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SECTION 500.00 - PROJECT DEVELOPMENT

SECTION 505.00 - PROJECT DEVELOPMENT INTRODUCTION

Projects impacting railroad facilities may have been initiated (refer to [Section 300.00](#)) following the recommendation of a Diagnostic Review (refer to [Section 215.00](#)) or other highway improvement project might impact railroad facilities and involve railroad right-of-way.

In general, right-of-way is not acquired in fee title from a Railroad Company, instead, ITD acquires permanent easements and temporary easements by an agreement with the Railroad Company (refer to [Section 400.00](#)). Project designers must first determine if encroachment on railroad property for the project is covered by prior agreement(s). Information about prior agreement(s) covering current encroachments on railroad right-of-way may be found on the ITD Utility/Railroad Agreement Tracking System (refer to [Section 120.00](#)). If available, copies will be provided upon request from the Utility/Railroad Unit. Contact the Rail-Highway Safety Coordinator for specific information about a rail-highway crossing.

Priority shall be given to the preparation and submission of necessary plans and data required to secure agreements with Railroad Companies when encroachments or crossings are involved. **Obtaining easements or executing construction/maintenance agreements can take 6 months to a year. It can take up to 18 months for a Railroad Company to obtain railroad crossing signal equipment and arrange for a work crew to install it. Therefore the project schedule should include at least 24 months from final design until Railroad signal work beginning.**

SECTION 510.00 - PROCEDURES WITH A LOCAL PUBLIC AGENCY (LPA)

When a Local Public Agency (city, county, or highway district) receives federal-aid funds for a local road project, ITD is obligated to ensure compliance with Federal and State regulations. For details regarding ITD responsibilities related to these projects refer to ITD Guidelines for Local Public Agency Projects.

SECTION 515.00 - CONCEPT OF PROJECT

ITD [Design Manual Section 325.00](#) outlines the process for concept development for all projects. During concept activities involving railroad facilities, the following actions shall be performed:

1. Identify which Railroad Companies are located within the limits of the project. A list of Railroad Companies with maps showing the railroad's location is available in [Appendix B](#) and [Appendix C](#).
2. Review any existing as-built plans and/or agreements for Railroad Companies within the project limits.
3. Contact the local maintenance foreman to ascertain any concerns which can be addressed.
4. Complete the Concept Report with the appropriate information.
5. District Traffic Section or Local Roads Section must perform a diagnostic review when a crossing is being considered for improvement. Refer to [Section 215.00](#).

Contact the Utility/Railroad Supervisor early for assistance with projects involving Railroad Companies.

SECTION 520.00 - PRELIMINARY DESIGN OF PROJECT

Some projects will only require contractor notes for the special provisions regarding the contractor's work. Other roadway rehabilitation projects working on railroad property within an established easement may require a Temporary Easement Agreement. The Utility/Railroad Unit stipulates the contractor notes required.

The District shall contact the Railroad Company to coordinate project design requirements, and determine the following:

- Constraints regarding the required location, relocation or adjustment of railroad facilities.
- Requirements for bridge structures for railroad facilities.
- Whether project Environmental Documentation covers railroad work or Railroad Company is required to get its own environmental approval.
- Whether railroad work can be completed prior to project construction or during project construction (i.e. determine a general length of time needed to do work).
- Consideration of phasing the construction of the project or requiring that specific work to be accomplished by ITD's contractor within a specific timeframe to assist with relocating or adjusting railroad facilities.
- Consideration of ITD's contractor performing work at the expense of the Railroad Company.
- Provide service life of highway improvement project to the Railroad Company to use for comparing the remaining service life of their facilities for determining any appropriate action.

Document all conversations and continue to follow-up with the Railroad Company until the design requirements are agreed upon.

Consider inviting Railroad Company representatives to design review meetings as necessary throughout the project development process, if it is determined that railroad work is critical to the successful design and construction of the project.

SECTION 525.00 - PLANS FOR RAILROAD AGREEMENTS

The project plans with railroad encroachments must contain the necessary data and be submitted to the Utility/Railroad Supervisor. 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.

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

- **Title Sheet.** Use the standard Title Sheet of the roadway plans.
- **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 roadway centerline and the railroad mainline track milepost along with the AAR/DOT number, which can be obtained from the Railroad Crossing Inventory (refer to [Section 205.00](#)). Show the intersection angle of centerlines for the railroad and the roadway alignment.

For railroad Right-of way information requirements refer to [Section 400.00](#).

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 ten (10) feet from centerline of nearest track. Railroad crossing signal information is available from ITD's Standard Drawings, "R" series. 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 Appendix D for example plan sheet.

- **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. The profile should 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 Company 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 Company purposes. In situations where special drainage conditions exist and drainage channels are necessary, a separate profile should be prepared to give the Railroad Company a more complete picture.

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

In cases where the encroachment on Railroad Right-of-way is longitudinal, 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.

