rebar and concrete placement, paving, and traffic control installations.

Quantities of work elements constructed will be measured and recorded to support the preparation and processing of progress pay estimates to the Contractor. Quantities will be documented in an interim quantity book for tracking of quantities constructed as compared to the original design quantities on the project. Consultant Project Engineer and Inspector shall assist CDOT in resolving disputes in quantities with the Contractor prior to the preparation of the pay estimate.

- 1.3 Project Documentation: Prepare and review Inspector's progress reports and complete appropriate CDOT paperwork and forms.

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- 1.4 Materials Testing: Document and complete the necessary testing per CDOT's Field Materials Manual and/or specifications.
- 1.5 Contaminated Material Notification: Monitor construction operations and notify the Project engineer and CDOT Resident Engineer immediately when contaminated material or otherwise unacceptable material is encountered or developed on the project.

Task 2.0 Post Construction Support

- 2.1 As-Constructed Drawings: Complete 11"x 17" as-constructed drawings of work completed by the Contractor, including final pay quantities.
- 2.2 Preparation of Final Pay Estimate: Assist in determining final pay quantities with appropriate supporting documentation and checks.
- 2.3 Preparation of Materials Final: Prepare the final materials documentation for closing the project.

Task 3.0 Project Management

- 3.1 Progress Reports: Prepare weekly progress reports for the CDOT Resident Engineer documenting project progress in accordance with the Basic Contract.
- 3.2 Certified Payroll: Review certified payroll documentation provided by the Contractor and conduct random interviews of Contractor employees to determine if the Contractor is in conformance with CDOT's EEO/Labor Compliance policies.

Deliverables generated during the project will include the following and will be submitted throughout the duration of the project, or at specific dates commensurate with the deliverable's intent:

- Weekly Progress Reports.
- Project diaries, inspection reports, quantity records, and other documentation prepared during the course of construction in accordance with CDOT requirements.

Section 2 – Assistant Project Engineer Requirements

General Work Description

Assistant Project Manager responsibilities may include, but are not limited to the following:

- ◆ Shall support CDOT's staff through management of the construction project
- ◆ Shall certify in writing that all inspection, materials, materials testing, and construction management conforms to the plans, specifications, and purpose of design.

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- ◆ Preparing and transmitting updates of construction activities to the CDOT's Public Information Office
- ◆ Preparing routine correspondence to the Contractor, CDOT staff, local agencies, etc.
- ◆ Preparing Contract Modification Orders
- ◆ All Inspector responsibilities as delineated below (Section 3)

The consultant shall furnish to the Project Engineer, the phone number, where the Project Engineer can reasonably expect to make contact promptly with the consultant at all times during the project unless otherwise approved by the Project Engineer. Back-up Consultant resources should be available in case of loss of staff, sickness, or vacations or as required for the project.

Personnel Qualifications

The Assistant Project Manager/Inspector shall be permanently assigned to the project and shall be responsible for the administration of the CDOT construction contract. The Assistant Project Manager/Inspector shall have minimum of six (6) years of experience in related road and bridge construction and responsible for supervising the work of the project Inspectors. The Consultant Assistant Project Engineer will be required to work night shifts if necessary. The Assistant Project Manager/Inspector shall have thorough knowledge of the use and completion of CDOT forms and documentation, including the CDOT Construction Manual, the CDOT Materials Manual, and the CDOT Inspector's Checklist. The Consultant Assistant Project Engineer and the Consultant Inspector shall have the qualifications and certifications described in CDOT Policy Memo #25, dated March 4, 2005 (attached), the mandatory Traffic Control Supervisor training as described in CDOT Policy Memo #22, dated September 9, 2004 (attached), as well as other certifications relevant to the project.

