



Port of Stockton General Track Design Guidelines



1. Introduction

The Port of Stockton (Port) is a major inland hub for domestic and international distribution in the San Joaquin Valley and has immediate access to two transcontinental railroads. All industry tracks at the Port of Stockton require an industrial track agreement between the Port and Industry. The Port leads all permit reviews and lease agreements for proposed industrial projects. The Central California Traction Company (CCT) is the designated operating railroad for Union Pacific Railroad (UPRR) and BNSF Railway (BNSF) at the Port. The CCT reviews proposed track layouts and train operations for all industry projects at the Port.

The Port has developed the following guidelines for its review of proposed industrial track projects. As a reference, the Port has adopted the UPRR and the BNSF Railway BNSF engineering standards, and the AREMA Manual for Railway Engineering. The following information is provided to help guide the design of a rail-served manifest facility or unit train/loop facility at the Port of Stockton. The latest versions of the UPRR and BNSF industry design standards, and AREMA Manual for Railway Engineering should be referenced by the applicant. These documents can be found at the links noted below:

UPRR: <https://www.up.com/customers/ind-dev/operations/specs/track/index.htm>

BNSF: <https://www.bnsf.com/ship-with-bnsf/ways-of-shipping/pdf/indytrkstds.pdf>

AREMA: https://www.arema.org/AREMA_MBRR/AREMAStore/MRE.aspx (Requires purchase)

2. Planning Requirements

All applicants shall schedule a planning review meeting with Port staff and the CCT General Manager to review the scope of their proposed project and rail operation before any formal permitting process may begin. The applicant shall complete and submit a Railroad Service Request (RSR) Form, a preliminary project schedule, and include a concept drawing with aerial background on an 11X17 sheets of the project including a document describing the proposed improvements and train operations to the Port and the CCT General Manager prior to the meeting. The concept design submittal shall adhere to requirements described in **Section 3** below. To schedule the planning review meeting, please contact the persons noted below:

Port of Stockton
315 Fyffe Avenue
Stockton, CA 95203
Phone: (209) 946-0246
Email: tracksubmittal@portofstockton.com

Jason Nalder, General Manager
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3. Submittal Requirements

All applicants shall submit concurrently to the Port and CCT for review of their design packages at the submittal schedule described in **Table 1**. The applicant shall provide all submittal documents listed in the Table at every design level to facilitate a swift review process.

The Applicants are recommended to observe the following sequence of events during the application process:

- Submit the Port Rail Service Request. The current RSR form is located on the Port website [here](#).
- Fill out the Submittal Checklist and make sure all support documents are included per the Design Level. The current Port Submittal Checklist is located on the Port website [here](#). A current Sample Conceptual Drawing is provided [here](#).
- The Port and CCT will jointly review the submittals. Initial review comments will be provided in writing, and, if the submitted project is ultimately approved, will be so indicated by the Port's issuance of an RSR Decision Letter/Port Project Approval Notice, listing any approval conditions.

The Applicant is responsible for reviewing and approving track material submittals in accordance with Port's design guidelines and Class 1 railroad requirements prior to beginning construction. The Applicant shall also provide copies of the approved track material submittals to the Port and the serving railroad prior to beginning construction.

Table 1 - Submittal Schedule

Design Phase	Submittal Requirements	Delivery Format
Concept	• RSR Application • Plan Drawings • Site Photos • Project Description • Description of Train Operations • Design CAD files on State Plane Coordinates • Preliminary Project Schedule	PDF
30%	• Applicant Response to Review Comments • Plan and Profile • Typical Sections • Schematic Construction Phasing • Design CAD files on State Plane Coordinates • Project Schedule	PDF
90%	• Applicant Response to Review Comments • Plan and Profile • Typical Sections • Schematic Construction Phasing	PDF



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	• Grading and Drainage and Erosion Control • Traffic Control • Cross Sections • Drainage Report • Civil and Track Details • Construction Submittals as Applicable Such As: Shoring, Falsework, Demolition, Erection, Etc. • Design CAD Files on State Plane Coordinates • Project Schedule	
IFC	• Issued for Construction (IFC) Plans shall include all Items required for the 90% Submittal and have Addressed all Review Comments. • Design CAD Files on State Plane Coordinates • Project Schedule	PDF
Construction Phase	• Provide Designer-Approved Track Material Submittal copies to the Port and serving railroad.	PDF

4. Track Design Guidelines

The Port's track design guidelines are as follows:

4.1 Clearances Requirements

All proposed tracks shall meet the following requirements:

1. Horizontal: The minimum clearance shall be 9 feet at a right angle from the centerline tangent track to nearest obstruction, including the **Port's right-of-way**. Side clearances for curves shall be increased by 1-1/2" per degree of curvature.
2. Vertical: The minimum clearance shall be 25 feet from top of rail to nearest overhead obstruction.
3. Rail car storage on a single track shall be set back 150 feet from the edge of roadway and 250 feet for multiple tracks.
4. Industry track center spacing minimums are as follows:
 - a. 15 feet preferred on tangent track.
 - b. 15 feet if spur is adjacent to a lead track or on a curve track.
 - c. 20 feet if spur is adjacent to a switching lead.
 - d. 25 feet if spur is adjacent to a main or branch line track



