CHAPTER 105

Railroad Coordination

Design Memorandum	Revision Date	Sections Affected
21-03	Mar. 2021	All sections revised.

The design memorandum applicable revision date as noted in brackets next to each section heading below.

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CHAPTER 105

RAILROAD COORDINATION

105-1.0 OVERVIEWS AND CODES, POLICIES, AND TERMINOLOGY

105-1.01 Introduction and Overview of Railroad Coordination

This chapter discusses common considerations in the railroad-coordination process. The various responsibilities of the Department and railroad companies (Railroads) are specified by State and Federal laws and regulations. The Indiana Design Manual does not repeat, replace, or modify these laws or regulations. Any conflict between the information presented in the Manual and State/Federal laws and regulations should be brought to the attention of the Division of Utilities and Railroads Director.

General

The Department and Railroads are each generally responsible for constructing, maintaining, and operating their own facilities. Each includes its own unique set of design, construction, operational, and maintenance considerations. Where highways and railroads intersect, are adjacent to, or otherwise encroach upon each other coordination and cooperation is needed to ensure that the design, construction, operation, and maintenance of both are compatible.

Potential changes to the railroad facilities or operations by the Railroad, such as a need for future additional tracks, may have a significant impact on the proposed highway project. A project crossing or adjacent to a railroad may impact the railroad facilities or operation. This includes work on the right of way such as roadway widening or earthwork operations; and work which may impact the safe operations of the rail line such as maintenance of traffic or contractor work activities. For these reasons, the project manager should include the Railroad Coordination activity line in the Scheduling and Project Management System (SPMS) when there is a railroad in the vicinity of the project.

If the roadway project requires a new grade crossing, the relocation of an existing crossing, or the modification of an existing roadway crossing by adding or deleting current lanes, the road agency should contact the Multimodal Rail Programs Office on the requirement for a submission of a Petition. If a railroad company is proposing to add one or more new tracks to an existing crossing, they too are required to submit a Petition to the Rail Programs Office

The purpose of railroad coordination is to identify what railroads are in a project area and to manage the interaction with the railroad as required for road improvement projects. The relationship between the railroad and the public right of way benefits the general welfare, safety, and health of Indiana residents.

The Railroad Coordinator is the person designated to complete the railroad coordination responsibilities. The Railroad Coordinator for a project can be a Department employee or consultant but regardless must be certified through the Department's Railroad Coordinator Certification process. This is effective for projects being certified after July 1, 2020. Requirements for and the process of becoming a Certificated Utility Coordinator can be found on the Department website. In addition to the certification process, performance evaluations may be applicable.

The following people are also involved in railroad coordination:

- The Railroad Oversight Agent is an INDOT employee designated with the responsibility to deliver the railroad tasks of the project by overseeing consultants who complete the railroad coordination responsibilities
- The INDOT Project Manager is the primary person responsible to deliver all aspects of a project including railroad coordination
- The INDOT Central Office Railroad Administrator provides advisement in railroad coordination and approves agreements and certifications with exceptions
- The Railroad Representative is the railroad designated contact for all coordination obligations for the railroad

The main goals of railroad coordination include:

- Projects delivered on time and within budget
- Mitigation of railroad conflicts
- Successful communication of railroad-related issues to the Project Manager and Designer
- Execution of the agreement with the railroad outlining potential financial, construction, and safety concerns and responsibilities

The estimated timeline for full railroad coordination from project initiation to coordination completion may be up to 420 days. This does not include the number of construction days, and that timeframe is based on work type, see Section 3.02, Agreements, for more information regarding each work type.

- **Average Construction Days by Work Type:**
    - Capacity: 270 Days
    - Restoration / Rehabilitation: 30 Days
    - Signals Safety Improvement:
        - Section 130: 10 – 30 Days
        - INDOT Upgrades: 30 Days

All steps are completed by either the District or the Consultant Railroad Coordinator assigned to the railroad coordination. The Central Office Railroad Administrator serves as the subject matter expert for issues or questions that may arise.

The estimated timeline for full railroad coordination from project initiation to coordination completion (averages vary based on complexity of project and / or railroad company involved):

- Determination of Railroad Involvement in Assigned Project: 30 Days
- Development of Railroad Preliminary Engineering Packet: 30 Days
- Railroad Preliminary Engineering and Contract Negotiations: 180 Days
- Agreement Processing: 60 Days
    - The Central Office Support Technician and Program Coordinator are involved in this step, they are responsible for routing, processing, notarizing (if needed), archiving, and distributing copies
- Final Pre-Letting Coordination Work: 90 Days
- Construction - Timeline variable based on work type and construction schedule
- Final Inspection and Project Close Out: 30 Days

105-1.02 Overview of LPA Coordination and Section 130 Program

105-1.02(1) LPA

Local Public Agency (LPA) projects are managed by local municipalities, towns, cities, or counties. INDOT Utility and Railroad Division does not have a responsibility for these projects and acts in an advisory capacity, providing only guidance to the LPA.

