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SECTION 300.00 – PRELIMINARY DESIGN

SECTION 310.00 – PROJECT DEVELOPMENT

The development of highway projects (funds, activities, etc.) is officially tracked through the Highway Development Program. The projects are broken into numerous categories that have varying preliminary design requirements. Some of the categories are: Interstate Preventive Maintenance Projects, Short Projects, Special Projects, Enhancement Projects, Congestion Mitigation/Air Quality (CMAQ) Projects, State-funded Projects, Federal-aid Projects, etc.

The Project Activity Flow Charts (Figure 3-1a and 3-1b) provide an overview of required project development activities and information, from the start of defining a purpose and need for a project through advertisement and award of the contract for construction. Figure 3-1a shows the various project activities and information for a "worst case" simple project. Figure 3-1b shows the various project activities and information for a "typical" complex project. Some activities and information are not necessary for some projects, while additional activities and information may be necessary for other projects.

The Project Development Checklist (Figure 3-2) can also be a useful tool to prevent overlooking a project activity and evaluating the current status of a project. Not all of the items are necessary for every project.

For all projects submitted to Roadway Design for review, three (3) weeks must be allowed from arrival date to the date of the review. Review dates shall be coordinated with the area engineers.

310.01 English Unit Conversion. Division of Highways Memorandum 17 states: "All documents and correspondence will exclusively show English units of measurement by FY-2005. Automated systems and standards will be standardized by July 1, 2003. English PS&E packages will be accepted beginning with FY-2004 and shall be required with the federal fiscal program on October 1, 2004".

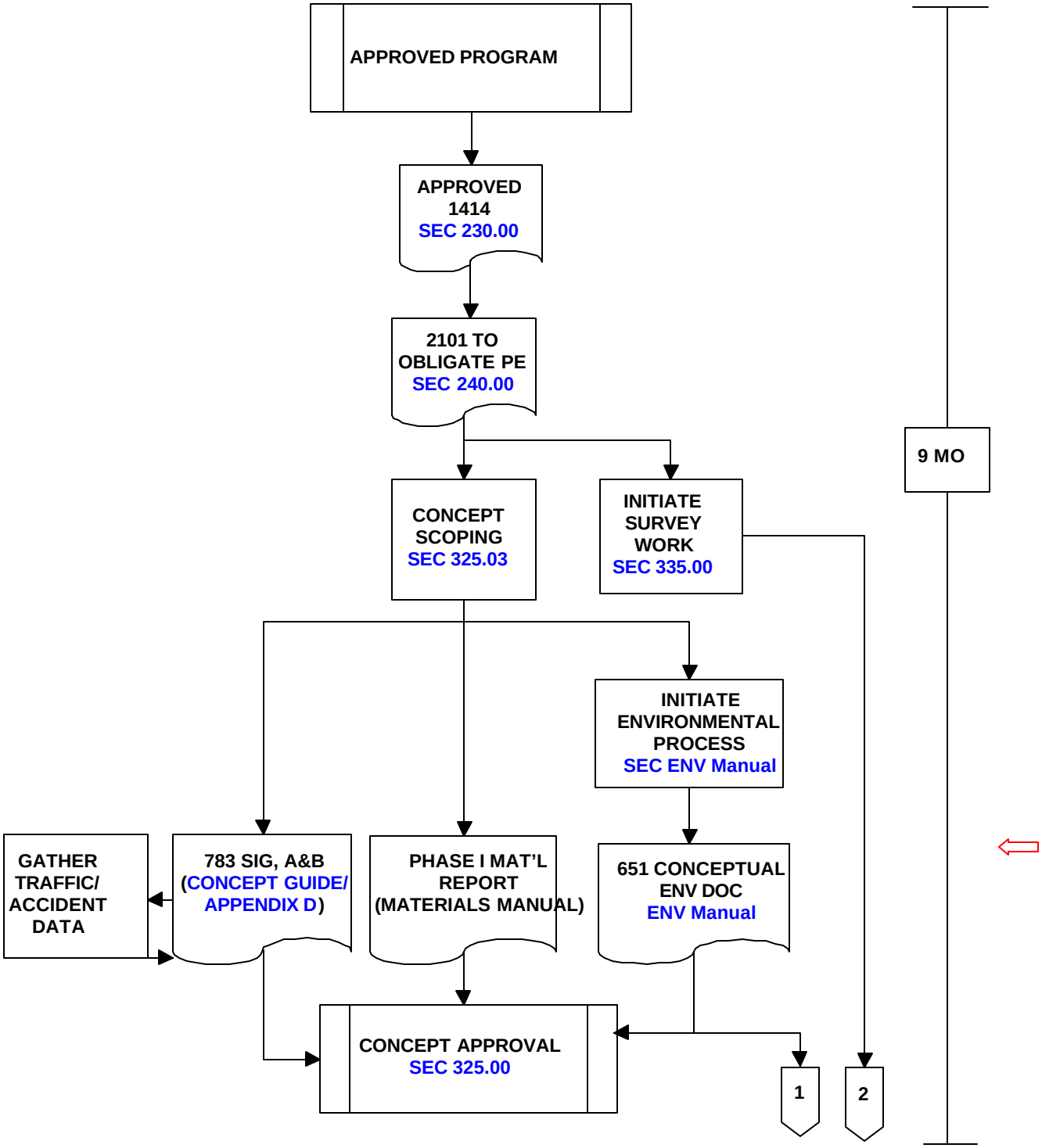
Therefore, projects will be designed in both Metric and English units depending on the fiscal year in which they reside in the program. All project correspondence should be in the units in which the project will be constructed. While the manuals, standards and systems are being converted to English units, use a soft conversion for the correspondence submittals where dual units or English units are not currently shown.

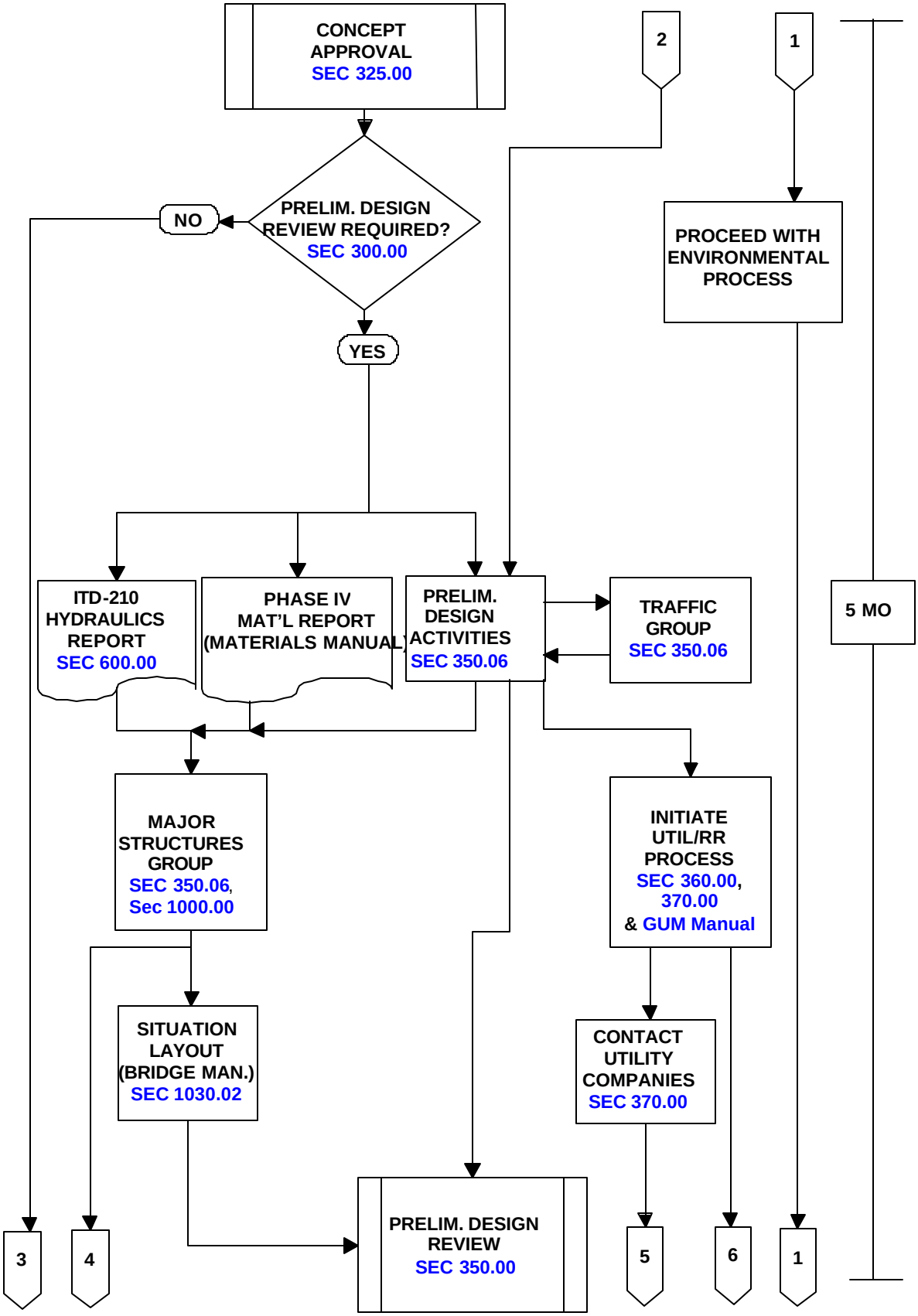
310.02 Constructability. Constructability reviews are required on all projects. A constructability review is a systematic process to ensure that a project possesses clear and feasible construction techniques. The Constructability Review Process starts at the inception of the project and continues throughout project development. Several constructability reviews are incorporated into the project planning and development. The combination of the reviews makes up the Constructability Review Process.

The purpose of constructability reviews during project development is to ensure that projects are biddable, buildable, cost-effective and maintainable. Constructibility reviews involve the optimum use of construction knowledge and experience in the planning and development of a project.

PROJECT ACTIVITY FLOWCHART

"WORST CASE" SIMPLE TYPE PROJECT
Time Line is for non-resource restricted personnel estimated at 60% efficiency




CONCEPT APPROVAL
SEC 325.00
2
1
PRELIM. DESIGN REVIEW REQUIRED?
SEC 300.00
NO
YES
PROCEED WITH ENVIRONMENTAL PROCESS
ITD-210 HYDRAULICS REPORT
SEC 600.00
PHASE IV MAT'L REPORT (MATERIALS MANUAL)
PRELIM. DESIGN ACTIVITIES
SEC 350.06
TRAFFIC GROUP
SEC 350.06
5 MO
MAJOR STRUCTURES GROUP
SEC 350.06, Sec 1000.00
INITIATE UTIL/RR PROCESS
SEC 360.00, 370.00
& GUM Manual
SITUATION LAYOUT (BRIDGE MAN.)
SEC 1030.02
CONTACT UTILITY COMPANIES
SEC 370.00
PRELIM. DESIGN REVIEW
SEC 350.00
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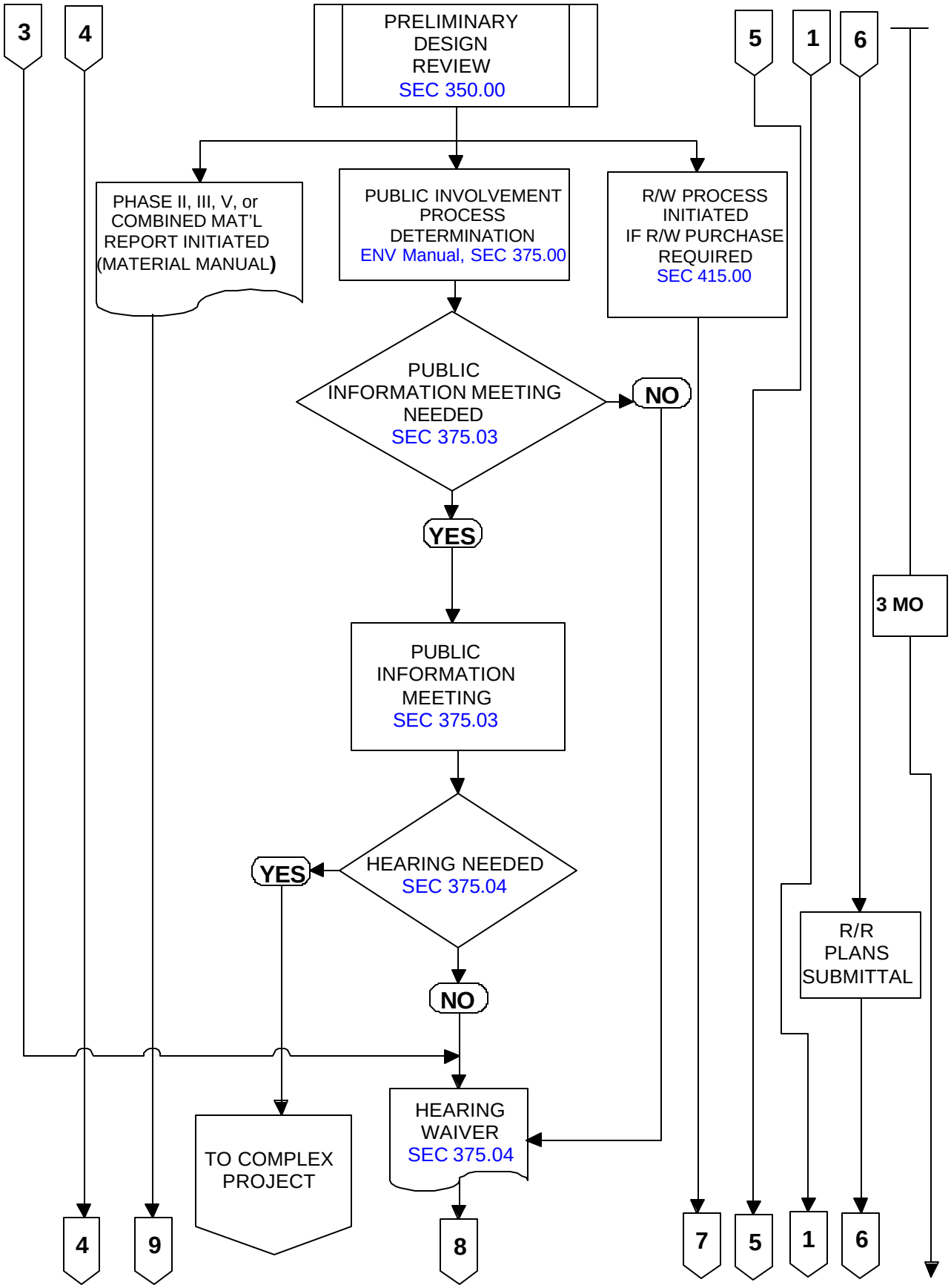
3
4
PRELIMINARY DESIGN REVIEW
SEC 350.00
5
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6
PHASE II, III, V, or COMBINED MAT'L REPORT INITIATED (MATERIAL MANUAL)
PUBLIC INVOLVEMENT PROCESS DETERMINATION
ENV Manual, SEC 375.00
R/W PROCESS INITIATED IF R/W PURCHASE REQUIRED
SEC 415.00
PUBLIC INFORMATION MEETING NEEDED
SEC 375.03
NO
YES
3 MO
PUBLIC INFORMATION MEETING
SEC 375.03
HEARING NEEDED
SEC 375.04
YES
NO
R/R PLANS SUBMITTAL
HEARING WAIVER
SEC 375.04
TO COMPLEX PROJECT
4
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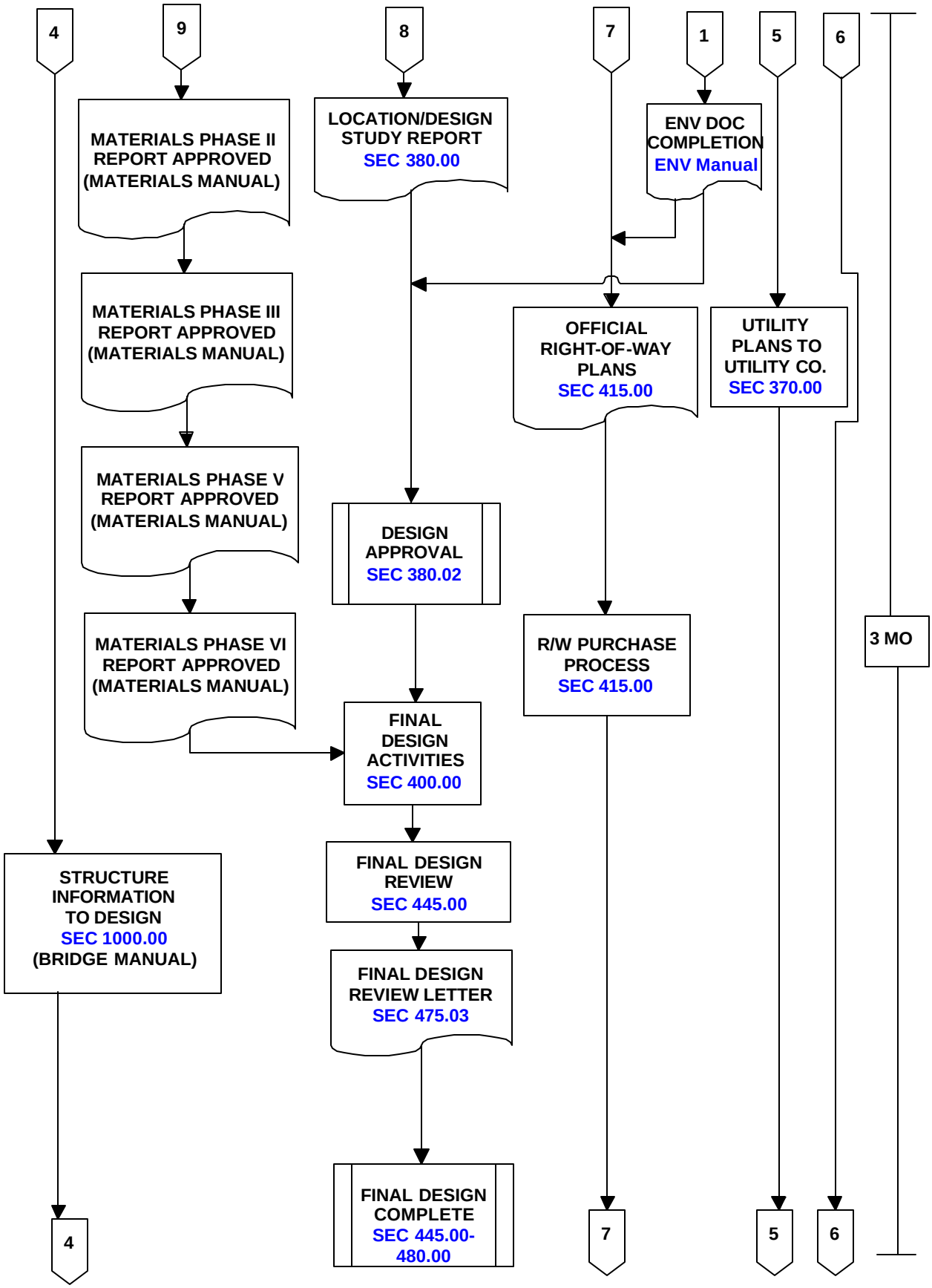
4
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6
MATERIALS PHASE II REPORT APPROVED (MATERIALS MANUAL)
LOCATION/DESIGN STUDY REPORT SEC 380.00
ENV DOC COMPLETION ENV Manual
MATERIALS PHASE III REPORT APPROVED (MATERIALS MANUAL)
OFFICIAL RIGHT-OF-WAY PLANS SEC 415.00
UTILITY PLANS TO UTILITY CO. SEC 370.00
MATERIALS PHASE V REPORT APPROVED (MATERIALS MANUAL)
DESIGN APPROVAL SEC 380.02
MATERIALS PHASE VI REPORT APPROVED (MATERIALS MANUAL)
R/W PURCHASE PROCESS SEC 415.00
3 MO
FINAL DESIGN ACTIVITIES SEC 400.00
STRUCTURE INFORMATION TO DESIGN SEC 1000.00 (BRIDGE MANUAL)
FINAL DESIGN REVIEW SEC 445.00
FINAL DESIGN REVIEW LETTER SEC 475.03
FINAL DESIGN COMPLETE SEC 445.00-480.00
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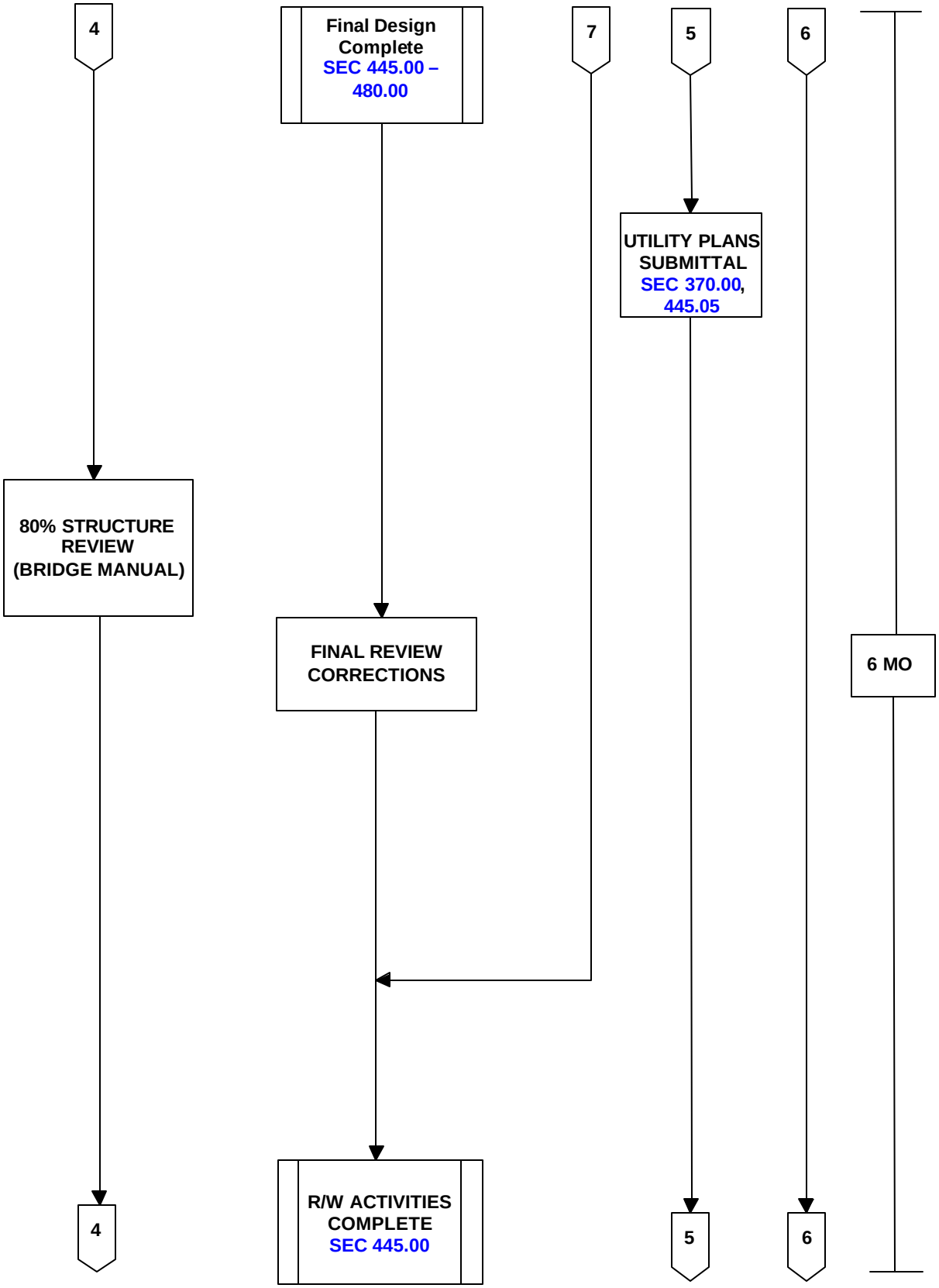
4
Final Design Complete
SEC 445.00 – 480.00
7
5
6
UTILITY PLANS SUBMITTAL
SEC 370.00, 445.05
80% STRUCTURE REVIEW (BRIDGE MANUAL)
FINAL REVIEW CORRECTIONS
6 MO
R/W ACTIVITIES COMPLETE
SEC 445.00
4
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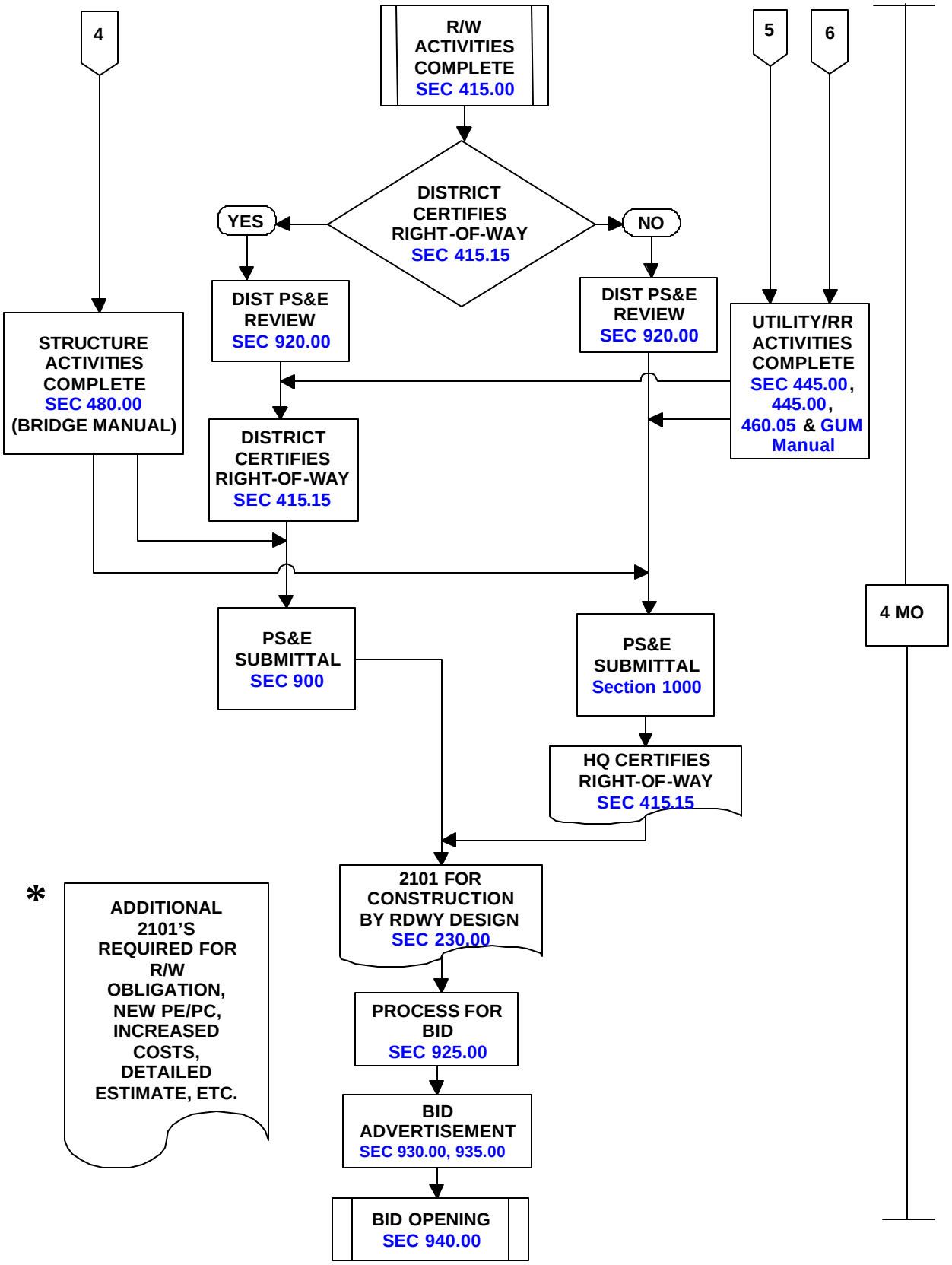
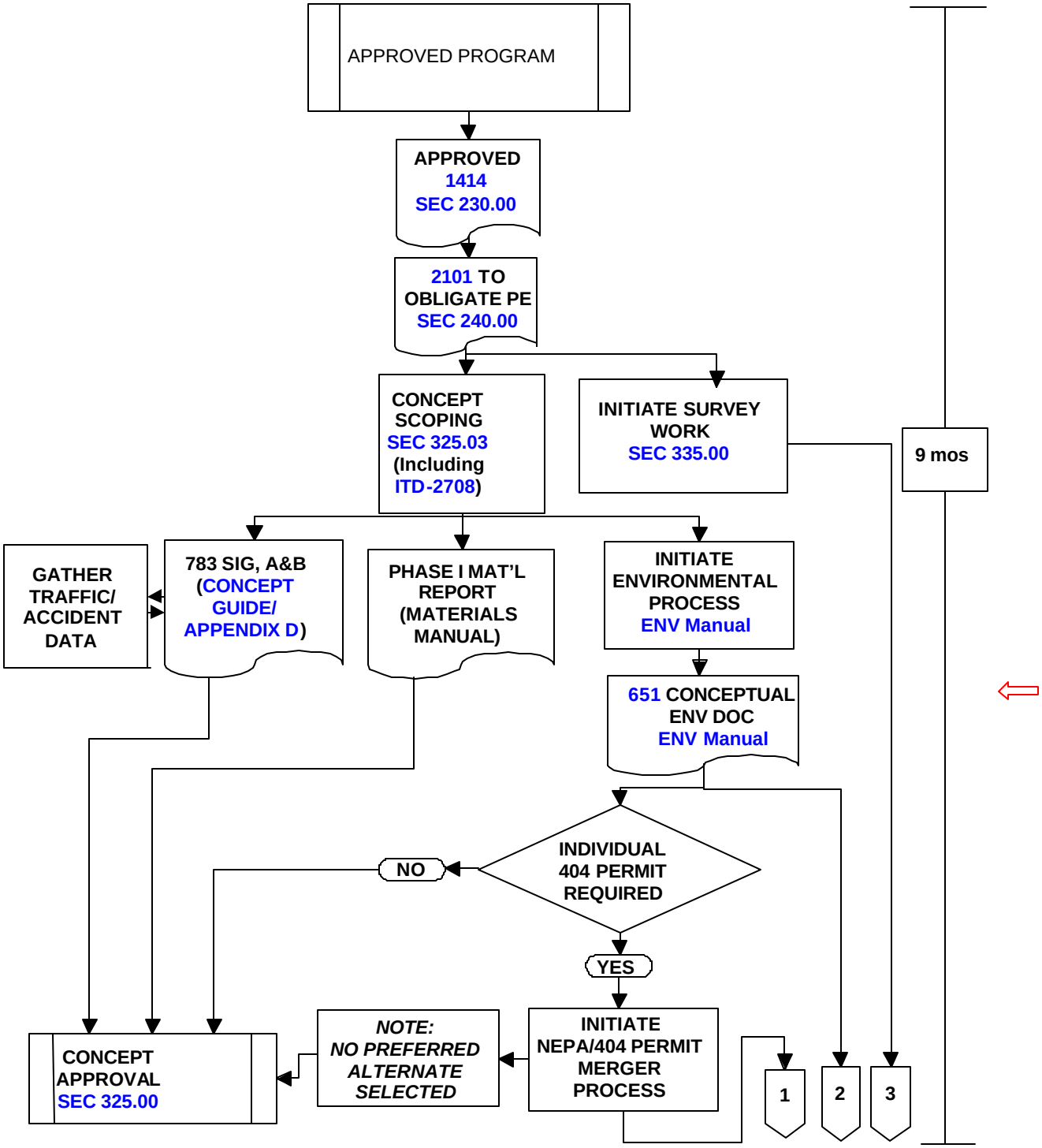
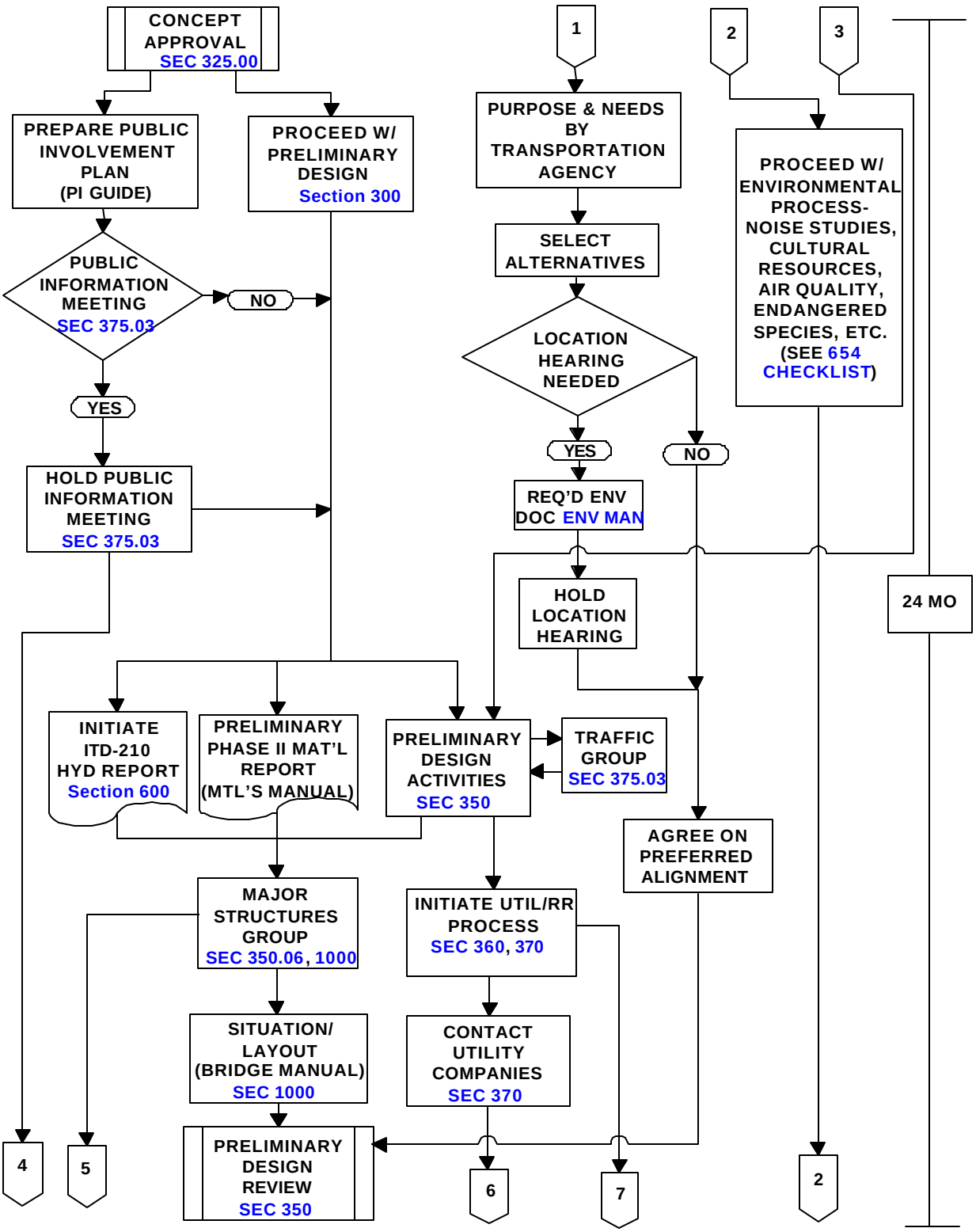

