SECTION 30 – INSPECTION PROCEDURES FOR RAILROAD FORCE ACCOUNT

30.1 INTRODUCTION *(Rev. 03-01-22)*

Responsibility for the inspection of the Railroad Force Account (RRFA) work, the review of the work being accomplished to ensure adherence to the agreement between the Railroad and the Department, and the approval of the railroad bills will occur at the DO level. The Railroad Team (RT) for the DO or CO will be available for consultation involving interpretation of the plans, administrative procedures, RT and DO instruction procedures, and salvage values.

Outlined briefly herein are the functions to be performed by the PEMS in making a satisfactory inspection and administration of the Railroad Force Account work.

30.2 AUTHORIZATION *(Rev. 03-01-22)*

Do not authorize a railroad to begin work until a copy of the authorization letter has been received from the RT.

The existence of an executed agreement by itself does not constitute authority to proceed with the work. The value of any Railroad work accomplished, special materials ordered, or any other cost incurred prior to the date of FHWA authorization will be cited and deducted from reimbursement by the FHWA. This applies whether the decision to make an early start is the fault of the Railroad or a Department or local government representative in authorizing the Railroad to start in advance of FHWA approval.

30.3 RAILROAD GRADE CROSSINGS *(Rev. 03-01-22)*

Prior to receiving bids on a contract, those railroads having grade crossings are advised of the planned highway construction by the RT. However, upon award of the contract, the PEMS, in cooperation with the DCD, must contact the appropriate railroad officials and arrange a meeting on the site. The railroad should always be invited to the pre-construction conference. This may eliminate the need for a separate meeting on the site. At this meeting, the railroad officials should be advised of the Contractor's schedule of operations. Coordination of the railroad's work plan with that of the road contractor's work plan should also be reviewed.

A Railroad agreement will establish a mechanism for obtaining personnel to ensure contract zone safety. If the Railroad has actual construction activities, it is normally work on their right-of-way and with their own forces. The PEMS must provide sufficient inspection of the railroad construction work so at the completion of the work, there is documentation supporting the work substantially complies with the plans.

Normally, when work is performed by a Department Contractor within the railroad right-of-way, or within 50 feet of the nearest track, the Contractor is required to provide Railroad Protective Insurance. An insurance policy must be received by the Railroad from the Contractor's insurer before the Notice to Proceed will be issued. If the work encroaches to within 25 feet of the tracks, a flagger, at the discretion of the Railroad, may be required to be present for any work to occur. The flagger will be paid for by the Department. The RT,

working with the PEMS will have sole authority for releasing any Railroad personnel assigned to the contract utilized for the purpose of flagging.

Some railroads will adjust their tracks exactly to the planned road grade, others may have a policy of leaving the tracks slightly high in anticipation of subsequent settlement. When power-tamping equipment is used to compact railroad ballast, no allowance is necessary for settlement. This method should be encouraged. In either event, it is important that the PEMS, or the Contractor through the Construction Engineering item, provide the track foreman the necessary grade stakes. The PEMS will inspect the staking and track adjustment work sufficiently to verify a smooth riding header and crossing. A poor crossing is not only unpleasant but can result in damage to the adjacent pavement from the impact of heavy motor vehicles.

Sufficient profiles and cross sections should be taken at all railroad crossings to build a smooth grade. Skewed crossings and tracks on super-elevated curves are often difficult to match with the road construction. If possible, tracks should be adjusted to the same elevation at crossings where two or more tracks are at different elevations. When the track adjustment is an appreciable amount, the Railroad should make the change as early as possible. In this manner, their track roadbed will have had an opportunity to become stabilized prior to paving. The final adjustment, if necessary, would then be only minor and the tracks would maintain their permanent elevation. If it appears that the Railroad will be required to lower its track to meet the planned grade, the PM must be notified so that adjustments to the design can be made. It is not desirable to attempt to lower the grade of an existing railroad.