INDOT Railroad Coordinators DO NOT sign Certifications, nor provide any exceptions to certification for any LPA projects

105-1.02(2) Section 130

Section 130 is a federal safety program providing funds for the elimination of hazards at railway-highway crossings. The funds are set-aside from the Highway Safety Improvement Program (HSIP) apportionment. This program is managed by the INDOT Traffic Safety and Local Programs Office. On occasion the Railroad Coordinator may be asked to assist in coordination of these Section 130 Projects. In general, the Railroad Coordinator is responsible for the final inspection.

105-1.03 Terminology

Abandonment: The relinquishment of interest (public or private) in right of way or activity thereon with no intention to reclaim or use again for highway or railroad purposes
Active Warning Device: Include but are not limited to flashing lights, train activated gates, bells, claxons, cantilevered flashing lights, and highway traffic signals

Advance Preemption: The notification of an approaching train that is forwarded to the highway traffic signal controller unit or assembly by the railroad equipment in advance of the activation of the railroad warning devices

Crash Rate: 1) The number of crashes, fatalities, or injuries divided by a measure of vehicle activity to provide a means of comparing accident trends through time. 2) The number of crashes per crossing per year

Cross Section: A vertical section of the ground and facilities thereon at right angles to the centerline

Crossing Angle: The angle of 90 degrees or less at which a railroad and a highway intersect

Encroachment: Unauthorized use of highway or railroad right of way or easements as for signs, fences, buildings, etc.

Force Account Work: Prescribed work paid for by INDOT to the railroad based on actual costs and appropriate additives

Grade Intersection (Crossing): An intersection (crossing) where roadways (and railroads) join or cross at the same level

Grade Separation: A crossing of two highways, or a highway and a railroad, at different levels

Highway-Rail Grade Crossing: The general area where a highway and a railroad cross at the same level, within which are included the railroad, roadway, and roadside facilities for traffic traversing that area

Joint Use Agreement: When INDOT enters an agreement with a railroad to cross the railroad's right-of-way with its highway facilities, a "joint use" highway-rail intersection is created

Local Public Agency (LPA): Any political subdivision of the State such as a city, county, or other public agency with legal authority to acquire right of way for highways or public roads and to provide relocation benefits

Pavement Markings: Markings set into the surface of, applied upon, or attached to the pavement for the purpose of regulating, warning, or guiding traffic and must be installed prior to completion on railroad coordination

Pedestrian Crossing: A highway-rail grade crossing used non-motorized vehicles

Preliminary Engineering: The work necessary to produce construction plans, specifications, and estimates to the degree of completeness required for undertaking construction there under, including locating, surveying, designing, and related work

Pre-Signal: Supplemental highway traffic signals, located in a position that controls traffic approaching the highway-rail grade crossing in advance of the intersection

Private Crossing: A highway-rail grade crossing that is not a public highway-rail grade crossing, such as grade crossings that are on privately-owned roadways utilized only by the owner's licensees and invitees

Public Crossing: A highway-rail grade crossing that has public right-of-way adjacent to both sides of the railroad's right-of-way

Railroad Coordinator: A person designated to complete the railroad coordination responsibilities and who has completed and been certified to do railroad coordination for Department projects. Certification to do railroad coordination for Department Projects is effective for all projects needing certification after July 1, 2021

Sight Distance: Available sight distances help determine the safe speed at which a vehicle can approach a crossing. The following three sight distances should be considered:

- Distance ahead to the crossing
- Distance ahead and along the tracks on which a train might be approaching the crossing from either direction
- Sight distance along the tracks in either direction from a vehicle stopped at the crossing.

Stopping Sight Distance: The length of highway required to safely stop a vehicle traveling at a given speed

Track Types: Railroad tracks are categorized according to function. These categories include:

- Main Track – A track extending through yards and between stations, upon which trains are operated by timetable or train order or both, or the use of which is governed by block signals or by centralized traffic control
- Branch Line – A railroad line that normally caries freight from its origin to a main line or from main line to destination
- Passing Track (or siding) – A track used for meeting and passing trains
- Side Track, Switching Track or Industrial Track – Track used for loading, unloading and storage of rail cars

Traffic Control Device: A sign, signal, marking, or other device placed on or adjacent to a street or highway by authority of a public body or official having jurisdiction to regulate, warn, or guide traffic

1. Active traffic control device. Traffic control devices activated by the approach or presence of a train, such as flashing light signals, automatic gates, and similar devices, as well as manually- operated devices and crossing watchmen, all of which display to motorists positive warning of the approach or presence of a train.
2. Passive traffic control device. Types of traffic control devices, including stop and yield signs, markings, and other devices, located at or in advance of grade crossings to indicate the presence of a crossing but that do not change aspect upon the approach or presence of a train.
3. Traffic control signal. Any device, whether manually, electrically, or mechanically operated, by which traffic is alternately directed to stop or permitted to proceed.

