

Norfolk Southern Corporation  
Industrial Development  
Services

# Customer Guide to Industrial Sidetrack Installation

## CONRAIL Shared Asset Areas



**Customer Guide to Industrial Sidetrack Installation  
CONRAIL Shared Asset Areas**

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Norfolk Southern Corporation Customer Profile

CONRAIL Application for Private Sidetrack Agreement

Norfolk Southern Corporation  
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**Step by Step Process for Sidetrack Installation CONRAIL Shared Asset Area**

Customer contacts NS Industrial Development Manager.

NS Industrial Development Manager schedules site meeting with Customer to review project feasibility.

NS ID Manager supplies information including NS Customer Profile (Application to initiate review by Norfolk Southern Corporation) and CONRAIL sidetrack standards.

Customer delivers completed Customer Profile to NS ID Manager and any site or building plans for facility. NS ID Manager can arrange for technical design assistance from NS's Engineering Services Group to aid in conceptual siding design if needed. Customer will need to arrange for preliminary engineering design plans with a qualified party.

Customer forwards letter of intent, sidetrack application and preliminary design plan (six copies) to CONRAIL Chief Engineer-Roadway Assets for review. Plan is preliminary and subject to approval by CONRAIL Operations Department. If proposed sidetrack connects to main track owned or operated by passenger or commuter railway where CONRAIL provides freight service, approval of sidetrack construction is also subject to the passenger or commuter railway. Preliminary cost estimates for the sidetrack can be provided by CONRAIL.

CONRAIL Engineering advises customer of Operating Department review, approved, revision required, or not approved.

CONRAIL Engineering advises customer of proposed CONRAIL costs associated with sidetrack installation, and furnishes customer with formal agreement to initiate sidetrack construction.

Customer returns executed agreement along with required check to CONRAIL Chief Engineer-Roadway Assets for turnout installation and/or track work.

Customer or Customer's contractor must provide 72 hours advance request to CONRAIL Chief Engineer-Roadway Assets office prior to beginning any grading or construction on CONRAIL right of way. CONRAIL may require Customer or Customer's contractor to obtain "Railway Flag Protection", such protection if required is at Customer or Customer's contractor's expense. Customer or Customer's contractor must complete grading prior to sidetrack turnout installation by CONRAIL.

CONRAIL Customer Service Department will contact Customer to set up Customer account information in CONRAIL information systems.

Upon completion of sidetrack construction, CONRAIL Engineering Department will make final inspection of the track prior to approving for CONRAIL service.

Customer can begin receiving rail service.

Norfolk Southern Corporation  
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Norfolk Southern Corporation  
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**INDUSTRIAL SIDETRACK CONSTRUCTION SPECIFICATIONS**  
March, 1993

**CONSOLIDATED RAIL CORPORATION**

**Office of the**

**CHIEF ENGINEER - DESIGN AND CONSTRUCTION**

**2001 Market Street - 12b**

**P. O. Box 41412**

**PHILADELPHIA, PA 19101-1412**

These specifications are provided only as a guideline for design. They do not grant the authority to construct sidings without prior review and approval by the office of the Chief Engineer - Design and Construction, of the Consolidated Rail Corporation.

All new sidings constructed must comply with all current and applicable federal, state, and local laws. The industry is responsible for providing and maintaining walkways which permit safely inspecting and switching rail cars as needed.

Values provided throughout are expressed as recommendations and as limits. Experience has shown that recommended values will produce economic track under most circumstances. Limits may not be exceeded except under special circumstances as approved by the Chief Engineer - Design and Construction. The nature of the special circumstances must be clearly stated in all requests for exceptions.

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# INDUSTRIAL SIDETRACK CONSTRUCTION SPECIFICATIONS

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## I. TRACK DESIGN

### a. Horizontal Alignment

#### Curves, spirals, and tangents

Curves should be designed and laid out using the chord definition of curvature.

The preferred maximum horizontal curve is 9°-30' (Radius = 603.805'). The maximum curve is 12°-30' (Radius = 459.28'). Curves sharper than 12°-30' must have the approval of the Chief Engineer - Design and Construction.

Curves should have spirals at both ends of the curve. Spirals should be designed using American Railway Engineering Association criteria and be at least 31 feet long where no superelevation is required and wherever conditions permit. If superelevation is required, the spiral length must be in agreement with Conrail's M.W.-4.

