



June 29, 2016

ADDENDUM NO. 1

Non-Potable Water Distribution System – Phase III CIP Project No. 592-59170

NOTICE TO BIDDERS:

The following clarifications, amendments, additions and/or deletions as set forth herein shall apply to the above documents and shall be made a part thereof and shall be subject to all the requirements thereof as though originally specified and/or shown. Bidders shall assure themselves that all addendum changes have been incorporated into their proposal.

A. AMENDMENTS

1. **Replace** Subsection B of Section TS-22 “Pipeline Trenchless Installation” with Attachment A1-1
2. **Replace** Exhibit A of the UPRR Agreement 2986-76 (Non-Potable Waterline) in Appendix “B” with Attachment A1-2
 - Vent pipes do not need to be installed with the waterline
3. **Replace** Exhibit A of the UPRR Agreement 2990-22 (Potable Waterline) in Appendix “B” with Attachment A1-3
 - Vent pipes do not need to be installed with the waterline

B. ADDITIONS/DELETIONS

1. **Add** Attachment A1-4 UPRR Shoring Guidelines to Appendix “B”
2. **Add** Attachment A1-5 UPRR Construction Clearance to Appendix “B”

All bidders shall acknowledge receipt and acceptance of Addendum No. 1 in the space provided on the Bid Proposal page 9 of the Contract Document.

-END OF ADDENDUM NO. -1-



James Campero P.E.
Construction Manager

Engineering Division
150 City Park Way
Phone (925) 516-5420
Fax (925) 516-5421

PUBLIC WORKS DEPARTMENT
Mailing Address
150 City Park Way, Brentwood, CA 94513
www.brentwoodca.gov

Operations Division
2201 Elkins Way
Phone (925) 516-6000
Fax (925) 516-6001

SECTION TS-22 PIPELINE TRENCHLESS INSTALLATION

B. UNION PACIFIC RAILROAD CROSSING

The Contractor shall install the potable and non-potable waterlines crossing the Union Pacific Railroad (UPRR) as shown in the Plans by the bore and jack method ~~or other method~~ as approved by the City Engineer.

Work on the UPRR right of way (ROW) and/or within 25 ft of track (including jack and bore operations under track) will require Railroad flagging. The Contractor shall be responsible to coordinate with the Railroad.

All equipment, materials, and personnel shall remain outside the Minimum Construction Clearance Envelope (see Appendix "B" for additional requirements).

Pre-Construction Submittals

The Contractor shall submit for review and approval the following items prior to construction:

- 1. Jack and bore plan. The jack and bore plan shall include track monitoring for heave, settlement, or displacement. Maximum acceptable horizontal or vertical movement of rail is ¼". All work shall be suspended if rail meets or exceeds this limit and UPRR flagger shall be notified. Remediation shall be coordinated with UPRR if necessary.*
- 2. Casing and carrier pipe material submittals.*
- 3. Excavations/shoring plans showing the proposed jacking and receiving pits. Excavation in Zone A or Zone B will require that shoring plans include calculations submitted to UPRR for review and approval. All excavations shall meet the requirements of the UPRR Guidelines for Temporary Shoring.*
- 4. Railroad flagging plan.*

Casing Pipe

Steel casing pipe shall be of leak proof construction and shall conform to the requirements of ASTM A53 (ASTM A139 Grade "B"). The pipe shall be coated inside and outside with a black bituminous coating a minimum of 5 mils thick. Steel casing pipe shall have minimum yield strength of 35,000 psi. Steel casing pipe sections shall have beveled ends with a single v-groove and shall be full penetration butt welded on the outside of the casing in accordance with the applicable portions of AWWA C206 for field welded waterpipe joints. All joints of the steel casing shall be butt welded prior to being subjected to the jacking operation. The welded joints shall be wire brushed and painted with bitumastic enamel coating in accordance with AWWA C203. The minimum inside diameter of the casing pipe shall be 4 inches greater than the largest outside diameter of the carrier pipe, joints, or couplings unless indicated otherwise. In all cases, the casing pipe shall be large enough to allow the carrier pipe to be removed subsequently without disturbing the casing pipe or roadway subgrade. If a larger casing diameter is shown in the plans, the larger diameter shall be used. The minimum thickness for casing pipes shall be ~~0.250 inches unless otherwise shown on the plans~~ *0.562 inches for 36-inch casing pipe and 0.437 inches for 24-inch casing pipe*. Larger casing diameters and/or thicker casings shall be installed where required by the agency having jurisdiction for the crossing; as needed to resist H-20 traffic loading under street crossings, and E-80 loading under railroad crossings; as necessary to resist forces transferred to the casing during jacking operations. The Contractor shall supply and install a *24-inch minimum casing pipe for the non-potable water carrier pipe and a 36-*

