



RTD UTILITY AGREEMENTS PROCESS

REQUESTING UTILITY AGREEMENTS

The RTD Utility Agreement Request to cross RTD's right of way and facilities with an OH (overhead) or UG (underground) utility is a process that begins and ends with RTD's Real Property Division. Other RTD groups such as Engineering and Maintenance of Way (MOW) can be useful to guide you through the process and can assist you with proper RTD engineering design criteria and requirements, plan and profiles, application data sheets, and On-Track-Safety Training. Approval is not guaranteed and is not granted until an Executed License is issued by RTD Real Property.

To start, submit the following information to RTD Real Property at:

RTD Real Property
1560 Broadway Street
Suite 650
Denver, CO 80202

or send email to UtilityAgreement.Property@rtd-denver.com

- An email or letter explaining your request sent to RTD Real Property
- A completed [RTD Railroad Utility Agreement – Application Data Sheet](#)
- Plan and profile showing utility crossing of RTD tracks and right of way with the appropriate required [RTD Notes to Contractors](#)

DIVISION REVIEW PROCESSES

RTD's Engineering Division will review your submittal to make certain your design is sound and that it meets RTD required criteria and that it includes the following [Engineering Review Check-Off List](#). Links to conditional requirement forms per the Check-Off List are provided below:

- If you are vacating a facility that crosses RTD ROW/Facilities an [RTD Agreement to Vacate Utility](#) must be submitted.
- If you cannot meet RTD criteria requirement and wish to apply for a variance, a [Request for Design Variance and Approvals](#) must be submitted to and approved by RTD Engineering before RTD Real Property will approve your Utility Agreement Request

Email any Engineering related questions to: UtilityAgreement.Engineering@rtd-denver.com

RTD's Maintenance of Way (MOW) will review the following requirements:

- Contractor has submitted current Permit request form
- Contractor has RTD's On-Track-Safety Training
- Contractor has attended RTD's MOW ROW Access Permit meeting (held weekly, [please check current form and meeting schedule](#)).

Note: Contractors may not begin construction until RTD Real Property has issued and executed RTD Utility Agreement.

Email any MOW related questions and requests for current Permit request forms to RailOpsPermits@rtd-denver.com

Regional Transportation District

1600 Blake Street
Denver, CO 80202

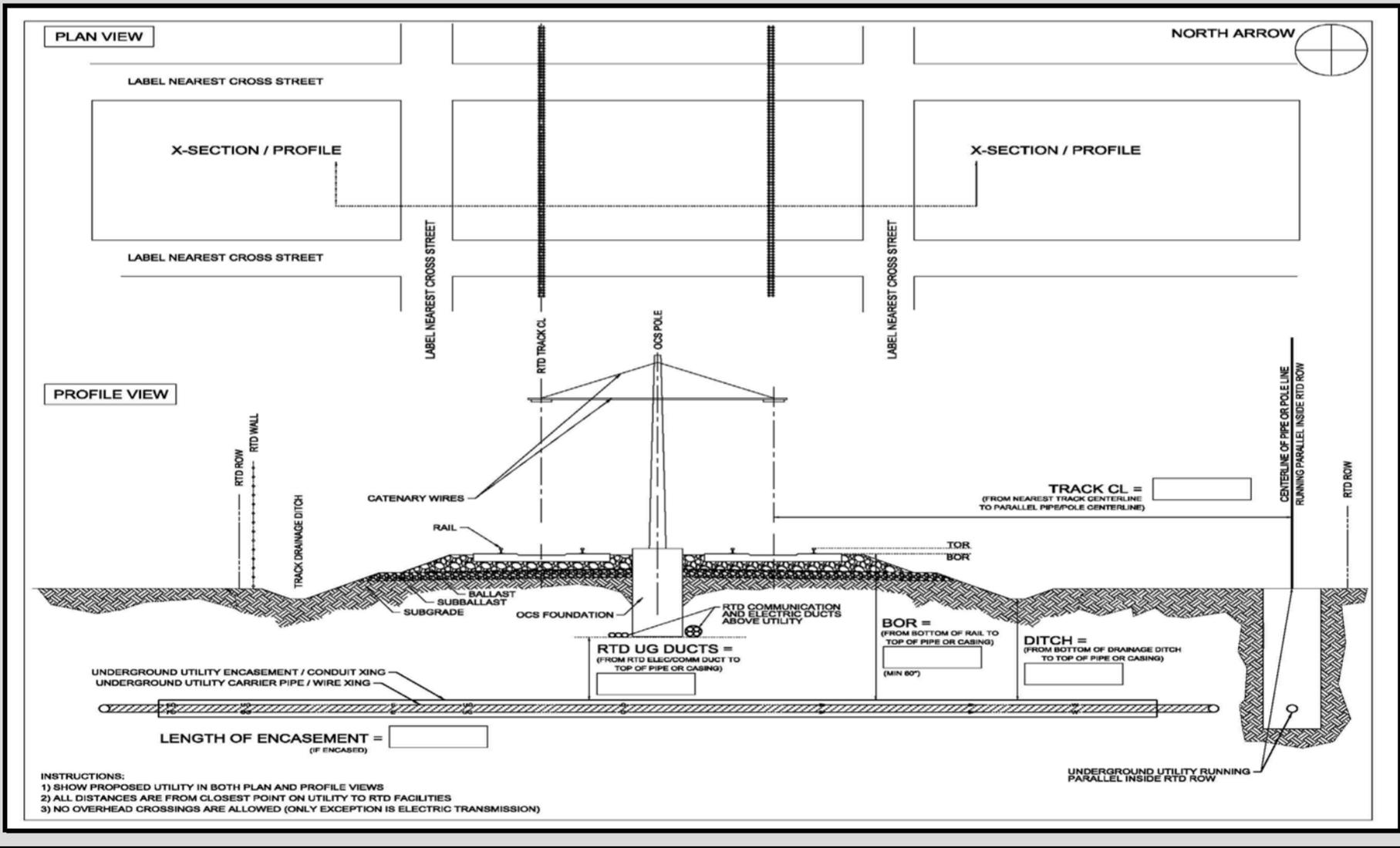
*RTD provides bus and rail service
to the Denver metro area.*

Date Executed / Revised:	RTD Railroad Utility Agreement - Application Data Sheet (Complete ALL Sections of this form)	RTD Agreement Number:
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RTD Rail Route:	Nearest Cross-Streets:	City:	County:	ROW (RTD, City, CDOT?):
Pre-Existing RR Agreement with which RR:	Pre-Existing Agreement RR Lead & Mile Post(s):		Pre-Existing Agreement Type & Number:	

Utility Owner Current (Original):	OH or UG:	Utility Type:
Project Location Detailed Description:	Xing or Parallel or Encroachment:	
Description of Utility Install Methods:		

# of Wires, Conduits, Pipes	
Carrier Pipe Size -and- Carrier Pipe Thickness:	
Carrier Pipe Material:	
Encasement Length or Distance between Poles:	
Encasement Size - and- Encasement Thickness:	
Encasement Material:	
Depth Below Base of Rail or Height Above Top of Rail:	
Other Important Details (Asbestos, kV, psi, etc):	
Variance to RTD Criteria (Explain):	
Date to be Installed:	



REQUIREMENTS for NEW UTILITIES XING RTD RR ROW:

- 1) Attach a Plan-and-Profile drawing showing the location of your New Utility, the location of RTD facilities (tracks, ROW, Elec & Comm Ducts, Walls, Structures), and the location of all other existing Utilities in the area in both Plan and Profile views. Plan-and-Profile drawing Must include ALL most current RTD notes to contractors.
- 2) Provide Load Calculations including Thicknesses of Carrier Pipe and Encasement for pressurized pipes to show your New facility will withstand RTD loads. Pressurized pipes crossing RTD tracks will need to be encased unless approved by RTD in writing thru an executed approved Variance requested by the Utility Owner.
- 3) All submittals (drawings, plans, profiles, and calculations Must be stamped and signed by a registered Professional Engineer.
- 4) RTD Criteria requires a minimum depth or 5 feet Below Base of RTD Rail to top of New Utility Owner facilities. Clearances to RTD Ducts may require New Utilities be deeper.
- 5) Contractor shall survey the Top-of-Rail (TOR) Befor and After Pipe installation to show no movement of tracks due to construction. If necessary, RTD will coordinate the survey and the Utility Owner will NOT be allowed to install the New Utility until after the Before survey is complete and sent to RTD.
- 6) Contractor shall install 4' Utility Markers over utility each side of RTD ROW/Track crossing. All Utility crossing must be Locatable with standard locating equipment.
- 7) Contractor must survey a minimum of five (5) locations along installed pipe and submit As-builts to RTD Real Property and RTD Engineering (Utilities) within 30 days of install.
- 8) Contact RTD's Jim Kelley, Utilities (303.299.6975) and RTD's Mitch Kuharski, Construction (303-299-6980) a full two (2) weeks prior to construction.

Please add the following additional construction notes to the 'for construction drawing'

- 1) CONTRACTOR SHALL NOTIFY RTD'S JIM KELLEY, UTILITIES (303-299-6975) AND RTD'S MITCH KUHARSKI, CONSTRUCTION (303-299-6980) A FULL TWO (2) WEEKS PRIOR TO CONSTRUCTION AND SHALL INVITE THEM TO THE PRE-CONSTRUCTION MEETING(S), AND ARRANGE FOR AN RTD REPRESENTATIVE TO BE ON-SITE DURING CONSTRUCTION.
- 2) CONTRACTOR SHALL CONTACT RTD'S MAINTENANCE OF WAY (MOW) AND RTD RAIL OPERATIONS (303-299-3415) A FULL WEEK PRIOR TO CONSTRUCTION AND ATTEND THE WEEKLY RTD MANDATORY CONSTRUCTION MEETING PRIOR TO THE START OF ANY PROJECT CONSTRUCTION. CALL RTD FOR MEETING SCHEDULE AND LOCATION. THE CONTRACTOR MUST ALSO ATTEND ALL NECESSARY ON TRACK SAFETY TRAINING PRIOR TO THE START OF ANY WORK ON, ADJACENT TO, OR ACROSS RTD ROW WITH RR TRACKS.
- 3) CONTRACTOR SHALL SURVEY AND SUBMIT COMPLETED HORIZONTAL PLAN AND VERTICAL PROFILE AS-BUILTS TO RTD WITHIN 30 CALENDAR DAYS OF THE COMPLETION OF CONSTRUCTION. THE PLAN AND PROFILE AS-BUILTS MUST CONTAIN THE FOLLOWING INFORMATION:
 - a) BEFORE AND AFTER SURVEY OF TOP OF RTD TRACKS TO SHOW NO MOVEMENT OF TRACKS DUE TO CONSTRUCTION: AT A MINIMUM, THE CONTRACTOR SHALL SURVEY 3 LOCATIONS SPACED 10' APART ALONG EACH RAIL (A TOTAL OF 6 SURVEY POINTS PER SET OF TRACKS), WITH THE CENTER POINT ON EACH RAILED CENTERED AS CLOSE AS POSSIBLE OVER THE CENTERLINE OF THE NEW PIPELINE SO THAT THE SHOTS STRADDLES THE NEW PIPELINE CROSSING LOCATION. THE CONTRACTOR MUST INCLUDE THE DATE OF THE BEFORE (PRE-CONSTRUCTION) SURVEY AND DATE OF THE AFTER (POST-CONSTRUCTION) SURVEY, AND BOTH PRE AND POST SURVEYS MUST BE NO MORE THAN 30 DAYS APART.
 - b) CONTRACTOR SHALL SURVEY A MINIMUM OF FIVE (5) LOCATIONS ALONG THE INSTALLED PIPELINE TO SHOW THE EXACT INSTALLED HORIZONTAL LOCATION AND VERTICAL DEPTH OF THE NEW PIPELINE WHERE IT 1) ENTERS THE RTD ROW, 2) EXISTS THE RTD ROW, 3) CROSSES THE CENTERLINE OF THE RTD TRACKS, 4) LOCATION HALF WAY BETWEEN ENTERING ROW & TRACK CENTERLINE ON EITHER SIDE OF THE TRACKS, 5) LOCATION HALF WAY BETWEEN EXITING ROW & TRACK CENTERLINE ON EITHER SIDE OF THE TRACKS.
 - c) CONTRACTOR SHALL SUPPLY RTD WITH A COPY OF THE SURVEYOR'S FIELD NOTES TO SUPPORT THE BEFORE AND AFTER SURVEY DATA AND FINAL UTILITY INSTALLATION DATA.
 - d) RTD LICENSE AGREEMENT NUMBER
 - e) DATE THE FACILITY WAS INSTALLED
 - f) SIZE OF PIPE AND SIZE OF CASING
 - g) MATERIAL BEING CARRIED IN THE PIPE
 - h) AS-BUILTS MUST BE STAMPED, SIGNED, AND DATED BY A LICENSED SURVEYOR OR ENGINEER.
- 4) CONTRACTOR SHALL INSTALL 4 FOOT UTILITY MARKERS OVER UTILITY ON BOTH SIDES OF RTD ROW/TRACKS TO MARK CROSSING. ALL UTILITIES INSTALLED WITHIN RTD ROW OR CROSSING RTD TRACKS MUST BE LOCATABLE WITH STANDARD LOCATING EQUIPMENT.
- 5) RTD ASSUMES NO RESPONSIBILITY FOR UTILITY LOCATIONS SHOWN ON THESE CONSTRUCTION DRAWINGS. IT IS THE CONTRACTORS RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.
- 6) CONTRACTOR SHALL IDENTIFY THE HORIZONTAL LOCATION AND VERTICAL DEPTH OF RTD UNDERGROUND ELECTRIC AND COMMUNICATION DUCTS WITHOUT COMPROMISING THE INTEGRITY OF THE RTD TRACKS OR DYNAMIC ENVELOPE. THIS MAY BE ACCOMPLISHED BY ANY MEANS OF LOCATING THE TOP AND BOTTOM OF THE RTD DUCTS THAT DOES NOT INCLUDE POTHOLING OR DIGGING WITHIN THE RTD TRACK ENVELOPE. THIS MAY INCLUDE A PHYSICAL POTHOLING METHOD IF AGREED UPON IN WRITING BY RTD PRIOR TO POTHOLING.

