ArcGIS
Railroads Data Model

2024 Edition

Contents

Esri geodatabase data model templates

The availability of a practical and up-to-date data model template, tailored to the unique needs of an industry, is one of the keys to a successful GIS implementation, whether one's use of Esri software is new or long-standing. For this reason, Esri collaborates with industry and academic leaders to continually evolve a range of geodatabase data model templates. The intent of Esri data model templates is to provide users with a best practice, industry-specific starting point. Most users start with these data model templates; then they refine and extend them to meet their specific needs and requirements. Esri data model templates work with the ArcGIS platform and reflect Esri's view of best data model practice.

The **ArcGIS Railroads Data Model** is a geodatabase data model template for organizations that operate in the railroad industry, or in industries that operate with railroad-based operations and assets. It is a moderately normalized data model, intended to digitally represent physical and non-physical aspects of railroad operations.

Esri thanks all those professionals and organizations who contributed their time and talents to the creation and improvement of the **ArcGIS Railroads Data Model** for the good of the community and of all Esri users in the Railroad industries.
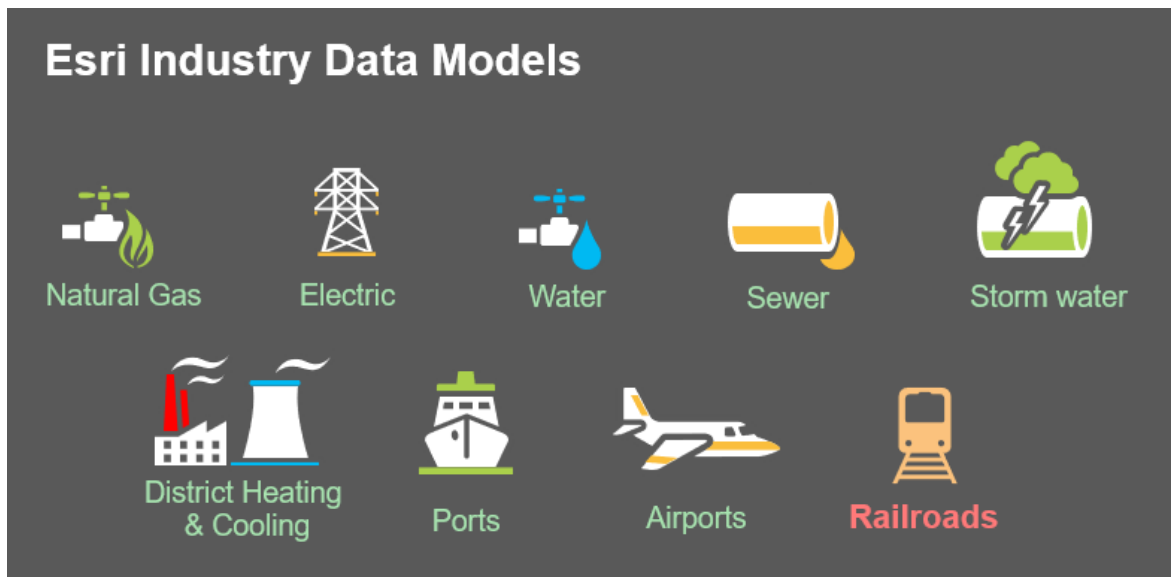
Goal of the ArcGIS Railroads Data Model

The goal of the **ArcGIS Railroads Data Model** is to make it easier, quicker, and more cost-effective for Railroad organizations to implement the ArcGIS system. The Esri provided data model template accomplishes this by freely providing a data model that takes full advantage of the capabilities of the geodatabase. The data model is created and tested with ArcGIS products to ensure that it works. This significantly reduces the complexity, time, and cost to implement a spatially enabled Railroads data repository.

Keeping up with the advancements of the geodatabase is an ongoing activity. Esri software development staff continue to enhance and evolve the capabilities of the geodatabase. In addition to the data model representing a best practice on how to leverage the geodatabase, the data model also represents a repository of industry knowledge. Much of the

structure and content of this data model is based on feedback from Esri's users as well as lessons learned from the large number of implementations of ArcGIS in the railroads industries.

Because the **ArcGIS Railroads Data Model** is built specifically for the ArcGIS family of products, it can be implemented as-is, without modification to ArcGIS products.

Audience

At this 2024 edition of the data model, the primary target audience are freight railroad organizations across North America.

Passenger rail organizations in North America, as well as all kinds of rail organizations in the world outside of North America have many significant differences in their assets, operations, as well as requirements and constraints that are specific to different countries and regions. That isn't to say that for those other organizations this data model would be useless. These other kinds of rail organizations may find valuable use from this data model as a starting point, or as a resource for enhancing their own database design.

It is simply important to recognize that for organizations other than North American railroads, this version of the data model has not comprehensively considered their needs. We welcome partners and other organizations would would like to collaborate with Esri for improving and extending this data model further, to broaded its scope for future versions.

Design Considerations

The ArcGIS Railroads Data Model has two sets of design considerations:

1. INDUSTRY COMPATIBILITY -- The ArcGIS Railroads Data Model needs to be fully compatible with other industry standard data models that already exist and are in productive use across the railroad industry. This is important for both interoperability purposes as well as making data exchange and translation easier. To that end, this ArcGIS Railroads Data Model includes elements of, and is fully compatible with:
    a. **North American Rail Network (NARN) database model**: Maintained and published by the US Department of Transportation's Federal Railroad Administration.
    b. **Positive Train Control (PTC) database model**: This is a set of technologies implemented to prevent some of the most major human-error incidents such as train-to-train collisions, over-speed derailments, incursions into established work zone limits, and the movement of trains thru a mainline switch left in the wrong position. PTC accomplishes these objectives in part with a database model for storing and updating data (including spatial data) in a standard and useful way. This database model is also governed by the US Department of Transportation's Federal Railroad Administration.
    c. **Rail Industry Geographic Information System (RIGIS™) database model**: Maintained and published by Railinc, which is a wholly owned, for-profit subsidiary of the Association of American Railroads (AAR). Railinc is a resource for technology solutions used by railroads across North America. RIGIS™ is the data model used by these railroads when sharing data with other railroads or updating their data with Railinc/AAR to support a wide variety of collective uses.

2. GIS CAPABILITIES -- The ArcGIS Railroads Data Model needs to contain design elements that allow railroad data to fully exploit the capabilities of the ArcGIS system, to include:
    a. Linear Referencing--specifically using ArcGIS Location Referencing tools.
    b. Network datasets--for solving best paths, service areas, and other network analysis capabilities.
    c. Trace Networks--for topological validation and all types of network tracing functions.
    d. Network Diagrams--for schematic mapping, and supporting track chart creation and update.
    e. Straight-Line Diagrams--for mapping point and span data of assets and phenomena.

d. Field Mobility--for asset inspection, incident reporting, maintenance of way operations, and more.
g. Real-Time mapping--of vehicles, personnel, and stationary sensors.
h. Parcel maintenance--as a base for managing real estate property, structures, and other assets.
i. Artificial Intelligence--for building and using deep learning models for automating data collection.

The Railroads 2024 Edition Geodatabase

The feature classes and tables that comprise the Railroads 2024 Edition Geodatabase are listed below.

Geodatabase Feature Classes

TrackSegments

Purpose: Each segment represent a pair of steel rails constituting one track.

Feature Class Schema

This is the schema for the *TrackSegments* feature class.

Column Name	Field Alias	Type	Length	Precision	Scale	Domain
Shape	Shape	PolylineZM	0	0	0	
ObjectId	Object ID	long	0	10	0	
Guid	Guid	Guid	38	0	0	
SCAC	Owner SCAC	text	4	0	0	SCACCode
DIVISION	Division	text	50	0	0	
SUBDIV	Subdivision	text	50	0	0	
SubdivisionId	Subdivision ID	short	0	4	0	
SegmentId	Segment ID	long	0	9	0	
NetAttribs	Network Attributes	long (nullable)	0	9	0	
TimetableOrientation	Timetable Orientation	text	1	0	0	
TrackName	Track Name	text	32	0	0	
TrackQualifier	Track Qualifier	text	50	0	0	
RouteName	Route Name	text	100	0	0	
RouteId	Route ID	Guid	38	0	0	
Prefix	Milepost Prefix	text	5	0	0	
Suffix	Milepost Suffix	text	5	0	0	
BeginNodeId	Begin Node ID	text	50	0	0	
BeginNodeSCAC	Begin Node SCAC	text	4	0	0	SCACCode
BeginNodeType	Begin Node Type	text	25	0	0	NodeTypeCode
BeginBoundaryType	Begin Boundary Type	text	25	0	0	BoundaryTypeCode
FromMilepostPrefix	From Milepost Prefix	text	5	0	0	
BeginMilepost	Begin Milepost	double	0	10	4	
FromMilepostSuffix	From Milepost Suffix	text	5	0	0	
EndNodeId	End Node ID	text	50	0	0	
EndNodeSCAC	End Node SCAC	text	4	0	0	SCACCode

EndNodeType	End Node Type	text	25	0	0	NodeTypeCode
EndBoundaryType	End Boundary Type	text	25	0	0	BoundaryTypeCode
ToMilepostPrefix	To Milepost Prefix	text	5	0	0	
EndMilepost	End Milepost	double	0	10	4	
ToMilepostSuffix	To Milepost Suffix	text	5	0	0	
CrossoverFlag	Crossover Flag	text	1	0	0	CrossoverFlagCode
FRAARCID	FRA Arc ID	long	0	10	0	
FRFRANODE	From FRA Node	long	0	10	0	
TOFRANODE	To FRA Node	long	0	10	0	
STFIPS	State FIPS	text	2	0	0	
CNTYFIPS	County FIPS	text	3	0	0	
STCNTYFIPS	State County FIPS	text	5	0	0	
STATEAB	State Abbr	text	2	0	0	StateAbbrCode
COUNTRY	Country	text	2	0	0	CountryCode
FRADISTRICT	FRA District	text	2	0	0	FraDistrictCode
RROWNER1	RR Owner 1	text	4	0	0	
RROWNER2	RR Owner 2	text	4	0	0	
RROWNER3	RR Owner 3	text	4	0	0	
TRKRGHTS1	Track Rights 1	text	4	0	0	
TRKRGHTS2	Track Rights 2	text	4	0	0	
TRKRGHTS3	Track Rights 3	text	4	0	0	
TRKRGHTS4	Track Rights 4	text	4	0	0	
TRKRGHTS5	Track Rights 5	text	4	0	0	
TRKRGHTS6	Track Rights 6	text	4	0	0	
TRKRGHTS7	Track Rights 7	text	4	0	0	
TRKRGHTS8	Track Rights 8	text	4	0	0	
TRKRGHTS9	Track Rights 9	text	4	0	0	
BRANCH	Branch	text	50	0	0	
YARDNAME	Yard Name	text	50	0	0	
PASSNGR	Passenger	text	1	0	0	PassengerTypeCode
STRACNET	Strac NET	text	1	0	0	StracNetTypeCode
NET	NET Track Type	text	1	0	0	NETTrackTypeCode
TrackStatus	Track Status	text	10	0	0	TrackStatusCode
MILES	Miles	double	0	12	6	
KM	Kilometers	double	0	12	6	
TIMEZONE	Time Zone	short	1	0	0	TimeZoneCode
ShapeSTLength	Shape Length Meters	double	0	12	6	
Shape_Length	Shape Length DD	double	0	12	6	

GeometryType: Polyline ZM

Relationships: None

Attachments: No

Editor Tracking: Yes

Editor Tracking Value	Attribute Name
Creator Field	created_user
Create Date Field	created_date
Update Editor Field	last_edited_user
Update Edit Date Field	last_edited_date

Attributes:

Field Name – Field description (source compatibility)
Shape - A single-part PolylineZM with M values that increase in the digitized direction. (GIS)
OBJECTID - Assigned by the GIS. (GIS)
Guid - Globally unique identifier, 128-bits (16 bytes). (GIS, RIGIS)
SCAC – SCAC (Standard Carrier Alpha Code) for owner railroad. (PTC, NARN, RIGIS)
DIVISION – Division in which this segment resides. (NARN)
SUBDIV – Subdivision in which this segment resides. (NARN)
SubdivisionId – Id of the subdivision containing the segment. (PTC, RIGIS)
SegmentId – 9-digit segment ID unique within the subdivision. (PTC)
NetAttribs – Network attributes for supporting network diagramming and schematic mapping. (GIS)
TimetableOrientation – Direction of milepost increase: N S E W. (PTC)
TrackName – Describes which track this segment contains. (PTC, RIGIS)
TrackQualifier – Element that makes the route_name unique. (RIGIS)
RouteName – Name of the route of which this segment is a part, to support LRS. (GIS, RIGIS)
RouteId – Guid of the route of which this segment is a part, to support LRS. (GIS)
Prefix – Milepost modifiers, if they exist. (PTC)
Suffix – Milepost modifiers, if they exist. (PTC)
BeginNodeId – Node Id connected to the low MP end of the segment. (PTC)
BeginNodeSCAC – SCAC corresponding to the begin node. (PTC)
BeingNodeType – Type of node connected to the start of the segment. (PTC)
BeginBoundaryType – Type of boundary at the start of the segment. (PTC)
FromMilepostPrefix – Milepost modifiers for all mileposts in the segment, else blank. (RIGIS)
BeginMilepost – Milepost value at the start of the segment. (PTC)
FromMilepostSuffix – Milepost modifiers for all mileposts in the segment, else blank. (RIGIS)
EndNodeId – Node Id connected to the high MP end of the segment. (PTC)
EndNodeSCAC – SCAC corresponding to the end node. (PTC)
EndNodeType – Type of node connected to the end of the segment. (PTC)
EndBoundaryType – Type of boundary at the end of the segment. (PTC)
ToMilepostPrefix – Milepost modifiers for all mileposts in the segment, else blank. (RIGIS)
EndMilepost – Milepost value at the end of the segment. (PTC)
ToMilepostSuffix – Milepost modifiers for all mileposts in the segment, else blank. (RIGIS)
CrossoverFlag – Indicates whether or not this segment is a crossover piece of track: Y or N. (PTC)
FRAARCID – FRA-assigned primary key of the segment as stored in the NARN. (NARN)
FRFRANODE – Id of the from node as stored in the NARN. (NARN)
TOFRANODE – Id of the to node as stored in the NARN. (NARN)
STFIPS – Fips code of the US state the segment resides in. (NARN)
CNTYFIPS – Fips code of the US country the segment resides in. (NARN)
STCNTYFIPS – Concat of the STFIPS and CNTYFIPS values. (NARN)
STATEAB – Two character abbreviation of the US state the is segment resides in. (NARN)
COUNTRY – Two character abbreviation of the country the segment resides in. (NARN)
FRADISTRICT – FRA district in which the segment resides: 1-8 for US, and 99 outside US. (NARN)
RROWNER1 – 2-4 character Standard Carrier Alpha Code (SCAC) for the railroad that owns the track. (NARN)
RROWNER2 – 2-4 character Standard Carrier Alpha Code (SCAC) for the railroad track co-owner. (NARN)
RROWNER3 – 2-4 character Standard Carrier Alpha Code (SCAC) for the railroad track co-owner. (NARN)
TRKRIGHTS1 – 2-4 character Standard Carrier Alpha Code (SCAC) for the railroad that has track rights. (NARN)
TRKRIGHTS2 – 2-4 character Standard Carrier Alpha Code (SCAC) for the railroad that has track rights. (NARN)

TRKRIGHTS3 – 2-4 character Standard Carrier Alpha Code (SCAC) for the railroad that has track rights. (NARN)
TRKRIGHTS4 – 2-4 character Standard Carrier Alpha Code (SCAC) for the railroad that has track rights. (NARN)
TRKRIGHTS5 – 2-4 character Standard Carrier Alpha Code (SCAC) for the railroad that has track rights. (NARN)
TRKRIGHTS6 – 2-4 character Standard Carrier Alpha Code (SCAC) for the railroad that has track rights. (NARN)
TRKRIGHTS7 – 2-4 character Standard Carrier Alpha Code (SCAC) for the railroad that has track rights. (NARN)
TRKRIGHTS8 – 2-4 character Standard Carrier Alpha Code (SCAC) for the railroad that has track rights. (NARN)
TRKRIGHTS9 – 2-4 character Standard Carrier Alpha Code (SCAC) for the railroad that has track rights. (NARN)
BRANCH – Branch name if it exists. (NARN)
YARDNAME – Yard name if it exists. (NARN)
PASSNGR – The type of passenger service on the segment. (NARN)
STRACNET – Strategic rail corridor. (NARN)
NET – Type of track using the NetTrackType domain. (NARN, RIGIS)
TrackStatus – Identifies if the track segment is active or otherwise. (NARN)
MILES – Length of the segment in miles. (NARN)
KM – Length of the segment in kilometers. (NARN)
TIMEZONE – Time zone that the track segment resides within: E, C, M, P, K, H, Z. (NARN)
ShapeSTLength – Length of the segment in meters. (NARN)
Shape_Length – Length in spatial reference units (for NARN is decimal degrees). (NARN)

TrackNodes

Purpose: Track Nodes are point features that represent the start and end nodes of each track segment. Each track segment must start and end with a node, and nodes may not appear anywhere else within or outside of a track segment line.

Feature Class Schema

This is the schema for the *TrackNodes* feature class.

Column Name	Field Alias	Type	Length	Precision	Scale	Domain
Shape	Shape	PointZM				
ObjectId	Object ID	long	0	10	0	
Guid	Guid	Guid	38	0	0	
NodeId	Node ID	text	50	0	0	
SCAC	Owner SCAC	text	4	0	0	SCACCode
DIVISION	Division	text	50	0	0	
SubdivisionId	Subdivision ID	short	0	4	0	
NodeType	Node Type	text	25	0	0	NodeTypeCode
Latitude	Latitude	double	0	12	8	
Longitude	Longitude	double	0	12	8	
Elevation	Elevation	double	0	12	8	
Description	Node Description	text	100	0	0	
FacingSCAC	Facing SCAC	text	4	0	0	
FacingSubdivisionId	Facing Subdivision ID	short	0	4	0	
FacingSegmentId	Facing Segment ID	long	0	9	0	
NormalSCAC	Normal SCAC	text	4	0	0	
NormalSubdivisionId	Normal Subdivision ID	short	0	4	0	
NormalSegmentId	Normal Segment ID	long	0	9	0	
ReverseSCAC	Reverse SCAC	text	4	0	0	

ReverseSubdivisionId	Reverse Subdivision ID	short	0	4	0	
ReverseSegmentId	Reverse Segment ID	long	0	9	0	
FRANODEID	FRA Node ID	long	0	9	0	
COUNTRY	Country Abbreviation	text	2	0	0	
STATE	State Abbreviation	text	2	0	0	
STFIPS	State FIPS	text	2	0	0	
CTYFIPS	County FIPS	text	3	0	0	
STCYFIPS	State and County FIPS	text	5	0	0	
FRADISTRICT	FRA District	long	0	9	0	
PASSNGR	Passenger Code	text	1	0	0	PassengerTypeCode
PASSNGRSTN	Passenger Station	text	50	0	0	
BNDRY	Boundary	text	25	0	0	BoundaryTypeCode

GeometryType: Point ZM

Relationships: None

Attachments: No

Editor Tracking: Yes

Editor Tracking Value	Attribute Name
Creator Field	created_user
Create Date Field	created_date
Update Editor Field	last_edited_user
Update Edit Date Field	last_edited_date

Attributes:

Field Name – Field description (source compatibility)
Shape - A single-part PointZM. (GIS)
OBJECTID - Assigned by the GIS. (GIS)
Guid - Globally unique identifier, 128-bits (16 bytes). (GIS, RIGIS)
NodeId – ID of the track node (GIS, RIGIS, NARN)
SCAC – SCAC (Standard Carrier Alpha Code) for owner railroad. (PTC, NARN, RIGIS)
DIVISION – Division in which this segment resides. (NARN)
SubdivisionId – Id of the subdivision containing the segment. (PTC, RIGIS)
NodeType – The reason for the addition of the node.
Latitude – Latitudinal location of the node, WGS 1984. (PTC)
Longitude – Longitudinal location of the node, WGS 1984. (PTC)
Elevation – Elevation in feet above mean sea level at the node's location. (PTC)
Description – Human readable description of the node. (PTC)
FacingSCAC – Railroad ID of the facing segment. (PTC)
FacingSubdivisionId – Subdivision ID of the facing segment. (PTC)
FacingSegmentId – Segment ID of the facing segment. (PTC)
NormalSCAC – Railroad ID of the normal segment. (PTC)
NormalSubdivisionId – Subdivision ID of the normal segment. (PTC)
NormalSegmentId – Segment ID of the normal segment. (PTC)
ReverseSCAC – Railroad ID of the reverse segment. (PTC)
ReverseSubdivisionId – Subdivision ID of the reverse segment. (PTC)
ReverseSegmentId – Segment ID of the reverse segment. (PTC)

FRANODEID – ID of the node as stored in the NARN. (NARN)

COUNTRY – Two character abbreviation of the country in which the node resides. (NARN)

STATE – Two character abbreviation of the state in which the node resides. (NARN)

STATEFIPS – State FIPS code for the state in which the node resides. (NARN)

CNTYFIPS – County FIPS code for the county in which the node resides. (NARN)

STCYFIPS – State and County FIPS for the county in which the node resides. (NARN)

FRADISTRICT – FRA District in which the node resides. (NARN)

PASSNGR – Passenger code. (NARN)

PASSNGRSTA – Passenger station description (NARN)

BNDRY – Unknown, but domain values are 0, 1, 2, 3 (NARN)

Switches

Purpose: Switches are devices that allow trains to be guided from one track to another, for example, when a train traveling on a single track approaches a switch where the single line splits into two tracks, and the train can be guided onto one or the other. Some switches are more complex than that, allowing for one or more inputs and one or more outputs.

Feature Class Schema

This is the schema for the *Switches* feature class.

Column Name	Field Alias	Type	Length	Precision	Scale	Domain
Shape	Shape	PointZM				
ObjectId	Object ID	long	0	10	0	
Guid	Guid	Guid	38	0	0	
NodeId	Node ID	text	50	0	0	
SCAC	Owner SCAC	text	4	0	0	SCACCode
SwitchDirection	Switch Direction	text	4	0	0	SwitchDirectionCode
SwitchName	Switch Name	text	50	0	0	
SiteName	Site Name	text	40	0	0	
SiteDeviceId	Site Device ID	text	40	0	0	
WIUAddress	WIU Address	text	64	0	0	
WIUStatusIndex	WIU Status Index	short	0	5	0	
SpringSwitchType	Spring Switch Type	text	20	0	0	SpringSwitchTypeCode
MonitoredStatus	Monitored Status	text	15	0	0	MonitoredStatusCode
FacingSwitchProtection	Facing Switch Protection	text	50	0	0	SwitchProtectionCode
NormalSwitchProtection	Normal Switch Protection	text	50	0	0	SwitchProtectionCode
ReverseSwitchProtection	Reverse Switch Protection	text	50	0	0	SwitchProtectionCode
RouteNameFacing	Route Name Facing	text	100	0	0	
RouteNameNormal	Route Name Normal	text	100	0	0	
RouteNameReverse	Route Name Reverse	text	100	0	0	
MilepostPrefixFacing	Milepost Prefix Facing	text	5	0	0	
MilepostNumberFacing	Milepost Number Facing	text	15	0	0	
MilepostSuffixFacing	Milepost Suffix Facing	text	5	0	0	
MilepostPrefixNormal	Milepost Prefix Normal	text	5	0	0	
MilepostNumberNormal	Milepost Number Normal	text	15	0	0	
MilepostSuffixNormal	Milepost Suffix Normal	text	5	0	0	

MilepostPrefixReverse	Milepost Prefix Reverse	text	5	0	0	
MilepostNumberReverse	Milepost Number Reverse	text	15	0	0	
MilepostSuffixReverse	Milepost Suffix Reverse	text	6	0	0	
TurnoutDirectionReverse	Turnout Direction Reverse	text	50	0	0	SwitchOrientationCode
CalibrationPointFlag	Calibration Point Flag	text	5	0	0	CalibrationPointFlagCode
SubdivisionId	RR Subdivision ID	short	0	4	0	
Latitude	Latitude	double	0	12	8	
Longitude	Longitude	double	0	12	8	
Elevation	Elevation	double	0	12	8	

GeometryType: Point ZM

Relationships: None

Attachments: No

Editor Tracking: Yes

Editor Tracking Value	Attribute Name
Creator Field	created_user
Create Date Field	created_date
Update Editor Field	last_edited_user
Update Edit Date Field	last_edited_date

Attributes:

Field Name – Field description (source compatibility)
Shape - A single-part PointZM. (GIS)
OBJECTID - Assigned by the GIS. (GIS)
Guid - Globally unique identifier, 128-bits (16 bytes). (GIS, RIGIS)
SCAC – SCAC (Standard Carrier Alpha Code) for owner railroad. (PTC, NARN, RIGIS)
SwitchDirection – Orientation of the switch: left face, right face, left rear, right rear (PTC, RIGIS)
SwitchName – User-readable name assigned to the switch. (PTC)
SiteName – The site to which the switch belongs. (PTC)
SiteDeviceId – The device ID of the switch as it is identified with respect to the specified site. (PTC)
WIUAddress – The WIU used to get the status of the switch. (PTC)
WIUStatusIndex – The location of the switch data in the status message. (PTC)
SpringSwitchType – If it's a spring switch, what kind and in what direction, or if it's a non-spring switch. (PTC)
MonitoredStatus – Whether or not the switch is monitored by some kind of active communication. (PTC)
FacingSwitchProtection – Whether or not the switch has protection, and if so, which kind. (PTC)
NormalSwitchProtection – Whether or not the switch has protection, and if so, which kind. (PTC)
ReverseSwitchProtection – Whether or not the switch has protection, and if so, which kind. (PTC)
RouteNameFacing – Route name of the track facing into the switch.
RouteNameNormal – Route name of the track the switch moves toward in normal position.
RouteNameReverse – Route name of the track the switch moves toward in reverse position.
MilepostPrefixFacing – If the facing milepost has a prefix.
MilepostNumberFacing – Milepost of the switch on the facing track leading into the switch.
MilepostSuffixFacing – If the facing milepost has a suffix.
MilepostPrefixNormal – If the normal milepost has a prefix.
MilepostNumberNormal – Milepost of the switch on the normal track thru the switch.
MilepostSuffixNormal – If the normal milepost has a suffix.
MilepostPrefixReverse – If the reverse milepost has a prefix.