If a crossing is to be installed as a part of the contract work, a copy of the current "General Specifications for Construction of Highway Railway Grade Crossings" will be included in the railroad agreement. These are to be treated the same as SS for the contract. The Scope of the Work Exhibit should be reviewed for any other work planned to be performed at the crossing. Certain pre-manufactured crossing surfaces will be indicated, "to be installed in accordance with the manufacturer's specifications." A copy of these specifications should be on file in the DO and the PEMS should obtain a copy for use and include a copy in the contract files.

Become familiar with 107.09 "Railroad-Highway Requirements", and 107.20 "Contractor's Responsibility for Utility Property and Services" of the SS. These sections may be modified and added to contracts as a special provision. Quite often the road contract will include work for placing drainage culverts through the railroad embankment. This work will normally be planned for by either open cutting or jacking. Although work of this nature is a part of the Railroad Agreement and has been cleared with the Railroad during the design stage, the Contractor is not relieved of his responsibilities as set out in the SS and the contract.

The SS require that protection arrangements for work performed by the Department's Contractor effecting the tracks and movement of trains during the construction period must be approved by the Railroad. It is the responsibility of the PEMS to verify that the Contractor complies with these requirements. In addition to the normal procedure for

approval of cofferdams at Railroad structures, the SS requirement for notification of, and approval from, the Railroad will apply on construction and maintenance contracts for:

a. installation of new grade crossing headers,
b. widening of an existing grade crossing,
c. installation of a pipe under the tracks, or
d. any other operation likely to affect the tracks or operation of the railroad.

Notification and approval by the Railroad of the above-mentioned protection arrangements will be required regardless of whether there is a formal railroad agreement between the Department and the Railroad. On LPA projects with Federal-Aid funding, there will be a written crossing agreement between the county or municipality and the Railroad with the Department acting as agent and utilizing the same specifications.

If the minutes of the pre-construction conference document that a Railroad representative was present to discuss construction involving the Railroad, these minutes will suffice for notification by the Contractor to the Railroad. However, written approval for the method of work to be used must be obtained by the Contractor from the Railroad and verified by the PEMS.

At crossings where active warning devices are to be installed, the Railroad Agreement will contain the current "General Specifications for Installation of Active Warning Devices at Highway-Railway Grade Crossings". The railroad will design the crossing surface and signal location and details of the design can be found in an exhibit to the railroad agreement. The crossing layout in the Force Account Exhibit will show, by symbol, the use of additional light pairs, cantilevers, and any other equipment to be installed outside of the control cabinet.

30.4 PRE-CONSTRUCTION CONFERENCE/RAILROAD CONFERENCE *(Rev. 03-01-22)*

Where multiple Railroads are involved in a contract, it is essential to discuss a workable schedule that coordinates with the Contractor's schedule. A Railroad conference should be held in conjunction with the usual pre-construction conference, and the RT must be informed of the pre-construction conference date. The PEMS is required to prepare minutes of the Railroad conference for inclusion in the pre-construction conference minutes.

At the railroad conference, and as previously noted, each Railroad company supervisor should be cautioned against starting work prior to receipt of proper authority or making any substantial change in the scope of work without prior approval. Failure to get such approval will restrict reimbursement for such advance or substantially revised work.

A copy of the minutes of the pre-construction conference involving the utility phase should be forwarded to the RT for inclusion in their file and their use in the engineering review of the Railroad billings. The proposed scheduled starting dates, anticipated completion dates, and any applicable or intermediate date must be recorded.

The date the Railroad was contacted regarding starting their work, the date the Railroad

actually started work, and any adverse conditions causing delay in the sequence of operations should be recorded in the pre-construction minutes. The PEMS should note specific items of assistance provided to the Railroad such as locating the centerline of the road, establishing grade stakes in advance of normal staking, etc. A comprehensive review of the work to be performed should be made at the start of the Railroad Force Account work.

30.5 INSPECTION *(Rev. 03-01-22)*

The degree of inspection of Railroad Force Account construction will vary considerably with the nature and location of the work and the type of contract involved. Judgment must be exercised regarding the manner and regularity of inspections. The inspection may vary from spot checks on some installations to detailed inspections of crossing construction and grade separation projects.

