



Non-Redundant Steel Tension Member (NSTM) Inspection Procedure

Reference: ODOT Manual of Bridge Inspection, Chapter 4

Inspection Responsibility:	ODOT District 11
County-Route-SLM:	BEL-7-1187
Structural File Number:	0700312
Inspection Frequency:	24 Months
Fatigue Life Study:	Year of Study: <u>Not Calculated</u> Remaining Fatigue Life: <u>Not Calculated</u>
Load Path Redundant:	<u>Yes. Superstructure consists of 10 steel beams; however, beams are supported directly by NSTM steel box caps.</u>
Structurally Redundant:	<u>Yes. Superstructure consists of continuous steel beam spans; however, beams are supported directly by NSTM steel box caps.</u>
Internally Redundant:	<u>N/A</u>
System Redundant:	<u>No rigorous analysis performed (i.e. finite element, 3-D modeling)</u>



Figure 1 – BEL-7-1187 east elevation, looking northwest.

Location: The BEL-7-1187 Bridge (see **Figure 1**) spans the Norfolk Southern Railroad in Shadyside, Ohio (see **Figure 2**). The bridge carries both directions of SR 7 traffic in ODOT District 11.



Figure 2 – BEL-7-1187 location map.

Structure Description: The structure consists of a 7-span continuous steel beam bridge. Originally constructed in 1983, the structure is approximately 565.5' long. The reinforced concrete deck is supported by a total of ten (10) continuous rolled steel beams which are supported on top of reinforced concrete substructure units near the bridge ends and five welded built-up steel box caps at Piers 2 through 6. The bridge carries two lanes of northbound traffic and two lanes of southbound traffic, with the northbound and southbound lanes separated by a median barrier and a longitudinal joint. As of 2023, the average daily traffic for the bridge was 15,370 with an average daily truck traffic percentage of 22%.

Structure nomenclature is from south to north with spans and substructure units labeled from south to north and beams labeled from west to east. The NSTM members on this structure include the welded steel box caps at Piers 2 through 6 (see **Figures 3 through 6**).



Figure 3 – NSTM Member Identification Plan (location of NSTM members highlighted in red).



Figure 4 – Pier 1 cap south elevation (typical hammerhead-style pier), looking north.



Figure 5 – Pier 4 cap south elevation (typical straddle pier), looking north.



Figure 6 – Typical access door on end of cap, looking east at the west end of the Pier 2 cap.

Inspection Risk Factors

Inspection Procedure and Inspector Access Risk Factors: A combination of aerial lift equipment, ladders, and non-permit required confined space entry procedures are required to gain hands-on access to all the NSTM members and their tension regions. In the 2023 inspection, all NSTM members were accessed with a 62' under-bridge inspection unit (snooper). Railroad coordination – including right-of-entry agreements and flagging protection – are required to inspect portions of the NSTM members within railroad right-of-way.

- Inspection Methods
 - Steel box caps: Inspect the bottom flange and bottom half of the web plates in positive moment regions, the top flange and top half of the web plates in negative moment regions, and the full height of the web plates in primary shear regions. Inspect each member for its full length, particularly for distress at fatigue prone details.
- Access
 - Under-bridge inspection unit: Used to gain hands-on access to the steel box caps which are within reach from the outside lane and shoulder along each side of the structure. Be aware that several caps extend well beyond the edges of the deck and are difficult to reach using a snoopers.
 - Extension Ladder: Can be used as an alternative to an under-bridge inspection unit or for locations near the ends of the caps which extend well beyond the edges of the deck.
 - Non-permit required confined space: The box cap interiors are accessed through locked doors at the ends of each cap. Keys are required and can be acquired by contacting the District office. Multi-gas monitors must be worn while inspecting the box cap interiors.
- Railroad Coordination
 - Norfolk Southern Railroad: Right-of-entry agreements and flagging protection services are required to inspect portions of the NSTM members within railroad right-of-way. **Refer to the attached right-of-entry agreement.**
- Maintenance of Traffic
 - Single right lane and shoulder closures in each direction of SR 7 are required during snoopers work.
- Inspector Risks
 - Work at heights
 - Traffic on the bridge
 - Railroad traffic
 - Confined spaces (non-permit required)
 - Cold/hot extreme temperatures
 - Biological/wildlife hazards