RTD ENGINEERING DIVISION REVIEW of UTILITY OWNER SUBMITTED REQUEST TO CROSS RTD ROW/FACILITIES

USE THIS REQUIREMENT CHECK-OFF LIST AS GUIDELINES - This list is used by RTD ENGINEERING STAFF for review of your submittal

Important - Crossing RTD ROW/Facilities is a process that begins and ends with RTD's Real Property Group, but if you have Engineering Questions, contact RTD Engineering.

Utility Owner (UO) _____ Utility-Type _____ Corridor/Street Location _____ / _____ UA # _____

ITEM #	REQUIREMENTS NEEDED	HAVE YOU INCLUDED THESE ITEMS?
1	RTD Railroad Utility Agreement - Application Data Sheet (Completely Filled Out)	
2	Plan/Profile with PE Stamp/Signature as FOR CONSTRUCTION	
3	Plan/Profile - Clear indication of Location of crossing/parallel wrt nearest major cross streets (Aerial photo)	
4	Plan/Profile - RTD tracks and RTD Right-of-Way (ROW) clearly shown with distances to Utility	
5	Plan/Profile - Both views show RTD tracks	
6	Plan/Profile - Both views show crossing utility and pipe and casing size and material	
7	Plan/Profile - Bore Pits clearly shown on Plan/Profile with distances from edge of Bore pits to nearest RTD rail and ROW	
8	Plan/Profile - If Encased - Length and Extent of Casing and distance from edge of casing to RTD Dynamic Envelope is indicated and is sufficient.	
9	Tracer Wire &/or Marker Poles Included in Design.	
10	If Pressurized - Calculations with PE Stamp/Signature meeting AREMA	
11	If Pressurized and Unencased - Correct Pipe Thickness (per AREMA)	
12	If Pressurized and Unencased - Cathodic Protection / Pipe Coating shown	
13	If Pressurized and Unencased - Weld Testing & Pull Force Monitoring Specs	
14	If Pressurized and Unencased - Inspection and Maintenance Plan	
15	Method of Insallation / Bore Spec	
16	Field Check - Depth of RTD Underground Comm/Elec Ducts have been field & as-built verified and Horizontal and Vertical Depth of proposed UO Utility is OK (UO must coordinate with RTD Engineering & MOW)	
17	Depending on size and depth of bore - Geotechnical Report may be required showing install will not impact surface and subsurface stability	
18	RTD Notes to Contractor on Plan/Profile (1) Contractor shall contact Jim Kelley & Mitch Kuharski two weeks prior to construction....	
19	RTD Notes to Contractor on Plan/Profile (2) Contractor shall contact MOW... Rail Ops... RTD On Track Safety Training. Prior to the start of work....	
20	RTD Notes to Contractor on Plan/Profile (3) Contractor shall Survey and Submit completed Horiz Plan & Vert Profile As-builts showing (a, b, c, d, e, f, g, h) and submit to RTD within 30 days of completion: a) Before and After survey of Top of Rail.... include Date of pre-construction and Date of post-construction surveys of top of rail b) Bore/Vertical Profile of Installed Pipe, Survey 5 locations along installed utility (minimum) c) Copy of Survey Field Notes to RTD to support Survey results shown on As-Built d) RTD Assigned License Agreement Number e) Date Facility was Installed f) Size of Pipe, Size of Casing g) Material carried in pipe h) As-Builts must be Stamped, Signed, Dated by Licensed Surveyor or Engineer	
21	RTD Notes to Contractor on Plan/Profile (4) Contractor shall Install 4 foot Utility Markers.... Utilities shall be Locatable....	
22	RTD Notes to Contractor on Plan/Profile (5) RTD Assumes No Responsibility for Utility Locations Shown on Construction Drawings.... It is the Contractors Responsibility to Field Verify....	
23	RTD Notes to Contractor on Plan/Profile (6) Contractor shall Locate RTD underground conduits (Horiz & Vert Depth) without compromising integrity of tracks....	
24	If Utility Owner (UO) design violates RTD criteria - RTD Variance has been submitted by UO and approved by RTD (if Variance is Rejected by RTD, UO submits new design reflecting necessary changes)	
25	If Utility Owner (UO) plans to REMOVE a crossing utility - RTD Agreement to Vacate Form (Completely Filled Out)	

For RTD Utility Application Forms and RTD Contact Information, go to www-rtd-denver.com



REQUEST FOR DESIGN VARIANCE

VARIANCE REQUEST NO:

_____ (RTD Doc Control only)

VARIANCE LOG COUNTER # _____

PROJECT TITLE: _____ RTD STAFF ASSIGNED: _____ EXT: _____
 PROJECT OWNER: _____ CONTACT PHONE NUMBER: _____
 DESIGN ENGINEER: _____ CONTACT PHONE NUMBER: _____
 DATE SUBMITTED: _____ DESIRED RESPONSE DATE: _____

SELECT VARIANCE SOURCE & REQUIRED LEVEL OF REVIEW: [TO BE COMPLETED BY RTD]

EXTERNAL INTERNAL LEVEL 3 VARIANCE LEVEL 4 VARIANCE

LOCATION(S): [LIST STREET NAME (PROJECT STATIONING)]

DESCRIPTION OF VARIANCE: [ATTACH SUPPORT DATA SUCH AS REPORTS, CALCULATIONS, AND DRAWINGS]

REASON FOR VARIANCE: [LIST DESIGN CRITERIA THAT IS NOT BEING MET OR OTHER FACTORS]

IMPACTS TO PROJECT - DESIGN AND CONSTRUCTION: [MAKE **BOLD & UNDERLINE ALL THAT APPLY]**

COST SAVINGS, COST AVOIDANCE, OR COST INCREASE: \$ _____

SCHEDULE SAVINGS OR INCREASE: _____

SAFETY OPERATIONS MAINTENANCE ENGINEERING DISCIPLINE: _____

EXPLAIN: _____

VARIANCE
 ADVANTAGES: _____

VARIANCE
 DISADVANTAGES: _____

RTD Light Rail Right of Way Access Request / Permit

Complete all fields that are in Blue (and have asterisks)

*Company Representing:		
*Person Submitting Request:	*LRT OTS Training <u>Card</u> expires:	
	*RTD OTS card #:	
*Contact Person:	*Contact Phone:	
*Approved permit to be emailed to:		
Dates of Access: (Not to exceed 7 days)	FROM SUNDAY THROUGH SATURDAY	
	*Requested From:	*To:
Time Period (military time)	*Requested From:	*To:
*Description of Work:		
*Location:		
*Equipment On Site:		

Right of Way Access Rules:

1. Right-of-Way Access Permit requests will be reviewed and granted upon completion of RTD On-Track Safety(OTS) Training.
2. Contractor must have RTD-OTS Trained competent person - look-out(s) on-site at each work location.
3. A copy of this completed access permit must accompany the work crew on each work site.
4. All personnel must wear reflective safety vests at all times.
5. Contractor must notify control (303-299-3480) prior to entering and when clear of any job site.
6. All active tracks must be 100% useable at all hours by the Light Rail trains. All rail flangeways and work areas must be cleared of debris prior to leaving the work area. Trains cannot be delayed.
7. When equipment or tools are used within the Right-of-Way that may impact safety or train operation, the Contractor must have an RTD flag person to protect and expedite train movement.
 Flagger rates: Mon – Fri 7:00am – 5:00pm, \$35.00/hr; Off-shift, Weekends and Holidays - \$57.00/hr.
8. The overhead catenary is to be considered Live and Hot at all times. If de-energization is requested, Contractor must confirm with MOW personnel prior to entry.

Please email to railopspermits@rtd-denver.com (ELECTRONIC FORM ONLY – not pdf format)

Requestor Confirmation and Agreement

* By checking this box, I acknowledge full understanding of RTD Access Permit rules and procedures and certify that OTS Training has been completed and is current.

*Requestor: Type Name Here _____ *Date _____

FAILURE TO COMPLY WITH ACCESS PERMIT RULES WILL RESULT IN PERMIT REVOCATION
 THE SECTION BELOW IS FOR RTD USE ONLY

Approved Dates of Access:	From:	To:
Approved Time Period (military time):	From:	To:
Approved Limits of Access:	Inbound:	To:
	Outbound:	To:
De-energize Overhead Power Required:	Yes No	
Operating Restrictions:		

RTD – Manager, Maintenance of Way

RTD – Manager, Light Rail Transportation

RTD – Safety Representative

Permit Number



Drainage Modification Procedures

1. If it is necessary to enter the railroad company's property to conduct a survey for the completion of required engineering plans and location information, the Permit To Be On Railroad Property for Utility Survey form must be printed, executed and returned following the instructions given in the permit.
2. The Application and the appropriate Exhibit "A" document must be printed and completed in their entirety.
3. Engineering plans must be completed in accordance with the requirements stipulated in the Drainage and Waterway Encroachment Planning Guide & Construction Procedures and Drainage and Waterway Hydrology Study Guide. Failure to do so merely delays the review process. In addition, any application not conforming to railroad minimum standards will delay processing. If there is a valid reason why compliance with the railroad standards is not possible, these reasons must be clearly explained or the application will be rejected and returned to you for further explanation.
4. If possible, please provide a City, County or topographical map of the area, showing the proposed installation.
5. When using a street name on the application which has been changed, please include the current name as well as any previous name. Many of the old railroad company maps do not reflect these name changes.
6. A non-refundable \$1,055 application fee must accompany your application. Applicant will reimburse the railroad company for all expenses incurred for review of drainage applications. All expenses will be due and payable when billed.
7. Applications should be submitted to the appropriate individual within the Real Estate Department. Select the representative for your region from the map of Pipeline, Wireline, Right of Entry and Drainage Contacts [http://www.uprr.com/reus/contacts/mgrcontacts/index.cfm?MGR_FUNC=Wire,%20Pipe,%20and%20Roadway] , and address the application to:
[Name of Your Region Representative]
Union Pacific Railroad Company
1400 Douglas Street, Mail Stop 1690
Omaha, Nebraska 68179
8. Generally, agreement processing time will be approximately 3 to 6 months. Please allow sufficient lead time for document handling prior to desired construction date. Before construction begins, agreements must be executed by the licensee and contractor, if applicable, and returned to this office. Verbal authorizations will not be permitted or granted. Generally, a minimum of 48 hours advance notice after execution of an agreement will be required prior to entry.
9. License fees and insurance certificates, if required, must be submitted at the time you execute and return the agreement. Because license fees are based on property values, we will only be able to provide you with fee information after your application has been reviewed and approved.
10. Depending on the scope of the work and proximity to our tracks we may require that Railroad Protective Liability Insurance be obtained, in addition to general liability insurance. We have acquired a blanket Railroad Protective Liability Insurance policy which may allow inclusion of your project under our coverage for an additional charge. We've found that in many instances it may be cheaper for the contractor do this than to obtain their own coverage. However, we do encourage you to shop around, as you may find a more favorable rate. An application form and additional information on Railroad Protective Liability Insurance can be found in this section.
11. Note: Only applications that are prepared on our standard application form identified as Exhibit "A." will be accepted
12. Questions? Need Assistance? Check the map of Pipeline, Wireline, Right of Entry and Drainage Contacts for the names of those who can help



BUILDING AMERICA®

Pipeline Installation Procedures for Crossings

Procedures for New Pipeline Crossings

1. If it is necessary to enter the railroad company's property to conduct a survey for the completion of required location information in this application, the Permit To Be On Railroad Property for Utility Survey form must be printed, executed and returned following the instructions given in the permit.
2. Please complete our online application process [<http://www.uprr.com/rem/ucs/jas/#/home>] and avoid the time delays, expense and uncertainty of mailing the application to us. Please review the Sample Copy of Exhibit "A" which is provided to enable you to complete the form as accurately as possible. Union Pacific Railroad follows AREMA Manual for Railway Engineering Chapter 1 - PART 5 Pipelines. To purchase a copy of these AREMA guidelines send an Application to AREMA [http://www.arema.org/files/pubs/forms/UP_Special_Order_for_Part_5_Pipelines.pdf]. If there is a valid reason why compliance with the railroad standards is not possible, these reasons must be clearly explained or the application will be rejected and returned to you for further explanation. You must complete the question on the Exhibit "A" that indicates you have called the Fiber Optic Hot Line and include the ticket number that you have been given.
3. If possible, please provide a city, county or topographical map of the area, showing the proposed installation.
4. When using a street name on the application that has been changed, please include the current name as well as any previous name. Many of the old railroad company maps do not reflect these name changes.
5. Please refer to the information on Fixed Object Identity for examples to assist you in locating "fixed objects." Your crossing must be tied to one of these objects.
6. Generally, agreement processing time will be approximately 30 to 45 days. Please allow sufficient lead time for document handling prior to desired construction date. Before construction begins, agreements must be executed by the Licensee and Contractor, if applicable, and returned to this office. Verbal authorizations will not be permitted or granted.
7. License fees and insurance certificates, if required, must be submitted at the time you execute and return the agreement. Because license fees are based on property values, we will only be able to provide you with fee information after your application has been reviewed and approved.
8. Depending on the scope of the work and proximity to our tracks we may require that Railroad Protective Liability Insurance be obtained, in addition to general liability insurance.
9. Licensee shall have in place and in full force during the life of the agreement General Liability, Automotive Liability and Worker' Compensation and Employer's Liability. See General Insurance Requirements.
10. Note: Only Applications that are prepared on our standard application form identified as Exhibit "A" will be accepted.
11. Questions? Need Assistance? Check the map of Pipeline, Wireline, Right of Entry and Drainage Contacts [<http://www.uprr.com/reus/contacts/mgrcontacts/index.cfm>] for the names of those who can help.

