

GENERAL LOCATION MAP
NOT TO SCALE



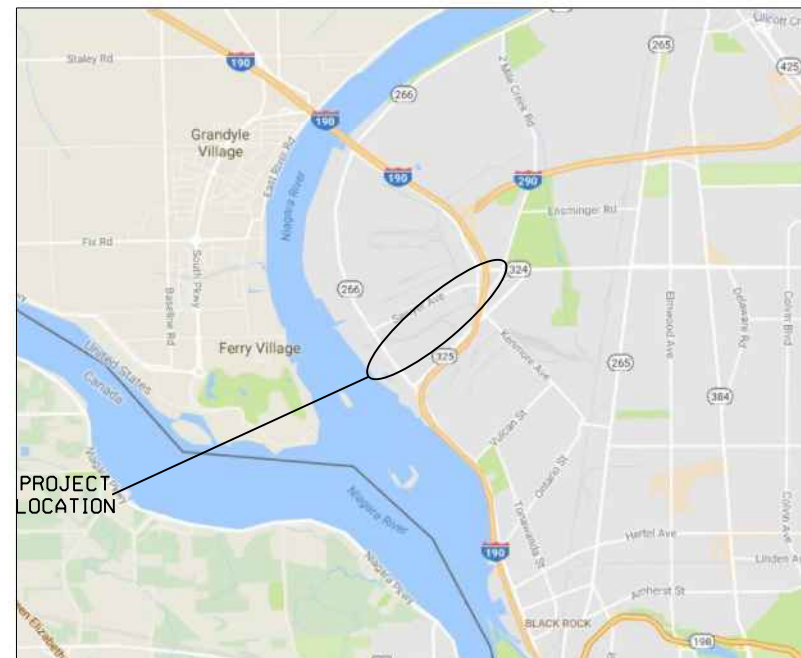
ERIE COUNTY INDUSTRIAL DEVELOPMENT AGENCY

SUMITOMO RUBBER USA RAILROAD TRACK IMPROVEMENT PROJECT NYS DOT PIN 5936.77.301

DECEMBER 21, 2017



**Department of
Transportation**



GENERAL LOCATION MAP
NOT TO SCALE

THE PROJECT IS LOCATED IN THE TOWN OF TONAWANDA IN ERIE COUNTY, NEW YORK. THE PROJECT SITE IS THE CURRENT LOCATION OF SUMITOMO RUBBER USA FACILITY WHICH IS ADJACENT TO THE NIAGARA RIVER AND AND RTE 325

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12-21-2017

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DATE

WARNING: IT IS A VIOLATION OF NEW YORK STATE EDUCATION LAW FOR ANY PERSON UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER ANY ITEMS ON THESE PLANS IN ANY WAY. IF ALTERATIONS TO THESE PLANS ARE REQUIRED, THE ALTERATIONS SHALL BE MADE IN ACCORDANCE WITH ARTICLE 145 - SUBSECTION 7209 OF THE NEW YORK STATE EDUCATION LAW.

Sumitomo Rubber Track Improvement Project

Sumitomo Rubber USA, LLC

ECIDA in Partnership with
The County of Erie



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BASE BID ESTIMATE OF QUANTITIES

NOTE:
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145, Section 7209.



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December 21, 2017
Scale:
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Drawing Number

C-001
2 of 10

ESTIMATE OF QUANTITIES					
LINE NO.	ITEM NUMBER	ITEM DESCRIPTION	UNIT	BASE BID	
				QUANTITY	AS-BUILT
GENERAL					
1	697.03	FIELD CHANGE PAYMENT	FPLS	NEC	
2	699.040001	MOBILIZATION (4%)	LS	NEC	
SITE WORK					
3	201.07	CLEARING AND GRUBBING	ACRE	0.25	
4	203.02	UNCLASSIFIED EXCAVATION AND DISPOSAL	CY	380	
5	206.0201	TRENCH AND CULVERT	CY	20	
6	603.171614	GALVANIZED STEEL END SECTIONS-PIPE (2-2/3" X 1/2" CORRUGATIONS) 30 INCH DIAMETER, 14 GAUGE	EA	2	
7	603.9824	SMOOTH INTERIOR CORRUGATED POLYETHYLENE CULVERT AND STORM DRAIN 24 INCH DIAMETER	LF	20	
8	621.51000015	GRADING CLEANING AND RESHAPING EXSITING DITCHES	LF	912	
TRACK WORK					
9	C675 . 0101	TRACK REMOVAL	TF	1076	
10	23675 . 10	FURNISH, PLACE, AND COMPACT BALLAST BASE COURSE	TN	380	
11	23675 . 15	FURNISH AND PLACE BALLAST SURFACING COURSE	TN	1400	
12	C675 . 2201	FURNISH AND INSTALL JOINTED RAIL TRACK	TF	878	
13	C675.27	TURNOUT RELOCATION	EA	1	
14	C675 . 30	REMOVE AND INSTALL WOOD CROSS TIES	EA	1280	
15	23675 . 42	FURNISH AND INSTALL TIMBER TURNOUT SET	EA	3	
16	C675.4201	INSTALL TURNOUT TIMBERS	LF		
17	23675. 56	FURNISH AND INSTALL COMPRISE RAIL JOINT ASSEMBLY	EA	2	
18	23675. 60	FURNISH AND INSTALL BUMPING POST	EA	2	
19	C675.78	FURNISH AND INSTALL NO. 8 SELF GUARDED SOLID MANGANESE STEEL FROG (SGSM)	EA	1	
20	C675 . 90	RAISE, ALIGN, AND SURFACE TRACK	TF	3392	
21	C675 . 92	RAISE, ALIGN, AND SURFACE TURNOUT	EA	7	

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ADD/ALT ESTIMATE OF QUANTITIES

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Drawing Number:

C-002 3 of 10

ESTIMATE OF QUANTITIES					
LINE NO.	ITEM NUMBER	ITEM DESCRIPTION	UNIT	ADD/ALT	
				QUANTITY	AS-BUILT
GENERAL					
1	697.03	FIELD CHANGE PAYMENT	FPLS	NEC	
2	699.040001	MOBILIZATION (4%)	LS	NEC	
SITE WORK					
3	203.02	UNCLASSIFIED EXCAVATION AND DISPOSAL	CY	115	
TRACK WORK					
4	C675 . 0101	TRACK REMOVAL	TF	303	
5	23675 . 10	FURNISH, PLACE, AND COMPACT BALLAST BASE COURSE	TN	115	
6	23675 . 15	FURNISH AND PLACE BALLAST SURFACING COURSE	TN	125	
7	C675 . 2201	FURNISH AND INSTALL JOINTED RAIL TRACK	TF	338	
8	C675.4201	INSTALL TURNOUT TIMBERS	LF	272	
9	23675. 56	FURNISH AND INSTALL COMPRISE RAIL JOINT ASSEMBLY	EA	2	
10	C675 . 90	RAISE, ALIGN, AND SURFACE TRACK	TF	338	

GENERAL NOTES:

- NOTE: IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.
- THE CONTRACTOR IS HEARBY ADVISED THAT THIS CONTRACT WILL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST EDITION AND REVISIONS THERETO OF THE FOLLOWING DOCUMENTS:
 - TRACK SAFETY STANDARDS, FEDERAL RAILROAD ADMINISTRATION (49 CFR PART 213)
 - ROADWAY WORKER SAFETY STANDARD, FEDERAL RAILROAD ADMINISTRATION (49 CFR PART 214)
 - THE MANUAL FOR RAILWAY ENGINEERING, THE AMERICAN RAILWAY ENGINEERING AND MAINTENANCE OF WAY ASSOCIATION (AREMA)
 - PORTFOLIO OF TRACKWORK PLANS, THE AMERICAN RAILWAY ENGINEERING AND MAINTENANCE OF WAY ASSOCIATION (AREMA)
 - STANDARD SPECIFICATIONS, CONSTRUCTION MATERIALS, NEW YORK STATE DEPARTMENT OF TRANSPORTATION, EDITION EFFECTIVE MAY 2008 AND LATEST REVISIONS.
 - SUMITOMO SAFETY RULES AND FORMS FOR CONTRACTOR.
- ALL SHOP DRAWINGS SUBMITTED FOR THIS PROJECT SHALL BE IN ENGLISH UNITS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR TRANSFERRING BENCHMARK POINTS PRIOR TO ANY DISTURBANCE OF THE FEATURE ON WHICH THEY WERE LOCATED.
- RETAIN A LICENSED LAND SURVEYOR FOR SITE LAYOUT, UTILITY STAKEOUT WORK, AND FOR ALL AS-BUILT DOCUMENTATION. PROVIDE HORIZONTAL AND VERTICAL CONTROL AT SITE.
- VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO CONSTRUCTION. IN CASE OF ANY DISCREPANCY NOTIFY OWNER AND ENGINEER.
- THE PROJECT WORK LIMIT FOR CONSTRUCTION SHALL BE WITHIN THE LIMITS OF THE PROPOSED TRACK WORK AS SHOWN IN THE CONTRACT PLANS. UNLESS OTHERWISE DIRECTED BY THE ENGINEER AND/OR OWNER, THE CONTRACTOR IS TO CONTAIN ALL CONSTRUCTION OPERATIONS (STORAGE, TRAFFIC, PARKING, ETC.) WITHIN PROJECT WORK LIMIT AS DESCRIBED.
- LOCATION OF UNDERGROUND UTILITIES AND OTHER UNDERGROUND STRUCTURES ARE APPROXIMATE. OTHER UNDERGROUND UTILITIES AND STRUCTURES MAY EXIST, THE LOCATIONS OF WHICH ARE PRESENTLY UNKNOWN. PRIOR TO BEGINNING WORK, THE CONTRACTOR SHALL VERIFY THE LOCATION AND EXTENT OF ALL UTILITIES. CONTACT NEW YORK STATE "ONE CALL" AT 1-800-962-7962 AND LOCAL UTILITY AGENCIES.
- NUMEROUS HIGH VOLTAGE ELECTRICAL LINES ARE LOCATED WITHIN THE LIMITS OF THIS PROJECT. REFER TO SUBSECTION 107-05 OF THE STANDARD SPECIFICATIONS FOR CONTRACTOR SAFETY REQUIREMENTS.
- PROTECT ALL UTILITIES EXPOSED BY EXCAVATION. PROTECTION SHALL BE ACCEPTABLE TO THE ENGINEER AND UTILITY AUTHORITY HAVING JURISDICTION.
- ADJUST ALL MANHOLE AND UTILITY COVERS, ETC. WHERE CONSTRUCTION MODIFIES FINISH GRADE.
- DIMENSIONS ARE TO FACE OF BUILDING, STRUCTURE, CURB, EDGE OF PAVEMENT, OR CENTERLINE OF TRACK UNLESS NOTED OTHERWISE.
- PROVIDE POSITIVE DRAINAGE ADJACENT TO NEW AND EXISTING STRUCTURES.
- BLEND ALL NEW WORK SMOOTHLY WITH EXISTING GRADES.
- RESTORE CONDITION OF ALL EXISTING SITE IMPROVEMENTS DISTURBED DURING CONSTRUCTION THAT ARE NOT SCHEDULED FOR REMOVAL.
- ALL PUBLIC ROADS SHALL BE KEPT CLEAN OF MUD AND DEBRIS AT ALL TIMES. SELECT (OR ALL) PRIVATE ROADS ON THE SITE, AS DESIGNATED BY THE ENGINEER AND/OR OWNER, SHALL BE KEPT CLEAN OF MUD AND DEBRIS AT ALL TIMES DURING CONSTRUCTION. AT COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL CLEAN MUD AND DEBRIS FROM ALL PRIVATE ROADWAYS USED DURING PROJECT CONSTRUCTION TO THE SATISFACTION OF THE ENGINEER AND/OR OWNER.
- ROADSIDE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES.
- OBTAIN ALL REQUIRED CONSTRUCTION PERMITS WHERE APPLICABLE.
- PROVIDE ACCURATE, FIELD VERIFIED AS-BUILT RECORD DRAWINGS AT COMPLETION OF CONSTRUCTION. INFORMATION SHALL INCLUDE BUT NOT BE LIMITED TO: HORIZONTAL AND VERTICAL LOCATIONS OF ALL PIPING, UTILITY CONNECTIONS, REPAIRS OR RELOCATIONS, AND ANY FIELD CHANGES MADE DURING CONSTRUCTION.

RAILROAD FLAGGING & WORK HOURS

- THE CONTRACTOR MUST COORDINATE WITH BUFFALO SOUTHERN RAILROAD AND SUMITOMO RUBBER IN ORDER TO SET THEIR WORK HOURS ON THE SITE AND TO OBTAIN ACCESS TO THE SITE. THE BUFFALO SOUTHERN PROVIDES SUMITOMO SWITCHING INSIDE THE PLANT MONDAY-FRIDAY FROM 5:30 AM TO 1:30 PM. IF THE CONTRACTOR WANTS TO WORK DURING THESE HOURS THEY WILL BE REQUIRED TO HAVE A JOB BRIEFING BEFORE ANY WORK STARTS WITH LARRY ATTI, WHO IS IN CHARGE OF THE DAY TO DAY SWITCHING FOR BUFFALO SOUTHERN RAILROAD. PROTECTION WILL CONSIST OF WORK LIMITS USING INACCESSIBLE TRACK VIA LOCKED SWITCHES, PORTABLE DERAILS ETC. LARRY ATTI CAN BE CONTACTED AT (716) 609 – 3192.
- IF THE CONTRACTOR WANTS TO WORK OUTSIDE THESE HOURS THEN A JOB BRIEFING WILL STILL BE REQUIRED TO MAKE SURE WHICH TRACKS CAN BE TAKEN OUT OF SERVICE AND FOR HOW LONG.

SUBSURFACE INVESTIGATION:

- NO SUBSURFACE EXPLORATIONS HAVE BEEN MADE FOR THIS PROJECT.

GENERAL REMOVAL NOTES:

- ALL ITEMS NOTED FOR REMOVAL, WITH THE EXCEPTION OF RAIL AND OTHER TRACK MATERIAL WHICH IS DESCRIBED IN THE CONTRACT PLANS AND SPECIFICATIONS, ARE TO BE COORDINATED WITH THE PROPERTY OWNERS AND ENGINEER TO ENSURE THEY ARE BEING DISPOSED OF IN ACCORDANCE WITH THE SOIL MANAGEMENT PLAN AND INTERIM REMEDIAL MEASURES WORK PLAN FOR THE SITE.
- EXISTING PAVEMENT DISTURBED BY CONSTRUCTION SHALL BE RESTORED TO PRE-CONSTRUCTION CONDITION. EDGES OF ALL DISTURBED PAVEMENT SHALL BE SAW-CUT IN A STRAIGHT AND ORTHOGONAL PATTERN ACCEPTABLE TO ENGINEER. TREAT ALL JOINTS BETWEEN NEW AND EXISTING ASPHALT PAVEMENT WITH AN ASPHALT EMULSION.
- MAINTAIN EXISTING UTILITIES AND PROTECT THEM AGAINST DAMAGE DURING REMOVAL OPERATIONS.
- CONDUCT REMOVAL OPERATIONS TO PREVENT INJURY TO PEOPLE AND DAMAGE TO ADJACENT BUILDINGS AND FACILITIES. ENSURE SAFE PASSAGE OF PEOPLE AROUND WORK AREA.
- REMOVE AND TRANSPORT DEBRIS IN A MANNER THAT WILL PREVENT SPILLAGE ON ADJACENT SURFACES AND AREAS.
- LIMIT THE SPREAD OF DUST AND DIRT. REFER TO THE SOIL MANAGEMENT PLAN AND INTERIM REMEDIAL MEASURES PLAN FOR THE SITE.

GENERAL EARTHWORK AND GRADING NOTES

- DURING CONSTRUCTION AND UNTIL DISTURBED AREAS ARE STABILIZED, MAINTAIN THE SITE AGAINST THE FORCES OF WATER AND WIND EROSION.
- RESTRICT GRADING OPERATIONS TO AREAS -SHOWN ON THE CONSTRUCTION DOCUMENTS. GRADING OUTSIDE PROJECT WORK LIMIT WILL NOT BE PERMITTED.
- PERFORM ALL EXCAVATION OPERATIONS WITH EXTREME CAUTION. DETERMINE EXACT LOCATION OF EXISTING UTILITIES PRIOR TO START OF EARTHWORK AND SITE GRADING.
- FILL MATERIAL UNDER PAVEMENTS, WALKS AND WITHIN BUILDING LINES SHALL BE COMPACTED IN 6-INCH LIFTS TO 95% DENSITY (ASTM D1557, TYP). FILL UNDER FOOTINGS SHALL BE COMPACTED TO 98% DENSITY. ALL OTHER FILL AREAS SHALL BE COMPACTED TO 90% DENSITY UNLESS OTHERWISE NOTED.
- UNSUITABLE SOILS REMOVED DURING SCARIFICATION SHALL BE STOCKPILED ON SITE AT A LOCATION DESIGNATED BY THE PROPERTY OWNER.
- AREAS REQUIRING FILL SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL TO REMOVE VEGETATION, ROOTS, OR OTHER EXTRANEIOUS MATERIAL PRIOR TO PLACING FILL.
- UNSUITABLE EXCAVATED MATERIAL SHALL NOT BE UTILIZED IN FILL SLOPES, STRUCTURAL FILLS, OR OTHER AREAS OF BACKFILL. UNSUITABLE MATERIAL IS DEFINED AS: HIGHLY ORGANIC SOIL, TOPSOIL, HIGHLY COMPRESSIBLE SOIL, FROZEN MATERIAL, ROOTS, TRASH, AND DEBRIS.
- SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH DEWATERING METHODS PREPARED BY THE CONTRACTOR AND APPROVED PRIOR TO USE BY THE ENGINEER.

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GENERAL CONSTRUCTION NOTES

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Drawing Number

C-100

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RAILROAD CONSTRUCTION NOTES:

ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH AREMA STANDARD GUIDELINES AND SPECIFICATIONS, NYS DOT SPECIFICATIONS AND AS SUPPLEMENTED BY SOUTH BUFFALO RAILROAD CO. STANDARD GUIDELINES AND SPECIFICATIONS INCLUDED IN PLANS AND PROPOSAL BOOK.