A tangent distance of at least 100' between reverse curves is preferred; the absolute minimum distance is one car length or 65', whichever is greater.

#### Track Centers

The minimum distance between track centers is:

14' on tangent tracks

15' if the siding is adjacent to a lead track or on a curve

20' if the siding is adjacent to a switching lead with turnouts

25' if the siding is adjacent to a main or branch line track

#### Turnouts

Number 10 turnouts are required on all main tracks or where road locomotives may be operated. Turnouts should be located no closer than 300 feet from a main line curve, bridge, or highway grade crossing.

Number 10 turnouts are recommended for all other industry track locations.

Number 8 turnouts will be considered where site conditions warrant, in lieu of number 10 turnouts.

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## b. Vertical Alignment

Grades shall be compensated for curvature at the rate of 0.05% for each degree of curvature. For example, the maximum allowable grade on a 9°-30' curve is:  
 $2.5\% - (0.05 * 9.5) = 2.03\%$ .

Grades, including compensation, should not exceed 2.5%.

Changes in grade must be accomplished with vertical curves. The maximum rate of change in grades is 2.50% per 100 feet of vertical curve.

Both sides of turnouts (the parent side and the diverging side) must be on the same grade. The turnout extends from the point of switch (at the switch stand) to the point where the diverging tracks are far enough apart to be placed on separate ties. Vertical curves must be no closer than 10 feet from all parts of all turnouts.

## II. ROADBED

### a. Preparation

Areas upon which tracks are to be constructed will be cleared of all vegetation, stripped of topsoil, and grubbed of all roots to a depth one foot below original grade. The surface shall be rolled or otherwise compacted to produce a maximum dry weight density of not less than 95% as determined by the Modified Proctor Test - (ASTM D-1557).

### b. Width (Symmetric about the center line of tracks)

24 feet for low traffic volume industry sidings

28 feet for unit train operation.

Additional width as needed to permit safe inspection of equipment and to permit safe access to and operation of all switches.

### c. Slopes - (Expressed as horizontal change : vertical change)

Fills - 2:1 unless conditions warrant flatter slopes.

Cuts - not less than 1.5:1 in common material with 2:1 slopes recommended. Slope protection to prevent erosion must be applied in all cases. 1:4 in sound rock except where competent analysis submitted to and found acceptable by Conrail indicates that a different slope is appropriate to the individual site.

### d. Compaction

Embankments and the top 6 inches in excavation will be compacted to not less than 95 percent of maximum density as determined by current ASTM D-1557.

### e. Filter Fabric

It is recommended that, except over sound rock or compacted sand / gravel soils, filter fabric be placed beneath the sub-ballast where provided on top of the prepared

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subgrade. Filter fabric shall be non-woven, needle punched, polyester or polypropylene material conforming to the following minimum average requirements:

Property	Minimum Average Requirements		Test
Weight	10.0	OZ./S.Y.	ASTM D 1910
Apparent Opening Size	70-120	Std. Sieve	ASTM D 4751
Grab Tensile	240	Lbs.	ASTM D 4632
Mullen Burst Strength	400	PSI	ASTM D 3786
Max Elong. at Failure	40-65	%	ASTM D 4632
Permittivity	1.1	L/Sec.	ASTM D 4491
Trapezoidal Tear	100	LBS.	ASTM D 4533
Puncture Strength	130	LBS.	ASTM D 4833

The surface to receive the fabric shall be prepared to a relatively smooth condition which is free of obstructions, depressions, debris, and soft or low density pockets of material. All holes, rips, or flaws in the fabric should be repaired by placing a piece of fabric (which is 1.5 feet larger than the hole in the fabric in all directions) directly over the hole before stone or soil is placed on the fabric.

The fabric rolls should be placed to provide a minimum width of 24 inches of overlap at each fabric joint. Sewing the fabric panels together is the suggested method of joining panels together, and may be used in lieu of the overlap. The use of securing pins is not recommended.

Filter fabric must be protected from sunlight, ultra-violet light, high temperatures, dirt, and debris, at all times prior to installation of the fabric. Sub-ballast should be placed on the fabric as specified herein (or as shown on the plans) immediately after the fabric is placed.