The designer should contact the Railroad Company to determine if they will require Cross-Section plans for the project.

- **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. An example for a Situation and Layout plan showing all the information required by the Railroad for approval is shown in [Appendix E](#).
- **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 most recent edition of the MUTCD, as adopted by the Idaho Transportation Board.
- **Standard Drawings.** For railroad signal projects, include the appropriate Highway-Railroad Grade Crossing Signal Standard Drawing R-1-A, B, C or a modified detail drawing of the signals, cantilever arms, and gates needed. For railroad grade improvement projects include Standard Drawing R-2 Highway-Railroad Grade Crossing Area.

SECTION 530.00 - 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 law 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 railroad tracks, unless the crossings is signed as “EXEMPT” or flagged by law enforcement or railroad personnel. The Federal Motor Carrier Safety Regulations also require certain vehicles to stop prior to crossing train-actuated signalized railroad grade crossings.

530.01 Planking. Improvements of grade crossing surfaces may be required to improve the road surface and provide a smoother ride over the at-grade railroad highway crossing. Only the types of planking currently acceptable to the Railroad Company shall be used on at-grade crossing projects. The Railroad Company will install and maintain planking between and two (2) feet outside of the rails in accordance with Idaho Code 62-306. Length of planking shown on plans is to be computed based upon the nominal length of the material used.

530.02 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 District Traffic Engineer. Refer to the MUTCD, Chapter 8.

530.03 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 based on the Diagnostic Review (refer to [Section 215.00](#)) and other required data 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 require prior approval by the Railroad Company. 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 pavement markings across the tracks. For cantilever and gate arm lengths in relationship to the roadway, refer to Standard Drawing R-1-A, B or C for Highway-Railroad Grade Crossing Signal.

530.04 Guardrail. Consideration should be given when 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 devices shall be used. The guardrail shall be designed in accordance with the ITD 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. state, city, or county forces and at whose expense).

SECTION 535.00 - RAILROAD STRUCTURE

Under railroad structures, the horizontal and vertical clearances shall meet the Railroad Company requirements. All railroad grade separation structures and shop plans for railroad grade separation structures carrying railroad traffic must be approved by the Railroad Company. Allow 60 days for review and approval for each time structure plans are submitted to the Railroad Company. For complex structures or structures carrying railroad traffic it may take longer for the Railroad Company to review and approve. Contact the Utility/Railroad Unit for clearance information. Some Railroad Companies have information pamphlets for design and construction of structures.

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.

SECTION 540.00 - FINAL DESIGN

Incorporate necessary railroad information into the project plans. Railroad Agreements shall be incorporated into the project contract and referenced by a contractor note in the special provisions. Contact the Utility/Railroad Unit regarding the railroad contractor notes.

All Railroad activities should be included in the construction schedule created during project development process.

Certain railroad projects may not require ITD to secure a contractor; rather all the work shall be done by the Railroad Company or their contractor per the Railroad Agreement. An example would be a railroad signalization project. These projects will be done as a Non-Bid project in accordance with the [Design Manual Section 315.13](#).

The designer should request a cost estimate from the Railroad Company for reimbursable work to be done by the Railroad Company. The cost estimate is to be detailed enough to show basis of costs for labor, materials, equipment, and salvage.

SECTION 545.00 - SUBMITTAL FOR RAILROAD AGREEMENT

The District's request to the Utility/Railroad Supervisor for a Railroad Agreement shall include the following (all plans shall be 11x 17 inches unless otherwise noted):

- One set of roadway plan and profile sheets.
- One set of encroachment plans with different hatched areas for each Railroad Company involved.
- One set of structure crossing sheets (Situation and Layout) showing clearances.
- One set of the roadway typical section showing the existing and proposed right-of-way lines.
- One set (for signal projects) of detailed drawing of signals, cantilever arms and gate or Standard Drawing R-1-A, B or C.
- One set of signing, delineation and pavement markings plans for at grade crossing projects.
- One copy of the completed ITD-602, Crossing Evaluation Report.

If additional right-of-way is required, the Official Right-of-Way Plans shall be submitted in accordance with [Section 400.00](#). 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.

SECTION 550.00 - RAILROAD AGREEMENT

A Railroad Agreement is entered into with a Railroad Company whenever there is monetary compensation for easements or work (e.g. flagging, signal or crossing surface upgrades, etc.) required from the Railroad Company. Each Railroad Agreement has specific terms and requirements which include how the work is paid for and by whom. All Railroad Agreements may be modified by a supplemental Railroad Agreement. All Railroad Agreements are reviewed by the Legal Section as to form and are signed by the Assistant Chief Engineer of Development after being recommended for signature by the Roadway Design Engineer. All attachments of the Railroad Agreement (including plans, cost estimates, special provision, etc.) and references are part of the Railroad Agreement. A Railroad Agreement may be written to cover any situation.