Inspection Risk Factors			
Risk Factor	Location	Description	Photo
NSTM Structure	Substructure	Steel box cap failure would cause partial or complete collapse of the structure.	-
Fatigue Prone Detail – Category E	Box cap web	Base metal at the end termination of longitudinal stiffener to web welds with no transition radius (Category E)	1
Fatigue Prone Detail – Category E'	Box cap top flange	Base metal at bearing sole plate to top flange longitudinal welds (thickness $\geq 1"$) (Category E')	2
High ADTT	Substructure	Average daily traffic is 15,370 vehicles with an average daily truck traffic percentage of 22%.	-

Category Reference: AASHTO LRFD Bridge Design Specs Table 6.6.1.2.3-1



Photo 1 – Base metal at the end termination of longitudinal stiffener to girder web welds with no transition radius (Category E). South face of the Pier 1 cap shown, looking north.



Photo 2 – Base metal at bearing sole plate to top flange longitudinal welds ($t \geq 1''$) (Category E'). Girder 2 bearing at Pier 1 cap shown, looking southeast.



August 29, 2023

Nicholas Fisco
STRINTEG CORPORATION
7700 Hub Parkway Suite 1
Valley View, Ohio, 44125

RE: A bridge inspection at DOT Crossing #960489Y

**Keystone Division, at Mile Post RO 47.78
Shadyside, Belmont County, Ohio
Latitude / Longitude: 39.962697 / -80.755476
NS Activity No. 1314188**

Dear Nicholas Fisco:

Attached for your records is a copy of the fully executed agreement countersigned by Norfolk Southern Railway Company ("Railway").

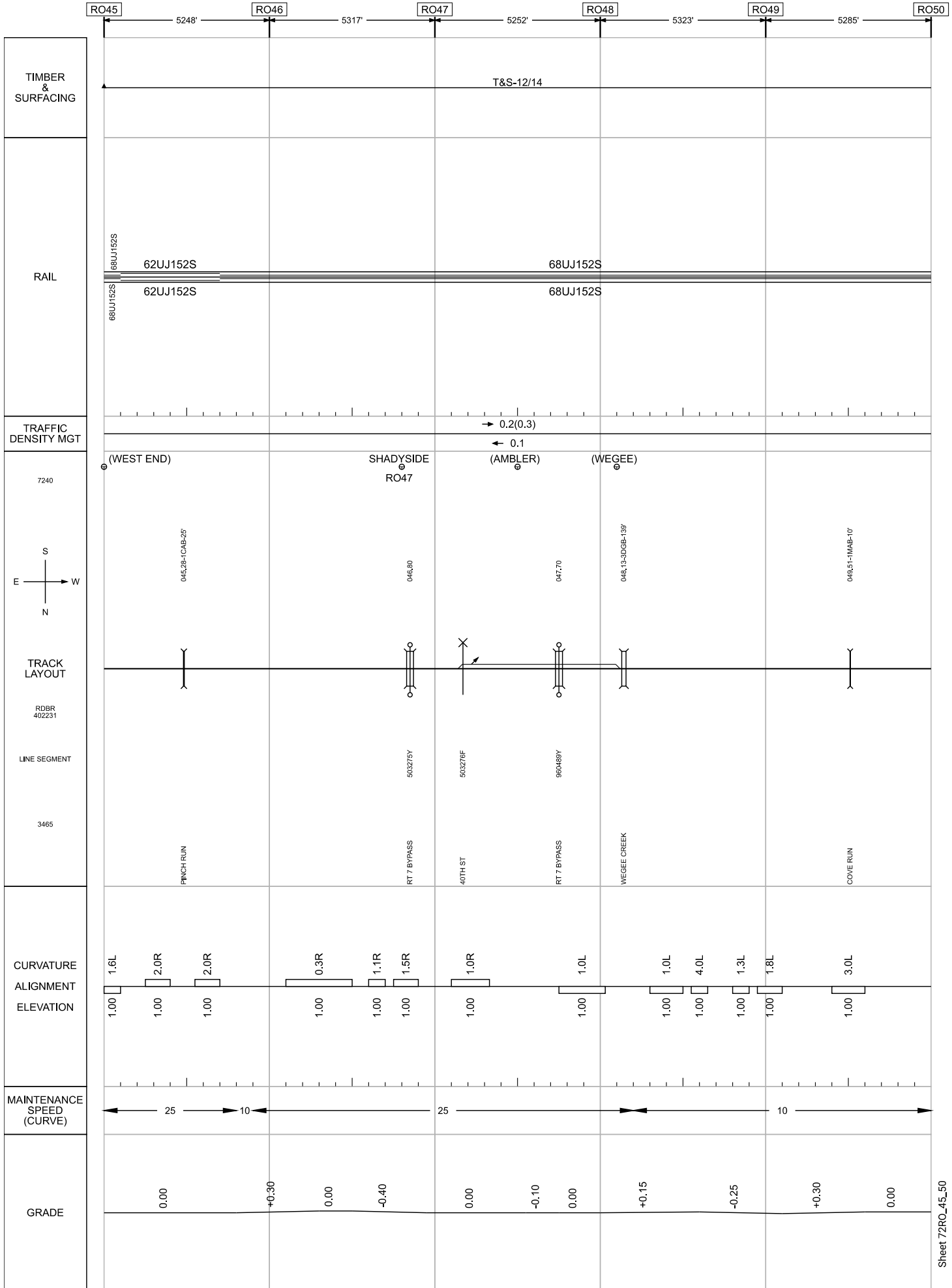
For Scheduling of Flagging & Construction Monitoring submit a Protection Services Coordination request online at: <https://ns.railprosp permitting.com>