Documentation

Inspection work shall conform to the CDOT Construction Manual, the Inspector Checklist and SiteManager requirements. The Consultant's Assistant Project Engineer shall maintain a daily diary for each day the Consultant performs work on the project. They shall use CDOT's Form 103, automated 103a - Project Diary, or other form approved by the CDOT Resident Engineer. SiteManager documentation procedures will apply. The contents of the diary shall be brief, with accurate statements of progress and conditions encountered during the prosecution of the work. Editorial comments are not to be incorporated in the diaries or on any written correspondence applicable to the project. A copy of the daily diary shall be given to the Project Engineer within three (3) working days of its date and will become a part of the permanent project record.

Section 3 – Inspector's Requirements

General Work Description

Inspection responsibilities may include, but are not limited to the following:

- ◆ Performing duties described in the CDOT *Inspector's Checklist*.

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- ◆ Preparing and transmitting periodic reports and billings required by CDOT Procedural Directive 400.2.
- ◆ Monitoring and documenting Contractor payroll compliance.
- ◆ Participating in weekly progress meetings with contractor, subs, utilities, and other interested parties.
- ◆ Securing project documentation from the Contractor.
- ◆ Anticipating project problems and suggesting recommended solutions to the Project Engineer.
- ◆ Reviewing drawings and data submitted by the construction contractor and suppliers for conformance with the intent of the specifications. Informing and obtaining concurrence as needed from the Project Engineer and keep relevant documentation for project records.
- ◆ Maintaining accurate notes reflecting actual construction details to be used in preparation of as-constructed plans.
- ◆ Communicating with adjacent landowners to resolve issues that may arise due to construction, as required.
- ◆ Reviewing and approving the Contractor's Method of Handling Traffic (MHT).
- ◆ Monitoring compliance with and taking appropriate action to preserve safety on the project for all workers and traveling public in accordance with Method of Handling Traffic (MHT) and the Manual of Uniform Traffic Control Devices (MUTCD).
- ◆ Providing initial, follow-up, and final inspections of work in progress including interim and final measurements and coordinating with the materials testers to ensure testing requirements are met.
- ◆ Notifying contractors and the Project Engineer of non-compliance with the contract plans and specifications in a timely manner.
- ◆ Performing special tests, investigations, or monitoring which are required to fulfill the intent of the CDOT Inspection Program.
- ◆ Preparing inspection documentation for development of progress payments for the Contractor in accordance with prescribed procedures.
- ◆ Submitting standard documentation reports no later than the following working day.
- ◆ Providing liaison and communication to contractor field crews.
- ◆ Assisting in preparing the final "As-Constructed" plans upon project completion.
- ◆ Assisting in preparing punch lists of uncompleted work, non-conformance reports, and deficiency notices.

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- ◆ Assisting in preparing responses to contractors' and suppliers' requests for information, submittals, change notices, claims, and correspondences.
- ◆ CDOT experience with the federal project requirements such as OJT, review of 205's, have done interviews to complete CDOT form 280, and have reviewed Davis-Bacon wages.

Personnel Qualifications

The Project Inspection Technicians (PITs) shall be permanently assigned to the project and shall perform all materials inspection and construction documentation as directed by the Project Engineer. The PIT performing the inspection shall have successfully completed the CDOT Inspector Qualification Program, pursuant to CDOT Policy Memo 25 issued March 4, 2005. The PIT shall have a minimum of one (1) year experience in related road and bridge construction. The PIT shall have thorough knowledge of the use and completion of CDOT forms and documentation, including the CDOT Construction Manual, the CDOT Materials Manual, and the CDOT Inspector's Checklist. References of inspection experience shall be available for all staff, and may be requested at any time during the Contract.

Personnel qualifications and staffing levels for the project shall be subject to the approval of the CDOT Resident Engineer. CDOT will reserve the right to review the resume and interview any new proposed staff to the project. The Consultant shall be certified as defined by the requirements set forth in this scope of work.