4. Traffic markings. All lines, patterns, words, colors, or other devices, except signs, set into the surface of, applied upon, or attached to the pavement or curbing or to the objects within or adjacent to the roadway, officially placed for the purpose of a regulating, warning, or guiding traffic.

Traffic Signal: A power-operated traffic control device by which traffic is regulated, warned, or alternately directed to take specific actions

Traveled Way: The portion of the roadway for the movement of vehicles, exclusive of shoulders

Volume: The number of vehicles passing a given point during a specified period of time

1. Average daily traffic (ADT). The average 24-hour volume, being the total volume during a stated period divided by the number of days in that period. Unless otherwise stated, the period is a year.
2. Design volume. A volume determined for use in design, representing traffic expected to use the highway. Unless otherwise stated, it is an hourly volume.

Yard: A system of tracks within defined limits provided for making up trains, storing cars, and other purposes

105-1.04 Additional Resources

105-1.04(1) Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD)

The purpose is to define the standards used by road managers nationwide to install and maintain traffic control devices on all public streets, highways, bikeways, and private roads open to public travel.

105-1.04(2) The Highway – Rail Crossing Handbook

The handbook is intended to provide practitioners of all levels of knowledge and experience with critical background information and "noteworthy practices" consistent with the MUTCD and more recent guidance developed by recognized subject matter experts.

105-1.04(3) The Buy America Policy

The Buy America Policy requirement is that all contracts, whether financed entirely or partially with State or Federal funds, shall comply with IC 5-16-8 and the 23 CFR 635.410. Except for pig iron and processed, pelletized, and reduced iron ore, steel shall be made in the United States by the open hearth, basic oxygen, electric furnace, Bessemer, or other steel making process. Except for pig iron and processed, pelletized, and reduced iron ore, all steel and cast-iron materials and products permanently incorporated in the contract shall be manufactured in the United States. Manufactured 90 products include those which are rolled, formed, shaped, drawn extruded, forged, cast, or fabricated. The United States includes all territories, continental and insular, subject to the jurisdiction of the United States of America. Except for pig iron and processed, pelletized, and reduced iron ore, no steel or cast-iron products produced in the United States may be modified in a foreign country and still comply with the Buy America Requirement.

A Buy America Certification shall be submitted and received for each product or source of material prior to being incorporated into the contract in accordance with INDOT Standard Specifications and the INDOT Construction Memorandum 17-04. An example of the certification form can be found in the INDOT Standard Specifications

105-1.04(4) American Railway Engineering and Maintenance -of-Way Association (AREMA)

AREMA is a professional association for railway engineering personnel that offers numerous educational opportunities and produces and publishes the recommended practices for railway engineering infrastructure including track, structures, and communications & signals. Please visit their website as a resource https://www.arema.org

105-2.0 RAILROAD COORDINATION - DETERMINING INVOLVEMENT (SCOPING THROUGH INITIAL RAILROAD CONTACT)

105-2.01 Scoping

Scoping is the initial phase of project planning and involves determining the specific details and evaluates the project complexity, potential cost, and anticipated schedule. Railroad coordination will be necessary for any project which includes a railroad or has a railroad near the terminus of the project limits. It is important to note that the Railroad Coordinator may not be directly involved in the scoping phase of the project but may be asked to clarify any potential railroad involvement. There are numerous topics to consider during the scoping phase, which include:

- Cost:
    - Railroad Preliminary Engineering
    - Upgrade warning devices (passive or active)
    - Extend or replace existing crossing surfaces
    - Flagging
- Schedule:
    - Railroad Preliminary Engineering
    - Agreement processing
    - Railroad Construction
    - Flagging
    - Inspection

If a railroad is within or near the project limits, the coordinator will need to answer questions to determine the level of involvement:

- Is a rail crossing within the project limits or within the parameters of near terminus?
- If involved, what type of warning devices does the current crossing have?
    - Active or Passive?
- Are upgrades to the devices needed and, if so, to what extent do the devices need to be upgraded?

105-2.02 Research and Identification

There are several different research tools available for the Railroad Coordinator to determine the parties involved and the level of coordination that may be required for a given project. The Railroad Coordinator will need to identify when conducting the research:

- Answering the Six Questions
- Near Terminus
- Insurance and Flagging Requirements

Based on the below research methods we can identify whether there is a railroad within or near the project limits.

