

8.01 FORCE ACCOUNT AND FINDING IN THE PUBLIC INTEREST (FORM 895A)

Public agencies shall comply with the procedures established for force account and Finding-in-the-Public-Interest type projects, including local agency competitive bid projects.

The term “force account” refers to construction work a public agency is allowed to perform on federal/state-funded projects using its own forces. Specifically, it means the direct performance of highway construction work by the Department, local entity, county, railroad, or other public utility company/agency by use of labor, equipment, materials, and supplies furnished by them and used under their contract terms (23 CFR Part 635.203[c]).

A Form 895a, Region Certification – Force Account and Finding in the Public Interest, and supporting documentation are needed when a project is constructed by a method other than competitive bid by CDOT, including contract administration or competitive bid performed by a local agency. The Finding in the Public Interest shall document that the local agency will competitively bid the project in a manner to attract sufficient bidders and will meet CDOT requirements.

To perform force account work, the public agency must be adequately staffed and suitably equipped with the necessary forces to perform the work cost effectively in the prescribed time frame and still be able to conduct its usual agency activities without additional staffing or hardship. An emergency situation may warrant construction by the force account method, which should be documented. The use of the force account method of construction for emergency situations financed by federal aid requires prompt notification to the FHWA, with a notice of intent to request emergency repair funds. The FHWA allows the force account method as a timesaving procedure for minor work normal to highway safety improvement projects.

These procedures will be used for all force account projects except adjustment of railroad or utility facilities and similar facilities owned or operated by a public agencies, which consists of minor work routinely performed by these agencies with their own forces and by their inherent nature are determined to be cost effective.

CDOT will require a Finding in the Public Interest when a project is to be advertised by a local agency instead of by the CDOT bid process. The Finding in the Public Interest will document that the agency is capable of contract administration and will award the project in a sufficiently competitive manner. Competitive bidding of a project by a local agency with state/federal funds will require a completed Form 895a, Region Certification-Force Account and Finding in the Public Interest, unless the agency has been approved by CDOT for local agency certification acceptance.

The Region Program Engineer certifies on the Form 895a that the agency is capable of administering and performing the specified work on a project in accordance with *CDOT Procedural Directive 387.1, Construction by Public Agencies*. For National Highway System projects, a copy of the Form 895a should be sent to the FHWA.

The following documentation should be retained in the project file for use of the force account method of construction or a required Finding in the Public Interest including advertisement and award by a public agency:

1. Completed Form 895a.
2. Determination of cost effectiveness. The public agency will submit costs for labor, equipment, materials and supplies.
3. Unit price cost estimate when the local agency will advertise and receive competitive bids for a project.

The following procedures describe the Region administration process for force account and Finding-in-the-Public-Interest projects:

1. The Region investigates the agency's request for using the force account method and Finding in the Public Interest to justify local agency advertisement and award.
2. A completed Form 463a, Design Data, is prepared that clearly indicates the method used.
3. The Region certifies the agency's qualifications and assembles the supporting documentation listed on Form 895a.
4. An abbreviated set of plans (at a minimum) is prepared consisting of:
 - a. General plan sheets (typical sections, plan and profile) as applicable.
 - b. Estimate of quantities (summary of quantities).
 - c. Tabulation of bid items, general notes and description of project work, type, and location (map).
 - d. Special details, as required.
 - e. Specifications, as required.
5. All required clearances will be obtained as applicable on the Form 1048a, Project Scoping/Clearance Record.
6. ProMIS is to reflect that the project is force account, whether state forces or a local agency does the work.
7. The Form 418a, Federal-Aid Program Data, is completed by OFMB after receipt of the signed Form 1180, Standards Certification and Project PS&E Approval, and obligation must be requested and approved through ProMIS. For federal-aid projects, the Form 418a is used to obtain obligation/authorization approval for the construction phase from the FHWA.
8. For projects that do not go through the CDOT bid process, a Notice to Proceed is issued by the Region only when all force account documentation and plans are complete and approved by the Resident Engineer, and obligating authority and funding are cleared by the Resident Engineer. A copy of the notice must be sent

to OFMB and Projects and Grants for CDOT to authorize expenditures for the construction phase.

Force account projects that are exempt from a formal Finding in the Public Interest may be emergency temporary repairs with FHWA approval as necessary, minor adjustment of railroad and utility facilities, and highway safety improvements such as railroad-highway grade crossings safety projects when it has already been determined by the FHWA to be in the public interest (see 23 CFR Part 635B for conditions).

Additional References:

1. 23 CFR Part 635B, Force Account Construction
2. See Appendix A for forms

8.02 METHOD OF CONSTRUCTION

Highway projects usually are awarded in an open, competitive bidding process to a construction contractor as established by federal and state rules and regulations. At times, however, work on a transportation construction project is performed by a method other than CDOT competitive bid.

When a method other than CDOT competitive bid is used, that method is to be documented. For force account, local agency bid, and Finding in the Public Interest projects, the Form 895a, Region Certification-Force Account and Finding in the Public Interest, will be completed, as outlined in Section 8.01. Adjustments to railroad facilities or utility facilities, as outlined in 23 CFR Part 635.205, Finding of Cost Effectiveness, do not require a Form 895a.

The Region Program Engineer is responsible for certifying that a local agency, other public agency, or other organization is able to perform work by the prescribed method of construction.

Documents required for force account and public agency projects are: a Finding-in-the-Public-Interest, a letter from the public agency or other organization justifying using its own forces for construction and/or construction management, if applicable, and a Form 895a with appropriate attachments certifying the agency's capabilities (see Section 8.01).

Work to be administered or performed by a public agency or other organization may be:

1. Contracts awarded by a public agency, under supervision of CDOT.
2. Public agency allowed to complete construction work using its own forces.
3. Purchase of equipment or materials only by the agency. For types of contracts see CDOT *Procedural Directive 387.1, Construction by Public Agencies*.
4. Railroad and utility adjustments.

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Additional References:

1. 23 CFR Part 630, Preconstruction Procedures
2. 23 CFR 635.104, Method of Construction
3. See Appendix A for forms

8.03 WORK BY OTHERS (With Federal Aid)

When work is done a method other than CDOT competitive bid on federal-aid projects, the latest requirements published in 23 CFR Part 635A, Contract Procedures, will be followed.

The federal rules require work to be performed by contract awarded by competitive bidding, unless the state transportation agency demonstrates that some other method is more cost effective or an emergency exists. When a public agency requests approval to perform the work by the force account method with federal aid, CDOT is responsible for the overall administration of the project, unless the agreement between CDOT and the agency provides otherwise.

The minimum requirements for a public agency or other organization, (which can be a state agency, a city, a railroad, utility or other public company), is that they be adequately staffed and suitably equipped to perform the work cost effectively.

The Region Program Engineer is responsible for certifying that the agency is capable of doing the work and federal regulations are met.

A Finding in the Public Interest and Form 895a, Region Certification-Force Account and Finding in the Public Interest, shall be prepared and initiated by the Region as outlined in Section 8.01 and in 23 CFR Part 630B, Plans, Specifications and Estimates, and Part 635B, Force Account Construction.

Additional References:

1. See Appendix A for forms

8.04 WORK BY STATE FORCES

CDOT has established procedures for a state agency to perform work on federal- or state-funded projects.

Any highway construction project where a significant portion of a project is constructed by a state agency, excluding minor approved items, will be administered under the force account method of construction. The minimum requirements for a state agency to perform the work are that they be adequately staffed and suitably equipped to do the work cost effectively.

The Region Program Engineer certifies on Form 895a, Force Account and Finding in the Public Interest, that CDOT or another state agency intends to perform work with its own forces. Additional Finding in the Public Interest information per Form 895a should be attached in a letter.

The following documentation is needed for force account construction by state forces:

1. Form 895a.
2. Finding-in-the-Public-Interest letter when additional justification is required.

The procedures outlined in the Section 8.01 will be followed.

NOTE: Blanket approval under force account is given to state forces (with a current limit of \$5,000) for certain advance construction signing, temporary construction striping, permanent signing, and permanent striping, all which have an existing blanket FHWA approval.

Additional References:

1. *CDOT Policy Directive 387.0, Construction by Public Agencies*
2. *CDOT Procedural Directive 387.01, Construction by Public Agencies*
3. See Appendix A for forms

8.05 VALUE ENGINEERING

Value Engineering is a formal analysis of a project whereby unnecessary costs are eliminated. Value Engineering is the systematic application of recognized techniques by a multi-disciplined team to identify innovative designs and cost reduction opportunities.

The Value Engineering team establishes viable alternatives through the use of creative thinking to provide the needed purpose of the project with the lowest life cycle cost without sacrificing safety, quality and environmental attributes.

The 23 CFR Part 627 requires the application of Value Engineering on all federal-aid projects on the National Highway System with an estimated cost of \$25 million or greater. The FHWA encourages Value Engineering on other federal-aid projects when its usage may have a high potential for cost savings.

Value Engineering techniques are encouraged throughout project development.