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inch minimum casing pipe for the potable water carrier pipe in the Union Pacific Railroad right of way as shown in the Plans. Cathodic protection of the casing pipe shall be provided as shown in the Plans and as specified in section TS-26 "Cathodic Protection".

Carrier Pipe

Carrier pipe for potable water alignment shall be 20-inch diameter fusible polyvynil chloride pipe as described in Section TS-21, "Potable Waterline and Valves". Carrier pipe for the non-potable water alignment shall be 12-inch diameter, fusible polyvynil chloride pipe as described in Section TS-23, "Non-Potable Waterline and Valves".

Annular Space

Contractor shall prepare a test plan to verify that annular space between the carrier pipe and casing is filled completely with material that meets City Standard W-18.

Jacking Equipment

The Contractor shall construct the new potable and non-potable waterlines between the limits indicated on the plans in such a manner that there shall be no disturbance of the railroad or drainage channel. Jacking operations shall be confined to the limits indicated on the plans or as directed by the City Engineer.

Casing pipe shall be installed by jacking as indicated on the plans. The jacking pit shall be of adequate size to accommodate the jacking head, frame, jacks, reaction blocks, added section of pipe, and other material and equipment, and to provide sufficient working space. The pit shall be excavated by suitable methods as specified for normal excavations. The jacking head shall be of suitable bearing pieces to protect the pipe from damage due to the thrust from the jacks, and to transfer that thrust from the jacks to the pipe. The jacking frame, upon which the pipe being jacked will rest, shall be of railroad rails or other suitable steel or wooden members set to the correct line and grade to act as guides for true alignment of the pipe. The jacks shall be of ample capacity to provide more than the anticipated jacking capacity necessary. The reaction blocks shall be suitable to provide for resistance to, and distribution of, the reaction from the jacks. The jacking apparatus shall be strongly constructed, and set and maintained in proper relative position and alignment.

Temporary Steel Plating

Steel plates used to cover jacking pits shall have 1-1/4-inch minimum thickness, be sized to extend a minimum of 12 inches beyond the edges of the pits, be capable of supporting HS20-44 truck loading per Caltrans Bridge Design Specification Manual, have a nonskid surface with a minimum friction coefficient of 0.35 as determined by California Test Method 342, and be attached together by welding or another method approved by the City Engineer.

Installation of Jacked Steel Casing Pipe

The City Engineer knows of no manmade obstruction in the path of the alignment. However, the Contractor shall remove or penetrate all natural obstructions encountered. If groundwater is found during construction, the Contractor shall control the flow sufficiently to protect the excavation, pipe, and equipment.

Bentonite may be used for lubricating the casing pipe but shall not be projected ahead of the pipe.

Sluicing or jetting will not be permitted.

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Jacking of welded steel pipe shall be in accordance with Section 65 "Concrete Pipe" and 70 "Miscellaneous Drainage Facilities" of the Caltrans Standard Specifications.

Any pipe damaged during the jacking operation shall be repaired by the Contractor at no expense to the City in a manner acceptable to the City Engineer. In the event that the pipe is damaged during jacking operations and the defects cannot be corrected to the satisfaction of the City Engineer, the Contractor shall fill the pipe with sand and seal in a manner to prevent future settlement and begin jacking in an alternative location as designated by the City Engineer.

Deviations in line and grade of the casing pipe will only be allowed to the extent that the carrier pipe can be shifted within the casing to compensate for the deviation. The Contractor shall remove all augers and check the alignment and grade of the leading end of the casing often enough to be able to correct any line or grade deviations while the boring is in progress. In no event shall the line and grade checks be at intervals exceeding 40 feet. The Contractor shall correct any deviation from grade or alignment resulting from the bore at no cost to the City. Proper alignment and elevation of the casing pipe shall be consistently maintained throughout the jacking operation.

