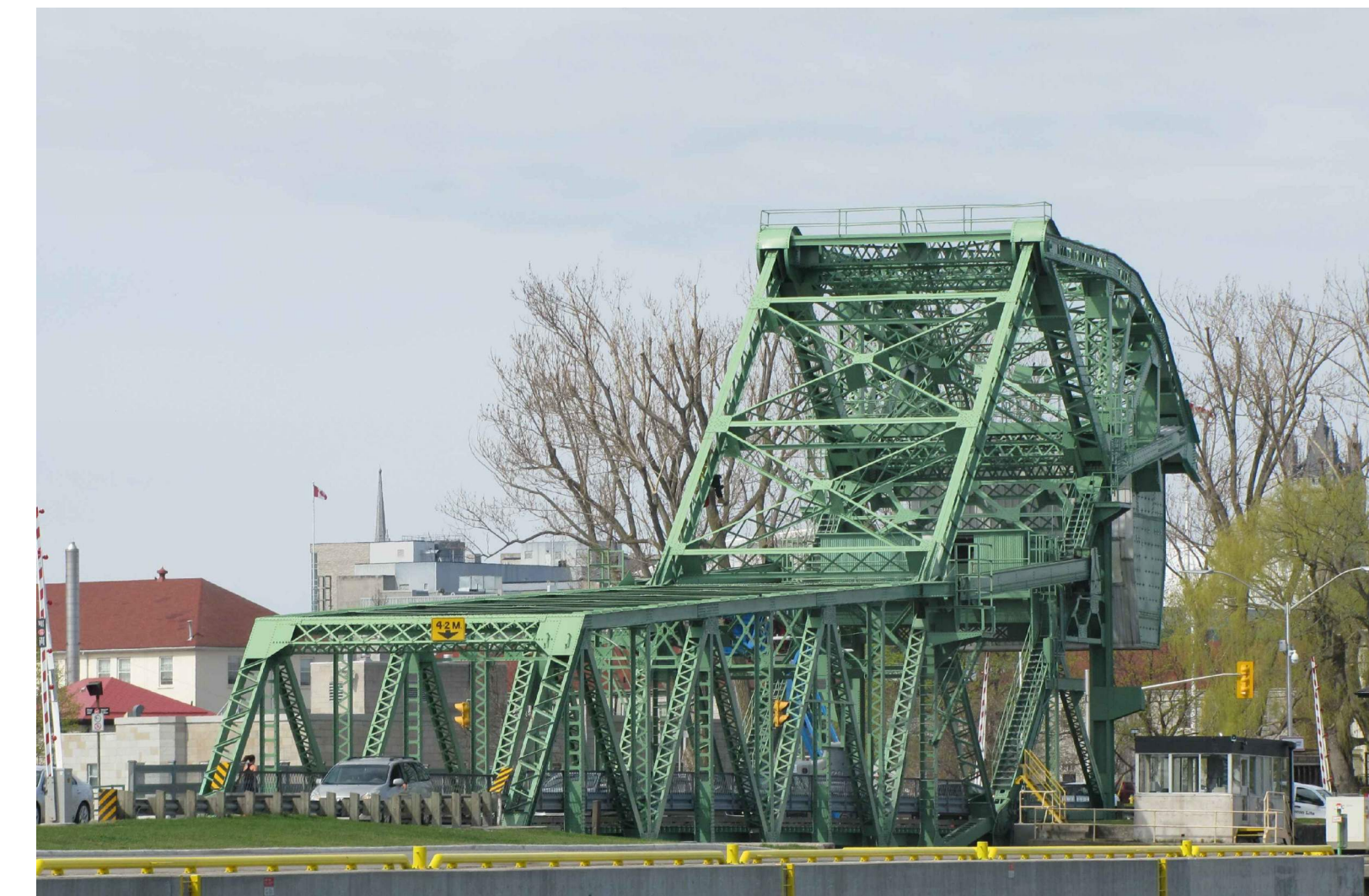




Public Works and Government Services
Canada

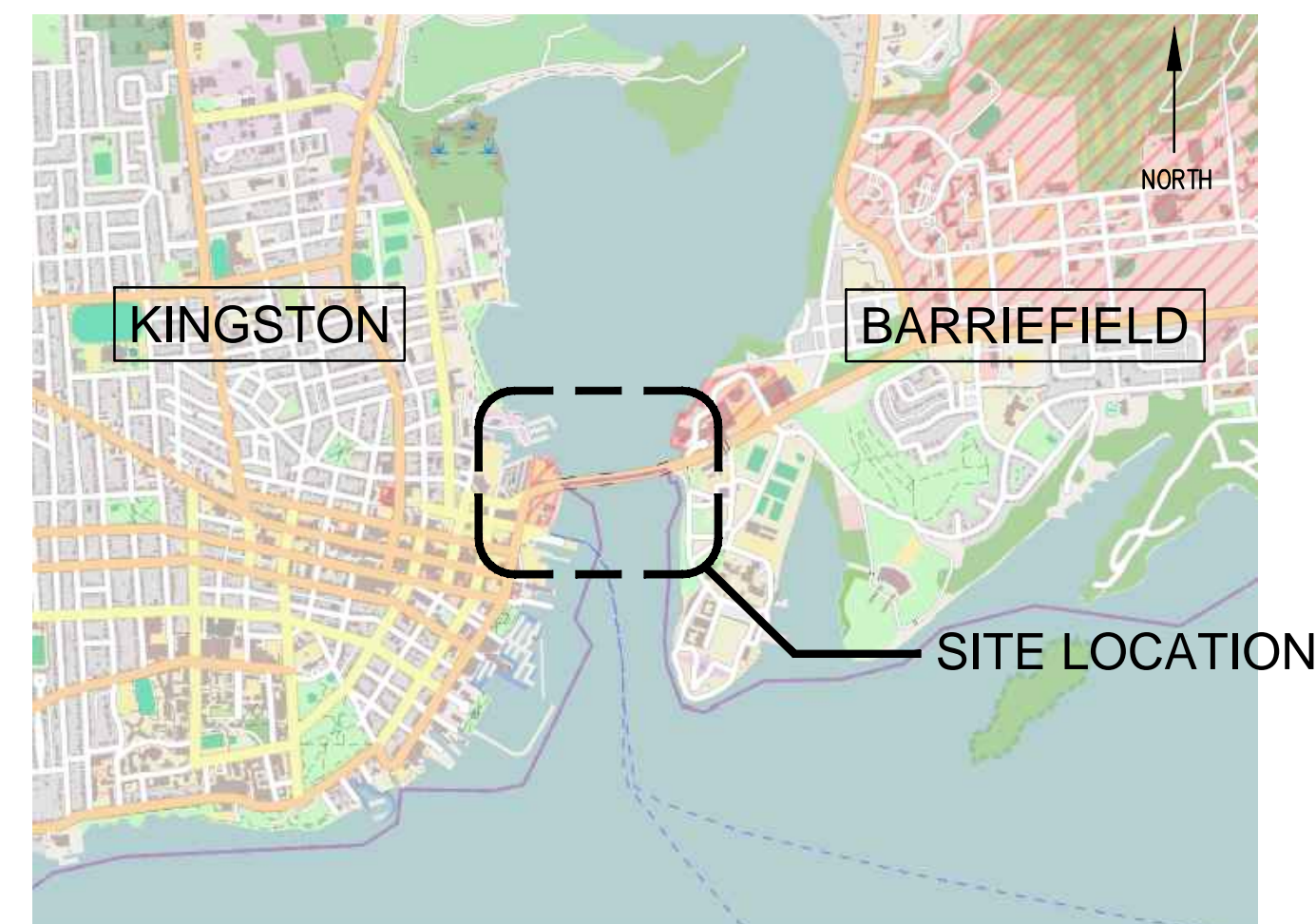
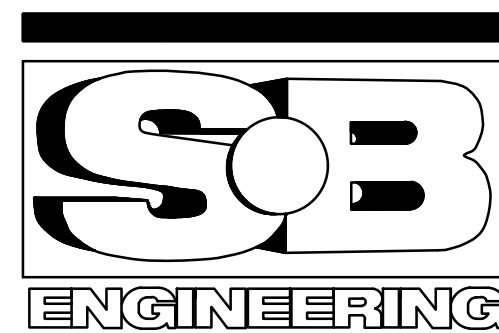
Architectural and Engineering Services
Ontario Region



PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

LASALLE CAUSEWAY - BASCULE BRIDGE MECHANICAL SYSTEMS REPAIR PROJECT NO. R.100019.001

PARSONS



ISSUED FOR TENDER

12-July-19

Canada

DRAWING LIST FOR LASALLE BRIDGE: MECHANICAL SYSTEMS REPAIR	
GENERAL	
DRAWING NO.	TITLE
G-1	COVER SHEET
G-2	INDEX OF DRAWINGS AND GENERAL NOTES
G-3	GENERAL BRIDGE ELEVATION, SECTION, PLAN
G-4	SUGGESTED STAGING AREA