Other skills to be highly considered for all personnel:

- Utility coordination
- Wide load coordination
- Working with CDOT Public Relations representative for periodic and timely press releases for construction activities
- Wetlands (404 Permit)
- Survey experience
- Bridge-inspection experience

All the Consultant staff (except the tester) shall be familiar with and possess experience using the Site Manager program to enter CMO's, 266 inspection forms, and other areas if needed. All Consultant Staff shall be thoroughly familiar with CDOT forms and documentation requirements.

The Consultant shall also provide any other services as requested by the CDOT Project Engineer.

Back-up Consultant resources should be available in case of loss of staff, sickness, or vacations or as required for the project.

Documentation

Inspection work shall conform to the CDOT Construction Manual, the Inspector Checklist and SiteManager requirements. Each of the Consultant's field inspectors shall maintain a daily diary for each day the Consultant performs work on the project. They shall use CDOT's Form 103, automated 103a - Project Diary, or other form approved by the CDOT Resident Engineer. SiteManager documentation procedures will apply.

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The contents of the diary shall be brief, with accurate statements of progress and conditions encountered during the prosecution of the work. Editorial comments are not to be incorporated in the diaries or on any written correspondence applicable to the project. A copy of the daily diary shall be given to the Project Engineer within three (3) working days of its date and will become a part of the permanent project record.

Section 4 – Materials Tester’s Requirements

Personnel Qualifications

The Consultant Materials Testing Technician (MTT or Tester) shall have experience in precast and cast in place concrete, asphalt, earthwork, and certifications accordingly. The MTT shall review project plans, specifications, and the current version of the CDOT Field Materials Manual and the project specific CDOT Form 250 to determine the number of testers required to complete the project and the number and type of test that will need to be performed on the project. The MTT and the CDOT Project Engineer shall meet on a regular basis prior to start of project to address any questions or issues involving testing procedures, frequency, or documentation. Additional testing may be required if requested by the CDOT Project Engineer or CDOT Resident Engineer. The MTT shall be thoroughly familiar with CDOT forms and documentation requirements. The consultant-supplied Materials Testing Technician shall be permanently assigned to the project and shall provide copies of the following qualifications:

- The MTT performing concrete tests shall be certified by The American Concrete Institute (ACI).
- The MTT performing hot bituminous pavement tests shall be Level II, A&B certified by The Colorado Asphalt Technician Certification Program (LabCAT).
- WAQTC, Soils Certification

Personnel provided by the Consultant who do not meet all of the specified requirements, or who fail to perform their work in an acceptable manner, shall be removed from the project when determined and directed by the CDOT Project Engineer or CDOT Resident Engineer.

Back-up Consultant resources should be available in case of loss of staff, sickness, or vacations or as required for the project.

Section 5 – Schedule Analysis Requirements

General Work Description

- ◆ Review the Contractor’s accepted as-planned schedule, schedule updates, and method statements for compliance with contract requirements
- ◆ Assemble and review as-built data and develop a current as-built schedule
- ◆ Perform a schedule delay analysis and determine the amount of Contractor and/or CDOT excusable delays
- ◆ Prepare schedule reports and exhibits to assist in evaluation of schedule delays and remaining as-planned work
- ◆ Provide ongoing schedule review and evaluation support through project completion

STATE OF COLORADO

DEPARTMENT OF TRANSPORTATION

Chief Engineer
4201 E. Arkansas Ave. #262
Denver, CO 80222
(303) 757-9206
(303) 757-9656 Fax



Date: March 4, 2005

To: Region Transportation Directors, Professional Engineer III's, and Resident Engineers

From: Craig Siracusa, Chief Engineer *Craig Siracusa*

Subject: Construction Inspector Qualification Program
Policy Memo 25

As a follow up to the memo issued on October 25, 2004, I would like to communicate progress in the implementation of the CDOT Inspector Qualification Program. The Inspector Qualification Board of Directors has developed the following policies in regard to prerequisites, certification requirements and program implementation.