4
R/W ACTIVITIES COMPLETE SEC 415.00
5
6
DISTRICT CERTIFIES RIGHT-OF-WAY SEC 415.15
YES
NO
DIST PS&E REVIEW SEC 920.00
DIST PS&E REVIEW SEC 920.00
STRUCTURE ACTIVITIES COMPLETE SEC 480.00 (BRIDGE MANUAL)
UTILITY/RR ACTIVITIES COMPLETE SEC 445.00, 445.00, 460.05 & GUM Manual
DISTRICT CERTIFIES RIGHT-OF-WAY SEC 415.15
4 MO
PS&E SUBMITTAL SEC 900
PS&E SUBMITTAL Section 1000
HQ CERTIFIES RIGHT-OF-WAY SEC 415.15
2101 FOR CONSTRUCTION BY RDWY DESIGN SEC 230.00
*
ADDITIONAL 2101'S REQUIRED FOR R/W OBLIGATION, NEW PE/PC, INCREASED COSTS, DETAILED ESTIMATE, ETC.
PROCESS FOR BID SEC 925.00
BID ADVERTISEMENT SEC 930.00, 935.00
BID OPENING SEC 940.00

PROJECT ACTIVITY FLOWCHART

"TYPICAL" COMPLEX PROJECT
Time Line is for 5 mile reconst/realign
30 parcels R/W
EA/FONSI w/individual 404 permit
non-resource restricted
personnel estimated at 60% efficiency




CONCEPT APPROVAL SEC 325.00
PREPARE PUBLIC INVOLVEMENT PLAN (PI GUIDE)
PROCEED W/ PRELIMINARY DESIGN Section 300
PUBLIC INFORMATION MEETING SEC 375.03
NO
YES
HOLD PUBLIC INFORMATION MEETING SEC 375.03
1
PURPOSE & NEEDS BY TRANSPORTATION AGENCY
SELECT ALTERNATIVES
LOCATION HEARING NEEDED
YES
NO
REQ'D ENV DOC ENV MAN
HOLD LOCATION HEARING
2
3
PROCEED W/ ENVIRONMENTAL PROCESS- NOISE STUDIES, CULTURAL RESOURCES, AIR QUALITY, ENDANGERED SPECIES, ETC. (SEE 654 CHECKLIST)
24 MO
INITIATE ITD-210 HYD REPORT Section 600
PRELIMINARY PHASE II MAT'L REPORT (MTL'S MANUAL)
PRELIMINARY DESIGN ACTIVITIES SEC 350
TRAFFIC GROUP SEC 375.03
AGREE ON PREFERRED ALIGNMENT
MAJOR STRUCTURES GROUP SEC 350.06, 1000
INITIATE UTIL/RR PROCESS SEC 360, 370
SITUATION/ LAYOUT (BRIDGE MANUAL) SEC 1000
CONTACT UTILITY COMPANIES SEC 370
PRELIMINARY DESIGN REVIEW SEC 350
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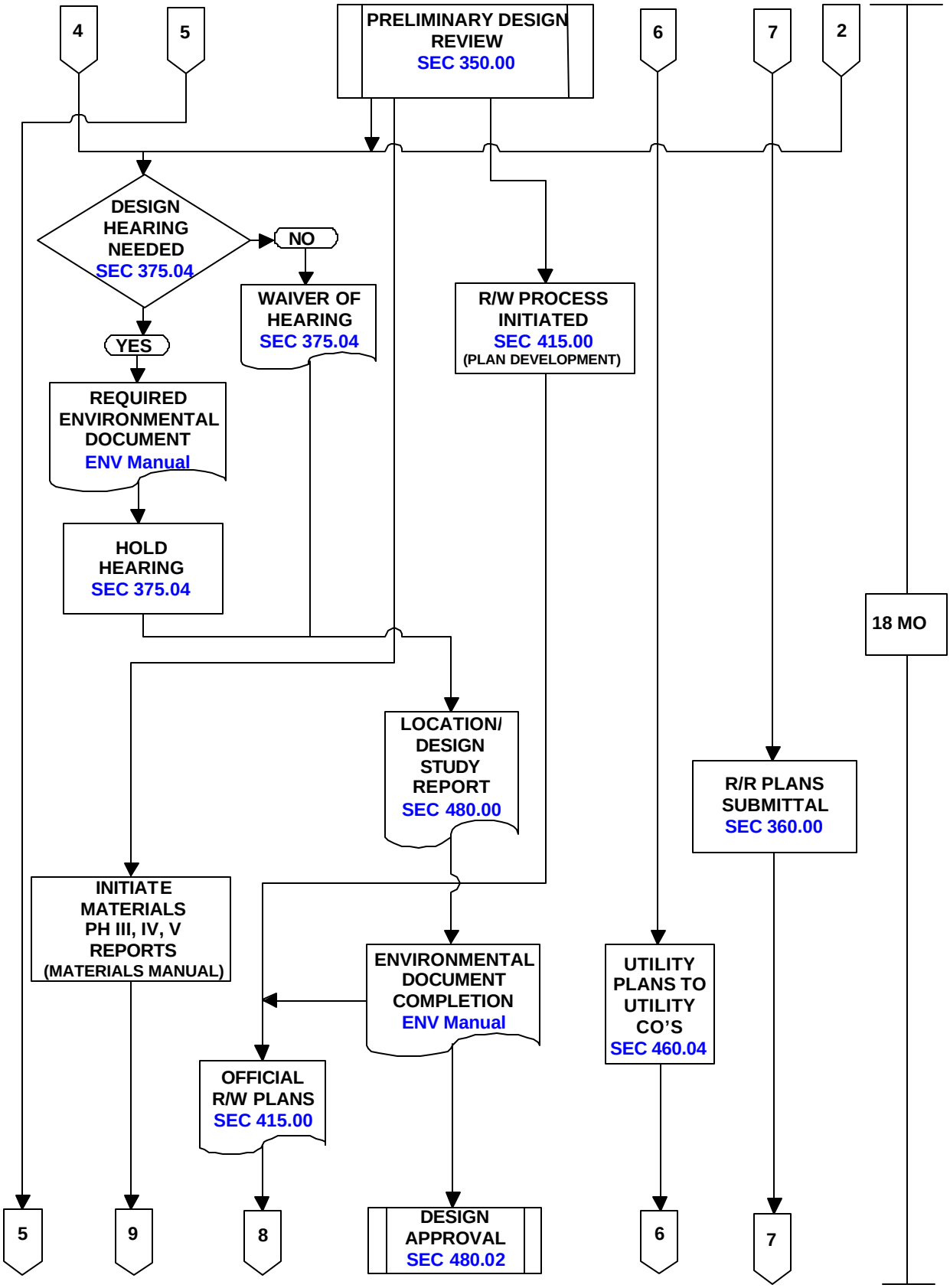
4
5
PRELIMINARY DESIGN REVIEW
SEC 350.00
6
7
2
DESIGN HEARING NEEDED
SEC 375.04
NO
WAIVER OF HEARING
SEC 375.04
R/W PROCESS INITIATED
SEC 415.00
(PLAN DEVELOPMENT)
YES
REQUIRED ENVIRONMENTAL DOCUMENT
ENV Manual
HOLD HEARING
SEC 375.04
18 MO
LOCATION/ DESIGN STUDY REPORT
SEC 480.00
R/R PLANS SUBMITTAL
SEC 360.00
INITIATE MATERIALS PH III, IV, V REPORTS
(MATERIALS MANUAL)
ENVIRONMENTAL DOCUMENT COMPLETION
ENV Manual
UTILITY PLANS TO UTILITY CO'S
SEC 460.04
OFFICIAL R/W PLANS
SEC 415.00
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DESIGN APPROVAL
SEC 480.02
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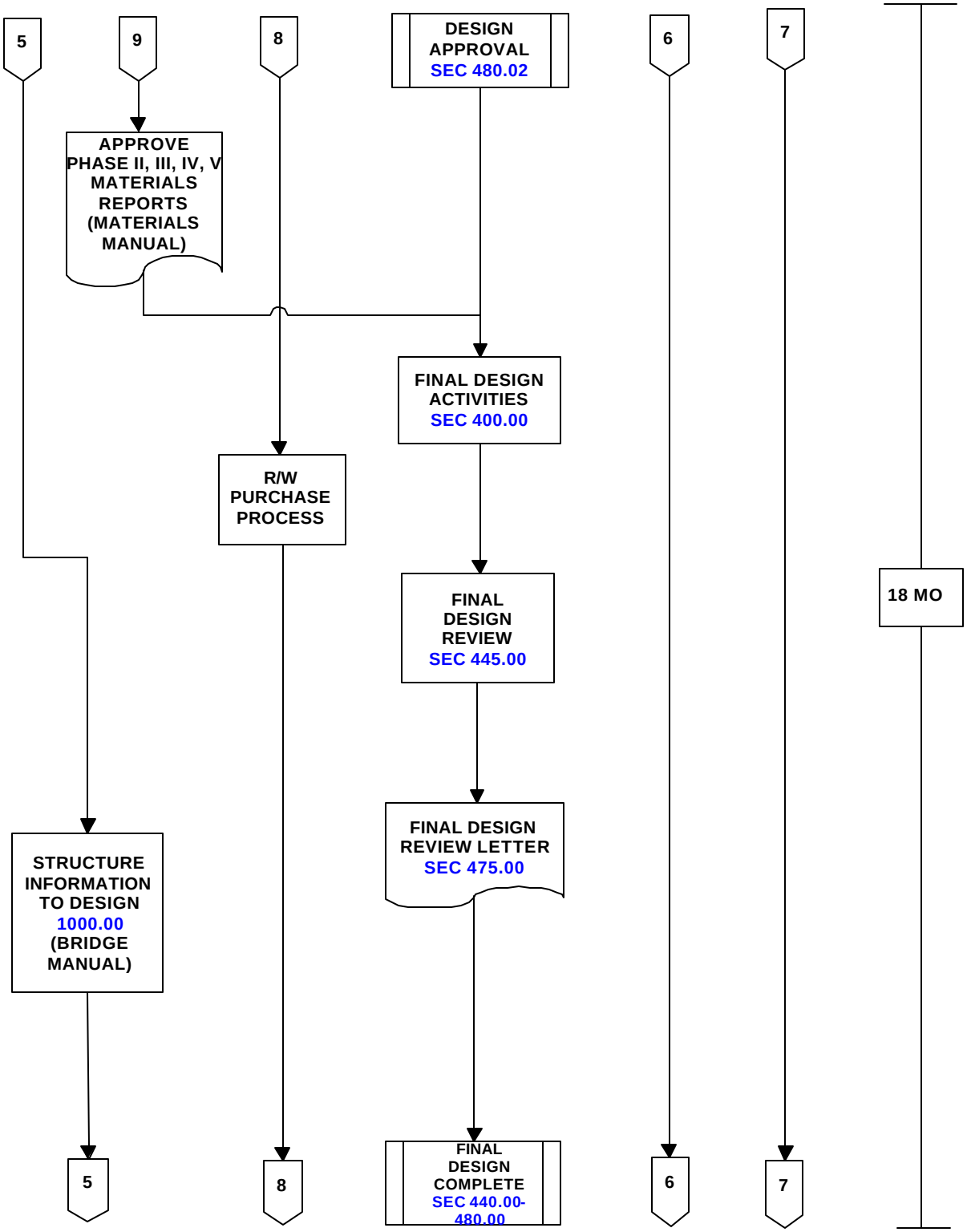
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DESIGN APPROVAL SEC 480.02
6
7
APPROVE PHASE II, III, IV, V MATERIALS REPORTS (MATERIALS MANUAL)
FINAL DESIGN ACTIVITIES SEC 400.00
R/W PURCHASE PROCESS
FINAL DESIGN REVIEW SEC 445.00
18 MO
FINAL DESIGN REVIEW LETTER SEC 475.00
STRUCTURE INFORMATION TO DESIGN 1000.00 (BRIDGE MANUAL)
5
8
FINAL DESIGN COMPLETE SEC 440.00-480.00
6
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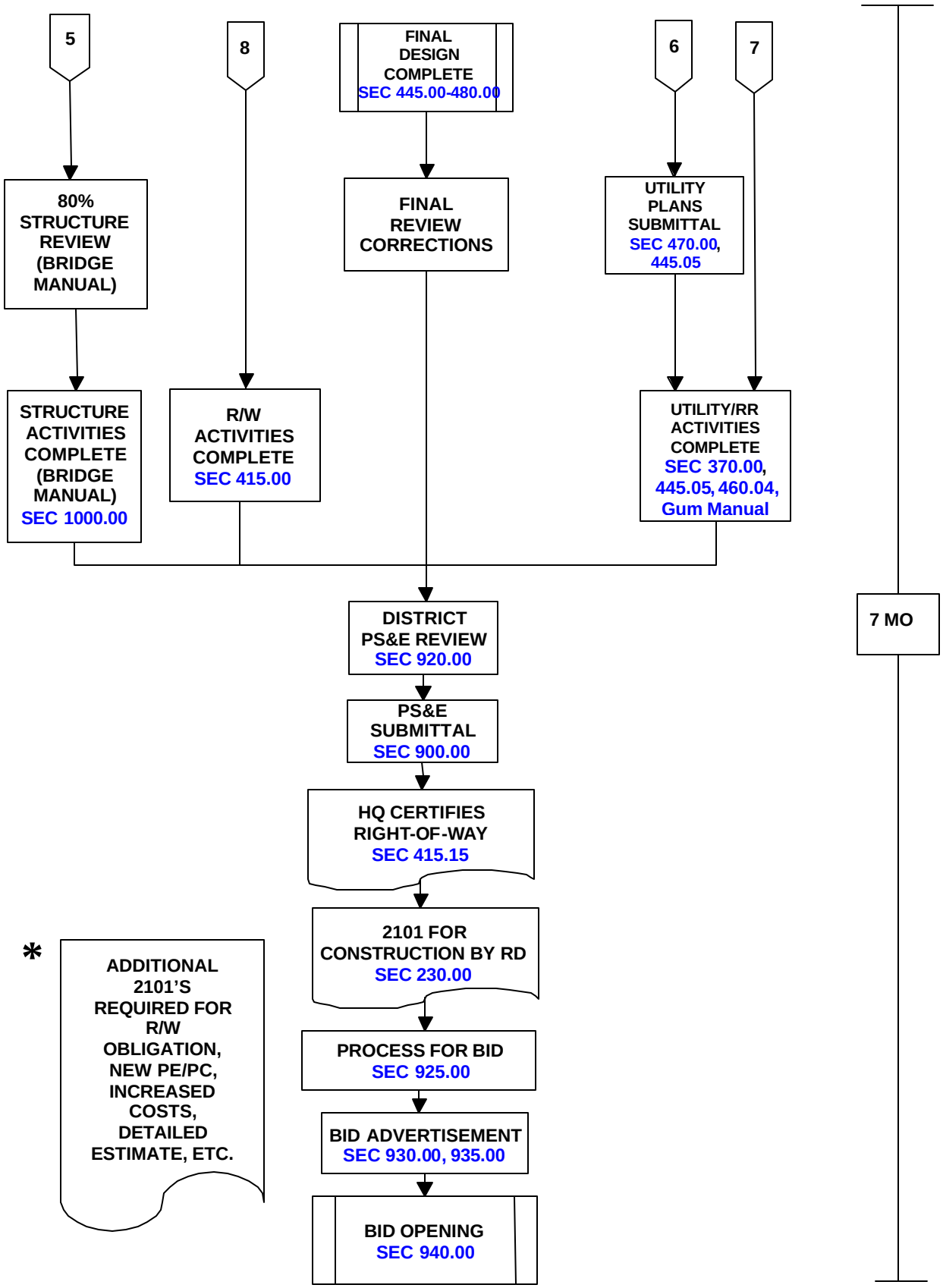
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8
FINAL DESIGN COMPLETE SEC 445.00-480.00
6
7
80% STRUCTURE REVIEW (BRIDGE MANUAL)
FINAL REVIEW CORRECTIONS
UTILITY PLANS SUBMITTAL SEC 470.00, 445.05
STRUCTURE ACTIVITIES COMPLETE (BRIDGE MANUAL) SEC 1000.00
R/W ACTIVITIES COMPLETE SEC 415.00
UTILITY/RR ACTIVITIES COMPLETE SEC 370.00, 445.05, 460.04, Gum Manual
7 MO
DISTRICT PS&E REVIEW SEC 920.00
PS&E SUBMITTAL SEC 900.00
HQ CERTIFIES RIGHT-OF-WAY SEC 415.15
2101 FOR CONSTRUCTION BY RD SEC 230.00
*
ADDITIONAL 2101'S REQUIRED FOR R/W OBLIGATION, NEW PE/PC, INCREASED COSTS, DETAILED ESTIMATE, ETC.
PROCESS FOR BID SEC 925.00
BID ADVERTISEMENT SEC 930.00, 935.00
BID OPENING SEC 940.00

PROJECT DEVELOPMENT CHECKLIST

PROJECT NAME:

PROJECT NUMBER: KEY NUMBER:

	Submittal Date	Approval Completion Date
Project Planning and Programming		
Project purpose and need established and documented. (A-11-02, Highway Development Program).		
Submit ITD-2435, Local Federal-Aid Project Request by Sponsor		
Complete ITD-1414, Project Program Entry or Revision, for program entry. Update if cost increases, see Administrative Policy, A-11-02.		
Initiate ITD-2101, Project Authorization and Agreement. (District requests funding for preliminary engineering).		
Preliminary Design		
Proceed with Concept Scoping Process (DE, ADE, MTCE, Environmental Planner, MTLS, RW, Designer). Complete ITD-2708, Preliminary Project Concept.		
Request for Survey Work, ITD-2865. (Assure that all property monuments are located, marked, and referenced)		
Complete Concept Approval. ITD-783*, Concept Approval; ITD-783A*, Design Standards; and ITD-783B, Alternate Solutions and Costs and Proposed Design Exceptions. (Requires Material Phase I Report and Pavement Type Determination. Concept team assists in preparation.) ITD-651, Conceptual Environmental Evaluation		
Complete Materials Phase I Report, Geological Reconnaissance Report with Pavement Life Cycle and Cost Analysis, and Corridor Defined.		
Initiate ITD-1151, Traffic Data Request Capacity Analysis		
Complete ITD-654, Preliminary Environmental Evaluation; ITD-654A, Hazardous Waste/Material Initial Site Assessment Checklist; and ITD-2784, NPDES Storm Water Permit Project Checklist for Construction, after receiving approval on ITD-1414. (Hazardous Materials?)		
Initiate Nepa/404 Permit Merger Process, if 404 Permit Required		
Initiate ITD-1500, Archaeological Reconnaissance, by Environmental Planner (requires 2-3 months lead time). Bridge Inspection Reports and Deck Studies.		
Prepare Public Involvement Plan		

PROJECT DEVELOPMENT CHECKLIST

PROJECT NAME:

	Submittal Date	Approval Completion Date
Preliminary Design		
Proceed with Preliminary Design Activities		
Complete ITD-210, Hydraulic Structure Study.		
Initiate Preliminary Materials Phase II Report		
Initiate Materials Phase IV Report — Foundation Investigation Report (requires situation layouts and hydraulics report).		
Initiate Traffic Design/Traffic Control Plan — signs, signals, illumination, and pavement markings.		
Prepare ITD-606, Access Control Determination.		
Complete Draft Environmental Report/Categorical Exclusion, Draft Environmental Impact Statement(EIS) or Environmental Assessment(EA)		
Initiate Utility Process		
Make Initial Owner contacts by Designer and Right-of-Way section (see R/W Procedures Manual)		
Complete ITD-783C, Field Inventory.		
Complete ITD-602, Crossing Evaluation (railroad) and Airport Clearance		
Complete Preliminary Design Review and Submit Approval Letter		
Initiate R/W process (Plan Development)		
Initiate Materials Phase III and V Reports		
Complete Waivers of Public Hearing; **OR** prepare hearing plans and request a Public Hearing.		
Hold Location/Design Hearing.		
Complete Design Study Report, including ITD-1414 if costs increase on F.A. projects, or for any change on ST projects		
Update ITD-1150, Cost Estimate Summary Sheet.		
Update ITD-2101, Project Authorization and Agreement.		
Complete Final Environmental Document — CE, EIS or FONSI		
Submit Utility Plans to Utility Companies		
Make Final Owner Contacts by Designer and Right of Way Agent		
Submit Official R/W Plans		
Obtain Design Approval		

PROJECT DEVELOPMENT CHECKLIST

PROJECT NAME:

	Submittal Date	Approval Completion Date
Final Design		
Proceed with Final Design Activities		
Initiate Permits (See Chapter 3.)		
Obtain Approved Phase II, III, IV, V Materials Reports		
Proceed with Right of Way Purchase Process		
Receive Final Traffic Plans		
Initiate Agreements with LPAs (Cooperative, Road Closure and Maintenance) Utilities, Railroads, Irrigation companies, etc.		
Obtain Material Source Plats		
Complete NPDES Storm Water Plan		
Complete Sediment and Erosion Control Plan		
Conduct Final Design Review and Plan in Hand Field Review		
Submit official Utility plans to Roadway Design — Utility agreements as needed will be obtained by the Utility Engineer.		
Compare right-of-way agreements with project plans for compliance		
Prepare Environmental Mitigation Plan Report		
Complete Final Design Letter and make plan corrections		
Complete District PS&E Review in District		
Finalize agreements with LPA, utilities, railroads, irrigation companies		
Obtain right-of-way Certificate		
Update ITD-1414, Program Entry or Revision if cost increases for F.A. projects or for any changes on ST projects		
Update ITD-1150, Cost Estimate Summary Sheet		
Complete PS&E Package and send to Roadway Design		
Send Resident Files to Resident Engineer		
Prepare and Complete Bidding Process by Roadway Design		

SECTION 315.00 – PROJECT DEFINITIONS

315.01 Simple Projects.

Require only approval at the District.