All construction traffic should be prevented from driving directly on the fabric. At least eight (8) inches of sub-ballast material should be placed on the fabric in areas where construction equipment will be moving before allowing that equipment to move through those areas.

f. **Sub-Ballast**

It is recommended that except where the subgrade is of a compact sand or gravel material, sub-ballast be placed beneath the full ballast section. This will be considered as fill and will not reduce the amount of ballast needed for the track structure. Attached is the railroad's minimum specifications for sub-ballast. See section VII.

g. **Side ditches**

Ditches must be designed to carry the expected flows from storms which have a 1% probability of being equalled or exceeded in any given year (100 year recurrence interval). Ditches must be graded to ensure flow (recommended minimum of 0.5% grade) and must not be so steep as to create erosion. The ditch flow line must be 2 feet or more below the bottom of ballast. The ditch bottom width must be at least 3 feet, or more as conditions dictate.

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## III. TRACK MATERIAL

### a. Rail

Under light to average traffic conditions, good second hand rail weighing 112 to 155 pounds per yard is recommended. Other weights will be considered depending upon site conditions and type of traffic anticipated, but none weighing less than 105 pounds per yard.

### b. Fastenings

Joint Bars may be either new or second hand in good condition. They must match the rail section used.

Tie plates are strongly recommended and may be either new or second hand in good condition, and must be appropriate for the rail section used. Placement of double shoulder plates under each rail of each tie is recommended.

Track bolts should be new, must be properly sized for the bolt holes in the rail section and have length sufficient for a full nut and a new heavy duty Spring Lock Washer. At least one bolt in both rails of each joint must be fully tightened. It is recommended that at least two bolts in both rails of each joint be fully tightened.

Track spikes must be new, 5/8" by 6" or 5/8" by 6 1/4" installed in accordance with FRA and Conrail standards. A minimum of two spikes per plate (4 spikes per tie) must be used, one on each side of the base of each rail.

Rail anchors should be new or reformed to firmly grip the base of rail used. Anchors shall be applied to both sides of every third tie on both rails (box anchored) firmly against the tie. If one rail on a tie is anchored, the other rail must be anchored to the same side(s) of the same tie. Ties in turnouts outside of the switch point, guard rail, and frog areas, should be box anchored. Anchors must be used wherever grades or train movement is likely to cause movement of rail.

### c. Ties

All tracks shall be constructed using sound ties free of large splits or holes through which ballast may pass. Spacing shall be measured at the base of each rail on tangents and at the base of the outer rail on curves.

Minimum requirements for wood ties requires a size of 6" x 8" x 8'-0". Ties for use in tracks to be in service for one year or longer must be treated with creosote or other suitable preservative per A.R.E.A. specifications.

Concrete or steel ties may be used if produced by an established manufacturer and installed according to the manufacturer's instructions.

It is strongly recommended that ties nominally 8'-6" long be used in all tracks. Where tracks are used frequently by groups of cars or heavily loaded cars or where

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severe grade or curvature increases stresses on tracks, use of oak or mixed hardwood ties are larger size ties, up to 7" x 9" x 8'-6" are suggested.

## d. Ballast

Under light traffic, crushed rock screening or equivalent material (AREA Class 5). Under heavy traffic, crushed rock ballast, main line quality, AREA class 4 gradation with allowable wear based on the Los Angeles Abrasion Test, limited to 30%. Minimum depth 15" between top of finished subgrade and top of tie. The full ballast section extends 9" beyond ends of tie for jointed rail and 12" for welded rail and thence to subgrade on not less than 2:1 slopes.

Note: See Exhibit "G" under the drawing and Engineering Standards section.

## IV. CLEARANCE REQUIREMENTS

### a. Horizontal

The minimum clearance will be 8'-6" from the center line of track to the nearest obstruction. On curves, add one and one half inches (1½") per degree of curve throughout the curve and 50 feet beyond the limits of the curve. Loading docks near curves require special attention so that the overhang of cars will not adversely affect the clearance to the dock.

### b. Vertical

23' from top of rail to the nearest overhead obstruction

27' from top of rail to overhead wires

27' minimum from top of rail to power lines plus National Electrical Code requirements (usually 27' to 35') and also in accordance with CE-4 depending on voltage used

4'-6" minimum below base of rail of any track to top of pipe lines, etc. must be in compliance with CE-8.