- If there is no railroad within these limits, then there is no further railroad coordination needed
- If there is railroad involvement, a need to determine the level of involvement and to what extent the crossing needs to be evaluated

Should a railroad be found within or near the project, there are six questions which will need to be answered. Refer to the "Policy for Railroad-Highway Grade Crossing Warning Devices" Chapter 5 Evaluation Procedure – Table 3 Basic Criteria for Requiring Warning Devices for determination. A "yes" answer to any of these six criteria questions indicates a need to evaluate for a warning device upgrade.
Types of warning devices include:

- Mast-mounted flashing pairs,
- Train Activated Gates
- Overhead cantilevers
- Warning bell or claxon

Should an upgrade be required, the devices must be installed and functioning properly prior to the crossing being open to traffic or accepted by the Federal Highway Administration (FHWA)
The Six Questions that must be answered:

1. Is the calculated Hazard Index value 0.100 or greater?
2. Have there been two or more crashes in the recent 5-year period? This is also defined as a multi-crash location.
3. Is the rail line classified as FRA Track Class 4 or greater? On Class 4 track, freight trains can operate up to 60 mph.
4. Is there regularly scheduled passenger service such as AMTRAK or NICTD or others operating on the rail line?
5. Are there two or more tracks? An additional track can be a railroad siding that is signalized where trains can operate in either direction.
6. Is the measured Intersection Angle 30 degrees or less?

105-2.02(1) Scheduling Project Management System (SPMS)

SPMS is an INDOT application which the program manager uses to keep all pertinent details regarding a project in one place. The Full Project Details Report, available in SPMS, provides the initial information we need to further research the railroad aspect of the project and will help identify the following:

- DES Number
- Letting Date
- Project Location – LON / LAT
- Project Team
- Work Type

Note: SPMS is only available to INDOT employees, please contact the Oversight Agent for this information if needed.

105-2.02(2) Internet Maps / Technology

Different internet maps, such as Google Maps, may be used to view satellite imagery of the project location. Street View can be used to view the current crossing to see what kind of warning devices are present (active or passive).

105-2.02(3) INDOT Rail Crossing Locator

The INDOT Rail Crossing Locator is used to get information on a specific crossing. INDOT maintains this interactive, GIS-based, map that lists every rail crossing in the state. This map is directly linked to the Federal Railroad Administration (FRA) database and makes available information about all crossings in the state. This can help identify a railroad's presence and provide the coordinator with information about the crossing and train operations that can assist at the researching phase of the project.

The INDOT Rail Crossing Locator will allow the coordinator to search directly for a specific crossing or zoom to a specific location on the map
By selecting the crossing, the following information can be found:

- The Crossing ID Number
- The Railroad Name
- Number of Trains Per Day
- Train Speed
- Vehicular Traffic
- Existing Warning Devices
- Additional Photos and the FRA Report

105-2.02(4) Federal Railroad Administration (FRA) Database

The Federal Railroad Administration (FRA) Database provides additional details on a specific crossing. The following reports can be found through the FRA Database:

- Inventory (Current and Historical since 1970)
- Accident Historical
- Accident Prediction Report – Crash Hazard Index
- Contact Sheet

A map can also be generated based on the crossing number entered.

105-2.02(5) Discussions with Involved Parties

- The INDOT Project Team- Meeting with the designer and project manager helps all involved members understand the full project scope and potential level of railroad involvement

- The Potentially Affected Railroad- The coordinator should review the answers to the six questions with the railroad to ensure all information gathered is correct and accurate to further determine the level of involvement.

Having discussions with the potentially affected railroad will help assist in formulating any budgetary and timeline estimates. This could also provide additional, or updated information that may not be accurate in the FRA database.