STEEL PRODUCTS PROCUREMENT ACT:

ANY STEEL PRODUCTS USED IN THE PERFORMANCE OF THIS PROJECT SHALL BE PRODUCED IN THE UNITED STATES (REF STEEL PRODUCTS PROCUREMENT ACT OF MARCH 3, 1978 P L 6 NO 3). CERTIFICATION SHALL BE PROVIDED FOR ALL STEEL USED FOR THE PROJECT.

RAIL

- A. ALL RAIL SHALL BE NEW CONTROL COOLED 100#/YD OR GREATER SECTION RE OR AREMA. RAIL LENGTHS SHALL BE A MINIMUM OF 33' ON CURVES AND 19'-6" ON TANGENTS AND SHALL BE FULLY BOLTED WITH 6-HOLE, 36" JOINT BARS. NEW INDUSTRIAL GRADE RAIL WILL BE ACCEPTED.
- B. ALL RAIL SHALL HAVE VISIBLE MANUFACTURER MARKINGS.
- C. RAIL FOR INDIVIDUAL SEGMENTS OF TRACK SHALL BE OF UNIFORM SECTIONAL PROPERTIES.

TIES

- A. THE CONTRACTOR WILL FURNISH 6" x 8" BY 8'-6" GRADE 3 CROSSTIES. TIES SHALL BE MANUFACTURED FROM OAK AND MIXED HARDWOODS. TIES SHALL BE SPACED AT 22 TIES PER 39' RAIL LENGTH.
- B. END PLATES SHALL BE SELECTIVELY APPLIED TO BOTH ENDS OF EACH TIE AND SHALL BE MANUFACTURED FROM 18 GAUGE GALVANIZED STEEL, GANG NAIL TYPE PLATE. END PLATES SHALL BE 6"x8" IN DIMENSION WITH TEETH PROTRUDING A MINIMUM OF 3/8" BEYOND THE PLATE SURFACE.
- C. CROSSTIE WANE UP TO 1" WILL BE ALLOWED IN RAIL BEARING AREAS.
- D. CROSSTIES SHALL BE MANUFACTURED FROM SOUND, LIVE TIMBER AND FREE OF ANY DEFECTS THAT MAY IMPAIR STRENGTH AND DURABILITY. ALL TIES SHALL BE STRAIGHT, WELL-SAWN ON FOUR SIDES, END SQUARE, WITH TOP AND BOTTOM PARALLEL, BARK WILL BE COMPLETELY REMOVED FROM THE TIE. THE DEFINITION OF STRAIGHT TIE IS WHEN A STRAIGHT LINE ALONG THE TOP, FROM MIDDLE OF BOTH ENDS OF THE TIE, IS ENTIRELY WITHIN THE TIE. THE SIDE OF THE TIE CONSIDERED STRAIGHT WHEN A LINE FROM THE MIDDLE OF BOTH ENDS IS NOT MORE THAN 2" FROM THE TOP OR BOTTOM OF THE TIE.
- E. TIES SHALL BE FREE OF DECAY AND STAIN. ANY TIE THAT HAS A LARGE HOLE OR A NUMBER OF HOLES RESULTING IN A LARGE HOLE WILL BE SUMMARILY REJECTED. A HOLE 1/2" IN DIAMETER AND 3" IN DEPTH IN THE RAIL BEARING AREA WILL BE CONSIDERED LARGE. LARGE AND NUMEROUS KNOTS IN A TIE WILL BE CAUSE FOR REJECTION OF THE TIE. IF THE KNOT(S) DIAMETER IS GREATER THAN 1/4 THE WIDTH OF THE SURFACE IT APPEARS ON. SHAKE GREATER THAN 1/3 THE WIDTH OF THE TIES WILL BE CAUSE FOR REJECTION. SPLIT TIES WILL BE REJECTED IF THE SPLIT EXCEEDS 5' OR IS 1/2" WIDE. TIES WITH A SLANT IN THE GRAIN OF 1:15 WILL BE REJECTED UNLESS THE WOOD HAS AN INTERLOCKING GRAIN.
- F. CROSSTIES SHALL BE CONDITIONED VIA THE VAPOR OR BOULTON DRYING PROCESS. THE PROCESS SHALL BE MAINTAINED UNTIL THE MOISTURE CONTENT OF THE TIE IS 15 PERCENT BY WEIGHT. A MINIMUM OF 20 BORE HOLES SHALL BE MADE TO DETERMINE THAT THE DRYING PROCESS OF THE CONDITIONED TIE MEETS THE SPECIFIED MOISTURE CONTENT.
- G. TIES SHALL BE TREATED WITH 60/40 CREOSOTE COAL TAR SOLUTION IN ACCORDANCE WITH THE AREMA MANUAL CHAPTER 3, PARTS 6, 7, 8 AND 9. TREATMENT RETENTION SHALL BE SEVEN POUNDS PER CUBIC FOOT OF TIMBER OR UNTIL REFUSAL. PENETRATION SHALL BE VERIFIED BY TAKING A MINIMUM OF 20 BORINGS.
- H. THE ENGINEER MAY REJECT TIES THAT, IN ITS OPINION, DO NOT MEET THE REQUIREMENTS OF THIS SPECIFICATION. THE OWNER AND SOUTH BUFFALO RAILWAY, AT ITS DISCRETION WITH A THIRD PARTY UNDER RAILROAD CONTRACT MAY INSPECT TIES BEFORE SHIPMENT, SEASONING OR TREATING. CERTIFICATION BY CONTRACTOR'S TIMBER SUPPLIER SHALL INCLUDE PRESERVATION RETENTION SEASONING PERIOD AND LOCATION, TIMBER SPECIES AND SUFFICIENT BORINGS FROM EACH CHARGE TO DETERMINE PROPER RETENTION AND PENETRATION.

NEW TREATED TIE PLUGS:

- A. 5/8" x 6" TIE PLUGS SHALL BE SOUTHERN YELLOW PINE TREATED WITH A 50/50 CREOSOTE COAL TAR SOLUTION TO 8 POUNDS RETENTION PER CUBIC FOOT PER THE REQUIREMENTS OF THE AMERICAN WOOD TREATERS ASSOCIATION. PLUGS SHALL BE NOTCHED WITH FIVE PLUGS PER STICK AND 100 STICKS PER BUNDLE. BUNDLES SHALL BE BANDED FOR SHIPMENT; OTHER TYPES OF PLUGGING MATERIALS MUST BE APPROVED BY THE ENGINEER PRIOR TO USE.
- B. THE ENGINEER MAY REJECT TREATED PLUGS THAT IN ITS OPINION, DOES NOT MEET THE REQUIREMENTS OF THIS SPECIFICATION.

SWITCH TIMBERS:

- A. THE CONTRACTOR WILL FURNISH ALL NEW SWITCH TIMBERS MANUFACTURED IN ACCORDANCE WITH CHAPTER THIRTY (30) OF THE AREMA MANUAL, PART 3 AND SPECIFICATIONS FOR SWITCH TIMBERS.
- B. SWITCH TIMBERS WILL BE MANUFACTURED FROM OAK OR HICKORY HARDWOODS TREATED WITH 60% CREOSOTE, 40% COAL TAR SOLUTION TO 7 POUNDS PER CUBIC FOOT RETENTION.
- C. SWITCH TIMBERS WILL BE 100% END PLATED AND BE DIMENSIONALLY CORRECT IN ACCORDANCE WITH AREMA 7" THICK X 9" WIDE CROSS-SECTION WITH A MINIMUM FACE OF 8 INCHES.
- D. ALL SWITCH TIMBERS SHALL BE FREE FROM DEFECTS THAT MAY IMPAIR STRENGTH OR DURABILITY, SUCH AS DECAY, LARGE OR NUMEROUS SPLITS, CHECKS, LARGE SHAKES, LARGE AND NUMEROUS HOLES, KNOTS OR SLANTING GRAIN.
- E. THE ENGINEER MAY REJECT SWITCH TIMBERS THAT, IN THEIR OPINION DOES NOT MEET THE REQUIREMENTS OF THIS SPECIFICATION.

RAILROAD CONSTRUCTION NOTES CONTD.:

TRACK BOLT UNITS:

- A. TRACK BOLT AND NUT MATERIALS SHALL BE NEW MANUFACTURED IN ACCORDANCE WITH AREMA MANUAL FOR RAILROAD ENGINEERING, CHAPTER 5 — PART 2 - "SPECIFICATION FOR HEAT TREATED CARBON-STEEL TRACK BOLTS AND CARBON-STEEL NUTS."
- B. TRACK BOLT DIAMETER WILL BE PER AREMA SPECIFICATION FOR THE RAIL BEING BOLTED TOGETHER.
- C. TRACK BOLTS SHALL BE MADE OF ROLLED STEEL WITH A BUTTON HEAD, OVAL NECK AND A WRENCH FIT THREAD.
- D. STANDARD SQUARE NUTS WILL BE PROVIDED WITH EACH BOLT IN ACCORDANCE WITH THE AREMA MANUAL CHAPTER 4 PART 1.
- E. THE LENGTH OF THE BOLT IS DETERMINED BY THE TYPE OF RAIL JOINTED BUT SHALL HAVE AT LEAST TWO EXPOSED THREADS AFTER THE NUT IS FULLY TIGHTENED.
- F. ALL THREADED PORTION OF THE MATERIALS SHALL BE COATED WITH OIL OR GREASE PRIOR TO SHIPMENT.
- G. WASHERS SHALL BE NEW SPRINGLOCK WASHERS MANUFACTURED IN ACCORDANCE WITH AREMA MANUAL FOR RAILROAD ENGINEERING CHAPTER 4 — PART 2 — "SPECIFICATION FOR SPRING WASHERS". SPRINGLOCK WASHERS SHALL ALSO CONFORM TO THE REQUIREMENTS OF ANSI B27 1 FOR "EXTRA HEAVY DUTY HELICAL SPRINGLOCK WASHERS." THE DIAMETER OF THE WASHER WILL CONFORM TO THE AREMA RECOMMENDED SIZE FOR THE DESIRED RAIL SECTION.
- H. THE ENGINEER MAY REJECT TRACK BOLT UNITS THAT, IN ITS OPINION, DOES NOT MEET THE REQUIREMENTS OF THIS SPECIFICATION.