Note: Once concepts are approved at the District, a copy shall be submitted to Roadway Design for their records. Also, a copy shall be distributed to the District Environmental Planner.

Rehabilitation/Restoration

Overlay

CRABS

Turn Bays

Traffic Signals

Minor Intersection Improvements

Minor Widening

Minor Bridge Replacement (Must be coordinated with Bridge Section)

These Projects meet all the following criteria.

Minor or insignificant R/W involvement

No public controversy anticipated

Environmental clearance expected as Categorical Exclusion

Little or no involvement from regulatory agencies

Exempt Status on Stewardship Plan

No Design Exception Required

Not an Enhancement Project

Note: Cost is not a deciding factor

Examples: Minor resurfacing (Circle M), sealcoats, pavement maintenance, intersection improvement, safety (HES, RR, Etc.), minor bridge replacement & rehabilitation, minor widening.

315.02 Complex Projects.

Require approval of Headquarters and FHWA if applicable.

Note: Once concepts are approved, a copy shall be distributed to the District Environmental Planner.

New Routes

New Alignments

Reconstruction

Enhancement

These Projects meet one or more of the following criteria.

Environmental clearance expected as EA or EIS

Have or expect public involvement

Require Hearing

Require System Action

Major R/W involvement

Design Exception Required

Examples: New interchange, new alignment, couplet, major urban intersection, major new or replacement bridge.

Revisiting of the concept and any changes made to the concept could result in a change of "simple" to "complex", or vice versa.

315.03 Short Projects. Short projects are projects that meet the simple project criteria (see Section 315.01 "Simple Projects"), are not on the interstate and do not require a preliminary design review. Therefore, intersection improvements, turn bays, bridge rehabilitation, etc. do not qualify. Short projects may follow the abbreviated procedures shown in Section 315.10 and Figure 3-4. The memo from the District to the Roadway Design Engineer granting design approval must include an explanation of why the project should be exempt from full design reviews.

315.04 Special Projects. Special projects as outlined in *23 CFR 771.117(c)* include landscaping, construction of bicycle and pedestrian facilities, fencing, signs, traffic signals, railroad warning devices, pavement markings, acquiring scenic easements, and improvements to existing rest areas and weigh stations. Many project procedures that are used for standard federal-aid projects are not applicable for special projects. Most Special Projects will use the abbreviated procedures shown in Section 315.10 and Figure 3-4.

For ITS Projects containing networking communications, Headquarters Information Services should be consulted.

315.05 Interstate Projects. New/Reconstruction: Work that includes removing the existing surface and replacing or adding to the base and then placing a new surface (reballasting). On structures, this would mean reconstructing all of the main components of the structure (i.e., deck, stringers, abutments, piers, etc.).

3R (Resurfacing, Restoration, and Rehabilitation): Work that retains the integrity of the existing ballast, including such work as rotomill-inlay/overlay, overlay, bridge deck rehabilitation, and modifying bridge rail.

Preventative Maintenance: Activities most closely associated with traditional maintenance, including roadway activities such as joint repair, pavement patching, shoulder repair, seal coating, hot-in-place recycle, and restoration of drainage systems and bridge activities such as crack sealing, joint repair, seismic retrofit, scour countermeasures, and painting.

Project development procedures on interstate preventative maintenance projects may follow the abbreviated procedures shown in Section 315.10 and Figure 3-4 (Abbreviated Project Development Flow Chart) and must include the following:

All work performed must meet AASHTO standards [*23 USC 109(c)*], but other previously built areas of the roadway do not need to be brought to full standards. However, in keeping with current FHWA policy regarding safety barriers, all blunt ends, unconnected bridge rails, and grossly substandard metal rail (including under-height and non-blocked out) will be upgraded to current standards on **all** federal-aid projects.

An ITD-654, Preliminary Environmental Evaluation, and a map showing the construction limits is forwarded to FHWA for an environmental determination. Most of these projects will be classified as a categorical exclusion.

All preventative maintenance projects are exempt from FHWA oversight on all design work per FHWA notification letter dated May 24, 1993.

315.06 State Projects. State-funded projects on the National Highway System (NHS) require the same standards as a federal-aid project of the same type. Therefore, all projects on the NHS will be designed to the applicable federal-aid standards, independent of funding. If standards are not met, exceptions must be documented and approved.

- All state-funded projects on the NHS, except for preventative maintenance type, will require a minimum of a concept approval and a final design review. The projects could also require an environmental clearance, hearing considerations, design approval, etc., depending on the type of project.
- For state contract maintenance (STM/STKP) projects, including those on the NHS, submittal for advertisement, in accordance with DOH Memorandum #16, is required as long as there will be no reconfiguration of the lanes when striping is done.
- State-funded projects that are not on the NHS, *HAVE NO SET STANDARDS*.
- (If guardrail is installed it will be per section 570.00 - Guardrail)

The Districts will determine the level of headquarters involvement on state-funded projects that **are not** on the NHS. Determination for headquarters involvement will be based on the types of projects, not on projected costs. The Districts will determine if concepts, preliminary reviews, and/or final reviews are required.

Signal and bridge projects must be coordinated through headquarters Traffic and Bridge sections. The Materials section will be used on all projects, but materials reports do not need approval from headquarters.

Small state projects may be treated the same as contract maintenance projects with only plans, specifications, and estimates (PS&E) submittal required. It is recommended that a district review be completed on all projects prior to PS&E submittal. Districts are encouraged to submit contract maintenance projects to the Maintenance Engineer for review prior to PS&E submittal.

If the District determines that a review of the design standards is necessary but design reviews are not going to be required, the project may follow these milestones:

- Concept approval
- PS&E submittal

Large state projects should follow these milestones:

- Concept approval
- Preliminary Design Review
- Final Design Review
- PS&E submittal

315.07 Enhancement Projects. Enhancement projects are selected through a statewide competitive application process. Information on this process and a sample of the most recent application packet are available on the Department's Planning Website http://www2.state.id.us/itd/planning in the "What's New" section. Projects applications are submitted through each district and are reviewed by the district enhancement coordinator (generally the Senior Transportation Planner or Local Project Coordinator (LPC)) prior to being entered into ITIP and then sent on to Headquarters. All projects are then reviewed and scored by the Enhancement Advisory Committee established by the Board under B-11-03. The committee recommends a prioritized list of projects to the Board. These projects with any changes made by the Board are placed in the Highway Improvement Program. After the program is approved by the Idaho Transportation Board, the following procedures are used for Enhancement projects:

Step 1. On local projects, Districts prepare a state/local agreement that includes the amount to be deposited by the sponsor to cover ITD's review of the plans.

Step 2. The District prepares and submits an ITD-2101, Project Authorization and Agreement.

Step 3. The District Planner prepares and submits an ITD-654, Preliminary Environmental Evaluation, and ITD-654-A, Hazardous Wastes/Materials Preliminary Site Assessment Checklist, to the Environmental section for determination of the appropriate environmental clearance level. The Environmental section identifies any additional information that may be necessary and give directions to the designing agency.

Step 4. An ITD-783, Concept Approval, is submitted by the designing agency. Approval of the ITD-783 may be all inclusive and constitutes Concept Approval and Preliminary Design Review, except for projects that include Signals (see Step 4a) or Bridges (see Step 4b). Due to the sensitive nature and their unique variations from the routine project development procedures, all Enhancement Project concepts require ITD Headquarters approval and are considered complex projects. When concept approval and environmental clearance are complete, design approval shall be obtained in accordance with Administrative Policy A-13-02, Public Involvement for Location and Design Determinations. The minimum submittal includes:

- A signature sheet,
- An ITD-783-A(ITD-0757), Design Standards,
- A project description,
- vicinity sketch, and
- estimate.

Step 4a. For signal projects, a set of plans must be prepared for Preliminary Design Review in accordance with Section 308.01 of the Traffic Manual. A Preliminary Design Review is required unless waived by the Traffic Engineer and should follow normal procedures.

Step 4b. For Bridge projects, a set of plans must be prepared for Preliminary Design Review in accordance with the Bridge manual. A Preliminary Design Review is required unless waived by the Bridge Engineer and should follow normal procedures.

Step 5. A complete set of plans will be prepared following the format for federal-aid plans outlined in Section 800.00 - Plans. Permit and environmental clearance requirements are the same as regular federal-aid projects.

Step 6. A formal Final Design Review is required and should follow normal procedures. Prior to final design, the project is reevaluated by the designing agency to ensure that the environmental clearance remains valid.

Step 7. PS&E submittal follows normal procedures.

315.08 Congestion Mitigation and Air Quality (CMAQ) Projects. The Idaho Transportation Department's Congestion Mitigation and Air Quality Improvement Program (CMAQ) is a statewide competitive program that provides federal transportation funds to implement cost-effective activities, plans, and projects that are mutually beneficial to transportation and air quality. CMAQ projects should demonstrate the highest potential for preventing or relieving a community's particular air quality problem. Planning activities can also be funded to develop a strategic plan which identifies additional projects and programs that will reduce a community's transportation-related air quality problems. For complete information on this program including application requirements go to:

http://www2.state.id.us/itd/planning/reports/cmaq/cmaq.html

For basic project development activities see Section 310.00. For an in-depth project development activity flowchart contact the planning section contact shown in the above web site.

315.09 Non-Bid Projects. Non-Bid Project is a project that is not advertised for bids since all work will be done by entity(ies) like railroad, utility, local agency, etc., in accordance with agreement(s) executed with the Idaho Transportation Department. The funding may be federal (FHWA, HUD, etc.) and/or State (ITD, Parks & Recreation, grant, etc.). The following procedures apply to Non-Bid Projects:

- Project programmed for a specific fiscal year with appropriate funding in accordance with the programming procedures.
- Agreement(s) executed with appropriate entity(ies). The agreement(s) will describe work to be done, who is to do work, cost of the work, and how payment is to be made. Plans and appropriate documents (estimate of cost from entity, insurances, special project requirements, etc.) will be included as attachments to the agreement(s).
- Funding obligated by ITD-2101 regardless of source of funding.
- Copies of executed agreement(s) and approved ITD-2101 are distributed by cover letter (see Figure 3-3).

Figure 3-3

Non-Bid Project Cover Letter

TRANSPORTATION DEPARTMENT

Date
Name of Person
Title of Person
Name of Company
Mailing Address of Company
City, State Zip Code

Re: Project No. ----, **Highway**, **Project Name**, ---- County
Key No. ----

Dear (**Name of Person**):

This is a Non-Bid Project that was not advertised for bids since all work will be done by **(list name of railroad, utility, local agency, etc.)** in accordance with the attached three copies of the agreements/plans executed with the Idaho Transportation Department and approved funding by the attached approved ITD-2101.

The Resident Engineer will provide notification to proceed with the work. Please coordinate all work schedules and send billings to the Resident Engineer at:

Name, Resident Engineer
Idaho Transportation Department District **Number**
Address
City, ID zip code
Telephone number

Sincerely,

Loren D. Thomas, P.E.
Roadway Design Engineer
LDT/
cc: **(list name of railroad, utility, local agency, etc.)** w/3 attach.

Attachments: 3 agreements/plans, ITD-2101
bcc: District- w/4 attach.
RI- w/attach.
RE- (**Name of RE**) w/5 attach.
FS w/agreement without attachments
TRAF(Wilson) w/attach. **If railroad agreement**
Construction w/attach.
RD
RD (Mike) w/attach.
RD(Utility)

315.10 Abbreviated Project Development Procedures. Abbreviated procedures have been approved for interstate preventative maintenance projects, short projects, and special projects (see Figure 3-4, Abbreviated Project Development Flow Chart). The following is a brief overview of these abbreviated procedures:

Step 1. The District submits an ITD-1414, Project Program Entry or Revision, an ITD-1414-A, Basic Data for New Projects, and a vicinity map to Highway Programming to add the project to the Highway Development Program.

Step 2. After the project is approved for the Highway Development Program and when the District is ready to begin development of the project, the District submits an ITD-2101, Project Authorization and Agreement. The request is then initialed and the work authorization number is assigned before beginning the preliminary engineering. All of the preliminary engineering money programmed in the current year can be requested, noting that the request is for "Preliminary Engineering for Design of the Project."

Step 3. The District submits an ITD-654, Preliminary Environmental Evaluation, and a map to the Environmental section for an environmental determination and clearance. Note in the transmittal that this project is a preventative maintenance, short, or special project.

Step 4. The District prepares an ITD-783, Concept Report, including the Phase I Materials Report and the life cycle cost analysis. Approval of this report constitutes Concept Approval and Preliminary Design Review.

Step 5. When the concept is approved and the environmental document is cleared and it is determined that no hearing is required, the District shall send a memo to the Roadway Design Engineer (see Figure 3-5, Sample Waiver and Design Approval Memo) indicating that the environmental clearance is complete, hearing is waived, no preliminary design review will be held, and granting design approval.

Step 6. A formal Final Design Review will be required and should follow normal procedures. Prior to final design, the project will be reevaluated by the District to ensure that the environmental clearance remains valid.

Step 7. Submittal to Roadway Design will follow normal procedures.

Figure 3-4

ABBREVIATED PROJECT DEVELOPMENT PROCEDURE FLOW CHART
(Interstate Preventative Maintenance, Short, and Special Projects)

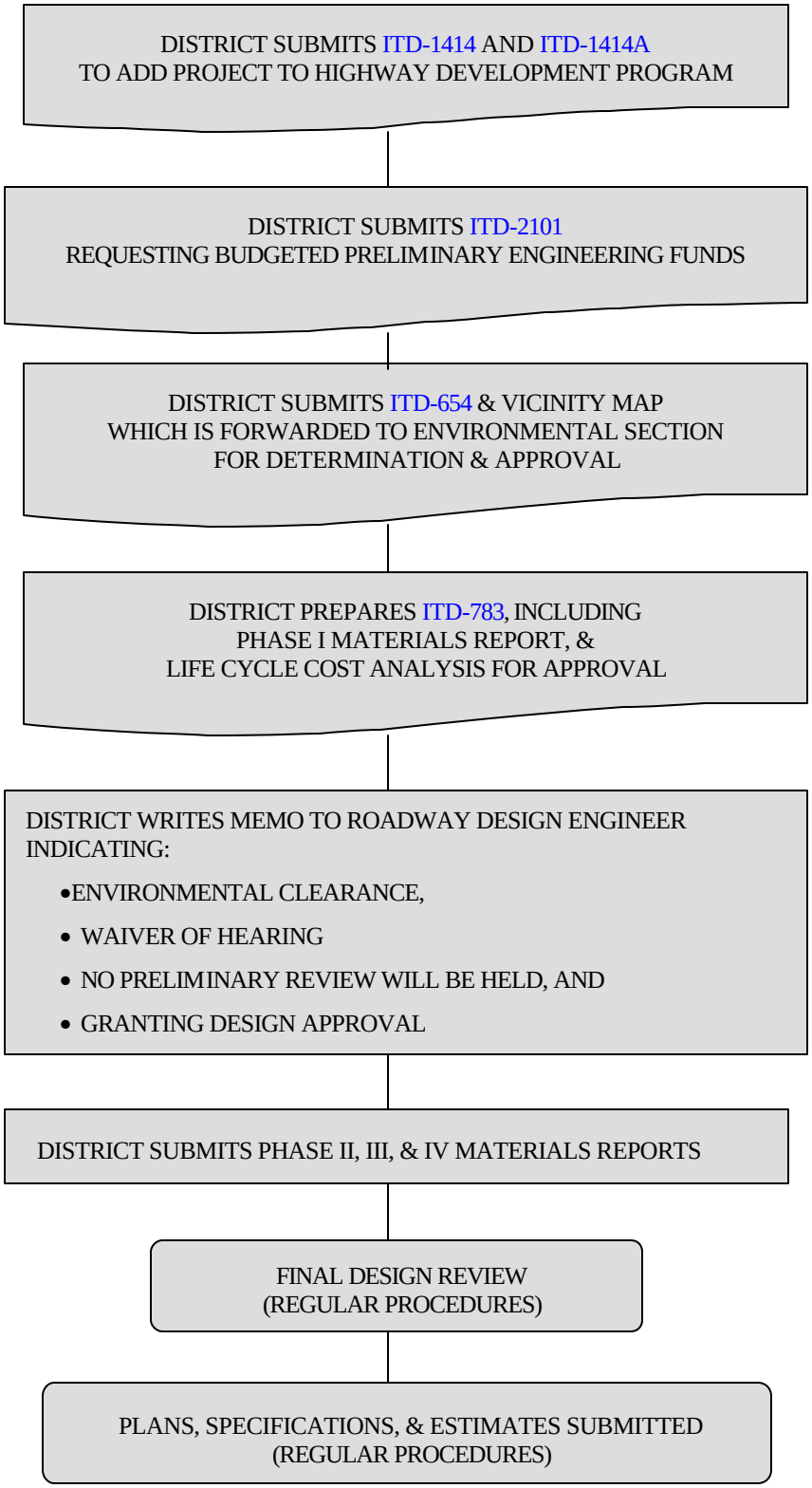


Figure 3-5

SAMPLE WAIVER AND DESIGN APPROVAL MEMO

ITD-500 9-94

IDAHO TRANSPORTATION DEPARTMENT

Department Memorandum

DATE: JULY 5, 1997

Project No.(s): IM-90-1(186)33

TO: STEVEN C. HUTCHINSON, PE
ROADWAY DESIGN ENGINEER

Key No.(s): 5051

FROM: SCOTT STOKES, PE
DISTRICT 1 ENGINEER

Project Id, Cnty, Etc.:
ROSE LAKE IC-ELIZABETH PARKS GS, KOOTENAI COUNTY, WA
#1931480

RE: DESIGN APPROVAL AND WAIVER OF PUBLIC HEARING

Design approval and a waiver of hearing is granted for this project.

The concept was approved September 12, 1996. The categorical exclusion was approved February 27, 1997.

This project was approved as a special project on September 12, 1996. Therefore, no preliminary design review was held. The District will proceed with the project development.

If significant changes occur on this project, this waiver and design approval will be re-evaluated.

LSS:kka:dg
Attachment
cc: CE
DE-1
ADE-1
PDE w/attach

SECTION 320.00 – DESIGN STANDARDS

Design standards for a project dictate the requirements for both the horizontal and vertical alignments. Design standards include design speed, roadway width, horizontal and vertical curvature, grade, clear zone width, foreslope, super-elevation, design vehicle, minimum vertical clearance, level of service, etc. Selection of the appropriate design standards for a project is initially dependent upon knowledge of the functional classification, access control, terrain, traffic volume, level of service, speed design, and super-elevation for the project route.

As early as possible, the designer needs to know what standards will apply to the project. The completion of an ITD-783-A(ITD-0757), Design Standards, will aid the designer in determining the design standards.

The general policy of the department is that all design criteria will be met and where both minimum and desirable values are provided, every reasonable effort should be made to achieve the desirable standards. The policies and standards are to serve as a basic guide in design work, however, they are not to be considered as inflexible, and are not intended as a substitute for engineering knowledge, experience, or judgment.

FHWA has adopted the Green Book (*A Policy on Geometric Design of Highways and Streets*) for new/reconstruction projects on the National Highway System (NHS). For Interstate System highways, the 1991 Interstate Policy (*A Policy on Design Standards - Interstate System*) also applies. In the absence of criteria in the Interstate Policy, the values in the Green Book should be used for design of Interstate System projects. For 3R projects the design standards are as indicated in Appendix A.05.

The criteria related to design speed, lane and shoulder widths, bridge widths, structural capacity, horizontal and vertical alignments, grades, stopping sight distance, cross slopes, super-elevation, and horizontal (not clear zone) and vertical clearances contained in the functional Chapters VII and VIII of the Green Book, the Interstate Policy for the Interstate System, and Appendix C.1, as appropriate, are the **controlling criteria** and require formal design exceptions when not met. The roadway widths indicated in the corridor plans referenced in Administrative Policy A-14-02, shall be met unless an exception is approved by the Design Exception Committee.

320.01 Design Policies, Standards, Guides, and References. All of the following policies, standards, guides, and references are to be used in conjunction with this manual. In those instances where this manual reflects the policies of the Idaho Transportation Department and does not equal or exceed FHWA standards, documentation will be required.

320.01.01 Standards and Policies for the Design of Roadways and Appurtenances. Projects shall be designed and constructed according to existing state and AASHTO standards (see following list). Deviations from these designated standards and policies require submittal to the Design Exception Committee for approval. FHWA approval may also be required. (See Section 330.00 for further details.)

The Green Book — *A Policy on Geometric Design of Highways and Streets* (AASHTO Current Issue)

The Interstate Policy — *A Policy on Design Standards - Interstate System* (AASHTO)

A Policy on Design of Urban Highway and Arterial Streets (AASHTO)

Interstate/NHS (New/Reconstruction), (AASHTO Current Issue)

3R, Resurfacing, Restoration, Rehabilitation NHS, see Appendix A.05

1R, Pavement Rehabilitation, see Appendix A.20

State, Federal Aid Non-NHS, including all LPA projects, see Appendix A.15

ST, Non-NHS State Funded, see Appendix A.15

Erosion and Sediment Control on Highway Construction Projects (FHWA, *23 CFR 650*, Subpart B)

Location and Hydraulic Design of Encroachments on Flood Plains (FHWA, *23 CFR 650*, Subpart A)

Procedures for Abatement of Highway Traffic Noise and Construction Noise (FHWA, *23 CFR 772*)

A Policy for the Accommodation of Utilities within the Right-of-way of the State Highway System in the State of Idaho, see Guide for Utility Management

320.01.02Guides and References. Deviations from these designated guides and references **do not** require approval of a design exception.

An Informational Guide for Roadway Lighting (AASHTO)

Highway Design and Operational Practices Related to Highway Safety, Report of the Special AASHTO Traffic Safety Committee (AASHTO 1974)

An Informational Guide on Fencing Controlled Access Highways (AASHTO)

Highway Capacity Special Report 209, Highway Capacity Manual (Transportation Research Board 1997)

Handbook of Highway Safety Design and Operating Practices (FHWA 1996)

Guidelines for Skid Resistant Pavement Design (AASHTO)

Roadside Design Guide (AASHTO)

Skid Accident Reduction Program (FHWA, T 5040.17, December 23, 1980)

Pavement Managemen Guide (AASHTO) Part I, II, III

General Materials Requirements (FHWA, *23 CFR 635*, Subpart D)

Standard Specifications for Transportation Materials and Methods of Sampling and Testing (AASHTO)

A Guide for Erecting Mailboxes on Highways (AASHTO)

A Guide on Safety Rest Areas for the National System of Interstate and Defense Highways (AASHTO)

Guide for the Development of Bicycle Facilities (AASHTO)

Guide Specifications for Highway Construction (AASHTO)

Highway Drainage Guidelines, Volumes I through XIII & XIV (AASHTO)

Catalog of Storm Water Best Management Practices (ITD 1998)

Flexibility in Highway Design (FHWA-PD-97-062)

Guide for Utility Management (ITD 2002)

320.02 Interchange Requirements. Interstate access points should be closely coordinated with the environmental process. Interchange requirements include: Need of an Interchange, Background, Description, Analysis, Traffic Generators, Crossroads, Alternatives, Effects, Construction, Costs, Local Support, and Approval. Graphic illustration of any of these items should be prepared to facilitate explanation of the documentation. Each interchange requirement should include the following details:

Need of an Interchange. Describe the need for the interchange, including:

- The history of land use projections.
- An explanation of how the land has developed and if the development was according to the projections.
- A description of future land use projections and the effect for existing roadway facilities.

- A breakdown of other road improvements that are planned area and their effect on the existing and forecasted traffic growth.
- The proposal to construct the requested interchange and the effect on the existing and forecasted traffic growth.
- A statement of how this proposal conforms to the expected land use and if the proposal has the support of local government entities.

Background: Describe the original planning background of the area and include pertinent local and regional comprehensive planning, as well as transportation planning. Include the population and land use forecasts that were the basis for the original interstate planning.

A summary of all studies and the outcome of those studies should be listed. The record of FHWA's participation in the decision is important as part of this description.

Analysis: Analyze the effected highway systems, including:

- A description of the crossroad (arterial, collector, etc.) and the roads it intersects.
- The type of community or area being served by these facilities including size and/or population.
- A description of any problem the present roadway system and major arterials are experiencing in handling the area traffic (such as peak hour traffic volumes created by commuter traffic).
- An outline of any improvements being planned for the present roadway system and if these improvements will eliminate the existing problems.
- The improvements to the present roadway system that are required to handle the existing problem and if these improvements will be cost effective.
- The forecasted ADT for the design year based on the requested improvements and on the existing conditions without any future improvements.
- A discussion of any long-range transportation plans for upgrading other interstate facilities and the effect these improvements would have on the existing problems.
- An accident data analysis to assure safety enhancement and mitigation of any adverse impact.

Description: Describe the proposed interchange, including:

- Type of interchange (full/partial diamond, with/without loop ramps, etc.).
- Location of the interchange in respect to the present crossover road or overpass.
- Basic characteristics of the interchange and the connecting road (i.e., basic right-of-way width, access control, design speed, roadway widths, and number and widths of lanes).
- Type of surface treatment used on the roadways as well as the shoulder, curb, and gutter treatment; sidewalks; bike lanes; etc.

Traffic Generators: Discuss the present traffic generators and the quantity of vehicles being produced by these generators, and any needed service to public-use facilities should be described in detail.