MilepostNumberReverse – Milepost of the switch on the reverse track thru the switch.
MilepostSuffixReverse – if the reverse milepost has a suffix.
TurnoutDirectionReverse – The position of the reverse track relative to the increasing milepost direction, left or right.
CalibrationPointFlag – Y/N flag indicates whether or not a switch point is also a calibration point for LRS.
SubdivisionId – The subdivision ID in which the switch resides.
Latitude – Latitude in decimal degrees, WGS 1984, where the switch is located.
Longitude – Longitude in decimal degrees, WGS 1984, where the switch is located.
Elevation – Elevation in feet above mean sea level, at which the switch is located.

TrackRoutes

Purpose: Track routes consist of groups of TrackSegment features, where each route feature consists of all segments that share the same RouteName/RouteId. This TrackRoutes feature class forms the basis of the Centerlines feature class created as part of a linear referencing system.

Feature Class Schema

This is the schema for the *TrackRoutes* feature class.

Column Name	Field Alias	Type	Length	Precision	Scale	Domain
Shape	Shape	PointZM				
ObjectId	Object ID	long	0	10	0	
Guid	Guid	guid	38	0	0	
SCAC	Owner SCAC	text	4	0	0	SCACCode
SubdivisionId	Subdivision ID	short	0	4	0	
RouteName	Route Name	text	100	0	0	
RouteId	Route ID	Guid	38	0	0	
TrackName	Track Name	text	255	0	0	
TrackQualifier	Track Qualifier	text	50	0	0	
TrackType	Track Type	text	25	0	0	TrackTypeCode
FromMilepostPrefix	From Milepost Prefix	text	5	0	0	
BeginMilepost	Begin Milepost	double	0	10	4	
FromMilepostSuffix	From Milepost Suffix	text	5	0	0	
ToMilepostPrefix	To Milepost Prefix	text	5	0	0	
EndMilepost	End Milepost	double	0	10	4	
ToMilepostSuffix	To Milepost Suffix	text	5	0	0	

GeometryType: Polyline ZM

Relationships: None

Attachments: No

Editor Tracking: Yes

Editor Tracking Value	Attribute Name
Creator Field	created_user
Create Date Field	created_date
Update Editor Field	last_edited_user

Update Edit Date Field	last_edited_date

Attributes:

Field Name – Field description (source compatibility)

Shape - A single-part PolylineZM with M values that increase in the digitized direction. (GIS)

OBJECTID - Assigned by the GIS. (GIS)

Guid - Globally unique identifier, 128-bits (16 bytes). (GIS, RIGIS)

SCAC – SCAC (Standard Carrier Alpha Code) for owner railroad. (PTC, NARN, RIGIS)

SubdivisionId – Id of the subdivision containing the segment. (PTC, RIGIS)

RouteName – Name of the route of which this segment is a part, to support LRS. (GIS, RIGIS)

RouteId – Guid of the route of which this segment is a part, to support LRS. (GIS)

TrackName – Describes which track this segment contains. (PTC, RIGIS)

TrackQualifier – Element that makes the route_name unique. (RIGIS)

TrackType – The route's track function (main, siding, yard, etc) (RIGIS)

FromMilepostPrefix – Milepost modifiers for all mileposts in the segment, else blank. (RIGIS)

BeginMilepost – Milepost value at the start of the segment. (PTC)

FromMilepostSuffix – Milepost modifiers for all mileposts in the segment, else blank. (RIGIS)

ToMilepostPrefix – Milepost modifiers for all mileposts in the segment, else blank. (RIGIS)

EndMilepost – Milepost value at the end of the segment. (PTC)

ToMilepostSuffix – Milepost modifiers for all mileposts in the segment, else blank. (RIGIS)

Signals

Purpose: Signals visible to train operators that direct movement options.

Feature Class Schema

This is the schema for the *Signals* feature class.

Column Name	Field Alias	Type	Length	Precision	Scale	Domain
Shape	Shape	PointZM				
ObjectId	Object ID	long	0	10	0	
Guid	Guid	guid	38	0	0	
SCAC	Owner SCAC	text	4	0	0	
SubdivisionId	Subdivision ID	short	0	4	0	
SegmentId	Segment ID	long				
Latitude	Latitude	double	0	12	8	
Longitude	Longitude	double	0	12	8	
Elevation	Elevation	double	0	12	8	
GraphicType	Graphic Type	text	20	0	0	GraphicTypeCode
Milepost	Milepost	double	0	10	4	
SignalType	Signal Type	text	30	0	0	SignalTypeCode
SignalDirection	Signal Direction	text	10	0	0	
SiteName	Site Name	text	40	0	0	
SiteDeviceId	Site Device ID	text	40	0	0	
WIUAddress	WIU Address	text	64	0	0	
WIUStatusIndex	WIU Status Index	long	0	5	0	
MonitoredStatus	Monitored Status	text	15	0	0	MonitoredStatusCode
SignalName	Signal Name	text	50	0	0	
PromptEnable	Prompt Enable	text	1	0	0	

PromptTime	Prompt Time	short	0	4	0	

GeometryType: Point ZM

Relationships: None

Attachments: No

Editor Tracking: Yes

Editor Tracking Value	Attribute Name
Creator Field	created_user
Create Date Field	created_date
Update Editor Field	last_edited_user
Update Edit Date Field	last_edited_date

Attributes:

Field Name – Field description (source compatibility)
Shape - A single-part PointZM. (GIS)
OBJECTID - Assigned by the GIS. (GIS)
Guid - Globally unique identifier, 128-bits (16 bytes). (GIS, RIGIS)
SCAC – SCAC (Standard Carrier Alpha Code) for owner railroad. (PTC, NARN, RIGIS)
SubdivisionId – Id of the subdivision containing the segment. (PTC, RIGIS)
SegmentId – 9-digit segment ID unique within the subdivision that the signal belongs. (PTC)
Latitude – Latitude in decimal degrees, WGS 1984, where the switch is located. (PTC)
Longitude – Longitude in decimal degrees, WGS 1984, where the switch is located. (PTC)
Elevation – Elevation in feet above mean sea level, at which the switch is located. (PTC)
GraphicType – Identifies which side of the track the signal is on, relative to increasing milepost. (PTC)
Milepost – The milepost location of the signal. (PTC)
SignalType – Defines the type of signal. (PTC)
SignalDirection – Defines whether the signal is visible to traffic in the direction of increasing milepost. (PTC)
SiteName – The site to which the signal belongs. (PTC)
SiteDeviceId – The device ID of the signal, as identified within its site. (PTC)
WIUAddress – The WIU used to get the status of the signal. (PTC)
WIUStatusIndex – The location of the signal data in the status message. (PTC)
MonitoredStatus – Defines whether the signal is monitored via peer-to-peer or office communication. (PTC)
SignalName – Unique name for the signal. (PTC)
PromptEnable – Defines whether prompting for authority to pass this signal at stop is enabled. (PTC)
PromptTime – Delay in seconds before on-board display displays a prompt to pass a signal at stop, and allows train to proceed in lieu of lock. (PTC)

MilepostMarkers

Purpose: Physical markers that display milepost values

Feature Class Schema

This is the schema for the *MilepostMarkers* feature class.

Column Name	Field Alias	Type	Length	Precision	Scale	Domain
Shape	Shape	PointZM				
ObjectId	Object ID	long	0	10	0	
Guid	Guid	Guid	38	0	0	

SCAC	Owner SCAC	text	4	0	0	SCACCode
SubdivisionId	Subdivision ID	short	0	4	0	
SegmentId	Segment ID	long				
Latitude	Latitude	double	0	12	8	
Longitude	Longitude	double	0	12	8	
Elevation	Elevation	double	0	12	8	
MilepostMeasure	Milepost Measure	double	0	12	4	
MilepostPrefix	Milepost Prefix	text	50	0	4	
MilepostLabel	Milepost Label	text	15	0	0	
MilepostSuffix	Milepost Suffix	text	5	0	0	
MilepostType	Milepost Type	text	15	0	0	MilepostTypeCode
CalibrationPointFlag	Calibration Flag	text	5	0	0	CalibrationPointFlagCode

GeometryType: Point ZM

Relationships: None

Attachments: No

Editor Tracking: Yes

Editor Tracking Value	Attribute Name
Creator Field	created_user
Create Date Field	created_date
Update Editor Field	last_edited_user
Update Edit Date Field	last_edited_date

Attributes:

Field Name – Field description (source compatibility)
Shape - A single-part PointZM. (GIS)
OBJECTID - Assigned by the GIS. (GIS)
Guid - Globally unique identifier, 128-bits (16 bytes). (GIS, RIGIS)
SCAC – SCAC (Standard Carrier Alpha Code) for owner railroad. (PTC, NARN, RIGIS)
SubdivisionId – Id of the subdivision containing the segment. (PTC, RIGIS)
SegmentId – 9-digit segment ID unique within the subdivision that the mile marker belongs. (PTC)
Latitude – Latitude in decimal degrees, WGS 1984, where the mile marker is located. (PTC, RIGIS)
Longitude – Longitude in decimal degrees, WGS 1984, where the mile marker is located. (PTC, RIGIS)
Elevation – Elevation in feet above mean sea level, at which the mile marker is located. (PTC, RIGIS)
MilepostMeasure – The numeric milepost measured location that the mile marker represents. (PTC, RIGIS)
MilepostPrefix – The milepost prefix if any. (RIGIS)
MilepostLabel – The milepost's measured label displayed on the marker. (RIGIS)
MilepostSuffix – The milepost suffix if any. (RIGIS)
MilepostType – The type of the milepost. (RIGIS)

MilepostHelper

Purpose: This feature allows for a milepost value to be linked to a location on the track where a MilepostMarker feature does not physically exist.

Feature Class Schema

This is the schema for the *MilepostHelper* feature class.

Column Name	Field Alias	Type	Length	Precision	Scale	Domain
Shape	Shape	PointZM				
ObjectId	Object ID	long	0	10	0	
Guid	Guid	Guid	38	0	0	
SubdivisionId	Subdivision ID	short	0	4	0	
SegmentId	Segment ID	long	0	10	0	
Latitude	Latitude	double	0	12	8	
Longitude	Longitude	double	0	12	8	
Elevation	Elevation	double	0	12	8	
MilepostMeasure	Milepost Measure	double	0	12	4	

GeometryType: Point ZM

Relationships: None

Attachments: No

Editor Tracking: Yes

Editor Tracking Value	Attribute Name
Creator Field	created_user
Create Date Field	created_date
Update Editor Field	last_edited_user
Update Edit Date Field	last_edited_date

Attributes:

Field Name – Field description (source compatibility)
Shape - A single-part PointZM. (GIS)
OBJECTID - Assigned by the GIS. (GIS)
Guid - Globally unique identifier, 128-bits (16 bytes). (GIS, RIGIS)
SCAC – SCAC (Standard Carrier Alpha Code) for owner railroad. (PTC, NARN, RIGIS)
SubdivisionId – Id of the subdivision containing the segment. (PTC, RIGIS)
SegmentId – 9-digit segment ID unique within the subdivision that the signal belongs. (PTC)
Latitude – Latitude in decimal degrees, WGS 1984, where the mile marker is located. (PTC, RIGIS)
Longitude – Longitude in decimal degrees, WGS 1984, where the mile marker is located. (PTC, RIGIS)
Elevation – Elevation in feet above mean sea level, at which the mile marker is located. (PTC, RIGIS)
MilepostMeasure – The numeric milepost measured location that the mile marker represents. (PTC, RIGIS)

RoadCrossingsAtGrade

Purpose: Locations where rail lines intersect wheeled vehicle roads at-grade. (ie, not over- or under-passes)

Feature Class Schema

This is the schema for the *RoadCrossingsAtGrade* feature class.

Column Name	Field Alias	Type	Length	Precision	Scale	Domain
Shape	Shape	PointZM				
ObjectId	Object ID	long	0	10	0	
Guid	Guid	Guid	38	0	0	
SCAC	Owner SCAC	text	4	0	0	
SubdivisionId	Subdivision ID	short	0	4	0	
SegmentId	Segment ID	long	0	9	0	
StreetName	Street Name	text	32	0	0	
DOTNum	DOT Number	text	8	0	0	
BeginMilepost	Begin Milepost	double	0	10	4	
EndMilepost	End Milepost	double	0	15	8	
BeginLatitude	Begin Latitude	double	0	15	8	
BeginLongitude	Begin Longitude	double	0	15	8	
BeginElevation	Begin Elevation	double	0	15	8	
EndLatitude	End Latitude	double	0	15	8	
EndElevation	End Elevation	double	0	15	8	
CrossingType	Crossing Type	text	16	0	0	CrossingTypeCode
HornDisable	Horn Disable	text	1	0	0	HornDisableCode

GeometryType: Point ZM

Relationships: None

Attachments: No

Editor Tracking: Yes

Editor Tracking Value	Attribute Name
Creator Field	created_user
Create Date Field	created_date
Update Editor Field	last_edited_user
Update Edit Date Field	last_edited_date

Attributes:

Field Name – Field description (source compatibility)
Shape - A single-part PointZM. (GIS)
OBJECTID - Assigned by the GIS. (GIS)
Guid - Globally unique identifier, 128-bits (16 bytes). (GIS, RIGIS)
SCAC – SCAC (Standard Carrier Alpha Code) for owner railroad. (PTC, NARN, RIGIS)
SubdivisionId – Id of the subdivision containing the segment. (PTC, RIGIS)
SegmentId – 9-digit segment ID unique within the subdivision that the signal belongs. (PTC)
StreetName – The name of the street that crosses the rail line. (PTC)

DOTNum – Identification number assigned to the cross-street by DOT, if any. (PTC)
BeginMilepostMeasure – The numeric milepost measured location at tbe beginning of the width of the crossing. (PTC)
EndMilepostMeasure – The numeric milepost measured location at the end of the width of the crossing. (PTC)
BeginLatitude – Latitude in decimal degrees, WGS 1984, where the crossing begins. (PTC)
BeginLongitude – Longitude in decimal degrees, WGS 1984, where the crossing begins. (PTC)
BeginElevation – Elevation in feet above mean sea level, at where the crossing begins. (PTC)
EndLatitude – Latitude in decimal degrees, WGS 1984, where the crossing ends. (PTC)
EndLongitude – Longitude in decimal degrees, WGS 1984, where the crossing ends. (PTC)
EndElevation – Elevation in feet above mean sea level, at where the crossing ends. (PTC)
CrossingType – Type of the at-grade crossing (ie, public, private, pedestrian). (PTC)
HornDisable – 'Y' if horn is not to be used at this at-grade crossing, else 'N'. (PTC)

ClearancePoints

Purpose: Location after the trailing leg of a switch that represents the point of clearance for traversing through the switch device.

Feature Class Schema

This is the schema for the *ClearancePoints* feature class.

Column Name	Field Alias	Type	Length	Precision	Scale	Domain
Shape	Shape	PointZM				
ObjectId	Object ID	long	0	10	0	
Guid	Guid	Guid	38	0	0	
SCAC	Owner SCAC	text	4	0	0	SCACCode
SubdivisionId	Subdivision ID	short	0	4	0	
NodeId	Node ID	text	50	0	0	
NodeSCAC	Node SCAC	text	4	0	0	SCACCode
NormalReverseType	Normal Reverse Type	text	1	0	0	
ClearingType	Clearing Type	text	30	0	0	
Latitude	Latitude	double	0	12	8	
Longitude	Longitude	double	0	12	8	
Elevation	Elevation	double	0	12	8	
ClearanceName	Clearance Name	text	50	0	0	

GeometryType: Point ZM

Relationships: None

Attachments: No

Editor Tracking: Yes

Editor Tracking Value	Attribute Name
Creator Field	created_user
Create Date Field	created_date
Update Editor Field	last_edited_user
Update Edit Date Field	last_edited_date

Attributes:

Field Name – Field description (source compatibility)
Shape - A single-part PointZM. (GIS)
OBJECTID - Assigned by the GIS. (GIS)
Guid - Globally unique identifier, 128-bits (16 bytes). (GIS, RIGIS)
SCAC – SCAC (Standard Carrier Alpha Code) for owner railroad. (PTC, NARN, RIGIS)
SubdivisionId – The subdivision ID in which the switch resides. (PTC)
NodeId – The node linked to the switch associated with this clearance point. (PTC)
NodeSCAC – The SCAC railroad that owns the node that this clearance point is linked to. (PTC)
NormalReverseType – Which side of the switch, increasing measure direction, the clearance point is on. (PTC)
ClearingType – Type of clearing. (PTC)
Latitude – Latitude in decimal degrees, WGS 1984, where the clearance point is located. (GIS, PTC)
Longitude – Longitude in decimal degrees, WGS 1984, where the clearance point is located. (GIS, PTC)
Elevation – Elevation in feet above mean sea level, at which the clearance point is located. (GIS, PTC)
ClearanceName – Unique name given to this clearance point. (PTC)

LRS Event Layers

Important: Do **not** use the *Create Feature Class* tool to create the following layers. Instead, use the *Create LRS Event* tool. For more information about this, refer to Appendix B of the ArcGIS Railroads Data Model data dictionary.

Calibration_Point

Purpose: Points with measures that are used by the LRS to calibrate those measures onto the LRS Centerline features. This layer is created by the ArcGIS "Create LRS" tool. Fields below marked with asterisks (*) are created by ArcGIS when this feature class is created. The other fields, you can add yourself if you want them.

Feature Class Schema

This is the schema for the *MaxSpeed* event layer feature class.

Column Name	Field Alias	Type	Length	Precision	Scale	Domain
Shape*	Shape	PointZM				
ObjectId*	Object ID	long	0	10	0	
FromDate*	FromDate	date				
ToDate*	ToDate	date				
NetworkId*	NetworkId	short	0	4	0	
Measure*	Measure	double	0	15	8	
RouteId*	RouteId	text	255	0	0	
GlobalID*	Guid	Guid	38	0	0	
SCAC	Owner SCAC	text	4	0	0	
SubdivisionId	Subdivision ID	short	0	4	0	
CalibrationPointType	Calibration Point Type	text	25	0	0	CalibrationPointTypeCode
RouteName	Route Name	text	255	0	0	
Latitude	Latitude	double	0	15	8	
Longitude	Longitude	double	0	15	8	

Elevation	Elevation	double	0	15	8	

GeometryType: Point ZM

Relationships: None

Attachments: No

Editor Tracking: Yes

Editor Tracking Value	Attribute Name
Creator Field	created_user
Create Date Field	created_date
Update Editor Field	last_edited_user
Update Edit Date Field	last_edited_date

Attributes:

Field Name – Field description (source compatibility)
Shape - A single-part PointZM. (GIS)
OBJECTID - Assigned by the GIS. (GIS)
FromDate – Date at which this calibration point became valid. (GIS)
ToDate – Date at which this calibration point was retired. (GIS)
NetworkId – ID value of the LRS Network that this calibration point applies to. (GIS)
RouteId – ID value of the route that this point will be used to calibrate measures. (GIS)
Measure – Route measure at this calibration point. (GIS, RIGIS)
Guid - Globally unique identifier, 128-bits (16 bytes). (GIS, RIGIS)
SCAC – SCAC (Standard Carrier Alpha Code) for owner railroad. (PTC, NARN, RIGIS)
SubdivisionId – Id of the subdivision containing the segment. (PTC, RIGIS)
CalibrationPointTypeCode – Type of calibration point (ie., milepost, equation, switch, etc.)
RouteName – Unique name of the route. (GIS, RIGIS)
Latitude – Latitude of calibration point. (GIS, RIGIS)
Longitude – Longitude of calibration point location. (GIS, RIGIS)
Elevation – Elevation of calibration point location. (RIGIS)

MaxPermissableSpeed

Purpose: Linear event features which store time-bound line events that represent the maximum operational speed of railed vehicles. These max speed areas exclude permanent or temporary speed restrictions. Those are managed in the SpeedRestrictions layer. Fields below marked with asterisks (*) are created by ArcGIS when this feature class is created. The other fields, you can add yourself if you want them.

Feature Class Schema

This is the schema for the *MaxPermissableSpeed* event layer feature class.

Column Name	Field Alias	Type	Length	Precision	Scale	Domain
Shape	Shape	PointZM				
ObjectId	Object ID	long	0	10	0	
FromDate*	FromDate	date				

ToDate*	ToDate	date				
NetworkId*	NetworkId	short	0	4	0	
FromMeasure*	From Measure	double	0	15	8	
ToMeasure*	To Measure	double	0	15	8	
RouteId*	RouteId	text	255	0	0	
GlobalID*	Guid	Guid	38	0	0	
SCAC	Owner SCAC	text	4	0	0	SCACCode
SubdivisionId	Subdivision ID	short	0	4	0	
SegmentId	Segment ID	long	0	9	0	
RouteName	Route Name	text	100	0	0	
TrainType	Train Type	text	20	0	0	
Direction	Direction	text	16	0	0	DirectionCode
Speed	Speed	short	0	3	0	
BeginLatitude	Begin Latitude	double	0	15	8	
BeginLongitude	Begin Longitude	double	0	15	8	
BeginElevation	Begin Elevation	double	0	15	8	
EndLatitude	End Latitude	double	0	15	8	
EndLongitude	End Longitude	double	0	15	8	
EndElevation	End Elevation	double	0	15	8	

GeometryType: Polyline ZM

Relationships: None

Attachments: No

Editor Tracking: Yes

Editor Tracking Value	Attribute Name
Creator Field	created_user
Create Date Field	created_date
Update Editor Field	last_edited_user
Update Edit Date Field	last_edited_date

Attributes:

Field Name – Field description (source compatibility)
Shape - A single-part PolylineZM, LRS-managed line event feature. (GIS)
OBJECTID - Assigned by the GIS. (GIS)
FromDate – Date at which this max speed became valid. (GIS)
ToDate – Date at which this max speed was retired. (GIS)
NetworkId – ID value of the LRS Network that this max speed applies to. (GIS)
RouteId – ID value of the route that this max speed applies to. (GIS)
FromMeasure – Route measure of the start of the max speed zone. (GIS)
ToMeasure – Route measure of the end of the max speed zone. (GIS)
GlobalId - Globally unique identifier, 128-bits (16 bytes). (GIS, RIGIS)
SCAC – SCAC (Standard Carrier Alpha Code) for owner railroad. (PTC, NARN)
SubdivisionId – Id of the subdivision containing the segment. (PTC, RIGIS)
SegmentId – 9-digit segment ID unique within the subdivision that the max speed belongs. (PTC)
RouteName – Name of the route of which this segment is a part, to support LRS. (GIS)
TrainType – Type of train that the max speed applies. (GIS, PTC)

Direction – Direction that the max speed applies, relative to increasing mileposts. (GIS, PTC)
Speed – The maximum speed in mph. (GIS, PTC)
BeginLatitude – Latitude in decimal degrees, WGS 1984, where the max speed begins. (PTC)
BeginLongitude – Longitude in decimal degrees, WGS 1984, where the max speed begins. (PTC)
BeginElevation – Elevation in feet above mean sea level, at where the max speed begins. (PTC)
EndLatitude – Latitude in decimal degrees, WGS 1984, where the max speed ends. (PTC)
EndLongitude – Longitude in decimal degrees, WGS 1984, where the max speed ends. (PTC)
EndElevation – Elevation in feet above mean sea level, at where the max speed ends. (PTC)

SpeedRestriction

Purpose: A line event layer that indicates the start and end spans of speed restrictions, that are exceptions to the maximum speed limit. Fields below marked with asterisks (*) are created by ArcGIS when this feature class is created. The other fields, you can add yourself if you want them.

