



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. 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.

For reference, the UPRR and BNSF industry design standards 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>

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 submit 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 drawing package shall adhere to requirements described in **Section 3** below. To schedule the planning review meeting, please contact the persons noted below:

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3. Submittal Requirements

All applicants shall submit concurrently to the Port and CCT for review their design packages at the submittal schedule described in **Table 1**. Each submittal package must be accompanied by a completed **Industry Track Development Submittal Checklist** attached to this document.

Table 1 - Submittal Schedule

Design Phase	Submittal Requirements	Delivery Format
Concept	<ul style="list-style-type: none"> • Plan drawings • Site photos • Project description • Description of train operations 	PDF
30%	<ul style="list-style-type: none"> • Applicant response to review comments • Plan and profile • Typical sections • Schematic construction phasing • CAD files on state plane coordinates 	PDF
90%	<ul style="list-style-type: none"> • Applicant response to review comments • plan and profile • typical sections • schematic construction phasing • 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. • CAD files on state plane coordinates 	PDF
IFC	Issued for Construction (IFC) plans shall include all items required for the 90% submittal and have addressed all review comments.	PDF



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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 24 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

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. 150' minimum tangent length between edge of roadway and facing point turnout
5. 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.



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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.

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.

4.6 Turnouts

Turnouts shall meet the following requirements:

1. All new industry turnouts shall be a common standard No. 9 as the minimum.
2. Use of turnouts smaller than a No. 9 will be considered given local conditions and will require formal approval from the Port and CCT.



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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 standard road crossing surface shall be concrete panels placed on 7"X9"X10' long ties.
2. Concrete panels shall extend a minimum of 3 feet past the edge of roadway.

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 gate keepers.
2. All fencing shall meet horizontal clearances as described in **Section 4.1** above.

4.11 Design Variances

All requests for variance to the standards must be submitted to the Port and CCT General Manager for review.