Crossroads. Include an in-depth description of the type and condition of the crossroad:

- System or regional plan of which the crossover is a part.
- ADT for the current and design year – through and turning.
- Number of existing traffic lanes and the type of highway.
- Probable number of traffic lanes for the design year.
- Distance to and the size of the communities directly served.
- Distances to the next interchange in each direction.

Alternatives: Cover the existence of the arterials parallel to the interstate that could be used by commuter traffic to interchanges other than the one under consideration. To what extent are these arterials being used now? Is it possible to develop new streets or arterials, generally parallel to the Interstate System, that could be used by interstate-bound traffic by way of interchanges other than the one being proposed?

Effects. Outline the effects this proposed interchange would have:

- On the interstate (sufficient distance to adequately handle merging traffic, diverge and weaving maneuvers, the ability to sign adequately, etc.).
- On major arterials that parallel the interstate (decrease in the ADT on arterials in the design year).
- On other interstates or business loops into adjoining cities.
- On lane requirements on the interstate and other interstates or business loops.
- On adjacent interchanges.
- On the safety of the interstate and adjacent local street network.

Construction. Describe what effects the construction sequence would have on the schedule of:

- Adjacent interchange improvements.
- Other interstate or connector improvements.
- Additional lanes on the interstate and other interstates or business loops.

Costs: As part of cost-effectiveness analysis, describe the cost resulting from construction of the interchange, together with the estimated benefit/cost ratio. The benefit/cost ratio should include such items as benefit/cost ratio number, present worth value, number of vehicle miles of travel saved, and number of vehicle hours of travel saved.

Local Support: Include a statement covering local support (or the lack of it) during location hearings and other times of public input. Also include a statement of local government opinion regarding the proposal. When a sizable city is to be effected, support should include a letter from the head of city government outlining the expected core area impact due to possible increased suburban development. Support should not be limited to local support, but should include any other information that is appropriate.

Approval: The request for approval is submitted to the Roadway Design section for review and then to FHWA for final approval. See FHWA Access Policy at http://www.fhwa.dot.gov/programadmin/fraccess.html

Final approval of the access point will not be given prior to the environmental document. A graphic illustration of the above items should be prepared to facilitate explanation of the documentation.

For additional information on Interchanges, Interstate/Expressways, see Appendix A.50.

320.03 Application of Design Standards. The design standards contained herein generally represent minimum values and should be considered the lowest acceptable limits in design. The policies and standards are to serve as a basic guide in design work, however, they are not to be considered as inflexible and are not intended as a substitute for engineering knowledge, experience, or judgment. Designs will embody the highest values possible, commensurate with conditions, and that minimum values should be utilized only in those cases where inordinately high costs would result or where other factors must be considered.

While maintaining sound safety and geometric design standards, project designers shall, to the extent practicable, locate alignments and facilities to avoid the following considerations:

- Hazardous wastes
- Wetlands
- Floodways
- Public parks/recreation areas
- Wildlife/waterfowl refuges
- Historic/archeological sites
- Displacements

Designers shall consult with environmental staff and district environmental planners regarding the location of areas of concern. Any unavoidable encounters involving the areas listed above require consideration of all practicable design measures to minimize harm (e.g., spanning a floodway). In addition, designers shall coordinate with environmental staff regarding other environmental issues that may arise and affect project design or location (e.g., noise abatement walls, bald eagle nesting sites, etc.).

320.04 Guidelines for Considering Alternate Routes. Alternate routes must be considered in the following corridors during development of plans or projects:

- On a Board-approved "Intrastate Priority Corridor" or
- A highway classified as "rural principal arterial" to support and enhance the Board-approved
- Access Control Policy B-12-01
- When evaluating alternative routes consideration should be given to the following factors:
- Environmentally feasible – The project must be supportable through the NEPA process.
- Cost-effectiveness – This item may include rebuilding "Main Street" whether the local jurisdiction assumes responsibility of the rebuilt road or not.
- Existing access control – Access control on the State Highway System is based on the type of facility, functional classification, highway safety, vehicle operations, preservation of highway utilities, zoning, and route consistency.
- Traffic volume and destination – The benefits to be derived from bypassing a city is directly related to the volume of traffic that is being delayed by operational constraints within the city.
- Population of the community – The community's ability to adjust to economic change is a factor in any consideration to build an alternate route. The number of through trips is a function of the city population.
- The percentage of through traffic approaching a city decreases as the city size increases. Economic benefits realized from bypass construction are reflected in improved accessibility and decreased vehicle-operating costs.
- Local community desire for the alternate route – This issue should be discussed thoroughly in the Public Involvement Process.
- Existing facility capacity – The level of service issue for arterials entering a community is an important factor for efficient and safe travel.
- Distance from town of the proposed alternate route – Access to traveler services is a factor for the traveling public.
- Safety/accident rates – Will the alternate route significantly increase safety or reduce accident rates?
- Signing of new route – Local communities should be assured that adequate and proper signing will be provided on the alternate route to encourage the traveler to use local businesses and services.

SECTION 325.00 – CONCEPT REPORT REQUIREMENTS

The concept report consists of concept approval, design standards, alternate solutions and costs, and a Phase I Materials Report if appropriate. For concept report requirements, see the most recently published *Guide to Completing the Concept Report*.

325.01 Pedestrian and Bicycle Facilities. Vehicle, bicycle and pedestrian requirements shall be individually discussed and documented during the concept stage of the project. In accordance with Administrative Policy A-09-08, all projects need to be analyzed to see if a need for bicycle and pedestrian facilities exist and added to the ITD-783-B under the alternatives. Areas to be covered include potential usage of the corridor by bicyclists (adjacent or within populated areas), ability of highway to accommodate bicyclists (wide shoulders), coordination with local communities and plans, etc. Either a plan to include bicycle facilities or justification as to why not must be included. The concepts that are submitted to Roadway Design for review will be routed to the Planning Division for Bike/Pedestrian facilities. Any issues concerning bike path standards will be addressed to the Geometrics Engineer in Roadway Design.

See Appendix A.40 for the design criteria for bicycle facilities.

325.01.01 Americans with Disabilities Act. Americans with Disabilities Act requirements are to be met on all reconstruction and 3-R type projects, regardless of funding source and will be addressed in the concept.

325.02 Intelligent Transportation Systems (ITS). Deployment of ITS technologies shall be considered on all projects as a method of addressing project goals, motorist needs, and the goals of Idaho's ITS program. For more information see Appendix A.45.

325.03 Concept Scoping Procedure. When a clear and concise concept, involving all appropriate stakeholders, can be laid out, approved, adhered to, and revisited when necessary, the ability to develop projects within budget and on time is greatly enhanced.

The Concept Scoping Procedure is the process used to determine the complexity level of a specific project and ultimately the approval level required before proceeding with design. The scoping procedure should be the ultimate goal and should achieve the following list of objectives:

- Promotes universal support within ITD.
- Has all project stakeholders accurately defined and they have the opportunity for input, and have confidence that the project will be feasible and successful.
- Uses the *Guide to Completing the Concept Report* to provide for consistent project concepts.
- Enables and encourages people to track and follow-up appropriately, and to revisit the concept as necessary.
- Assures approvals are completed as scheduled and do not delay the project design completion.
- Assures ROW and Environmental aspects are covered in sufficient detail to enhance future document approvals.
- Promotes regularly scheduled Concept tours and includes appropriate stakeholders. All background information is available and all issues and impacts have been identified.
- Provides for Projects to be identified as simple or complex with appropriate approvals.
- Assures project concepts have a reduced likelihood of changes and sufficient evidence of benefits is provided for any proposed changes.
- Provides for consistent scheduled completions and accurate budgeting, therefore promoting an overall stabilized program.

The key elements of the Concept Scoping Procedure are:

1. IDENTIFY AND INCLUDE ALL STAKEHOLDERS i.e.: District – Project Manager, Sponsor, Asst. District Engineer, PDE, Designer, Senior Planner, Environmental Manager, ROW Supervisor, Materials Engineer, Traffic Engineer, Maintenance Foreman, HQ – Area Engineer, Bridge, Traffic, Materials, Environmental, Other – FHWA, Local Sponsor, Consultants, and Resource Agencies, plus any other applicable parties.

   Roadway Design and FHWA Operations Engineers assigned to each District are members of the Concept Review Teams and are invited to attend concept reviews. The District Environmental planner shall be included in the review of all concepts. The Project Development Engineer should contact the Area Engineers as soon as the Highway Development program is approved to determine the level of involvement and to make travel arrangements, if necessary.

   When the Area Engineer is a member of the Concept Review Team, the Area Engineer has the authority to approve the concepts at the time of the review, therefore speeding up the concept approval process.

2. GATHER ADEQUATE BACKGROUND INFORMATION and SET PROPER GROUNDWORK INCLUDING: Project area history, old plans, aerial photographs, public input, Right-of-way information, ownership information, political pressures, highway needs report data, programming history, utility locations, Planning Section contacts, where necessary.

   Steps "one" and "two" are cyclical by nature. It is probable that stakeholders would be identified, then background information gathered and as a result, the stakeholders' list modified.

   2a. Conduct Concept Scoping Tour involving stakeholders

   2b. Ground Reconnaissance

   The District Surveyor, Design Engineer, Materials Engineer, Geologist, Environmental Manager, and Right-of-Way Agent will go over the proposed route to examine special topographic land use or geological problems that may affect the final location.

   Rock slope treatment shall also be considered for each rock cut at this stage. A serrated slope should be recommended for slopes that are rippable. Should the rock be hard and tight and/or the design slopes steeper than 4/3:1 (1:4/3), presplitting is recommended. Where rock cuts are shallow, consideration should be given to laying the slope back on a slope flat enough to blanket with soil.

   Preliminary results and recommendations should be presented in the Phase I Materials Report or the Summary of Geotechnical Findings Report. Final design recommendations should be presented in the Phase II Materials Report or the Special Geotechnical Report. If the recommended method of handling rock cut slopes is accepted at an early review stage, the decision can aid the landscape architects in planning for special planting of the minibenches or seeding of soil covered rock cuts and can minimize changes during construction where rock characteristics are found to be different than those anticipated.

3. DETERMINE PURPOSE AND NEED FOR PROJECT: Revisit the programming purpose and needs. Add to or modify based on new or additional information.

4. EVALUATE RISK ASSESSMENT AS TO LEVEL OF EFFORT NEEDED: Determine risks involved in alternate levels of design and analyze risks to assist in determining level of design. Use this information in establishing alternates and selecting design.

   4.a DETERMINE POSSIBLE RIGHT-OF-WAY IMPACTS: Address possible ROW impacts, including number of owners, types of property, impacts to properties, amount of takes for each alternate, establish costs estimates.

   4b. DETERMINE POSSIBLE ENVIRONMENTAL IMPACTS: Identify possible environmental issues and determine what can be avoided and what needs to be dealt with and determine schedule so the environmental clearances are not keeping the project from progressing. Include level of clearance needed, wetlands, mitigation measures, hazardous materials, archeological considerations, historical sites, needed permits, clearances, costs and threatened and endangered species.

   4c. DEFINE PROJECT STANDARDS: Determine required standards for the project location, type of project, and determine which standards the project will be designed to. Evaluate need for exceptions. Determine, up-front, if exceptions can be avoided.

5. ESTABLISH ALTERNATE SOLUTIONS AND COSTS: Analyze options and determine possible solutions. Go into enough detail that the best alternative can be selected and costs can be used for comparisons. Develop a range of options and solutions and use innovation and value engineering where applicable. This may be an area that a consultant can be used to include alternates that ITD has no experience with.

   5a. DETERMINE BEST POSSIBLE OPTION - (DO IT RIGHT): After analyzing all the issues, select the best option.

6. DETERMINE COMPLEXITY OF PROJECT: Review the information available and determine complexity of the project. This will determine how in depth the concept and the approval process will need to be.
7. PUT TOGETHER THE DESIGN TEAM: Define the responsibility of the team.
8. SET REALISTIC SCHEDULE BY PROJECT MANAGER AND GET BUY-IN FROM STAKEHOLDERS: Set schedule based on type and size of project, involvement of different sections (bridge, traffic, utilities, design, materials, R/W, etc.), different agencies, consultants, number of property owners, known environmental issues and district and designer workload. Review proposed schedule with stakeholders and get agreement/buy-in that this schedule will be meant.
   8a. EVALUATE AND ACCOUNT FOR AREAS THAT MAY CAUSE DELAYS IN DESIGN: Identify potential bottlenecks and decide how they will be dealt with up front. Tough environmental issues, high profile public involvement, railroad involvement, permits required that historically take long periods of time to secure, several R/W parcels or known problems in R/W to work with.
9. DETERMINE IF CONSULTANTS ARE NEEDED AND AT WHAT STAGE OR PHASE: As schedule is set, determine if consultants are needed and what work they will need to do. Make sure PE is scheduled for consultant services.
10. SET REALISTIC BUDGET: Use the updated information including: stakeholder input, known standards, set schedule, environmental concerns, R/W impacts, materials data and selected option to set budget.
11. LOOK BEYOND 20 YEAR DESIGN: Although our design year for most Federal-aid projects is 20 years beyond the construction year, try to look beyond that time and evaluate how the selected design will effect future projects.

An important element is the emphasis on minimizing change and re-work. The goal is to develop a procedure that emphasized prior planning and awareness of the impact that changes have, thereby making alteration less likely.

The decision-making process needs to be documented. Rejected ideas often resurface because decisions have not been documented, thereby wasting time and effort. Putting together a tighter concept initially should control this issue better.

All projects should not be treated the same, regarding approvals, when in fact there is a larger volume of projects that do not and should not require as much scrutiny as the others. The distinction of "simple" versus "complex" and the approval process associated with each (see item #6 above) is an effort to help speed the project development process along. Refer to Sections 315.01 and 315.02 for guidelines to categorize these projects.

325.04 Concept Report for Federal-Aid Projects. A concept report will be approved prior to the Preliminary Design Review. On Interstate Projects greater than $300,000 per lane mile and Interstate Bridge Projects greater than $3 million, the project concept report will also be submitted to FHWA for review.

The project concept report for federal-aid projects shall consist of:

- ITD-783, Concept Approval,
- Draft Location and/or Design Study Report narrative (see figures 3-15 to 3-18 for examples), including a statement by the District Environmental planner about federal permits or other environmental requirements, constraints, issues, etc. (if none, so state),
- Vicinity Sketch,
- ITD-783-A(ITD-0757), Design Standards, and supporting data,
- ITD-783-B, Alternate Solutions and Costs (proposed design exceptions),

- An approved Phase I Materials Report and Life Cycle Cost Analysis including Typical Section Drawings, and
- Detailed cost estimate for preferred alternative.

The ITD-783-C, Roadway Inventory, should be completed in the field to itemize existing conditions and submitted with plans for Preliminary Review.

325.05 Concept Report for State-Funded Projects. The decision of whether a concept report is required for state projects will largely be up to the District. An additional consideration is that without the concept report, Roadway Design is unable to check design features when the plans are submitted for PS&E even though the rules of responsibility to the public for professional engineering still apply.

A concept report is required for the following state projects:

- All projects on the National Highway System,
- Bridge projects,
- Signal and major intersection projects, and
- Any projects that the District determines require approval of the standards.

Normally, state projects do not require as much detail in the concept report as federal-aid projects, and for small state projects concept reports may not be required.

The following minimum items are required when a concept report is submitted for state-funded projects:

- Narrative description of the project and work to be done,
- ITD-783, Concept Approval,
- ITD-783-A(ITD-0757), Design Standards, (On most projects, only the heading, section A, and character of work need to be completed. However, on projects involving traffic considerations such as signals and passing and turning lanes, other appropriate sections should be completed.)
- Vicinity sketch
- Cost estimate

The concept report must be completed and signed before the contract documents are forwarded to Roadway Design for plans, specifications, and estimates submittal.

SECTION 330.00 – DESIGN EXCEPTIONS

The general policy of the department is that all design criteria will be met. Where both minimum and desirable values are provided, every reasonable effort should be made to achieve the desirable standards. The two most common design exceptions requested are for width and roadside obstacles. When the approved standard is met, but a corridor plan referenced in Administrative Policy, A-14-02, is not met, an exception shall be requested and shall be approved by the Design Exception Committee.

Whenever necessary or desirable to deviate from the design policies and standards, a design exception shall be submitted for approval by the Design Exception Committee. FHWA approval is required for design exceptions on federal-aid projects under full FHWA oversight and will be accomplished through the Design Exception Committee. The committee includes the Roadway Design Engineer, the Traffic Engineer, the Bridge Engineer, and the FHWA Field Operations Engineer. As exceptions to standards are required during the course of project development, the District shall make the request on an ITD –783-B, ITD-783-C, or by memo to the Roadway Design Engineer.

All design exceptions must be documented and justified. A design exception request should include a description of what standard is being reduced, to what extent the reduction will be, where the reduced standard will be applied, two or more justifications for reducing the standard, and the full cost to obtain the standard. Whenever possible, the deviation from the standards should be as little as possible. (Requests for exception should be justified in engineering terms rather than economic terms, since the argument that the state needed to save tax dollars is not usually a persuasive justification.)

The justification should completely describe the physical and environmental factors that make the exception necessary. Justifications should follow along those reasons that would be considered good engineering judgment such as effect of the variance on the safety and operation of the facility, compatibility with adjacent sections of the roadway, functional classification, amount and character of traffic, type of project (new construction, reconstruction, or 3R), accident history, resultant environmental impacts, and future improvements programmed. Cost-effective justifications should be used whenever applicable and should always be used whenever standards are reduced significantly or large costs are involved. (See the following , Guidelines for Preparing a Request for Design Exception.)

330.01 Guidelines for Preparing a Request for Design Exceptions. The appropriate justification and documentation must accompany every request for a design exception. Each design exception request must be based upon a comparison of what is proposed versus the appropriate standard. Generally, the following three items should be considered in any analysis:

1. What is the degree to which the standard is being reduced?
2. Will the exception affect other standards?
3. Are there additional features being introduced, such as signing or delineation, that would mitigate the exception?

At least two justifiable reasons must be presented for each exception.

Most requests for roadway width exception are actually for a shoulder width exception. An example of this is a request to construct a 28 feet (8.4 meter) wide roadway in lieu of the 36 feet (10.8 meter) wide AASHTO standard. Since the 28 feet (8.4 meter) roadway typically has two 12 feet (3.6 meter) lanes and two 2 feet (0.6 meter) shoulders, and a 36 feet (10.8 meter) roadway typically has two 12 feet (3.6 meter) lanes and two 6 feet (1.8 meter) shoulders, the exception is really to construct the roadway with 2 feet (0.6 meter) instead of 6 feet (1.8 meter) shoulders. At least six arguments can support this width exception.

1. Administrative Policy A-14-02 — Establishes recommended roadway widths based on completed corridor plans or by applicable standards. The Design Exception Committee must approve requests for exceptions to recommended widths established in a corridor plan. Although reference to a corridor plan should be noted for any applicable projects, the request for a width design exception to AASHTO standards cannot be based solely on this justification.
2. Capacity — A roadway width exception should not be requested unless the proposed roadway width will provide adequate capacity in the design year. An analysis that shows that adequate capacity can be attained without the full standard width is not by itself adequate justification for a design exception, but can help support other arguments.
3. Continuity of Width With Adjacent Roadway Sections — If roadway sections adjacent to the proposed project have been constructed to a lesser width than the AASHTO standard, there is often no benefit to be derived from building the proposed project to the full standard width. (Example: A project is proposed for a 22 feet (6.5 kilometer) section of an existing 24 feet (7.2 meter) roadway. The existing roadway at the south end of the project was constructed eight years ago to a 28 feet (8.4 meter); and the roadway at the north end of the project was constructed four years ago to an 28 feet (8.4 meter) width. Even though the AASHTO standard may call for a 36 feet (10.8 meter) roadway, no benefit will be gained by constructing to this width as long as there are no safety or capacity problems.
4. Accident History — The accident history of the roadway section should be examined to determine if there have been a significant number of accidents that can be attributed to inadequate roadway width or shoulder width. Lack of such accidents can be cited as support for no additional widening of the section.

5. Shoulder width for local roads and collectors and a minimum "usable" shoulder width for arterials. The terms "graded" and "usable" are defined in the Green Book. The pavement foreslope may be considered part of the "graded" or "usable" shoulder if the foreslope is 6:1(1:6) or flatter. Assuming a pavement depth of 3.5" (90 mm), a 6:1(1:6) foreslope would give an additional 2 feet (0.6 meter) of shoulder on each side of the roadway. This would mean that a roadway constructed to meet a width requirement of 36 feet (10.8 meter), with two 12 feet (3.6 meter) lanes and two 6 feet (1.8 meter) shoulders, could also be considered to meet an AASHTO requirement of 8 feet (2.4 meter) shoulders if the foreslope was 6:1(1:6) or flatter. The use of the 6:1 (1:6) paved foreslope as part of the "graded" or "usable" shoulder must be documented in the ITD-783, Concept Approval.
6. Cost-Effectiveness of Incremental Changes in Cross-Section Design — Widening a substandard width roadway shoulder will usually result in a reduction in the accident rate for that section of road. The cost effectiveness of widening a substandard width shoulder to a greater width can be estimated from the cost effectiveness of incremental changes in cross-section design. For certain existing shoulder widths, the safety benefit gained by widening is less than the cost of the widening itself and therefore not cost effective, thus a width design exception can be supported. Often an interim shoulder width will be more cost effective than widening to full standards.

Additional considerations — Such as environmental impacts, can be included as justification for certain width exceptions.

330.02 Cost Effectiveness. The term "cost effectiveness," is meant to apply to the general consideration of the relative worth of a highway project or individual design elements of a highway project. Is the highway project or design elements worth the estimated costs in terms of returning to the public a benefit commensurate with the taxpayer's investment?

Cost effectiveness, benefit/cost ratio, rate of return, and payback period are some of the analytical methodologies used to quantitatively calculate the value of a proposed highway project or design element. The objective is to analyze all possible alternatives of providing the facility that will render the desired service and is used as an aid to reach the final decision on what course of action to take. Because of the objective nature of cost-effective studies, only those impacts that are quantifiable and which can be assigned a realistic monetary value can be considered. Cost effectiveness does not incorporate the impacts of such considerations as general design consistency, aesthetics, land values and uses, access, driver convenience and comfort, social ramifications, and environmental consequences. The final choice must also reflect these other considerations when given their proper weight.

In theory, design criteria generally reflects cost-effective considerations. However, because of the need to develop design criteria for widespread application, some criteria inherently assumes typical benefits and costs that would normally be encountered in the selection and design of a highway project. Obviously, what is actually encountered in the design process for a specific project may vary widely in terms of expected benefits and expected costs and therefore the cost effectiveness of normal design criteria must be considered based on the individual project and site.

330.03 Cost-Effective Analyses. Cost-effective analyses are conducted at many levels; the most common of which is the exercise of good engineering judgment. A rough estimate of construction and maintenance costs is usually available and when intuitively compared to the expected benefits based on a designer's perception of past experience, it is often obvious whether or not a design element is cost effective. In many cases, simple analysis is the most practical in the interest of time. However, when the project represents a large dollar amount, or the actual costs and benefits cannot be reasonably estimated through judgment, or the project and its design become controversial, an in-depth cost-effective analysis is warranted. In these cases, the time and effort spent on conducting a detailed cost-effective study may be minimal when compared to the increased economies realized in the final product.

Cost-effective methodologies can calculate:

1. *User benefits and costs* for a highway project as a whole or for an individual design element within a highway project.
2. *Safety benefits* and construction costs for a highway safety project *based on* actual *accident experience* and the anticipated accident reduction of the proposed countermeasure.
3. *Safety benefits* and construction costs for a proposed highway safety countermeasure ***based on*** *the potential for accidents*. This methodology is applied to roadside obstacles.

Numbers 2 and 3 above are actually subsets of number 1 since accidents and safety are considered in the assessment of total user benefits and costs.

Separate cost-effective methodologies for highway safety have evolved because 1) the increased emphasis on highway safety has resulted in the designation of highway funds that are strictly for the purpose of reducing the potential for highway accidents; and 2) the "accident" information element offers an identifiable unit that is measurable, lends itself to data collection and statistical analysis, and has undergone extensive research to realistically establish social costs.

330.03.01 Cost Effectiveness Computer Programs.

Refer to the current AASHTO *Roadside Design Guide* for determining recommended programs.

Length of Need calculates the length of need for guardrail installation based on the AASHTO *Roadside Design Guide*.

Road X estimates the safety benefits and benefit-to-cost ratio that would be expected to result from improvements such as lane widening, shoulder widening, sideslope flattening, and roadside improvements on specific sections of rural, two-lane roads. Road X should only be used for highway sections with the following conditions:

- Two-lane rural roads with an ADT of between 50 and 10,000.
- Lane widths of 8 feet (2.4 meter)to 12 feet (3.6 meter).
- Shoulder widths of zero to 12 feet (3.6 meter).

Road X should also be used in the design of 3R (resurfacing, restoration, and rehabilitation) type projects, particularly for improvement projects that will be constructed on existing vertical and horizontal alignment and within the existing right-of-way.

330.04 User Benefit and Cost Analysis. Many methodologies have been developed and many references exist that address cost effectiveness for highway projects as a whole and for individual highway design elements. The basic approach is summarized in the following steps:

- Update user cost factors. Approximately every one or two years, the highway user costs for items such as time, fuel, and vehicle maintenance and depreciation should be updated.
- Select an economy study model to measure the cash outward and inward flows in equivalent dollars by use of a compound interest formula. AASHTO recommends the use of a discount rate to calculate present values.
- Estimate project costs.
- Calculate unit user costs. The user costs, as a function of traffic characteristics and highway geometry, should be estimated for the alternative designs including the "do-nothing" alternative.
- Calculate user benefits. The benefits for savings in vehicle operating costs, travel time, accident costs, and fares should be estimated.
- Estimate residual value. At the end of a facility's or design element's service life, some value will likely remain. This value should be estimated and its worth included in the methodology to offset project costs.
- Determine present values and economic desirability. The stream of user benefits and user costs over the design service life must be converted to a present value for comparisons between the two.

330.05 Safety Benefits Based on Accident Experience. Accident experience is usually the best indicator of future accidents. Therefore, if the data is available and given certain other information, the cost effectiveness of a proposed highway safety countermeasure can be accurately measured. This methodology is most frequently used for proposed projects that will be funded with money explicitly set aside for highway safety projects. However, the methodology is applicable to assess the cost effectiveness of a highway design element that is intended to reduce the frequency and severity of accidents.

A methodology for highway safety projects similar to the one presented in NCHRP 162 *Methods for Evaluating Highway Safety Improvements* is summarized in the following steps:

- Identify hazardous locations. By applying statistical analyses to accumulated accident data, locations can be identified that have accident rates higher than what can be attributed to chance (usually 95%).
- Identify the nature of the established accident pattern. By use of a collision diagram, the accident pattern can be established as it relates to the type of accident, weather conditions, and time of day.
- Select alternative improvements. Several countermeasures may be proposed to reduce the frequency or severity of accidents.
- Evaluate the estimated effectiveness of each alternative. Accident reduction factors can be applied for each countermeasure to estimate the impact of the countermeasure on the accident problem.
- Estimate project benefits. Based on the number and severity of the accidents, a dollar benefit can be assigned to each countermeasure.
- Estimate project costs.
- Convert project benefits and costs to an equivalent monetary value. The recommended method is to convert to an equivalent uniform annual cost over the estimated service life of the proposed countermeasure.
- Calculate a B/C ratio. A B/C ratio should be calculated for each countermeasure with the highest B/C usually considered the preferred alternative. Normally, a minimum B/C of 1.0 is used to decide whether or not a project should be undertaken.