The following items should be noted by the PEMS:

a. Verify that proposed grade and alignment are according to approved Railroad plans and are compatible with the road structures, and construction features, etc.

b. Verify that proper backfill methods and materials are used where proposed and future road surfaces and berms are involved.

c. Be observant for any substantial change in methods and materials from those approved, such as the use of sheeting, special backfill, etc. The PEMS should immediately contact the Railroad representative to determine whether the Railroad or its Contractor expect to receive extra compensation for performing such work. Such a change, if compensable, can be approved by the RT. However, such approval must be obtained prior to starting the procedure change.

d. Verify that the Railroad foreman is familiar with symbols furnished on the construction stakes, such as cut and fill information, and that both the Railroad and the Department use the same data.

e. Spot checks should be made to verify that depths are compatible with Department plans, vertical clearance of overhead installations are sufficient to ensure proper clearance distance from highway structures, and horizontal alignment is compatible with construction limits, access lines, etc.

Railroads are authorized, after the PEMS has obtained the verbal approval of the DO, to do all necessary work involving minor changes in quantities or additions of minor items not included in any approved estimate. These changes are those deemed necessary to accomplish the intent of the approved agreements and do not require formal approval from the RT. However, adequate documentation and justification of such minor changes, items of material, and work performed must be attached to the record kept by the PEMS to aid Internal Affairs in any audit review.

RT approval must be secured for substantial changes in the scope of work that may affect the cost, such as:

a. a change in width of the crossing,
b. change in elevation of wire, (causing different length poles to be used),
c. special footage,
d. extra guying, bracing, sheeting, dewatering, and
e. changes in location or alignment.

In non-emergency situations, the proposal for such a change must be submitted in writing by the Railroad to the RT, and shall provide as much detailed information as practical. Sketches, estimates (if work is being performed by the Contractor, the Designer's estimate should be made prior to the Contractor's proposal for same), costs and other documentation should be required and transmitted.

The RT will base the decision of the Railroad's request on the PEMS' opinion of the necessity or desirability for the change. The request should indicate whether the changes result from (1) unusual field conditions not considered by the Designer, (2) changes made by the Department's Contractor, or (3) mutual agreement that a change is desirable.

After approval by the RT, the RT will send copies of the approved design changes to the DO, the PEMS, and the Railroad. The PEMS must inform the Railroad in writing of approval of field changes. The PEMS must also forward a copy of the approval of field changes to the DO and the RT. If timing is of essence, the PEMS may contact the RT by telephone for their assistance followed by a memorandum for the record. In these emergency situations where the RT has been asked for assistance by the PEMS, the appropriate RT personnel will contact the FHWA, review the problem with them, and request their concurrence in the change, subject to receiving the above-described documentation from the field. The RT will confirm the approval for the record after receipt of the appropriate documents from the field, with a copy to the Railroad.

It is recognized that it may be difficult to define or otherwise describe the limits of "substantial change" due to variations in cost of work, its complexity, the variable situations, and terrain encountered. It is also undesirable to request RT approval for every recognizable change. However, in case of doubt and where considerable amounts of money are involved, the RT should be contacted for approval as directed above.

30.6 RECORDS *(Rev. 03-01-22)*

The record of the PEMS for the Force Account work should be kept in sufficient detail to indicate that the several stages of the work were performed in conformance with the plans or scheduling. This record will also be used in preparing the final letter recommending acceptance and payment for the Railroad Force Account work performed. The various methods of payment of the Force Account relocation work results in differences in the records required to be kept at the construction level. These are described below:

a. For contracts performed entirely by the Railroad with Railroad forces, the

record kept by the PEMS should include the number and class of employees, major equipment on site, principal materials used and materials removed from the site. Also, pertinent data such as weather conditions, ground conditions, breakdown of equipment, delays due to conflicts with other Railroad forces or Contractor's operations, should be recorded. Any conversations with the Railroad or the RT should be documented in the contract files.

