Colorado Department of Transportation

Railroad Manual

2017

COLORADO
Department of Transportation

Helping deliver railroad projects more efficiently throughout Colorado

Colorado Department of Transportation

Railroad Manual

August 2017

COLORADO
Department of Transportation

Table of Contents

Appendices

List of Figures

List of Flowcharts

Preface

COLORADO
Department of Transportation

Preface

The State of Colorado is rich with a variety of transportation elements, including numerous rail lines. The rail lines provide transport for passengers and freight throughout the state as they go over, under, and through vehicular, bike and pedestrian travel ways. The Colorado Department of Transportation realizes the need to facilitate a wide variety of rail projects involving railroads in an efficient manner and has published this rail-project focused manual to detail the processes and procedures involved for successful project delivery through construction.

This manual was developed by CDOT in partnership with rail owners, operators, and regulatory entities to provide clear and consistent guidance in carrying out program goals more efficiently and also streamline the process for rail projects throughout the state. The *CDOT Railroad Manual* as well as many of the manuals referenced herein are available at https://www.codot.gov/ .

Definitions of Terms and Acronyms

COLORADO
Department of Transportation

Definitions of Terms and Acronyms

The following terms used throughout the Manual are defined below:

Term	Definition
AAR	Association of American Railroads
AASHTO	American Association of State Highway and Transportation Officials
Active Warning Devices	Traffic control devices that include signals, flashing lights, automatic gates, bells, and other automatic operated devices that warn motorists, pedestrians, and bicyclists of an approaching train.
ADT	Average Daily Traffic
AGNC	Associated Governments of Northwestern Colorado
Agreement	A general term referring to a signed document between two or more parties outlining conditions each signing party has agreed to.
Applicant	The party that is responsible to apply for and obtain any required PUC authorization for the project.
Apportionment	Funding allocated for a specific scope. Includes unexpended apportionments made under prior authorization laws.
AQPC	Air Quality Planning Council
AREMA	American Railway Engineering and Maintenance-of-Way Association
At-Grade Crossing	The location where a roadway and a railroad track intersect each other at the same elevation.
Automatic Gates	Gates that automatically block travel lanes, sidewalks, bike paths and other passageways to warn of the approaching train.
BNSF	BNSF Railway
CDOT	Colorado Department of Transportation
CFR	Code of Federal Regulations
CMGC	Construction Manager General Contractor
CMS	Contract Management System
COFRS	Colorado Financial Reporting System.
CRS	Colorado Revised Statutes
DB	Design-Build Project
DBB	Design-Bid-Build Project
Department	Colorado Department of Transportation
Detour	A temporary rerouting of a railroad track or roadway due to closure of the crossing by construction or other activities.
Diagnostic Review	An on-site evaluation of the safety of a highway-rail crossing, which typically consists of, among other factors, reviewing train and highway traffic volumes, speed, sight distance and existing warning devices.

Diagnostic Review Team	Federal, State, and local officials, Railroad representatives, engineering consultants and other professionals responsible for conducting an on-site investigation of railroad crossings. This team is also responsible for recommending closure of crossings or installation of appropriate protective devices.
DOT Number	A unique identification number consisting of a six-digit number and one letter; assigned by the FRA to both at-grade and grade-separated highway-rail crossings.
DRCOG	Denver Regional Council of Governments
DSR	Design Scoping Review
DTD	Division of Transportation Development
DTR	Division of Transit Rail
Easement	A right of the land owner to make lawful and beneficial use of the land to another user
EPA	Environmental Protection Agency
FAST Act	Fixing America's Surface Transportation Act (enacted 12/4/2015)
Federal-Aid Highway	Any highway eligible for Federal funding assistance. (Note: Local roads and rural minor collectors are not eligible).
FHWA	Federal Highway Administration
Final Order	PUC approval of an application of crossing improvement project or other project involving a railroad.
FIR	Field Inspection Review (approximate 30% plan level design)
FOR	Final Office Review (approximately 90% plan level design)
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
Grade Separation	A crossing of a roadway and a railroad at different levels
Highway	The area within the right-of-way of a public vehicular travel way such as a road, street, or parkway.
HISP	Highway Integrated Safety Plan. A document published annually by CDOT's Project Development Branch in which all safety projects are outlined.
Local Agency	City, county, or other local governmental entity that becomes a party to a contract based on their political jurisdiction over the involved highway.
Local Agency Project Manager	Contact and manager for a city, county or other local jurisdiction
Maintenance (Highway)	The preservation of the entire highway including surface, shoulders, roadsides, structures, and such traffic-control devices as are necessary for safe and efficient utilization of the highway.
Maintenance (Railroad)	The preservation of the entire railroad including rail alignment and condition, ballast, ties, special trackwork, grade-crossing panels, grade-crossing equipment, and railroad signal equipment.
Manual	Colorado Department of Transportation Railroad Manual
MHT	Method of Handling Traffic
MP	Mile Post
MPO	Metropolitan Planning Organization

MUTCD	The Manual on Uniform Traffic Control Devices for Streets and Highways
NTP	Notice To Proceed
NWCCOG	Northwest Colorado Council of Governments
OAG	Office of Attorney General
OFMB	Office of Financial Management and Budget
P3	Public Private Partnership
PACOG	Pueblo Area Council of Governments
Passive Warning Devices	Traffic control devices such as signs and pavement markings placed at a crossing or at approaches at highway-rail crossings that warn of the approaching crossing, but not specifically of an approaching train.
PE	Preliminary Engineering
Permit	An official document that grants authorization for an entity to do something within the terms of an agreement.
PPACG	Pikes Peak Area Council of Governments
Procedural Directives	An order or instruction by the state related to a particular work task.
Project	A piece of planned work or an activity that is finished over a period of time and intended to achieve a particular purpose.
Project Manager	The CDOT Region representative (i.e. Region Utilities Engineer, Resident Engineer, etc.) assigned to coordinate and manage the project at the regional level, and with whom the Railroad Program Manager coordinates on contract development.
Public Authority	A Federal, state, county, town or township, municipal or other local government with authority to finance, build, operate, or maintain facilities.
Public Road	Any road or street under the jurisdiction of and maintained by a public authority and open to public travel.
PUC	Public Utilities Commission
Rail Safety Engineer	The transportation safety engineer representing the PUC on highway-rail crossing safety matters.
Railroad Company (Railroad)	An entity comprised of any person, private company, public entity, or cooperative owning and/or operating railway and each and every branch or extension together with all tracks, bridges, trestles, rights-of-way, subways, stations, tunnels, depots, yards, terminals, terminal facilities, structures and equipment, and all other real estate, fixtures and personal property used in connection for use in the transportation of persons or property.
Railroad Program Manager	The CDOT Project Development Branch person responsible for contract development and oversight of rail projects in the state.
Region	CDOT Transportation Region
Region Business Office	CDOT Region Business Office

Right-of-Entry	Permission granted by the Railroad to CDOT or its contractor or the local agency to enter a Railroad's property for the purpose of conducting surveying and/or other project-related investigations for construction activities.
Right-of-Way	A general term denoting land, property, or interest therein, acquired for or devoted to transportation purposes.
ROW	Right-of-Way
RTD	Regional Transportation District
RUE	Region Utility Engineer from one of CDOT's engineering regions
SAFETEA-LU	Safe Accountable Flexible Efficient Transportation Equity Act – A Legacy for Users
Safety Project	A highway-rail crossing project that enhances safety.
SAP	Systems, Applications, and Products in data processing. It is proprietary software used for the state financial management system
Section 130	The Federal highway-rail crossings program authorized and funded pursuant to Section 130 of 23 U.S.C.
Shortline Railroad	A small or midsized railroad company that operates over a relatively small area.
Signal Preemption	Interconnection of the traffic signal system with the railroad crossing warning system, where the railroad signal can preempt the operations of the traffic signal when a train is detected.
STIP	Statewide Transportation Improvement Program
SWCCOG	Southwest Colorado Council of Governments
TEA-21	The Transportation Equity Act for the 21st Century
TIP	Transportation Improvement Program. A metropolitan transportation planning process used by all metropolitan areas exceeding population of 50,000. All projects included in the TIP must be included in the STIP either directly or by reference.
TPR	Transportation Planning Region
Transportation Commission	11-commissioners that are appointed by the Governor and confirmed by the State Senate to oversee transportation matters in the state.
TSM&O	Transportation Systems Maintenance and Operation
UPRR	Union Pacific Railroad Company

Chapter 1: Introduction

COLORADO
Department of Transportation

1.0 Purpose

This Manual establishes procedures for the preparation and processing of Colorado Department of Transportation (CDOT) (also known as "Department"), Railroad Company (or Railroad), and local agency contracts and the development of CDOT construction projects involving Railroads. This manual is also intended to guide the Department and local agencies in the planning and administration of highway-rail crossing safety projects funded under Title 23 of the United States Code (U.S.C) Section 130 and other CDOT projects involving Railroads. Information contained herein is a compilation of currently available procedures and guidelines, as of this publication, but are not all inclusive. The reader is encouraged to review website links and resources provided within this manual to obtain updates as they become available. This Manual is provided as a guide to assist users in the tasks associated with projects involving railroads.

1.1 Authority and Policy

Federal and State statutes in effect at the release date of this manual pertaining to contracts involving railroad projects are as follows:

Table 1-1: Federal and State Statutes Involving RR Projects

Code of Federal Regulations (C.F.R) and Colorado Revised Statutes (C.R.S.)	Definition	Direct Link
C.F.R. Part 646-Railroads	Federal Regulations relating to railroad projects.	https://www.gpo.gov/fdsys/pkg/CFR-2011-title23-vol1/pdf/CFR-2011-title23-vol1-part646.pdf
§43-1-110, C.R.S.	As amended, gives the Colorado Department of Transportation (CDOT, Department) responsibility and authority. Paragraph (3) of the statute gives the Chief Engineer authority to accept Federal-aid money for highway-rail projects.	http://www.lexisnexis.com/hottopics/Colorado/
§43-2-102, C.R.S.	As amended, gives the Department the authority and responsibility to design, construct, improve, maintain, and manage the state highway system.	http://www.lexisnexis.com/hottopics/Colorado/
43-2-144, C.R.S.	As amended, authorizes towns, cities, and counties to contract with the Transportation Commission for construction and maintenance agreements.	http://www.lexisnexis.com/hottopics/Colorado/
§29-1-203, C.R.S.	As amended, allows local governments to contract with other governmental units for projects or services that are mutually beneficial.	http://www.lexisnexis.com/hottopics/Colorado/
§43-4-204, C.R.S.	As amended, establishes what the highway users' tax can be used for.	http://www.lexisnexis.com/hottopics/Colorado/

The following CDOT Procedural Directives (PD) pertain to projects and contracts involving a Railroad:

Table 1-2: CDOT Procedural Directives Pertaining to Projects and Contracts Involving a Railroad

Procedural Directive	Description
PD 400.5	General Contract Procedures
PD 512.1	Project Scoping and the Design Scoping Review (DSR)
PD 548.1	Safety Considerations on Resurfacing and 3R Type Projects
PD 1700.5	Local Entity/State Contracts, Local Entity/Consultant Contracts, and Local Entity/RR Contracts

1.2 Applicability

The procedures established by this *Manual* apply to all transportation projects involving work on or near railroad property. These projects may be broadly classified as follows:

1. Section 130 Highway-Rail Grade Crossing Safety Improvement Projects
2. Other CDOT projects with Railroad involvement including, but not limited to:
    - Projects for the elimination of existing grade crossings (crossing closure, grade separation).
    - Projects for the reconstruction or rehabilitation of existing grade separation structures.
    - Projects (other than Section 130 safety projects) that require the alteration of existing grade crossings as incidental to other planned improvements.
    - Other transportation projects involving work by railroad forces, adjustments to railroad facilities, railroad flagging, construction easements, and/or other work on or near railroad property.
    - Access Permitting Development
    - Local Agency Permitting Development
    - Local Agency Projects
    - Division of Transit and Rail (DTR)

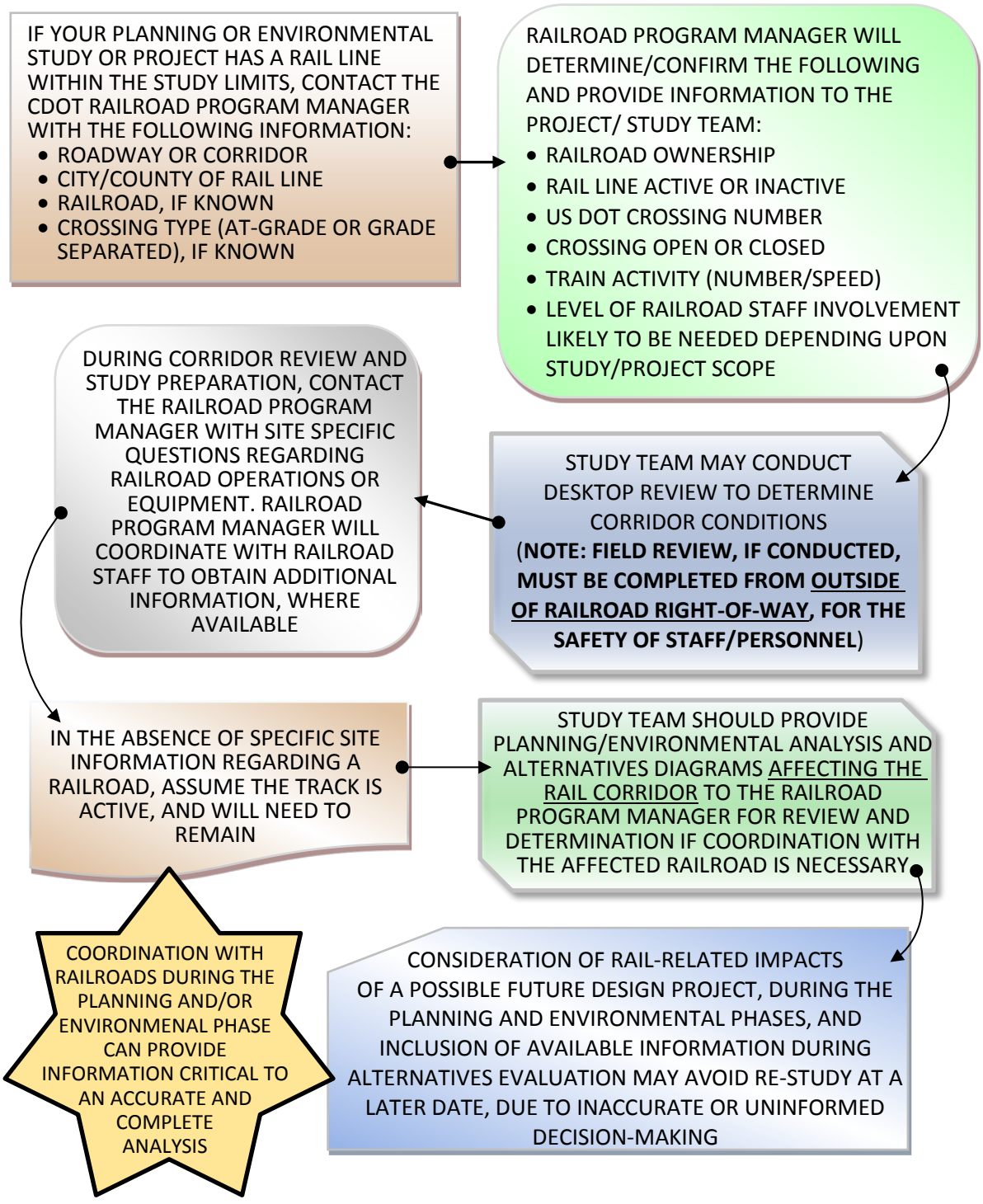
1.3 CDOT Headquarters Railroad Unit Services

The Railroad Unit within CDOT's Project Development Branch has the following responsibilities and work products:

- Manage the Federal Section 130 program which includes:
  - Installation of warning devices at highway-rail grade crossings.
  - Elimination of at-grade crossings by closure or by construction of grade separation structures.
- Coordinate work by railroad forces on CDOT construction projects.
- Solicit, evaluate, and prioritize candidate projects for Section 130 Grade Crossing Safety Improvement Projects.
- Periodically coordinate (through executive management) the selection of an appropriate Section 130 Grade Separation Project.
- Provide liaison between Railroad and Region designers on CDOT construction projects that involve construction on or near railroad right-of-way (ROW).
- Prepare and coordinate the execution of contracts among CDOT and involved Railroads and/or local agencies.
- Prepare (or coordinate preparation of, if on local streets or roads) Public Utilities Commission (PUC) applications covering proposed changes to an existing grade crossing.
- Schedule and conduct periodic coordination meetings among CDOT staff, executive management, PUC, Class 1 railroads, shortline railroads, tourist railroads, Federal Highway Administration (FHWA), and Federal Railroad Administration (FRA).
- Prepare/coordinate issuance of plans for Section 130 Grade Crossing Projects.
- Coordinate with Railroad planning activities such as mobility studies, abandonment/corridor acquisition, intermodal connections, and passenger rail.
- Monitor grade crossing project construction and coordinate change order activities.
- Review and forward contract billings to CDOT Regions and Local Agencies.

The Railroad Unit should also be contacted regarding studies, planning efforts, or environmental document preparation when the study limits include a railroad (see Flowchart 1-1).

Flowchart 1-1
CDOT-Railroad
Planning-Environmental Projects
General Process



1.4 Colorado Rail System Overview

The role of the railroads and rail transportation in Colorado is to provide efficient transportation choices for the movement of goods and people while connecting effectively to the other transportation modes. The rail system in the state is an interconnected component of much larger regional, national, and global multimodal transportation systems and economies. There are 4 main types of railways in the state: freight, shortlines, tourist, and passenger.

Currently, 17 privately-owned freight railroads operate in Colorado (See Figure 1-1: Colorado Freight Rail System Map). These railroads own more than 2,452 miles of track in the state. This represents about 1.8 percent of the nation's 137,000 miles of freight network track. The extent of this network is also reflected in the fact that 49 of Colorado's 64 counties are directly served by the freight rail network. There are two Class I railroads in Colorado: BNSF Railway (See Figure 1-2: BNSF System Map - Colorado) and Union Pacific Railroad (UPRR) (See Figure 1-3: UPRR Service and Regions Map). Combined, they operate over 80 percent of the freight track miles and carry the majority of freight in the state. The freight rail network in the Front Range is currently near capacity and is forecasted to be over capacity by 2035.

Additionally, there are 15 shortline railroads in Colorado (See Figure 1-4: Colorado Shortline Railroads Map). They provide local service with connections to the Class I railroads. They principally serve the agricultural industry and are very valuable assets to both local and statewide economies. Colorado's shortline railroads are the Cimarron Valley Railroad, Colorado and Wyoming Railway, Denver Rock Island Railroad, Deseret Power Railroad, Great Western Railway of Colorado, Kansas and Oklahoma Railroad, Kyle Railroad, Nebraska Kansas Colorado Railway, Rock and Rail LLC, San Luis Central Railroad, Utah Railway, and Victoria & Southern Railway. Additionally, the Leadville-Climax Shortline Railway Company and Titan Terminal Railway Company also operate on short distances of rail in Colorado.

Colorado has 9 tourist railroad lines (See Figures 1-5 Colorado's Tourist Rail Lines and Figure 1-6: Colorado Tourist Railroads Map), which showcase Colorado's history and offer trips through Colorado's scenic outdoors. These scenic and tourist lines are Cripple Creek and Victor Narrow Gauge Railroad, Durango and Silverton Narrow Gauge Railroad, Georgetown Loop Railroad, Manitou and Pike's Peak Cog Railway, Royal Gorge Route Railroad, Rio Grande Scenic Railroad, Leadville Scenic Railroad, Cumbres and Toltec Railroad, and Winter Park Ski Train.

The passenger rail system in Colorado is currently growing, with service provided by RTD and AMTRAK (See Figure 1-7: Colorado's Passenger Rail Lines). In the greater Denver area, RTD provides both light rail and commuter service (See Figure 1-8: RTD Service Map). In addition, Amtrak passenger service is provided on two routes in the state and runs on freight tracks (See Figure 1-9: Colorado Amtrak Service Map):

1. The California Zephyr runs daily between Chicago and San Francisco. Colorado stops include: Fort Morgan, Denver, Fraser/Winter Park, Granby, Glenwood Springs, and Grand Junction.
2. The Southwest Chief runs daily between Chicago and Los Angeles. Colorado stops include: Lamar, La Junta, and Trinidad.

COLORADO Department of Transportation

Colorado's Freight Rail System, 2017

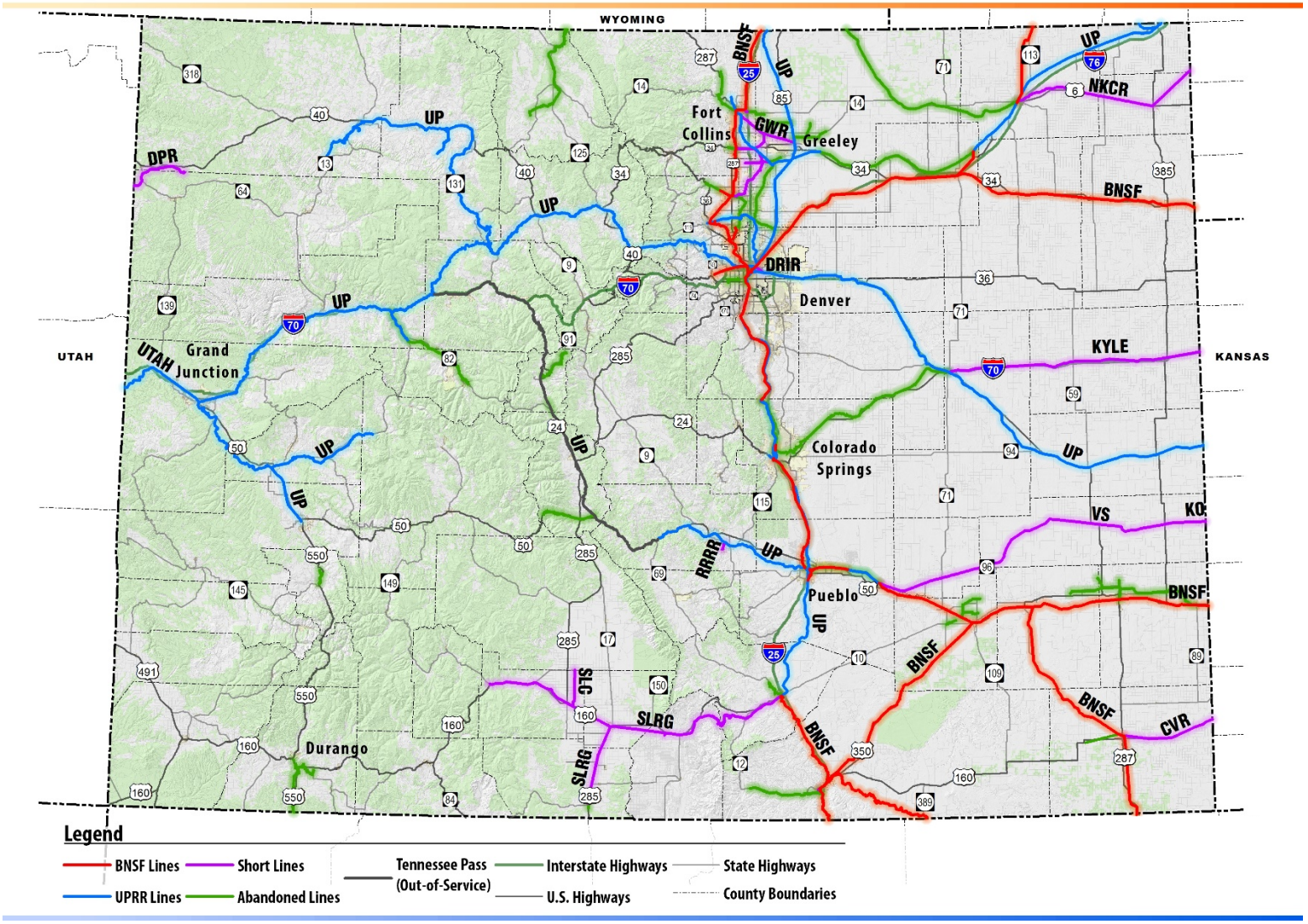
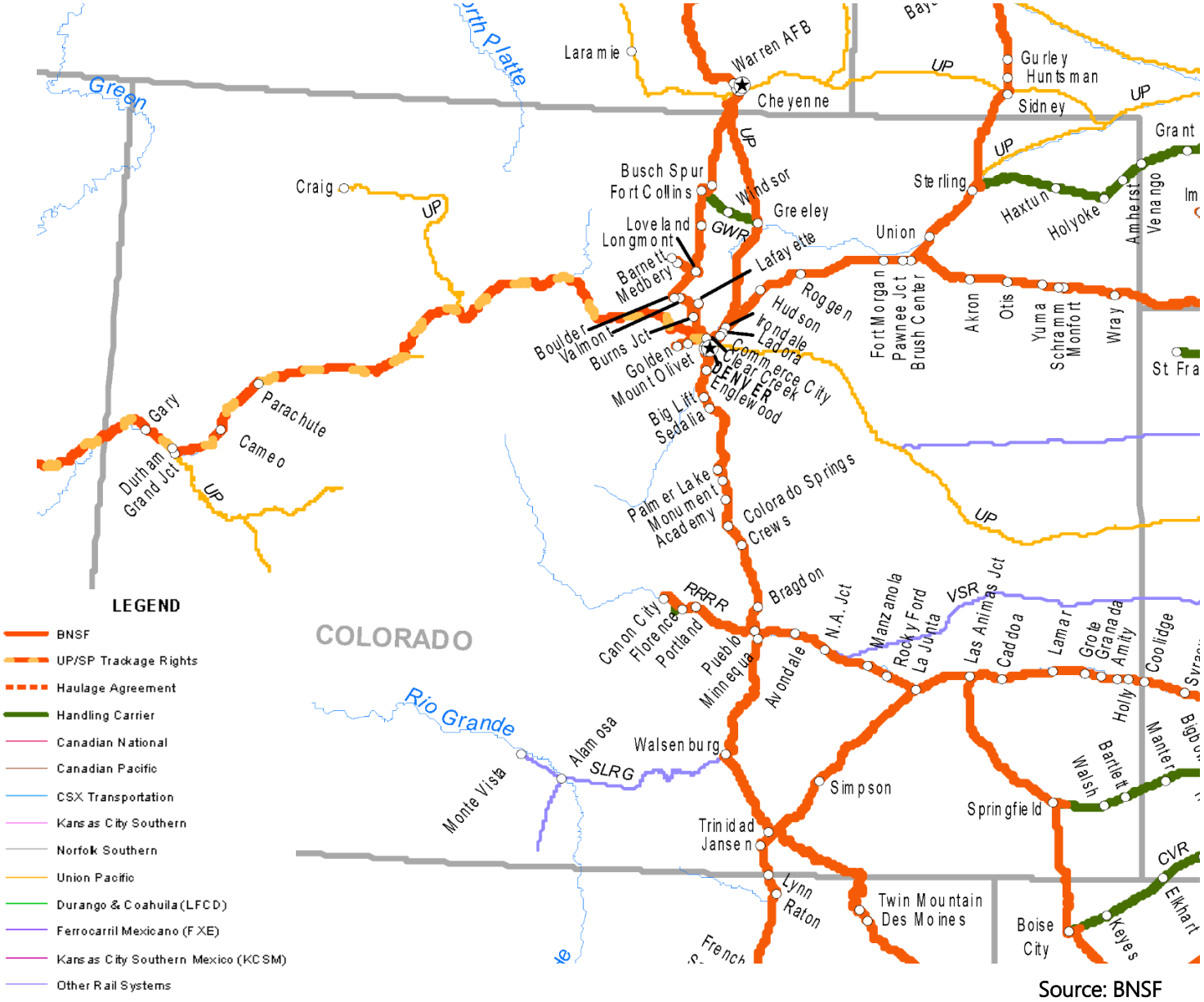


Figure 1-1: Colorado Freight Rail System Map



Source: BNSF

Figure 1-2: BNSF System Map - Colorado

Source: UPRR

Figure 1-3: UPRR Service and Regions Map

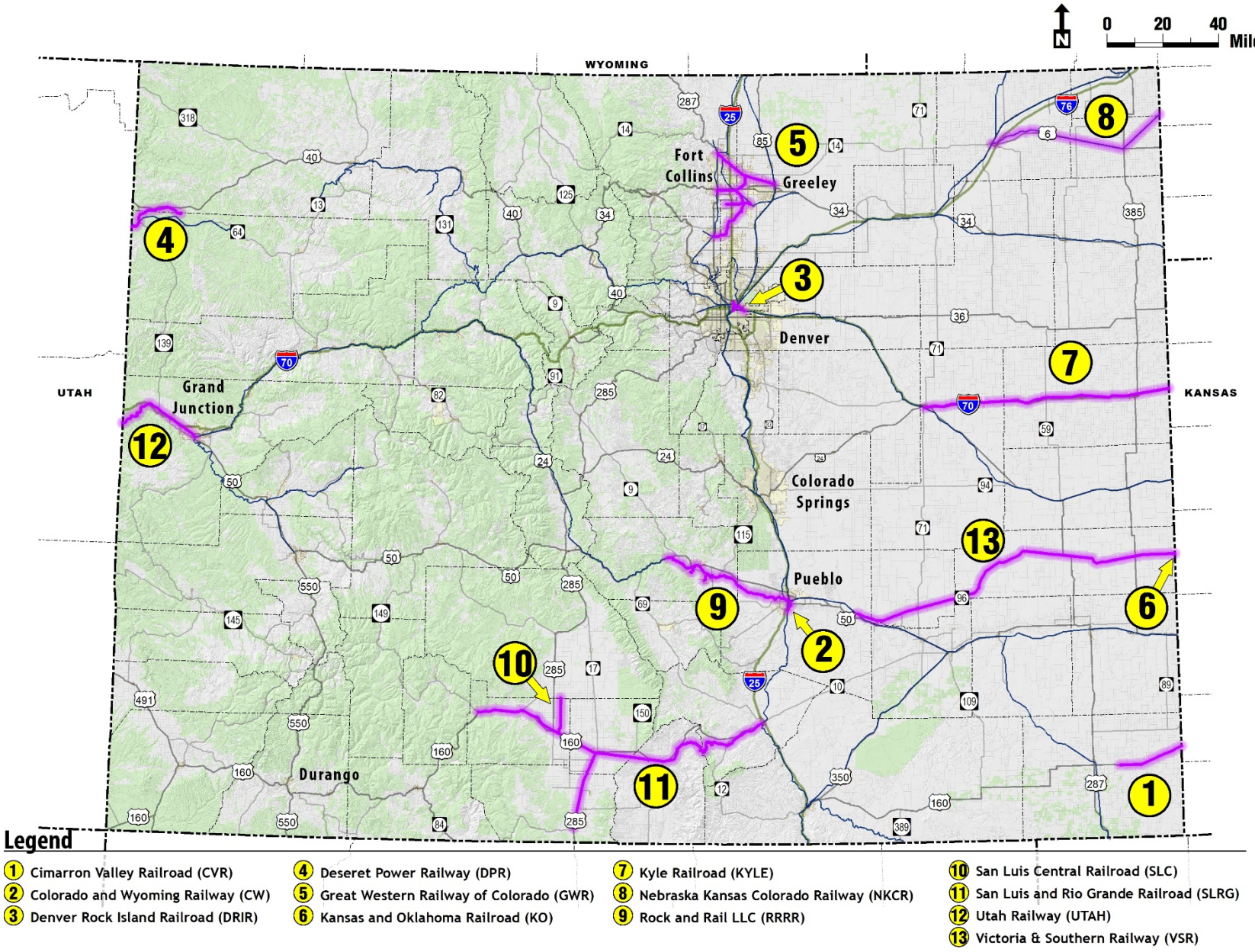


Figure 1-4: Colorado Shortline Railroads Map

Cripple Creek & Victor Narrow Gauge Railroad
520 E Carr Ave
Cripple Creek, Colorado
719-689-2640
www.cripplecreekrailroad.com

Royal Gorge Route Railroad
330-B Royal Gorge Boulevard
Canon City, CO 881212
(719)276-4000
www.royalgorgeroute.com

Durango & Silverton Narrow Gauge Railroad
479 Main Avenue
Durango CO 81301
970-259-0274

Rio Grande Scenic Railroad
610 State Avenue
Alamosa CO 81101
(719)587-0509
www.coloradotrain.com

Georgetown Loop Railroad
P.O. Box 249
Georgetown, CO 80444
1-888-456-6777
www.georgetownlooprr.com

Leadville Scenic Railroad
326 E. 7th St. / PO Box 916
Leadville, CO 80461
719-486-3936
www.leadville-train.com

Manitou and Pike's Peak Cog Railway
515 Ruxton Ave.
Manitou Springs, CO 80829
(719)685-5401
www.cograilway.com

Cumbres & Toltec Scenic Railroad
500 Terrace Ave
Chama, NM
1-888-286-2737
www.cumbrestoltec.com

Figure 1-5: Colorado's Tourist Rail Lines

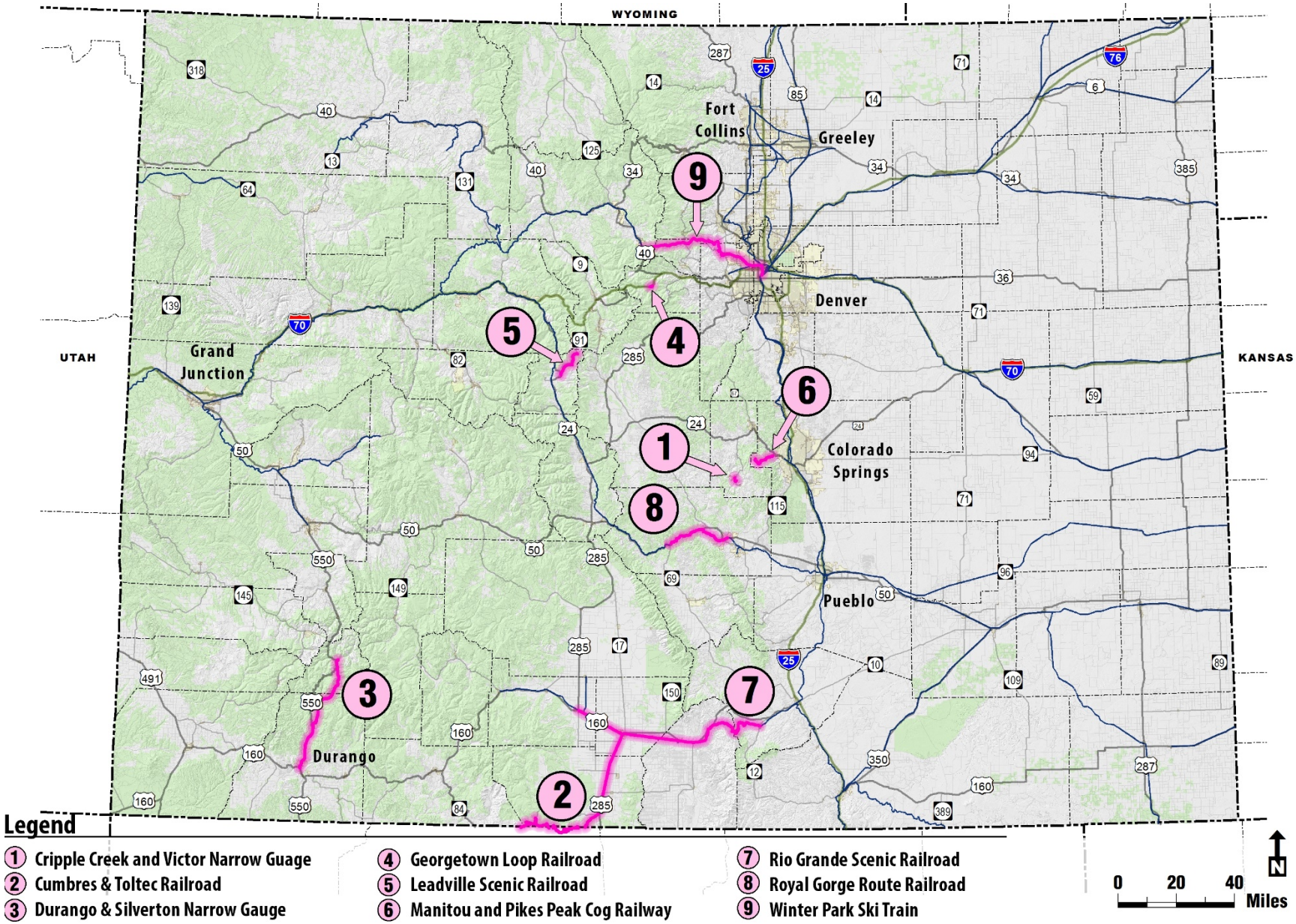


Figure 1-6: Colorado Tourist Railroads Map

Figure 1-7:
Colorado's Passenger Rail Lines
Contact Information

Regional Transportation District
Commuter Rail
1600 Blake Street
Denver, Colorado 80202
303-299-6000
www.rtd-denver.com/CommuterRail

Winter Park Ski Train
c/o Amtrak
1-800-872-7245
www.amtrak.com/winterparkexpress

Regional Transportation District
Light Rail
1600 Blake Street
Denver, Colorado 80202
303-299-6000
www.rtd-denver.com/LightRail

California Zephyr & Southwest
Chief Passenger Rail
c/o Amtrak
1-800-872-7245
www.amtrak.com

PHOTO COURTESY OF
REGIONAL TRANSPORTATION DISTRICT

PHOTO COURTESY OF AMTRAK

PHOTO COURTESY OF
REGIONAL TRANSPORTATION DISTRICT

Source: RTD

Figure 1-8: RTD Service Map

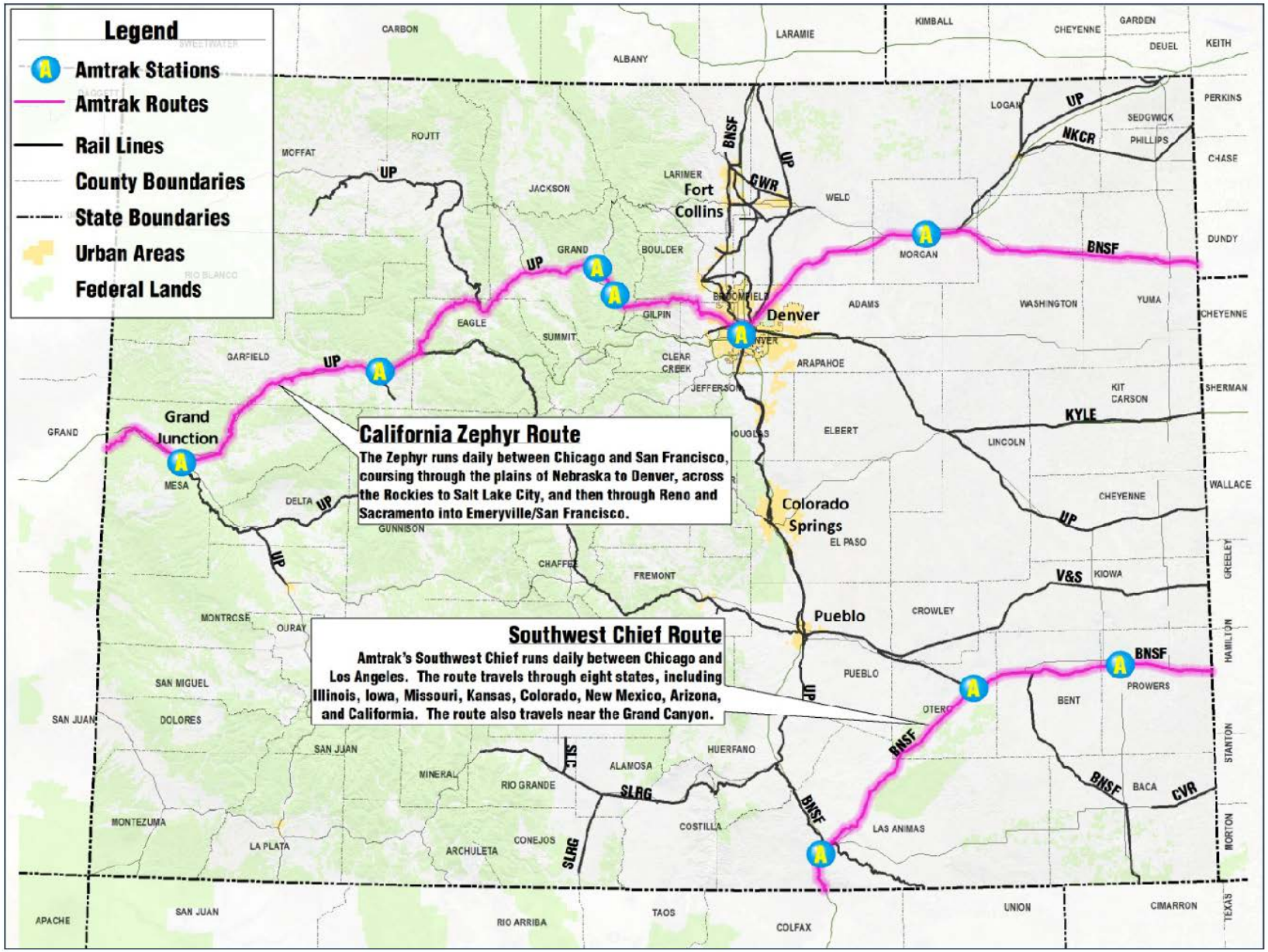


Figure 1-9: Colorado Amtrak Service Map

1.4.1 Highway-Rail Crossings

There are currently 2129 total public railroad crossings in Colorado. They are broken down as shown in Figure 1-10 below:

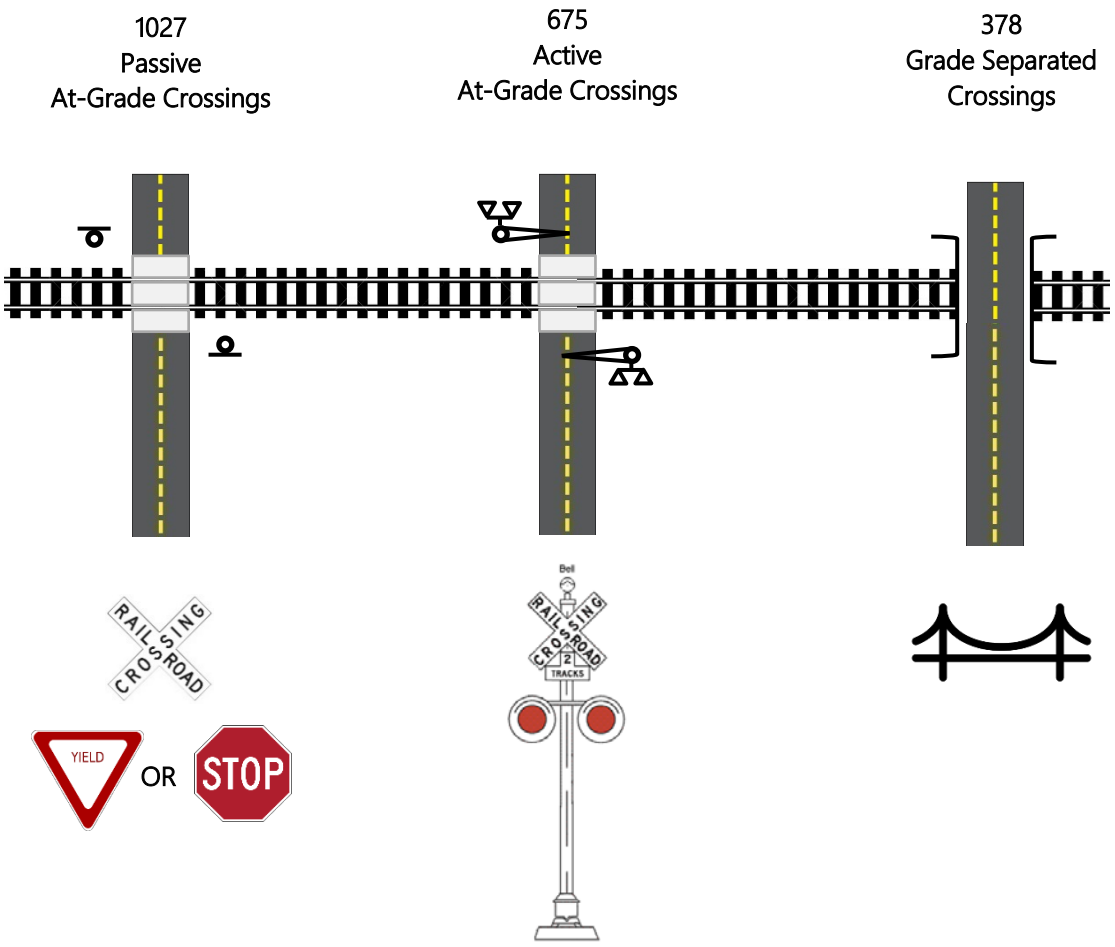


Figure 1-10: Colorado Highway-Rail Crossings Breakdown

Figure 1-11 details the density of public grade crossings regionally in Colorado.

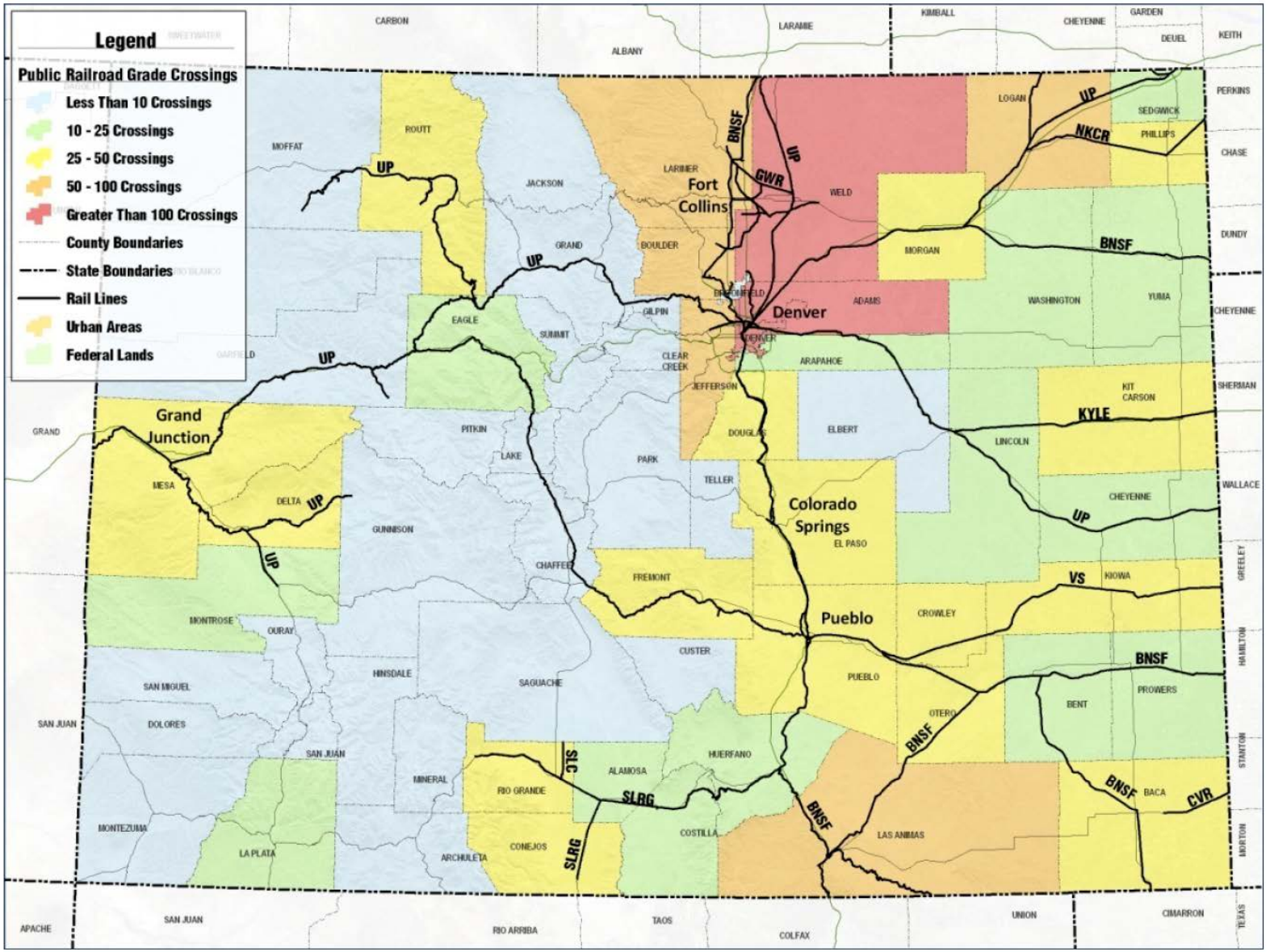


Figure 1-11: Colorado Public Grade Crossing Map

Chapter 2: Railroad Project Development Process Overview

COLORADO
Department of Transportation

2.0 Long Range Plan

CDOT is required to develop and adopt a long-range plan, the purpose of which is to outline transportation goals and improvements throughout the state. This plan must identify potential projects and funding requirements for Statewide Transportation Improvement Program (STIP) development.

2.1 TIP/STIP

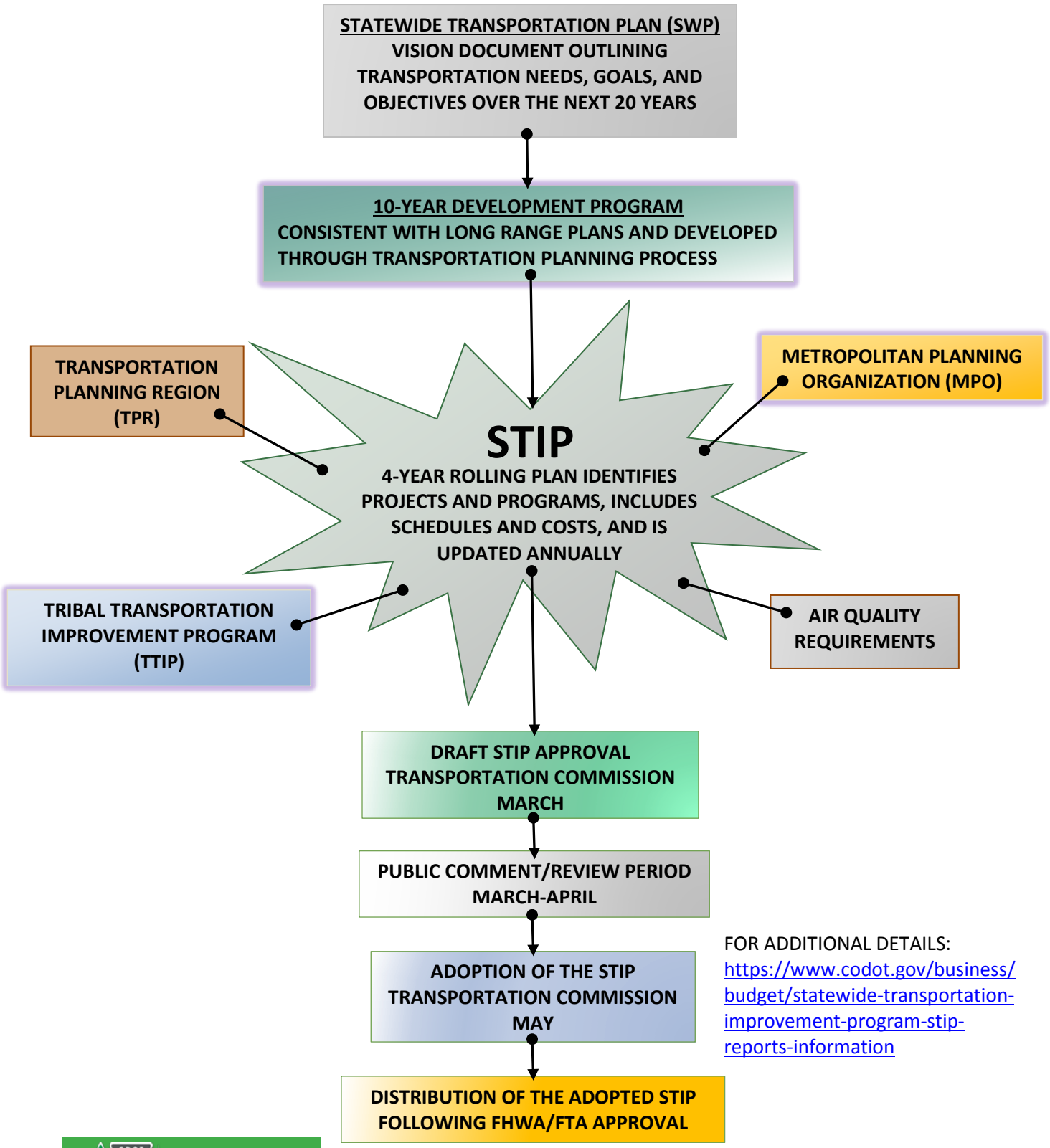
All projects receiving Federal funds must be identified in the STIP. The Fixing America's Surface Transportation (FAST) Act requires each state to develop a STIP containing at least four years of projects. The STIP is developed in cooperation with the Metropolitan Planning Organizations (MPOs), local officials, and tribal governments with responsibility for transportation. The STIP development process is where local agency projects are "selected" or "approved" for Federal funding. In developing the STIP, the Governor is required to provide citizens, affected public agencies, representatives of transportation agencies, freight shippers, private providers of transportation, providers of freight transportation services, representatives of users of public transit, and other interested parties with a reasonable opportunity to comment on the proposed STIP.

A STIP, by law, must be financially constrained. This means all funding sources must be identified for each project.

Every other year, the STIP is updated through a comprehensive and cooperative process involving the FHWA, FTA, MPOs, Transportation Planning Regions (TPRs), and City and County governments (local agencies). The STIP development process varies depending on whether projects are located in MPOs or TPRs (see Flowchart 2-1).

As noted above, the FAST Act only requires four years' of projects in the STIP; however, the Colorado Transportation Commission has passed a resolution that requires the plan to include a full six years of projects. The Transportation Commission has also passed a resolution requiring all state and Federally funded transportation projects, even those receiving only state funds, to be included in the STIP.

Flowchart 2-1
Statewide Transportation Improvement Program (STIP) Process Flowchart



FOR ADDITIONAL DETAILS:
https://www.codot.gov/business/budget/statewide-transportation-improvement-program-stip-reports-information

2.2 TIP Development in MPO Areas

For each metropolitan area exceeding 50,000 in population, the FAST Act requires a Transportation Improvement Program (TIP), which identifies locally significant projects. The TIP preparation is the responsibility of the MPOs. In Colorado, these MPOs include the Denver Regional Council of Governments (DRCOG), the Pikes Peak Area Council of Governments (PPACG), the North Front Range Transportation & Air Quality Planning Council (NFRT & AQPC), the Pueblo Area Council of Governments (PACOG) and the Grand Junction/Mesa County MPO. Figure 2-1 details the MPO and Regional Planning areas statewide.

The MPOs are responsible for the development and approval processes of financially constrained TIPs. The appropriate MPO should be contacted to ascertain the procedures for establishing a project in a TIP.

Once a TIP has been approved by the MPO, it is forwarded to the Governor for final approval. TIPs and the STIP are developed concurrently. An approved TIP is incorporated into the STIP verbatim.

DRCOG, PPACG, and NFRT & AQPC are considered Air Quality Non-Attainment Areas by the Federal government. In these areas, the projects in the TIP must be modeled to demonstrate that project implementation will not degrade air quality below the Environmental Protection Agency (EPA) health standards as set forth in the Clean Air Act Amendment of 1990.

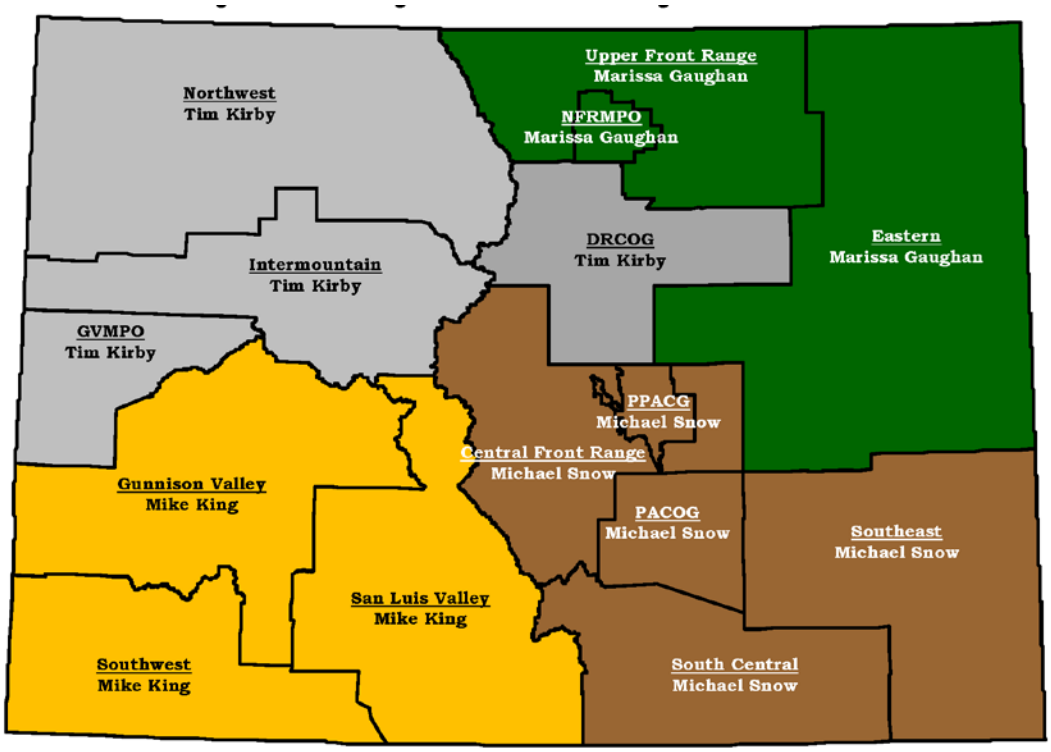


Figure 2-1: CDOT MPO & Regional Planning Section – Staff Assignments (2017)

2.2.1 STIP Development in TPR Areas

In areas outside the MPOs, referred to as TPRs, TIPs are not required. To develop the STIP, TPR representatives meet with the appropriate CDOT Engineering Region and State Highway Transportation Commissioners to cooperate in the project prioritization process. A CDOT Engineering Region can contain multiple TPRs and/or Transportation Commissioners. Public meetings are conducted in each TPR to solicit requests for projects and comments on state-selected projects. To establish a project in the STIP, contact the appropriate TPR. A list of TPR representatives is available from the CDOT Division of Transportation Development (DTD).

The FAST Act also requires that the STIP be made available for public review and comment. Copies of the STIP are mailed to public agencies, transportation agencies, private providers of transportation, and other interested parties. A public meeting on the STIP is conducted biennially with the Transportation Commission, typically at its April meeting. Comments are considered before the Transportation Commission approves the STIP. Once the Transportation Commission approves the STIP, it is forwarded to FHWA and FTA for final approval.

2.2.2 STIP Amendment

Because of the dynamic nature of transportation programs, changes may be necessary. The process for amending the STIP varies depending on the project type, funding source and whether the project to be amended is in an MPO or a TPR. STIP amendments will not be approved unless they are financially constrained.

If the project scope significantly changes or additional funds are needed, the STIP must be amended before a budget action can be processed.

2.2.3 STIP Amendment in MPO Areas

TIP amendments must be approved by the MPO before the corresponding STIP amendments can be approved.

2.2.4 STIP Amendment in TPR Areas

The CDOT Engineering Regional Manager is responsible for coordinating with the appropriate TPRs to reach consensus on STIP amendments.

2.3 Programming and Budget Actions

CDOT's Railroad program includes both CDOT Regional priority projects and the Federally Administered Section 130 Crossing Hazard Elimination Program.

CDOT's Regional priority projects contain several sources of funding (Federal, State, and Local) and are contained within a four year project priority list. The railroad projects identified within the four year project list move forward with a scoping, schedule and budget meeting between the Region Utility Engineer and the Railroad Program Manager.

Section 130 Federal-aid funds become available in October at the start of the Federal fiscal year. From the priority list of at-grade safety improvement projects developed by CDOT's Project Development Branch, Federal-aid funds are appropriated and budgeted to specific projects. Starting in July, the responsible region gets a project number assigned and budgets each project for about 10% of the approved amount for preliminary engineering (PE) and the project becomes part of the STIP. (Proposals under consideration include advancing the projects even further by setting up the projects in January, ahead of the October funding availability and budgeting the projects for the entire approved amount rather than for PE only.)

After the project has been entered into the STIP, the Region Business Office shall:

- Assign a project number, location description, and project sub account code.
- Take initial budget action (in coordination with the Railroad Program Manager).
- For CDOT priority projects, obtain program approval and design (D) phase authorization from FHWA via the Office of Financial Management and Budget (OFMB). For Section 130 projects design (C) phase authorization from FHWA via the Office of Financial Management and Budget (OFMB) is required.

Prior to any budget action, the following must have occurred (responsible parties indicated in parentheses):

- Inclusion in the Integrated Safety Plan (TSM&O)
- Inclusion in an appropriate TIP as applicable (region coordinate with TPR)
- Inclusion in an appropriate STIP as signified by approved STIP number (HQ Business Office)
- Project set-up to establish project number, location, and project code (Region Business Office)

Individual project budgets will be funded by transferring funds from the appropriate component(s) of the Design (D), Utility (U), and Construction (C) phases. The CDOT Headquarters Railroad Program Manager will coordinate with the Region Business Office, via e-mail or Systems, Applications, and Products software (SAP), to initiate transfer of funds. The region will follow up with a SAP "R" ("requested") action. The OFMB will complete the transaction, subject to available obligation authority.

The project must be budgeted for all phase(s) if applicable. The "D" phase will cover the Railroad's eligible incurred PE costs. The "U" phase will cover any Construction and Maintenance Agreement estimated costs and the "C" phase will cover the Railroad's eligible incurred labor, materials, equipment, overhead and indirect costs related to Section 130

projects.

The "D" phase budget amount for Preliminary Engineering review on a typical project is between $15,000 and $20,000. Higher amounts should be substantiated and documented for larger scoped projects. Contact the Railroad Program Manager for an estimate.

If budgeted at the time of project inception, the "C" phase budget amount will be the total planning budget (as shown in the Integrated Safety Plan) less the amount budgeted for "D" phase.

If budgeted at the time of "C" phase authorization, the "C" phase budget amount will be equal to, or approximately equal to (e.g., next higher hundred-dollar increment) the amount of the Railroad's force account cost estimate.

For Section 130 projects, the BNSF, and others, may include their estimated PE costs in the "C" phase estimate. The UPRR, and others, may separate "D" phase PE costs out separately and only include "C" phase estimated items.

For CDOT Regional Priority Projects the "U" phase is utilized and budgets are set according to work to be completed by railroad employees or contractors.

2.4 Section 130 Prioritization and Selection

Section 130(d) of 23 U.S.C. requires that each state develop a prioritized list of annual highway-rail crossings that will need safety improvements. The CDOT Division of Project Support, Project Development Branch, in collaboration with FHWA, FRA, CDOT regions, and the PUC use a hazard index for each public highway-rail crossing in the state. It is calculated annually using a formula derived from Federal Railroad Administration (FRA) formulas and guidelines. The hazard index is the primary initial factor used to rank and select Section 130 projects. The final ranking is based on the combination of the hazard index, recent accident history, and input received. This process is explained in detail in Chapter 3.

2.5 CDOT Regional Priority Projects

Section 2.1 identified the project selection process through MPO, TIP, and STIP perspectives. Once the projects move into the regions, CDOT will identify a 4-year list of priority projects. CDOT Regional staff will review the project priority list that includes a comprehensive regional list of railroad projects as well. Each Region contains Engineering Program Areas that identify the location of the railroad project contained with their individual engineering residencies. The Resident Engineer (RE) will coordinate the selected railroad project with a project delivery team that includes a Project Manager and each specialty unit lead. The Specialty Unit Leads include Right-of-Way, Utilities, and Environmental design. The Region Utility Engineer (RUE) also serves as the Regional Railroad Program Manager. Each identified railroad project shall coordinate with the RUE prior to moving forward with State Railroad Program Manager (see Flowchart 2-2).

2.6 Diagnostic Review

Once a priority list of the funded projects is created, the next step in the process is to hold an on-site Diagnostic Review meeting for every crossing considered for funding. The CDOT Project Development Branch, in collaboration with a Diagnostic Review Team, which includes Federal, state, local agencies, and Railroad company representatives, conducts the Diagnostic Review in order to determine appropriate crossing safety improvement recommendations (see Chapter 3 for detailed information).