330.06 Safety Benefits Based on the Potential for Accidents. It is unusual for a roadside location to have a sufficiently high accident experience to estimate potential accidents, however, run-off-the-road accidents represent a high proportion of highway fatalities and injuries. Therefore, roadside hazard improvements warrant consideration even if a particular location has never experienced an accident.

SECTION 335.00 – PRELIMINARY DESIGN ANALYSIS

Design alternatives need to be reviewed showing the various design options with benefit/cost determinations and recommendations on an ITD-783-B, Alternate Solutions and Costs. The Phase I Materials Report, complete with the life cycle cost analysis, shall be included. Nonstandard design features or deviation from AASHTO and state standards that are known at this time will require approval and are to be included on the ITD-783-B. Alternatives to longitudinal encroachments on 100-year flood plains shall be documented.

335.01 Environmental Activities. Project development activities may begin as soon as the project is placed on the Highway Development Program. To determine the level of environmental documentation that is needed for the project, an ITD-651, Conceptual Environmental Evaluation, should be prepared.

The District Planner shall also request that an archeological reconnaissance be made on the complete right-of-way of the final highway location. The reconnaissance checks for archeological, paleontological, historical, or other sites of state and national significance that should not be destroyed or should be salvaged and may effect the final locations. If an archeological clearance is given to a project in the ground reconnaissance stage, further investigation may not be necessary. (See The Environmental Manual, Environmental Process, for more detailed environmental considerations.)

335.02 Traffic Volume.

For all rural roads other than freeways and arterials, the current year ADT (two years beyond the program year) may be used for determining standards. unless the design hourly volume (DHV) is greater than 100. If the DHV is greater than 100, then the projected DHV for 22 years after the programmed year should be used.

For rural freeways and arterials, the DHV (30th highest hourly volume) for 22 years after the programmed year should be used. Routes with a high percentage of recreational traffic (where the 30th highest hourly volume is greater than 15% of the ADT) may be designed with the 200th highest hour as the DHV if the expected maximum hourly traffic does not exceed the capacity of the highway.

Traffic volumes should be requested from the Division of Transportation Planning on an ITD-1151, Traffic Data Request, for 2 years and 22 years beyond the year in which the project is programmed. The request for traffic data, including any necessary turning moves, should be made as soon as the initial ITD-1414, Project Program Entry or Revision, is approved for preliminary design and environmental studies.

335.03 Functional Classification. The functional classification for a project should be obtained from the Division of Transportation Planning who is responsible for the establishment of urban boundaries and the functional classification of all public roads.

335.04 Access Control. Administrative Policy A-12-01, State Highway Access Control, serves as a guide in establishing access control. Location public hearings will include a discussion of access control that applies to the alternatives under consideration. An ITD-606, Access Control Determination, shall be submitted to the Roadway Design section to determine the type of access control to be employed on the project.

For Type V Access See FHWA Access Policy at http://www.fhwa.dot.gov/programadmin/fraccess.html

335.05 Terrain. The selection of the appropriate terrain type is difficult because a project can encompass portions of two or sometimes all of the three terrain types.

Level Rolling Mountainous

Refer to the Vertical Alignment section of the Green Book for guideline definitions of the three terrain types. The *Highway Capacity Manual* also contains general terrain definitions. Sound engineering judgment involving consideration of all factors should be applied.

335.06 Level of Service.

Recommended minimum levels of service are:

Highway Type	Type of Area and Appropriate Level of Service			
	Rural Level	Rural Rolling	Rural Mountainous	Urban/ Suburban
Freeway	B	B	C	C
Arterial	B	B	C	C
Collector	C	C	D	D
Local	D	D	D	D

(From the Green Book Level of Service section)

In some cases, the cost of construction for the recommended level of service becomes prohibitive and a lower level of service is acceptable for economic reasons. Justification for the reduced level of service must be documented.

When comparing levels of service, each highway type uses a different methodology and criteria for determining the level of service.

335.07 Design Speed. Once the functional classification, terrain, and traffic volumes have been determined, the minimum design speed can be selected from the appropriate section of the AASHTO policy. Minimum design speed should only be used as the project design speed when there are topographic constraints or other restrictions. Otherwise, the highest design speed that is compatible with the topography and project economics should be adopted.

Current policy is that design speed is to be selected to equal or exceed the posted or regulatory speed limit of the completed facility. After the design speed has been selected, the required stopping sight distance, vertical curvature, widths, maximum grades, and clear zone can be determined. (To determine the horizontal curvature, the maximum super-elevation rate must also be determined.)

335.08 Super-elevation. The maximum super-elevation rate that is practical for a given location is controlled by climate conditions (snow and ice), terrain, rural or urban location, and volume of trucks. Normally, the maximum super-elevation rate on open highways in flat terrain would be 10%. However, in Idaho there are very few locations where this would apply and therefore a maximum rate of 8% is more logical. In urbanized areas, a maximum rate of 4% to 6% is applicable for moderate design speeds. On low speed urban streets with numerous turning moves, the super-elevation may be eliminated.

Once the maximum super-elevation rate has been established, the minimum radius can be determined from Exhibit 3-14 of the Green Book. Design super-elevation values for particular degrees of horizontal curvature can be taken from Exhibit 3-21 through 3-25 of the same text.

335.09 Roadside Hazards. Chapter 2, Roadside Safety and Economics, and Appendix A in the AASHTO Roadside Design Guide presents the approved method for evaluating countermeasures for identified roadside hazards. The analysis includes provisions for different design speeds, different roadway geometrics, and the ability to incorporate an estimated traffic growth rate. The procedure outlined assesses the potential for a given hazard to be struck and assigns a cost to the hazard. By evaluating different options, the most cost-effective option can then be selected and establishes the following countermeasures in order of desirability:

1. Remove the obstacle or redesign so obstacle can be safely traversed.
2. Relocate the obstacle to a place where it is less likely to be struck.
3. Reduce the impact severity by using an appropriate breakaway device.
4. Redirect a vehicle by shielding the obstacle with a longitudinal traffic barrier and/or crash cushion.
5. Do nothing, i.e., leave the hazard unshielded.

335.10 Warrants for Traffic Barriers. Chapter 5 in the AASHTO Roadside Design Guide presents the warrants for traffic barriers and in Chapter 7 guidelines for embankment barriers. These warrants are based on the relative severity between the hazard and the traffic barrier, but do not address the question of whether or not a traffic barrier installation is cost effective. To assess the necessity of a traffic barrier:

- Assess the potential striking the hazard by estimating the lateral placement, width and length of the hazard, traffic volumes, highway alignment (geometry), design speed, and, likely, encroachment frequency.
- Calculate the average annual cost of the existing hazard by assigning a dollar value to the accident, and the initial and maintenance costs.
- Calculate the average annual cost for each appropriate countermeasure to establish the annual cost for a modification of the hazard or for installation of a barrier (which is also analyzed as a hazard). (The calculation of the annual cost for the existing hazard represents the cost of the do-nothing alternative.)
- Compare annual costs for each countermeasure to the annual cost for the do-nothing alternative to indicate which of the alternatives will extract the least cost from the highway user.

335.11 Rumble Strips.

Shoulder Rumble Strips

Rumble strips are an extremely cost-effective means of reducing single-vehicle run-off-the-road accidents. Because of this, all projects need to be analyzed to see if a need for installation of milled-in shoulder rumble strips exists and should be added to the ITD-783-B under the alternatives. The following items should be considered:

- **Type of project.** It does not make sense to include rumble strips in certain types of projects such as enhancements, CMAQ, Bridge, ITS, etc., nor with spot location improvements.
- **Single-vehicle run-off-the-road (ROR) accident rate.** Calculate the Safety Index following the procedures in the *Safety Evaluation Instruction Manual.* Rumble strips will not provide a benefit where there are few incidences of ROR accidents.
- **Bicycle usage.** Adequate shoulder width must be available. Some routes have heavy bicycle usage, particularly in summer months, and it is important that rumble strip installations do not displace or endanger bicycle traffic on the shoulder. Refer to Section 4.4.1, Pedestrian and Bicycle Facilities, and check with the State Bicycle Coordinator in the ITD Planning Division.

- **Shoulder width.** Generally, rumble strips should not be installed where the remaining shoulder width is less than 5' (1.3m) (desirable) or 3' (1m) (minimum) unless separate facilities are available for bicyclists. Refer to the item above. Also consider that the presence of guardrail, retaining walls or other continuous obstructions requires a minimum shy distance of 1' (.3m) for bicyclists in addition to the widths noted above.
- **Shoulder condition.** If the shoulder is in poor condition and the project does not include an overlay, rumble strips should not be included.
- **Residential roadside development.** Consider the effect of increased exterior noise levels from rumble strips.

Centerline Rumble Strips

Centerline rumble strips can be effective in reducing head-on and sideswipe accident rates in areas with curvilinear alignments. The use of centerline rumble strips should be considered where the rates for these types of accidents are higher than the statewide average. Special drawings will be required to depict the rumble strip locations and configuration. Centerline rumble strips should be no wider than 1' (0.3m).

SECTION 337.00 – SURVEY/LOCATION OF HIGHWAY PROJECTS

The location of most highway projects shall be mathematically tied to the Idaho State Plane Coordinate System, existing geodetic survey monuments, and property land corners through surveying methods and must comply with Idaho Code.

337.01 Land Surveying Required. Idaho Code requires that any department surveying for rights of way, material sources, tracts of land, or other property boundary determinations comply with the requirements for "land surveying." The term "land surveying" includes the responsible supervision of areas for their correct determination and descriptions and for conveyance, establishment, or reestablishment of land boundaries and the plotting of lands and subdivisions. Any ITD surveys involving property boundary determinations or rights of way acquisition requires that a Land Surveyor supervise the land surveys and sign and seal related documents. Projects involving 3R type of work, maintenance projects, and other projects not having right-of-way acquisition can usually be excluded from land surveying requirements.

337.02 Corner Perpetuation and Survey Monuments Required. Corner perpetuation and filing (Idaho Code, 55-16) is required so that all property monuments within highway rights of way or those adjacent thereto are protected and preserved. Land survey monuments must be shown on all project plans. Idaho Code, Section 55-1612, makes engineers subject to disciplinary action by the Board if they do not indicate on their plans the presence of land survey monument that appear on a corner perpetuation record, BLM or GLO plat, record of survey, or subdivision plat. Anyone who prepares plans that do not indicate the presence of land survey monuments and the construction of the facility results in the destruction of a land survey monument are also liable for civil penalties.

337.03 Flagging Colors.

On all preliminary surveys, the following flagging colors should be used:

Control Survey	Fluorescent
Centerline Alt	Red
Centerline Alt 2	Blue
R/W Alt 1	Yellow
R/W Alt 2	White

337.04 Control Surveys. The purpose of a control survey is to establish the position of the points required to locate the position of the highway facilities. This permanent project control network serves the following advantages:

Provides a control system of horizontal and vertical survey data for establishment of photogrammetric points.

Provides a convenient network of high order horizontal and vertical control points for subsequent construction surveys.

Control surveys are generally based on the network of horizontal and vertical monuments established by the United States National Geodetic Survey (NGS) and existing established land corners. Information relative to specific NGS survey monuments and the NAD83 Idaho Coordinate System is available by calling the NGS at (301) 713-3242.

337.05 ITD Project Coordinate System. The ITD Project Coordinate System is a grid system of rectangular X and Y coordinates that are used to define the location of any point in Idaho and provides a standard procedure based on a common datum referenced to a common origin. The coordinate system, based on NAD83, shall be used with coordinate points calculated for all project control survey points. All property monuments on the project should be located, marked, and referenced as part of the project control surveys. If construction will remove or disturb the property monuments, they shall be reestablished and monumented as part of the construction project by a licensed Land Surveyor.

337.06 Project Topographic Data. The project topographic data can be obtained from field surveys or photogrammetric methods. On small projects (minor structure, intersection, railroad grade crossing improvement, or small materials source), a field topographic survey is usually faster and more convenient in obtaining the field data for design purposes. On larger projects, photogrammetric surveys are recommended to provide data compatible with the ITD Computer-Aided Drafting and Design System and to allow photogrammetric remeasure applications.

> Advance planning is required to establish a survey control network and photogrammetric picture points, obtain aerial photography, and digitize data for mapping. Allow at least **24 months** prior to any need for topographic data for project design activities.

The project control network traverse should be tied to two (2) separate survey control points off the project to facilitate correction and adjustment of errors of the traverse. All points of the control network should be established as permanent points of horizontal and vertical control and located so they will not be disturbed by the project construction. The specifications for traverse, triangulation, and leveling are given in the FHWA's *Surveying and Mapping Manual*. The survey points for the project control network shall normally be Second Order Level of Accuracy with appropriate surveying ties to NGS monuments and existing land corners. For all other survey points (photogrammetric picture points, structure control points, location surveys, and project details), a Third Order Level of Accuracy is sufficient. (See Figure 3-6, Survey Orders of Accuracy.)

Figure 3-6

SURVEY ORDERS OF ACCURACY

TYPE OF WORK	ORDER OF SURVEY			
	First	Second	Third	Lower
ADVANCE PLANNING SURVEY				XX
PRELIMINARY LOCATION SURVEY			XX	XX
MAPPING (large and high-density areas)	XX	XX		
PRIMARY CONTROL	XX	XX		
MAJOR STRUCTURES	XX	XX		
MINOR STRUCTURES		XX		
CENTERLINE SURVEY (high-density urban area)		XX		
FINAL LOCATION SURVEY			XX	

337.07 Record of Surveys. The record of surveys (Idaho Code, 55-19) by ITD that define the project rights of way and adjacent property boundaries shall be filed with the applicable County Recorder.

The survey map shall meet the requirements defined in Idaho Code, 55-1905, and shall provide the data outlined therein. The map shall contain a certificate of survey and a seal and shall be signed by a licensed Land Surveyor. (Right-of-Way plans contain all the information necessary to prepare property descriptions, but do not contain all of the requirements for records of survey, so a separate record of survey must be prepared.)

A special record of survey may be required for material sources, maintenance sites, or small projects where only a few parcels are involved and normal rights of way plan sheets are not required. In these cases, a record of survey shall be prepared and filed.

SECTION 340.00 – FLOOD CONSIDERATIONS

If the proposed route encroaches on a 100-year flood plain that has been identified by FEMA and is shown on their map, Roadway Design must evaluate the flood hazards of the new location and various alternatives to longitudinal encroachments, and as far as practical, shall preclude the uneconomic, hazardous, or unnecessary use of the flood plain by this route.

SECTION 345.00 – PRELIMINARY STRUCTURES STUDIES

All structure locations shall be studied for various points such as foundation conditions, skew possibilities, relative grade line separation, structure types, avoidance of regulatory floodways, etc. The District shall conduct these studies and may request assistance from the Bridge Section for aid in the field studies. Contact with the Idaho Fish and Game Department's local representatives for input is essential. See Section 600.00 and Appendix B for additional information on hydraulic data and structures.

SECTION 350.00 – PRELIMINARY DESIGN REVIEW

The purpose of the Preliminary Design Review is to initiate, resolve, and approve the overall design aspects. Actions that are included in the Preliminary Design Review are design considerations, opportunity to attend, review topics, and the report.

An approved ITD-783-A(ITD-0757), Design Standards, and ITD-783-B, Alternate Solutions and Costs, are required prior to the Preliminary Design Review. The ITD-783-C, Roadway Inventory that itemizes existing conditions, may be submitted with the Preliminary Design Review submittal. Depending on the design constraints, approval of Phase II Materials Report may be obtained prior to, concurrent with, or subsequent to the Preliminary Design Review. Approval of the Phase II Materials Report is required prior to approval of Final Design.

350.01 Design Considerations. The plans, rough sketches, and/or typical section drawings should be prepared showing:

- Project limits, including the station and milepost,
- Length of transitions,
- Basic design vehicle at intersections (Select the design vehicle to be used in geometric design of intersections and pavement markings.),
- Number of lanes at the intersection approaches, including auxiliary lanes for turning and turning movements in design hourly volume (DHV),
- Structure coordination,
- Passing opportunity,
- Existing utility facilities, and
- Right-of-Way requirements.

Potential environmental impact shall also be considered. For bridge plans and other data requirements, consult the Bridge Engineer and the Bridge manual.

350.02 Opportunity to Attend. The District Right-of-Way Supervisor or a representative should be notified of and offered the opportunity to attend the Preliminary Design Review when any right-of-way will be acquired. The District Maintenance Engineer or a representative should also be notified of and offered the opportunity to attend. On projects involving local public agencies and their consultants, an opportunity should be given to review plans and attend the review for their input. The Port of Entry Manager shall be involved in the review of all projects that effect a port of entry building or scale.

350.03 Review Topics.

Review topics should include:

- Hearing and plan requirements,
- Available environmental documents (All environmental, Section 4(f), and historic property constraints must be identified.),
- General standards of the profile design that are appropriate for the conditions and the programmed cost of the project,
- Discuss materials issues and Material Reports requirements,
- Plans for compliance to local ordinances, planning, zoning, building setback, building restrictions, fire codes, school restrictions, flood plain limits, and any other regulations that have an effect on the proposed design and right-of-way acquisition,
- Effects and evaluation of relocation assistance actions, and
- Recommendations and suggestions from headquarters and outside agencies.

350.04 Report on Recommendations/Suggestions. The District prepares a letter summarizing the decisions in regard to the comments and suggestions presented at the Preliminary Design Review and received from headquarters sections and outside agencies. Copies of this letter shall be furnished to all parties concerned.

350.05 Design Plans for the Preliminary Design Review. Design plans that are required for the Preliminary Design Review are a set of 11" x 17" (279 mm x 432 mm) black and white plans (some may be Xeroxed) and are to be sent to the Roadway Design section. The information and plans may be in rough draft form. Pencil sketches of items (intersection layouts, etc.) and handwritten materials are acceptable. The data supplied shall be complete enough so line, grade, and general design concepts may be approved. Show mileposts on the plan sheets at the beginning and ending of each roadway project and equate mileposts and stationing on all projects when both are used for project control.

For signal projects, show either mileposts or the stations of intersections and ties with the existing cross streets where possible. Note on the plans the type, location, and general design features of all existing and planned facilities such as signing, illumination, intersection data and features, and other related items that will affect the project design. Detour requirements and development of the TCPs should also be shown.

350.06 Plan Sheet Checklists. The following can be used as a checklist for the usual plan sheets that are required for the Preliminary Design Review. Also, see Figure 9-1.

Roadway Group

- **Title Sheet.** The title sheet shall be part of the Preliminary Design Review requirements for plans and should also be used for the hearing plans.

- **Total Ownership Maps.** Preliminary total ownership maps are based on the project's preliminary design information obtained from the county tax assessor's records. The maps are used for reference by title companies in title searches and preliminary property studies involving damage and severance, economic impacts, and preliminary relocation assistance studies. The preliminary total ownership map does not require all of the ownership to be shown, but must show sufficient dimensional and graphic data to permit ready identification and correlation with the legal description of all effected ownerships. The map must show alignment, property lines (estimated), and planimetric features and topography.

- **Typical Sections.** Draft form is acceptable.

- **Plan and Profile.** Include bearings, grades, curve data, super-elevations, and R.L. and Z distance.

Special Drawings Group

Drainage. Include wetlands and flood plain limits.

- **Minor Structures.** Minor structures are structures with a span of 20' (6 meters) or less (headwalls, retaining walls, etc.) that may be designed by the Bridge section, but will be included in the roadway summary items.

- Headwalls for pipes and arches larger than 48" (1200 mm) and bottomless arches with footings must be submitted to the Bridge section for design or verification of design and, therefore, require submittal of a contour map; Phase IV Materials Report; channel cross sections; an ITD-210, Hydraulic Structures Survey; and a situation and layout sheet.

- Standard Drawings D-7 through D-9 should be used for pipes and arches 48" (1200 mm) or smaller.

Traffic Group

- **Delineation.** Determine the extent for no delineation; partial, public road approaches and transitions only; partial, horizontal curves, and public road approaches; full delineation per Standard Drawing G-3 and the Traffic manual; and snow poles.

- **Signing.** Show the intent legend and the approximate location of signs (existing to be retained, temporary, and permanent).
- **Illumination.** Show areas and discuss the intent to be covered, proposed intensity, minimum uniformity ratio, and type of illumination.
- **Railroad Crossings. .** See Section 360.02.
- **Pavement Markings.** Show the location and extent, including edge lines planned; transitions lengths; stop bars and crosswalks; two-way turn lanes; turn bays – right and left; channelizing lines; Bike lanes, and center lane lines. (The type of material, color, width of lines, and other minor details may be shown later. For scales of pavement marking plans, see Section 810.04.)
- **Traffic Control Plans.** See Section 355.00.
- **Minor Intersections**. Show the number of lanes of each approach and the width of the approach; corner radii; design vehicles used; and signal warrant worksheet (if applicable).
- **Major Intersections or Traffic Signals.** Projects that involve intersections of major streets or highways and intersections with signal warrants within the design year should include an individual site plan showing the existing conditions. Where approach speeds are less than 40 mph (60 km/h), the site plan scale should be 1”=20’(1:200) and should extend at least 150 feet (50 meters) on each approach. Where approach speeds are 40 mph (60 km/h) or more, the scale should either be 1”=20’ (1:200) or 1”= 40’ (1:500) and should extend at least 350 feet (100 meters) on each approach.

Site Plan Requirements

The following should be included on any site plans:

- Show north arrow.
- Show street names, route numbers, and stationing.
- Show edge of existing surfacing, lane and shoulder widths, all pavement markings, right-of-way and property lines, approximate grades, drainage pipes and inlets, intersection radii (curbed or uncurbed), driveways, and barriers.
- Show utility poles, street lighting, traffic islands, traffic signal poles, vehicular detectors, signal heads, and controller, if any.
- Locate no parking and restricted parking zones, hours, etc., bus stops, and direction of one-way streets, if any.
- Show all traffic control signs and the speed limits on each approach.
- Show existing buildings and locate any obstruction to sight distance for the driver approaching the intersection including trees, shrubbery, fences, billboards, walls, etc.
- Show location of any railroad grade crossings within 300’ (90 meters) of the intersection. Give the name of the railroad company. Indicate the existing protection and whether the railroad is a siding, mainline, etc.
- Indicate distance to the nearest existing traffic signal on each approach if 1 mile (1600 km) or less. Show municipal boundaries if within the area of the plan and identify the municipality.
- Show condition of pavement on all approaches where loop detection is proposed.
- Locate overhead wires, underground utilities, fire hydrants, basements, and any other appurtenances that could influence the signal design.
- Supplemental photos often furnish additional information in addition to that shown on the plan sheet. Two photos taken from each street approach, one from fairly close and the second from about 100 feet (30 meters) back, make a good reference for intersection details.

Right-of-Way Group

- **Right-of-Way.** Show existing right-of-way lines and the proposed (approximating is acceptable) right-of-way lines for the project, meeting design requirements.
- **For Railroad encroachments see Section 360.02.**

Major Structure Group

Major structures are structures with a span over 20 feet (6 meters) in length and will be included in bridge summary items. Preliminary bridge plan preparation consists of a situation and layout sheet and a foundation investigation sheet (see the Bridge section Office Standards for situation and layout sheet requirements). Sketches or views of out-of-the-ordinary structure details should also be included in the submittal on additional sheets if necessary. The submittal should be accompanied by District-approved roadway profile and alignment data.

Plan preparation will always include a separate roadway sheet showing the plan and profile for the bridge location and all related items and a typical section sheet showing the existing and proposed work to be done, even if it's by the county or others. This requirement applies especially to "bridge only" projects. The bridge situation and layout sheet does not replace the separate plan and profile sheet requirement.

A Foundation Plat, prepared in accordance with Section 16-250 of the Materials manual and showing test hole locations, should also be included.

Guardrail Requirements

Guardrail requirements are based upon an economic analysis that considers:

- The cost of right-of-way and grading to preclude the need for guardrail.
- The cost of the guardrail.
- The accident costs.

SECTION 355.00 – TRAFFIC CONTROL PLAN (TCP)

- A TCP shows ways of handling traffic through a specific highway or street work zone or project. The TCP may range in scope from a very detailed plan designed solely for the specific project to standard plans, from the *Manual of Uniform Traffic Control Devices*, or from a standard highway agency manual. The detail in the TCP will depend on the project complexity and traffic interference with construction activity.

- Consideration should be given to the safe storage of materials and equipment during construction. Include designated storage and staging areas when limitations exist inside the right-of-way. See Figure 5-7 and Figure A-2.

355.01 Public Convenience Measures. Public convenience must be considered on every project. All contract construction plans will include a traffic control plan with public convenience being considered. Public convenience measures can be optional (not required) if the level of service is C or better under the construction restriction and if the daily road user cost is less than liquidated damages. To minimize inconvenience to the motorist and maintain property owner access at all times, consider the following measures.

Analyze the capacity of the highway during construction to determine construction traffic control needs and detours. Use two-lane two-way detours when the ADT exceeds 6,000 or DHV exceeds 1,000. Projects should contain lane rental provisions when the roadway is near capacity with the number of lanes provided in each direction.

Use restrictive specifications on commuter routes with high directional split or high peak hour volumes. Schedule traffic-delaying work (use a contractor's note) to avoid rush hour commuter traffic in major urban areas, heavy holiday traffic, and events that may cause peaks and associated congestion. Consider requiring nighttime construction operations.

Consideration should be given to access for emergency vehicles on projects with considerable traffic control and narrow work zones and detours. Also, pullouts on .5 mile (1 km) intervals should be created for disabled vehicles and staging of incident management and law enforcement vehicles. For large projects in congested areas controlled access areas, motorist guidance programs and contractor furnished courtesy patrols should be considerations.

Use incentive provisions for early completion on projects that are in urban areas (highways where traffic exceeds 3,000 ADT on a 2-lane or 6,000 ADT on a 4-lane) or on projects that will significantly impact traffic and do not have practical detours. Incentive provisions should not exceed five percent (5%) of construction costs on major projects. Incentives on intersections, small bridges, and other minor projects should only be considered on a case-by-case basis. Incentives should not be specified for minor projects if either the short duration of the project or the value of the contract would make the incentive infeasible.

Do not use incentives if utility work by others will interfere with construction, if construction is anticipated to extend through more than one construction season, if moisture-sensitive soils may be encountered during wet-weather construction, or if there is uncertainty about subsurface materials.

355.02 Development. A TCP shall be developed and included in the contract plans for all federal-aid highway projects and should be developed for non-federal-aid projects where significant interference is expected. The scope of the TCP should be determined in the preliminary design stage of a project and the TCP should be completed and included in the plans prior to the Final Design Review. Separate TCPs should be prepared for each stage of construction.

TCPs for interstate projects should provide for minimum interference with the free flow of the traffic. Stopping interstate traffic should be avoided unless no other feasible alternative exists. If traffic must be stopped on interstate projects, traffic signals are recommended. Consideration should also be given to access for emergency vehicles, pullouts for disabled and emergency vehicles, motorist guidance programs, and courtesy patrols.

Contractors may develop and use their own TCPs if approved by the department and determined to be as good or better than those provided in the contract.

355.03 Widths. Construction zones should be wide enough to handle 15 feet. (4.5 meter) wide loads. If the detour will not handle these wide loads, the contractor must notify the Port of Entry Over Legal Permit Unit at (208) 334-8418 at least seven days prior to opening the detour to traffic. Further instructions should be covered in the Special Provisions.