### b. Laws and Regulations

In some instances, certain states will accept vertical or horizontal clearances slightly less than Conrail standards. In these instances, Conrail will accept the state's lesser clearances, although the industry will be required to sign an impaired clearance agreement with the railroad as part of the sidetrack agreement. In any situation where either the vertical or horizontal clearance is less than those of the state's requirements, the industry shall secure necessary approval from the local, or state authority of such sub-standard clearances. Conrail's general manager for the area involved may be required to make application in some states. The agreement covering service to the industry's track will include the specific reference to the sub-standard clearance involved. When state law requires clearances that are more restrictive, such laws will govern.

See standard plan of close clearance sign (as an exhibit)

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## V. TRACK CONSTRUCTION SPECIFICATIONS

### a. Track Laying and Surfacing

1. Track laying and surfacing shall be supervised by personnel experienced and skilled in railroad track construction
2. Cross ties shall be uniformly spaced with a center to center distance not exceeding 24 inches. Ties shall be placed perpendicularly to the rail. Through curves, the center to center distance shall be measured along the base of the outer rail. Ties shall be generally centered under the track.
3. When handling or spacing ties, care shall be taken not to damage them with picks or hammers. Tie tongs shall be used for this purpose.
4. The pulling of spikes, once driven, shall be avoided insofar as possible. When spikes are pulled, the holes shall be immediately plugged with creosoted tie plugs of the proper size to completely and tightly fill the hole.
5. The bottom of the rail, the tie plate, and the wearing surface of the tie shall be cleaned before the rail is laid.
6. Tie plates shall be applied at the time the rail is laid to avoid unnecessary spiking. The tie plate shoulder shall bear against the outside base of the rail for the full length of the shoulder.
7. Rails shall be unloaded, stored, or distributed along the roadbed in such manner as to prevent damage.
8. Jointed rails should be laid so that the joints in the rails on one side of the track are opposite the quarter points of the rail in other side of the track. For rails 39 feet long, the joints would be staggered so that the joints on one side would be 9 feet 9 inches away from the joints on the other side of the track.
9. If a determination is made to stagger rail, then rails of miscellaneous lengths, less than 39 feet, shall be used at suitable intervals for maintaining the proper stagger of joints on curves.
10. Rail less than 19 feet long shall not be used except for temporary closures unless specifically required in turnout areas.
11. Rails must be laid to ensure good alignment. The rail ends must be brought squarely together, spaced for expansion, and bolted together before spiking.
12. Rails must be cut squarely and cleanly using rail saws. Holes for all of the bolts in a joint should be drilled according to Conrail Specifications. New holes should never be drilled between two pre-existing holes which are already drilled. Cutting rails or drilling holes in cut rails by means of acetylene or electric torch is prohibited.

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13. Holes for all bolts in the joint must be drilled to properly align with holes in the joint bars. Existing holes may not be slotted nor additional holes drilled between holes which do not align with holes in the joint bar used. Ends of rails must be cropped to eliminate holes which do not align with the holes in the bars. Use of gas or electric torches to create bolt holes is prohibited.
14. The appropriate number of bolts for the rail joint used must be applied. The nuts of all bolts shall alternate uniformly inside and outside of each joint. Each bolt shall be equipped with a spring washer which has the correct size to fit the diameter of the bolts used.
15. The right hand rail going in the direction of the stationing or the outside rail on curves shall first be spiked in position in its proper relation to the lined end of ties. The opposite rail shall then be spiked to true track gauge (4'-8½").
16. On tangent track and on curves up to 6°, two spikes, one inside and one outside the base of rail, shall be used to fasten each rail to each tie. On curves 6° and over, two inside and one outside rail spike shall be used on each rail.
17. Spikes shall be staggered so that the outside spikes shall be on the same side of the tie and the inside spikes on the opposite side.
18. Rail shall not be struck with a maul or heavy tool when spiking, gauging, or lining.
19. Spikes shall be started vertically and squarely. They shall be driven straight with full bearing against the base of the rail. Straightening with maul of spikes started crookedly will not be permitted. Spikes started crookedly shall be pulled, the holes filled with plugs, and spikes re-driven. Spikes shall be driven so as to allow 1/8" to 3/16" space between the underside of the head of the spike and the top of the base of the rail. Immediately after completion of track surfacing, spikes shall be settled in place with the underside of the head of the spike contacting the top of the rail base with a minimum of pressure.
20. When the track has been raised to within 2 inches of final grade and the ballast has been properly compacted, the final lift shall be made by jacking the track up to the exact elevation provided by the grade stakes. The ballast shall then be tamped under the ties. The space extending from 15 inches inside either rail to the ends of the ties shall be thoroughly tamped, but the tie centers shall not be tamped.
21. After the track has been brought to its true surface, elevation and grade, it shall be given a final lining and placed in true alignment.
22. Turnouts shall be constructed of all new or good second hand rail and other track material. Unless otherwise approved by the Chief Engineer - Design and Construction, all turnouts must be fabricated to Conrail standards.