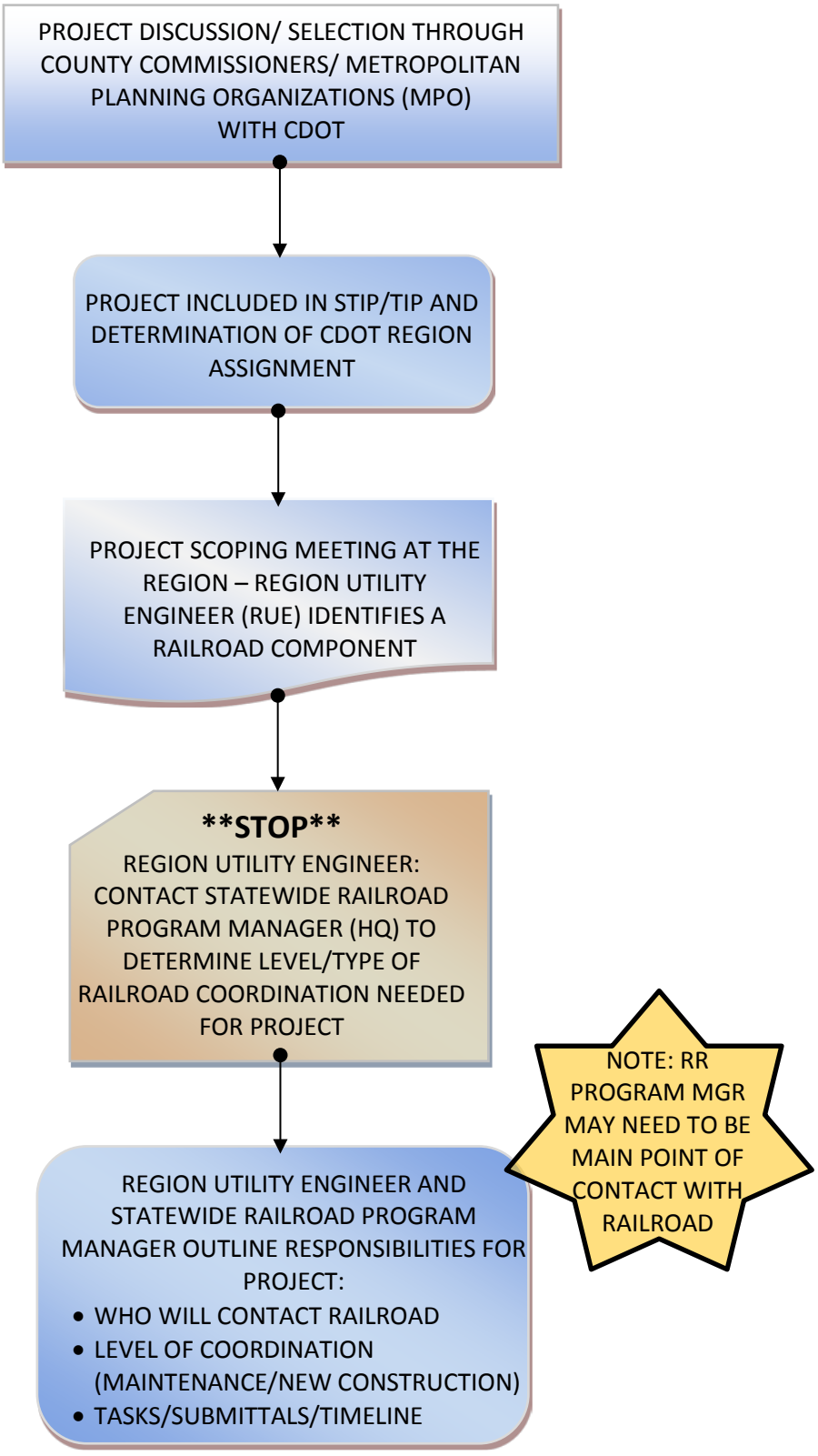
2.7 Railroad Alternative Project Delivery Methods

Timing of request for Railroad Cost Estimates and contracting should be:

- After the field diagnostic review has been held.
- When the railroad elements of the project have been designed to a minimum of 30% has been reviewed and approved by the railroad.
- When no substantive changes to design involving railroad elements are anticipated.

For the standard Design-Bid-Build (DBB) projects as well as for Construction Manager General Contractor (CMGC) projects, wherein design progresses allowing for submittals, review by agencies and railroads, approvals, and development of agreements, requests to the railroad for Railroad Cost Estimates should follow the 30% design, after it is reviewed by the Railroad, and provided there are no substantive changes anticipated to the design of railroad elements. The Railroad Cost Estimate can be requested later than 30% design, if there is reason to believe the design involving the railroad elements may be revised. Railroad estimates can take 90 to 180 days depending upon the complexity of the project. This timeline should updated monthly and accounted for in the project schedule.

Flowchart 2-2
Region Railroad Projects
Process Flowchart



For Design-Build (DB) or Public Private Partnership (P3) projects, where the traditional sequencing of a project is not utilized, and the contractor or concessionaire team provides both design and construction at an accelerated pace, the need for early action on the railroad elements is critical. Design of railroad elements must occur early in the project process to allow for the Railroad's review to reduce the overall risk to the DB and P3 contractors. The '30% design and no substantive changes' philosophy, while still applicable, may constrain the project at the railroad project location for these types of delivery projects. The DB, CDOT, and P3 project teams must prioritize the final railroad design elements as early as possible, and to a point of no substantive changes, in order to request a Railroad Cost Estimate and finalize the lengthy contracting process. The ability of early engagement and coordination by CDOT will assist the DB and P3 project teams and ultimately aid in reducing risk with delays and increase a higher success rate incorporating a railroad improvement projects. The 90 to 180 day railroad estimate timeline should be accounted for in the project schedule.

2.8 Railroad Cost Estimate

In order to proceed with the railroad cost estimate for crossing safety enhancements the following steps must be completed:

1. Diagnostic review
2. Recommendations for safety enhancements determined by PUC
3. PE agreement in place with Railroad (if necessary, depending on RR)
4. Concept plan prepared by Railroad or Agency reviewed and approved by PUC, and other involved parties

When these steps are completed, design and estimating services can be requested for safety enhancements from the Railroad. Design and estimating services typically take approximately 90 days from the official request after the above steps are in place. If the estimate is not received in 90 days a follow up to the railroad is recommended. Railroad estimates are actual cost estimates and can overrun for a variety of reasons. Cost overruns can be caused by schedule changes, scope changes, and acts of God. Cost overruns can be minimized by good coordination with Railroads.

Once the estimate is received from the railroad, general review is recommended to make sure the schematic railroad design plan (front sheet) and material list reflect approved plans. The Railroad Program Manager shall distribute estimates to the region, local agency if involved, and the Office of Financial Management and Budget (OFMB).

If the railroad estimate is within budget estimates and available funding on the authorized PE amount and project expenditure, proceed with project agreements. If additional funding is required, other funding sources may be necessary, such as other funding pools, projects with surplus funds, railroad participation, or local sources. Appropriate actions should be taken for required funding.

2.9 Monthly Status Sheet

In the first week of the month, the status of highway-rail crossing projects shall be updated by the Project Manager. Status sheets are used to track the activities of the Section 130 projects and other CDOT projects that involve railroads

from project inception through notice to proceed. The railroad project status sheet shall include the following milestone dates:

1. Design Scoping Review (DSR)
2. Field Inspection Review (FIR)
3. Final Office Review (FOR)
4. Diagnostic Review
5. Estimate's from Railroad
6. 463 and 1180 Submittal

2.10 Submittal of CDOT Forms 463 and 1180

The Region shall prepare and submit to the Project Manager a preliminary CDOT Form 463, documenting the proceedings including the Diagnostic Team's findings and recommendations. The Region may assist a local agency applicant in the completion of this step.

The Project Manager shall prepare a final Form 463 (including obtaining the environmental clearance required therein). The Region shall input the final Form 463 into the SAP system, approve the final Form 463, and furnish a signed copy to the Railroad Program Manager.

The Region shall complete and submit CDOT Form 1180, "Standards Certification and Project Plans, Specifications & Estimate Approval," to the Office of Financial Management and Budget (OFMB).

The Region and/or the local agency are responsible for completing the CDOT Form 463, Design Data, to get the project programmed in CDOT's system.

2.11 Obligation of Construction Funds

CDOT Regional Priority Projects (Non-Section 130) Construction phase authorization of funds include the following situations:

- Railroad Force Accounts utilized for construction phase funding include the following:
  - RR Flagging Force Account number 700-70042

Section 130 Construction phase authorization is subject to the following conditions being met:

- Receipt of Railroad estimate by OFMB (furnished by Railroad Program Manager upon receipt of estimate from the Railroad)
- Approved final CDOT Form 463 "Design Data" as shown in SAP (Region)

- Environmental clearance as reflected in the CDOT Form 463 (Region)
- Approved CDOT Form 1180 "Standards Certification and Project PS&E Approval" (Region).

Upon completion of the final CDOT Forms 463 and 1180, the Railroad Program Manager shall request the obligation of construction funds. This can be accomplished via e-mail to OFMB. Once the obligation request is made, it is important to monitor the status of CDOT Form 418 for authorization information. The Railroad Program Manager shall be responsible for the monitoring of the construction phase authorization of all Section 130 funded projects.

The obligation amount will be indicated in SAP by the planned transfer of funds, in the amount of the Railroad's cost estimate, from the source to the project. If the obligation of construction funds does not occur in the specified fiscal quarter, the parties shall coordinate moving the planned obligation date to an appropriate future quarter.

OFMB shall obtain Federal C phase authorization after final CDOT Form 463, Railroad's estimate, and CDOT Form 1180 are in place.

2.12 PUC Application

The Railroad Program Manager is responsible for making sure the Office of Attorney General (OAG) files an application with the PUC on behalf of CDOT when CDOT is the applicant. The local agency Project Manager's Attorney is responsible for submitting a PUC application with the PUC for off system projects. This process is further explained in Chapter 6.

2.13 Railroad Contracts

CDOT has approved Master Agreement Contracts for *at-grade highway-rail* work for each of the Class 1 railroads (BNSF, UPRR) that operate in Colorado. The Master Agreement Contract allows task orders to be written for each project. The proposal received by the Railroad should be signed by the Railroad and the task order then is signed only by a CDOT representative delegated with signature authority.

See Chapter 5 of this Manual for detailed information on contract requirements and agreements.

Adequate lead time to process the contract or task order is required, as a new contract or task order must be executed for each project. Plans should be completed before the PUC applications and/or contracting begins. This process requires intensive communication with the affected Railroad. The Railroad also has requirements which must be fulfilled, such as a need for sufficient time to prepare estimates.

Contact the Center of Procurement and Contract Services, Contracting Unit, annually to coordinate anticipated contracts in order to ensure contracting deadlines are met. It is strongly suggested that the Regional staff work with Headquarters' Railroad Program Manager and schedule an annual coordination meeting to develop an annual plan and conduct

quarterly updates to plan. The development process of a typical contract is as follows:

- Provide contract/task order information to the Contracting Unit, such as railroad estimates and related correspondence.
- Coordinate any contract revisions with the Contracting Unit as early as possible. The Contracting Unit will use an approved template, and any changes to the language must be approved by the State Controller's Office, which can significantly increase the processing time.
- The Contracting Unit will make available an electronic copy of the fully executed contract. Contracts will be stored in a repository within the SAP (the state financial management system) workflow.
- Letters to Railroad transmitting fully executed contract are to be attached to the Notice to Proceed.

2.14 Right-of-Way, Utilities and Environmental Clearances

The applicant shall be responsible to obtain any additional ROW and/or easements and to coordinate any utility relocations or adjustments as may be necessitated by the project. The Region shall develop and issue utility, Railroad and ROW clearances for the project (in coordination with the local agency as needed), pursuant to 23 CFR 635.309(b), and furnish copies thereof to the Railroad Program Manager.

The Region Utility Engineer (RUE) shall provide evidence of utility, railroad, environmental, and ROW clearance to Railroad Program Manager prior to issuance of the notice to proceed (NTP) letter to the Railroad.

2.15 Notice to Proceed

Upon receipt of NTP from the Railroad Program Manager, the Railroad shall proceed with construction of the project. The Railroad cannot commence work prior to receiving the NTP.

2.16 Right-of-Entry

There are two general types of Right-of-Entry for work within railroad rights-of-way that require authority from the railroad.

Right-of-Entry during the planning or design phase of a project is obtained through each railroad for activities that include, but are not limited to, survey, geotechnical investigations, environmental analysis, soil sampling, utility locations, and other non-construction activities. Each railroad has a process by which the applicant identifies the location and type of work to be done, and provides this information in the appropriate application. Applicants can be public or local

agencies, but may also be consultants or vendors working for public or local agencies. Most Right-of-Entry permits have an associated fee. The flowcharts in Section 4.11: "Railroad Right-of-Entry" outline the processes specific to the BNSF Railway, Union Pacific Railroad, and OmniTRAX Railway for the different non-construction right-of-entry permits, depending on the need for entry. BNSF's Right-of-Entry process utilizes a Temporary Occupancy Permit, and is administered through their external Real Estate Representative, Jones Lang LaSalle Brokerage, Inc. UPRR's Right-of-Entry utilizes a Right-of-Entry Permit for Temporary Use, and is administered by UPRR's Real Estate Department. OmniTRAX utilize a Right-of-Entry Permit application, administered by OmniTRAX. Other Shortline Railroads, Tourist Railroads, and Light Rail/Commuter Rail may have similar requirements, for which the reader is directed to the respective railroad's or transit agency's website for contact information.

Right-of-Entry for construction activities is generated by the respective railroad following the railroad's review and approval of project plans or a maintenance request. Any time CDOT workers, local agency workers, or construction contractors, require access to railroad ROW for the purposes of construction, or to have labor forces, equipment and materials onsite to complete maintenance activities, the Railroad will require a Right-of-Entry agreement. The BNSF Railway documents are referred to as Exhibit "C", Contractor Requirements and Exhibit "C-1," Agreement between BNSF Railway Company and the Contractor. The Union Pacific Railroad Company (UPRR) documents are identified as "Contractor's Right-of-Entry." These documents provide the terms and conditions under which a construction or maintenance contractor has permission to conduct work within railroad rights-of-way, and outline the necessary safety orientation and required insurance to be maintained by the contractor. Note that the Right-of-Entry documents for each project are generated by the respective railroad specific to each project assignment, and are provided by the Railroad to the project agency as part of the agreement process. These documents are then passed on to the construction or maintenance contractor for completion of the requirements and transmittal to the Railroad. For construction Right-of-Entry to OmniTRAX, other shortlines, tourist railroads, or light rail/commuter rail transit agencies, it is recommended to contact the Railroad or agency directly to confirm application and permission processes.

In order to provide information regarding the Railroad requirements to all construction or maintenance contractors who might bid on a project, it is recommended to provide the template language for the appropriate Railroad within the project specifications, with clarification that the templates are for information only.

Safety and Security Orientation for anyone working on Railroad ROW is a requirement of the Federal Railroad Administration (FRA). The Contractor Safety Orientation and eRailSafe Safety and Security Orientation is available online for construction and maintenance contractors and consultants. Both the BNSF and UPRR have links on their respective websites for these required sources for railroad safety and security orientation. OmniTRAX, other shortline railroads and tourist railroads may require safety orientation specific to the project location. The reader is directed to the respective railroad's website for contact information. For safety training associated with work in light rail and commuter rail rights-of-way, the reader is referred to the Regional Transportation District (RTD) website. Table 2-1 details the safety training requirements by railroad that must be completed prior to entering the Railroad right-of-way.

Table 2-1: Railroad Safety Training

Railroad	Training Requirement	Website Link
UPRR	ERAIL Safe	https://www.up.com/aboutup/community/safety/erailsafe/index.htm

UPRR	Property Access Training	https://www.up.com/aboutup/community/safety/erailsafe/up-pat/index.htm
BNSF	Contractor Safety	https://bnsfcontractor.com/
OmniTRAX	Project Specific	http://omnitrax.com/wp-content/uploads/2017/04/OmniTRAX-Customer-Safety-Handbook.pdf -
RTD	Project Specific	http://www.rtd-denver.com/UtilityConstruction.shtml

2.17 Traffic Control

The NTP letter to the Railroad shall contain all pertinent information related to the Method of Handling Traffic (MHT) during the construction of the improvement at the crossing. Requirements for construction traffic control devices at approaches of the crossing shall be coordinated with the Region Traffic Engineer. For off-system crossings, the Local Agency Project Manager shall be responsible for all traffic control. For additional information, see Section 4.17: "Construction Traffic Control At or Near Highway-Rail Crossings" of this Manual. For off-system crossings, the Local Agency Project Manager shall be responsible for all traffic control coordination requirements, which shall, at a minimum, comply with the latest CDOT approved edition of the Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD). Consideration should be given to nearby traffic control that has the potential to affect grade crossing operations.

2.18 Project Final Inspection and Closure

Upon completion of the work as described in the contract, for regional projects, the Railroad shall notify the Region Utility Engineer or the Resident Engineer so that arrangement for final inspection can be made. The Region Utility Engineer shall coordinate the final inspection of the railroad work. The inspection team should include the following:

- Region Utility Engineer
- PUC Rail Safety Engineer
- Resident Engineer (if the project is on the state highway system)
- Railroad Program Manager
- Local Agency Project Manager (Section 130 only)

The Resident Engineer or the Region Utility Engineer shall verify that all work has been completed according to the contract terms and notify the Railroad Program Manager in writing. The Region Utility Engineer or Resident Engineer will be responsible for project closure. CDOT Form 950 may be used to document proper project closure. Railroad Program Manager will submit PUC compliance filing when CDOT is the applicant.

2.19 Audit

Documentation and reports of the work performed by the Railroad shall be sufficient enough to provide the opportunity for CDOT and project funding entities to conduct an audit review of the project. The following documentation should be available for review:

- Number of workers, their classification and hours charged to the project
- Documentation of quality and cost of materials and equipment and labor used on the project
- Detailed description of the work completed
- Documentation of any extra work completed as a result of contract; amendment
- Any other document requested by CDOT Auditors.

2.20 Project Files Maintained by Railroad Program Manager

The railroad project files must be systematically reviewed and properly maintained at all times by the Railroad Program Manager. The file contents and documentation shall be as detailed below.

2.20.1 Project Development and Programming Documents

- Highway-rail Grade Crossing Project Application
- Section 130 Priority Listing showing project and fiscal year plan
- ISP Tabulation for applicable fiscal year
- Documentation (E-Mail, SAP Screen Print, etc.) of budget actions
- PE Authorization Letter to Railroad
- CDOT Form 1180 – Form to send to FHWA for approving project funding
- CDOT Form 463 Design Data – Final 463 including environmental clearance
- Documentation of phase obligation actions
- Advance Materials Authorization Letter (if applicable)

2.20.2 Diagnostic Review Documents

- Diagnostic Review Meeting Letter and Meeting Minutes
- Site Review Attendance Roster and Meeting Notes
- Site photographs
- USDOT Crossing Inventory Data Sheet
- Documentation of Diagnostic Team recommendations

2.20.3 PUC Application and Order Documents

- PUC Application
- Notice of Application Filed
- Entry of Appearance and Notice of Intervention
- Order granting application
- Local agency resolution and supporting information

2.20.4 Plans and Notice to Proceed Documents

- Copy set of complete plans
- Plans transmittal memo
- ROW and utility clearance letters
- NTP letter by Railroad Program Manager to Railroad Project Manager
- Copy of NTP issued by Regional Manager

2.20.5 Billing and Closeout Documents

- Billing documentation
- Transmittal memo forwarding billing to local agency
- CDOT Form 950 and/or other project closure documentation
- Audit documents

Chapter 3:
Highway-Rail At-Grade Crossings

COLORADO
Department of Transportation

3.0 Introduction

Highway-Rail At-Grade Crossings are often complex and unique as they involve different owners, operating authorities and users, with at least two modes of transportation intersecting at one location. Although there have been many successful grade separation projects in the state in the recent past, the majority of the nation's and state's highway-rail crossings remain at grade.

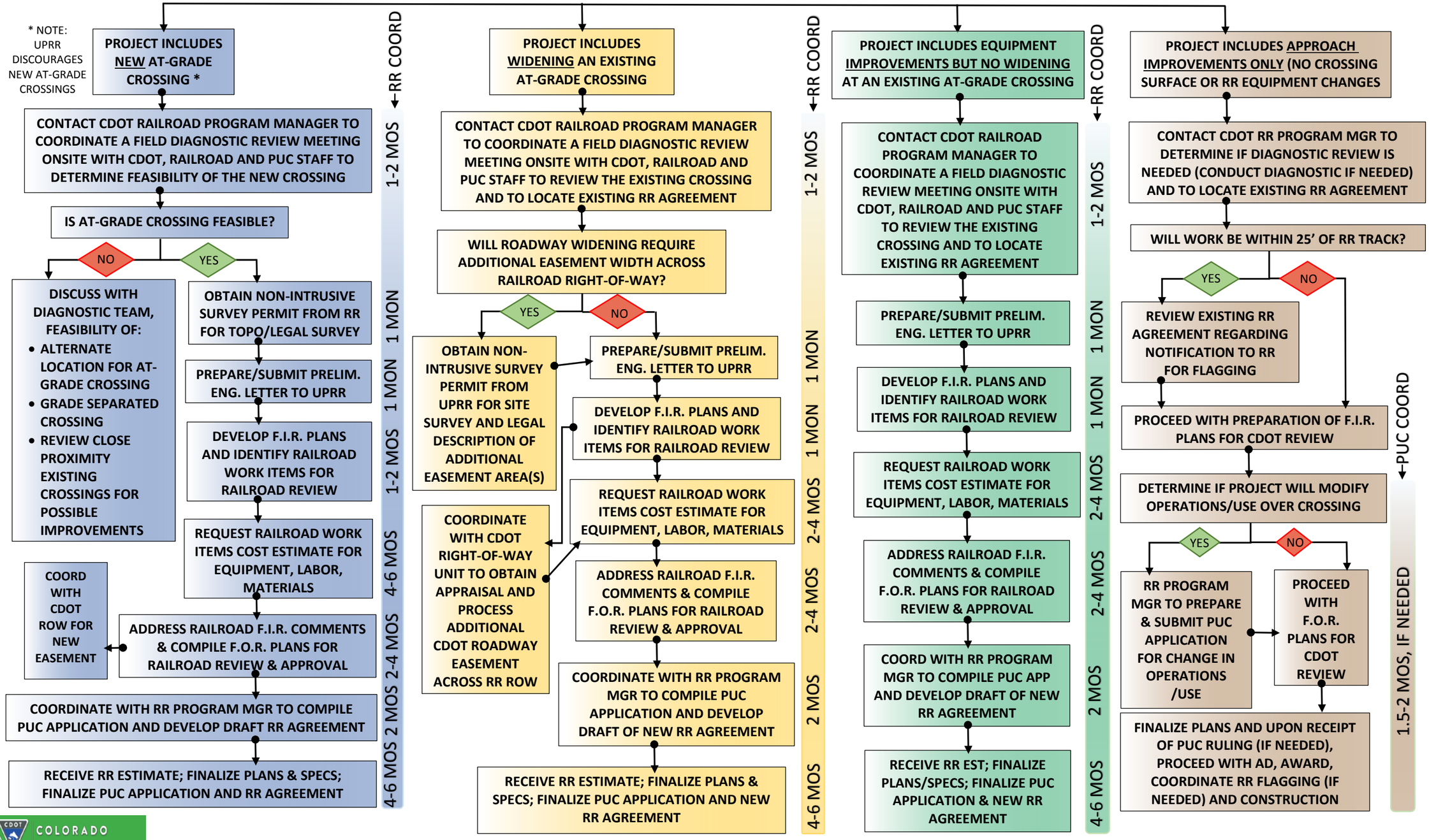
Highway-Rail Grade Crossings are complex, as each crossing has its own unique features. Some of these differences include the physical characteristics of the crossing – such as the number of lanes, number of tracks, overall width of the crossing, the angle at which the railroad crosses the highway and the profile of the crossing. Other differences include the volume of vehicular traffic, the types of crossing users (trucks, buses, pedestrians, bikes, etc.), the speed and frequency of the trains and the types of rail operators (freight, commuter, transit).

Trains have the right-of-way at crossings. This historically stems out of the ability of a train to stop in comparison to a vehicle, bike, or pedestrian and has been confirmed by the Supreme Court. The ability to stop is a characteristic of the train's mass. As such, it is critical to clearly establish right-of-way at grade crossings to help deter train-vehicle incidents. When there is a new grade crossing project or a modification to an existing grade crossing, the project goal should be to minimize user risk in an effort to save human life.

Flowchart 3-1 details the general coordination process for UPRR at-grade crossing projects. Flowchart 3-2 details the general coordination process for BNSF at-grade crossing projects. Flowchart 3-3 details the general coordination process for OmniTRAX at-grade crossing projects.

NOTE: IF CLOSELY SPACED SIGNALIZED INTERSECTION IS PRESENT, COORDINATE WITH RR PROGRAM MANAGER AND REGION TRAFFIC ENGINEER

Flowchart 3-1
Union Pacific Railroad At-Grade Crossings
Process Flowchart



COLORADO Department of Transportation

Flowchart 3-2
BNSF Railway At-Grade Crossings
Process Flowchart

NOTE: IF CLOSELY SPACED SIGNALIZED INTERSECTION IS PRESENT, COORDINATE WITH RR PROGRAM MANAGER AND REGION TRAFFIC ENGINEER

❖ JONES LANG LASALLE (JLL) IS BNSF'S REAL ESTATE/PERMIT REPRESENTATIVE. CONTACT INFORMATION: http://www.bnsf.com/in-the-community/jll-contacts.html

BNSF RIGHT-OF-WAY MAPPING AVAILABLE THROUGH BARTLETT AND WEST. SEND MAPPING REQUEST TO: BNSFMaps@bartwest.com.

* NOTE: BNSF DISCOURAGES NEW AT-GRADE CROSSINGS

PROJECT INCLUDES NEW AT-GRADE CROSSING *

←RR COORD

CONTACT CDOT RAILROAD PROGRAM MANAGER TO COORDINATE A FIELD DIAGNOSTIC REVIEW MEETING ONSITE WITH CDOT, RAILROAD AND PUC STAFF TO DETERMINE FEASIBILITY OF THE NEW CROSSING

1-2 MOS

IS AT-GRADE CROSSING FEASIBLE?

NO

DISCUSS WITH DIAGNOSTIC TEAM, FEASIBILITY OF:

- ALTERNATE LOCATION FOR AT- GRADE CROSSING
- GRADE SEPARATED CROSSING
- REVIEW CLOSE PROXIMITY EXISTING CROSSINGS FOR POSSIBLE IMPROVEMENTS

1 MON

YES

OBTAIN TEMPORARY OCCUPANCY PERMIT FROM RR FOR TOPO/LEGAL SURVEY

DEVELOP F.I.R. PLANS AND IDENTIFY RAIL-ROAD WORK ITEMS FOR RAILROAD REVIEW

1-2 MOS

REQUEST RAILROAD WORK ITEMS COST ESTIMATE FOR EQUIPMENT, LABOR, MATERIALS

4-6 MOS

ADDRESS RAILROAD F.I.R. COMMENTS & COMPILE F.O.R. PLANS FOR RAILROAD REVIEW & APPROVAL

2-4 MOS

COORD WITH CDOT ROW FOR NEW EASEMENT

COORDINATE WITH RR PROGRAM MGR TO COMPILE PUC APPLICATION AND DEVELOP DRAFT RR AGREEMENT

2 MOS

RECEIVE RR ESTIMATE; FINALIZE PLANS & SPECS; FINALIZE PUC APPLICATION AND RR AGREEMENT

4-6 MOS

PROJECT INCLUDES WIDENING AN EXISTING AT-GRADE CROSSING

←RR COORD

CONTACT CDOT RAILROAD PROGRAM MANAGER TO COORDINATE A FIELD DIAGNOSTIC REVIEW MEETING ONSITE WITH CDOT, RAILROAD AND PUC STAFF TO REVIEW THE EXISTING CROSSING AND TO LOCATE EXISTING RR AGREEMENT

1-2 MOS

WILL ROADWAY WIDENING REQUIRE ADDITIONAL EASEMENT WIDTH ACROSS RAILROAD RIGHT-OF-WAY?

YES

OBTAIN TEMPORARY OCCUPANCY PERMIT FROM BNSF FOR SITE SURVEY AND LEGAL DESCRIPTION OF ADDED EASEMENT AREA(S)

COORDINATE WITH CDOT ROW UNIT TO OBTAIN APPRAISAL AND PROCESS ADDED ROADWAY EASEMENT ACROSS RR ROW

1 MON

NO

DEVELOP F.I.R. PLANS AND IDENTIFY RAILROAD WORK ITEMS FOR RAILROAD REVIEW

2-4 MOS

REQUEST RAILROAD WORK ITEMS COST ESTIMATE FOR EQUIPMENT, LABOR, MATERIALS

ADDRESS RAILROAD F.I.R. COMMENTS & COMPILE F.O.R. PLANS FOR RAILROAD REVIEW & APPROVAL

2-4 MOS

COORDINATE WITH RR PROGRAM MGR TO COMPILE PUC APPLICATION AND DEVELOP DRAFT OF NEW RR AGREEMENT

2 MOS

RECEIVE RR ESTIMATE; FINALIZE PLANS & SPECS; FINALIZE PUC APPLICATION AND NEW RR AGREEMENT

4-6 MOS

PROJECT INCLUDES EQUIPMENT IMPROVEMENTS BUT NO WIDENING AT AN EXISTING AT-GRADE CROSSING

←RR COORD

CONTACT CDOT RAILROAD PROGRAM MANAGER TO COORDINATE A FIELD DIAGNOSTIC REVIEW MEETING ONSITE WITH CDOT, RAILROAD AND PUC STAFF TO REVIEW THE EXISTING CROSSING AND TO LOCATE EXISTING RR AGREEMENT

1-2 MOS

DEVELOP F.I.R. PLANS AND IDENTIFY RAILROAD WORK ITEMS FOR RAILROAD REVIEW

1 MON

REQUEST RAILROAD WORK ITEMS COST ESTIMATE FOR EQUIPMENT, LABOR, MATERIALS

2-4 MOS

ADDRESS RAILROAD F.I.R. COMMENTS & COMPILE F.O.R. PLANS FOR RAILROAD REVIEW & APPROVAL

2-4 MOS

COORD WITH RR PROGRAM MGR TO COMPILE PUC APP AND DEVELOP DRAFT OF NEW RR AGREEMENT

2 MOS

RECEIVE RR EST; FINALIZE PLANS/SPECS; FINALIZE PUC APPLICATION & NEW RR AGREEMENT

4-6 MOS

PROJECT INCLUDES APPROACH IMPROVEMENTS ONLY (NO CROSSING SURFACE OR RR EQUIPMENT CHANGES)

←RR COORD

CONTACT CDOT RR PROGRAM MGR TO DETERMINE IF DIAGNOSTIC REVIEW IS NEEDED (CONDUCT DIAGNOSTIC IF NEEDED) AND TO LOCATE EXISTING RR AGREEMENT

1-2 MOS

WILL WORK BE WITHIN 25' OF RAILROAD TRACK?

YES

PREPARE APPLICATION FOR ROADWAY SURFACING/RESURFAC-ING (SEE FORM A) AND F.I.R. PLANS FOR CDOT REVIEW AND SUBMITTAL WITH FEE TO JLL❖

NO

PREPARE F.I.R. PLANS FOR CDOT REVIEW AND CONFIRM WITH BNSF IF RR FLAGGING WILL BE REQUIRED

1 MON

DETERMINE IF PROJECT WILL MODIFY OPERATIONS/USE OVER CROSSING

YES

RR PROGRAM MGR TO PREPARE & SUBMIT PUC APPLICATION FOR CHANGE IN OPERATIONS /USE

NO

PROCEED WITH F.O.R. PLANS FOR CDOT REVIEW

2-4 MOS

FINALIZE PLANS AND UPON RECEIPT OF PUC RULING (IF NEEDED), AND ROADWAY SURFACING PERMIT FROM JLL (IF NEEDED), PROCEED WITH AD, AWARD, COORDINATION RR FLAGGING (IF NEEDED) AND CONSTRUCTION

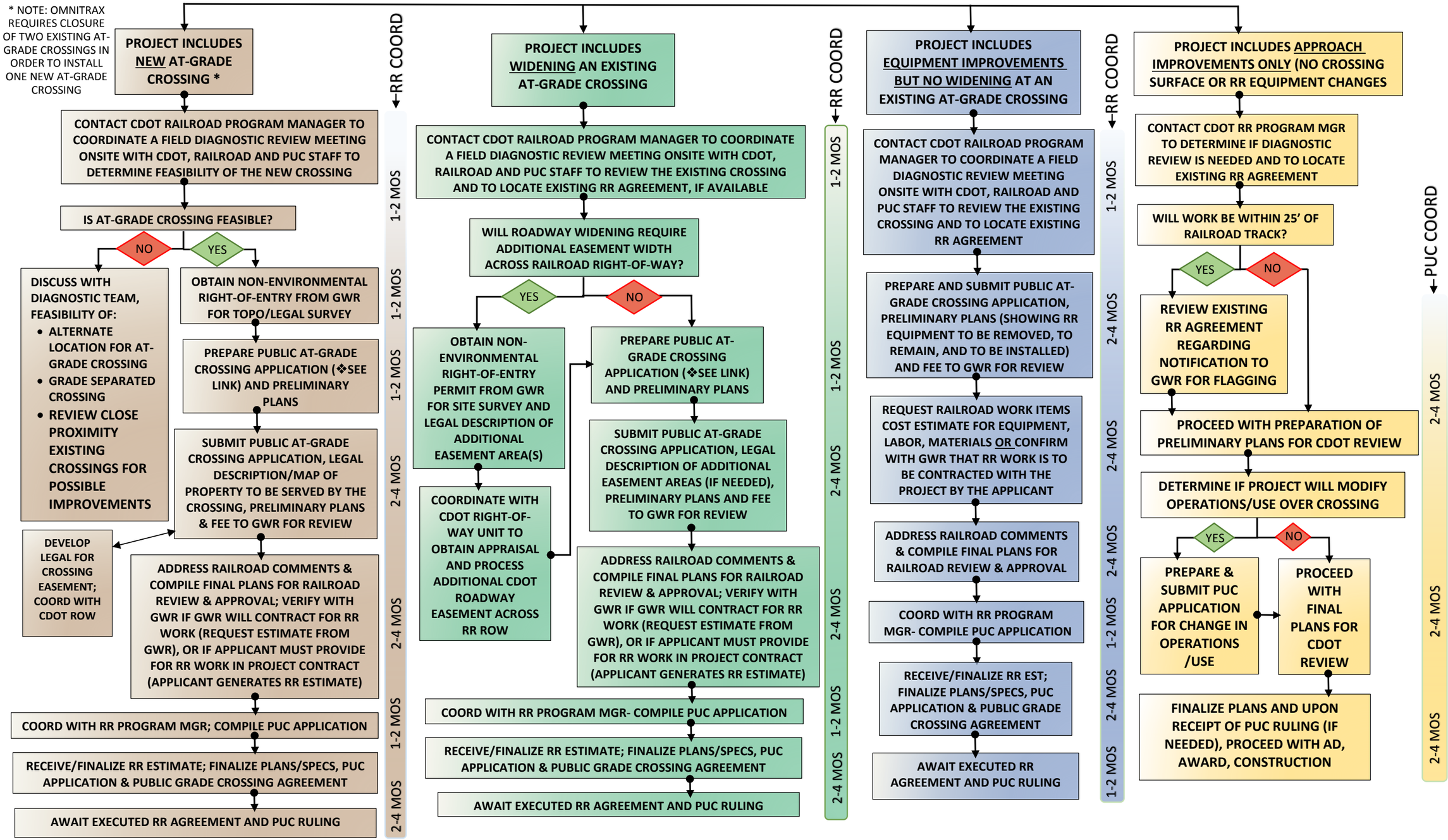
1-2 MOS

COLORADO Department of Transportation

NOTE: IF CLOSELY SPACED SIGNALIZED INTERSECTION IS PRESENT, COORDINATE WITH RR PROGRAM MANAGER AND REGION TRAFFIC ENGINEER

Flowchart 3-3
OmniTRAX At-Grade Crossings Process Flowchart

❖PUBLIC GRADE CROSSING APPLICATION FORM: http://omnitrax.com/wp-content/uploads/2017/03/APPLICATIONS-OMNITRAX-Public-Grade-Crossing.pdf



COLORADO Department of Transportation

3.1 Grade Crossing Data Resources

The Federal Railroad Administration, one of ten departments of the US Department of Transportation (DOT), assigns a crossing number for all at-grade and grade separated crossings nationwide. The 7-digit DOT number consists of 6 letters, followed by one alphabetic number, such as: 254064N. For all new crossings, the Railroad owner is responsible to select a crossing number and must submit the number to the FRA for processing. The FRA assigns the crossing a number to uniquely identify that crossing. DOT numbers are posted at every grade crossing on the Emergency Notification System (ENS) Signs and sometimes on the railroad signal cabinets/houses if the crossing has active warning devices.

Figure 3-1: DOT Number Postings at Grade Crossings
ENS Sign (Left) and Railroad Signal House (Right)

At the start of any grade crossing project, it is key to determine the correct DOT number for that crossing. The FRA has established a Crossing Locator Application that can be a good resource not only for finding a crossing's DOT number and other crossing information. The app can be downloaded at: https://www.fra.dot.gov/Page/P0845. The inventory information is updated by the railroad and CDOT as required by the FRA.

In addition to the app, the FRA website contains multiple resources for any grade crossing project: http://safetydata.fra.dot.gov/OfficeofSafety/Default.aspx. These resources include the FRA Inventory Report, the FRA Accident History, and the FRA Crossing Locator App.

The FRA, in cooperation with the Association of American Railroads (AAR), has developed the Highway-Railroad Crossing Inventory. The inventory contains information for each crossing (at-grade and grade-separated). CDOT's Railroad Program Manager is responsible for updating FRA inventory related traffic counts on the State Highway system. Local Road authorities are required to provide information to CDOT, for CDOT to update inventory data associated with local road's information, including:

- Types and number of traffic control devices
- Nearby highway traffic signals
- Highway traffic signal interconnection
- Highway traffic signal preemption
- Highway traffic presignals
- Highway system
- Functional classification of road at crossing

- Is crossing on State Highway system
- Highway speed limit
- Annual average daily traffic volume (AADT)
- Estimated percent of trucks
- School Bus Use
- Emergency service route
- Roadway authority

The FRA Accident History is also available with the FRA App or through the FRA Website and provides historical information on the number and type of grade crossing incidents at each crossing since the early 1970s. The accident reports detail the day and time, the type of crossing user (motorist, pedestrian, and trespasser), the weather conditions at the time of the accident, speeds at time of impact, and sometimes a general description of the incident. Accident reports, especially those made in the last 5 years, can often be a good resource in determining what type of crossing enhancements may need to be considered to help avoid similar incidents in the future.

3.1.1 Emergency Notification Information

Each railway owner is required by the FRA to maintain a 24-hour hotline number for any emergencies at their grade crossings and along their right-of-way. If you are at a grade crossing or working near the tracks, you are encouraged to call the railroad's hotline number if you see something that is of concern to crossing safety and rail operations. Each grade crossing has an Emergency Notification Sign (ENS) that details the hotline number specific to that railroad, typically the rail entity (UPRR, BNSF, OmniTRAX, etc.) and the Department of Transportation (DOT) Number. The signs are always blue with white lettering and mounted on the grade crossing active or passive warning equipment. Figure 3-2 details what Emergency Notification Signs can look like.

Figure 3-2 Emergency Notification Signs

The railroad hotline numbers provide a way to directly communicate with the railroads if there is an emergency at a grade crossing or something that would affect train operations. The public is encouraged to call the hotline numbers if any of the following is observed at a grade crossing or on railroad property:

- Malfunctioning gates and lights

- Trespassers or other suspicious behavior
- Grade Crossing Problems
- Personal injuries
- Criminal activities
- Illegal dumping
- Vehicles stuck/stalled on the tracks, or other track obstructions
- Other environmental issues, such as:
    - Hazardous materials released
    - Idling locomotives
    - Engines with excessive smoke

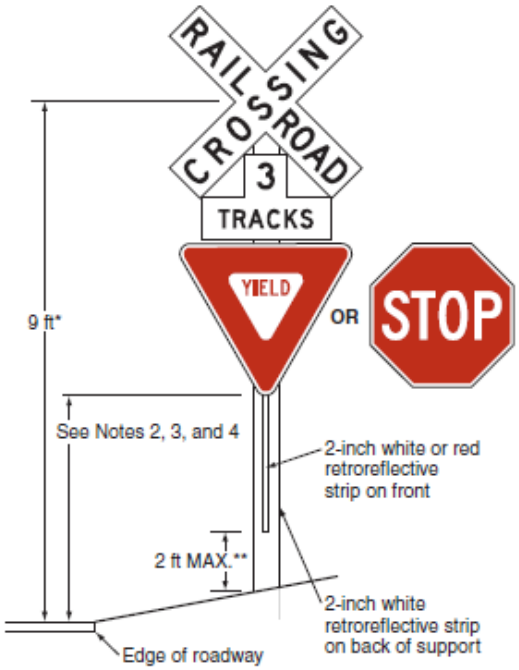
When you call the hotline, clearly state your name, the crossing DOT number and the reason for your call. The hotline operator will then ask you questions related to your concern and will direct your concern to the necessary party to respond. Depending on the severity and type of concern, the dispatcher can advise train operations to stop if needed, contact railroad employees/contractors, and/or advise local law enforcement. While the 911 system is widely used nationally to report emergencies of any type, calling the railroad hotline number for grade crossing and rail right-of-way emergencies is the most efficient way to immediately be in contact with the railway owner with your location easily identified with the crossing DOT number.

3.2 Highway-Rail Grade Crossing Traffic Control Devices

Vehicles approaching a Highway-Rail Crossing should be adequately warned of the existence of the crossing. This can be accomplished by installing location-specific warning devices as set forth in the most current edition of the MUTCD, Part 8 (Traffic Control for Railroad and Light Rail Transit Grade Crossings.

3.2.1 Passive Grade Crossing Equipment

Passive Grade Crossing Devices are those that do not give warning as a result of activation by the trains. Their message is constant to crossing users and consists of pavement markings and signs. The Railroad is responsible for installing and maintaining all crossbuck signs and yield or stop signs, as applicable, at the grade crossing. See Figure 3-3 for MUTCD-specified crossbuck assembly. All other railroad advance warning and regulatory signs, described in Part 8 of the FHWA Manual on Uniform Traffic Control Devices (MUTCD), are the responsibility of the highway authority with jurisdiction over the public road. See Figure 3-4 for MUTCD-specified regulatory signs and plaques at grade crossings. See Figure 3-5 for MUTCD-specified warning signs and plaques at grade crossings. The MUTCD is available for download at https://mutcd.fhwa.dot.gov/pdfs/2009r1r2/pdf_index.htm.



*Height may be varied as required by local conditions and may be increased to accommodate signs mounted below the Crossbuck sign

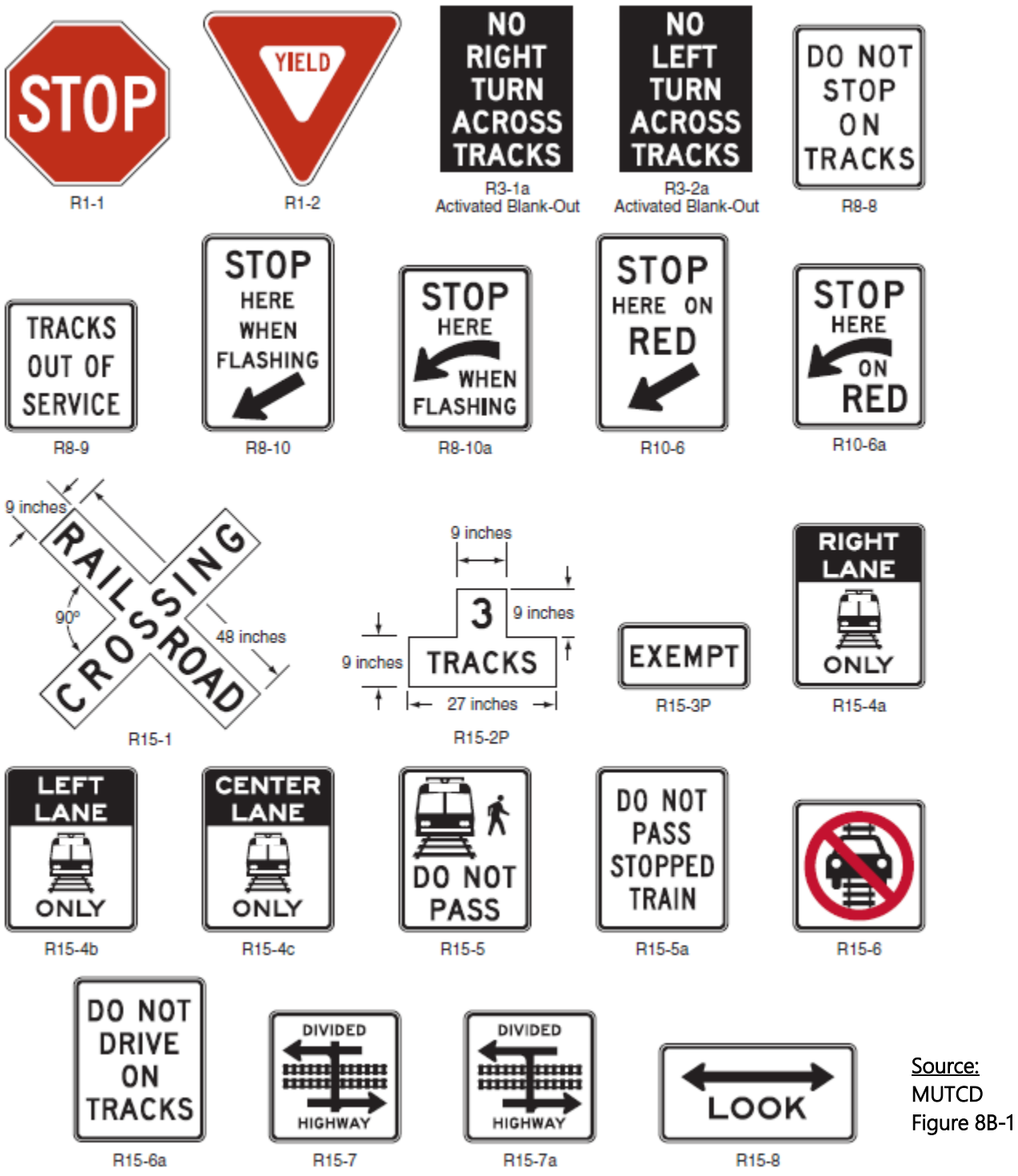
**Measured to the ground level at the base of the support

Notes:

1. YIELD or STOP signs are used only at passive crossings. A STOP sign is used only if an engineering study determines that it is appropriate for that particular approach.
2. Mounting height shall be at least 4 feet for installations of YIELD or STOP signs on existing Crossbuck sign supports.
3. Mounting height shall be at least 7 feet for new installations in areas with pedestrian movements or parking.

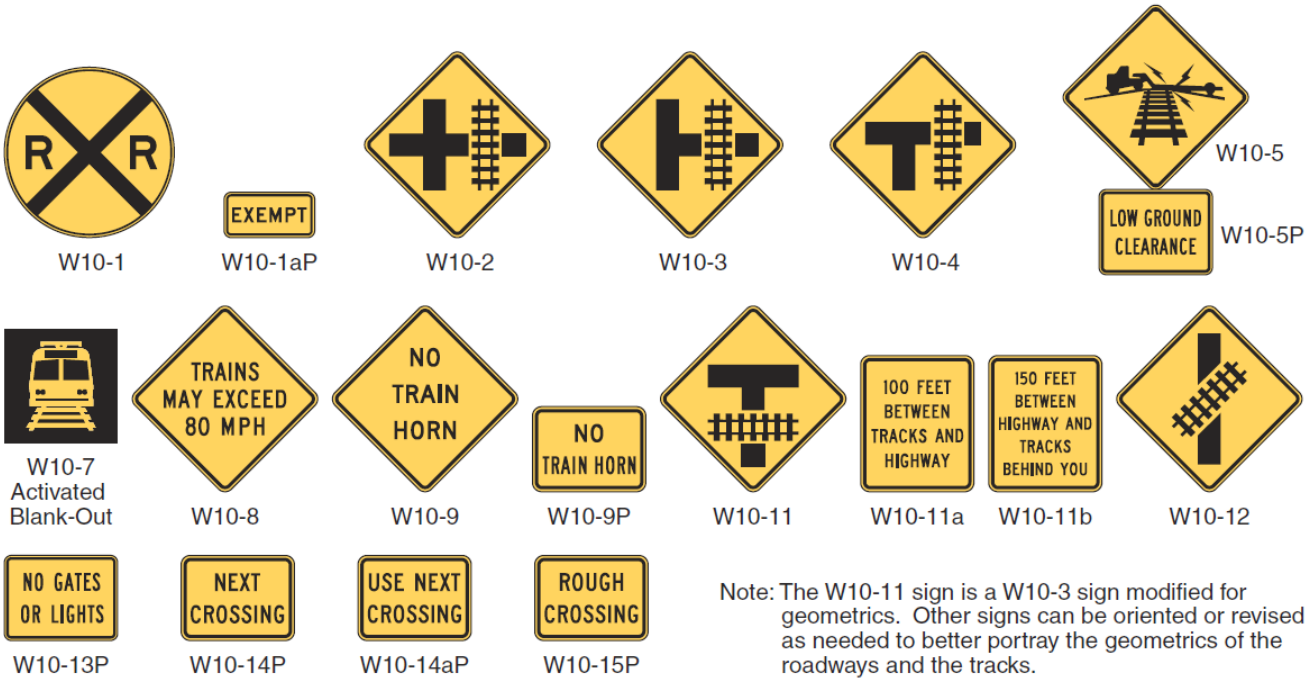
Source:
MUTCD
Figure 8B-2

Figure 3-3: Crossbuck Assembly with a YIELD or STOP Sign on the Crossbuck Sign Support



Source:
MUTCD
Figure 8B-1

Figure 3-4: Regulatory Signs and Plaques for Grade Crossings



Source: MUTCD Figure 8B-4

Figure 3-5: Warning Signs and Plaques for Grade Crossings

3.2.2 Active Grade Crossing Equipment

Active Grade Crossing Devices include post-mounted or cantilevered flashing signal lights, gates, bells and other devices or methods intended to inform motorists and pedestrians of the approach and presence of trains. Most of the devices are activated by the trains. Selection and design of the appropriate active warning device shall be based on the standards and guidance of the MUTCD and FHWA Railroad-Highway Grade Crossing Handbook in conjunction with Stakeholders at the crossing diagnostic meeting and project review process.

Flashing Light Signals with Automatic Gates and Bells: The most common type of active warning device typically consists of post-mounted flashing signal lights with automatic gates and bells.

Flashing-Light Signal: A standard flashing-light signal consists of two red lights in a horizontal line flashing alternately at approaching highway traffic. At a crossing with highway traffic approaching in both directions, flashing-lights are installed facing oncoming traffic in a back-to-back configuration in accordance with the MUTCD. The support used for the lights should also include a standard crossbuck sign and, where there is more than one track, an auxiliary "multiple tracks" R15-2 sign. Back lights may be eliminated with one-way highway traffic, based on engineering judgment. An audible control device may be included. (Source: Guidance on Traffic Control Devices at Highway-Railroad Grade Crossings, FHWA (2002))

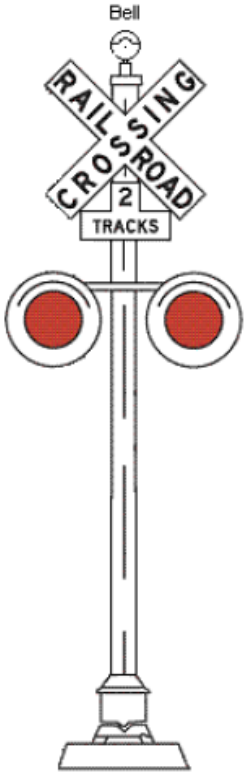


Figure 3-6: Flashing Light Signal

Cantilever Flashing-Light Signal: This device supplements the standard flashing-light signal. Cantilever flashing-lights consist of an additional one or two sets of lights mounted over the roadway on a cantilever arm and are directed at approaching highway traffic. Cantilevered lights provide better visibility to approaching highway traffic, particularly on multi-lane approaches. This device is also useful on high-speed, two-lane highways, where there is a high percentage of trucks, or where obstacles by the side of the highway could obstruct visibility of standard mast mounted flashing-lights. An example is where the terrain or topography of the approaching highway is such that the sight of a roadside mounted signal light could not be readily seen by an approaching driver due to vertical or horizontal curves. Cantilever flashing-light signals may be mounted back-to-back and should also have an additional crossbuck added to the overhead structure, based on site conditions and engineering judgment. (Source: Guidance on Traffic Control Devices at Highway-Railroad Grade Crossings, FHWA (2002)).

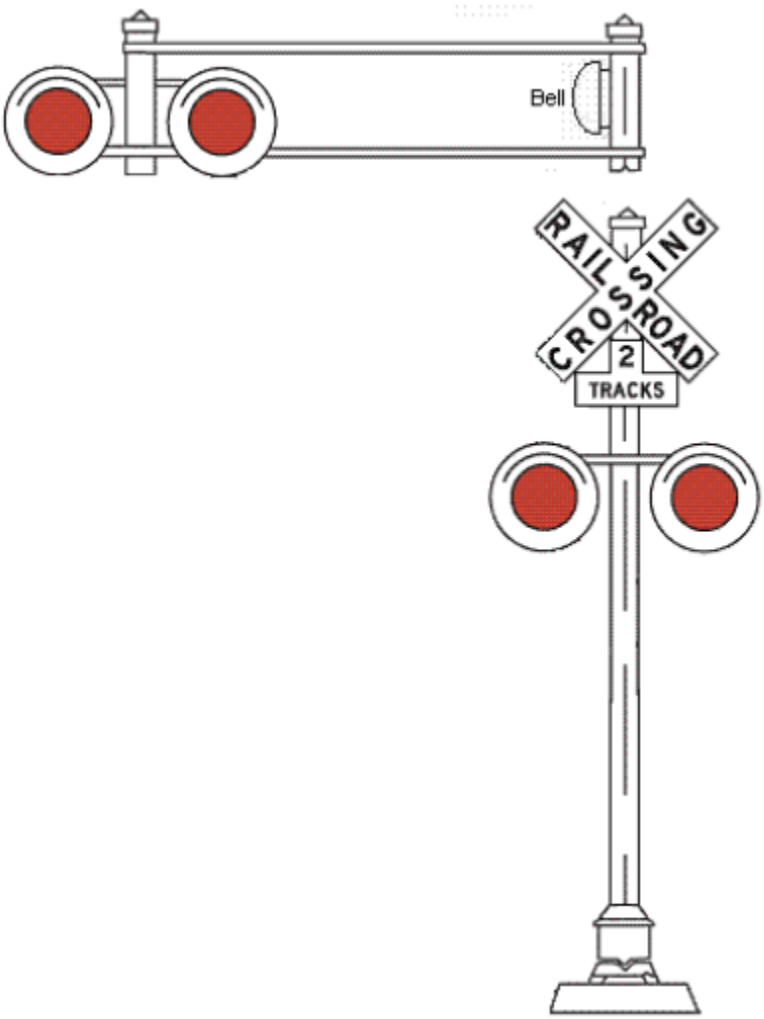
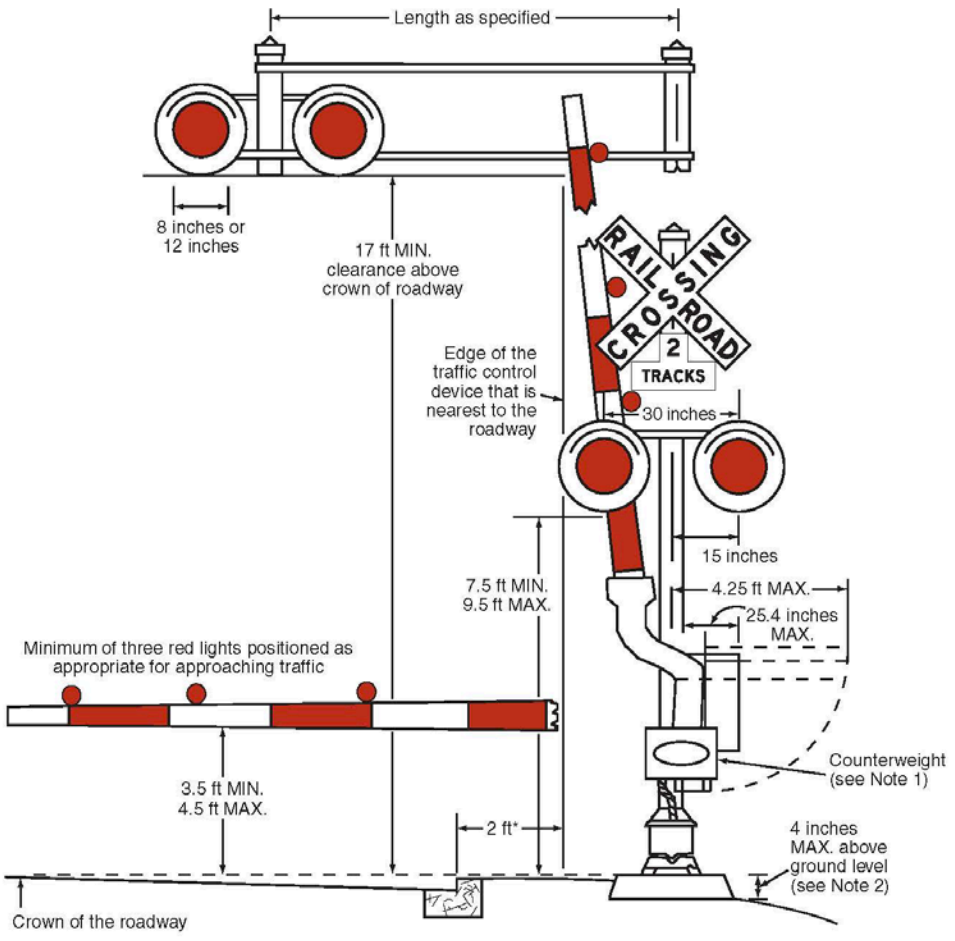


Figure 3-7: Cantilever Flashing-Light Signal (Without a Gate)

Automatic Gate: The automatic gate provides supplemental visual display when used with both road side mounted

flashing-lights and cantilever flashing-light signals. The device consists of a drive unit and a gate arm. The drive mechanism can be mounted on flashing-light posts or cantilever pole supports, or on a stand-alone support. The gate arm is fully reflectorized on both sides with vertical red and white stripes and has at least three lights; the tip light is continuously lit and the others alternately flash when the gate is activated and lowered. When lowered, the gate should extend across approaching highway traffic lanes. Special consideration should be given to clearances for movement of the counter weight arm portion of the gate drive unit in a median and adjacent to sidewalk locations with pedestrians, particularly with the requirements of the Americans with Disabilities Act (ADA) of 1990. (Source: Guidance on Traffic Control Devices at Highway-Railroad Grade Crossings, FHWA (2002))

Figure 8C-1. Composite Drawing of Active Traffic Control Devices for Grade Crossings Showing Clearances



*For locating this reference line on an approach that does not have a curb, see Section 8C.01.

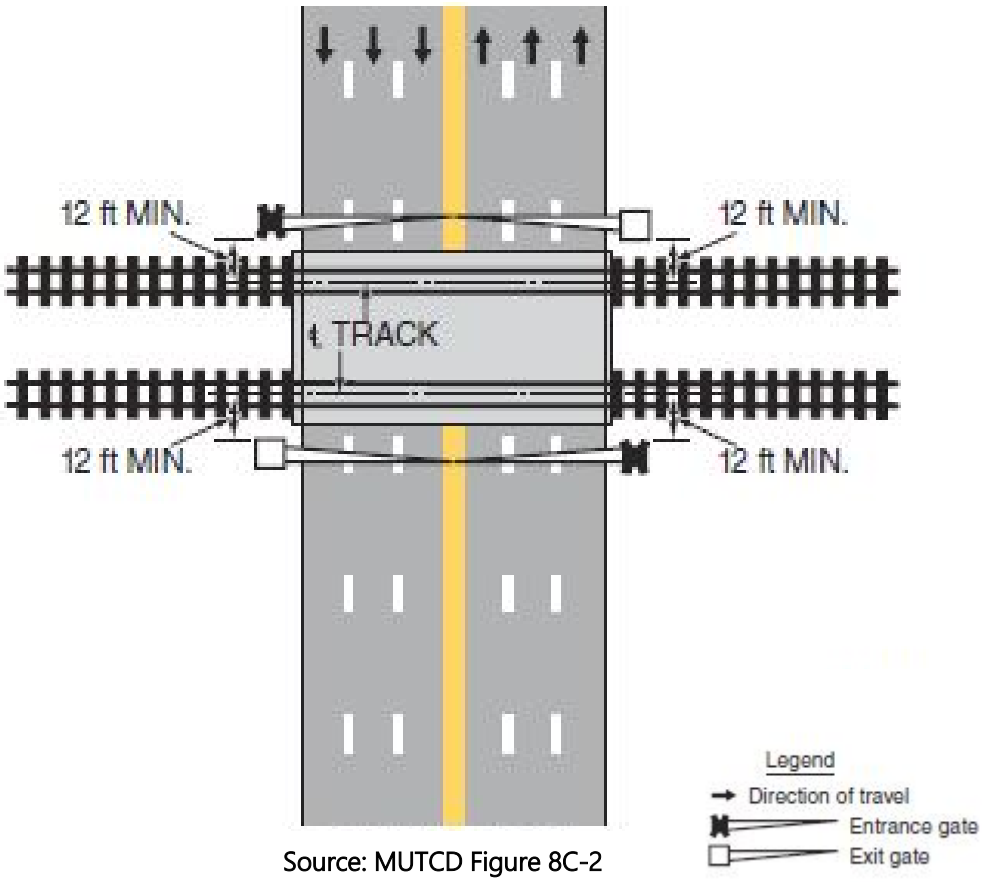
Notes:

1. Where gates are located in the median, additional median width may be required to provide the minimum clearance for the counterweight supports.
2. The top of the signal foundation should be no more than 4 inches above the surface of the ground and should be at the same elevation as the crown of the roadway. Where site conditions would not allow this to be achieved, the shoulder side slope should be re-graded or the height of the signal post should be adjusted to meet the 17-foot vertical clearance requirement.

Source: MUTCD Figure 8C-1

Figure 3-8: Cantilever Flashing Light Signal with Automatic Gate

Exit Gate Systems: Exit gates consist of a series of automatic flashing-light signals and gates where the gates extend across the departure side of roadway lanes. Unlike entrance gate systems, exit gates provide additional vehicular movement prohibition into the grade crossing after the gates have been lowered. Exit gate systems can be operated with a timed gate delay, an exit gate detection system, or a combination of the two. An exit gate vehicle detection system prevents the exit gate from lowering if there is a vehicle within the grade crossing area. Many factors will need to be reviewed during the safety diagnostic to determine which type of exit gate operation should be used.



Source: MUTCD Figure 8C-2

Figure 3-9: Exit Gates

Pedestrian Gates: Pedestrian gates may be required at highway-rail crossings that have high pedestrian traffic movements.

Bells: Bells are provided as a supplement to other active warning devices. The bell is typically mounted on top of the flashing light signal posts. The bell sounds when the flashing light signals are activated. At all crossings, bells are kept on for the duration of the crossing activation event. At crossings with exit gates and pedestrian gates, it is also important to discuss the exact placement of the bells at the diagnostic meeting, as some devices will not need to have a bell in order to provide adequate audible warning at the crossing.

Additional Flashing-Light Signals: Additional approaches to active highway-rail grade crossings require additional flashing- light signals be directed at the approaching traffic. These lights can be mounted on existing flashing-light masts, extension arms, and additional traffic signal masts, cantilever supports, in medians or other locations on the left side of the roadway. (Source: Guidance on Traffic Control Devices at Highway-Railroad Grade Crossings, FHWA (2002))

3.3 PUC Rail Crossing Jurisdiction

The PUC retains primary jurisdiction over all public highway-rail crossings, including opening, closing, upgrading, overpasses and underpasses, and the allocation of costs. Under the authority given to the PUC by §40-4-106, C.R.S., any changes to a grade crossing's operating characteristics must also be coordinated with the PUC. See Chapter 6: Public Utilities Commission Authority for more information.

3.4 Strategies for Enhancing Safety at Grade Crossings

The best way to enhance safety at an existing grade crossing is to grade separate the crossing or to close the crossing. Those options should always be reviewed on any proposed grade crossing project. If grade separation or closure is not possible, grade crossing safety can be enhanced through improvement, enforcement, and education.

Strategies for improving at-grade crossing safety include upgrading warning devices, public education campaigns, increased enforcement efforts, grade separation of existing at-grade crossings, crossing elimination, and improving the crossing's physical characteristics such as providing MUTCD compliant signing and striping, enhancing roadway geometrics, improving sight distance, and providing better ride quality. On- track vehicular queuing should be reviewed to see if any queue management techniques should be implemented.

Where passive crossings exist, enhanced sign systems may increase driver awareness and responsiveness. Enhanced sign systems are a combination of signs, flashing beacons, and vehicle detection that can be placed near grade crossings to provide more effective warning. Pavement loops (paved roads) or infrared sensors (unpaved roads) can be used to activate the flashing beacon when traffic is detected. Some highway authorities choose to have the flashing beacons on continuously. Figure 3-10 shows an example of an enhanced sign system. At active crossings, where sight distance of the crossing is limited due to roadway curvature, enhanced signs have been interconnected to the railroad signal system to provide advanced or simultaneous warning to the highway authority sign, similar to an interconnected traffic signal.

Figure 3-10: Enhanced Sign System

The horizontal and vertical roadway alignment at the crossing can sometimes be adjusted to provide improved sight distance for the motorist. In upgrading the crossing facilities, designers should consider all aspects of safety.

3.5 Crossings within Limits of a Planned Highway Project

When a highway-rail grade crossing is located within the limits of a planned highway project, the crossing, along with any existing devices, must be reconfigured or relocated as necessary to be compatible with changes to the highway. The Railroad Program Manager is required to assess the extent of plan review coordination and contracting that may be required for such a project. A safety assessment and diagnostic of the existing crossing should also be made, and, to the extent feasible, the project should include any appropriate crossing safety enhancements. Refer to CDOT Procedural Directive 548.1, "Safety Considerations on Resurfacing and 3R Type Projects," for additional guidance. An example of a 3R (resurfacing, restoration, rehabilitation projects) type project includes replacement of bridge railing, protective fencing and/or curbing on a grade separated structure over railroad facilities. Please contact the Railroad Program Manager for additional guidance. In addition, Flowcharts 3-1, 3-2, and 3-3 specify the necessary steps for projects involving UPRR, BNSF, and OmniTRAX respectively.

3.6 Crossings in Proximity to a Signalized Intersection Project

Active highway-rail grade crossings that are located close to a signalized roadway intersection (generally within 200') increase the complexity of signing and signals. Drivers may receive conflicting information from such closely spaced signals, and the traffic stopped at the adjacent signalized intersection may queue back onto the railroad crossing. In such cases, consideration should be given to interconnecting the traffic control signal with the active control system of the railroad crossing, and providing an advanced preemption sequence. With preemption, the approach of a train causes the nearby traffic signals to enter a special mode to control traffic movements in a manner that is complementary with the train's passage through the crossing.