Additional References:

1. *FHWA Value Engineering Manual*

8.06 STAGE CONSTRUCTION (Future Capacity Considerations)

Stage construction accommodates future improvements when the initial construction does not provide the ultimate design requirements needed to handle the projected traffic, particularly near urban areas. When a project is anticipated to have a design hourly volume in excess of the design capacity within 10 years after construction, the initial improvements should provide for and protect the integrity of developing a higher type (facility) in later years. The acquisition of additional right of way and appropriate clear zone, and provision for items such as extra lanes, curb and gutter, sidewalk, auxiliary lane or bikeway, should be considered when future improvements are anticipated.

The Resident Engineer is responsible for identifying elements of future construction that should be accommodated in the current design. Future design considerations should be discussed in the Design Scoping Review and budgeted at the preliminary engineering stage. Future elements to be accommodated in the current design should be identified in the construction plans, such as with notes or typical sections.

Traffic volumes and commercial growth should be documented and analyzed for potential stage construction during the project development phase. If a project is to include stage construction, the construction plans and five-year plan shall reflect these developments and requirements.

8.07 EXPERIMENTAL ITEMS

This section provides guidelines for the use of experimental features on CDOT construction projects. An experimental item is a method, material, or practice that is not a CDOT or an industry standard. A minor change to adopt specifications to a single project is not considered an experimental feature.

An experimental feature must have preliminary approval by a Program Engineer, the Research Engineer or a technical committee. The experimental feature must be monitored and reported on to a technical committee for a decision on future use.

The Resident Engineer must confirm that the requirements of *CDOT Procedural Directive 3.1, Product Evaluation and Experimental Features*, are met before an experimental feature is incorporated into a CDOT construction project.

A proposed experimental feature is documented by a statement of purpose, the specifications affected, a description of the field monitoring to be conducted, and to the extent of use (number and size of projects). After the experimental feature is constructed and monitored, the results and recommendations are reported to the appropriate technical committee. Documentation responsibility is outlined in *Procedural Directive 3.1*.

The Department of Transportation Development, Research Branch, must review proprietary items used as an experimental feature for research or a distinctive type of construction in the highway process.

Refer to *Procedural Directive 3.1* for details on this process.

Additional References:

1. 23 CFR Part 635D, General Material Requirements
2. Propriety Items (see Section 8.16 of this manual)

8.08 MANDATORY SOURCE OF MATERIALS

When it is in the public's interest, CDOT can require the Contractor to use material furnished by a state agency or from sources designated by the state agency.

Materials can be local sources of natural materials such as borrow aggregates used for embankments, or any material purchased by the Department and furnished to the Contractor for mandatory use on the project.

When the Department or other public agency requires the Contractor to use material furnished to them, the Resident Engineer is responsible for preparing a Finding in the Public Interest justifying the use of this mandatory source, and for monitoring, inspecting, and approving the public agency's material sources.

A Finding-in-the-Public-Interest letter shall be documented in the file showing the cost effectiveness, specifications, location, and reasons that the material furnished to the project is in the best interest of the public.

Requirements for creating a mandatory source of materials are:

1. Natural materials (borrow/embankment) must be based on environmental considerations and meet specifications.
2. The location and unit prices of natural material must be stated in the plans or specified provisions.
3. Materials other than natural material must have been acquired on the basis of competitive bidding by CDOT Purchasing and must be listed in the special provisions of the project for the benefit of all prospective bidders.
4. Federal participation will be limited to the unit cost of such material to the Department.
5. The Contractor must use the designated source of materials to be eligible for federal participation.
6. All costs of material are to be reviewed and approved by the Engineer Estimating program in the Contracts and Market Analysis Branch.

The FHWA Contract Administration Core Curriculum Participant's Manual and Reference Guide offers the following:

Current FHWA policy requires that the Contractor must furnish all materials to be incorporated in the work, and the Contractor shall be permitted to select the sources from which the materials are to be obtained. Exceptions to this requirement may be made when there is a definite finding by the state highway agency and concurred in by the FHWA Division Administrator, that it is in the public interest to require the contractor to use materials furnished by the state highway agency from sources designated by the state highway agency. The exception policy can be best understood by separating

state-furnished materials into the categories of manufactured materials and local natural materials.

Manufactured materials

When the use of state-furnished manufactured materials is approved based upon a Finding in the Public Interest, such use must be made mandatory. The optional use of state-furnished manufactured materials is in violation of the Department's policy prohibiting public agencies from competing with private firms. Manufactured materials to be furnished by the state must be acquired through competitive bidding, unless there is a Finding in the Public Interest for another method, and that is concurred in by the FHWA Division Administrator for federal-aid projects.

Local natural materials

When the state highway agency owns or controls a local natural materials source such as a borrow pit or a stockpile of a salvaged pavement material, the materials may be designated for either optional or mandatory use; however, mandatory use will require a Finding in the Public Interest and the FHWA Division Administrator's concurrence for federal-aid projects.

To permit prospective bidders to properly prepare their bids, the location, cost, and any conditions to be met for obtaining materials that are made available to the Contractor shall be stated in the bidding documents.

In summary, FHWA policy for the mandatory use of borrow or disposal sites outlines:

1. Mandatory use of either requires a Finding in the Public Interest and the FHWA Division Administrator's concurrence.
2. Mandatory use of either may be based on environmental consideration where the environment will be substantially enhanced without excessive additional cost.
3. Where the use is based on environmental considerations, the discussion in the environmental document may be used as the basis for the Finding in the Public Interest.

Additional References:

1. 23 CFR Part 635D, General Material Requirements
2. <http://www.fhwa.dot.gov/infrastructure/progadmin/contracts/coretoc.htm> FHWA Contract Administration Core Curriculum Participant's Manual and Reference Guide 2001

8.09 DESIGN SCOPING REVIEW

The Design Scoping Review (DSR) creates an early, on-site review of a project prior to preliminary design. This enables developing a scope of work that will be consistent with the planning and design characteristics.

The process establishes the objectives of a project, the identification of design standards, funding source, and the required resources necessary to complete a project. All projects, regardless of size, shall use the scoping process.

CDOT Procedural Directive 512.1, Project Scoping and the Design Scoping Review (DSR), outlines the phases of scoping a project:

Phase I

The project is created in the Statewide Transportation Improvement Program, as described in Section 1.03 of this manual.

Phase II

This phase is initiated, organized, and conducted by the Resident Engineer. Phase II includes the formal Design Scoping Review, which comes after design funds have been budgeted and obligated for the project. The Design Scoping Review identifies project concerns and determines future budget requirements.

The Resident Engineer should limit participation at the Design Scoping Review to those who will have significant input. Individuals with only minor concerns should communicate those to the Resident Engineer prior to the meeting and need not attend the on-site review.

The documentation and information necessary to complete a successful Design Scoping Review meeting shall contain the following, at a minimum:

1. A detailed description of the proposed improvements.
2. A location map with the proposed project limits identified.
3. As-constructed plans of the existing facility, if available.
4. Traffic data, if available.
5. Other documentation as described in *Procedural Directive 512.1* received from individuals who have only minor concerns.

The Resident Engineer will be responsible to produce the minutes of the Design Scoping Review meeting, research unresolved concerns and issues, prepare cost estimates, and prepare proposed project schedules for the Field Inspection Review, Final Office Review, and advertisement.

After the project development and design needs have been identified in the scoping process and resolved, preliminary design may begin.

Phase III

This phase includes confirmation of the scoping review and the need for any refinements at the Field Inspection Review level.

Additional References:

1. 23 CFR Part 625, Design Standards for Highways

8.10 FIELD INSPECTION REVIEW

The Field Inspection Review (FIR) is the on-site review of preliminary construction plans that signifies the end of the preliminary design phase. Field Inspection Review plans are preliminary in nature, but still must contain applicable required items and details of all salient features. The Field Inspection Review is held to conclude all unresolved issues identified during preliminary design and to establish the specific criteria and direction that are to be used in the final design.

The following instructions are provided to establish the procedures preparatory to and for the conduct of the Field Inspection Review meeting. These instructions apply to all projects on which Plans, Specifications and Estimate (PS&E) are developed by the Resident Engineer.

- I. The Field Inspection Review will be initiated and scheduled by the Resident Engineer.
- II. The following items are required prior to the Field Inspection Review:
 - A. Scoping, budgeting and planning
 1. Preliminary Form 463a, Design Data, with safety requirements, if available.
 2. Preliminary alignment data.
 3. Justification for variances. Variances to design standards must be identified and justified prior to being included in the Field Inspection Review plans. Justifications for variances are to be based upon analysis of operational and safety effects on the highway facility, alternatives considered, and mitigation features considered.
 - B. Environmental
 1. Form 128, Categorical Exclusion Determination, showing clearance activities.
 2. Every project requires an environmental clearance of some type.
 3. Projects not eligible for Programmatic Categorical Exclusions require FHWA sign-off.
 - C. Traffic
 1. Identification of detours and the proposed preliminary construction-phasing plan should be provided prior to the Field Inspection Review.
 2. Complete traffic data, accident data, safety report, and turning movements should be available, if required.
 - D. Materials
 1. Soil survey should be completed.
 2. Final stabilization plan should be provided.
 - E. Right of way
 1. At a minimum, the assessor's parcel maps, ownership list and old right-of-way plans are necessary for the Right-of-Way Manager to review and prepare. All necessary temporary easements must be identified.

