

**Forest Service Handbook
National Headquarters - Washington Office
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**Forest Service Handbook 7709.57 – Road Construction Handbook
Chapter 1 - Project Preparation and Planning**

Amendment: 7709.57-1992-1

Effective date: September 4, 1992

Duration: This amendment is effective until superseded or removed.

Superseded Directive: Entire Handbook issued September 1986; Title Page; 0--1 thru 7.3

Approved by: F. Dale Robertson, Chief

Date approved:

Responsible Staff:

Explanation of changes: Following is an explanation of the changes throughout the directive by section.

This amendment is a reissuance of FSH 7709.57 to conform the format and structure of the Handbook to the requirements of electronic directive issuance.

This amendment makes no substantive changes to the text. The only changes made are those necessary to meet new format requirements or to correct spelling, punctuation, or unit names.

This Handbook is now available electronically in the National Information Center in the same format as the paper copy. Henceforth, amendments to this Handbook will be issued to Forest Service units electronically on a document basis.

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1.1 - Preparation

Prior to contract award, ensure that inspection personnel, office space and equipment, forms, supplies, means of communication, vehicles, specialist support, and testing equipment are available to accomplish the construction engineering task.

1. Office Review. Review and become familiar with all of the following project documents and information:

- a. Environmental assessments.
- b. Design criteria.
- c. Design elements and standards.
- d. Materials investigation reports.
- e. Transportation planning reports.
- f. Preconstruction notes.
- g. Value analysis reports.
- h. Permits or licenses.
- i. Contract drawings.
- j. Specifications and special project specifications.
- k. Special contract requirements.
- l. Cost estimates.
- m. Contract time and road completion date.
- n. Construction activity time projections.

- o. Bid tabulations.
- p. Potential weather problems (fire hazard restrictions, season length, etc.)

2. Specialist Input. Discuss the project with specialists associated with the project development and design.

3. Field Review. Visit the project site and become familiar with:

- a. Access routes and restrictions.
- b. Utility locations.
- c. Material sources.
- d. Staging and stockpile sites.
- e. Unusual conditions that require special controls or specialized, technical assistance or inspection skills.
- f. Environmental assessment requirements.
- g. Design and survey, including construction staking.
- h. Disposal sites.
- i. Other activities in the work area.

4. Inspection Plan. Prepare an inspection plan that establishes the priority, intensity, and tentative schedule of inspection time and personnel. Make sure the plan is flexible to accommodate new information or changes in conditions. Base the inspection plan on:

- a. Potential for resource damage.
- b. Knowledge of contractor's workmanship.
- c. Complexity and cost of construction activity; frequency of inspection should be commensurate with the design standards and construction requirements.
- d. Contract requirements for quality control and quantity measurement.
- e. Contractor's work schedule and estimated work speed.

f. Manpower demands of other projects that are anticipated to be active during this construction season.

g. Consequences of low level or no inspection.

Evaluate tradeoffs between onsite inspection and the risks to the project and the resources which could result from noncompliance.

Consider use of overtime, flexible work schedules, and contract inspection. Also consider the availability of certified inspectors from other projects and other personnel such as survey crews and specialists to assist the inspector(s) and contracting officer's representative.

1.2 - Prewrite Conference

The Contracting Officer or a designated representative is responsible for the prework conference (FSH 6309.11). The Engineer conducts the technical portion of the prework conference. Use the checklist in exhibit 01 as a guideline. (Note: Select the items appropriate to a given project.) Involve appropriate specialists when the project contains specialized or highly complex construction conditions.

1.2 - Exhibit 01

Pework Conference Technical Checklist

1. Maintenance for traffic requirements:
 - a. Roads authorized for use and restrictions.
 - b. Traffic plan and approval of traffic controls and delays.
 - c. Construction signing.
 - d. Maintenance responsibilities.
 - e. Seasonal shutdown precautions (winterization).
 - f. Other activities and/or traffic in the area.
2. Control of materials requirements:
 - a. Point of acceptance.
 - b. Preservation of specified aggregate gradation.
 - c. Weighing requirements if specified.
 - d. Sampling and testing frequencies.
 - e. Certification of compliance.
 - f. Material sources (see item 9).
3. Quality control and quantity measurement requirements (as applicable):
 - a. Quality control personnel.
 - b. Submittal and approval of quality control plan, include timing of tests.
 - c. Availability to Government of contractor's inspection and testing records.
 - d. As-built drawings.
 - e. Certification of compliance.
 - f. Quantity measurement for payment.
 - g. Computation of quantities.
4. Construction staking requirements:
 - a. Qualification of crew.
 - b. Flagging colors, stake marking, and notekeeping.