b. On the few contracts where part or all the Railroad work is being performed by a Contractor having a continuing contract with the Railroad, the same records are required as in (a) above, unless the agreement clearly established that the work being performed under a continuing contract is on a unit of work basis. If it is clearly on a unit of work basis, only the units of work completed per day by the Contractor need be recorded. Records on any work performed by the Railroad's forces in conjunction with a continuing contract should follow (a) above.

c. For contracts being performed in part or completely by outside Contractors, on a unit of work basis, the record should cover the units of work performed on a daily basis. On contracts being performed in part or completely by an outside Contractor, on a lump sum basis, the items of recording labor and equipment used by the Contractor can be deleted from the record, except in those instances when extra work performed by the Contractor on a per hour or per diem basis is involved. The units of work completed should be recorded daily to form a basis for checking payment to the Railroad for their Contractor's work. This should include such things as the number of poles installed, amount of wire strung, the lineal footage of pipe installed, the length of line removed, the amount of trenching, tons of ballast placed, number of ties laid, length and weight (size) of rail installed or changed, number of crossing sections installed, lineal footage of track resurfaced, or any other work unit.

d. On lump sum agreements between the Department and the Railroad where the construction work is being performed either by Railroad forces or by the contract method, the daily checks on the manpower, equipment, and material can be omitted. However, a detailed review must be made at the final Railroad inspection to ensure conformance with the agreement. In these instances, the Railroad will be paid the exact amount of the original or duly modified agreement regardless of the actual cost incurred by the Railroad, as long as they have satisfactorily performed all work covered by the approved plan.

Records should be kept clearly indicating the hours for the Railroad's inspection personnel with particular emphasis on those not on the Railroad payroll.

30.7 SALVAGE MATERIAL *(Rev. 03-01-22)*

If salvageable materials are encountered, the PEMS should contact the DO immediately. It

is essential to account for all materials removed from the site. The Railroad must have the scrap or salvage materials available for inspection. In the interest of cooperation and liaison with the Railroad, the PEMS should remind the Railroad representative of this requirement. The Railroad will be held responsible for the full value of the item, whether of salvageable quality or not, if it is disposed of without first notifying and getting approval to do so from the Engineer.

The following definitions are provided as a general guideline:

SALVAGE - Materials which have been recovered from project work by the Railroad or Contractor and are accepted for re-use and return to Railroad storage. The Department shall receive reimbursement for all salvage material and the amount shall be credited to contract cost. In determining salvage values, the following criteria should be followed: (1) For all materials recovered from temporary contract use, the Railroad or Contractor shall give credit to the total contract cost, less a depreciation allowance of 10% for rails, angle bars, tie plates, and metal turnout materials and 15% for all other materials. (2) All materials recovered from the permanent installation will be credited to the total contract cost at current stock prices.

SCRAP OR SALABLE - Materials which have been recovered by the Railroad or Contractor from contract work and are not acceptable for re-use, but are salable items and are too valuable to junk. If these materials have a net sale value, then the Department will inspect the materials and provide authorization for their sale. The Department, or the Railroad, will advertise these items for bids and sell the materials to the highest bidder, or the Railroad may retain the materials if they conduct periodic sales. If sold in a Railroad periodic sale, credit given for these materials will be based on Railroad records of these periodic sales. If lengths or quantities of any materials installed are less than those removed and if such removal increases operating costs to the Railroad, then the amount of credit given to the Department may be reduced.

JUNK - Junk is material that has no salvage or scrap value. Such junk material is to be destroyed by the Railroad under Department supervision.

When abandonment in place is identified for particular parts or all of a facility and the abandonment will, in the opinion of the DO, constitute a hazard or liability to the Department, the Railroad, the Contractor, or adversely effects the work of the Contractor, it will be treated as a substantial change. Approval to remove the facility must be requested from the RT. Rails located within the roadway are not to be abandoned in place. Their removal will be considered incidental to the contract. After approval by the RT, the Railroad should be instructed to remove the facility and documentation of the change placed within the contract record. In general, the RT is of the opinion that all pipe 12 in. or less in diameter may be abandoned in place when concurrence is received from the Designer and FHWA. Poles, after being pulled and hardware removed, may be abandoned on the Railroad's right-of-way. The final decision on abandonment shall be the responsibility of the DO and/or the railroad concerned.