Procedures

Please submit Online Application Form [<http://www.uprr.com/rem/ucs/jas/#/home>] for Pipeline Installations.

Pipeline Installation

ONLINE APPLICATION FORM [<http://www.uprr.com/rem/ucs/jas/#/home>]

› Exhibit "A" – Flammable

› Exhibit "A" – Non-Flammable

› Exhibit "A" – Gas Line

› **Send an Application to AREMA**
[http://www.arema.org/files/pubs/forms/UP_Special_Order_for_Part_5_Pipelines.pdf]



BUILDING AMERICA®

Drainage and Waterway Encroachment Planning Guide & Construction Procedures

Preparation of Construction Drawings for Engineering Review Process

The following information may be used to aid in the preparation of construction drawings for engineering review process by the railroad company and may expedite the approval of the drawings by the railroad for consideration of a drainage facilities on the right of way.

1. The drainage ditch must be located at the outer limits of the railroad company right of way within 5 feet of property line and a minimum of 35 feet from centerline of nearest track with a flat bottom drainage ditch for future maintenance.
2. The drainage structure plans must be approved and stamped by a registered engineer for the state the structure is to be located in.
3. The following must be shown on the drawings: bridges, culverts, signal, signal houses, and other signal facilities, street, and road crossings, overpasses and bridge piers in relation to track and drainage facilities, pole line, railroad mile post, streets and name of streets, river, fences, underground facilities, railroad right of way, all necessary dimensions measured at right angles to the main track, and any other information which could be helpful.
4. All excavations and back filling must be done using workmanship acceptable to the railroad. All back filling must be placed in a maximum of 6-inch layers and compacted to 95% of maximum standard density as determined by ASTM T-99 or ASTM D698. All areas disturbed in any manner must be reseeded in a manner to prevent erosion using a grass seed mixture native to the area.
5. Drainage ditches cannot be installed in the slope of cut or fill sections of the roadbed nor can the slope of cut or fill sections of the roadbed be benched, unless permission has been obtained from the vice president of engineering services office in writing to do otherwise. Drainage ditches found in the slope section of the roadbed without permission to be installed there will have to be removed and the slope restored to Union Pacific's satisfaction at the complete cost of the applicant. In addition, the owner will be liable for all damage cost to train operations and roadbed restoration costs due to a slip or slide caused by improper installation of the drainage ditch or structure being installed in the slope without the permission from the railroad company.
6. Any proposed pipeline crossings may use the Standard Pipeline Crossings Applications (see information on Pipeline Procedures). Each crossing location must be filled out separately, Track bores must be a minimum of 60 inches below base of rail. Wet bores are not permitted on Union Pacific Railroad property. The ends of steel casings (see Union Pacific Common Standard 1029) will have to be a minimum of 30 feet from centerline of the track when measured at right angle to the track. Also bore pits must be a minimum of 30 feet from the centerline of the track when measured at right angle to the track. Also bore pits must be a minimum of 30 feet from centerline of track when measured at right angles to the track. In addition, no bore pits can be located in the slope of a cut or fill section of the road bed. The bore pit size must be kept to a minimum.
7. Manholes must be capable of withstanding H-20 highway loading requirements and must be installed so as not to create a stumbling hazard.
8. Construction drawings submitted to the railroad must contain the following information in addition to Nos. 2 and 3 above:
 1. General notes along with the symbols and their meanings.
 2. A sheet showing all the special details.
 3. Small scale maps showing overall drainage routes.
 4. Sheet showing all details for installation at track. Include all shoring plans (sealed by registered professional engineer in the respective state).
 5. As built drawings shall be provided on standard railroad right of way maps to standards specified by railroad.
9. Before work can begin on railroad rights of way, the agreement between Union Pacific and the owner must be fully executed. An agreement between the railroad and the contractor must also be fully executed, and employees of the applicant and its contractor personnel that will be on and about railroad property must have a copy of the Minimum Safety Requirements for Contractors Exhibit B and be safety-trained by a Union Pacific Project Inspector.

Construction Procedures

1. The drainage facilities must be located behind (field side) all signal facilities because of the numerous underground signal cable running between track and the signal facility. Signal department personnel will remove and replace all guy wires on railroad poles lines.
2. Trees or brush must be chipped to _ inch size and can be blown onto railroad rights of way or removed from site; however, care must be taken not to obstruct ditches, streams tracks, railroad structures, or private property. Trees or brush which cannot be chipped to _ inch size must be removed from the right of way.
3. Please keep in mind it normal takes three weeks to obtain flagman for a project; therefore, work schedules will have to be planned accordingly.
4. Adequate barrier protection is required for all excavation on railroad right of way to protect

individuals from falling into holes.

5. Grading is required on the railroad right of way on all areas disturbed by construction to prevent ponding or storm water.
6. Erosion protection must be established on all areas disturbed by construction using perennial grasses native to areas.
7. All drainage projects approved by the railroad company may require a railroad flagman for work within 25 feet of the track and on the railroad right of way at applicant's expense.
8. All costs incurred for any and all parts of review, approval and construction will be at applicant's expense.

APPLICATION

(Please allow 30-45 days for crossings and 90-120 days for encroachments)

1. Name of Licensee _____
(Exact Name of the Owner of the Utility)

State of Incorporation _____; if not incorporated, please list entity's legal status

2. Address, email, phone and Fax number of Licensee

Contact Name: _____

Address: _____

Email _____ Phone _____ Fax _____
3. Name, address and phone number of individual to whom agreement is to be mailed
if different than Item 2.

4. Contact information for individual to contact in the event of questions.

Email _____ Phone _____ Fax _____
5. Location of installation –

(City, County and State)

_____ Ft (N), (S), (E), or (W) of the (N), (S), (E), (W) or (center) line of
Section _____; Township _____ (N), (S); Range _____ (E), or (W)

* Texas applications, provide local Survey detail _____
6. Do you have an existing agreement at this location with Union Pacific that is affected
by this request.
() No () Yes, Union Pacific's Audit No. or Folder No. _____
7. Is this installation a crossing _____ or an encroachment _____ or both _____
8. Will this facility serve Union Pacific Railroad? _____ Yes _____ No

UNION PACIFIC RAILROAD
1400 DOUGLAS STREET MS 1690
OMAHA NE 68179



Utility Contracts System

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WELCOME TO THE UTILITIES ONLINE APPLICATION SYSTEM

- Before you Begin:
 - Applicants must complete all application fields. To save your application progress and return at a later time, click the "save" button. Failure to click the "save" button shall forfeit your previous progress. To send your final application, you must click the "submit" button. **BE ADVISED: Your application will not be deemed received by Union Pacific until the applicant clicks the "submit" button AND all fees in full are submitted.**
- Application Timeline Approval Information:
 - All crossing applications shall at a minimum take 30-45 days for review.
 - All encroachment applications shall take 90-120 days for review.
 - In addition to the minimum review time noted above (30-45 days), any variances require secondary review and shall take an additional 30-45 days for secondary review (60-90 days total).
- Payment Information:
 - The following fees shall apply:
 - Maintenance Review Request fee: \$505.00
 - Crossings:
 - Crossing application fee: \$505.00
 - 5-business-day rush fee: \$10,055.00
 - 15-business-day rush fee: \$5,055.00
 - Encroachments:
 - Encroachment application fee: \$1,055.00 **If your application is an encroachment and a crossing, the encroachment fee shall apply.*
 - Mitigation Review:
 - Electric applications over 750 volts with an intersecting angle of less than 45 degrees or parallels UPRR Right of Way: \$3,505.00
 - **NOTE: To avoid UPRR Specification Variance fees as noted above, applicant will provide Exhibit A's with no less than 45 degrees of an intersecting angle**
 - One rush fee applies to one folder number (application).
 - *Eg. If an applicant submits 5 applications and submits one 5-day rush payment (\$10,055.00), the applicant will be able to rush one folder number (application), but the four remaining folder numbers (applications) shall be processed under our normal processing time*

I agree to the terms and conditions.



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Permits/Real Estate

- [How do I obtain a permit?](#)
- [How do I know if this is BNSF property?](#)
- [How long does it take to get a permit?](#)
- [Once I return the executed permit to you, how long will it be before I can perform the work?](#)
- [If I am applying for more than one \(1\) permit at a time, what is the processing fee?](#)
- [What are the specifications for installations on BNSF property?](#)
- [If I need to perform maintenance or repair to an existing crossing/line, what do I need to do?](#)

How do I obtain a permit?

To better facilitate the needs of prospective occupants of its railroad system, BNSF Railway Company (BNSF) has partnered with Jones Lang LaSalle Brokerage, Inc. (JLL), a company committed to providing professional Real Estate Services. This web site is intended to provide you with all the information you should need to apply for a permit to access BNSF's property through JLL.

Please select the appropriate application below. The following documents are in PDF format ([Get Adobe® Reader®](#)).

Instructions and Application	Description
Pipeline or Wire Line	Installation of a pipeline for water, natural gas, sewage, oil or petroleum, etc. Electric supply line for voltage, circuits or electricity. Communication Line for fiber optic, phone or CATV. Example
Temporary Occupancy	Geotechnical study of the soil, survey, inspection or construction access. Laying cable along tracks or on property to test for seismic activity. Example
Private Crossing	Private crossing for vehicular/ pedestrian/ bicycle access over BNSF tracks. Example
Roadway Surfacing/Resurfacing	Surface/resurface/overlay existing road (not due to road widening). Example
General License	Culvert, drainage ditch or storm water fall-out. Encroachments, ex. fence. Example
House or Structure Crossing	Low-clearance vehicles and those in excess of state DOT height/weight standards. Ex. houses, boilers or transformers. Example
Assignment	Selling property or a name change. Example
Environmental	Soil sample or topographical survey for contamination, installation of monitoring wells. Example

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How do I know if this is BNSF property?

You can check with the local tax assessor or courthouse records.

For informational purposes Railroad maps are available to assist with your project references. These maps provide the width of the railroad corridor as well as other information. To obtain a copy of a map, please contact BNSFMaps@bartwest.com. You will be contacted regarding payment.

How long does it take to get a permit?

On average, it takes 4 weeks for a permit to be sent to you for your execution if there are no engineering issues or changes involved.

Once I return the executed permit to you, how long will it be before I can perform the work?

If the executed agreement is returned with all required fees and insurance you should receive a fully executed agreement from Jones Lang LaSalle Brokerage, Inc. in about a week. Also, before entering

the property, you must give at least 10 days advance notice to the Roadmaster.

If I am applying for more than one (1) permit at a time, what is the processing fee?

There is a \$775 processing fee for each application.

What are the specifications for installations on BNSF property?

Please see the [Utility Accommodation Manual](#) regarding standard design specifications.

If I need to perform maintenance or repair to an existing crossing/line, what do I need to do?

If you have an existing permit with BNSF Railway Company and are performing maintenance or repair work, you must contact the Roadmaster and have a copy of your permit before entering BNSF property. The Roadmaster's contact information is located on your permit. If you are unable to locate the contact information you may contact the respective [JLL Manager](#).

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[Terms of Use](#) | [Privacy Policy](#) | [Contact Us](#) | [Access Mobile Site](#) | [Site Map](#) | [Feedback](#)

[Report Railroad Emergencies: 800-832-5452](#) | [General Inquiries](#)

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GENERAL LICENSE PROCESS INSTRUCTIONS

Licensing Process:

1. Once the application package is received by Jones Lang LaSalle Brokerage, Inc. (JLL), the application and drawing will be forwarded to the engineering firm to prepare the Exhibit "A" drawings for the contract. **This process takes approximately 10 to 15 working days.**
2. When the Exhibit "A" is completed, a contract will be prepared and two (2) copies will be forwarded to you for an original signature. A letter will be sent to you that will provide directions regarding insurance and any additional fees.
3. Return the signed contracts (2 contracts with original signatures), along with the appropriate payment to JLL's Permits Department.
4. The final contracts, with original signatures, will be presented for execution provided payment has been received and insurance has been approved.
5. Once the contract is executed, one original will be returned to you for your files.
6. Prior to commencing any work on the Premises, Licensee shall complete and shall require its contractor (all parties who will be working on the site) to complete the safety training program at Internet Website www.contractororientation.com. This training must be completed no more than one year in advance of Licensee's entry on the Premises.
7. The cover letter and the executed contract will list the Roadmaster's name and phone number. **You will need to contact the Roadmaster ten (10) days prior to beginning work.**

Process Time:

Please be advised that the average time period for completion of this process is 4 weeks from the time that the application is received. Every effort will be made to complete this process in a timely manner.