2. The consultant selection process for right-of-way work should be initiated or completed early to allow the consultant time to complete the preliminary ownership map. Accurate location of all existing right-of-way and property lines should be provided prior to the Field Inspection Review.
- F. Utilities
Existing utility information, including irrigation ditches and water rights, should be available. The Region Utility Engineer should research utilities.
- G. Hydraulics
A preliminary hydraulic report or design should be provided prior to the Field Inspection Review.
- H. Survey
1. A complete survey, including topography, utilities and existing monumentation, should be completed.
 2. If right of way is involved, aliquot section corners, property pins and right-of-way markers must be tied in to allow work on the ownership map to begin.
- I. Preliminary cost estimate
1. The Field Inspection Review plans are to be preliminary in nature. The items included below may not apply to specialized project plans.
 2. Projects shall contain all the applicable items and preliminary details of the salient features.
 3. The Engineer Estimating program is available to assist in current pricing.
- III. Wetlands:
- A. The following item is not required prior to the Field Inspection Review, however, it is desirable
1. Identification and scheduling of wetland mapping by the Region Planning/Environmental Manager (see Section 2.11).
 - a. Before the Environmental Programs office in the Project Development Branch can start field mapping, the Environmental Programs office will check with the Resident Engineer or the Region Planning/Environmental Manager for project scope, termini, detours, and the project plan sheets.
 - b. The Region Planning/ Environmental Manager will submit the information to the Environmental Programs office.
- B. Avoidance of wetlands is stressed by the Environmental Protection Agency and the U.S. Army Corps of Engineers in their Mitigation Memorandum of Agreement effective February 7, 1990. Designers must know early in their scoping and design process where wetland areas are so the sites can be analyzed for avoidance.
- IV. Three categories of items (required, desired and optional) are to be included in Field Inspection Review plans:
- A. Required in all plans
1. Scoping, budgeting and planning
A title sheet, typical sections, general notes, plan and profile sheets with existing topography and utilities, proposed alignments, slope catch points,

- profile grades, ground line, existing right-of-way and rough structure notes, drainage plan, access plan, and detour plan.
2. Environmental
 - a. Mapping of any existing wetlands obtained from the Environmental Programs office. This will allow discussion of avoidance alternatives during the Field Inspection Review meeting.
 - b. Preliminary mitigation plan.
 - c. Locations of environmental constraints (other than wetlands).
 - d. Initial site assessment completed and potential hazardous materials sites identified.
 3. Traffic
 - a. Conceptual construction phasing plan.
 - b. Traffic volume data.
 4. Structure
 - a. Bridge general layouts and applicable plan sheets.
 - b. Roadway cross-sections (preferably 8-1/2" x 11").
 - c. Major structure cross-sections.
 5. Materials
 - a. Soil profile and stabilization requirements.
 6. Right of way
 - a. Existing and proposed right of way shown on the design plan.
 7. Utilities
 - a. Identification of impacts to utilities shown.
 - b. Names of utility companies and contact people.
 8. Other
 - a. Preliminary layouts of interchanges/intersections.
 - b. Preliminary estimate.
 - c. Special details and unusual specifications.
 - d. Driveways and field approaches.
- B. Desired items
The Field Inspection Review plans should contain the following items if available in time for the scheduled Field Inspection Review:
1. Preliminary survey tabulation sheet.
 2. Preliminary survey control sheet.
- C. Optional items
The Field Inspection Review plans should contain all appropriate optional items that are available at the time of the scheduled Field Inspection Review. These items may identify design problems that can best be resolved with an on-site inspection and may also contain preliminary design data that would assist in resolving problems encountered during the Field Inspection Review. Optional items should include only those that will improve the efficiency of the Field Inspection Review in the opinion of the Resident Engineer and do not include items such as tabulations, summaries or final details.

V. Distribution of plans

The Resident Engineer will distribute prints of the Field Inspection Review plans at least seven, but preferably 14 days, in advance of the Field Inspection Review. Prints of the Field Inspection Review plans will be transmitted as follows (the Resident Engineer needs to determine when it is appropriate to distribute the memo without the plans):

- A. FHWA-Attn.: Operations Engineer
- B. Region Transportation Director
- C. Project Structural Engineer
- D. Geotechnical Engineer
- E. Region Planning/Environmental Manager
- F. Region Program Engineer
- G. Region Materials Engineer
- H. Region Right-of-Way Manager
- I. Region Utility Engineer
- J. Region Hydraulics Engineer
- K. Region Professional Land Survey Coordinator
- L. Region Maintenance Superintendent
- M. Region Resident Engineer
- N. Region Traffic Engineer
- O. Landscape Architect
- P. Colorado State Patrol
- Q. Other Local, State or Federal Agencies
- R. Consultant
- S. Others as determined by the Resident Engineer

VI. Participation

The Resident Engineer should limit participation at the Field Inspection Review to those who will have significant input. Those receiving plans who have only minor concerns should communicate those to the Resident Engineer prior to the Field Inspection Review and not attend the meeting.

Staff Bridge Branch may conduct a separate Field Inspection Review.

On certain projects, outside public agencies involved in the project may request a separate field review prior to the Field Inspection Review. The Resident Engineer may conduct these reviews separately from the scheduled Field Inspection Review and should document in writing pertinent information and requirements incorporated into construction plans. When a request for a separate review is desirable, the Resident Engineer will notify the appropriate agencies' representatives and shall schedule the review with sufficient advance time to allow the agencies to prepare their own written comments (if they so desire) for consideration prior at the Field Inspection Review.

VII. Conduct of the review

The Resident Engineer will conduct the review. It is strongly recommended that a prepared checklist be completed for all meetings. Also, an agenda (schedule) should be formulated, especially for complex projects, so that participants can recognize which parts of the meeting they should attend. The items to be reviewed may include, but not be limited to, the following:

- A. Scoping, budgeting and planning
 1. Typical sections, stabilization and general notes.
 2. The horizontal and vertical alignments.
 3. Plan details for approaches to project and possible cutoff points if funds are insufficient to construct the proposed length of the project.
 4. Preliminary cost estimate.
 5. Schedule (such as proposed advertisement date or critical issues).
- B. Environmental
 1. Plan details for measures to mitigate or avoid adverse environmental impacts (such as noise, air, water, parks and stream encroachments).
 2. Preliminary field mapping of existing wetland areas.
 3. Stormwater management plans.
 4. Permit requirements.
- C. Traffic
 1. Plan details for any provisions for traffic during construction, including detours, phasing or guardrail.
 2. Traffic control plan.
 3. Traffic signal plan (if applicable).
- D. Structures
 1. Structure Selection Report.
 2. Structure demolition method.
- E. Materials
 1. Sources of material for borrow, topsoil and aggregate.
 2. Sources of hot bituminous pavement, concrete and other materials.
 3. Locations for disposal of waste or surplus materials.
- F. Right of way
 1. Right-of-way requirements and access control plan.
 2. Identify impacts to improvements/farming operations.
 3. Identify number of owners affected and impacts.
 4. Purchase of mitigation areas.
 5. Agreements that have conditions affecting plans.
 6. Plan details for fencing requirements.
 7. Purchase of utility easements.
 8. Purchase of temporary construction easements.
 9. Section 4(f) process requirements.
- G. Utilities
 1. Utility relocation requirements.
 2. Power sources.
 3. New or future utility accommodations.
 4. Irrigation ditches.

- H. Agreements, justifications and approvals status
 - 1. Railroad requirements and other agreement conditions.
 - 2. Coordination of all design elements requiring mitigations, action items, conditions, or justifications within CDOT or between CDOT and other entities.
 - I. Survey
 - 1. Preliminary survey tabulation sheet.
 - 2. Additional survey needs.
 - J. Hydraulics
 - 1. Irrigation and drainage requirements.
 - K. Others
 - 1. Safety issues.
 - 2. Maintenance concerns.
 - 3. Special interest groups.
 - 4. Specialty reports (safety, geotechnical).
 - 5. Fencing.
- VIII. Field Inspection Review follow-up
- As soon as possible after the Field Inspection Review, the Resident Engineer will:
- A. Send a letter reporting the minutes of the Field Inspection Review to all who were originally sent Field Inspection Review notification. The Resident Engineer will keep a copy of the marked-up plans and additional copies will be sent to others if the Resident Engineer deems it necessary.
 - B. Obtain decisions and responses for all questions left unanswered at the Field Inspection Review meeting.
 - C. Revise the Form 463a, Design Data, as necessary.
 - D. Revise project plans:
 - 1. Monitor the progress of the wetlands finding that the Region Planning/Environmental Manager submits to the FHWA.
 - 2. Request traffic plans.
 - 3. Complete stabilization and special justification letters.
 - 4. Transmit plans showing proposed features to the Region Right-of-Way Manager.
 - 5. Transmit plans showing replacement or new utility locations to the Region Utilities Engineer.
 - 6. Request or complete the final hydraulic report.
 - 7. Transmit the preliminary survey tabulation sheet to the Region Field Survey Coordinator.
 - E. Wetlands:

In the event of project impacts to wetlands, the Region Planning/Environmental Manager must ensure that a wetlands finding is prepared, whether by the Region, the Environmental Programs office or a private consultant. Following completion, the finding must be forwarded to the Environmental Programs office for review and approval. Once the finding is approved, copies are returned to the Region. It is the Region's responsibility to forward a copy to the Resident Engineer. This last step is important because the finding is a legally

binding commitment between CDOT and the FHWA regarding the extent of wetland impacts and mitigation requirements.