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23. Highway grade crossings on industry-owned trackage should be constructed with timbers and asphalt with 2½" flangeways provided on the gauge side of the rails. Private crossings across railroad owned trackage and all public streets, roads, and highways will require pre-fabricated, treated, timber and asphalt crossing materials as a minimum. See exhibit "J."

Timber crossing materials shall be 8 inch wide, squarely edged and soundly creosoted planks of fir or hemlock, or equal, with the height of plank equal to the distance from the top of the tie to the top of the rail. The planks are to be fastened with countersunk ¾" x 12" galvanized Lewis washer head drive spikes.

Each crossing location will be evaluated individually by the railroad to determine crossing surface material requirements. Some crossings may require the use of structural rubber, pre-cast concrete, or other premium materials.

24. The stub ends of sidings shall be protected with earth and tie bumpers shall be used where possible. If bumping posts are used, they shall be Hayes type WG-HD, or equal, for the designated rail section as approved by the Chief Engineer - Design and Construction.
25. Derails shall be appropriately sized for the designated rail section, or a 16'-6" double point split switch derail, both complete with proper length connecting rod and switch stand. The type used to be determined by the Chief Engineer - Design and Construction or his authorized representative, dependent on track gradient, location, and anticipated track use. Hayes sliding derails require a distance of 50' beyond the 13' clearance point. Other derails require more distance as directed by the Chief Engineer - Design and Construction.

## VI. DRAINAGE STRUCTURES:

- a. Culvert pipes - use of either class 5 wall C reinforced concrete or corrugated steel culvert is satisfactory. The following gauges of corrugated steel pipe must be used:

Pipe Diameter	Gauge of steel
30" or less	14
36"	12
42" to 54"	10

- b. All corrugated steel pipes must be galvanized or aluminized in accordance with A. R. E. A. recommendations. Corrugated steel pipes should be further protected by coating with asphalt or plastic.
- c. Concrete headwalls or end sections must be designed for the proper size for the pipe section used.
- d. Minimum pipe diameter should be not less than 24" diameter to allow for cleanout.
- e. All culvert pipes shall provide E-80 support capacity.

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- f. Depth from bottom of tie to top of culvert pipe shall be no less than one half the diameter of the pipe plus 12 inches, or 18", whichever is greater.
- g. Pipe shall be bedded and installed to produce a true grade and to preserve the pipe cross section. Crushed pipe or pipe in which water pools shall be replaced.
- h. All reinforced concrete structure designs are to be approved by the Chief Engineer - Design and Construction prior to construction, i.e., concrete box culverts, bridges, under track pits, scale pits, etc..
- i. Railroad minimum culvert construction specifications may be obtained, if needed, by contacting the Office of the Chief Engineer - Design and Construction.

## VII. INDUSTRY SUB-BALLAST

### a. Description

Sub-Ballast shall consist of a granular foundation course for a typical railroad roadbed similar to the subbase course for a roadway pavement. It shall consist of soil aggregate materials as described in ASTM D-1241-68 (See attached exhibit "H") of any single gradation shown therein.

### b. Use

- 1. It is recommended that a layer of subballast not less than 8" thick be provided at all locations except where the subgrade consists of a compacted sand or sand and gravel mixture having no materials within the upper foot retained on a 3" sieve nor more than 12% of the material passing through a #200 sieve. The one foot dimension may be reduced to 6" over the high points of sound rock.
- 2. For locations where more than 25% of the material in the subgrade passes through a #200 sieve, or where any organic material is present, a minimum depth of 12" of subballast is recommended. The use of filter fabric is also recommended.
- 3. Where material as described in paragraph 2, above, is naturally saturated or nearly saturated with water, or contains organic materials or evidences any signs of slippage, it is recommended that a geotechnical study be performed to determine the appropriate use of subballast and other roadbed materials.