355.04 Two-Lane, Two-Way Operation (TLTWO). Guidelines for proposing the use of TLTWO of traffic on one roadway of a normally divided highway are as follows:

- TLTWO shall be used only after careful consideration of other available methods of traffic control.
- The desirable length of TLTWO is 3 miles (4.8 km) or less and should not exceed 5 miles (8 km).
- The safe speed of median crossovers for TLTWO should equal the design speed of the highway facility.
- Consideration for emergency vehicles access to all lanes of traffic should be given.
- Pullout on 1km intervals are recommended for disable vehicles, staging of incident management and law enforcement vehicles.
- Courtesy patrols for disable vehicles and incident management should be considered.
- If the TLTWO is proposed, the TCP shall meet the required specifications in the Traffic Manual for appropriate durations.

355.05 Signing and Channelization. Sequential arrow boards may be used in addition to the other signing and delineation whenever closure of lanes is necessary on rural multilane highways.

Auxiliary advisory speed signs shall not be used alone. Auxiliary speed signs may be used when mounted under standard warning signs.

The Slow to "XX," signs, may be used when necessary to advise traffic that a given speed is desirable at that location.

If reduced speed limits are necessary, speed limit signs may be used, provided that the speed zones are properly established and approved in accordance with the Construction manual, Regulatory Speed Control Zones.

When concrete guardrail is used adjacent to traffic lanes, the guardrail should be adequately delineated so as to be highly visible to nighttime drivers.

Pavement markings (temporary tape, painted lines and symbols, thermoplastic markings, and raised markers) that are no longer applicable and that might create confusion in the minds of vehicle operators shall be removed or obliterated as soon as possible.

355.06 Construction Crossovers. Construction crossovers for use by the traveling public should be designed to the speed of the roadway and anticipated volume of traffic during construction. The crossover shall be located at logical project termini and shall be left in place for future projects. A positive restriction (earth berms, etc.) shall be placed on the crossovers to prevent random use when the project is completed.

355.07 Bid Items. Item 626-100A, Rent Incidental Traffic Control Item, Item 626-105A, Traffic Control Maintenance, and other items in Sections 626 or 630 in the Standard Specifications shall be used as payment coding for:

- Incidental traffic control devices and hardware that is not included in other pay items;
- Relocation and maintenance of devices paid for or rented under other bid items; and
- Costs associated with providing, monitoring, and supervising traffic control devices.

SECTION 358.00 – GOVERNMENTAL PERMITS

A federal-aid or state-funded project may require one or more permits from state, federal, or local agencies. Permits are normally obtained through an application process. Project approvals are obtained through coordination and negotiation with the approving agency. Most permits are related to environmental documentation and can also require supplemental materials. A table with regulatory provisions is outlined in The Environmental Manual, Government Permits.

SECTION 360.00 – RAILROAD ENCROACHMENTS – GENERAL

- In general, right-of-way is not acquired in fee title from a railroad company. Instead, ITD acquires permanent easements, temporary easements, right-of-entries or leases access rights by an agreement with the Railroad. Railroad involvement is usually one of the following:
- Encroachment on railroad right-of-way without crossing tracks.
- Encroachment on railroad right-of-way and crossing tracks with a grade separation structure.
- Encroachment on railroad right-of-way and crossing tracks with an at-grade crossings, with or without signals.
- Information about prior agreements covering current encroachments on Railroad right-of-way will be provided upon request from the Utility/Railroad Engineer if available.
- Generally any action involving a Railroad is time consuming. Obtaining easements or executing agreements can take 6 months to a year. It can take 8 months for a Railroad to obtain railroad crossing signal equipment and arrange for a work crew to install it.

360.01 Joint Inspection of Railroad Crossing. Prior to any survey, a joint, on-the-ground field inspection at the site shall be held with the Railroad, ITD personnel, and other interested parties to define

the scope of the project. The level of decision-making personnel in attendance at the field meeting will depend on the magnitude of involvement. If warranted, Roadway Design personnel should be invited to attend the field meeting. The District shall send to the appropriate railroad company a topographic vicinity map and cross sections showing the proposed roadway as related to the railroad. In the letter, a field meeting at the site should be proposed to discuss the concepts and proposed treatment.

At the joint inspection determinations should be made for:

- The nearest encroachment to the centerline of the tracks that will be permitted for the project. If closer than 25 feet railroad protection services will be required.
- Drainage, bank protection, and other conditions that may be encountered on the proposed roadway location.
- The type, number, and location of railroad signals. Consideration should be given to locating railroad signals outside the clear zone area to eliminate the requirement for guardrail or other protective devices.
- Utility locations, both aerial and buried, that could be affected by the proposed installation and if these utilities interfere with the proposed railroad signals or gate installation. Adjustments may need to be made to the utilities, or the location of the railroad signals adjusted.
- Consider the existing track and road elevations in relation to providing a smooth crossing surface.
- Any proposed future roadway widening project that would effect the placement of signals.
- Any unusual situation at the site.

Photographs shall be taken during the field inspection for later reference during the design phase of the project.

- Additionally, the following information shall be provided to the Railroad at the time of the field inspection and recorded on an ITD-602, Crossing Evaluation Report:

- Identify the project by project number (if issued), ITD Crossing Number (if a railroad crossing), and the types of funding. (Be sure to note if federal-aid funds are used.)
- Include the names, telephone numbers and agencies of the persons present.
- Identify if the work that is being performed by the railroad is at state or local public agency expense or at railroad expense.
- Advise the Railroad that the work cannot commence until an agreement has been completed and executed by all parties. Also, work cannot commence prior to Federal Highway Administration approval and authorization by Idaho Transportation Department without jeopardizing federal funds.
- The District shall document any decisions made during the field inspection and distribute the completed ITD-602 to the attending representatives, the Roadway Design Engineer, Traffic Engineer, and the Utility/Railroad Engineer.

360.02 Plans for Railroad Agreements. Priority shall be given to the preparation and submission of necessary plans and data for use in securing agreements with railroad companies when encroachments or crossings are involved. The project plans with railroad encroachments must contain the necessary data and be submitted early to the Utility/Railroad Engineer. Roadway encroachments on railroad property shall also be shown on the right-of-way plans. The project plans, profile and typical sections shall be made in such a manner that the railroad company will be able to plot the roadway alignment on their railroad alignment. The scale for each sheet should be selected based on the complexity of necessary detail.

Plan Requirements

The plan sheet 11 x 17 inches (unless otherwise noted) preparation shall include the following data:

- **Title Sheet.** Show all standards and structure drawings on the title sheet.

- **Plan Sheet.** Show the existing and proposed railroad and roadway alignments for a minimum of 500 feet on each side of the crossing. Show all existing topography, all new improvements, and other features that may effect the design or traffic operation of the crossing, such as intersections, driveways, or structures.

  Show the intersection station equation of the railroad mainline track and the roadway centerline along with the milepost and the AAR/DOT #. Show the intersection angle of centerlines for the railroad and the roadway.

  Show the Railroad and roadway right-of way lines and the existing easement lines for the roadway on the Railroad right-of-way. Show the needed roadway easement by hatching the area. Show the ties at the beginning and end for each encroachment and within the encroachment area at all break and/or angle points. Generally, encroachment across the full width of the railroad right-of-way should be straight and parallel to roadway centerline. Show the Railroad and the roadway stations and offset from centerlines for each tie.

  Show any railroad switch locations, the name of the Railroad company and the use of the tracks (mainline, branch line, siding, or spur).

  Show the type of signals proposed, the length of gates and/or cantilevers required, the number of signal heads and direction to be installed, and the exact location of the signal supports in relation to the Railroad and roadway centerlines intersection. Signal cantilever arms and gates should normally be located perpendicular to the roadway centerline and a minimum of 10 feet from centerline of nearest track. Show all railroad facilities, signal control and switch boxes, and all utility poles, including those on Railroad right-of-way. Pedestrian gates may be required in certain urban areas and should be considered in the design reviews. See example plan sheet Figure 3-7.

- **Profile Sheet.** Extend the roadway profile to match the plan alignment. This profile shall be a minimum of 500 feet in each direction from the crossing.

  Where a new crossing of the railroad tracks is proposed, a special profile along the top of the rails for a minimum of 500 feet each side of the crossing should be shown.

  - Where there is an adjustment proposed in the railroad line such as raising or lowering the tracks, a special profile of the top of rails should be prepared along the railroad alignment to show the full extent of the raising and lowering of tracks and for a sufficient distance outside of the adjusted area to give a complete picture to the Railroad of the proposed adjustment.

    Special profiles shall be furnished where special drainage or waterway channels are proposed. The usual form of profile is sufficient for most Railroad purposes, however, where special drainage conditions exist and drainage channels are necessary, a separate profile should be prepared to give the Railroad a more complete picture.

- **Typical Section.** A typical section shall be provided in the plans showing geometrics of the roadway and ditches including dimensions.

  In cases where the roadway encroachment is on Railroad right-of-way, the typical section must be extended across the centerline of the railroad tracks to show the relationship between the finished roadway grade and the railroad tracks. Typical sections should be in the critical areas where the greatest encroachment is proposed with elevations at the base of the rail.

Where a slope or a ditch easement is required in addition to the regular encroachment width, the typical section shall show the Railroad right-of-way line, the easement line, and the sloping or channel change line. These distances indicated on the typical sections should conform to those distances shown on the plan sheet.

For signal projects, include the appropriate Railroad - Highway Crossing Signal Standard Drawing R-12-A or B, or a modified detail drawing of the signals, cantilever arms, and gates needed.

- **Situation and Layout.** If a grade separation structure for roadway over the railroad tracks is required, include a Situation and Layout plan showing clearances related to the railroad tracks. See Figure 3-8 for example.
- **Signing, Delineation & Pavement Markings.** For at-grade crossing projects include plan sheet(s) showing all required traffic control signing, delineation and pavement markings which must adhere to the latest version of the MUTCD accepted by ITD.

360.03 At-Grade Crossings Design Criteria. An at-grade railroad crossing is, in effect, a traffic crossing and due consideration must be given to the design and traffic control of the intersection. *Idaho Code* requires all vehicles to stop at highway-railroad grade crossings protected by police officers, flagmen, traffic control signals, active railroad crossing gates or alternating flashing lights. Other regulations require specific vehicles to stop prior to crossing at unattended crossings and those signed as "exempt" crossings. The Federal Motor Carrier Safety Regulations also requires certain vehicles to stop prior to crossing train-actuated signalized railroad grade crossings.

Plankings
Improvements of grade crossing surfaces may be required to improve the road surface and provide a smoother ride over the at-grade crossing. Only the types of planking that are currently acceptable to the Railroad are to be used on the project. The Railroad will install and maintain planking between and 2 feet outside of the rails. Length of planking shown on plans is to be computed based upon 8 feet increments.

Stopping Lanes
Generally, stopping lanes are not provided on two-lane roadways that are protected by railroad crossing signals. They may be considered at unsignalized crossings and on high volume roadways with signals. The decision to add stopping lanes should be made on a project-by-project basis after reviewing the situation with the Traffic Engineer.

Warning Devices
Warning devices, including signs, pavement markings, railroad crossing signals, cantilever supports, gates, and types of train-actuation systems, should be selected for each crossing individually after the joint inspection and other required data is obtained.

The cantilever arm length is determined by measuring from the center of the inner lane to the desired support location. The light units on the pedestal and on the end of the cantilever arm should be installed back-to-back. Two-lane roadways do not normally require cantilevers except for unusual sight distance problems. All post-mounted lights on two-lane roadways shall have back-to-back light units. Two-lane roadways with truck and bus stop lanes should have a cantilever with back-to-back light units installed over the main traffic lane and on the pedestal.

Gate arms longer than 28 feet are not standard for the Union Pacific Railroad Company, and therefore require prior approval by the railroad company. Gate arms should end at 12 inches or less from the centerline of undivided roadways. Two-way turn bays shall not be painted across railroad tracks and shall be terminated 30 feet on each side of the railroad tracks with barrier striping across the tracks. For cantilever and gate arm lengths in relationship to the roadway, refer to Standard Drawing R-12-A & R-12-B for Railroad-Highway Crossing Signals.

Guardrail

Consideration should be given to locating railroad signals outside the clear zone area to eliminate the requirement for guardrail. When required to protect the railroad signals and for safety of the motorist, guardrails or other approved crash protection devises shall be used. The guardrail shall be designed in accordance with the standard drawings. Terminal sections shall be no closer than 12 feet to the centerline of the nearest track. When guardrail is to be installed other than by contract, the guardrail requirement note shall include who will make the installation, i.e., show by state, city, or county forces and at whose expense.

360.04 Railroad Structure. Under railroad structures, the horizontal and vertical clearances shall meet the railroad requirements. All railroad grade separation structures and shop plans for railroad grade separation structures carrying railroad traffic must be approved by the Railroad.

Grade separations that are on railroad curves are to have top of rail profiles for each track with railroad curve data to include the super of track at centerline of railroad and highway.

360.05 Request for a Railroad Encroachment Agreement. The District's request to the Utility/Railroad Engineer for a railroad encroachment agreement shall include the following (all plans shall be 11x 17 inches unless otherwise noted):

- One set of roadway plan and profile sheets (white prints).
- One set of colored white prints (encroachments colored) for each railroad involved.
- One set of structure crossing sheets (Situation and Layout) showing clearances (white prints).
- One set of the roadway typical section showing the existing and proposed right-of-way lines (white prints).
- One set (for signal projects) of detailed drawing of signals, cantilever arms and gate or Standard Drawing R-12-A or R-12-B (white prints).
- One set of signing, delineation and pavement markings plans for at grade crossing projects (white prints).
- One copy of the completed ITD-602, Crossing Evaluation Report.

The Utility/Railroad Engineer will review the submittal and resolve any comments with the District. Additional copies may be requested (made from the original plans) depending on the requirements for submittal to the railroad.

If additional right-of-way is required, the Official Right-of-Way Plans shall be submitted in accordance with Section 415.10. If additional right-of-way was purchased under another project, state this information in the request. Include any data that will be helpful in the preparation of the agreement, especially if a local public agency is involved.

Figure 3-7

PLAN / PROFILE FOR RAILROAD CROSSING

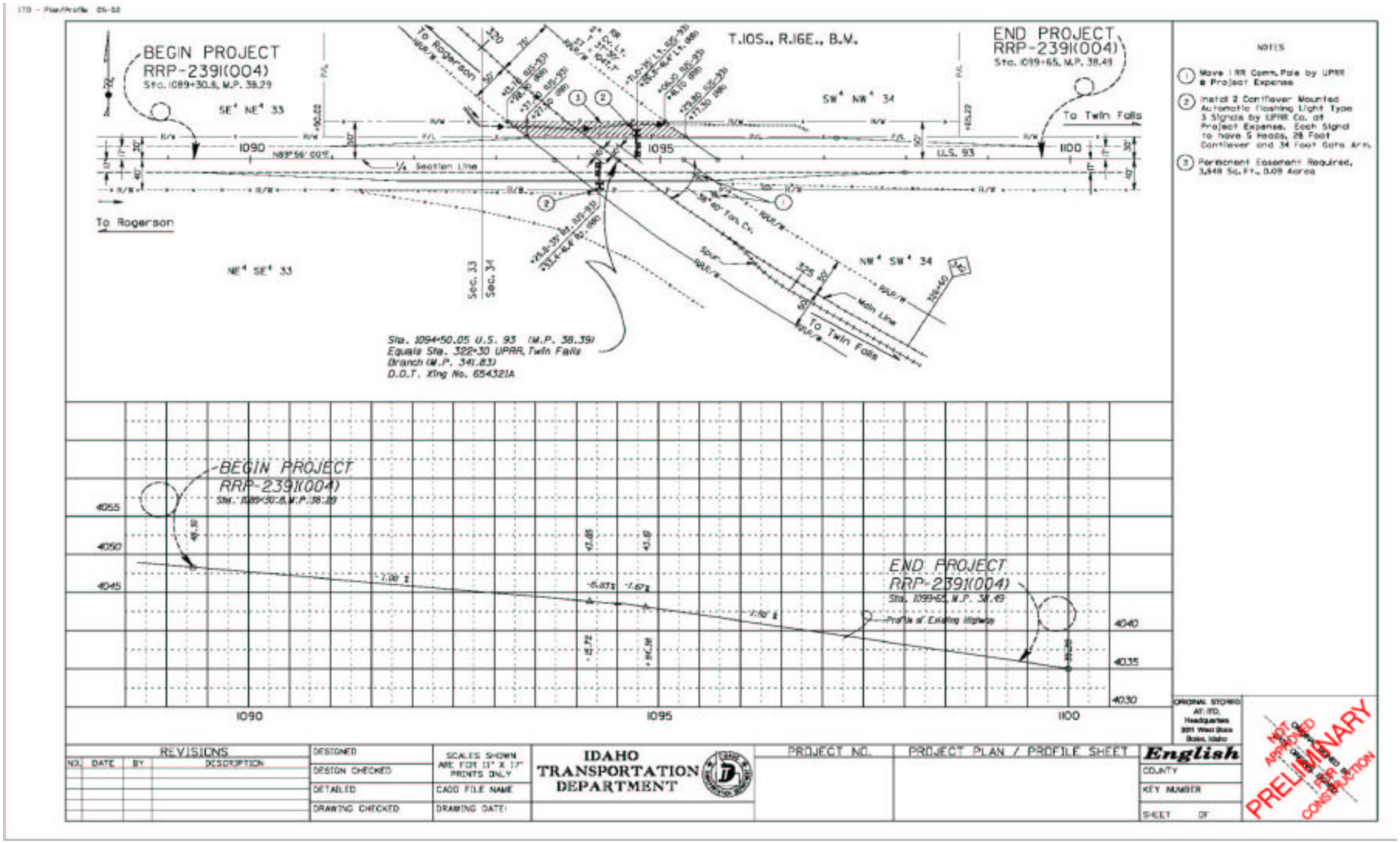
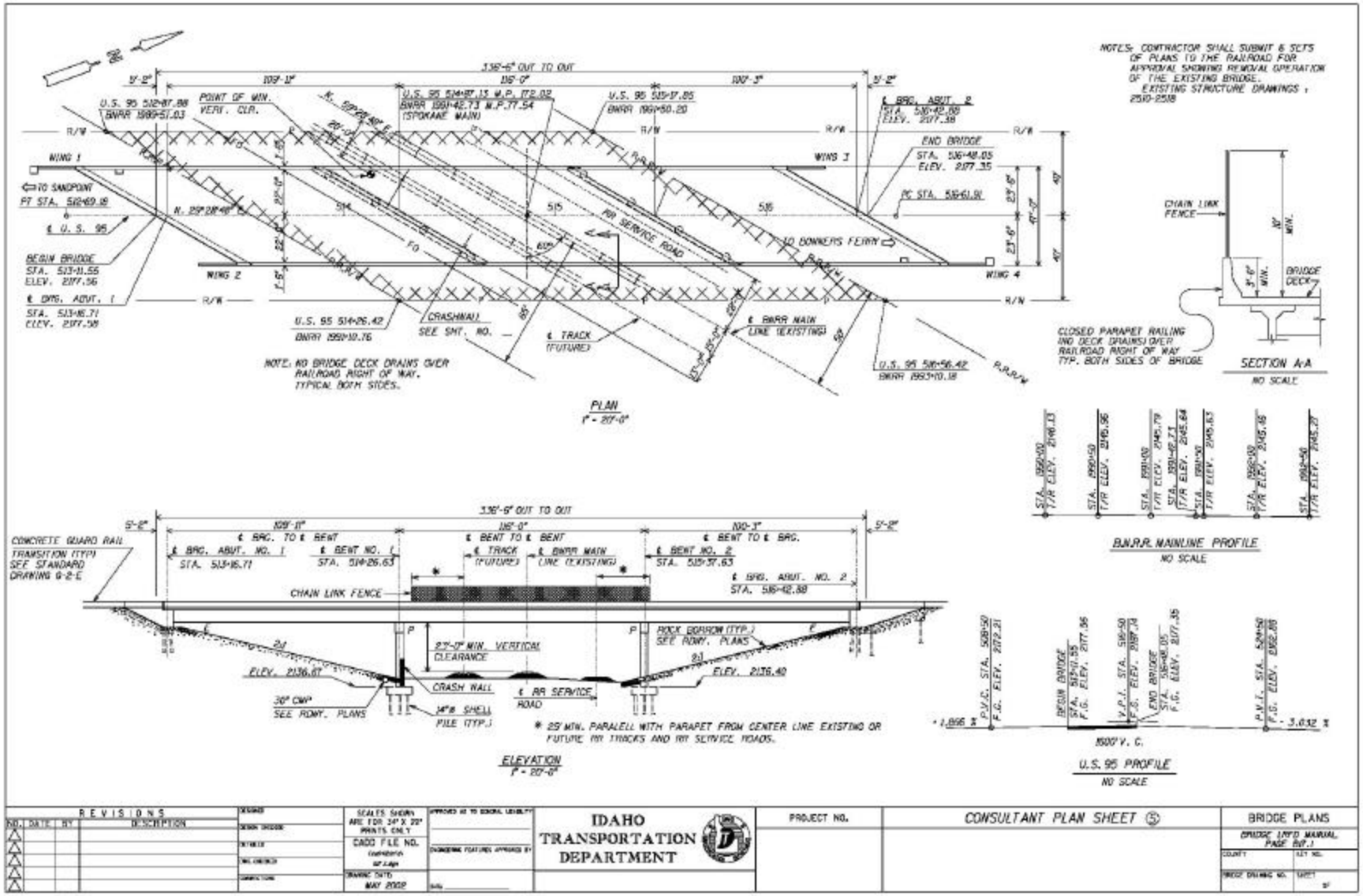


Figure 3-8

SITUATION AND LAYOUT



SECTION 365.00 – AIRPORT CLEARANCE REQUIREMENTS

Any proposed new construction or alteration of an existing facility that may impose an obstruction to present or future air navigation must be coordinated with the Federal Aviation Administration (FAA) and with the department's Division of Aeronautics (Aeronautics). The FAA and Aeronautics require notification of proposed construction or alteration that contain vertical elements exceeding limitations established in Federal Aviation Regulations Part 77. The federal regulations ensure that the expenditure of public funds is in the public interest, coordinate airport expansion and highway construction, provide for safety of the public in the air and on the ground, and inform FAA and Aeronautics of potential hazards so as to prevent or minimize the hazard. Construction that does not exceed the general limitations are considered to have little or no potential for a hazard to air navigation. Additional reference material on airport clearance can be found in:

FHWA, Highway Improvements in the Vicinity of Airports

Federal Aviation Regulations Part 77, Objects Affecting Navigable Air Space

Division of Aeronautics, Marking of Obstructions to Air Flight, *Idaho Airport Facilities Directory*, Idaho Aeronautical Chart, and IDAPA Rule 39.04.01

Idaho Code 21-513 through 21-520

Coordination with Local Airport Officials

Projects within 2 miles (3.2 km) of an airport will be carefully examined. If FAA and Aeronautics must be notified of the proposed construction, or for any project when considered appropriate, the District will contact the local airport authority. Planned or probable expansion of the airport that may cause substandard clearances to the highway project should be discussed. Proposals to eliminate conflicts should be initiated by the District when practical. Unusual or controversial highway-airport situations will be brought to the attention of the FHWA.

Conditions Requiring Notification

Aeronautics requires notification of any structure that would be 150 feet (45.7 meters) above the ground or water surface. FAA requires notification of any structure that would be 200 feet (60.9 meters) above the ground or water surface. Aeronautics and FAA also require notification of any proposed construction or alteration of a greater height than an imaginary surface sloping outward and upward at one of the following slopes around runways and heliports:

- 100 to 1 for a horizontal distance of 2,000 feet (6100 meters) from the nearest runway for airports or seaplane bases with at least one runway longer than 3,200 feet (975 meters).
- 50 to 1 for a horizontal distance of 10,000 feet (3050 meters) from the nearest point of the nearest runway for airports or seaplane bases with no runway longer than 3,200 feet (975 meters).
- 25 to 1 for a horizontal distance of 5,000 feet (1525 meters) from the nearest point of the nearest landing and take off area of heliports.

Vertical elements for a highway include the height of the vehicles using them and any structure elements such as signs, lights, and signals. The height of vehicles is 17 feet (5.1 meters) on interstate highways, 15 feet (4.6 meters) on other public roads, and 10 feet (3.0 meters) or the height of the highest mobile object expected to use private roads and driveways.

Notification requirements apply to military bases and airports that are available for public use and are listed in the Airport Directory of the current *Airmen's Information Manual* or the *Idaho Airport Facilities Directory* published by the Idaho Transportation Department.

Exceptions to Notification Requirements

Notification is not required for the following:

- Airports available for private use only.
- Highway projects on which structures, the highway, and mobile objects would be shielded by existing structures of a permanent and substantial character or by natural terrain or topographic features of equal or greater height.
- Highway projects on which structures would be located in the congested area of a city, town, or settlement where it is evident beyond all reasonable doubt that the structure so shielded that it will not adversely effect safety in air navigation.
- Projects that may be considered stage construction of projects previously coordinated with FAA and Aeronautics.
- Minor improvements such as pavement overlays, seal coats, updating signing, or guardrail unless vertical elements such as lights, signals, overhead signs, or relatively tall construction equipment are involved.

The District shall send a memo to the Roadway Design section stating that notification is not required and how the "no notification" determination was made.

Procedures for Notification

When FAA and Aeronautics notification is required, the District will prepare a *FAA Form 7460-1, Notice of Proposed Construction or Alteration,* for projects originating in the District. Outside agencies involved in plan preparation may prepare this form and submit it with the required project data to the District. The *FAA Form 7460-1* is a five-page packet with carbons that can be obtained by contacting the Idaho Transportation Department, Bureau of Aeronautics, 3483 Rickenbacker Street, Boise, Idaho, 83705; telephone number (208) 334-8775. The notification must use an original of the form, not a reproduction.

The completed form and three copies are to be sent to the Roadway Design section with a highway map or drawing showing the airport and the construction, as shown on the Sketch Map (Figure 3-9). The map or drawing may be made on county or city maps or on separate sketches and shall be sufficiently detailed both vertically and horizontally to show the effect of the highway project on the airport and the effect of the airport on the highway project.

Roadway Design will review the form and map for completeness and forward to FAA's Northwest Mountain Regional Office in Renton, Washington. Copies will be sent to Aeronautics and the District. FAA or Aeronautics will determine if the airport will be a hazard to air navigation and require any special lighting or marking. When considered appropriate, additional study may be required.

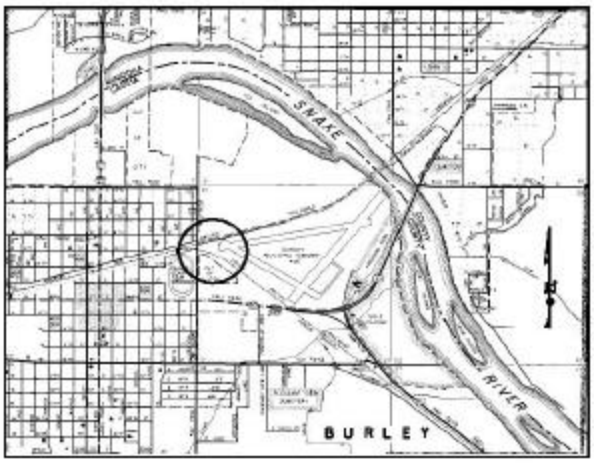
365.01 Cooperation with Aeronautics and Public Transportation. Aeronautics will receive copies of all construction programs, including state maintenance and stockpiles. When requested by Aeronautics and approved by the District Engineer, the District will include airport paving, seal coats, or crushed aggregate for airport construction or maintenance with ITD projects for similar work.