F. Right of way

Details such as edge of oil, curb and gutter, toe of slope, driveways, structures, field approaches, alignment, drainage ditches/pipes, irrigation design, replacement wetland areas, replacement utilities, easements, and detours should be sent to the Right-of-Way Program in Project Development.

G. Utilities

Initiate utility agreements.

Additional References:

1. 23 CFR Part 625, Design Standards for Highways
2. See Appendix A for forms

8.11 DESIGN OFFICE REVIEW

Design Office Reviews usually are conducted on the more complicated projects or consultant-prepared projects when an informal meeting is desirable to discuss design issues or problems. These reviews generally are conducted between the Field Inspection Review and the Final Office Review stages. Minutes are prepared of reviews held for examining specific problems, such as utilities, major structures, right of way or hydraulics.

The Resident Engineer is responsible for initiating, scheduling, conducting and documenting these reviews. Plans for specific areas of concerns may be required as well as the attendance by responsible personnel involved with the Design Office Reviews purpose.

8.12 FINAL OFFICE REVIEW

The Final Office Review (FOR) is a final review of construction plans, specifications and cost estimates for completeness and accuracy. The Final Office Review plans are to be final in nature. A Final Office Review is conducted for all projects on which the Plans, Specifications and Estimate (PS&E) are finalized by CDOT or its consultants. Prior to the Final Office Review, the Resident Engineer should ensure that all variances have been approved.

The Resident Engineer leads the project design team. A design team consists of individuals from various CDOT work units, consultants and entities. The principal responsibility of the Resident Engineer is to ensure that the important objectives (e.g., schedule, budget, scoping, design and quality) are successfully accomplished.

- I. Final Office Review documents shall consist of the following plan package:
 - A. Plans and specifications
 1. Complete and finalized project plans containing all necessary tabulations and details required for construction.
 2. All specifications necessary for the project, current as of the date of the Final Office Review.
 - B. Cost estimate

An updated cost estimate including all finalized plan quantities and other items chargeable to the project such as design, right of way, utilities, construction engineering and indirect costs.
- II. Procedure
 - A. Initiation of the Final Office Review

The Final Office Review will be initiated, scheduled and conducted by the Resident Engineer. The Final Office Review will be held in the office most convenient to the majority of the attendees, as determined by the Resident Engineer.
 - B. Distribution of the Plans, Specifications and Estimate package

Copies of the plans and special provisions will be distributed by the Resident Engineer at least seven working days, preferably 10 days, in advance of the Final Office Review. The distribution of any preliminary cost estimate is rigidly controlled and will be distributed only in accordance with *CDOT Procedural Directive 511.1, Security and Confidentiality of the Engineer's Detailed Estimate*.

The Resident Engineer will distribute prints of the Final Office Review plans and specifications at least seven, but preferably 14 days, in advance of the Final Office Review. Plans and specifications will be transmitted to the following (the Resident Engineer needs to determine when it is appropriate to distribute the memo without the plans):

1. FHWA-Attn.: Operations Engineer
 2. Region Transportation Director
 3. Project Structural Engineer
 4. Geotechnical Engineer
 5. Region Planning/Environmental Manager
 6. Region Program Engineer
 7. Region Materials Engineer
 8. Region Right-of-Way Manager
 9. Region Utility Engineer
 10. Region Hydraulics Engineer
 11. Region Professional Land Survey Coordinator
 12. Region Maintenance Superintendent
 13. Region Resident Engineer
 14. Region Traffic Engineer
 15. Landscape Architect
 16. Colorado State Patrol
 17. Other Local, State or Federal Agencies
 18. Consultants
 19. Others as determined by the Resident Engineer
- C. Those receiving plans and specifications will have reviewed them for completeness and accuracy of construction details and plan quantities, and will be prepared to present their recommendations for revisions and corrections. Specialties with significant involvement should attend the Final Office Review. If their involvement is limited, they can communicate to the Resident Engineer prior to the meeting and not attend.
- D. Conduct of the Final Office Review
The Resident Engineer should prepare an agenda for the Final Office Review so the participants can recognize which parts of the meeting they should attend. Following the Final Office Review meeting, the Resident Engineer will ensure that all corrections are made for advertising. All decisions necessary for the finalization of the plans, specifications and cost estimate will be made at or prior to the Final Office Review.
- E. Documentation
The Resident Engineer will maintain one set of prints to record the corrections and revisions that result from the review. The Resident Engineer will send the minutes reporting the results of the Final Office Review to all who were originally sent Final Office Review notification. The Resident Engineer will keep a copy of the marked-up plans and additional copies will be sent to others, as the Resident Engineer deems necessary.

On consultant-designed projects, the consultant will conduct the Final Office Review meeting and prepare and distribute the minutes. The consultant will incorporate all modifications agreed to into the plans and specifications and submit to the Resident Engineer the minutes of the meeting, the revised

reproducibles, CAD files, and the Final Office Review documents with corrections, if applicable.

F. Combination Field Inspection Review/Final Office Review

For small projects, such as write-ups, it may be beneficial to combine the Final Office Review with the Field Inspection Review, if the Plans, Specifications and Estimate is adequate. In some instances, formal meetings may not be necessary.

8.13 DESIGN DECISION LETTER

A design decision letter can be used by of the Resident Engineer to support and document discretionary design decisions. The letter is used to document a major decision when special circumstances exist that would make conforming to accepted design guidelines less desirable. The letter should clearly explain the options that were considered and the decision that was made. Design decision letters should not be used in lieu of "safety letters" or "design exceptions" (variance letters).

Design decision letters should be:

1. Discussed with the Program Engineer.
2. Addressed to the project file if written by the Resident Engineer.
3. Addressed to the Resident Engineer if written by outside agencies or consultants.
4. Referred to on a Form 463a, Design Data, under remarks.
5. Referred to in the Field Inspection Review or Final Office Review minutes.

Additional References:

1. 23 CFR Part 625, Design Standards for Highways
2. See Appendix A for forms

8.14 DISPOSAL OF EXCESS MATERIAL OFF PROJECT SITE

Usually materials developed on a construction project should be used during construction or disposed within the project boundaries. The intent is to provide an efficient use of the material and avoid excessive hauls. This can allow the Contractor to best determine use of the material.

Whenever a project has provisions for a mandatory site for the disposal of excess material off the project right of way or beyond a reasonable distance from the project limits, a Finding in the Public Interest by the Department must be documented.

If the Department procures a disposal site for excess material, the Resident Engineer is responsible for obtaining an economical site, considering environmental impact. Whenever the Department mandates a disposal site, the Resident Engineer must assure there is adequate area/volume available to accommodate the disposal. If there is not, the disposal site should be selected by the Contractor. The Resident Engineer must also address royalty fees imposed by the U.S. Government, when disposing of material from public lands. When the Contractor procures a disposal site, it will be his responsibility to obtain a site that will comply with all federal, state and local laws.

The mandatory disposal site designated by the Department will be documented by the Resident Engineer with a Finding-in-the-Public-Interest letter approved by the Program Engineer. The plans and/or agreements shall provide for any restoration or site improvement.

Additional References:

1. 23 CFR Part 635.407, Use of Materials Made Available by a Public Agency

8.15 USE OF MATERIAL FURNISHED BY A PUBLIC AGENCY

Material furnished by a public agency for a construction project shall meet the specification requirements on the project. Material furnished that has a monetary value to the project must be approved as being in the public interest. If the project has CDOT oversight it must be approved by the Department and if federal oversight, by the FHWA.

Usually, contracts for highway projects specify that the Contractor furnishes all materials to be incorporated in the work. When it is found to be in the public interest, material may be furnished by CDOT or the other agency.

A justification or determination of cost effectiveness is required on all projects when the state, an entity, or other agency furnishes material or equipment normally furnished by the Contractor as a bid item.

To be eligible for federal participation costs, any material, other than local natural materials made available by a public agency, must be acquired by a competitive bidding process (23 CFR Part 635.407 explains natural materials).

The Resident Engineer is responsible for assuring that the use of public agency furnished materials follows the rules and regulations applicable to such usage (see 23 CFR Part 635 B&D).

When an agency is recovering reimbursement of cost, it is important to follow the force account procedures in Section 8.01. The following items are preparatory to documenting the use of public agency material, including state furnished materials:

1. A letter of intent from the entity requesting a Finding in the Public Interest to purchase materials/equipment through its own bidding procedures, if applicable.
2. A submittal of a price and/or cost proposal for the items.
3. A technical and audit evaluation by the Engineer Estimating program for cost effectiveness.
4. A Form 895a, Region Certification – Force Account and Finding in the Public Interest, certifying the entity's qualifications with concurrence by the Region Program Engineer.
5. A Notice to Proceed issued by Agreements in the Contracts and Markets Analysis Branch and administered by the Resident Engineer, if reimbursement is applicable and only when executed in a proper and timely manner prior to purchase of the material.