Boring/Jacking operations shall be planned such that the operation is continuous between jacking and receiving pits. Jacking operation shall not stop under the track unless necessary due to site conditions (removal of obstructions or other). If site conditions require the stopping of the jacking operation for a significant amount of time, continuous survey monitoring of nearest track(s) will be required by the Contractor. Cost for the continuous survey monitoring will be the responsibility of the Contractor.

Special care shall be taken during the installation of the jacked pipe to ensure that no settlement or caving be caused to the above surface. Any caving caused by the placement of the pipe shall be the Contractor's responsibility and he shall repair any area so affected as directed by the City Engineer.

During jacking operations, particular care shall be exercised to prevent caving ahead of the pipe which will cause voids outside of the pipe. If caving occurs, the Contractor shall install three 1½ inch grout ports, 120 degrees apart every 8 feet along the casing. The City Engineer will inspect each port after opening to confirm the requirement for grouting. Cement grout shall then be pumped into each port under low pressure. Grout shall be placed by positive displacement pumps capable of placing grout at pressures up to 50 psi unless otherwise allowed by the City Engineer. Grout shall be placed at pressures which are requisite for the conditions encountered and will normally be less than 10 psi except in cases where large cave-ins or other adverse conditions may require higher pressures. Gages shall be provided to indicate grout pressure obtained. All voids shall be filled to the satisfaction of the City Engineer. The Contractor shall not use blasting in making excavations through jacked pipe.

Carrier Pipe Rollers (optional)

The carrier pipe shall be installed in the casing using bore spacers with runners on maximum 6 foot centers, as manufactured by Pipeline Seal and Insulator, Inc. model S12G-2 or C12G-2, Cascade Waterworks Mfg. model CCS-ER, or equal. Spacers shall be polyvinyl chloride coated 14 gauge steel or 14 gauge 304 stainless steel. Runners shall be glass reinforced or ultra high molecular weight polymer with high abrasion resistance.

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Spacers and runners shall be installed in accordance with manufacturer's recommendations.

There must be no metallic contact between the casing and the carrier pipe. The positioning of the spacers should ensure that the carrier pipe is adequately supported throughout its length, particularly at the ends, to offset settling and possible electrical shorting. The end spacer must be within 12 inches of the end of the casing pipe, regardless of carrier/casing differential or type of spacer being used.

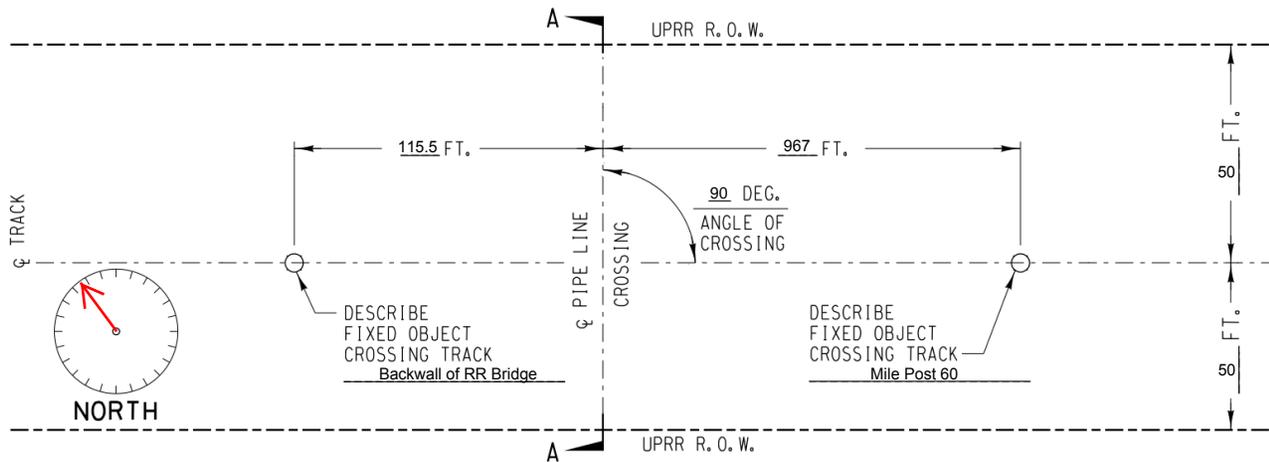
The first pipe joint outside all casings shall be within 12 inches of the end of the casing. The casing pipe shall then be filled with sand to the top of the casing pipe. After the lines have been pressure tested, end seal shall be placed at each end of the casing pipe.