Figure 3-9

SKETCH MAP

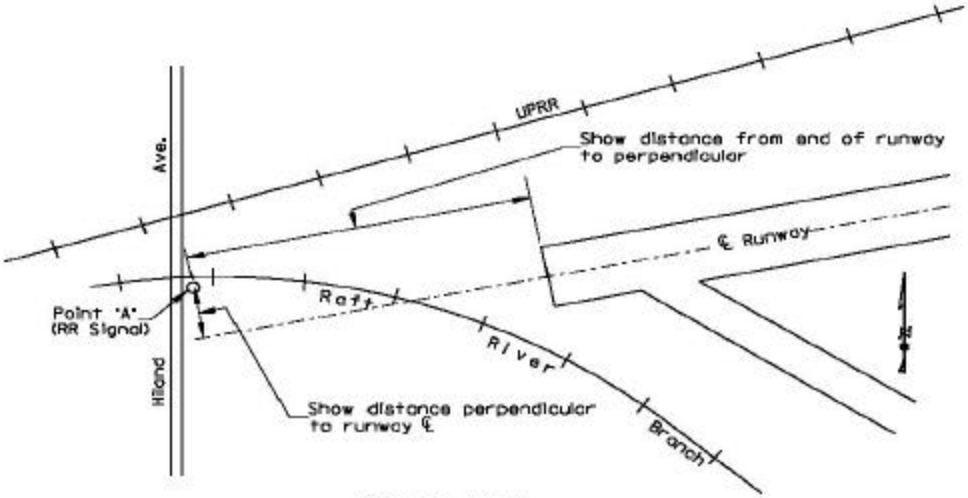
ITD 1767 12-98
Form use : Mtce Projects

metric
Figure 4–09
May, 1999



Point	Point Elev.	Horiz. Dist.	Vert. Dist.
'A'	1270.409	181.966	5.73

* from NW end of runway.
Elev. at end of runway is 1264.676.



SKETCH MAP

CADD DWG. 4_090599.dgn

SECTION 370.00 – UTILITIES – GENERAL

Utility facilities shall mean all privately, publicly, or cooperatively owned lines, facilities, and systems for producing, transmitting, or distributing communications, cable television, electricity, light, heat, gas, oil, crude products, ore, water, steam, waste, storm water not connected with highway drainage, and other similar items. Idaho Code grants Utility Companies the right to occupy public right-of-way with their facilities and authorizes the Idaho Transportation Board to control the use of the right-of-way.

ITD has developed the *"Guide for Utility Management"* with information and guidance regarding the coordination and administration of utility facilities installation, relocation and adjustment within the right-of-way of the State Highway System and for highway improvement projects using Federal-Aid funds. Refer to chapter 4 of the latest version of the *"Guide for Utility Management"* for information concerning the design process incorporating utility facilities.

SECTION 375.00 – PUBLIC INVOLVEMENT

ITD has developed the "Guidebook to Public Involvement: Development of Highway Projects" to assist in planning and implementing systematic public involvement in the development of highway projects. A copy of the guidebook is located on the Design Manual CD and is also available in hard copy from ITD's Office of Public Affairs public involvement coordinator. The guidebook provides in-depth guidelines for conducting public involvement.

The purpose of public involvement is to ensure that transportation decisions by the Idaho Transportation Department are based upon the best overall public interest. Public involvement enables ITD to gather concerns and needs of the public to be considered during the decision making process. ITD's goal for public involvement is informed decisions. ITD strives to meet its public involvement goal by:

- Communicating complete and accurate, understandable and timely information to the public throughout the project development process
- Actively gathering input from the community by providing citizens with meaningful opportunities to participate in the development and decision making processes
- Complying with requirements of Title VI Civil Rights Act of 1964 and ensuring all citizens regardless of race, income or physical limitations have the opportunity to participate
- Providing opportunities for early and continuing involvement
- Considering and responding to community input in project development studies and final decisions
- Designing highway projects that are consistent with federal and state laws and sensitive to local goals and objectives

375.01 Public Involvement Definitions.

Scoping: A preliminary process for determining the scope of issues to be addressed in the environmental document and public involvement process. Scoping identifies significant issues related to a proposed action. It occurs early in the project development process.

Public Involvement Plan: A document that identifies public involvement goals, objectives and strategies and details the methods and tools for soliciting public involvement in the development of highway projects.

Public Information Meeting: An open meeting to discuss proposed alternatives of a highway project. The meeting is held before a specific alternative is chosen.

Public Hearing: An open meeting to discuss and take public testimony on the proposed alternatives of a highway project. The hearing is held before a specific alternative chosen.

System Action: The process used to abandon, relocate, or replace a highway serving or traversing any city. Idaho Code 40-310 requires that before the Idaho Transportation Board can undertake a system action affecting any highway serving or traversing any city, a public hearing in that city must be held.

375.02 Public Involvement Process. The public involvement process applies to all projects and begins early in the project development stage. As required by 23 CFR 771.111 (2)(ii), the public shall have early and continuing involvement in the identification of social, economic and environmental impacts and mitigations, as well as impacts associated with relocation of individuals groups and institutions.

Two tasks are vital to the public involvement process:

- Scoping a project for the need and degree of public involvement
- Developing the public involvement plan for a project

These activities are important to the successful development of ITD highway projects since each project has a different level of public interest. Some will generate little interest. Others will generate tremendous interest and require well-planned public involvement activities. Well-planned means proactive. A project's need for public involvement is determined by:

- Identifying potential controversies
- Gauging levels of interest by various stakeholders
- Assessing available resources
- Deciding which tools and techniques will work best for enhancing two-way communication with the public
- Identifying social, economic and environmental concerns

375.02.01 Scoping. ITD recommends that public involvement scoping occur during the broader concept scoping, a process delineated in Section 4.5.1 of the Design Manual. Scoping a project for public involvement accomplishes the following:

- It helps the project manager ask the questions that are critical to the project's success.
- It provides the information necessary to write the public involvement plan that will guide future public involvement activities and schedules.
- If conducted before a consultant is hired, it helps ITD project concept team members determine which consultant could provide the best public involvement services.
- It allows project managers to better analyze a consultant's scope of work.

The complexity of a project, simple or complex is a good indicator of the level of public involvement necessary for the project. Simple and complex projects are defined in Chapter 4. Responding to scoping questions may indicate that a seemingly simple project is complex because of a high level of public concern.

ITD Public Involvement Scoping Questions

The following questions can be found in a worksheet form in "A guide to completing the ITD 783 Concept Report." ITD recommends answering the scoping questions as a step in completing the ITD 2708 Preliminary Project Concept.

1. Project origin and background

a. Why is this project in the program?

b. Why is this project needed?

c. What are the concerns or history of public involvement in the communities affected by this project?

d. What does the community (elected officials and others) know about this project?

2. Project Impacts

a. What are the benefits of this project? How will it improve the community?

b. Will the project change the character or function of the highway? How?

c. Are there any special concerns associated with the project?

d. What public reaction is expected?

3. Stakeholders

a. Who is impacted by this project? Who are the project stakeholders? (This list should be updated as needed throughout the project.)

b. What is the best way to provide information to stakeholders?

c. What are the best ways to gather input from stakeholders? What is the best way to develop two-way communication with stakeholders?

d. Whose needs will be met by this project?

e. Whose needs will not be met?

f. Are any minority, low-income, Indian tribes, elderly or other populations with special needs affected or impacted by this project?

g. What is the best way to develop two-way communication with minority, low-income, Indian tribes, elderly or other populations with special needs affected or impacted by this project?

4. Schedule

a. What is the schedule for project development?

b. Will the project require a merger process, and if so, why?

c. What community events could be affected by this project?

5. Legal questions

a. Will right-of-way need to be purchased? If so, how much, and what actions are necessary?

b. What are the mandates or regulations governing this project?

c. What are the possible environmental or cultural impacts?

d. What impacts will there be to roadways or facilities under another agency's jurisdiction?

6. Resources

a. What resources are needed to implement public involvement for this project?

b. What resources do I have to implement this project? If resources are not adequate, what steps can be taken?

375.02.02 Developing a Public Involvement Plan. Every highway project is different; each one requires a public involvement plan tailored to its unique needs and issues. The information obtained in completing the scoping questions will help determine the appropriate public involvement goals, objectives, strategies and tools. The public involvement plan details the methods and tools for soliciting public input. With advance planning, changes are less likely to be necessary midway through a project. And the project is more likely to stay within budget and on schedule.

Flexibility is also a critical component of any strategy. Effective public involvement activities should change as conditions and situations change.

ITD recommends the following actions:

- Complete the scoping questions before you start writing the public involvement plan.
- Write a plan for complex highway projects, but not necessarily for simple projects.
- Ask the public involvement coordinator for help completing the public involvement plan, if necessary.
- Submit your public involvement plan to Headquarters Office of Public Affairs, public involvement coordinator and attach a copy to the Location and/or Design Study Report.

The different components of a public involvement plan are:

1. **Project Introduction**. This section of the public involvement plan should explain the project, as well as provide any background information about the project. This section will also set the tone for the project's public involvement and may be useful when developing materials for the project.
2. **Goals and Objectives of Public Involvement in the Project**. Every public involvement plan begins with ITD's goals for public involvement.

GATHER THE CONCERNS AND NEEDS OF THE PUBLIC TO BE CONSIDERED DURING THE PROJECT'S DECISION MAKING PROCESS.

USE INFORMATION GATHERED FROM THE PUBLIC TO MAKE INFORMED DECISIONS.

The objectives should be derived from the specific circumstances of the project. The more specific the objectives, the better they will guide the public involvement plan. Objectives provide justification for all other activities included in this plan.

3. **Project Stakeholders**. This section of the public involvement plan should cover two categories of information. First, it should identify who might be interested in participating and whose participation is necessary for the department to make sound decisions. Next, it should identify the best channels of communication with stakeholders and what information these stakeholders need about the project.
4. **Project Strategy**. This section of the public involvement plan should identify the general approach and public involvement process for achieving the project's goals and objectives.
5. **Tools and Techniques.** This section of the public involvement plan identifies the tools and techniques to be used in carrying out the strategy for achieving the public involvement goals and objectives. Before selecting a tool or technique, review what has worked for prior projects. Poorly planned involvement activities are rarely successful. Understanding the project and the level of public interest will help you select the appropriate tools and techniques to be used in the public involvement process. For example, the following tools can help meet a project's goals and objectives:

- Broachers
- Charrettes
- Informational meetings
- Letters to property owners or interested parties
- Logos
- Mailing list or stakeholder databases
- Media Involvement
- Newsletters
- One-on-one contacts or meetings
- Partnerships
- Presentations
- Press releases
- Public advisory committee
- Project hot lines
- Public hearings
- Surveys
- Web pages
- Workshops

For definitions and discussions of possible public involvement activities, refer to *Public Involvement Techniques for Transportation Decision-making*, September 1996, by the U.S. Department of Transportation, Federal Highway Administration. This publication is available from ITD's Office of Public Affairs, public involvement coordinator.

6. Resources. This section of the public involvement plan should identify resources (including time and money) necessary to implement the project's public involvement activities. It is important to know the cost of your tools and techniques in order to determine if available resources are adequate. If not, you will need to look for additional resources.

7. Project Schedule. This section of the public involvement plan should detail the schedule necessary for public involvement activities. Identifying project milestones helps determine when particular public involvement activities are appropriate. Key public involvement activities should be integrated into the project's critical path method (CPM). The Project Activity Flowcharts, Simple Type and Complex Type identify where "typical" public involvement activities occur in during the development process.

8. Management. This section of the public involvement plan identifies the chain of communication and roles and responsibilities between Headquarters Office of Public Affairs, the district as well as any public involvement consultants. This section is especially important if a consultant is implementing public involvement activities. Who will be doing what? Who is responsible for what?

9. Evaluation. This section of the public involvement plan should identify methods and measurements for evaluating whether the strategy, tools, and techniques are meeting public involvement goals and objectives for the project. Evaluation should occur throughout the project.

375.03 Public Information Meetings. Public information meetings are often held as part of urban construction projects, prior to public hearings, and when the time between the final hearing and the beginning of construction is longer than three (3) years.

The meetings can occur before and during construction of a highway project. The District Design Engineer shall contact the Public Involvement Coordinator when bid specifications require a contractor to sponsor weekly public information meetings prior to and during a construction project. The weekly meetings generally occur for urban projects, or where there is considerable public interest in the project. The Public Involvement Coordinator along with Public Affairs will work with the contractor to publicize and facilitate the meetings.

A period of not less than 45 days is allowed for the return of comments on the draft EIS [*23 CFR 771.123(i)*].

If there is intense public interest in a project, if the level of impact is great, or if the project's public hearing was held longer than three (3) years prior to construction, public information meeting or meetings must be held. The number of appropriate public hearings/meetings for a project with an Environmental Assessment or Environmental Impact Statement needs to be determined based on issues, inputs, proposed mitigation, and public concern/input.

Conducting Public Information Meetings

The public information meeting shall be conducted in a format similar to a public hearing (see Figure 3-11, Public Hearing Requirements). Details about the format are available from the Public Affairs Office.

The activities of the public information meeting shall be documented with file memos that include:

- How long meetings or contacts lasted.
- Where the meetings were held.
- Who initiated the meetings.
- Who participated.
- How participants were notified.
- Content of discussions, questions, comments, and concerns.
- Conclusions (including response to comment/concerns).

375.04 Public Hearings. Public hearings provide the department with an opportunity to summarize studies, new developments, and public input on a proposed project. The hearings also give ITD opportunities to share project information with the public and, in turn, receive more input before final design.

Public Hearing Need

The District Engineer may waive public hearings when public awareness and support for the project is apparent and non-controversial. If there is a question as to whether a hearing is needed, the District Engineer shall request in writing that the Roadway Design Engineer determine whether a hearing will be held based on the following criteria and the results of the public information meetings.

Projects involving federal funds must have a hearing, or an opportunity for hearing, when there is:

- Acquisition of significant amounts of right-of-way.
- Substantial change to the layout or function of the connecting roadways or of the facilities being improved.
- Significant adverse impact on abutting property or when litigation or public controversy is anticipated.
- Significant social, economic, and/or environmental effect on the surrounding area.

Projects financed totally with state funds must have a public hearing when:

- The state highway serving or traversing any city is to be abandoned, relocated, or replaced.
- There is significant public interest or controversy surrounding the project.

FHWA may request a public hearing when a hearing may be in the public interest.

Figure 3-11

PUBLIC HEARING REQUIREMENTS

Glossary of Personnel Abbreviations/Terminology

ASHD	Administrative Secretary Highway Division	PDE	Project Design Engineer
CE	Chief Engineer	PIC	Public Involvement Coordinator
DE	District Engineer	Q&A	Questions and Answers
District	District Engineer, Assistant District Engineer, and District personnel — Project Development Engineer, Project Engineer, Traffic Engineer, Right-of-Way Supervisor, Traffic Engineer, and Environmental Planner	RD	HQ Roadway Design Section
ENV	HQ Environmental Section	RDE	Roadway Design Engineer
HO	Hearing Officer	R/W	Right-of-Way Manager
HPM	Highway Programming Manager	SB	Secretary to the Idaho Transportation Board
PA	Public Affairs	Team	District personnel, PIC, ENV, and PA

DAY	ACTIVITY	RESPONSIBLE
	Submit environmental documentation to ENV for approval prior to beginning of hearing process.	District
70	Submit request to RD for hearing requirement determination. (If Question exists as to whether or not a hearing is needed)	District
70	Prepare appropriate number of project hearing plan sets and submit 1 set to RD for review	District
65	Make determination on hearing requirement and advise District and PIC.	RD
65	Notify PIC when plans are approved and return approved plans to District.	RD
65	Send copy of environmental document to PIC for file.	ENV
65	Call PIC to schedule hearing date: _____.	District
65	Inform SB and ASHD to advise appropriate Board member of hearing date.	PIC
60	Meet to outline organization of hearing. Define scope of hearing and make initial assignments for support materials, presentation, Q&A, and team leader.	Team
60	Make assignments for following areas: General administration, Local government concerns, Participation by other political entities, Illustrations and exhibits, Event site coordination, Video and still photographs, Property owner contacts and R/W issues, Publications (written project overview), Publicity, Event scripts for each presenter.	Team DE DE DE/PIC PDE/PIC PDE/PIC PA/PIC R/W PIC PIC/PA Each

DAY	ACTIVITY	RESPONSIBLE
60	If system action, advise HPM and PIC.	RD
60	Identify Work Authority: _____ Activity code: _____ Functional code: _____ Rule: _____	PIC
60	Identify hearing location: _____ (Must be handicapped accessible and approximately 2,800 sq. ft. Please note that the best hearing location is one with all facilities included – sign-in area, main hall, separate video and testimony areas, break room for staff.) Hearing hours: _____	District/PIC
60	Submit project information to PIC. Include Reason for project, Type, Alternatives, Length, Estimated cost, Construction year, Environmental impacts, Public concerns, R/W properties effected, Map of project location that is suitable for reproduction, Location where project information/plans can be obtained, and Contact person and phone number.	District
60	Decide who will be the primary contact person for each area: Design: _____, Right-of-Way: _____, Environment: _____, Traffic: _____, Alternates: _____ _____	DE
60	Layout all creative concepts for advance publicity; e.g., paid advertising, radio spots, news releases, etc. Identify papers and media to be contacted	PIC
60	Secure Hearing Officer	PIC
55	Contact property owners again to personally advise them of upcoming hearing date, time and location, plus impact on individual property.	District & R/W
55	Draft script to be used for video, project brochure, advertisements, news releases, etc. Send copy to Team. Comments due to PIC by Day 52	PIC
50	Make any necessary corrections to script and send copy to Team. Script should include shot list for video and still photographs.	PIC

DAY	ACTIVITY	RESPONSIBLE
45	Develop copy for all print/paid ads. Schedule dates for: Ads: _____, News releases: _____, Public notice: _____, and Interviews: _____	PIC
45	Make telephone inquiries of local officials to determine public interest in project as well as public concerns. Assess property owner concerns. Determine if notification needs to be translated into another language and notify PIC.	District
45	Scriptwriter, videographer, and District staff meet on-site to shoot video footage and still photos.	PIC/PA/ District
45	Finalize copy of paid ad and public notice. Review with Team.	PIC
40	Prepare Q&A for each area. Distribute copies internally.	Team
35	Draft letter for DE to send to involved property owners, local entities, utility companies, user groups, etc., advising them of the hearing. Review with DE, make any necessary changes, and transmit final copy to District. Comment due date should be two weeks after hearing. Request contact with District personnel if special needs are necessary.	PIC
30	Mail letter (and hearing brochure, if ready) to involved property owners, local entities, utility companies, Indian Tribes, user groups, special interest groups, state legislators, etc., advising them of the hearing. Send copy of the letter and mailing list to PIC.	District
21	First display ad appears in newspaper(s). Verify publication and file copy in hearing file	PIC
20	Print project brochure.	PIC
15	Report on any issues that might effect hearing to PIC.	DE & R/W
15	Train team members at hearing site with 1/2 day of full dress rehearsal at hearing site including videos, still photos, illustrations, and Q&A scripts. Include audience interaction with mock questions and answers.	PIC
15	Participate in local daily newspaper interview.	DE/PIC/PA
14	Second display ad appears in newspaper(s). Verify publication and file copy in hearing file.	PIC
10	Distribute approved news release to District/appropriate media.	PIC
10	OPTIONAL: Conduct off-site public presentation of the key elements of the proposed project in a high-visibility area such as a mall (gives opportunity to test presentations and reactions).	Team
10	Print reminder postcards with hearing information. Mail to same mailing list as DE's invitation letter (see Day 30).	PIC/District

DAY	ACTIVITY	RESPONSIBLE
7	Legal public notice appears in newspaper(s). Verify publication, send copy to HO, and file copy in hearing file.	PIC
7	Print sign-in forms and take to hearing.	PIC
7	Contact HO, give overview of project, brochure, and District contact.	PIC
5	Interview appears in newspaper(s). Verify and send copy to PA and PIC.	District
5	Do any final clean-up work and review changes from dress rehearsal.	Team
2	Final display ad appears in newspaper(s). Verify publication and file copy in hearing file.	PIC
1	Make reminder calls to media about public hearing.	PIC
1	Meet for final briefing	Team/HO/PIC
0	Conduct hearing.	Team/HO
-1	Critique hearing. HO leaves one tape recording with DE or PDE.	Team/HO
-5	Mail thank you letters, as necessary, and include written testimony forms to those who didn't attend hearing. Send copy to PIC.	PIC/DE
-7	Obtain attendance figures and number of males/females/ disabled and minorities from PIC for hearing certification.	HO
-14	Deadline for written comments to HO.	PIC
-15	Prepare transcript, certification, and other necessary information and give to PIC for copying and distribution.	HO
-15	Transmit copies of the transcript, sign-in sheets, certification of public notice, and mail-in testimony to the DE, SB (8 copies), RDE, ENV, FHWA, and local agencies/consulting engineer (if applicable). If local hearing, transmit original and one copy of transcript, mail-in testimony, and sign-in sheets to local entity with cover memo. Keep copy of everything in file.	PIC
-18	Transmit hearing transcript to DE and indicate required action by District.	RD
	Submit location and/or Location and/or Design Study Report to RD.	District

DAY	ACTIVITY	RESPONSIBLE
-18	**If Board decision is required** by Administrative Policy A-13-02, Public Involvement for Location and Design Determinations: Prepare Board agenda item with recommendation (also see system action instructions) and submit to RD. Complete and submit Board agenda item with record of decision. Send copy to District. If system action: Send Board decision to local entity by certified mail within 10 days of decision and file copy in hearing file. Once construction is complete, prepare official minutes for Board signature and file copy in hearing file.	District RD SB HPM
	If Board decision is not required: Submit appropriate project report to RD with request for location/design approval.	District
	Approve location/design of project and notify PIC and District of project approval.	CE/RD
	Prepare record of decision for CE signature.	RD
	Advise involved property owners and those who attended hearing of Board/CE decision through a personal letter from the DE using the mailing list from hearing invitation and sign-in sheets. File copy in hearing file.	PIC/District
	Prepare news release outlining decision and file copy in hearing file	PIC/PA
	Close out hearing file.	PIC

Hearing Information

Information needed at a hearing shall include, but not be limited to:

- The need and purpose for the proposed project.
- Project description.
- Project location sketch map.
- Alternative courses of action.
- Alternate project locations.
- Major design features.
- Engineering, social, economic, and environmental impacts.
- Environmental documents.
- Right-of-Way requirements.
- Relocation assistance programs.
- Relocation assistance payments, when appropriate.
- Proposed mitigation procedures.
- How the project is consistent with local planning goals and objectives.

Graphics and displays, such as aerial photographs, retouched photographs, and video information used in the hearing, shall be retained in the District until the project has been completed.

The Public Involvement Coordinator shall gather hearing information together into a written brochure. The brochure shall be mailed (whenever possible) to involved property owners and local government officials with an invitation letter from the District Engineer. In addition, the brochure shall be available to each person attending the hearing.

- Hearing plans shall be prepared for display at the hearing. The plans should show the following:
- The property owner's name, but not the acreage required or remaining. If title reports are not available, the owner's name, as indicated by the assessor's tax roll, is sufficient.
- The profile and ground line, except for urban projects where the profile and ground lines more or less coincide.
- The right-of-way lines established from the latest design and other pertinent features.

Right-of-Way lines and approaches shown on the Design Hearing Plans are subject to change as the project progresses to final design.

The project description and the project location sketch map are used as the basis for the informational brochure. The project description is to be written by the District and shall cover the following information plus any other appropriate features of the project:

- Description of where the project begins and ends, including the length of the construction and references to landmarks known to people familiar with the area.
- Roadway characteristics, including traffic lane widths, shoulders, medians, bike lanes or paths, barriers, truck lanes, turn bays, traffic signals/signs, and any other details in which the public may be interested.
- Right-of-Way minimum and maximum widths, as well as access control and the general effects.
- Description of basic construction, such as what type of fills or excavations will occur; channel changes, if any; environmental concerns, including re-vegetation or environmental restoration; and wetlands and flood plain involvement.
- Structure requirements, including interchanges, grade separations, bridges, major culverts, etc.
- Proposed construction phases, such as what type of work will occur, when and how will the public be effected, and information about possible detours.
- Project location sketch map.

Public Hearing Scheduling

Information provided by the Districts to the Public Involvement Coordinator in order to schedule a hearing shall include:

- Project description.
- Project sketch map.
- Tentative hearing date and location.
- Preferred hearing hours.
- A mailing list of adjacent property owners involved with right-of-way acquisition and other interested individuals.
- Locations where project information can be obtained and the contact person.
- Conceptual displays and graphics to be developed for the hearing.

In all cases, the major design features, alternatives, and required environmental documents (see The Environmental Manual), shall be reviewed by the headquarters Design Engineer and Environmental Manager prior to scheduling a public hearing to determine that the project's features are generally acceptable for hearing purposes. The public hearing date will be approved by the Public Involvement Coordinator, after consultation with the Hearing Officer.

Notice of Public Hearing

The Public Involvement Coordinator will administer the public hearing notification process and coordinate hearing activities with the Districts. The Public Involvement Coordinator, in consultation with the Environmental Manager, shall determine the length of the notification period as required by the project's environmental classification.

According to federal requirements, whenever a public hearing is held and a draft environmental impact statement (EIS) or an environmental assessment (EA) has been prepared, the EIS/EA shall be available at the public hearing and for a minimum of 15 days in advance of the public hearing. The availability of the draft EIS shall be mentioned and public comments requested in any public hearing notice and at the public hearing. If the public hearing on an action proposed for federal funding is canceled, a notice similar to a public hearing notice shall be placed in the newspaper advising where the draft EIS is available for review, how copies may be obtained, and when and where comments should be sent.

Newspaper advertisements, known as "display ads," shall be published to notify the public of an opportunity for a public hearing. The display ads shall be published twice with at least seven (7) days between publication dates. The deadline for submitting a written request for a public hearing may not be less than fifteen (15) days after the date of publication of the first notice of opportunity for public hearing. The District shall then establish the hearing dates in coordination with the Public Involvement Coordinator and notice will be sent to those requesting a hearing and the public through the newspaper. If no hearing is requested, a notice of hearing cancellation will be published.

When there is doubt about the need for a hearing and there is reason to believe that the project may be controversial, a notice of opportunity for a hearing may be used to satisfy the hearing requirement. Review of any project-related information before requesting a hearing cannot be required as a part of this notice. The only requirement is that the hearing request must be made in writing.

On occasion, the department will receive only a small number of written requests for a hearing. In this situation, it is permissible to advertise and hold a meeting at some convenient location to explain the project and answer any questions.

Each legal notice of a public hearing shall be published at least once. Specify the date, time, and place of the hearing; specify that pertinent information concerning the project is available for public inspection and copying, and explain where the information is available and include the name and phone number of a contact person. Procedures for submitting written comments following the hearing, notice of the availability of an environmental document (when applicable), and invitation for public comment on the environmental document shall also be included in the legal notice.

If the project may impact non-English speaking individuals, translated legal advertisements and notices should be prepared. Advertisements and notices shall be published in the newspaper serving the counties or cities where the proposed project is located. In addition, the advertisements and notices shall be published in other newspapers having a substantial circulation in the area. If no newspapers of general circulation are in the project area, then notice will be posted in three (3) of the most public places near the proposed project.

In addition to publishing display ads for the opportunity for public hearings and the legal notice for public hearings, the District Engineer shall send a letter of invitation to the hearing to:

- Property owners that may be effected by the project.
- Federal, state, utility companies, and local agency officials.
- Public advisory groups and agencies requesting notice of hearings.
- Other groups, including minority groups or agencies, that by nature of their function, interest, or responsibility may be interested in or effected by the proposed project.

Waiver of Public Hearing

Whether a question about the amount of right-of-way required is significant or not, a hearing waiver may be solicited from effected property owners. The hearing waiver must be in the form shown in Figure 3-12, Waiver of Public Hearing.