105-2.03 Near Terminus

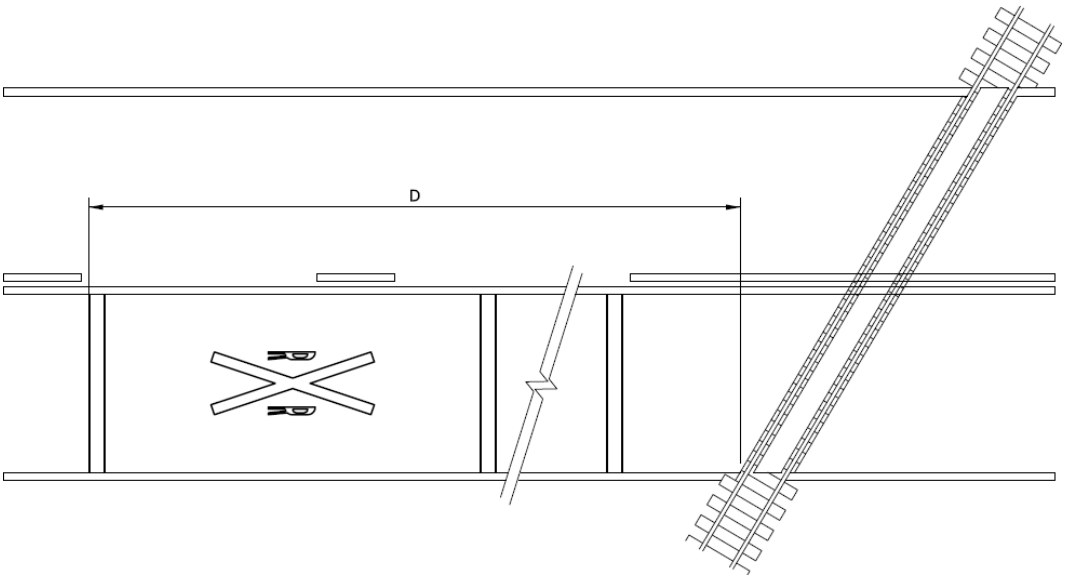
To determine when an INDOT project needs to include an active railroad crossing warning device which may be beyond the project limits, the Roadway Design Speed is compared to Table 1 and if the project construction limit is within the determined distance (D) as measured from the nearest rail, the crossing must be included in the project scope. This dimension is shown on Table 1 and Diagram 1 below, these dimensions are derived from Standard Drawing E 808-MKPM-06. Please refer to Chapter 47 of the Design Manual or the Highway Grade Crossing Warning Device Policy for further clarification.

Table 1: Controlling dimension for determining crossing inclusion

Roadway Design Speed	**D = Distance from nearest rail to controlling pavement marking ***
< 35 mph	131 feet
40 mph	156 feet
45 mph	206 feet
50 mph	281 feet
55 mph	356 feet
60 mph	431 feet

*This is the distance from the nearest rail point to the project limits for determining if a project must include the crossing. For example: if the roadway design speed is 45 mph the project limits MUST be at least 207 feet away or the crossing must be considered as part of the project.

Diagram 1: (From the drawing {E 808-MKPM-06} below)



105-2.04 Determination and Crossing Upgrades

If it has been determined that the railroad is within or near the terminus of the project, the Railroad Coordinator will need to determine the level of involvement that the railroad will have with the project:

- Are there currently adequate warning devices, or is there a need to evaluate and possibly upgrade the crossing?
- Crossing Arms
- Overhead Cantilever Mounted Flashing Lights
- What kind of insurance is required?
- Will there be a flagging need?

The ultimate decision on whether to upgrade the crossing is made by the project manager or designer. The role of the coordinator is to gather the data and assist them in making this determination, they may enlist the help of a qualified diagnostics team to further make that decision.

Best practice is to upload the completed "Six Questions" into the RRA to reference later by all involved parties.

If any of the Six Questions received a Yes answer, the crossing will need further evaluation to determine the level of upgrade recommended.

Adequate warning devices, under 23 CFR Section 646.214(b)(2) or on any project where Federal-aid funds participate in the installation of the devices are to include automatic gates with flashing light signals when one or more of the following conditions exist:

- Multiple main line tracks.
- Multiple tracks at or in the vicinity of the crossing which may be occupied by a train or locomotive to obscure the movement of another train approaching the crossing.
- High Speed train operation combined with limited sight distance at either single or multiple track crossings.
- A combination of high speeds and moderately high volumes of highway and railroad traffic.
- Either a high volume of vehicular traffic, high number of train movements, substantial numbers of school buses or trucks carrying hazardous materials, unusually restricted sight distance, continuing accident occurrences, or any combination of these conditions.
- A diagnostic team recommends them.

In addition to, or in place of, crossing arms there may be a need to upgrade the existing crossing to include overhead cantilevers.

How should the Railroad Coordinator determine if an overhead cantilever may be warranted? There are several aspects to consider:

- Presence of large trucks due to proximity to a factory or manufacturing plant
- Presence of buses (school or commercial)
- Roadway has significant elevation changes as it approaches the crossing
- Crossing is adjacent to a farm field where crops may obscure the mast-mounted flashing pairs on approach from either direction

If the crossing is elevated from a flat roadway with nothing obscuring signal visibility on approach to the crossing, an overhead cantilever will most likely not be necessary.

All crossings do not require two cantilevers. For example, small, two-lane county roads can be very effectively controlled by one cantilever with flashing pairs facing each direction of approach. This is a judgment call, however, and INDOT strives to always lean towards installation unless their installation adds nothing to the safe operations of vehicular traffic at this crossing.

105-2.05 Insurance and Flagging Requirements

The 3M - 50/25 Rule

The 3M:

- Manpower
- Machinery
- Materials

Depending on how close any of these “M”s are to the nearest rail, additional measures may need to be taken.