Required Prerequisite Classes:

- Technical Series (EPS Assistant I thru EPS Technician III)
 - Basic Highway Math
 - Basic Highway Surveying
 - Basic Highway Plan Reading
 - Erosion Control Supervisor
- Professional Series (EIT I thru EIT III)
 - Basic Highway Surveying
 - Basic Highway Plan Reading
 - Erosion Control Supervisor

The specialty certifications, such as CAPA Asphalt Inspection, WAQTC, and Major Structures, will only be required when an inspector is working on a project where those items of work are performed. For example, a person working on an asphalt overlay would need the pre-requisites plus the CAPA asphalt inspection; a person working on an embankment would need the pre-requisites plus the WAQTC soils; etc. The specialty training requirements apply to the full range of both the technical and professional series listed above.

Supervisors will be required to anticipate and incorporate the required specialty training needs into training plans as required by project assignments.

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Resident Engineers are also encouraged to look at the background of their Project Engineers (both licensed and not licensed). Resident Engineers should include the categories that they believe are appropriate in the Project Engineers' training plans as well.

Program Implementation:

- The above requirements will be mandatory on CDOT projects after March 1, 2006.
- The scopes of work in future consultant contracts must include the certification requirements for inspectors effective March 1, 2006.

The qualification program products can be accessed both internally and externally at:

<http://www.dot.state.co.us/CHREmpCorner/empdev.cfm>

I encourage you to begin to work with your employees to structure a plan that addresses the specific needs.

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DEPARTMENT OF TRANSPORTATION

Safety and Traffic Branch
4201 East Arkansas Avenue, Empire Park B770
Denver, Colorado 80222
(303) 512-5100
FAX (303) 757-9219



DATE: September 9, 2004

Timothy Harris, Director of Staff Services

A handwritten signature in black ink, appearing to be "TH", is written over the printed name of Timothy Harris.

FROM: Gabriela Vidal, Safety and Traffic Branch Manager

Mandatory Traffic Control Supervisor Training
Policy Memo 22

Mandatory Traffic Control Supervisor Training

September, 2004

The CDOT is always striving to improve work zone safety. Managements philosophy is, "That employees and contractors shall receive detailed training on Traffic Control Supervision so all parties involved in the construction of projects understand and utilize the best practices and procedures when setting up, working in and taking down work zones."

Note: This policy does not change the certification requirements for the TCS or other personnel that are presently required to be certified.

Definitions

- ☐ ATSSA – American Traffic Safety Services Association
- ☐ CCA – Colorado Contractor's Association
- ☐ Certificate of Achievement or Completion – The Certificate issued by CCA upon completing the 2-day Traffic Control Supervisor (TCS) training and passing the test. The Certificate of Achievement or Completion from CCA will serve as written proof from CCA that a passing score was achieved on the Traffic Control Supervisor Exam. The 1-day Traffic Control Technician (TCT) along with the 2-day Traffic Control Supervisor (TCS) training provided by ATSSA may be substituted. Written proof from ATSSA that an eighty percent or higher score was achieved on both the Traffic Control Technician and Traffic Control Supervisor Exam is required.

CDOT Personnel

In order to achieve the goal of improving work zone safety, Safety and Traffic Branch is utilizing 402 Roadway Safety Program funds to provide a 2-day Traffic Control Supervisor class for CDOT employees. The following CDOT individuals must obtain a **Certificate of Achievement or Completion** by July of 2006:

- ☐ CDOT personnel that work on construction projects, including maintenance personnel and Resident Engineers.
- ☐ CDOT new hires that work on construction projects need to complete the training within 12 months.

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After obtaining their supervisor's permission, an individual can register for a regularly scheduled CCA class by returning the attached registration form to CCA at the fax number indicated on the registration form. If the Region wishes to have a class in the Region then they need to establish a point of contact and have that person contact Terry Kish of CCA at 303-290-6611. See the attached announcement



Contractor Superintendents

By July 1, 2005, all Contractor Superintendents must obtain a Certificate of Achievement or Completion. Contractor personnel will need to arrange for their own training through either CCA or ATSSA.