Feature Class Schema

This is the schema for the *SpeedRestriction* event layer feature class.

Column Name	Field Alias	Type	Length	Precision	Scale	Domain
Shape	Shape	PointZM				
ObjectId	Object ID	long	0	10	0	
FromDate*	FromDate	date				
ToDate*	ToDate	date				
NetworkId*	NetworkId	short	0	4	0	
FromMeasure*	From Measure	double	0	15	8	
ToMeasure*	To Measure	double	0	15	8	
RouteId*	RouteId	text	255	0	0	
GlobalID*	Guid	Guid	38	0	0	
SCAC	Owner SCAC	text	4	0	0	SCACCode
SubdivisionId	Subdivision ID	short	0	4	0	
SegmentId	Segment ID	long	0	9	0	
RouteName	Route Name	text	100	0	0	
TrainType	Train Type	text	20	0	0	
Direction	Direction	text	16	0	0	DirectionCode
Speed	Speed	short	0	3	0	
BeginLatitude	Begin Latitude	double	0	15	8	
BeginLongitude	Begin Longitude	double	0	15	8	
BeginElevation	Begin Elevation	double	0	15	8	
EndLatitude	End Latitude	double	0	15	8	
EndLongitude	End Longitude	double	0	15	8	
EndElevation	End Elevation	double	0	15	8	
QualifierType	Qualifier Type	text	15	0	0	QualifierTypeCode
RestrictionType	Restriction Type	text	20	0	0	RestrictionTypeCode
RestrictionParameter	Restriction Parameter	long	0	5	0	
Operator	Operator	text	2	0	0	OperatorTypeCode

GeometryType: Polyline ZM

Relationships: None

Attachments: No

Editor Tracking: Yes

Editor Tracking Value	Attribute Name
Creator Field	created_user
Create Date Field	created_date
Update Editor Field	last_edited_user
Update Edit Date Field	last_edited_date

Attributes:

Field Name – Field description (source compatibility)
Shape - A single-part PolylineZM, LRS-managed line event feature. (GIS)
OBJECTID - Assigned by the GIS. (GIS)
FromDate – Date at which this speed restriction became valid. (GIS)
ToDate – Date at which this speed restriction was retired. (GIS)
NetworkId – ID value of the LRS Network that this speed restriction applies to. (GIS)
FromMeasure – Route measure of the start of the speed restriction zone. (GIS)
ToMeasure – Route measure of the end of the speed restriction zone. (GIS)
RouteId – ID value of the route that this speed restriction applies to. (GIS)
GlobalId - Globally unique identifier, 128-bits (16 bytes). (GIS, RIGIS)
SCAC – SCAC (Standard Carrier Alpha Code) for owner railroad. (PTC, NARN)
SubdivisionId – Id of the subdivision containing the segment. (PTC, RIGIS)
SegmentId – 9-digit segment ID unique within the subdivision that the speed restriction belongs. (PTC)
RouteName – Name of the route of which this segment is a part, to support LRS. (GIS)
TrainType – Type of train that the speed restriction applies. (GIS, PTC)
Direction – Direction that the speed restriction applies, relative to increasing mileposts. (GIS, PTC)
Speed – The speed restriction in mph. (GIS, PTC)
BeginLatitude – Latitude in decimal degrees, WGS 1984, where the speed restriction begins. (PTC)
BeginLongitude – Longitude in decimal degrees, WGS 1984, where the speed restriction begins. (PTC)
BeginElevation – Elevation in feet above mean sea level, at where the speed restriction begins. (PTC)
EndLatitude – Latitude in decimal degrees, WGS 1984, where the speed restriction ends. (PTC)
EndLongitude – Longitude in decimal degrees, WGS 1984, where the speed restriction ends. (PTC)
EndElevation – Elevation in feet above mean sea level, at where the speed restriction ends. (PTC)
QualifierType – Whether the restriction is "head-end", "restricted speed", or "none" . (PTC)
RestrictionType – Whether the restriction applies generically, or based on tonnage or axle count. (PTC)
RestrictionParameter – Whatever the restriction type is, this value is the restriction measure (ie., tonnage, axle count). (PTC)
Operator – Comparison operator value to apply to the speed (ie., <, >, =, etc). (PTC)

TrackRule

Purpose: Linear events for assigning and storing operating rules over defined sections of track. Fields below marked with asterisks (*) are created by ArcGIS when this feature class is created. The other fields, you can add yourself if you want them.

Feature Class Schema

This is the schema for the *TrackRule* event layer feature class.

Column Name	Field Alias	Type	Length	Precision	Scale	Domain
Shape	Shape	PointZM				
ObjectId	Object ID	long	0	10	0	
FromDate*	FromDate	date				
ToDate*	ToDate	date				
NetworkId*	NetworkId	short	0	4	0	
FromMeasure*	From Measure	double	0	15	8	
ToMeasure*	To Measure	double	0	15	8	
RouteId*	RouteId	text	255	0	0	
GlobalID*	Guid	Guid	38	0	0	
SCAC	Owner SCAC	text	4	0	0	SCACCode
SubdivisionId	Subdivision ID	short	0	4	0	
SegmentId	Segment ID	long	0	9	0	
RouteName	Route Name	text	100	0	0	
BeginLatitude	Begin Latitude	double	0	15	8	
BeginLongitude	Begin Longitude	double	0	15	8	
BeginElevation	Begin Elevation	double	0	15	8	
EndLatitude	End Latitude	double	0	15	8	
EndLongitude	End Longitude	double	0	15	8	
EndElevation	End Elevation	double	0	15	8	
SignalAuthorityType	Signal Authority Type	text	15	0	0	SignalAuthorityTypeCode
FBARDirection	FBAR Direction	text	20	0	0	FBARDirectionCode
CabSignalType	Cab Signal Type	text	8	0	0	CabSignalTypeCode
YardLimits	Yard Limits	text	2	0	0	YardLimitsCode

GeometryType: Polyline ZM

Relationships: None

Attachments: No

Editor Tracking: Yes

Editor Tracking Value	Attribute Name
Creator Field	created_user
Create Date Field	created_date
Update Editor Field	last_edited_user
Update Edit Date Field	last_edited_date

Attributes:

Field Name – Field description (source compatibility)

Shape - A single-part PolylineZM, LRS-managed line event feature. (GIS)
OBJECTID - Assigned by the GIS. (GIS)
FromDate – Date at which this track rule became valid. (GIS)
ToDate – Date at which this track rule was retired. (GIS)
NetworkId – ID value of the LRS Network that this track rule applies to. (GIS)
FromMeasure – Route measure of the start of the track rule. (GIS)
ToMeasure – Route measure of the end of the track rule. (GIS)

RouteId – ID value of the route that this track rule applies to. (GIS)
GlobalId - Globally unique identifier, 128-bits (16 bytes). (GIS, RIGIS)
SCAC – SCAC (Standard Carrier Alpha Code) for owner railroad. (PTC, NARN)
SubdivisionId – Id of the subdivision containing the segment. (PTC, RIGIS)
SegmentId – 9-digit segment ID unique within the subdivision that the track rule belongs. (PTC)
RouteName – Name of the route of which this segment is a part, to support LRS. (GIS)
BeginLatitude – Latitude in decimal degrees, WGS 1984, where the track rule begins. (PTC)
BeginLongitude – Longitude in decimal degrees, WGS 1984, where the track rule begins. (PTC)
BeginElevation – Elevation in feet above mean sea level, at where the track rule begins. (PTC)
EndLatitude – Latitude in decimal degrees, WGS 1984, where the track rule ends. (PTC)
EndLongitude – Longitude in decimal degrees, WGS 1984, where the track rule ends. (PTC)
EndElevation – Elevation in feet above mean sea level, at where the track rule ends. (PTC)
SignalAuthorityType – Whether the restriction is "head-end", "restricted speed", or "none" . (PTC)
FBARDirection – Whether the restriction applies generically, or based on tonnage or axle count. (PTC)
CabSignalType – Whatever the restriction type is, this value is the restriction measure (ie., tonnage, axle count). (PTC)
YardLimits – Comparison operator value to apply to the speed (ie., <, >, =, etc). (PTC)

CABSignalDropout

Purpose: Linear events that map out areas where cab signal indication is unavailable. Fields below marked with asterisks (*) are created by ArcGIS when this feature class is created. The other fields, you can add yourself if you want them.

Feature Class Schema

This is the schema for the *CADSignalDropout* event layer feature class.

Column Name	Field Alias	Type	Length	Precision	Scale	Domain
Shape	Shape	PointZM				
ObjectId	Object ID	long	0	10	0	
FromDate*	FromDate	date				
ToDate*	ToDate	date				
NetworkId*	NetworkId	short	0	4	0	
FromMeasure*	From Measure	double	0	15	8	
ToMeasure*	To Measure	double	0	15	8	
RouteId*	RouteId	text	255	0	0	
GlobalID*	Guid	Guid	38	0	0	
SCAC	Owner SCAC	text	4	0	0	SCACCode
SubdivisionId	Subdivision ID	short	0	4	0	
SegmentId	Segment ID	long	0	9	0	
RouteName	Route Name	text	100	0	0	
BeginLatitude	Begin Latitude	double	0	15	8	
BeginLongitude	Begin Longitude	double	0	15	8	
BeginElevation	Begin Elevation	double	0	15	8	
EndLatitude	End Latitude	double	0	15	8	
EndLongitude	End Longitude	double	0	15	8	
EndElevation	End Elevation	double	0	15	8	

GeometryType: Polyline ZM

Relationships: None

Attachments: No

Editor Tracking: Yes

Editor Tracking Value	Attribute Name
Creator Field	created_user
Create Date Field	created_date
Update Editor Field	last_edited_user
Update Edit Date Field	last_edited_date

Attributes:

Field Name – Field description (source compatibility)

Shape - A single-part PolylineZM, LRS-managed line event feature. (GIS)
OBJECTID - Assigned by the GIS. (GIS)
FromDate – Date at which this known cab indication area is known to exist. (GIS)
ToDate – Date at which this cab indication limitation was retired. (GIS)
NetworkId – ID value of the LRS Network that this cab signal unavailability applies to. (GIS)
FromMeasure – Route measure of the start of cab signal unavailability. (GIS)
ToMeasure – Route measure of the end of cab signal unavailability. (GIS)
RouteId – ID value of the route that this cab signal unavailability applies to. (GIS)
GlobalId - Globally unique identifier, 128-bits (16 bytes). (GIS, RIGIS)
SCAC – SCAC (Standard Carrier Alpha Code) for owner railroad. (PTC, NARN)
SubdivisionId – Id of the subdivision containing the segment. (PTC, RIGIS)
SegmentId – 9-digit segment ID unique within the subdivision that the cab signal unavailability belongs. (PTC)
RouteName – Name of the route of which this segment is a part, to support LRS. (GIS)
BeginLatitude – Latitude in decimal degrees, WGS 1984, where the cab signal unavailability begins. (PTC)
BeginLongitude – Longitude in decimal degrees, WGS 1984, where the cab signal unavailability begins. (PTC)
BeginElevation – Elevation in feet above mean sea level, at where the cab signal unavailability begins. (PTC)
EndLatitude – Latitude in decimal degrees, WGS 1984, where the cab signal unavailability ends. (PTC)
EndLongitude – Longitude in decimal degrees, WGS 1984, where the cab signal unavailability ends. (PTC)
EndElevation – Elevation in feet above mean sea level, at where the cab signal unavailability ends. (PTC)

TieType

Purpose: Linear events that map out sections of railroad that have various types of ties installed. Fields below marked with asterisks (*) are created by ArcGIS when this feature class is created. The other fields, you can add yourself if you want them.

Feature Class Schema

This is the schema for the *TieType* event layer feature class.

Column Name	Field Alias	Type	Length	Precision	Scale	Domain
Shape	Shape	PointZM				
ObjectId	Object ID	long	0	10	0	
FromDate*	FromDate	date				
ToDate*	ToDate	date				
NetworkId*	NetworkId	short	0	4	0	
FromMeasure*	From Measure	double	0	15	8	
ToMeasure*	To Measure	double	0	15	8	
RouteId*	RouteId	text	255	0	0	

GlobalID*	Guid	Guid	38	0	0	
SCAC	Owner SCAC	text	4	0	0	SCACCode
SubdivisionId	Subdivision ID	short	0	4	0	
SegmentId	Segment ID	long	0	9	0	
RouteName	Route Name	text	100	0	0	
BeginLatitude	Begin Latitude	double	0	15	8	
BeginLongitude	Begin Longitude	double	0	15	8	
BeginElevation	Begin Elevation	double	0	15	8	
EndLatitude	End Latitude	double	0	15	8	
EndLongitude	End Longitude	double	0	15	8	
EndElevation	End Elevation	double	0	15	8	
TieType	Tie Type	text	50	0	0	TieTypeCode

GeometryType: Polyline ZM

Relationships: None

Attachments: No

Editor Tracking: Yes

Editor Tracking Value	Attribute Name
Creator Field	created_user
Create Date Field	created_date
Update Editor Field	last_edited_user
Update Edit Date Field	last_edited_date

Attributes:

Field Name – Field description (source compatibility)
Shape - A single-part PolylineZM, LRS-managed line event feature. (GIS)
OBJECTID - Assigned by the GIS. (GIS)
FromDate – Date at which ties of this type were inspected or known to have been installed. (GIS)
ToDate – Date at which this type of tie was retired. (GIS)
NetworkId – ID value of the LRS Network that use this type of tie. (GIS)
FromMeasure – Route measure of the start of this type of tie. (GIS)
ToMeasure – Route measure of the end of this type of tie. (GIS)
RouteId – ID value of the route that this type of tie applies to. (GIS)
GlobalId - Globally unique identifier, 128-bits (16 bytes). (GIS)
SCAC – SCAC (Standard Carrier Alpha Code) for owner railroad. (GIS)
SubdivisionId – Id of the subdivision containing this type of tie. (GIS)
SegmentId – 9-digit segment ID unique within the subdivision where this type of tie exists. (GIS)
RouteName – Name of the route of which this segment is a part, to support LRS. (GIS)
BeginLatitude – Latitude in decimal degrees, WGS 1984, where this type of tie exists. (GIS)
BeginLongitude – Longitude in decimal degrees, WGS 1984, where this type of tie exists. (GIS)
BeginElevation – Elevation in feet above mean sea level, at where this type of tie exists. (GIS)
EndLatitude – Latitude in decimal degrees, WGS 1984, where this type of tie exists. (GIS)
EndLongitude – Longitude in decimal degrees, WGS 1984, where this type of tie exists. (GIS)
EndElevation – Elevation in feet above mean sea level, where this type of tie exists. (GIS)
TieType – Type of railroad ties used along this length, between FromDate and ToDate. (GIS)

BallastType

Purpose: Linear events that map out sections of railroad where the rails are secured using different types of ballast anchoring foundation. Fields below marked with asterisks (*) are created by ArcGIS when this feature class is created. The other fields, you can add yourself if you want them.

Feature Class Schema

This is the schema for the *BallastType* event layer feature class.

Column Name	Field Alias	Type	Length	Precision	Scale	Domain
Shape	Shape	PointZM				
ObjectId	Object ID	long	0	10	0	
FromDate*	FromDate	date				
ToDate*	ToDate	date				
NetworkId*	NetworkId	short	0	4	0	
FromMeasure*	From Measure	double	0	15	8	
ToMeasure*	To Measure	double	0	15	8	
RouteId*	RouteId	text	255	0	0	
GlobalID*	Guid	Guid	38	0	0	
SCAC	Owner SCAC	text	4	0	0	SCACCode
SubdivisionId	Subdivision ID	short	0	4	0	
SegmentId	Segment ID	long	0	9	0	
RouteName	Route Name	text	100	0	0	
BeginLatitude	Begin Latitude	double	0	15	8	
BeginLongitude	Begin Longitude	double	0	15	8	
BeginElevation	Begin Elevation	double	0	15	8	
EndLatitude	End Latitude	double	0	15	8	
EndLongitude	End Longitude	double	0	15	8	
EndElevation	End Elevation	double	0	15	8	
BallastType	Ballast Type	text	50	0	0	BallastTypeCode

GeometryType: Polyline ZM

Relationships: None

Attachments: No

Editor Tracking: Yes

Editor Tracking Value	Attribute Name
Creator Field	created_user
Create Date Field	created_date
Update Editor Field	last_edited_user
Update Edit Date Field	last_edited_date

Attributes:

28

Field Name – Field description (source compatibility)

Shape - A single-part PolylineZM, LRS-managed line event feature. (GIS)

OBJECTID - Assigned by the GIS. (GIS)

FromDate – Date at which ballast of this type were inspected or known to have been installed. (GIS)

ToDate – Date at which this type of ballast was retired. (GIS)

NetworkId – ID value of the LRS Network that use this type of ballast. (GIS)

FromMeasure – Route measure of the start of this type of ballast. (GIS)

ToMeasure – Route measure of the end of this type of ballast. (GIS)

RouteId – ID value of the route that this type of ballast applies to. (GIS)

GlobalId - Globally unique identifier, 128-bits (16 bytes). (GIS)

SCAC – SCAC (Standard Carrier Alpha Code) for owner railroad. (GIS)

SubdivisionId – Id of the subdivision containing this type of ballast. (GIS)

SegmentId – 9-digit segment ID unique within the subdivision where this type of ballast exists. (GIS)

RouteName – Name of the route of which this segment is a part, to support LRS. (GIS)

BeginLatitude – Latitude in decimal degrees, WGS 1984, where this type of ballast exists. (GIS)

BeginLongitude – Longitude in decimal degrees, WGS 1984, where this type of ballast exists. (GIS)

BeginElevation – Elevation in feet above mean sea level, at where this type of ballast exists. (GIS)

EndLatitude – Latitude in decimal degrees, WGS 1984, where this type of ballast exists. (GIS)

EndLongitude – Longitude in decimal degrees, WGS 1984, where this type of ballast exists. (GIS)

EndElevation – Elevation in feet above mean sea level, where this type of ballast exists. (GIS)

BallastType – Type of railroad ballast used along this length, between FromDate and ToDate. (GIS)

Curvature

Purpose: Linear events that map out sections of railroad that have certain measured curvature. Curvature is measured as the angle created by the point at the FromMeasure, the point at the ToMeasure, and the point along the centerline of the track halfway between the FromMeasure and ToMeasure. Fields below marked with asterisks (*) are created by ArcGIS when this feature class is created. The other fields, you can add yourself if you want them.

Feature Class Schema

This is the schema for the *Curvature* event layer feature class.

Column Name	Field Alias	Type	Length	Precision	Scale	Domain
Shape	Shape	PointZM				
ObjectId	Object ID	long	0	10	0	
FromDate*	FromDate	date				
ToDate*	ToDate	date				
NetworkId*	NetworkId	short	0	4	0	
FromMeasure*	From Measure	double	0	15	8	
ToMeasure*	To Measure	double	0	15	8	
RouteId*	RouteId	text	255	0	0	
GlobalID*	Guid	Guid	38	0	0	
SCAC	Owner SCAC	text	4	0	0	SCACCode
SubdivisionId	Subdivision ID	short	0	4	0	
SegmentId	Segment ID	long	0	9	0	
RouteName	Route Name	text	100	0	0	
BeginLatitude	Begin Latitude	double	0	15	8	
BeginLongitude	Begin Longitude	double	0	15	8	

29

BeginElevation	Begin Elevation	double	0	15	8	
EndLatitude	End Latitude	double	0	15	8	
EndLongitude	End Longitude	double	0	15	8	
EndElevation	End Elevation	double	0	15	8	
Curvature	Curvature	double	0	15	8	

GeometryType: Polyline ZM

Relationships: None

Attachments: No

Editor Tracking: Yes

Editor Tracking Value	Attribute Name
Creator Field	created_user
Create Date Field	created_date
Update Editor Field	last_edited_user
Update Edit Date Field	last_edited_date

Attributes:

Field Name – Field description (source compatibility)
Shape - A single-part PolylineZM, LRS-managed line event feature. (GIS)
OBJECTID - Assigned by the GIS. (GIS)
FromDate – Date at which this curvature was first measured or recorded. (GIS)
ToDate – Date at which this curvature is no longer valid. (GIS)
NetworkId – ID value of the LRS Network where this curvature is being measured. (GIS)
FromMeasure – Route measure of the start of the chord of the curvature measurement. (GIS)
ToMeasure – Route measure of the end of the chord of the curvature measurement. (GIS)
RouteId – ID value of the route where this curvature is being measured. (GIS)
GlobalId - Globally unique identifier, 128-bits (16 bytes). (GIS)
SCAC – SCAC (Standard Carrier Alpha Code) for owner railroad. (GIS)
SubdivisionId – Id of the subdivision where this curvature is being measured. (GIS)
SegmentId – 9-digit segment ID unique within the subdivision where curvature is being measured. (GIS)
RouteName – Name of the route of which this segment is a part, to support LRS. (GIS)
BeginLatitude – Latitude in decimal degrees, WGS 1984, where the curvature chord begins. (GIS)
BeginLongitude – Longitude in decimal degrees, WGS 1984, where the curvature chord begins. (GIS)
BeginElevation – Elevation in feet above mean sea level, at where the curvature chord begins. (GIS)
EndLatitude – Latitude in decimal degrees, WGS 1984, where the curvature chord ends. (GIS)
EndLongitude – Longitude in decimal degrees, WGS 1984, where the curvature chord ends. (GIS)
EndElevation – Elevation in feet above mean sea level, where the curvature chord ends. (GIS)
Curvature – The measure if the angle, in degrees, created by the FromMeasure point, ToMeasure point, and Centerpoint of the linear event length. (GIS)

Grade

Purpose: Linear events that map out sections of railroad that have certain measured grade. Fields below marked with asterisks (*) are created by ArcGIS when this feature class is created. The other fields, you can add yourself if you want them.

Feature Class Schema

This is the schema for the *Grade* event layer feature class.

Column Name	Field Alias	Type	Length	Precision	Scale	Domain
Shape	Shape	PointZM				
ObjectId	Object ID	long	0	10	0	
FromDate*	FromDate	date				
ToDate*	ToDate	date				
NetworkId*	NetworkId	short	0	4	0	
FromMeasure*	From Measure	double	0	15	8	
ToMeasure*	To Measure	double	0	15	8	
RouteId*	RouteId	text	255	0	0	
GlobalID*	Guid	Guid	38	0	0	
SCAC	Owner SCAC	text	4	0	0	SCACCode
SubdivisionId	Subdivision ID	short	0	4	0	
SegmentId	Segment ID	long	0	9	0	
RouteName	Route Name	text	100	0	0	
BeginLatitude	Begin Latitude	double	0	15	8	
BeginLongitude	Begin Longitude	double	0	15	8	
BeginElevation	Begin Elevation	double	0	15	8	
EndLatitude	End Latitude	double	0	15	8	
EndLongitude	End Longitude	double	0	15	8	
EndElevation	End Elevation	double	0	15	8	
Grade	Grade	double	0	15	8	

GeometryType: Polyline ZM

Relationships: None

Attachments: No

Editor Tracking: Yes

Editor Tracking Value	Attribute Name
Creator Field	created_user
Create Date Field	created_date
Update Editor Field	last_edited_user
Update Edit Date Field	last_edited_date

Attributes:

Field Name – Field description (source compatibility)
Shape - A single-part PolylineZM, LRS-managed line event feature. (GIS)
OBJECTID - Assigned by the GIS. (GIS)
FromDate – Date at which this grade was first measured or recorded. (GIS)
ToDate – Date at which this grade is no longer valid. (GIS)
NetworkId – ID value of the LRS Network where this grade is being measured. (GIS)
FromMeasure – Route measure of the start of the grade measurement. (GIS)
ToMeasure – Route measure of the end of the grade measurement. (GIS)
RouteId – ID value of the route where this grade is being measured. (GIS)

GlobalId - Globally unique identifier, 128-bits (16 bytes). (GIS)

SCAC – SCAC (Standard Carrier Alpha Code) for owner railroad. (GIS)

SubdivisionId – Id of the subdivision where this grade is being measured. (GIS)

SegmentId – 9-digit segment ID unique within the subdivision where grade is being measured. (GIS)

RouteName – Name of the route of which this segment is a part, to support LRS. (GIS)

BeginLatitude – Latitude in decimal degrees, WGS 1984, where the grade begins. (GIS)

BeginLongitude – Longitude in decimal degrees, WGS 1984, where the grade begins. (GIS)

BeginElevation – Elevation in feet above mean sea level, at where the grade begins. (GIS)

EndLatitude – Latitude in decimal degrees, WGS 1984, where the grade ends. (GIS)

EndLongitude – Longitude in decimal degrees, WGS 1984, where the grade ends. (GIS)

EndElevation – Elevation in feet above mean sea level, where the grade ends. (GIS)

Grade – The percentage grade, created by the FromMeasure point, ToMeasure point, and Centerpoint of the linear event length. (GIS)

TrackOutage

Purpose: Linear events that map out sections of railroad that are experiencing outage for some reason, such as planned or unplanned maintenance, inspection, or other conditions or phenomena where it is directed that this defined section of track is out of service. Fields below marked with asterisks (*) are created by ArcGIS when this feature class is created. The other fields, you can add yourself if you want them.