Design of traffic control signals near highway-rail grade crossings and preemption programming, when required, shall conform to the latest edition of the MUTCD. Refer to Section 3.11: "Traffic Signal Preemption" of this Manual for further information.

3.7 Crossings in Proximity to a Planned Highway Project

Planned highway projects in the vicinity of a grade crossing also need to be reviewed to determine if the planned improvements are impacting grade crossing operations. One example of such a project would be the signalization of a nearby intersection to a grade crossing. Depending on the amount of traffic, number of lanes, and the proposed traffic signal operations, spillback queuing from the intersection could occur at the grade crossing since traffic on the roadway will now be metered by the traffic signal. Thus, even though the grade crossing in not within the physical limits of the project area, the proposed improvements have the potential to affect operations at the grade crossing. Another example is a roadway widening project that stops short of the grade crossing, forcing a lane drop in the vicinity of the grade crossing.

Nearby projects could affect the long term operations at a grade crossing, but they also can also easily impact the grade crossing in the short term due to traffic control operations. For example, if an adjacent crossing is closed for construction, additional traffic would likely be using the adjacent grade crossing. Improvements could be needed at the nearby grade crossing in order to be able to successfully accommodate the proposed highway improvements in a safe and efficient manner for all.

If you have a highway project with a grade crossing nearby, carefully review the proposed improvements to determine if a diagnostic meeting with crossing stakeholders is needed to more thoroughly assess.

3.8 Closure of Unnecessary Crossings

In 1991, the Executive Director of the FRA established a goal of closing 25% of all at-grade rail crossings in the United States. Closing unnecessary crossings improves safety by eliminating accidents at the closed crossings and by allowing limited safety funds to be concentrated on the remaining crossings. Guidance for eliminating and consolidating railroad crossings is provided in the Federal Highway Administration (FHWA) Grade Crossing Handbook Revised Second Edition (August 2007) (https://www.fra.dot.gov/Elib/Details/L02829) and FRA document, "Crossing Consolidation Guidelines" (July 2009) (https://www.fra.dot.gov/Elib/Document/2002).

Grade crossing closure is something that needs to be carefully considered at the beginning of each new project. Existing crossing data such as train volume, roadway volume, and accident history should all be carefully evaluated among other factors.

3.9 Overview of Federal Section 130 Program

Each year, FHWA apportions funds to help improve roadway-rail safety, pursuant to 23 U.S.C. Section 130 and related Federal law. These funds must be applied toward projects for the elimination of hazards at highway-rail crossings, including the new grade separation of existing at-grade crossings, the reconstruction of existing railroad at-grade crossing structures (e.g. passive warning to active warning), and the relocation of highways to eliminate grade crossings.

Annual program funds for Colorado total approximately $3.0 million, of which at least half ($1.5 million) shall be available for the installation of warning devices at existing highway-rail at-grade crossings. The balance of funds may be applied, at CDOT's discretion, toward grade crossing warning devices or any other eligible project under this section. CDOT's policy goal has been to apply half of program funds toward grade crossing protective devices and half of program funds toward a new grade separation structure.

Under this strategy, CDOT is capable of constructing four to six grade crossing upgrades (e.g., installation of flashing lights, gates, and bells) each year on a continuing basis. Due to the high cost of a typical grade separation structure, it is impractical for CDOT to apply the remaining $1.5 million annual apportionment to a new grade separation project each year. Instead, CDOT can allow multiple years' worth of apportionment to accumulate until a meaningful amount ($3 million) is available for such a project.

Most of the safety improvement projects are on local roads and streets (most state highway-rail crossings have already been upgraded). Local agencies may have greater incentive to participate in the program if the project is not conditioned on local matching funds. Section 130 funding for grade separation structures is on a 90:10 Federal matching basis. The State can issue local governments 90% Federal Section 130 dollars with a 10% Local Match for an eligible grade-separated structure.

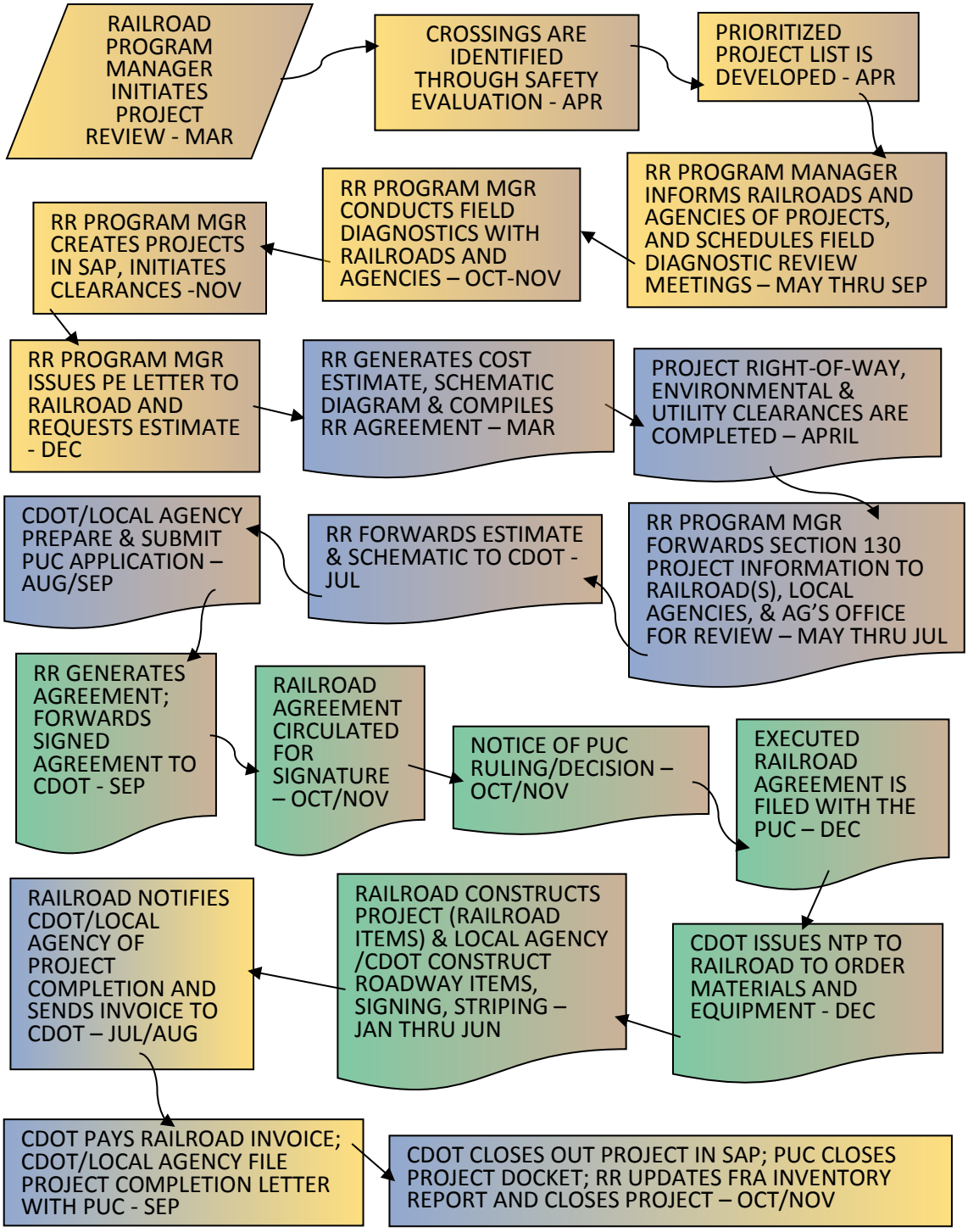
Flowchart 3- 4 details the general internal process that CDOT staff follows for Section 130 projects. Flowchart 3-5 details the overall process for Section 130 Grade Crossing Projects.

3.9.1 Eligibility

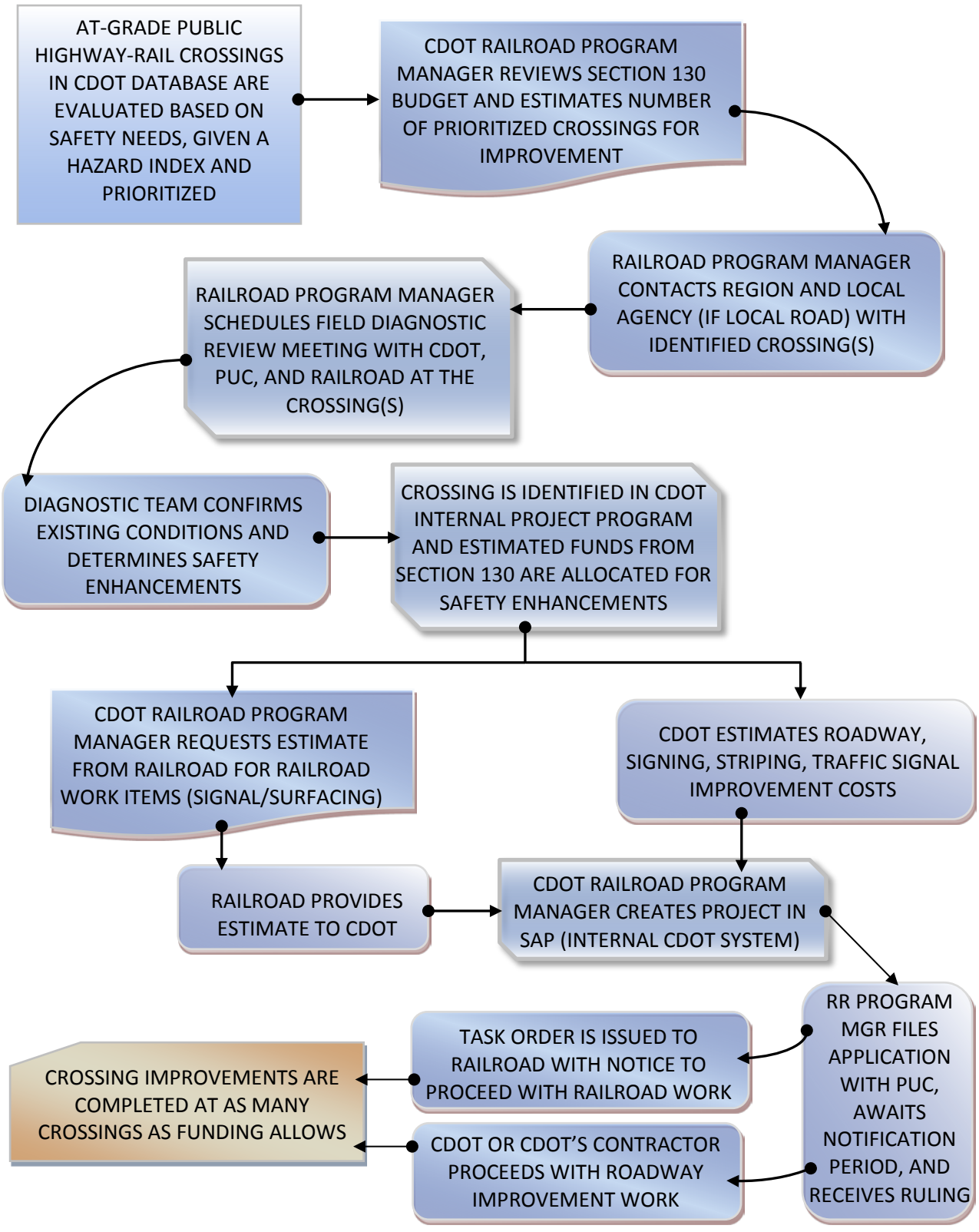
The following types of projects are eligible to receive Federal Section 130 Program funding:

Table 3-1: Section 130 Funding	
Types of Projects Eligible to Receive Section 130 Funding	Reconstruction of existing railroad grade crossing structures
	New Separation of grades at existing at-grade crossings
	Relocation of highways to eliminate grade crossings
	Relocation and realignment of railroad tracks to eliminate at-grade crossings
	Installation of active advance warning signs
	Traffic signal preemption
	Removal of obstructions in sight triangle
	Construction of median barriers
	Intelligent Transportation System (ITS) improvements (e.g. Blank out signs)
	Grade crossing closures
	Reconstruction of existing railroad grade crossing structures

Flowchart 3-4
Railroad Section 130 Projects
General Internal Process for CDOT Staff



Flowchart 3-5
Railroad Section 130 Projects
At-Grade Crossing Project Process



3.10 Ranking, Selection and Prioritization of Projects

A statewide priority list of grade crossing improvement projects will be developed every year. This is done as a cooperative effort between CDOT, the PUC, FHWA, and MPOs, incorporating the Railroad companies' crossing assessment data.

CDOT's Railroad Unit is responsible for inventorying public rail/highway crossings within the State of Colorado. The collected inventory data is used to identify those crossings that are below minimum standards for traffic protective devices and to calculate a hazard rating for each crossing.

Numerous elements exist at a highway-rail crossing and each can impact the calculation of a hazard rating. To consider each of these elements in a single formula would make the formula far too complex to be of practical use. As such, the formula that the Railroad Unit uses to determine hazard ratings is unique to Colorado - there is no nationally recognized formula. The formula uses the following elements, which have been selected as having the largest impact on safety at a highway-rail crossing. The Railroad Unit evaluates each of these elements, finishing with a numerical value indicating the crossing's hazard rating.

- A vehicle's stopping sight distance.
- The crossing's existing traffic control devices.
- Ability of the driver to see approaching trains.
- The highway's annual average daily traffic (AADT).
- The railroad's AADT.
- The number and type of railroad tracks existing at the crossing.

One important element, grade crossing accidents, is not used in the Railroad Unit's hazard rating formula. This non-usage is not an oversight; instead, it is due to Colorado having very few grade crossing accidents each year. As such, it has not been possible to determine a relationship between accidents and physical crossing characteristics for use in a hazard rating formula.

Crossings with the highest hazard index value are studied in detail. In order to gauge effectiveness of likely countermeasures, crossings selected for improvement are analyzed based upon several criteria to generate a final score or ranking. Projects are funded in the final priority order; to the extent funds are available.

- Once a prioritized list of projects is developed, CDOT assigns the top candidates to an appropriate fiscal year plan, according to available funds.
- Candidate projects that are not initially selected and budgeted may be resurrected later in the three-year planning cycle, if a higher-ranked project should be abandoned for any reason.
- If a project does not get approved during the current planning cycle, the sponsoring agency may re-nominate it during the next open solicitation.
- State highway crossings and the applications received from local authorities and railroad companies are combined, evaluated, and ranked prior to project selection.

3.11 Traffic Signal Preemption

Generally when a signalized intersection is within 200 feet of highway-rail grade crossing, the traffic control signal should be provided with preemption capabilities. If the distance between the signalized intersection and the at grade highway-rail crossing is greater than 200 feet, but less than 1000 feet, a site-specific traffic engineering study, including an estimate of expected vehicle queue length, should be performed. Preemption requirements must be discussed and documented at the on-site Diagnostic Review meeting and must include the following:

- Type of preemption required (simultaneous or advance)
- Preemption time requested
- Right-of-way transfer time (minimum green times, pedestrian walk/don't walk times during preemption)
- Queue clearance time
- Queue Prevention Strategy
- Type of traffic signal proposed (intersection signal, presignal, or queue cutter signal)

The following conditions may dictate the need for preemption:

- Highway traffic volume
- Number of trains per day
- Proximity of nearby signalized intersections
- Regular on-track queuing

When a new traffic signal is proposed at an intersection in close proximity to a highway-rail crossing, an engineering study may be required to determine the appropriate interconnection of the intersection and crossing signals. The study must be coordinated with the Railroad, the local agency and the PUC.

In situations where vehicles have the potential to queue across a grade crossing, a presignal or queue cutter should be considered. Presignals are traffic signals that are installed before a grade crossing to prevent motorists from queuing across the tracks. They are typically installed at grade crossings that have a traffic signal in close proximity and use the traffic signal controller at the nearby intersection to provide a delayed red signal so that vehicles never queue to the tracks. Figure 3-11 shows the typical layout for a presignal. Additionally, an example of a presignal at the intersection of 96th Street and State Highway 2 in Commerce City can be seen in Figure 3-12.

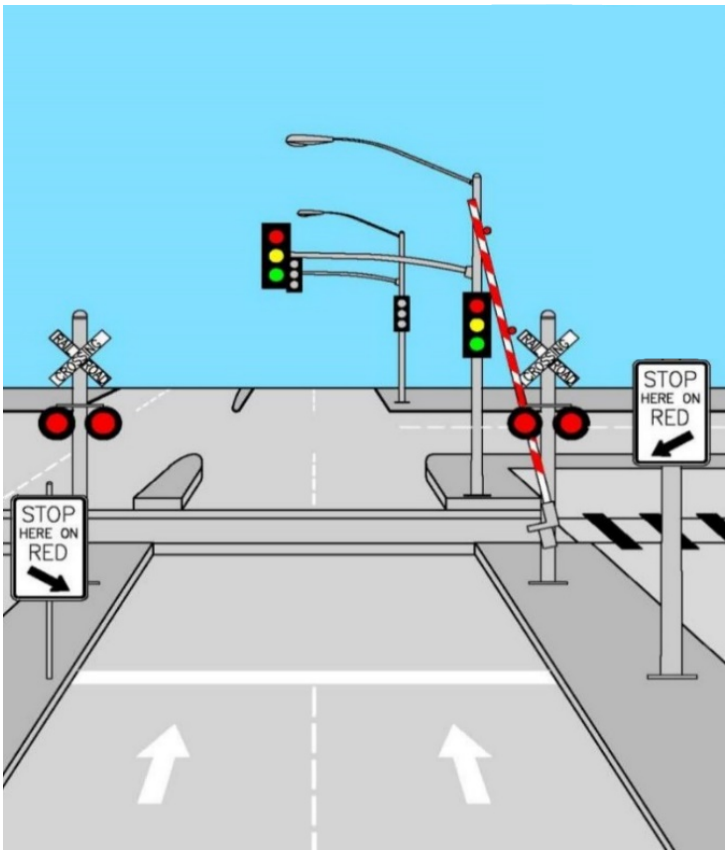


Figure 3-11: Typical Presignal Placement

Figure 3-12: 96th Avenue at Highway 2 Presignal, Henderson

Queue cutter signals are traffic signals that are placed at a grade crossing and can detect if downstream vehicle queuing is nearing the tracks. If queuing nears the tracks, the queue cutter signal will change to red, preventing vehicles from queuing on the tracks. Queue cutters typically have their own traffic signal controller and operate independently from any nearby traffic signals, which makes them ideal for crossings that are very far from nearby intersections, but still have regular queuing to the tracks occur. Figure 3-13 shows the typical layout for a queue cutter signal. Additionally, an example of a queue cutter traffic signal on Weld County Road 13 at Great Western Railway in Weld County can be seen in Figure 3-14. Figure 3-15 shows the queue cutter traffic signal on Highway 34 at Great Western Railway.

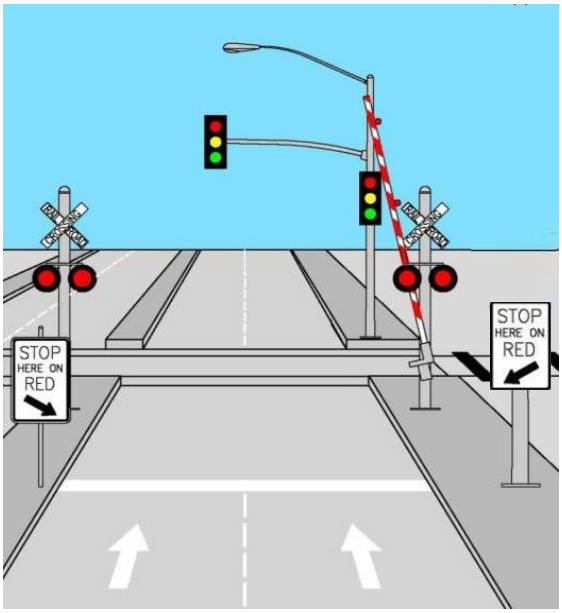


Figure 3-13: Queue Cutter Traffic Signal Downstream Placement

Figure 3-14: Weld County Road 13 at Great Western Railway, Weld County

Figure 3-15: Highway 34 at Great Western Railway, Weld County

The signal preemption determination and design must comply with the requirements of the MUTCD and the American Railway Engineering and Maintenance of Way Association (AREMA) "Communication and Signal Manual". The CDOT Region Traffic Engineer, the local agency traffic engineer or a designated representative, and the PUC Rail Safety Engineer must review all relevant documents and collaboratively determine the type and need for signal preemption.

3.12 On-Site Diagnostic Review Meeting

An on-site Diagnostic Review shall be conducted by team consisting of knowledgeable representatives from the Project Development Branch, the Region, the Railroad, the PUC, and the local agency. This group reviews the various aspects of the existing crossing and makes a determination of the type of improvement required, if needed. The items to review include the following:

- Sight Distance
- Visibility of Warning Devices
- Traffic Signal Preemption Requirements
- Roadway Alignments
- Adjacent highway railroad grade crossings and consolidating highway-rail grade crossings
- Trucks carrying hazardous materials
- School bus routes
- Roadway approach grades
- Number and type of railroad tracks
- Condition, type, and adequacy of existing crossing surface, including drainage

- Traffic signals or other control devices that may be affected by the grade crossing improvement
- Traffic signal preemption requirements
- Roadway volume and speed
- Train volume and speed
- Train switching or speed operations
- Signs and pavement markings
- Accident history
- Need for protection of traffic signal poles such as guard rail or attenuators
- Need for protection of railroad crossing devices such as guard rail or attenuators
- Plans for future changes in railroad operations
- Possible crossing closure of adjacent crossings
- Bicycle and pedestrian safety considerations

The Region Diagnostic Review team members should have a good familiarity with the crossing being investigated and the conditions of all adjacent crossings.

The Diagnostic Review team members must take photographs of the crossing and all approaches and quadrants.

Following the Diagnostic Review meeting, the Project Development Branch Meeting Organizer shall prepare a report that depicts the scope of the safety improvements recommended. The report should provide engineering plans that show existing conditions and potential improvements that may include:

- Improving passive warning devices
- Installing new active warning devices
- Closing the highway-rail grade crossing
- Closing the highway-rail grade crossing via grade separation
- Site distance improvements
- Surface condition improvements
- Impact of construction-service interruptions

The Diagnostic Review team should investigate additional supplemental or temporary improvements that may be required as a result of the crossing safety enhancement. These may include:

- Utility relocations, both above and below ground.
- Drainage improvements
- New curb and gutter
- Sidewalks
- Shoulder pavement
- Tree trimming and removal.
- Raised Medians
- Traffic signal upgrades, addition/modification of RR preemption programming and/or

addition/modification of railroad interconnection.

3.13 Plans, Specifications, & Estimate (PS&E)

The Project Manager shall incorporate all necessary railroad-related requirements into the project plans, specifications, and estimate; and shall coordinate with the Railroad Program Manager to ensure that the contract fully and accurately reflects such information.

As part of the concept level submittal, the following information should be provided to the Railroad:

- Scope of Work detailing work to be done by Agency and/or Railroad
- Photos of all four quadrants of project location
- Existing and proposed traffic counts
- Existing agreements with Railroad

Generally, the following information, as applicable, should be included on the concept level plan, and carried through final plans submitted to the Railroad for review and approval:

- Project location map
- Existing and proposed Roadway right-of-way
- Existing Railroad right-of-way
- Degree of angle of roadway intersection at railroad crossing
- Number & width of roadway lanes
- Number & width of shoulders
- Number & width of sidewalks
- Width of median
- Degree of curvature and profile grade of roadway on railroad right-of-way
- Existing or proposed super elevation of roadway on railroad right-of-way
- Curbing type
- Median, length, width, and distance to nearest rail
- Existing and proposed pavement markings and roadway striping
- Existing and proposed roadway signage
- Fencing
- Lighting
- Direction of traffic per lane
- Existing and proposed warning device type and location as selected by highway authority consistent with applicable Federal and State Guidelines and Regulations
- Distance from near rail to parallel roadway
- Intersection within 200 ft. of railroad
- Traffic signal within 200 ft. of railroad

- Location of traffic signal on railroad right-of-way
- Existing and proposed type of preemption (simultaneous or advance) and requested timing
- Existing and proposed utilities (locations and types)
- Location of existing signboards/billboards
- Traffic type (public, industrial, commercial, agricultural, residential)

If needed, the following additional information or documents should be included in 30% or later plan submittal to the Railroad for review and processing:

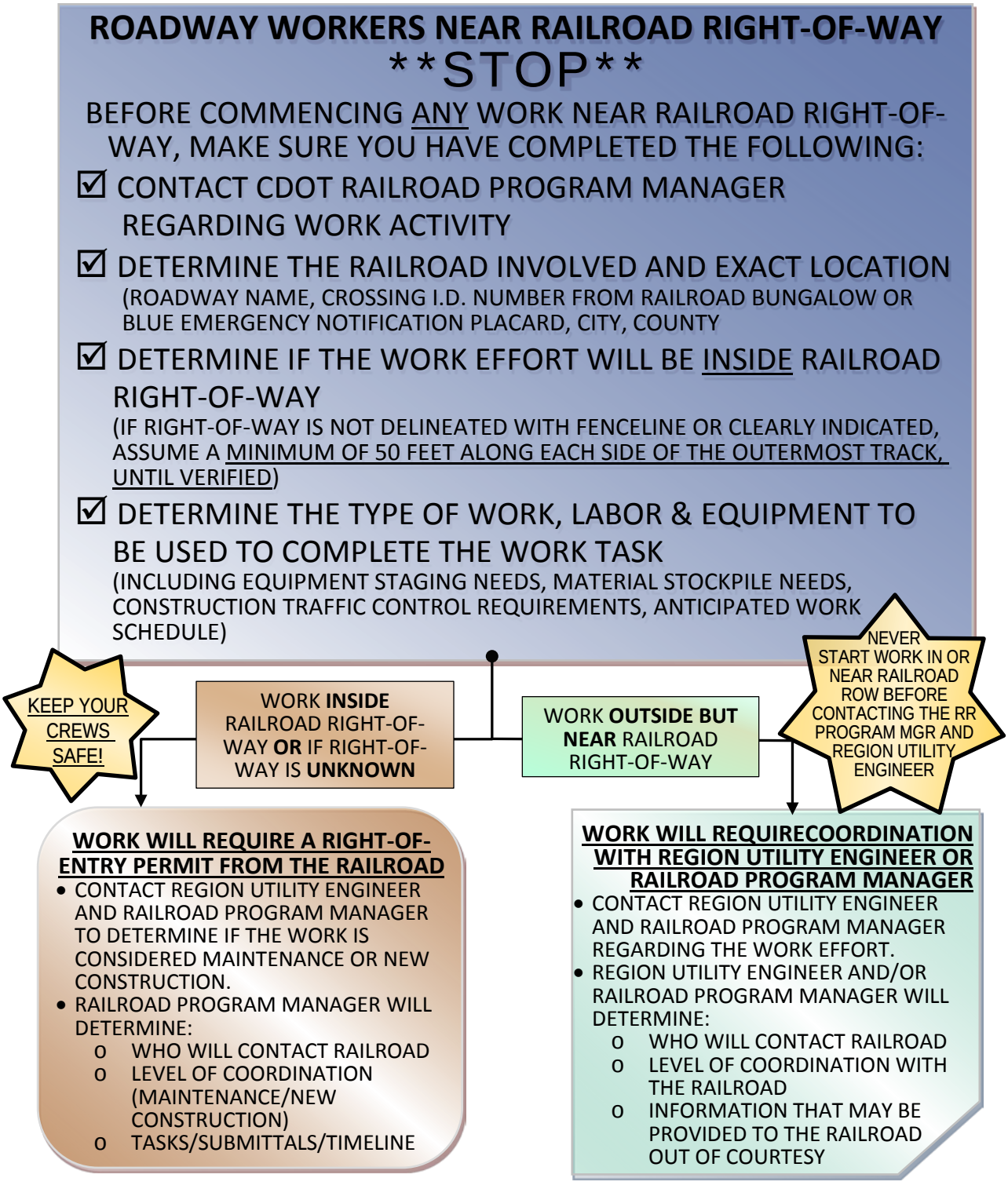
- Legal description of temporary and permanent easements
- Exhibit of temporary and permanent easements
- Temporary crossing(s) layout (NOTE: Railroads require contractors to use public roadways for access and generally will not allow a temporary at-grade highway-rail crossing)
- Detour plan sheets

3.14 Work Coordination

Roadway workers preparing to conduct work near railroad right-of-way should review Flowchart 3-6 for a checklist and coordination process.

Railroads needing to coordinate with road authorities for rail related work at or near crossings are directed to the process shown on Flowchart 3-7.

Flowchart 3-6
Roadway Workers near Railroad Right-of-Way
Checklist / Coordination



Flowchart 3-7
Railroads Needing To Contact Road Authorities
Process / Contacts

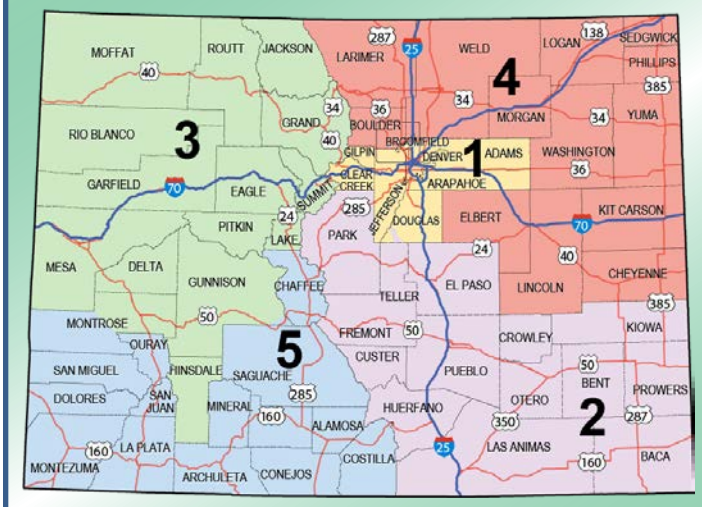
RAILROAD WORKERS NEAR ROADWAY CROSSINGS

****STOP****

BEFORE COMMENCING ANY WORK ON PUBLIC ROADWAYS,
PLEASE CONTACT THE ROAD AUTHORITY WITH THE FOLLOWING INFORMATION:

- ☑ CROSSING LOCATION (ROADWAY NAME, CITY, COUNTY, RAILROAD CROSSING)
- ☑ TYPE OF WORK OR MAINTENANCE TO BE COMPLETED
- ☑ IDENTIFY IF THE WORK EFFORT WILL REQUIRE RAILROAD FORCES TO BE WITHIN THE ROADWAY LIMITS (IN TRAFFIC)
  (IF SO, COORDINATE WITH ROAD AUTHORITY REGARDING CONSTRUCTION TRAFFIC CONTROL)
- ☑ TIMELINE/SCHEDULE TO COMPLETE THE WORK
  (PLEASE PROVIDE 1-2 WEEKS NOTICE TO THE ROAD AUTHORITY SO THEY CAN PLACE WARNING SIGNS, IF NEEDED, IN ADVANCE OF THE WORK TO INFORM VEHICULAR TRAFFIC OF ANY DETOURS OR CLOSURES)

WORK ON STATE HIGHWAYS:
CONTACT CDOT REGION UTILITY ENGINEER:



REGION CONTACT:

1	303-512-4272
2	719-546-5418
3	970-683-6283
4	970-350-2163
5	970-385-1400

WORK ON LOCAL AGENCY ROADWAYS:
CONTACT LOCAL AGENCY (CITY, COUNTY, TOWN) PUBLIC WORKS OR STREET/ MAINTENANCE DEPARTMENT. SEE LOCAL AGENCY'S WEBSITE.

KEEP YOUR CREWS SAFE!
CONTACT THE ROAD AUTHORITY IF RAIL RELATED WORK WILL BE WITHIN THE ROADWAY

Chapter 4:
Grade Separation and Other Specialized Projects

COLORADO
Department of Transportation

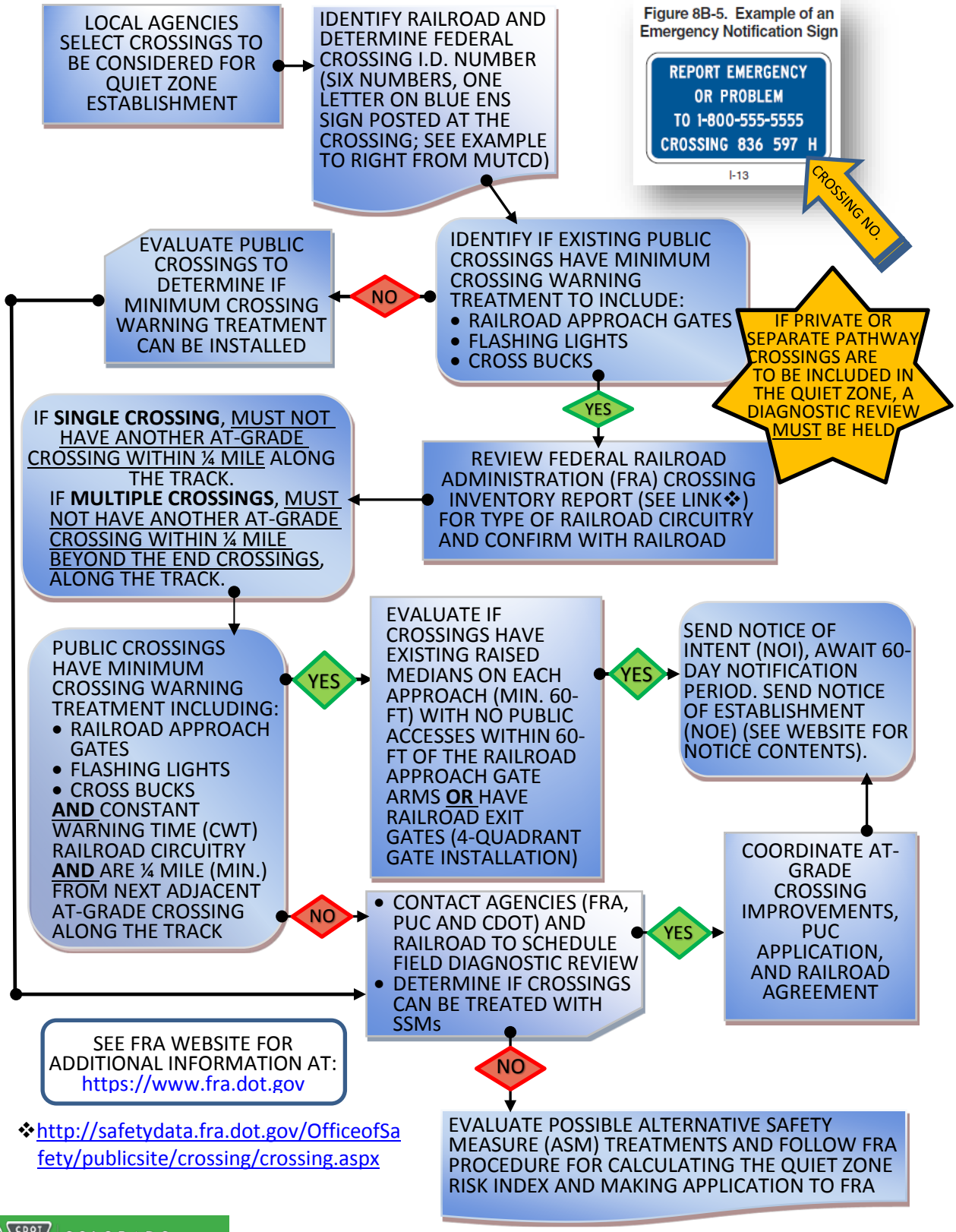
4.0 Background

Anytime CDOT has a construction project that could impact railroad ROW, a specialized type of project processing is required. Examples of specialized projects may include, but are not limited to the following:

- Rehabilitation, widening, or reconstruction of an existing grade separation structure
- New alignment or widening of an existing roadway that may encroach to the railroad ROW
- A resurfacing project that may include reconstruction of the railroad crossing surface.
- Section 130 Hazard Elimination Grade Separation

Local agencies may also approach CDOT regarding crossing improvements in pursuit of railroad quiet zone establishment. Flowchart 4-1 provides general guidance for quiet zone projects, and applicable references.

Flowchart 4-1
At-Grade Railroad Crossing Evaluation / Improvements for Quiet Zone Establishment Using Supplementary Safety Measures (SSMs)



❖http://safetydata.fra.dot.gov/OfficeofSafety/publicsite/crossing/crossing.aspx

4.1 Planning, Programming and Funding

The CDOT Region shall plan, program and budget the project in accordance with established CDOT procedures. The Project Manager shall notify the Railroad Program Manager as early as practicable in the project development process after having determined there will be Railroad involvement on the project. Early notification is needed to allow sufficient time for preliminary engineering, contract development, general coordination with the railroad entity, coordination with PUC (as applicable), cost estimates and for ordering of railroad materials (if applicable). Project phases may include PE, ROW, Utilities, and Construction.

The Regional Manager shall coordinate with the Railroad Program Manager on any required project funding actions involving the use of Federal Section 130 Funds. These funds reside in a set-aside budget controlled by the Project Development Branch. A typical grade separation project may be funded with a combination of Federal-aid project funds, Section 130 and other safety funds, including local funds.

4.2 Selection of Grade Separation Projects

Grade separation crossing projects of railroad tracks can either be part of a larger or more complex project that includes a new roadway overpass or underpass of a railroad, where there is no at-grade crossing currently, or may be pursued specifically to eliminate an at-grade crossing.

Grade separations that are part of larger projects progress through the clearance and design process as funding becomes available. Prioritization of these projects is determined by the CDOT Program Engineer or Region Transportation Director.

For grade separation projects proposed to replace an existing at-grade crossing, there are no specific criteria for selection other than an agency determination that the project will eliminate at-grade crossing hazards.

The selection of a grade separation project for funding (or partial funding) with Section 130 funds must be based on a consensus process among the CDOT Regions and the PUC.

Grade separation projects pursued by local agencies are under the jurisdiction and process of the local agency for prioritization. Roadways that are not state highways, but have been prioritized for grade separation using Section 130 funds proceed through CDOT's local agency process, because CDOT administers Section 130 funding in Colorado.

4.3 Scoping

Involved parties (Region, Railroad, local agency, and PUC) to determine project scope, design data, funding provisions,

and applicable law, rule and procedure, to determine all necessary railroad construction, proposed active warning devices and coordination details and requirements including, but not limited to:

- Nature and extent of project work involving railroad property
- Party or parties responsible for work performance
- Railroad flagging needs
- Contractor entry
- Coordination requirements
- Protective measures
- Maintenance provisions
- Utility Permitting

4.4 Railroad Program Manager's Role

CDOT maintains a Railroad Program Manager (RPM) to assist in coordinating CDOT projects that involve railroads statewide. It is in the best interest of CDOT projects for the CDOT Project Manager to contact the RPM at project onset, as he/she is the central point of contact to the state's railroads and transit agencies.

For planning and environmental project efforts, the RPM should be made aware of the project location or corridor, the railroad involved or adjacent, and the level of study or evaluation to be conducted. The RPM will recommend the level of effort likely to be necessary from the involved Railroad, and may offer contact information, if available.

For design projects, the RPM should be contacted as part of the project scoping, to determine the railroad involved, railroad information associated with the project location, and anticipated level of effort of coordination to support the project. The RPM has access to CDOT's library of information with regard to Railroad contacts, processes, location information, and existing agreements (if available). The RPM can assist the Region Project Manager and Region Utility Engineer in determining the appropriate process, documentation, and timeline to guide the project and minimize delay. Following initial scoping and determination of railroad documentation, the RPM may remain more involved if detailed agreements or special coordination is required, or may continue in a support role to the Project Manager or Region Utility Engineer.

As design projects progress toward construction, the RPM is responsible for determining and advancing the necessary agreement, task order or maintenance request with the project railroad. The RPM will also compile, or assist the Region Project Manager or Region Utility Engineer in compiling the necessary information to be contained in a PUC application, if one is required. Upon completion of the application, it shall be sent to the RPM with supporting exhibits, at which time the RPM shall circulate the application to the appropriate departments of the State for the required signatures. The RPM forwards the signed PUC application to the Attorney General's office for formal filing with the PUC.

To allow the RPM to continue to monitor CDOT's railroad-related projects statewide, it is recommended that the RPM be invited to design project FIR and FOR meetings. For project tracking, the RPM should be copied on all permit and right-of-entry applications, and required submittals from contractors as part of construction rights-of-entry.

For Local Agency projects involving a state highway and a railroad, the local agency Project Manager, or the local agency's consultant Project Manager is encouraged to contact the RPM at the start of a project to discuss project needs and obtain available railroad information for the project area. Similar to CDOT projects, the RPM should be invited to design FIR and FOR meetings, and copied on permit and right-of-entry applications for CDOT's project tracking. Note that the agreement and PUC applications may need to be 3-party documents, depending upon the level of involvement of CDOT. The local agency or consultant Project Manager should contact the RPM to determine the format of any railroad agreements or PUC applications.

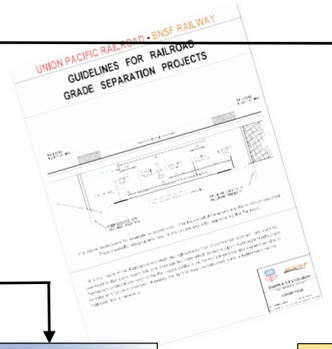
Local Agency projects not involving a state highway are coordinated directly between the local agency staff or their consultant, and the Railroad. Local agency staff or consultants may contact the CDOT RPM for guidance or information. However, agreements and PUC applications between local agencies and the railroad are not subject to the review or signatory requirements of the departments of the State.

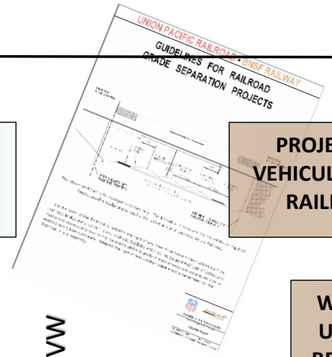
4.5 Railroad's Role

Each Railroad has its own operational policies that may be unique to that company, and what works for one Railroad on a project may not work with another. Railroad companies are private companies and have their own guidelines and policies. When working on a rail related project, coordinate early with the appropriate railroad representative. When starting a project, some railroads have a Manager of Public Projects that will be your key representative. Use the materials and links provided in this manual for guidance and then contact the railroad for further guidance on your specific project. On any rail-related project, it is critical that the Railroad's cooperation is secured and sufficient time is afforded to them to prepare estimates, review plans and specifications, and prepare for and attend meetings. Any successful railroad project needs the railroad's involvement and input from the start as well as concurrence for project approval. A key point to remember is that all projects that a railroad representative works on is rail related – use their expertise to make your project successful for all.

Refer to Chapter 3 for guidelines for working with railroads on grade crossing projects. Refer to Flowchart 4-2 for grade separated projects, based on guidelines provided jointly by BNSF and UPRR.

Flowchart 4-2
Grade Separation Projects
General Procedures / Coordination with Railroads





PROJECT INCLUDES HIGHWAY BRIDGE OVER RAILROAD

EXISTING BRIDGE RECONSTRUCTION

WILL BRIDGE REMAIN IN SAME FOOTPRINT (NO CHANGE TO ROADWAY WIDTH, BRIDGE SECTION, LOCATION OF ABUTMENTS, PIERS)?

NO

YES

DISCUSS WITH RAILROAD PROGRAM MANAGER (PROJECT MAY QUALIFY AS BRIDGE MAINTENANCE)

NEW BRIDGE CONSTRUCTION

CONTACT RR PROGRAM MANAGER TO CONDUCT FIELD REVIEW WITH RAILROAD/PUC

FOR UPRR ONLY – PREPARE & SUBMIT PRELIMINARY ENGINEERING LETTER

DEVELOP CONCEPT PLANS AND COMPILE SITE PHOTOS FOR RAILROAD REVIEW

ADDRESS RAILROAD CONCEPT COMMENTS & COMPILE 30% PLANS FOR RAILROAD REVIEW

ADDRESS RAILROAD 30% COMMENTS & COMPILE 100% PLANS FOR RAIL-ROAD REVIEW & APPROVAL

RR RVW

1 MON

1-2 MOS

1-2 MOS

1-2 MOS

PROJECT INCLUDES HIGHWAY UNDER A RAILROAD BRIDGE

EXISTING BRIDGE/ ABUTMENT/ PIER RECONSTRUCTION

WILL BRIDGE REMAIN IN SAME FOOTPRINT (NO CHANGE TO ROADWAY WIDTH, BRIDGE SECTION, LOCATION OF ABUTMENTS, PIERS)?

NO

YES

DISCUSS WITH RAILROAD PROGRAM MANAGER (PROJECT MAY QUALIFY AS BRIDGE MAINTENANCE)

NEW BRIDGE/ ABUTMENT/ PIER CONSTRUCTION

CONTACT RR PROGRAM MANAGER TO CONDUCT FIELD REVIEW WITH RAILROAD/PUC

FOR UPRR ONLY – PREPARE & SUBMIT PRELIMINARY ENGINEERING LETTER

DEVELOP CONCEPT PLANS AND COMPILE SITE PHOTOS FOR RAILROAD REVIEW

ADDRESS RAILROAD CONCEPT COMMENTS & COMPILE 30% PLANS FOR RAILROAD REVIEW

ADDRESS RAILROAD 30% COMMENTS & COMPILE 60% PLANS FOR RAILROAD REVIEW & APPROVAL

ADDRESS RAILROAD 60% COMMENTS & COMPILE 100% PLANS FOR RAILROAD REVIEW & APPROVAL

RR RVW

1 MON

1-2 MOS

2-3 MOS

2-3 MOS

PROJECT INCLUDES NON-VEHICULAR BRIDGE OVER RAILROAD (PED/TRAIL)

OVERHEAD NON-VEHICULAR BRIDGE CONSTRUCTION/ RECONSTRUCTION

CONTACT RR PROGRAM MANAGER TO CONDUCT FIELD REVIEW WITH RAILROAD/PUC

FOR UPRR ONLY – PREPARE & SUBMIT PRELIMINARY ENGINEERING LETTER

DEVELOP CONCEPT PLANS AND COMPILE SITE PHOTOS FOR RAILROAD REVIEW

ADDRESS RAILROAD CONCEPT COMMENTS & COMPILE 30% PLANS FOR RAILROAD REVIEW

ADDRESS RAILROAD 30% COMMENTS & COMPILE 100% PLANS FOR RAIL-ROAD REVIEW & APPROVAL

RR RVW

1 MON

1-2 MOS

1-2 MOS

1-2 MOS

PROJECT INCLUDES NON-VEHICULAR CROSSING UNDER RAILROAD (PED/TRAIL)

WILL UNDERPASS USE AN EXISTING BRIDGE/CULVERT?

YES

NO

DOES EXISTING UNDERPASS CONVEY DRAINAGE?

YES

NO

BRIDGES/ CULVERTS CONVEYING ACTIVE DRAINAGE ARE GENERALLY NOT PERMITTED TO BE USED FOR TRAIL CROSSINGS

PROCEED WITH PREPARATION OF PLANS IN ACCORDANCE WITH 'HIGHWAY UNDER A RAILROAD BRIDGE' PROCEDURE, AS APPROPRIATE, FOR RAILROAD REVIEW (DISCUSS WITH RAILROAD PROGRAM MANAGER)

PREPARE DETAILED TYPE SELECTION REPORT FOR PROPOSED UNDERPASS STRUCTURE. PROCEED WITH PREPARATION OF PLANS IN ACCORDANCE WITH 'HIGHWAY UNDER A RAILROAD BRIDGE' PROCEDURE, AS APPROPRIATE, FOR RAILROAD REVIEW (DISCUSS WITH RAILROAD PROGRAM MANAGER)

RR RVW

SEE TIMELINE FOR 'HIGHWAY UNDER RAILROAD BRIDGE'

COLORADO Department of Transportation

4.6 Preliminary Engineering (PE)

At the start of a project involving a railroad, the Railroad should be contacted to identify the project location, anticipated design work, and information regarding how the project may affect the Railroad's property or infrastructure.

UPRR has a specific process that includes submittal of a Preliminary Engineering (PE) Agreement to the Manager of Industry and Public Projects (MIPP). This agreement requires the road authority or project proponent to identify basic project information, and agree to reimburse the UPRR staff, and/or UPRR's consultant, for their time in review of the project documents and for attendance at meetings. UPRR prefers the PE Agreement be in place prior to the field diagnostic review meeting, if applicable, such that UPRR staff can be reimbursed for their participation in this meeting. The UPRR provides information regarding the PE Agreement on their website at: http://www.up.com/real_estate/roadxing/industry/getting_started/index.htm. Local agencies, businesses, or private companies are required to contact the Manager of Industry and Public Projects, and prepare the necessary PE Agreement in accordance with UPRR's website for non-CDOT projects.

The BNSF Railway does not use a formal preliminary engineering agreement or process at this time. Costs for BNSF staff participation in review of public or private project documents is built into project related railroad cost estimates requested by the road authority or project proponent. Project proponents are encouraged to contact the BNSF Manager Public Projects (MIPP) to determine the necessary process at the start of non-CDOT projects.

CDOT has agreement documentation in place for UPRR's effort in Preliminary Engineering of CDOT projects and for coordination with BNSF regarding CDOT projects. The Region Project Manager or Region Utility Engineer should contact the Railroad Program Manager to determine the process of documentation necessary for CDOT projects.

Shortline Railroads, Tourist Railroads, and Light Rail/Commuter Rail may require reimbursement for staff time in review of public or private projects that affect their rights-of-way or infrastructure. Review the Railroad's or transit agency's website and/or contact the Railroad/agency at project onset, to determine the coordination and reimbursement requirements specific to the involved railroad or agency.

4.7 Cost Sharing

CDOT, the Railroad, and local agency, as applicable, shall cooperatively determine the parties' respective shares of railroad-related project costs.

Grade separation cost sharing on Federal-aid projects shall be subject to the provisions and limitations of 23 CFR 646.210 , which states the Railroad is required to contribute 5% of the cost of the portion of the theoretical structure if the crossing already has active devices installed or active devices have been ordered by the PUC. Cost sharing on non-Federal-aid projects shall be subject to the provisions and limitations of §40-4-106, C.R.S., which currently states the Railroad is responsible for costs not to exceed 2.5 million dollars in one calendar year for one or more than one project for any one railroad company. For the purpose of assigning the level of cost responsibility for grade separation projects,

the Project Manager shall coordinate with the Railroad, the Railroad Program Manager, the Region Utility Engineer, and the CDOT Bridge Design and Management Branch to develop geometry and cost estimate for the "theoretical structure" as described in 23 CFR 646.210

For Grade Crossings, the PUC will determine cost sharing on installing, reconstructing, or improving signals or devices on Federally Funded projects.

4.8 Railroad Force Account Work

Because of railroad labor union contracts with Class 1 Railroads, Railroad forces typically perform all track and signal work on railroad property. Early determination of work responsibility and funding sources must be coordinated between the Railroad Program Manager and Railroad. The type of funding (Federal, State, or Local), must be determined and the Railroad will need to know if "Buy America" provisions are required.

If a project requires specialized materials that are not readily available from Railroad's stores, the Railroad Program Manager shall, after the project Utility phase has been authorized, obtain a contract agreement for force account work.

4.9 Railroad Flagging

Railroads require flagmen any time labor or equipment are within a prescribed distance from active tracks (typically 25') or have equipment with the ability to foul an active track (cranes, etc.). Exact procedures must be conveyed to the Railroads to determine when a flagman is needed. Railroads determine when and who protects their right-of-way. Most Railroads have the ability to assign qualified flagmen from either their railroad forces or a qualified approved 3rd party Railroad flagging provider but the Railroad will make that decision. The Region shall include project special provisions in the contract documents acknowledging the ability to use contract flagmen if allowed by the particular Railroad and estimating the number of days of flagging required, which is multiplied by the Railroad's or Flagging Contractor's current rates, and designate this as a contractor pay item. Scheduling Railroad Union flagmen, depending on the length of job, may take up to 45 days if the job has to be put up for bid by the Railroad per union rules. Check with the Railroad Program Manager for specifics for each Railroad. Contract flagmen do not have a bid process and the length of time is much shorter, but the Railroads always have to approve of contract flagmen. When a Railroad Flagger is no longer needed, it is the responsibility of CDOT's contractor to notify the Railroad or the Contract Flagging provider typically with a ten day notice in writing, otherwise the flagger, due to contractual agreement, will continue to be paid until proper notification is received.

4.10 Plans, Specifications & Estimate (PS&E)

The Project Manager shall incorporate all necessary railroad-related requirements into the project plans, specifications, and estimate; and shall coordinate with the Railroad Program Manager to ensure that the contract fully and accurately

reflects such information.

The concept level submittal to the Railroad includes:

- Concept Level Plans
- Site Photos

The following design information is required for 30% plan submittal to the Railroad for review and approval:

- Response to Concept Level comments received from the Railroad
- 30% Design Plans (Railroad-related sheets)
- Project Specifications (Railroad-related specifications)
- Drainage Report & Plan
- Shoofly Design
- Construction Phasing Plans

The following design information is required for 100% plan submittal to the Railroad for review and approval:

- Response to 30% plan comments received from the Railroad
- 100% Design Plans (Railroad-related sheets)
- Project Specifications (Railroad-related specifications)
- Drainage Report & Plan
- Shoofly Design
- Construction Phasing Plans

Reference the latest version of the "Union Pacific Railroad-BNSF Railway Guidelines for Railroad Grade Separation Projects" (https://www.up.com/cs/groups/public/documents/document/pdf_rr_grade_sep_projects.pdf) for additional detail regarding submittal requirements to these Railroads. Generally, this submittal information will be acceptable to shortline railroads.

Grade separation projects that are being prepared to ask for cost allocation from the PUC must have the following documents prepared to be submitted to the Railroad Program Manager for inclusion in the PUC application:

- Project location map
- Cost estimate for a theoretical grade separation
- Theoretical bridge longitudinal section
- Grade separation bridge general layout
- Theoretical roadway plan sheet(s)
- ROW plan sheet(s)
- ROW plan sheet (ownership map)
- Legal description of temporary and permanent easements
- Easement document

- Railroad detour (shoofly) plan sheets for all phases
- Temporary crossing(s) layout, keep in mind that the Railroad requires contractors to use public roadways for access and generally will not allow a temporary at-grade highway-rail crossing.
- Other information as requested

For grade separation projects crossing commuter or light rail tracks of RTD, reference the "RTD Engineering Guidelines," (https://us1.aconex.com/GuestFileDownload?_action=downloadFile&fileId=1211499277&value=vFpWcF2%2BCKlbWf63DrzA5zSiUvzVONY0WdDsRLZRCW6swbraS2QQo9CxNpiSsNNw) or the most recent version for design guidelines and submittal requirements.

4.11 Railroad Right-of-Entry

Right-of-Entry, Utility Agreements, Access Permits, or Consent Letters are required when CDOT's construction contractor will be working on railroad ROW. Each Railroad has specific instructions and costs depending on what is required. The majority of access instructions can be found at the following web sites:

- UPRR - https://www.up.com/real_estate/tempuse/index.htm
- BNSF - http://www.bnsf.com/communities/faqs/permits-real-estate/
- OmniTRAX - http://omnitrax.com/services/track-access/
- GWRR
    - Utah Railway https://gwrr.com/railroads/north_america/utah_railway#m_real-estate
    - Kyle Railway https://gwrr.com/railroads/north_america/kyle_railroad#m_real-estate
- RTD - http://www.rtd-denver.com/

For shortline or tourist railroads, contact the railroad directly for guidance regarding Right-of-Entry criteria.

For RTD commuter or light rail, contact RTD for design criteria and clearance standards.

Other non-shortline railroad companies will require similar documents, and need to be consulted for their specific requirements. Flowcharts 4-3, 4-4, and 4-5 provide general guidance for BNSF, UPRR, and OmniTRAX, along with references for shortline railroads.

Flowchart 4-3
BNSF Railway
Temporary Occupancy Permits / Right-of-Entry
(Administered by BNSF Real Estate Representative, Jones Lang LaSalle Brokerage (JLL))

GEOTECHNICAL, SURVEY, INSPECTION, CONSTRUCTION ACCESS (SEISMIC SURVEY REQUIRES ADDITIONAL LEASE AGREEMENT)

↓

CONTACT RAILROAD PROGRAM MANAGER REGARDING IDENTIFICATION OF RAILROAD INFORMATION ASSOCIATED WITH PROJECT LOCATION

↓

GENERATE DRAWING OF AREA TO BE OCCUPIED TO INCLUDE: NEAREST CITY, STATE, RAILROAD LOCATION INFORMATION, STREETS, DISTANCE FROM TRACKS AND STREETS, MILEPOSTS (IF KNOWN), DISTINGUISHING LANDMARKS

↓

DOWNLOAD AND COMPLETE APPLICATION FOR TEMPORARY OCCUPANCY FORM FROM BNSF WEBSITE ❖

↓

MAIL HARD COPY PACKAGE INCLUDING:
- **PERMIT APPLICATION FORM**
- **ONE SET OF 11X17 DRAWINGS**
- **NON-REFUNDABLE PROCESSING FEE**

TO ADDRESS INDICATED IN THE PERMIT FORM (Note: Incomplete submittals will require full resubmittal with full processing fee)

↓

RECEIVE TWO (2) COPIES OF PERMIT; SIGN BOTH COPIES AND RETURN WITH CERTIFICATES OF INSURANCE AND PERMIT FEE (IDENTIFIED IN PERMIT)

↓

UPON RECEIPT OF ONE EXECUTED PERMIT, COMPLETE SAFETY ORIENTATION (SEE WEBSITE BELOW) PRIOR TO START OF WORK, AND NOTIFY ROADMASTER 10 DAYS PRIOR TO START OF WORK

← RR PROCESSING 3-4 WEEKS 4-6 WEEKS

SURFACING, RESURFACING, OVERLAY EXISTING ROAD (NOT DUE TO WIDENING)

↓

CONTACT RAILROAD PROGRAM MANAGER REGARDING IDENTIFICATION OF RAILROAD INFORMATION ASSOCIATED WITH PROJECT LOCATION AND DETERMINE IF CONTRACTOR'S RIGHT-OF-ENTRY WILL ALSO BE REQUIRED

↓

GENERATE DRAWING OF PROJECT AREA TO INCLUDE: NEAREST CITY, STATE, RAILROAD LOCATION INFORMATION, STREETS, DISTANCE FROM TRACKS AND STREETS, MILEPOSTS (IF KNOWN), DISTINGUISHING LANDMARKS

↓

DOWNLOAD AND COMPLETE APPLICATION FOR ROADWAY SURFACING/RESURFACING FORM FROM BNSF WEBSITE ❖

↓

MAIL HARD COPY PACKAGE INCLUDING:
- **PERMIT APPLICATION FORM**
- **ONE SET OF 11X17 DRAWINGS**
- **NON-REFUNDABLE PROCESSING FEE**

TO ADDRESS INDICATED IN THE PERMIT FORM (Note: Incomplete submittals will require full resubmittal with full processing fee)

↓

RECEIVE TWO (2) COPIES OF PERMIT; SIGN BOTH COPIES AND RETURN WITH CERTIFICATES OF INSURANCE AND PERMIT FEE (IDENTIFIED IN PERMIT)

↓

UPON RECEIPT OF ONE EXECUTED PERMIT, COMPLETE SAFETY ORIENTATION (SEE WEBSITE BELOW) PRIOR TO START OF WORK, AND NOTIFY ROADMASTER 30 DAYS PRIOR TO START OF WORK

← RR PROCESSING 3-4 WEEKS 4-6 WEEKS

ENVIRONMENTAL ACCESS (SOIL SAMPLES FOR CONTAMINATION, INSTALLATION OF MONITORING WELLS)

↓

CONTACT RAILROAD PROGRAM MANAGER REGARDING IDENTIFICATION OF RAILROAD INFORMATION ASSOCIATED WITH PROJECT LOCATION

↓

CONCURRENT SUBMITTALS

GENERATE THE FOLLOWING FOR SUBMITTAL WITH APPLICATION FORM TO JLL:
- **APPLICATION FORM FROM BNSF WEBSITE ❖**
- **ONE SET OF DRAWINGS 11X17) OF THE AREA TO BE OCCUPIED (STREETS, ISTANCE FROM STREETS/ TRACKS, LANDMARKS)**
- **NON-REFUNDABLE FEE**

(Note: Incomplete submittals require full resubmittal with full processing fee)

GENERATE THE FOLLOWING FOR SUBMITTAL TO TRC ENVIRONMENTAL CORP FOR ENVIRONMENTAL REVIEW:
- **PROPOSED WORK PLAN (SEE SAMPLE ON BNSF WEBSITE ❖)**
- **ENVIRONMENTAL FEE CALCULATOR FORM & FEE**

↓

RECEIVE TWO (2) COPIES OF PERMIT; SIGN BOTH COPIES AND RETURN WITH CERTIFICATES OF INSURANCE AND PERMIT FEE (IDENTIFIED IN PERMIT)

↓

UPON RECEIPT OF ONE EXECUTED PERMIT, COMPLETE SAFETY ORIENTATION (SEE WEBSITE BELOW) PRIOR TO START OF WORK, AND NOTIFY ROADMASTER 10 DAYS PRIOR TO START OF WORK

← RR PROCESSING 3-4 WEEKS 4-6 WEEKS

❖ http://www.bnsf.com/in-the-community/faqs.html
SAFETY ORIENTATION WEBSITE: www.bnsfcontractor.com

Flowchart 4-4
Union Pacific Railroad
Right-of-Entry / Temporary Use Permits

(Associated with Design Only*)

NON-INTRUSIVE WORK (SURVEY, OBSERVATION OF SURFACE FEATURES)

CONTACT RAILROAD PROGRAM MANAGER REGARDING IDENTIFICATION OF RAILROAD INFORMATION ASSOCIATED WITH PROJECT LOCATION

CREATE MAP OF PROJECT LOCATION WITH NEAREST CITY, STATE, TRACK, RAILROAD RIGHT-OF-WAY WIDTH (IF KNOWN), PUBLIC ACCESS FROM WHICH RAILROAD RIGHT-OF-WAY WILL BE ACCESSED AND LAT/LONG OF LOCATION

DOWNLOAD AND COMPLETE NONINTRUSIVE CIVIL ENGINEERING SURVEY PERMIT FORM FROM UPRR WEBSITE ❖

OR

EMAIL PERMIT APPLICATION FORM AND LOCATION MAP TO UPRR AT THE EMAIL ADDRESS INDICATED IN THE PERMIT FORM

HARD COPY MAIL INCLUDING:
- **PERMIT APPLICATION FORM**
- **LOCATION MAP**
- **ADMINISTRATIVE FEE**

TO ADDRESS INDICATED IN THE PERMIT FORM

RECEIVE PERMIT; <u>MUST BE MAINTAINED ONSITE AT ALL TIMES</u> DURING NON-INTRUSIVE WORK

← RR PROCESSING

SUBMIT MINIMUM 10 BUSINESS DAYS PRIOR TO REQUESTED ENTRY DATE

INTRUSIVE WORK (NON-ENVIRONMENTAL) (GEOTECHNICAL INVESTIGATIONS, SEISMIC ASSESSMENT, UTILITY LOCATES/POTHOLING, ETC.)