If you have questions regarding the Protection Service request process, the work plan requirements, or need assistance submitting a request, please send an email to NS.Info@RailPros.com or call (402) 965-0539. It is recommended that the contractor or construction field manager submit the request as information on specific construction means and methods are required. Projects are scheduled only after the construction work plan has been approved. **Entry onto Railway's property without the Division Engineer or their representative's prior approval is considered trespassing.**

Sincerely,

Peggy Betzer

Real Estate Specialist
RailPros



Sheet 72RO_45_50

INDEMNIFICATION AND RIGHT OF ENTRY AGREEMENT

THIS INDEMNIFICATION AND RIGHT OF ENTRY AGREEMENT (this "Agreement") is made as of July 6, 2023, by and between **NORFOLK SOUTHERN RAILWAY COMPANY** ("Company" or "Railway"), for itself and as agent for any parent, affiliated or subsidiary company that may own or operate the Premises (as defined herein) in whole or in part, and **STRINTEG CORPORATION**, ("Principal") a(n) Ohio Corporation whose mailing address is 7700 Hub Parkway Suite 1, Valley View, Ohio 44125.

WHEREAS, Principal has requested that Company permit Principal to be on or about the Premises for the Designated Activities (as defined herein);

WHEREAS, Company is willing to grant the Right of Entry (as defined herein) subject to the terms and conditions set forth herein;

NOW THEREFORE, in consideration of the foregoing and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and intending to be legally bound hereby, Company and Principal hereby agree as follows:

1. Subject to the terms and conditions of this Agreement, Company hereby permits Licensee, (as defined herein) to enter upon property owned or controlled by Company located at or near:
 - Milepost RO 47.78, Keystone Division
 - Latitude 39.962697, Longitude -80.755476
 - Shadyside, Belmont County, Ohio

(the "Premises") and being located substantially as shown upon the print marked Exhibit "A", attached hereto and made a part hereof (the "Right of Entry"). **The Right of Entry is granted to Licensee for the sole purpose of performing bridge inspection at DOT Crossing #960489Y (the "Designated Activities") from July 10, 2023, to September 10, 2023, but in no event shall Licensee occupy the Premises for more than thirty (30) cumulative days.** Licensee shall not perform intrusive environmental sampling or soil borings for environmental testing or sampling. The term "Licensee" means Principal, Principal's subcontractors, and such other entities affiliated with Principal to whom authorized representatives of Company have granted express, written approval, as well as the officers and employees of the foregoing. The Right of Entry shall apply to those portions of the Premises, and to such equipment, machinery, rolling stock and other personal property and fixtures belonging to Company or otherwise located on the Premises, only to the extent specifically designated and approved in writing by authorized representatives of Company (collectively, "Designated Property").