A team of ITD personnel consisting of at least the project designer and a right-of-way agent, with additional District personnel as deemed necessary, should make all property owner contacts.

Figure 3-12

WAIVER OF PUBLIC HEARING

Project No.: _____

Parcel No.: _____

I, the undersigned, have been fully informed concerning Project _____ _____, including the project's effect on my property.

I am aware of the amount of right-of-way to be acquired, the relationship to the remainder of my property, and have been informed that I will receive fair compensation for Right-of-Way acquisition on the project.

I am aware that I have the right to request a public hearing and I hereby waive said right to a public hearing.

_____ _____

Property Owner **Date**

_____

Address

Conducting Public Hearings

Specific details and duties regarding public hearings and meetings shall be followed and are available in ITD's *Guide to Public Involvement*. Public hearings will be held at a place located as near to the project as possible and for the number of hours convenient for those persons impacted by the proposed project. The format of the hearing will be similar to an open house in which the public is invited to drop by at any time during the specified hours. A 5 to 7 minute video will be shown to give the public an overview of the proposed project and the hearing process.

Written statements and other information provided by the public in the place of, or in addition to, oral testimony can be accepted at the public hearing. The procedures for such submissions shall be clearly described in the hearing brochure.

Following the public hearing, a transcript of public testimony and a certification that a required hearing or hearing opportunity was offered shall be submitted to FHWA. In addition, copies of all written statements from the public that were submitted at the hearing or during the announced period following the hearing shall accompany the transcript and certification.

Additional Hearings

Even though a public hearing has been held (or opportunity offered), sometimes, additional hearings (or opportunities for hearings) may be necessary. Based on the reevaluation of project information and documents as required by *CFR 771.129*, the FHWA and ITD will determine whether changes in the project or new information warrant additional public involvement. The Environmental section shall hold additional hearings at the discretion of the department in consultation with FHWA when there is any of the following:

- Substantial change in the proposal.
- Substantial development in the area affected by the proposal.
- A lapse of time of at least three (3) years since the last hearing with no major action taken on advancing the project or little or no public involvement activity for the project.
- Identification of potentially significant social, economic, or environmental effects not previously considered at an earlier hearing. (Passage of new environmental legislation after a hearing does not necessarily require a new hearing.)

SECTION 380.00 – LOCATION AND/OR DESIGN STUDY REPORT

The District Engineer shall prepare a Location and/or Design Study Report. The Location and/or Design Study Report is a formal document that records considerations and conclusions that were reached by the District in the development of a project through environmental documentation, preliminary design, and the public hearing phase. The Location and/or Design Study Report is used to obtain concurrence in preliminary project design. The Location and/or Design Study Report shall be prepared on all federal-aid projects and is required to obtain Design approval.

The Location and/or Design Study Report documents:

- ITD's consideration of transportation needs, socioeconomic, and environmental impacts of the project by summarizing significant design considerations and decisions. Included in the report are design criteria changes from the concept approval and preliminary design approval.
- Recommendations and proposed changes that were made as a result of the public hearing testimony. This information must also be included in an environmental re-evaluation.

380.01 Location and/or Design Study Report Contents. Essential items that must be included in the Location and/or Design Study Report, and any other information that clarifies the design intentions and improves the understanding of the highway improvement project should be included.

Essential items for the Location and/or Design Study Report are:

- A narrative description of the project.
- Vicinity sketch.
- Any changes in project concept (including design exceptions) since approval of the project concept report (ITD-783-A(ITD-0757), Design Standards, and ITD-783-B, Alternate Solutions and Costs).
- A summary of public hearing testimony, proposed resolutions of identified concerns, and any changes made in design that were based on the hearing.
- Waivers of public hearing or documentation of the hearing being waived by the Roadway Design Engineer.
- Location and/or Design Study Report Checklist (Figure 3-14).
- Significant items that effect the project (include environmental-related commitments).

Optional items that can be included at the discretion of the Districts are:

- Cover Sheet (Figure 3-13)
- Copy of the approved *ITD-783-A(ITD-0757)* and *ITD-783-B*
- Typical sections

Four examples of Location and/or Design Study Reports are included as Figures 3-15 through 3-18. The examples are for the following types of projects:

1. Non-controversial pavement rehabilitation project with no right-of-way purchase and no environmental impacts.
2. Small structure replacement and approaches project. Temporary easements for detour and approach work.
3. Highway relocation project with a public hearing held and environmental assessment prepared. No major controversy or testimony presented.
4. Major relocation project with high environmental impacts and several controversial issues addressed in the hearing testimony.

Follow the example that is nearest to the type of project being designed.

380.02 Location and/or Design Study Report Approval. Project determination and approvals shall be in accordance with Administrative Policy A-13-02. The District Engineer may approve location and design for projects that do not require a hearing, no hearing is requested after an opportunity for hearing is given or when the hearing is waived. The Location and/or Design Study Report shall not be approved or submitted for approval until after the District has:

- Completed environmental documentation;
- Analyzed the public hearing transcript and determinations have been made on the problems and concerns addressed at the hearing or until the hearing has been waived; and
- Project determinations and approvals are settled, as outlined in Administrative Policy A-13-02, Public Involvement for Location and Design Determinations.

FHWA has full oversight on interstate system projects that are over $300K per lane mile and interstate bridges over $3 million in which the Location and/or Design Study Report will be submitted to FHWA for concurrence of our approval. Exempt projects shall follow the FHWA Oversight Matrix (Figure 1-1)

Final design of a project can not commence until the Location and/or Design Study Report is approved.

Figure 3-13

LOCATION AND/OR DESIGN STUDY REPORT

COVER SHEET

LOCATION AND/OR DESIGN STUDY REPORT

PROJECT NO.

KEY NO.

PROJECT DESCRIPTION

LOCATION

WORK AUTHORITY

COUNTY

Prepared by: Designer Name Date: 00/00/01

Approved by: RDE Name Date: 00/00/01

Figure 3-14

LOCATION AND/OR DESIGN STUDY REPORT CHECKLIST

Phase I Material Report			_____ Date approved
Concept Report (ITD-783-A(ITD-0757) and ITD-783-B			_____ Date approved
Access Control (ITD-606)			_____ Date approved
Field Inventory (ITD-783-C)			_____ Date submitted
Preliminary Design Review			_____ Date held
Environmental Document	_____ Type		_____ Date approved
Public Hearing	_____ Date held	or	_____ Date waived
Transcription of Public Hearing Testimony			_____ Date submitted

LOCATION AND/OR DESIGN STUDY REPORT EXAMPLE 1

IR-15-1(102)54
Inkom to Portneuf
Bannock County
Key No. 3720
WA #I875190

This project consists of pavement rehabilitation of I-15, south of Pocatello, in the travel lane and full width over structures with a full width seal throughout. The project length is 14 km from MP 54.70 to MP 53.20.

The roadway width was originally constructed to current standards of 12 meters in 1969 and 1970 with no widening for guardrail. The last construction was in 1982 with a seal to the travel lane and 1983 with a seal to the passing lane.

The project was approved for rehabilitation and sealing by the Idaho Transportation Board on January 21, 1996, for FY98.

The current ADT is 10,440 with a projected ADT of 16,080 and design hourly volume of 1,790 for the year 2011. The project will be designed to AASHTO Standards for Interstate Systems with no design exceptions. Horizontal and vertical alignment will remain the same. Fill slopes where guardrail removal will occur will be flattened to 1:4 minimum, 1:6 maximum. Full access control was approved under original construction.

Drainage in areas of guardrail removal will be extended appropriately to accommodate the flatter slopes. Detours are not practical for this project but, rather, traffic will be controlled through proper channelization into one lane.

A revised ITD-783, Concept Approval, was approved by headquarters on September 21, 1997.

Pavement rehabilitation consists of cold milling and inlaying plant mix pavement in the travel lanes to remove ruts and full width over structures to remove excess dead load and repair deck joints. A full width seal coat will be applied to interstate roadways and ramps, with a scrub and seal in the Inkom Port of Entry and an interchange crossroad. Bridge rail updating will be accomplished by the beam retrofit and some guardrail will be removed or updated on crossroads or selected areas on the interstate.

All proposed construction will be on existing right-of-way or in state-owned sources. A categorical exclusion for environmental concerns was approved September 2, 1996.

LOCATION AND/OR DESIGN STUDY REPORT EXAMPLE 2

BRF-5152(200)
Evans Creek Bridge Replacement SH-3
Kootenai County
Key No. 1754
WA #P861140

This section of roadway and bridge was constructed in 1936 under Project WPSS 179-C. Due to the rolling terrain, the alignment along this portion of roadway consists of a 10° curve left, with a substandard vertical curve at the Evans Creek Bridge location. The bridge is a three-span wooden bridge sitting on wood piles. The bridge width is 8 meters out to out with substandard metal guardrail and has a 7.9 sufficiency rating.

Due to the location and the adjacent wetlands, it is not economically feasible to upgrade the entire roadway to AASHTO standards at this time. The District is proposing to replace the existing bridge at the present location with clear-span, pre-stressed box girder/pre-stressed girder bridge having a curb-to-curb width of 10 meters, and upgrading the existing roadway approaches to the bridge. Approximately 213 meters of roadway will be upgraded by widening from 8 meters to 9 meters using 1:4 foreslopes, 1:1.5 fill slopes, and 2.2 meter guardrail posts. The slopes mentioned above were chosen to minimize the impact to the wetland and are part of the wetland mitigation and to stay within the existing right-of-way. The vertical curve considered will be improved to meet the required standards.

The bridge replacement will require building a detour south of the existing structure. When the detour is no longer needed, the fill material will be removed and used to construct roadway embankment on the future Rose Lake project.

No right-of-way purchase will be required on this project. Temporary easements will be required from two property owners for the purpose of improving approaches and constructing the temporary detour.

The following changes need to be made on the ITD-783, Concept Approval, submitted April 24, 1990. The design speed of 90 km/h should be changed to 70 km/h. The 1:6 foreslopes on the typical sections should be changed to 1:4, which has been approved.

An exception for the 9.9 meter bridge width was approved November 9, 1990.

The Archeological Clearance on this project was approved July 16, 1992.

The Idaho Fish and Game have no objection to the replacement of Evans Creek Bridge, but were concerned regarding the detour. No in-stream work is to be done between April 1 and July 1 to protect cutthroat trout spawners, eggs, and fry.

A Preliminary Design Review was held on this project November 4, 1992.

A categorical exclusion was approved on December 30, 1992.

A waiver of public hearing was requested and approved on January 19, 1993.

LOCATION AND/OR DESIGN STUDY REPORT EXAMPLE 3

Project No. F-4113(77)
Ferdinand-Lawyer's Canyon

The section of roadway proposed for improvements is a portion of U.S. Highway 95 from a point approximately 1 km southeast of Ferdinand and continuing northerly to a proposed structure over Lawyer's Canyon Creek at the Idaho-Lewis County line. Reconstruction of this section of highway will be part of the improvement program planned for US-95 between Ferdinand and Craigmont, as explained in the Final Environmental Statement dated July 1978 (FHWA-IDA-EIS-77-02-F).

EXISTING AREA CONDITIONS

US-95 is the major link between northern and southern Idaho. The highway begins at the southwestern Oregon/Idaho border approximately 50 km south of Caldwell, Idaho. From this point, the route extends northward approximately 850 km to the Idaho/Canadian border.

The project area lies in the northern part of Idaho County. The county is rural in nature, being largely public-owned U.S. Forest Service land that supports an extensive timber industry. Large farms and ranches dominate the privately owned land in this county.

The project will begin approximately 1 km southeast of Ferdinand and end at the proposed structure over Lawyer's Canyon Creek. Ferdinand has a few stores and grain elevators and provides basic services for the surrounding rural area. The town had a population of 144 at the 1980 census.

Ferdinand does not have a hospital (Cottonwood, Grangeville, and Lewiston have the nearest medical facilities). During recent years, basic services in the form of schools, full-service grocery outlets, and retail gasoline stations have closed. These services are available in Craigmont, 14 km to the north, and Cottonwood, approximately 13 km to the south. The majority of the school children are transported to Cottonwood; therefore, US-95 serves as a school bus route for the local schools. Improved sight distances and shoulder widths are important for the safe transportation of school children along the route.

The majority of the people living within the project corridor have been residents of the area for many years. The communities have changed very little in the past and no major changes due to roadway improvements are expected in the future.

EXISTING ROAD DESCRIPTION

The existing highway is classified as a principal arterial under the 1990 Functional Classification System. Characteristics of the 6.5 km of existing highway proposed for improvement are a 7 meter roadway with no shoulders, a basic right-of-way width of 25 meters, and an alignment that is well below current standards. Present access control is governed by the Standard Approach Policy.

Current maintenance operations on this portion of US-95 include spot patching and seal coating as needed. Should this portion not be reconstructed, maintenance requirements foreseen will include major surface overlays and extensive shoulder rehabilitation for the entire length.

REASON FOR IMPROVEMENT

The project would be the final stage of an overall project to improve approximately 16 km of US-95 from Ferdinand to Craigmont.

The project is needed to accommodate existing and future traffic volumes and to correct the following deficiencies:

- Slow operating speed due to narrow roadway pavement width, inadequate shoulders, and restrictive passing sight distance.
- Limited safety because of unrestricted access control and dangerous conditions adjacent to the roadway.
- Substandard surfacing that creates hazardous driving in wet or freezing weather and is subject to considerable breakup during freezing and thawing conditions.

The improvement would minimize or eliminate the deficiencies cited and increase the efficiency and safety of the highway for the increasing traffic volumes projected for this section of highway.

ALTERNATIVES

In May 1977, the project was addressed in an environmental impact statement and a location hearing was held in July 1977. As a result of this hearing, the Idaho Transportation Board selected the Existing Improved Alternate. This alignment has changed slightly from the approved one due to Lawyer's Creek Bridge being shifted upstream approximately 150 meters. This was done so the bridge could be constructed on a tangent rather than a curve.

In October 1988, the Idaho Transportation Board directed that the East Alternate from Ferdinand to Lawyer's Canyon be reconsidered, as it is a shorter route and would not involve railroad crossings for US-95.

A No Major Improvement Alternate would not meet current and future transportation needs. Other construction alternatives are not compatible with the selected route from Lawyer's Canyon to Craigmont and only the Existing Improved Alternate and East Alternate are being considered.

PROJECT DESCRIPTION

Existing Improved Alternate

The Existing Improved Alternate begins 1 km southeast of Ferdinand; crosses the Camas Prairie Railroad with an at-grade, signalized crossing; and then bypasses Ferdinand to the south. The alignment then swings north following the existing US-95 west of Ferdinand. The route then follows the east breaks of Moody Gulch, crosses beneath the Camas Prairie Railroad where an underpass would be built, and then continues north to the bridge over Lawyer's Creek. The overall project length is approximately 6.5 km.

This would provide a roadway surface width of 10.3 meters (consisting of two 3.6 meter lanes – one in each direction – and two 1.5 meter shoulders). The subgrade would be built to accommodate a future 12 meter paved surface width.

The horizontal and vertical alignments would result in a design speed of 100 km/h. The maximum radius of curve being 400 meters with a maximum grade of 4.595 percent. Two truck climbing lanes are included, the first being constructed south of Ferdinand to aid the northbound traffic and the other being south of the new Lawyer's Canyon Creek Bridge to aid the southbound traffic.

A basic right-of-way width of 60 meters to 130 meters would be needed for the project. Access control for the proposed alignment allows public and private at-grade crossings that would require temporary easements during construction. Access to Ferdinand would be provided by constructing two connections to the existing highway (one from the north and the other from the south of town).

Upon completion of the project, approximately 3.8 km of existing US-95 would be removed from the state system and relinquished to local jurisdictions for maintenance.

East Alternate

The East Alternate route would begin approximately 1 km southeast of Ferdinand. The route runs northerly, bypasses Ferdinand on the east, and then parallels the Camas Prairie Railroad. The alignment continues northwesterly to the proposed structure over Lawyer's Canyon Creek. The alignment is approximately 5.8 km in length and would not involve any railroad crossings.

This route would provide a roadway surface width of 10.2 meters (consisting of two 3.6 meter lanes and two 1.5 meter shoulders). The subgrade would be constructed to handle a future 12.1 meter roadway.

Curvature and sight distance on the finished project would have a design speed of 100 km/h. The maximum radius of curve on the alignment would be 500 meters with a maximum grade of 3.268 percent.

A truck-climbing lane would be built south of the Lawyer's Canyon Creek Bridge and extend approximately 1950 meters to aid the southbound traffic.

A basic right-of-way width of 60 meters to 105 meters would be required, with larger widths in larger embankment areas. Access control for the proposed alignment allows for public and private approaches that would require temporary easements during construction. On this improvement, one connection to Ferdinand would be provided by use of an existing road on the south end of town.

Upon completion of the project, approximately 5.6 km of the existing US-95 would be relinquished to local jurisdictions for maintenance.

SOCIAL, ECONOMIC, AND ENVIRONMENTAL IMPACTS

An Environmental Assessment was prepared and approved on August 24, 1989, which addresses the impacts of the project. A copy of this document is attached.

SYNOPSIS OF DESIGN HEARING TESTIMONY

A public location/design and systems action hearing was held in Ferdinand, Idaho on November 8, 1989. There were 67 interested citizens in attendance including Ferdinand Mayor Eugene Kuther, Craigmont Mayor David Boknecht, and Ferdinand Highway District Commissioners Dennis Seubert, Jerry Schwartz, and Donald Bieker. The Idaho Transportation Board was represented by Vice Chairman Marion Davidson and Executive Assistant Mary Detmar.

Both written and oral testimony was given by 72 citizens. By organization of this testimony, 21 favored the Existing Improved Alternate, 41 favored the East Alternate, and 10 offered no preference. Five individuals supported a state-maintained business loop for Ferdinand. Five of those persons favoring the Existing Improved Alternate indicated the loss of prime farmland as a major concern.

Twelve testimonies requested an underpass be furnished on the local farm-to-market roads to provide access to Ferdinand, regardless of the selected alternate. Two petitions were also received supporting the underpass for the east or west city access. The petition for the east underpass had 89 signatures and the petition of the west underpass had 121 signatures.

Other testimonies referred to individual problems relating to specific ownerships such as drainage, access, severance, etc.

CONCLUSION

As requested by the public testimony, the feasibility of underpasses for the public road connections to Ferdinand was investigated for the two alternates.

Based on the AASHTO publication entitled "A Policy on Geometric Design of Highways and Streets, 1984," an underpass is not warranted in this case. The traffic volumes on these local roads are low and no accidents have been recorded at the present at-grade intersections. The proposed projects will provide adequate sight distance and roadway alignment to allow for crossing by the anticipated users.

An underpass structure of the size needed to accommodate farm trucks and equipment would increase the estimated cost of the Existing Improved Alternate by $173,000 and the East Alternate by $278,000. If the East Alternate was selected, the underpass would also require approximately two acres of prime farmland for additional right-of-way. As no warrant for these grade separations is apparent and as safe, adequate at-grade intersections would be provided. It is concluded that expenditure of federal funds for the underpasses probably could not be made. The Ferdinand Highway District has offered to participate in the cost of the structure. If this offer was accepted, the structure could be included in the project.

The removal of the existing US-95 from the State Highway System was addressed at the July 1977 location hearing and a determination was issued by the Idaho Transportation Board on October 16, 1977. This determination was reaffirmed on August 15, 1988, by a letter from Board Chairman John M. Ohman to Ferdinand Mayor Eugene Kuther. Repairs to the existing facility will be negotiated with the city of Ferdinand and will be accomplished prior to the relinquishment of the roadway to the city.

Problems relating to individual concerns will be resolved with minor design corrections or by compensation during the appraisal process.

Based upon public testimony, engineering, and cost considerations, the District recommends that the East Alternate be selected for development and construction.

LOCATION AND/OR DESIGN STUDY REPORT EXAMPLE 4

Project No. F-3271(33)
Eagle Alternate Route

The section of roadway proposed for improvement and new alignment is a portion of SH-44 and SH-55 in and near Eagle, Idaho. The project is located between MP 16.000 and MP 19.45 of SH-44 and MP 17.79 and 18.000 of SH-55.

EXISTING AREA CONDITIONS

SH-44 goes through downtown Eagle on an east-west route. SH-55 enters from the south and currently joins SH-44 in downtown Eagle. The project is located in Ada County and goes from west of Ballantine Road eastward to the new SH-55 North intersection.

EXISTING ROAD CONDITIONS

The existing SH-44 is classified as a minor arterial from the west to junction with SH-55 and a principal arterial from that junction to the SH-55 North junction. The existing SH-55 is classified as a principal arterial. All are under the 1995 Functional Classification System. The present SH-44 roadway consists of a two-lane facility with a 12.0 meter ± width in the rural sections and a 9.0 meter ± width in downtown Eagle. The present SH-55 roadway consists of a two-lane facility with a 6.6 meters ± width. Present access control is governed by the Standard Approach Policy. Current maintenance operations on these portions of state highways include spot patching and sanding for winter maintenance.

REASON FOR IMPROVEMENT

The existing roadways are inadequate to handle current traffic volumes and substandard for projected traffic. The current junction has very poor geometrics and sight triangles and is extremely hard for trucks to maneuver even with lane encroachments. The existing SH-44 is a good roadway except through downtown Eagle where additional room is required. The existing SH-55 is deteriorating and is in need of repair. It is also substandard in width.

PROPOSED IMPROVEMENTS

A public information meeting was held February 1, 1989. The public was presented with seven alternatives. Approximately 120 people attended and the District received 35 report forms back as of April 10, 1989. The forms indicated that 27 favored the Long West Option (see Table 1 for “con” comments and the response), 5 favored the Short West Option, 2 favored the Couplet System Option, and 1 favored the Do Nothing Option.

Table 1
LONG WEST OPTION "CON" COMMENTS

Comment	No. of Comments	Response
This option would be a waste (or irresponsible use) of tax dollars.	7	The additional cost of this option is minimal considering its benefits in improved traffic mobility, gas saving, and travel time reduction. All four alternatives for the project show a positive benefit/cost ratio. For the two that include the Long West Option, the values were 10.7 (Alt. 1) and 13.7 (Alt. 3). The Short West Option costs $200,000 less than the Long West Option–approximately 3% of total expenditures–but does not offer the transportation and economic growth advantages associated with the Long Option. A west option is needed to avoid extreme traffic congestion in Eagle in the near future.
Consider the high cost of acquiring river front land on the Long West Option. It is not zoned farmland any more and the owners will fight for subdivision prices. Fair value must reflect the residential development potential.	2	The price paid for riverfront land will be based on current use and comparable land values at the time of appraisal. If there has been no capital improvement, there can be no compensation for it.
On the Long West Option, the cost of buying right-of-way and replacing the Chevron pipeline should be taken into account. These costs may be quite high.	1	The cost of buying right-of-way will be as described above. The Chevron pipeline was taken into account in the design of the roadway location.
The Long West Option serves populated areas (at the expense of rural landowners). It puts unwanted congestion in the rural area.	1	This is a recognized impact of the project. However, without the project, traffic congestion will increase to intolerable levels in the near future that would also affect rural landowners.

Four alternatives were presented to the public at a combined design location hearing held March 13, 1991, at Centennial High School auditorium. These alternatives were two directional, five-lane sections requiring 42.6 meters of right-of-way, 21.3 meters on either side of the centerline on new alignment, and an existing right-of-way of 36.5 meters with 18.3 meters on both sides of the centerline.

Option 1: Long West North

This option would leave existing SH-44 near Ballantine Road on the west at MP 16.223, proceed southeasterly, and cross existing SH-55 approximately 548.6 meters south of the existing SH-44 and SH-55 intersection in Eagle. It would then continue in an easterly direction to an intersection with existing SH-44 approximately 305 meters east of Edgewood Lane at MP 18.952.

This would involve removal of 4.47 km of SH-44 and 0.45 km of SH-55 from the State Highway System. It would also involve an addition of 4.3 km to SH-44 along the new alignment. The net result is a decrease of 0.62 km.

Option 2: Short West North

This option would leave existing SH-44 just east of the Dry Creek Bridge at MP 16.852, proceed southeasterly, and cross existing SH-55 approximately 550 meters south of the existing SH-44 and SH-55 intersection in Eagle. It would then continue in an easterly direction to an intersection with existing SH-44 approximately 305 meters east of Edgewood Lane at MP 18.952. This would involve removal of 3.5 km of SH-44 and 0.51 km of SH-55 from the State Highway System. It would also involve an addition of 3.46 km to SH-44 along the new alignment. The net result is a decrease of 0.55 km.

Option 3: Long West South

This option would leave existing SH-44 near Ballantine Road on the west at MP 16.223, proceed southeasterly, and cross existing SH-55 approximately 550 meters south of the existing SH-44 and SH-55 intersection in Eagle. It would then continue easterly and south of the trailer park at MP 19.0 to an intersection with existing SH-44 at MP 19.401. This would involve removal of 5.1 km of SH-44 and 0.45 km of SH-55 from the State Highway System. It would also involve an addition of 5.0 km to SH-44 along the new alignment. The net result is a decrease of 0.55 km.

Option 4: Short West South

This option would leave existing SH-44 just east of the Dry Creek Bridge at MP 16.852, proceed southeasterly, and cross existing SH-55 approximately 550 km south of the existing SH-44 and SH-55 intersection in Eagle. It would then continue easterly and south of the trailer park at MP 19.0 to an intersection with existing SH-44 at MP 19.401. This would involve removal of 4.2 km of SH-44 and 0.51 km of SH-55 from the State Highway System. It would also involve an addition of 4.02 km to SH-44 along the new alignment. The net result is a decrease of 0.69 km.

CONCLUSIONS

With any of these options, there would be connector roads constructed to provide adequate access to Eagle and meet all current geometric standards.

All horizontal curve super-elevation rates would meet current standards according to ITD and AASHTO requirements.

Signing would be new except where existing signs are deemed current with ITD policy and MUTCD requirements.

An Environmental Assessment was published February 11, 1991.

In addition to the new route selected in the System Action decision, it was agreed that the existing SH-44 between Alternate Route connections will receive a new pavement overlay before being turned over to the Ada County Highway District.

The District submitted all testimony from the combined design location hearing to the Idaho Transportation Board. As a result of the combined hearing testimony, a few changes were incorporated into the District's recommendations to the Idaho Transportation Board.

The District agreed that with no access allowed from the new route, a full 4.2 meter median was not required and that a 1.2 meter median will meet all AASHTO and ITD minimums. This recommendation reduces pavement width from 24.3 meters to 21.3 meters and will help contain costs. One other change was recommended to the Idaho Transportation Board: The removal of the two-way turn lane on Eagle Road between the new intersection and State Street. A near unanimous response to remove it was included in the District's recommendations. The District formally recommended Option 3 to the Idaho Transportation Board.

The Idaho Transportation Board initially selected Option 4, but left a loophole for the city of Eagle to alter the decision with a written request within 30 days. The city of Eagle did make a formal request that the Idaho Transportation Board change their decision. On July 9, 1991, the Board issued the revised decision adopting Alternate 3 (South Option and Long West Option) for the Eagle Alternative.

The Idaho Transportation Board, in its decision of July 9, 1991, further ordered a committee to study wetland, noise mitigation, river access, bike paths, wildlife protection, and natural preservation. This committee held an information meeting in Eagle on October 3, 1991. The results of that meeting and the committee recommendation were presented to the Idaho Transportation Board at their November 1991 meeting. The Board approved the committee's recommendation on November 15, 1991.

SECTION 385.00 – STRUCTURES (BRIDGES)

(See Section 1000 – Structures)