MECHANICAL	
DRAWING NO.	TITLE
M-1	IDENTIFICATION OF WORK AND SCHEDULE
M-2	TESTING AND REPLACEMENT OF COUNTERWEIGHT TRUNNION SLEEVE STUDS
M-3	COUNTERWEIGHT TRUNNION AND SECOND LINK PIN LUBE PIPING
M-4	SOUTH OPERATING BEARING RIVET REPLACEMENT, BUFFER SHIMS, BUMPER BLOCK

NOTES:

GENERAL:

- DO NOT SCALE DRAWINGS.
- THE LATEST VERSION OF ALL REFERENCE DOCUMENTS SHALL APPLY.
- ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH THE CANADIAN HIGHWAY BRIDGE DESIGN CODE CSA S6-06 (2014 EDITION).
- FEATURES OF CONSTRUCTION NOT FULLY SHOWN SHALL BE OF THE SAME CHARACTER AS SHOWN FOR SIMILAR CONDITIONS.
- DIMENSIONS RELATING TO EXISTING CONSTRUCTION MUST BE FIELD VERIFIED BY CONTRACTOR BEFORE STARTING ANY WORK OR FABRICATION.
- THE CONTRACTOR SHALL EXAMINE THE SITE AND SATISFY HIMSELF OF THE ACTUAL CONDITIONS AND REQUIREMENTS OF THE WORK.
- DISASSEMBLY OF COMPONENTS IS TO BE DONE IN A NON-DESTRUCTIVE MANNER, UNLESS APPROVED BY THE DEPARTMENTAL REPRESENTATIVE.

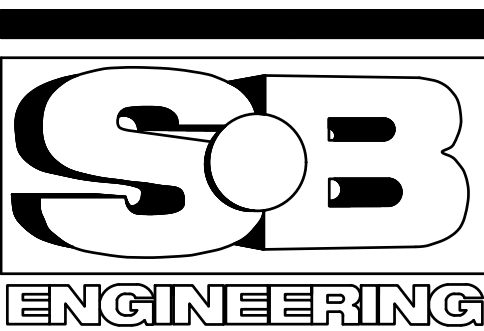
GENERAL CONSTRUCTION AND PROCEDURES:

- THE CONTRACTOR SHALL PLAN AND CONTROL THE PROCESS/PROCEDURES TO THE EXTENT NECESSARY TO ENSURE THAT TOLERANCES IN THE CONTRACT DOCUMENTS ARE COMPLIED WITH. THE DEPARTMENTAL REPRESENTATIVE SHALL BE ENTITLED TO DEMAND THAT ANY SPECIFIC WORKING /INSPECTION PROCEDURE BE ADJUSTED IF SUCH PROCEDURE APPEARS NOT TO PROVIDE ADEQUATE SECURITY AGAINST EXCEEDING OF TOLERANCES.
- ACTUAL FIELD CONDITIONS MAY REQUIRE MODIFICATION TO CONSTRUCTION DETAILS AND WORK QUANTITIES. THE CONTRACTOR SHALL PERFORM THE WORK IN ACCORDANCE WITH FIELD CONDITIONS FOLLOWING WRITTEN APPROVAL FROM DEPARTMENTAL REPRESENTATIVE.
- IF THE CONTRACTOR DAMAGES ANY MATERIALS WHICH ARE TO REMAIN IN PLACE, OR WHICH ARE TO REMAIN THE PROPERTY OF THE OWNER, THE DAMAGED MATERIALS SHALL BE REPAIRED OR REPLACED IN A MANNER SATISFACTORY TO THE DEPARTMENTAL REPRESENTATIVE AT THE EXPENSE OF THE CONTRACTOR.
- THE CONTRACTOR SHALL TAKE PRECAUTIONS SO AS NOT TO LEAVE DEBRIS, MATERIALS, TOOLS, ETC. ON THE BRIDGE SURFACE WHEN LEAVING THE WORK AREA ON A DAILY BASIS.
- HORIZONTAL, VERTICAL AND DETAIL DIMENSIONS AND ELEVATIONS SHOWN ON THESE PLANS HAVE BEEN OBTAINED FROM THE ORIGINAL DESIGN DRAWINGS, SHOP DRAWINGS, AND SUBSEQUENT MODIFICATION DRAWINGS OF THE EXISTING STRUCTURES. THE CONTRACTOR SHALL PERFORM FIELD MEASUREMENTS TO ESTABLISH CONTROL POINTS AND TO VERIFY ALL EXISTING DIMENSIONS AFFECTING FABRICATION AND CONSTRUCTION. SHOP AND CONSTRUCTION DRAWINGS SHALL SHOW DESIGN DIMENSIONS AND FIELD DIMENSIONS WHENEVER THEY DIFFER.
- RECORD DRAWNGS OF THE EXISTING STRUCTURE ARE ON FILE AT THE OFFICES OF PWGSC. RECORD DRAWINGS OF THE EXISTING STRUCTURE WILL BE MADE AVAILABLE TO THE SUCCESSFUL BIDDER FOR REFERENCE, BUT MAY NOT BE REMOVED,
- EXCEPT AS SHOWN ON THE PLANS, NO WELDING OF ANY NATURE SHALL BE PERFORMED WITHOUT THE WRITTEN CONSENT OF THE DEPARTMENTAL REPRESENTATIVE AND THEN ONLY IN THE MANNER AND LOCATION(S) DESIGNATED IN THE AUTHORIZATION.
- THE CONTRACTOR SHALL SUBMIT TO THE DEPARTMENTAL REPRESENTATIVE A DETAILED WRITTEN PLAN OF OPERATIONS COINCIDENT WITH THE PROJECT SCHEDULE AND EACH SUBSEQUENT SCHEDULE UPDATE AS DEFINED WITHIN THE CONTRACT SPECIFICATIONS.
- THE CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH THE PERMITTED LANE CLOSURES AS DEFINED IN THE CONTRACT SPECIFICATIONS. WORK THAT DOES NOT AFFECT THE TRAFFIC MAY BE PERFORMED OUTSIDE THE TIMES OF THE RESTRICTIVE LANE CLOSURES BUT MUST REMAIN IN CONFORMANCE WITH THE ACCEPTED WRITTEN PLAN OF OPERATIONS AND DEPARTMENTAL REPRESENTATIVE'S APPROVALS.
- DURING REMOVAL AND CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL NOT BE PERMITTED TO DROP MATERIAL OR DEBRIS FROM THE BRIDGE NOR SHALL ANY WATER WHICH IS USED FOR WASHING PURPOSES OR OTHER SIMILAR OPERATIONS WHICH CAUSES IT TO BECOME POLLUTED WITH SAND, SILT, CEMENT, OIL OR OTHER IMPURITIES BE DEPOSITED INTO THE CATARAQUI RIVER
- PROTECTIVE SHIELDS SHALL BE USED TO CATCH POTENTIAL FALLING MATERIAL AND SHIELD THE AREA BELOW THE WORK. THE LOAD CARRYING CAPACITY OF THE PROTECTIVE SHIELDS SHALL BE CONSISTENT WITH THE NATURE OF THE WORK BEING PERFORMED IN ANY PARTICULAR LOCATION. IF THE ENGINEER DETERMINES THAT ADEQUATE PROTECTIVE SHIELDS ARE NOT BEING PROVIDED, THE WORK SHALL BE SUSPENDED UNTIL ADEQUATE WORK SHIELD ARE EMPLOYED.
- THE CONTRACTOR SHALL SUBMIT TO THE DEPARTMENTAL REPRESENTATIVE FINAL DESIGN DRAWINGS AND DESIGN CALCULATIONS OF ALL TEMPORARY ACCESS AND CONSTRUCTION PLATFORMS AND PROTECTIVE SHIELDS. THESE DRAWINGS SHALL BE FULLY DIMENSIONED AND SHALL SHOW ALL ATTACHMENTS TO THE EXISTING BRIDGE MEMBERS. DRAWINGS AND CALCULATIONS SHALL EACH BEAR THE SIGNATURE AND SEAL OF THE DESIGNER WHO SHALL BE A LICENSED PROFESSIONAL ENGINEER IN ONTARIO. ATTACHMENTS TO THE EXISTING STRUCTURE, THAT IN THE OPINION OF DEPARTMENTAL REPRESENTATIVE, COULD BE DAMAGING TO ANY COMPONENT OF THE BRIDGE STRUCTURE SHALL NOT BE USED.
- THE CONTRACTOR SHALL OBTAIN HIS OWN ELECTRICAL POWER SOURCE FOR ALL CONSTRUCTION OPERATIONS AND SHALL NOT BE PERMITTED TO USE ANY EXISTING UTILITIES ON THE BRIDGE AS A SOURCE OF POWER.
- EXCEPT WHILE INCLUDED WITHIN A PARTICULAR PHASE OF CONSTRUCTION, THE BRIDGE MAINTENANCE CATWALKS OR STAIRS, THE ROADWAY, AND ANY BRIDGE EASEMENT SHALL NOT BE USED FOR STORAGE OF MATERIALS OR EQUIPMENT AND SHALL NOT BE COVERED OR BLOCKED IN ANY WAY WITHOUT WRITTEN AUTHORIZATION BY DEPARTMENTAL REPRESENTATIVE.
- CONTRACTOR TO SUBMIT A DETAILED PLAN OF HIS PROPOSED REMOVAL AND INSTALLATION OF ALL STRUCTURAL AND MECHANICAL COMPONENTS TO THE DEPARTMENTAL REPRESENTATIVE FOR APPROVAL. THIS PLAN MUST BE SUBMITTED AT LEAST 7 DAYS PRIOR TO COMMENCEMENT OF ANY WORK.
- CONTRACTOR TO SUBMIT SITE-SPECIFIC HEALTH AND SAFETY PLAN PER SPECIFICATION REQUIREMENTS.
- THE CONTRACTOR SHALL REPAIR ANY DAMAGE TO THE COATING SYSTEM THAT OCCURRED WHILE PERFORMING THE WORK IN ACCORDANCE WITH REQUIREMENTS OF THE CONTRACT SPECIFICATIONS FOR PAINTING. ALL COSTS FOR TOUCH-UP PAINTING SHALL BE CONSIDERED INCIDENTAL.