2. Licensee access to the Premises shall be limited to the Designated Property, and Principal shall be liable and fully responsible for all actions of Licensee while on the Premises pursuant to the Right of Entry.
3. All Licensee shall (a) be subject to Company's direction when upon the Premises, and (b) be subject to removal from the Premises by Company for any reason, including breach of this Agreement or failure, in Company's sole discretion, to act safely, respectfully, responsibly, professionally, and/or in a manner consistent with Company's desire to minimize risk and maintain its property with maximum security and minimum distractions or disruptions. Company shall not be required to specify either the basis for its decision or which objections, if any, it has to the individual(s).
4. If Principal is a contractor that has been retained to provide services to Company, Principal shall, and shall cause all other Licensee to, conduct all activities in accordance with the Norfolk Southern Operating Guidelines for Contractors (the "Guidelines") and it shall be Principal's obligation to request and obtain a copy of the Guidelines from Company.

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5. Principal shall give Company's officer signing this Agreement, or his or her authorized representative, not less than seventy-two (72) hours' advance notification of the presence of any Licensee on Designated Property.
6. (a) Principal shall indemnify and save harmless Company, Company's parent, subsidiary and affiliated companies, and their respective directors, officers, agents and employees (collectively, the "Indemnified Parties") from and against any and all claims, demands, losses, suits, judgments, costs, expenses (including without limitation reasonable attorney's fees) and liability in connection with:
 - (i) any alleged loss of life or personal or bodily injury to or damage to or loss of property of any person, including without limitation any of the Indemnified Parties, arising from, incident to or occurring in connection with the presence of any Licensee or any property of any Licensee, or both, on the property of Company, regardless of whether negligence on the part of any Indemnified Parties caused or contributed to such loss of life, personal or bodily injury or property loss or damage, in whole or in part; provided, however, that if, under the law applicable to enforcement of this Agreement, an agreement to indemnify against the indemnified party's own negligence is invalid, then in that event Principal's obligation to indemnify the Indemnified Parties under this Section shall be reduced in proportion to the negligence of Company, if any, that proximately contributed to such loss of life, personal injury or property loss or damage, provided that, in the event of personal injury to or death of an employee of Company, such employee's negligence will not be considered to be negligence of Company under this provision;
 - (ii) any alleged violation of any law, statute, code, ordinance or regulation of the United States or of any state, county or municipal government (including, without limitation, those relating to air, water, noise, solid waste and other forms of environmental protection, contamination or pollution or to discrimination on any basis) that results in whole or in part, directly or indirectly, from the activities of Licensee related in any way to their presence on the Premises or from any other act or omission of Licensee contributing to such violation, regardless of whether such activities, acts or omissions are intentional or negligent, and regardless of any specification by Company without actual knowledge that it might violate any such law, statute, code, ordinance or regulation;
 - (iii) any allegation that Company is an employer or joint employer of any Licensee or is liable for related employment benefits or tax withholdings;
 - (iv) any decision by Company to remove or exclude any Licensee from the Premises pursuant to Section 3 above;
 - (v) any violation of Section 12 of this Agreement; or
 - (vi) in addition to the obligations covered by subsection (i) above, which are not modified by this subsection (vi), any other alleged injury or harm to any Licensee that is incident to or occurs in connection with the exercise of the Right of Entry or the presence of any Licensee on the property of Company, except where such injury or harm results from any judicially determined violation of law by Company.
- (b) No causes of action, defenses or claims of Principal against Company shall derogate from or in any way invalidate or offset or prevent the enforcement of the obligations of Principal under this Section.
7. Insurance - Without limiting in any manner the liability and obligations assumed by Licensee under any other provision of this Agreement, and as additional protection to Railway, Licensee shall comply with the following provisions:
 - (a) Licensee shall pay Railway a Risk Financing Fee in the amount of \$1,900 in conjunction

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with the Right of Entry. Licensee may submit inquiries about RPL issues at ns.permitting@railpros.com. At the Licensee's option, rather than pay a Risk Financing fee, Licensee shall purchase a commercial Railroad Protective Liability (RPL) insurance policy for Railway as described in Option A, below. In the event that the value of the Designated Activities exceeds \$350,000, Licensee shall be required to use Option A, below;