CONTACT RAILROAD PROGRAM MANAGER REGARDING IDENTIFICATION OF RAILROAD INFORMATION ASSOCIATED WITH PROJECT LOCATION

DOWNLOAD AND COMPLETE APPLICATION – RIGHT-OF-ENTRY FORM FROM UPRR WEBSITE ❖

CREATE SITE PLAN OF PROJECT LOCATION WITH NEAREST CITY, COUNTY, STATE, TRACK, RAILROAD RIGHT-OF-WAY WIDTH (IF KNOWN), IDENTIFICATION OF FIXED OBJECTS, LAT/LONG AND RAILROAD MILEPOST LOCATIONS PER UPRR WEBSITE ❖

<u>COMPILE SUBMITTAL INCLUDING:</u>
- **PERMIT APPLICATION FORM**
- **LOCATION MAP**
- **SITE PLAN SHOWING AREAS OF WORK ON RAILROAD PROPERTY**

REGULAR PROCESSING

INCLUDE FEE WITH APPLICATION PACKAGE

RUSH HANDLING

INCLUDE <u>RUSH HANDLING FORM</u> AND FEE WITH APPLICATION PACKAGE (NOTE: NOT ALL REQUESTS CAN BE HANDLED VIA RUSH; SEE FORM FOR DETAILS ON UPRR WEBSITE ❖)

RECEIVE UNSIGNED PERMIT FROM RR; MUST SUBMIT PROOF OF REQUIRED INSURANCE AND FEES WITH SIGNED PERMIT TO UPRR FOR RAILROAD SIGNATURE AND APPROVAL

← RR PROCESSING

REGULAR PROCESSING: 30-45 DAYS FROM COMPLETE SUBMITTAL
RUSH HANDLING: 5-30 DAYS (SEE RUSH HANDLING FORM)

ENVIRONMENTAL WORK (SOILS ANALYSIS FOR ENVIRONMENTAL EVALUATION, REMEDIATION)

CONTACT RAILROAD PROGRAM MANAGER REGARDING IDENTIFICATION OF RAILROAD INFORMATION ASSOCIATED WITH PROJECT LOCATION

DOWNLOAD AND COMPLETE APPLICATION FOR ENVIRONMENTAL RIGHT-OF-ENTRY FORM FROM UPRR WEBSITE ❖

GENERATE AND COMPILE THE FOLLOWING FOR SUBMITTAL WITH THE APPLICATION FORM:
- **ENVIRONMENTAL SITE PLAN**
- **WORK PLAN**
- **REGIONAL MAP**
- **MONITOR WELL DESIGN, IF APPLICABLE**

(SEE UPRR WEBSITE FOR DETAILS ❖)

INCLUDE FEE WITH APPLICATION PACKAGE

RECEIVE UNSIGNED PERMIT FROM RR; MUST RETURN SIGNED PERMIT WITH PROOF OF REQUIRED INSURANCE TO UPRR (SEE UPRR WEBSITE ❖); UPRR WILL SIGN/EXECUTE PERMIT AND PROVIDE A COPY BACK TO APPLICANT

← RR PROCESSING

SUBMIT MINIMUM 60 DAYS PRIOR TO REQUESTED ENTRY DATE

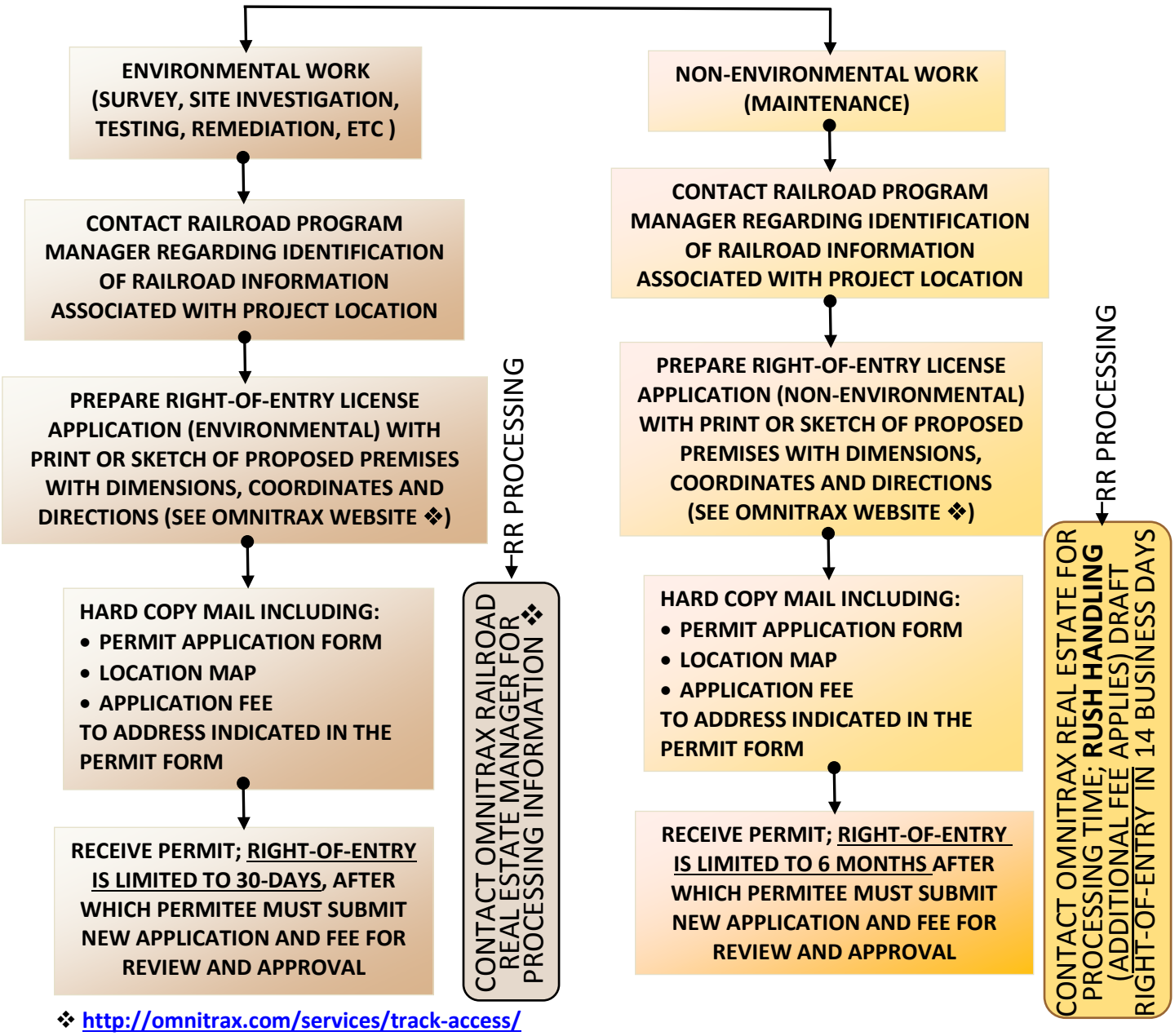
❖ http://www.up.com/real_estate/tempuse/procedures/index.htm

*NOTE: CONTRACTOR'S RIGHT-OF-ENTRY AGREEMENT ASSOCIATED WITH CONSTRUCTION IS SENT BY UPRR TO THE PROJECT CONTRACTOR SEPARATE FROM THESE PROCESSES.

COLORADO Department of Transportation

Flowchart 4-5
OmniTRAX ▲
Right-of-Entry / Temporary Use Permits

(Associated with Design Only*)



❖ http://omnitrax.com/services/track-access/

*NOTE: CONTRACTOR'S RIGHT-OF-ENTRY AGREEMENT ASSOCIATED WITH CONSTRUCTION IS SENT BY THE RAILROAD TO THE PROJECT CONTRACTOR SEPARATE FROM THESE PROCESSES.

▲OMNITRAX railroads in Colorado include Great Western Railway of Colorado, Utah Railway, Kyle Railroad, and Nebraska Kansas & Colorado Railway. For right-of-entry processes for other short line railroads in Colorado, contact the railroad directly (See Chapter 1).

4.12 PUC Approval

Under §40-4-106, C.R.S., the PUC has exclusive authority over all public railroad crossings. Approval of the PUC is required before any crossing is constructed above or below a railroad track. For more information about the PUC application process, visit https://www.colorado.gov/pacific/dora/rail.

4.13 Design Standards for Grade Separation Structures

The design of grade separation structures over railroads shall comply with AASHTO, CDOT, FHWA, and PUC minimum Standards. The design of grade separation structures under railroads shall comply with AREMA and the Railroad's standards as applicable.

The BNSF Railway and Union Pacific Railroad have jointly published the "Guidelines for Railroad Grade Separation Structures," which provides design criteria and standards for overhead and underpass structures, including trails. The link to the latest version of this document is available on the UPRR website at: http://www.up.com/real_estate/roadxing/industry/grade_separation/index.htm.

4.14 Vertical Clearances for Overhead Structures

A minimum vertical clearance of 23 feet – 4 inches measured from the top of highest point on rail to the lowest point on the bridge shall be provided for all overhead structures. This permanent vertical clearance must not be violated, even after taking into account the deflection of the superstructure. Additional considerations should be given to specific project or Railroad requirements.

4.15 Vertical Clearances for Underpass Structures

The minimum vertical clearance for underpass structures is measured from the top of highest point on the roadway surface to the lowest point on the superstructure. Class 1 railroads request different vertical clearances depending on structure type. The most common clearance is 16 feet – 6 inches but review UPRR/BNSF and AREMA standards, as well as PUC minimum requirements. Coordinate early with the Railroad to determine the required vertical clearance for that location and any possible variance requests for factors beyond structure cost.

4.16 Horizontal Clearances for Overhead Structures

Class 1 Railroads require all piers and abutments be located outside the Railroad right-of-way for structures over the Railroad. Other Railroads may have a similar requirement. When this requirement is impractical, you must provide written justification and request a variance. Design must also meet PUC minimum requirements. It is important to discuss with the Railroads their needs for access roads, drainage ditches, future freight and commuter tracks, as well as the correct location and clearances. Any horizontal clearance within 25' of center line of existing or future tracks shall require AREMA crash walls.

Highway Underpass – Horizontal clearances vary depending on Railroad, curvature of track, future tracks, access roads and other issues that need to be investigated with the Railroads prior to commencing design. Design must also meet PUC minimum requirements.

4.17 Construction Traffic Control At or Near Highway-Railroad Crossings

Highway construction at or near highway-rail crossings may require special traffic control measures to preserve highway and traffic safety, protect workers, and provide for the safe passage of trains through the project work zone. Construction traffic control activities involving railroads may occur on:

- Section 130 highway-rail grade crossing safety projects
- Projects requiring work on or near railroad tracks or property
- Highway-rail grade separation structure projects

Refer to the applicable section of the latest edition of the MUTCD for standard guidance on work in the vicinity of highway-rail grade crossings and for typical application of construction traffic control devices at highway-rail grade crossings. A properly designed construction traffic control plan needs to prevent vehicles from queuing on the tracks.

Section 130 safety projects are constructed by railroad forces on a force account basis. If the crossing is on a state highway, CDOT maintenance forces will be responsible to furnish construction traffic control. If the crossing is on a local road or street, the involved local agency is responsible for traffic control. This is to conserve limited Federal Section 130 funds so that monies will be spent on actual safety devices.

The project plans will include a tabulation of construction traffic control devices as a planning aid for the responsible party; and traffic control will be coordinated with the designated CDOT Resident Engineer who is responsible for project oversight.

Highway projects involving work on or near railroad tracks or crossings may, in addition to necessary traffic control measures at-grade crossings, also require the use of railroad flaggers. Railroad flaggers are Railroad employees or approved railroad flagger contractors who are authorized to stop or direct train traffic on the affected tracks. Whenever

the highway work may pose a danger to trains or interfere with normal train movements (construction equipment near tracks, bridge demolition work, etc.), the Railroad will require a flagger to be stationed at the project site, to monitor site conditions and to exert positive control over trains passing through the project. Railroad flagging requirements and payment provisions, if any, will be set forth in the project special provisions; railroad flagging rates (daily or hourly) will be specified by the Railroad.

Highway construction on railroad overpass structures may also require the use of railroad flaggers, to guard against hazards to trains such as falling debris, bridge falsework, or construction equipment.

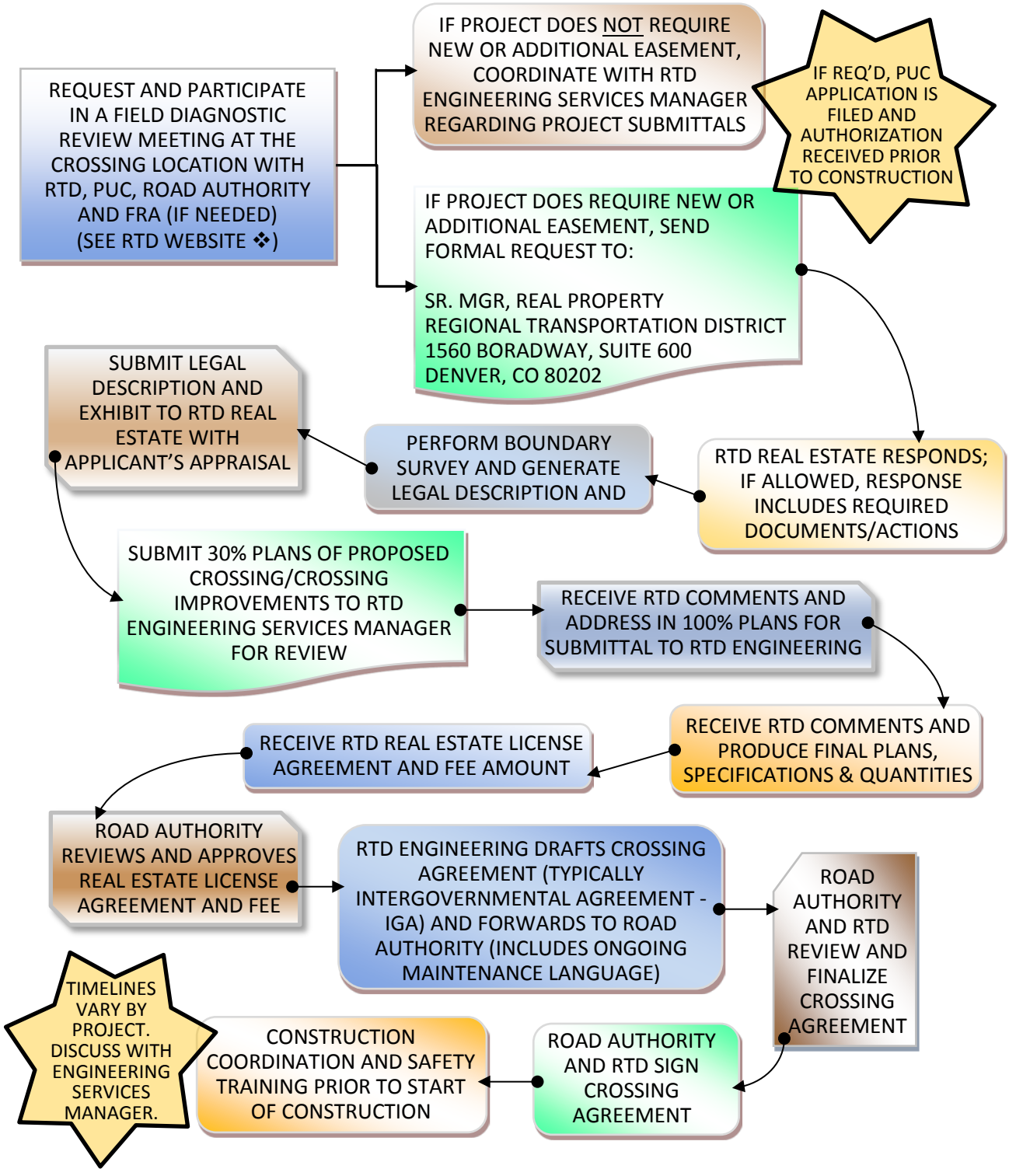
The required contract among CDOT, the Railroad, and involved local agency (if any) will set forth traffic control responsibilities, coordination requirements, and railroad flagging requirements, as applicable. The designer must coordinate any contract requirement with the Railroad Program Manager well in advance of planned construction to allow sufficient time for contract development and execution (see Chapter 5). CDOT field construction personnel must closely coordinate traffic control with the Railroad's and local agency's representatives.

4.18 Projects with Regional Transportation District (RTD)

For projects involving RTD, contact RTD to determine exact process elements specific to the proposed project. RTD requests to be involved at the earliest point possible in any roadway projects that cross their ROW and/or tracks. With enough advance warning, RTD can often coordinate and team on projects. Contact the RTD Engineering Services Manager for all Railroad crossing projects. See Flowchart 4-6 for the general track crossing process for RTD projects. For further information regarding engineering and construction projects involving RTD, visit: http://www.rtd-denver.com/ConstructionEngineering.shtml

Flowchart 4-6
Regional Transportation District (RTD)
General Track Crossing Process Flowchart

(At-Grade, Grade Separated, Crossing Widening, Crossing Improvements)



Chapter 5: Agreements

5.0 Introduction

A contract between CDOT and the Railroad is required and must be executed prior to any work being done on Railroad ROW. All CDOT projects fall under one of the following three types of agreements: Maintenance Consent, Master Agreements, and Construction and Maintenance Agreements. Flowchart 5-1 details the project coordination process for Railroads with Master Agreements with CDOT.

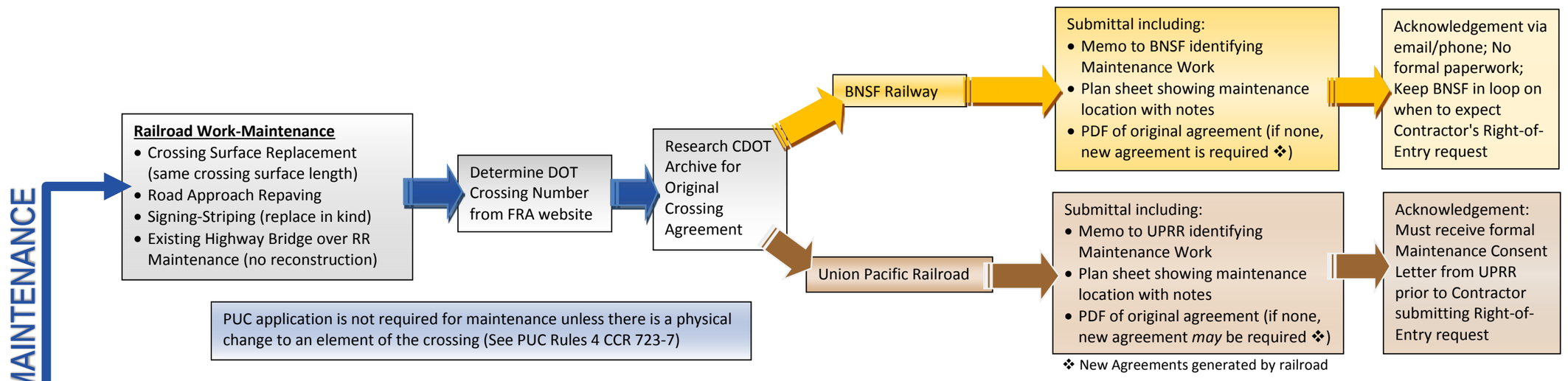
5.1 Types of Contracts

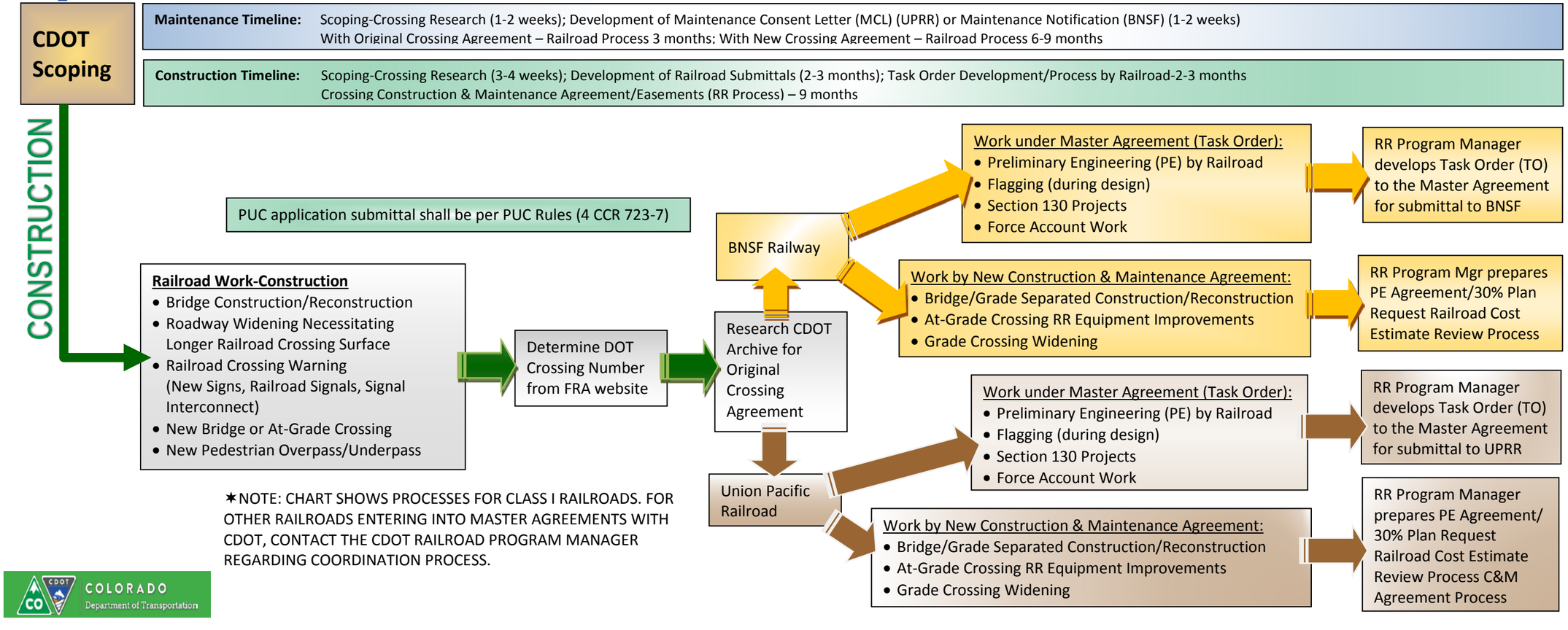
The following table outlines the types of agreements and how each may be utilized for a given situation or project.

Table 5-1: Railroad Contracts Administered by CDOT

Contract Type	Contract Use
Maintenance Consent Agreements	Typically include work conducted under the terms of the original contract, for example: resurfacing, bridge rail and curbing renewals.
2-Way Construction and Maintenance Contract	This type of contract is used on CDOT construction projects that receive a portion of its funding from the Section 130 program funds. Examples include grade separations, major widening construction projects that involve railroad work and railroad real property acquisition. When the at-grade crossing is on the state highway system, a 2-way contract between CDOT and Railroad is required.
3-Way Construction and Maintenance Contract	This type of contract is used on CDOT construction projects that receive a portion of its funding from the Section 130 program funds for local off system road crossing. Examples include grade separations, major widening construction projects that involve railroad work and railroad real property acquisition. When the at-grade crossing is off the state highway system, a 3-way contract between CDOT, Local Government, and Railroad is required.
Wireline Agreement	New CDOT fiber optic installations over or under a railroad facility
Pipeline Crossing	New CDOT drainage culvert either under or within railroad Right-of-Way
Encroachment Agreement	New CDOT storm drainage culvert parallel to the railroad tracks

Flowchart 5-1
Railroad Project Coordination
Railroads with Master Agreements with CDOT ✶





✶NOTE: CHART SHOWS PROCESSES FOR CLASS I RAILROADS. FOR OTHER RAILROADS ENTERING INTO MASTER AGREEMENTS WITH CDOT, CONTACT THE CDOT RAILROAD PROGRAM MANAGER REGARDING COORDINATION PROCESS.

COLORADO Department of Transportation

5.2 Preliminary Contract Preparation Procedures

5.2.1 CDOT Maintenance Projects with Class 1 Railroads

For CDOT projects with the Class 1 Railroads (BNSF and UPRR), CDOT has Master Agreements in place under which maintenance work can be completed. Maintenance work that can be completed under a Task Order to the Master Agreement includes:

- Railroad Crossing Surface Replacement (same length as existing; no widening)
- Roadway Approach Work (repaving; repair to existing pavement)
- Signing-Striping on Approaches
- Existing Highway Bridge Maintenance over Railroad (no reconstruction)

For these maintenance efforts, contact the Railroad Program Manager with the following information to coordinate the task order:

- Statement of Work, including roadway name and milepost, railroad name and milepost, crossing DOT number, city, county, type of crossing (at-grade/grade separated), and proposed maintenance to be completed
- Anticipated timeline of maintenance work
- Amount of time roadway forces or roadway contractor will be within railroad right-of-way
- Concept plan, sketch or schematic with notes indicating work to be done
- Photo log of site photos including work areas, with descriptions

5.2.2 CDOT Construction Projects with Class 1 Railroads

For CDOT construction projects with the Class 1 Railroads (BNSF and UPRR), additional information is needed to complete a project specific Construction & Maintenance Agreement for the work. Construction projects include:

- Reconstruction of an Existing Bridge
- Roadway Widening necessitating Longer Railroad Crossing Surface Material
- At-Grade Crossing New or Upgraded Railroad Crossing Warning Equipment
- New Bridge Construction
- New At-Grade Crossing
- New Pedestrian Overpass/Underpass

For these new construction projects, contact the Railroad Program Manager to determine the documents that will be needed for a Construction & Maintenance Agreement for the project. Generally, these documents will include:

- Project Statement of Work and Location Map
- Estimate of Time Contractor will be within Railroad Right-of-Way/Estimate of Time Needing Railroad Flagging
- CDOT Plans, Specifications and Estimate
- Existing Right-of-Way Agreement or Proposed Right-of-Way Plans and Legal Description

5.2.3 CDOT Project with other Freight Railroads/Local Agency Projects

For CDOT projects with other freight Railroads, and for Local Agency projects with any of the freight Railroads, an Agreement will be needed between the Local Agency/Road Authority and the Railroad for the work. The freight railroads generally use a Construction & Maintenance Agreement, and documents needed to compile the agreement are generally those listed above for new construction projects.

5.2.4 CDOT and Local Agency Projects with Tourist Railroads

For projects with tourist railroads, the railroad should be contacted directly to determine the form of agreement for new projects or maintenance work.

5.2.5 CDOT and Local Agency Project with RTD

For projects crossing commuter or light rail under the jurisdiction of RTD, contact RTD for the form of agreement for new projects or maintenance work.

5.3 Contract Development and Data Requirements

5.3.1 CDOT-Railroad Agreements

The Railroad Program Manager shall develop, or acquire from the Region, the Railroad, and PUC, all available supporting data needed for contract preparation. The following details must be defined in order to prepare the contract:

- There must be a clear scope of work. The work of each party to the contract, i.e., the Railroad and CDOT contractor, must be detailed in writing.
- Responsibility for maintenance of the improvements by the parties must be fully described.
- When ROW is to be obtained from the Railroad, language is to be included in the contract along with proper contract exhibits.
- Railroad billing and payment information is required in the contract.
- When a grade separation structure is involved and cost allocation between CDOT and the Railroad is being pursued, theoretical structure plans and cost estimates are to be included.
- If there is to be written advance authorization to the Railroad for either Preliminary Engineering and/or materials procurement, the funding and obligation must have been approved on the project.

The following requirements must be fulfilled before final contract preparation takes place and the contracts are circulated for signature:

- Project funds must be budgeted, appropriated, and otherwise made available with sufficient unencumbered balance remaining for payments.
- The scope of the project must be sufficiently defined for inclusion in the contract.
- The Railroad's written estimate of costs must have been received.

5.3.2 Local Agency-Railroad Agreements

For Local Agency projects with freight railroads, the freight railroad typically will generate the draft agreement for the Local Agency's review. In order to initiate communication with the freight railroad, it is recommended to compile the following information regarding the project:

- Statement of Work, including roadway name and milepost, railroad name and milepost, crossing DOT number, city, county, type of crossing (at-grade/grade separated), and proposed project work
- Anticipated timeline of project (design and construction)
- Indication of work to be done within railroad right-of-way
- Concept plan, sketch or schematic with notes indicating work to be done
- Photo log of site photos including anticipated work areas, with descriptions

Contract legal language generated by the Railroad will typically include the following information, to which project specific language and exhibits are attached:

- Parties Involved
- Effective Date and Term of the Contract
- Recitals of Authority, Purpose and References
- Definitions of Terms
- Statement of Work
- Maintenance Responsibilities after Construction
- Payment Terms and Parties
- Required Reporting and Notifications
- Record Documents
- Representations, Warranties, Liability, Breach, and Remedies
- Representatives of Each Party
- General Provisions
- Signature Page

Project specific documents attached to the agreement by the Local Agency typically include:

- Project Plans and Construction Estimate (non-Railroad work)
- Project Specifications
- Legal Descriptions and Exhibits for Temporary/Permanent Easements

Project specific documents attached to the agreement by the Railroad typically include:

- Project location map
- Railroad estimate
- Flagging rates
- Payment provisions
- Contractor entry requirements
- Utility requirements
- Insurance requirements
- Other coordination requirements

5.4 Draft Contract Preparation

5.4.1 CDOT-Railroad Agreements

Once all necessary contract information is gathered, the Railroad Program Manager shall work with the Contracting Unit staff to prepare the appropriate documents for the agreement, depending upon the project type and railroad involved.

Before processing the contract for final approvals, verify that the U and or C phase is properly authorized for the project (prior phase authorization is a necessary condition for Federal participation in costs). Phase authorization status is accessible through ZJ40 in SAP.

5.4.2 Local Agency-Railroad Agreements

For local agency projects involving railroads, generally the Railroads generate the agreement and forward to the local agency for review by local agency counsel. Agreements are not typically begun until the following activities have occurred:

- Initial contact has been made with the Railroad/project information provided
- Field Diagnostic Review of the project location has occurred, if required
- 30% Project design documents have been completed and submitted to the Railroad for review
- Local Agency has formally requested a Railroad Work Items Cost Estimate from the railroad (for work to be completed by Railroad forces, or Railroad Contractors)
- Local Agency has received and agreed to pay the Railroad Work Items Cost Estimate and notified the Railroad
- 100% Project design documents have been completed and submitted to the Railroad for review and approval

Generally, the Railroads do not begin agreements until projects have been fully designed and approved, because contract staff at many of the Railroads is limited, and they need assurance that the project will go forward, prior to expending staff time to generate the agreement.

The following requirements must be fulfilled before final contract preparation takes place and the contracts are sent out for signature:

Table 5-2: Requirements to Fulfill Before Final Contract Preparation

Project funds must be budgeted, appropriated, and otherwise made available with sufficient unencumbered balance remaining for payments.
The scope of the project must be sufficiently defined for inclusion in the contract.
The Railroad's written estimate of costs must have been received.
Final Right-of-Way documents
Final PUC approval
CDOT Controller review and Attorney General's office review and signature
Chief Engineer Signature
CDOT Controller Final Signature

5.5 Standard Contract Exhibits

The Railroad Program Manager shall upload the following exhibits on CDOT ProjectWise system Contracting Unit:

Table 5-3: Exhibits to Provide to the Contracting Unit
PUC approval to construct order/ruling
Local agency ordinance or resolution, as applicable, authorizing the agency's expenditures under the contract
General plan(s) of the crossing and proposed work including such items as: proposed highway and railroad alignment, bridge layout, highway or railroad detour(s), signal plans and circuitry diagram, topography, proposed grades, typical section, drainage structures, ROW limits, and any other data which are pertinent to the use or modification of railroad property
Railroad's force account estimate prepared in accordance with 23 CFR Part 140, Subpart I
State and Federally prescribed Civil Rights Exhibit concerning compliance with Title VI of the Federal Civil Rights Act of 1964
Special provisions (Green: Federal-aid projects, Yellow: 100% state- funded projects)
CDOT Form 1186a, (Contract Funding Increase/Decrease and Approval Letter)
Railroad protective liability insurance provisions (not required on Section 130 grade crossing improvement projects)
Contractor Right-of-Entry provisions and documentation (not required on Section 130 grade crossing improvement projects)
Advance PE Authorization letter (if applicable)
Easement documents with specific railroad requirements
Railroad exhibits

5.6 Distribution of Executed Contracts

Upon receipt of fully executed contract copies (one copy retained by the State Controller's Office), the Railroad Program Manager shall distribute the executed contracts as follows:

1. Send one original copy and an electronic copy (including all required exhibits and/or attachments) to the Railroad.
2. Submit one original contract (including all required exhibits and/or attachments) to CDOT Contract Files.
3. Send one electric or photocopy copy (including all required exhibits and/or attachments) to the Region Business Office, Utility Engineer, and Project Manager, if applicable.
4. Keep one photocopy copy (including all required exhibits and/or attachments) for the project file.

5.7 Utility Permits

An applicant (CDOT or its contractors and subcontractors) must obtain a Utility Occupancy License (Wire or Pipeline) through a formal application process before entering railroad property. To initiate the process, the applicant must fully complete the Railroad's application form.

A permit to be on Railroad property for utility survey should be executed prior to all survey work on railroad property. See Railroad's website for this application.

Determine if this project is to be defined as a public project or a third party utility project. Railroad Real Estate Departments define (1) the type of permit required if the utility is acting as a public service or private use, (2) purpose of the permit, and (3) the name and owner "licensee" of the utility being permitted. The permit will be classified and defined initially as a "private" or "public" project by the Railroad's real estate permitting department.

Upon receipt of the formal application and fees, the Railroad's real estate team will review the package for approval. Application does not guarantee approval. If the application is approved, a Utility License agreement will be drafted and forwarded to the applicant for signature. The partially executed agreement must be returned to the Real Estate Department accompanied by the fees and relevant proof of insurance (outlined in the agreement) prior to execution.

For "standard processing", permit process takes 6-8 weeks. "Expedited processing" can reduce the processing time to 1-2 weeks for an additional fee defined as an "expedite fee". If the application and plans are returned to applicant for revisions in order to meet required engineering specifications, the expedited process may not be allowed by the railroad, or, may take longer than two weeks.

There are various types of permits dependent on the purpose and need of the applicant. Further clarification can be found at each railroad's permitting site but generally the permit classifications are as follows:

1. Public Crossings: At-Grade Roadway Improvement Projects, Grade Separation Bridge Projects, New Road Crossing Openings, Parallel Roads/Highways and Recreational Trails, and Private and Public Roads Crossing Pipelines: storm drain, water, gas, culverts. The Industry and Public Projects (IPP) group is the main point of contact for local communities and public agencies developing and working on public projects. Public projects may include public or private crossings, crossing surface renewals, road reconstruction at crossings, over- or underpasses, signalized crossing projects, recreational trails, etc.

2. Private Utility Crossing Permits: Advertising signboards, drainage modifications, environmental cleanup or

access, house moves, mineral or water rights, property leases, property purchases, temporary Right-of-Entry such as for movie production, seismic survey requests, pipeline crossings, pipeline encroachments, wireline crossings, wireline encroachments, pipe and wire maintenance and utility upgrades on existing utilities.

Specific engineering installation and construction guidelines are established by the Railroads: AREMA Manual for Railway Engineering Chapter 1 - PART 5 Pipelines. To purchase a copy of these AREMA guidelines send an application to AREMA.

Every Railroad has a permitting procedure and engineering policy that applies to all public and private utilities, including electric power, telephone (including fiber optics), telegraph, cable television, water, gas, oil, petroleum products, steam, chemicals, sewage, drainage, irrigation and similar lines that are located, adjusted or relocated within the property under the jurisdiction of railroad right-of-way. Such utilities may involve underground, surface, or overhead facilities. Utilities will be located so as to provide a safe environment and shall conform to the current "National Electrical Safety Code," "American Waterworks Association Specifications," "Federal Pipeline Safety Regulations," and "The American Railway Engineering and Maintenance Association Specifications." Where laws or orders of a public authority prescribe a higher degree of protection, then the higher degree of protection prescribed shall supersede the provisions of this manual.

Pipelines laid longitudinally on railroad property shall be located as far as practical from any tracks or other important structures and as close to the outer right-of-way property line as practical.

Parallel encroachments on railroad right-of-way are to be avoided, if possible, and understood that any and all costs associated with this parallel utility line is at the expense of attachment to bridges and other structures.

The Utility Owner will not be permitted to attach to bridges or route facilities through drainage structures or cattle passes. Utilities are not to be attached to other railroad structures without the written approval of railroad Engineering. As a general rule, overhead power, communication and cable television line crossings at bridges must be avoided.

There is an option to file an application with the PUC if there are issues coming to an agreement between the road authority and the Railroad.

5.7.1 Utility Design

The design of all utility installations will be the responsibility of the Utility Owner.

The plans for the proposed installation shall be submitted with the application.

Plans shall be drawn to scale showing the relationship of the proposed utility line to the railroad tracks, the angle of crossing, location of valves and vents, the railroad mile post and engineering station, railroad property lines and general layout of tracks and other railroad facilities. The plans should include a cross-section (or sections) from the field survey that will show utility placement in relation to actual profile of ground and tracks. If tunneling is proposed, method of supporting tracks or driving of tunnel shall be shown. The geotechnical study, when required, should be included.

The plans should contain the following data for carrier pipe and casing pipe:

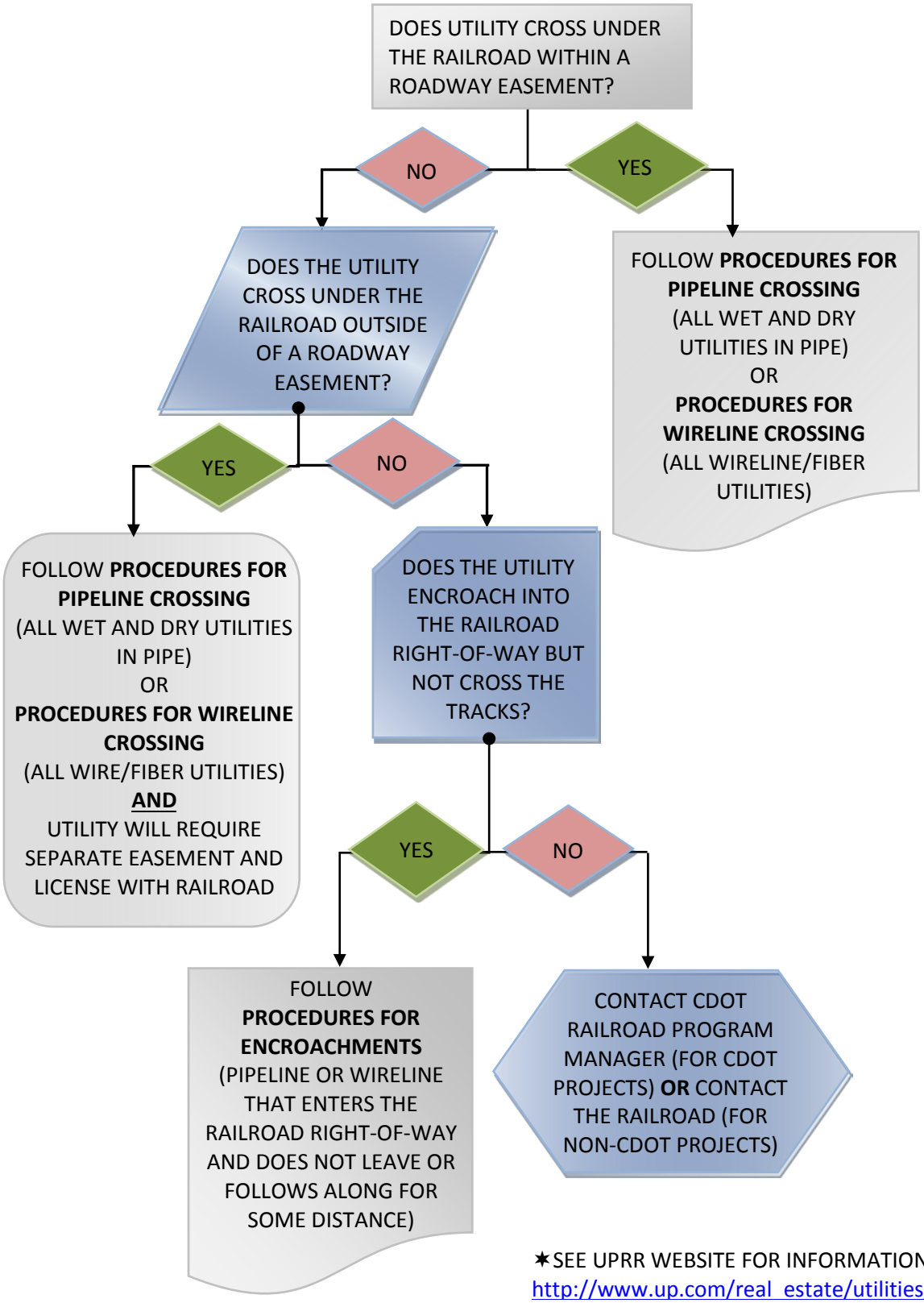
- Contents to be carried
- Inside diameter
- Pipe material
- Specifications and grade of material
- Wall thickness
- Actual working pressure
- Type of joints
- Longitudinal joint factor
- Coating
- Type, size, and spacing of insulators or supports method of installation
- Vents-Number, size, height above ground seals-both ends, one end
- Cover (top of tie to top of pipe or casing)
- Cover (other than under tracks)
- Cover (at ditches)
- Cathodic protection

5.7.2 Utility Construction

- The execution of the work on railroad property shall be subject to the inspection and direction of the Railroad's Roadmaster or his representative.
- A representative of Railroad's Signal Department must be present during installation if railroad signals are in the vicinity of the proposed construction.

Flowcharts 5-2 through 5-7 provide process elements and guidance/references for utilities involving UPRR, BNSF, and OmniTRAX.

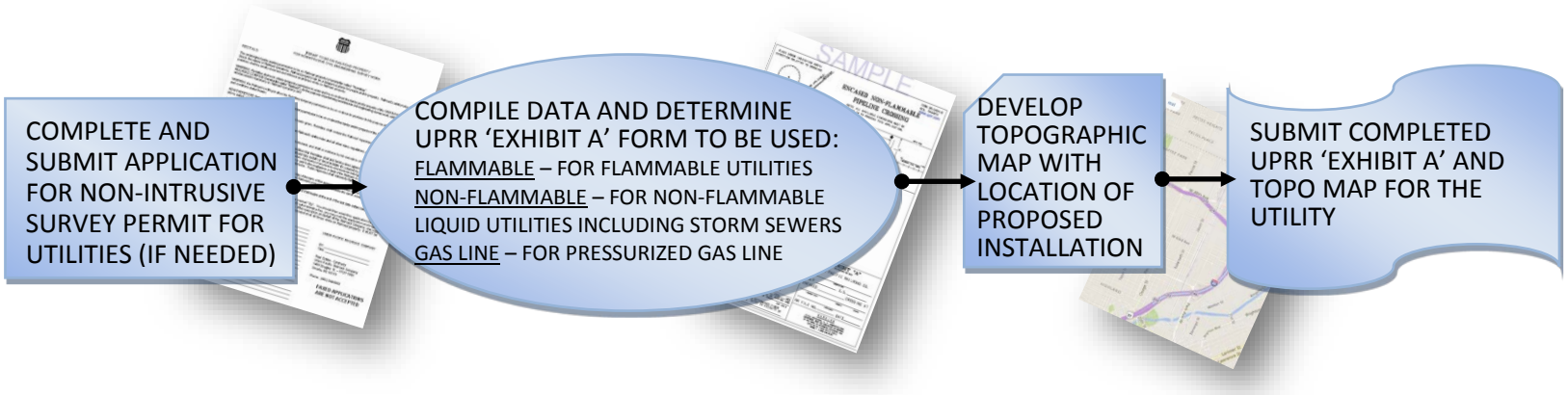
Flowchart 5-2
Union Pacific Railroad
Utility Coordination✶



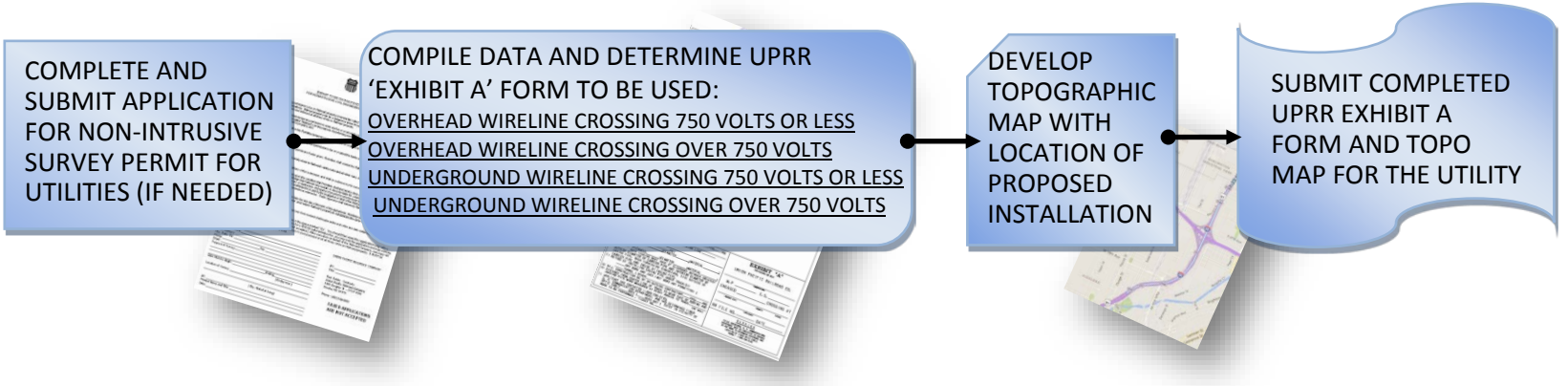
✶SEE UPRR WEBSITE FOR INFORMATION:
http://www.up.com/real_estate/utilities/index.htm

Flowchart 5-3
Union Pacific Railroad
Utility Process: Wireline / Pipeline Crossing ✶

PROCEDURES FOR PIPELINE CROSSING:



PROCEDURES FOR WIRELINE CROSSING:



TIMELINE: FOLLOWING SUBMITTAL OF COMPLETED APPLICATION (ONLINE SUBMITTAL AND RUSH HANDLING AVAILABLE)
STANDARD (FEE APPLIES) 30-45 DAYS; RUSH (STIPULATIONS & FEES APPLY) 5-DAY OR 15-DAY

✶SEE UPRR WEBSITE FOR FORMS AND INFORMATION: http://www.up.com/real_estate/utilities/index.htm

Flowchart 5-4
Union Pacific Railroad
Utility Process: Wireline / Pipeline Encroachment ✶

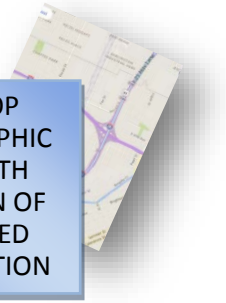
PROCEDURES FOR WIRELINE/PIPELINE ENCROACHMENT:

COMPLETE AND SUBMIT APPLICATION FOR NON-INTRUSIVE SURVEY PERMIT FOR UTILITIES (IF NEEDED)

DEVELOP PLANS FOR ENCROACHMENT TO INCLUDE:

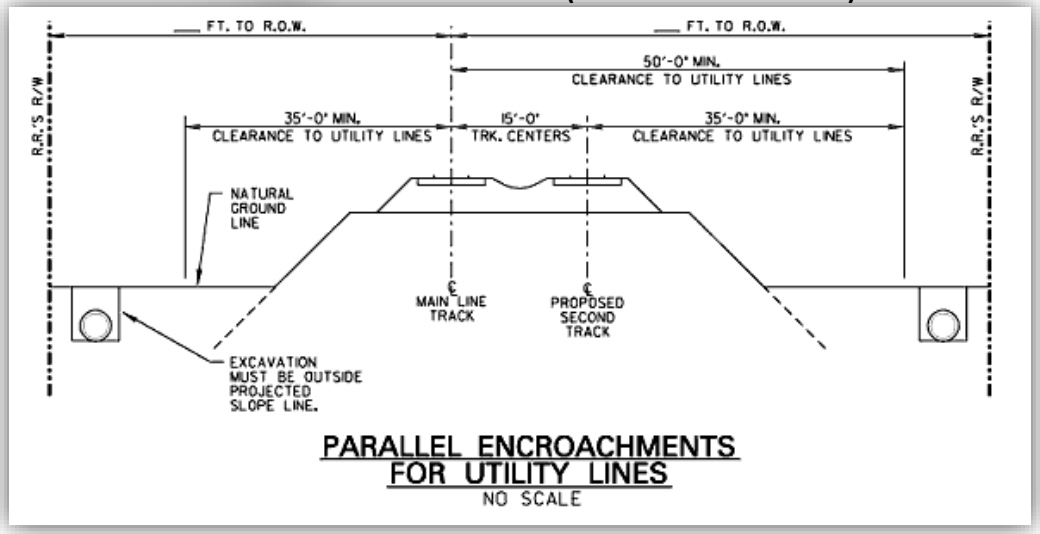
- GENERAL NOTES
- DETAILS
- MAP OF ENCROACHMENT ROUTE
- DETAILS FOR TRENCHING, DIRECT BURIAL OR POLE LINE
- SHORING PLANS
- UTILITY MARKER DETAILS
- SURROUNDING LANDMARKS (ROADS, BRIDGES, CULVERTS, WATERWAYS, FENCES, OTHER UTILITIES, ROW, RAILROAD MP)
- DIMENSIONS TO RIGHT ANGLE WITH THE TRACK

DEVELOP TOPOGRAPHIC MAP WITH LOCATION OF PROPOSED INSTALLATION



SUBMIT PLANS AND TOPO MAP FOR THE UTILITY

UPRR PARALLEL ENCROACHMENT DIAGRAM (Source: UPRR Website)

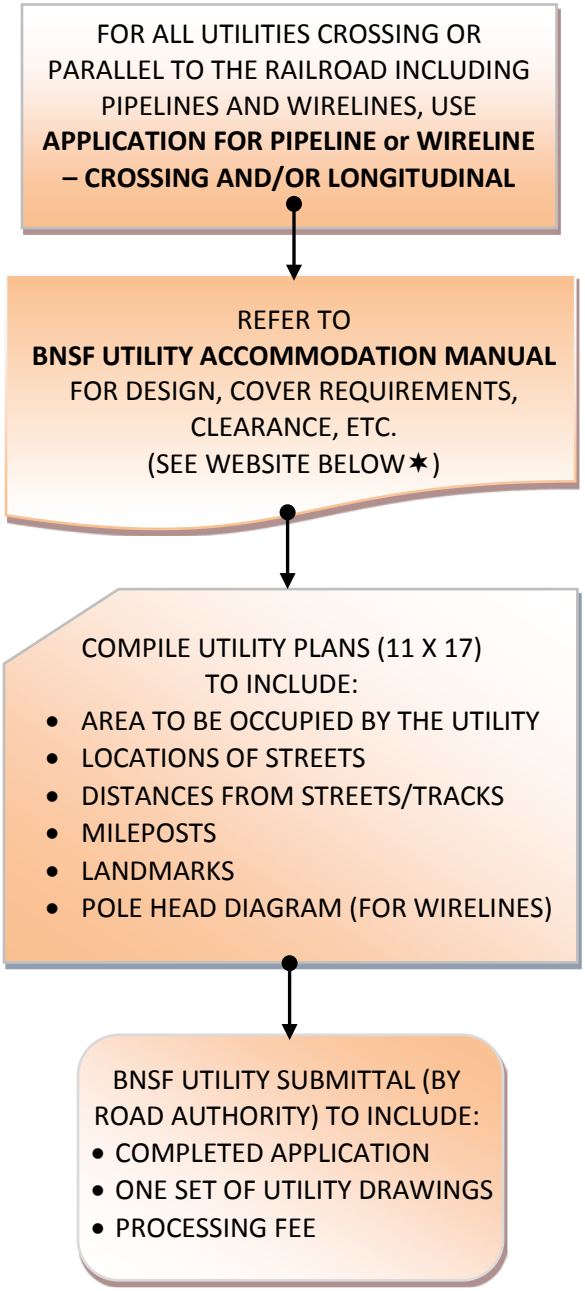


NOTE: UPRR WILL NOT ALLOW UTILITIES HANDLING GAS OR LIQUIDS TO BE ATTACHED TO BRIDGES. COMMUNICATIONS LINES MAY BE ATTACHED WITH UPRR APPROVAL.
ALL PIPELINES SHALL BE BURIED A MINIMUM OF 5 FEET BELOW NATURAL GROUND.

TIMELINE: FOLLOWING SUBMITTAL OF ENGINEERING PLANS - PROCESS TIME (FEE APPLIES) 90 - 120 DAYS (ONLINE SUBMITTAL AVAILABLE; NO RUSH HANDLING AVAILABLE)

✶SEE UPRR WEBSITE FOR FORMS AND INFORMATION: http://www.up.com/real_estate/utilities/index.htm

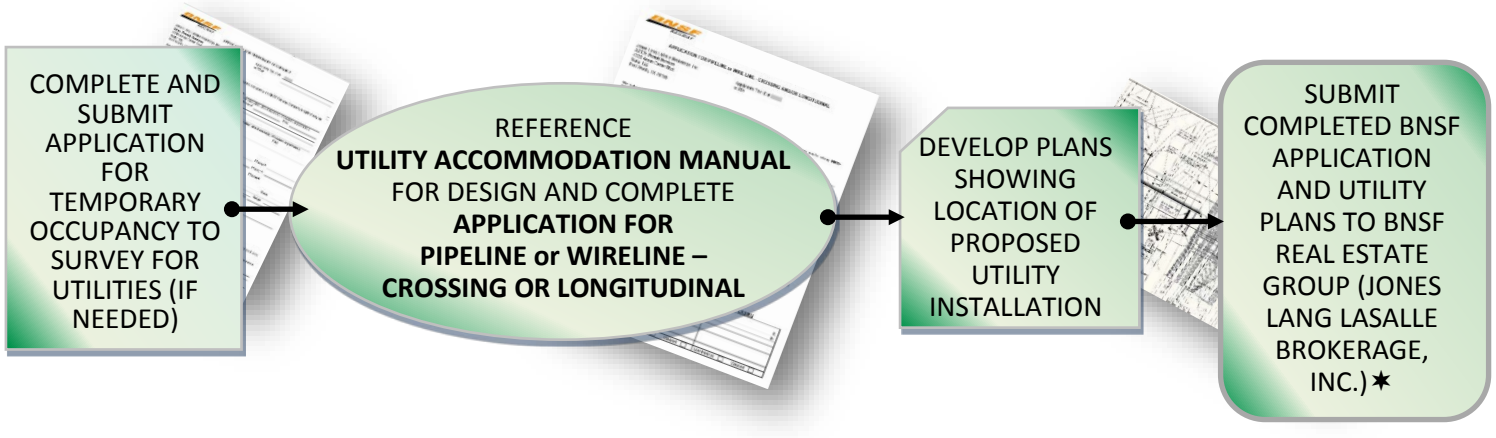
Flowchart 5-5
BNSF Railway
Utility Coordination✶



✶SEE BNSF WEBSITE FOR INFORMATION:
http://www.bnsf.com/about-bnsf/faqs.html

Flowchart 5-6
BNSF Railway
Utility Process: Wireline / Pipeline Crossing or Longitudinal ✶

PROCEDURES FOR PIPELINE/WIRELINE CROSSING AND/OR LONGITUDINAL (STANDARD PROCESSING):

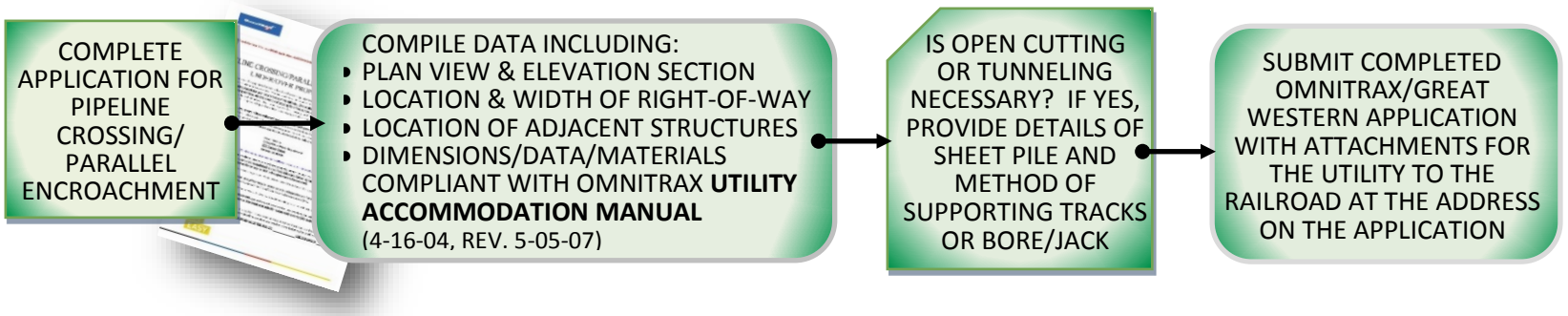


TIMELINE: FOLLOWING SUBMITTAL OF COMPLETED APPLICATION/PLANS
STANDARD (FEE APPLIES) 10-15 WORKING DAYS; NO RUSH AVAILABLE FOR PUBLIC PROJECTS

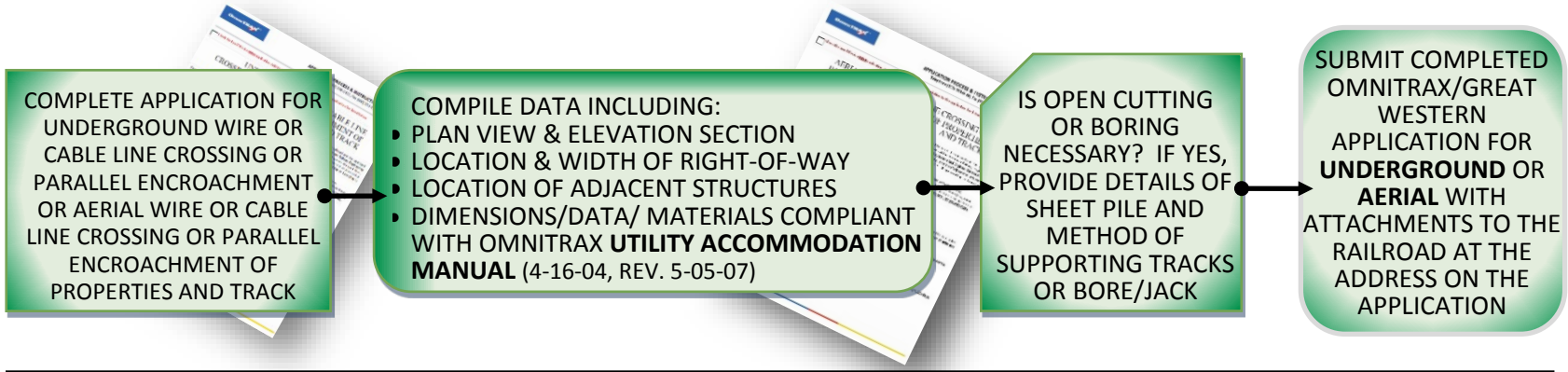
✶SEE BNSF WEBSITE FOR FORMS AND INFORMATION: http://www.bnsf.com/about-bnsf/faqs.html

Flowchart 5-7
OmniTRAX
Utility Process: Pipeline Crossing / Parallel Encroachment✶
Aerial / Underground Wire / Cable Crossing / Parallel Encroachment✶

PROCEDURES FOR PIPELINE CROSSING/PARALLEL ENCROACHMENT:



PROCEDURES FOR AERIAL OR UNDERGROUND WIRE OR CABLE LINE CROSSING/PARALLEL ENCROACHMENT:



TIMELINE: UPON SUBMITTAL OF COMPLETED APPLICATION
STANDARD (FEE APPLIES) 120 DAYS (MAX); RUSH (STIPULATIONS & FEES APPLY) 30 DAYS TO DRAFT AGREEMENT

✶ **NOTE:** ADDITIONAL INFORMATION CAN BE FOUND AT: http://omnitrax.com/services/track-access/

5.8 Other Types of Agreements

When CDOT has a highway project that encroaches into the railroad ROW, it is important that CDOT, its contractor, and/or consultant sign a Right-of-Entry Agreement and a Contractor's Right-of-Entry with the Railroad before beginning any work or activity inside the railroad property.

Furthermore, if the project plans call for work activities that require permanent occupation of the Railroad ROW, such as boring a conduit or water pipe under a railroad track(s), a permit must be obtained from the Railroad. Each Railroad has different requirements for issuing permits and licenses, which can be obtained on their websites. A drawing of the construction plans that concern the railroad property should be sent with the permit.

The Railroads require that liability insurance of the standard amounts be obtained before work on Railroad ROW will be permitted. If workers and equipment are within 25 feet of the track, a railroad flagger(s) must be present. If work is being done by CDOT forces, an insurance certificate may be obtained from the CDOT Office of Risk Management.

The table below shows the different activities that require filing of an application for permits or licenses with the Burlington Northern and Santa Fe Railway Company.

Table 5-4: BNSF Property Permits and Licenses

Permit/License	Example
Consent to Assign	Selling property, name change
Environmental Access	Soil sample for contamination; install monitoring wells; topographical survey for contamination
License Agreement - General	Culvert, drainage ditch, storm water fall-out
Pipeline Crossing	Installing a pipeline for water, natural gas, sewage, oil, petroleum, etc.
Roadway Surfacing/Resurfacing	Surface/Resurface/Overlay existing road (not due to road widening)
Temporary Occupancy	Geotechnical study of the soil, survey/inspection, construction access
Wireline Crossing or Longitudinal Communication & Electric	Communication line for fiber optic, phone, CATV; electric supply line for voltage, circuits, electricity

Source: http://m.bnsf.com/about-bnsf/faqs.html

Detailed information on licensing and permitting for other railroads can be found on the following websites:

Table 5-5: Other Railroad Property Permits and Licenses Websites

Railroad	Website
UPRR	http://www.uprr.com/reus/index.shtml
RTD	http://www.rtd-denver.com/UtilityConstruction.shtml
OmniTRAX	http://omnitrax.com/services/track-access/

Chapter 6: Public Utilities Commission Authority

COLORADO
Department of Transportation

6.0 PUC Authority

The PUC has the primary jurisdictional authority over all public highway-rail crossings, including opening, closing, upgrading, overpasses or underpasses, and the allocation of costs in accordance with PUC rules. Links to applicable PUC rules and regulations are shown below:

Direct link to the Colorado Public Utilities Commission Rules and Regulations, 4 Code of Colorado Regulations (CCR) 723-1, Part 1:
http://www.sos.state.co.us/CCR/GenerateRulePdf.do?ruleVersionId=6492&fileName=4%20CCR%20723-1

Direct link to the Colorado Public Utilities Commission Rules and Regulations, 4 CCR 723-7, Part 7:
http://www.sos.state.co.us/CCR/GenerateRulePdf.do?ruleVersionId=6875&fileName=4%20CCR%20723-7

6.1 Applicant

CDOT's Railroad Program Manager shall be required to assemble and prepare a PUC application for crossing projects on the state highway system. CDOT's Office of Attorney General (OAG) shall be required to file applications with the PUC for crossing projects on the state highway system and is considered the applicant. If the crossing improvement is not on the state highway system but is being done as part of a state highway construction project, CDOT will take the lead and file a joint application with the local agency.

For all other crossings located on local public roads, the local agency is considered the applicant and is required to file an application with the PUC.

Applicants who may submit applications to the PUC shall be in accordance with the current version of 4 CCR 723-7-7203.

An application for authority to construct a crossing where the highway or pathway currently exists may be made by the railroad, railroad corporation, rail fixed guideway, transit agency, or other person, firm, or corporation that will own the tracks proposed to be constructed.

(a) An application for authority to construct a crossing where the highway or pathway currently exists may be made by the railroad, railroad corporation, rail fixed guideway, transit agency, or other person, firm, or corporation that will own the tracks proposed to be constructed.

(b) An application for authority to construct a crossing where the tracks or other facilities currently exist may be made by the appropriate road authority that will own the highway or pathway.

(c) An application for authority to alter or abolish a crossing may be made by the appropriate railroad, Railroad Corporation, rail fixed guideway, or transit agency that owns the tracks at the crossing, or road authority that

owns the highway or pathway at the crossing.

(d) An application for authority to install or modify active warning or passive warning devices may be made by a railroad, Railroad Corporation, rail fixed guideway, or transit agency that owns the tracks at the crossing, or road authority that owns the highway or pathway. The Colorado Department of Transportation may make application for Federal Section 130 crossing projects in conjunction with, or on behalf of the road authority.

(e) An application for authority to construct, alter or abolish a utility crossing may be made by the appropriate public utility, railroad, railroad corporation, rail fixed guideway, transit agency or other person, firm, or corporation that will own or owns the tracks or other facilities proposed to be constructed. Applications for utility crossings can be made if the public utility and railroad, Railroad Corporation, rail fixed guideway, transit agency or other person, firm or corporation that will own or owns the tracks or other facilities proposed to be constructed are unable to reach agreement on the terms and conditions of a negotiated agreement.

(f) An application that includes a request for authority to install temporary safety measures as part of an application to install or modify active warning or passive warning devices may be made by a railroad, Railroad Corporation, rail fixed guideway, transit agency, or road authority. The Colorado Department of Transportation may make application that includes a request for temporary safety measures for Federal Section 130 crossing projects in conjunction with, or on behalf of the road authority.

Flowchart 6-1 details the Colorado Public Utilities Commission (PUC) Application process. Flowchart 6-2 details the process for 2-party Railroad agreements. Flowchart 6-3 details the process for 3-party Railroad agreements.

Flowchart 6-1
Colorado Public Utilities Commission (PUC) Application Process ❖

PROJECTS <u>INVOLVING A RAILROAD</u> THAT REQUIRE A PUC APPLICATION INCLUDE:

1. Bridge Construction/Reconstruction (Existing Highway/Pathway bridge over rail or Existing Railroad bridge over highway/pathway)
2. Roadway Widening Necessitating Longer Railroad Crossing Surface, or Addition of Sidewalks at a crossing
3. Railroad Crossing Warning Modifications (New Signs, Railroad Signals, Signal Interconnect) at a crossing
4. New Bridge (overpass or underpass) or New At-Grade Crossing
5. New Pedestrian/Pathway Overpass/Underpass

↓

CONTACT CDOT RR PROGRAM MANAGER TO DETERMINE OTHER ACTIVITIES OR PROCESSES THAT NEED TO OCCUR PRIOR TO COMPILING THE PUC APPLICATION, INCLUDING FIELD DIAGNOSTIC REVIEW AND INITIAL CONTACT WITH RAILROAD

↓

<u>FOR AT-GRADE CROSSING IMPROVEMENTS:</u>

1. DETERMINE RAILROAD WORK NEEDED (CROSSING SURFACE, RAILROAD CROSSING WARNING DEVICES, INTERCONNECT TO ROADWAY TRAFFIC SIGNAL, ETC.)
2. FOLLOWING RAILROAD REVIEW OF CONCEPT SUBMITTAL, DEVELOP 30% PLANS AND SUBMIT TO RAILROAD WITH REQUEST FOR RAILROAD ESTIMATE (FOR WORK TO BE DONE BY RAILROAD FORCES) AND SCHEMATIC OF RAILROAD EQUIPMENT
3. COMPILE INFORMATION REQUIRED FOR PUC APPLICATION IN ACCORDANCE WITH 4 CCR 723-7❖
4. PROVIDE DRAFT APPLICATION TO CDOT RR PROGRAM MANAGER FOR REVIEW, COORDINATION OF REVIEW BY ATTORNEY GENERAL'S OFFICE, CIRCULATION FOR SIGNATURES AND OFFICIAL FILING WITH THE PUC

<u>FOR GRADE SEPARATED CROSSING IMPROVEMENTS:</u>

1. DETERMINE RAILROAD WORK NEEDED (FLAGGING, TEMPORARY ACCESS, ETC.)
2. FOLLOWING RAILROAD REVIEW OF CONCEPT SUBMITTAL, DEVELOP 30% PLANS AND SUBMIT TO RAILROAD WITH REQUEST FOR RAILROAD ESTIMATE (FOR WORK TO BE DONE BY RAILROAD FORCES)
3. <u>FOR RAILROAD BRIDGES</u>, ADDRESS RAILROAD 30% COMMENTS AND PROGRESS 60% PLANS FOR RAILROAD REVIEW (FOR HIGHWAY BRIDGES, 60% NOT REQUIRED)
4. COMPILE INFORMATION REQUIRED FOR PUC APPLICATION IN ACCORDANCE WITH 4 CCR 723-7
5. PROVIDE DRAFT APPLICATION TO CDOT RR PROGRAM MANAGER FOR REVIEW, COORDINATION OF REVIEW BY ATTORNEY GENERAL'S OFFICE, CIRCULATION FOR SIGNATURES AND OFFICIAL FILING TO THE PUC

↓

UPON FILING, REQUIRED RECIPIENTS ARE NOTIFIED OF APPLICATION (30 DAYS TO COMMENT)

↓

<u>UNCONTESTED APPLICATION: 60 DAYS</u>

- 2 WEEKS-PUC 'COMPLETENESS' REVIEW
- 30-DAY NOTIFICATION PERIOD
- 2 WEEKS TO RULING

<u>CONTESTED APPLICATION: 12 MONTHS</u>

- CONTESTED APPLICATIONS ARE REMANDED TO AN ADMINISTRATIVE LAW JUDGE (ALJ) FOR HEARING

❖FOR ADDITIONAL INFORMATION SEE PUC WEBSITE: https://www.colorado.gov/dora/puc

Flowchart 6-2
2-Party PUC Applications
CDOT-Local Agency

PROJECT TYPES THAT REQUIRE A 2- PARTY PUC APPLICATION:

- **LOCAL AGENCY FUNDED PROJECTS** THAT WILL PROVIDE AT-GRADE OR GRADE SEPARATED IMPROVEMENTS TO A HIGHWAY-RAIL CROSSING **ON A STATE HIGHWAY**

↓

CONTACT CDOT REGION UTILITY ENGINEER OR RAILROAD PROGRAM MANAGER WITH THE FOLLOWING INITIAL PROJECT INFORMATION:

- NAME OF STATE HIGHWAY
- CITY, COUNTY
- NAME OF RAILROAD, IF KNOWN
- EXISTING CROSSING TYPE
- PROPOSED PROJECT IMPROVEMENTS
- SOURCE OF FUNDING FOR PROJECT
- TIMELINE OF PROPOSED PROJECT

↓

THE LOCAL AGENCY SHALL PREPARE THE PUC APPLICATION IN CONFORMANCE WITH THE PUC *RULES REGULATING RAILROADS, RAIL FIXED GUIDEWAYS, TRANSPORTATION BY RAIL AND RAIL CROSSINGS, 4 CODE OF COLORADO REGULATIONS 723-7*.