RAIL ANCHORS

- A. RAIL ANCHORS SHALL BE NEW, ONE PIECE, MANUFACTURED TO FIT THE RAIL SECTION. ANCHORS WILL BE DRIVE-ON OR WRENCH ON ANCHORS MANUFACTURED FROM HEAT TREATED STEEL IN CONFORMANCE TO AREMA MANUAL, CHAPTER 5, PART 7.
- B. USED SPRING TYPE ANCHORS SHALL BE USED ON THE SIDING AND TRACK 100B.
- C. THE ENGINEER MAY REJECT RAIL ANCHORS THAT, IN ITS OPINION, DOES NOT MEET THE REQUIREMENTS OF THIS SPECIFICATION.
- D. RAIL ANCHOR PATTERNS ARE PROVIDED ON SHEET C-203 AND C-204.

TIE PLATES

- A. TIE PLATES SHALL BE GOOD QUALITY, RELAY MATERIAL WITH MINIMUM DIMENSION OF 7 3/4" x 13" MINIMUM PLAN 11 (PUNCHING A) DOUBLE SHOULDER PLATE CANTED WITH SQUARE HOLES
- B. TIE PLATES SHALL BE FREE FROM VISUAL DEFECTS THAT WOULD AFFECT PROPER FUNCTIONING. SPIKE HOLES SHALL BE FREE OF SPIKE CUTTING AND ELONGATION.
- C. THE ENGINEER MAY REJECT TIE PLATES THAT, IN THEIR OPINION, DOES NOT MEET THE REQUIREMENTS OF THIS SPECIFICATION.

TURNOUT (FROGS)

- A. THE FROG SHALL BE A SELF GUARDED SOLID MANGANESE FROG STEEL FROG WITH TWIN HOOK TIE PLATES FOR 105DY RAIL.
- B. ALL FROGS AND FROG PLATING (AREMA DESIGN 224-55-E82) MAY EITHER BE NEW OR OF GOOD QUALITY RELAY MATERIAL FOR 105# RAIL. ALL HARDWARE SHALL BE NEW.
- C. THE ENGINEER MAY REJECT FROG OR FROG COMPONENTS THAT, IN ITS OPINION, DO NOT MEET THE REQUIREMENTS OF THIS SPECIFICATION.

SPIKES

- A. SPIKES SHALL BE NEW 5/8" X 6" CUT SPIKES WITH REINFORCED THROATS MANUFACTURED IN ACCORDANCE WITH AREMA MANUAL FOR RAILROAD ENGINEERING, CHAPTER 5 — PART 2 — "SPECIFICATION FOR STEEL TRACK SPIKES"
- B. THE ENGINEER MAY REJECT SPIKES THAT, IN ITS OPINION, DOES NOT MEET THE REQUIREMENTS OF THIS SPECIFICATION.

HOLD DOWN SPIKES

ANCHOR PATTERNS FOR HOLD DOWN SPIKES ARE PROVIDED ON SHEET C-203 AND C-204. HOLD DOWN HOLES SHALL BE PRE BORED 3/8" BY 4".

JOINT BARS

- A. JOINT BARS SHALL BE SIX HOLE TOELESS MANUFACTURED TO FIT THE RAIL SECTIONS INDICATED IN THE CONTRACT DOCUMENTS
- B. BARS ARE TO BE MANUFACTURED IN ACCORDANCE WITH AREMA MANUAL FOR RAILROAD ENGINEERING, CHAPTER 4 — PART 2 — "SPECIFICATION FOR QUENCHED CARBON STEEL JOINT BARS AND FORGED COMPROMISE BARS"
- C. JOINT BARS SHALL BE PUNCHED AND BOLTED FOR SIX TRACK BOLTS/LOCK WASHER UNITS. JOINT BARS CAN BE NEW OR GOOD QUALITY RELAY MATERIAL.
- D. THE ENGINEER MAY REJECT JOINT BARS THAT, IN ITS OPINION, DOES NOT MEET THE REQUIREMENTS OF THIS SPECIFICATION.

TIE DISPOSAL

APPROXIMATELY 100 TIES WERE RECENTLY REPLACED ALONG THE INNER LOOP TRACK AND SHALL BE RETAINED AND STOCKPILED AT AN ON-SITE LOCATION DESIGNATED BY THE ENGINEER/BSOR. ALL REMAINING CROSS TIES AND SWITCH TIES SHALL BE LEGALLY DISPOSED OF BY THE CONTRACTOR. PAYMENT FOR DISPOSAL OF TIES IS INCLUDED UNDER ITEMS C675.2201, C675.30, 23675.42 AND C675.4201.

TRACK SALVAGE

THE SALVAGE VALUE OF SELECT RAIL AND OTM MATERIALS GENERATED FROM TRACK AND SWITCH RETIREMENTS IS TO BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REFELECTED IN THE UNIT PRICES BID UNDER VARIOUS ITEMS IN THE CONTRACT. RAIL MATERIALS TO BE RETAINED AND STOCKPILED ON SITE ARE LISTED ON PLAN SHEETS C-200 & C-201.

CERTIFICATIONS

THROUGHOUT THE MANUAL REFERENCES ARE MADE TO A "MANUFACTURER'S CERTIFICATION" AS AN EVIDENCE OF ACCEPTABILITY OF SPECIFIC MATERIALS OR PRODUCTS.

SUCH A DOCUMENT CAN PROPERLY BE EXECUTED ONLY BY A MANUFACTURER OR PRODUCER.

WHEN SHIPMENTS ARE MADE DIRECTLY TO A PROJECT SITE BY THE MANUFACTURER OR PRODUCER THE ESSENTIAL COMPONENTS OF A MANUFACTURER'S CERTIFICATION INCLUDE:

- 1. IDENTIFICATION OF THE MANUFACTURER OR PRODUCER

NAME OF COMPANY AND THE ADDRESS OF ITS MANUFACTURING OR PRODUCING FACILITY. THE BRAND NAME OF THE MATERIAL OR PRODUCT SHOULD ALSO BE INCLUDED IN DIFFERENT THAN THE NAME OF THE COMPANY.

- 2. IDENTIFICATION OF THE MATERIAL OR PRODUCT

GENERIC NAME OF THE MATERIAL OR PRODUCT AND NYS DOT MATERIALS DESIGNATION (700 NUMBER).

- 3. IDENTIFICATION OF THE SHIPMENT

SUFFICIENT DETAIL TO DESCRIBE THE QUANTITY CONTENT OF THE SHIPMENT AND ITS PROJECT DESTINATION INCLUDING A DATE OF SHIPMENT AND ADEQUATE IDENTIFICATION OF THE VEHICLE IN WHICH THE SHIPMENT WAS MADE. WHEN MATERIAL IS RECEIVED IN CRATED OR PACKAGED FORM VIA COMMON CARRIER THE SERIAL NUMBER OF THE BILL OF LADING ACCOMPANYING SUCH SHIPMENT SHOULD BE THE IDENTIFICATION CRITERIA RATHER THAN A VEHICLE IDENTIFICATION.

- 4. STATEMENT OF CONFORMANCE

- A. A DEFINITIVE STATEMENT THAT THE MATERIAL CONTAINED IN THE SHIPMENT MEETS THE REQUIREMENTS OF THE DEPARTMENT SPECIFICATION UNDER WHICH IT IS TO BE USED OR A SPECIFIC SPECIFICATION OF ANOTHER AGENCY AS STATED IN THE DEPARTMENT SPECIFICATION (I.E., - ASTM, ASSHTO, ETC.)
- B. A STATEMENT AS TO THE DOMESTIC ORIGIN OF ALL CEMENT AND/OR STEEL OR MATERIALS CONTAINING CEMENT AND/OR STEEL. AN ACCEPTABLE STATEMENT REGARDING DOMESTICITY IS: "CONFORMS (OR DOES NOT CONFORM) TO THE DOMESTIC REQUIREMENTS OF NYS DOT EB 83-10."

INDUSTRIAL RAIL SPECIFICATION

Scope: "Industrial Rail" quality (IQ) rails supplied shall meet this guideline. Variance from this guideline is allowed when agreed upon with approval from the Engineer.