The pipe shall be jacked ahead when stopping work each night to create a plug of sufficient thickness to assure material stability.

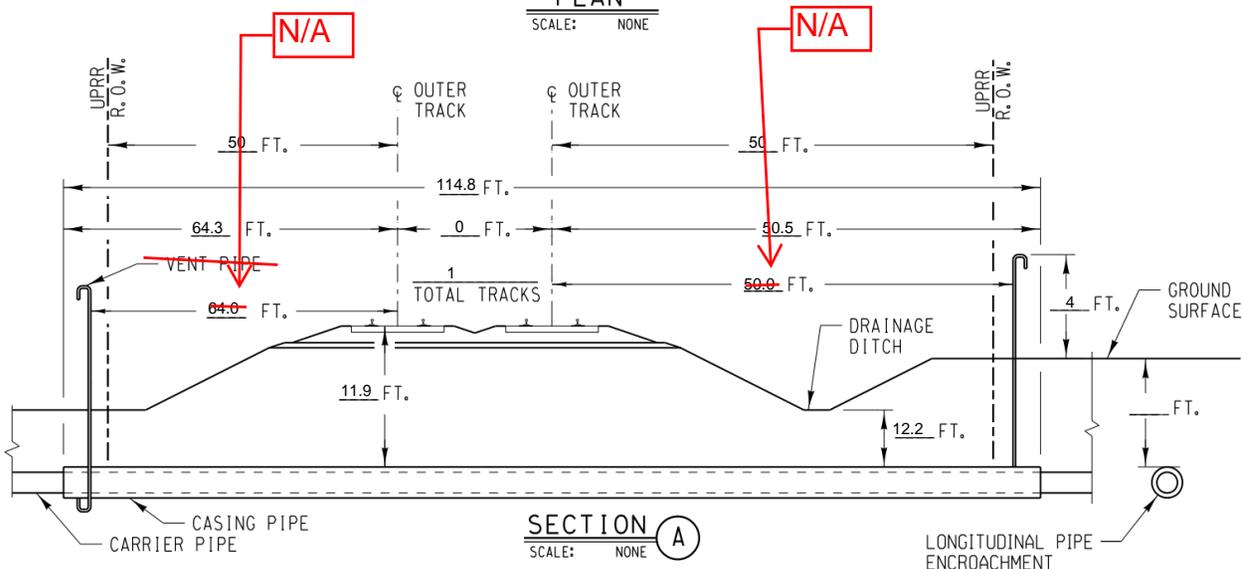
Refer to Appendix "B" for additional requirements.

NON-FLAMMABLE LIQUID PIPELINE

- CROSSING
- ENCROACHMENT
- BOTH



PLAN
SCALE: NONE



SECTION A
SCALE: NONE

- NOTES:
 1) ALL DIMENSIONS MEASURED PERPENDICULAR TO THE CENTERLINE OF TRACK
 2) REFER TO AREMA VOLUME 1. CHAPTER 1. PART 5. SECTION 5.1

- A) METHOD OF INSTALLATION Bored and Jacked
- B) DIST. FROM CENTERLINE OF TRACK TO PIPE ENCROACHMENT _____
- C) SIGNS PROVIDED? At minimum signs will be provided as stated above
- D) CARRIER MATERIAL Plastic. IF RCP, CLASS V? NA.
 COMMODITY TO BE CONVEYED Non-Potable Water.
 OPERATIONAL PRESSURE 100.0 PSI. MAOP 100.0 PSI.
 WALL THICKNESS (INCH)/ SCHEDULE 0.73". DIAMETER 12.0 IN.
 CATHODIC/COATING PROTECTION Yes
- E) CASING MATERIAL Steel Pipe. IF RCP, CLASS V? NA.
 TOTAL LENGTH CASING PIPE: 114.0 FT.
 WALL THICKNESS 0.437 IN. DIAMETER 24.0 IN.
 CATHODIC/COATING PROTECTION Yes
 CASING PIPE IS Sealed AT THE ENDS.
- F) DISTANCE FROM CENTERLINE OF TRACK TO NEAR FACE OF BORING AND JACKING PITS WHEN MEASURED AT RIGHT ANGLES 64.0 AND 50.0.