Feature Class Schema

This is the schema for the *TrackOutage* event layer feature class.

Column Name	Field Alias	Type	Length	Precision	Scale	Domain
Shape	Shape	PointZM				
ObjectId	Object ID	long	0	10	0	
FromDate*	FromDate	date				
ToDate*	ToDate	date				
NetworkId*	NetworkId	short	0	4	0	
FromMeasure*	From Measure	double	0	15	8	
ToMeasure*	To Measure	double	0	15	8	
RouteId*	RouteId	text	255	0	0	
GlobalID*	Guid	Guid	38	0	0	
SCAC	Owner SCAC	text	4	0	0	SCACCode
SubdivisionId	Subdivision ID	short	0	4	0	
SegmentId	Segment ID	long	0	9	0	
RouteName	Route Name	text	100	0	0	
BeginLatitude	Begin Latitude	double	0	15	8	
BeginLongitude	Begin Longitude	double	0	15	8	
BeginElevation	Begin Elevation	double	0	15	8	
EndLatitude	End Latitude	double	0	15	8	
EndLongitude	End Longitude	double	0	15	8	
EndElevation	End Elevation	double	0	15	8	
OutageType	Outage Type	text	50	0	0	
OutageNotes	Outage Notes	text	255	0	0	

GeometryType: Polyline ZM

Relationships: None

Attachments: No

Editor Tracking: Yes

Editor Tracking Value	Attribute Name
Creator Field	created_user
Create Date Field	created_date
Update Editor Field	last_edited_user
Update Edit Date Field	last_edited_date

Attributes:

Field Name – Field description (source compatibility)
Shape - A single-part PolylineZM, LRS-managed line event feature. (GIS)
OBJECTID - Assigned by the GIS. (GIS)
FromDate – Date at which the track was put out of service. (GIS)
ToDate – Date at which the track was put back in service. (GIS)
NetworkId – ID value of the LRS Network where this outage occurs. (GIS)
FromMeasure – Route measure of the start of the outage area. (GIS)
ToMeasure – Route measure of the end of the outage area. (GIS)
RouteId – ID value of the route where this outage occurs. (GIS)
GlobalId - Globally unique identifier, 128-bits (16 bytes). (GIS)
SCAC – SCAC (Standard Carrier Alpha Code) for owner railroad. (GIS)
SubdivisionId – Id of the subdivision where this outage occurs. (GIS)
SegmentId – 9-digit segment ID unique within the subdivision where this outage occurs. (GIS)
RouteName – Name of the route of which this segment is a part, to support LRS. (GIS)
BeginLatitude – Latitude in decimal degrees, WGS 1984, where the outage begins. (GIS)
BeginLongitude – Longitude in decimal degrees, WGS 1984, where the outage begins. (GIS)
BeginElevation – Elevation in feet above mean sea level, at where the outage begins. (GIS)
EndLatitude – Latitude in decimal degrees, WGS 1984, where the outage ends. (GIS)
EndLongitude – Longitude in decimal degrees, WGS 1984, where the outage ends. (GIS)
EndElevation – Elevation in feet above mean sea level, where the outage ends. (GIS)
OutageType – The type of outage (ie., planned maint, unplanned maint, inspection, etc.) (GIS)
OutageNotes – Free text area for recording extra notes about the outage. (GIS)

TrackSignage

Purpose: Point events that map out the positions and attributes of signage along the railroad right of way. Fields below marked with asterisks (*) are created by ArcGIS when this feature class is created. The other fields, you can add yourself if you want them.

Feature Class Schema

This is the schema for the *TrackSignage* event layer feature class.

Column Name	Field Alias	Type	Length	Precision	Scale	Domain
Shape	Shape	PointZM				
ObjectId	Object ID	long	0	10	0	
FromDate*	FromDate	date				
ToDate*	ToDate	date				

NetworkId*	NetworkId	short	0	4	0	
Measure*	From Measure	double	0	15	8	
RouteId*	RouteId	text	255	0	0	
GlobalID*	Guid	Guid	38	0	0	
SCAC	Owner SCAC	text	4	0	0	SCACCode
SubdivisionId	Subdivision ID	short	0	4	0	
SegmentId	Segment ID	long	0	9	0	
RouteName	Route Name	text	100	0	0	
Latitude	Begin Latitude	double	0	15	8	
Longitude	Begin Longitude	double	0	15	8	
Elevation	Begin Elevation	double	0	15	8	
SignType	Sign Type	text	50	0	0	
SignWidth	Sign Width	short	0	4	0	
SignHeight	Sign Height	short	0	4	0	
SignPosition	Sign Position	text	255	0	0	
SignContents	Sign Contents	text	255	0	0	

GeometryType: Polyline ZM

Relationships: None

Attachments: No

Editor Tracking: Yes

Editor Tracking Value	Attribute Name
Creator Field	created_user
Create Date Field	created_date
Update Editor Field	last_edited_user
Update Edit Date Field	last_edited_date

Attributes:

Field Name – Field description (source compatibility)
Shape - A single-part PolylineZM, LRS-managed line event feature. (GIS)
OBJECTID - Assigned by the GIS. (GIS)
FromDate – Date at which the sign was installed. (GIS)
ToDate – Date at which the sign was removed. (GIS)
NetworkId – ID value of the LRS Network of the sign's location. (GIS)
Measure – Route measure of the sign's location. (GIS)
RouteId – ID value of the route of the sign's location. (GIS)
GlobalId - Globally unique identifier, 128-bits (16 bytes). (GIS)
SCAC – SCAC (Standard Carrier Alpha Code) for owner railroad. (GIS)
SubdivisionId – Id of the subdivision of the sign's location. (GIS)
SegmentId – 9-digit segment ID unique within the subdivision of the sign's location. (GIS)
RouteName – Name of the route of which this segment is a part, to support LRS. (GIS)
Latitude – Latitude in decimal degrees, WGS 1984, of the sign's location. (GIS)
Longitude – Longitude in decimal degrees, WGS 1984, of the sign's location. (GIS)
SignType – Type of sign.
SignWidth – Width in inches of the sign itself.

SignHeight – Height in inches of the sign itself.
SignPosition – Position of the sign relative to the track.
SignContents – Description of what the sign says.

Field Value Domains

BallastTypeCode
Field Type: Text, Width: 50

Code	Description
broken_stone	Broken Stone
sand	Sand
gravel	Gravel
moorum	Moorum
coal_ash	Coal Ash
cinder	Cinder
brickbat	Brickbat
other	Other

BoundaryTypeCode
Field Type: Text, Width: 25

Code	Description
switch_facing	
switch_normal	
switch_reverse	
subdivision_begin	
subdivision_end	
prefix_begin	
prefix_end	
suffix_begin	
suffix_end	
end_of_track	
milepost_equation_break	
interconnect	
track_name_change	
other	

CabSignalTypeCode
Field Type: Text, Width: 8

Code	Description
None	
4_aspect	

CalibrationPointFlagCode
Field Type: Text, Width: 5

Code	Description
Yes	This point is also an LRS calibration point
No	This point is not an LRS calibration point

CalibrationPointTypeCode
Field Type: Text, Width: 25

Code	Description
milepost	This calibration point is a milepost
milepost_equation	This calibration point is the result of a milepost equation
subdivision	This calibration point is at a subdivision boundary
switch	This calibration point is at a track switch
other	This calibration point is something other than a milepost, equation, subdivision, or switch

CountryCode
Field Type: Text, Width: 2

Code	Description
[XX]	Two-letter *(alpha-2)* country codes as defined by ISO 3166-1 *(e.g., USA: US, Canada: CA, Mexico: MX)*

CrossingTypeCode
Field Type: Text, Width: 16

Code	Description
public	
private	
pedestrian	

CrossoverFlagCode
Field Type: Text, Width: 1

Code	Description
Y	Is a crossover track
N	Is not a crossover track

DirectionCode
Field Type: Text, Width: 16

Code	Description
increasing	Speed applies in the direction of increasing milepost measures
decreasing	Speed applies in the direction of decreasing milepost measures
bidirectional	Speed applies in both directions

FBARDirectionCode
Field Type: Text, Width: 16

Code	Description
none	Form based authority is not required
bidirectional	Form based authority is required in both directions
increasing	Form based authority is required in the direction of increasing milepost measures
decreasing	Form based authority is required in the direction of decreasing milepost measures

FraDistrictCode
Field Type: Text, Width: 2

Code	Description
1	CT, MA, ME, NH, NJ, NY, RI, VT
2	DC, DE, MD, OH, PA, VA, WV
3	AL, FL, GA, KY, MS, NC, SC, TN
4	IL, IN, MI, MN, WI
5	AR, LA, NM, OK, TX
6	CO, IA, KS, MO, NE
7	AZ, CA, HI, NV, UT
8	AK, ID, MT, ND, OR, SD, WA, WY
99	Outside of the United States

GraphicTypeCode
Field Type: Text, Width: 20

Code	Description
signal_left	Signal positioned to the left of track, relative to increasing milepost measure
signal_right	Signal positioned to the right of track, relative to increasing milepost measure
signal_center	Signal positioned near the center of track or tracks
aspect_change_point	
none	

HornDisableCode
Field Type: Text, Width: 1

Code	Description

Code	Description
N	Horn may be sounded automatically
Y	Automatic horn is disabled

MaxSpeedCode
Field Type: Single, Scale: 9

Code	Description
5	5 miles per hour
10	10 miles per hour
15	15 miles per hour
20	20 miles per hour
25	25 miles per hour
30	30 miles per hour
35	35 miles per hour
40	40 miles per hour
50	50 miles per hour
60	60 miles per hour
70	70 miles per hour
80	80 miles per hour

MilepostTypeCode
Field Type: Text, Width: 15

Code	Description
physical	The milepost is physically marked with a sign
virtual	The milepost is measured, but is not physically marked with a sign

MonitoredStatusCode
Field Type: Text, Width: 15

Code	Description
unmonitored	Device is unmonitored (signal, switch)
peer_to_peer	Device is monitored peer to peer
office	Device is monitored from office
both	Device is monitored both from office and peer-to-peer

NETTrackTypeCode
Field Type: Text, Width: 1

Code	Description
A	Abandoned rail line, rail still present
F	Rail ferry connection

I	Major industrial lead
M	Main line
O	Other track (minor industrial leads)
R	Abandoned rail line, rail physically removed
S	Passing sidings
T	Trail on former right-of-way
X	Out of service line
Y	Yard tracks

NodeTypeCode
Field Type: Text, Width: 25

Code	Description
routing	
prefix	
suffix	
subdivision	
milepost_equation_break	
interconnect	
track_name_change	
end_of_track	
disconnected	
other	

OperatorTypeCode
Field Type: Text, Width: 2

Code	Description
>	Speed restriction is greater than restriction parameter value
<	Speed restriction is less than restriction parameter value
=	Speed restriction is equal to the restriction parameter value
>=	Speed restriction is greater than or equal to restriction parameter value
<=	Speed restriction is less than or equal to restriction parameter value

PassengerTypeCode
Field Type: Text, Width: 1

Code	Description
A	Amtrak line
B	B
C	Commuter line

D	D
O	Other
R	Rail line, now rapid transit
T	Tourist line
V	VIA line
X	Previous passenger route/line
<null>	Not applicable, or unknown

QualifierTypeCode
Field Type: Text, Width: 15

Code	Description
head_end	
restricted_speed	
none	

RestrictionTypeCode
Field Type: Text, Width: 20

Code	Description
generic	
heavy_train_TPOB	TPOB: Tons per operative brake
heavy_train_tonnage	Overall tonnage
axle_count	

SCACCode
Field Type: Text, Width: 4

Code	Description
SEE APPENDIX C	

SignalAuthorityTypeCode
Field Type: Text, Width: 16

Code	Description
non_signaled	
bidirectional	
increasing	
decreasing	

SignalTypeCode
Field Type: Text, Width: 30

Code	Description

absolute_interlocking	
absolute_noninterlocking	
intermediate_stop_and_proceed	
intermediate_restricted	
distant_operative	
distant_inoperative	
track_circuit	
OS_track_circuit	

SpringSwitchTypeCode
Field Type: Text, Width: 20

Code	Description
not_spring_switch	
spring_normal	
spring_reverse	

StateAbbrCode
Field Type: Text, Width: 50, Precision: 0, Scale: 0

Code	Description
[XX]	Two-letter US Postal Service abbreviation for US states.

StracNetTypeCode
Field Type: Text, Width: 1

Code	Description
S	On the STRACNET system
C	Connector to the STRACNET system
<null>	Not on the STRACNET system

SwitchDirectionCode
Field Type: Text, Width: 4

Code	Description
LF	Left facing
LR	Left rear
RF	Right facing
RR	Right rear

SwitchProtectionCode
Field Type: Text, Width: 50

Code	Description

Code	Description
not_protected_by_signal_or_track_circuit	
protected_by_signal_stop_required	
protected_by_track_circuit_stop_required	
protected_by_signal_no_stop_required	
protected_by_track_circuit_no_stop_required	

SwitchOrientationCode

Field Type: Text, Width: 50

Code	Description
left_facing	Left facing switch
right_facing	Right facing switch
left_rear	Left rear switch
right_rear	Right rear switch

TieTypeCode

Field Type: Text, Width: 50, Precision: 0, Scale: 0

Code	Description
wood	Wood
concrete	Concrete
steel	Steel
plastic	Plastic
other	Other type

TimeZoneCode

Field Type: Single, Precision: 10, Scale: 0

Code	Description
-4	AST
-5	EST
-6	CST
-7	MST
-8	PST
[other UTC offset]	Any other time zone that does not intersect North America

TrackStatusCode

Field Type: Text, Width: 10

Code	Description
active	Broken Stone
inactive	Sand

TrackTypeCode
Field Type: Text, Width: 25, Precision: 0, Scale: 0

Code	Description
main	Main track
connection	Connection track
siding	Siding track
crossover	Crossover track
foreign	Foreign track
industry	Industial track
yard	Yard track
industrial_lead	Industrial lead track
yard_lead	Yard lead track
other	Track that does not fit current categories

YardLimitsCode
Field Type: Text, Width: 1

Code	Description
Y	Yard limits are in effect
N	Yard limits are not in effect
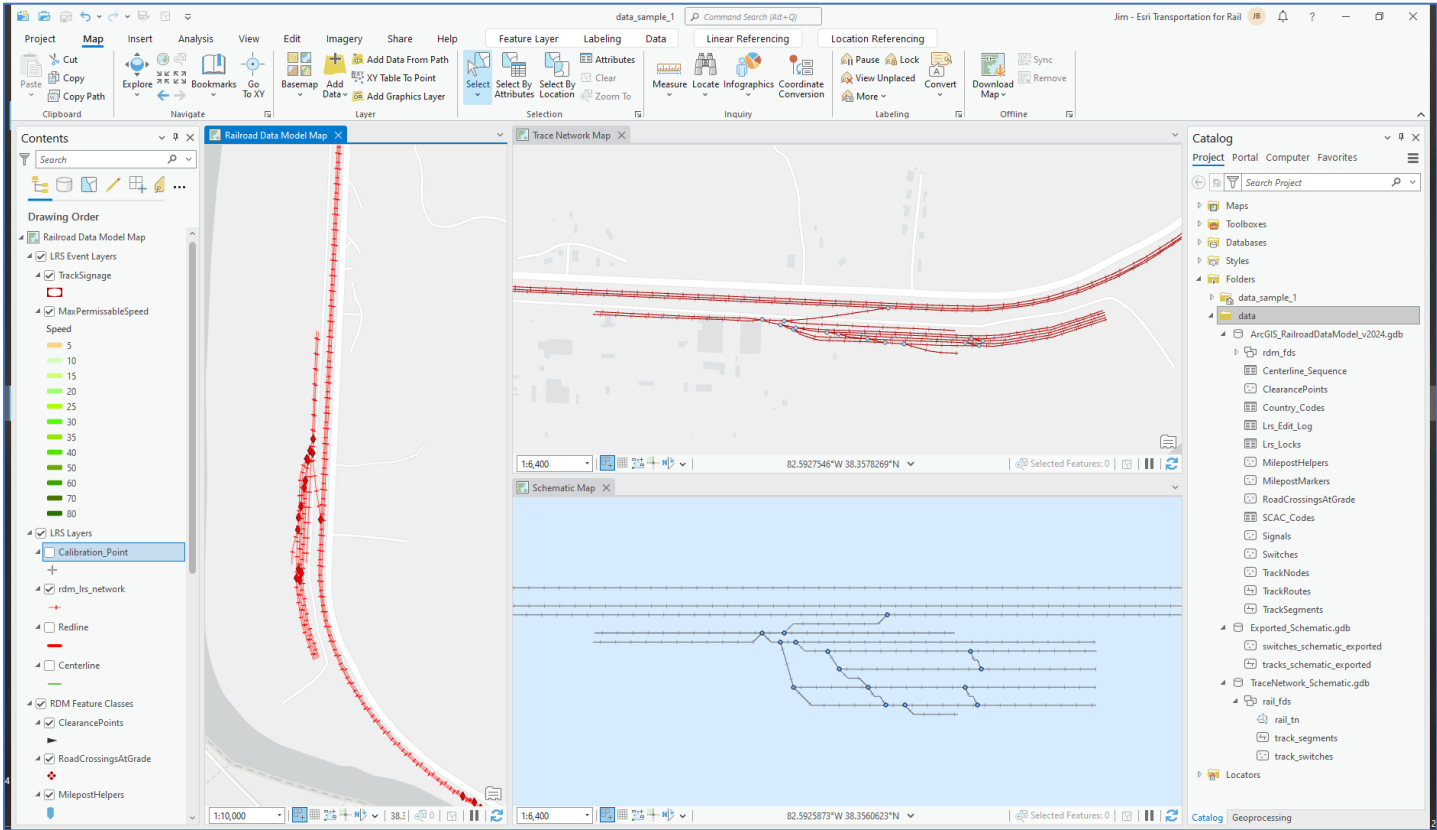
APPENDIX A

Creating a Railroad Schematic Diagram Map

1. Start with a File Geodatabase containing tracks (edges), and switches (junctions).

2. Inside the File Geodatabase, create a Feature Dataset, copy the tracks and switches feature classes into it.

3. Use "*Create Trace Network*" tool to create a trace network

Parameters:

Input Feature Dataset: your feature dataset that contains the tracks and switches feature classes

Track Network Name: [give this new trace network a name]

Input Junctions: your switches feature class

Input Edges: your tracks feature class

Connectivity Policy: "Simple edge"

Then click "Run"

4. In catalog, go to your Feature Dataset and you should see your new trace network. Click and drag it onto the map. You will get a popup message asking, "*Do you also want to add all classes that participate in 'your trace network' to the map?*" Click "*Yes*".

5. Go to your contents pane and expand the trace network group layer. You will notice that the entire map area is purple, because when the trace network is first created, it is all a "*dirty*" area.

6. Use the "*Enable Network Topology*" tool to enable network topology.

Parameters:

Input Trace Network: [choose your new trace network]

Advanced Options: [take the defaults]

Then click "Run"

7. If you have any topology errors, they will appear in the map. There could be Point errors, Line errors, Junction errors, or Dirty areas. Use the editing tools on the Edit ribbon to fix those. Here are some examples of errors you may have:

    a. You may have missing or duplicate junctions. Edit the switches layer so that everywhere 3 or more track polylines touch at their end nodes that there is one switch feature snapped to it.

    b. You may have polylines that are not split at junctions. Use the "*Line Intersection*" editing tool to split the polyline at the point where it should be split by the intersecting line.

c. You may have "pseudonodes". That is, two polylines that are connected at the end points. These two polylines should be merged into one. Use the "*Merge*" editing tool for this.

d. There may be other issues. Simply examine the contents of all 4 of the topology errors layers in the Trace Network group layer, and use the edit tools for fix all of those.

8. Be sure to save all of your edits before continuing further.

9. Run the "*Disable Network Topology*" tool, using your trace network as the parameter.

10. Run the "*Enable Network Topology*" tool, using your trace network as the parameter. When this tool completes running, you should have no more error features in any of the Trace Network group layer's error layers. If you still have errors, go back *(to Step 7)* and edit those, and don't continue *(to Step 11)* until your run "*Enable Network Topology*" and there are no more errors.

11. Run the "*Validate Network Topology*" tool, using your trace network as the parameter, and using the "*Default*" extent. If it runs successfully, you should get a message saying that the "*Validate Network Topology completed with warnings*", and if you View Details, you should see "*WARNING 001804: A dirty area is not present within the specified extent*". This is ok.

12. In the map, use the "*Select - Rectangle*" tool to drag a box to select all of the features you want to build a schematic map for.

13. Go to the "*Trace Network*" ribbon and its "*Data*" tab. In the "*Diagram*" button group, click "*New*" then "*Basic*". This will create a new diagram. It will not look like a schematic yet. In fact, it would look very similar to the original rail data. This is just a test to ensure that you can completely create trace network topology without errors.

14. Close the Diagram. We do not need it anymore.

15. Open the attribute table for the switches layer and add a new column called "NetAttribs". Give it a data type of Integer, and allow nullable values.

16. Add values to this column in order to establish a track hierarchy. Where you just have one track or two tracks side by side, you can give the tracks a value of 1. Where there are crossovers between two tracks side by side, you can give those crossovers a value of 2. The first spur or loop extending outward from the main tracks, give a value of 3. New spurs beyond 3, you can give odd values successively, like 5, then 7, then 9 and so on. Crossovers between spurs you can give even numbers between them. For example a spur with a value of 9 and the next spur with a value of 11, if there is a crossover between them give a value of 10. Take a look at the diagram below for guidance on how to add values to the NetAttribs field. When you are done adding NetAttribs values, save all of your edits.
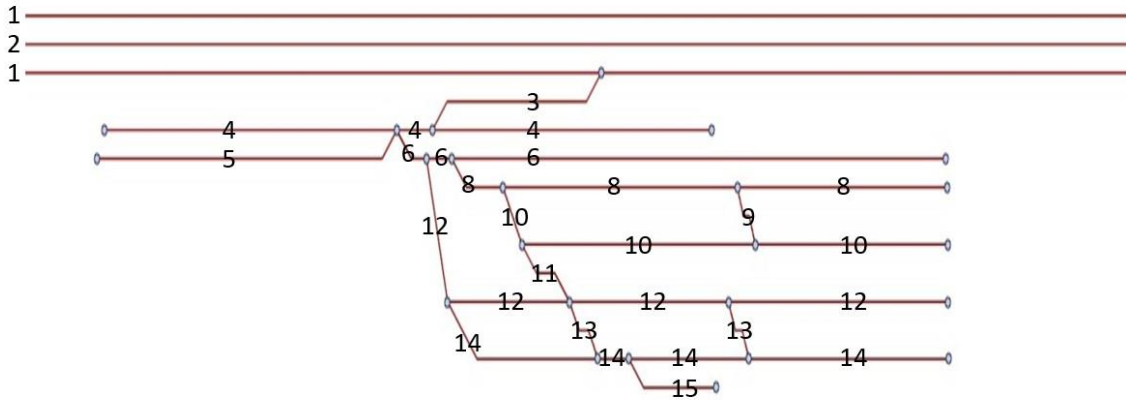
17. Run the "Disable Network Topology" tool, using your trace network as the parameter.

18 Run the "Add Network Attribute" tool.

Parameters:

Input Trace Network: [your trace network]

Attribute name: give it a name. I usually use "Track Hierarchy"

Attribute Type: choose "Long (large integer)"

Nullable: check this ON

Then click "Run"

19. Run the "Set Network Attribute" tool.

Parameters:

Input Trace Network: [your trace network]

Network Attribute: choose "Track Hierarchy"

Feature Class: select your tracks layer

Field: choose the "NetAttribs" field

Then click "Run"

20. Run the "Enable Network Topology" tool, using your trace network as the parameter.

21. Run the "Validate Network Topology" tool, using your trace network as the parameter. The only warning you should get, again, is "001804" about how there are no dirty areas. That's ok.

22. In the map, use the "Select - Rectangle" tool to drag a box to select all of the features you want to build a schematic map for.

23. Go to the "Trace Network" ribbon and its "Data" tab. In the "Diagram" button group, click "New" then "Basic". This will create a new diagram. It will not look like a schematic yet. In fact, it would look very similar to the original rail data.