1.2 - Exhibit 01--Continued

- c. Government furnished P-line control, drawings, and stakeout notes.
 - d. Culvert, catch basin, or structure stakes.
 - e. Approval of staking.
 - f. Protection and maintenance of staking.
 - g. Resetting of stakes during construction.
 - h. Precision.
 - i. As-staked notes.
 - j. As-staked computations.
5. Rights-of-way:
- a. Limits of right-of-way.
 - b. Fence maintenance.
 - c. Special conditions.
6. Clearing and grubbing:
- a. Pioneer operations.
 - b. Designated fire-dangerous or unstable trees.
 - c. Utilization standards.
 - d. Removal of right-of-way timber.
 - e. Stump disposal.
 - f. Slash disposal methods and disposal sites.
 - g. Burning permits and smoke management.
 - h. Equipment size and type.
 - i. Locations of log decks.
 - j. Work activities outside clearing limits.
7. Excavation and embankment:

1.2 - Exhibit 01--Continued

- a. Construction tolerances.
 - b. Catch basin construction.
 - c. Unsuitable material and excess excavation.
 - d. Blasting operations and overbreakage.
 - e. Confinement of operations within roadway.
 - f. Subgrade treatment and reinforcement.
 - g. Water sources and moisture content.
 - h. Embankment placement and compaction.
 - i. Roadbed finishing and treatment of oversized material.
 - j. Borrow and conserved material.
 - k. Slope rounding, benching, and scaling cutslopes.
 - l. Equipment size and type.
8. Culvert and drainage installation:
- a. Sensitive streams and streamcourse protection.
 - b. Erosion control.
 - c. Drainage ditches.
 - d. Ordering culverts from as-staked list.
 - e. Fabricators certification.
 - f. Bedding material, foundation, camber, and required approvals.
 - g. Backfill and compaction requirements.
 - h. Pipe alignment and grade.
 - i. Circumferential laps and welded/lock-seam pipe installation.
 - j. Metal gauges and coupling bands.
 - k. On-site storage.

1.2 - Exhibit 01--Continued

- l. Field cutting and coating repair.
 - m. Headwalls and energy dissipators.
 - n. Downdrain connections and anchors.
 - o. Special features.
 - p. Dewatering and other items which require special construction methods.
9. Scheduling and development of pits and quarries:
- a. Development limits and typical cross sections.
 - b. Access, clearing, and grubbing requirements.
 - c. Topsoil and overburden requirements.
 - d. Development sequence requirements.
 - e. Utilization and oversize material treatment.
 - f. Plant and stockpile sites.
 - g. Restoration, drainage, and cleanup.
 - h. Drill logs and testing records.
 - i. Safety requirements.
 - j. Scheduling.
 - k. Alternate sources.
 - l. Rehabilitation.
 - m. Disposal of timber.
10. Aggregate base production and placement:
- a. Roadbed approval.
 - b. Point of acceptance.
 - c. Quality and gradation requirements.
 - d. Oversize removal and disposal.

1.2 - Exhibit 01--Continued

- e. Additives and water sources.
 - f. Spread stakes--mixing and placing.
 - g. Compaction and layer depth.
 - h. Thickness and width tolerances.
 - i. Haul roads and signing.
11. Seeding, mulching, and erosion control:
- a. Seasonal dates.
 - b. Application rates and method(s).
 - c. Limits of area to be treated.
 - d. Certification of compliance.
 - e. Temporary erosion control requirements.
12. Specialized construction (consider the need for specialist support):
- a. Bituminous pavements.
 - b. Retaining structures.
 - c. Bridges.
 - d. Structural--plate pipe.
 - e. Gates, cattleguards, and fences.
 - f. Geotextiles.
 - g. Riprap.
13. Miscellaneous. Many of the following items may be included in the Contracting Officer's part of the prework conference and are listed here as a reminder to be included as appropriate.
- a. Measurement and payment (see FSH 6309.11).
 - b. Progress schedule and plan of operations (see Timber Sale Contract Sections B6.3, C6.3, C6.311).

1.2 - Exhibit 01--Continued

- c. Road completion dates and contract time.
- d. Government furnished property.
- e. Fire protection and suppression requirements.
- f. Specification lists.
- g. Drawings.
- h. Value engineering change proposals.
- i. Changes (see FSH 7709.57, chapter 4).
- j. Safety of operations.
- k. State or local permits.
- l. Submittals required of contractor by specifications.
- m. Cleanup.
- n. Sanitary provisions.
- o. Special use permits required.
- p. Camps and utilities.
- q. Quality control and quantity surveys.