Insurance Requirements for the following Agreement:

Commercial General Liability Insurance	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.
Business Automobile Insurance	Combined single limit of at least \$1,000,000 per occurrence.
Workers Compensation and Employers Liability Insurance	Employers' Liability with limits of at least \$500,000 each accident, \$500,000 by disease policy limit, \$500,000 by disease each employee.
Railroad Protective Liability Insurance	Coverage of at least \$2,000,000 per occurrence and \$6,000,000 in the aggregate, with the exception of New Mexico in which coverage is \$5,000,000 per occurrence and \$10,000,00 in the aggregate. .
Please note: These limits are subject to change without notice. An Agreement will be provided to you, which contains details concerning insurance requirements.	

Please send the following so we may process your License request:

1. **Completed Application.**
2. **\$775 non-refundable processing fee.** Check should be made payable to BNSF Railway Company.
3. **One set of drawings** (no larger than 11 x 17) for the area to be occupied. (Include: streets, distance from tracks and streets, mileposts if available and any distinguishing land marks.) Please ensure all information is accurate, as each change will add an additional \$775 to the processing fee.

Forward to:

Jones Lang LaSalle Brokerage, Inc.

Attn: Permit Services

4300 Amon Carter Blvd.

Suite 100

Ft. Worth, TX 76155



APPLICATION FOR LICENSE AGREEMENT

Jones Lang LaSalle Brokerage, Inc.
ATTN: Permit Services
 4300 Amon Carter Blvd.
 Suite 100
 Fort Worth, Texas 76155

Applicants Tax ID #
 or SS #

We submit for your approval the following application to occupy **BNSF RAILWAY COMPANY'S** right-of-way, as shown on the enclosed location plan and detailed sketch.

Legal Name of company / municipality who will occupy the property: _____
 State in which incorporated: _____ (If not incorporated, please attach name(s) of owners or partners.)
 Name of Contact for ownership entity: _____ Phone # _____
 Email Address: _____ FAX: _____
 Mailing Address: _____

Is this project **ARRA** funded? Yes No
 Is this a condemning authority? Yes No
 Is Applicant a Railroad Shipper? Yes No
 If yes, BNSF Marketing Rep name: _____ Phone # _____
 Was this service requested by BNSF? Yes No
 If yes, BNSF person requesting service _____ Phone # _____
 Is this in conjunction with a track or track expansion project? Yes No
 If yes, BNSF contact name _____ Phone # _____

Purpose of License _____
 Name of nearest town on RR _____ County _____ State _____
 Name of nearest roadway crossing RR _____
 Location of proposed occupancy: _____ 1/4 Section _____ Township _____ Range _____
 Railroad Milepost _____ Latitude _____ Longitude _____
 Will this project be located entirely within the limits of a public street? Yes No
 Total cost of project \$ _____
 What type of improvements will be located on the property? _____

Culvert:

Contents to be handled through culvert: _____

CULVERT

Length of culvert on RR property (plastic pipe must be encased full width of ROW)	ft.
Inside diameter of pipe	in.
Pipe Material	
Specification & grade (Minimum yield strength casing 35,000 psi)	
Wall thickness (minimum wall thickness of casing pipe under 14 in. – 0.188 in E-80 Loading)	
Actual working pressure	
Type of Joint	Mechanical <input type="checkbox"/> Welded <input type="checkbox"/>
Coating	
Distance from base of rail to top of culvert (Flammable contents, steam, water or non-flammable – minimum 5 ½ ft. under main track) (uncased gaseous products – minimum 10' under track)	
Minimum ground cover on RR property (minimum 3 ft.)	
Cathodic protection casing (flammable substance)	

Type of insulators or support: _____ Size: _____ Space: _____
 Number of Vents (flammable substances require 2 vents) _____ Size: _____ Height Above Ground: _____

Method of Crossing:
 Jacking
 (Jacking pit location min. 30 ft. from centerline of track. Pit must not be open more than 48 hrs. and must be protected when not in use.)

 Trench
 (RR to furnish flagman at applicant's expense)

 Dry Bore Only
 (Jacking pit location min. 30 ft. from centerline of track. Pit must not be open more than 48 hrs. and must be protected when not in use.)

Does culvert support an oil or gas well? Yes No
 If yes, distance from RR property. _____ ft. Name of well: _____

Attached to this sheet are a location plan and a detailed sketch outlining the type of improvements that will be located on the property. Exact dimensions should be shown on the sketch of the project area. Distances to the centerline of nearest railroad track and road crossing, bridge or other railroad structure should be included.

I understand that submission of this application does not authorize occupancy of the property. Exact fees and insurance requirements will be forwarded after the application has been reviewed and approved by BNSF Railway Company.

Date: _____

Signed: _____
 Print Name: _____
 Title: _____
 Phone #: _____ FAX: _____

If you require additional assistance, please contact your [Jones Lang LaSalle Brokerage, Inc.](#) representative.



APPLICATION FOR LICENSE AGREEMENT

Jones Lang LaSalle Brokerage, Inc.
ATTN: Permit Services
4300 Amon Carter Blvd.
Suite 100
Fort Worth, Texas 76155

Applicants Tax ID # 00-0000000
or SS #

We submit for your approval the following application to occupy BNSF RAILWAY COMPANY'S right-of-way, as shown on the enclosed location plan and detailed sketch.

Legal Name of company / municipality who will occupy the property: Emerald City
State in which incorporated: TX (If not incorporated, please attach name(s) of owners or partners.)
Name of Contact for ownership entity: Jane Doe Phone # 555-555-5555
E-Mail Address: JDoe@EmeraldCity.com FAX: 444-444-4444
Mailing Address: 1234 Main St., Emerald City, TX 01234

Is this project ARRA funded? Yes [] No [X]
Is this a condemning authority? Yes [] No [X]
Is Applicant a Railroad Shipper? Yes [] No [X]
If yes, BNSF Marketing Rep name: Phone #
Was this service requested by BNSF? Yes [] No [X]
If yes, BNSF person requesting service Phone #
Is this in conjunction with a track or track expansion project? Yes [] No [X]
If yes, BNSF contact name Phone #

Purpose of License installation of rip rap on BNSF property for flood control
Name of nearest town on RR Emerald City County Oz State TX
Name of nearest roadway crossing RR Yellowbrick Rd.
Location of proposed occupancy: SW 1/4 Section 33 Township 54N Range 3W
Railroad Milepost 26.57 Latitude 27.95 Longitude -93.66
Will this project be located entirely within the limits of a public street? Yes [] No [X]
Total cost of project \$ 25,000
What type of improvements will be located on the property? Rip Rap

Attached to this sheet are a location plan and a detailed sketch outlining the type of improvements that will be located on the property. Exact dimensions should be shown on the sketch of the project area. Distances to the centerline of nearest railroad track and road crossing, bridge or other railroad structure should be included.

I understand that submission of this application does not authorize occupancy of the property. Exact fees and insurance requirements will be forwarded after the application has been reviewed and approved by BNSF Railway Company.

Date: 01/01/2011

Signed: Jane Doe
Print Name: Jane Doe
Title: City Manager
Phone #: 555-555-5555 FAX: 444-444-4444

If you require additional assistance, please contact your Jones Lang LaSalle Brokerage, Inc. representative.

Burlington Northern Santa Fe

UTILITY ACCOMMODATION POLICY



Engineering Services
4515 Kansas Avenue
Kansas City, KS 66106
May 18, 2011

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PART 1

GENERAL POLICY

PART 1 - GENERAL POLICY

A. Policy Application

1. Purpose

This policy is to prescribe the accommodation, location and method of installation, adjustments, removal, relocation and maintenance of utility facilities within the property of Burlington Northern & Santa Fe Railway Company, referred to hereafter as BNSF. The policy was developed in the interest of safety, protection, utilization, and future development of BNSF with due consideration given to public and private service afforded by adequate and economical utility installations.

2. Application

The policy concerning utility accommodations shall apply to all:

- a. New utility installations.
- b. Additions to existing utility installations.
- c. Adjustment and relocation of utilities.
- d. Existing or planned utility installations for which agreements with BNSF were entered prior to the date of the adoption of this policy.
- e. Existing utility installations that do not meet the license requirements may remain at the discretion of BNSF.

Various types of utility lines not specifically discussed herein shall be considered within the provisions of this policy. It shall be the general practice to consider all lines carrying caustic, flammable or explosive materials under the provisions for high-pressure gas and liquid fuel lines.

3. Scope

Utilities include lines, facilities and systems for producing, transmitting or distributing communications, power, electricity, light, heat, gas, oil, crude products, water, steam, waste, storm water and other similar commodities which are privately, publicly or cooperatively owned and which serve directly or indirectly the public or any part thereof.

A Utility Agreement License allowing a Utility Owner the privilege of placing its facilities in or on railroad property does not constitute permanent right for such usage. Any removal, remodeling, maintenance or relocation of the facilities, whether or not required by BNSF, will be accomplished promptly by the Utility Owner at no cost to BNSF.

4. Exceptions

Exceptions to any design, location or methods of installation provisions contained in this policy must be authorized by BNSF. Requests for exceptions will be considered only where it is shown that extreme hardship and/or unusual conditions provide justification and where alternate measures can be prescribed in keeping with the intent of this policy. All requests for exceptions shall be fully documented including design data, cost comparisons and other pertinent information.

5. Liability

The Utility Owner, its successor, or assigns shall assume all risk and liability for accidents and damages that may occur to persons or property on account of this work, and shall indemnify and hold BNSF harmless from any and all costs, liabilities, expenses, suits, judgments or damages to persons or property or claims of any nature whatsoever arising out of or in connection with the permit, or the operation and performance thereunder by the utility, its agents, employees or subcontractors. In this regard, it is further understood and agreed that the utility may be required to obtain insurance coverage as determined by BNSF.

The Utility Owner agrees that if liability insurance is required, it will file with the designated office, prior to granting of the license, "Certificates of Insurance" or other evidence to show that the appropriate insurance is carried.

Insurance as may be required shall be maintained in force until the final release of the Utility Owner by BNSF from all obligations under the terms of the license. The insurance contract shall cover claims for such length of time as law permits said claims. The insurance document shall include a clause requiring the insurer to notify BNSF ten (10) days in advance of any cancellation or change in insurance contacts.

The Utility Owner is responsible for any subcontractor to be knowledgeable of the policy and to require all work to be in compliance with this policy. Subcontractors must carry a liability insurance policy unless the subcontractor is covered by the Utility Owner's insurance.

6. Replacement of Facility

Replacement of existing facility with the same facilities or facilities of a different type, or design, is to be considered as a new utility installation and all work shall adhere to this policy.

7. Change in Ownership

It is the Utility Owner's responsibility to inform BNSF, in writing, of any name, ownership or address changes.

8. Noncompliance

Noncompliance with any terms of this Utility Accommodation Policy or Utility License Agreements may be considered as cause for discontinuance of construction or operations until compliance is assured. Continued noncompliance will result in the revocation of the license. The cost of any work required by BNSF in the removal of non-complying construction will be assessed against the Utility Owner.

9. Discharge of Waste Material

Applications for a Utility License Agreement for the installation of utility facilities which will discharge materials into the nation's waters, must comply with all applicable requirements of Corps of Engineers, and other federal, state or local environmental protection agencies. Identification of applicable requirements and administration of compliance procedures are the responsibility of the Utility Owner.

B. Utility License Agreement Requirements

1. General

Utility License Agreements are required when utility facilities are installed, relocated, removed or maintained along or across all BNSF property.

If liability insurance is required, then evidence of adequate liability insurance is to be on file with BNSF for each agreement.

2. Applications

Approved requests to install, maintain, relocate or remove a utility within the property of BNSF shall be authorized by a Utility License Agreement. The applications for utility license agreements along with plans for the proposed installation shall be submitted to BNSF and approved before construction has commenced (see blank forms in appendix).

3. Location

- a. Utility lines shall be located to avoid or minimize the need for adjustments for future railroad improvements and to permit access to the utility lines for their maintenance with minimum interference to railroad traffic.

- b. Pipelines shall be installed under tracks by boring, jacking, or in some cases, open-trenching. **WATER JETTING IS NOT PERMITTED.**
- c. Where practical, pipelines carrying liquefied petroleum gas shall cross the railway where the tracks are carried on an embankment.
- d. All high-pressure pipelines (greater than 60-psi internal pressure), except those in public roads, shall be prominently marked at the property line (on both sides of the track for under crossings) by signs which state the size of the line and its depth.

Example:

CAUTION: 30-inch diameter high-pressure Gas main 7 feet deep.