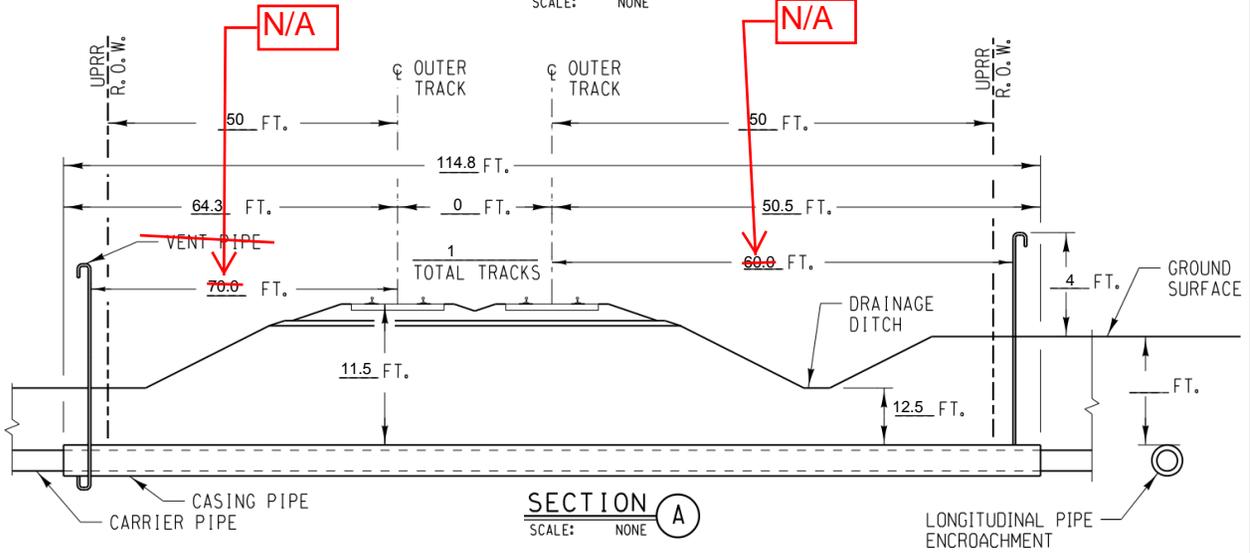
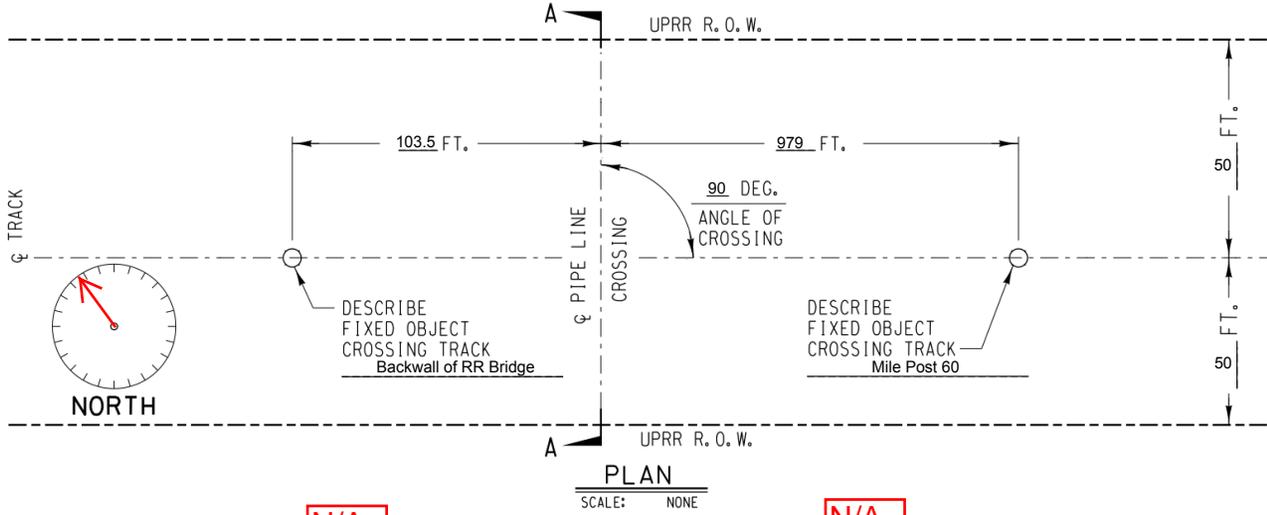
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EXHIBIT "A"