Option A. In lieu of paying the Risk Financing Fee, Licensee shall purchase a commercial RPL policy with Limits of \$2,000,000 per occurrence and \$6,000,000 in the aggregate. In the event that the Designated Activities value exceeds \$350,000 a commercial RPL shall be purchased with limits of \$5,000,000 per occurrence and \$10,000,000 in the aggregate. The RPL policy shall conform to CG 00 35 04 13 or equivalent and include coverage for Terrorism and the Physical Damage to Property Endorsement and shall name Norfolk Southern Corporation, affiliates and subsidiaries as the insured. The job location, Licensee and description must appear on the declaration pages. Prior to any activity beginning under this Agreement, an electronic copy of the RPL policy, not simply the binder, shall be submitted to ns.permitting@railpros.com.

(b) Licensee shall obtain a Commercial General Liability ("CGL") policy containing products and completed operations and contractual liability coverage, with a combined single limit of not less than \$2,000,000 for each occurrence. Any portion of this requirement may be satisfied by a combination of General Liability and/or Excess/Umbrella Liability Coverage. The policy shall not deny any obligation of any insured under the Federal Employer's Liability Act, as amended. The CGL policy shall provide additional insured coverage equivalent to ISO CG 20 10 11/85.

(c) Licensee shall obtain Automobile Liability Insurance with a current ISO occurrence form policy (or equivalent) and apply on an "any auto" (Symbol 1) basis, including coverage for all vehicles used in connection with the Designated Activities, providing annual limits of at least \$1,000,000 per occurrence for bodily injury and property damage combined including uninsured and underinsured motorist coverage, medical payment protection, and loading and unloading.

(d) Licensee shall obtain Workers' Compensation Insurance to meet fully the requirement of any compensation act, plan or legislative enactment applicable in connection with the death, disability or injury of Licensee's officers, agents, servants or employees arising directly or indirectly out of the performance of this Agreement;

(e) Licensee shall obtain Employers' Liability Insurance with limits of not less than \$1,000,000 each accident \$1,000,000 policy limit for disease, and \$1,000,000 each employee for disease;

(f) General Insurance Requirements. Each insurance policy referred to in section 7 above shall also comply with the following requirements:

(i) Additional Insureds. All insurance required (excluding any RPL policy and Workers' Compensation policy) shall name Railway and its parent, subsidiary and affiliated companies as additional insureds with an appropriate endorsement to each policy.

(ii) Licensee's Coverage Primary and Without Right to Contribution. All policies secured by Licensee, whether primary, excess, umbrella or otherwise, and providing coverage to the Railway as an additional insured (i) are intended to take priority in responding and to pay before any insurance policies Railway may have secured for itself must respond or pay and (ii) may not seek contribution from any policies the Railway may have secured for itself.

(iii) Severability of Interests (Cross Liability). No cross-liability exclusions are permitted that would apply to the additional insureds, and there may not be any restrictions in

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any policy that limits coverage for a claim brought by an additional insured against a named insured.