All projects that have bids opened after July 1, 2005 will include a Project Special Specification, which will require the Contractor's Superintendent to have the Certification of Completion.

Continuing Training and Specifications

Continuing Training Requirements-

Once every three years a refresher course of 4-8 hours in length must be taken. The Refresher course is yet to be developed.

If there are questions relating to training please contact Dwayne Wilkinson @ 303-512-5134.

Specifications that must be used:

The Project Special Specification that will require the Contractor's Superintendent to have the Certification of Completion for the two day TCS course will be posted on the following web site prior to June 1, 2005.

http://www.dot.state.co.us/S_Standards/specs_1999/special_provisions_1999.html

If there are questions regarding the specifications please contact K.C. Matthews at 303-757-9543.

Since these Specifications may undergo change through use, it is suggested that the link above be used at the time Plans are finalized.

I Concur

Craig Snare
Chief Engineer

10/12/04
Date

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COLORADO DEPARTMENT OF TRANSPORTATION		<input type="checkbox"/> POLICY DIRECTIVE <input checked="" type="checkbox"/> PROCEDURAL DIRECTIVE
Subject: Personal Protective Equipment Use		Number: 80.1
Effective: 11-01-2009	Supersedes: 06-03-04	Originating Office: Office of Transportation Safety (OTS)

PURPOSE

This document provides a procedure for the use of personal protective equipment by all CDOT personnel.

AUTHORITY

Executive Director
Governor's Executive Order DO 138 89 (Safety in the Workplace)
Policy Directive 80.0, Occupational Safety & Health

APPLICABILITY

This procedural directive applies to all CDOT employees. If CDOT cannot provide the required Personal Protective Equipment (PPE), and an employee chooses to purchase their own PPE, it must be coordinated and approved through the Region Safety Officer.

DEFINITIONS

ANSI—American National Standards Institute is a standards promulgating organization.

ASTM—American Society for Testing Materials.

Eye/face protection—Equipment designed to protect the eyes and face from injury due to flying objects and chemical sprays. Eye and face protection equipment shall comply with ANSI Z87.1-2003 (R1999), “Standard for Occupational and Educational Eye and Face Protection”.

Fall protection—Equipment designed to protect the wearer from falling to the ground when working at heights of 6 feet or more above the ground/floor level. Fall protection equipment shall comply with ANSI 1264.1 2007 (R1999).

Foot protection—Equipment designed to prevent or minimize foot injury resulting from heavy object impact and sharp object puncture. Foot protection shall meet ASTM F2413-05 M/I/75/C/75 standard for industrial foot protection.

Hand protection—Gloves and hand-wear designed to protect the wearer from hand injury. Hand protection shall meet ANSI/ISEA 105-2000 standard for industrial hand protection.

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Head protection—Headwear designed to protect the wearer from falling and flying objects, and electrical contact that could injure the head. Head protection shall comply with ANSI Z89.1-2003, “American National Standard for Personnel Protection-Protective Headwear for Industrial Workers-Requirements”.

Hearing protection—Devices designed to protect the worker’s hearing from damaging noise produced by explosives, machinery and equipment by attenuating the sound entering the ear channel. These devices include earplugs, earmuffs, etc.

High-Visibility Safety Apparel—Personal protective safety clothing intended to provide conspicuity during daytime and nighttime usage, which meets ANSI/ISEA 107-2004 Standard for High-Visibility Safety Apparel.