The Region will notify the agency with clearance to proceed with "advance purchase of materials," if appropriate.

Force account is defined in Section 8.01.

Additional References:

1. 23 CFR Part 635B, Force Account Construction, and 635D, General Material Requirements
2. 23 USC 112, Letting of Contracts
3. Section 3.01, Traffic Data
4. Section 8.21, Federal-aid Program Data

8.16 PROPRIETARY ITEMS

When the use of a patented or proprietary (trade name) item is essential for a project, a Finding in the Public Interest shall show that no equally suitable alternative exists.

Once a proprietary item is accepted as meeting standards and a non-proprietary specification can be written, the material or product should be selected on a competitive basis.

The Resident Engineer is responsible for preparing a Finding in the Public Interest justifying the use of any patented or proprietary item. An interim use as an experimental item may be used as a justification when approved by CDOT and FHWA (for federal projects) and processed through the Research Branch of the Division of the Transportation Development (see Section 8.07 of this manual). The requirements of the proprietary item must be specifically set forth in the plans and specifications of the project.

Materials and products that are judged equal may be bid under generic specifications. If only patented or proprietary products are acceptable, they shall be bid as alternatives with all, or at least a reasonable number of acceptable materials or products listed. A reasonable number would be to specify three or more equally suitable products; or, two if no other can be found after making a serious search and documented in the Finding in the Public Interest letter.

A justification letter approved by the Manager of Procurement and Contract Services to the files certifies that no equally suitable or patented item exists for use on the project and that such patented or proprietary item is essential for the construction of the project. Generally, products identified by their brand or trade name are not to be specified without an "or equal" or equivalent phrase.

A Sole Source Certification Form <http://internal.dot.state.co.us/purchasing/97june/solesrce.pdf> shall be completed only for sole sources of goods or services. This certification does not apply to situations classified as "Emergency Procurement" covered by CRS 24-103-206,

The Research Branch also must review proprietary items used as an experimental feature for research or a distinctive type of construction in the highway process. It is the policy of the FHWA not to participate, directly or indirectly, in payment for any premium or royalty on any patented or proprietary material, specification, or process specifically set forth in the plans and specifications for a project, unless:

1. The item is purchased or obtained through competitive bidding process with equally suitable unpatented items.

2. The Department certifies either that the proprietary or patented item is essential for synchronization with the existing highway facilities or that no equally suitable alternative exists.
3. The item is used for research or for specified type of construction on relatively short sections of road for experimental purposes.

The attached memo from Contract Services titled, "Clarification of certain legal requirements and some new procedures," dated March 27, 1996, includes other useful information.

Additional References:

1. 23 CFR Part 635.411, Material or Product Selection
2. <http://www.fhwa.dot.gov/infrastructure/progadmin/contracts/coretoc.htm> FHWA Contract Administration Core Curriculum Participant's Manual and Reference Guide 2001

MEMORANDUM

DEPARTMENT OF TRANSPORTATION

Center For Procurement and Contract Services
4201 East Arkansas Avenue, West Annex Rm. A-160
Denver, Colorado 80222-3400
(303) 757-9473



DATE: March 27, 1996
TO: Regional Directors and potential Project Managers
FROM: Contract Services
SUBJECT: Clarification of certain legal requirements and some new procedures

Due to concerns expressed by the A.G.'s office and some recurring problems that are slowing down the approval of contracts by the State Department of Personnel and the Controller, the Contract Services Unit requests that, as of October 1, the following procedures be followed on all contract requests.

ALL contract requests, including non-project specific contracts, as well as requests for supplements and amendments, should be accompanied by:

- 1) An accounting information form (CDOT Form #516) detailing the COFRS information that needs to be referenced in the contract. Please also use this form to provide the Federal Employer's Identification Number (FEIN) for the other party to any CDOT contract.
- 2) A Purchase Requisition form on which you provide a brief description of the work/project, specific dates for the period of performance, the amount budgeted for the work/project, and the name and mailing address of the contact person of the other party to the contract.
- 3) A detailed Scope of Work indicating the tasks to be performed, materials, schedules, deadlines, specs, and other information intrinsic to the performance of the work.
- 4) A Certification for Personal Services Contracts form, filled out completely, and signed by the "Executive Director" (Manager of the Center for Procurement and Contract Services, Jennie Readey, or the Regional Transportation Director for your region), and by the "Contract Administrator" (CDOT Project Manager). This form is required by State Law (24-50-508 C.R.S.) and the requirement is enforced by the State Department of Personnel and the Attorney General's Office. You must include this form unless:

- a) You are not contracting for a personal service. Personal Service Contracts are defined as "Any type of State agreement, regardless of what it may be called, for the furnishing of labor, time or effort acquired for the State's direct benefit in its operations." (24-50-502 C.R.S.)
- b) You are contracting with another State Agency,
- c) You are contracting with a political subdivision of the State (Cities, Counties, etc.),
- d) You are contracting with an Agency, Department, or other division of the Federal Government, or
- e) You are contracting for a service that has a specific exemption granted by the State Department of Personnel and the A.G.'s office.

These requirements are intended to be broad and hard to "get out of" and the State assumes the position that these Certification forms are necessary unless proven otherwise. Further, contrary to any practices in the past, these forms are not to be filled out by Contract Services. Because the forms are project specific, the contracting unit would not have the information necessary to fill them out. Since the regions and project managers are closest to the work, and they have to sign the form certifying the accuracy of the information, they are the appropriate persons to fill out the form. Please remember that without this form, the State Department of Personnel simply will not sign off on the contract and therefore the contract cannot be fully executed.

- 5) A Sole Source Certification form, if applicable. According to the State Contracting Manual, when a service or product is available ONLY from a single supplier, that supplier is said to be a sole source. Since the State is required to obtain its services by use of competitive public bids, a special procedure must be followed for the acquisition of services and/or goods from a sole source. (See 24-103-205 C.R.S.) This involves award of a contract without competition upon a prior written determination that there is absolutely only one source for the required service/good. For such certification on CDOT Contracts, application must be directed to the Manager of the Center for Procurement and Contract Services, Jennie Readey. This certification is ONLY for sole sources of goods or services, it does not apply to situations where there is an entity that is favored or even clearly better than other providers of the same goods or services. Nor does this certification apply to situations classified as "Emergency Procurements" covered by 24-103-206 C.R.S.
- 6) If you are requesting a supplement to an existing basic contract, you must also provide a copy of the executed basic contract and any prior

supplements thereto. The A.G.'s office will not sign the contract if this information is not provided.

- 7) Should a basic contract need a time extension, an abbreviated procedure is in place for the Contract Services Unit to prepare a one page "Letter of Agreement." This applies ONLY in situations where the only change to the contract is an extension of the term of the contract. If any other changes are needed, e.g. changes in funding or scope of work, a full contract amendment is necessary.

The A.G.'s office has recently expressed serious concern that work on projects is being authorized by CDOT project managers before there is a fully executed contract committing money to the project because such action by a project manager is contrary to law. Your attention is drawn to Section 24-109-404 of the Colorado Revised Statutes:

24-109-404 LIABILITY OF PUBLIC EMPLOYEES

If any governmental body purchases any supplies, services or construction contrary to the provisions of this code, or the rules promulgated pursuant thereto, the head of such governmental body and the public employee, which for purposes of this section includes elected officials, actually making such purchase shall be personally liable for the cost thereof. If such supplies, services, or construction are unlawfully purchased and paid for with state moneys, the amount thereof may be recovered in the name of the state in an appropriate civil action.

We realize that there may be emergency situations which require immediate action. If a project manager believes that work on his/her project falls into this category he or she should let us know. We will do everything we can to expedite the execution of the necessary contract. Sooner or later, the State on the advice of the A.G.'s office will decide to make an example of some well meaning but illegally acting project manager. It is for your own protection to comply with the legal requirements of the cited statute.

Compliance with the applicable legal requirements and the procedures outlined above will decrease the time required to get the contracts executed and increase your ability to get the work done.

We would be happy to attend the next meeting of the Regional Transportation Directors and Maintenance Supervisors held in Denver and to answer any questions and address any concerns that you may have. We are of course always available by phone for your questions and comments.

Don Mitchell Tom Riley
(303) 757-9781 (303) 757-9398

Diana Pribble
(303) 757-9401

Scott Kaufman
(303) 757-9473

Thank you for your attention to these matters.
Sincerely yours,

Jennie Readey, Manager
Center for Procurement and Contract Services
Colorado Department of Transportation

8.17 ON-THE-JOB TRAINEE APPROVAL

CDOT has established procedures for identifying and approving On-the-Job Training relative to the Equal Employment Opportunity program. CDOT has two On-the-Job Training programs, the Standard Program for federal-aid projects and the Colorado Program (formerly the On-the-Job Pilot Program) for all projects. The Colorado Program is an optional program that Contractors volunteer to participate in, in lieu of the Standard Program requirements.