### c. Placement

Subballast shall be placed in uniform layers not exceeding 6 inches in compacted depth and rolled or otherwise compacted to achieve at least 95% of the maximum dry weight density as defined by the Modified Proctor Test, (ASTM D-1557).

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## VIII. WALKWAYS

### a. Safety

Walkways shall be constructed and maintained to provide a reasonably regular surface and shall be maintained in a safe condition, clear of vegetation, debris, standing water, and other obstructions which constitute a hazard.

### b. Grades and Slopes

Walkways shall not have a grade and slope in excess of approximately one (1) inch of elevation per eight (8) inches of horizontal length in any direction. Excess slope is permissible only where the proximity of adjacent tracks so dictates as long as the slope between tracks is constant.

### c. Construction

Walkways shall be constructed to a minimum width of six (6) feet, as measured from the outside edge of the rail. They shall be constructed and maintained in such manner that the elevation of the surface is approximately level with the tops of ties, or up to one inch below and sloping away from the track at a desirable slope of 1 in 48 ( $\frac{1}{4}$ " per foot). If a paved area or obstruction is adjacent to the track, the walkway may be elevated up to the top of rail.

### d. Requirements

Walkways shall be located along the sides of the tracks for a minimum distance of one hundred twenty five (125) feet on both sides of every switch stand or other track side switch-throwing mechanism and in areas where groups of cars are normally inspected.

### e. Minimum distances

Walkways shall be continuous and maintained from the switch stand through the switch frog and along the diverging track to a point at least twenty five (25) feet beyond the clearance point of the switch. An additional three (3) feet of walkway width shall extend for a minimum distance of four (4) feet in each direction from the switch stand or other track side switch throwing mechanism on the side of the track where the mechanism is located. This additional three (3) feet of width shall be gradually tapered back to the six (6) foot minimum width in a distance of not less than twenty (20) feet.

### f. Guidelines

These specifications are provided only as a guideline for design and should not be taken as authority to construct walkways. All walkway construction must conform to any federal, state, or local specifications, whichever is the most protective of public safety. All walkway construction shall comply with current and applicable laws. Contractors shall be responsible for the proper construction of walkways in the state where the tracks will be constructed.