- Performance Class 1—217 square inches of background material and 155 square inches of retro-reflective materials. Minimum width of retro-reflective material is 1 inch.
- Performance Class 2—775 square inches of background material and 201 square inches of retro-reflective materials. Minimum width of retro-reflective material is 1.375 inches.
- Performance Class 3—1,240 square inches of background material and 310 square inches of retro-reflective materials. Minimum width of retro-reflective is 2 inches.
- Performance Class E—465 square inches of background material and 108 square inches of retro-reflective materials. Minimum width of retro-reflective is 2 inches.
- Headwear—78 square inches of background material and 10 square inches of retro-reflective materials. No minimum on width of the materials.
- **NOTE: A Performance Class 2 or Performance Class 3 vest worn with a Performance Class E pant will equal a Performance Class 3 Ensemble.**

ISEA— International Safety Equipment Association

Mandatory PPE—Required protective equipment for all highway and construction related activities, e.g. safety vest, foot protection, CDOT hardhat, safety glasses, work gloves, and hearing protection.

NIOSH—National Institute of Occupational Safety and Health

PPE—Personal Protective Equipment

Protective clothing—Clothing designed to shield the wearer from cold, heat, chemicals, and other natural and manmade environments.

Respiratory protection—Equipment designed to protect the worker from the hazards of respiratory contaminants. Respiratory protection devices shall comply with ANSI Z88.2-1992 standard for respiratory protection, and must be NIOSH approved.

Special Protective Equipment—Protective equipment used in specific/special situations, e.g. avalanche control, explosive handling, confined-space operations, herbicide application, bucket trucks, etc.

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Visitor—All non-CDOT employees and non-contract personnel, and all CDOT employees and contract personnel visiting construction and maintenance areas to attend meetings; for taking official tours; or incidental/casual construction and maintenance project stop-bys

RESPONSIBILITIES

Management Responsibility

Management must ensure that all safety policies and procedures are followed by all CDOT employees, and to take appropriate actions when policy and procedure violations occur. Region Safety Leadership will insure that training is made available to all region supervisors and employees with respect to the proper wearing and use of personal protective equipment (PPE), and the recognition and avoidance of workplace hazards.

Supervisor Responsibility

Each supervisor shall ensure employees are wearing the appropriate personal protective equipment for the operations and situations encountered by the employee to reduce the risk of injury, and to promote a safer working environment for the employee. Each Supervisor shall instruct their employees in the recognition and avoidance of work related hazards, and in safety regulations applicable to the work environment. The supervisor will provide training to their employees in the proper wearing and use of personal protective equipment. The supervisor will advise employees of enforcement actions applicable to PPE noncompliance, and shall document and report violations of this procedural directive.

Employee Responsibility

Each employee is required to wear the mandated personal protective equipment specified for the work activity being performed. Each employee shall be given a copy of this directive to sign after being instructed in the use of the personal protective equipment by his or her immediate supervisor.

ACCOUNTABILITY

All CDOT employees shall comply with safety standards, rules and regulations designed to protect their safety and health in the work place. Employees, who willfully fail to obey safety rules and regulations, observe and follow procedural directive, memoranda, bulletins or other safety related instructions pertaining to safe work practices, shall be subject to corrective or disciplinary actions as provided by the State Department of Personnel Rules and Regulations.

Safety Violations and Worker's Comp

When an employee suffers a personal injury or illness due to the employee's willful failure to properly wear or use the personal protective equipment issued by CDOT, as required by this directive, or by the employee's willful failure to obey any reasonable safety rules or directives adopted and posted by CDOT, such failure may reduce any injury compensation.

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BASIC SAFETY EQUIPMENT

Available Safety Equipment

These are personal protective equipment items available to employees by CDOT:

- Hardhat
- Retro-reflective safety vest
- Retro-reflective safety pant
- Retro-reflective Arm/Leg bands
- Retro-reflective Gators
- Safety glasses
- Safety goggles
- Hearing protection
- Safety boots
- Protective clothing
- Respirators
- Gloves

The Supervisor, Branches and Regions should order and provide other personal protective equipment required to provide a safe working environment for CDOT employees. Contact the CDOT Safety Office to ensure ordered safety items meet current safety standards and specifications.

Visitors

CDOT shall provide an orange hardhat, and appropriate high-visibility apparel to all those visiting CDOT operations within the right-of-way, or in other locations presenting recognized safety hazards.

