V. INDUSTRY SUBMITTED PLANS

5.01 GENERAL

Sample plans are shown in the attachments as reference.

The industry submitted plans will be utilized by several Company Departments in its internal review and approval process. This process ensures compliance with engineering and safety standards and verifies the validity of the proposal from an operational stand point. A clear, well labeled plan is essential for a successful submittal and prompt review.

The plans will also be utilized as attachments in track usage agreements between the track's owner and the Company. As such a clear reference to ownership and parties to the sidetrack agreement should be included on the plan.

It is the Company's desire to be a cooperative partner in progressing projects owned by our customers; however the safety of Company employees and the equipment it operates is of paramount importance. Plans must be provided that clearly define all existing and proposed conditions and allow for sound judgments to be made by the Company in the approval process.

When overhead structures, retaining walls, or under track structures are involved, submitted plans for these structures must bear the seal of a current Registered Licensed Professional Engineer in the state of the project.

Plans produced and submitted by an industry or its contractor must be provided to the appropriate Norfolk Southern Industrial Development Manager's office in MicroStation (.dgn) or other equivalent and compatible format. A PDF version of the completed plans must also be attached. Hand drawn plans may also be submitted provided that they are clearly drawn and easy to read. Two sets of hand drawn plans must be submitted.

Plans submitted must be drawn to scale and show all essential features affecting the track layout. The preferred scale for drawings is 1"=100'. Smaller projects may utilize a scale of 1"=50' and larger projects may utilize a scale of 1"=200'.

All tracks on the drawings must be shown as a **CENTER LINE** of track. **Tracks showing crossties and rails are not acceptable**. Existing track center lines shall be shown as light weight and solid lines. Proposed track center lines shall be shown as a heavy line weight (wt=5) with a dashed line (style=3). **The line style of 3 shall only be used on the drawing for proposed tracks**. The plot scale of the drawing must be sufficient to show the dashes in the proposed track line style. Tracks to be relocated or removed shall be shown light weight and dashed (style=2). Tracks in relocated position shall be shown heavy weight (wt=5) and dashed (style=2).

Any questions about design specifications that cannot be answered in the attached guidelines publication should be addressed to your local NS Industrial Development Manager, who will put you in contact with a NS Design & Construction Department representative assigned to your region.

5.02 REQUIRED PLAN SIZES

The Company allows 7 different standard plan sizes. The sizes are:

- AA – 8.5" x 11"
- AB – 11" x 17"
- AC – 17" X 22"
- AD – 22" x 34"
- ARN – 11" X >34"
- ARM – 22" X >34"
- ARW – 36" X >34"

AB, AC and AD plans are the preferred size subject to layout requirements and should be utilized when possible for ease of reproduction. When possible a single sheet including both site plan and profile drawing should be submitted. Typically grading details and cross sections are not required but may be requested on a case by case basis.

All drawings must leave a 3" vertical by 5" horizontal clear area in the lower right hand corner (within inner border) of all plan sheets for insertion of a drawing identification label by NS Design & Construction.

5.03 TITLE BLOCK

Completed plan drawings submitted to Norfolk Southern for its review and approval must include the following industry title block information:

- Facility owner.
- Location (Address, City & State).
- A drawing title.
- A drawing number or file reference.
- Date.
- Firm that produced drawing and contact information.

5.04 SITE AND TRACK PLAN

Site and Track Plan must include following items:

- English units, engineering format (decimal).
- Centerline stationing for all trackage.
- Points of Switch (PS), turnout size, whether right hand (RHTO) or left hand (LHTO) turnout, and whether switch is hand throw or power operated.
- Points of Curve (PC) or Points of Tangent to Spiral (PTS).

- Points of Tangency (PT) or Points of Spiral to Tangent (PST).
- Curve data for all curves based on the chord definition. Data shall include Delta, Degree of Curvature, Radius, Tangent, and Length.
- Track Clear Points (CP).
- Door/Dock Clearances.
- Track centers or minimum track centers.
- Derails / Division of Ownership & Maintenance.
- Track Capacities in number of cars.
- Existing tracks with description (i.e. Main Track, Industry Track, etc…).
- Proposed tracks with description (i.e. Main Track, Industry Track, etc…).
- Show vertical & horizontal clearance of all structures within 15 feet of center line of proposed or existing track.
- North Arrow.
- Drainage structures, proposed and existing.
- Utilities with clearances (both vertical and horizontal).
- Fiber optic cables with line identification numbers.
- All signals, signal equipment and shelters.
- The direction to and name of the nearest railroad city.
- The distance between the proposed point of switch and the nearest railway milepost with a directional arrow towards the milepost.
- The distance to the nearest major land mark in each direction if not shown on the plan (i.e. road crossing, bridge, mile post, etc…).
- County in which the project is located.
- Location map.
- Location of Railway right-of-way (R/W) lines.
- Location of property lines, other than Railway R/W, where possible.
- End of track device (both existing and proposed).
- Level (0%) grades for all loading / unloading areas.
- Coordinate table for all survey control points (point #, Northing, Easting, Elevation, and Description). The proposed point of switch should be tied to the local State Plane or world coordinate system, if possible, with the coordinates for the proposed point of switch shown on the plan.
- Detailed plans and calculations for proposed unloading pits and scales must bear the seal of a current Registered Licensed Professional Engineer. These plans must be approved by the Norfolk Southern Bridges and Structures Department prior to the commencement of any site work involving the track.

5.05 TRACK PROFILE

The Track Profile must include the following items:

- Point of Switch (PS)
- Derails

- Stationing in the same direction as the proposed track alignment and displayed on the same scale as the plan view.
- Average grade of existing and proposed tracks.
- Profiles of the existing track, proposed track, and sub-grade.
- Points of Vertical Curvature (PVC).
- Points of Vertical Tangency (PVT).
- Vertical curve lengths and “r” value (rate of change).
- Top of rail elevations for the proposed track every 100 feet.
- Top of rail elevations at all important stations.
- Storage capacity in number of cars in loading/unloading zones.
- Dock height and elevation.
- End of track device.

5.06 ADDITIONAL DRAWING REQUIREMENTS

Additionally, all drawings must include the following:

- A typical roadbed cross-section of the track showing the depth of the sub-ballast, ballast, and design of the sub-grade (in compliance with Norfolk Southern standards).
- A legend explaining all line types.
- An applicable clearance diagram (in compliance with Norfolk Southern standards).
- A typical section and/or detail plan for any unloading pit, or loading/unloading apparatus.
- Detail of end of track device.