SUBDIVISION: <u>Tracy Sub.</u>	
TRACK TYPE: <u>Mainline Track</u>	
M.P.: <u>59.82</u>	LAT.: <u>37.953859176003</u>
E.S.M.: <u>1193+91 ±</u>	LONG.: <u>-121.7164939641</u>
NEAREST CITY: <u>BRENTWOOD</u>	COUNTY: <u>Contra Costa</u> STATE: <u>CA</u>
APPLICANT: <u>City of Brentwood Public Works Department</u>	
FILE NO.: <u>0298676</u>	DATE: <u>5/16/2016</u>

NON-FLAMMABLE LIQUID PIPELINE

- CROSSING
- ENCROACHMENT
- BOTH



- NOTES:
 1) ALL DIMENSIONS MEASURED PERPENDICULAR TO THE CENTERLINE OF TRACK
 2) REFER TO AREMA VOLUME 1. CHAPTER 1. PART 5. SECTION 5.1

- A) METHOD OF INSTALLATION Bored and Jacked
- B) DIST. FROM CENTERLINE OF TRACK TO PIPE ENCROACHMENT _____
- C) SIGNS PROVIDED? At minimum signs will be provided as stated above
- D) CARRIER MATERIAL Plastic. IF RCP, CLASS V? NA
 COMMODITY TO BE CONVEYED Potable Water
 OPERATIONAL PRESSURE 100.0 PSI. MAOP 100.0 PSI.
 WALL THICKNESS (INCH)/ SCHEDULE 1.20". DIAMETER 20.0 IN.
 CATHODIC/COATING PROTECTION Yes
- E) CASING MATERIAL Steel Pipe. IF RCP, CLASS V? NA
 TOTAL LENGTH CASING PIPE: 115.0 FT.
 WALL THICKNESS 0.562 IN. DIAMETER 36.0 IN.
 CATHODIC/COATING PROTECTION Yes
 CASING PIPE IS Sealed AT THE ENDS.
- F) DISTANCE FROM CENTERLINE OF TRACK TO NEAR FACE OF BORING AND JACKING PITS WHEN MEASURED AT RIGHT ANGLES 64.3 AND 50.5.



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EXHIBIT "A"

SUBDIVISION: <u>Tracy Sub.</u>	
TRACK TYPE: <u>Mainline Track</u>	
M.P.: <u>59.81</u>	LAT.: <u>37.953876095511</u>
E.S.M.: <u>1194+03 ±</u>	LONG.: <u>-121.7164832353</u>
NEAREST CITY: <u>BRENTWOOD</u>	COUNTY: <u>Contra Costa</u> STATE: <u>CA</u>
APPLICANT: <u>CITY OF BRENTWOOD</u>	
FILE NO.: <u>0299022</u>	DATE: <u>5/16/2016</u>