Vehicle and Equipment Operation Seatbelt Usage

All operators and passengers in CDOT or personal automobiles traveling on CDOT business shall utilize and wear the vehicles personal restraint system (seatbelt and shoulder harness). All equipment operators and passengers shall utilize and wear the factory installed, or CDOT retrofitted, operator restraint system when operating any equipment. No passengers shall ride on equipment unless, (1) the equipment is designed for passengers, and (2) the equipment has factory installed or CDOT retrofitted passenger restraint devices.

CDOT SAFETY REGULATIONS GOVERNING THE USE OF PERSONAL PROTECTIVE EQUIPMENT

HEAD PROTECTION

CDOT hardhats shall comply with ANSI Z89.1-2003, "American National Standard for Personnel Protection-Protective Headwear for Industrial Workers-Requirements". Hardhats shall be issued to and worn by all

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employees when their job tasks require them to work outside, on construction sites, or while operating mechanized equipment, e.g. forklifts, loaders, pavers, etc., and in all situations where the potential for head injury from falling objects and overhead obstructions exist. The wearing of a hardhat is optional when operating mechanized equipment constructed with a completely enclosed cab system with factory-installed roll over protection (ROP). There is no requirement to wear the hard hat when traveling inside a vehicle or when inside a building, unless the indoor work situation presents a hazard from falling objects or overhead obstructions.

HIGH-VISIBILITY OUTER GARMENTS

All safety garments worn on CDOT projects shall comply with ANSI/ISEA 107-2004 Standard for High-Visibility Safety Apparel. For **daytime operations**, all CDOT employees and contractors shall wear, at a minimum, ANSI/ISEA Performance Class 2 high-visibility safety garments (Figure 1 in Appendix) while working within the right-of-way, on construction projects, and in any area where they might be exposed to vehicular traffic. For **nighttime operations**, all CDOT personnel and their contractors will wear appropriate ANSI/ISEA Performance Class 3 Ensemble (Figure 2 in Appendix), or a Performance Class 3 vest (Figure 3 in Appendix). Nighttime operations is defined as any work that occurs from "Dusk till Dawn".

EYE AND FACE PROTECTION

CDOT issued eye and face protective equipment shall comply with ANSI Z87.1-2003 (R1999), "Standard for Occupational and Educational Eye and Face Protection". All employees shall wear eye and/or face protection when performing tasks that present a potential eye or face injury hazard from physical activities, chemical, grinding and sanding tasks, spray painting, or radiation agents. Employees shall wear both safety/chemical goggles and face shield when working with chemicals, since safety goggles alone are not sufficient protection against chemical splashes.

HEARING PROTECTION

Hearing protection devices are provided as part of an overall hearing conservation program. CDOT issued hearing conservation devices shall be worn by all employees working in areas where machines or operations present potential hearing damage caused by noise exposure, which exceed 85 decibels on average in an 8 hour period. Traffic noise on city streets or construction projects exceeds the 85 db threshold. All employees engaged in blasting or avalanche control operations shall wear the appropriate hearing protection. Supervisors should contact the CDOT Occupational Safety Office when a belief that noise levels in your work area(s) are exposing employees to excessive noise levels.

RESPIRATORY PROTECTION

CDOT issued respiratory protective devices shall comply with ANSI Z88.2-1992 standard for respiratory protection, and must be approved by NIOSH. All employees shall wear the appropriate respiratory protection where an exposure to respiratory contaminants is likely to have adverse effects on the health of the employee. Welding, vehicle painting, sanding and grinding of painted materials, are examples of activities that may produce contaminants harmful to the employee's health. Beards and large mustache will decrease the effectiveness of certain respirators by preventing the formation of a tight seal around the face. When this situation occurs, an appropriate respirator will be provided to the employee. When an alternative respiratory protection device fails to protect the employee, the employee will either reduce the quantity of facial hair, or be

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reassigned to other duties. Employees shall *only* wear respiratory protection after medical approval, proper fitting of respirator, and the employee obtains training on the limitations, care and operation of the respirator.