THE DRAFT PUC APPLICATION SHALL BE SUBMITTED TO THE RAILROAD PROGRAM MANAGER FOR REVIEW. RAILROAD PROGRAM MANAGER SHALL COORDINATE REVIEW BY ATTORNEY GENERAL'S OFFICE.

↓

UPON FINAL REVIEW AND APPROVAL OF THE PUC APPLICATION BY THE ATTORNEY GENERAL'S OFFICE AND THE LOCAL AGENCY'S LEGAL REPRESENTATIVE, **THE PUC APPLICATION WILL BE SIGNED BY THE LOCAL AGENCY THEN RETURNED TO CDOT FOR ATTORNEY GENERAL SIGNATURE AND FORMAL FILING BY CDOT.**

QUESTIONS REGARDING PUC APPLICATIONS OR AGREEMENTS INVOLVING CDOT SHOULD BE DIRECTED TO THE CDOT RAILROAD PROGRAM MANAGER

Flowchart 6-3
3-Party Railroad Agreements
CDOT-Local Agency-Railroad

PROJECT TYPES THAT REQUIRE A 3- PARTY RAILROAD AGREEMENT:

- **LOCAL AGENCY FUNDED PROJECTS** THAT WILL PROVIDE AT-GRADE OR GRADE SEPARATED IMPROVEMENTS TO A HIGHWAY-RAIL CROSSING **ON A STATE HIGHWAY THAT REMAINS UNDER THE JURISDICTION OF CDOT**
- **SECTION 130 FUNDED PROJECTS (FUNDS ADMINISTERED BY CDOT)** THAT WILL PROVIDE AT-GRADE OR GRADE SEPARATED IMPROVEMENTS TO A HIGHWAY-RAIL CROSSING **ON A ROADWAY UNDER LOCAL AGENCY JURISDICTION**

↓

3-PARTY RAILROAD AGREEMENTS INVOLVING CDOT WILL BE GENERATED BY CDOT RAILROAD PROGRAM MANAGER AND REVIEWED BY THE ATTORNEY GENERAL'S OFFICE.

FOR LOCALLY FUNDED PROJECTS ON A STATE HIGHWAY, CDOT WILL REQUEST PROJECT INFORMATION NEEDED FOR THE AGREEMENT FROM THE LOCAL AGENCY.

↓

UPON FINAL REVIEW AND APPROVAL OF THE AGREEMENT BY THE ATTORNEY GENERAL'S OFFICE AND THE LOCAL AGENCY'S LEGAL REPRESENTATIVE, THE AGREEMENT WILL BE CIRCULATED FOR SIGNATURE AS FOLLOWS:

1. **LOCAL AGENCY SIGNATURE**
2. **ATTORNEY GENERAL SIGNATURE**
3. **STATE CONTOLLER SIGNATURE**
4. **CDOT CHIEF ENGINEER SIGNATURE**
5. **RAILROAD SIGNATURE**

QUESTIONS REGARDING PUC APPLICATIONS OR AGREEMENTS INVOLVING CDOT SHOULD BE DIRECTED TO THE CDOT RAILROAD PROGRAM MANAGER

6.2 Railroad Program Manager Responsibilities

The Railroad Program Manager responsibilities include but are not limited to:

Table 6-1: Railroad Program Manager Responsibilities
With the assistance of the OAG, as appropriate, prepare and file the PUC application (signed by the Chief Engineer and Resident Engineer or designated representative) on CDOT's behalf.
Assist local agency applicant in the completion of the application, if requested by such agency.
Submit to the PUC evidence of the executed contract and other information as may be required as soon as practicable and in accordance with the PUC's rules, procedures and orders.
Track the progress of applications through the point at which a Final Order is issued; and coordinate with the Region, Railroad, and involved local agency to ensure timely filing is made and proper authorization is received.
Complete compliance filings (final plans, contracts, and notice of completion).

6.3 Application Requirements

While there is standard boilerplate language utilized in the PUC applications, each application must be tailored to fit the project. Exhibits to the application are unique to each project. This is a legal document and must be carefully prepared. The PUC can reject an application if it is not complete when submitted, starting the application process over.

The PUC application shall be in the form, and follow procedures, as prescribed by the PUC; the full requirements are identified in 4 CCR 723-7-7204(a), and at a minimum shall contain the following:

Table 6-2: PUC Application Requirements
Contact name, mailing address, and email address for the relevant Railroad Company
Contact name, mailing address, and email address for the relevant Highway Authority
Contact name and mailing address of all persons, including adjacent property owners, public utilities, and local government agencies that may be interested in or affected by the application.
Railroad Mile Post (M.P.) or reference point
FRA inventory crossing ID number http://safetydata.fra.dot.gov/OfficeofSafety/PublicSite/Crossing/Crossing.aspx
Total estimated cost (Federal/State/Highway Authority/other portions)
Total estimated cost for the railroad force account work
Exhibits (including general layouts and plan sheets/crossing plan
Structure length
Existing average daily traffic (ADT)
Future year ADT
Number of trains per day (from RR or FRA inventory)
Speed of trains (MPH) (from RR or FRA inventory)
Construction start date (month/year)
Construction completion time (months or completion date)
Utility company name, contact person and address of all known utilities within the project limits
Names and addresses of adjacent property owners, public utilities, and governmental agencies
Description current warning devices
Description of proposed improvements

6.4 Timing of Application Filing

The application shall be completed and filed as soon as practicable after all information required therein becomes known, which is typically on or about the time of contract preparation, and in any event, the application shall be filed sufficiently in advance of the planned start of work, as to not delay the project, pending final PUC action on the application.

The Railroad Program Manager may coordinate with the PUC's Rail Safety Engineer to send a draft PUC application, hard copy or electronic, for review. The PUC will not consider the application complete at this time, and engaging the PUC earlier in the process could result in a more complete application, saving time during the final application process.

6.5 Notice of Application Filed

Once the application is submitted, the PUC will review the package and a deficiency letter may be sent by Staff of the Commission after an initial review of the filing, but the Commission will not take any action to deem the application either complete or incomplete until after the after the application comes off notice. The applicant has 10 days to submit missing information. Once the application is submitted, the PUC will send a document titled "Notice of Application Filed" to the CDOT Railroad Program Manager, and copies of the document by first-class mail or through efiling to all the adjacent property owners, utility companies and other affected parties (Counties, Cities) that are in the application.

6.6 Entry of Appearance and Notice of Intervention

Upon filing an application to the PUC for a railroad related project, in accordance with 4 CCR 723-7, 7208, notification of the application is provided by the Commission to all persons who, in the opinion of the Commission, would be interested in or affected by the grant or denial of the application, including those interested persons the applicant lists in its application.

Noticed persons have 30 days to provide an Entry of Appearance and Notice of Intervention in accordance with 4 CCR 723-1. Interventions may or may not be in contest or opposition of the application. The Entry of Appearance and Notice of Intervention can generally take one of two forms:

1. Entry of Appearance and Notice of Intervention as a matter of right applies to individuals who have been granted automatic right by statute or Commission Rule to be a party and participate in a matter before the Commission.

2. Entry of Appearance and Notice of Intervention by permissive intervention applies to individuals who have to request permission to be included as a party to the proceeding, as they do not have a right to participate per statute or Commission Rule.

Anyone filing to contest or oppose the application must also request a hearing in the matter and provide the grounds for intervention, the claim, or defense for which intervention is being sought, including the specific interest that justifies intervention, and the nature and quantity of evidence, then known, that will be presented if intervention is granted by the Commission.

Standard practice is for legal counsel for the road authority or railroad to file the Entry of Appearance and Notice of Intervention on the road authority's or Railroad's behalf. For CDOT projects, the OAG would make this filing. For local agency projects, legal counsel for the local agency would make this filing.

6.7 Hearings

If a filed application is contested or opposed, the PUC encourages the applicant to meet with the protesting party to negotiate an agreement. If no agreement is reached, a hearing will be set before the PUC or an administrative law judge

(ALJ). The ALJ will typically schedule prehearing conferences after the case is initially referred to them in order to discuss procedural matters regarding the case. Additionally settlement negotiations may occur during the course of a proceeding, but it is not required that any party, that contests or opposes an application, meet with the applicant to negotiate. The parties have the right to due process and the ALJ may elect to conduct hearings until a ruling can be ordered. In contested applications, up to a twelve (12) month duration is expected.

6.8 Order Granting Application

Once all parties sign a construction and maintenance agreement for the project, file the agreement electronically through efiling process, or send hard copies compliant with the PUC's procedures. The PUC will send a Final Order that permits the project to be constructed per the terms of the application. The Final Order will include a deadline for filing the signed construction and maintenance agreement, which must reflect the conditions of the Final Order, and may also require that additional documents be filed with the PUC.

Chapter 7:
CDOT Railroad Billings, Payment Process and Audits

COLORADO
Department of Transportation

7.0 CDOT Central Point of Contact

Because CDOT has five engineering regions and there are numerous local agencies in Colorado, the Railroads have requested that a centralized location for billing submittals be designated within CDOT. The Railroad Program Manager fulfills this role. Furthermore, CDOT has determined that it would be far more effective if the railroad billings were channeled to one office. It was also felt that this would expedite payment to the Railroads and allow the CDOT Resident Engineers to be more involved in their total project leadership responsibilities.

The railroad invoice will be sent to the Railroad Program Manager in CDOT Headquarters. The name and address of the Railroad Program Manager will be shown in the construction and maintenance agreement. The Railroad Program Manager sends copies of billing to:

- Region Utility Engineer or the Resident Engineer
- Region Business Office
- Project Engineer if the project is on the State Highway System

7.1 Time Frame for CDOT Billing Submittal

The Railroad usually sends partial billings when a project is in progress. The Railroad shall provide its final and complete billings of all incurred costs to the Railroad Program Manager within one year following completion of the railroad work as described in the contract.

The billing for such work shall reference the project number and subaccount number. CDOT shall provide the Railroad with written notice of the completion of the work, thus marking the beginning of the one-year period. If the Railroad does not submit the final bill to CDOT's Railroad Program Manager within that one-year time period, as required by paragraph 140.922 of 23 CFR, previous payments to the Railroad for the railroad work may be considered as final and complete reimbursement for that work, and the CDOT may close out the project with no further financial obligation.

7.2 CDOT Billing Review and Approval

The Region Utility Engineer or the Resident Engineer is responsible for:

Table 7-1: Regional Utility Engineer or Resident Engineer Bill Review and Approval Responsibilities
Reviewing the billing
Certifying the receipt of goods and services
Verifying the accuracy of the billing, retainage and payment amounts
Verifying that the billings and services are in compliance with contract terms
Verifying that the billings do not exceed the contract encumbrance amount

After the billing review and acceptance, the Region Utility Engineer or Resident Engineer will sign the payment voucher request. In order to ensure accurate and timely encumbrance liquidation, the voucher request must also contain a contract reference in the appropriate coding block. This number is written on the first page of the contract.

The vendor number must be written in the box at the top of the voucher. The Region Utility Engineer or the Resident Engineer should identify the Federal-aid matching ratio in the transmittal memo, on the invoice, and on the voucher. This information can be found in the contract.

7.3 Local Agency Billing Review and Approval

If the project is under a local agency jurisdiction, the local agency is responsible for reviewing and verifying the Railroad's billings to ensure that they are for eligible charges and for work actually performed. The local agency will sign the billings as approved for payment. The local agency shall also be responsible for:

Table 7-2: Local Agency Bill Review and Approval Responsibilities
Reviewing the billing
Certifying the receipt of goods and services
Verifying the accuracy of the billing
Verifying that the billings and services are in compliance with contract terms
Verifying that the billings do not exceed the contract encumbrance amount

The local agency billing approval process shall be as follows:

- The local agency will be sent a copy of the billing by the Railroad Program Manager; then
- The local agency will notify the Region Utility Engineer or the Resident Engineer that the railroad force account work has been completed and endorses bill payment; then
- The Utility Engineer or the Resident Engineer shall notify the Region Business Office to pay the invoice.

7.4 CDOT Payment Processing

Because the contract language requires that payments be made promptly, it is important to send the railroad bill payments out as quickly as possible. The Region Business Office obtains the signature of the Region Utility Engineer or the Resident Engineer on the invoice, verifies that it is in agreement with terms of the contract, and initiates a payment voucher. CDOT has 30 days to process and pay the billing. Payment information for BNSF and UPRR can be found at the following web addresses:

BNSF: http://m.bnsf.com/suppliers/contact-us.html
UPRR: http://www.up.com/suppliers/order_inv/oriss/index.htm

7.5 Audit and Follow Up

The Railroad's billings for incurred costs for the railroad work may be audited by CDOT or other agencies for compliance with 23CFR, Part 140, Subpart 1, and the Railroad shall allow such an audit to be performed.

Labor charges for any railroad work performed by railroad personnel shall be in accordance with then-current working agreements between the Railroad and its employees in order to be considered eligible charges.

Chapter 8:
Highway and Railroad Track Maintenance Operations

COLORADO
Department of Transportation

8.0 Crossing Surface Maintenance and Replacement

The Colorado PUC's Rule 4 CCR 723-7-7211 establishes the details related to Crossing Surface Maintenance and Replacement. Per Rule 7211(a), whenever a highway, pathway, or sidewalk is removed at an existing crossing or constructed at a new crossing, or the highway, pathway, or sidewalk portion of an existing crossing is widened, the road authority shall bear all costs to remove, construct or widen crossing surfaces at the crossing including the cost of the crossing surface; the highway, pathway, and/or sidewalk approaches; and highway and/or pathway construction traffic control. Extensions of crossing surfaces for the addition of sidewalks to an existing crossing require only the addition of crossing surface panels for the sidewalks and do not require the entire crossing surface to be replaced. Rule 7211(a) also requires roadway authorities to pay for the cost of railroad flagging to maintain the roadway surface between tracks at multiple track crossings.

Per Rule 7211(b), whenever a track is removed at an existing crossing, or constructed at a new crossing, or the track portion of an existing crossing is widened, the railroad, railroad corporation, rail fixed guideway, transit agency, or owner of the track shall bear all costs to remove, construct or widen the track including the cost of the crossing surface; the highway, pathway, and or sidewalk approaches; and highway and/or pathway construction traffic control.

Per Rule 7211(c), in addition to projects described in Rule 7211(b), railroads, railroad corporations, rail fixed guideways, transit agencies, or owners of the track shall bear all costs of their initiated projects (e.g., capital improvement projects) involving crossings.

Per Rule 7211(d), the crossing surface shall be of plank, concrete, rubber, flangeway, and asphalt, or other suitable material that is compatible with the highway approaches, and shall be of the same width as the pavement or other surfacing material in the approaches of the adjacent highway including the roadway shoulders. The crossing surface material shall make a reasonably smooth riding surface over the track or tracks and be approximately level with the top of the rails. Wherever practicable, the tracks at multiple track crossings shall be level with the mainline track.

Per Rule 7211(e), the Commission may determine the materials to be used in a crossing at the time the Commission considers the application regarding the crossing.

Per Rule 7211(f), whenever practicable, sidewalks should be detached from the curb and constructed behind the crossing signal mast. The crossing surface material for sidewalks need not be continuous with the crossing surface material of the vehicle travel lanes.

Per Rule 7211(g), pathway crossings of mainline trackage shall be grade separated. Rail fixed guideway and rail fixed guideway systems are exempted from this requirement. Sidewalks or pathway crossings under railroad open deck bridges or trestles shall have a protective cover (roof) extending a reasonable distance beyond the edges of the bridge or trestle to prevent material or debris from striking users of the sidewalk or pathway crossings. Sidewalks and pathway crossings under closed deck bridges may have either a protective cover extending a reasonable distance beyond the edges of the bridge or may have fencing attached to the bridge structure to prevent material or debris from striking users of the sidewalk or pathway crossing.

Per Rule 721(h), a railroad, Railroad Corporation, rail fixed guideway, transit agency, or owner of the track shall maintain the grade crossing surface from the outside end of the tie to the outside end of the tie at single track crossings. Railroads, railroad corporations, rail fixed guideways, transit agencies, and owners of the track shall promptly assist any road authority to the extent required to maintain the road surface between tracks at multiple track crossings. The road authority shall bear the cost of railroad flagging required to maintain the road surface between tracks at multiple track crossings.

Per Rule 7211(i), the road authority that owns the highway shall maintain, at its own expense, the highway approaches up to the outside end of the ties.

Per Rule 7211(j), the total costs to maintain an existing crossing surface, including, but not limited to, materials, labor, traffic control, railroad flagging, and any necessary permits shall be shared equally between the railroad, railroad corporation, rail fixed guideway, transit agency, or owner of the track and the road authority.

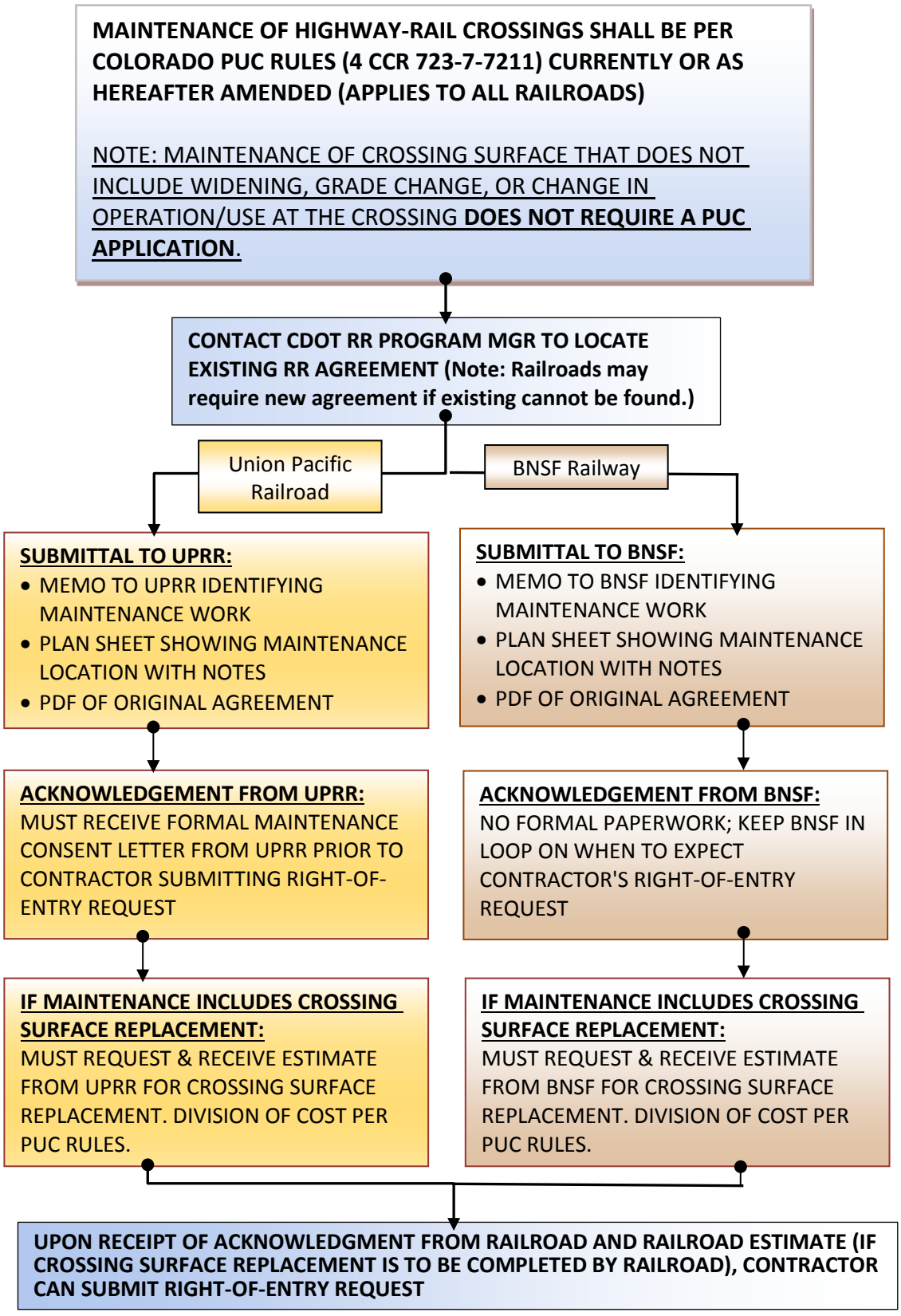
Per Rule 7211(k), every railroad, Railroad Corporation, rail fixed guideway, transit agency, or owner of the track, at all points in Colorado where its tracks cross any public highway or public pathway at- grade, shall remove all obstructions along the tracks that block the view of motorists, bicycles, and/or pedestrians as outlined in Rule 7301(c). The Commission may determine what obstructions are to be removed to secure reasonable safety.

In certain instances, CDOT and the Railroad may determine that a higher quality and/or more durable crossing surface may be installed rather than the minimum standard surface typically utilized by the Railroad. The cost is typically CDOT's cost participation in order to attain ride ability and durability benefits for the motorist that would otherwise not be forthcoming. CDOT might also fund crossing surface improvements or adjustments in cases where changes in the roadway geometry so require.

Railroad crossing surface complaints should be directed to CDOT's Railroad Program Manager. The Railroad Program Manager will contact the responsible party for the Maintenance of Track, also known as the Roadmaster or Manager of Track Maintenance. The Region Utility Engineer should notify the CDOT Railroad Program Manager that a crossing surface needs repair. The CDOT Railroad Program Manager will determine whether or not the surface complaint is actually between the end of the railroad ties or on the crossing approach and contact the responsible party.

Flowchart 8-1 details the At-Grade Highway-Rail Crossing Maintenance Process.

Flowchart 8-1
At-Grade Highway-Rail Crossing Maintenance



8.1 Crossing Surface Materials

The most common material being used by the railroads is concrete, but most have several types of materials approved in their standards such as:

- Precast Concrete
- Wood
- Asphalt
- Rubber

The best crossing surface materials and methods will be decided as a collaborative effort between the Railroad and road authority, and the railroads will typically install the crossing surface. Crossings located in curves or near switches may need special ordering and delay projects. Communicate with the railroad to determine if curved or special crossing panels are needed.

8.2 PUC Adjudication

The PUC Rules identify the division of costs for maintenance of crossings between the road authority and the railroad (4 CCR 723-7-7211).

The Commission's rules in effect at the time controls what parties are responsible for costs and work. If there is disagreement as to who is responsible for the costs of a particular crossing surface, the road authority may make application to the PUC requesting a determination. The Commission will adjudicate the matter if requested.

Some road authorities have previously existing crossing maintenance agreements with the railroad or railroads passing through their communities. If both parties continue to abide by the terms of those maintenance agreements, there is no need for PUC action. If one or both parties disagree with the terms of the existing maintenance agreement, any application to the PUC will result in a division of costs pursuant to the PUC Rules.

8.3 Highway Overlay Projects

When a CDOT highway resurfacing project includes replanking of a railroad crossing surface, the Railroad's cooperation must be sought early in the project development. The Resident Engineer should send a letter to the operating Railroad formally requesting partnership with CDOT to repair deteriorating crossing surfaces. Typical CDOT contributions to crossing surface improvement may include:

- Construction traffic control
- Procurement of crossing surface materials
- Installation or removal of crossing surface and any affected highway, pathway, or sidewalk approaches

The breakdown of responsibilities and expectations are spelled out in 4 CCR 723-7-7211.

8.4 Traffic Control during Maintenance Operations

On State Highways, CDOT is responsible for arranging or providing traffic control at approaches of highway-rail crossings when railroad forces are engaging in maintenance work at crossings. The type of traffic control typically varies, from the closure of a shoulder or a lane to full closures. Typically, railroad crossing renewals require the full closure of the crossing from 1-4 days, depending on the scope of work. Planning and MHT approval by the CDOT Region Traffic Engineer may also be required along with the local road authority approval for traffic detours.

Special care needs to be taken when providing traffic control for any work at a grade crossing, no matter how minor. Motorists rely on receiving clear and consistent messages to guide them while driving. Traffic control needs to be able to provide adequate warning of the changed condition to the motorist. If lane reductions at a grade crossing are necessary, the design should follow the MUTCD for lane drops and occur prior to the grade crossing to avoid confusion and potential on-track queuing.

Appendices

COLORADO
Department of Transportation

Appendix A
CDOT Forms

CDOT Forms used for project work are available to CDOT staff through the following link: https://www.codot.gov/library/forms/cdot-forms-by-number.

The most commonly used CDOT Forms on rail-related projects are as follows:

- CDOT Form 895 - Force Account and Finding in the Public Interest
- CDOT Form 995 - Activity Report for Safety Project
- CDOT Form 1048 - Project Scoping/Clearance Record
- CDOT Form 1180 - Standards Certification and Project Plans, Specifications and Estimate Approval
- CDOT Form 1186 - Contract Funding Increase/Decrease and Approval Letter
- CDOT Form 1212 - Local Agency Section 130 Final Construction Acceptance Certification
- CDOT Form 1243 - Local Agency Contract Administration Checklist

Appendix B
Sample Railroad Project Documents

Appendix B presents examples of the most common form letters and other documents typically used in a project involving railroad work.

- Preliminary Engineering Task Order
- Railroad Cost Estimate (UPRR)
- UPRR Maintenance Consent Letter
- PUC Application
- PUC Compliance Filings as Ordered (Project Completion)
- UPRR Submittal Checklist
- Contractor's Right-of-Entry Agreement C and C-1 (BNSF)
- Right of Entry Agreement - UPRR
- Utility Clearance Letter - CDOT
- CDOT – Notice to Proceed Letter Sample
- CDOT Maintenance Traffic Control Plan Sample
- Railroad Project Diagnostic Form

Preliminary Engineering Task Order
Sample Document

Preliminary Engineering Task Order Sample Document (1 of 3)

EXHIBIT B – SUPPLEMENT

Date: 08/01/12	Master Contract CMS #: 12 HAA 40760	Supplement # 4 Task Order # 4	CMS Routing # 12 HA3 42764

In accordance with Section 5(G)(ii) of the Master Contract between the State of Colorado, acting by and through the Department of Transportation ("**State**"), and Union Pacific Railroad Company ("**Railroad**") beginning March 1 , 2012, and ending on February 28, 2017 ("**Master Contract**"), the provisions of the Master Contract and any amendments thereto affected by this Supplement are modified as follows

1) **Supplement Description.** Railroad shall perform the task(s) listed in Railroad's Preliminary Engineering Proposal or General Flagging Proposal or Section 130 Supplement No. 4, dated July 20, 2012, which is incorporated by reference herein in accordance with the provisions of the Master Contract.

2) **Price/Cost.** The maximum amount payable by the State for performance of this Supplement is $20,000.00. The total Master Contract value including all previous amendments, Supplements, etc., is $65,000.00.

3) **Performance Period.** Railroad shall complete its obligations under this Supplement on or before **February 28, 2017.**

4) **Effective Date.** The effective date hereof is upon approval of the State Controller or May 31, 2012, whichever is later.

THE PARTIES HERETO HAVE EXECUTED THIS SUPPLEMENT

*** Persons signing for Railroad hereby swear and affirm that they are authorized to act on Railroad's behalf and acknowledge that the State is relying on their representations to that effect.**

RAILROAD Union Pacific Railroad Company	STATE OF COLORADO John W. Hickenlooper GOVERNOR Department of Transportation
Agreement by Railroad pursuant to the terms of the Master Contract	By: _____ By: Timothy J. Harris, PE, Chief Engineer

ALL CONTRACTS REQUIRE APPROVAL BY THE STATE CONTROLLER

CRS §24-30-202 requires the State Controller to approve all State contracts. This Supplement is not valid until signed and dated below by the State Controller or delegate. Railroad is not authorized to begin performance until such time. If Railroad begins performing prior thereto, the State of Colorado is not obligated to pay Railroad for such performance or for any goods and/or services provided hereunder.

STATE CONTROLLER
David J. McDermott, CPA

By: _____
Department of Transportation

Date: 8/16/2012

UP MasterAgreement.01. Jan12 – orignated from approved OSC PSC template Rev 1/12/11 Exhibit B

Preliminary Engineering Task Order Sample Document (2 of 3)

PRELIMINARY ENGINEERING PROPOSAL
FROM UNION PACIFIC RAILROAD COMPANY
TO STATE OF COLORADO ACTING BY AND THROUGH COLORADO DEPARTMENT OF TRANSPORTATION

This Preliminary Engineering Proposal ("**PE Proposal**") is made this 20th day of July 2012, from the Union Pacific Railroad Company ("**Railroad**") to the State of Colorado acting by and through the Department of Transportation ("**CDOT**"). Railroad and CDOT are collectively identified as the "**Parties**".

Railroad proposes the following:

A) CDOT provided notice to Railroad of its intent to advance an existing public grade crossing improvement project ("**Project**") located at the existing junction of a state highway and UPRR tracks as more fully described below.

CDOT/Public Road involved:	**SH 82**	UPRR Milepost #	**360.19**
DOT Crossing #:	**253-558X**	UPRR Subdivision	**Glenwood Springs**
City:	**Glenwood Springs**	County:	**Garfield**
State:	**Colorado**		
Agency Project Number:		**FBR 0821-094, 18158**	

B) Pursuant to the Parties Master Agreement for at-grade public highway crossings on the Railroad's tracks with roadway rights of way that require safety improvements ("**Master Agreement**") dated March 1, 2012, CMS #12 HAA 40760, Railroad proposes to collaborate in the development of the Project by performing the following (collectively, the "**Preliminary Services**"):

1) Preliminary engineering and other related services including procurement of materials, equipment rental, manpower and deliveries to the job site and all direct and indirect overhead labor/construction costs including Railroad's standard additive rates;
2) Development of cost estimates;
3) Review of the project's preliminary layouts; and
4) Submit current train and switching moves.

C) Railroad estimates that the Preliminary Services for the Project will be **$20,000.00**.

D) Upon CDOT's execution of a Supplement (as defined in the Master Agreement) for the Preliminary Services, CDOT's payment and Railroad's performance for the Preliminary Services shall be made pursuant to the provisions of the Master Agreement. Railroad will refer to CDOT's project number (identified above) and shall forward Invoices to CDOT pursuant to the Master Agreement.

Preliminary Engineering Task Order Sample Document (3 of 3)

E) Railroad verifies that train movements at the Project crossing number 7 freight and 2 passenger per day with a maximum timetable speed of 40 MPH for freight trains and 50 MPH for passenger trains.

F) Railroad verifies that switching movements at the Project crossing number 0 per day with a maximum speed of 40 MPH.

G) This PE Agreement is the complete proposal from the Railroad for the Preliminary Services for the Project identified above and may be modified by written amendment only, signed by Railroad.

RAILROAD:
Union Pacific Railroad Company

By: John P Hovanec
Print Name of Authorized Individual Title: John Hovanec

Print Title of Authorized Individual: AVP Engineering

Date: July 20, 2012

Railroad Cost Estimate
Sample Document

Railroad Cost Estimate Sample Document (1 of 2)

Material And Force Account Estimate

CDOT

Estimate Creation Date: 05/09/2017 Number: 111323 Version: 1

Estimate Good for 6 Months Until 11/09/17

Location: GREELEY SUB, SIMN, 55-93.64
Buy America: Yes

Description of Work: Greeley Sub MP 86.04 Carr, CO Stevenson Ave DOT#804893F WO#36777 PID#100948
100% Recollectable

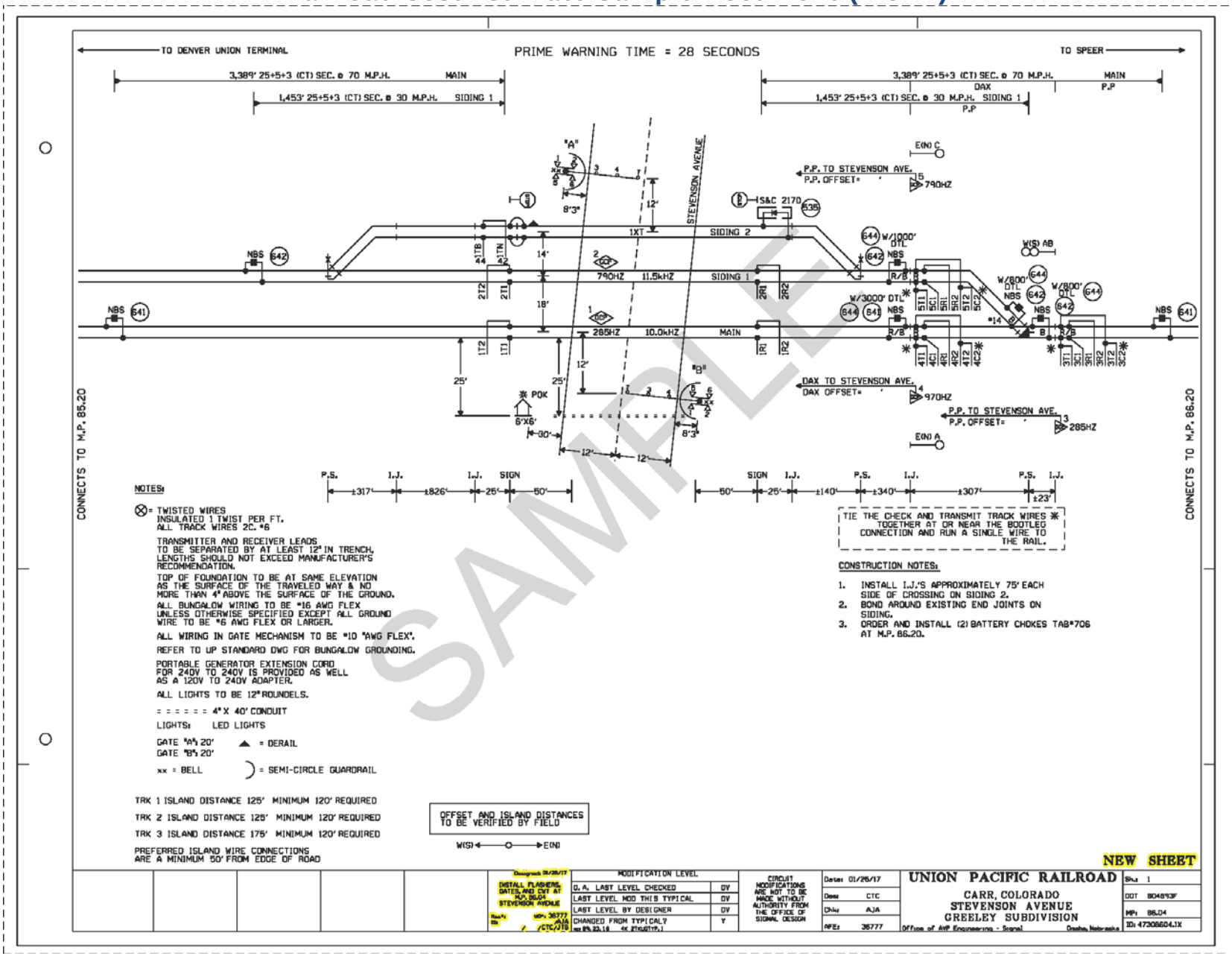
COMMENTS	FACILITY	Description	QTY	UOM	Unit Cost	LABOR	MATERIAL	TOTAL	UP%	Agency%
SIGNAL										
		Xing - AC/DC Island Only	1	LS	6,007.00	0	6,007	6,007	0	6,007
		Xing - Dax Cable 1000'	1	EA	6,440.00	4,000	2,440	6,440	0	6,440
		Xing - Guard Rail	2	EA	1,672.00	2,000	1,344	3,344	0	3,344
		Xing - IJ	2	PR	9,000.00	8,996	9,004	18,000	0	18,000
Federal w/o 116.95%		Xing - Labor Additive	1	LS	100,262.00	100,262	0	100,262	0	100,262
		Xing - Track Card (Main and Stand-by) New Cable	3	EA	12,889.00	18,000	20,667	38,667	0	38,667
		Xing - Track Filter/Battery Choke	2	EA	240.00	0	480	480	0	480
		Xing - 2 Trk CWE w/Gates	1	EA	152,876.00	48,800	104,076	152,876	0	152,876
		Xing - Engineering Design	1	LS	7,967.00	7,967	0	7,967	0	7,967
		Xing - Pill/Rock/Gravel	1	LS	7,000.00	0	7,000	7,000	0	7,000
		Xing - Meter Service	1	LS	5,000.00	0	5,000	5,000	0	5,000
					Sub-Total =	190,025	156,018	346,043	0	346,043
					Totals =	190,025	156,018	346,043	0	346,043

Grand Total = $346,043

This is a "Shotgun" estimate, intended to provide a ballpark cost to determine whether a proposed project warrants further study. This estimate is not to be used for budget authority. Quantities and costs are estimated using readily available information and experience with similar projects. Site conditions and changes in project scope and design may result in significant cost variance.

Tuesday, May 09, 2017 Page 1 of 1

Railroad Cost Estimate Sample Document (2 of 2)



UPRR Maintenance Consent Letter
Sample Document

UPRR Maintenance Consent Letter Sample Document (1 of 16)

UNION PACIFIC RAILROAD
1400 Douglas Street Omaha, Nebraska 68179
Mail Stop 1690
David LaPlante
dclaplante@up.com
402-544-8563

AUDIT 280013

MAINTENANCE CONSENT LETTER

February 29, 2016
Folder No.: 2958-12

ROB MARTINDALE
COLORADO DEPT. OF TRANSPORTATION
222 6th St., RM 317
Grand Junction, CO 81501

Dear Rob:

RE: Proposed resurfacing of the bridge deck and maintenance to the existing N. Ave and Mesa Ave. Overpass grade-separated public road crossings at or near Railroad Mile Posts 120.52 & 120.38 on the Walsenburg Sub., at or near Pueblo, Pueblo County, CO.

Please refer to an application notifying the Railroad Company of the above subject project regarding the Colorado Department of Transportation's ("State's") intention to conduct resurfacing, repaving, and repair of the bridge decks; pressure washing and painting the steel framing of the structures; treatment of caps and columns with corrosion inhibitors; and the removal of replacement of the existing bridge fencing, pedestrian bridge hand rails and the existing concrete barrier; and other simple maintenance activities; at the two existing Northern and Mesa Avenues grade-separated public road crossings at Railroad Mile Posts 120.52 (DOT 253466S) and 120.38 (DOT 253465K) on the Walsenburg Subdivision in or near Pueblo, Pueblo County, Colorado. This letter serves as an acceptance of the proposed work to be performed. Attached hereto is a Railroad Location Print marked **Exhibit A**, which respectively illustrates the general location of the public road crossing work.

This consent is provided as a courtesy to the State in order to allow the State to conduct simple maintenance on the Mesa and Northern Ave. grade-separated public road crossings as agreements could not be located for these two structures. The State agrees to enter into agreements for these two grade-separated public road crossings when future improvements or reconstructions are requested in the future.

If a contractor is to do any of the work performed on or about the Railroad Company's trackage (including substantial maintenance and repair work), then the Public Entity shall require its contractor to execute the Railroad Company's form Contractor's Right of Entry Agreement. Public Entity acknowledges receipt of a copy of Contractor's Right of Entry Agreement and

UPRR Maintenance Consent Letter Sample Document (2 of 16)

understanding its term, provisions and requirements, and will inform its contractor of the need to execute the Agreement. Under no circumstances will Public Entity's contractor be allowed on or about the Railroad Company's trackage without first executing the Contractor's Right of Entry Agreement.

In order to protect the property as well as for safety reasons, it is imperative that the Public Entity notify the Railroad Company's Representative(s) at least 48-hours in advance prior to the proposed work to be conducted at the subject crossing. The following information is furnished with regard to the local contact for the Railroad Company:

Telecommunications ("Call Before You Dig"): 1-800-336-9193

LANCE KIPPEN
MGR SPEC PROJ IND &
303/8 405-5039
lkippen@up.com

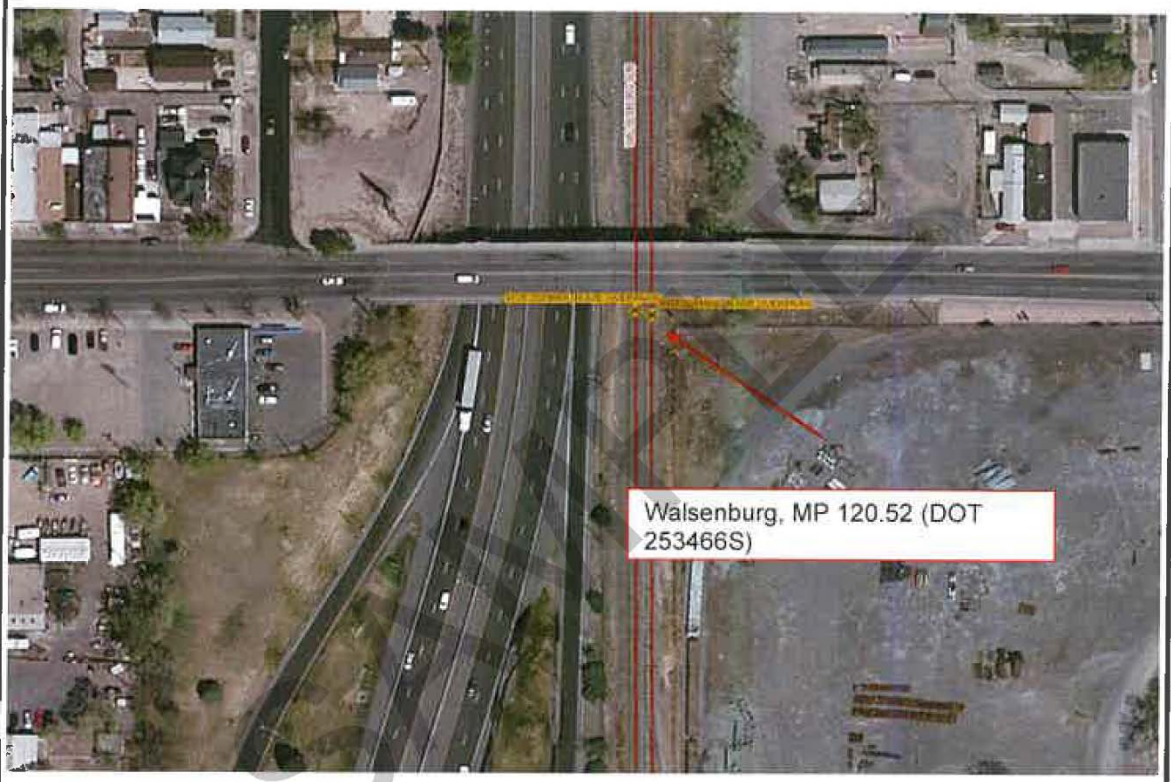
Regards,

David C. LaPlante
Senior Manager-Real Estate
Union Pacific Railroad Company
1400 Douglas Street STOP 1690
Omaha, NE 68179-1690
402-544-8563
dclaplante@up.com

UPRR Maintenance Consent Letter Sample Document (3 of 16)

EXHIBIT "A"

RAILROAD LOCATION PRINT
ACCOMPANYING A
GRADE-SEPARATED CONSTRUCTION & MAINTENANCE
CONSENT/CONTRACTOR'S
RIGHT OF ENTRY AGREEMENT



UNION PACIFIC RAILROAD COMPANY

WALSENBURG SUBDIVISION
RAILROAD MILE POSTS 120.52 PUEBLO,
PUEBLO COUNTY, COLORADO

To accompany an agreement with the

COLORADO DEPT. OF TRANSPORTATION and its CONTRACTOR'S

UPRR Folder No. 2958-12(a) Date: February 29, 2016

WARNING

IN ALL OCCASIONS, U.P. COMMUNICATIONS DEPARTMENT MUST BE CONTACTED IN ADVANCE OF ANY WORK TO DETERMINE EXISTENCE AND LOCATION OF FIBER OPTIC CABLE.

PHONE: 1-(800) 336-9193

Exhibit A
Railroad Location Print

UPRR Maintenance Consent Letter Sample Document (4 of 16)

Folder No.: 2958-12
UPRR Audit No.:

CONTRACTOR'S RIGHT OF ENTRY AGREEMENT

THIS AGREEMENT is made and entered into as of the _____ day of _____, 2016, by and between **UNION PACIFIC RAILROAD COMPANY**, a Delaware corporation ("Railroad"); and

_____ (*Name of Contractor*)

a _____ corporation ("Contractor").

RECITALS:

Contractor has been hired by Colorado Department of Transportation's ("State's") to conduct resurfacing, repaving, and repair of the bridge decks; pressure washing and painting the steel framing of the structures; treatment of caps and columns with corrosion inhibitors; and the removal of replacement of the existing bridge fencing, pedestrian bridge hand rails and the existing concrete barrier; and other simple maintenance activities; at the two existing Northern and Mesa Avenues grade-separated public road crossings at Railroad Mile Posts 120.52 (DOT 253466S) and 120.38 (DOT 253465K) on the Walsenburg Subdivision in or near Pueblo, Pueblo County, Colorado, as such location is in the general location shown on the Railroad Location Print marked **Exhibit A**, attached hereto and hereby made a part hereof, which work is the subject of a Consent Letter dated February 29, 2016, between the Railroad and State.

The Railroad is willing to permit the Contractor to perform the work described above at the location described above subject to the terms and conditions contained in this Agreement

AGREEMENT:

NOW, THEREFORE, it is mutually agreed by and between Railroad and Contractor, as follows:

ARTICLE 1 - DEFINITION OF CONTRACTOR.

For purposes of this Agreement, all references in this agreement to Contractor shall include Contractor's contractors, subcontractors, officers, agents and employees, and others acting under its or their authority.

ARTICLE 2 - RIGHT GRANTED; PURPOSE.

Railroad hereby grants to Contractor the right, during the term hereinafter stated and upon and subject to each and all of the terms, provisions and conditions herein contained, to enter upon and have ingress to and egress from the property described in the Recitals for the purpose of

UPRR Maintenance Consent Letter Sample Document (5 of 16)

performing the work described in the Recitals above. The right herein granted to Contractor is limited to those portions of Railroad's property specifically described herein, or as designated by the Railroad Representative named in Article 4.

ARTICLE 3 - TERMS AND CONDITIONS CONTAINED IN EXHIBITS B, C & D.

The General Terms and Conditions contained in **Exhibit B**, the Insurance Requirements contained in **Exhibit C**, and the Minimum Safety Requirements contained in **Exhibit D**, each attached hereto, are hereby made a part of this Agreement.

ARTICLE 4 - ALL EXPENSES TO BE BORNE BY CONTRACTOR; RAILROAD REPRESENTATIVE.

A. Contractor shall bear any and all costs and expenses associated with any work performed by Contractor, or any costs or expenses incurred by Railroad relating to this Agreement.

B. Contractor shall coordinate all of its work with the following Railroad representative or his or her duly authorized representative (the "Railroad Representative"):

MIGUEL J. ARAGON
MGR TRACK MNTCE
400 West B Street
PUEBLO, CO 81003
(719) 549-6266

C. Contractor, at its own expense, shall adequately police and supervise all work to be performed by Contractor and shall ensure that such work is performed in a safe manner as set forth in Section 7 of **Exhibit B**. The responsibility of Contractor for safe conduct and adequate policing and supervision of Contractor's work shall not be lessened or otherwise affected by Railroad's approval of plans and specifications involving the work, or by Railroad's collaboration in performance of any work, or by the presence at the work site of a Railroad Representative, or by compliance by Contractor with any requests or recommendations made by Railroad Representative.

ARTICLE 5 - SCHEDULE OF WORK ON A MONTHLY BASIS.

The Contractor, at its expense, shall provide on a monthly basis a detailed schedule of work to the Railroad Representative named in Article 4B above. The reports shall start at the execution of this Agreement and continue until this Agreement is terminated as provided in this Agreement or until the Contractor has completed all work on Railroad's property.

ARTICLE 6 - TERM; TERMINATION.

A. The grant of right herein made to Contractor shall commence on the date of this Agreement, and continue until _____, unless sooner terminated as herein
(Expiration Date)

UPRR Maintenance Consent Letter Sample Document (6 of 16)

provided, or at such time as Contractor has completed its work on Railroad's property, whichever is earlier. Contractor agrees to notify the Railroad Representative in writing when it has completed its work on Railroad's property.

B. This Agreement may be terminated by either party on ten (10) days written notice to the other party.

ARTICLE 7 - CERTIFICATE OF INSURANCE.

A. Before commencing any work, Contractor will provide Railroad with the (i) insurance binders, policies, certificates and endorsements set forth in **Exhibit C** of this Agreement, and (ii) the insurance endorsements obtained by each subcontractor as required under Section 12 of **Exhibit B** of this Agreement.

B. All insurance correspondence, binders, policies, certificates and endorsements shall be sent to:

Union Pacific Railroad Company
Real Estate Department
1400 Douglas Street, MS 1690
Omaha, NE 68179-1690
UPRR Folder No.: 2958-12

ARTICLE 8 - DISMISSAL OF CONTRACTOR'S EMPLOYEE.

At the request of Railroad, Contractor shall remove from Railroad's property any employee of Contractor who fails to conform to the instructions of the Railroad Representative in connection with the work on Railroad's property, and any right of Contractor shall be suspended until such removal has occurred. Contractor shall indemnify Railroad against any claims arising from the removal of any such employee from Railroad's property.

ARTICLE 9 - CROSSINGS.

No additional vehicular crossings (including temporary haul roads) or pedestrian crossings over Railroad's trackage shall be installed or used by Contractor without the prior written permission of Railroad.

ARTICLE 10 - CROSSINGS; COMPLIANCE WITH MUTCD AND FRA GUIDELINES.

A. No additional vehicular crossings (including temporary haul roads) or pedestrian crossings over Railroad's trackage shall be installed or used by Contractor without the prior written permission of Railroad.

B. Any permanent or temporary changes, including temporary traffic control, to crossings must conform to the Manual of Uniform Traffic Control Devices (MUTCD) and any applicable Federal Railroad Administration rules, regulations and guidelines, and must be reviewed by the Railroad prior to any changes being implemented. In the event the Railroad is found to be out of compliance with federal safety regulations due to the Contractor's modifications, negligence, or any other reason arising from the Contractor's presence on the Railroad's property, the Contractor agrees to assume liability for any civil penalties imposed upon the Railroad for such

UPRR Maintenance Consent Letter Sample Document (7 of 16)

noncompliance.

ARTICLE 11 - EXPLOSIVES.

Explosives or other highly flammable substances shall not be stored or used on Railroad's property without the prior written approval of Railroad.

IN WITNESS WHEREOF, the parties hereto have duly executed this agreement in duplicate as of the date first herein written.

UNION PACIFIC RAILROAD COMPANY
(Federal Tax ID #94-6001323)

By:_____
DAVID C. LAPLANTE
Senior Mgr. Contracts

(Name of Contractor)

By_____

Printed Name:_____

Title:_____

UPRR Maintenance Consent Letter Sample Document (8 of 16)

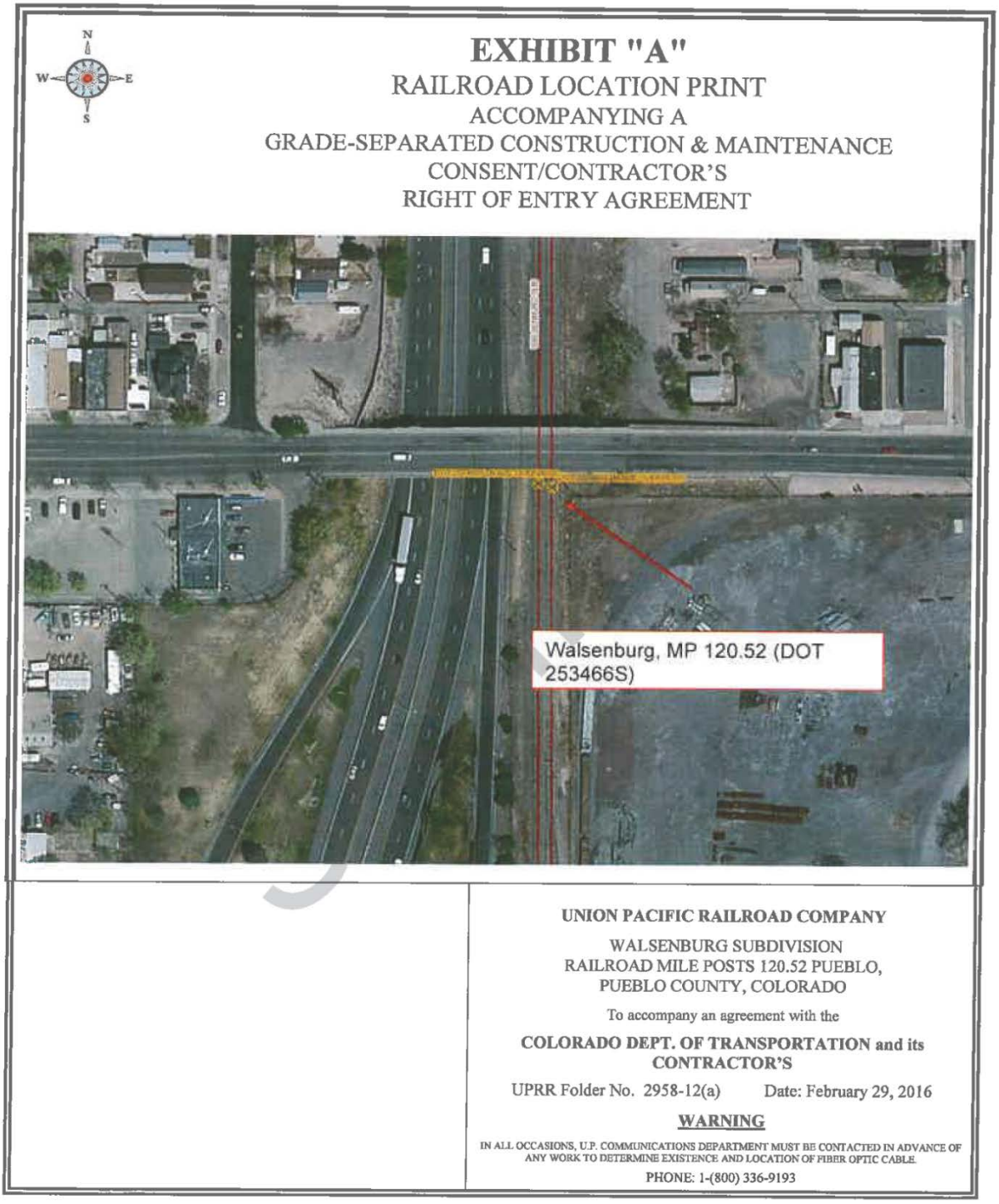


Exhibit A
Railroad Location Print

UPRR Maintenance Consent Letter Sample Document (9 of 16)

EXHIBIT B

TO CONTRACTOR'S RIGHT OF ENTRY AGREEMENT

GENERAL TERMS & CONDITIONS

Section 1. NOTICE OF COMMENCEMENT OF WORK - FLAGGING.

A. Contractor agrees to notify the Railroad Representative at least thirty (30) working days in advance of Contractor commencing its work and at least ten (10) working days in advance of proposed performance of any work by Contractor in which any person or equipment will be within twenty-five (25) feet of any track, or will be near enough to any track that any equipment extension (such as, but not limited to, a crane boom) will reach to within twenty-five (25) feet of any track. No work of any kind shall be performed, and no person, equipment, machinery, tool(s), material(s), vehicle(s), or thing(s) shall be located, operated, placed, or stored within twenty-five (25) feet of any of Railroad's track(s) at any time, for any reason, unless and until a Railroad flagman is provided to watch for trains. Upon receipt of such ten (10)-day notice, the Railroad Representative will determine and inform Contractor whether a flagman need be present and whether Contractor needs to implement any special protective or safety measures. If flagging or other special protective or safety measures are performed by Railroad, Railroad will bill Contractor for such expenses incurred by Railroad, unless Railroad and a federal, state or local governmental entity have agreed that Railroad is to bill such expenses to the federal, state or local governmental entity. If Railroad will be sending the bills to Contractor, Contractor shall pay such bills within thirty (30) days of Contractor's receipt of billing. If Railroad performs any flagging, or other special protective or safety measures are performed by Railroad, Contractor agrees that Contractor is not relieved of any of its responsibilities or liabilities set forth in this Agreement.

B. The rate of pay per hour for each flagman will be the prevailing hourly rate in effect for an eight-hour day for the class of flagmen used during regularly assigned hours and overtime in accordance with Labor Agreements and Schedules in effect at the time the work is performed. In addition to the cost of such labor, a composite charge for vacation, holiday, health and welfare, supplemental sickness, Railroad Retirement and unemployment compensation, supplemental pension, Employees Liability and Property Damage and Administration will be included, computed on actual payroll. The composite charge will be the prevailing composite charge in effect at the time the work is performed. One and one-half times the current hourly rate is paid for overtime, Saturdays and Sundays, and two and one-half times current hourly rate for holidays. Wage rates are subject to change, at any time, by law or by agreement between Railroad and its employees, and may be retroactive as a result of negotiations or a ruling of an authorized governmental agency. Additional charges on labor are also subject to change. If the wage rate or additional charges are changed, Contractor (or the governmental entity, as applicable) shall pay on the basis of the new rates and charges.

C. Reimbursement to Railroad will be required covering the full eight-hour day during which any flagman is furnished, unless the flagman can be assigned to other Railroad work during a portion of such day, in which event reimbursement will not be required for the portion of the day during which the flagman is engaged in other Railroad work. Reimbursement will also be required for any day not actually worked by the flagman following the flagman's assignment to work on the project for which Railroad is required to pay the flagman and which could not reasonably be avoided by Railroad by assignment of such flagman to other work , even though Contractor may not be working during such time. When it becomes necessary for Railroad to bulletin and assign an employee to a flagging position in compliance with union collective bargaining agreements, Contractor must provide Railroad a minimum of five (5) days notice prior to the cessation of the need for a flagman. If five (5) days notice of cessation is not given, Contractor will still be required to pay flagging charges for the five (5) day notice period required by union agreement to be given to the employee, even though flagging is not required for that period. An additional ten (10) days notice must then be given to Railroad if flagging services are needed again after such five day cessation notice has been given to Railroad.

Section 2. LIMITATION AND SUBORDINATION OF RIGHTS GRANTED

A. The foregoing grant of right is subject and subordinate to the prior and continuing right and obligation of the Railroad to use and maintain its entire property including the right and power of Railroad to construct, maintain, repair, renew, use, operate, change, modify or relocate railroad tracks, roadways, signal, communication, fiber optics, or other wirelines, pipelines and other facilities upon, along or across any or all parts of its property, all or any of which may be freely done at any time or times by Railroad without liability to Contractor or to any other party for compensation or damages.

UPRR Maintenance Consent Letter Sample Document (10 of 16)

B. The foregoing grant is also subject to all outstanding superior rights (including those in favor of licensees and lessees of Railroad's property, and others) and the right of Railroad to renew and extend the same, and is made without covenant of title or for quiet enjoyment.

Section 3. NO INTERFERENCE WITH OPERATIONS OF RAILROAD AND ITS TENANTS.

A. Contractor shall conduct its operations so as not to interfere with the continuous and uninterrupted use and operation of the railroad tracks and property of Railroad, including without limitation, the operations of Railroad's lessees, licensees or others, unless specifically authorized in advance by the Railroad Representative. Nothing shall be done or permitted to be done by Contractor at any time that would in any manner impair the safety of such operations. When not in use, Contractor's machinery and materials shall be kept at least fifty (50) feet from the centerline of Railroad's nearest track, and there shall be no vehicular crossings of Railroads tracks except at existing open public crossings.

B. Operations of Railroad and work performed by Railroad personnel and delays in the work to be performed by Contractor caused by such railroad operations and work are expected by Contractor, and Contractor agrees that Railroad shall have no liability to Contractor, or any other person or entity for any such delays. The Contractor shall coordinate its activities with those of Railroad and third parties so as to avoid interference with railroad operations. The safe operation of Railroad train movements and other activities by Railroad takes precedence over any work to be performed by Contractor.

Section 4. LIENS.

Contractor shall pay in full all persons who perform labor or provide materials for the work to be performed by Contractor. Contractor shall not create, permit or suffer any mechanic's or materialmen's liens of any kind or nature to be created or enforced against any property of Railroad for any such work performed. Contractor shall indemnify and hold harmless Railroad from and against any and all liens, claims, demands, costs or expenses of whatsoever nature in any way connected with or growing out of such work done, labor performed, or materials furnished. If Contractor fails to promptly cause any lien to be released of record, Railroad may, at its election, discharge the lien or claim of lien at Contractor's expense.

Section 5. PROTECTION OF FIBER OPTIC CABLE SYSTEMS.

A. Fiber optic cable systems may be buried on Railroad's property. Protection of the fiber optic cable systems is of extreme importance since any break could disrupt service to users resulting in business interruption and loss of revenue and profits. Contractor shall telephone Railroad during normal business hours (7:00 a.m. to 9:00 p.m. Central Time, Monday through Friday, except holidays) at 1-800-336-9193 (also a 24-hour, 7-day number for emergency calls) to determine if fiber optic cable is buried anywhere on Railroad's property to be used by Contractor. If it is, Contractor will telephone the telecommunications company(ies) involved, make arrangements for a cable locator and, if applicable, for relocation or other protection of the fiber optic cable. Contractor shall not commence any work until all such protection or relocation (if applicable) has been accomplished.

B. In addition to other indemnity provisions in this Agreement, Contractor shall indemnify, defend and hold Railroad harmless from and against all costs, liability and expense whatsoever (including, without limitation, attorneys' fees, court costs and expenses) arising out of any act or omission of Contractor, its agents and/or employees, that causes or contributes to (1) any damage to or destruction of any telecommunications system on Railroad's property, and/or (2) any injury to or death of any person employed by or on behalf of any telecommunications company, and/or its contractor, agents and/or employees, on Railroad's property. Contractor shall not have or seek recourse against Railroad for any claim or cause of action for alleged loss of profits or revenue or loss of service or other consequential damage to a telecommunication company using Railroad's property or a customer or user of services of the fiber optic cable on Railroad's property.

Section 6. PERMITS - COMPLIANCE WITH LAWS.

In the prosecution of the work covered by this Agreement, Contractor shall secure any and all necessary permits and shall comply with all applicable federal, state and local laws, regulations and enactments affecting the work including, without limitation, all applicable Federal Railroad Administration regulations.

Section 7. SAFETY.

A. Safety of personnel, property, rail operations and the public is of paramount importance in the prosecution of the work performed by Contractor. Contractor shall be responsible for initiating, maintaining and supervising all safety, operations and programs in connection with the work. Contractor shall at a minimum comply with Railroad's safety standards listed in

UPRR Maintenance Consent Letter Sample Document (11 of 16)

Exhibit D, hereto attached, to ensure uniformity with the safety standards followed by Railroad's own forces. As a part of Contractor's safety responsibilities, Contractor shall notify Railroad if Contractor determines that any of Railroad's safety standards are contrary to good safety practices. Contractor shall furnish copies of **Exhibit D** to each of its employees before they enter the job site.

B. Without limitation of the provisions of paragraph A above, Contractor shall keep the job site free from safety and health hazards and ensure that its employees are competent and adequately trained in all safety and health aspects of the job.

C. Contractor shall have proper first aid supplies available on the job site so that prompt first aid services may be provided to any person injured on the job site. Contractor shall promptly notify Railroad of any U.S. Occupational Safety and Health Administration reportable injuries. Contractor shall have a nondelegable duty to control its employees while they are on the job site or any other property of Railroad, and to be certain they do not use, be under the influence of, or have in their possession any alcoholic beverage, drug or other substance that may inhibit the safe performance of any work.

D. If and when requested by Railroad, Contractor shall deliver to Railroad a copy of Contractor's safety plan for conducting the work (the "Safety Plan"). Railroad shall have the right, but not the obligation, to require Contractor to correct any deficiencies in the Safety Plan. The terms of this Agreement shall control if there are any inconsistencies between this Agreement and the Safety Plan.