24. With the new Diagram open, run the "Apply Relative Mainline Layout" tool.

Parameters:

Input Network Diagram Layer: select "Temporary Diagram"

Line Attribute: select "Track Hierarchy"

Direction: select "From left to right"
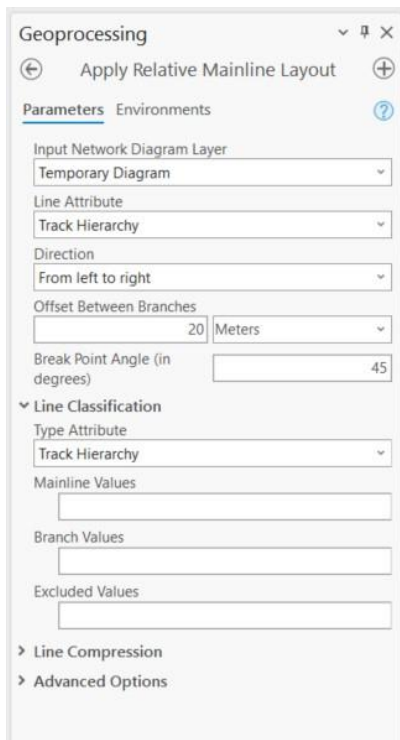
Offset between branches: enter "20 Meters"

Break Point Angle (in degrees): enter 45

Under "Line Classification":

Type Attribute: "Track Hierarchy"

Accept all other default parameters

Then click "Run"

Your result should look something like this:
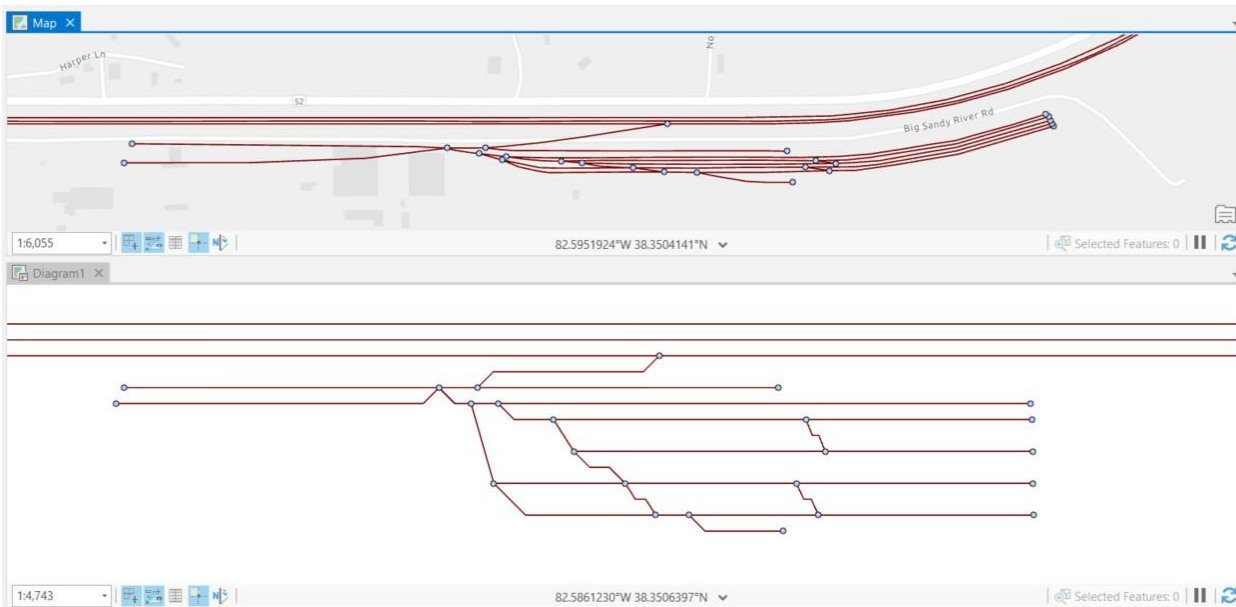
APPENDIX B

Creating a Location Referencing System for Railroad Data

Background

The steps below start with a line dataset of rail centerlines and a point dataset of track switches which are where three or more track lines will need to snap to. The point dataset of track switches also needs to contain points that represent bumper stops in situations where the end of a track centerline just stops *(spurs, turnouts, terminals, dead ends)*. The rail centerlines become the edges in this network, and the track switches and bumper stops serve as the junctions in the network.

Prepping the data

While ArcGIS Roads and Highways only works when all of the data is stored in enterprise geodatabases, and served as web services from ArcGIS Enterprise, there is a lot of prep work you can do on that data using locally stored file geodatabases. The steps below do as much prep work as possible in file geodatabases, then later in the steps, the FGDBs are imported into EGDBs, for the remaining steps.

Steps

1-- Start with a FGDB containing a FDS. *(quick definitions - FGDB: File Geodatabase, FDS: Feature Dataset, FC: Feature Class)*

*2-- In that FDS there should be a PolylineMZ feature class of track segments to serve as network edges.

*3-- In that FDS there should be a PointMZ feature class of track nodes to serve as network junctions.

(Note about Steps 2 and 3: To check to see if a feature class supports M and Z, in Catalog, right click on the feature class, click Properties, then in the Properties popup, on the Source tab, check for "Yes" in the rows labeled "Coordinates have Z value" and "Coordinates have M value". If your feature classes do not support M and Z, you can use the Export Features tool and its Environments tab to ensure that the exported output supports M and Z.)

4-- Every polyline in the track segments FC should start and end with a point in the track nodes FC. Check to ensure this is true.

5-- And of course since both FCs are in the same FDS, they must share the same spatial reference. If you get any errors that mention mismatched spatial reference as you put these two FCs into the same FDS, you'll need to use the *Project* tool on one or both of them to get them into the same spatial reference as the FDS.

6—Next. It's important to ensure that all of the FCs in the FDS have valid network topology. Building a Trace Network, then Enabling, then Validating topology is a great way to do this, and where topology errors are found, fix them all until you can Validate a clean network topology for all FCs that will be participating in the LRS. For railroads, at a minimum this will be the track segments FC and the track nodes FC.

7-- Another tip, is to use an "arrow along" line symbol on the tracks layer in order to visually inspect the digitized direction of the track lines. You'll have smoother results if you can make it so that all track lines flow in the same digitized direction. When it comes to mileposts/kilometerposts, check with the railroad to understand which direction that post measurements are ascending, then fix the data so that digitized directional flow conforms. This is not required of course. It's just best practice for building a tight foundational database. And don't just check the main tracks, but also the crossovers, spurs, loops, and yards. This is not always perfectly possible given some types of track organization like U-curves, lollipops, turntables, and other structures that might pose a challenge, but do your best. The polylines that are misoriented, you can select, then use the *Flip Line* tool to flip their digitized direction to get the track data to flow in the same direction.

8-- What we're going to do below is prepare the data for use with ArcGIS Roads & Highways. To do this will follow several steps, using tools you'll find in the toolboxes: *Linear Referencing* and *Location Referencing.* Here is a list of tools, in order, that you will be using, in case you want to move them into your Favorites list:

Create Routes
Add Field
Calculate Field
Create LRS
Create LRS Network
Append Routes
Generate Calibration Points
Generate Routes
Create LRS Event

9-- Create a new column in the track segments polyline feature class to store the route names. For the purposes of the rest of these instructions, we're going to assume that you give this field the name "*RouteName*". Populate that field with route name values, in a way that all polylines that you want to be in the same route, should get the same route name value. For example, each of the main lines along the way should be its own route from start to finish, but then each crossover, spur, and loop should be their own routes. It helps to use a consistent naming structure.

10-- In the *Linear Referencing* toolbox, run the *Create Routes* tool.

- Input line features: use the polyline FC from Step 2
- Route Identifier Field: should be "*RouteName*" *(or the name from Step 9)*
- Output Route Feature Class: if the polyline FC is called "*abc*" then call the output "*abc_routes*". *(IMPORTANT!!: The tool will—by default--try to write this output routes FC into the default project FGDB. Instead, navigate to the same FDS the tracks and switches FCs are stored in, to ensure that the new routes FC output will go into that same FDS.)*
- Measure Source: "*Length of Features*" *(don't worry, we can recalibrate later)*
- Coordinate Priority: *[Whatever makes sense for your data. What helps is if you use arrow symbology to inspect the digitized direction of your lines in order to choose the best orientation setting in this pull-down.]*
- Measure Factor, 1; Measure Offset, 0;
- Ignore spatial gaps, *check on*; Build index, *check on*;
- Click *Run*

11—Add some new columns to this new output routes FC and calculate values into them. One way to do this is to open the attribute table, then using its Add and Save buttons, then for each new field, right clicking the field header to get to the field calculator. Another way to do this is with the *Add Field* and *Calculate Field* tools. Either way:

- add two new Date columns called: `FromDate, ToDate.`
- add a new Text(38) column called: `RouteId`
- on the Fields ribbon, click Save, to save these new columns.
- close the Fields panel, returning to the attribute table panel.
- In the attribute table, right click the FromDate field name, and in the popup menu click "Calculate Field".
- In the *Calculate Field* dialog box, change *Expression Type* to *"Arcade"*.
- In the text box under "`FromDate =`", scroll down the "*Helpers*" box and double-click to select "`Now()`", then click OK. *(Using Arcade ensures that the date/time will use GMT/Zulu/UTM+0 time. There is a way to do this with Python, but that will pull the local time off your machine, and will may cause problems after this FC is published as web services.)*
- Leave the values in the `ToDate` column as *null*
- Now calculate the `RouteID` field with a Guid using Arcade: `RouteId = Guid().`
- or…
- If you'd rather use Uuid's instead of Guid's, you can use Python instead of Arcade. If so, then write this line into the "`RouteId =`" textbox:
  `'{' + str(uuid.uuid4()) + '}'`
  And write this line into the "Code Block" box, then click OK:
  `import uuid`

12-- Create a new empty LRS: *Location Referencing tools > Configuration > LRS > Create LRS*

- Input Location: use the FDS from Step 2
- LRS Name: if your FDS is "*abc_fds*", call this new lrs "*abc_lrs*"
- Centerline Feature Class Name: default *Centerline*
- Calibration Point Feature Class Name: default *Calibration_Point*
- Redline Feature Class Name: default *Redline*
- Centerline Sequence Table Name: default *Centerline_Sequence*
- Spatial Reference: *[same as the ~routes FC in the FDS]*
- Tolerances and Resolutions: just take the defaults *(If your source data is unprojected, you may get red X's next to the boxes "Z Tolerance" and "Z Resolution". If so, just change the units for those to "Decimal Degrees", and that should remove the red X's and allow you to continue. Do not change any of the numeric values, because those must match the same parameters that belong to the FDS that these layers belong to.)*
- Click *Run*

13-- Back in the map, create a Group Layer called "*base layers*" and put your original polyline, point, and route FCs into it, to sort of get them out of the way.

14-- Create a new LRS Network: *Location Referencing tools > Configuration > LRS Network > Create LRS Network*

- Input Location: use the FDS that contains the routes FC you created in Step 10.
- LRS Name: Should auto-populate with the name of the LRS you had just created, which is stored in that FDS. If it doesn't appear, then you may not have been storing everything into the same FDS, as you need to be. Important to remember that these tools often <u>try</u> by default to send output to the project's default FGDB. You should always navigate the output away from that, and instead send the output to the FGDB you created above where everything else is being stored
- LRS Network Name: if your FDS is "*abc_fds*" and your LRS is "*abc_lrs*", make it "*abc_lrs_network*"
- Route ID Field: `RouteId`
- Route Name Field: `RouteName`
- From Date Field: `FromDate`
- To Date Field: `ToDate`
- Derive from line network, *unchecked*; Include fields to support lines, *unchecked*; Measure Unit, *Miles (US Survey)*;
- Click *Run*

15-- Append the routes into the LRS Network: *Location Referencing tools > Append Routes*

- Source Routes: use the routes FC you created in Step 10
- LRS Network: use the LRS Network you created in Step 14
- Route ID Field: default, should be "*RouteId*"
- Route Name Field: default, should be "*RouteName*" *(or the name from Step 9)*
- From Date Field: default, should be "*FromDate*"
- To Date Field: default, should be "*ToDate*"
- Field Map section: just leave them all blank by default
- Load Type: default, should be "*Add*"
- Load Field: default, should be "*Route ID*" *(older versions of Pro do not have this option, that's ok)*
- Click *Run*

16-- Generate the calibration points: *Location Referencing Tools > Generate Calibration Points*

- Input Polyline Features: use the routes FC you created in Step 10
- Route ID Field: use the `RouteId` field from Step 11
- FromDate, ToDate: use the `FromDate` and `ToDate` fields from Step 11
- Calibration Point Feature Class: use the *Calibration_Point* layer created in Step 14
- LRS Network: use the LRS network you created in Step 14
- Calibration Direction: use *Digitized direction* *(see Step 7 for more info)*
- Calibration Method: use *Geometry length*
- .Click *Run*
- *Note: After the tool runs, it may return a warning, despite completing successfully, with a note about M-resolutions being different between the routes FC and the LRS network. I've found most of the time that the difference is at a decimal precision far smaller and insignificant than the accuracy of any dataset you'll be using. Ultimately, that's up to you, but for most purposes, we can just keep going.*

17—Generate routes: *Location Referencing Tools > Generate Routes*

- Input Route Features: use the LRS Network you created in Step 14
- Record calibration changes…: leave *unchecked* *(newer versions of Pro do not have this option, that's ok)*
- Click *Run*

18—Create a LINE event layer to store linear events that record and display max speed limits along the rail line: *Location Referencing Tools > Configuration > Create LRS Event*

- Parent LRS Network: use the LRS network you created in Step 14
- Event Name: name it "*MaxPermissableSpeed*" *(more info: see the ArcGIS Railroads Data Model data dictionary)*
- Geometry Type: *Line*
- Event ID Field: *Eventid*
- Route ID Field: *FromRouteId*
- From Date Field: *FromDate*
- To Date Field: *ToDate*
- Location Error Field: *LocError*
- MeasureField: *FromMeasure*
- To Measure Field: *ToMeasure*
- Store Route Name: check on
- Route Name Field: *RouteName*
- Click *Run*
- *If you want, now or later, you can add other fields as described in the ArcGIS Railroads Data Model.*

19-- Create a POINT event layer to store point events that record and display crossings *(grade, overpass, underpass)* along the rail line: *Location Referencing Tools > Configuration > Create LRS Event*

- Parent LRS Network: use the LRS network you created in Step 14
- Event Name: name it "*TrackSignage*" *(more info: see the ArcGIS Railroads Data Model data dictionary)*
- Geometry Type: *Point*
- Event ID Field: *Eventid*
- Route ID Field: *FromRouteId*
- From Date Field: *FromDate*
- To Date Field: *ToDate*
- Location Error Field: *LocError*
- MeasureField: *Measure*
- Store Route Name: check on
- Route Name Field: *RouteName*
- *If you want, you can add other fields as described in the ArcGIS Railroads Data Model.*

20-- Ensure the FDS components hava global IDs and have editor tracking enabled

- In Catalog, navigate to the FDS you've been working with since Step 1
- Right-click the FDS, then click "*Manage*"
- In the *Properties* popup dialog, in the *Manage* tab, ensure the *Global IDs* and *Editor tracking* are both *checked on*. One or both of the boxes might already be *"boxed on"*. Click it twice to ensure that it is actually *"checked on".*
- When you check on *Editor tracking*, it will drop down a few field names and pull downs, just accept all the defaults.
- Click OK. And watch the process run until two green check boxes appear. When successful, the dialog will vanish.

21—Ensure the Centerline_Sequence table has global IDs and editing tracking enabled

- In Catalog, navigate to the FGDB you've been working with since Step 1
- Right click the *Centerline_Sequence* table, then click "*Manage*"
- In the *Properties* popup dialog, in the *Manage* tab, ensure that *Global IDs* and *Editor tracking* are checked on. You can check *Attachments* on or off, your choice.
- When you check on *Editing tracking*, it will drop down a few field names and pull downs, just accept all the defaults.
- Click OK. And watch the process run until two green check boxes appear. When successful, the dialog will vanish.

AND FINALLY:
- SAVE THE PROJECT and CLOSE OUT PRO. This will force all locks to be removed from the FGDB you created.
- Use Windows Explorer to navigate to the folder in which your FGDB is stored. Zip up the FGDB folder and get ready to move it somehow to your server for the next steps.

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

Move the data to ArcGIS Enterprise

Now you have gotten as far as you can go with FGDBs. The next set of steps involve moving all of your prepared data into Enterprise Geodatabases so that you can begin working with your data using ArcGIS Roads & Highways Server, which is an extension of ArcGIS Enterprise.

FIRST:
In Pro, ensure that you are logged into an enterprise portal that has Roads & Highways installed and running. If you created the FGDB on your local machine, then you need to find a way to zip it up and move it to the server.

22. Create a new empty Enterprise GDB for each of the FGDBs that you want to port over. To do this, run the *Create Enterprise GDB* tool, using these parameters:

- database platform - SQL Server *(for example, but whatever yours is)*
- instance – mydb *(for example, or whatever your database instance is)*
- database - *[your choice, for what you want the db to be called]*
- database administrator – gdb *(for example, or whatever your dba name is)*
- database administrator password - *[your database administrator password]*
- sde owned schema - uncheck it
- authorization file - *[Server_Ent_Adv.ecp file for the edition and version you're running]*
- spatial type – ST_Geometry
- Click *Run*

23. Create a connection, as the SDE user, to this new EGDB that you created. *(Later we will create a connection for the GIS user, and this connection we're creating for the SDE user will allow us to create new users, like in our case, the GIS user.)* So, first, to create this new SDE user connection, run the *Create Database Connection* tool, with these parameters:

- Connection File Location – Navigate to a folder on disk. It can pretty much go anywhere, but might be good to make a "*connectionfiles*" folder somewhere you won't misplace.
- Connection File Name – Anything is ok, but a good convention is to name it the name of the database, then "as", then the name of the connection, in our case "SDE". Like "*lametro as SDE*"

- Database Platform – whatever yours is, say PostgreSQL or SQL Server, etc.
- Instance/Server – whatever your databases server instance is
- Database Authentication – check 'on' if you're using db authentication
- Username – your db username
- Password – your db password
- Save username and password – checked on/off as you see fit
- Database – your database name created in step 22, should be in a drop-down
- Geodatabase Connection Properties:
  - Version Type – Branch
  - The following version will be used = sde.DEFAULT
- Click *Run*

24. Go to Windows Explorer, to the folder in which you stored the connection file created in 23, to see if it's there and looks good. The file should be called "dbname as SDE.sde". For example: "lametrog as SDE.sde"

25. Create a new folder connection to the database connection you just created in step 23. To do this:

- Go to Catalog
- Right click "Folders"
- Click "Add Folder Connection"
- In the open file dialog, navigate to the <u>folder</u> where you're storing your connection files
- Click OK
- Back in Catalog, tick open the new folder connection. In that folder connection you should see your database connection you created in step 23.

26. Now that the connection has been created and made accessible in your project, now you can use that "SDE" connection to create a new user. In our case, we'll call this the "GIS" user. To do this, run the *Create Database User* tool with these parameters:

- Input Database Connection – In the open file dialog, navigate to and select the "SDE" database connection created in step 23
- Database User – Whatever you want to call this user, but when in doubt, you can use "gis".
- Database User Password – Whatever you want the password for this user to be
- Role – leave blank
- Click *Run*

27. Now we want to create a database connection for this new database user created in step 26. To do this, run the *Create Database Connection* tool with these parameters:

- Connection File Location – <u>folder</u> where you're storing your connection files
- Connection File Name – what you want to call this file. A good convention is to use "*[dbname]* as *[USER]*.sde". For example: "*lametrog as GIS*"
- Database Platform: PostgreSQL, SQL Server, or whatever your RDBMS type is
- Instance/Server – your database server instance
- Database Authentication – checked 'on'
- Username – whatever you want the username to be; a good convention is "gis"
- Password – whatever you want the database user's password to be
- Save username and password – checked 'on'
- Database – name of the database you created in step 22

- Geodatabase Connection Properties
    - Version Type – Branch
    - The following version will be used – sde.DEFAULT
- Click *Run*

28. Go to Catalog, to Folders, then to your connectionfiles folder to see now that there are two database connections listed. One for the *SDE* user, and one for the other user, which you may have called the *GIS* user. It's inside this *GIS* user database connection is where we will be copying the file geodatabase and all of its feature classes and tables that were created from steps 1-21. The *GIS* user will be hosting all that data inside the enterprise geodatabase.

29. Now we're going to copy all of the data from the FGDB into the EGDB. Here are the steps:

- Inside your FGDB, but not inside the FDS, find the set of 3 flat tables *(Centerline_Sequence, Lrs_Edit_Log, Lrs_Locks)*
- Copy those three tables into the root of your new EGDB
- Next, if you have a table called "*Centerline_Sequence_ATTACH*" and a relationship called "*Centerline_Sequence_ATTACHREL*", copy those over too.
- Next, if you have any feature classes that are not in the FDS, copy those over as well
- Finally, copy the entire FDS at once, and paste it into your new EGDB.
- *(Note: It's important to copy these components over separately and in the order listed above.)*
- Open the EGDB connection and refresh it to see that everything made it over.

30. Now we're going to get the EGDB datasets ready for branch versioning. Here are the steps:

- In Catalog, go into your EGDB, and right-click on the "Lrs_Edit_Log" table, in the popup menu click "Manage", and in the Table Properties dialog, check 'on' Versioning, and radio 'on' Branch, then Click "OK".
- Do the same for the "Lrs_Locks", and any "Centerline_Sequence*" tables.
- Then go into the FDS, click one of the FCs, say perhaps the "Centerline" FC, then click "Data Design > Fields" to ensure that there is a GlobalID field in there.
- Then in Catalog, go into the EGDB, select the FDS, then right click the FDS and in the popup menu, click "*Manage*".
- In the Feature Dataset Properties dialog, in its Manage tab, check 'on' "*Versioning*", then radio 'on' "*Branch*".
- You can leave "*Replica Tracking*" checked 'off'.
- You will notice that there are checked 'on' options for Archiving, Global IDs, and Editor Tracking. If not, then you can fix those later.
- Then click "*OK*"

31. In the Pro project, you currently have a Map that contains the entire FGDB that you created from steps 1-21. So now we will create a new empty Map, in which we will load up the entire EGDB. Here are the steps:

- On the Insert ribbon, click "New Map"
- Name this map "LRS Geographic in EGDB" or "LRS Schematic in EGDB"
- If you want, probably a good idea to set the spatial reference of the Map to *WGS 1984 Web Mercator (auxiliary sphere)* to make it smoother when publishing web layers later, even if that spatial reference differs from the spatial reference of your FDS.
- In Catalog, drag the FDS into the map. Leave the tables behind. Just the FDS.
- If you're working with a schematic map, feel free to turn off (or remove) the basemap layers from the Map, leaving a blank white canvas.

- In the Contents pane, if the layers' names are displaying with their fully qualified database names, then change the names of all of the layers, removing the full qualified database name portion of the layer name. For example, if a layer is called "lametrog.gis.Centerline", just change the name of the layer to "Centerline". This is to prevent users outside your organization from knowing the name of your database and the name of the database user.
- If this is the only Map currently in the project, great. But if the project already contains any Maps, say perhaps a Map that contains your FGDB FCs, then remove and delete that Map from the project. Make this project so that it only contains one Map, and that Map only contains your new EGDB-based LRS.
- In Catalog, tick open the "Maps" section to ensure that this project only contains this one new empty map that you just created. If there are others, then one at a time, right-click each, then click Delete to remove those maps from the project altogether.
- Save the Project. Or if you want to Save As, so that you don't lose the other Map, that's fine too.