- WHERE EXISTING MATERIAL IS TO BE CONNECTED TO NEW MATERIAL, UNLESS OTHERWISE NOTED, THE EXISTING SURFACE SHALL BE CLEANED TO SSPC-SP 3-82 (R 2004), POWER TOOL CLEANING OF ALL PAINT, LOOSE RUST, OR OTHER FOREIGN MATERIAL PRIOR TO INSTALLATION OF NEW MATERIAL. FAYING SURFACES SHALL BE PRIMED ONLY. AFTER NEW MATERIAL IS INSTALLED, THE AFFECTED SURFACES MUST BE PRIMED AND PAINTED WITH PRESCRIBED PAINT SYSTEM.
- PAINT REMOVAL AND TOUCH-UP PAINTING REQUIRED FOR THE WORK IN THIS CONTRACT SHALL BE PERFORMED IN ACCORDANCE WITH REQUIREMENTS OF CONTRACT SPECIFICATIONS FOR PAINTING. ALL COSTS FOR PAINT REMOVAL AND TOUCH-UP PAINTING SHALL BE COVERED UNDER THE LUMP SUM CONTRACT BID.
- THE CONTRACTOR SHALL LIMIT THE WEIGHT OF ANY TEMPORARY ACCESS STRUCTURE, PROTECTIVE SHIELDS OR SPECIAL EQUIPMENT TO BE SUPPORTED TO THE EXISTING BRIDGE. PRIOR TO THE INSTALLATION OF ANY TEMPORARY MATERIAL ON THE BRIDGE, THE CONTRACTOR SHALL SUBMIT THE WEIGHT LIMITS AND OTHER LOADING CONDITIONS TO THE DEPARTMENTAL REPRESENTATIVE FOR REVIEW AND ACCEPTANCE CALCULATIONS AS TO THE CAPACITY OF THE STRUCTURE TO ACCOMMODATE THE PROPOSED LOADS SHALL ALSO BE SUBMITTED AND SHALL BEAR THE SIGNATURE AND SEAL OF THE DESIGNER WHO SHALL BE A LICENSED PROFESSIONAL ENGINEER IN ONTARIO. IN NO CASE SHALL THE TEMPORARY LOADS RESULT IN A CONDITION THAT WOULD EXCEED THE OPERATING CRITERIA AS DEFINED BY CANADIAN HIGHWAY BRIDGE DESIGN CODE CSA S6-06 (2014 EDITION).
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE SIZE, WEIGHT AND TYPE OF ALL CONSTRUCTION EQUIPMENT TO BE USED ON THE STRUCTURE AND TO ASSESS THE ADEQUACY OF THE STRUCTURE FOR ITS USE BASED ON THE EXISTING CONDITION OF THE STRUCTURE. NO EQUIPMENT SHALL BE PERMITTED ON THE STRUCTURE THAT WOULD RESULT IN A CONDITION THAT EXCEEDS OPERATING CRITERIA AS DEFINED BY THE MOST CURRENT EDITION OF CHBDC. THE DETERMINATION OF THE PERMISSIBLE LOADS SHALL BE MADE BY A LICENSED PROFESSIONAL ENGINEER IN ONTARIO EMPLOYED BY THE CONTRACTOR. INTENDED LOADINGS FOR LIFTING ALONG WITH THE WRITTEN DETERMINATION BY THE CONTRACTOR'S PROFESSIONAL ENGINEER, SHALL BE SUBMITTED TO THE DEPARTMENT REPRESENTATIVE FOR REVIEW AT LEAST 10 WORKING DAYS PRIOR TO MOVING THIS EQUIPMENT TO THE BRIDGE STRUCTURE.
- ACCESS TO THE BUFFER PEDESTALS ON THE EAST ABUTMENT IS VIA THE CHAIN-LINK FENCE GATE AND STAIRS AT THE SOUTHEAST QUADRANT.

TRAFFIC CONTROL

- CONTRACTOR SHALL PROVIDE SCHEDULE OF LANE CLOSURES FOR APPROVAL AT LEAST 14 DAYS PRIOR TO WORK COMMENCEMENT.
- CONTRACTOR SHALL CONFIRM WORK OR CANCELLATION OF LANE CLOSURES PRIOR TO WORK COMMENCEMENT.
- CONTRACTOR SHALL FOLLOW THE PWGSC LASALLE CAUSEWAY-ROAD CLOSURE PROTOCOL. (PROVIDED IN SPECIFICATIONS).
- ALL TRAFFIC CONTROL SIGNAGE AND EQUIPMENT TO BE STORED AND/OR PLACED OUT OF TRAFFIC SIGHT LINES BETWEEN CLOSURE PERIODS.
- REFLECTIVE SIGNS APPROXIMATELY 120x7500mm WITH ADVANCED WARNING OF BRIDGE CLOSURE PERIODS TO BE APPROVED AND PLACED AS DIRECTED BY THE DEPARTMENTAL REPRESENTATIVE.
- ADVANCED WARNING SIGNS SHALL BE PLACED AT HIGHWAY 15 AND HIGHWAY 401.
- TRAFFIC CONTROL PLAN FOR TEMPORARY CONDITIONS (BRIDGE AND LANE CLOSURES) SHALL BE PROVIDED BY CONTRACTOR AND BE IN ACCORDANCE WITH ONTARIO TRAFFIC MANUAL-BOOK 7. THE TRAFFIC CONTROL PLAN SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE DEPARTMENTAL REPRESENTATIVE.
- THE CONTRACTOR SHALL MAINTAIN SIDEWALK OR PROVIDE A SAFE TEMPORARY WALKWAY 1500mm WIDE MINIMUM THROUGH THE WORK ZONE AT ALL TIMES. THE TEMPORARY WALKWAY SHALL BE PROTECTED FROM ADJACENT TRAFFIC AND WORK ACTIVITIES. AN ACCESSIBLE SURFACE SHALL BE PROVIDED, AND THE TRANSITION TO THE SIDEWALK ON EITHER END SHALL BE ACCESSIBLE.



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revision	description	date

Do not scale drawings.
Verify all dimensions and conditions on site and immediately notify the engineer of all discrepancies.