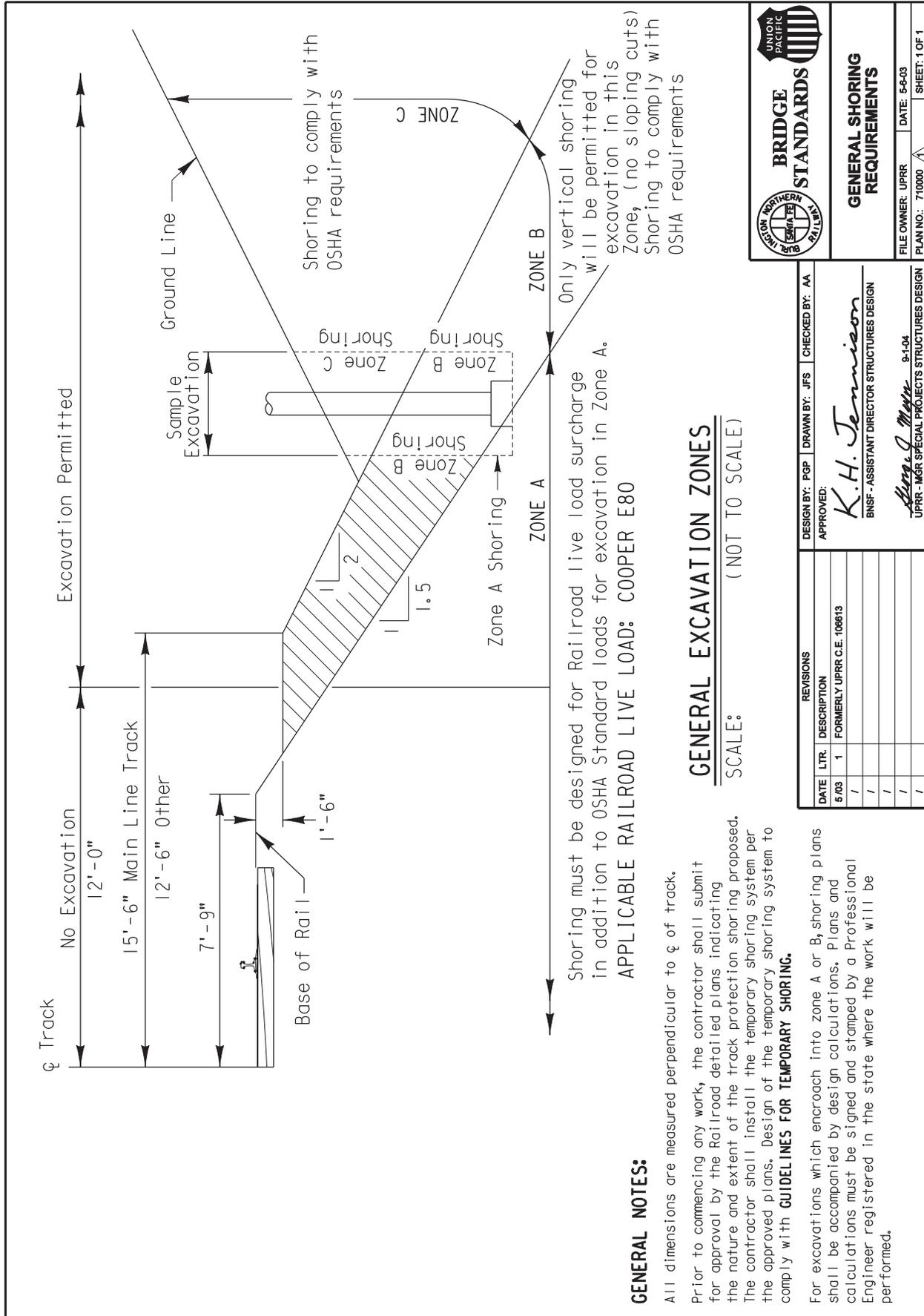
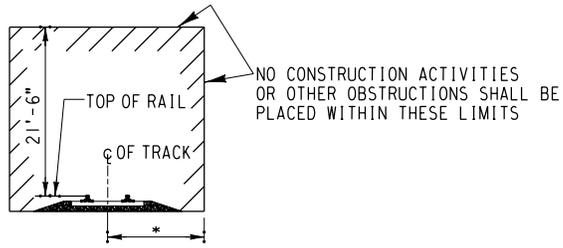


Figure 1

ATTACHMENT A1-5



MINIMUM CONSTRUCTION CLEARANCE ENVELOPE

(NORMAL TO RAILROAD)

* 15'-0" for BNSF and 12'-0" for UPRR