4. Design Considerations

- a. The design of any utility installation will be the responsibility of the Utility Owner. An installation within the railroad property must be reviewed and approved by the railroad with regard to location and the manner of adjustment. This includes the measures to be taken to preserve the safety and flow of rail traffic, structural integrity of the roadway or structure, ease of maintenance and the integrity of the utility facility. Utility installations, on, over or under BNSF property shall conform with requirements contained herein and/or as a minimum, the appropriate requirements outlined in the following:
 - 1) Safety Rules for the Installation and Maintenance of Electric Supply and Communication Lines-National Electric Safety Code.
 - 2) Title 49 C.F.R. Part 192, Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards and Amendments.
 - 3) Title 49 C.F.R. Part 195, Transportation of Liquids by Pipelines and Amendments.
 - 4) American Society for Testing and Materials (ASTM) Specifications - latest edition.
 - 5) Manual on Uniform Traffic Control Devices - with revisions.
 - 6) Rules and Regulations for Public Water Systems - latest edition, published by the appropriate State Health Department.
- b. All utility installations on, over or under BNSF property shall be of durable materials designed for long service life and relatively free from routine servicing and maintenance. Conformance with current applicable material specifications and codes is mandatory.
- c. References given to any manual, publication or specification are intended to be the most current edition. If a conflict occurs between any publication and this manual, the most restrictive specification will be used.

- d. For all boring and jacking installations under main and passing tracks, greater than 26 inches in diameter, and at a depth of between 5.5 and 10.0 feet below top of tie, a geotechnical study will need to be performed to determine the presence of granular material and/or high water table elevation, at the sole expense of the Permittee. The study will include recommendations and a plan for a procedure to prevent failure and a collapse of the bore. Generally, core samples are to be taken near the ends of tie at the proposed location, at least as deep as the bottom of the proposed horizontal bore. Test results must be reviewed and approved by BNSF, or its agent, prior to boring activities commencing. BNSF reserves the rights, based on test results, to require the Permittee to select an alternate location, or to require additional engineering specifications be implemented, at the sole expense of the Permittee, in order to utilize existing location.

C. Safety

1. A safety orientation course will be completed by all workers prior to entering BNSF property. It is the contractor's responsibility to conduct the safety training and implementation of a safety program for its employees. Training materials are available on the web site: www.contractororientation.com. The contractor must comply with all federal, state and local safety regulations.

2. Flagging

When work is performed within twenty-five (25) feet of the centerline of the track, railroad flagging will be required.

- a. Railroad flagging will be required:

- 1) During the period of construction when it is necessary for the Contractor to operate equipment in the vicinity of, or over, BNSF property which may endanger railroad operations, or
- 2) Two or more railroad flagmen may be required at other times that the Railway Company Roadmaster's sole discretion shall deem necessary.

- b. Flagging services shall be performed by BNSF employees and the total cost borne by the Utility Owner.

- c. The Utility Owner will be billed monthly at a rate to be determined by BNSF to include labor and payroll associated costs plus any expenses incurred by BNSF for flagging services.

- d. A written request for flagging services will be required at least 72 hours prior to the time when such services are needed. This request is made to the BNSF Roadmaster, as noted in agreement.

3. Material Storage

Storage of materials, parking of equipment and vehicles when not used in actual utility work will not be permitted on railroad property.

4. **Call Before You Dig!** Call 1-800-533-2891 to arrange for a BNSF underground cable locate. BNSF form "Underground Cable Location & Acknowledge" will be completed by a BNSF representative and copy provided to the contractor. The contractor must have this completed form in possession at the job site at all times.

D. Maintenance and Servicing Utilities

1. Utility Owner's Responsibility

- a. Maintenance of the utility is the responsibility of the Utility Owner.
- b. Maintenance must be performed to keep the facility in an as-constructed condition, and in a good state of repair in accordance with the requirements of Federal, State and Local laws, regulatory standards and utility codes.
- c. It is the Utility Owner's responsibility to replace and stabilize all earth cover and vegetation when it has eroded over an underground utility facility where such erosion is due to, or caused by, the placement or existence of the underground utility facility.
- d. The Utility Owner shall be responsible for any settlement of backfill, fills, and embankments that may occur.

2. Emergency Maintenance

- a. Emergency maintenance of utilities located on railroad property is permissible without obtaining a Utility License Agreement if an emergency exists that is dangerous to the life, safety or welfare of the public and which requires immediate repair. The Utility Owner shall take all necessary and reasonable safety measures to protect the public and the railroad.
- b. The Utility Owner, in such an event, will advise the Railway Company's Roadmaster as soon as possible. Damage to the right-of-way and facilities will be restored to its original condition. A Utility License Agreement should be requested by the Utility Owner within the second working day provided the work is not covered under any previously granted license. Flagging requirements described earlier apply in all situations.

E. Preservation, Restoration and Cleanup

1. Disturbed Areas

- a. Areas of railroad property, disturbed by the installation, maintenance, removal and relocation of utilities shall be kept to a minimum.
- b. Disturbed areas shall be returned to normal grade and elevation, with compaction of backfill material, and all excess or undesirable material removed by the Utility Owner. The Utility Owner shall replace destroyed vegetation by sodding, or seeding, fertilizing and mulching, or a combination thereof.
- c. The Utility Owner shall provide protection against erosion in disturbed areas that are subject to erosion. Such protection may be in the form of rock riprap, wash checks, hay or straw cover, or other material that is approved and does not interfere with railroad maintenance.

2. Drainage Facilities

Care shall be taken to avoid disturbing existing drainage facilities. Underground utility facilities shall be bedded with pervious material and outlets provided for entrapped water. Underdrains should be provided where necessary.

3. Cleanup

Unused material or debris shall be removed from the work site area. At the end of every construction day, construction equipment and materials shall be removed as far from the operating railroad tracks as possible (minimum 25 feet from centerline). All machines will be disabled when not in use to prevent unauthorized operation.

F. Protection of Vegetation

1. Trimming, Clearing or Removal of Vegetation

- a. Consistent with the preservation of planted vegetation, consideration will be given to Utility Owners for the necessary trimming, clearing or removal of vegetation to provide adequate clearance of overhead wires. Such work will be done in accordance with established practices and standards; however, approval will not be granted for wasteful or wanton trimming, or removal in order to provide easy solutions to a difficult situation.
- b. No trees, shrubs, bushes, vines or ground cover on railroad property shall be sprayed, trimmed, cut down, rooted up, removed or mutilated in any manner unless a permit is granted by BNSF to do such work.

2. Chemical Brush Control

- a. Spraying brush and seedling tree growth to prevent re-sprouting may be permitted, and when permitted, shall be carried out with extreme caution and careful performance. The Utility Owner shall be responsible for the performance of their employees or contractors in the application of brush control and approved by BNSF Environmental Department.
- b. All spraying shall be done by a herbicide applicator that is licensed in the state where the work is to be performed.
- c. Permit applications for spraying shall list the kinds of chemical weed and brush killers that will be used. When liability insurance is required, it shall be provided by the herbicide applicator, or be insured under the liability insurance of the Utility Owner.
- d. Plants over five (5) feet in height should not be sprayed for control. Brush over five (5) feet in height, which is to be removed, should be cut and the stumps treated to prevent growth. Shrubbery type growth such as dogwood, sumac, redbud, plum, etc., should not be sprayed as a general rule. Steep slopes, where brushy growth is a major factor in preventing erosion, should not be sprayed.

3. Tree Pruning

- a. Tree pruning on railroad property for utility lines will utilize the best horticultural practices. All cut branches, dead limbs, etc., shall be removed. Such materials shall not be burned or disposed of on railroad property unless permission is granted by Utility License Agreement.
- b. Should burning be permitted, the Utility Owner will be held liable for any damage to grass, crops, native shrubs and trees arising from careless burning of such brush.
- c. Any and all limbs trimmed shall be removed with a clean cut and all limb scars over one (1) inch in diameter shall be treated with appropriate tree paint.

PART 2

UTILITIES PARALLELING

RAILROAD PROPERTY

PART 2 - UTILITIES PARALLELING RAILROAD PROPERTY

A. General Provisions

This section of the policy 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 BNSF. Such utilities may involve underground, surface or overhead facilities.

Any utility line greater than five hundred (500) feet in length will be considered a parallel line and is to be located on uniform alignment, within ten (10) feet or less of the property line so as to provide a safe environment and to preserve space for future railroad improvements or other utility installations. BNSF Engineering must approve any installation over one mile.

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 public authority prescribe a higher degree of protection, then the higher degree of protection prescribed shall supersede the provisions of this manual.

B. Overhead Installations

1. Minimum four feet clearance required above signal and communication lines.
2. Poles must be located 50 feet out from the centerline of railroad main, branch and running tracks, CTC sidings, and heavy tonnage spurs. Pole location adjacent to industry tracks; must provide at least a 10-foot clearance from the centerline of track, when measured at right angles. If located adjacent to curved track, then said clearance must be increased at a rate of 1-½ inches per degree of curved track.
3. Regardless of the voltage, unguyed poles shall be located a minimum distance from the centerline of any track, equal to the height of the pole above the ground-line plus 10 feet. If guying is required, the guys shall be placed in such a manner as to keep the pole from leaning/falling in the direction of the tracks.
4. Poles (including steel poles) must be located a minimum distance from the railroad signal and communication line equal to the height of the pole above the ground-line or else be guyed at right angles to the lines. High voltage towers (34.5 kV and higher) must be located off railroad right of way.

5. For proposed electrical lines paralleling tracks, BNSF may request that an inductive coordination study be performed at the expense of the utility owner. Inductive interference from certain lines has the potential to disrupt the signal system in the track causing failures in the track signals and highway grade crossing warning devices. Generally, if the proposed electrical line exceeds 12.5 kV *and* runs parallel to the track for at least 1,000 feet, a study will be required. A study will be required if a new sub-station is to be located within 1,000 feet of the track. The General Director of Signals will determine the need for a study on a case-by-case basis.

C. Underground Installations

1. Underground utility installations should be located on top of the back slope at the outer limits of the railroad property.
2. If the pipeline is located forty (40) feet or less from centerline of track, the pipeline shall be encased in a steel pipe subject to approval from BNSF. No pipe may be placed closer than twenty-five (25) feet from centerline of track. Pipe must be buried with a minimum cover of three (3) feet.
 - a. If less than minimum depth is necessary because of existing utilities, water table, ordinance or similar reasons, the line shall be rerouted.
 - b. Locations where it will be difficult to attain minimum depth due to wet or rocky terrain shall be avoided. Any location change from plan must be approved by BNSF.
3. The use of plastic carrier pipe for sewer, water, natural gas and other liquids is acceptable under specific circumstances. The use of plastic pipe is satisfactory if the pipe is designed to meet AREMA and all applicable federal and state codes, and if the carrier pipe is properly encased with a steel casing pipe for the entire length on BNSF right of way.
4. Manholes shall be limited to those necessary for installation and maintenance of underground lines. Manholes vary as to size and shape depending on the type of utility they serve. To conserve space, their dimensions should be minimally acceptable by good engineering and safety standards. In general, the only equipment to be installed in manholes located on railroad property is that which is essential to the normal flow of the utility, such as circuit reclosers, cable splices, relays, valves and regulators. Other equipment should be located outside the limits of the railroad property. Manholes shall not protrude above the surrounding ground nor be located in the shoulder, shoulder slope, ditch, backslope, or within twenty-five (25) feet of the centerline of track without approval of BNSF.
5. Electric Power Lines
 - a. A minimum depth of 3.0 feet below natural grade (BNG) will be maintained for 750 volts and less, and 4.0 feet BNG for greater than 750 volts.

- b. A 6-inch wide warning tape will be installed, 1.0 foot BNG directly over the underground power line where located on Railroad right-of-way outside the track ballast sections.

6. Fiber Optic Lines

- a. A minimum depth of 4.0 feet BNG for fiber optic cable wirelines.
- b. Whenever feasible, all cable should be laid within 5 feet from property lines.
- c. A 6-inch wide warning tape will be installed, 1.0 foot BNG directly over the underground fiber optic line where located on Railroad right-of-way outside the track ballast sections.

7. Abandonment/Removal of Facilities

- a. Upon termination of license the pipeline needs to be removed from BNSF property except for the portion under the track embankment.

D. Attachment to Bridges and Other Structures

The Utility Owner will not be permitted to attach to BNSF 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 BNSF Engineering. As a general rule, overhead power, communication and cable television line crossings at bridges must be avoided. Pipelines laid longitudinally on railroad property shall be located as far as practical from any tracks or other important structures. If located within forty (40) feet of the centerline of any track, the carrier pipe shall be encased or be of special design as approved by BNSF Engineering.

E. Drains for Steep Slopes (Tight Lines)

Drainage onto BNSF property from adjacent land that is significantly higher than the track elevation should be directed through a pipe anchored into the steep slope. The pipe needs to be designed to withstand the weight of the water in the pipe. The drainage system will include a diffuser at the bottom to prevent erosion on BNSF property (see appendix page A-10 for an example).

In some instances a concrete vault with a strike plate and bolted manhole cover may be required. The volume and velocity of discharge will determine the type of pipe or structure to convey the water across BNSF property. BNSF Engineering will review and approve the plan prior to execution of the license agreement.

PART 3

UTILITIES CROSSING

RAILROAD PROPERTY

PART 3 - UTILITIES CROSSING RAILROAD PROPERTY

A. General Provisions

This section of the policy 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 BNSF. Such utilities may involve underground, surface or overhead facilities.

Installations crossing the property of the railroad, to the extent feasible and practical, are to be perpendicular to the railroad alignment and preferably at not less than forty-five (45) degrees to the centerline of the track. Utilities shall not be placed within culverts or under railroad bridges, buildings or other important structures.

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 public authority prescribe a higher degree of protection, then the higher degree of protection prescribed shall supersede the provisions of this manual.