Section 8. INDEMNITY.

A. To the extent not prohibited by applicable statute, Contractor shall indemnify, defend and hold harmless Railroad, its affiliates, and its and their officers, agents and employees (individually an "Indemnified Party" or collectively "Indemnified Parties") from and against any and all loss, damage, injury, liability, claim, demand, cost or expense (including, without limitation, attorney's, consultant's and expert's fees, and court costs), fine or penalty (collectively, "Loss") incurred by any person (including, without limitation, any Indemnified Party, Contractor, or any employee of Contractor or of any Indemnified Party) arising out of or in any manner connected with (i) any work performed by Contractor, or (ii) any act or omission of Contractor, its officers, agents or employees, or (iii) any breach of this Agreement by Contractor.

B. The right to indemnity under this Section 8 shall accrue upon occurrence of the event giving rise to the Loss, and shall apply regardless of any negligence or strict liability of any Indemnified Party, except where the Loss is caused by the sole active negligence of an Indemnified Party as established by the final judgment of a court of competent jurisdiction. The sole active negligence of any Indemnified Party shall not bar the recovery of any other Indemnified Party.

C. Contractor expressly and specifically assumes potential liability under this Section 8 for claims or actions brought by Contractor's own employees. Contractor waives any immunity it may have under worker's compensation or industrial insurance acts to indemnify the Indemnified Parties under this Section 8. Contractor acknowledges that this waiver was mutually negotiated by the parties hereto.

D. No court or jury findings in any employee's suit pursuant to any worker's compensation act or the Federal Employers' Liability Act against a party to this Agreement may be relied upon or used by Contractor in any attempt to assert liability against any Indemnified Party.

E. The provisions of this Section 8 shall survive the completion of any work performed by Contractor or the termination or expiration of this Agreement. In no event shall this Section 8 or any other provision of this Agreement be deemed to limit any liability Contractor may have to any Indemnified Party by statute or under common law.

Section 9. RESTORATION OF PROPERTY.

In the event Railroad authorizes Contractor to take down any fence of Railroad or in any manner move or disturb any of the other property of Railroad in connection with the work to be performed by Contractor, then in that event Contractor shall, as soon as possible and at Contractor's sole expense, restore such fence and other property to the same condition as the same were in before such fence was taken down or such other property was moved or disturbed. Contractor shall remove all of Contractor's tools, equipment, rubbish and other materials from Railroad's property promptly upon completion of the work, restoring Railroad's property to the same state and condition as when Contractor entered thereon.

UPRR Maintenance Consent Letter Sample Document (12 of 16)

Section 10. WAIVER OF DEFAULT.

Waiver by Railroad of any breach or default of any condition, covenant or agreement herein contained to be kept, observed and performed by Contractor shall in no way impair the right of Railroad to avail itself of any remedy for any subsequent breach or default.

Section 11. MODIFICATION - ENTIRE AGREEMENT.

No modification of this Agreement shall be effective unless made in writing and signed by Contractor and Railroad. This Agreement and the exhibits attached hereto and made a part hereof constitute the entire understanding between Contractor and Railroad and cancel and supersede any prior negotiations, understandings or agreements, whether written or oral, with respect to the work to be performed by Contractor.

Section 12. ASSIGNMENT - SUBCONTRACTING.

Contractor shall not assign or subcontract this Agreement, or any interest therein, without the written consent of the Railroad. Contractor shall be responsible for the acts and omissions of all subcontractors. Before Contractor commences any work, the Contractor shall, except to the extent prohibited by law; (1) require each of its subcontractors to include the Contractor as "Additional Insured" in the subcontractor's Commercial General Liability policy and Business Automobile policies with respect to all liabilities arising out of the subcontractor's performance of work on behalf of the Contractor by endorsing these policies with ISO Additional Insured Endorsements CG 20 26, and CA 20 48 (or substitute forms providing equivalent coverage; (2) require each of its subcontractors to endorse their Commercial General Liability Policy with "Contractual Liability Railroads" ISO Form CG 24 17 10 01 (or a substitute form providing equivalent coverage) for the job site; and (3) require each of its subcontractors to endorse their Business Automobile Policy with "Coverage For Certain Operations In Connection With Railroads" ISO Form CA 20 70 10 01 (or a substitute form providing equivalent coverage) for the job site.

UPRR Maintenance Consent Letter Sample Document (13 of 16)

EXHIBIT C

TO CONTRACTOR'S RIGHT OF ENTRY AGREEMENT

INSURANCE REQUIREMENTS

Contractor shall, at its sole cost and expense, procure and maintain during the course of the Project and until all Project work on Railroad's property has been completed and the Contractor has removed all equipment and materials from Railroad's property and has cleaned and restored Railroad's property to Railroad's satisfaction, the following insurance coverage:

A. **COMMERCIAL GENERAL LIABILITY INSURANCE**. Commercial general liability (CGL) with a limit of not less than $5,000,000 each occurrence and an aggregate limit of not less than $10,000,000. CGL insurance must be written on ISO occurrence form CG 00 01 12 04 (or a substitute form providing equivalent coverage).

The policy must also contain the following endorsement, which must be stated on the certificate of insurance:

- Contractual Liability Railroads ISO form CG 24 17 10 01 (or a substitute form providing equivalent coverage) showing "Union Pacific Railroad Company Property" as the Designated Job Site.
- Designated Construction Project(s) General Aggregate Limit ISO Form CG 25 03 03 97 (or a substitute form providing equivalent coverage) showing the project on the form schedule.

B. **BUSINESS AUTOMOBILE COVERAGE INSURANCE**. Business auto coverage written on ISO form CA 00 01 10 01 (or a substitute form providing equivalent liability coverage) with a combined single limit of not less $5,000,000 for each accident and coverage must include liability arising out of any auto (including owned, hired and non-owned autos).

The policy must contain the following endorsements, which must be stated on the certificate of insurance:

- Coverage For Certain Operations In Connection With Railroads ISO form CA 20 70 10 01 (or a substitute form providing equivalent coverage) showing "Union Pacific Property" as the Designated Job Site.
- Motor Carrier Act Endorsement - Hazardous materials clean up (MCS-90) if required by law.

C. **WORKERS' COMPENSATION AND EMPLOYERS' LIABILITY INSURANCE**. Coverage must include but not be limited to:

- Contractor's statutory liability under the workers' compensation laws of the state where the work is being performed.
- Employers' Liability (Part B) with limits of at least $500,000 each accident, $500,000 disease policy limit $500,000 each employee.

If Contractor is self-insured, evidence of state approval and excess workers compensation coverage must be provided.

Coverage must include liability arising out of the U. S. Longshoremen's and Harbor Workers' Act, the Jones Act, and the Outer Continental Shelf Land Act, if applicable.

The policy must contain the following endorsement, which must be stated on the certificate of insurance:

- Alternate Employer endorsement ISO form WC 00 03 01 A (or a substitute form providing equivalent coverage) showing Railroad in the schedule as the alternate employer (or a substitute form providing equivalent coverage).

D. **RAILROAD PROTECTIVE LIABILITY INSURANCE**. Contractor must maintain Railroad Protective Liability insurance written on ISO occurrence form CG 00 35 12 04 (or a substitute form providing equivalent coverage) on behalf of Railroad as named insured, with a limit of not less than $2,000,000 per occurrence and an aggregate of $6,000,000. A binder stating the policy is in place must be submitted to Railroad before the work may be commenced and until the original policy is forwarded to Railroad.

E. **UMBRELLA OR EXCESS INSURANCE**. If Contractor utilizes umbrella or excess policies, these policies must "follow form" and afford no less coverage than the primary policy.

F. **POLLUTION LIABILITY INSURANCE**. Pollution liability coverage must be written on ISO form Pollution Liability Coverage Form Designated Sites CG 00 39 12 04 (or a substitute form providing equivalent liability coverage), with limits of at least

UPRR Maintenance Consent Letter Sample Document (14 of 16)

$5,000,000 per occurrence and an aggregate limit of $10,000,000.

If the scope of work as defined in this Agreement includes the disposal of any hazardous or non-hazardous materials from the job site, Contractor must furnish to Railroad evidence of pollution legal liability insurance maintained by the disposal site operator for losses arising from the insured facility accepting the materials, with coverage in minimum amounts of $1,000,000 per loss, and an annual aggregate of $2,000,000.

OTHER REQUIREMENTS

G. All policy(ies) required above (except worker's compensation and employers liability) must include Railroad as "Additional Insured" using ISO Additional Insured Endorsements CG 20 26, and CA 20 48 (or substitute forms providing equivalent coverage). The coverage provided to Railroad as additional insured shall, to the extent provided under ISO Additional Insured Endorsement CG 20 26, and CA 20 48 provide coverage for Railroad's negligence whether sole or partial, active or passive, and shall not be limited by Contractor's liability under the indemnity provisions of this Agreement.

H. Punitive damages exclusion, if any, must be deleted (and the deletion indicated on the certificate of insurance), unless the law governing this Agreement prohibits all punitive damages that might arise under this Agreement.

I. Contractor waives all rights of recovery, and its insurers also waive all rights of subrogation of damages against Railroad and its agents, officers, directors and employees. This waiver must be stated on the certificate of insurance.

J. Prior to commencing the work, Contractor shall furnish Railroad with a certificate(s) of insurance, executed by a duly authorized representative of each insurer, showing compliance with the insurance requirements in this Agreement.

K. All insurance policies must be written by a reputable insurance company acceptable to Railroad or with a current Best's Insurance Guide Rating of A- and Class VII or better, and authorized to do business in the state where the work is being performed.

L. The fact that insurance is obtained by Contractor or by Railroad on behalf of Contractor will not be deemed to release or diminish the liability of Contractor, including, without limitation, liability under the indemnity provisions of this Agreement. Damages recoverable by Railroad from Contractor or any third party will not be limited by the amount of the required insurance coverage.

UPRR Maintenance Consent Letter Sample Document (15 of 16)

EXHIBIT D

TO CONTRACTOR'S RIGHT OF ENTRY AGREEMENT

MINIMUM SAFETY REQUIREMENTS

The term "employees" as used herein refer to all employees of Contractor as well as all employees of any subcontractor or agent of Contractor.

I. CLOTHING

A. All employees of Contractor will be suitably dressed to perform their duties safely and in a manner that will not interfere with their vision, hearing, or free use of their hands or feet.

Specifically, Contractor's employees must wear:

i. Waist-length shirts with sleeves.
ii. Trousers that cover the entire leg. If flare-legged trousers are worn, the trouser bottoms must be tied to prevent catching.
iii. Footwear that covers their ankles and has a defined heel. Employees working on bridges are required to wear safety-toed footwear that conforms to the American National Standards Institute (ANSI) and FRA footwear requirements.

B. Employees shall not wear boots (other than work boots), sandals, canvas-type shoes, or other shoes that have thin soles or heels that are higher than normal.

C. Employees must not wear loose or ragged clothing, neckties, finger rings, or other loose jewelry while operating or working on machinery.

II. PERSONAL PROTECTIVE EQUIPMENT

Contractor shall require its employees to wear personal protective equipment as specified by Railroad rules, regulations, or recommended or requested by the Railroad Representative.

i. Hard hat that meets the American National Standard (ANSI) Z89.1 – latest revision. Hard hats should be affixed with Contractor's company logo or name.
ii. Eye protection that meets American National Standard (ANSI) for occupational and educational eye and face protection, Z87.1 – latest revision. Additional eye protection must be provided to meet specific job situations such as welding, grinding, etc.
iii. Hearing protection, which affords enough attenuation to give protection from noise levels that will be occurring on the job site. Hearing protection, in the form of plugs or muffs, must be worn when employees are within:

- 100 feet of a locomotive or roadway/work equipment
- 15 feet of power operated tools
- 150 feet of jet blowers or pile drivers
- 150 feet of retarders in use (when within 10 feet, employees must wear dual ear protection – plugs and muffs)

iv. Other types of personal protective equipment, such as respirators, fall protection equipment, and face shields, must be worn as recommended or requested by the Railroad Representative.

III. ON TRACK SAFETY

Contractor is responsible for compliance with the Federal Railroad Administration's Roadway Worker Protection regulations – 49CFR214, Subpart C and Railroad's On-Track Safety rules. Under 49CFR214, Subpart C, railroad contractors are responsible for the training of their employees on such regulations. In addition to the instructions contained in Roadway Worker Protection regulations, all employees must:

i. Maintain a distance of twenty-five (25) feet to any track unless the Railroad Representative is present to authorize movements.

UPRR Maintenance Consent Letter Sample Document (16 of 16)

ii. Wear an orange, reflectorized workwear approved by the Railroad Representative.
iii. Participate in a job briefing that will specify the type of On-Track Safety for the type of work being performed. Contractor must take special note of limits of track authority, which tracks may or may not be fouled, and clearing the track. Contractor will also receive special instructions relating to the work zone around machines and minimum distances between machines while working or traveling.

IV. EQUIPMENT

A. It is the responsibility of Contractor to ensure that all equipment is in a safe condition to operate. If, in the opinion of the Railroad Representative, any of Contractor's equipment is unsafe for use, Contractor shall remove such equipment from Railroad's property. In addition, Contractor must ensure that the operators of all equipment are properly trained and competent in the safe operation of the equipment. In addition, operators must be:

i. Familiar and comply with Railroad's rules on lockout/tagout of equipment.
ii. Trained in and comply with the applicable operating rules if operating any hy-rail equipment on-track.
iii. Trained in and comply with the applicable air brake rules if operating any equipment that moves rail cars or any other railbound equipment.

B. All self-propelled equipment must be equipped with a first-aid kit, fire extinguisher, and audible back-up warning device.

C. Unless otherwise authorized by the Railroad Representative, all equipment must be parked a minimum of twenty-five (25) feet from any track. Before leaving any equipment unattended, the operator must stop the engine and properly secure the equipment against movement.

D. Cranes must be equipped with three orange cones that will be used to mark the working area of the crane and the minimum clearances to overhead powerlines.

V. GENERAL SAFETY REQUIREMENTS

A. Contractor shall ensure that all waste is properly disposed of in accordance with applicable federal and state regulations.

B. Contractor shall ensure that all employees participate in and comply with a job briefing conducted by the Railroad Representative, if applicable. During this briefing, the Railroad Representative will specify safe work procedures, (including On-Track Safety) and the potential hazards of the job. If any employee has any questions or concerns about the work, the employee must voice them during the job briefing. Additional job briefings will be conducted during the work as conditions, work procedures, or personnel change.

C. All track work performed by Contractor meets the minimum safety requirements established by the Federal Railroad Administration's Track Safety Standards 49CFR213.

D. All employees comply with the following safety procedures when working around any railroad track:

i. Always be on the alert for moving equipment. Employees must always expect movement on any track, at any time, in either direction.
ii. Do not step or walk on the top of the rail, frog, switches, guard rails, or other track components.
iii. In passing around the ends of standing cars, engines, roadway machines or work equipment, leave at least 20 feet between yourself and the end of the equipment. Do not go between pieces of equipment of the opening is less than one car length (50 feet).
iv. Avoid walking or standing on a track unless so authorized by the employee in charge.
v. Before stepping over or crossing tracks, look in both directions first.
vi. Do not sit on, lie under, or cross between cars except as required in the performance of your duties and only when track and equipment have been protected against movement.

E. All employees must comply with all federal and state regulations concerning workplace safety.

PUC Application
Sample Document

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF COLORADO

PROCEEDING NO. _____

IN THE MATTER OF THE APPLICATION OF THE COLORADO DEPARTMENT OF TRANSPORTATION, ON BEHALF OF YUMA COUNTY, FOR AUTHORITY TO INSTALL FLASHING LIGHT SIGNALS, GATES, BELLS, CONSTANT WARNING TIME CIRCUITRY, NEW SIGNAL CABIN AND NEW CROSSING SURFACE AT TRACKS OWNED BY BNSF RAILWAY COMPANY CROSSING COUNTY ROAD J, ALSO KNOWN AS COUNTY ROAD 15, USDOT NO. 057-318J, IN YUMA COUNTY, STATE OF COLORADO.

APPLICATION

The Colorado Department of Transportation, hereinafter referred to as "CDOT", on behalf of the County of Yuma, hereby submits this application to the Colorado Public Utilities Commission, hereinafter referred to as "PUC", for an order authorizing the installation of flashing light signals with gates and bells, constant warning time circuitry, new signal cabin and new crossing surface at the County Road J crossing of BNSF Railway tracks for which CDOT has appropriated Federal Section 130 Funds in Yuma County, State of Colorado.

Following are CDOTs responses to the specific requirements concerning highway-rail grade crossing applications, as prescribed in 4 *Code of Colorado Regulations* (CCR) 723-7-7002(b)(I-IX), 4 CCR 723-7204(a)(I), and 4 CCR 723-7-7204(a)(II) – (XVIII) and 4 CCR 723-7-7205 as required, including without limitation, acknowledgement that by signing the application, CDOT understands that the filing of the application does not by itself constitute approval of the application for the requested action.

Consistent with Rule 7002(b), 4 CCR 723-7, the information below is provided within this application, or in an appropriately identified attachment to this application as indicated.

I. Information Required by Rule 7002(b)

A. Rule 7002(b)(I)

The name and mailing address of CDOT:

Colorado Department of Transportation
4201 East Arkansas Avenue
Denver, CO 80222

B. Rule 7002(b)(II)

If the applicant is a corporation or limited liability company; the name of the state in which the applicant is incorporated or organized and the location of its principal office, if any, in Colorado:

PUC Application Sample Document (1 of 25)

CDOT is not a corporation or a limited liability company.

C. Rule 7002(b)(III)

If the applicant is a partnership; the names, titles and addresses of all general and limited partners:

CDOT is not a partnership.

D. Rule 7002(b)(IV)

The name, address, telephone number, and e-mail address of the applicant's representative to whom all inquiries concerning the application may be made:

Rob Martindale
Railroad Program Manager
Colorado Department of Transportation
4201 East Arkansas Avenue, 4th Floor
Denver, CO 80222
Ph: 970-210-5913
Email: rob.martindale@state.co.us

E. Rule 7002(b)(V)

A statement that the applicant agrees to respond to all questions propounded by the Commission or its staff concerning the application:

CDOT agrees to respond to all questions propounded by the Commission or its staff concerning the application.

F. Rule 7002(b)(VI)

A statement indicating the town or city, and any alternative town or city, where the applicant prefers any hearings to be held:

CDOT prefers any hearings to be held at the Commission office in Denver, or, in the alternative, at any other location which the Commission may designate.

G. Rule 7002(b)(VII)

A statement that the applicant understands that, if any portion of the application is found to be false or to contain material misrepresentations, any authorities granted pursuant to the application may be revoked upon Commission decision:

CDOT understands that, if any portion of the application is found to be false or to contain material misrepresentations, any authorities granted pursuant to the application may be revoked upon Commission decision.

PUC Application Sample Document (2 of 25)

H. Rule 7002(b)(VIII)

Acknowledgement that by signing the application, the applicant understands that:

1. The filing of the application does not by itself constitute approval of the application for the requested action;
2. If the application is granted, the applicant shall not commence the requested action until the applicant complies with applicable Commission rules and any pre-construction conditions established by Commission decision granting the application;
3. If a hearing is held, the applicant must present evidence at the hearing to establish its qualifications to undertake, and its right to undertake, the requested action; and
4. In lieu of the statement contained in subparagraphs (b)(VII)(A) through(C) of this paragraph, an applicant may include a statement that it has read, and agrees to abide by, the provisions of subparagraphs (b)(VII)(A) through(C) of this paragraph.

CDOT acknowledges that by signing the application:

1. The filing of the application does not by itself constitute approval of the application for the requested action;
2. If the application is granted, the applicant shall not commence the requested action until the applicant complies with applicable Commission rules and any pre-construction conditions established by Commission decision granting the application;
3. If a hearing is held, the applicant must present evidence at the hearing to establish its qualifications to undertake, and its right to undertake, the requested action; and
4. In lieu of the statement contained in subparagraphs (b)(VII)(A) through(C) of this paragraph, an applicant may include a statement that it has read, and agrees to abide by, the provisions of subparagraphs (b)(VII)(A) through(C) of this paragraph.

I. Rule 7002(b)(IX)

An attestation which is made under penalty of perjury; which is signed by an officer, a partner, an owner, an employee of, an agent for, or an attorney for the applicant, as appropriate, who is authorized to act on behalf of the applicant; and which states that the contents of the application are true, accurate, and correct. The application shall contain the title and the complete address of the affiant.

See attached Affidavit.

II. Information Required by Rule 7204(a)

A. Rule 7204(a)(I) - All crossing applications shall contain the following information:

1. The contact person name, mailing address and e-mail address to whom the Commission notice is to be sent:

PUC Application Sample Document (3 of 25)

a) If the application is filed by a road authority, provide the above information for each railroad, railroad corporation, rail fixed guideway, or transit agency that owns the tracks affected by an application.

Amber Stoffels
Manager Public Projects
BNSF Railway
3700 Globeville Road
Denver, CO 80216

b) If the application is filed by a railroad, railroad corporation, rail fixed guideway, transit agency, or other person, firm, or corporation that will own the tracks, provide the above information for each road authority that owns the roadway affected by the application.

N/A

2. The railroad and/or rail fixed guideway line name and milepost number where the crossing that is subject of the application is located.

BNSF Railway, Powder River Division, Akron Sub, McCook-E Brush Line Segment, MP 401.439

3. The National Inventory Number and the National Inventory Form for an existing crossing, or a statement that no National Inventory Number and/or National Inventory Form exists for a new crossing.

National Inventory Number 057318J, See attached Exhibit A.

4. All accident reports for the crossing and/or a listing of all accidents for any rail fixed guideway tracks through the crossing, or a statement that no accident reports and/or listing of rail fixed guideway accidents exist for the crossing.

For FRA reported accident reports for this crossing, see attached Exhibit B.

5. A statement of the date that the required crossing safety diagnostic occurred, or a copy of written correspondence from Commission staff that a crossing safety diagnostic was not required.

The required crossing safety diagnostic occurred on Tuesday, April 19, 2016.

6. A statement of:

a) The existing number and character of trains (e.g., through movements, switching movements) passing through the crossing each day if the National Inventory Form has not been updated within three years from the date of the filing of the application, or the existing number, character, and timetable speed

PUC Application Sample Document (4 of 25)

of trains as shown on the National Inventory Form if the form has been updated within three years from the date of the filing of the application;

Total Day Thru Trains: 8
Total Night Thru Trains: 8
Total Switching Trains: 0

b) The five-year projection of increases or decreases of the number and character of trains using the crossing; and

No anticipated increases or decreases in the number or character of trains is known at this time.

c) The maximum timetable speed of trains using the crossing.

Maximum Timetable Speed: 79 MPH

7. A detailed statement as to the nature of and need for the construction, alteration, abolition, installation, or modification for which approval is sought.

County Road J has heavy vehicle use and steep approach grades, which have contributed to hazardous crossing activity. CDOT has appropriated Federal Section 130 Funds to provide active warning devices in accordance with the diagnostic team recommendations. Active warning device installation is necessary to improve safety and reduce hazards at this crossing.

8. A statement of the scope of the project, including without limitation:

a) The highway design, pathway design, crossing warning devices, and necessary traffic signal interconnection and preemption;

The project includes installation of active crossing warning devices, including flashing light signals, automatic railroad gates and bells on each approach. Constant warning time circuitry and a new railroad signal cabin will be installed. The crossing will receive new concrete crossing material. There are no adjacent signalized intersections. Therefore, no interconnection or preemption is part of this application.

b) The detailed itemized estimated cost of the proposed construction, alteration, abolition, or highway-rail or pathway crossing warning device installation or modification;

The detailed itemized estimated cost of the railroad signal and surfacing items is included in the attached Exhibit C.

5

PUC Application Sample Document (5 of 25)

c) How the applicant proposes to provide for the cost, explaining the proposed apportionment between or among the parties in interest if applicable; and

The cost for improvements will be funded through appropriation of Federal Section 130 Funds.

d) If the funds necessary for the project are currently available and encumbered.

The funds necessary for the project are currently available and encumbered.

9. A statement of the estimated month and year for:

a) The start date for the construction, alteration, abolition, or crossing warning device installation or modification;

The estimated start date of construction is: November 15, 2017

b) The completion date for the construction, alteration, abolition, or crossing warning device installation or modification; and

The estimated completion date of construction is: June 30, 2018

c) The date for commencement of operations through the crossing for new crossings.

N/A

10. A vicinity map that includes the proposed project limits (i.e., a map that includes the general area circumscribing the project).

A Vicinity Map is provided as attached Exhibit D.

11. The names and mailing addresses of all persons, including adjacent property owners, public utilities, and local government agencies that may be interested in or affected by the application.

Property Owners:

No.	Owner Name	Mail Address	City	State	Zip
1	BNSF Railway	3700 Globeville Road	Denver	CO	80216
2	CHS-M&M, Inc.	38205 County Road J	Yuma	CO	80759
3	Yuma County Dairy, LLC	8798 county Road 39	Yuma	CO	80759

PUC Application Sample Document (6 of 25)

Utility Owners:

No.	Utility Name & Contact Person	Mail Address	City	State	Zip
1					
2					
3					

12. If the crossing is at-grade: a statement fully justifying why a separation of grades is not practicable under the circumstances.

No grade separated modifications are being proposed at the County Road J crossing of the BNSF tracks. The project work involves installation of active railroad crossing warning devices and new railroad crossing surface to improve safety. The following information is provided to identify why grade separation is not practical at this crossing:

(a) The County Road J crossing of BNSF tracks is a rural, paved roadway surrounded by farmland and dairy production. The intersection of State Highway 34 and County Road J is approximately 400 feet south of the BNSF crossing. Grade separation would require reconfiguration of accesses to adjacent private properties, and would impact the intersection of SH 34.

(b) County Road J is not part of the National Highway System.

(c) The posted speed is less than 70 miles per hour.

(d) Grade separation at this location is not practical or economically feasible.

13. A statement if the application is seeking preliminary approval of conceptual level design plans, or if the application is seeking final approval of final design plans.

CDOT is seeking final approval of final design with this application.

14. A statement if the application includes a request to install a temporary safety measure.

N/A

B. Rule 7204(a)(II) - Applications for all highway-rail crossings shall include:

1. The existing ADT volume and character of vehicles (including, but not limited to estimated percentage of heavy vehicles and a statement about whether school buses use the crossing) passing through the highway-rail crossing each day if the traffic volume on the National Inventory Form has not been updated within three years from the date of the filing of the application, or the existing ADT volume and character of vehicles passing through the highway-rail crossing each day as shown on the National Inventory Form if the traffic volume on the form has been updated within three years from the

PUC Application Sample Document (7 of 25)

date of the filing of the application. If the ADT volume has not been updated within three years from the date of the filing of the application, the road authority will be responsible for paying for the cost of the updated ADT count;

Existing ADT: 600 VPD, <insert year>
Character of Vehicles:
% Trucks: 7%
School buses do not use this crossing.

2. The five--year and twenty-year ADT volume projections of vehicles using the highway-rail crossing; and

5-Year Projected ADT: <insert number>
20-Year Projected ADT: <insert number>

3. The posted or unposted speed limit for the vehicles traveling through the highway-rail crossing.

Posted Speed: 55 MPH

C. Rule 7204(a)(III) - Applications for all pathway crossing shall include:

1. The existing or estimated number of pedestrians and bicycles passing through the pathway crossing each day and a statement if the number is based on an actual count or an estimate; and

N/A

2. The five-year and twenty-year projections of the number of pedestrians and bicycles using the pathway crossing.

N/A

D. Rule 7204(a)(IV) - Applications that include a request for temporary safety measures filed pursuant to paragraph 7203(f) shall include:

1. A statement of the temporary safety measure being sought;

N/A

2. Schematic plans of the temporary measure to be implemented;

N/A

3. The diagnostic notes including a list of all in attendance;

N/A

8

PUC Application Sample Document (8 of 25)

4. A statement that the diagnostic team is in consensus with the temporary safety measure being sought;

N/A

E. Rule 7204(a)(V) - Applications for preliminary of final approval of new at-grade crossing shall include:

1. Detailed plans/drawings of a suitable scale, showing the at-grade crossing, including signing and striping, tracks, buildings, structures, property lines, and public highways within the right-of-way limits of the railroad, railroad corporation, rail fixed guideway, rail fixed guideway system, or transit agency;

N/A

2. A profile drawing showing grade lines and proposed grade lines of approaches on the public highway or pathway, and the tracks being crossed that may be affected by the proposed or existing crossing;

N/A

3. Proposed roadway classification (e.g., local road, collector, arterial, freeway) and a cross-section drawing of the road authority's standards for that roadway classification or cross-section drawing of the pathway;

N/A

4. The following documentation for all existing crossings within one-mile of the proposed location of the new crossing in urban locations or within towns, or the two crossings nearest the proposed crossing in rural locations:
   a) The National Inventory Number and National Inventory Form;

      N/A

   b) All accident reports or a statement that no accident reports are available; and

      N/A

   c) The existing ADT volume and character of vehicles (including, but not limited to, estimated percentage of heavy vehicles and a statement about whether school buses use the crossing) passing through the highway-rail crossing each day if the traffic volume on the National Inventory Form has not been updated within three years from the date of the filing of the application, or the existing ADT volume and character of vehicles passing through the highway-rail crossing each day as shown on the National Inventory Form if the traffic volume on the form has been updated within three years from the date of the filing of

PUC Application Sample Document (9 of 25)

the application. If the ADT volume has not been updated within three years from the date of the filing of the application, the road authority will be responsible for paying for the cost of the updated ADT count.

N/A

F. Rule 7204(a)(VI) - Applications for preliminary or final approval to widen, narrow, or relocate an existing crossing shall include:

1. Detailed plans/drawings of a suitable scale, showing the grade crossing, including signing and striping, tracks, buildings, structures, property lines, and public highways within the right-of-way limits of the railroad, railroad corporation, rail fixed guideway, rail fixed guideway system, or transit agency;

N/A

2. A profile drawing showing grade lines and proposed grade lines of approaches on the public highway or pathway and the tracks being crossed that may be affected by the proposed or existing crossing;

N/A

3. Existing roadway classification (e.g., local, collector, arterial, freeway) and a cross-section drawing of the roadway authority's standards for that roadway classification or cross-section drawing of the pathway; and

N/A

5. Proposed roadway classification (e.g., local road, collector, arterial, freeway) and a cross-section drawing of the roadway authority's standards for that roadway classification or cross-section drawing of the pathway.

N/A

G. Rule 7204(a)(VII) - Applications for preliminary or final approval to close a crossing by removal of the tracks shall include:

1. Detailed plans/drawings of a suitable scale, showing the details of the crossing closure plan;

N/A

2. A copy of the notice of proposed closure of the crossing as required under paragraph 7208(c); and

N/A

PUC Application Sample Document (10 of 25)

3. Traffic volumes under (II) are not required.

N/A

H. Rule 7204(a)(VIII) - Applications to close a crossing by removal of the roadway or pathway shall include:

1. The following documentation for all existing crossings within one-mile of the proposed location of the crossing to be closed in urban locations or within towns, or the two crossings nearest the proposed crossing to be closed in rural locations:

   a) The National Inventory Number and National Inventory Form;

   N/A

   b) All accident reports or a statement that no accident reports are available; and

   N/A

   c) The existing ADT volume and character of vehicles (including, but not limited to, estimated percentage of heavy vehicles and a statement about whether school buses using the crossing) passing through the highway-rail crossing each day if the traffic volume on the National Inventory Form has not been updated within three years from the date of the filing of the application, or the existing ADT volume and character of vehicles passing through the highway-rail crossing each day as shown on the National Inventory Form if the traffic volume on the form has been updated within three years from the date of the filing of the application. If the ADT volume has not been updated within three years from the date of the filing for the application, the road authority will be responsible for paying for the cost of the updated ADT count.

   N/A

2. Detailed plans/drawings of a suitable scale showing the details of the crossing closure plan; and

   N/A

3. The notice of proposed closure of the crossing as required under paragraph 7208(c).

   N/A

I. Rule 7204(a)(IX) - Applications for preliminary or final approval to install or change passive warning devices at crossings shall include:

1. A description of the type of warning device the applicant proposes to install; and

PUC Application Sample Document (11 of 25)

N/A

2. Detailed railroad cost estimate of the crossing warning devices.

   N/A

J. Rule 7204(a)(X) - Applications for preliminary or final approval for installation of new active warning devices, replacement of existing active warning devices, or replacement of existing train detection circuitry at crossings shall include:

1. Detailed plans/drawings of a suitable scale, showing the crossing, including signing and striping, tracks, buildings, structures, property lines, and public highways within the right-of-way limits of the railroad, railroad corporation, rail fixed guideway, rail fixed guideway system, or transit agency;

   No roadway plans have been generated for this project. Installation is railroad equipment and surfacing only, as part of a safety improvement project funded with Federal Section 130 Funds.

2. A description of the type of warning devices the applicant proposes to install (reference may be made to recommended standards on highway-rail grade crossing warning devices as published in current editions of the MUTCD and/or the American Railway Engineering and Maintenance-of-Way Association's Signal Manual of Recommended Practice);

   CDOT proposes to install entrance automatic railroad gates with cross bucks, flashers and bells (MUTCD Section 8C.04). New concrete crossing surface will also be installed.

3. The detailed railroad cost estimate of the crossing warning devices; and

   The detailed railroad cost estimate of the crossing warning devices (signal) and crossing material (surface) is included in the attached Exhibit C.

4. The schematic diagram of the crossing warning devices (commonly referred to as the "front sheet") and shall specifically identify the equipment response time, advanced preemption time, minimum warning time, clearance time, buffer time, and total warning time).

   The schematic diagram of the crossing warning devices is included with the railroad's signal estimate as part of the attached Exhibit C.

5. A description of the type of four quadrant exit gate operating mode proposed (e.g., timed, dynamic exit gate vehicle detection, or timed/dynamic combination);

   N/A

K. Rule 7204(a)(XI) - Applications for preliminary or final approval involving installation of four quadrant gate active warning devices shall include:

1. A description of the type of four quadrant exit gate operating mode proposed (e.g., timed, dynamic exit gate vehicle detection, or timed/dynamic combination);

   N/A

2. For timed exit gate operating mode, the proposed exit gate clearance time, a description of the methodology used to determine the exit gate clearance time and the calculations performed to determine the exit gate clearance time;

   N/A

3. For dynamic exit gate operating mode, a description of the type of vehicle detection proposed, a plan/drawing showing the proposed vehicle detector placement(s) and description and timings of how the vehicle detection will operate; and

   N/A

5. A letter of concurrence from Commission staff regarding the proposed four-quadrant operations and timings, or a statement that Commission staff does not concur with the proposed four-quadrant operations and timings.

   N/A

L. Rule 7204(a)(XII) - Applications for preliminary or final approval involving interconnection to traffic signals or queue cutter signals and preemption by active warning signals shall include:

1. A statement of the proposed preemption operations (e.g., simultaneous, advanced);

   N/A

2. The traffic signal timings, including:
   a) The traffic signal cycle length;

      N/A

   b) Minimum green time for each signal phase and pedestrian phase;

      N/A

   c) Green times for each signal phase;

      N/A

PUC Application Sample Document (13 of 25)

d) Yellow change times for each signal phase;

N/A

e) Red clearance times for each signal phase;

N/A

f) Walk times for each pedestrian phase;

N/A

g) Flashing don't walk times for each pedestrian phase;

N/A

h) The traffic signal phasing diagram including the preemption sequence; and

N/A

i) A statement of whether and what type of gate down circuitry will be used.

N/A

3. A list of and calculations for the following distances and timings:
   a) Minimum track clearance distance;

N/A

b) Design vehicle designation and length;

N/A

c) Clear storage distance;

N/A

d) Preemption delay time;

N/A

e) Controller response time to preemption call;

N/A

f) Worst case conflicting vehicle time and worst case conflicting pedestrian time;

PUC Application Sample Document (14 of 25)

N/A

g) Maximum highway traffic signal preemption time;

N/A

h) Right-of-way transfer time;

N/A

i) Queue clearance time;

N/A

j) Clearance time;

N/A

k) Separation time;

N/A

l) Advance preemption time;

N/A

m)Minimum warning time.

N/A

4. A letter of concurrence from Commission staff regarding the proposed preemption operations and timings, or a statement that Commission staff does not concur with the proposed preemption operations and timings.

N/A

M. Rule 7204(a)(XII) - Applications requesting cost allocation to the Highway-Rail Crossing Signalization Fund or projects for which the Colorado Department of Transportation has appropriated Federal Section 130 Fund shall contain:

1. Specific information regarding the requested apportionment of costs between the railroad, railroad corporation, rail fixed guideway, rail fixed guideway system, or transit agency, the road authority, and the Highway-Rail Crossing Signalization Fund or Federal Section 130 Fund.

The apportionment of costs is as follows:

15

PUC Application Sample Document (15 of 25)

BNSF Railway (Railroad): **$0**
Yuma County (Road Authority): **$0**
Federal Section 130 Fund: **$340,831.00**

N. Applications for preliminary or final approval to change an existing crossing from a public crossing to a private crossing shall include:

1. The following documentation for all existing crossings within one-mile of the proposed location of the new crossing in urban locations or within towns, or the two crossings nearest the proposed crossing in rural locations:
   a) The National Inventory Number and National Inventory Form;

      N/A

   b) Copies of all accident reports or a statement that no accident reports are available for those crossings; and

      N/A

   c) The existing ADT volume and character of vehicles passing through the highway-rail crossing each day if the traffic volume on the National Inventory Form has not been updated within three years from the date of the filing of the application, or the existing ADT volume and character of vehicles passing through the highway-rail crossing each day as shown on the National Inventory Form if the traffic volume on the form has been updated within three years from the date of the filing of the application.

      N/A

2. Documentation (ordinance, ruling, etc.) showing that the road authority agency is proposing to remove the road from its network of ownership, operation, and maintenance; and

   N/A

3. Documentation showing the person that will be owning, operating, and maintaining the private roadway.

   N/A

O. Rule 7204(a)(XV) - Applications for preliminary or final approval to change an existing crossing from a private crossing to a public crossing shall include:

1. Proposed roadway classification (e.g., local road, collector, arterial, freeway) and a cross-section drawing of the road authority's standards for that roadway classification or cross-section of the pathway;

PUC Application Sample Document (16 of 25)

N/A

2. A statement that the existing crossing meets the standards of the proposed roadway classification or a statement that the roadway will be changed to meet the current roadway classification standards; and

N/A

3. Documentation (ordinance, ruling, etc.) showing that the road authority is accepting the road into its network for ownership, operation, and maintenance;

N/A

P. Rule 7204(a)(XVI) - Applications for preliminary or final approval to construct a grade separated crossing shall include:

1. Detailed plans/drawings of a suitable scale, showing the crossing, including signing and striping, tracks, buildings, structures, property lines, and public highways within the right-of-way limits of the railroad, railroad corporation, rail fixed guideway, rail fixed guideway system, or transit agency;

N/A

2. A profile drawing showing grade lines and proposed grade lines of approaches on the public roadway, highways, streets, or pathways and the tracks being crossed that may be affected by the proposed or existing crossing;

N/A

3. Bridge plan/drawings that show, at a minimum:
   a) The total length of the bridge structure;

   N/A

   b) The length of each individual span for multiple span bridge structures;

   N/A

   c) The location of all existing and any possible proposed future tracks in relation to the bridge structure;

   N/A

   d) The minimum vertical clearance from the top of rail or pavement to the bottom of structure;

   N/A

PUC Application Sample Document (17 of 25)

e) The minimum horizontal clearance from centerline of track to face of pier or abutment if track is under the bridge structure; and

N/A

f) The cross-section of the bridge showing information regarding the roadway, pathway, or railroad configuration including, but not limited to, out-to-out distance, fencing, lane widths, walkway widths, and median widths.

N/A

Q. Rule 7204(a)(XVII) - Applications for any preliminary approval of plans/drawings shall include:

1. The date by which all final plans/drawings for which preliminary or conceptual level plans/drawings were provided with the application will be filed for approval; and

N/A

2. A waiver of the applicable statutory period I §40-6-109.5, C.R.S. regarding the time limit for decisions.

N/A

R. Rule 7204(a)(XVIII) - Applications for a utility crossing shall include:

1. The contact person name, mailing address and e-mail address to whom the Commission notice is to be sent:
   a) For each railroad, railroad corporation, rail fixed guideway, or transit agency that owns the tracks affected by an application filed by a utility; and

   N/A

   b) For each utility affected by the application filed by a railroad, railroad corporation, rail fixed guideway, transit agency, or other person, firm, or corporation that will own the tracks affected by the application.

   N/A

2. The railroad and/or rail fixed guideway line name and milepost number where the crossing that is subject of the application is located;

N/A

3. A detailed statement as to the nature of and need for the construction, alternation, abolition, installation, or modification for which approval is sought;

PUC Application Sample Document (18 of 25)

N/A

4. A statement of the scope of the project, including without limitation:
   a) The utility construction location;

      N/A

   b) The detailed itemized estimated cost of the proposed utility crossing construction, alteration, abolition, or modification;

      N/A

   c) How the applicant proposes to provide for the cost, explaining the proposed apportionment between or among the parties in interest if applicable; and

      N/A

   d) If the funds necessary for the project are currently available and encumbered.

      N/A

5. A statement of the estimated month and year for:
   a) The start date for the utility crossing construction, alteration, abolition, or modification; and

      N/A

   b) The completion date for the utility crossing construction, alteration, abolition, or modification.

      N/A

6. A vicinity map that includes the proposed project limits (i.e., a map that includes the general area circumscribing the project);

   N/A

7. The names and mailing addresses of all persons, including adjacent property owners, public utilities, and local government agencies that may be interested in or affected by the application:

   N/A

8. Detailed plans/drawings of a suitable scale, showing the utility crossing, tracks, buildings, structures, and property lines within the right-of-way limits of the railroad,

PUC Application Sample Document (19 of 25)

railroad corporation, rail fixed guideway, rail fixed guideway system, or transit agency; and

N/A

9. A profile drawing showing grade lines and proposed grade lines of the utility in relation to the tracks being crossed.

N/A

III. Information Required by Rule 7205

A. Additional Application Contents for Cost Allocation Requests in Grade Separation Applications.

1. In the case of applications concerning highway-rail grade separations for which contribution from one or more railroad corporations is requested, the applicant shall, in addition to the information required by paragraph 7204(a), include the following additional information in the application in the following order and specifically identified either in the application or appropriately identified attachments:
   a) A complete description of the scope of the proposed separation project;

      N/A

   b) A preliminary set of construction plans, including engineering costs;

      N/A

   c) A Preliminary engineer's cost estimate, including engineering costs;

      N/A

   d) The estimated costs of right-of-way, parcel by parcel, including railroad right-of-way;

      N/A

   e) A proposed construction timetable;

      N/A

   f) A list of affected railroad corporations;

      N/A

   g) A Preliminary design of the theoretical structure for a reasonably adequate facility; and

PUC Application Sample Document (20 of 25)

N/A

h) A cost estimate of the theoretical structure, including the costs described in subparagraphs (III) and (IV) of this paragraph and including a 20 percent contingency.

N/A

2. The railroad and/or rail fixed guideway line name and milepost number where the crossing that is subject of the application is located.

N/A

3. The National Inventory Number and the National Inventory Form for an existing crossing, or a statement that no National Inventory Number and/or National Inventory Form exists for a new crossing.

N/A

4. All accident reports for the crossing and/or a listing of all accidents for any rail fixed guideway tracks through the crossing, or a statement that no accident reports and/or listing of rail fixed guideway accidents exist for the crossing

N/A

5. A statement of the date that the required crossing safety diagnostic occurred, or a copy of written correspondence from Commission staff that a crossing safety diagnostic was not required.

N/A

6. A statement of:
   a) The existing number and character of trains (e.g., through movements, switching movements) passing through the crossing each day if the National Inventory Form has not been updated within three years from the date of the filing of the application, or the existing number, character, and timetable speed of trains as shown on the National Inventory Form if the form has been updated within three years from the date of the filing of the application;

   N/A

   b) The five-year projection of increases or decreases of the number and character of trains using the crossing; and

   N/A

PUC Application Sample Document (21 of 25)

c) The maximum timetable speed of trains using the crossing.

N/A

7. A detailed statement as to the nature of and need for the construction, alteration, abolition, installation, or modification for which approval is sought.

N/A

8. A statement of the scope of the project, including without limitation:
   a) The highway design, pathway design, crossing warning devices, and necessary traffic signal interconnection and preemption;

   N/A

   b) The detailed itemized estimated cost of the proposed construction, alteration, abolition, or highway-rail or pathway crossing warning device installation or modification;

   N/A

   c) How the applicant proposes to provide for the cost, explaining the proposed apportionment between or among the parties in interest if applicable; and

   N/A

   d) If the funds necessary for the project are currently available and encumbered.

   N/A

9. A statement of the estimated month and year for:
   a) The start date for the construction, alteration, abolition, or crossing warning device installation or modification;

   N/A

   b) The completion date for the construction, alteration, abolition, or crossing warning device installation or modification; and

   N/A

   c) The date for commencement of operations through the crossing for new crossings.

   N/A

PUC Application Sample Document (22 of 25)

10. A vicinity map that includes the proposed project limits (i.e., a map that includes the general area circumscribing the project).

N/A

11. The names and mailing addresses of all persons, including adjacent property owners, public utilities, and local government agencies that may be interested in or affected by the application.

N/A

12. If the crossing is at-grade: a statement fully justifying why a separation of grades is not practicable under the circumstances.

N/A

13. A statement if the application is seeking preliminary approval of conceptual level design plans, or if the application is seeking final approval of final design plans

N/A

14. A statement if the application includes a request to install a temporary safety measure.

N/A

PUC Application Sample Document (23 of 25)

WHEREFORE, CDOT requests that the Public Utilities Commission enter an Order authorizing the installation of flashing light signals with gates and bells, constant warning time circuitry, new signal cabin and new crossing surface at the County Road J crossing of BNSF Railway tracks for which CDOT has appropriated Federal Section 130 Funds in Yuma County, State of Colorado.

DATED at Denver, Colorado this _____ day of _____, 2017.

DEPARTMENT OF TRANSPORTATION
STATE OF COLORADO

By _____
Joshua Laipply, P.E.
Chief Engineer

By _____
Gregg E. Carson, #25460
Attorney for the Colorado Department of Transportation
Litigation & Employment Section-Transportation Unit
1300 Broadway, 10th Floor
Denver, CO 80203
Ph. 720-508-6000
Email: Gregg.Carson@coag.gov

PUC Application Sample Document (24 of 25)

ATTESTATION

The undersigned is authorized to act on behalf of the applicant and attests, as required and pursuant to Commission Rule 4 *Code of Colorado Regulations* 723-7-7002(b)(IX), that [s]he has read the foregoing Application and states, under penalty of perjury, that all facts regarding this Application are true and correct to his/her best personal knowledge, information and belief.

_____

Neil Lacey, PE
Resident Engineer
Colorado Department of Transportation
4201 East Arkansas Avenue, 4th Floor
Denver, CO 80222

STATE OF COLORADO)
)ss.
COUNTY OF DENVER)

Subscribed and sworn to before me this _____ day of _____, 2017

_____

Notary Public

--My Commission expires on

_____

25

PUC Application Sample Document (25 of 25)

PUC Compliance Filing as Ordered (Project Completion)

PUC Compliance Filing (Project Completion) (1 of 1)

COLORADO
Department of Transportation
Division of Project Support
Railroad Program

March 23, 2017

CDOT Project No. STA 0704-210, 16259
I-70 Bridge Replacement over UPRR
Smith Road DOT # 805-503U

Doug Dean
Director
Colorado Public Utilities Commission
1560 Broadway, Suite 250
Denver, CO 80202

RE: **Docket 13A-0567R** - CDOT Compliance Filing

This letter is to provide information on a CDOT project related to PUC Docket 13A-0567R, and **Decision No C13-0847** that required CDOT to provide information.

The subject CDOT Project has completed the I-70 Bridge replacements over the UPRR, and was operational on **December 1, 2016**.

This information should complete the required compliance information.

Sincerely,

Rob Martindale
CDOT Railroad Program Manager

CDOT Railroad Program, 4201 E. Arkansas Ave, Denver, CO 80222 P 303.757.9541

Contractor Requirements – BNSF Exhibit C and C-1 Sample Document

Contractor Requirements – BNSF Exhibit C and C-1 Sample Document (1 of 21)

CDOT – BNSF Master Agreement
SAP PO #
CMS #

EXHIBIT C
CONTRACTOR REQUIREMENTS

1.01 General

- **1.01.01** The Contractor must cooperate with **BNSF RAILWAY COMPANY**, hereinafter referred to as "Railway" where work is over or under on or adjacent to Railway property and/or right-of-way, hereafter referred to as "Railway Property", during the construction of _____.

- **1.01.02** The Contractor must execute and deliver to the Railway duplicate copies of the Exhibit "C-1" Agreement, in the form attached hereto, obligating the Contractor to provide and maintain in full force and effect the insurance called for under Section 3 of said Exhibit "C-1". Questions regarding procurement of the Railroad Protective Liability Insurance should be directed to Rosa Martinez at Marsh, USA, 214-303-8519.

- **1.01.03** The Contractor must plan, schedule and conduct all work activities so as not to interfere with the movement of any trains on Railway Property.

- **1.01.04** The Contractor's right to enter Railway's Property is subject to the absolute right of Railway to cause the Contractor's work on Railway's Property to cease if, in the opinion of Railway, Contractor's activities create a hazard to Railway's Property, employees, and/or operations. Railway will have the right to stop construction work on the Project if any of the following events take place: (i) Contractor (or any of its subcontractors) performs the Project work in a manner contrary to the plans and specifications approved by Railway; (ii) Contractor (or any of its subcontractors), in Railway's opinion, prosecutes the Project work in a manner which is hazardous to Railway property, facilities or the safe and expeditious movement of railroad traffic; (iii) the insurance described in the attached Exhibit C-1 is canceled during the course of the Project; or (iv) Contractor fails to pay Railway for the Temporary Construction License or the Easement. The work stoppage will continue until all necessary actions are taken by Contractor or its subcontractor to rectify the situation to the satisfaction of Railway's Division Engineer or until additional insurance has been delivered to and accepted by Railway. In the event of a breach of (i) this Agreement, (ii) the Temporary Construction License, or (iii) the Easement, Railway may immediately terminate the Temporary Construction License or the Easement. Any such work stoppage under this provision will not give rise to any liability on the part of Railway. Railway's right to stop the work is in addition to any other rights Railway may have including, but not limited to, actions or suits for damages or lost profits. In the event that Railway desires to stop construction work on the Project, Railway agrees to immediately notify the following individual in writing:

_____

_____

_____

_____

- **1.01.05** The Contractor is responsible for determining and complying with all Federal, State and Local Governmental laws and regulations, including, but not limited to environmental laws and

Contractor Requirements – BNSF Exhibit C and C-1 Sample Document (2

of 21)

regulations (including but not limited to the Resource Conservation and Recovery Act, as amended; the Clean Water Act, the Oil Pollution Act, the Hazardous Materials Transportation Act, CERCLA), and health and safety laws and regulations. The Contractor hereby indemnifies, defends and holds harmless Railway for, from and against all fines or penalties imposed or assessed by Federal, State and Local Governmental Agencies against the Railway which arise out of Contractor's work under this Agreement.

- **1.01.06** The Contractor must notify the (Agency) at _____ and Railway's Manager Public Projects, telephone number (__)____at least thirty (30) calendar days before commencing any work on Railway Property. Contractors notification to Railway, must refer to Railroad's file.

- **1.01.07** For any bridge demolition and/or falsework above any tracks or any excavations located with any part of the excavations located within, whichever is greater, twenty-five (25) feet of the nearest track or intersecting a slope from the plane of **the** top of rail on a 2 horizontal to 1 vertical slope beginning at eleven (11) feet from centerline of the nearest track, both measured perpendicular to center line of track, the Contractor must furnish the Railway five sets of working drawings showing details of construction affecting Railway Property and tracks. The working drawing must include the proposed method of installation and removal of falsework, shoring or cribbing, not included in the contract plans and two sets of structural calculations of any falsework, shoring or cribbing. For all excavation and shoring submittal plans, the current "BNSF-UPRR Guidelines for Temporary Shoring" must be used for determining the design loading conditions to be used in shoring design, and all calculations and submittals must be in accordance with the current "BNSF-UPRR Guidelines for Temporary Shoring". All submittal drawings and calculations must be stamped by a registered professional engineer licensed to practice in the state the project is located. All calculations must take into consideration railway surcharge loading and must be designed to meet American Railway Engineering and Maintenance-of-Way Association (previously known as American Railway Engineering Association) Coopers E-80 live loading standard. All drawings and calculations must be stamped by a registered professional engineer licensed to practice in the state the project is located. The Contractor must not begin work until notified by the Railway that plans have been approved. The Contractor will be required to use lifting devices such as, cranes and/or winches to place or to remove any falsework over Railway's tracks. In no case will the Contractor be relieved of responsibility for results obtained by the implementation of said approved plans.

- **1.01.08** Subject to the movement of Railway's trains, Railway will cooperate with the Contractor such that the work may be handled and performed in an efficient manner. The Contractor will have no claim whatsoever for any type of damages or for extra or additional compensation in the event his work is delayed by the Railway.

1.02 Contractor Safety Orientation

- **1.02.01 No employee of the Contractor, its subcontractors, agents or invitees may enter Railway Property without first having completed Railway's Engineering Contractor Safety Orientation, found on the web site www.contractororientation.com. The Contractor must ensure that each of its employees, subcontractors, agents or invitees completes Railway's Engineering Contractor Safety Orientation through internet sessions before any work is performed on the Project. Additionally, the Contractor must ensure that each and every one of its employees,**

Contractor Requirements – BNSF Exhibit C and C-1 Sample Document (3 of 21)

subcontractors, agents or invitees possesses a card certifying completion of the Railway Contractor Safety Orientation before entering Railway Property. The Contractor is responsible for the cost of the Railway Contractor Safety Orientation. The Contractor must renew the Railway Contractor Safety Orientation annually. Further clarification can be found on the web site or from the Railway's Representative.

1.03 Railway Requirements

- **1.03.01** The Contractor must take protective measures as are necessary to keep railway facilities, including track ballast, free of sand, debris, and other foreign objects and materials resulting from his operations. Any damage to railway facilities resulting from Contractor's operations will be repaired or replaced by Railway and the cost of such repairs or replacement must be paid for by the Agency.

- **1.03.02** The Contractor must notify the Railway's Division Superintendent _____ at (_____)_____ and provide blasting plans to the Railway for review seven (7) calendar days prior to conducting any blasting operations adjacent to or on Railway's Property.

- **1.03.03** The Contractor must abide by the following temporary clearances during construction:

  - 15' Horizontally from centerline of nearest track
  - 21'-6" Vertically above top of rail
  - 27'-0" Vertically above top of rail for electric wires carrying less than 750 volts
  - 28'-0" Vertically above top of rail for electric wires carrying 750 volts to 15,000 volts
  - 30'-0" Vertically above top of rail for electric wires carrying 15,000 volts to 20,000 volts
  - 34'-0" Vertically above top of rail for electric wires carrying more than 20,000 volts

- **1.03.04** Upon completion of construction, the following clearances shall be maintained:

  - 25' Horizontally from centerline of nearest track
  - 23'-3 ½" Vertically above top of rail

- **1.03.05** Any infringement within State statutory clearances due to the Contractor's operations must be submitted to the Railway and to the (Agency)_____ and must not be undertaken until approved in writing by the Railway, and until the (Agency)_____ has obtained any necessary authorization from the State Regulatory Authority for the infringement. No extra compensation will be allowed in the event the Contractor's work is delayed pending Railway approval, and/or the State Regulatory Authority's approval.

- **1.03.06** In the case of impaired vertical clearance above top of rail, Railway will have the option of installing tell-tales or other protective devices Railway deems necessary for protection of Railway operations. The cost of tell-tales or protective devices will be borne by the Agency.

- **1.03.07** The details of construction affecting the Railway's Property and tracks not included in the contract plans must be submitted to the Railway by (Agency)_____ for approval before work is undertaken and this work must not be undertaken until approved by the Railway.

- **1.03.08** At other than public road crossings, the Contractor must not move any equipment or materials across Railway's tracks until permission has been obtained from the Railway. The Contractor must obtain a "Temporary Construction Crossing Agreement" from the Railway prior

Contractor Requirements – BNSF Exhibit C and C-1 Sample Document (4

of 21)

to moving his equipment or materials across the Railways tracks. The temporary crossing must be gated and locked at all times when not required for use by the Contractor. The temporary crossing for use of the Contractor will be constructed and, at the completion of the project, removed at the expense of the Contractor.

- **1.03.09** Discharge, release or spill on the Railway Property of any hazardous substances, oil, petroleum, constituents, pollutants, contaminants, or any hazardous waste is prohibited and Contractor must immediately notify the Railway's Resource Operations Center at 1(800) 832-5452, of any discharge, release or spills in excess of a reportable quantity. Contractor must not allow Railway Property to become a treatment, storage or transfer facility as those terms are defined in the Resource Conservation and Recovery Act or any state analogue.

- **1.03.10** The Contractor upon completion of the work covered by this contract, must promptly remove from the Railway's Property all of Contractor's tools, equipment, implements and other materials, whether brought upon said property by said Contractor or any Subcontractor, employee or agent of Contractor or of any Subcontractor, and must cause Railway's Property to be left in a condition acceptable to the Railway's representative.

1.04 Contractor Roadway Worker on Track Safety Program and Safety Action Plan

- **1.04.01** Each Contractor that will perform work within 25 feet of the centerline of a track must develop and implement a Roadway Worker Protection/On Track Safety Program and work with Railway Project Representative to develop an on track safety strategy as described in the guidelines listed in the on track safety portion of the Safety Orientation. This Program must provide Roadway Worker protection/on track training for all employees of the Contractor, its subcontractors, agents or invitees. This training is reinforced at the job site through job safety briefings. Additionally, each Contractor must develop and implement the Safety Action Plan, as provided for on the web site www.contractororientation.com, which will be made available to Railway prior to commencement of any work on Railway Property. During the performance of work, the Contractor must audit its work activities. The Contractor must designate an on-site Project Supervisor who will serve as the contact person for the Railway and who will maintain a copy of the Safety Action Plan, safety audits, and Material Safety Datasheets (MSDS), at the job site.

1.05 Railway Flagger Services:

- **1.05.01** The Contractor must give Railway's Roadmaster (telephone _____) a minimum of thirty (30) calendar days advance notice when flagging services will be required so that the Roadmaster can make appropriate arrangements (i.e., bulletin the flagger's position). If flagging services are scheduled in advance by the Contractor and it is subsequently determined by the parties hereto that such services are no longer necessary, the Contractor must give the Roadmaster five (5) working days advance notice so that appropriate arrangements can be made to abolish the position pursuant to union requirements.

- **1.05.02** Unless determined otherwise by Railway's Project Representative, Railway flagger will be required and furnished when Contractor's work activities are located over, under and/or within twenty-five (25) feet measured horizontally from centerline of the nearest track and when cranes or similar equipment positioned beyond 25-feet from the track centerline could foul the track in

Contractor Requirements – BNSF Exhibit C and C-1 Sample Document (5 of 21)

the event of tip over or other catastrophic occurrence, but not limited thereto for the following conditions:

- **1.05.02a** When, upon inspection by Railway's Representative, other conditions warrant.
- **1.05.02b** When any excavation is performed below the bottom of tie elevation, if, in the opinion of Railway's representative, track or other Railway facilities may be subject to movement or settlement.
- **1.05.02c** When work in any way interferes with the safe operation of trains at timetable speeds.
- **1.05.02d** When any hazard is presented to Railway track, communications, signal, electrical, or other facilities either due to persons, material, equipment or blasting in the vicinity.
- **1.05.02e** Special permission must be obtained from the Railway before moving heavy or cumbersome objects or equipment which might result in making the track impassable.
- **1.05.03** Flagging services will be performed by qualified Railway flaggers.
- **1.05.03a** Flagging crew generally consists of one employee. However, additional personnel may be required to protect Railway Property and operations, if deemed necessary by the Railways Representative.
- **1.05.03b** Each time a flagger is called, the minimum period for billing will be the eight (8) hour basic day.
- **1.05.03c** The cost of flagger services provided by the Railway will be borne by the (Agency). The estimated cost for one (1) flagger is approximately between $800.00-$1,600.00 for an eight (8) hour basic day with time and one-half or double time for overtime, rest days and holidays. The estimated cost for each flagger includes vacation allowance, paid holidays, Railway and unemployment insurance, public liability and property damage insurance, health and welfare benefits, vehicle, transportation, meals, lodging, radio, equipment, supervision and other costs incidental to performing flagging services. Negotiations for Railway labor or collective bargaining agreements and rate changes authorized by appropriate Federal authorities may increase actual or estimated flagging rates. **THE FLAGGING RATE IN EFFECT AT THE TIME OF PERFORMANCE BY THE CONTRACTOR HEREUNDER WILL BE USED TO CALCULATE THE ACTUAL COSTS OF FLAGGING PURSUANT TO THIS PARAGRAPH.**
- **1.05.03d** The average train traffic on this route is _____ freight trains per 24-hour period at a timetable speed _____ MPH and _____ passenger trains at a timetable speed of _____ MPH.

1.06 Contractor General Safety Requirements

- **1.06.01** Work in the proximity of railway track(s) is potentially hazardous where movement of trains and equipment can occur at any time and in any direction. All work performed by contractors within 25 feet of any track must be in compliance with FRA Roadway Worker Protection Regulations.

Contractor Requirements – BNSF Exhibit C and C-1 Sample Document (6 of 21)

- **1.06.02** Before beginning any task on Railway Property, a thorough job safety briefing must be conducted with all personnel involved with the task and repeated when the personnel or task changes. If the task is within 25 feet of any track, the job briefing must include the Railway's flagger, as applicable, and include the procedures the Contractor will use to protect its employees, subcontractors, agents or invitees from moving any equipment adjacent to or across any Railway track(s).

- **1.06.03** Workers must not work within 25 feet of the centerline of any track without an on track safety strategy approved by the Railway's Project Representative. When authority is provided, every contractor employee must know: (1) who the Railway flagger is, and how to contact the flagger, (2) limits of the authority, (3) the method of communication to stop and resume work, and (4) location of the designated places of safety. Persons or equipment entering flag/work limits that were not previously job briefed, must notify the flagger immediately, and be given a job briefing when working within 25 feet of the center line of track.

- **1.06.04** When Contractor employees are required to work on the Railway Property after normal working hours or on weekends, the Railroad's representative in charge of the project must be notified. A minimum of two employees must be present at all times.

- **1.06.05** Any employees, agents or invitees of Contractor or its subcontractors under suspicion of being under the influence of drugs or alcohol, or in the possession of same, will be removed from the Railway's Property and subsequently released to the custody of a representative of Contractor management. Future access to the Railway's Property by that employee will be denied.

- **1.06.06** Any damage to Railway Property, or any hazard noticed on passing trains must be reported immediately to the Railway's representative in charge of the project. Any vehicle or machine which may come in contact with track, signal equipment, or structure (bridge) and could result in a train derailment must be reported immediately to the Railway representative in charge of the project and to the Railway's Resource Operations Center at 1(800) 832-5452. Local emergency numbers are to be obtained from the Railway representative in charge of the project prior to the start of any work and must be posted at the job site.

- **1.06.07** For safety reasons, all persons are prohibited from having pocket knives, firearms or other deadly weapons in their possession while working on Railway's Property.

- **1.06.08** All personnel protective equipment (PPE) used on Railway Property must meet applicable OSHA and ANSI specifications. Current Railway personnel protective equipment requirements are listed on the web site, www.contractororientation.com, however, a partial list of the requirements include: a) safety glasses with permanently affixed side shields (no yellow lenses); b) hard hats c) safety shoe with: hardened toes, above-the-ankle lace-up and a defined heel; and d) high visibility retro-reflective work wear. The Railroad's representative in charge of the project is to be contacted regarding local specifications for meeting requirements relating to hi-visability work wear. Hearing protection, fall protection, gloves, and respirators must be worn as required by State and Federal regulations. **(NOTE – Should there be a discrepancy between the information contained on the web site and the information in this paragraph, the web site will govern.)**

- **1.06.09 THE CONTRACTOR MUST NOT PILE OR STORE ANY MATERIALS, MACHINERY OR EQUIPMENT CLOSER THAN 25'-0" TO THE CENTER LINE OF THE NEAREST RAILWAY TRACK. MATERIALS, machinery OR EQUIPMENT MUST**

of 21)

NOT BE STORED OR LEFT WITHIN 250 FEET OF ANY HIGHWAY/RAIL AT-GRADE crossings OR TEMPORARY CONSTRUCTION CROSSING, WHERE STORAGE OF THE SAME WILL OBSTRUCT THE VIEW OF A TRAIN APPROACHING THE CROSSING. PRIOR TO BEGINNING WORK, THE CONTRACTOR MUST ESTABLISH A STORAGE AREA WITH CONCURRENCE OF THE RAILROAD'S REPRESENTATIVE.

- **1.06.10** Machines or vehicles must not be left unattended with the engine running. Parked machines or equipment must be in gear with brakes set and if equipped with blade, pan or bucket, they must be lowered to the ground. All machinery and equipment left unattended on Railway's Property must be left inoperable and secured against movement. (See internet Engineering Contractor Safety Orientation program for more detailed specifications).

- **1.06.11** Workers must not create and leave any conditions at the work site that would interfere with water drainage. Any work performed over water must meet all Federal, State and Local regulations.

- **1.06.12** All power line wires must be considered dangerous and of high voltage unless informed to the contrary by proper authority. For all power lines the minimum clearance between the lines and any part of the equipment or load must be; 200 KV or below - 15 feet; 200 to 350 KV - 20 feet; 350 to 500 KV - 25 feet; 500 to 750 KV - 35 feet; and 750 to 1000 KV - 45 feet. If capacity of the line is not known, a minimum clearance of 45 feet must be maintained. A person must be designated to observe clearance of the equipment and give a timely warning for all operations where it is difficult for an operator to maintain the desired clearance by visual means.