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4.2 Horizontal Alignment

The horizontal track alignment requirements are as follows:

1. 60' minimum tangent length between curves and reverse curves
2. 60' minimum tangent length between facing point turnouts
3. 60' minimum tangent length between point of turnout and end of curve
4. Horizontal curves are defined using the 100-foot chord definition method. Tracks should be designed with the minimum degree of curvature that is practicable and attainable. Horizontal curves shall have 9°30' maximum degree of curve and 7°30' max degree of curve for unit train tracks.

4.3 Vertical Alignment

The vertical track alignments are as follows:

1. Track profile grades shall be limited to a maximum of 1.5% for manifest industry track and 0.5% maximum for unit train tracks
2. Vertical curves must be provided at break points in profile grade. The rate of change shall not exceed 2.0 in summits or sags. For unit train tracks the rate of change shall not exceed 1.0 in summits and 0.5 in sags.
3. Vertical curves shall not fall within the limits of horizontal curves or turnouts.
4. Vertical curves shall have a minimum length of 100 feet.
5. Vertical curves shall be a minimum of 100 feet apart.

4.4 Structures

All structures such as bridges, drainage structures, track hoppers, retaining walls, etc. shall be designed to carry Cooper E-80 live loads and shall be signed and sealed by a licensed engineer in the state of California.

4.5 Track

All proposed tracks shall meet the following requirements:

1. Rail sections shall be 112 lb. or heavier. Continuous welded rail is preferred; however, good quality jointed rail is acceptable.
2. Hardwood ties shall be 7"X9"X8'-6" long and placed on 21.5" centers.
3. For manifest trains, the ballast 8" minimum thick and subballast sections shall be 12" minimum thick.
4. For unit trains, the ballast and subballast sections shall be 12" minimum thick.



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4.6 Turnouts

Turnouts shall meet the following requirements:

1. All new industry turnouts shall be a common standard No. 9 as the minimum. All new turnouts to be installed on Port's beltway/lead track shall be new or reconditioned 136RE UPRR/BNSF No. 9 Common Standard turnout with RBM frog per UPRR STD DWG 5009 (No. 9 Turnout 136 LB).
2. Use of turnouts not conforming to the minimum specification as stated above will be considered on a project-by-project basis for installation outside of the Port's beltway/lead track by the Port and CCT. Minimum specification allowed for installation in Port tracks shall be 115RE No. 7, SMSG or RBM, new or reconditioned per UPRR STD DWG 5007A (No. 7 Turnout 136 LB. Rail).

4.7 Derails

Derails shall meet the following requirements:

1. Derails shall be placed on all tracks connecting with a main line, siding, or industry lead.
2. Derails shall be installed such that derailed car is directed away from the main line, siding, or industry lead.
3. Derails shall be placed 50 feet minimum behind the 13-foot clear point. Please reference UPRR standard drawing 2000C "Permanent Derail Installation Instruction" for the appropriate derail application.

4.8 Road Crossings

Road crossings shall meet the following requirements:

1. The point of switch for turnout shall be offset at least 20 feet from the nearest edge of road.
2. No portion of the turnout shall be within the roadway limits.
3. The standard road crossing surface shall be concrete panels placed on 7"X9"X10' wood ties.
4. Concrete panels shall extend a minimum of 3 feet past the edge of roadway or sidewalk when present.
5. The Port will evaluate and determine the type of warning devices and safety treatments required for all proposed and modified at-grade crossings.



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4.9 Walkways

Track walkways shall meet the following requirements:

1. Walkways shall be provided along switches, bridges, as well as anywhere switch men will perform switch activity.
2. Walkways shall be installed in accordance with the latest California Public Utilities Commission (CPUC) Standards.

4.10 Fences and Gates

Fences and gates shall meet the following requirements:

1. Industry gates that cross industry tracks shall swing inwards towards the industry and be augmented with gatekeepers.
2. All fencing shall meet horizontal clearances as described in **Section 4.1** above.

4.11 End-of-Track Treatment

For stub-ended tracks, the typical UPRR requirements for end-of-track treatment must be adhered to, as outlined by UPRR Standard Drawing No. 0030. The requirements are as follows:

1. Earthen bumper is the preferred treatment method unless clearance requirements necessitate alternative treatment. A bumping post may be accepted as an alternative treatment device on a case-by-case basis.
2. Railcars shall be stored a minimum of 20 feet of buffer distance away from the end-of-track device.
3. End of track sign must be used in addition to the earthen bumper or wheel stop per UPRR Standard Drawing No. 0513. The sign must be placed on the track 5 feet away from the end-of-track device.

4.12 Design Variances

All requests for variance to the Port's track guidelines must be submitted to the Port and CCT General Manager for review.