FOOT PROTECTION

CDOT Protective Footwear must meet or exceed ASTM F2413-05 M/I/75/C/75 for safety footwear. Construction will be a work boot style, made of leather or other suitable material, have a minimum of a 6" upper above the ankle, be a lace-up type for ankle support, have a steel or composite toe protection, have a slip resistant sole, and can be insulated or non-insulated. Exceptions to these requirements will be made on a case-by-case basis. Such exceptions may include slip-on type boots for employees classified as welders and employees with a documented medical condition requiring special footwear. CDOT will provide safety footwear to those employees in occupational classes requiring such equipment. Permanent and permanent part-time employees will be provided protective footwear. Temporary employees will not be provided protective footwear. All CDOT employees working in field assignments or have supervisor approval shall wear appropriate ASTM compliant protective footwear. These assignments include working in storerooms, highway maintenance activities, construction activities, mechanics, or any situation where equipment operations or the movement or lifting of heavy materials could cause injury to the feet. Visitors to construction sites are exempt from wearing safety boots, unless the wearing of safety boots is required by the company safety policy or as a condition to entering the worksite. Employees shall not wear inappropriate footwear in any location where the potential exists for foot and toe injury, e.g. tennis shoes, sandals, sneakers, clogs, etc.

HAND PROTECTION

CDOT issued protective gloves shall meet ANSI/ISEA 105-2000 standard for industrial hand protection. All employees shall wear hand protection when performing any activity that may cause injury to the hands.

SAFETY BELTS, LIFELINES, AND LANYARDS

CDOT issued safety belts, lifelines, and lanyards shall comply with ANSI Z359.1-2007 (R1999). All employees shall wear fall protection when working at elevations 6 feet or greater from the floor or ground level, e.g. bucket vehicles, bridge activities, roof repairs, man-lifts, scaffolds, formwork, etc.

Exceptions:

Working on vehicles or equipment at heights exceeding 6-feet will not require the use of fall protection where such use would be impractical or would present a greater danger to the employee. Working on ladders is also excluded from the fall protection requirement.

LIFE JACKET OR BUOYANT WORK VESTS

United States Coast Guard (USCG) approved personal flotation devices shall be worn by CDOT employees working over or near water where the risk of drowning exists. USCG approval is pursuant to 46 CFR Part 160, Subpart Q, Coast Guard Lifesaving Equipment Specifications. Personal flotation devices (PFD) are classified by type. CDOT will provide Type I PFD, which provides the most buoyancy. It is effective for all waters,

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especially open, rough, or remote waters where rescue may be delayed. It is designed to turn most unconscious wearers in the water to a face-up position.

SPECIAL PROTECTIVE CLOTHING OR PROTECTIVE DEVICES

The Supervisor, Branches and Regions should order and provide other personal protective equipment required to provide a safe working environment for CDOT employees as the need arises.

TRAINING REQUIREMENTS

All CDOT employees will receive training in the proper usage, care and storage of all personal protective equipment.

IMPLEMENTATION

All divisions and offices of the CDOT shall implement this procedural directive immediately.

REVIEW DATE

This procedural directive shall be reviewed before October 2014 or every five years.

SIGNATURES



11/01/2009

Executive Director Signature

Date

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Employee's Receipt of Procedural Directive 80.1

Personal Protective Equipment

"I have read and I understand the CDOT Procedural Directive 80.1 on Personal Protective Equipment use. I have been given an opportunity to discuss this policy with my supervisor."

Employee Signature

Date

Supervisor Signature

Date

cc: Employee
Supervisor
Employee's Personal History Jacket

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APPENDIX



Figure 1
Performance Class 2 Vest



Figure 2
Performance Class 3
Ensemble



Figure 3
Performance Class 3 Vest