B. Overhead Installations

1. Minimum four feet clearance required above signal and communication lines.
2. Poles must be located 50 feet out from the centerline of railroad main, branch and running tracks, CTC sidings, and heavy tonnage spurs. Pole location adjacent to industry tracks; must provide at least a 10-foot clearance from the centerline of track, when measured at right angles. If located adjacent to curved track, then said clearance must be increased at a rate of 1-½ inches per degree of curved track.
3. Regardless of the voltage, unguyed poles shall be located a minimum distance from the centerline of any track, equal to the height of the pole above the ground-line plus 10 feet. If guying is required, the guys shall be placed in such a manner as to keep the pole from leaning/falling in the direction of the tracks.
4. Poles (including steel poles) must be located a minimum distance from the railroad signal and communication line equal to the height of the pole above the ground-line or else be guyed at right angles to the lines. High voltage towers (34.5 kV and higher) must be located off railroad right of way.
5. Crossings must not be installed under or within 500 feet of the end of any railroad bridge, or 300 feet from the centerline of any culvert or switch area.

6. Complete spanning of the property is encouraged with supportive structures and appurtenances located outside railroad property. For electric supply lines, normally the crossing span shall not exceed 150 feet with adjacent span not exceeding 1-1/2 times the crossing span length. For communication lines, the crossing span shall not exceed 100 feet in heavy loading districts, 125 feet in medium loading districts, and 150 feet in light loading districts; and the adjacent span shall not exceed 1-1/2 times the crossing span length. For heavier type construction, longer spans will be considered.
7. Joint-use construction is encouraged at locations where more than one utility or type of facility is involved. However, electricity and petroleum, natural gas or flammable materials shall not be combined. Pipe truss design and layout will need to be reviewed and approved by BNSF Engineering.
8. To ensure that overhead wire crossings are clear from contact with any equipment passing under such wires, communication lines shall be constructed with a minimum clearance above top of rail of twenty-four (24) feet, and electric lines with a minimum clearance of twenty-six and one-half (26 1/2) feet or greater above top of rail when required by the "National Electric Safety Code" or state and local regulations. Electric lines must have a florescent ball marker on low wire over centerline of track.
9. The utility owner will label the posts closest to the crossing with the owner's name and telephone number for emergency contact.
10. All overhead flammable and hazardous material lines will need BNSF Engineering approval, but should be avoided if possible.
11. For proposed electrical lines crossing tracks, BNSF may request that an inductive coordination study be performed at the expense of the utility owner. Inductive interference from certain lines have the potential to disrupt the signal system in the track causing failures in the track signals and highway grade crossing warning devices. The General Director of Signals will determine the need for a study on a case-by-case basis.

C. Underground Installations

1. General

- a. All underground utility crossings of railroad trackage shall be designed to carry Cooper's E-80 Railroad live loading with diesel impact (AREMA Cooper's loading Section 8-2-8). This 80,000-lb. axle load may be distributed laterally a distance of three (3) feet, plus a distance equal to the depth from structure grade line to base of rail, on each side of centerline of single tracks, or centerline of outer track where multiple tracks are to be crossed. In no case shall railroad loading design extend less than ten (10) feet laterally from centerline of track. Longitudinally, the load may be distributed between the five-foot axle spacing of the Cooper configuration. Railroad loading criteria will also apply

where future tracks on BNSF are contemplated, to the extent this information is available.

- b. All utility crossings under ditches and railroad trackage should have a minimum depth of cover of three (3) feet below the flow line of the ditch or ground surface and five and one-half (5-1/2) feet from base of rail. In fill sections, the natural ground line at the toe of slope will be considered as ditch grade. The depth of cover shall not be less than that meeting applicable industry standards.
- c. For all boring and jacking installations under main and passing tracks, greater than 26 inches in diameter, and at a depth of between 5.5 and 10.0 feet below top of tie, a geotechnical study will need to be performed to determine the presence of granular material and/or high water table elevation, at the sole expense of the Permittee. The study will include recommendations and a plan for a procedure to prevent failure and a collapse of the bore. Generally, core samples are to be taken near the ends of tie at the proposed location, at least as deep as the bottom of the proposed horizontal bore. Test results must be reviewed and approved by BNSF, or its agent, prior to boring activities commencing. BNSF reserves the rights, based on test results, to require the Permittee to select an alternate location, or to require additional engineering specifications be implemented, at the sole expense of the Permittee, in order to utilize existing location.
- d. The use of plastic carrier pipe for sewer, water, natural gas and other liquids is acceptable under specific circumstances. The use of plastic pipe is satisfactory if the pipe is designed to meet all applicable federal and state codes, and if the carrier pipe is properly encased within a steel casing pipe per AREMA standards. This casing must extend the full width of the right of way. Casing may be omitted only for gaseous products if the carrier pipe is steel and is placed ten (10) feet minimum below the base of rail per AREMA standards.

2. General Design and Construction Requirements

- a. If the minimum depth is not attainable because of existing utilities, water table, ordinances, or similar reasons, the line shall be rerouted.
- b. Locations that are considered unsuitable or undesirable are to be avoided. These include deep cuts and in wet or rocky terrain or where it will be difficult to obtain minimum depth.
- c. Underground installations may be made by open-trenching from the property line to the toe of the fill slope in fill sections and to the toe of the shoulder slope in cut sections but to no closer than thirty (30) feet of the centerline of track. The remainder will be tunneled, augured, jacked or directional-bored through the roadbed. Refer to the following sections for required encasement of utilities and boring requirements.
- d. Manholes should be located outside railroad property, when possible. No manhole will be located in the shoulder, shoulder slope, ditch or backslope, or within twenty-five (25)

feet of the centerline of track, and shall not protrude above the surrounding ground without approval of BNSF.

- e. Utilities will not be attached to or routed through drainage structures or cattle passes. Utilities are not to be attached to other railroad structures without written approval of the BNSF Structures Department.
- f. Jacking/boring pits shall be located a minimum of thirty (30) feet from the centerline of track, and kept to the minimum size necessary.
- g. Under-track bores shall be located greater than 150 feet from the nearest bridge, culvert, track switch, building or other major structure.

3. Pipeline Requirements

- a. Pipeline designs are to specify the type and class of material, maximum working pressures and test and design pressure. Pipelines which are not constructed, operated and maintained under regulations established under US Department of Transportation Hazardous Materials Regulations Board, shall upon revisions in the class of material or an increase in the maximum operating pressure, must obtain BNSF Engineering approval.
- b. Pipelines carrying oil, liquefied petroleum gas, natural or manufactured gas and other flammable products shall conform to the requirements of the current AREMA, ANSI/ASME B 31.4 Code for pressure piping - Liquid Petroleum Transportation Piping Systems; ANSI B 31.8 Code for pressure piping - Gas Transmission and Distribution Piping Systems; other applicable ANSI codes and 49 C.F.R. Part 192 or Part 195 - Transportation of Hazardous Liquids by Pipeline, except that the maximum allowable stress of design of steel pipe shall not exceed the following percentages of the specified minimum yield strength (multiplied by longitudinal joint factor) of the pipe as defined in the ANSI codes.
- c. Pipelines under railroad tracks and across railroad property shall be encased in a larger pipe or conduit called "casings." Generally, casings shall extend from right-of-way line to right-of-way line, unless otherwise approved.
- d. Pipelines and casing pipes shall be suitably insulated from underground conduits carrying electric wires on railroad property.
- e. Reinforced concrete pipe will need to be encased for a distance as wide as the embankment at the utility crossing. This is to protect against track failure due to joint separation.

4. Encasement of Utilities

- a. Casings are oversized load-bearing conduits or ducts through which a utility is inserted:

- 1) To protect the railroad from damages and to provide for repair, removal and replacement of the utility without interference to railway traffic.
 - 2) To protect the carrier pipe from external loads or shock, either during or after construction.
 - 3) To convey leaking fluids or gases away from the area directly beneath the railroad trackage to a point of venting at the railroad property line.
- b. Casings may be omitted for **gaseous products only** under the following circumstances:
- 1) Carrier pipe must be steel and the wall thickness must conform to E-80 loading for casing pipe shown in the tables as included in the AREMA manual Chapter 1, Part 5 for Pipeline Crossings. The length of thicker-walled pipe shall extend from railroad right-of-way line to right-of-way line. This will generally result in thicker-walled pipe on railroad right-of-way.
 - 2) All steel pipe shall be coated and cathodically protected.
 - 3) The depth from base of rail to top of pipe shall not be less than ten (10) feet below base of rail. The depth from ditches or other low points on railroad right-of-way shall not be less than six (6) feet from ground line to top of pipe.
- c. In circumstances where it is not feasible to install encasement from right-of-way line to right-of-way line, casing pipe under railroad tracks and across railroad property shall extend to the greater of the following distances, measured at right angles to the centerline of track:
- 1) Two (2) feet beyond toe of slope.
 - 2) Three (3) feet beyond ditch line.
 - 3) Twenty-five (25) feet from centerline of outside track when casing is sealed at both ends.
 - 4) Forty-five (45) feet from centerline of outside track when casing is open at both ends.
 - 5) If additional track is planned for future construction, casing must extend far enough to meet above distances given the additional track requirement.
- d. Pipelines and casing pipe shall be suitably insulated from underground conduits carrying electric wires on railroad property.
- e. Casing pipe and joints shall be made of metal, and of leakproof construction. Casings shall be capable of withstanding the railroad loadings and other loads superimposed upon them.

f. Wall thickness designations for steel casing pipe for E-80 loading (including impact) are:

Nominal Diameter, (Inches)	Min. Thickness for Coated (Inches)	Non Coated (Inches)
14 and Under	0.188	0.188
16	0.219	0.281
18	0.250	0.312
20 and 22	0.281	0.344
24	0.312	0.375
26	0.344	0.406
28	0.375	0.438
30	0.406	0.469
32	0.438	0.500
34 and 36	0.469	0.531
38, 40 and 42	0.500	0.563
44 and 46	0.531	0.594
48	0.563	0.625
50	0.594	0.656
52	0.625	0.688
54	0.656	0.719
56 and 58	0.688	0.750
60	0.719	0.781
62	0.750	0.813
64	0.718	0.844
66 and 68	0.813	0.875
70	0.844	0.906
72	0.875	0.938

- 1) Steel pipe shall have minimum yield strength of 35,000 pounds per square inch.
- 2) All metallic casing pipes are to be designed for effective corrosion control, long service life and relatively free from routine servicing and maintenance. Corrosion control measures for metallic carrier piping must include cathodic protection.
- 3) Cast iron may be used for casing. It shall conform to ANSI A21. The pipe shall be connected with mechanical-type joints. Plain-end pipe shall be connected with compression-type couplings. The strength of the cast iron pipe to sustain external loads shall be computed in accordance with the most current ANSI A21.1 "Manual for the Computation of Strength and Thickness of Cast Iron Pipe."

g. The inside diameter of the casing pipe shall be such that the carrier pipe can be removed without disturbing the casing. All joints or couplings, supports, insulators or centering devices for the carrier pipe shall be considered in the selection of the casing diameter.

- h. For flexible casing pipe, a minimum vertical deflection clearance of the casing pipe shall be three percent (3%) of its diameter plus one-half (1/2) inch so that no loads from the roadbed, track, railroad traffic or casing pipe are transmitted to the carrier pipe. When insulators are used on the carrier pipe, the relationship of the casing size to the size of the carrier pipe is:

<u>Diameter of Carrier Pipe</u>	<u>Inside Dia. of Casing Pipe Equals Outside Dia. of Carrier Pipe Plus</u>
0" - 8"	2"
10" - 16"	3-1/4"
Over 16"	4-1/2"

5. Casing and Pipeline Installation

- a. Casing and pipeline installations should be accomplished by directional boring (see appendix page A-8), jack-and-bore, tunneling or other approved methods. Tunneling construction under tracks will be permitted only under direct supervision of a BNSF Engineer. Tunneling procedures and equipment, as well as structural design, must have BNSF Engineering approval prior to starting any work on BNSF property. Generally, tunneling shall not be considered where less than six (6) feet of cover exists, or where excessively sandy, loose or rocky soils are anticipated.

Rail elevations over the work must be monitored at intervals prescribed by BNSF to detect any track movement. Movements of over one-quarter (1/4) inch vertically shall be immediately reported to the BNSF Roadmaster. Due to the danger to rail traffic that is caused by only small amounts of track movement, BNSF forces may have to be called to surface the track several times.

The following requirements shall apply to these construction methods:

- 1) The use of water under pressure jetting or puddling will not be permitted to facilitate boring, pushing or jacking operations. Some boring may require water to lubricate cutter and pipe, and under such conditions, is considered dry boring.
- 2) Where unstable soil conditions exist, boring or tunneling operations shall be conducted in such a manner as not to be detrimental to the railroad being crossed.
- 3) If excessive voids or too large a bored hole is produced during casing or pipeline installations, or if it is necessary to abandon a bored or tunneled hole, prompt remedial action should be taken by the Utility Owner.
- 4) All voids or abandoned holes caused by boring or jacking are to be filled by pressure grouting. The grout material should be sand cement slurry with a minimum of two (2) sacks of cement per cubic yard and a minimum of water to assure satisfactory placement.