32. Now we're going to publish the map service. Here are the steps:

- On the Share ribbon, under Web Layer, click "Publish Web Layer"

o Now we're going to check to see if branch versioning is setup correctly. In the "Sharing As Web Layer" tool pane:

- Go to the Configuration tab
    - o Under Capabilities, ensure that Version Management is there. That tells you that all of the layers in the map have been setup for branch versioning. This is an important gut check, because if it's not there, then any subsequent configuration won't work and will be for naught. If Version Management is not there, then you need to fix that in the map and datasets before proceeding. Do not check the box 'on'; leave it checked 'off' for now.
- Go back to the General tab
    - o Give this Web Layer a name. In my case "LAMetros".
    - o Summary and Tags are optional
    - o Reference registered data – Map Image radio 'on', and Feature check 'on'
        - ▪ This makes it so that the data is left in the EGDB and is NOT copied over into the enterprise relational data store
    - o Copy all data – all options radio 'off'
    - o Portal folder – Whatever folder you want this to be in. In my case I have an LAMetro_g or LAMetro_s folder
    - o Server and Folder – The Server and Folder you want to publish the map service.
    - o Then for the folder, choose one, or type in a new one. Might be good to give the folder the same name on the utilities-transportation portal as you're using on the utilities-ent portal
- Then go to the Configuration tab – LEFT most icon, the yellow pagey icon
    - o Layers section – should contain Map Image and Feature
    - o Additional Layers – no need for WMS or WFS or OGC
    - o Capabilities – check 'on', both Linear Referencing and Version Management
- Then in the Configuration tab – MIDDLE icon, looks like white page with popup on it icon
    - o Leave it as None (Assumed UTC).
- Then in the Configuration tab – RIGHT most icon, looks like three white pages icon
    - o Instance Type – radio 'on' "Dedicated instance"
    - o Number of instances per machine – Min 2, Max 4 is ok to start
- Then in the Content tab
    - o Under "My Content", should show the portal folder that your stuff is in
    - o Under that should be Map service with layers underneath

- o   Under that should be Feature service with layers underneath
- Click "Analyze" and fix errors, and pay attention to warnings
- If you get error 00231 about layers data source must be registered with server, then:
    - o   tick it open,
    - o   right click on the first layer,
    - o   then click "Register Data Source With Server"
    - o   This brings up a dialog called "Add data store"
        - ▪   Title – lametrog_datastore
        - ▪   Tags – optional
        - ▪   Portal folder – LAMetro_g like the other one
        - ▪   Same as publisher database connection – radio 'on'
        - ▪   New connection – radio 'off'
        - ▪   Select the servers… - check 'on' ONLY the utilities-transportation server
        - ▪   Click "Validate", which should put a green check next to the utilities-transportation server
        - ▪   Click "Create"
        - ▪   Then back in your Messages window, tick closed the 00231 error list
- If you get error 00374 about Unique numeric IDs are not assigned
    - o   Right click on that error
    - o   Click "Open Map Properties to Allow Assignment"
    - o   Then in Map Properties dialog, check 'on' "Allow assignment of unique numeric IDs…"
    - o   Click "OK"
- If you get a warning 24034 about default z values not being assigned, then:
    - o   In the Share As Web Layer tool pane, go to the Configuration tab
    - o   Click the left-most icon, the yellow curvy rectangle
    - o   In the "Layer(s)" section, click the pencil to the right of "Feature"
    - o   Check 'on' the property "Apply default to features with z-values"
    - o   Check 'on' the property "Allow geometry updates without m-value"
- Still in the "Share As Web Layer" pane, click back over to the Messages tab
- Click the "Analyze" button again
    - o   If all red X errors are gone, then you're good
    - o   If all warnings are gone except for minor ones, then you're good
        - ▪   Warning 10001: Data source projection difference: IS OK
        - ▪   Warning 24078: Layer's data source not supported: IS OK, as long as it's only refering to the basemaps
- Once "Analyze" does ok, per above, then click "Publish". Clicking "Publish" actually runs an Analyze again, that's ok.
- At the bottom, you should end up with a green bar that says the web layer has successfully published. In that bar is a hyperlink labeled "Manage the web layer", click that.

33. That opens a browser which brings you to the utilities-ent portal. If it's not signed in yet, sign in as railadmin/railadmin1234. Either way, go to the Content tab. Go to the folder where you put the stuff in and you should see:
- The Feature layer
- The Map Image Layer
- The Data Store (Database)

34. Click on the Feature Layer item.
- See that all the layers are there.
- You can setup layer symbology here if you want, saved with layer.
- You can bring feature service into web map, and setup symbology there if you want.

- Check popups. See if everything looks cool.
- SAVE THE PROJECT.
- You can now close the Pro project and exit Pro. We're done with it.

35. From any machine, even your local machine outside the RDP, let's go to the server manager:
- On the folders pane on the left, click on the LAMetro_g server folder you created
- On the main pane, should say "Lametrog (Map Service)
  - Service runtime: ArcGIS Pro
  - Instance type: Dedicated
  - Status: Started
  - Instances Running: 4
  - Instances in Use: 0 (so far)
  - Maximum instances: 4
- Then on the right, the run button should be disabled, and the stop button enabled, which tells you that it's running.
- On the Main pane there, click on the map service name
  - Path: tells you which Pro project was used to create this map service
  - Capabilities tab: these options should be turned on: Mapping, Feature Access, Version Management, Linear Referencing
  - Clicking on the Mapping gives you the end points for the map service, and clicking on the Feature Access gives you the endpoints for the feature service. Along with operations allowed.
- Back in Server Manager, click back on Lametro_g to go back to the top folder
  - Click on the database icon that's to the right of (Map Service)
  - Then in the Service Workspaces dialog, click on sde.DEFAULT, and below in Workspace Properties, it'll tell you everything about how this was setup, database it's pointing to, etc.
  - Click *Close*

36. Now let's create an *Event Editor* web app

- The steps below are all covered thru this page here
https://enterprise.arcgis.com/en/roads-highways/latest/event-editor/configuring-the-event-editor-web-application.htm

- Use File Explorer and go to your web server root. If you're using MS-IIS, then it's usually *inetpub\wwwroot*
- Create a folder that will be your website
- Go to C:\Program Files\ArcGIS\LocationReferencing*Server11.x*\Web\RoadsandHighways\RoadwayCharacteristicsEditor
- Select all contents and copy
- Go back in your *inetpub\wwwroot\[your_website]* folder, paste it all in

37. Create a Web Map

- In a browser, log into your portal
- In the *Contents* tab, in the folder you put the published web layers into, find the Map Service *(not the feature service)* and open its portal Item page.
- Click the blue "*Open in Map Viewer*" button. The New Map Viewer is ok now.
- Change the basemap to whatever you want. If schematic, then blank white is ok.
- Save your webmap by giving it a title, tags, summary, then Save.

38. Start configuring the event editor web app

- Grab web map item ID
- Go into the event editor app folder and open up config.json in a text editor, then add:
  - Line 2: the web map ID
  - Line 10: the portalUrl (https:// *[your enterprise server domain]* /portal)
  - *[Leave notepad open. We have more steps to do in a bit.]*

39. Register the event editor app in your portal, to get an AppId
- Go to the Content tab of the utilities-transporation portal
- Click "Add Item", then "An Application"
  - Type: Web Mapping
  - Purpose: Ready To Use
  - API: JavaScript
  - URL: *[the path to the folder under your web server's root]*
  - Title: *[Give it a name]* Event Editor
  - Tags: give it tags
  - Click "Next"
- It leaves you at the app's item page.
- Click "Settings"
- Scroll down and then click "Register"
  - App Type: Browser
  - Redirect URI: *[The url to your web server]*
  - Click "Add"
  - Click "Register"
- Then under "App Registration" copy the App ID to the clipboard
- Then back in *config.json*:
  - Line 8: paste in the App ID.
  - Line 25: give the event editor a name "*[your event editor name]* Geographic Event Editor"
- then Save and Close the *config.json* file and Notepad.

40. Open both Event Editors
- YOU MUST USE DIFFERENT BROWSERS OR PROFILES, NOT JUST DIFFERENT TABS
- Now you can use the Event Editor tools to start adding and retiring events.

APPENDIX C

Standard Carrier Alpha Codes (SCAC)

These are "railroad reporting marks" assigned to railroad organizations by RailInc™. In this data model, these are the values that you will find in the "SCACCode" domain.

SCAC	CARRIER NAME
AA	ANN ARBOR RAILROAD
AARE	RAILINC CORPORATION - TEST
AARW	RAILINC PROGRAM COMMUNICATIN TO TRAIN
AB	AKRON BARBERTON CLUSTER RAILWAY COMPANY
ABL	ALAMEDA BELT LINE
ABR	ATHENS LINE LLC, THE
ABS	ALABAMA SOUTHERN RAILROAD
ABWR	ALABAMA WARRIOR RAILWAY, LLC.
AC	ALGOMA CENTRAL RAILROAD INC
ACJR	ASHTABULA CARSON & JEFFERSON RAILROAD
ACR	AGAWA CANYON RAILROAD ULC
ACWR	ABERDEEN CAROLINA & WESTERN RAILWAY CO
ADBF	ADRIAN & BLISSFIELD RAIL ROAD COMPANY
AERC	ALBANY & EASTERN RAILROAD COMPANY
AF	ALABAMA & FLORIDA RAILWAY CO
AFR	AMADOR FOOTHILLS RAILROAD
AGCR	ALAMO GULF COAST RAILROAD COMPANY
AGR	ALABAMA & GULF COAST RAILWAY LLC
AIKR	AIKEN RAILWAY COMPANY, LLC
AKDN	ACADIANA RAILWAY COMPANY
AKMD	ARKANSAS MIDLAND RAILROAD CO INC
ALE	ALABAMA EXPORT RAILROAD INC
ALLN	ALLENTOWN AND AUBURN RAILROAD

ALM   ARKANSAS LOUISIANA & MISSISSIPPI RAILROAD COMPANY
ALR   ALABAMA RAILROAD, LLC
ALS   ALTON & SOUTHERN RAILWAY COMPANY
ALT   AIRLAKE TERMINAL RAILWAY COMPANY
AM   ARKANSAS AND MISSOURI RAILROAD CO
AMTK   AMTRAK-NATIONAL RAILROAD PASSENGER CORPORATION
AN   AN RAILWAY LLC
ANR   ANGELINA & NECHES RIVER RAILROAD COMPANY
ANRG   ALTEX ENERGY LTD
ANY   ATHABASCA NORTHERN RAILWAY LTD
AO   APPALACHIAN & OHIO RAILROAD INC
AOK   ARKANSAS-OKLAHOMA RAILROAD INC
AOR   THE ALIQUIPPA & OHIO RIVER RAILROAD COMPANY
APA   APACHE RAILWAY COMPANY
APD   ALBANY PORT DISTRICT
APNC   APPANOOSE COUNTY COMMUNITY RAILROAD INC
APR   ALBERTA PRAIRIE RAILWAY
AR   ABERDEEN AND ROCKFISH RAILROAD COMPANY
ARA   ARCADE AND ATTICA RAILROAD CORPORATION
ARC   ALEXANDER RAILROAD COMPANY
ARR   ALASKA RAILROAD CORPORATION
ARS   ARKANSAS SOUTHERN RAILROAD
ART   A & R TERMINAL RAILROAD
ARZC   ARIZONA & CALIFORNIA RAILROAD CO
ASRY   ASHLAND RAILWAY CO
AT   AFFTON TERMINAL SERVICES RAILROAD, LLC
ATCR   ATCS TESTING & FIELD EVALUATION
ATCS   ATCS TESTING & FIELD EVALUATION
ATL   ATLANTIC RAILWAYS COMPANY LLC
ATLT   AT & L RAILROAD CO INC
ATN   ALABAMA & TENNESSEE RIVER RAILWAY LLC
ATR   ALLIANCE TERMINAL RAILROAD LLC
ATW   ATLANTIC & WESTERN RAILWAY, L P
AUT   AUTAUGA NORTHERN RAILROAD LLC
AVR   ALLEGHENY VALLEY RAILROAD COMPANY
AVRR   AG VALLEY RAILROAD, LLC
AWRR   AUSTIN WESTERN RAILROAD
AWRY   ADAMS WARNOCK RAILWAY, INC.
AWW   ALGERS WINSLOW AND WESTERN RAILWAY COMPANY
AZCR   ARIZONA CENTRAL RAILROAD INC
AZER   ARIZONA EASTERN RAILWAY COMPANY
BAWT   BAYWAY TERMINAL SWITCHING COMPANY LLC
BAYL   BAY LINE RAILROAD L L C, THE
BB   BUCKINGHAM BRANCH RAILROAD COMPANY
BBAY   BOGALUSA BAYOU RAILROAD LLC
BCLR   BAY COLONY RAILROAD CORPORATION
BCR   BAY COAST RAILROAD
BCRM   BCR PROPERTIES LTD.
BCRY   BARRIE-COLLINGWOOD RAILWAY
BDRV   BELVIDERE & DELAWARE RIVER RAILWAY COMPANY INC
BDTL   BALLARD TERMINAL RAILROAD CO LLC
BDW   BIGHORN DIVIDE & WYOMING RAILROAD INC
BEEM   BEECH MOUNTAIN RAILROAD COMPANY
BFT   BIG FOUR TERMINAL RAILROAD, LLC
BGCM   BG & CM RAILROAD
BGS   BIG SKY RAIL CORP
BH   B&H RAIL CORP
BHP   BHP NEVADA RAILROAD COMPANY
BHR   BROOKHAVEN RAIL, LLC
BHRR   BIRMINGHAM TERMINAL RAILWAY LLC
BIP   BELPRE INDUSTRIAL PARKERSBURG RAILROAD

```
BIR      BUCYRUS INDUSTRIAL RAILROAD LLC
BIRR     BELLINGHAM INTERNATIONAL RAILROAD LLC
BJRR     BAJA CALIFORNIA RAILROAD INC
BJRY     BURLINGTON JUNCTION RAILWAY
BKRR     BATTEN KILL RAILROAD INC
BLE      BESSEMER AND LAKE ERIE RAILROAD COMPANY
BLMR     BLUE MOUNTAIN RAILROAD INC
BLOL     BLOOMER LINE, THE
BLR      BLACKLANDS RAILROAD THE
BLU      BLUE RIDGE SOUTHERN RAILROAD LLC
BM       BOSTON AND MAINE CORPORATION
BML      BELFAST AND MOOSEHEAD LAKE RAILROAD COMPANY
BMRG     BLUE MOUNTAIN AND READING RAILROAD
BNG      BLACKWELL NORTHERN GATEWAY RAILROAD COMPANY
BNML     BURLINGTON NORTHERN (MANITOBA) LTD
BNSF     BNSF RAILWAY COMPANY
BOCT     BALTIMORE AND OHIO CHICAGO TERMINAL RAILROAD CO
BOP      BORDER PACIFIC RAILROAD CO
BPRR     BUFFALO & PITTSBURGH RAILROAD INC
BRAN     BRANDON RAILROAD LLC
BRC      BELT RAILWAY COMPANY OF CHICAGO
BRG      BROWNSVILLE & RIO GRANDE INTERNATIONAL RAILWAY, LLC
BRR      BATTLE RIVER RAILWAY NGC INC
BRS      BATON ROUGE SOUTHERN RAILROAD, LLC.
BRW      BLACK RIVER & WESTERN CORPORATION
BS       BIRMINGHAM SOUTHERN RR CO
BSDA     BI-STATE DEVELOPMENT AGENCY
BSOR     BUFFALO SOUTHERN RAILROAD INC
BSR      BIG SPRING RAIL SYSTEM, INC.
BSRR     BOSTON SURFACE RAILROAD COMPANY, INC
BSVY     BOONE & SCENIC VALLEY RAILROAD
BTR      BOUNDARY TRAIL RAILWAY COMPANY INC.
BVRR     BOISE VALLEY RAILROAD, LLC
BVRY     BRANDYWINE VALLEY RAILROAD COMPANY
BXN      BAUXITE & NORTHERN RAILWAY COMPANY
CA       CHESAPEAKE & ALBEMARLE
CAEG     COFFEEN AND WESTERN RAILROAD
CAGY     COLUMBUS AND GREENVILLE RAILWAY
CALA     CAROLINA SOUTHERN RAILROAD COMPANY, THE
CAMY     CAMP CHASE RAILWAY COMPANY, LLC
CARR     CARROLLTON RAILROAD
CBC      CHEMIN DE FER BAIE DES CHALEURS INC
CBNS     CAPE BRETON & CENTRAL NOVA SCOTIA RAILWAY
CBR      COOS BAY RAIL LINE, INC
CBRW     COLUMBIA BASIN RAILROAD COMPANY INC
CBRY     COPPER BASIN RAILWAY INC
CBYN     CROSBYTON RAILWAY COMPANY INC
CC       CHICAGO CENTRAL & PACIFIC RAILROAD CO
CCET     CCET, LLC
CCH      COLUMBUS & CHATTAHOOCHEE RAILROAD, INC
CCKY     CHATTOOGA & CHICKAMAUGA RAILWAY CO
CCPN     CORPUS CHRISTI TERMINAL RAILROAD INC
CCRA     CAMP CHASE INDUSTRIAL RAILROAD CORPORATION
CCRL     CLEVELAND & CUYAHOGA RAILWAY, LLC
CCT      CENTRAL CALIFORNIA TRACTION COMPANY
CCUO     CHICAGO-CHEMUNG RAILROAD CORP
CEDR     CEDAR RIVER RAILROAD COMPANY
CEIW     CENTRAL INDIANA & WESTERN RAILROAD CO INC
CEMR     CENTRAL MANITOBA RAILWAY INC
CER      CHARLOTTE WESTERN RAILROAD, LLC
CERA     CENTRAL RAILROAD COMPANY OF INDIANAPOLIS
```

CERR   CICERO CENTRAL RAILROAD, L.L.C.
CF   CAPE FEAR RAILWAYS INC
CFE   CHICAGO FT WAYNE & EASTERN A DIVISION OF CENTRAL RAILROAD OF INDIANAPOLIS INC
CFL   C F LANAUDIERE INC
CFNR   CALIFORNIA NORTHERN RAILROAD COMPANY LP
CFR   CENTRAL FLORIDA RAIL CORRIDOR
CFS   SARTIGAN RAILWAY/CHEMIN DE FER SARTIGAN
CFWR   CANEY FORK AND WESTERN RR
CGR   CG RAILWAY, LLC
CHAT   CHATTAHOOCHEE BAY RAILROAD INC
CHB   CLEVELAND PORT RAILWAY, LLC
CHR   CHESTNUT RIDGE RAILWAY COMPANY
CHS   CHARLOTTE SOUTHERN RAILROAD COMPANY
CIC   CEDAR RAPIDS & IOWA CITY RAILWAY COMPANY
CIND   CENTRAL RAILROAD OF INDIANA
CIR   CITY OF ROCHELLE ILLINOIS
CIRR   CHATTAHOOCHEE INDUSTRIAL RAILROAD
CIRY   CENTRAL ILLINOIS RAILROAD COMPANY
CJR   CHICAGO JUNCTION RAILWAY COMPANY, LLC
CKIN   CHESAPEAKE AND INDIANA RAILROAD COMPANY INC
CLC   COLUMBIA & COWLITZ RAILWAY LLC
CLCY   CHESSIE LOGISTICS CO., LLC
CLNA   CAROLINA COASTAL RAILWAY INC
CLP   CLARENDON AND PITTSFORD RAILROAD COMPANY, THE
CM   CENTRAL MONTANA RAIL INC
CMC   CMC RAILROAD INC
CMGN   CENTRAL MICHIGAN RAILWAY CO
CMPA   MADISON RAILROAD (A DIV OF CITY OF MADISON PORT AUTHORITY)
CMQ   CENTRAL MAINE & QUEBEC RAILWAY
CMSL   CAPE MAY SEASHORE LINES
CN   CANADIAN NATIONAL RAILWAYS
CNAT   CN AQUATRAIN
CNRR   CORNHUSKER RAILROAD, LLC
CNUR   C & NC RAILROAD CORPORATION
CNYK   CENTRAL NEW YORK RAILROAD CORPORATION
CNZR   CENTRAL NEW ENGLAND RAILROAD CO INC
COEH   CONECUH VALLEY RAILWAY LLC
COER   CRAB ORCHARD & EGYPTIAN RAILWAY A DIVISION OF PROGRESSIVE RAIL IN
COP   CITY OF PRINEVILLE RAILWAY
CORP   CENTRAL OREGON & PACIFIC RAILROAD INC
CORY   COLUMBIA & READING RAILWAY CO
CP   CP RAIL SYSTEM
CPC   CHICAGO PORT RAILROAD COMPANY
CPDR   CAROLINA PIEDMONT DIVISION SOUTH CAROLINA CENTRAL RAILROAD COMPANY INC
CPKC   CANADIAN PACIFIC AND KANSAS CITY *(2023 merger of CP and KCS)*
CPMY   COOPERSVILLE AND MARNE RAILWAY COMPANY
CPR   CATERPARROTT RAILNET, LLC
CPRL   CHICAGO RAIL & PORT, LLC
CPRS   CANADIAN PACIFIC RAILWAY
CQPA   CENTRAL COLUMBIANA & PENNSYLVANIA RAILWAY INC
CRC   CINCINNATI RAILWAY COMPANY
CRE   CHICAGO SUGAR EXPRESS RAILROAD
CRL   CHICAGO RAIL LINK
CSCD   CASCADE AND COLUMBIA RIVER RAILROAD COMPANY
CSKR   C & S RAILROAD CORPORATION
CSO   CONNECTICUT SOUTHERN RAILROAD INC
CSP   CHICAGO, ST. PAUL & PACIFIC RAILROAD LLC
CSR   CAMDEN & SOUTHERN RAILROAD INC
CSRJ   COLUMBIA SHIPYARDS RAILROAD LLC
CSS   CHICAGO SOUTHSHORE & SOUTH BEND RAILROAD
CSXT   CSX TRANSPORTATION

CT	COLUMBIA TERMINAL
CTM	CHICAGO TERMINAL RAILROAD
CTN	CANTON RAILROAD COMPANY
CTR	CLINTON TERMINAL RAILROAD COMPANY
CTRR	CLOQUET TERMINAL RAILROAD COMPANY INC
CTRW	CARLTON TRAIL RAILWAY COMPANY
CTXR	CENTRAL TEXAS & COLORADO RIVER RAILWAY, LLC
CUOH	COLUMBUS & OHIO RAILROAD COMPANY
CVLY	CLACKAMAS VALLEY RAILWAY, LLC
CVR	CIMARRON VALLEY RAILROAD L C
CVRC	PROGRESSIVE RAIL INC D/B/A CANNON VALLEY RAILROAD COMPANY
CVYR	CADDO VALLEY RAILROAD COMPANY
CW	COLORADO & WYOMING RWY CO
CWA	CENTRAL WASHINGTON RAILROAD COMPANY
CWCY	CALDWELL COUNTY RAILROAD COMPANY
CWR	CWRR INC
CWRO	CLEVELAND WORKS RAILWAY COMPANY
CWRY	COMMONWEALTH RAILWAY INC
CWW	CWW, LLC
CXR	COLORADO PACIFIC RAILROAD
CZRY	CARRIZO GORGE RAILWAY INC
DA	CP RAIL SYSTEM
DAIR	D & I RAILROAD COMPANY
DAKR	DAKOTA RAIL INC
DAKS	DAKOTA SHORT LINE
DALT	DALLAS TERMINAL RAILWAY
DC	DELRAY CONNECTING RAILROAD COMPANY
DCC	DECATUR CENTRAL RAILROAD, INC.
DCON	DETROIT CONNECTING RAILROAD COMPANY
DCR	DELMARVA CENTRAL RAILROAD COMPANY
DCRR	DUBOIS COUNTY RAILROAD
DD	DOVER AND DELAWARE RIVER RAILROAD, LLC
DFW	DALLAS FORT WORTH & SOUTHERN RAILWAY COMPANY
DGNO	DALLAS GARLAND & NORTHEASTERN RAILROAD INC
DGVR	DURBIN & GREENBRIER VALLEY RAILROAD INC
DH	DELAWARE & HUDSON RAILWAY COMPANY INC
DIR	DAVENPORT INDUSTRIAL RAILROAD, LLC
DKS	DONIPHAN KENSETT & SEARCY RAILWAY
DL	DELAWARE-LACKAWANNA RAILROAD CO INC
DLWR	DEPEW LANCASTER & WESTERN RAILROAD CO INC
DME	DAKOTA MINNESOTA & EASTERN RAILROAD CORP
DMM	DANSVILLE AND MOUNT MORRIS RAILROAD COMPANY, THE
DMVW	DAKOTA MISSOURI VALLEY & WESTERN RAILROAD INC
DN	DAKOTA NORTHERN RAILROAD INC
DQE	DEQUEEN & EASTERN RAILROAD LLC
DR	DARDANELLE & RUSSELLVILLE RAILROAD COMPANY
DREI	DECATUR & EASTERN ILLINOIS RAILROAD LLC
DRIR	DENVER ROCK ISLAND RAILROAD
DRR	DELAWARE AND RARITAN RIVER RAILROAD
DRRV	DOVER & ROCKAWAY RIVER RAILROAD
DSC	DRAKE SWITCHING COMPANY, LLC
DSRC	DAKOTA SOUTHERN RAILWAY COMPANY
DSRR	DELTA SOUTHERN RAILROAD COMPANY
DT	DECATUR JUNCTION RAILWAY COMPANY
DUSR	DUTCHTOWN SOUTHERN RAILROAD, LLC
DV	DELAWARE VALLEY RAILWAY COMPANY INC
DVR	DEVCO RY (CAPE BRETON DEVELOPMENT CORP)
DVS	DELTA VALLEY & SOUTHERN RAILWAY COMPANY
EACH	EAST CAMDEN & HIGHLAND RR CO
EARY	EASTERN ALABAMA RAILWAY
EBG	EASTERN BERKS GATEWAY RAILROAD COMPANY