# INDUSTRIAL SIDETRACK CONSTRUCTION SPECIFICATIONS

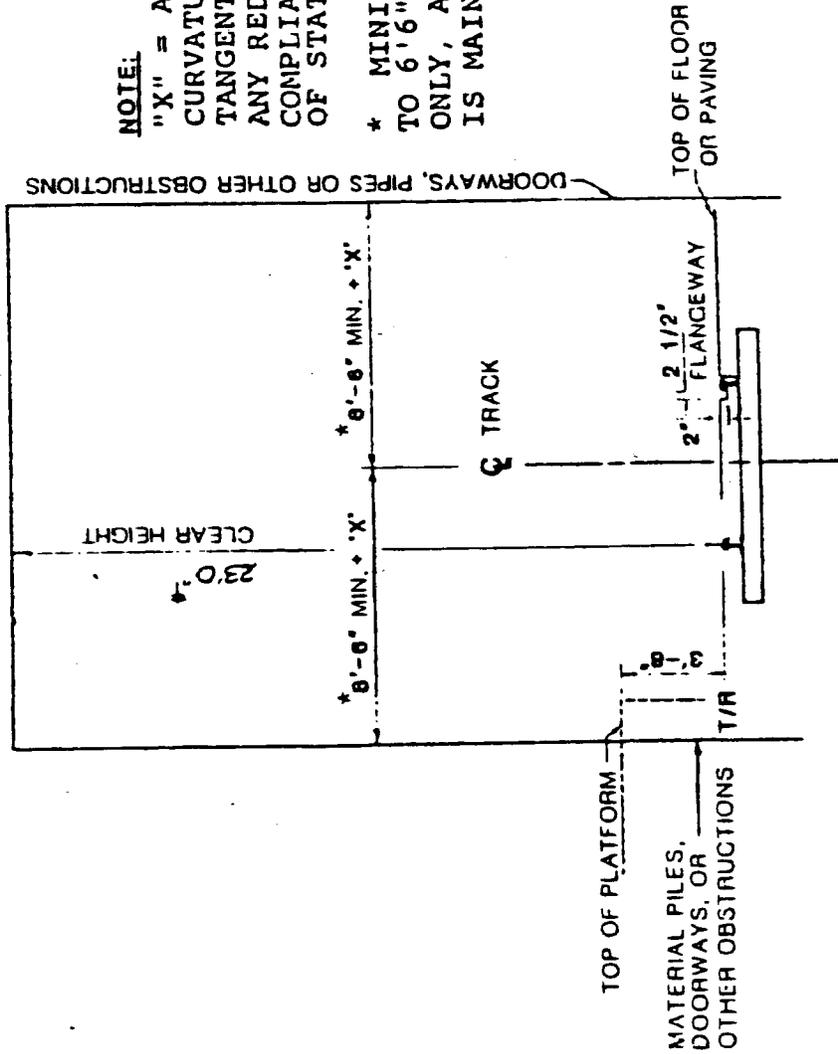
March, 1993

Values provided throughout are expressed as recommendations and as limits. Experience has shown that recommended values will produce economic track under most circumstances. Limits may not be exceeded except under special circumstances as approved by the Chief Engineer - Design and Construction. The nature of the special circumstances must be clearly stated in all requests for an exception.





TYPICAL CLEARANCE SECTION



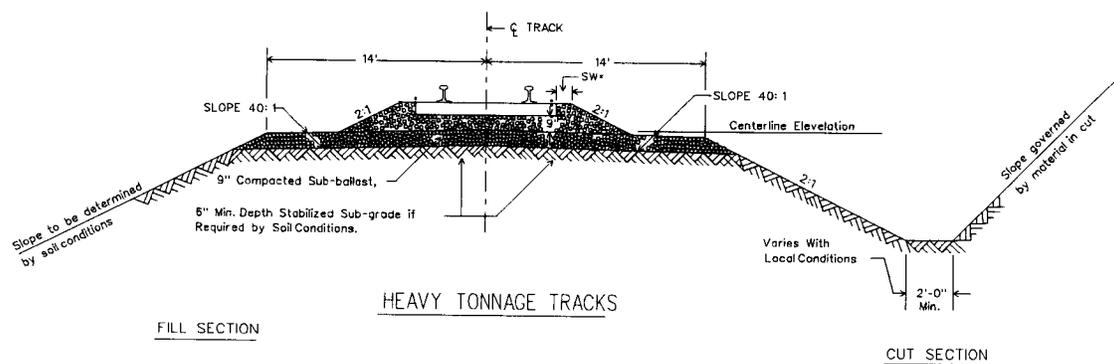
NOTE:

- "X" = ADD 1" PER DEGREE OF CURVATURE UNTIL CAR IS TOTALLY ON TANGENT TRACK.
- ANY REDUCTION BELOW 8'6" REQUIRES COMPLIANCE WITH GOVERNING STATUTES OF STATE INVOLVED.
- \* MINIMUM DISTANCE CAN BE REDUCED TO 6'6" + "X" ON PLATFORM SIDE ONLY, AS LONG AS 8'6" MIN. + "X" IS MAINTAINED ON OPPOSITE SIDE.



CONSOLIDATED RAIL CORPORATION  
 OFFICE OF CHIEF ENGINEER - D & C  
 REV. SEPT 30, 1992 JULY 14, 1981

† 22'-6" ABOVE BASE OF RAIL IN CANADA



SHOULDER WIDTH (SW )

BALLAST WIDTH FROM END OF TIE TO EDGE OF SLOPE

	<u>Jointed Rail</u>	<u>Welded Rail</u>
SW (Inside of Curve)	0"	6"
SW (Outside of Curve)	6"	12"
SW (Tangent both sides)	0"	6"

- (1) Sub-grade may be stabilized with lime, lime-fly ash, cement or stone.
- (2) Tamping of ballast must not disturb compacted sub-ballast.
- (3) Top of sub-grade is to be crowned.