1.07 Excavation

- **1.07.01** Before excavating, the Contractor must determine whether any underground pipe lines, electric wires, or cables, including fiber optic cable systems are present and located within the Project work area. The Contractor must determine whether excavation on Railway's Property could cause damage to buried cables resulting in delay to Railway traffic and disruption of service to users. Delays and disruptions to service may cause business interruptions involving loss of revenue and profits. Before commencing excavation, the Contractor must contact BNSF's Field Engineering Representative (_____).All underground and overhead wires will be considered HIGH VOLTAGE and dangerous until verified with the company having ownership of the line. **It is the Contractor's responsibility to notify any other companies that have underground utilities in the area and arrange for the location of all underground utilities before excavating.**

- **1.07.02** The Contractor must cease all work and notify the Railway immediately before continuing excavation in the area if obstructions are encountered which do not appear on drawings. If the obstruction is a utility and the owner of the utility can be identified, then the Contractor must also notify the owner immediately. If there is any doubt about the location of underground cables or lines of any kind, no work must be performed until the exact location has been determined. There will be no exceptions to these instructions.

- **1.07.03** All excavations must be conducted in compliance with applicable OSHA regulations and, regardless of depth, must be shored where there is any danger to tracks, structures or personnel.

- **1.07.04** Any excavations, holes or trenches on the Railway's Property must be covered, guarded and/or protected when not being worked on. When leaving work site areas at night and over

Contractor Requirements – BNSF Exhibit C and C-1 Sample Document (8 of 21)

weekends, the areas must be secured and left in a condition that will ensure that Railway employees and other personnel who may be working or passing through the area are protected from all hazards. All excavations must be back filled as soon as possible.

1.08 Hazardous **Waste, Substances and Material Reporting**

- **1.08.01** If Contractor discovers any hazardous waste, hazardous substance, petroleum or other deleterious material, including but not limited to any non-containerized commodity or material, on or adjacent to Railway's Property, in or near any surface water, swamp, wetlands or waterways, while performing any work under this Agreement, Contractor must immediately: (a) notify the Railway's Resource Operations Center at 1(800) 832-5452, of such discovery: (b) take safeguards necessary to protect its employees, subcontractors, agents and/or third parties: and (c) exercise due care with respect to the release, including the taking of any appropriate measure to minimize the impact of such release.

1.09 Personal Injury Reporting

- **1.09.01** The Railway is required to report certain injuries as a part of compliance with Federal Railroad Administration (FRA) reporting requirements. Any personal injury sustained by an employee of the Contractor, subcontractor or Contractor's invitees while on the Railway's Property must be reported immediately (by phone mail if unable to contact in person) to the Railway's representative in charge of the project. The Non-Employee Personal Injury Data Collection Form contained herein is to be completed and sent by Fax to the Railway at 1(817) 352-7595 and to the Railway's Project Representative no later than the close of shift on the date of the injury.

THE REST OF THIS PAGE INTENTIONALLY LEFT BLANK

of 21)

CDOT – BNSF Master Agreement
SAP PO #
CMS #

NON-EMPLOYEE PERSONAL INJURY DATA COLLECTION

INFORMATION REQUIRED TO BE COLLECTED PURSUANT TO FEDERAL REGULATION. IT SHOULD BE USED FOR COMPLIANCE WITH FEDERAL REGULATIONS ONLY AND IS NOT INTENDED TO PRESUME ACCEPTANCE OF RESPONSIBILITY OR LIABILITY.

1. Accident City/St _____

2. Date: _____ Time: _____

County:_____ 4. Temperature: _____5. Weather: _____
(if non-Railway location)

5. Social Security # _____

6. Name (last, first, mi) _____

7. Address: Street: _____ City: _____

St._____ Zip: _____

8. Date of Birth: _____ and/or Age_____ Gender: _____
(if available)

9. (a) Injury: _____ (b) Body Part: _____
(i.e. (a) Laceration (b) Hand)

11. Description of Accident (To include location, action, result, etc.):

_____

_____

12. Treatment:
? First Aid Only
? Required Medical Treatment
? Other Medical Treatment

13. Dr. Name: _____ Date:_____

14. Dr. Address:
Street: _____City: _____ St: _____ Zip: _____

15. Hospital Name: _____

16. Hospital Address:

Street: _____City: _____St: ____ Zip: _____

17.Diagnosis:

_____

_____

FAX TO
RAILWAY AT (817) 352-7595
AND COPY TO
RAILWAY ROADMASTER FAX

Contractor Requirements – BNSF Exhibit C and C-1 Sample Document (10 of 21)

CDOT – BNSF Master Agreement
SAP PO #
CMS #

EXHIBIT C-1 (BNSF AND CONTRACTOR AGREEMENT – LOW LIMIT)

BNSF RAILWAY COMPANY
Attention: Manager Public Projects

Railway File: _____
Agency Project: _____

The undersigned (hereinafter called, the "Contractor"), has entered into a contract (the "Contract")dated _____, 2010, with _____for the performance of certain work in connection with the following project _____. Performance of such work will necessarily require contractor to enter BNSF RAILWAY COMPANY ("Railway") right of way and property ("Railway Property"). The Contract provides that no work will be commenced within Railway Property until the Contractor employed in connection with said work for _____ (i) executes and delivers to Railway an Agreement in the form hereof, and (ii) provides insurance of the coverage and limits specified in such Agreement and Section 3 herein. If this Agreement is executed by a party who is not the Owner, General Partner, President or Vice President of Contractor, Contractor must furnish evidence to Railway certifying that the signatory is empowered to execute this Agreement on behalf of Contractor.

Accordingly, in consideration of Railway granting permission to Contractor to enter upon Railway Property and as an inducement for such entry, Contractor, effective on the date of the Contract, has agreed and does hereby agree with Railway as follows:

Section 1. RELEASE OF LIABILITY AND INDEMNITY

Contractor hereby waives, releases, indemnifies, defends and holds harmless Railway for all judgments, awards, claims, demands, and expenses (including attorneys' fees), for injury or death to all persons, including Railway's and Contractor's officers and employees, and for loss and damage to property belonging to any person, arising in any manner from Contractor's or any of Contractor's subcontractors' acts or omissions or any work performed on or about Railway's property or right-of-way. **THE LIABILITY ASSUMED BY CONTRACTOR WILL NOT BE AFFECTED BY THE FACT, IF IT IS A FACT, THAT THE DESTRUCTION, DAMAGE, DEATH, OR INJURY WAS OCCASIONED BY OR CONTRIBUTED TO BY THE NEGLIGENCE OF RAILWAY, ITS AGENTS, SERVANTS, EMPLOYEES OR OTHERWISE, EXCEPT TO THE EXTENT THAT SUCH CLAIMS ARE PROXIMATELY CAUSED BY THE INTENTIONAL MISCONDUCT OR GROSS NEGLIGENCE OF RAILWAY.**

THE INDEMNIFICATION OBLIGATION ASSUMED BY CONTRACTOR INCLUDES ANY CLAIMS, SUITS OR JUDGMENTS BROUGHT AGAINST RAILWAY UNDER THE FEDERAL EMPLOYEE'S LIABILITY ACT, INCLUDING CLAIMS FOR STRICT LIABILITY UNDER THE SAFETY APPLIANCE ACT OR THE LOCOMOTIVE INSPECTION ACT, WHENEVER SO CLAIMED. THIS INDEMITY SHALL ALSO EXTEND, ON THE SAME BASIS, TO CLAIMS BASED ON THE ACTUAL OR ALLEGED VIOLATIONS OF ANY FEDERAL, STATE OR LOCAL LAWS OR REGULATIONS INCLUDING BUT NOT LIMITED TO STATE WORKERS COMPENSATION STATUTES, THE OCCUPATIONAL HEALTH AND SAFETY ACT, THE RESOURCE CONSERVATION AND RECOVERY ACT, AND ANY SIMILAR STATE OR FEDERAL STATUTE.

Contractor further agrees, at its expense, in the name and on behalf of Railway, that it will adjust and settle all claims made against Railway, and will, at Railway's discretion, appear and defend any suits or actions of law or in equity brought against Railway on any claim or cause of action arising or growing out of or in any manner connected with any liability assumed by Contractor under this Agreement for which Railway is liable or is alleged to be liable. Railway will give notice to Contractor, in writing, of the receipt or dependency of such claims and thereupon Contractor must proceed to adjust and handle to a conclusion such claims, and in the event

Contractor Requirements – BNSF Exhibit C and C-1 Sample Document (11

of 21)

of a suit being brought against Railway, Railway may forward summons and complaint or other process in connection therewith to Contractor, and Contractor, at Railway's discretion, must defend, adjust, or settle such suits and protect, indemnify, and save harmless Railway from and against all damages, judgments, decrees, attorney's fees, costs, and expenses growing out of or resulting from or incident to any such claims or suits.

In addition to any other provision of this Agreement, in the event that all or any portion of this Article shall be deemed to be inapplicable for any reason, including without limitation as a result of a decision of an applicable court, legislative enactment or regulatory order, the parties agree that this Article shall be interpreted as requiring Contractor to indemnify Railroad to the fullest extent permitted by applicable law. **THROUGH THIS AGREEMENT THE PARTIES EXPRESSLY INTEND FOR CONTRACTOR TO INDEMNIFY RAILROAD FOR RAILROAD'S ACTS OF NEGLIGENCE.**

It is mutually understood and agreed that the assumption of liabilities and indemnification provided for in this Agreement survive any termination of this Agreement.

Section 2. TERM

This Agreement is effective from the date of the Contract until (i) the completion of the project set forth herein, and (ii) full and complete payment to Railway of any and all sums or other amounts owing and due hereunder.

Section 3. INSURANCE

Contractor must, at its sole cost and expense, procure and maintain during the life of this Agreement the following insurance coverage:

A. Commercial General Liability insurance. This insurance shall contain broad form contractual liability with a combined single limit of a minimum of $2,000,000 each occurrence and an aggregate limit of at least $4,000,000 but in no event less than the amount otherwise carried by the contractor. Coverage must be purchased on a post 1998 ISO occurrence form or equivalent and include coverage for, but not limit to the following:

- Bodily Injury and Property Damage
- Personal Injury and Advertising Injury
- Fire legal liability
- Products and completed operations

This policy shall also contain the following endorsements, which shall be indicated on the certificate of insurance:

- The definition of insured contract shall be amended to remove any exclusion or other limitation for any work being done within 50 feet of railroad property.
- Waiver of subrogation in favor of and acceptable to Railroad.
- Additional insured endorsement in favor of and acceptable to Railroad.
- Separation of insureds.
- The policy shall be primary and non-contributing with respect to any insurance carried by Railroad.

It is agreed that the workers' compensation and employers' liability related exclusions in the Commercial General Liability insurance policy(s) required herein are intended to apply to employees of the policy holder and shall not apply to Railroad employees.

No other endorsements limiting coverage as respects obligations under this Agreement may be included on the policy with regard to the work being performed under this agreement.

Contractor Requirements – BNSF Exhibit C and C-1 Sample Document (12 of 21)

B. Business Automobile Insurance. This insurance shall contain a combined single limit of at least $1,000,000 per occurrence, and include coverage for, but not limited to the following:

- Bodily injury and property damage
- Any and all vehicles owned, used or hired

The policy shall also contain the following endorsements or language, which shall be indicated on the certificate of insurance:

- Waiver of subrogation in favor of and acceptable to Railroad.
- Additional insured endorsement in favor or and acceptable to Railroad.
- Separation of insureds.
- The policy shall be primary and non-contributing with respect to any insurance carried by Railroad.

C. Workers Compensation and Employers Liability insurance including coverage for, but not limited to:

- Contractor's statutory liability under the worker's compensation laws of the state(s) in which the work is to be performed. If optional under State law, the insurance must cover all employees anyway.
- Employers' Liability (Part B) with limits of at least $500,000 each accident, $500,000 by disease policy limit, $500,000 by disease each employee.

This policy shall also contain the following endorsements or language, which shall be indicated on the certificate of insurance:

- Waiver of subrogation in favor of and acceptable to Railroad.

D. Railroad Protective Liability insurance naming only the Railroad as the Insured with coverage of at least $2,000,000 per occurrence and $6,000,000 in the aggregate. The policy Shall be issued on a standard ISO form CG 00 35 10 93 and include the following:

- Endorsed to include the Pollution Exclusion Amendment (ISO form CG 28 31 10 93)
- Endorsed to include the Limited Seepage and Pollution Endorsement.
- Endorsed to remove any exclusion for punitive damages.
- No other endorsements restricting coverage may be added.
- The original policy must be provided to the Railroad prior to performing any work or services under this Agreement

In lieu of providing a Railroad Protective Liability Policy, Licensee may participate in Licensor's Blanket Railroad Protective Liability Insurance Policy available to contractor.

Other Requirements:

All policies (applying to coverage listed above) must not contain an exclusion for punitive damages and certificates of insurance must reflect that no exclusion exists.

Contractor agrees to waive its right of recovery against Railroad for all claims and suits against Railroad. In addition, its insurers, through the terms of the policy or policy endorsement, waive their right of subrogation against Railroad for all claims and suits. The certificate of insurance must reflect the waiver of subrogation endorsement. Contractor further waives its right of recovery, and its insurers also waive their right of subrogation against Railroad for loss of its owned or leased property or property under contractor's care, custody or control.

Contractor is not allowed to self-insure without the prior written consent of Railroad. If granted by Railroad, any deductible, self-insured retention or other financial responsibility for claims must be covered directly by contractor in lieu of insurance. Any and all Railroad liabilities that would otherwise, in accordance with the

of 21)

provisions of this Agreement, be covered by contractor's insurance will be covered as if contractor elected not to include a deductible, self-insured retention or other financial responsibility for claims.

Prior to commencing the Work, contractor must furnish to Railroad an acceptable certificate(s) of insurance including an original signature of the authorized representative evidencing the required coverage, endorsements, and amendments. The policy(ies) must contain a provision that obligates the insurance company(ies) issuing such policy(ies) to notify Railroad in writing at least 30 days prior to any cancellation, non-renewal, substitution or material alteration. This cancellation provision must be indicated on the certificate of insurance. Upon request from Railroad, a certified duplicate original of any required policy must be furnished. Contractor should send the certificate(s) to the following address:

Ebix BPO
PO Box 12010-BN
Hemet, CA 92546-8010
Fax number: 951-652-2882
Email: bnsf@ebix.com

Any insurance policy must be written by a reputable insurance company acceptable to Railroad or with a current Best's Guide Rating of A- and Class VII or better, and authorized to do business in the state(s) in which the service is to be provide.

Contractor represents that this Agreement has been thoroughly reviewed by contractor's insurance agent(s)/broker(s), who have been instructed by contractor to procure the insurance coverage required by this Agreement. Allocated Loss Expense must be in addition to all policy limits for coverages referenced above.

Not more frequently than once every five years, Railroad may reasonably modify the required insurance coverage to reflect then-current risk management practices in the railroad industry and underwriting practices in the insurance industry.

If any portion of the operation is to be subcontracted by contractor, contractor must require that the subcontractor provide and maintain the insurance coverages set forth herein, naming Railroad as an additional insured, and requiring that the subcontractor release, defend and indemnify Railroad to the same extent and under the same terms and conditions as contractor is required to release, defend and indemnify Railroad herein.

Failure to provide evidence as required by this section will entitle, but not require, Railroad to terminate this Agreement immediately. Acceptance of a certificate that does not comply with this section will not operate as a waiver of contractor's obligations hereunder.

The fact that insurance (including, without limitation, self-insurance) is obtained by contractor will not be deemed to release or diminish the liability of contractor including, without limitation, liability under the indemnity provisions of this Agreement. Damages recoverable by Railroad will not be limited by the amount of the required insurance coverage.

For purposes of this section, Railroad means "Burlington Northern Santa Fe Corporation", "BNSF RAILWAY COMPANY" and the subsidiaries, successors, assigns and affiliates of each.

Section 4. EXHIBIT "C" CONTRACTOR REQUIREMENTS

The Contractor must observe and comply with all provisions, obligations, requirements and limitations contained in the Contract, and the Contractor Requirements set forth on Exhibit "C" attached to the Contract and this Agreement, including, but not be limited to, payment of all costs incurred for any damages to Railway roadbed, tracks, and/or appurtenances thereto, resulting from use, occupancy, or presence of its employees, representatives, or agents or subcontractors on or about the construction site.

Contractor Requirements – BNSF Exhibit C and C-1 Sample Document (14 of 21)

CDOT – BNSF Master Agreement
SAP PO #
CMS #

Section 5. TRAIN DELAY

Contractor is responsible for and hereby indemnifies and holds harmless Railway (including its affiliated railway companies, and its tenants) for, from and against all damages arising from any unscheduled delay to a freight or passenger train which affects Railway's ability to fully utilize its equipment and to meet customer service and contract obligations. Contractor will be billed, as further provided below, for the economic losses arising from loss of use of equipment, contractual loss of incentive pay and bonuses and contractual penalties resulting from train delays, whether caused by Contractor, or subcontractors, or by the Railway performing work under this Agreement. Railway agrees that it will not perform any act to unnecessarily cause train delay.

For loss of use of equipment, Contractor will be billed the current freight train hour rate per train as determined from Railway's records. Any disruption to train traffic may cause delays to multiple trains at the same time for the same period.

Additionally, the parties acknowledge that passenger, U.S. mail trains and certain other grain, intermodal, coal and freight trains operate under incentive/penalty contracts between Railway and its customer(s). Under these arrangements, if Railway does not meet its contract service commitments, Railway may suffer loss of performance or incentive pay and/or be subject to penalty payments. Contractor is responsible for any train performance and incentive penalties or other contractual economic losses actually incurred by Railway which are attributable to a train delay caused by Contractor or its subcontractors.

The contractual relationship between Railway and its customers is proprietary and confidential. In the event of a train delay covered by this Agreement, Railway will share information relevant to any train delay to the extent consistent with Railway confidentiality obligations. Damages for train delay are currently $382.20 per hour per incident. **THE RATE THEN IN EFFECT AT THE TIME OF PERFORMANCE BY THE CONTRACTOR HEREUNDER WILL BE USED TO CALCULATE THE ACTUAL COSTS OF TRAIN DELAY PURSUANT TO THIS AGREEMENT.**

Contractor and its subcontractors must give Railway's representative (_____) _____ weeks advance notice of the times and dates for proposed work windows. Railway and Contractor will establish mutually agreeable work windows for the project. Railway has the right at any time to revise or change the work windows due to train operations or service obligations. Railway will not be responsible for any additional costs or expenses resulting from a change in work windows. Additional costs or expenses resulting from a change in work windows shall be accounted for in Contractor's expenses for the project.

Contractor and subcontractors must plan, schedule, coordinate and conduct all Contractor's work so as to not cause any delays to any trains.

Kindly acknowledge receipt of this letter by signing and returning to the Railway two original copies of this letter, which, upon execution by Railway, will constitute an Agreement between us.

_____	
(Contractor)	**BNSF Railway Company**
By:_____	By:_____
Printed Name:_____	Name:_____
Title:_____	Manager Public Projects
Contact Person: _____	Accepted and effective this _____day of 201__.

of 21)

CDOT – BNSF Master Agreement
SAP PO #
CMS #

Address: _____

City:_____State:_____Zip:_____

Fax: _____

Phone: _____

E-mail:_____

THE REST OF THIS PAGE INTENTIONALLY LEFT BLANK

Contractor Requirements – BNSF Exhibit C and C-1 Sample Document (16 of 21)

CDOT – BNSF Master Agreement
SAP PO #
CMS #

EXHIBIT C-1B (BNSF AND CONTRACTOR AGREEMENT – HIGH LIMIT)

BNSF RAILWAY COMPANY
Attention: Manager Public Projects

a) Railway File: _____
Agency Project: _____

Gentlemen:

The undersigned (hereinafter called, the "Contractor"), has entered into a contract (the "Contract")dated _____, 200_, with Colorado Department of Transportation for the performance of certain work in connection with the following project:

_____

_____

_____

_____. Performance of such work will necessarily require contractor to enter BNSF RAILWAY COMPANY ("Railway") right of way and property ("Railway Property"). The Contract provides that no work will be commenced within Railway Property until the Contractor employed in connection with said work for Colorado Department of Transportation (i) executes and delivers to Railway an Agreement in the form hereof, and (ii) provides insurance of the coverage and limits specified in such Agreement and Section 3 herein. If this Agreement is executed by a party who is not the Owner, General Partner, President or Vice President of Contractor, Contractor must furnish evidence to Railway certifying that the signatory is empowered to execute this Agreement on behalf of Contractor.

Accordingly, in consideration of Railway granting permission to Contractor to enter upon Railway Property and as an inducement for such entry, Contractor, effective on the date of the Contract, has agreed and does hereby agree with Railway as follows:

Section 1. RELEASE OF LIABILITY AND INDEMNITY

Contractor hereby waives, releases, indemnifies, defends and holds harmless Railway for all judgments, awards, claims, demands, and expenses (including attorneys' fees), for injury or death to all persons, including Railway's and Contractor's officers and employees, and for loss and damage to property belonging to any person, arising in any manner from Contractor's or any of Contractor's subcontractors' acts or omissions or any work performed on or about Railway's property or right-of-way. **THE LIABILITY ASSUMED BY CONTRACTOR WILL NOT BE AFFECTED BY THE FACT, IF IT IS A FACT, THAT THE DESTRUCTION, DAMAGE, DEATH, OR INJURY WAS OCCASIONED BY OR CONTRIBUTED TO BY THE NEGLIGENCE OF RAILWAY, ITS AGENTS, SERVANTS, EMPLOYEES OR OTHERWISE, EXCEPT TO THE EXTENT THAT SUCH CLAIMS ARE PROXIMATELY CAUSED BY THE INTENTIONAL MISCONDUCT OR GROSS NEGLIGENCE OF RAILWAY.**

THE INDEMNIFICATION OBLIGATION ASSUMED BY CONTRACTOR INCLUDES ANY CLAIMS, SUITS OR JUDGMENTS BROUGHT AGAINST RAILWAY UNDER THE FEDERAL EMPLOYEE'S LIABILITY ACT, INCLUDING CLAIMS FOR STRICT LIABILITY UNDER THE SAFETY APPLIANCE ACT OR THE BOILER INSPECTION ACT, WHENEVER SO CLAIMED.

Contractor further agrees, at its expense, in the name and on behalf of Railway, that it will adjust and settle all claims made against Railway, and will, at Railway's discretion, appear and defend any suits or actions of

of 21)

law or in equity brought against Railway on any claim or cause of action arising or growing out of or in any manner connected with any liability assumed by Contractor under this Agreement for which Railway is liable or is alleged to be liable. Railway will give notice to Contractor, in writing, of the receipt or dependency of such claims and thereupon Contractor must proceed to adjust and handle to a conclusion such claims, and in the event of a suit being brought against Railway, Railway may forward summons and complaint or other process in connection therewith to Contractor, and Contractor, at Railway's discretion, must defend, adjust, or settle such suits and protect, indemnify, and save harmless Railway from and against all damages, judgments, decrees, attorney's fees, costs, and expenses growing out of or resulting from or incident to any such claims or suits.

It is mutually understood and agreed that the assumption of liabilities and indemnification provided for in this Agreement survive any termination of this Agreement.

Section 2. TERM

This Agreement is effective from the date of the Contract until (i) the completion of the project set forth herein, and (ii) full and complete payment to Railway of any and all sums or other amounts owing and due hereunder.

Section 3. INSURANCE

Contractor must, at its sole cost and expense, procure and maintain during the life of this Agreement the following insurance coverage:

A. Commercial General Liability insurance. This insurance shall contain broad form contractual liability with a combined single limit of a minimum of $5,000,000 each occurrence and an aggregate limit of at least $10,000,000 but in no event less than the amount otherwise carried by the contractor. Coverage must be purchased on a post 1998 ISO occurrence form or equivalent and include coverage for, but not limit to the following:

- Bodily Injury and Property Damage
- Personal Injury and Advertising Injury
- Fire legal liability
- Products and completed operations

This policy shall also contain the following endorsements, which shall be indicated on the certificate of insurance:

- The definition of insured contract shall be amended to remove any exclusion or other limitation for any work being done within 50 feet of railroad property.
- Waiver of subrogation in favor of and acceptable to Railroad.
- Additional insured endorsement in favor of and acceptable to Railroad.
- Separation of insureds.
- The policy shall be primary and non-contributing with respect to any insurance carried by Railroad.

It is agreed that the workers' compensation and employers' liability related exclusions in the Commercial General Liability insurance policy(s) required herein are intended to apply to employees of the policy holder and shall not apply to Railroad employees.

No other endorsements limiting coverage as respects obligations under this Agreement may be included on the policy with regard to the work being performed under this agreement.

B. Business Automobile Insurance. This insurance shall contain a combined single limit of at least $1,000,000 per occurrence, and include coverage for, but not limited to the following:

- Bodily injury and property damage

Contractor Requirements – BNSF Exhibit C and C-1 Sample Document (18 of 21)

- Any and all vehicles owned, used or hired

The policy shall also contain the following endorsements or language, which shall be indicated on the certificate of insurance:

- Waiver of subrogation in favor of and acceptable to Railroad.
- Additional insured endorsement in favor or and acceptable to Railroad.
- Separation of insureds.
- The policy shall be primary and non-contributing with respect to any insurance carried by Railroad.

C. Workers Compensation and Employers Liability insurance including coverage for, but not limited to:

- Contractor's statutory liability under the worker's compensation laws of the state(s) in which the work is to be performed. If optional under State law, the insurance must cover all employees anyway.
- Employers' Liability (Part B) with limits of at least $500,000 each accident, $500,000 by disease policy limit, $500,000 by disease each employee.

This policy shall also contain the following endorsements or language, which shall be indicated on the certificate of insurance:

- Waiver of subrogation in favor of and acceptable to Railroad.

D. Railroad Protective Liability insurance naming only the Railroad as the Insured with coverage of at least $5,000,000 per occurrence and $10,000,000 in the aggregate. The policy Shall be issued on a standard ISO form CG 00 35 10 93 and include the following:

- Endorsed to include the Pollution Exclusion Amendment (ISO form CG 28 31 10 93)
- Endorsed to include the Limited Seepage and Pollution Endorsement.
- Endorsed to remove any exclusion for punitive damages.
- No other endorsements restricting coverage may be added.
- The original policy must be provided to the Railroad prior to performing any work or services under this Agreement.

In lieu of providing a Railroad Protective Liability Policy, Licensee may participate in Licensor's Blanket Railroad Protective Liability Insurance Policy available to contractor.

Other Requirements:

All policies (applying to coverage listed above) must not contain an exclusion for punitive damages and certificates of insurance must reflect that no exclusion exists.

Contractor agrees to waive its right of recovery against Railroad for all claims and suits against Railroad. In addition, its insurers, through the terms of the policy or policy endorsement, waive their right of subrogation against Railroad for all claims and suits. The certificate of insurance must reflect the waiver of subrogation endorsement. Contractor further waives its right of recovery, and its insurers also waive their right of subrogation against Railroad for loss of its owned or leased property or property under contractor's care, custody or control.

Contractor is not allowed to self-insure without the prior written consent of Railroad. If granted by Railroad, any deductible, self-insured retention or other financial responsibility for claims must be covered directly by contractor in lieu of insurance. Any and all Railroad liabilities that would otherwise, in accordance with the provisions of this Agreement, be covered by contractor's insurance will be covered as if contractor elected not to include a deductible, self-insured retention or other financial responsibility for claims.

of 21)

Prior to commencing the Work, contractor must furnish to Railroad an acceptable certificate(s) of insurance including an original signature of the authorized representative evidencing the required coverage, endorsements, and amendments. The policy(ies) must contain a provision that obligates the insurance company(ies) issuing such policy(ies) to notify Railroad in writing at least 30 days prior to any cancellation, non-renewal, substitution or material alteration. This cancellation provision must be indicated on the certificate of insurance. Upon request from Railroad, a certified duplicate original of any required policy must be furnished. Contractor should send the certificate(s) to the following address:

Ebix BPO
PO Box 12010-BN
Hemet, CA 92546-8010
Fax number: 951-652-2882
Email: bnsf@ebix.com

Any insurance policy must be written by a reputable insurance company acceptable to Railroad or with a current Best's Guide Rating of A- and Class VII or better, and authorized to do business in the state(s) in which the service is to be provide.

Contractor represents that this Agreement has been thoroughly reviewed by contractor's insurance agent(s)/broker(s), who have been instructed by contractor to procure the insurance coverage required by this Agreement. Allocated Loss Expense must be in addition to all policy limits for coverages referenced above. Not more frequently than once every five years, Railroad may reasonably modify the required insurance coverage to reflect then-current risk management practices in the railroad industry and underwriting practices in the insurance industry.

If any portion of the operation is to be subcontracted by contractor, contractor must require that the subcontractor provide and maintain the insurance coverages set forth herein, naming Railroad as an additional insured, and requiring that the subcontractor release, defend and indemnify Railroad to the same extent and under the same terms and conditions as contractor is required to release, defend and indemnify Railroad herein.

Failure to provide evidence as required by this section will entitle, but not require, Railroad to terminate this Agreement immediately. Acceptance of a certificate that does not comply with this section will not operate as a waiver of contractor's obligations hereunder.

The fact that insurance (including, without limitation, self-insurance) is obtained by contractor will not be deemed to release or diminish the liability of contractor including, without limitation, liability under the indemnity provisions of this Agreement. Damages recoverable by Railroad will not be limited by the amount of the required insurance coverage.

For purposes of this section, Railroad means "Burlington Northern Santa Fe Corporation", "BNSF RAILWAY COMPANY" and the subsidiaries, successors, assigns and affiliates of each.

Section 4. EXHIBIT "C" CONTRACTOR REQUIREMENTS

The Contractor must observe and comply with the provisions, obligations, requirements and limitations contained in the Contract and the Contractor Requirements set forth on Exhibit "C" attached to the Contract and this Agreement, including, but not be limited to, payment of all costs incurred for any damages to Railway roadbed, tracks, and/or appurtenances thereto, resulting from use, occupancy, or presence of its employees, representatives, or agents or subcontractors on or about the construction site.

Contractor Requirements – BNSF Exhibit C and C-1 Sample Document (20 of 21)

CDOT – BNSF Master Agreement
SAP PO #
CMS #

Section 5. TRAIN DELAY

Contractor is responsible for and hereby indemnifies and holds harmless Railway (including its affiliated railway companies, and its tenants) for, from and against all damages arising from any unscheduled delay to a freight or passenger train which affects Railway's ability to fully utilize its equipment and to meet customer service and contract obligations. Contractor will be billed, as further provided below, for the economic losses arising from loss of use of equipment, contractual loss of incentive pay and bonuses and contractual penalties resulting from train delays, whether caused by Contractor, or subcontractors, or by the Railway performing work under this Agreement. Railway agrees that it will not perform any act to unnecessarily cause train delay.

For loss of use of equipment, Contractor will be billed the current freight train hour rate per train as determined from Railway's records. Any disruption to train traffic may cause delays to multiple trains at the same time for the same period.

Additionally, the parties acknowledge that passenger, U.S. mail trains and certain other grain, intermodal, coal and freight trains operate under incentive/penalty contracts between Railway and its customer(s). Under these arrangements, if Railway does not meet its contract service commitments, Railway may suffer loss of performance or incentive pay and/or be subject to penalty payments. Contractor is responsible for any train performance and incentive penalties or other contractual economic losses actually incurred by Railway which are attributable to a train delay caused by Contractor or its subcontractors.

The contractual relationship between Railway and its customers is proprietary and confidential. In the event of a train delay covered by this Agreement, Railway will share information relevant to any train delay to the extent consistent with Railway confidentiality obligations. Damages for train delay for certain trains may be as high as $50,000.00 per incident.

Contractor and its subcontractors must give Railway's representative (_____) thirty days advance notice of the times and dates for proposed work windows. Railway and Contractor will establish mutually agreeable work windows for the project. Railway has the right at any time to revise or change the work windows due to train operations or service obligations. Railway will not be responsible for any additional costs or expenses resulting from a change in work windows. Additional costs or expenses resulting from a change in work windows shall be accounted for in Contractor's expenses for the project.

Contractor and subcontractors must plan, schedule, coordinate and conduct all Contractor's work so as to not cause any delays to any trains.

Kindly acknowledge receipt of this letter by signing and returning to the Railway two original copies of this letter, which, upon execution by Railway, will constitute an Agreement between us.

_____	
(Contractor)	**BNSF Railway Company**
By:_____	By:_____
Printed Name:_____	Name:_____
Title: _____	Manager Public Projects
Contact Person:_____	Accepted and effective this ____day of _____20__.

of 21)

CDOT – BNSF Master Agreement
SAP PO #
CMS #

Address_____

_____

City:_____State:___Zip:___

Fax: _____

Phone: _____

E-mail: _____

THE REST OF THIS PAGE INTENTIONALLY LEFT BLANK

Contractor's Right-of-Entry Agreement – UPRR Sample Document

Contractor's Right-of-Entry Agreement - UPRR Sample Document (1 of 14)

Folder No.: 2958-12
UPRR Audit No.:

CONTRACTOR'S RIGHT OF ENTRY AGREEMENT

THIS AGREEMENT is made and entered into as of the _____ day of _____, 2016, by and between **UNION PACIFIC RAILROAD COMPANY**, a Delaware corporation ("Railroad"); and

_____ (*Name of Contractor*)

a _____ corporation ("Contractor").

RECITALS:

Contractor has been hired by Colorado Department of Transportation's ("State's") to conduct resurfacing, repaving, and repair of the bridge decks; pressure washing and painting the steel framing of the structures; treatment of caps and columns with corrosion inhibitors; and the removal of replacement of the existing bridge fencing, pedestrian bridge hand rails and the existing concrete barrier; and other simple maintenance activities; at the two existing Northern and Mesa Avenues grade-separated public road crossings at Railroad Mile Posts 120.52 (DOT 253466S) and 120.38 (DOT 253465K) on the Walsenburg Subdivision in or near Pueblo, Pueblo County, Colorado, as such location is in the general location shown on the Railroad Location Print marked **Exhibit A**, attached hereto and hereby made a part hereof, which work is the subject of a Consent Letter dated February 29, 2016, between the Railroad and State.

The Railroad is willing to permit the Contractor to perform the work described above at the location described above subject to the terms and conditions contained in this Agreement

AGREEMENT:

NOW, THEREFORE, it is mutually agreed by and between Railroad and Contractor, as follows:

ARTICLE 1 - DEFINITION OF CONTRACTOR.

For purposes of this Agreement, all references in this agreement to Contractor shall include Contractor's contractors, subcontractors, officers, agents and employees, and others acting under its or their authority.

ARTICLE 2 - RIGHT GRANTED; PURPOSE.

Railroad hereby grants to Contractor the right, during the term hereinafter stated and upon and subject to each and all of the terms, provisions and conditions herein contained, to enter upon and have ingress to and egress from the property described in the Recitals for the purpose of

Contractor's Right-of-Entry Agreement - UPRR Sample Document (2 of 14)

performing the work described in the Recitals above. The right herein granted to Contractor is limited to those portions of Railroad's property specifically described herein, or as designated by the Railroad Representative named in Article 4.

ARTICLE 3 - TERMS AND CONDITIONS CONTAINED IN EXHIBITS B, C & D.

The General Terms and Conditions contained in **Exhibit B**, the Insurance Requirements contained in **Exhibit C**, and the Minimum Safety Requirements contained in **Exhibit D**, each attached hereto, are hereby made a part of this Agreement.

ARTICLE 4 - ALL EXPENSES TO BE BORNE BY CONTRACTOR; RAILROAD REPRESENTATIVE.

A. Contractor shall bear any and all costs and expenses associated with any work performed by Contractor, or any costs or expenses incurred by Railroad relating to this Agreement.

B. Contractor shall coordinate all of its work with the following Railroad representative or his or her duly authorized representative (the "Railroad Representative"):

MIGUEL J. ARAGON
MGR TRACK MNTCE
400 West B Street
PUEBLO, CO 81003
(719) 549-6266

C. Contractor, at its own expense, shall adequately police and supervise all work to be performed by Contractor and shall ensure that such work is performed in a safe manner as set forth in Section 7 of **Exhibit B**. The responsibility of Contractor for safe conduct and adequate policing and supervision of Contractor's work shall not be lessened or otherwise affected by Railroad's approval of plans and specifications involving the work, or by Railroad's collaboration in performance of any work, or by the presence at the work site of a Railroad Representative, or by compliance by Contractor with any requests or recommendations made by Railroad Representative.

ARTICLE 5 - SCHEDULE OF WORK ON A MONTHLY BASIS.

The Contractor, at its expense, shall provide on a monthly basis a detailed schedule of work to the Railroad Representative named in Article 4B above. The reports shall start at the execution of this Agreement and continue until this Agreement is terminated as provided in this Agreement or until the Contractor has completed all work on Railroad's property.

ARTICLE 6 - TERM; TERMINATION.

A. The grant of right herein made to Contractor shall commence on the date of this Agreement, and continue until _____, unless sooner terminated as herein
(Expiration Date)

Contractor's Right-of-Entry Agreement - UPRR Sample Document (3 of 14)

provided, or at such time as Contractor has completed its work on Railroad's property, whichever is earlier. Contractor agrees to notify the Railroad Representative in writing when it has completed its work on Railroad's property.

B. This Agreement may be terminated by either party on ten (10) days written notice to the other party.

ARTICLE 7 - CERTIFICATE OF INSURANCE.

A. Before commencing any work, Contractor will provide Railroad with the (i) insurance binders, policies, certificates and endorsements set forth in **Exhibit C** of this Agreement, and (ii) the insurance endorsements obtained by each subcontractor as required under Section 12 of **Exhibit B** of this Agreement.

B. All insurance correspondence, binders, policies, certificates and endorsements shall be sent to:

Union Pacific Railroad Company
Real Estate Department
1400 Douglas Street, MS 1690
Omaha, NE 68179-1690
UPRR Folder No.: 2958-12

ARTICLE 8 - DISMISSAL OF CONTRACTOR'S EMPLOYEE.

At the request of Railroad, Contractor shall remove from Railroad's property any employee of Contractor who fails to conform to the instructions of the Railroad Representative in connection with the work on Railroad's property, and any right of Contractor shall be suspended until such removal has occurred. Contractor shall indemnify Railroad against any claims arising from the removal of any such employee from Railroad's property.

ARTICLE 9 - CROSSINGS.

No additional vehicular crossings (including temporary haul roads) or pedestrian crossings over Railroad's trackage shall be installed or used by Contractor without the prior written permission of Railroad.

ARTICLE 10 - CROSSINGS; COMPLIANCE WITH MUTCD AND FRA GUIDELINES.

A. No additional vehicular crossings (including temporary haul roads) or pedestrian crossings over Railroad's trackage shall be installed or used by Contractor without the prior written permission of Railroad.

B. Any permanent or temporary changes, including temporary traffic control, to crossings must conform to the Manual of Uniform Traffic Control Devices (MUTCD) and any applicable Federal Railroad Administration rules, regulations and guidelines, and must be reviewed by the Railroad prior to any changes being implemented. In the event the Railroad is found to be out of compliance with federal safety regulations due to the Contractor's modifications, negligence, or any other reason arising from the Contractor's presence on the Railroad's property, the Contractor agrees to assume liability for any civil penalties imposed upon the Railroad for such

Contractor's Right-of-Entry Agreement - UPRR Sample Document (4 of 14)

noncompliance.

ARTICLE 11 - EXPLOSIVES.

Explosives or other highly flammable substances shall not be stored or used on Railroad's property without the prior written approval of Railroad.

IN WITNESS WHEREOF, the parties hereto have duly executed this agreement in duplicate as of the date first herein written.

UNION PACIFIC RAILROAD COMPANY
(Federal Tax ID #94-6001323)

By:_____
DAVID C. LAPLANTE
Senior Mgr. Contracts

(Name of Contractor)

By_____

Printed Name:_____

Title:_____

Contractor's Right-of-Entry Agreement - UPRR Sample Document (5 of 14)

EXHIBIT "A"

RAILROAD LOCATION PRINT
ACCOMPANYING A
GRADE-SEPARATED PUBLIC ROAD CROSSING MAINTENANCE
CONSENT/CONTRACTOR'S
RIGHT OF ENTRY AGREEMENT

UNION PACIFIC RAILROAD COMPANY

WALSENBURG SUB.
RAILROAD MILE POSTS 120.38
PUEBLO, PEUBLO COUNTY, CO

To accompany an agreement with the

COLORADO DEPT. Of TRANSPORTATION and/or CONTRACTORS

UPRR Folder No. 2958-12(b) Date: February 29, 2016

WARNING

IN ALL OCCASIONS, U.P. COMMUNICATIONS DEPARTMENT MUST BE CONTACTED IN ADVANCE OF ANY WORK TO DETERMINE EXISTENCE AND LOCATION OF FIBER OPTIC CABLE.

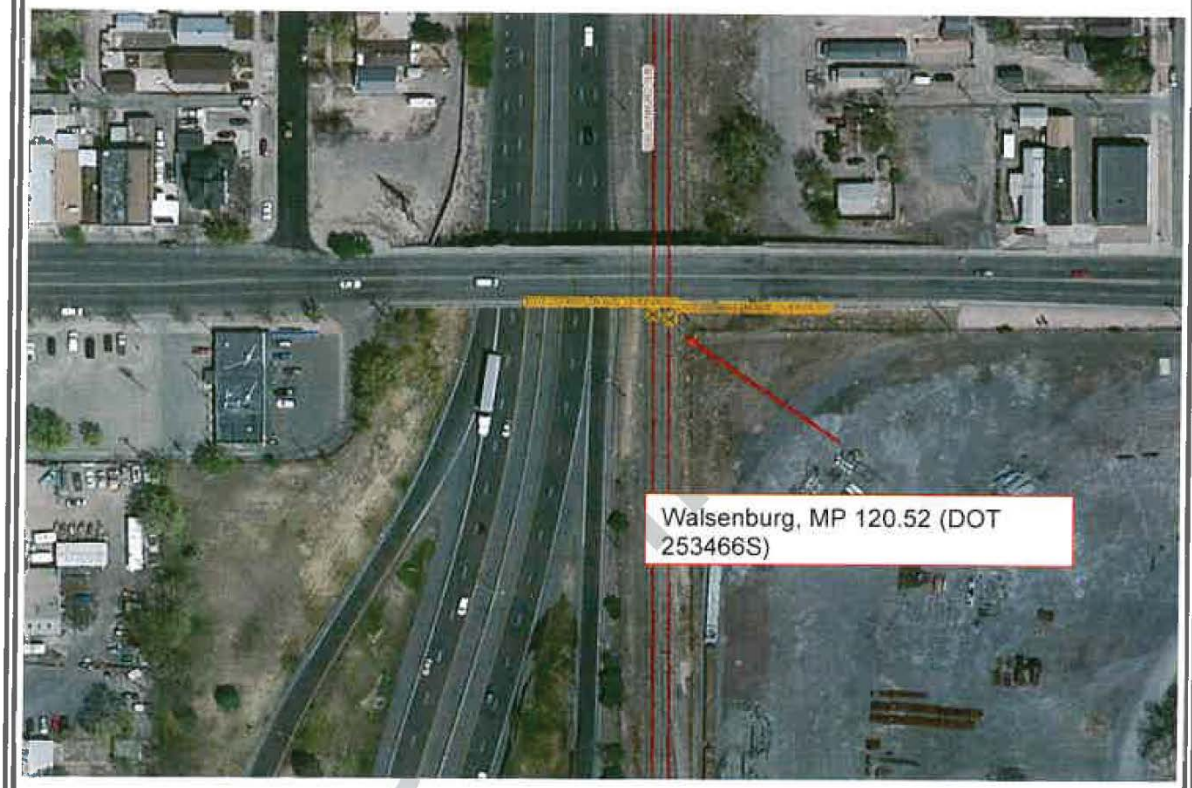
PHONE: 1-(800) 336-9193

Exhibit A
Railroad Location Print

Contractor's Right-of-Entry Agreement - UPRR Sample Document (6 of 14)

EXHIBIT "A"

RAILROAD LOCATION PRINT
ACCOMPANYING A
GRADE-SEPARATED CONSTRUCTION & MAINTENANCE
CONSENT/CONTRACTOR'S
RIGHT OF ENTRY AGREEMENT



UNION PACIFIC RAILROAD COMPANY

WALSENBURG SUBDIVISION
RAILROAD MILE POSTS 120.52 PUEBLO,
PUEBLO COUNTY, COLORADO

To accompany an agreement with the

COLORADO DEPT. OF TRANSPORTATION and its CONTRACTOR'S

UPRR Folder No. 2958-12(a) Date: February 29, 2016

WARNING

IN ALL OCCASIONS, U.P. COMMUNICATIONS DEPARTMENT MUST BE CONTACTED IN ADVANCE OF ANY WORK TO DETERMINE EXISTENCE AND LOCATION OF FIBER OPTIC CABLE.

PHONE: 1-(800) 336-9193

Exhibit A
Railroad Location Print

Contractor's Right-of-Entry Agreement - UPRR Sample Document (7 of 14)

EXHIBIT B

TO CONTRACTOR'S RIGHT OF ENTRY AGREEMENT

GENERAL TERMS & CONDITIONS

Section 1. NOTICE OF COMMENCEMENT OF WORK - FLAGGING.

A. Contractor agrees to notify the Railroad Representative at least thirty (30) working days in advance of Contractor commencing its work and at least ten (10) working days in advance of proposed performance of any work by Contractor in which any person or equipment will be within twenty-five (25) feet of any track, or will be near enough to any track that any equipment extension (such as, but not limited to, a crane boom) will reach to within twenty-five (25) feet of any track. No work of any kind shall be performed, and no person, equipment, machinery, tool(s), material(s), vehicle(s), or thing(s) shall be located, operated, placed, or stored within twenty-five (25) feet of any of Railroad's track(s) at any time, for any reason, unless and until a Railroad flagman is provided to watch for trains. Upon receipt of such ten (10)-day notice, the Railroad Representative will determine and inform Contractor whether a flagman need be present and whether Contractor needs to implement any special protective or safety measures. If flagging or other special protective or safety measures are performed by Railroad, Railroad will bill Contractor for such expenses incurred by Railroad, unless Railroad and a federal, state or local governmental entity have agreed that Railroad is to bill such expenses to the federal, state or local governmental entity. If Railroad will be sending the bills to Contractor, Contractor shall pay such bills within thirty (30) days of Contractor's receipt of billing. If Railroad performs any flagging, or other special protective or safety measures are performed by Railroad, Contractor agrees that Contractor is not relieved of any of its responsibilities or liabilities set forth in this Agreement.

B. The rate of pay per hour for each flagman will be the prevailing hourly rate in effect for an eight-hour day for the class of flagmen used during regularly assigned hours and overtime in accordance with Labor Agreements and Schedules in effect at the time the work is performed. In addition to the cost of such labor, a composite charge for vacation, holiday, health and welfare, supplemental sickness, Railroad Retirement and unemployment compensation, supplemental pension, Employees Liability and Property Damage and Administration will be included, computed on actual payroll. The composite charge will be the prevailing composite charge in effect at the time the work is performed. One and one-half times the current hourly rate is paid for overtime, Saturdays and Sundays, and two and one-half times current hourly rate for holidays. Wage rates are subject to change, at any time, by law or by agreement between Railroad and its employees, and may be retroactive as a result of negotiations or a ruling of an authorized governmental agency. Additional charges on labor are also subject to change. If the wage rate or additional charges are changed, Contractor (or the governmental entity, as applicable) shall pay on the basis of the new rates and charges.

C. Reimbursement to Railroad will be required covering the full eight-hour day during which any flagman is furnished, unless the flagman can be assigned to other Railroad work during a portion of such day, in which event reimbursement will not be required for the portion of the day during which the flagman is engaged in other Railroad work. Reimbursement will also be required for any day not actually worked by the flagman following the flagman's assignment to work on the project for which Railroad is required to pay the flagman and which could not reasonably be avoided by Railroad by assignment of such flagman to other work , even though Contractor may not be working during such time. When it becomes necessary for Railroad to bulletin and assign an employee to a flagging position in compliance with union collective bargaining agreements, Contractor must provide Railroad a minimum of five (5) days notice prior to the cessation of the need for a flagman. If five (5) days notice of cessation is not given, Contractor will still be required to pay flagging charges for the five (5) day notice period required by union agreement to be given to the employee, even though flagging is not required for that period. An additional ten (10) days notice must then be given to Railroad if flagging services are needed again after such five day cessation notice has been given to Railroad.

Section 2. LIMITATION AND SUBORDINATION OF RIGHTS GRANTED

A. The foregoing grant of right is subject and subordinate to the prior and continuing right and obligation of the Railroad to use and maintain its entire property including the right and power of Railroad to construct, maintain, repair, renew, use, operate, change, modify or relocate railroad tracks, roadways, signal, communication, fiber optics, or other wirelines, pipelines and other facilities upon, along or across any or all parts of its property, all or any of which may be freely done at any time or times by Railroad without liability to Contractor or to any other party for compensation or damages.

Contractor's Right-of-Entry Agreement - UPRR Sample Document (8 of 14)

B. The foregoing grant is also subject to all outstanding superior rights (including those in favor of licensees and lessees of Railroad's property, and others) and the right of Railroad to renew and extend the same, and is made without covenant of title or for quiet enjoyment.

Section 3. NO INTERFERENCE WITH OPERATIONS OF RAILROAD AND ITS TENANTS.

A. Contractor shall conduct its operations so as not to interfere with the continuous and uninterrupted use and operation of the railroad tracks and property of Railroad, including without limitation, the operations of Railroad's lessees, licensees or others, unless specifically authorized in advance by the Railroad Representative. Nothing shall be done or permitted to be done by Contractor at any time that would in any manner impair the safety of such operations. When not in use, Contractor's machinery and materials shall be kept at least fifty (50) feet from the centerline of Railroad's nearest track, and there shall be no vehicular crossings of Railroads tracks except at existing open public crossings.

B. Operations of Railroad and work performed by Railroad personnel and delays in the work to be performed by Contractor caused by such railroad operations and work are expected by Contractor, and Contractor agrees that Railroad shall have no liability to Contractor, or any other person or entity for any such delays. The Contractor shall coordinate its activities with those of Railroad and third parties so as to avoid interference with railroad operations. The safe operation of Railroad train movements and other activities by Railroad takes precedence over any work to be performed by Contractor.

Section 4. LIENS.

Contractor shall pay in full all persons who perform labor or provide materials for the work to be performed by Contractor. Contractor shall not create, permit or suffer any mechanic's or materialmen's liens of any kind or nature to be created or enforced against any property of Railroad for any such work performed. Contractor shall indemnify and hold harmless Railroad from and against any and all liens, claims, demands, costs or expenses of whatsoever nature in any way connected with or growing out of such work done, labor performed, or materials furnished. If Contractor fails to promptly cause any lien to be released of record, Railroad may, at its election, discharge the lien or claim of lien at Contractor's expense.

Section 5. PROTECTION OF FIBER OPTIC CABLE SYSTEMS.

A. Fiber optic cable systems may be buried on Railroad's property. Protection of the fiber optic cable systems is of extreme importance since any break could disrupt service to users resulting in business interruption and loss of revenue and profits. Contractor shall telephone Railroad during normal business hours (7:00 a.m. to 9:00 p.m. Central Time, Monday through Friday, except holidays) at 1-800-336-9193 (also a 24-hour, 7-day number for emergency calls) to determine if fiber optic cable is buried anywhere on Railroad's property to be used by Contractor. If it is, Contractor will telephone the telecommunications company(ies) involved, make arrangements for a cable locator and, if applicable, for relocation or other protection of the fiber optic cable. Contractor shall not commence any work until all such protection or relocation (if applicable) has been accomplished.

B. In addition to other indemnity provisions in this Agreement, Contractor shall indemnify, defend and hold Railroad harmless from and against all costs, liability and expense whatsoever (including, without limitation, attorneys' fees, court costs and expenses) arising out of any act or omission of Contractor, its agents and/or employees, that causes or contributes to (1) any damage to or destruction of any telecommunications system on Railroad's property, and/or (2) any injury to or death of any person employed by or on behalf of any telecommunications company, and/or its contractor, agents and/or employees, on Railroad's property. Contractor shall not have or seek recourse against Railroad for any claim or cause of action for alleged loss of profits or revenue or loss of service or other consequential damage to a telecommunication company using Railroad's property or a customer or user of services of the fiber optic cable on Railroad's property.

Section 6. PERMITS - COMPLIANCE WITH LAWS.

In the prosecution of the work covered by this Agreement, Contractor shall secure any and all necessary permits and shall comply with all applicable federal, state and local laws, regulations and enactments affecting the work including, without limitation, all applicable Federal Railroad Administration regulations.

Section 7. SAFETY.

A. Safety of personnel, property, rail operations and the public is of paramount importance in the prosecution of the work performed by Contractor. Contractor shall be responsible for initiating, maintaining and supervising all safety, operations and programs in connection with the work. Contractor shall at a minimum comply with Railroad's safety standards listed in

Contractor's Right-of-Entry Agreement - UPRR Sample Document (9 of 14)

Exhibit D, hereto attached, to ensure uniformity with the safety standards followed by Railroad's own forces. As a part of Contractor's safety responsibilities, Contractor shall notify Railroad if Contractor determines that any of Railroad's safety standards are contrary to good safety practices. Contractor shall furnish copies of **Exhibit D** to each of its employees before they enter the job site.

B. Without limitation of the provisions of paragraph A above, Contractor shall keep the job site free from safety and health hazards and ensure that its employees are competent and adequately trained in all safety and health aspects of the job.

C. Contractor shall have proper first aid supplies available on the job site so that prompt first aid services may be provided to any person injured on the job site. Contractor shall promptly notify Railroad of any U.S. Occupational Safety and Health Administration reportable injuries. Contractor shall have a nondelegable duty to control its employees while they are on the job site or any other property of Railroad, and to be certain they do not use, be under the influence of, or have in their possession any alcoholic beverage, drug or other substance that may inhibit the safe performance of any work.

D. If and when requested by Railroad, Contractor shall deliver to Railroad a copy of Contractor's safety plan for conducting the work (the "Safety Plan"). Railroad shall have the right, but not the obligation, to require Contractor to correct any deficiencies in the Safety Plan. The terms of this Agreement shall control if there are any inconsistencies between this Agreement and the Safety Plan.

Section 8. INDEMNITY.

A. To the extent not prohibited by applicable statute, Contractor shall indemnify, defend and hold harmless Railroad, its affiliates, and its and their officers, agents and employees (individually an "Indemnified Party" or collectively "Indemnified Parties") from and against any and all loss, damage, injury, liability, claim, demand, cost or expense (including, without limitation, attorney's, consultant's and expert's fees, and court costs), fine or penalty (collectively, "Loss") incurred by any person (including, without limitation, any Indemnified Party, Contractor, or any employee of Contractor or of any Indemnified Party) arising out of or in any manner connected with (i) any work performed by Contractor, or (ii) any act or omission of Contractor, its officers, agents or employees, or (iii) any breach of this Agreement by Contractor.

B. The right to indemnity under this Section 8 shall accrue upon occurrence of the event giving rise to the Loss, and shall apply regardless of any negligence or strict liability of any Indemnified Party, except where the Loss is caused by the sole active negligence of an Indemnified Party as established by the final judgment of a court of competent jurisdiction. The sole active negligence of any Indemnified Party shall not bar the recovery of any other Indemnified Party.

C. Contractor expressly and specifically assumes potential liability under this Section 8 for claims or actions brought by Contractor's own employees. Contractor waives any immunity it may have under worker's compensation or industrial insurance acts to indemnify the Indemnified Parties under this Section 8. Contractor acknowledges that this waiver was mutually negotiated by the parties hereto.

D. No court or jury findings in any employee's suit pursuant to any worker's compensation act or the Federal Employers' Liability Act against a party to this Agreement may be relied upon or used by Contractor in any attempt to assert liability against any Indemnified Party.

E. The provisions of this Section 8 shall survive the completion of any work performed by Contractor or the termination or expiration of this Agreement. In no event shall this Section 8 or any other provision of this Agreement be deemed to limit any liability Contractor may have to any Indemnified Party by statute or under common law.

Section 9. RESTORATION OF PROPERTY.

In the event Railroad authorizes Contractor to take down any fence of Railroad or in any manner move or disturb any of the other property of Railroad in connection with the work to be performed by Contractor, then in that event Contractor shall, as soon as possible and at Contractor's sole expense, restore such fence and other property to the same condition as the same were in before such fence was taken down or such other property was moved or disturbed. Contractor shall remove all of Contractor's tools, equipment, rubbish and other materials from Railroad's property promptly upon completion of the work, restoring Railroad's property to the same state and condition as when Contractor entered thereon.

Contractor's Right-of-Entry Agreement - UPRR Sample Document (10 of 14)

Section 10. WAIVER OF DEFAULT.

Waiver by Railroad of any breach or default of any condition, covenant or agreement herein contained to be kept, observed and performed by Contractor shall in no way impair the right of Railroad to avail itself of any remedy for any subsequent breach or default.

Section 11. MODIFICATION - ENTIRE AGREEMENT.

No modification of this Agreement shall be effective unless made in writing and signed by Contractor and Railroad. This Agreement and the exhibits attached hereto and made a part hereof constitute the entire understanding between Contractor and Railroad and cancel and supersede any prior negotiations, understandings or agreements, whether written or oral, with respect to the work to be performed by Contractor.

Section 12. ASSIGNMENT - SUBCONTRACTING.

Contractor shall not assign or subcontract this Agreement, or any interest therein, without the written consent of the Railroad. Contractor shall be responsible for the acts and omissions of all subcontractors. Before Contractor commences any work, the Contractor shall, except to the extent prohibited by law; (1) require each of its subcontractors to include the Contractor as "Additional Insured" in the subcontractor's Commercial General Liability policy and Business Automobile policies with respect to all liabilities arising out of the subcontractor's performance of work on behalf of the Contractor by endorsing these policies with ISO Additional Insured Endorsements CG 20 26, and CA 20 48 (or substitute forms providing equivalent coverage; (2) require each of its subcontractors to endorse their Commercial General Liability Policy with "Contractual Liability Railroads" ISO Form CG 24 17 10 01 (or a substitute form providing equivalent coverage) for the job site; and (3) require each of its subcontractors to endorse their Business Automobile Policy with "Coverage For Certain Operations In Connection With Railroads" ISO Form CA 20 70 10 01 (or a substitute form providing equivalent coverage) for the job site.

Contractor's Right-of-Entry Agreement - UPRR Sample Document (11 of

14)

EXHIBIT C

TO CONTRACTOR'S RIGHT OF ENTRY AGREEMENT

INSURANCE REQUIREMENTS

Contractor shall, at its sole cost and expense, procure and maintain during the course of the Project and until all Project work on Railroad's property has been completed and the Contractor has removed all equipment and materials from Railroad's property and has cleaned and restored Railroad's property to Railroad's satisfaction, the following insurance coverage:

A. **COMMERCIAL GENERAL LIABILITY INSURANCE**. Commercial general liability (CGL) with a limit of not less than $5,000,000 each occurrence and an aggregate limit of not less than $10,000,000. CGL insurance must be written on ISO occurrence form CG 00 01 12 04 (or a substitute form providing equivalent coverage).

The policy must also contain the following endorsement, which must be stated on the certificate of insurance:

- Contractual Liability Railroads ISO form CG 24 17 10 01 (or a substitute form providing equivalent coverage) showing "Union Pacific Railroad Company Property" as the Designated Job Site.
- Designated Construction Project(s) General Aggregate Limit ISO Form CG 25 03 03 97 (or a substitute form providing equivalent coverage) showing the project on the form schedule.

B. **BUSINESS AUTOMOBILE COVERAGE INSURANCE**. Business auto coverage written on ISO form CA 00 01 10 01 (or a substitute form providing equivalent liability coverage) with a combined single limit of not less $5,000,000 for each accident and coverage must include liability arising out of any auto (including owned, hired and non-owned autos).

The policy must contain the following endorsements, which must be stated on the certificate of insurance:

- Coverage For Certain Operations In Connection With Railroads ISO form CA 20 70 10 01 (or a substitute form providing equivalent coverage) showing "Union Pacific Property" as the Designated Job Site.
- Motor Carrier Act Endorsement - Hazardous materials clean up (MCS-90) if required by law.

C. **WORKERS' COMPENSATION AND EMPLOYERS' LIABILITY INSURANCE**. Coverage must include but not be limited to:

- Contractor's statutory liability under the workers' compensation laws of the state where the work is being performed.
- Employers' Liability (Part B) with limits of at least $500,000 each accident, $500,000 disease policy limit $500,000 each employee.

If Contractor is self-insured, evidence of state approval and excess workers compensation coverage must be provided.

Coverage must include liability arising out of the U. S. Longshoremen's and Harbor Workers' Act, the Jones Act, and the Outer Continental Shelf Land Act, if applicable.

The policy must contain the following endorsement, which must be stated on the certificate of insurance:

- Alternate Employer endorsement ISO form WC 00 03 01 A (or a substitute form providing equivalent coverage) showing Railroad in the schedule as the alternate employer (or a substitute form providing equivalent coverage).

D. **RAILROAD PROTECTIVE LIABILITY INSURANCE**. Contractor must maintain Railroad Protective Liability insurance written on ISO occurrence form CG 00 35 12 04 (or a substitute form providing equivalent coverage) on behalf of Railroad as named insured, with a limit of not less than $2,000,000 per occurrence and an aggregate of $6,000,000. A binder stating the policy is in place must be submitted to Railroad before the work may be commenced and until the original policy is forwarded to Railroad.

E. **UMBRELLA OR EXCESS INSURANCE**. If Contractor utilizes umbrella or excess policies, these policies must "follow form" and afford no less coverage than the primary policy.

F. **POLLUTION LIABILITY INSURANCE**. Pollution liability coverage must be written on ISO form Pollution Liability Coverage Form Designated Sites CG 00 39 12 04 (or a substitute form providing equivalent liability coverage), with limits of at least

Contractor's Right-of-Entry Agreement - UPRR Sample Document (12 of 14)

$5,000,000 per occurrence and an aggregate limit of $10,000,000.

If the scope of work as defined in this Agreement includes the disposal of any hazardous or non-hazardous materials from the job site, Contractor must furnish to Railroad evidence of pollution legal liability insurance maintained by the disposal site operator for losses arising from the insured facility accepting the materials, with coverage in minimum amounts of $1,000,000 per loss, and an annual aggregate of $2,000,000.

OTHER REQUIREMENTS

G. All policy(ies) required above (except worker's compensation and employers liability) must include Railroad as "Additional Insured" using ISO Additional Insured Endorsements CG 20 26, and CA 20 48 (or substitute forms providing equivalent coverage). The coverage provided to Railroad as additional insured shall, to the extent provided under ISO Additional Insured Endorsement CG 20 26, and CA 20 48 provide coverage for Railroad's negligence whether sole or partial, active or passive, and shall not be limited by Contractor's liability under the indemnity provisions of this Agreement.

H. Punitive damages exclusion, if any, must be deleted (and the deletion indicated on the certificate of insurance), unless the law governing this Agreement prohibits all punitive damages that might arise under this Agreement.

I. Contractor waives all rights of recovery, and its insurers also waive all rights of subrogation of damages against Railroad and its agents, officers, directors and employees. This waiver must be stated on the certificate of insurance.

J. Prior to commencing the work, Contractor shall furnish Railroad with a certificate(s) of insurance, executed by a duly authorized representative of each insurer, showing compliance with the insurance requirements in this Agreement.

K. All insurance policies must be written by a reputable insurance company acceptable to Railroad or with a current Best's Insurance Guide Rating of A- and Class VII or better, and authorized to do business in the state where the work is being performed.

L. The fact that insurance is obtained by Contractor or by Railroad on behalf of Contractor will not be deemed to release or diminish the liability of Contractor, including, without limitation, liability under the indemnity provisions of this Agreement. Damages recoverable by Railroad from Contractor or any third party will not be limited by the amount of the required insurance coverage.

Contractor's Right-of-Entry Agreement - UPRR Sample Document (13 of

14)

EXHIBIT D

TO CONTRACTOR'S RIGHT OF ENTRY AGREEMENT

MINIMUM SAFETY REQUIREMENTS

The term "employees" as used herein refer to all employees of Contractor as well as all employees of any subcontractor or agent of Contractor.

I. CLOTHING

A. All employees of Contractor will be suitably dressed to perform their duties safely and in a manner that will not interfere with their vision, hearing, or free use of their hands or feet.

Specifically, Contractor's employees must wear:

i. Waist-length shirts with sleeves.
ii. Trousers that cover the entire leg. If flare-legged trousers are worn, the trouser bottoms must be tied to prevent catching.
iii. Footwear that covers their ankles and has a defined heel. Employees working on bridges are required to wear safety-toed footwear that conforms to the American National Standards Institute (ANSI) and FRA footwear requirements.

B. Employees shall not wear boots (other than work boots), sandals, canvas-type shoes, or other shoes that have thin soles or heels that are higher than normal.

C. Employees must not wear loose or ragged clothing, neckties, finger rings, or other loose jewelry while operating or working on machinery.

II. PERSONAL PROTECTIVE EQUIPMENT

Contractor shall require its employees to wear personal protective equipment as specified by Railroad rules, regulations, or recommended or requested by the Railroad Representative.

i. Hard hat that meets the American National Standard (ANSI) Z89.1 – latest revision. Hard hats should be affixed with Contractor's company logo or name.
ii. Eye protection that meets American National Standard (ANSI) for occupational and educational eye and face protection, Z87.1 – latest revision. Additional eye protection must be provided to meet specific job situations such as welding, grinding, etc.
iii. Hearing protection, which affords enough attenuation to give protection from noise levels that will be occurring on the job site. Hearing protection, in the form of plugs or muffs, must be worn when employees are within:

- 100 feet of a locomotive or roadway/work equipment
- 15 feet of power operated tools
- 150 feet of jet blowers or pile drivers
- 150 feet of retarders in use (when within 10 feet, employees must wear dual ear protection – plugs and muffs)

iv. Other types of personal protective equipment, such as respirators, fall protection equipment, and face shields, must be worn as recommended or requested by the Railroad Representative.