Applies to: All AREMA "RE Rail Sections".

Criteria:

- 1. **General:** Except as detailed below, IQ Rail shall meet the parameters of "Standard Chemistry – Steel Rail" as published in the current edition of the AREMA *Manual for Railway Engineering*; Chapter 4 – Rail.
- 2. **Chemical Analysis:** Chemical analysis will be documented using standard and/or modified Mill Test Certificate. Chemical analysis shall conform to the following:

Heat Analysis [wt%]	Minimum	Element				
		Carbon [C]	Manganese [Mn]	Phosphorous [P]	Sulfur [S]	Silicon [Si]
	Maximum	.65	.70	.048	.058	.10
Product Check Variance [wt%]	Over	.04	.06			
	Under	.04	.06			

- 3. **Dimensions:** Dimensional variance from AREMA specification within the listed values is allowed.

Variance from AREMA [inches]	Dimension			
	Height	Head Width	Base Width	Web Thickness
Over	.060	.045	.060	.060
Under	.025	.045	.060	.030

- 4. **Straightness** Permissible variance from AREMA straightness is (in inches):
Drop: .040 max *Hook:* .040 max *Saddle:* .040 max
- 5. **Ultrasonic Testing** All rails shall be examined by and pass Ultrasonic Testing
- 6. **Surface** Rails will be suitable for all common industrial applications
- 7. **Branding and Stamping** All rails shall have visible manufacturer markings.
- 8. **Marking** Rail ends shall be painted yellow and shall have three (3) yellow stripes on the rail head.

Sumitomo Rubber Track Improvement Project

Sumitomo Rubber USA, LLC

ECIDA in Partnership with The County of Erie



Waterfront Village Center
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Buffalo, New York 14202

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NO.	DATE	DESCRIPTION	REV. CKD

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RAILROAD CONSTRUCTION NOTES

NOTE: Unauthorized alteration or addition to this drawing is a violation of the New York State Education Law Article 145, Section 7209.

DECEMBER 21, 2017
Date

Project Manager: **L. Brewer**
Designed by: **J. DiMartino**
Drawn by: **J. DiMartino**
Checked by: **C. Rode**
Date Issued: **December 21, 2017**
Scale: **AS SHOWN**

NYS DOT Project File Number: **5936.77.301** ECIDA_SumitomoRubber_Final Drawings.dgn

C-101 5 of 10

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TRACK PLAN (SHEET 1 OF 2)

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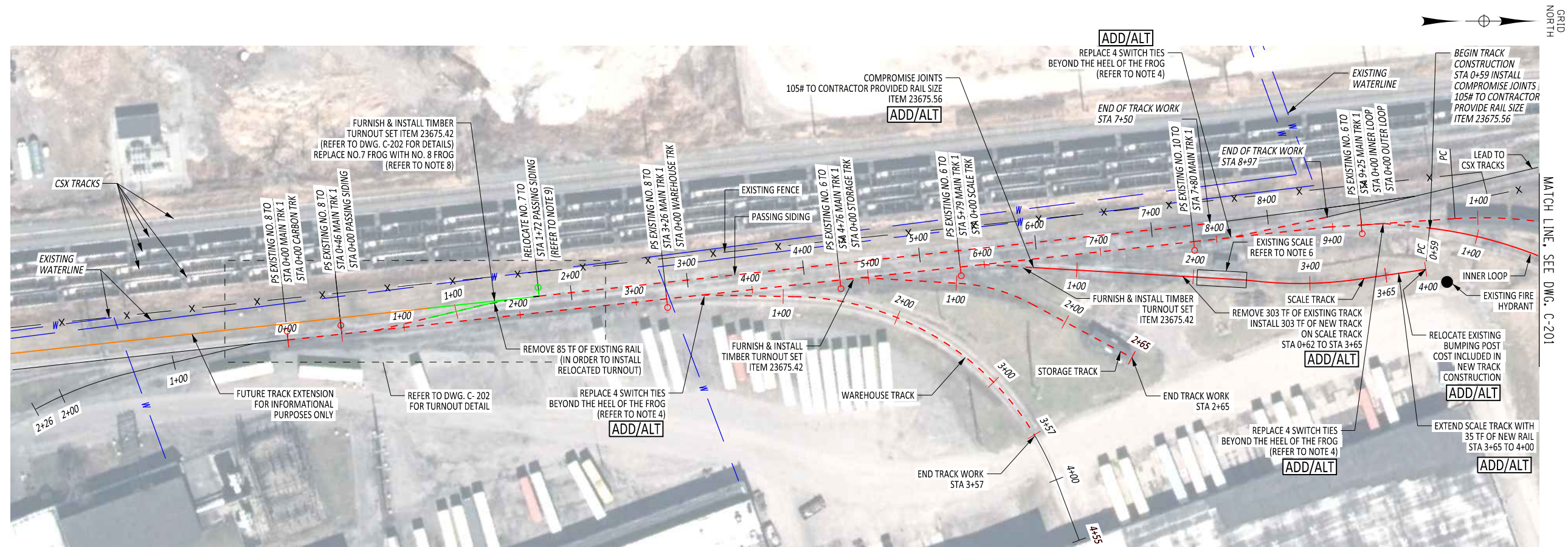


Project Manager:
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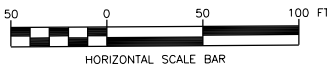
Drawing Number:

C-200 6 of 10



- LEGEND:**
- EXISTING TRACK
 - REMOVE EXISTING TRACK, ITEM C675.0101
 - FURNISH AND INSTALL JOINTED RAIL TRACK, ITEM C675.2201
 - RAISE, ALIGN & SURFACE TRACK, ITEM 23675.90
 - REMOVE AND INSTALL WOOD CROSS TIES, ITEM C675.30
 - FURNISH & INSTALL TIMBER TURNOUT SET, ITEM 23675.42 (SEE NOTE 4)
 - RAISE, ALIGN & SURFACE TRACK, ITEM 23675.90
 - RAISE, ALIGN & SURFACE TURNOUT, ITEM 23675.92
 - TURNOUT RELOCATION, ITEM C675.27
 - FURNISH & INSTALL TIMBER TURNOUT SET, ITEM 23675.42 (SEE NOTE 4)
 - FURNISH AND INSTALL NO. 8 SELF GUARDED SOLID MANGANESE STEEL FROG (SGSM), ITEM C675.78
 - RAISE, ALIGN & SURFACE TURNOUT, ITEM 23675.92
 - REMOVE EXISTING TRACK, ITEM C675.0101
 - FUTURE TRACK (FOR INFORMATIONAL PURPOSES ONLY)
 - X — EXISTING PERIMETER FENCE
 - # — EXISTING WATERLINE