- (iv) Waiver of Subrogation. To the fullest extent permitted by law, all insurance furnished by Licensee in compliance with this Section 7 shall include a waiver of subrogation in favor of Railway with an appropriate endorsement to each policy.
 - (v) Notice of Cancellation, Modification or Termination. All policies required under this Section 7 shall not be subject to cancellation, termination, modification, changed, or non-renewed except upon thirty (30) days prior written notice to the additional insureds.
 - (vi) No Limitation. The insurance coverages maintained by Licensee shall not limit any of Licensee's indemnity obligations or other liabilities under this Agreement. The insurance available to Railway and its parent, subsidiary and affiliated companies as additional insureds shall not be limited by these requirements should Licensee maintain higher coverage limits.
 - (vii) Any deductibles or self-insured retentions of Licensee over \$50,000 must be declared and approved by Railway. Approval of such requests shall not be unreasonably withheld. All insurance provided shall have an A.M Best Rating of at least A- VII.
 - (viii) Licensee shall require all subcontractors who are not covered by the insurance carried by Licensee to maintain the insurance coverage described except for the RPL insurance, including but not limited to additional insured status for Railway and its parent, subsidiary and affiliated companies.
 - (ix) Licensee shall furnish electronically certificates of insurance and the RPL Insurance Policy to Railway's Managing Agent prior to execution of this Agreement at ns.permitting@railpros.com. The insurance coverage required herein shall in no way limit Licensee's liability under this Agreement.
8. Principal shall reimburse Company for any material, labor, supervisory and protective costs (including flagging) and related taxes and overhead expenses required or deemed necessary by Company due to the presence of any Licensee or any Licensee Property on the Premises.
9. Principal shall, and shall ensure that all Licensee, exercise special care and precautions to protect the Premises and equipment, machinery, rolling stock and other personal property and fixtures belonging to Company or otherwise located on the Premises (whether or not constituting Designated Property) and to avoid interference with Company's operations.
10. Principal shall not, and shall not permit any Licensee to, create or otherwise allow to exist any drainage conditions that would be adverse to the Premises or any surrounding areas. Principal shall ensure that no work by any Licensee shall interfere with the safe and proper support of Company's roadbed and track. All Designated Activities shall occur only during daylight hours.
11. Principal shall, and shall ensure that all Licensee, maintain a minimum clearance of fifteen feet (15') from the center line of the nearest track for any Licensee Property unless otherwise authorized in writing by Company. With the exception of public grade crossings, Licensee shall not cross the tracks of Company with any vehicle unless Principal shall have executed such separate agreement as shall be provided by Company.
12. Principal shall not, and shall ensure that no Licensee, cause or permit any trash, waste or debris to be released upon, buried in or burned upon the Premises. Principal will remove from the

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Premises all soil, fill, construction and demolition debris, or other materials (whether solid or liquid) disturbed or created during the Designated Activities, including any such material that is contaminated and/or potentially contaminated. Company assumes no responsibility for any such material and shall not be a signatory on any waste manifests, bills of lading, or other documentation concerning such material. Principal shall not use or permit the use of any explosives of any kind on the Premises.

13. Principal shall restore the Premises, the Designated Property and surrounding areas to their original condition or to a condition satisfactory to the Company officer signing this Agreement or to his or her authorized representative (ordinary wear and tear to rolling stock and equipment excepted) upon termination of the Right of Entry.
14. It is expressly understood that Principal's indemnification obligations set forth herein cover claims by Principal's employees, agents, independent contractors and other representatives. Principal expressly waives any defense to or immunity from such indemnification obligations and/or any subrogation rights available under any applicable state constitutional provision, laws, rules or regulations, including without limitation the workers' compensation laws of any state. Specifically, (i) in the event that all or a portion of the Premises is located in the State of Ohio, the following provision shall be applicable: "Principal, with respect to the indemnification provisions contained herein, hereby expressly waives any defense or immunity granted or afforded it pursuant to Section 35, Article II of the Ohio Constitution and Section 4123.74 of the Ohio Revised Code"; and (ii) in the event that all or a portion of the Premises is located in the Commonwealth of Pennsylvania, the following provision shall be applicable: "Principal, with respect to the indemnification provisions contained herein, hereby expressly waives any defense or immunity granted or afforded it pursuant to the Pennsylvania Workers' Compensation Act, 77 P.S. 481".
15. This Agreement shall be governed by the internal laws of the Commonwealth of Virginia, without regard to otherwise applicable principles of conflicts of laws. If any provision of this Agreement is held for any reason to be unlawful or unenforceable, the parties intend that only the specific words found to be unlawful or unenforceable be severed and deleted from this Agreement and that the balance of this Agreement remain a binding enforceable agreement to the fullest extent permitted by law.
16. This Agreement may be amended only in writing and signed by authorized representatives of Company and Principal.
17. If any mechanics' or materialmen's lien, or similar lien, is asserted against the Premises, or any other property of Company, as a result of the exercise of the Right of Entry in any given instance, Principal shall immediately satisfy, defend, or obtain the release of such lien, all at Principal's expense, and Principal shall indemnify and hold harmless Company from and against any claims arising out of or connected with such lien. In the event that any such lien shall attach to the Premises or Principal shall fail to pay such taxes, then, in addition to any other right or remedy available to Company, Company may, but shall not be obligated to, discharge the same. Any amount paid by Company for any of the aforesaid purposes, together with related court costs, attorneys' fees, fines and penalties, shall be paid by Principal to Company within ten (10) days after Company's demand therefor.
18. This Agreement (a) shall not be assigned or transferred by Principal, (b) may be terminated at will by Company or Principal, and (c) **shall terminate automatically on September 10, 2023**; provided, however, that (i) the terms of this Agreement that, by their nature, are intended to survive termination shall so survive, and (ii) termination shall not relieve Principal of any obligation or liability incurred prior to such termination.
19. The parties agree that if an authorized officer of a party fully signs this Agreement in the appropriate location(s) below and then returns that signature to the other party via electronic means with a pdf