EBSR   EAST BROOKFIELD & SPENCER RAILROAD LLC
EBTC   EAST BROAD TOP CONNECTING RAILROAD
ECO   ECORAIL INC
ECTB   EAST CHATTANOOGA BELT RAILWAY COMPANY
ECYR   EASTSIDE COMMUNITY RAIL, LLC
EDW   EL DORADO AND WESSON RAILWAY COMPANY
EE   ELLIS & EASTERN COMPANY
EEC   EAST ERIE COMMERCIAL RAILROAD
EFRR   EFFINGHAM RAILROAD COMPANY
EIRR   EASTERN IDAHO RAILROAD LLC
EJR   EAST JERSEY RAILROAD AND TERMINAL COMPANY
EJSR   ELWOOD JOLIET & SOUTHERN RAILROAD L.L.C
ELKR   ELK RIVER RAILROAD INC
ELS   ESCANABA AND LAKE SUPERIOR RAILROAD COMPANY
EMHR   EAST MAHANOY & HAZELTON RAILROAD COMPANY
EMRY   EASTERN MAINE RAILWAY COMPANY
ENR   E & N RAILWAY COMPANY (1998) LTD
ERRT   EAST CHICAGO RAIL TERMINAL, LLC
ESPN   EAST PENN RAILROAD LLC
ETL   ESSEX TERMINAL RAILWAY COMPANY THE
ETRY   EAST TENNESSEE RAILWAY, L P
EV   EVERETT RAILROAD
EVWR   EVANSVILLE WESTERN RAILWAY INC
EWR   ELKHART & WESTERN RAILROAD CO
EZR   ELIZABETHTOWN INDUSTRIAL RAILROAD, LLC
FAPR   FLOYDADA & PLAINVIEW RAILROAD COMPANY
FC   FULTON COUNTY RAILROAD INC
FCCM   COMPANIA DE FERROCARRILES CHIAPAS MAYAB SA DE CV
FCEN   FLORIDA CENTRAL RAILROAD CO
FCR   FULTON COUNTY RAILWAY LLC
FCRD   FIRST COAST RAILROAD INC
FEC   FLORIDA EAST COAST RAILWAY, LLC
FGA   FLORIDA GULF & ATLANTIC RAILROAD, LLC
FGLK   FINGER LAKES RAILWAY CORP
FIR   FLATS INDUSTRIAL RAILROAD COMPANY
FMID   FLORIDA MIDLAND RAILROAD CO INC
FMR   FORTY MILE RAILROAD, INC.
FMRC   FARMRAIL CORPORATION
FNOR   FLORIDA NORTHERN RAILROAD COMPANY INC
FOXY   FOX VALLEY & LAKE SUPERIOR RAIL SYSTEM, L.L.C.
FP   FORDYCE AND PRINCETON RAILROAD CO
FRR   FALLS ROAD RAILROAD CO INC
FRVT   FORE RIVER TRANSPORTATION CORPORATION
FSR   FORT SMITH RAILROAD CO
FSRR   FERROSUR S A DE C V
FVRR   FREDONIA VALLEY RAILROAD INC
FWCR   FLORIDA WEST COAST RAILROAD INC
FWDB   FORT WORTH & DALLAS BELT RAILROAD
FWDR   FORT WORTH & DALLAS RAILROAD COMPANY
FWRY   FILMORE & WESTERN RAILWAY
FWWR   FORT WORTH & WESTERN RAILROAD
FXE   FERROCARRIL MEXICANO S A DE C V
GC   GEORGIA CENTRAL RAILWAY L P
GCK   GEORGES CREEK RAILWAY
GCRC   GOLDEN CAT RAILROAD CORP, THE
GCW   GARDEN CITY WESTERN RAILWAY COMPANY, THE
GDLK   GRAND ELK RAILROAD, LLC.
GET   GETTYSBURG & NORTHERN RAILROAD CO
GEXR   GODERICH-EXETER RAILWAY COMPANY LTD
GFR   GRAND FORKS RAILWAY COMPANY
GFRR   GEORGIA & FLORIDA RAILWAY, LLC

GIO   GIO RAILWAYS
GITM   GOLDEN ISLES TERMINAL RAILROAD INC
GLC   GREAT LAKES CENTRAL RAILROAD
GLTR   GREAT LAKES TERMINAL RAILROAD, LLC
GMR   GEORGIA MIDLAND RAILROAD INC
GMRC   GREEN MOUNTAIN RAILROAD CORPORATION
GNBC   GRAINBELT CORPORATION
GNPR   GNP RLY INC.
GNRR   GEORGIA NORTHEASTERN RAILROAD CO
GNWR   GENESEE AND WYOMING RAILROAD COMPANY
GOGR   GEAUX GEAUX RAILROAD LLC
GOOS   GOOSE LAKE RAILWAY LLC
GR   GRAND RAPIDS EASTERN RAILROAD INC
GRD   GARDENDALE RAILROAD, INC
GRLW   GREENVILLE & WESTERN RAILWAY COMPANY LLC
GRNR   GRAND RIVER
GRNW   GREAT NORTHWEST RAILROAD LLC
GRR   GEORGETOWN RAILROAD COMPANY
GRRY   THE GREAT LAKE PORT CORPORATION D/B/A THE GRAND RIVER RAILWAY
GRW   GARY RAILWAY COMPANY
GRWR   GREAT WALTON RAILROAD CO, THE
GRYR   GRENADA RAILROAD LLC D/B/A GRENADA RAILWAY
GS   GEORGIA SOUTHERN RAILWAY CO.
GSI   GULF & SHIP ISLAND RAILROAD LLC
GSM   GREAT SMOKEY MOUNTAINS RAILWAY INC
GSR   GREAT SANDHILLS RAILWAY, LTD.
GSWR   GEORGIA SOUTHWESTERN RAILROAD INC
GTR   GREAT RIVER RAILROAD
GTRA   GOLDEN TRIANGLE RAILROAD LLC
GTW   GRAND TRUNK WESTERN RAILROAD COMPANY
GU   GRAFTON AND UPTON RAILROAD COMPANY
GVSR   GALVESTON RAILROAD LP
GWR   GREAT WESTERN RAILWAY OF COLORADO LLC
GWRC   GEORGIA WOODLANDS RAILROAD CO
GWRS   GREAT WESTERN RAILWAY LTD
GWSW   GWI SWITCHING SERVICES L P
GWWE   GATEWAY EASTERN RAILWAY COMPANY
HAL   HILTON & ALBANY RAILOAD, INC.
HB   HAMPTON & BRANCHVILLE RAILROAD COMPANY
HBRY   HUDSON BAY RAILWAY COMPANY
HBT   HOUSTON BELT & TERMINAL RAILWAY COMPANY
HCRY   HURON CENTRAL RAILWAY INC
HE   HOLLIS & EASTERN R R CO
HESR   HURON AND EASTERN RAILWAY COMPANY INC
HIRR   HAINESPORT INDUSTRIAL RAILROAD LLC
HIRW   HERRIN RAILROAD, LLC
HLSC   HAMPTON RAILWAY INC
HMCR   HUNTSVILLE & MADISON COUNTY RAILROAD AUTHORITY
HN   HUTCHINSON AND NORTHERN RAILWAY COMPANY, THE
HNW   HAMILTON NORTHWESTERN RAILROAD CO.
HOB   HENDERSON OVERTON BRANCH
HOG   HEART OF GEORGIA RAILROAD INC
HOS   HOOSIER SOUTHERN RAILROAD
HPTD   HIGH POINT THOMASVILLE & DENTON RAILROAD COMPANY
HR   HERITAGE RAILROAD CORP
HRR   HONDO RAILWAY LLC
HRRC   HOUSATONIC RAILROAD COMPANY INC
HRT   HARTWELL RAILROAD COMPANY
HSR   HAINESPORT SECONDARY, LLC
HSRR   HARDIN SOUTHERN RAILROAD INC
HTR   HEART OF TEXAS RAILROAD, LP

```
IAIS      IOWA INTERSTATE RAILROAD LTD
IAMR      IOWA & MIDDLETOWN RAILWAY LLC
IANR      IOWA NORTHERN RAILROAD
IANW      IOWA NORTHWESTERN RAILROAD
IARR      IOWA RIVER RAILROAD INC
IATR      IOWA TRACTION RAILWAY COMPANY
IBT       INTERNATIONAL BRIDGE AND TERMINAL COMPANY, THE
IC        ILLINOIS CENTRAL RAILROAD COMPANY
ICRK      INDIAN CREEK RAILROAD COMPANY
IERR      INDIANA EASTERN RAILROAD LLC
IHB       INDIANA HARBOR BELT RAILROAD COMPANY
ILW       ILLINOIS WESTERN RAILROAD COMPANY
IMR       ITAWAMBA MISSISSIPPIAN RAILROAD LLC
IMRR      ILLINOIS & MIDLAND RAILROAD INC
IN        INDIANA NORTHEASTERN RAILROAD COMPANY INC
INPR      IDAHO NORTHERN & PACIFIC RAILROAD COMPANY
INRD      INDIANA RAIL ROAD CORPORATION
IORY      INDIANA & OHIO RAILWAY COMPANY
IR        ILLINOIS RAILWAY, LLC
ISR       IOWA SOUTHERN RAILROAD COMPANY
ISRC      IDAHO & SEDALIA TRANSPORTATION COMPANY LLC
ISRR      INDIANA SOUTHERN RAILROAD COMPANY INC
ISRY      IOWA SOUTHERN RAILWAY COMPANY
ISW       INDIANA SOUTHWESTERN RAILWAY CO
ITHR      ITHACA CENTRAL RAILROAD LLC
JAIL      JACKSON & LANSING RAILROAD COMPANY
JE        JOPPA & EASTERN RAILROAD COMPANY
JEFW      JEFFERSON WARRIOR RAILROAD CO INC
JKL       J K LINE INC
JTCO      JACKSONVILLE TERMINAL CO
JVRR      JUNIATA VALLEY RAILROAD COMPANY
JXPT      JACKSONVILLE PORT TERMINAL RAILROAD L.L.C.
KAW       KAW RIVER RAILROAD
KBSR      KANKAKEE BEAVERVILLE AND SOUTHERN RAILROAD COMPANY
KCS       KANSAS CITY SOUTHERN RAILWAY COMPANY
KCSM      KANSAS CITY SOUTHERN DE MEXICO S DE R L DE C V
KCT       KANSAS CITY TERMINAL RAILWAY COMPANY
KCTL      KANSAS CITY TRANSPORTATION CO LLC
KFR       KETTLE FALLS INTERNATIONAL RAILWAY LLC
KGTR      KINGMAN TERMINAL RAILROAD, LLC
KJR       KISKI JUNCTION RAILROAD
KJRY      KEOKUK JUNCTION RAILWAY
KKRR      KNOX & KANE RAILROAD COMPANY
KNOR      KLAMATH NORTHERN RAILWAY COMPANY
KNR       KINSTON RAILROAD, LLC
KNWA      KANAWHA RIVER RAILROAD L.L.C.
KO        KANSAS & OKLAHOMA RAILROAD LLC
KPR       KELOWNA PACIFIC RAILWAY LTD
KRC       KEEWATIN RAILWAY COMPANY
KRL       KASGRO RAIL LINES
KRR       KIAMICHI RAILROAD COMPANY LLC
KRS       KATAHDIN RAILCAR SERVICES, LLC
KSH       KINSTON & SNOW HILL RAILROAD CO., INC.
KSRY      KOSCIUSKO SOUTHWESTERN RAILWAY
KT        KENTUCKY AND TENNESSEE RAILWAY
KTR       KENDALLVILLE TERMINAL RAILWAY CO
KVR       KERN VALLEY RAILROAD
KWT       KWT RAILWAY INC
KXCG      KNOXVILLE AND CUMBERLAND GAP RAILROAD COMPANY, LLC
KXHR      KNOXVILLE & HOLSTON RIVER RAILROAD CO INC
KYLE      KYLE RAILROAD COMPANY
```

LAJ	LOS ANGELES JUNCTION RAILWAY COMPANY
LAL	LIVONIA, AVON & LAKEVILLE RAILROAD CORPORATION
LAS	LOUISIANA SOUTHERN RAILROAD
LBR	LOWVILLE AND BEAVER RIVER RAILROAD COMPANY THE
LBWR	LUBBOCK & WESTERN RAILWAY, L.L.C.
LC	LANCASTER & CHESTER RAILROAD, LLC.
LCR	LAKE COUNTY RAILROAD
LCRI	LONG CREEK RAILROAD COMPANY INC
LDRR	LOUISIANA & DELTA RAILROAD INC
LEN	LAKE ERIE & NORTHERN
LER	LOGANSPORT & EEL RIVER SHORT-LINE CO INC
LFCD	LINEA COAHUILA DURANGO SA DE CV
LI	LONG ISLAND RAILROAD COMPANY
LINC	LEWIS & CLARK RAILWAY CO
LIRC	LOUISVILLE & INDIANA RAILROAD COMPANY
LIRR	LAPEER INDUSTRIAL RAILROAD COMPANY
LKRR	LITTLE KANAWHA RIVER RAIL INC
LLG	LEAVENWORTH, LAWRENCE & GALVESTON DBA BALDWIN CITY & SOUTHERN
LLR	LAKE LINE RAILROAD INC.
LMIC	LAKE MICHIGAN AND INDIANA RAILROAD COMPANY
LMR	LAST MOUNTAIN RAILWAY
LNAL	LOUISVILLE NEW ALBANY & CORYDON RAILROAD
LNVT	LANDISVILLE TERMINAL & TRANSFER COMPANY
LNW	LOUISIANA AND NORTH WEST RAILROAD COMPANY, THE
LPN	LONGVIEW, PORTLAND & NORTHERN RAILWAY COMPANY
LRA	LOUISVILLE RIVERPORT AUTHORITY RAILROAD
LRPA	LITTLE ROCK PORT RAILROAD
LRS	LAURINBURG AND SOUTHERN RAILROAD COMPANY
LRWN	LITTLE ROCK & WESTERN RAILWAY, L P
LRWY	LEHIGH RAILWAY, LLC.
LS	LUZERNE AND SUSQUEHANNA RAILWAY COMPANY
LSI	LAKE SUPERIOR & ISHPEMING RAILROAD COMPANY
LSRC	LAKE STATE RAILWAY COMPANY
LT	LAKE TERMINAL RAILROAD COMPANY, THE
LVR	LANDISVILLE RAILROAD, LLC
LVRB	LEHIGH VALLEY RAIL MANAGEMENT LLC - BETHLEHEM DIVISION
LVRJ	LEHIGH VALLEY RAIL MANAGEMENT LLC - JOHNSTOWN DIVISION
LVRR	LYCOMING VALLEY RAILROAD COMPANY
LVSW	LONGVIEW SWITCHING COMPANY
LW	LOUISVILLE AND WADLEY RAILWAY COMPANY
LXVR	LUXAPALILA VALLEY RAILROAD INC
MAA	MAGMA ARIZONA RAILROAD COMPANY
MAL	MICHIGAN AIR-LINE RAILWAY CO
MAN	MANNING RAIL, INC
MAUP	MANATEE COUNTY PORT AUTHORITY
MAW	MAUMEE & WESTERN RAILROAD CORPORATION
MC	MASSACHUSETTS COASTAL RAILROAD LLC
MCER	MASSACHUSETTS CENTRAL RAILROAD CORPORATION
MCLR	MCLAUGHLIN LINE RAILROAD
MCR	MCCLOUD RAILWAY COMPANY
MCRI	MIDCOAST RAILSERVICE, INC.
MCSA	MOSCOW, CAMDEN & SAN AUGUSTINE RAILROAD
MCVR	MERCED COUNTY CENTRAL VALLEY RAILROAD LLC
MD	C&J RAILROAD COMPANY D/B/A MISSISSIPPI DELTA RAILROAD
MDDE	MARYLAND AND DELAWARE RAILROAD COMPANY
MDS	MERIDIAN SOUTHERN RAILWAY LLC
MDSN	MADISON TERMINAL RAILWAY LLC
MDW	MINNESOTA DAKOTA & WESTERN RAILWAY COMPANY
ME	MORRISTOWN & ERIE RAILWAY INC
MEC	MAINE CENTRAL RAILROAD COMPANY
MER	MISSOURI EASTERN RAILROAD, LLC

```
MET     MODESTO AND EMPIRE TRACTION COMPANY
METW    MUNICIPALITY OF EAST TROY WISCONSIN
METX    METRA
MGRI    MG RAIL INC
MH      MT HOOD RAILROAD CO
MHC     MOHALL CENTRAL RAILROAD INC
MHSF    MOREHEAD & SOUTH FORK RAILROAD CO INC
MHWA    MOHAWK ADIRONDACK & NORTHERN RAILROAD CORP
MIDH    MIDDLETOWN & HUMMELSTOWN RAILROAD COMPANY
MJ      MANUFACTURERS JUNCTION RAILWAY COMPANY
MMID    MARYLAND MIDLAND RAILWAY INC
MMRR    MID-MICHIGAN RAILROAD INC
MMT     MISSION MOUNTAIN RAILROAD
MNA     MISSOURI & NORTHERN ARKANSAS RAILROAD COMPANY INC
MNBR    M&B RAILROAD LLC
MNC     MOTIVE RAIL INC D/B/A MISSOURI NORTH CENTRAL RAILROAD
MNCW    METRO-NORTH COMMUTER RAILROAD
MNF     MOREHEAD & NORTH FORK
MNJ     MIDDLETOWN & NEW JERSEY RAILWAY LLC
MNN     MINNESOTA NORTHERN RAILROAD INC
MNNR    MINNESOTA COMMERCIAL RAILWAY CO
MNR     MAINE NORTHERN RAILWAY COMPANY
MOC     MISSOURI CENTRAL RAILROAD COMPANY
MPLI    MINNESOTA PRAIRIE LINE INC
MQT     MARQUETTE RAIL LLC
MRA     MINERAL RANGE, INC.
MRI     MOHALL RAILROAD INC
MRL     MONTANA RAIL LINK INC
MS      MICHIGAN SHORE RAILROAD INC
MSCI    MISSISSIPPI CENTRAL RAILROAD COMPANY
MSE     MISSISSIPPI EXPORT RAILROAD COMPANY
MSL     MONTGOMERY SHORT LINE LLC
MSN     BALLARD TERMINAL RAILROAD COMPANY LLC D/B/A MEEKER SOUTHERN RAILROAD
MSO     MICHIGAN SOUTHERN RAILROAD CO INC
MSR     MISSISSIPPI SOUTHERN RAILROAD
MSRW    MISSISSIPPIAN RAILWAY COOPERATIVE INC
MSTR    MASSENA TERMINAL RAILROAD COMPANY, THE
MSV     MISSISSIPPI & SKUNA VALLEY RAILROAD LLC
MTNR    MISSISSIPPI TENNESSEE RAILROAD LLC
MVRY    MAHONING VALLEY RAILWAY COMPANY, THE
MVT     MT VERNON TERMINAL RAILWAY INC
MWRC    MOUNT WASHINGTON RAILWAY CO
MWRR    MONTANA WESTERN RAILWAY CO INC
NAP     NARRAGANSETT PIER RAILROAD COMPANY INC, THE
NAUG    NAUGATUCK RAILROAD COMPANY INC
NBER    NITTANY & BALD EAGLE RAILROAD CO
NBSR    NEW BRUNSWICK SOUTHERN RAILWAY COMPANY LIMITED
NCIR    NEW CASTLE INDUSTRIAL RAILROAD
NCPR    NORTH CAROLINA PORTS RAILWAY COMMISSION
NCRC    NEBRASKA CENTRAL RAILROAD COMPANY
NCRL    NC RAILROAD INC
NCRR    NORTH COAST RAILROAD
NCS     NCSR LLC. D/B/A NEW CASTLE SOUTHERN RAILROAD
NCVA    NORTH CAROLINA & VIRGINIA RAILROAD CO INC
NCYR    NASH COUNTY RAILROAD CORP
NDCR    N D C RAILROAD COMPANY
NECR    NEW ENGLAND CENTRAL RAILROAD INC
NEGS    NEW ENGLAND SOUTHERN RAILROAD CO INC
NERR    NASHVILLE AND EASTERN RAILROAD CORP
NET     NORTHEAST TEXAS CONNECTOR LLC
NFTS    THE NELSON AND FT. SHEPPARD RAILWAY CORPORATION
```

NHCR	NEW HAMPSHIRE CENTRAL RAILROAD INC
NHN	NEW HAMPSHIRE NORTHCOAST CORP
NHRR	NEW HOPE & IVYLAND RAILROAD
NHVT	NEW HAMPSHIRE AND VERMONT RAILROAD COMPANY
NICD	NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
NJRC	NEW JERSEY RAIL CARRIER LLC
NJSL	NEW JERSEY SEASHORE LINES, INC.
NJTR	N J TRANSIT RAIL OPERATIONS (COMMUTER CARRIER)
NKCR	NEBRASKA KANSAS & COLORADO RAILNET INC
NLA	NORTH LOUISIANA & ARKANSAS RAILROAD
NLR	NORTHERN LINES RAILWAY LLC
NLRL	NORTHERN LIGHTS RAIL LTD.
NMGR	NEW MEXICO GATEWAY RAILROAD LLC
NNW	NEBRASKA NORTHWESTERN RAILROAD INC.
NOGC	NEW ORLEANS & GULF COAST RAILWAY COMPANY INC
NOKL	NORTHWESTERN OKLAHOMA RAILROAD COMPANY
NOLR	NEW ORLEANS LOWER COAST RAILROAD INC
NOPB	NEW ORLEANS PUBLIC BELT RAILROAD
NOW	NORTHERN OHIO & WESTERN RAILWAY LTD
NPB	NORFOLK & PORTSMOUTH BELT LINE RAILROAD COMPANY
NPR	NORTHERN PLAINS RAILROAD INC
NS	NORFOLK SOUTHERN RAILWAY COMPANY (NORFOLK SOUTHERN)
NSHR	NORTH SHORE RAILROAD CO
NSR	NEWBURGH & SOUTH SHORE RAILROAD COMPANY
NTRY	NIMISHILLEN & TUSCARAWAS LLC
NTZR	NATCHEZ RAILWAY INC.
NVRR	NAPA VALLEY RAILROAD CO
NWP	NORTHWESTERN PACIFIC RAILROAD COMPANY
NWR	NASHVILLE & WESTERN RAILROAD CORP
NYA	NEW YORK & ATLANTIC RAILWAY COMPANY
NYER	NEW YORK AND EASTERN RAILWAY LLC
NYGL	NEW YORK & GREENWOOD LAKE RAILWAY
NYLE	NEW YORK & LAKE ERIE RAILROAD
NYNJ	NEW YORK NEW JERSEY RAIL LLC
NYOG	NEW YORK & OGDENSBURG RAILWAY COMPANY INC
NYSW	NEW YORK SUSQUEHANNA AND WESTERN RAILWAY CORP
OAR	OLD AUGUSTA RAILROAD LLC
OBRY	GIO RAILWAYS CORPORATION DBA ORANGEVILLE BRAMPTON RAILWAY
OCR	OKLAHOMA CENTRAL RAILROAD CO
OCTL	OIL CREEK & TITUSVILLE LINES
OCTR	MORRISTOWN & ERIE RAILWAY INC D/B/A OCTORARO RAILROAD
OERR	OREGON EASTERN RAILROAD
OHCR	OHIO CENTRAL RAILROAD CO
OHIC	OHI-RAIL CORPORATION
OHIO	OHIO TERMINAL RAILWAY COMPANY
OHPA	OHIO & PENNSYLVANIA RAILROAD COMPANY
OHRY	OWEGO & HARFORD RAILWAY INC
OIRR	OREGON INDEPENDENCE RAILROAD, LLC
OKAN	OKANAGAN VALLEY RAILWAY COMPANY
OLB	OMAHA LINCOLN AND BEATRICE RAILWAY COMPANY
OLO	ONTARIO L'ORIGNAL RAILWAY INC
OMID	ONTARIO MIDLAND RAILROAD CORPORATION
ONCT	ONTARIO CENTRAL RAILROAD CORPORATION
ONT	ONTARIO NORTHLAND RAILWAY (ONTARIO NORTHLAND TRANS COMMISSION)
OPE	OREGON PACIFIC & EASTERN RAILWAY COMPANY
OPR	OREGON PACIFIC RAILROAD CO
OPT	ORANGE PORT TERMINAL RAILWAY
ORC	OGEECHEE RAILROAD COMPANY
OS	ONTARIO SOUTHLAND RAILWAY INC
OSCR	INDIANA EASTERN RAILROAD, LLC D/B/A OHIO SOUTH CENTRAL RAILROAD
OSRR	OHIO SOUTHERN RAILROAD CO

```
OTCO    OWENSVILLE TERMINAL CO INC
OTCR    OAKDALE TRACTION CORPORATION
OTR     OAKLAND TERMINAL RAILROAD COMPANY
OTVR    OTTERTAIL VALLEY RAILROAD CO INC
OUCH    OUACHITA RAILROAD
OURD    OGDEN UNION RAILWAY AND DEPOT COMPANY, THE
OV      OTTER VALLEY RAIL ROAD
OVR     OHIO VALLEY RAILROAD COMPANY
OVRR    OZARK VALLEY RAILROAD INC
OYLO    OLYMPIA & BELMORE RAILROAD, INC.
PAL     PADUCAH & LOUISVILLE RAILWAY
PAM     PITTSBURGH ALLEGHENY & MCKEES ROCKS RR CO
PAS     PAN AM SOUTHERN, LLC.
PBL     PHILADELPHIA BELT LINE RAILROAD COMPANY, THE
PBRR    PINE BELT SOUTHERN RAILROAD CO INC
PBVR    PORT BIENVILLE RAILROAD
PCC     PALOUSE RIVER & COULEE CITY RAILROAD LLC
PCN     POINT COMFORT & NORTHERN RAILWAY COMPANY
PCY     PITTSBURGH CHARTIERS & YOUGHIOGHENY RAILWAY COMPANY
PDRR    PEE DEE RIVER RAILROAD CORP
PGR     PROGRESSIVE RAIL INC
PGRV    PIGEON RIVER RAILROAD COMPANY
PHL     PACIFIC HARBOR LINE INC
PHRR    PORT HARBOR RAILROAD INC
PI      PADUCAH & ILLINOIS RAILROAD COMPANY
PICK    PICKENS RAILWAY COMPANY
PIR     PERU INDUSTRIAL RAILROAD, LLC
PJR     PORT JERSEY RAILROAD CO
PJRL    PENN JERSEY RAIL LINES INC
PKHP    PICKENS RAILWAY COMPANY
PMR     PORT MANATEE RAILROAD, LLC
PN      PENNSYLVANIA NORTHEASTERN RAILROAD, LLC
PNR     PANHANDLE NORTHERN RAILROAD COMPANY
PNW     PRESCOTT AND NORTHWESTERN RAILROAD COMPANY
PNWC    PACIFIC NORTHWEST CHAPTER-NRHS INC
PNWR    PORTLAND & WESTERN RAILROAD INC
POHC    THE PITTSBURGH & OHIO CENTRAL RAILROAD COMPANY
POTB    PORT OF TILLAMOOK BAY RAILROAD
POVA    PEND OREILLE VALLEY RAILROAD (PORT OF PEND OREILLE)
PPBD    PORT OF PALM BEACH DISTRICT
PR      SOUTH CAROLINA DIVISION OF PUBLIC RAILWAYS D/B/A PALMETTO RAILWAY
PRI     PORT RAIL, INC.
PRTD    PORTLAND TRACTION COMPANY
PRV     PEARL RIVER VALLEY RAILROAD COMPANY
PRY     PIONEER INDUSTRIAL RAILWAY CO
PSAP    THE PUGET SOUND & PACIFIC RAILROAD COMPANY A DIVISION OF THE ARIZONA & CALIFORNIA RAILROAD CO LP
PSC     PYCO INDUSTRIES INC
PSCC    PENNSYLVANIA & SOUTHERN RAILWAY LLC
PSRR    PACIFIC SUN RAILROAD, LLC
PSWR    PENNSYLVANIA SOUTHWESTERN RAILROAD INC
PT      PENINSULA TERMINAL COMPANY
PTC     PLAINVIEW TERMINAL COMPANY
PTM     PORTLAND TERMINAL COMPANY
PTRA    PORT TERMINAL RAILROAD ASSOCIATION
PTRC    PORTLAND TERMINAL RAILROAD COMPANY
PVJR    PORTLAND VANCOUVER JUNCTION RAILROAD LLC
PVRR    PIONEER VALLEY RAILROAD COMPANY
PVS     PECOS VALLEY PERMIAN RAILROAD LLC DBA PECOS VALLEY SOUTHERN RAILW
PW      PROVIDENCE AND WORCESTER RAILROAD COMPANY
QGRY    QUEBEC GATINEAU RAILWAY INC
QNSL    QUEBEC NORTH SHORE AND LABRADOR RAILWAY COMPANY
```