- NOTES:**
- PLANS DERIVED FROM NYS GIS ORTHOIMAGERY. TRACK GEOMETRY IS APPROXIMATED AND IS FOR LOCATIONAL REFERENCE ONLY. THE LOCATION OF THE FENCE AND EXISTING WATERLINE IS APPROXIMATE BASED ON INFORMATION PROVIDED FROM SUMITOMO RUBBER.
 - TURNOUT SIZES ARE LABELED AT THEIR RESPECTIVE LOCATIONS ON THE PLANS. TURNOUT LENGTHS SHALL BE AS FOLLOWS: NO. 6 TURNOUTS ARE 71 FEET IN LENGTH, NO. 7 TURNOUTS ARE 85 FEET IN LENGTH, NO. 8 TURNOUTS ARE 99 FEET IN LENGTH AND NO. 10 TURNOUTS ARE 117 FEET IN LENGTH.
 - 1280 TIES WILL BE REPLACED PER ITEM C675.30 - REMOVE AND INSTALL WOOD CROSS TIES. WHILE THE PLAN SHEETS SHOW THE GENERAL LIMITS ALONG VARIOUS TRACKS WHERE TIES WILL BE REPLACED, INDIVIDUAL TIES TO BE REPLACED WILL BE MARKED OUT BY THE ENGINEER PRIOR TO THE CONTRACTOR COMMENCING WORK.
 - TURNOUTS IDENTIFIED TO HAVE TIMBER SETS REPLACED SHALL BE PAID UNDER UNDER ITEM 23675.42 AND ARE CALLED OUT ON PLAN SHEETS. TURNOUTS NOT IDENTIFIED TO RECEIVE NEW TIMBER SETS SHALL HAVE FOUR (4) - 17 FOOT LONG SWITCH TIES INSTALLED BEYOND THE HEEL OF THE FROG AS MARKED OUT BY THE ENGINEER PRIOR TO THE CONTRACTOR COMMENCING WORK TO ELIMINATE INTERLACING OF CROSS TIES AND SHALL BE PAID UNDER ITEM C675.4201.
 - FOR EXISTING SOIL OR MATERIAL DISTURBED ON SITE (I.E. ITEM 203.02 - UNCLASSIFIED EXCAVATION AND DISPOSAL, ITEM 621.51000015 - CLEANING EXISTING DITCH, ETC.), THE CONTRACTOR SHALL STOCKPILE IT AT AN ON-SITE LOCATION AS DESIGNATED BY THE ENGINEER/OWNER FOR INSPECTION AND/OR TESTING BY THE OWNER'S ENVIRONMENTAL REPRESENTATIVE. UPON COMPLETION OF INSPECTION/TESTING BY THE OWNER'S ENVIRONMENTAL REPRESENTATIVE, THE CONTRACTOR WILL BE RESPONSIBLE FOR PLACING AND/OR SPREADING THE TESTED MATERIAL AT A DESIGNATED LOCATION ON-SITE. IF MATERIAL IS FOUND TO BE CONTAMINATED REQUIRING TREATMENT AND/OR OFF-SITE DISPOSAL, THE OWNER'S ENVIRONMENTAL REPRESENTATIVE WILL BE RESPONSIBLE FOR THE DISPOSAL OUTSIDE OF THIS PROJECT.
 - THERE IS AN EXISTING SCALE LOCATED ALONG THE SCALE TRACK WHICH IS NO LONGER IN SERVICE AND SHALL BE REMOVED PRIOR TO NEW TRACK CONSTRUCTED IN ITS PLACE. REMOVAL OF THE EXISTING SCALE SHALL BE INCLUDED UNDER ITEM C675.0101 - REMOVE EXISTING TRACK. NEW TRACK CONSTRUCTION SHALL BE PAID UNDER ITEM 23675.2201 - FURNISH AND INSTALL JOINTED RAIL TRACK.
 - APPROXIMATELY 100 TIES WERE RECENTLY REPLACED ALONG THE INNER LOOP TRACK AND SHALL BE RETAINED AND STOCKPILED AT AN ON-SITE LOCATION DESIGNATED BY THE ENGINEER/BSOR. ALL REMAINING CROSS TIES AND SWITCH TIES SHALL BE LEGALLY DISPOSED OF BY THE CONTRACTOR. PAYMENT FOR DISPOSAL OF TIES IS INCLUDED UNDER ITEMS C675.0101, C675.30, 23675.42 AND C675.4201.
 - THE RELOCATED 105DY NO. 7 TURNOUT SHALL BE UPGRADED TO A NO. 8 FOR INSTALLATION AS A CROSSOVER CONFIGURATION. THE EXISTING NO. 7 FROG SHALL BE REPLACED WITH A NO. 8 SELF GUARDED SOLID MANGANESE STEEL FROG. FROG PLATING AND HARDWARE SHALL BE PROVIDED PER AREMA DESIGN 224-55-E82. THE NO. 8 FROG, FROG PLATING, HARDWARE, INSTALLATION, ETC. SHALL BE PAID UNDER ITEM C675.78.
 - FOLLOWING INSTALLATION OF THE RELOCATED TURNOUT, AND PRIOR TO PLACING IT INTO SERVICE, THE SWITCH POINTS SHALL BE SPIKED AND A PAD LOCK PLACED ON THE SWITCH STAND SO RAIL TRAFFIC WILL ONLY BE ABLE TO UTILIZE THE DIVERGING MOVEMENT THROUGH THE TURNOUT.
 - THE CONTRACTOR SHALL STOCKPILE RAIL, JOINT BARS AND TIE PLATES REMOVED FROM TRACK RETIREMENTS FROM THE INNER LOOP TRACK, PASSING SIDING TRACK AND SCALE TRACK AT AN ONSITE LOCATION DESIGNATED BY THE ENGINEER/BSOR. THE NO. 7 FROG AND FROG PLATES REMOVED FROM THE RELOCATED AND UPGRADED TURNOUT SHALL BE STOCKPILED AT AN ONSITE LOCATION DESIGNATED BY THE ENGINEER/BSOR. ALL SPIKES REMOVED DURING THE REPLACEMENTS AND TRACK REMOVAL SHALL BE COLLECTED AND DISPOSED OF BY THE CONTRACTOR UNDER THEIR RESPECTIVE WORK ITEMS. RAIL ANCHORS WHICH HAVE BEEN REMOVED AND ARE NOT FIT FOR REUSE SHALL BE COLLECTED AND DISPOSED OF BY THE CONTRACTOR UNDER THEIR RESPECTIVE WORK ITEMS.



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DRAWN BY = DONSPROJ0123456

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RELOCATED TURNOUT DETAIL

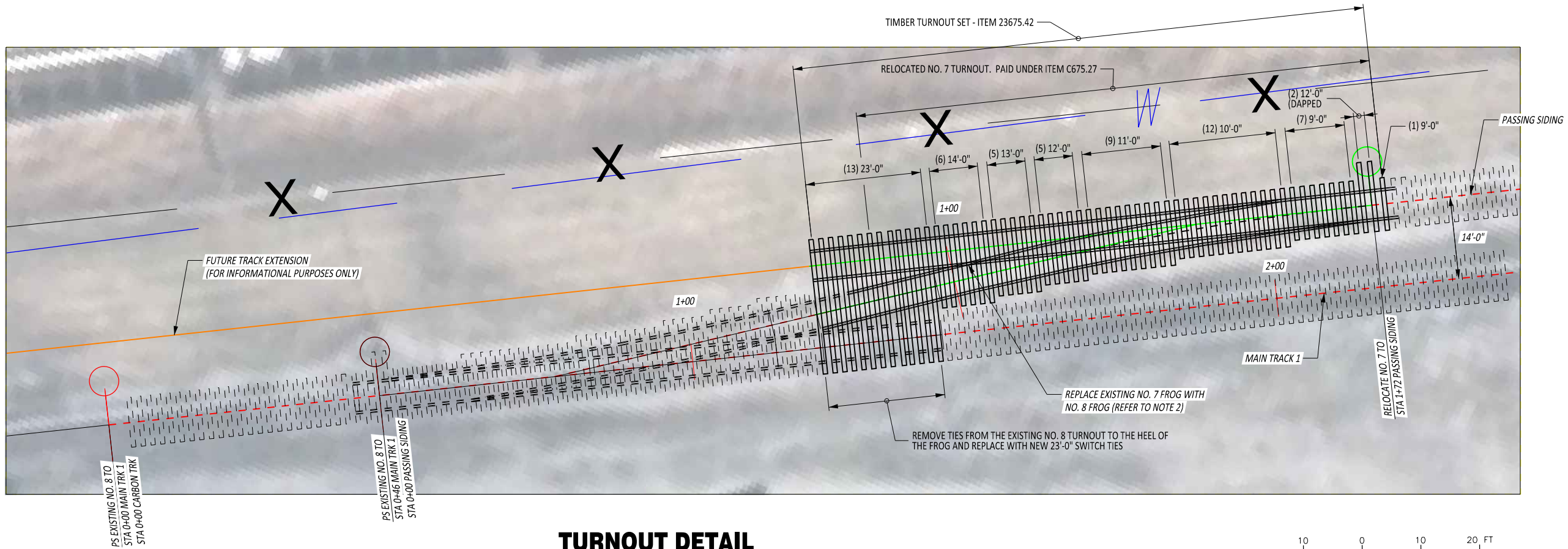
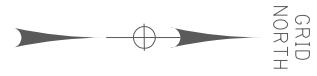
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Drawing Number: **C-202** 8 of 10



TURNOUT DETAIL

NOTES:

- TURNOUT TIE SPACING SHALL BE CONSISTANT WITH THE REQUIREMENTS SET FORTH BY THE CURRENT AREMA PORTFOLIO OF TRACK WORK PLANS, CURRENT EDITION.
- THE RELOCATED 10SDY NO. 7 TURNOUT SHALL BE UPGRADED TO A NO. 8 FOR INSTALLATION AS A CROSSOVER CONFIGURATION. THE EXISTING NO. 7 FROG SHALL BE REPLACED WITH A NO. 8 SELF GUARDED SOLID MANGANESE STEEL FROG. FROG PLATING AND HARDWARE SHALL BE PROVIDED PER AREMA DESIGN 224-55-E82. THE NO. 8 FROG, FROG PLATING, HARDWARE, INSTALLATION, ETC. SHALL BE PAID UNDER ITEM C675.78.
- FOR EXISTING SOIL OR MATERIAL DISTURBED ON SITE (I.E. ITEM 203.02 - UNCLASSIFIED EXCAVATION AND DISPOSAL, ITEM 621.51000015 - CLEANING EXISTING DITCH, ETC.), THE CONTRACTOR SHALL STOCKPILE IT AT AN ON-SITE LOCATION AS DESIGNATED BY THE ENGINEER/OWNER FOR INSPECTION AND/OR TESTING BY THE OWNER'S ENVIRONMENTAL REPRESENTATIVE. UPON COMPLETION OF INSPECTION/TESTING BY THE OWNER'S ENVIRONMENTAL REPRESENTATIVE, THE CONTRACTOR WILL BE RESPONSIBLE FOR PLACING AND/OR SPREADING THE TESTED MATERIAL AT A DESIGNATED LOCATION ON-SITE. IF MATERIAL IS FOUND TO BE CONTAMINATED REQUIRING TREATMENT AND/OR OFF-SITE DISPOSAL, THE OWNER'S ENVIRONMENTAL REPRESENTATIVE WILL BE RESPONSIBLE FOR THE DISPOSAL OUTSIDE OF THIS PROJECT.
- THE CONTRACTOR SHALL STOCKPILE RAIL, JOINT BARS AND TIE PLATES REMOVED FROM TRACK RETIREMENTS FROM THE PASSING SIDING TRACK AT AN ONSITE LOCATION DESIGNATED BY THE ENGINEER/BSOR. THE NO. 7 FROG AND FROG PLATES REMOVED FROM THE RELOCATED AND UPGRADED TURNOUT SHALL BE STOCKPILED AT AN ONSITE LOCATION DESIGNATED BY THE ENGINEER/BSOR. ALL SPIKES REMOVED DURING TIE REPLACEMENTS AND TRACK REMOVAL SHALL BE COLLECTED AND DISPOSED OF BY THE CONTRACTOR UNDER THEIR RESPECTIVE WORK ITEMS. RAIL ANCHORS WHICH HAVE BEEN REMOVED AND ARE NOT FIT FOR REUSE SHALL BE COLLECTED AND DISPOSED OF BY THE CONTRACTOR UNDER THEIR RESPECTIVE WORK ITEMS.