- 5) The hole diameter resulting from bored or tunneled installations shall not exceed the outside diameter of the utility pipe, cable or casing (including coating) by more than one and one-half (1-1/2) inches for pipes with an inside diameter of twelve (12) inches or less, or two (2) inches on pipes with an inside diameter greater than twelve (12) inches.
 - 6) Pits for boring, tunneling or jacking will not be permitted within thirty (30) feet of the centerline of track; or closer to the track than the toe of fill slopes in fill sections, or toe of shoulder slopes in ditch sections when pipes are allowed on the railroad property.
- c. Vents. In casing pipe installations, vents are appurtenances by which fluids or gases between carrier and casing may be inspected, sampled, exhausted or evacuated.
- 1) Vents shall be located at the high end of short casings and at both ends of casing longer than one hundred fifty (150) feet.
 - 2) Vent standpipes shall be located and constructed so as not to interfere with maintenance of the railroad or to be concealed by vegetation. Where possible, they shall be marked and located at the property line. The markers shall give the name and address of the owner, and a phone number to contact in case of emergency.
 - 3) Casing pipe, when sealed, shall be properly vented. Vent pipes shall be of sufficient diameter, but in no case less than two (2) inches in diameter and shall be attached near each end of casing, projecting through ground surface at property lines.
 - 4) Vent pipes shall extend not less than four (4) feet above ground surface. Top of vent pipes shall be fitted with a down-turned elbow, properly screened; or a relief valve.
 - 5) For pipelines carrying flammable materials, vent pipes on casings shall be at least 16 feet (vertically) from aerial electric wires. Casings shall be suitably insulated from underground conduits carrying electric wires on Railroad right-of-way.
- d. Shut-Off Valves
- 1) The Utility Owner shall install accessible emergency shut-off valves within effective distances on each side of the railroad. Where pipelines are provided with automatic control stations, no additional valves will be required.
 - 2) Locating a shut-off valve on railroad property should be avoided. If approval is acquired, a guardrail must protect the shut-off valve.
 - 3) When a guardrail is required, its height shall be four (4) feet above the ground line. All four corner posts shall be driven to a minimum depth of four (4) feet below ground line. There shall be a minimum clearance of two (2) feet from the valve to the

guardrail. The steel pipes for the four corner posts and guardrail shall have a minimum diameter of four (4) inches. All joints will be welded with a one-quarter (1/4) inch fillet weld all around.

6. Water Lines

- a. Where casing pipe is used, venting is not required; however, sealing will be required if the ends of the casing are not above high water.
- b. Where non-metallic pipe is permitted and installed, steel casings are required from right of way line to right of way line.
- c. Manholes should be located outside the railroad property. Manholes shall not be located within twenty-five (25) feet of railroad trackage, in the shoulder, shoulder slope, ditch or backslope; and shall not protrude above the surrounding ground without the approval of BNSF Engineering.
- d. The Utility Owner shall place a readily identifiable and suitable marker at each railroad property line where it is crossed by a water line.

7. Sewer Lines

- a. New and relocated sewer lines shall be constructed with satisfactory joints, materials and designs which will provide protection and resistance to damage from sulfide gases and other corrosive elements to which they may be exposed.
- b. Where casing pipe is used, venting and sealing of casing will be required on pressurized lines.
- c. Where non-metallic pipe is permitted and installed, a durable metal wire shall be concurrently installed; or other means shall be provided for detection purposes.
- d. Manholes should be located outside the railroad property. Manholes shall not be located within twenty-five (25) feet of railroad trackage, in the shoulder, shoulder slope, ditch or backslope; and shall not protrude above the surrounding ground without the approval of BNSF Engineering.

8. Electric Power Lines

- a. A minimum depth of 5.5 feet below the base of rail (BBR) will be maintained.
- b. A minimum depth of 3.0 feet below natural grade (BNG) will be maintained for 750 volts and less, and 4.0 feet BNG for greater than 750 volts.
- c. The wireline must be encased completely across the Railroad right-of-way with a rigid conduit. The conduit can be metal or high-density poly-ethylene (HDPE).

- d. Crossings shall not be installed under or within 50 feet of the end of any Railroad bridge, centerline of any culvert or switch area.
- e. A BNSF signal representative must be present during installation if railroad signals are in the vicinity of wireline crossings unless signal representative authorizes otherwise.
- f. Markers that identify the Utility Owner shall be placed at both property lines for utilities crossing the railroad property. For parallel lines markers shall be placed above the cable at intervals no less than 300' apart. The markers should identify the owner, type of cable and emergency telephone number. A 6-inch wide warning tape will be installed, 1.0 foot BNG directly over the underground power line where located on Railroad right-of-way outside the track ballast sections.
- g. Above-ground utility appurtenances installed as a part of an underground installation shall be located at or near the railroad property line and shall not be any closer than twenty-five (25) feet to the centerline of track.

9. Fiber Optic Lines.

- a. The same requirements for electric power line crossings will apply for fiber optic line crossings except for the following:
- b. A minimum depth of 4.0 feet BNG for fiber optic cable wirelines.
- c. BNSF Engineering must approve any specialized equipment used to install cable. No rail plow will be allowed for installation purposes.
- d. Schedule 80 HDPE pipe is acceptable (with no casing pipe) for use when housing fiber optic lines. A metallic ribbon or wire must be included in the pipe to allow for radio locating at a later date.

10. Abandonment/Removal of Facilities

- a. Upon termination of license the pipeline needs to be removed from BNSF property except for the portion under the track embankment. For pipelines crossing under the tracks the pipe and casing will be cut just short of the toe of embankment slope, purged and filled with a flowable grout (see appendix page A-9).

PART 4

**PLANS, APPROVALS AND
PROCEDURES**

PART 4 - PLANS, APPROVALS AND PROCEDURES

A. Plans and Approvals

1. Design

- a. The design of all utility installations will be the responsibility of the Utility Owner.
- b. The plans for the proposed installation shall be submitted with the application and have BNSF approval before construction is initiated.
- c. 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.
- d. 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
- 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
- Type, Size and Spacing of insulators or supports

- e. When a geotechnical study is required, the findings and protection plan shall be prepared by a licensed civil engineer and included with the plans. The geotechnical crew will need to be properly permitted to enter BNSF right-of-way and a BNSF flagman will be required when working within 25 feet of the track.

2. Approvals

- a. Approval of plans and application forms is required for all installations of utilities prior to initiation of work on railroad property.
- b. If surveying is necessary for the completion of an application, a “Right of Entry” or “Temporary Occupancy Permit” must be executed and referenced.

B. License Procedures

1. Submit applications to:

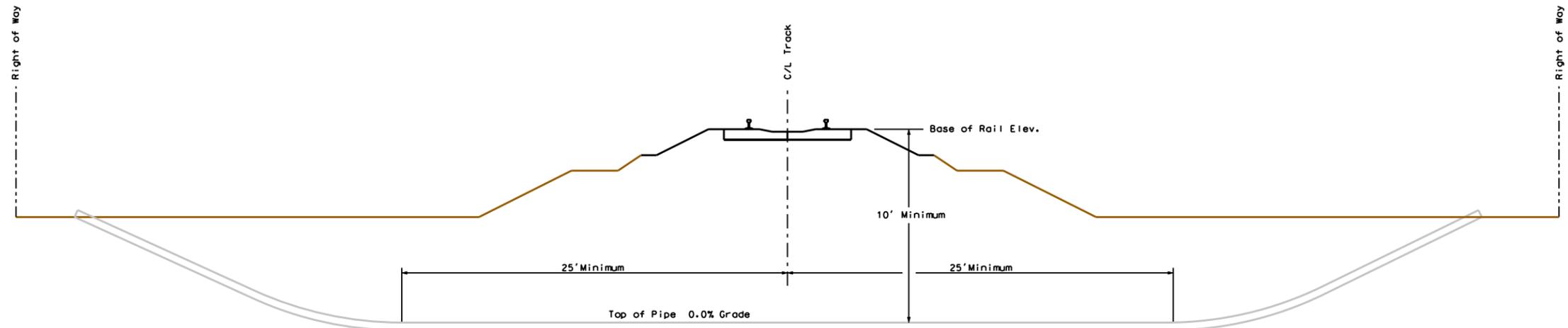
Jones Lang LaSalle
4300 Amon Carter Blvd, Suite 100
Fort Worth, TX 76155

2. Upon receipt of the application, a letter will be forwarded acknowledging receipt and advising of the Permit & Contract file reference number that has been assigned and the person who should be contacted for further inquiries.
3. Office Hours: 8:00 A.M. to 5:00 P.M. Monday through Friday, CT
Phone Number: (toll free) 866-498-6647. Fax: 817-306-8265
4. Agreements will be required for all encroachments on railroad property.
5. Generally, agreement-processing time will be thirty to sixty days. Please allow sufficient lead-time for document handling prior to desired construction date. Before construction begins, agreements must be executed by Utility Owner and returned. Verbal authorizations will not be granted or permitted. A minimum of seventy-two (72) hours advance notice after execution of an agreement will be required prior to initiation of construction.
6. License fees must be submitted at the time the agreement is executed and returned.
7. Applications are to be made on the standard application form including an Exhibit “A.”

C. Construction

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

APPENDIX

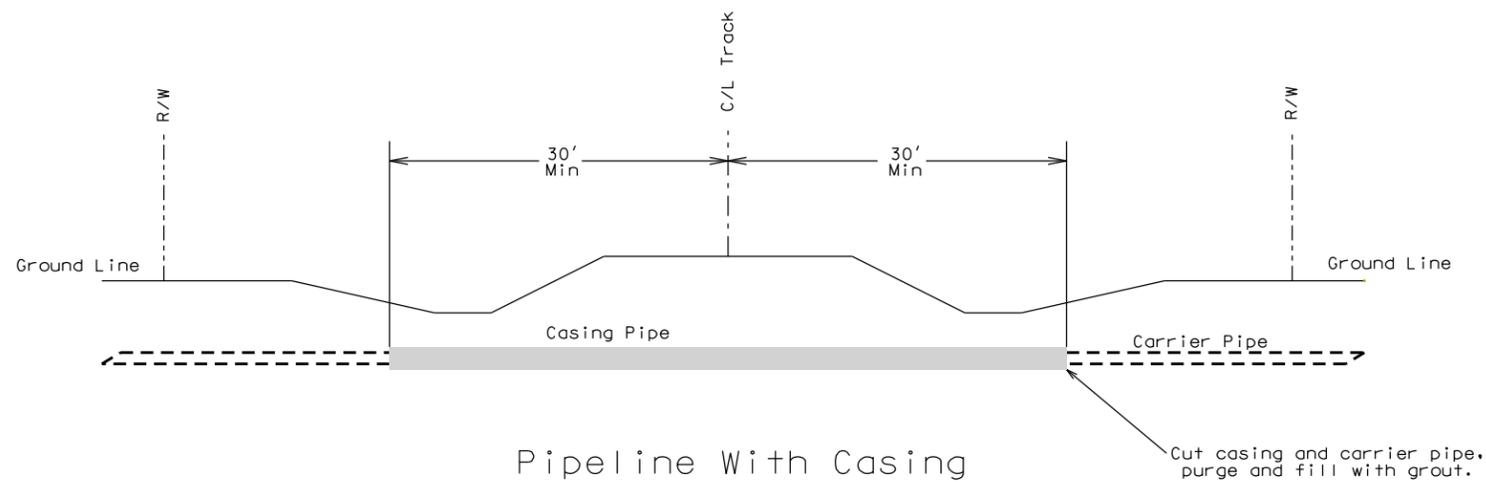


Cutting head must travel at 0.0% grade (or downward) beginning 25' (minimum) from centerline of track until it reaches a point 25' (minimum) from the centerline of track. Minimum pressure must be applied to pumping the slurry to the cutting head during drilling. This will deter the bentonite slurry used for lubrication from seeping up and fouling the track roadbed.

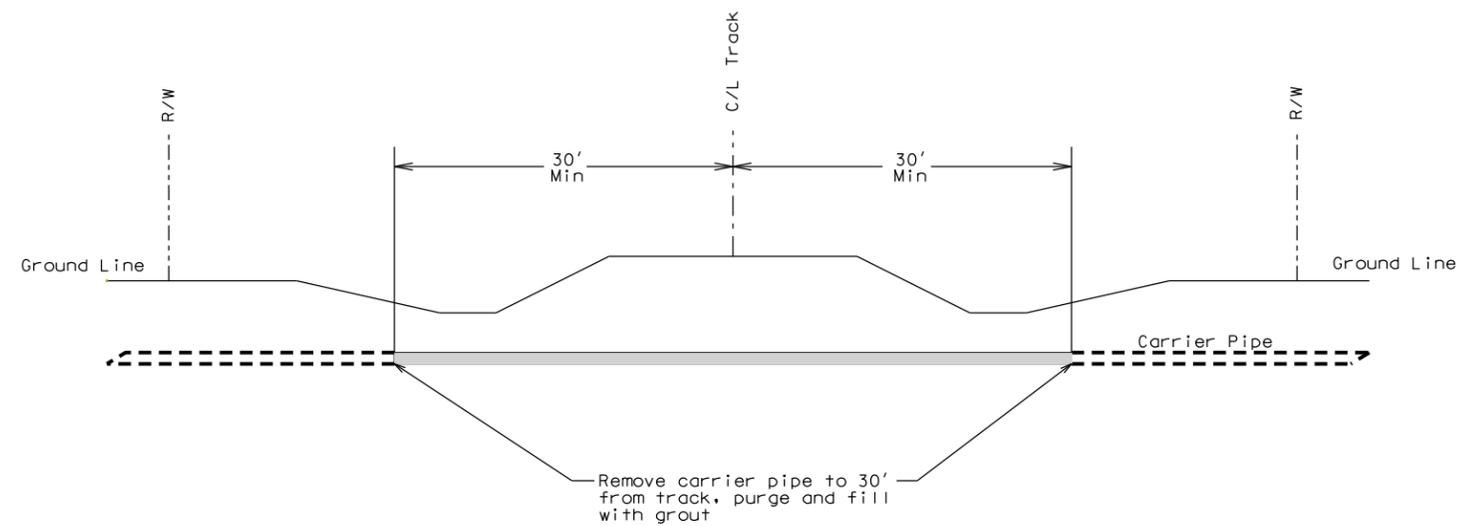
The plans submitted with the application must show the planned travel path of the cutting head.