A

B

C

Detail No.
No. du détail

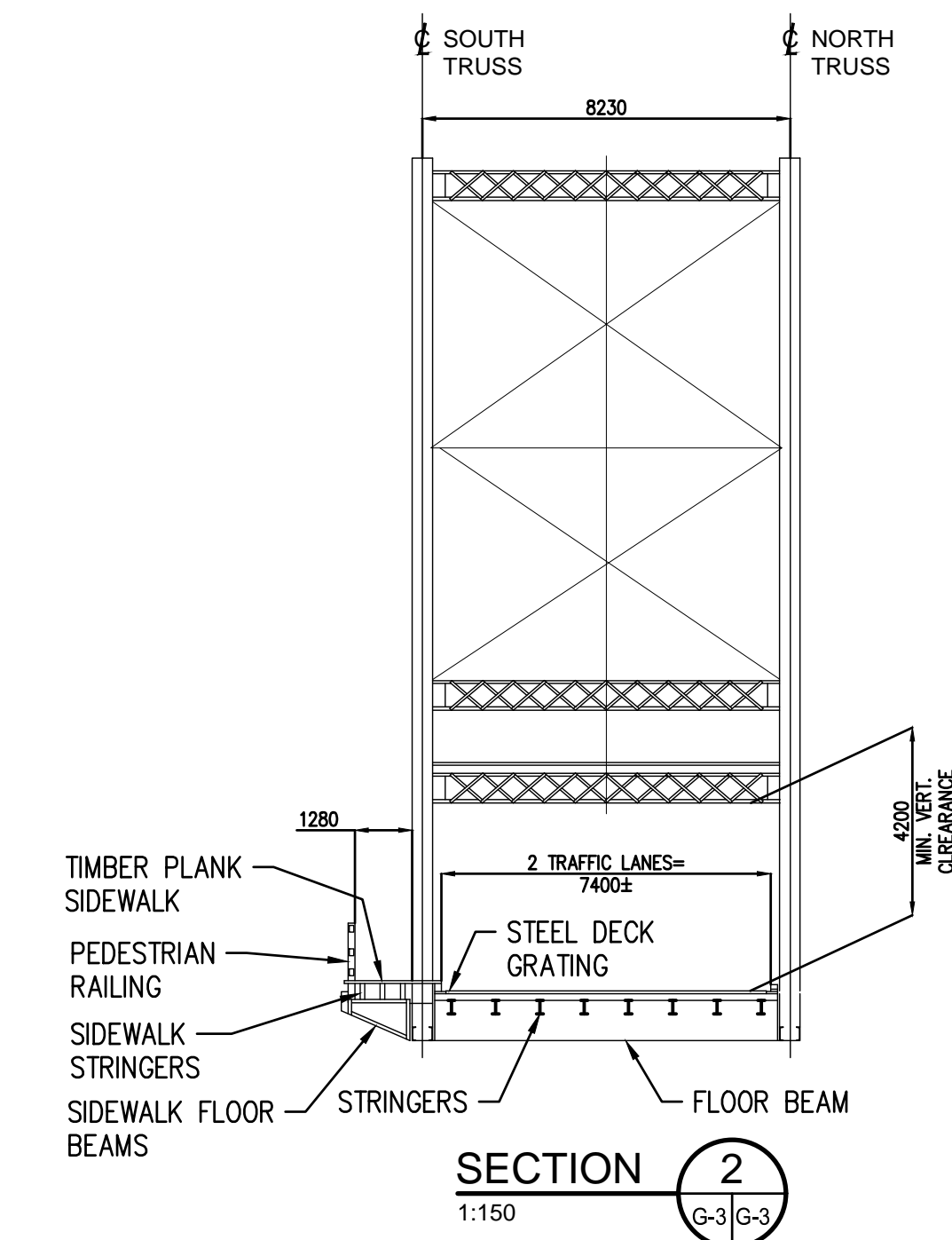
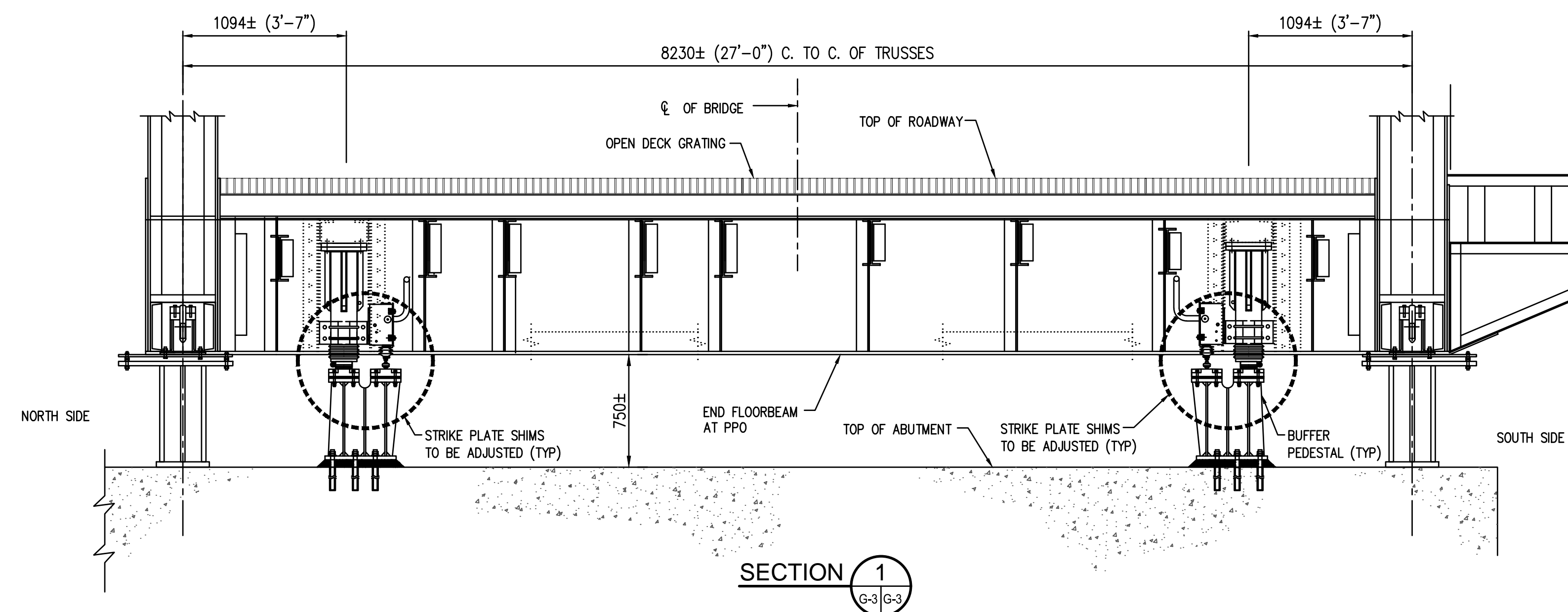
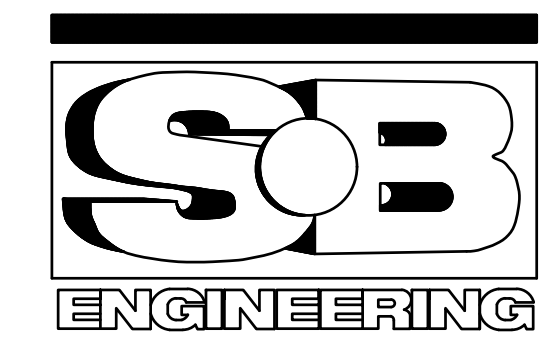
drawing no. - where detail required
dessin no. - où détail exigé

drawing no. - where detailed
dessin no. - où détaillé

project title titre du projet	Ontario
LASALLE CAUSEWAY BASCULE BRIDGE	


MECHANICAL SYSTEMS
REPAIR

drawing title titre du dessin	INDEX OF DRAWINGS AND GENERAL NOTES	
drawn by dessiné par	A. DOXTATER	
designed by conc par	C. WADDELL	
approved by approuvé par	P. HARVEY	
tender soumission	S. FRANCHUK	project manager administrateur de projets
project date date du projet	JULY 2019	
project no. no. du projet	R.100019.001	
drawing no. dessiné no.	G-2	



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revision	description	date

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 A Detail No.
No. du détail

B drawing no. — where detail required
dessin no. — où détail exigé

C drawing no. — where detailed
dessin no. — où détaillé

project title	
titre du projet	

LASALLE CAUSEWAY
BASCULE BRIDGEMECHANICAL SYSTEMS
REPAIR

drawing title
titre du dessin

GENERAL BRIDGE ELEVATION,
SECTION, PLAN

drawn by
dessine par

A. DOXTATER

designed by conc par	C. WADDELL
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approved by
approuvé par