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or similar scanned copy of that signature, then that scanned signature shall serve as that party's signature for the Agreement, and, upon full execution of the Agreement by all parties, shall create a legally binding agreement.

STRINTEG CORPORATION

DocuSigned by:
By Donald W. Cartwright
382CC094CA3B46F...
Title Vice President
Name Donald W. Cartwright
Date July 13, 2023 | 18:17 PDT

NORFOLK SOUTHERN RAILWAY COMPANY

DocuSigned by:
By [Signature]
2837D5D5B1D04F0...
Title Real Estate Manager
Name Solomon Jackson
Date August 28, 2023 | 13:37 PDT

DS
KSH

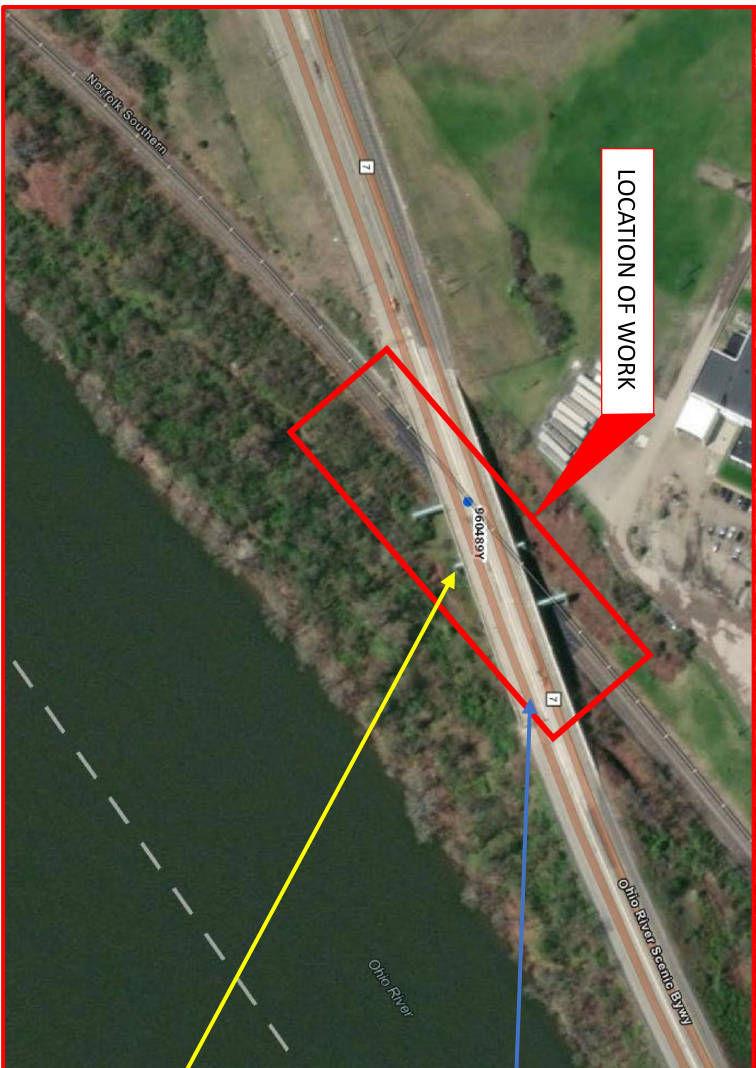
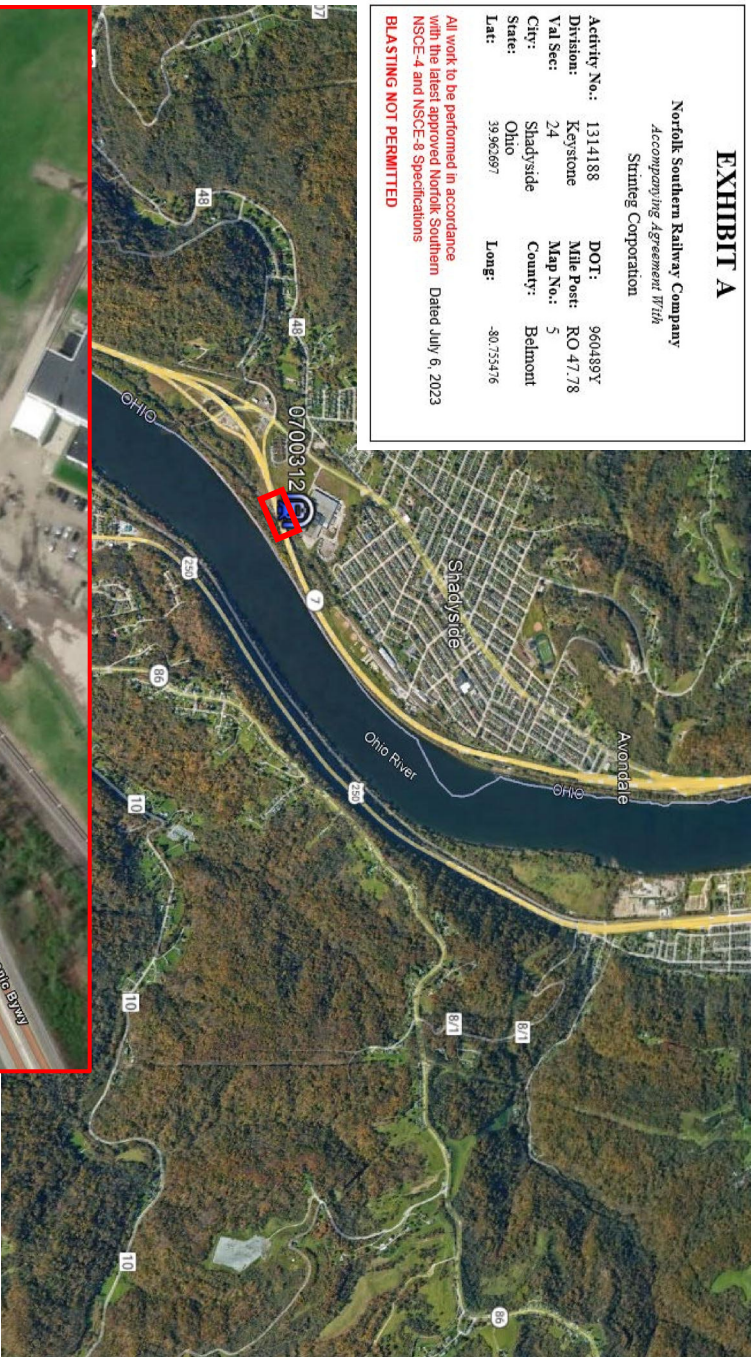
DS
Activity Number: 1314188
PJB: 07/06/2023

EXHIBIT A

Norfolk Southern Railway Company
Accompanying Agreement With
Sunting Corporation

Activity No.:	1314188	DOT:	960489Y
Division:	Keystone	Mile Post:	RO 47.78
Val Sec:	24	Map No.:	5
Ctry:	Shadyside	Country:	Balmain
State:	Ohio		
Lat:	39.962697	Long:	-80.755476

All work to be performed in accordance with the latest approved Norfolk Southern NSCE-4 and NSCE-8 Specifications
BLASTING NOT PERMITTED



LOCATION OF WORK

GPS: 39.962697, -80.755476
DOT Crossing #: 960489Y
RR Milepost: 47.75
RR Division: Pittsburgh
RR Subdivision: River IT
Schedule: July – September 2023

Description of Work: Visual inspection of the 5 steel box caps and the surrounding bridge components crossing over the NS track utilizing an under-bridge inspection vehicle (from above) and/or manlift and extension ladder (from below). No direct access to the tracks is required.

Work Duration: Approximately 2 Days.