A BNSF Flagman must be present during installation and will monitor the ballast and roadbed.

APPROVALS	TITLE	DATE	REVISIONS					DATE: 06/20/08	HORIZONTAL DIRECTIONAL DRILLING STANDARDS NOT TO SCALE
			NO.	DESCRIPTION	DATE	BY		LS/mp:	
			1	Added "minimum" to distance from track	9/19/08	JRC			
							DIVISION:		
							SUBD:		
							\utilacom\hdd.dgn		
			DESIGNED:	ENGINEERING SERVICES www.bnsf.com/tools/fieldengineering/Index	FILE NO.				
			DRAWN:		RFA / AFE NO.				
			CHECKED:		STATUS				



Pipeline With Casing



Pipeline Without Casing

Upon termination all pipelines and casings will be removed entirely from BNSF property up to the toe of track embankment, but no closer than 30' from centerline of track.

APPROVALS - (NAME - TITLE)	DATE	APPROVALS - (NAME - TITLE)	DATE



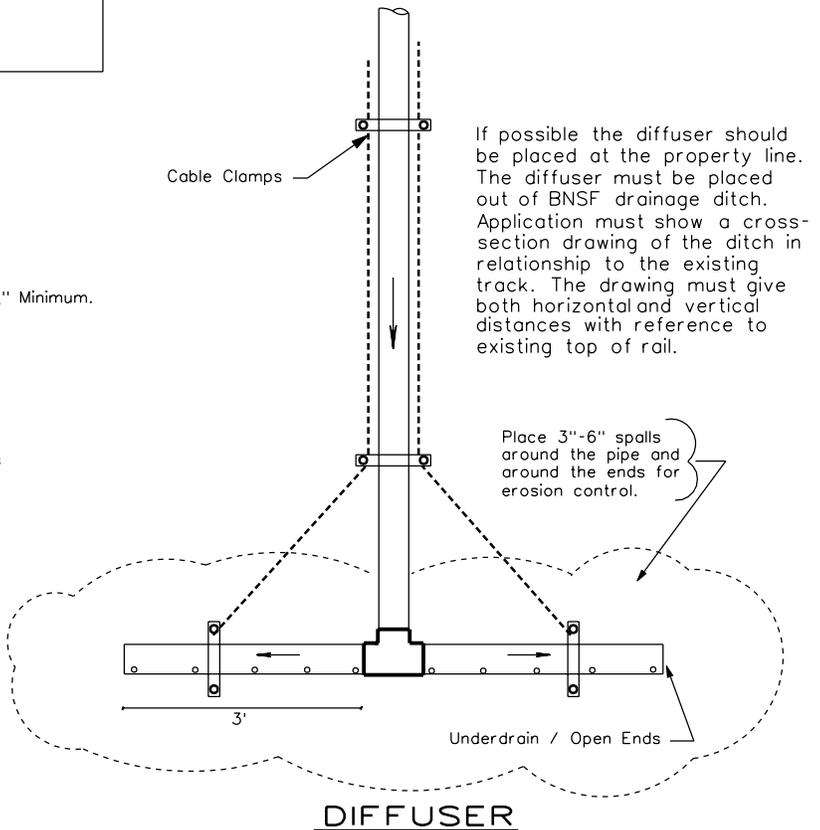
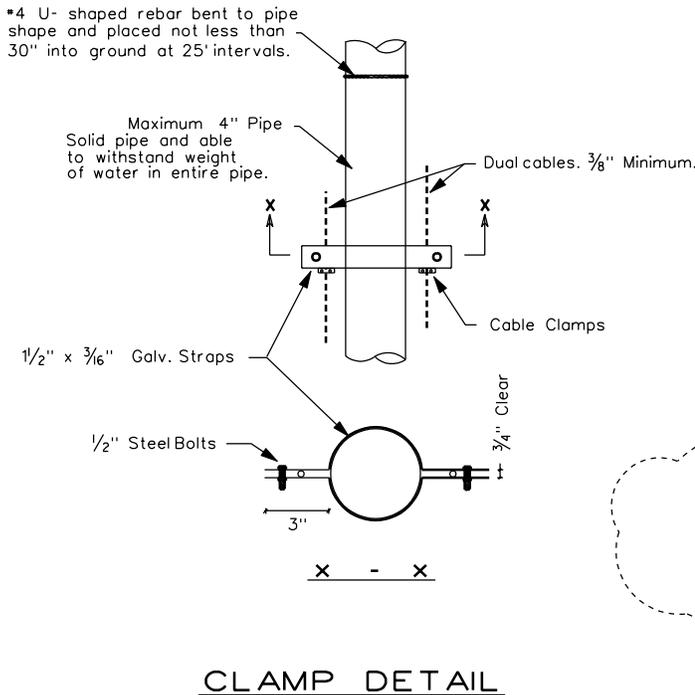
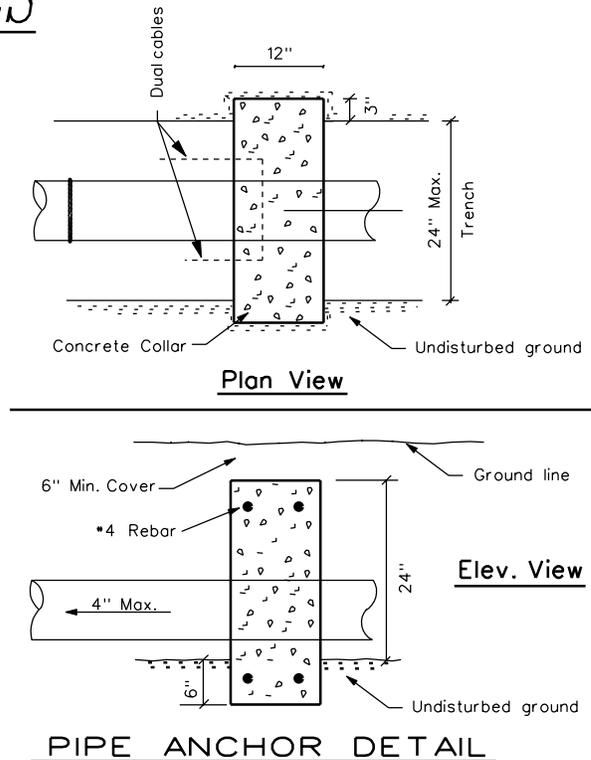
RETIREMENT/REMOVAL OF PIPELINES ON BNSF PROPERTY

REVISIONS			
NO.	DESCRIPTION	DATE	BY

DRAINS FOR STEEP SLOPES

Installation of the pipeline will be difficult due to the slope in which the pipe will be laid. Any damage to the slope due to construction must be repaired to its original condition. A large load on the concrete anchor which supports the pipe at the top of the slope will result due to this installation. This anchor should be moved as far away from the face of the slope as possible to maximize its support capability. The pipeline should be designed to withstand the weight of the water within the pipe.

See details below commonly used to support and hold the pipe in place, which should be used for this installation. If the pipeline fails, it will be the owners responsibility to reinstall the pipeline. If damage occurs to railway property due to the failure of the pipeline, the property owner will be responsible for damages. The property owner must not deposit grass clippings, yard waste, trees or other debris on the slope at any time.



If possible the diffuser should be placed at the property line. The diffuser must be placed out of BNSF drainage ditch. Application must show a cross-section drawing of the ditch in relationship to the existing track. The drawing must give both horizontal and vertical distances with reference to existing top of rail.

Place 3'-6" spalls around the pipe and around the ends for erosion control.

NOT TO SCALE

DEFINITION OF TERMS

The terminology used in this Policy strives for conventional meaning and to insure uniform interpretation. To this end, the following definitions apply:

ACCESS CONTROL: Restriction of access to and from abutting lands to railroad property.

AREMA: American Railroad Engineering and Maintenance of Way Association.

ANSI: American National Standard Institute.

ASTM: American Society for Testing and Materials.

BACKFILL: Replacement of soil around and over an underground utility facility.

BORING: Piercing a hole under the surface of the ground without disturbing the earth surrounding the hole. Boring may be accomplished by any approved manner. Water jetting or puddling will not be permitted. Holes may be mechanically bored and cased using a cutting head and continuous auger mounted inside of the casing. Small diameter holes may be augured and the casing or utility facility pushed in later.

BNSF: Burlington Northern and Santa Fe Railway Company.

BURY: Placement of the utility facility below grade of roadway, ditch or natural ground to a specified depth.

CARRIER: Pipe directly enclosing a transmitted fluid (liquid or gas).

CASING: A larger pipe enclosing a carrier.

CFR: Code of Federal Regulations.

COATING: Material applied to or wrapped around a pipe.

COMMUNICATION LINE: Fiber optic, telephone cable and similar lines, not exceeding four hundred (400) volts to ground or seven hundred fifty (750) volts between any two (2) points of the circuit, the transmittal power of which does not exceed one hundred fifty (150) watts.

CONDUIT OR DUCT: An enclosed tubular runway for protecting wires or cables.

COVER: The depth of material placed over a utility. Depth of cover is measured from top of utility casing or carrier pipe (if no casing is required) to the natural ground line or construction line above the utility.

DIRECT BURIAL: Installing a utility underground without encasement, by plowing or trenching. No rail plows will be permitted.

ELECTRIC SUPPLY: Electric light, power supply, and trolley lines, irrespective of voltage used for transmitting a supply of electrical energy.

ENCASEMENT: Structural element surrounding a pipe or cable.

FLEXIBLE PIPE: A plastic, fiberglass, or metallic pipe having a large ratio of diameter to wall thickness that can be deformed without undue stress. Copper or aluminum pipe shall be considered as flexible pipe.

GROUNDING: Connected to the earth or to some extended conducting bodies which intentionally or accidentally is connected with the earth.

GROUT: A cement mortar or slurry of fine sand or clay as conditions govern.

HORIZONTAL DIRECTIONAL DRILLING: A steerable trenchless method of installing underground pipes, conduits and cables in a shallow arc along a prescribed bore path by using a surface launched drilling rig, with minimal impact on the surrounding area.

JACK-AND-BORE: The installation method whereby the leading edge of the jacked pipe is well ahead of the cutting face of the auger bit. The auger is removing waste from inside the pipe as it is being jacked. This method greatly reduces the likelihood of subsidence of granular material during installation.

JACKING: The installation of small pipes by the use of hydraulic jacks or rams to push the pipe under the traveled surface of a road, railroad roadbed, or other facility.

LICENSE:

UTILITY LICENSE AGREEMENTS are executed for all utility facilities located on railroad property.

MANHOLE: An opening to an underground utility system which workmen or other may enter for the purpose of maintaining, inspecting, or making installations.

NATURAL GAS PIPELINES:

DISTRIBUTION SYSTEM - A pipeline other than a gathering or transmission line.

SERVICE LINE - A distribution line that transports gas from a common source of supply to a customer meter.

TRANSMISSION SYSTEM - A pipeline other than a gathering line that transports gas from a gathering line or storage facility to a distribution center or storage facility. It operates at a hoop stress of twenty percent (20%) or more of the Specified Minimum Yield Strength.

NORMAL: Crossing at a right angle.

PERMITS:

PERMIT TO BE ON BNSF PROPERTY FOR UTILITY SURVEY is to be executed prior to all survey work on railroad property.

PIPE: A tubular product made as a production item for sale as such. Cylinders formed from plate in the course of fabrication of auxiliary equipment are not pipes as defined here.

PRESSURE: Relative internal pressure in PSI (pounds per square inch) gauge.

PRIVATE LINES: Any privately owned facilities which convey or transmit the commodities outlined under the definition for Utilities but are devoted exclusively to private use.

PUBLIC LINES: Those facilities which convey or transmit the commodities outlined under the definition for Utilities and directly or indirectly serve the public or any part thereof.

RIGHT OF WAY: A general term denoting land, property of interest therein, usually in a strip, acquired for or devoted to railroad transportation purposes.

SEAL: A material placed between the carrier pipe and casing to prevent the intrusion of water, where ends of casing are below the ground surface.

SHOULDER: That portion of the roadbed outside the ballast.

TRENCHED: Installed in a narrow excavation.

TUNNELING: Excavating the earth ahead of a large diameter pipe by one or more of the following processes: 1) The earth ahead of the pipe will be excavated by men using hand tools while the pipe is pushed through the holes by means of jacks, rams or other mechanical devices, 2) The excavation is carried on simultaneously with the installation of tunnel liner plates, and/or 3) The tunnel liner plates are installed immediately behind the excavation as it progresses and are assembled completely away from the inside.

UTILITY OWNER: All privately, publicly or cooperatively owned lines, facilities and systems for producing, transmitting or distributing communications, power, electricity, light, heat, gas, oil, crude products, water, steam, waste, storm water and other similar commodities, including fire and police signal systems and street lighting systems which directly or indirectly serve the public.