LEGEND:

	EXISTING TURNOUT, TIMBERS AND RAILS
	RELOCATED TURNOUT & NEW TURNOUT TIMBERS

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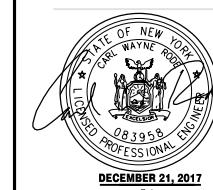
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MISCELLANEOUS RAILROAD DETAILS

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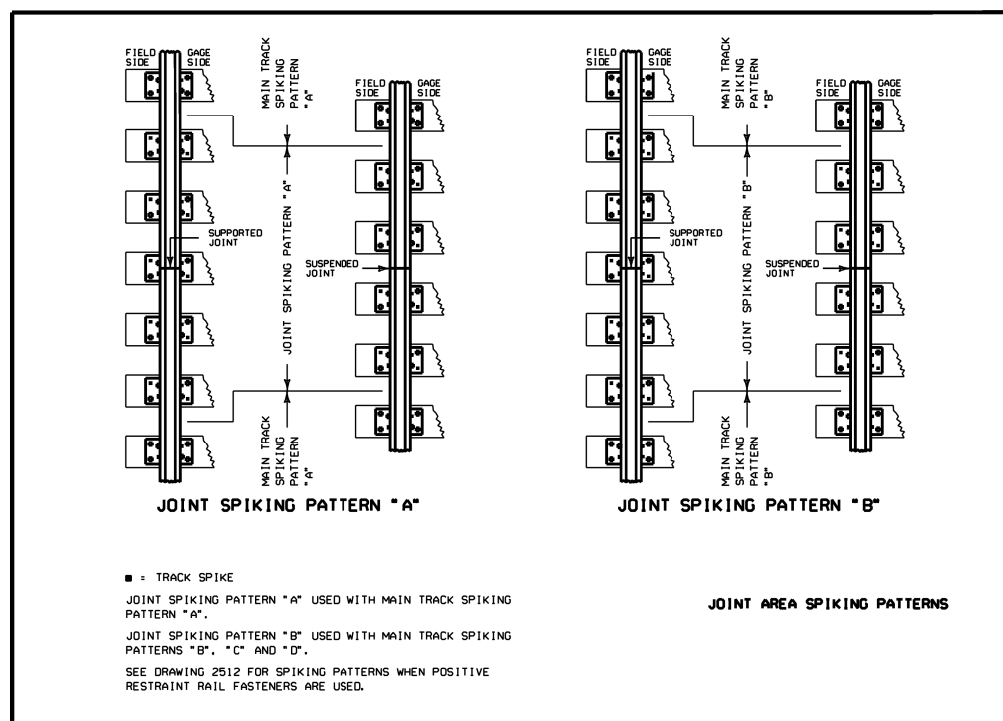
C-203

SPIKING REQUIREMENTS										
TRACK ALIGNMENT		MAIN TRACKS AND SIDINGS					SIDE, YARD AND INDUSTRY TRACKS			
		MAXIMUM AUTHORIZED FREIGHT SPEED					MAXIMUM AUTHORIZED SPEED			
		UP TO 45 MPH		46 MPH TO 60 MPH		61 MPH AND HIGHER		UP TO 25 MPH		26 MPH AND HIGHER
DEGREE FROM	DEGREE TO	SPIKES PER TIE PLATE	SPIKING PATTERN	SPIKES PER TIE PLATE	SPIKING PATTERN	SPIKES PER TIE PLATE	SPIKING PATTERN	SPIKES PER TIE PLATE	SPIKING PATTERN	SPIKES PER TIE PLATE
TANGENT		2	A	3	B	4	C	2	A	2
0°-01'	1°-59'	3	B	4	C	4	C	4	C	4
2°-00'	3°-59'	4	C	4	C	4	C	4	C	4
4°-00'	5°-59'	4	C	4	C	4	C	4	C	4
6°-00'	11°-59'	5	D	5	D	5	D	4	C	4
12°-00'	12°-59'	5	D	5	D	5	D	4	C	4
13°-00'	AND UP	5	D	5	D	5	D	5	D	5

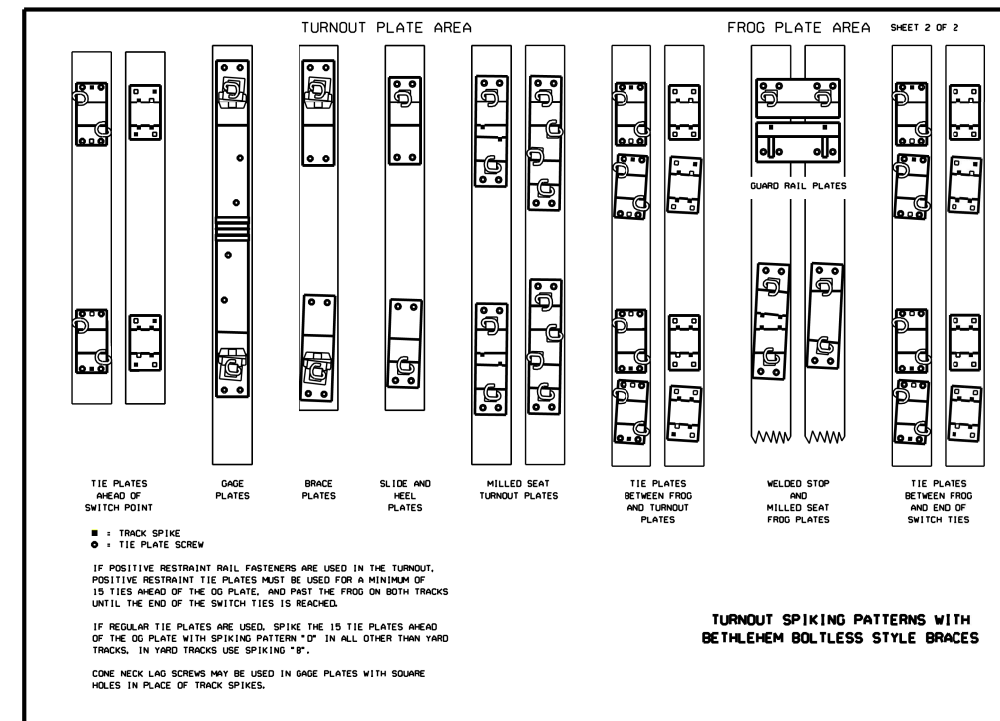
SPIKING PATTERN "A"	SPIKING PATTERN "C"
SPIKING PATTERN "B"	SPIKING PATTERN "D"