After a review by the PEMS of any recovered poles, pipes, rails, ties, or other material

which the Railroad has declared to be non-salvageable, (non-usable) the material shall be disposed of by the Railroad through invitational bids, if the estimate of value or amount of material warrants such action. Otherwise, the material shall be taken to an established disposal yard, abandoned outside construction limits, or otherwise disposed of and documented accordingly. Any pipe abandoned under tracks greater than 12 in. diameter must first be adequately filled with suitable material and the ends plugged with concrete.

30.8 FINAL INSPECTION OF RAILROAD FORCE ACCOUNT *(Rev. 03-01-22)*
At the conclusion of the Railroad work, a final inspection will be made by the RT, in the presence of the Railroad representative and their Contractor, to determine conformance with the approved original or modified plan. The RT will perform the final inspection and record the results on the Rail Crossing Final Inspection Report form 40908.

When the RT Section is advised by the Railroad that completed work has been placed in service, a final inspection meeting is scheduled with representatives of the Railroad, the DO, and the FHWA utilizing the following procedures:

A. *Modern Active Flashing Light Signals*

1. The location and lateral clearances are checked to determine compliance with the plans and FHWA requirements.

2. The signal assembly, mast, instrument case and battery well are checked to determine if all construction was performed in a workman-like manner.

3. The painting of all units is inspected.

4. The roadway is driven from both approaches with the flashing light signals in operation to determine if the flashing light units are properly focused and functioning properly.

5. If a train crosses the intersection during the inspection period, the time elapsed from the start of flashing operation until the arrival of the train is determined and documented. Discuss this situation with the RT for additional documentation.

6. The lengths of circuits are checked to determine that the warning devices will be in operation a minimum of 20 seconds before the arrival of the fastest train.

7. Documentation is made of any highway obstructions to the visibility of the flashing signals.

B. *Modern Active Flashing Light Signals with Short Arm Gates*
In addition to the above procedure, tests are conducted to determine if the installation complies with the following requirements:

1. Gate arm lights shall operate in conjunction with the highway-crossing signal. The light nearest the tip of the arm shall burn steady and the remaining two lights shall flash alternately and in unison with lights on the signal.

2. The gate shall start its downward movement not less than 3 seconds after the signal starts to operate.

3. The gate arm shall reach the horizontal position before arrival of any train and remain in this position until the rear of the train has cleared crossing.

4. The bell shall sound a warning from the time the signal lights start to operate (minimum of 20 seconds before arrival of the train) until the gate arm is in the horizontal position.

5. The gate arm shall return to the 90° vertical position.

6. The time of operation from full horizontal position to raised position shall be from 9 to 12 seconds.

7. Two sources of power shall be provided for the operation of the grade crossing warning devices.

8. If the signals are interconnected with traffic signals for railroad preemption of the highway signals, DT shall be requested to attend the final inspection performed by RT and to verify that the preemption is functioning as specified in the railroad agreement. The RT will record the amount of advance warning time provided on the Rail Crossing Final Inspection Report form 40908 as “Preemption time”.

C. *Advance Warning Signs and Standard Pavement Markings*
Crossings will be checked for:

1. Pavement markings, as shown in the MUTCD, have been used on all paved approaches to Railroad crossings. Such markings are the responsibility of the public authorities.

2. Advance warning signs have been placed off the Railroad right-of-way appropriately. The signs are the responsibility of the public authorities.

30.9 TRANSMITTING RECORDS *(Rev. 03-01-22)*
The PEMS must keep the Force Account record at the contract field office until obtaining receipt of the final railroad billing from the RT. The record will be used in reviewing the partial and final billings. Afterwards, the record must be attached to the recommendation for approval letter for final billing. The RT will then transmit the billing to Contract Audit for audit and final payment. RT will retain the PEMS record in their files.