III. ON TRACK SAFETY

Contractor is responsible for compliance with the Federal Railroad Administration's Roadway Worker Protection regulations – 49CFR214, Subpart C and Railroad's On-Track Safety rules. Under 49CFR214, Subpart C, railroad contractors are responsible for the training of their employees on such regulations. In addition to the instructions contained in Roadway Worker Protection regulations, all employees must:

i. Maintain a distance of twenty-five (25) feet to any track unless the Railroad Representative is present to authorize movements.

Contractor's Right-of-Entry Agreement - UPRR Sample Document (14 of 14)

ii. Wear an orange, reflectorized workwear approved by the Railroad Representative.
iii. Participate in a job briefing that will specify the type of On-Track Safety for the type of work being performed. Contractor must take special note of limits of track authority, which tracks may or may not be fouled, and clearing the track. Contractor will also receive special instructions relating to the work zone around machines and minimum distances between machines while working or traveling.

IV. EQUIPMENT

A. It is the responsibility of Contractor to ensure that all equipment is in a safe condition to operate. If, in the opinion of the Railroad Representative, any of Contractor's equipment is unsafe for use, Contractor shall remove such equipment from Railroad's property. In addition, Contractor must ensure that the operators of all equipment are properly trained and competent in the safe operation of the equipment. In addition, operators must be:

i. Familiar and comply with Railroad's rules on lockout/tagout of equipment.
ii. Trained in and comply with the applicable operating rules if operating any hy-rail equipment on-track.
iii. Trained in and comply with the applicable air brake rules if operating any equipment that moves rail cars or any other railbound equipment.

B. All self-propelled equipment must be equipped with a first-aid kit, fire extinguisher, and audible back-up warning device.

C. Unless otherwise authorized by the Railroad Representative, all equipment must be parked a minimum of twenty-five (25) feet from any track. Before leaving any equipment unattended, the operator must stop the engine and properly secure the equipment against movement.

D. Cranes must be equipped with three orange cones that will be used to mark the working area of the crane and the minimum clearances to overhead powerlines.

V. GENERAL SAFETY REQUIREMENTS

A. Contractor shall ensure that all waste is properly disposed of in accordance with applicable federal and state regulations.

B. Contractor shall ensure that all employees participate in and comply with a job briefing conducted by the Railroad Representative, if applicable. During this briefing, the Railroad Representative will specify safe work procedures, (including On-Track Safety) and the potential hazards of the job. If any employee has any questions or concerns about the work, the employee must voice them during the job briefing. Additional job briefings will be conducted during the work as conditions, work procedures, or personnel change.

C. All track work performed by Contractor meets the minimum safety requirements established by the Federal Railroad Administration's Track Safety Standards 49CFR213.

D. All employees comply with the following safety procedures when working around any railroad track:

i. Always be on the alert for moving equipment. Employees must always expect movement on any track, at any time, in either direction.
ii. Do not step or walk on the top of the rail, frog, switches, guard rails, or other track components.
iii. In passing around the ends of standing cars, engines, roadway machines or work equipment, leave at least 20 feet between yourself and the end of the equipment. Do not go between pieces of equipment of the opening is less than one car length (50 feet).
iv. Avoid walking or standing on a track unless so authorized by the employee in charge.
v. Before stepping over or crossing tracks, look in both directions first.
vi. Do not sit on, lie under, or cross between cars except as required in the performance of your duties and only when track and equipment have been protected against movement.

E. All employees must comply with all federal and state regulations concerning workplace safety.

Utility Clearance Letter
Sample Document

Utility Clearance Letter Sample Document (1 of 1)

COLORADO
Department of Transportation
Division of Engineering, Design and Construction

Rob Martindale - Region 3 Utility Engineer
222 South Sixth Street, Room 317
Grand Junction, CO 81501-2769
Phone: (970) 683-6209 / Fax: (970) 683-6205

Date: October 14, 2015

To: Roland Wagner – Project Manager

From: Rob Martindale – Region 3 Utility Engineer

Subject: **Utility Clearance**

Pursuant to 23 CFR 635.309(b), this is to advise that all known utilities have been cleared in conjunction with the project shown below. In conjunction with the project listed below all railroad work has been arranged for it to be undertaken and completed as required for proper coordination with the physical construction schedules of the CDOT project work.

Project No.: **FBR 0821-094**
Location: **SH 82 Grand Ave Bridge (F-07-A)**
Sub-Account: **18158**

Please feel free to contact Rob Martindale, at the address or phone number shown above, should you have any questions.

cc: Eller
Olson
Wagner
Feery
Business Office
File

BNSF Submittal Checklist
Sample Document

BNSF Submittal Checklist Sample Document (1 of 3)

Format for External Submittals to BNSF Structures Department

Email Subject Line

Department—LS-MP--Subject
Where Department will be ES (Engineering Services), PP (Public Projects), or FE (Field Engineering)

Example:
Subject: PP—0035-0080.80--Drilled Shaft Supplemental Information

---

Email Body Information

LS-MP:
Location: *(City/Station, State)*
Subdivision Name:
Project Name: *(Be consistent on this)*

Submittal Description:

Submittal Commentary:

Specific Review Request Items: *Identify what specifically needs structures review.*

Variance Requests: *Identify what variances are being requested, if any, and what BNSF Guidelines are being referenced.*

Status of Review by Others: *Status of Agency, Owner, or Third Party Reviews*

Other Engineering Services Review Comments:

Example:
LS-MP: 0035-0080.80
Location: Tioga, ND
Subdivision Name: Glasgow
Project Name: Glasgow Subdivision Expansion Project

BNSF Submittal Checklist Sample Document (2 of 3)

Submittal Description: Temporary Shoring Design dated 12/15/2013

Submittal Commentary: Attached is the Engineer's response to our comments on the temporary shoring design submittal. They appear to have addressed each item.

Specific Review Request Items: Please review the Engineer's responses

Status of Review by Others: No review performed by others

Variance Requests: Calculated deflection of temporary shoring is outside of BNSF limits as stated in the Guide for Grade Separation Projects.

Other Engineering Services Review Comments: Temporary shoring calculations have not been PE stamped.

BNSF Submittal Checklist Sample Document (3 of 3)

The following could be copied and pasted into the body of an email requesting review.

LS-MP:
Location:
Subdivision Name:
Project Name:

Submittal Description:

Submittal Commentary:

Specific Review Request Items:

Variance Requests:

Status of Review by Others:

Other Engineering Services Review Comments:

UPRR Submittal Checklist
Sample Document

UPRR Submittal Checklist Sample Document (1 of 4)

85 CORRIDOR IMPROVEMENTS

Submittal Type: Concept Plan Submittal

Agency: Douglas	Railroad: Union Pacific Railroad
PROJECT INFORMATION: US 85 Corridor Improvements HWY / STREET NAME: US-85 (Sante Fe Drive) CITY AND STATE: Littleton, CO COUNTY / PARISH: Douglas PROJECT NO. C1 2011 - 025 DATE:	GRADE SEPARATION: RR Over STATE: CO LOCATION: Douglas STREET/HWY: US-85 (Sante Fe Drive) Colorado RTE: M.P.: 14.3 SUB.: Springs Sub DOT No.: 253-052R AWO/CAN: TBD

Item	Required Information		As Submitted	Railroad: A=APPROVED R=REJECTED Variance Request / Comment(s)	A/R
	Concept Plan Submittal				
1	Plan, Elevation and Typical Section		Yes		
2	Photo Log in all controlling directions		Yes		
Grade Separation Minimum Guidelines					
4.1	Railroad Operations Requirements		Yes	Mainline Track Operations to remain in service. Proposed maintenance does not impact railroad structure.	
4.1.1	Shoofly Tracks		N/A	No shoofly proposed. Existing structure not altered.	
4.1.2	Track Spacing and Shifting		N/A	No change in track layout. Existing structure not altered.	
4.1.3	Future Track		N/A	No impact to existing structure. No furture track proposed.	
4.1.4	Access Road		N/A	No impact to existing structure.Existing structure doesn't have an access road.	
4.2	Structure Type		Yes	Existing RR over US 85.	
4.3	Structure Separation		N/A		
4.6	Fencing		No	Existing structure has handrails in place. No impacts to the existing structure. No structure fencing proposed.	
4.9	Utilities		No	No known impacted utilities.	
6.1	Underpass Design		No	Proposed maintenance does not impact railroad structure. Existing structure under C&M Agreement dated April 18, 1985.	
7.3.2.2	Trail Crossing Under Existing Structure		Yes	Existing railroad structure is closed deck.	
	Overhead protection		Yes	Proposed canopy to protect pathway users. Will not be attached to the railroad structure and will extend 30' past the end of the structure in both directions.	

Page 1

UPRR Submittal Checklist Sample Document (2 of 4)

Item	Required Information		As Submitted	Railroad: A=APPROVED R=REJECTED	
				Variance Request / Comment(s)	A/R
Plan					
	1. North Arrow		Yes		
	2. Alignment of centerline of Bridge and/or centerline of project, centerline of existing track(s), centerline of future track(s), centerline of shoofly, centerline of roadway. Identify tracks as main, siding, etc.		Yes		
	3. Angle between centerline of roadway and centerline of bridge. Skew angle of substructure.		Yes	Existing structure to remain, 51°16'01".	
	4. Horizontal distance between centerlines of main track(s) and adjacent existing and/or future tracks.		Yes	Mainline track only. No proposed tracks due to no change in the structure.	
	5. Individual span length(s) and total bridge length from face to face of back walls.		Yes		
	Limits of Railroad ROW wrt centerline of mainline track. Limits of ROW fencing		Yes	Existing easement defined in existing C&M Agreement.	
	7. Footprint of proposed superstructure and substructure including approach slabs and existing structure, if applicable.		Yes	No proposed changes to existing superstructure.	
	8. Footprint of roadway, sidewalks, retaining walls, etc.		Yes	Existing roadway is proposed to be widened. Proposed trail on NE side of roadway.	
	9. Location of access roadway(s) and turnarounds.		Yes	Existing railroad access to remain. No roads or turnarounds present today.	
	10. Timetable direction arrow, nearest railroad station and end station of railroad subdivision.		Yes		
	11. Railroad Milepost measured at the inside face of back wall, at the low milepost bridge end.		Yes		
	12. Point of minimum vertical clearance.		Yes		
	13. All existing facilities and utilities and their proposed relocation, if applicable.		Yes	No known impacted utilities.	
	14. Limits of shoring including minimum distance at right angle from centerline of the nearest track.		N/A	If applicable, to be provided in 30% Plan submittal.	
	15. Limits of grading, with existing and proposed contours.		No	To be provided in 30% Plan submittal.	
	16. Minimum structure separation for adjacent structures,		N/A		
	17. Direction of flow for all drainage systems within the project limits		N/A	If applicable, to be provided in 30% Plan submittal.	
	18. Location of geotech borings		No	Geotech borings are in progress to investigate any impacts to the existing footings due to the roadway widening. Data will be provided with the 30% Plan submittal.	

UPRR Submittal Checklist Sample Document (3 of 4)

Item	Required Information		As Submitted	Railroad: A=APPROVED R=REJECTED	
				Variance Request / Comment(s)	A/R
Elevation View					
	1. Individual span length(s) and total bridge length from inside face to face of back walls.		Yes		
	2. Distance from nearest Railroad Mile marker to inside face of back wall at the low milepost		Yes		
	3. Profile grade of bridge.		N/A	Due to no changes proposed to the existing structure, data not provided.	
	4. Profile grade and top of rail elevations for main track.		N/A	Due to no changes proposed to the existing structure, data not provided.	
	5. Roadway section		Yes	Proposed changes in the roadway section.	
	6. Minimum vertical clearance from roadway to bridge.		Yes	16'-6"	
	7. Limits of handrail/fence on bridge		Yes	No additional fencing proposed due to protective cover. Existing structure does have handrails spanning the length of the	
	8. Location of fixed and expansion bearings.		N/A	No change to existing structure proposed.	
	9. Location and type of sub structure with elevations.		Yes	No change to existing structure proposed.	
	10. Numbering of spans, abutments and piers.		Yes		
	11. Existing and proposed ground line, including slope paving.		No	To be provided in 30% Plan submittal.	
	12. Existing and proposed utilities		No	To be provided in 30% Plan submittal.	
	13. Depth of foundation below roadway.		Yes	Based off of as-builts. Exploratory work in progress. To be provided in 30% Plan submittal.	

UPRR Submittal Checklist Sample Document (4 of 4)

Item	Required Information		As Submitted	Railroad: A=APPROVED R=REJECTED	
				Variance Request / Comment(s)	A/R
Typical Section - No change in existing structure and substructure proposed.					
	1. Centerline of bridge and/or horizontal control line of project, centerline of existing		No	No change to existing structure proposed.	
	2. AREMA clearance envelope		No	No change to existing structure proposed.	
	3. Horizontal distance between centerline of tracks, distance from centerline of track to face of ballast retainer and handrail/fence.		No	No change to existing structure proposed including no additional tracks.	
	4. Total Width of superstructure		Yes		
	5. Width of walkway		No	No change to existing structure proposed. No walkway on existing structure.	
	6. Height and type of ballast retainer,		No	No change to existing proposed.	
	7. Depth of superstructure		No	No change to existing structure proposed.	
	8. Rail, tie and ballast system with vertical		No	No change to existing structure proposed.	
	9. Cross slope of deck, if applicable, and water proofing system.		No.	No change to existing structure proposed.	
	10. Girder system		No	No change to existing structure proposed.	
	11. Diaphragms		No	No change to existing structure proposed.	
Other: Existing Construction and Maintenance Agreement and ROW documentation precviously submitted to the UPRR, MIPP. As-bulits submitted with the Concept Plan package.					

Notice to Proceed Letter from Railroad Program Manager Sample Document

Sample Notice to Proceed (NTP) Letter

COLORADO
Department of Transportation
Division of Engineering,
Design and Construction

Rob Martindale - CDOT Railroad Manager
4201 Arkansas Ave 4th Floor
Denver, CO 80222
Phone: (970) 210-5913 / Fax: (970) 683-6205

August 19, 2016

CDOT Project No. SFTY R200-207, SA 20127
CR 75.1 Flashing lights and gates Project

Amber Stoffels
BNSF Railway | Manager Public Projects – CO, NE, WY
Email amber.stoffels@bnsf.com
Office (303) 480-6584, Cell (817) 565-8234

Re: NOTICE TO PROCEED
Executed Contract of CR 75.1 Las Animas County Flashing Lights and Gates near Trinidad, CO
MP 632.75
Existing DOT No.(s) 003-324M
Trinidad, Colorado

Enclosed please find an executed original of the Contract executed on April 12, 2016 for above referenced project.

You are hereby authorized to proceed with the construction of the above-referenced railroad work to provide the installation of new flashing lights and gates, subject to the following conditions.

- The CDOT Resident Engineer must be contacted as soon as possible in advance of any construction work.
- No Construction work that encroaches on any roadway shall commence until a Traffic control plan has been developed and approved by the CDOT Resident Engineer listed below.
- A pre-construction conference with CDOT representatives may be required prior to beginning construction activities. The CDOT Resident Engineer should be contacted about the need for such conference.

The CDOT Resident Engineer for this project is **Matt Jagow**, 902 Erie Ave, Pueblo, CO, 81002, 719.546.5751, matthew.jagow@state.co.us

Please have all future billings for this project include the CDOT project number **SFTY R200-207 and Sub Account # 20127** on the cover of each invoice.

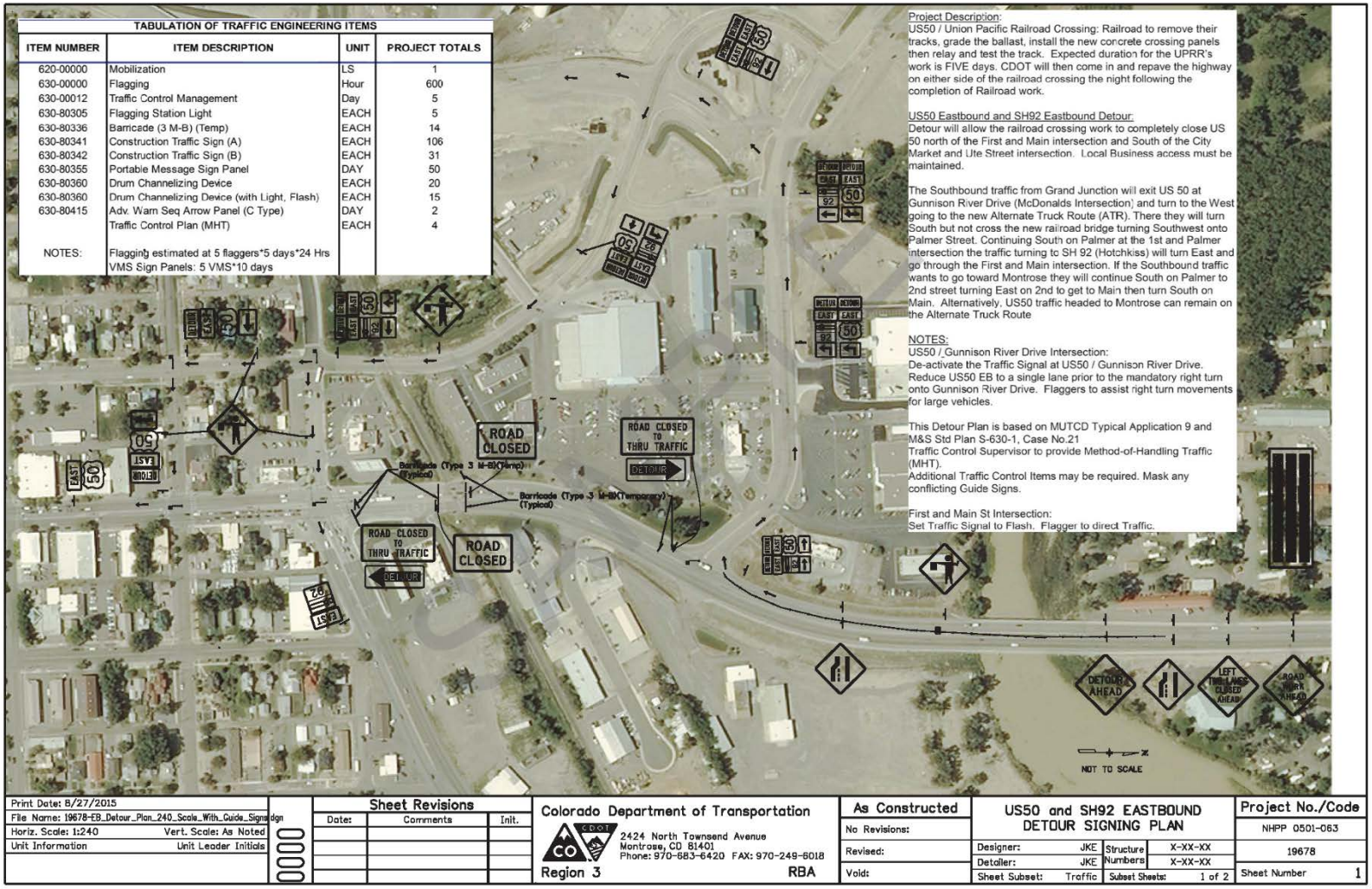
Sincerely,

Rob Martindale
CDOT Railroad Manager

222 South Sixth Street / PO Box 2769, Grand Junction, CO 81501 P 970.683.6209 F 970.683.6205 www.colorado.gov/

Traffic Control Plans for a Maintenance Project
Sample Document

Traffic Control Plans for a Maintenance Project Sample Document (1 of 3)



TABULATION OF TRAFFIC ENGINEERING ITEMS

ITEM NUMBER	ITEM DESCRIPTION	UNIT	PROJECT TOTALS
620-00000	Mobilization	LS	1
630-00000	Flagging	Hour	600
630-00012	Traffic Control Management	Day	5
630-80305	Flagging Station Light	EACH	5
630-80336	Barricade (3 M-B) (Temp)	EACH	14
630-80341	Construction Traffic Sign (A)	EACH	106
630-80342	Construction Traffic Sign (B)	EACH	31
630-80355	Portable Message Sign Panel	DAY	50
630-80360	Drum Channelizing Device	EACH	20
630-80360	Drum Channelizing Device (with Light, Flash)	EACH	15
630-80415	Adv. Warn Seq Arrow Panel (C Type)	DAY	2
	Traffic Control Plan (MHT)	EACH	4

NOTES:
Flagging estimated at 5 flaggers*5 days*24 Hrs
VMS Sign Panels: 5 VMS*10 days

Project Description:
US50 / Union Pacific Railroad Crossing: Railroad to remove their tracks, grade the ballast, install the new concrete crossing panels then relay and test the track. Expected duration for the UPRR's work is FIVE days. CDOT will then come in and repave the highway on either side of the railroad crossing the night following the completion of Railroad work.

US50 Eastbound and SH92 Eastbound Detour:
Detour will allow the railroad crossing work to completely close US 50 north of the First and Main intersection and South of the City Market and Ute Street intersection. Local Business access must be maintained.

The Southbound traffic from Grand Junction will exit US 50 at Gunnison River Drive (McDonalds Intersection) and turn to the West going to the new Alternate Truck Route (ATR). There they will turn South but not cross the new railroad bridge turning Southwest onto Palmer Street. Continuing South on Palmer at the 1st and Palmer intersection the traffic turning to SH 92 (Hotchkiss) will turn East and go through the First and Main intersection. If the Southbound traffic wants to go toward Montrose they will continue South on Palmer to 2nd street turning East on 2nd to get to Main then turn South on Main. Alternatively, US50 traffic headed to Montrose can remain on the Alternate Truck Route

NOTES:
US50 / Gunnison River Drive Intersection:
De-activate the Traffic Signal at US50 / Gunnison River Drive. Reduce US50 EB to a single lane prior to the mandatory right turn onto Gunnison River Drive. Flaggers to assist right turn movements for large vehicles.

This Detour Plan is based on MUTCD Typical Application 9 and M&S Std Plan S-630-1, Case No.21
Traffic Control Supervisor to provide Method-of-Handling Traffic (MHT).
Additional Traffic Control Items may be required. Mask any conflicting Guide Signs.

First and Main St Intersection:
Set Traffic Signal to Flash. Flagger to direct Traffic.

ROAD CLOSED
ROAD CLOSED TO THRU TRAFFIC
DETOUR
Barricade (Type 3 M-B)(Temp) (Typical)
DETOUR AHEAD
NOT TO SCALE

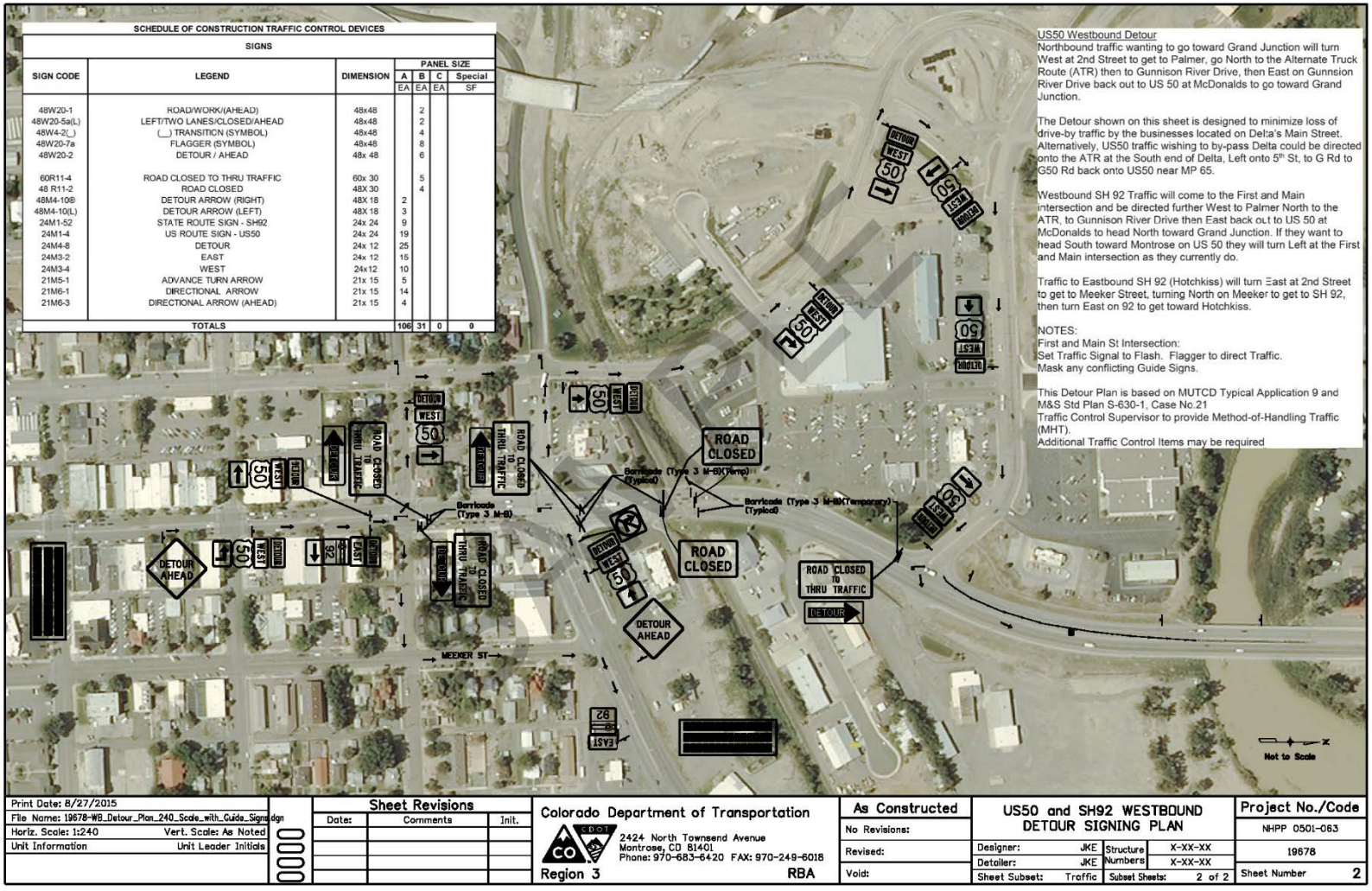
Print Date: 8/27/2015	Sheet Revisions	Colorado Department of Transportation	As Constructed
File Name: 19678-EB_Detour_Plan_240_Scale_With_Guide_Signs.dgn	Date: Comments Init.	2424 North Townsend Avenue, Montrose, CO 81401, Phone: 970-683-6420 FAX: 970-249-6018	No Revisions:
Horiz. Scale: 1:240 Vert. Scale: As Noted		Region 3 RBA	Revised:
Unit Information Unit Leader Initials			Void:

US50 and SH92 EASTBOUND DETOUR SIGNING PLAN

Designer:	JKE	Structure Numbers	X-XX-XX
Detailer:	JKE		X-XX-XX
Sheet Subset:	Traffic	Subset Sheets:	1 of 2

Project No./Code: NHPP 0501-063
19678
Sheet Number 1

Traffic Control Plans for a Maintenance Project Sample Document (2 of 3)



Traffic Control Plans for a Maintenance Project Sample Document (3 of 3)

TABULATION OF TRAFFIC ENGINEERING ITEMS

ITEM NUMBER	ITEM DESCRIPTION	UNIT	PROJECT TOTALS	UNIT PRICE	EXTENDED
620-00000	Mobilization	LS	1	$2,500.00	$2,500.00
630-00000	Flagging	Hour	600	$32.00	$19,200.00
630-00012	Traffic Control Management	Day	5	$1,000.00	$5,000.00
630-80305	Flagging Station Light	EACH	5	$200.00	$1,000.00
630-80336	Barricade (3 M-B) (Temp)	EACH	14	$400.00	$5,600.00
630-80341	Construction Traffic Sign (A)	EACH	106	$30.00	$3,180.00
630-80342	Construction Traffic Sign (B)	EACH	31	$50.00	$1,550.00
630-80355	Portable Message Sign Panel	DAY	50	$120.00	$6,000.00
630-80360	Drum Channelizing Device	EACH	20	$15.00	$300.00
630-80360	Drum Channelizing Device (with Light, Flash)	EACH	15	$20.00	$300.00
630-80415	Adv. Warn Seq Arrow Panel (C Type)	DAY	2	$200.00	$400.00
	Traffic Control Plan (MHT)	EACH	4	$100.00	$400.00
NOTES:	Flagging estimated at 5 flaggers*5 days*24 Hrs VMS Sign Panels: 5 VMS*10 days				
				TOTAL	$45,430.00

SCHEDULE OF CONSTRUCTION TRAFFIC CONTROL DEVICES

SIGNS

SIGN CODE	LEGEND	DIMENSION	PANEL SIZE A	PANEL SIZE B	PANEL SIZE C	PANEL SIZE Special
			EA	EA	EA	SF
48W20-1	ROAD/WORK/(AHEAD)	48x48		2		
48W20-5a(L)	LEFT/TWO LANES/CLOSED/AHEAD	48x48		2		
48W4-2(__)	(__) TRANSITION (SYMBOL)	48x48		4		
48W20-7a	FLAGGER (SYMBOL)	48x48		8		
48W20-2	DETOUR / AHEAD	48x 48		6		
60R11-4	ROAD CLOSED TO THRU TRAFFIC	60x 30		5		
48 R11-2	ROAD CLOSED	48X 30		4		
48M4-10®	DETOUR ARROW (RIGHT)	48X 18	2			
48M4-10(L)	DETOUR ARROW (LEFT)	48X 18	3			
24M1-52	STATE ROUTE SIGN - SH92	24x 24	9			
24M1-4	US ROUTE SIGN - US50	24x 24	19			
24M4-8	DETOUR	24x 12	25			
24M3-2	EAST	24x 12	15			
24M3-4	WEST	24x12	10			
21M5-1	ADVANCE TURN ARROW	21x 15	5			
21M6-1	DIRECTIONAL ARROW	21x 15	14			
21M6-3	DIRECTIONAL ARROW (AHEAD)	21x 15	4			
	TOTALS		106	31	0	0

NOTES

Railroad Crossing Diagnostic Form
Sample Document

RR Crossing Diagnostic Form Sample Document (1 of 14)

US DOT Crossing Name: US DOT Crossing Number: Diagnostic Date:

RR Crossing Diagnostic Form

Railroad/CDOT Project Information

Reviewer:_____ Railroad:_____

City: _____ County:_____

Area Classification: Urban Rural Zoning Classification:_____

Roadway Classification:_____ Roadway Name/Highway Number:_____

Crossing Width Existing:_____ Future:_____

Railroad Crossing Data

Subdivision: _____ Milepost:_____

Number of Trains/Day Existing:_____ Future:_____

Type of Trains (Existing)		**Type of Trains (Future)**	
Freight	# Trains/Day _____	Freight	# Trains/Day _____
Unit Trains		Unit Trains	
Mixed Manifest		Mixed Manifest	
Local Delivery		Local Delivery	
Passenger	# Trains/Day _____	Passenger	# Trains/Day _____
Light Rail (RTD)		Light Rail (RTD)	
Commuter (RTD)		Commuter (RTD)	
Amtrak		Amtrak	
Tourist		Tourist	
Other	_____	Other	_____

Type of Movements (Existing)		**Type of Movements (Future)**	
Thru	# Trains/Day _____	Thru	# Trains/Day _____
Switching	# Trains/Day _____	Switching	# Trains/Day _____

Time Table Speed: _____ Within Yard Limits: Yes No

FRA Track Class: _____ Number of Tracks:_____

Type of Track: _____ Track Gradient:_____% Direction:_____

Rail Weight: _____ RR ROW Width at Crossing:_____

Page 1 of 14

RR Crossing Diagnostic Form Sample Document (2 of 14)

US DOT Crossing Name: US DOT Crossing Number: Diagnostic Date:

	Approach Direction:	Approach Direction:
Flashing Lights		
Cantilevered Flashing Light Pairs:	☐ Yes ☐ No Number:___	☐ Yes ☐ No Number:___
Mast Mounted Flashing Lights:	☐ Yes ☐ No Number:___	☐ Yes ☐ No Number:___
Flashing Light Pairs:	Total:___	Total:___
Flashing Light Type:	☐ Incandescent ☐ LED	☐ Incandescent ☐ LED
Gates		
Entrance Gates:	☐ Yes ☐ No Number:___	☐ Yes ☐ No Number:___
Exit Gates:	☐ Yes ☐ No Number:___	☐ Yes ☐ No Number:___
Pedestrian Gates:	☐ Yes ☐ No Number:___	☐ Yes ☐ No Number:___
Traffic Signals		
At Crossing as Primary Crossing Control:	☐ Yes ☐ No	☐ Yes ☐ No
Downstream Interconnected Intersection:	☐ Yes ☐ No	☐ Yes ☐ No
Presignal:	☐ Yes ☐ No	☐ Yes ☐ No
Queue Cutter:	☐ Yes ☐ No	☐ Yes ☐ No
Protective Guardrail:	☐ Yes ☐ No	☐ Yes ☐ No
Bells:	☐ Yes ☐ No Number:	☐ Yes ☐ No Number:

Bungalow Location (Quadrant): ☐ NE ☐ NW ☐ SE ☐ SW

RR Interconnection (Existing):	RR Interconnection (Proposed):
☐ None	☐ None
☐ Advanced Preemption	☐ Advanced Preemption
☐ Simultaneous Circuit	☐ Simultaneous Circuit
☐ Gates Down Circuit	☐ Gates Down Circuit
☐ Supervised Circuit	☐ Supervised Circuit
☐ Traffic Signal Health Circuit	☐ Traffic Signal Health Circuit

Crossing Surface: _____

Medians: ☐ Yes ☐ No Type:_____ Crossing Angle:_____

Accident History: _____

Other Crossing Information: _____

Click button to attach Accident History Report/Inventory Report: **Attach Files**

Page **2** of **14**

RR Crossing Diagnostic Form Sample Document (3 of 14)

US DOT Crossing Name: US DOT Crossing Number: Diagnostic Date:

Roadway Approach Data

ADT/AADT

Total:	Existing: _____	Future: _____	Year: _____
% Heavy Vehicles:	Existing: _____	Future: _____	Year: _____
% Buses:	Existing: _____	Future: _____	Year: _____
Sidewalks	Existing: ☐ Yes ☐ No		Width: _____
	Future: ☐ Yes ☐ No		Width: _____
Utility Locations/Interferences	Electric: _____		
	Gas: _____		
	Telecom: _____		
	Water: _____		
	Other: _____		

Environmental Issues: _____

RR Crossing Diagnostic Form Sample Document (4 of 14)

US DOT Crossing Name: US DOT Crossing Number: Diagnostic Date:

Approach Direction:	Approach Direction:
Speed Limit:	Speed Limit:
Number of Lanes Existing:	**Number of Lanes** Existing:
Future:	Future:
Lane Width Existing:	**Lane Width** Existing:
Future:	Future:
Gradient: % Direction:	Gradient: % Direction:
Curvature:	Curvature:
Number of Driveways within 200': Distance to next Intersection:	Number of Driveways within 200': Distance to next Intersection:
Is adjacent intersection signalized? ☐ Yes ☐ No	☐ Yes ☐ No
Interconnected? ☐ Yes ☐ No	☐ Yes ☐ No
Existing Regulatory Signs	
R1-1  ☐ Yes ☐ No	☐ Yes ☐ No
R1-2  ☐ Yes ☐ No	☐ Yes ☐ No
R8-8  ☐ Yes ☐ No	☐ Yes ☐ No
R8-10  ☐ Yes ☐ No	☐ Yes ☐ No
R10-6  ☐ Yes ☐ No	☐ Yes ☐ No
R15-1  ☐ Yes ☐ No	☐ Yes ☐ No
Are R15-1 sign(s) reflective? ☐ Yes ☐ No	☐ Yes ☐ No
R15-2P  ☐ Yes ☐ No	☐ Yes ☐ No
R15-3P  ☐ Yes ☐ No	☐ Yes ☐ No
Other	

RR Crossing Diagnostic Form Sample Document (5 of 14)

US DOT Crossing Name: US DOT Crossing Number: Diagnostic Date:

Approach Direction:	Approach Direction:
Existing Advance Warning Signs	
W10-1  ☐ Yes ☐ No	☐ Yes ☐ No
W10-1aP  ☐ Yes ☐ No	☐ Yes ☐ No
W10-2  ☐ Yes ☐ No	☐ Yes ☐ No
W10-3  ☐ Yes ☐ No	☐ Yes ☐ No
W10-4  ☐ Yes ☐ No	☐ Yes ☐ No
W10-9P  ☐ Yes ☐ No	☐ Yes ☐ No
W10-11  ☐ Yes ☐ No	☐ Yes ☐ No
W10-11a  ☐ Yes ☐ No	☐ Yes ☐ No
Other _____	_____
Existing Flashing Beacons ☐ Yes ☐ No	☐ Yes ☐ No
Sign(s) _____	_____
Existing LED Sign Panels ☐ Yes ☐ No	☐ Yes ☐ No
Sign(s)	

Vegetation ☐ NE Quadrant ☐ NW Quadrant ☐ SE Quadrant ☐ SW Quadrant

Other Roadway/Approach Information:

RR Crossing Diagnostic Form Sample Document (6 of 14)

US DOT Crossing Name: US DOT Crossing Number: Diagnostic Date:

Aerial View of Existing Crossing

Click to Insert Picture

RR Crossing Diagnostic Form Sample Document (7 of 14)

US DOT Crossing Name: US DOT Crossing Number: Diagnostic Date:

Site Photos

Click to Insert Picture

Crossing ID #

Click to Insert Picture

Existing Surface Conditions

Page **7** of **14**

RR Crossing Diagnostic Form Sample Document (8 of 14)

US DOT Crossing Name: US DOT Crossing Number: Diagnostic Date:

Site Photos

Click to Insert Picture

NB Approach

Click to Insert Picture

EB Approach

Page **8** of **14**

RR Crossing Diagnostic Form Sample Document (9 of 14)

US DOT Crossing Name: US DOT Crossing Number: Diagnostic Date:

Site Photos

Click to Insert Picture

SB Approach

Click to Insert Picture

WB Approach

List major attributes of crossing which may contribute to safety:

List features which may reduce crossing safety:

Possible methods for improving safety at the crossing:

RR Crossing Diagnostic Form Sample Document (10 of 14)

US DOT Crossing Name: US DOT Crossing Number: Diagnostic Date:

Proposed Crossing Upgrades

	Approach Direction:	Approach Direction:
Proposed Flashing Lights		
Cantilevered Flashing Lights:	☐ Yes ☐ No Number:___	☐ Yes ☐ No Number:___
Mast Mounted Flashing Lights:	☐ Yes ☐ No Number:___	☐ Yes ☐ No Number:___
Total Count of Flashing Light	☐ Yes ☐ No Number:___	☐ Yes ☐ No Number:___
Flashing Light Type	☐ Incandescent ☐ LED	☐ Incandescent ☐ LED
Proposed Gates		
Entrance Gates:	☐ Yes ☐ No Number:___ Lengths:_____	☐ Yes ☐ No Number:___ Lengths:_____
Exit Gates:	☐ Yes ☐ No Number:___	☐ Yes ☐ No Number:___
Pedestrian Gates:	☐ Yes ☐ No Number:___	☐ Yes ☐ No Number:___
Proposed Traffic Signal		
Downstream Intersection:	☐ Yes ☐ No	☐ Yes ☐ No
Presignal:	☐ Yes ☐ No	☐ Yes ☐ No
Queue Cutter:	☐ Yes ☐ No	☐ Yes ☐ No
Protective Guardrail:	☐ Yes ☐ No	☐ Yes ☐ No
Bells:	☐ Yes ☐ No	☐ Yes ☐ No

Bungalow Location (Quadrant): ☐ NE ☐ NW ☐ SE ☐ SW

Bungalow Power Source Location:

RR Interconnection (Existing):	RR Interconnection (Proposed):
☐ None	☐ None
☐ Motion Detection	☐ Motion Detection
☐ Constant Warning	☐ Constant Warning
☐ Other: _____	☐ Other: _____
☐ Advanced Preemption	☐ Advanced Preemption
☐ Simultaneous Circuit	☐ Simultaneous Circuit
☐ Gates Down Circuit	☐ Gates Down Circuit
☐ Supervised Circuit	☐ Supervised Circuit
☐ Traffic Signal Health Circuit	☐ Traffic Signal Health Circuit

Crossing Surface: _____ Medians: ☐ Yes ☐ No Type:_____

RR Crossing Diagnostic Form Sample Document (11 of 14)

US DOT Crossing Name: US DOT Crossing Number: Diagnostic Date:

Approach Direction:				Approach Direction:	
Proposed Regulatory Signs					
R1-1		☐ Yes	☐ No	☐ Yes	☐ No
R1-2		☐ Yes	☐ No	☐ Yes	☐ No
R8-8		☐ Yes	☐ No	☐ Yes	☐ No
R8-10		☐ Yes	☐ No	☐ Yes	☐ No
R10-6		☐ Yes	☐ No	☐ Yes	☐ No
R15-1		☐ Yes	☐ No	☐ Yes	☐ No
Are R15-1 sign(s) reflective?		☐ Yes	☐ No	☐ Yes	☐ No
R15-2P		☐ Yes	☐ No	☐ Yes	☐ No
R15-3P		☐ Yes	☐ No	☐ Yes	☐ No
Other					

RR Crossing Diagnostic Form Sample Document (12 of 14)

US DOT Crossing Name: US DOT Crossing Number: Diagnostic Date:

Approach Direction:			Approach Direction:	
Proposed Advance Warning Signs				
W10-1		☐ Yes ☐ No	☐ Yes ☐ No	
W10-1aP		☐ Yes ☐ No	☐ Yes ☐ No	
W10-2		☐ Yes ☐ No	☐ Yes ☐ No	
W10-3		☐ Yes ☐ No	☐ Yes ☐ No	
W10-4		☐ Yes ☐ No	☐ Yes ☐ No	
W10-9P		☐ Yes ☐ No	☐ Yes ☐ No	
W10-11		☐ Yes ☐ No	☐ Yes ☐ No	
W10-11a		☐ Yes ☐ No	☐ Yes ☐ No	
Other				
Proposed Flashing Beacons Sign(s)		☐ Yes ☐ No	☐ Yes ☐ No	
Proposed LED Sign Panels Sign(s)		☐ Yes ☐ No	☐ Yes ☐ No	

Reason for Proposed Upgrades:

RR Crossing Diagnostic Form Sample Document (13 of 14)

US DOT Crossing Name: US DOT Crossing Number: Diagnostic Date:

Sketch of Proposed Crossing

Click to Insert Picture

RR Crossing Diagnostic Form Sample Document (14 of 14)

US DOT Crossing Name: US DOT Crossing Number: Diagnostic Date:

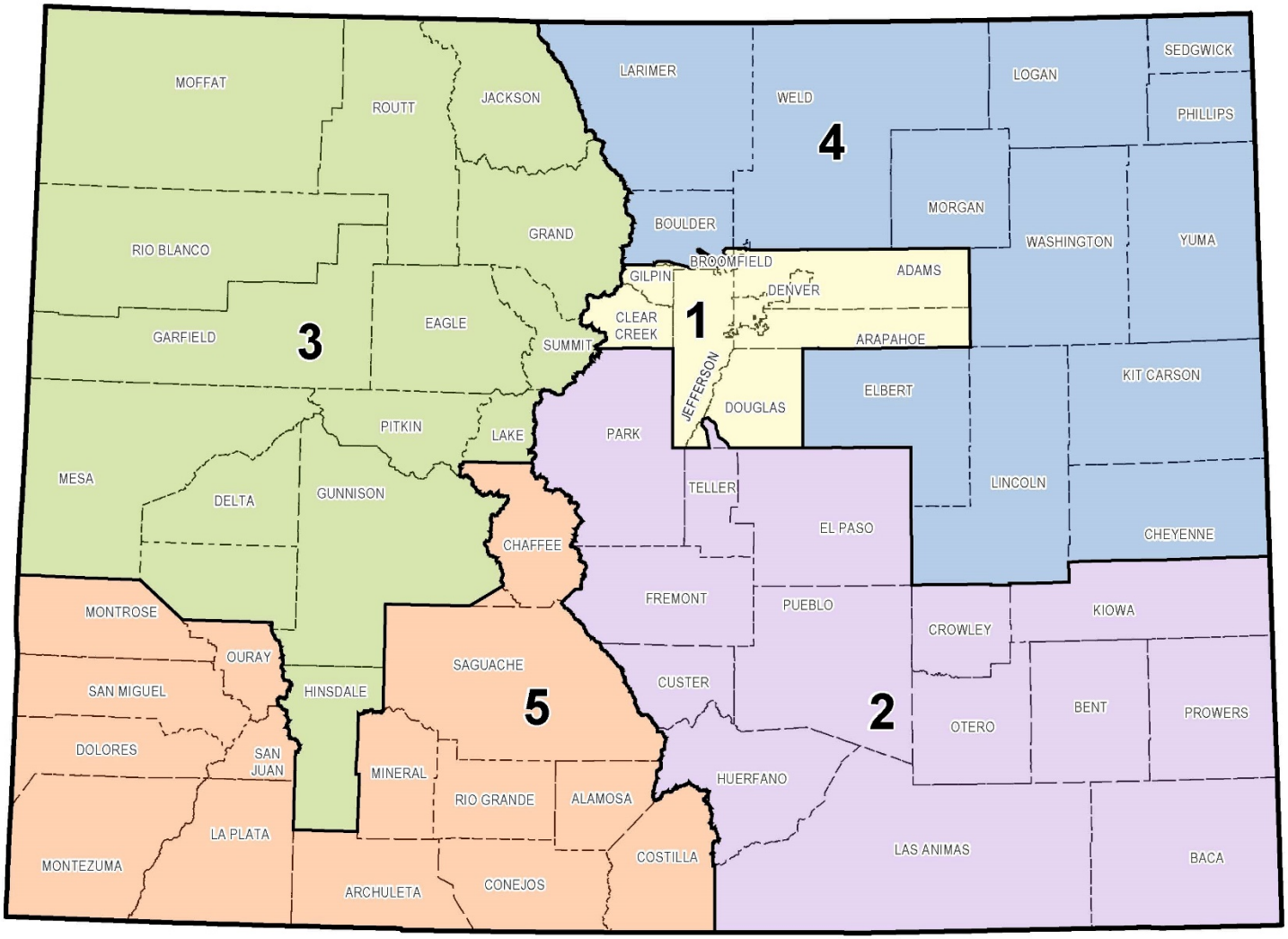
Diagnostic Meeting Attendees

Name	Representing	Contact Info
		Phone: Email:
		Phone: Email:
		Phone: Email:
		Phone: Email:
		Phone: Email:
		Phone: Email:
		Phone: Email:
		Phone: Email:
		Phone: Email:
		Phone: Email:
		Phone: Email:
		Phone: Email:
		Phone: Email:
		Phone: Email:

Appendix C
CDOT Maps

Appendix C presents the following maps. All of these maps can be found at:
http://dtdapps.coloradodot.info/staticdata/downloads/StatewideMaps/

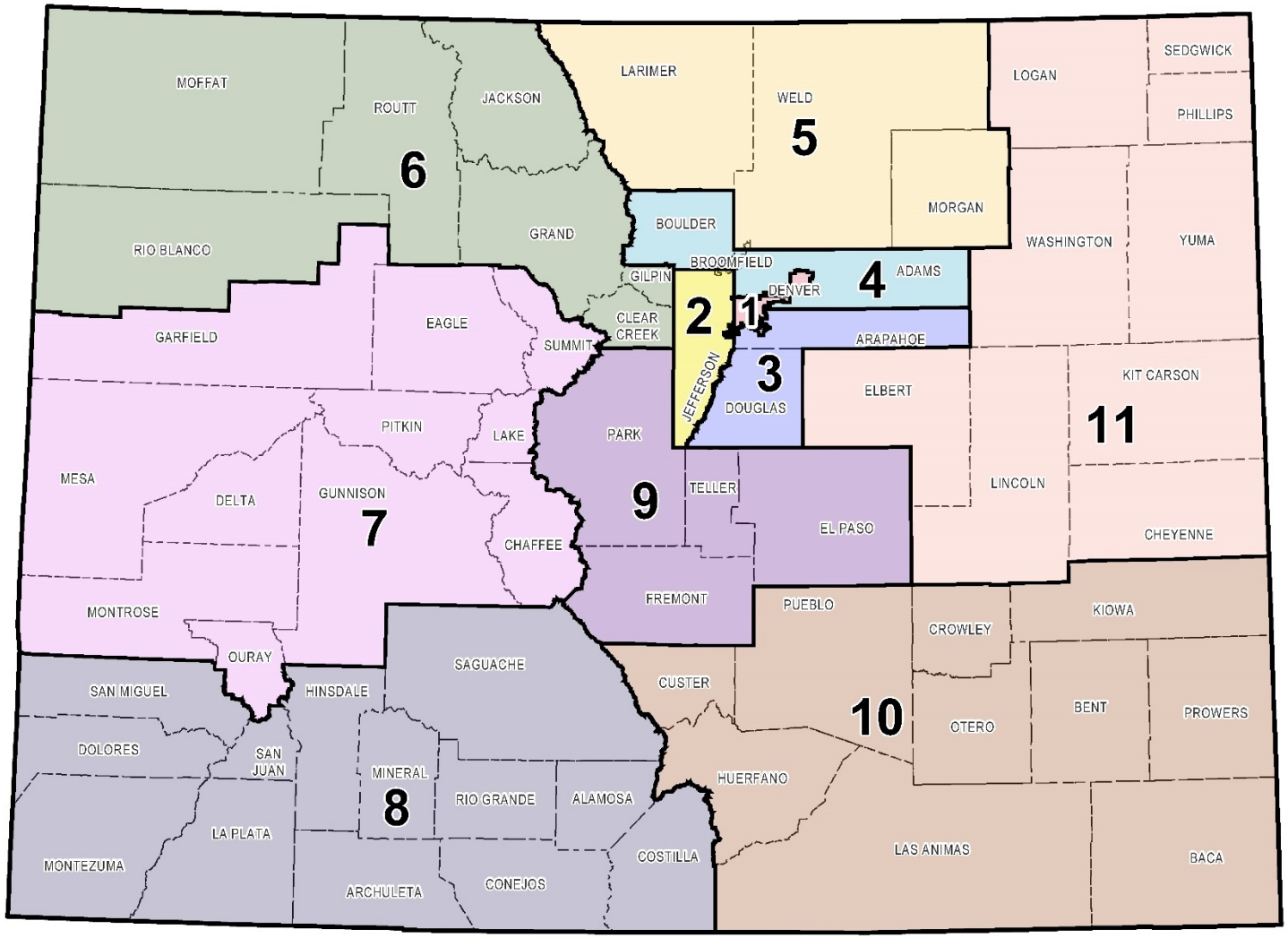
- CDOT Engineering Regions
- CDOT Commission Districts
- Transportation Planning Regions
- CDOT Maintenance Sections
- Colorado Highways



Data Source: CDOT 2015
Published: December 2016
www.codot.gov

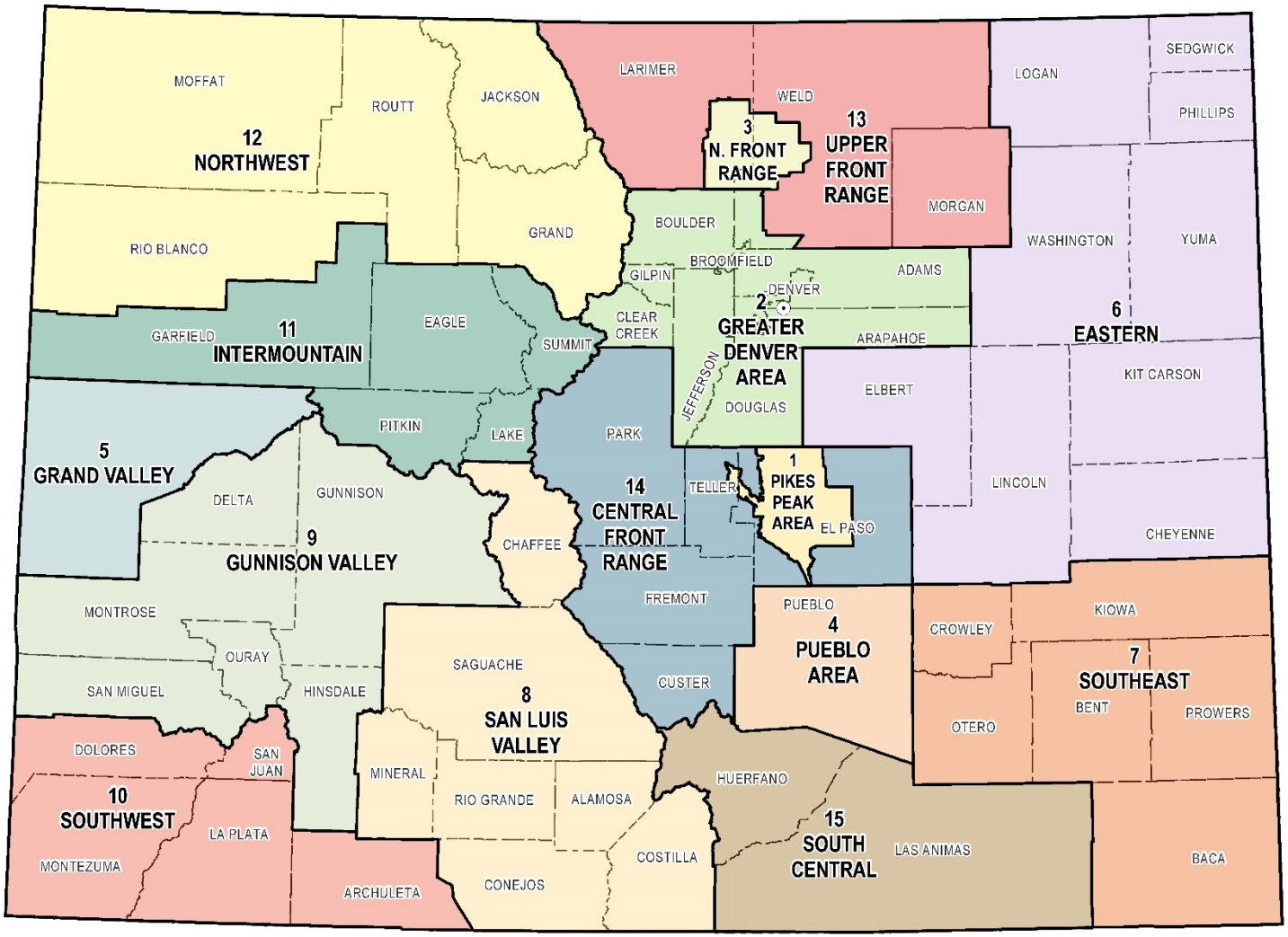
CDOT Engineering Regions

COLORADO
Department of Transportation



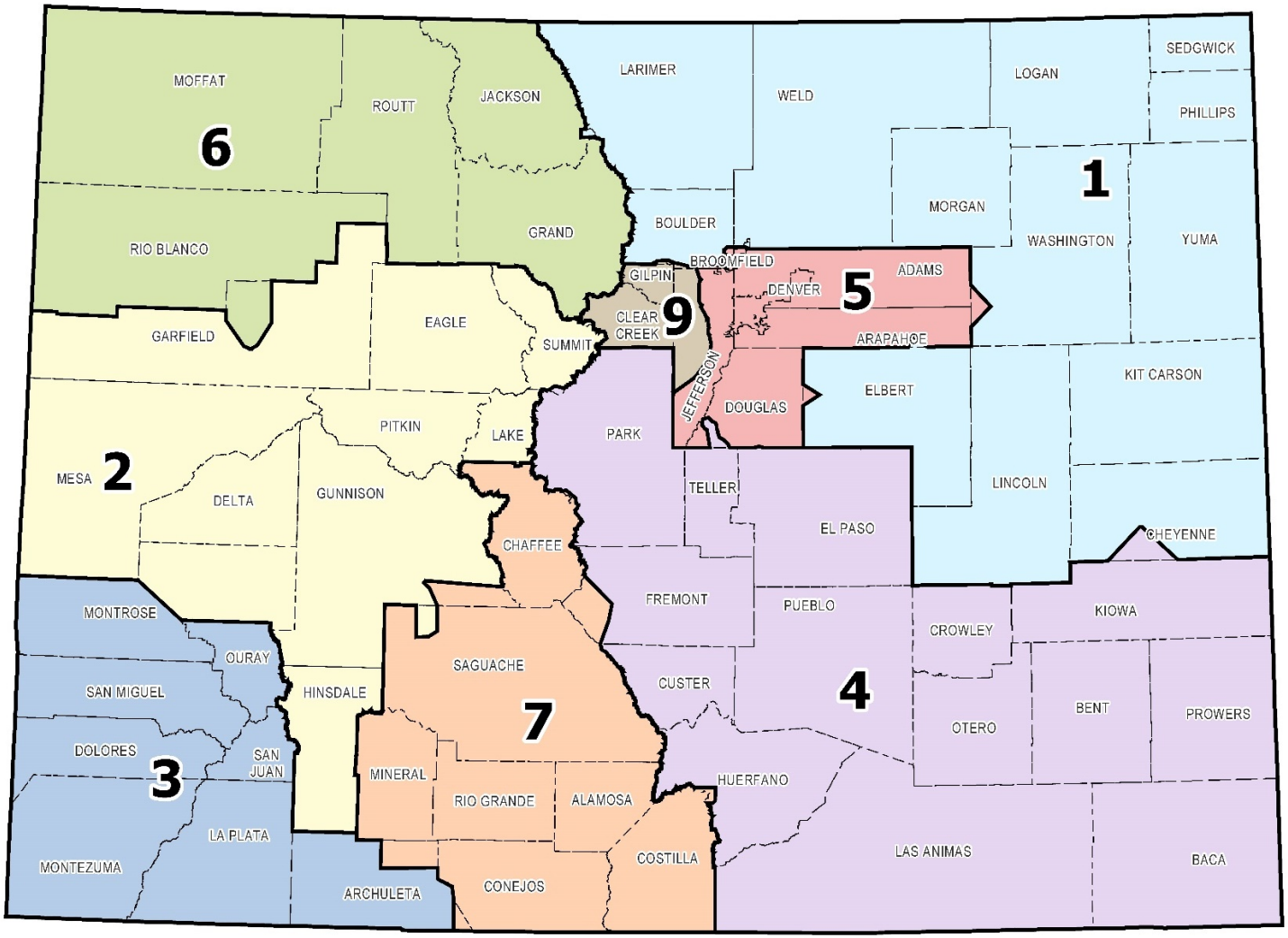
Data Source: CDOT 2015
Published: December 2016
www.codot.gov

CDOT Commission Districts



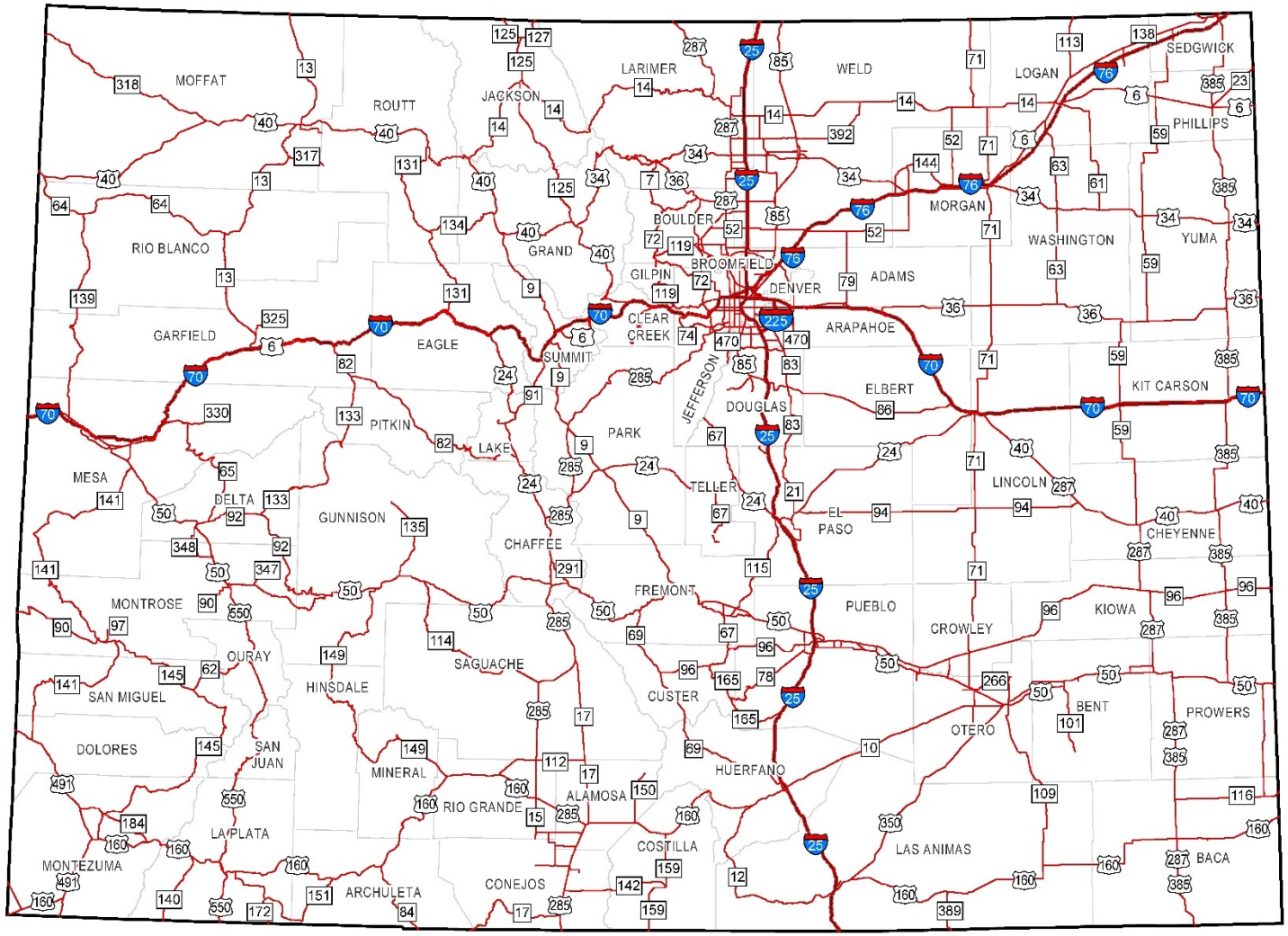
Data Source: CDOT 2015
Published: December 2016
www.codot.gov

Transportation Planning Regions



Data Source: CDOT 2015
Published: December 2016
www.codot.gov

CDOT Maintenance Sections



Data Source: CDOT 2015
Published: December 2016
www.codot.gov

Colorado Highways

Reference Material

COLORADO
Department of Transportation

Table R-1 Reference Material		
Agency	**Reference**	**Link**
American Railway Engineering and Maintenance-of-Way Association (AREMA)	AREMA Manual for Railway Engineering	https://www.arema.org/publications/mre/
BNSF/UPRR	BNSF/UPRR Guidelines for Railroad Grade Separation Projects	https://www.up.com/real_estate/roadxing/industry/grade_separation/index.htm
Code of Federal Regulations (CFR)	23 CFR Part 140 - Reimbursement (Subpart I – Reimbursement for Railroad Work). 23 CFR Part 646 - Railroads	https://www.gpo.gov/fdsys/pkg/CFR-2011-title23-vol1/pdf/CFR-2011-title23-vol1-part140.pdf https://www.gpo.gov/fdsys/pkg/CFR-2011-title23-vol1/pdf/CFR-2011-title23-vol1-part646.pdf
Colorado Revised Statutes (C.R.S.)	§40-4-106, C.R.S. Rules for public safety-crossings-allocation of expenses.	http://codes.findlaw.com/co/title-40-utilities/co-rev-st-sect-40-4-106.html
Colorado Department of Transportation (CDOT)	CDOT Local Agency Project Manual CDOT Utility Manual CDOT Utility Accommodation Code CDOT Project Development Manual	https://www.codot.gov/business/designsupport/bulletins_manuals/2006-local-agency-manual https://www.codot.gov/business/designsupport/bulletins_manuals/utility-manual https://www.sos.state.co.us/CCR/GenerateRulePdf.do?ruleVersionId=3222 https://www.codot.gov/business/designsupport/bulletins_manuals/project-development-manual
Federal Highway Administration (FHWA)	Manual on Uniform Traffic Control Devices (MUTCD), FHWA Colorado State Supplement to the Federal MUTCD.	https://mutcd.fhwa.dot.gov/pdfs/2009r1r2/pdf_index.htm https://mutcd.fhwa.dot.gov/resources/state_info/colorado/co.htm

Table R-1 Reference Material

	Reference	Link
Federal Highway Administration (FHWA) (Continued)	"Railroad-Highway Grade Crossing Handbook," Federal Highway Administration (FHWA)	https://www.fra.dot.gov/Elib/Details/L02829
	"Guidance on Traffic Control Devices at Highway-rail Grade Crossings," FHWA, Highway/Rail Grade Crossing Technical Working Group, November 2002.	https://safety.fhwa.dot.gov/intersection/other_topics/fhwasa09027/resources/Guidance%20On%20Traffic%20Control%20at%20Highway%20Rail%20Grade.pdf
Federal Railroad Administration (FRA)	Guide for Preparing U.S. DOT Crossing Inventory Forms	https://www.fra.dot.gov/eLib/Details/L16201
	Highway-Rail Crossing Inventory Data	http://safetydata.fra.dot.gov/OfficeofSafety/publicsite/downloaddbf.aspx
	Accident Data	http://safetydata.fra.dot.gov/Officeofsafety/publicsite/on_the_fly_download.aspx
	Guide to the Quiet Zone Establishment Process	https://www.fra.dot.gov/eLib/Details/L04781
Institute of Transportation Engineers (ITE)	Preemption of Traffic Signals Near Railroad Crossings	http://library.ite.org/pub/e1dca8bc-2354-d714-51cd-bd0091e7d820
Public Utilities Commission (PUC)	PUC rules and procedures promulgated thereunder	https://www.colorado.gov/pacific/dora/railrules
United States Department of Transportation (U.S. DOT)	U.S. DOT Crossing Inventory Form	https://www.fra.dot.gov/eLib/Details/L16197

Index

Index