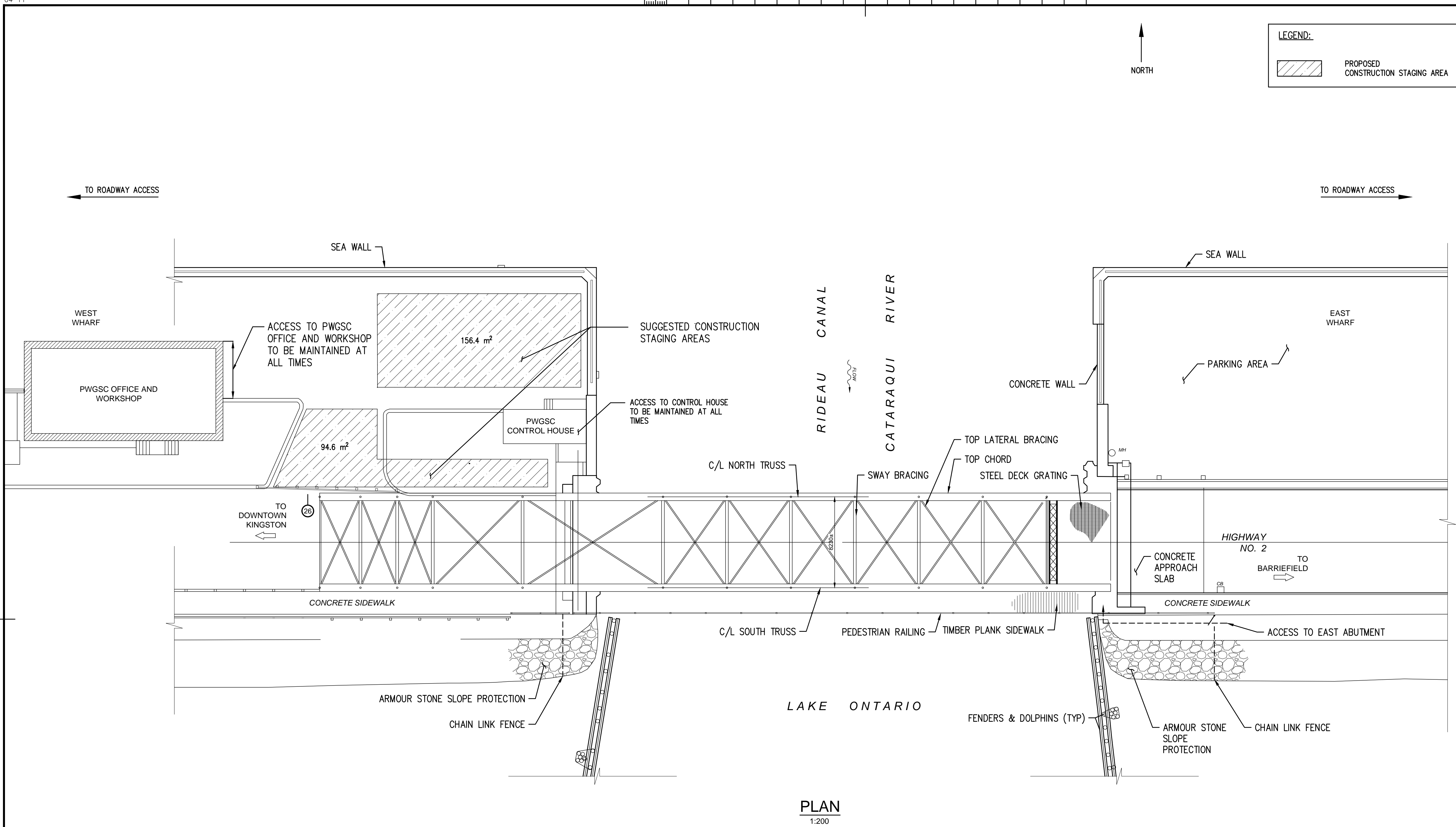
P. HARVEY

tender soumission	S. FRANCHUK	project manager administrateur de projets
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project date date du projet	JULY 2019
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project no. no. du projet	R.100019.001
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drawing no.
dessine no. G-3



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revision	description	date

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B	drawing no. - where detail required dessin no. - où détail exigé
C	drawing no. - where detailed dessin no. - où détaillé

project title
titre du projet

Ontario
LASALLE CAUSEWAY
BASCULE BRIDGE

MECHANICAL SYSTEMS
REPAIR

drawing title
titre du dessin
SUGGESTED STAGING AREA

drawn by
dessiné par
A. DOXTATER

designed by
conçu par
C. WADDELL

approved by
approuvé par
P. HARVEY

tender
soumission
S. FRANCHUK

project manager
administrateur
de projets

project date
date du projet
JULY 2019


project no.
no. du projet
R.100019.001

drawing no.
dessiné no.
G-4

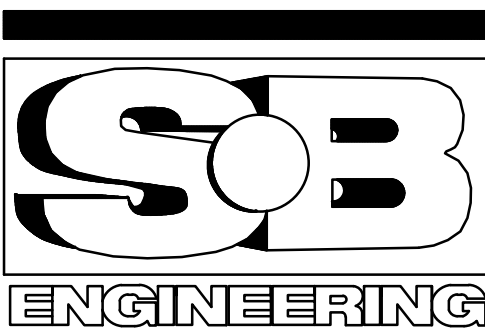
MECHANICAL SYSTEMS REPAIR SCHEDULE			
MK. NO.	COMPONENT	DESCRIPTION	REF. DWGS.
MK1	COUNTERWEIGHT TRUNNION SLEEVE STUDS	TESTING AND REPLACEMENT OF SLEEVE STUDS	M-2
MK2	COUNTERWEIGHT TRUNNION BEARING LUBE LINES	REMOVAL OF EXISTING AND INSTALLATION OF NEW LUBE LINES	M-3
MK3	SECOND LINK PIN BEARING LUBE LINES	REMOVAL OF EXISTING AND INSTALLATION OF NEW LUBE LINES	M-3
MK4	SOUTH OPERATING STRUT INBOARD BEARING	REMOVAL OF EXISTING RIVETS AND INSTALLATION OF NEW TURNED BOLTS	M-4
MK5	BUFFER PEDESTAL	ADJUSTMENT OF PEDESTAL SHIMS	M-4
MK6	OVER-TRAVEL BUMPER BLOCKS	INSTALLATION OF NEW BUMPER BLOCKS	M-4

GENERAL NOTES:

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH CONTRACT DRAWINGS G-1 THRU G-4 AND M-1 THRU M-4 AND THE SPECIFICATIONS. ALL DISCREPANCIES AND/OR CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE DEPARTMENTAL REPRESENTATIVE FOR REVIEW AND CLARIFICATION..
2. ALL DISASSEMBLY IS TO BE NON-DESTRUCTIVE EXCEPT REMOVAL OF FAILED COUNTERWEIGHT TRUNNION BEARING SLEEVE STUD(S) WHICH CANNOT BE OTHERWISE REMOVED AND REMOVAL OF SOUTH OPERATING STRUT INBOARD BEARING RIVETS. CARE SHALL BE TAKEN TO NOT DAMAGE ANY EXISTING COMPONENTS WHICH ARE TO REMAIN.

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Architectural and Engineering Services
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revision	description	date

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<div><div>A</div><div>B</div><div>C</div></div>	<div>A Detail No. No. du détail</div> <div>B drawing no. - where detail required dessin no. - où détail exigé</div> <div>C drawing no. - where detailed dessin no. - où détaillé</div>
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project title
titre du projet