The reimbursement cost to the Railroad Company is estimated prior to execution and is specified in the Railroad Agreement. Reimbursement cost for Railroad Agreements may be specified as a lump sum or actual cost.

Generally, a lump sum cost basis of payment is used when the cost of work is less than \$50,000 and can be precisely defined with small likelihood that there would be any changes to the work. The dollar amount specified in the lump sum Railroad Agreement is paid in full after completion of the railroad work, regardless of the actual cost of the railroad work. No detailed documentation of costs is required.

The dollar amount of the actual cost of the railroad work supported by adequate documentation is paid, as costs are incurred, as prescribed in the Railroad Agreement. Final payment of the actual cost of all railroad work supported by adequate documentation, including any modifications by a supplemental agreement and minus any previous payments, is paid in full after completion of the railroad work.

550.01 Insurance. The Railroad Agreements shall outline the insurance requirements for working on railroad right-of-way. The State, Cities and Counties provide a maximum of \$500,000 of liability insurance for bodily or personal injury, death, or property damage or loss as the result of any single occurrence or collision, regardless of the number of persons injured or the number of claimants, in accordance with Subsections 6-924 and 6-926 of Idaho Code.

The contractor shall, at their sole cost and expense, procure and maintain during the life of the Railroad Agreement, the insurance required therein. Generally, Railroad Companies require Railroad Protective Liability Insurance, naming the Railroad Company as the insured, with a combined single limit of \$2,000,000 per occurrence with a \$6,000,000 aggregate. Some Railroad Companies require contractors to have a higher limit of Commercial General Liability and Business Automobile Coverage Insurance, than that required by ITD specifications.

The policy shall be broad form coverage for “Physical Damage to Property.” A binder stating the policy is in place must be submitted to company until the original policy is forwarded to company.

The contractor shall furnish to the Railroad Company and ITD an original certificate or certificates of insurance, evidencing the required coverage, endorsements, and amendments. The certificate(s) shall contain a provision that obligates the insurance company(ies) issuing the policy(ies) to notify the Railroad Company in writing, of any cancellation or material alteration. The Railroad Company must approve the contractors insurance prior to any work commencing on railroad right-of-way.

All insurance policies shall be written by a reputable insurance company, acceptable to the Railroad Company and authorized to do business in Idaho.

The fact that insurance is obtained by the contractor shall not be deemed to release or diminish the liability of the contractor to the Railroad Company for any damages.

550.02 Railroad Flagging and Protective Services. The Railroad Agreements shall summarize requirements for the Railroad Company to provide flagging or other protective services. The Railroad Company may provide inspection, security, flagging, or other protective services as necessary for the protection of railroad property or operations whenever there are contractor

operations on railroad property. The Railroad Company shall, at project expense, furnish all labor, materials, and equipment necessary for railroad flagging. The agreement shall include an estimated cost of railroad flagging at dollars per day or total lump sum cost.

SECTION 555.00 - ACTIONS BY UTILITY UNIT OF ROADWAY DESIGN SECTION

The Utility/Railroad Unit will do the following:

- Review and comment on project development submittals for agreement requirements from District or LPA having railroad involvement.
- Review project railroad plan submittals and resolve any necessary corrections or clarifications. Additional copies may be requested depending on the requirements for submittal to the Railroad Company.
- Determine with the Railroad Company the basis of payment (Lump Sum or Actual Cost; refer to [Section 550.00](#)).
- Coordinate with the Railroad Company, LPA and ITD Legal to prepare the Railroad Agreement.
- Submit agreements to all parties for signatures and have agreements executed by ITD and distribute copies of the agreement, as required.
- Give notification for the Railroad Company to purchase signals and crossing materials required by the agreement.
- Coordinate with ITD Headquarter Right-of-way to have easements recorded (refer to Section 450.05).
- Request Area Assistants of Roadway Design to obligate funds for the Railroad Agreements.

555.01 Plans, Specifications and Estimates (PS&E). The ITD [Design Manual Section 900.00](#) outlines the process for PS&E submittal, advertisement, and award of construction contracts for highway projects. All required right-of-way and Railroad Agreements must be completed before advertisement of projects. The Utility/Railroad Unit will coordinate with the Rail-Highway Safety Coordinator and Area Engineer in verifying or resolving any discrepancies between project plans and specification with the Railroad Agreement prior to the project being advertised for bids.

The Utility/Railroad Unit will send a copy of the Contractor's bid proposal and plans for information to the Rail-Highway Safety Coordinator and each Railroad Company and LPA involved with the project.

Railroad projects not requiring contractor services will be done as a Non-Bid projects in accordance with the ITD [Design Manual Section 315.13](#) and the Utility/Railroad Unit will prepare and distribute the documents to the Rail-Highway Safety Coordinator, the ITD District, the Railroad Company and LPA involved with the project.