The purpose of the On-the-Job Training program is to prescribe the policies, procedures, and guides relative to the implementation of training programs on CDOT construction projects.

The state's overall training program and goals are to be developed jointly by CDOT and the FHWA based on federal-aid-apportioned amounts and minority population. In actual practice, the FHWA requests that the Department submit recommended calendar-year goals for approval that are based on factors such as the type of project and estimated awarded projects during the year, and availability of minorities and women.

The Resident Engineer ensures that the project specific On-the-Job training goals and related specifications are included in the construction plans. It should be noted that although the On-the-Job Standard Special Provision is included in all projects, the Standard Program requirements only apply to federal aid projects.

For federal-aid projects, two project force account items and budgets must be established, On-the-Job Trainee and Colorado OJT Program (formerly On-the-Job Pilot). For non-federal-aid projects, only one project force account item and budget must be established, the Colorado OJT Program. The force account amount for the Standard Program is defined in the provision. The Colorado Program force account is identified OJT Colorado Program Budget Guidelines (attached).

The On-the-Job Standard Special Provision defines the number of trainees assigned to the project based on the project dollar amount. The provision also defines the amount to be included in the force account budget for the Standard program.

For the Colorado Program, the Contractor is assigned an annual training goal by the CDOT On-the-Job Program Manager.

Additional References:

1. 23 CFR Parts 230A, Equal Employment Opportunity ...
2. *CDOT Construction Manual*
3. *On-the-Job Pilot Program Manual*
4. See Appendix A for forms

OJT PILOT PROGRAM BUDGET GUIDELINES

10/30/92

Project Construction Budget

Project OJT Estimate

| | | |
|------------|--------------|----------|
| | Below 50,000 | 0.00 |
| 50,000 | - 99,999 | 100.00 |
| 100,000 | - 249,999 | 150.00 |
| 250,000 | - 499,999 | 200.00 |
| 500,000 | - 999,999 | 300.00 |
| 1,000,000 | - 2,499,999 | 525.00 |
| 2,500,000 | - 4,999,999 | 1,000.00 |
| 5,000,000 | - 9,999,999 | 2,100.00 |
| 10,000,000 | - 19,999,999 | 5,250.00 |
| 20,000,000 | - 49,999,999 | 9,000.00 |

In addition to the dollars above, continue to budget \$200.00 for each recommended trainee slot on the project as a separate force account item (On-the-Job Trainee).

8.18 DISADVANTAGED BUSINESS ENTERPRISE GOALS

The Disadvantaged Business Enterprise program was created to achieve the following objectives in both state and Department of Transportation-assisted contracts for construction, design and engineering to:

1. Ensure nondiscrimination in the award and administration of contracts in the Department's highway, transit, and airport financial assistance programs;
2. Create a level playing field on which Disadvantaged Business Enterprises can compete fairly for contracts;
3. Ensure that CDOT's Disadvantaged Business Enterprise program is narrowly tailored in accordance with applicable law;
4. Ensure that only firms that fully meet the Disadvantaged Business Enterprise Program eligibility standards are permitted to participate as Disadvantaged Business Enterprises;
5. Help remove barriers to the participation of Disadvantaged Business Enterprises in contracts;
6. Assist the development of firms that can compete successfully in the marketplace outside the Disadvantaged Business Enterprise program; and
7. Provide appropriate flexibility in establishing and providing opportunities for Disadvantaged Business Enterprises.

To be considered a Disadvantaged Business Enterprise and be credited toward the Disadvantaged Business Enterprise goal on a project, the firm must have received Disadvantaged Business Enterprise Certification from the Colorado Department of Regulatory Agencies, Office of Certification. CDOT's Business Program's Office publishes a monthly listing of the currently certified Disadvantaged Business Enterprises and Underutilized Disadvantaged Business Enterprises.

The Disadvantaged Business Enterprise Program was established under the authority of the CDOT Executive Director *and CDOT Policy Directive 611.0, Disadvantaged Business Enterprise*, in accordance with the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991, the Transportation Equity Act for the 21st Century and the Airport and Airway Safety and Capacity Expansion Act of 1987.

To be certified as a Disadvantaged Business Enterprise, a firm must be:

1. A small business concern as defined pursuant to Section 3 of the Federal Small Business Act.
2. At least 51 percent owned by one or more minorities or women; the groups that are included are people who are Hispanic, Asian American, African American, Native American, women, or members of other groups found to be economically and socially disadvantaged under Section 8(a) of the Small Business Act.
3. Independent from any other firm.
4. Managed and controlled on a day-to-day basis by the disadvantaged owners.

5. Able to meet other requirements contained in the 49 CFR Part 26.

It is the responsibility of the Region EEO/Civil Rights Specialist, at the request of the Resident Engineer, to review the engineer's estimates and bid items and list on a Form 863, DBE Contract Goal Recommendation, all items that they believe can be subcontracted to Disadvantaged Business Enterprises. The Form 863 should include the total of the estimate for the items identified as potential Disadvantaged Business Enterprise subcontracts, names of potential Disadvantaged Business Enterprises who could be expected to submit bids on these items, and the recommended Disadvantaged Business Enterprise goal for the project. (It is recommended that each work item considered for the Disadvantaged Business Enterprise goal should be performed by two or more Disadvantaged Business Enterprise subcontractors, so that there is competition for the work.) A copy of the Form 863 and a copy of the engineer's estimate for the project are sent to the Business Programs Office.

It is the Region's responsibility to monitor each Region's Disadvantaged Business Enterprise participation to ensure it meets the Disadvantaged Business Enterprise participation commitment by the end of the federal fiscal year. This commitment is to include Disadvantaged Business Enterprise participation on both federal- and state-funded projects.

Each Region must meet the Region's Disadvantaged Business Enterprise goal commitment. The Business Programs Office will monitor Disadvantaged Business Enterprise Participation, and furnish the Region with monthly reports that list Disadvantaged Business Enterprise participation on federal- and state-funded projects for each Region and for the entire state.

Additional References:

1. 13 CFR Part 121, Small Business Size Regulations
2. 23 CFR Part 635.107, Small and Disadvantaged Business Participation
3. 23 CFR Subchapter A, Part 1, Section 1.36, Compliance With Federal Laws and Regulations
4. 49 CFR Part 26, Participation by Disadvantaged Business Enterprises in Department of Transportation Financial Assistance Programs
5. See Appendix A for forms

8.19 PROJECT CONTROL DATA (Form 859a)

The Form 859a, Project Control Data, is used to establish the contract time, and controlling or salient features for a project at the Final Office Review or pre-ad stage.

The Form 859a shows information that is relevant to the determination of contract time, affected pay item quantities, and a bar chart showing established time allotted for the "controlling items of work" and /or "salient features."

NOTE: A "controlling item of work" is an item of work that will extend the overall completion of the project if the duration of this item is increased. A "salient feature" is an item of work that may be of special interest in coordinating the project schedule, but may not affect the overall completion of the project.

All specific project features, construction requirements and any other special requirements that may impact contract time should also be included in the Form 859a. The Resident Engineer is responsible for initiation and completion of this form.

In addition to the items on the form the following key issues should also be documented when completing the Form 859a:

1. Urgency of proposed improvement.
2. Effect on local businesses and property access.
3. Need for coordination with other projects.
4. Irrigation requirements.
5. Special events schedules and holiday impacts.

The procedures for processing the Form 859a are:

1. Complete the form after the Final Office Review and all key issues have been resolved.
2. Determine contract time for the project.
3. Identify the controlling items of work, salient features and related working days.
4. List items of work in chronological order on the Bar Chart of Form 859a.
5. Complete and distribute the Form 859a four weeks prior to the scheduled advertisement date.

Additional References:

1. *CDOT Construction Manual*
2. See Appendix A for forms

8.20 PLANS, SPECIFICATIONS AND ESTIMATE APPROVAL

Plans and specifications of a project describe the location and design features with all the construction items in sufficient detail to facilitate construction. The estimate reflects the anticipated costs in detail to permit an effective review and comparisons of bids received.

A complete Plans, Specifications and Estimate (PS&E) set of plans shall include:

1. Standard specifications for road and bridge construction (they may be supplemental or modified to suit specific contracts).
2. Plans in the form of detailed drawings, layouts, profiles or cross-section pertaining to geometrics, hydraulics, structures, soil, pavements, and other appurtenances.
3. Project costs of bid items, force account items, right of way, and utility costs.

The Engineer Estimating program will review or establish prices for materials, labor, and equipment required to perform the work (see Section 8.26 of this manual).

The Resident Engineer is responsible for assembling the final Plans, Specifications and Estimate plan package, which includes:

1. Compiling the final plan sheets.
2. Running the final Engineer's Estimate, as reviewed by the Engineer Estimating program.
3. Obtaining CDOT clearance approvals and sign-offs as required on Form 1048a, Project Scoping/Clearance Record.
4. Submitting the Plans, Specifications and Estimate package for printing.