LASALLE CAUSEWAY
BASCULE BRIDGE

MECHANICAL SYSTEMS REPAIR

drawing title
titre du dessin

IDENTIFICATION OF WORK
AND SCHEDULE

drawn by
dessine par

M. BROGLIE

designed by
conc par

M. BROGLIE

approved by
approuve par

J. WILLIAMS

tender
soumission

S. FRANCHUK

project manager
administrateur
de projets

project date
date du projet

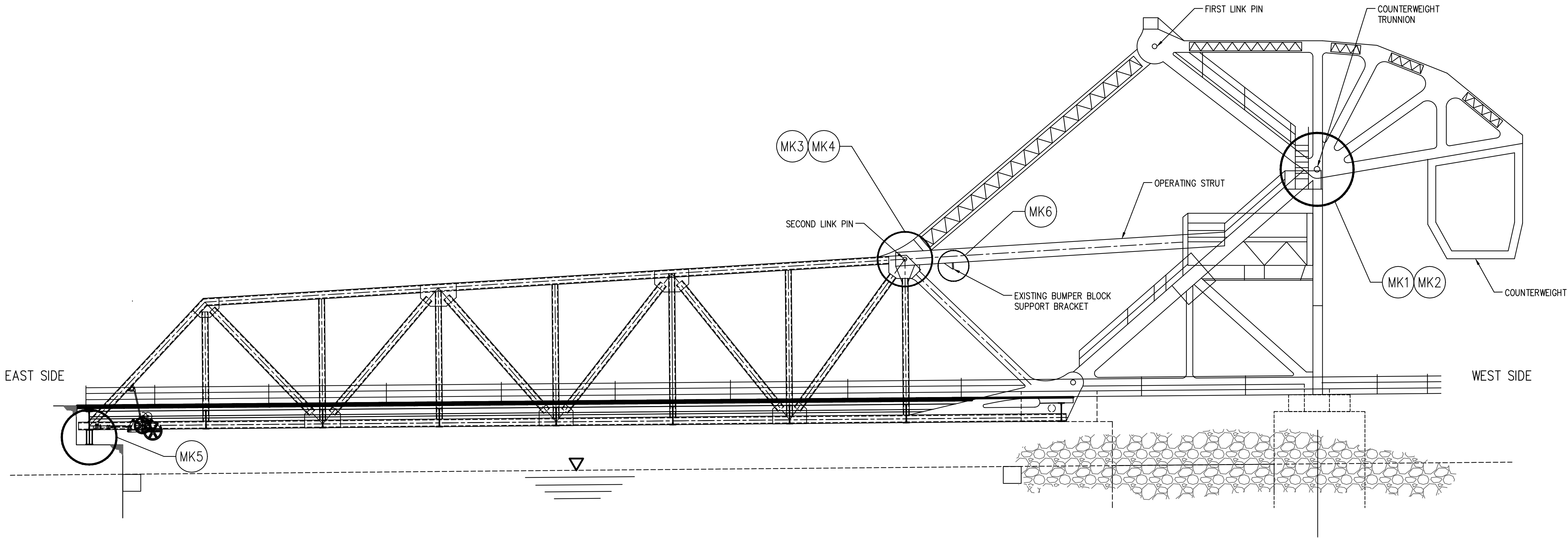
JULY 2019

project no.
no. du projet

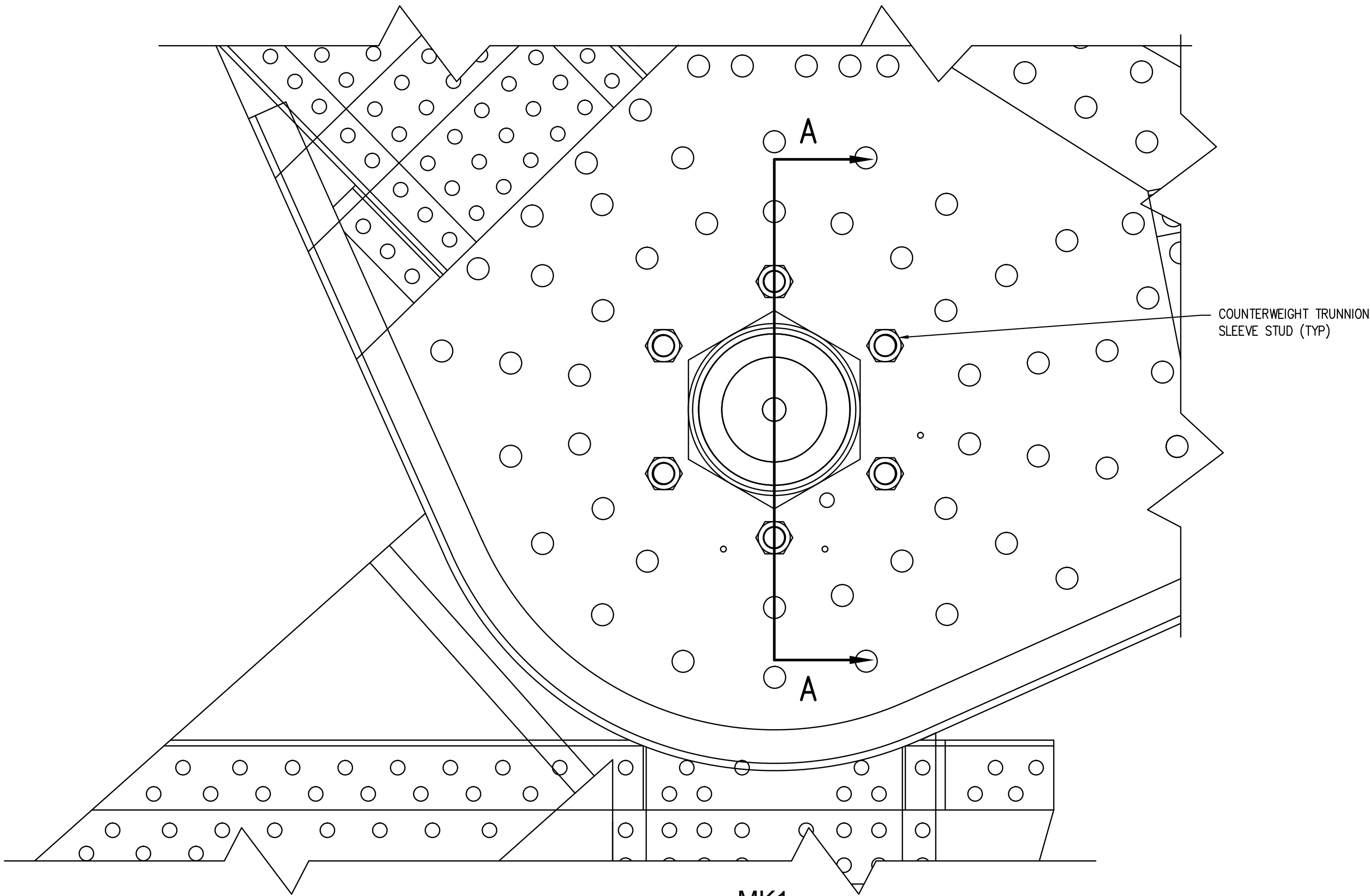
R.100019.001

drawing no.
dessine no.

M-1

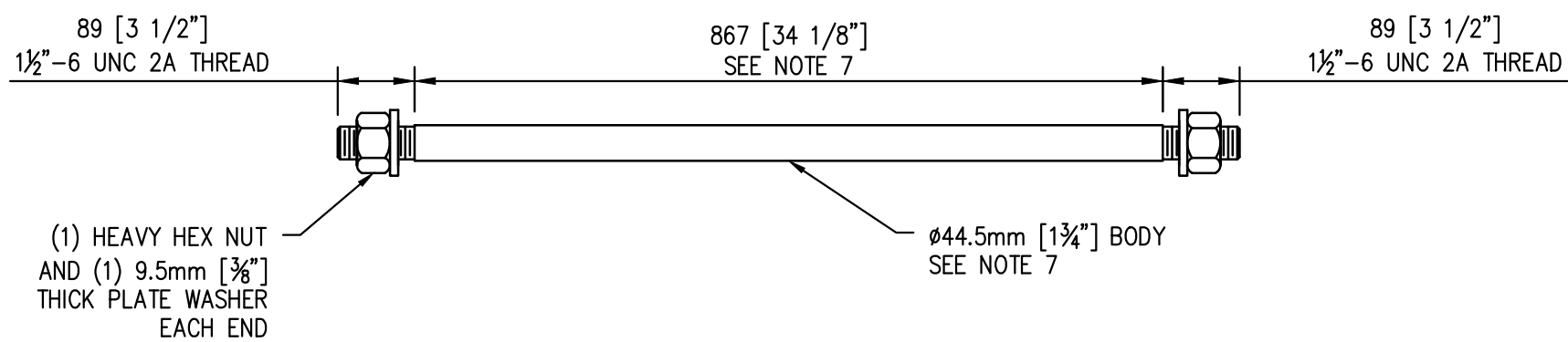


NORTH ELEVATION VIEW
NOT TO SCALE



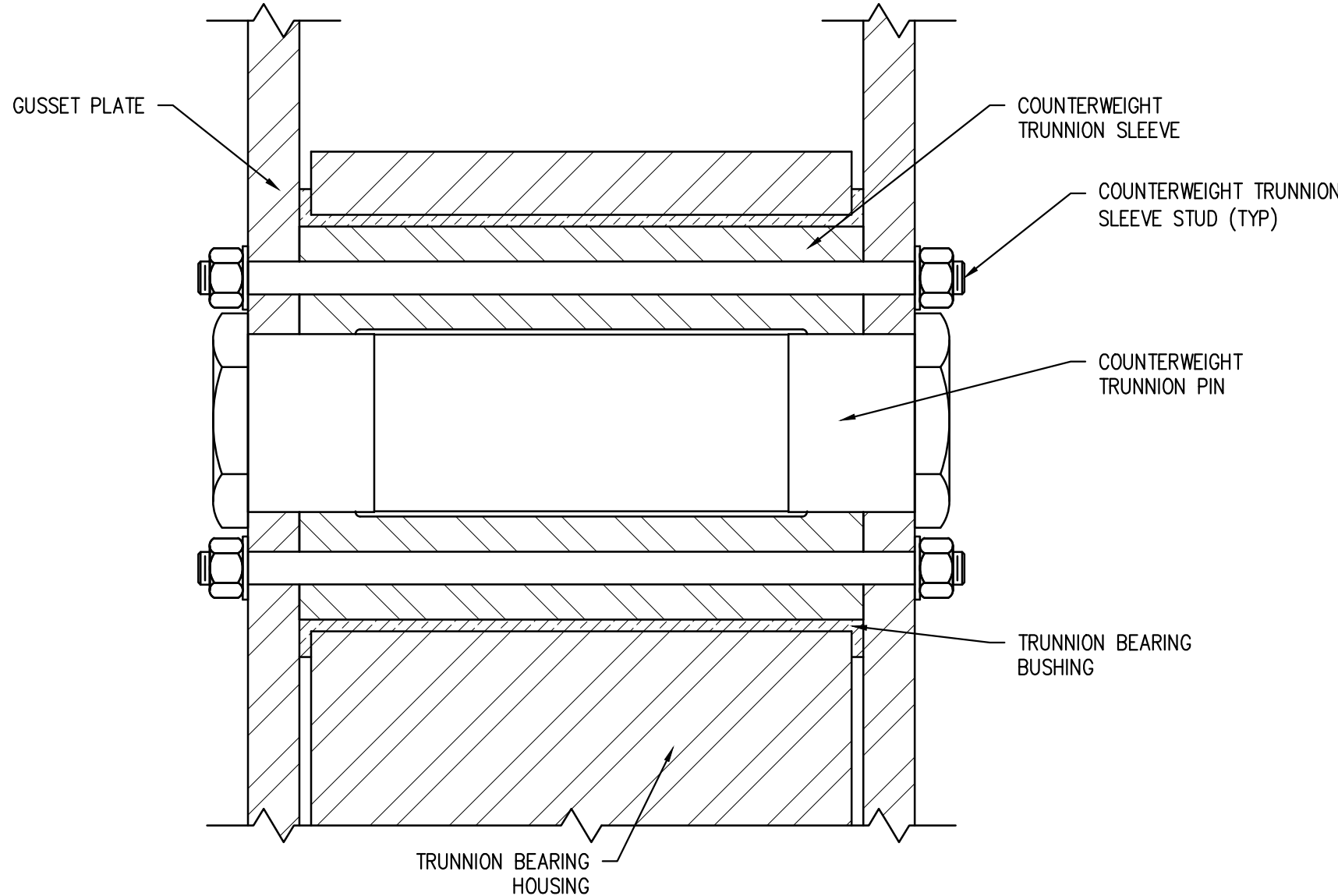
**MK1
COUNTERWEIGHT TRUNNION
SLEEVE STUDS**