50/25 Rule:

- If any of the three M's are within 50 feet of the nearest rail, REGARDLESS of right-of-way lines, the contractor must carry Railroad Protective Liability (RPL) insurance at the levels deemed appropriate by the affected railroad

- Should any of the three M's encroach to within 25 feet of the nearest rail, in addition to the RPL, the contractor may be required to have a flagger present. This is at the sole discretion of the railroad or its authorized representative

105-2.06 Initial Contact with the Railroad

Once the research is completed, the Railroad Coordinator can bring their findings to the project management team.

If the design and project manager have determined that a crossing does warrant an upgrade, or no upgrade is required but the project will involve material, machinery, and / or manpower within 50 feet of the railroad, the Railroad Coordinator will need to advise the Railroad of the project and timeline.
The Railroad will need to see the preliminary plans for the project that involves the Railroad.

The railroad can now provide their input as to whether the crossing warrants an upgrade or not and will also be able to address the insurance and flagging requirements for the work that will be done within the railroad's limits. The railroad will require special consideration be made by the INDOT contractor which will include the railroad insurance and a railroad flagger.

105-3.0 RAILROAD COORDINATION - RAILROAD INVOLVED

Once a preliminary evaluation of the project is made and review of the potential railroad involvement is determined by the Railroad Coordinator, a meeting with the project manager is recommended. The purpose of this meeting is to further obtain project details and review any potential issues or concerns.
Items for discussion:

- Request and review updated project plans
- Review Budget and Schedule details
- Address any anticipated delays or differences in budget due to railroad involvement or a change in the overall project
- Confirm funds are available for railroad coordination
- Discuss any known risks such as adding more time to complete should the project involve a passenger rail

105-3.01 Preliminary Engineering

The Railroad Preliminary Engineering (RR PE) Packet which is sent to the railroad consists of:

- The Purchase Order (PO) to the railroad for railroad preliminary engineering work
- A set of preliminary plans
- The Preliminary Engineering Authorization Letter – revised for this specific project from the template in the RRA

Critical Steps in acquiring the RR PE PO:

- Prepare an estimate of the level of funding recommended based on project work type
- Review railroad estimate with the Project Manager and once approved, request to have the funds programed in SPMS
- Once the money is available in SPMS, file a funding request in CapWise for that amount
- After the funding request has been reviewed and approved in CapWise the district's Program Manager will dispatch a Purchase Order in PeopleSoft

During the preliminary engineering phase of the project the Railroad Coordinator, project manager, and project designer will work together to determine the final plans approved by the railroad.

Once INDOT and the Railroad have agreed upon the railroad plans, the Railroad will provide a Force Account Estimate (FAE), or an estimate of its costs, and both the railroad work plan and cost estimate are approved by the project manager and incorporated into the railroad agreement.

The railroad will determine if a flagger is required for safe operations and if so, they will estimate the costs of that personnel to be included in the total costs of the FAE.

INDOT agrees to pay the railroad for all reasonable and necessary expenses. The railroad will estimate what those charges will be, inclusive of all overhead and materials and labor. The FAE must be approved by the PM.

The Railroad Coordinator is to ensure the designer and the railroad have an open line of communication to resolve any conflicts with proposed plans.

The coordinator should be able to understand the plans, be able to discuss them with the project manager and railroad, be able to answer questions or direct questions to the appropriate person and assist in finalizing the plans and approving the FAE.

When preparing for the initial meeting with the project manager and estimating railroad involvement, the Railroad Coordinator should consider the work type and amount INDOT typically provides as reimbursement to the railroad for their preliminary engineering work. This dollar amount will be used to create the initial RR PE PO.

Estimating Preliminary Engineering Cost

INDOT Project Work Type	Typical PE Allotment
Railroad Signals Upgrade / Section 130	$20,000.00
All Non-Bridge Related Resurface Work	$5,000.00
Minor Bridge Rehab (Resurface, Terminal Joints, Painting, etc.)	$10,000.00
Major Bridge Rehab (Bridge Deck Replacement, Bridge Replacement, etc.)	$15,000.00
New Construction - Roadway	See Signals and Surface Upgrade Section
New Construction - Roadway Bridge	$15,000.00
New Construction - Railroad Bridge	$25,000.00

Construction costs can be substantial and need to be addressed with the project manager. The coordinator will also need to estimate flagging costs by discussing with the area engineer for the number of days that the flagger will be needed.

Construction costs can fall into two different categories:

1. Actual railroad construction activities, such as surface or signals work

    - Costs for surface or signals work will be determined by the railroad since they produce the design for this type of project
    - INDOT reimburses the railroad for installing these facilities and then the railroad maintains them in perpetuity unless otherwise arranged

2. Safety Support and Inspections for INDOT work on or near the railroad right of way

    - Costs for Safety Support and Inspections are determined by the railroad in conjunction with information from the INDOT Railroad Coordinator

The railroad may desire to perform inspections of the work being done. Each inspection typically costs approximately $1,500.00. There will generally be at least two inspections by the railroad; one prior to work commencing and one after the work is complete but there may be more due to duration of work or complexity.