The Region Program Engineer is responsible to:

1. Check the final Plans, Specifications and Estimate and clearance process.
2. Review the final Plans, Specifications and Estimate for federal and state requirements (compliance).
3. Approve assembly of the bid package.
4. Certify that appropriate design and safety standards have been met, and approving the Plans, Specifications and Estimate package by signing the 1180, Standards Certification and Project Plans, Specifications and Estimates Approval.

After the final Plans, Specifications and Estimate plans are reviewed and all requirements of federal and state regulations have been met, the Resident Engineer will submit a Form 1180. This form is to be submitted to the Office of Finance, Management and Budget to finalize obligation of the construction phase.

NOTE: If oversight is by the Federal Highway Administration, the Form 1180 is not required because the FHWA certifies the Plans, Specifications and Estimate package. The FHWA requires two weeks to approve the Plans, Specifications and Estimate package.

Additional References:

1. 23 CFR Part 625, Design Standards for Highways, and Part 630B, Plans, Specifications and Estimates
2. 23 USC 106, Project Approval and Oversight
3. *CDOT Procedural Directive, 512.1, Project Scoping and Design Scoping Review (DSR)*
4. *CDOT Procedural Directive 1700.3, Plans, Specifications and Estimates and Authorization to Advertise for Bids under Certification Acceptance*
5. See Appendix A for forms

8.21 FEDERAL-AID PROGRAM DATA (Form 418a)

The Form 418a, Federal Aid Program Data, is needed to obtain FHWA program authorization and obligation of federal funds for specified phases of work.

The Form 418a gives a quick overview of the project; for example, it shows the different phases of work by type of funds, approval date and amount.

After the Form 463a, Design Data, has been approved, the Office of Financial Management and Budget submits the Form 418a to the Federal Highway Administration for obligation and authorization of federal funds.

The approved Form 418a constitutes federal authorization for the specific phases of work and commits federal funds for the project.

NOTE: 23 CFR Part 630.106 outlines that federal funds shall not be used (participating) for costs incurred prior to the date of obligation/authorization.

Federal Highway Administration authorization is not required for non-federal-aid projects (see Section 1.03 and Section 1.07 of this manual for an explanation of when charges can be made against a project).

Additional References:

1. 23 CFR Part 630A, Federal-Aid Project Authorization
2. See Appendix A for forms

8.22 BID PACKAGE REVIEW

The Resident Engineer is responsible for the final assembly of the plan sheets, cross-sections, special provisions, estimate, schedule, advertisement notice, bid documents and the reproduction work order.

Immediately prior to requesting that a project be advertised the Resident Engineer finishes the final check of the bid package following Region procedures.

The Form 1048a, Project Scoping/Clearance Record, is to be completed by the Resident Engineer. All clearances outlined on the Form 1048a will be obtained prior to advertisement of a project.

To complete the bid package review, the following are to be accomplished:

1. Confirm all clearances/requirements (see Form 859a, Project Control Data, Form 1048a and check sheets).
2. Review construction plans.
3. Review special provisions, estimate, schedule, and advertisement notice.

The Resident Engineer's sign off on bid package clearance on Form 1048a indicates approval by the Region Program Engineer for projects with budget deficits up to 10 percent (based on Transportation Commission budget plus planned action versus Engineer's Estimate). For projects with deficits greater than 10 percent, the Resident Engineer's clearance indicates approval by the Regional Transportation Director and that the Chief Engineer has been advised. (**NOTE:** Deficits greater than 15 percent may delay the project going to advertisement because of required Transportation Commission action.)

Additional References:

1. 23 CFR Part 635B, Force Account Construction
2. *Procedural Directive 520.1, Documents for Bidding and Contracting on Construction Projects*
3. See Appendix A for forms

8.23 ADVERTISEMENT

The activities that lead up the Plans, Specifications and Estimate (PS&E) advertisement are:

1. Process design requirements and clearances.
2. Check final design, specifications and bid items.
3. Compile the Plans, Specifications and Estimate deliverable package.
4. Approve the Plans, Specifications and Estimate package, including advertisement for bid.
5. Prepare the Plans, Specifications and Estimate delivery schedule.

The *CDOT Checking Manual* should be used to complete the checking of the final Plans, Specifications and Estimate package.

On all projects prior to authorizing the project for advertisement, the Resident Engineer will ensure that the Form 859a, Project Control Data, and the Form 463a, Design Data, have been fully executed. The Resident Engineer will ensure that all applicable clearances have been obtained on the Form 1048a, Project Scoping/Clearance Record, and that all mitigating and discrepancies have been resolved.

If federal funds are involved with the project, prior to authorizing the project for advertisement, the Resident Engineer will ensure that construction obligation has been processed through the Office of Financial Management and Budget (OFMB), by submitting a final CDOT Form 463a and Form 1180 (if FHWA has oversight send summary of estimate in lieu of Form 1180) to OFMB. OFMB submits the Form 418a to the FHWA for funding authorization, usually a two-week process. The Resident Engineer will ensure that the "Authorization Screen" in ProMIS shows that the funds are "Approved," not just "Requested," "Unobligated" or "In-Transit."

The Resident Engineer is responsible for delivering the documents to the Printing and Visual Communications Center. The following should be included:

1. Form 644, Plan Distribution Request
2. Form 155, Reproduction Work Order
3. Project schedule of items
4. Original project plan sheet
5. Original project specifications and special provisions
6. Original project cross-sections, if applicable
7. Earthwork calculations, if applicable
8. Advertisement request form letter from Resident Engineer (e-mail)

Authorization letters must be sent to the "HQ-CU/Construction Contracts Unit" distribution list in Outlook. All advertisement authorizations must be received no later

than 9:00 a.m. on the Monday morning before the advertisement date. If Monday is a holiday, they must be received by 9:00 a.m. the previous Friday.

To ensure a timely advertisement of the project, the Printing and Visual Communications Center requires the following schedule (additional consideration should be given during holidays).

1. Typical plans, Specifications and Estimate packages of 150 plan sheets or less, delivery to the Center seven calendar days prior to advertisement.
2. Large plans, Specifications and Estimate packages of more than 150 plan sheets, delivery to the Center at least 14 calendar days prior to advertisement.

The Advertisement Notice in Trns*Port must contain the following information:

- In upper left corner:
- Letting Date
 - Counties
 - Region

- In upper right corner:
- Contract ID
 - Project No.
 - DBE Goals/Guaranty
 - Plan Price
 - Work or Calendar Days
 - Resident Engineer
 - More than \$1,000,000
 - Between \$500,000 and \$1,000,000
 - Less than \$500,000

Deleted: (Th

The quantities should read "MAJOR ITEMS" as opposed to "BID ITEMS." If a pre-bid conference is scheduled, include location, time, date, and clearly state whether it is mandatory.

The following format is to be used on all letters authorizing project advertisements.

AUTHORIZATION LETTER FORMAT

Const. Project No.: _____
Const. Project Code: _____

PE Project No.: _____
PE Project Code: _____

Date: _____

To: Construction Contracts Unit

From: **Project Manager's Name**

Subject: Advertise **Project Number**

Please advertise the above project on _____(date) for _____ weeks. Necessary clearances have been obtained. The advertisement notice is ready for download in Trns*Port. Plans and specifications have been sent to the Print Center in accordance with their submittal deadlines. The UDBE contract goal has been set at __%.

It is estimated that the bid items
___ will not exceed \$500,000.
___ will exceed \$500,000 but not \$1,000,000.
___ will exceed \$1,000,000.

If the project is federally funded, use the following statement:
FHWA signed CDOT Form 418a on _____ obligating the construction phase.

If the project is not federally funded, use the following statement:
This is a non-federally funded project.

The following is applicable only if a pre-bid conference is to be conducted:
"A (mandatory or optional) pre-bid conference will be held at _____ (location)
_____ (date), and _____ (time) ."

The following is applicable only if a mandatory pre-bid conference is to be conducted:
"Bids will be accepted only from pre-qualified bidders who attend the mandatory pre-bid conference."

NOTE TO DESIGNER: In addition, the letter will advise of any special conditions for bid acceptance that may have been made anywhere in the project specifications. It is impractical for the bid reviewer to read all the project specifications for a project. Therefore, it is essential to advise of any special documentation that is required. Unusual requirements or specifications may not be expected by the Contractor and therefore cause potential bid problems. Failure to so advise has resulted in the acceptance of bids that have been contested by other bidders. These incidents come as a complete surprise to the bid reviewer and cause embarrassment and potential liability to CDOT.

8.24 PS&E REVISIONS UNDER ADVERTISEMENT

The following procedure and format are to be followed for all plan revisions. These instructions standardize the process statewide and also update certain items that have been affected by organizational changes. Previous instructions, such as those in the *Checking Manual*, are usurped by these instructions.

All revision packages are to be submitted to the Printing and Visual Communications Center no later than 10 days prior to the scheduled letting date. Revisions occurring later will require that the opening be deferred. The package to the Printing Center will include the revision letter and all revised sheets. Additionally, an e-mail distribution of the revision letter must be made concurrently with or prior to the submittal to the Print Center. It is essential these steps be followed to ensure that key processes are initiated.