SCALE: NTS
NORTH COUNTERWEIGHT TRUNNION SHOWN, SOUTH SIMILAR
12 TOTAL STUDS, 6 STUDS AT EACH COUNTERWEIGHT TRUNNION SLEEVE



NEW SLEEVE STUD DETAIL

STUD MATERIAL: ASTM A193 GRADE B7



SECTION A-A

NOTES:

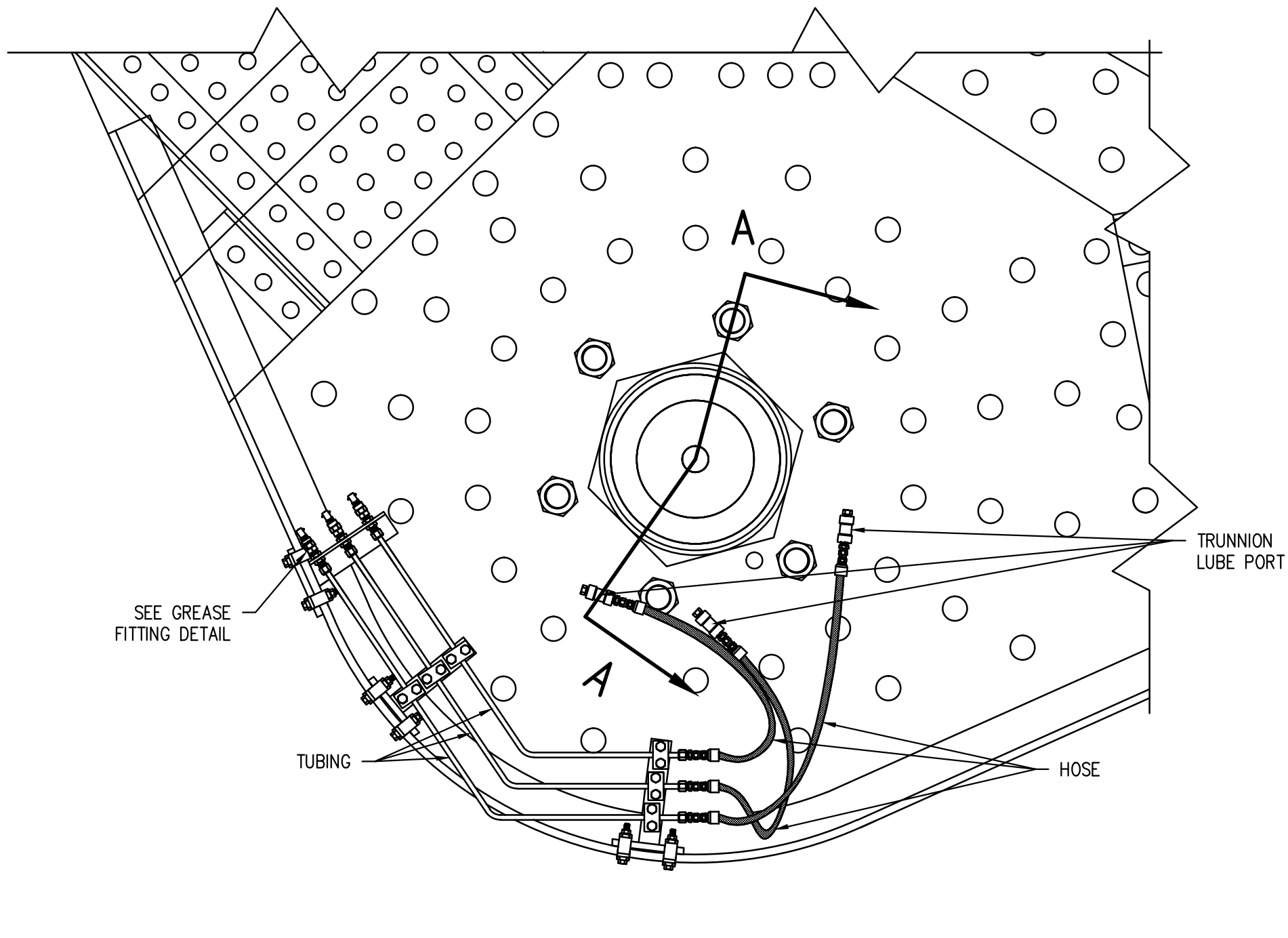
1. SEE DRAWING M-1 FOR GENERAL NOTES.
2. PERFORM ULTRASONIC TESTING (UT) TO DETERMINE WHETHER ANY INDICATIONS OF FLAWS EXIST IN EACH OF THE EXISTING COUNTERWEIGHT TRUNNION SLEEVE STUDS. SEE SPECIFICATION FOR ADDITIONAL DETAILS.
3. ALL FAILED EXISTING STUDS SHALL BE REMOVED BY PULLING/DRIVING THEM OUT. IF IT IS FOUND THAT A STUD IS SEIZED IN EITHER THE SLEEVE OR GUSSETS AND IT IS NECESSARY TO DESTRUCTIVELY REMOVE THE STUD, THIS SHALL BE DONE BY MACHINING THE STUD OUT. REMOVAL OF STUDS SHALL BE WITNESSED BY THE DEPARTMENTAL REPRESENTATIVE.
4. THE CONTRACTOR SHALL VERIFY THE LOCATION OF THE FAILURE (DISTANCE FROM THE END OF THE STUD) FOR THE STUD THAT IS KNOWN TO BE FAILED AND TO COMPARE THE ACTUAL FAILURE LOCATION TO THE UT REPORT.
5. FOLLOWING REMOVAL OF ONE FAILED STUD, PERFORM A TEST OPENING WHILE MONITORING THE SLEEVE THROUGH THE STUD HOLE TO DETERMINE IF THERE IS MOVEMENT OCCURRING BETWEEN THE SLEEVE AND TRUSS. OBSERVATIONS SHALL BE DOCUMENTED AND SUBMITTED TO THE DEPARTMENTAL REPRESENTATIVE. DEPENDING ON RESULTS, BODY DIAMETER OF NEW STUD MAY BE ADJUSTED.
6. THE CONTRACTOR SHALL NOT OPERATE THE BRIDGE WITH MORE THAN ONE STUD REMOVED FROM EACH COUNTERWEIGHT TRUNNION SLEEVE.
7. AFTER REMOVING EACH FAILED STUD, REPLACE WITH NEW SLEEVE STUD. FIELD VERIFY DIAMETER AND BODY LENGTH OF EXISTING STUDS AND ADJUST BODY LENGTH AND DIAMETER OF NEW STUD TO MATCH. SEE SPECIFICATION FOR ADDITIONAL DETAILS.
8. IF NECESSARY, REAM EXISTING HOLE(S) TO FACILITATE INSTALLATION OF NEW STUDS. ANY REAMING REQUIRED IS CONSIDERED INCIDENTAL TO THE WORK.