POSITIVE RESTRAINT RAIL FASTENERS ALL TRACK ALIGNMENTS	<ul style="list-style-type: none"> ■ = TRACK SPIKE ● = TIE PLATE SCREW 	<p>MAIN TRACK SPIKING PATTERNS</p> <p>SIDE TRACK SPIKING PATTERNS</p>
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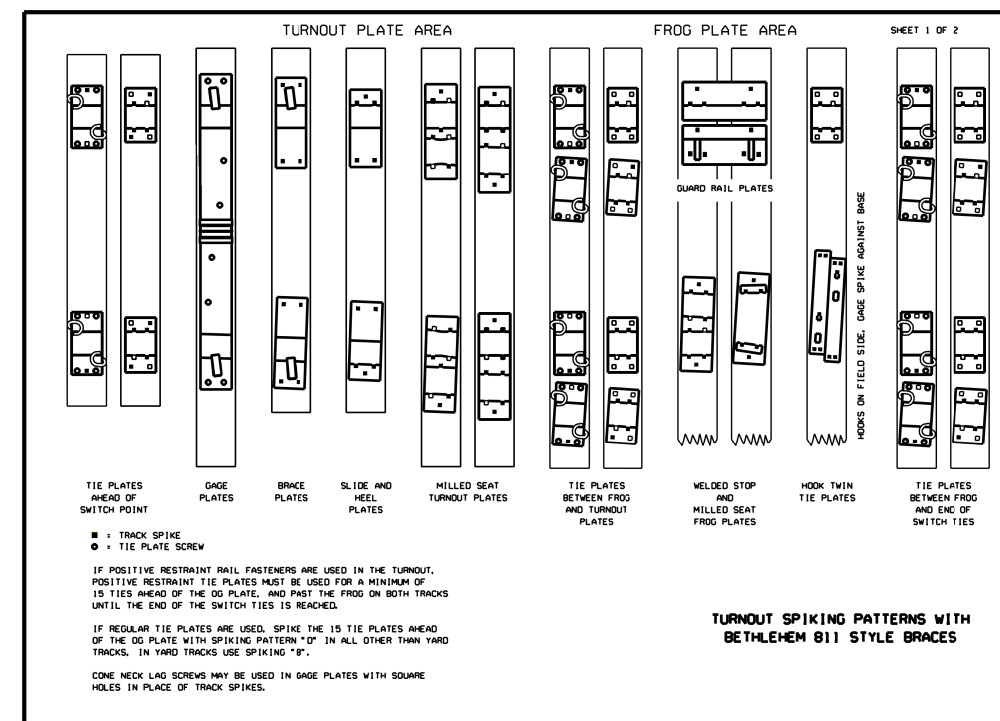
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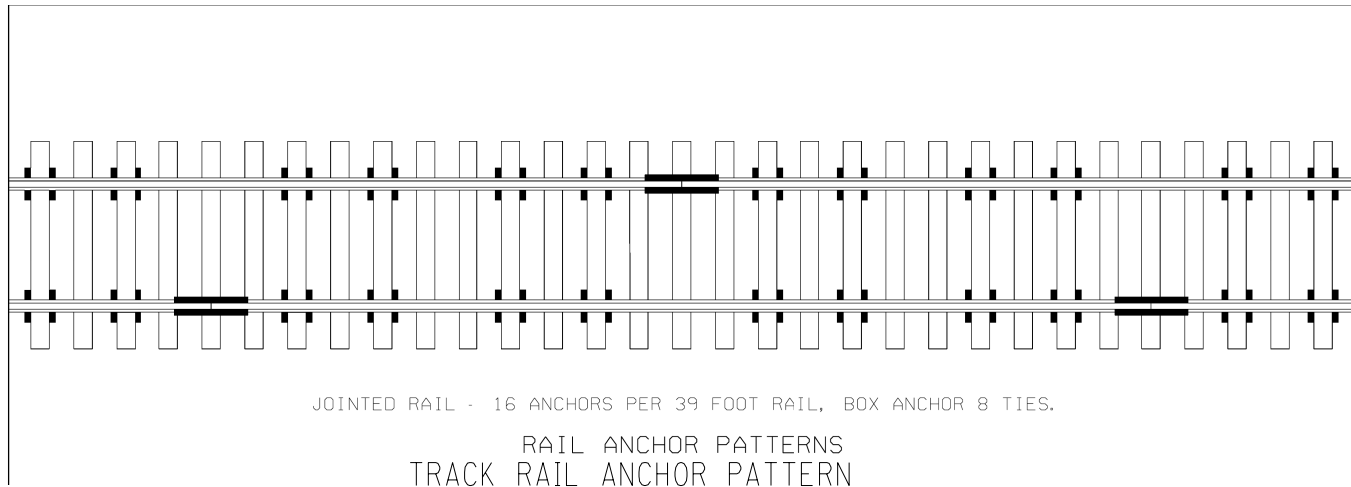
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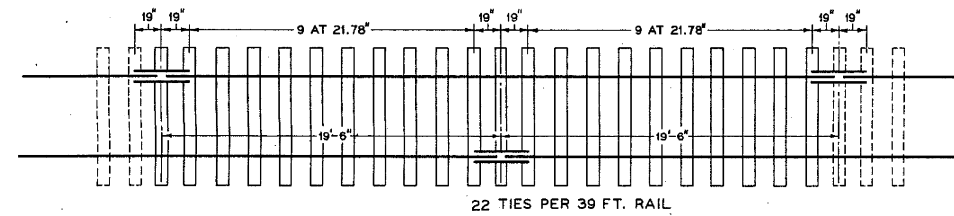


NOT TO SCALE



JOINTED RAIL - 16 ANCHORS PER 39 FOOT RAIL, BOX ANCHOR 8 TIES.

RAIL ANCHOR PATTERNS
TRACK RAIL ANCHOR PATTERN
NOT TO SCALE



22 TIES PER 39 FT. RAIL

STANDARD TIE SPACING LAYOUT
NOT TO SCALE

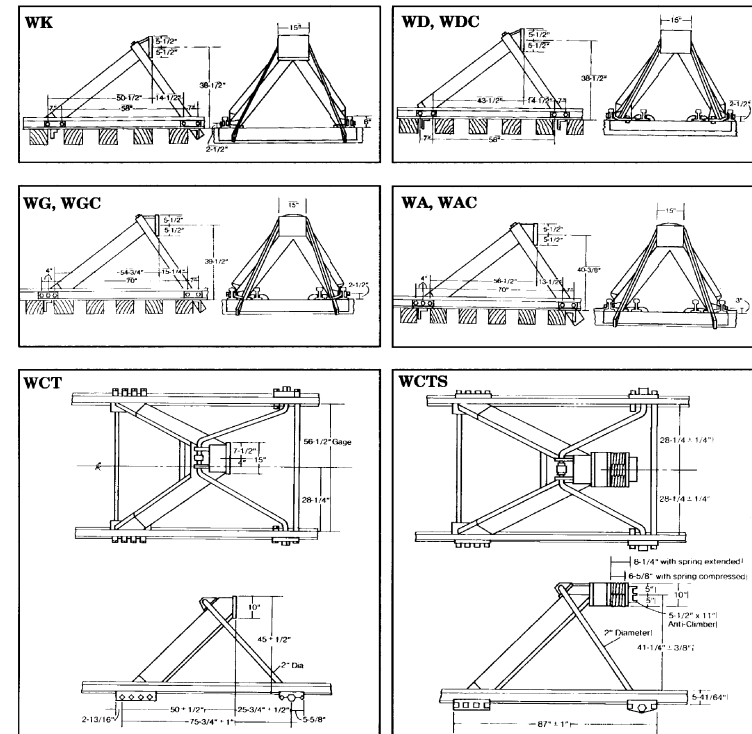


General dimensions for the bumping posts you order

You know which types of bumping posts you need. The next step is to determine the dimensions and other requirements for installation. The following drawings will give you the data you need.

Please note that all bumping post heads except on the Type WCTS and WCT are built 2-1/2 inches to the right of centerline of track. This accommodates standard car coupler position.

Bumping Posts Type



WESTERN-CULLEN-HAYES, INC.
2700 W. 36TH PLACE CHICAGO, IL 60632
(773) 254-9600 FAX (773) 254-1110



WESTERN-CULLEN-HAYES, INC.
120 N. 3rd Street, P.O. Box 756, Richmond, Indiana 47374
(765) 962-0526 FAX (765) 966-5374

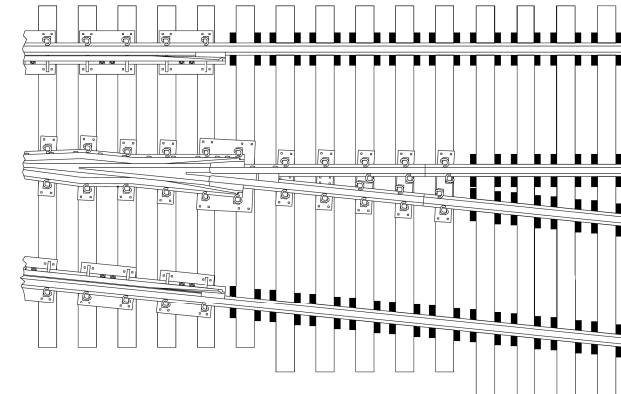
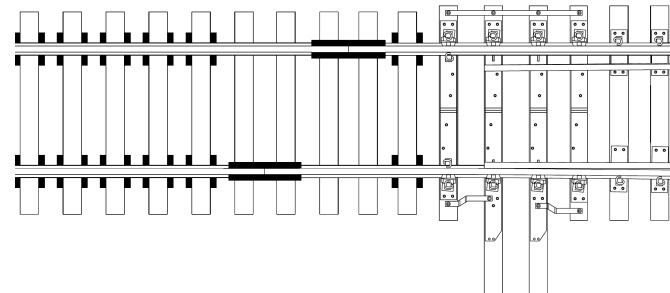
BUMPER POST DETAILS
NOT TO SCALE

AHEAD OF SWITCH POINT :

- BOX ANCHOR EVERY TIE FOR 130 TIES. COUNT FROM FURTHEST JOINT FROM SWITCH POINT OR FROM TIE AHEAD OF BRACE PLATES IF STOCK RAILS ARE WELDED INTO TRACK.
- IF JOINT BARS ARE PERMANENT, DO NOT APPLY ANCHORS OPPOSITE BARS

BEHIND HEEL OF FROG :

- BOX ANCHOR EVERY TIE FOR 130 TIES ON BOTH THE THROUGH TRACK AND TURNOUT TRACK. COUNT FROM THE LAST LONG TIE.
- BOX ANCHOR EVERY TIE TO END OF GUARD RAIL.



- BETWEEN SWITCH HEEL AND TOE OF FROG, BOX ANCHOR EVERY TIE THAT CAN BE ANCHORED ON AS MANY RAILS AS POSSIBLE. (REFER TO APPLICABLE STANDARD DRAWINGS)

TURNOUT AND CROSSING RAIL ANCHOR PATTERN
NOT TO SCALE

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MISCELLANEOUS RAILROAD DETAILS

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C-204 10 of 10