Address the actual revision letter to "All Holders of Plans for Project No. _____." Under "Subject," the Revision No. should be listed (to be acknowledged in all bid proposals). Include the following recipients at the bottom of the letter for hard copy distribution:

FHWA, Colo. F/A Division Operations Engr. (if FHWA oversight)
 Martinez/Duran, Printing Center
 R. Auerbach, Bid Plans
 J. Carter, Business Programs
 J. Williams, Agreements Program
 D. Sarganis, Engineer Estimating
 Records Center

Project Manager
 Resident Engineer

The "Subject" for the e-mail cover letter should note "Revision No. _____ Project No. _____" All the standard non-regional recipients have been consolidated in a distribution list called "HQ-CU/Construction". The current names in this list are shown for information only.

David Martinez --,
 Bid Plans |
 Alvaro Duran |
 Mark Tieman | - = *HQ-CU/Construction
 Jim Williams |
 Cheri Rupp |
 Richard Ott --'

Region Transp. Dir.
 Program Engineer

All non-regional distribution instructions must be followed exactly. The intra-regional distributions are based on a consensus taken from all the regions and may be modified as the Region directs.

The revision letter shall include the following in the order specified (an example is attached).

1. Bid Proposal
Indicate if there are any changes to the bid proposal (or schedule). If there are, state that the revised schedule (for those not using EBS) or EBS amendment must be used (see example).
2. Project Special Provisions
List page numbers with brief descriptions for each revised specification.
3. Standard Special Provisions
List page numbers and descriptions.
4. Plan Sheets
List sheet numbers with description of revision.
5. Date
Explicitly state the date of the bid opening and whether it has changed. Do not make vague statements, such as, "At the time previously advertised." If the project has been deferred, call attention to the revised EBS file (see example text).
6. FHWA Approval
If the project requires FHWA oversight, indicate the FHWA engineer who approved the revision.
7. Authorization
Indicate who is authorizing the revision and the Region. All revisions must be authorized by someone at or above the Professional Engineer II level. A signature is not required.

IMPORTANT: In the event that significant plan quantity errors become known, it is mandatory to issue a revision. In the past, there have been some incidents when the Region went forward with the intent to deal with the errors "in the field." This is not permissible because it creates distortions in the bidding process that cannot be administered fairly.

NOTE: In the event that a revision adds Disadvantaged Business Enterprise participation to a project, the Bid Plans Room must be advised to include the Form 714, Underutilized DBE Bid Conditions Assurance, "Note on DBE %" with the package sent to plan holders and add these forms to any new sets that are sold.

The Resident Engineer should attempt to minimize revisions by reviewing all plans and specifications carefully prior to advertisement. If there are any questions on this process, please call the Agreements Program in Project Development at (303) 757-9865.

EXAMPLE OF REVISION REQUEST E-MAIL:

Date: }
}
From: } (Automatically filled in by Email)
}
Dept: }
Tel No: }

TO: See Below

Subject: Revision No. 1 HB 9999-999

Please find attached the following revision letter for Project _____.

Distribution:

HQ-CU/Construction --,
|
V

- TO:** Bid Plans @DHQ
- TO:** Duran, Alvaro @DHQ
- TO:** Martinez, Dave D @DHQ
- TO:** Ott, Richard @DHQ
- TO:** Tieman, Mark @DHQ
- TO:** Rupp, Cheri @DHQ
- TO:** Williams, James S @DHQ

CC: RTD
CC: Program Engineer

EXAMPLE OF REVISION REQUEST LETTER:

HB 9999-999
10000
SH 99, North of Big Hole

DATE:

TO: All Holders of Plans for Project No. HB 9999-999

SUBJECT: Revision No. 1 (to be acknowledged in all bid proposals)

Bid Proposal:

Revised Schedule. Prospective bidders not using EBS must submit their bids on the revised schedule dated (Revision Date) or the bid will be rejected. For EBS use the Amendment posted on the CDOT web site.

OR

No revisions to Schedule

Project Special Provisions:

Pages 12a and 12xa: Revised Index

Page 16a: Added Cross Sections

Pages 50-56: Deleted Section 253-Asbestos Containing Material Management

...etc

OR

N/A

Standard Special Provisions:

Page 12xa: Revised Date on Standard Special Provision R.O.S.
106-Quality Of Hot Bituminous Pavement (Nov. 7, 1996)

...etc

OR

N/A

Plan Sheets:

Sheet 1: Updated Revision Block

Sheet 8: Deleted Item and Revised Quantity

Sheet 10: Added Item

Sheet 12: Deleted Item

Sheet 21: Changed Note

...etc

OR

N/A

It is requested that you substitute the enclosed revisions in your copy of plan documents and destroy those sheets superseded by this transmittal.

The Department will open bids for this project on (Bid Opening Date) as previously advertised.

OR

The Department has delayed the bid opening ___ weeks for this project. Bids will be opened on (Bid Opening Date). A new EBS file has been posted on the web to correspond to the revised bid opening date. Bidders using EBS must use the new file.

If FHWA Oversight:

This revision has been approved by _____, FHWA Colorado Federal Aid Division Operations Engineer.

This revision is authorized by (PE II authorizing Revision).

cc: FHWA (if oversight)

Martinez/Duran, Printing Center
R. Auerbach, Bid Plans
J. Carter, Business Programs
J. Williams, Constr. Contracts
D. Sarganis, Cost Estimating
Records Center

Project Manager
Resident Engineer

8.25 RE-ADVERTISEMENT

Occasionally projects need to be re-advertised because bidders exceeded the estimated construction costs, there were too few bidders, or there was no acceptable bidder.

CDOT can reject bids for any reasonable cause. The Resident Engineer can request to re-advertise the project at a later date or request additional funds from the Transportation Commission. A cost justification is required to award any project with a low bid greater than 15 percent over the estimate, but that requirement does not limit the Department's authority to reject projects that exceed the estimate by a lesser amount. If additional funds are approved by the Transportation Commission, the Chief Engineer can authorize award of the project.

If a project's low bid exceeds the "Detailed Engineer's Estimate" by \$50,000, or the low bid received is greater than 115 percent or less than 80 percent of the engineer's estimate, it will be discussed with the apparent low bidder and the Engineer Estimating program in the Contracts and Market Analysis Branch to determine the difference.

Projects that are \$50,000 or less will be discussed only when the bid varies from the estimate by more than 50 percent or \$10,000.

The Engineer Estimating program will document the reasons for the excessive variations in engineer's estimates.

Bids may be rejected on a project for several reasons including but not limited to:

1. Less than three bids received with the low bid being greater than 110 percent of the engineer's estimate (greater than 125 percent on projects under \$1 million) in accordance with CRS 43-1-113(16), Transportation, General and Administrative.
2. Lack of funding to award the project at the amount bid. Contact Region Business Office for resolution of funding shortfall.
3. Failure of bidders to satisfactorily respond to the Disadvantaged Business Enterprise requirements.
4. A negative finding on the cost justification review or low bid analysis.

In the event that all bids are rejected, the Region may re-advertise the project. The Region should take steps to remedy the causes for not receiving acceptable bids prior to re-advertisement. Examples of such remedies are changing completion time specifications or working conditions, modifying the scope of the work and revising the engineer's estimate when appropriate.

Additional References:

1. 23 Part CFR 635A, Contract Process
2. *CDOT Procedural Directive 303.01, Award of Contract – Justification of Bid*

8.26 ESTIMATE REVIEW BY ENGINEER ESTIMATING

The final engineer's estimate will be used as a basis for either award or rejection of the project's bid.

All bid items listed in the construction plans are tabulated by the Resident Engineer with unit quantities and given to the Engineer Estimating program in the Contracts and Market Analysis Branch for assignment of unit prices.

Engineer Estimating program activities include:

1. Preliminary unit pricing prior to the Final Office Review stage.
2. Review of Final Office Review engineer's estimate.
3. Prepare the final engineer's estimate prior to advertisement.
4. Create bid tabulations based on contractor bids.
5. Retain historical cost data.

Copies of estimates prior to bid will be sent to CDOT Regions and FHWA when applicable. Estimates will be confidential prior to the bid opening, after the bid opening they are no longer confidential.

The Resident Engineer should coordinate each stage of the project estimating process with the Engineer Estimating program. The following activities describe the cost estimate review:

1. The Resident Engineer tabulates the plan quantities and requests unit prices from the Engineer Estimating program.
2. The Engineer Estimating program provides unit prices for the Preliminary Engineer's Estimate.
3. The Engineer Estimating program reviews any subsequent estimates as requested by the Resident Engineer.
4. The Engineer Estimating program determines the unit prices for the final estimate prior to advertisement.

Estimate Security

To provide for the confidentiality of the estimate, the following restriction shall be adhered to:

1. Engineers prepare their cost estimates in the CDOT computerized estimating system.
2. Consultants prepare "quantity only" estimates.
3. The Engineer's Estimate is protected by the computer system and is confidential by CDOT policy.

Additional References:

1. 23 CFR Part 630B, Plans, Specifications and Estimates
2. *CDOT Procedural Directive 303.01, Award of Contract – Justification of Bid*
3. *CDOT Procedural Directive 511.1, Security and Confidentiality of the Engineer's Detailed Estimate*
4. Estimated Total Project Cost (see Section 1.05 of this manual)