After the Railroad Coordinator and Project Manager have reviewed the railroad's FAE and agreed that the project costs the railroad has detailed are reasonable, an agreement is prepared and fully executed prior to the Purchase Order for these costs being dispatched.

As soon as the coordinator has been informed that the money is available and the railroad agreement has been fully executed, the construction PO request needs to be filed through CapWise, preferably submitted 1 – 2 months prior to letting.

The Railroad Coordinator is responsible for confirming the necessary money has been programed in SPMS which is equal to the FAE and preparing the requisition of the Purchase Order in CapWise and PeopleSoft.

105-3.02 Agreement Process

After the Preliminary Engineering, FAE, and special provisions are approved, the Railroad Coordinator will prepare the agreement and send to railroad for review and execution.

There are three basic railroad agreement types depending on the type of roadway project INDOT is scheduling:

- Capacity
- Restoration / Rehabilitation
- Signals Safety Improvements

105-3.02(1) Capacity

Any time the vehicular traffic is increasing where the roadway and the railroad meet, corresponding work will likely be required by the railroad.

- Adding Travel or Turning Lanes - Will require any railroad signals to be relocated and the crossing surface widened
- New Bridge Construction - Railroad signals and crossing surface will likely be removed. Extensive engineering and construction activities will need to be performed by the affected railroad
- New Road Construction or Roadway Realignment - The railroad may need to design and install a new crossing surface, design, install, and operate train-activated warning devices for this type of project.

A petition must be submitted to the Rail Programs Office for new, relocated or modified (add or drop existing travel lanes) through grade crossings.

105-3.02(2) Restoration / Rehabilitation

Projects that involve only maintaining INDOT facilities at or near the railroad may only require a flagger.

The roadway project type that rarely require railroad construction activities but may require a flagger are:

- HMA (Hot Mix Asphalt) Overlays
- Bridge Deck Overlays
- Small Structure Repair / Replace

105-3.02(3) Signal Safety Improvements

INDOT administers a federal program called SAFETEA-LU Section 130 Crossing Safety Upgrades, or commonly referred to as Section 130s. These projects require the Railroad to engineer and install new train-activated warning devices at various crossings as identified by INDOT.

Section 130 projects are managed by the INDOT Traffic Safety and Local Programs Office.

105-3.02(4) Agreement Preparation and Negotiation

Portions of the templates will be modified to make the agreement project specific. Once the agreement template has been correctly modified it will be sent to the railroad for review and execution.

Occasionally the railroad will have questions or request revisions to the agreement. The Central Office personnel can occasionally approve these changes while other changes will need to be sent to INDOT Legal for approval. All proposed changes by the Railroad will need to be reviewed by the Central Office.

105-3.02(5) Execution

Once ready for execution, the INDOT Railroad Coordinator will submit the agreement, along with all attachments and special provisions to the railroad for review and execution.

Once the contract has been executed by the railroad and returned to INDOT, the Railroad Coordinator will submit the agreement, along with an agreement routing form to the Central Office Railroad Administrator for approval and execution by INDOT. The agreement routing form can be found in the Template Library in the RRA Once the agreement is fully executed it is returned to the Utility and Railroad Central office support group for handling.

A scanned copy of the fully executed agreement will be uploaded to the RRA by Central Office and the Railroad Coordinator will be provided an emailed copy to forward to the Railroad.

105 3.03 Special Provisions and Certification

INDOT has published a detailed list of standard construction specifications that explain INDOT's requirements for performing work. Railroads supplement INDOT's standard construction specifications with their own special provisions that protect rail interests. These special provisions are attached to the railroad agreement and then added to the INDOT contract documents prior to bidding.

During the agreement preparation process, the coordinator will add the special provisions template, found in the template library in RRA, to the railroad agreement for review and approval. Any changes to the special provisions template must be submitted to the Railroad Administrator at INDOT Central Office.

Prior to RFC, and preferably by Final Tracings, the INDOT Railroad Coordinator will submit to the project manager and designer the railroad certification. This document confirms that all railroads are shown on the plans and that the railroad coordination has been completed by a qualified Railroad Coordinator. INDOT and FHWA allow for a certification with exception but those must be approved by the Railroad Administrator at Central Office.