QRR	QUINCY RAILROAD COMPANY
RAIL	RAILINC CORPORATION
RARW	RARUS RAILWAY COMPANY
RBMN	READING BLUE MOUNTAIN & NORTHERN RAILROAD COMPANY
RCPE	RAPID CITY, PIERRE & EASTERN RAILROAD, INC.
RCRR	RED COAT ROAD & RAIL LTD
RCRY	RARITAN CENTRAL RAILWAY LLC
RI	CHICAGO, ROCK ISLAND & PACIFIC RAILROAD, LLC DBA ROCK ISLAND RAIL
RJAL	RJ CORMAN RAILROAD COMPANY/CHILDERSBURG LINE, LLC
RJCC	R J CORMAN RAILROAD COMPANY/CENTRAL KENTUCKY LINES
RJCD	RJ CORMAN RAILROAD COMPANY/TEXAS LINES, LLC
RJCK	R J CORMAN RAILROAD COMPANY/TENNESSEE TERMINAL LLC
RJCL	R J CORMAN RAILROAD COMPANY/CLEVELAND LINE
RJCM	R J CORMAN RAILROAD COMPANY/MEMPHIS LINE
RJCN	R J CORMAN RAILROAD COMPANY/ALLENTOWN LINES INC
RJCP	R J CORMAN RAILROAD COMPANY/PENNSYLVANIA LINES INC
RJCR	R J CORMAN RAILROAD CORPORATION/BARDSTOWN LINE
RJCS	RJ CORMAN RAILROAD CO/CAROLINA LINES, LLC
RJCV	R J CORMAN RAILROAD COMPANY/WV LINE
RJCW	R J CORMAN RAILROAD COMPANY/WESTERN OHIO LINE
RL	RUTLAND LINE INC
RLHH	RAILINK SOUTHERN ONTARIO
RLK	RAILINK OTTAWA VALLEY
RMRR	ROCKY MOUNTAIN RAILCAR AND RAILROAD INC
RNA	RIPLEY & NEW ALBANY RAILROAD COMPANY
RNRH	ROANOKE CHAPTER-NRHS INC
RPP	RUSK, PALESTINE, & PACIFIC RAILROAD, LLC
RPRC	RICHMOND PACIFIC RAILROAD CORPORATION
RRC	REDMONT RAILWAY COMPANY INC
RRCO	ROCHELLE RAILROAD CO
RRRR	ROCK & RAIL INC
RRVW	RED RIVER VALLEY & WESTERN RAILROAD CO
RS	ROBERVAL AND SAGUENAY RAILWAY COMPANY, THE
RSL	RSL RAILROAD LLC
RSM	RAILROAD SWITCHING SERVICE OF MISSOURI INC
RSNR	RED SPRINGS & NORTHERN RAILROAD CO
RSOR	RICEBORO SOUTHERN RAILWAY LLC
RSP	ROSCOE SNYDER & PACIFIC RAILWAY COMPANY
RSR	ROCHESTER & SOUTHERN RAILROAD INC
RSS	ROCKDALE SANDOW & SOUTHERN RAILROAD COMPANY
RVPR	RIVERPORT RAILROAD LLC
RVSC	RIO VALLEY SWITCHING COMPANY
RVT	ROGUE VALLEY TERMINAL RAILROAD CORPORATION
RWRR	RINGNECK AND WESTERN RAILROAD
RYAL	RYAL, LLC
SAC	SAN ANTONIO CENTRAL RAILROAD, LLC
SAN	SANDERSVILLE RAILROAD COMPANY
SAPT	SAVANNAH PORT TERMINAL RAILROAD INC
SAV	SACRAMENTO VALLEY RAILROAD
SB	SOUTH BUFFALO RAILWAY COMPANY
SBG	SAVAGE BINGHAM & GARFIELD RAILROAD COMPANY
SBLN	STERLING BELT LINE RAILWAY
SBMR	SAN FRANCISCO BAY RAILROAD - MARE ISLAND
SBR	THE STOURBRIDGE RAILWAY
SBRR	STOURBRIDGE RAILROAD COMPANY
SBS	SAGINAW BAY SOUTHERN RAILWAY COMPANY
SBVR	SOUTH BRANCH VALLEY RAIL ROAD
SC	SANTA CRUZ AND MONTEREY BAY RAILWAY COMPANY
SCBG	SANTA CRUZ BIG TREES & PACIFIC RAILWAY CO
SCIH	SOUTH CHICAGO & INDIANA HARBOR RAILWAY COMPANY
SCR	SYDNEY COAL RAILWAY

SCRF	SOUTH CAROLINA CENTRAL RAILROAD CO INC
SCS	SQUAW CREEK SOUTHERN RAILROAD
SCT	SIOUX CITY TERMINAL RAILWAY COMPANY
SCTR	SCTRR LLC
SCWY	SRC RAILWAY LLC
SCXF	SOUTH CENTRAL FLORIDA EXPRESS INC
SCXY	ST CROIX VALLEY RAILROAD COMPANY
SD	SAVAGE DAVENPORT RAILROAD COMPANY
SDBB	SOMERSET TERMINAL RAILROAD CO
SDIY	SAN DIEGO & IMPERIAL VALLEY RAILROAD CO INC
SE	SEMO PORT RAILROAD INC
SEI	SOUTHEASTERN INTERNATIONAL CORPORATION
SEKR	SOUTHEAST KANSAS RAILROAD COMPANY
SERA	SIERRA RAILROAD COMPANY
SFAL	SF&L RAILWAY INC
SFB	SAN FRANCISCO BAY RAILWAY, LLC
SFG	SOCIETE DU CHEMIN DE FER DE LA GASPESIE
SFR	SOUTHERN FREIGHT RAILROAD
SFS	SANTA FE SOUTHERN RAILWAY
SGLR	SEMINOLE GULF RAILWAY L P
SGR	SOUTHWEST GULF RAILROAD COMPANY
SH	STEELTON & HIGHSPIRE RAILROAD COMPANY
SHOP	RIC ASSIGNMENT FOR I/C TO OR FROM PRIVATE REPAIR SHOPS
SIND	SOUTHERN INDIANA RAILWAY INC
SJR	SAN JACINTO TRANSPORTATION COMPANY, INCORPORATED
SJVR	SAN JOAQUIN VALLEY RAILROAD CO
SKOL	SOUTH KANSAS & OKLAHOMA RAILROAD INC
SL	SALT LAKE CITY SOUTHERN RAILROAD COMPANY INC
SLAL	SOUTH PLAINS LAMESA RAILROAD LTD
SLC	SAN LUIS CENTRAL RAILROAD COMPANY
SLGG	S & L RAILROAD LLC
SLGW	SALT LAKE GARFIELD AND WESTERN RAILWAY COMPANY
SLQ	ST LAWRENCE & ATLANTIC RAILROAD (QUEBEC) INC
SLR	ST LAWRENCE & ATLANTIC RAILROAD CO
SLRG	SAN LUIS & RIO GRANDE RAILROAD INC
SLRS	SMS RAIL SERVICE INC
SLWC	STILLWATER CENTRAL RAILROAD COMPANY LLC
SM	SAINT MARYS RAILROAD COMPANY
SMA	SAN MANUEL ARIZONA RAILROAD COMPANY
SMAR	SONOMA-MARIN AREA RAIL TRANSIT
SMRR	SISSETON MILBANK RAILROAD
SMV	SANTA MARIA VALLEY RAILROAD COMPANY
SMW	ST MARYS RAILWAY WEST LLC
SNC	SARATOGA & NORTH CREEK RAILWAY
SNR	SUNFLOUR RAILROAD INC
SNY	SMS RAIL LINES OF NEW YORK LLC
SOM	SOMERSET RAILROAD CORPORATION
SOO	SOO LINE RAILROAD
SORA	SOUTHERN RAILS COOPERATIVE LIMITED
SPO	SOUTH POINT & OHIO RAILROAD, LLC
SPP	ST. PAUL & PACIFIC RAILROAD LLC
SPR	SOUTHWIND SHORTLINE RAILROAD COMPANY
SPSR	SAN PEDRO RAILROAD OPERATING CO LLC D/B/A SAN PEDRO & SOUTHWESTERN RAILROAD COMPANY
SPUD	ST PAUL UNION DEPOT
SPV	SAN PEDRO VALLEY RAILROAD LLC
SQSC	SEQUATCHIE VALLEY SWITCHING CO., LLC
SRC	STRASBURG RAILROAD COMPANY
SRN	SABINE RIVER & NORTHERN RAILROAD COMPANY
SRNJ	SOUTHERN RAILROAD COMPANY OF NEW JERSEY
SRRR	SWAN RANCH RAILROAD LLC
SRY	SOUTHERN RAILWAY OF BRITISH COLUMBIA LTD

SRYC	SIERRA RAILWAY COMPANY OF CALIFORNIA
SS	SAND SPRINGS RAILWAY COMPANY
SSAM	SAULT STE MARIE BRIDGE COMPANY
SSC	SOUTHERN SWITCHING COMPANY
SSH	SOUTH SHORE RAILWAY CO
SSJR	SHEFFIELD STATION JUNCTION RAILWAY
SSOR	SISSETON SOUTHERN RAILWAY CO
SSP	SPOKANE, SPANGLE & PALOUSE RAILWAY
SSPB	SEASPAN INTERNATIONAL LIMITED
SSR	S&S SHORTLINE RAILROAD
SSS	STEWART SOUTHERN RAILWAY INC
ST	SPRINGFIELD TERMINAL RAILWAY COMPANY
STE	STOCKTON TERMINAL AND EASTERN RAILROAD
STLH	ST LAWRENCE & HUDSON RAILWAY COMPANY LIMITED
STMA	ST MARIES RIVER RAILROAD COMPANY
STPP	ST. PAUL & PACIFIC NORTHWEST RAILROAD COMPANY, LLC
STR	SHAWNEE TERMINAL RAILWAY COMPANY INC
STRT	STEWARTSTOWN RAILROAD CO
STS	SANTA TERESA SOUTHERN RAILROAD, LLC
STTY	ST. THOMAS, AYLMER, TILLSONBURG RAILWAY
SUN	SUNSET RAILWAY COMPANY
SV	SHENANDOAH VALLEY RAILROAD
SVHO	SAVANNAH & OLD FORT RAILROAD, L.L.C
SVI	SOUTHERN RAILWAY OF VANCOUVER ISLAND LIMITED
SVRR	SHAMOKIN VALLEY RAILROAD COMPANY
SW	SOUTHWESTERN RAILROAD COMPANY INC
SWGR	SEAGRAVES WHITEFACE & LUBBOCK RAILROAD COMPANY
SWP	SOUTHWEST PENNSYLVANIA RAILROAD COMPANY
SYRR	SANDUSKY RIVER RAILROAD
TASD	TERMINAL RAILWAY ALABAMA STATE DOCKS
TBER	TERRE HAUTE BRAZIL & EASTERN RAILROAD
TBFR	TRANSDISTRIBUTION BROOKFIELD RAILROAD LLC
TBRB	TULSA BASE RAILROAD, LLC
TBRY	THERMAL BELT RAILWAY
TC	TEMPLE & CENTRAL TEXAS RAILWAY, INC.
TCB	TEXAS CENTRAL BUSINESS LINES CORPORATION
TCBR	TEXAS COASTAL BEND RAILROAD
TCBY	TECUMSEH BRANCH CONNECTING RAILROAD COMPANY
TCG	TUCSON CORNELIA & GILA BEND RAILROAD COMPANY
TCRY	TRI-CITY RAILROAD COMPANY
TCT	TEXAS CITY TERMINAL RAILWAY COMPANY
TCWR	TWIN CITIES & WESTERN RAILROAD
TE	TACOMA EASTERN RAILWAY CO
TEXC	TEXAS CENTRAL RAILROAD COMPANY
TFG	TFG TRANSPORT LLC
TFVM	TERMINAL FERROVIARIA DEL VALLE DE MEXICO SA DE CV
TGS	TGS CEDAR PORT RAILROAD LLC
TI	TURNERS ISLAND LLC
TIBR	TIMBER ROCK RAILROAD LLC
TIR	TOLEDO INDUSTRIAL RAILROAD
TKEN	TENNKEN RAILROAD COMPANY INC
TLE	MIDWEST RAIL, LLC DBA TOLEDO, LAKE ERIE AND WESTERN RAILWAY
TM	TEXAS MEXICAN RAILWAY COMPANY, THE
TMBL	TACOMA MUNICIPAL BELT LINE RAILWAY
TMSS	TOWANDA AND MONROETON SHIPPERS LIFELINE, INC.
TMUS	TRANSMEX/USA INC
TN	TEXAS & NORTHERN
TNER	TEXAS NORTHEASTERN DIVISION MID-MICHIGAN RAILROAD INC
TNHR	THREE NOTCH RAILWAY LLC
TOE	TEXAS OKLAHOMA & EASTERN RAILROAD LLC
TPR	TRADEPOINT RAIL, LLC

TPW	TOLEDO PEORIA & WESTERN RAILWAY CORPORATION
TR	TOMAHAWK RAILWAY L P
TRC	TRONA RAILWAY COMPANY
TRE	TEXAS RAILWAY EXCHANGE LLC
TRIN	TRINIDAD RAILWAY INC
TRMW	TACOMA RAIL MOUNTAIN DIVISION
TRR	THUNDER RAIL LTD
TRRA	TERMINAL RAILROAD ASSOCIATION OF ST LOUIS
TRRR	TRANSDISTRIBUTION RIDGELAND RAILROAD LLC
TRRY	TRILLIUM RAILWAY CO LTD
TRV	TORCH RIVER RAIL INC.
TSH	TSHIUETIN RAIL TRANSPORTATION INC
TSNR	TYSON RAILROAD INC
TSR	TEXAS & EASTERN RAILROAD, LLC
TSRR	TENNESSEE SOUTHERN RAILROAD CO INC
TSU	TULSA-SAPULPA UNION RAILWAY COMPANY L L C
TTIS	TRANSKENTUCKY TRANSPORTATION RAILROAD CO INC
TTR	TALLEYRAND TERMINAL RAILROAD COMPANY INC
TUST	TEXARKANA UNION STATION TRUST
TXGN	TEXAS GONZALES & NORTHERN RAILWAY COMPANY
TXN	TEXAS NEW MEXICO RAILWAY, L.L.C.
TXNW	TEXAS NORTH WESTERN RAILWAY COMPANY
TXOR	TEXAS AND OKLAHOMA RAILROAD COMPANY
TXPF	TEXAS PACIFICO TRANSPORTATION LTD
TXR	TEXAS ROCK CRUSHER RAILWAY COMPANY
TXTC	TEXAS TRANSPORTATION COMPANY
TYBR	TYBURN RAILROAD, LLC
TZPR	TAZEWELL & PEORIA RAILROAD INC
UCIR	UNION COUNTY INDUSTRIAL RAILROAD COMPANY
UCRS	UPPER CANADA RAILWAY SOCIETY
UCRY	UTAH CENTRAL RAILWAY COMPANY
UCT	INDIANA BUSINESS RAILROAD D/B/A UNION CITY TERMINAL RAILROAD
UMP	UPPER MERION AND PLYMOUTH RAILROAD COMPANY
UP	UNION PACIFIC RAILROAD COMPANY
UPCS	UNION PACIFIC CARRIER SERVICES
URR	UNION RAILROAD COMPANY, LLC
USNY	U.S. RAIL OF NEW YORK, LLC
USR	UTAH SOUTHERN RAILROAD COMPANY LLC
UTAH	UTAH RAILWAY COMPANY
VCRR	VENTURA COUNTY RAILROAD COMPANY
VIA	VIA RAIL CANADA INC
VR	VALDOSTA RAILWAY L P
VRR	VAUGHN RAILROAD COMPANY
VRRC	VANDALIA RAILROAD COMPANY
VSOR	VICKSBURG SOUTHERN RAILROAD LLC
VSR	V AND S RAILWAY INC
VSRR	VIRGINIA SOUTHERN RAILROAD DIVISION NORTH CAROLINA & VIRGINIA RAILROAD
VST	V&S RAILWAY INC D/B/A TOWNER RAILWAY
VTR	VERMONT RAILWAY INC
VVRR	VERMILION VALLEY RAILROAD COMPANY INC
WACR	WASHINGTON COUNTY RAILROAD CORPORATION
WBCR	WABASH CENTRAL RAILROAD CORPORATION
WBRW	WEST BELT RAILWAY LLC
WC	WISCONSIN CENTRAL LIMITED
WCCL	WISCONSIN CHICAGO LINK LTD
WCKR	WOLF CREEK RAILROAD LLC
WCLC	WACCAMAW COAST LINE RAILROAD CO INC (CLINTON DIVISION)
WCLR	WACCAMAW COASTLINE RAILROAD CO INC
WCOR	WELLSBORO & CORNING RAILROAD LLC
WCRL	WEST CHESTER RAILROAD CO
WCRR	WYOMING CONNECT RAILROAD LLC

WE	WHEELING & LAKE ERIE RAILWAY COMPANY
WER	WASHINGTON EASTERN RAILROAD, LLC
WESL	WEST ERIE SHORT LINE
WFS	WEST ISLE LINE INC
WGCR	WIREGRASS CENTRAL RAILWAY LLC
WGNS	WISCONSIN GREAT NORTHERN RAILROAD INC
WHOE	WALKING HORSE & EASTERN RAILROAD CO INC
WHRC	WINDSOR & HANTSPORT RAILWAY CO
WHRR	WALKING HORSE RAILROAD, LLC
WIF	WEST INDIA FRUIT & STEAMSHIP
WIR	WASHINGTON & IDAHO RAILWAY INC
WIRR	WISCONSIN RAPIDS RAILROAD, L.L.C.
WKRL	WESTERN KENTUCKY RAILWAY LLC
WLO	WATERLOO RAILWAY COMPANY
WMI	WEST MICHIGAN RAILROAD CO
WN	PROGRESSIVE RAIL INC D/B/A WISCONSIN NORTHERN RAILROAD
WNFR	KANAWHA RAIL CORP
WNRR	WESTERN NEVADA RAILROAD LLC
WNYP	WESTERN NEW YORK & PENNSYLVANIA RAILROAD LLC
WPRR	WILLAMETTE & PACIFIC RAILROAD INC
WPY	WHITE PASS & YUKON
WRI	WHEATLAND RAIL INC
WRL	WRL, LLC
WRRC	WESTERN RAILROAD COMPANY
WRS	WESTERN RAIL SWITCHING INC
WRY	WATERLOO RAILWAY COMPANY
WS	WALKERVILLE SOUTHERN RAILROAD INC
WSOR	WISCONSIN & SOUTHERN RAILROAD LLC
WSR	WARREN & SALINE RIVER RAILROAD COMPANY
WSRY	WINAMAC SOUTHERN RAILWAY COMPANY
WSS	WINSTON-SALEM SOUTHBOUND RAILWAY COMPANY (CSX TRANSPORTATION)
WTA	WICHITA TERMINAL ASSOCIATION
WTCO	WESTERN TRANSPORTATION CO
WTJR	WICHITA TILLMAN & JACKSON RAILWAY COMPANY INC
WTLC	WEST TEXAS AND LUBBOCK RAILWAY COMPANY
WTLR	WEST TEXAS AND LUBBOCK RAILROAD COMPANY INC
WTNN	WEST TENNESSEE RAILROAD CORP
WTRM	WARREN & TRUMBULL RAILROAD COMPANY, THE
WTRY	WILMINGTON TERMINAL RAILROAD INC
WURR	WALLOWA UNION RAILROAD AUTHORITY
WUT	WICHITA UNION TERMINAL RAILWAY CO
WVC	WEST VIRGINIA CENTRAL RAILROAD
WVR	WILLAMETTE VALLEY RAILWAY COMPANY INC
WW	WINCHESTER AND WESTERN RAILROAD COMPANY
WWRC	WILMINGTON & WESTERN RAILWAY CORP
WYEC	WYE TRANSPORTATION CO
XTRA	XTRA INTERMODAL
YARR	YOUNGSTOWN & AUSTINTOWN RAILROAD CO
YB	YOUNGSTOWN BELT RAILROAD COMPANY, THE
YCR	YCR CORP
YRC	YORK RAILWAY COMPANY
YRPL	YELM ROY PRAIRIE LINE
YSRR	YOUNGSTOWN & SOUTHEASTERN RAILROAD COMPANY INC
YSVR	YELLOWSTONE VALLEY RAILROAD LLC
YVRR	YADKIN VALLEY RAILROAD COMPANY
YVT	YAKIMA VALLEY TRANSPORTATION COMPANY
YW	YREKA WESTERN RAILROAD COMPANY
METX	METRA (NORTHEAST ILLINOIS REGIONAL COMMUTER RAILROAD)
FRGN	OWNED BY FOREIGN CARRIER
UNK	OWNED BY UNKNOWN CARRIER