NORFOLK SOUTHERN RAILWAY COMPANY

**ROADBED SECTION**

FOR HEAVY TONNAGE TRACKS  
OTHER THAN MAIN TRACKS

JANUARY 1989

Atlanta, Georgia

DATE	REVISION

Norfolk Southern Corporation  
Industrial Development  
Services

## Glossary of Railroad Terms

Alignment	The horizontal location of a railroad as described by curves and tangents.
Ballast	Selected stone aggregate material placed on the roadbed for the purpose of holding the track in line and surface.
Clear Point	That point where there is 15-foot spread between main track and an adjacent track and 14-foot from other tracks as measured between track centers, allowing the passing of freight cars and or locomotives
Derail	Track safety device to guide freight cars off the rails at selected spot as a means of protection against collisions or other accidents.
Lead Track	Track serving or with the ability to serve more than one industry with individual spur tracks for each industry.
Point of Switch	The beginning of the sidetrack, the point at which the rails slide to direct the wheels onto the sidetrack.
Profile	A line representing the ground surface or an established grade line or both, in relation to the horizontal.
Runaround Track	Track used by a locomotive to runaround to the opposite end of a string of freight cars.
Sidetrack	One or a combination of spur track(s), switching track(s), lead track(s), or runaround track(s).
Spur Track	Track serving only one industry.
Switching Track	Track used to set off cars, runaround cars and or to facilitate the general switching operations to serve an industry
Sub-Ballast	Stone aggregate material which is spread on the finished subgrade of the roadbed and below the top-ballast to provide better drainage, to prevent upheaval by frost and to better distribute the load over the roadbed.
Turnout	Synonymous "Switch". The portion of the sidetrack from the point of switch to clear point

## Railroad Contractors

<p><b>Amtrac Railroad Contractors of Ohio, Inc.</b> Lynn B. Lawson P. O. Box 756 Wooster, OH 44691</p> <p>800-421-5143                      Fax 330-683-3243</p>	<p><b>National Railroad Contractors, Inc.</b> Joseph Siravo 1401 A Street Wilmington, DE 19801</p> <p>302-654-0290                      Fax 302-654-4536</p>
<p><b>Atlas Railroad Construction Co.</b> William M. Stout, President 1253 State Route 519 Eighty Four, PA 15330</p> <p>724-228-4500                      Fax 724-228-3183</p>	<p><b>Railroad Construction Company, Inc.</b> Pamela Cochran 75-77 Grove Street Paterson, NJ 07503</p> <p>973-684-0362                      Fax 973-684-1355</p>
<p><b>A. C. Railroad Service Co.</b> Jim Krugle P. O. Box 73 McKees Rock, PA 15136</p> <p>412-331-7585                      Fax 412-777-7764</p>	<p><b>Railroad Construction Company of South Jersey</b> James J. Daloisio 700 Beideman Avenue Camden, NJ 08105</p> <p>609-964-1005                      Fax 609-342-9796</p>
<p><b>Eastcoast Railroad Contractors, Inc.</b> David L. Rorabaugh P. O. Drawer H Hershey, PA 17033</p> <p>717-944-5521                      Fax 717-944-6072</p>	<p><b>Railworks</b> Fulton Kennedy P. O. Box 3088, Simpson Ferry Road Shiremanstown, PA 17011-3088</p> <p>717-761-2436                      Fax 717-761-0811</p>
<p><b>Fox Contracting Company</b> Thomas J. Higgins P. O. Box 194 Plymouth Meeting, PA 19462</p> <p>610-941-1100                      Fax 610-941-1050</p>	<p><b>The Railroad Associates Corporation (TRAC) Railroad Construction Management Services</b> Michael P. Kennedy 1100 Spring Garden Drive, Suite C Middletown, PA 17057</p> <p>717-939-1500                      Fax 717-939-2841</p>
<p><b>Grayline Industrial Service</b> Thomas M. Gray, President 10559 Geiser Road Holland, OH 43528</p> <p>419-861-1345                      Fax 419-861-1347</p>	<p><b>Tracks Unlimited, Inc.</b> Robert F. Hahn, P.E. 1330 North Avenue Plainfield, NJ 07062</p> <p>908-769-6840                      Fax 908-769-0068</p>
<p><b>Hulcher Services, Inc.</b> Blair Alexander P. O. Box 271 Denton, TX 76202-0271</p> <p>800-637-5471                      Fax 817-382-4550</p>	<p><b>W. E. (Bill) Yoder</b> 41 South Maple Street Kutztown, PA 19530</p> <p>610-683-7383                      Fax 610-683-8638</p>

**This list of private rail contractors has been reported as being reputable. These rail contractors do not represent Norfolk Southern and Norfolk Southern does not guarantee their workmanship. This list is provided only as a courtesy.**