There are four different types of railroad certifications:

1. No Railroads found within specific project limits

    - This is the most common and often used type of certification
    - Most of INDOT's projects do not affect railroads, even if they happen to be in the vicinity of the project

2. Railroads exist within the project limits, but have been found not to be affected by the proposed construction, incidental construction, or Maintenance of Traffic

    - If this second type of certification exists, the coordinator will need to complete Special Provisions and "Attachment A" (List of Railroads within Project Limits but were determined to be unaffected by the proposed construction)

3. Railroads exist within the project limits and have been found to be affected by the proposed construction

    - Most INDOT resurface projects that cross a railroad will require this type of certificate and an agreement will be executed between the State and the Railroad, generally for flagging.
    - In these instances, you will also need to complete the "Attachment B" (List of Railroads within Project Limits and were found to be affected by the proposed Construction)

4. Design-Build Project

    - The last type of certificate, INDOT will allow a project to go to bid with the design incomplete and hire a design builder to complete the design and build the project
        - Occasionally these projects involve a railroad
    - If so, complete the "Attachment D" and add the INDOT Contract Number and Date of Handoff in the text of this attachment before signing it

After the type of certificate has been determined the Railroad Coordinator will need to determine whether to let with or without exception.

There are two different types of lettings, based on railroad involvement:

- Let without Exceptions
    - Railroad Agreement has been executed, special provisions and insurance requirements, if any, are attached to contract.
- Let with Exceptions
    - This is done when most railroad coordination is complete, but the agreement may not be fully executed and with the expressed approval of the project manager and certification is signed by Senior Railroad Engineer. This applies to State projects only - No exceptions permitted on Local Projects

For Certifications which are to be Let with Exception, "Attachment C" will need to be filled out which provides a detailed description as to why the project is not ready to let without exceptions.

105 3.04 Notice to Proceed

The Railroad Coordinator will formally authorize the Railroad to begin the construction phase after consultation with the project manager 1 – 2 months prior to letting. This is done using the Notice to Proceed letter from the template library in RRA and revising as needed. For projects which require railroad involvement during construction, detailed coordination is required so that the construction project stays on schedule.

Once the schedule is finalized, the Railroad Coordinator will provide the railroad with the fully executed agreement, PO information to cover the FAE and formal authorization to begin the construction phase of the project. All charges from that point forward being billed against the construction purchase order.

105 4.0 RAILROAD COORDINATION - POST LETTING

Once the project has been awarded to a contractor, and the Railroad is preparing to participate in the construction activities, the Railroad Coordinator should already have:

- A fully executed agreement with the railroad
- Supplied INDOT Contracts with the Special Provisions
- Notify Railroad to proceed with the construction phase
- Processed the "final" invoice for the PE phase and closed the PE purchase order. This should be a main priority entering the Post-Letting Construction Phase

105 4.01 Pre-Construction / Scheduling

The goal of the Pre-Construction Conference (Pre-Con) is to bring all involved personnel together to finalize schedules, work zone parameters, confirm all conditions of the special provisions are met, and safety considerations. As the liaison between INDOT and the Railroad, the Railroad Coordinator should invite the Railroad or their representative to attend the Pre-Con.

105 4.02 Construction

While in construction, the Railroad Coordinator is responsible for several duties, to include:

- Site visits
- Attendance at Construction Related Meetings
- Monitor progress to confirm the project is on schedule
- Investigate railroad activity to ensure they are providing the services they agreed to provide
- Process any construction billing from the railroad

105 4.03 Inspection

As construction activities at or near the railroad begin to wind down the Railroad Coordinator should work with the INDOT Area Engineer to ensure that all required work is accurate and complete and, if present, work requiring the railroad flagger is finished.

- Any discrepancies must be rectified prior to the final invoice being paid and the project being closed out
- The required form (Form 40908) should be completed and is found in the template library in the RRA
- Send Railroad Release and request for final billing

105 4.04 Flagging

Flagging can take time to acquire and INDOT should work with the contractor to see that all work requiring flagging is scheduled together to minimize the amount of overall time needed.

Before the flagger is released, the Railroad Coordinator along with the Area Engineer and a representative from the railroad must perform an inspection of the work affecting railroad operations.

If there are any discrepancies and the discrepancy is due to work that our contractor needs to do, a determination will need to be made whether flagging will continue to be required. The flagger should not be released until all the work performed near the tracks is complete.

If the work is by the railroad, the contractor should be released, and the Railroad Coordinator should work with the railroad to get any discrepancies corrected.

105 4.05 Invoicing

The Railroad Coordinator will receive invoices from the railroad for the work that INDOT will reimburse for.

- Review and approve the invoice
- Invoices need to be sent to your district's billing department
- Be sure to communicate any discrepancies / disputes with the Project Manager

As the invoices are being processed the Railroad Coordinator should be particularly aware of the PO levels and the typical billing amounts. This will help prevent a request additional funds should there be an overrun.

When construction is complete, the Railroad Coordinator will need to ask the Railroad to compile all their charges and present INDOT with a final bill.

105 4.06 Audit

After the billing cycle is complete an audit will be performed by INDOT Accounting. The coordinator may be tasked with providing information or justification for this effort. To maintain compliance with the State's retention policy, all project related documents such as invoices, payment requests, and correspondences should be archived in the RRA.