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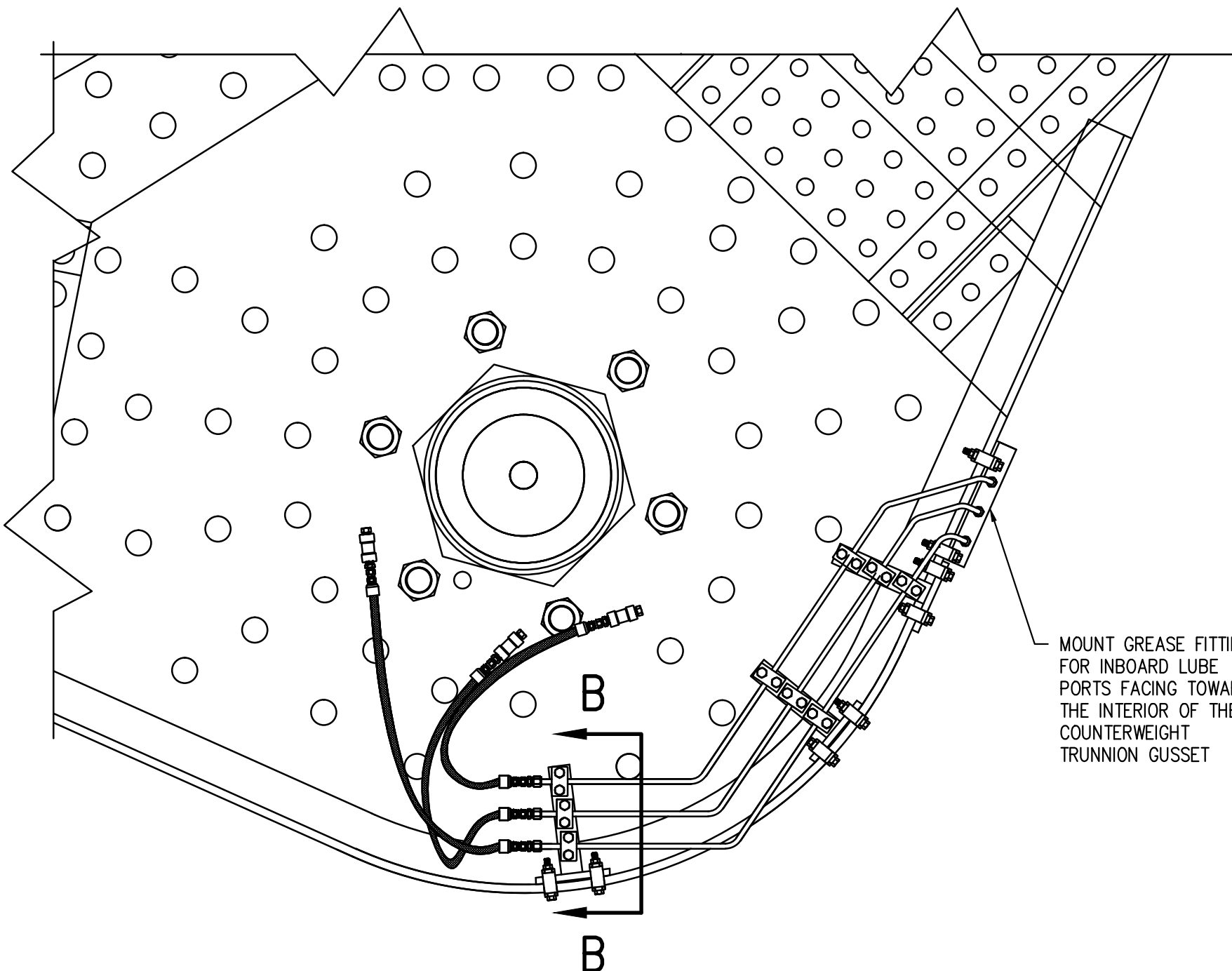
A	Detail No.
B	No. du détail
C	drawing no. — where detail required dessin no. — où détail exigé
	drawing no. — where detailed dessin no. — où détaillé

project title titre du projet	Ontario
LASALLE CAUSEWAY BASCULE BRIDGE	
MECHANICAL SYSTEMS REPAIR	
drawing title titre du dessin	TESTING AND REPLACEMENT OF COUNTERWEIGHT TRUNNION SLEEVE STUDS
drawn by dessiné par	M. BROGLIE
designed by conc par	M. BROGLIE
approved by approuvé par	J. WILLIAMS
tender soumission	S. FRANCHUK
project manager administrateur de projets	
project date date du projet	JULY 2019
project no. no. du projet	R.100019.001
drawing no. dessiné no.	M-2



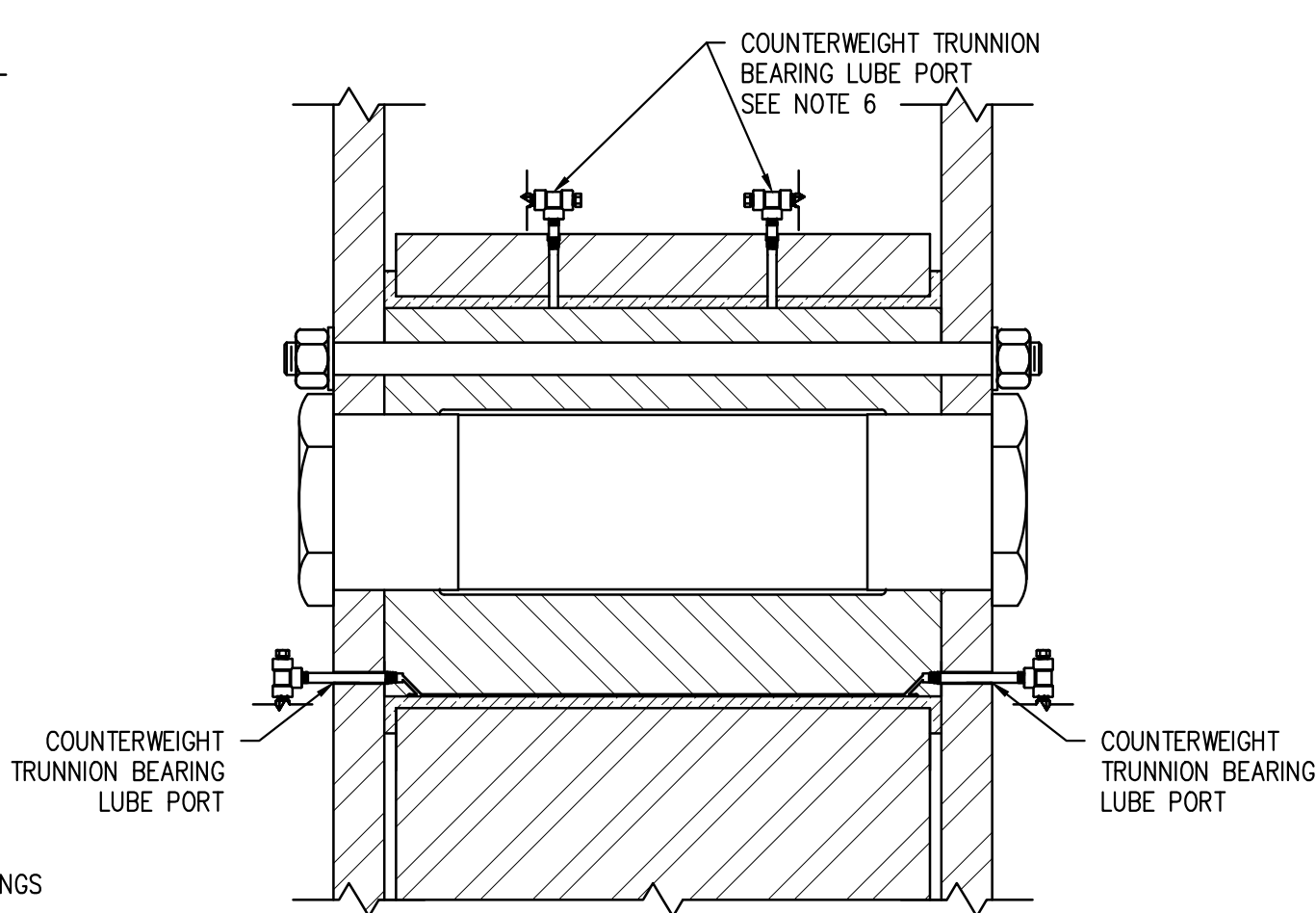
MK2
NEW COUNTERWEIGHT TRUNNION
BEARING LUBE LINES - OUTBOARD

SCALE: NTS
NORTH COUNTERWEIGHT TRUNNION SHOWN, SOUTH SIMILAR



MK2
NEW COUNTERWEIGHT TRUNNION
BEARING LUBE LINES - INBOARD

SCALE: NTS
NORTH COUNTERWEIGHT TRUNNION SHOWN, SOUTH SIMILAR

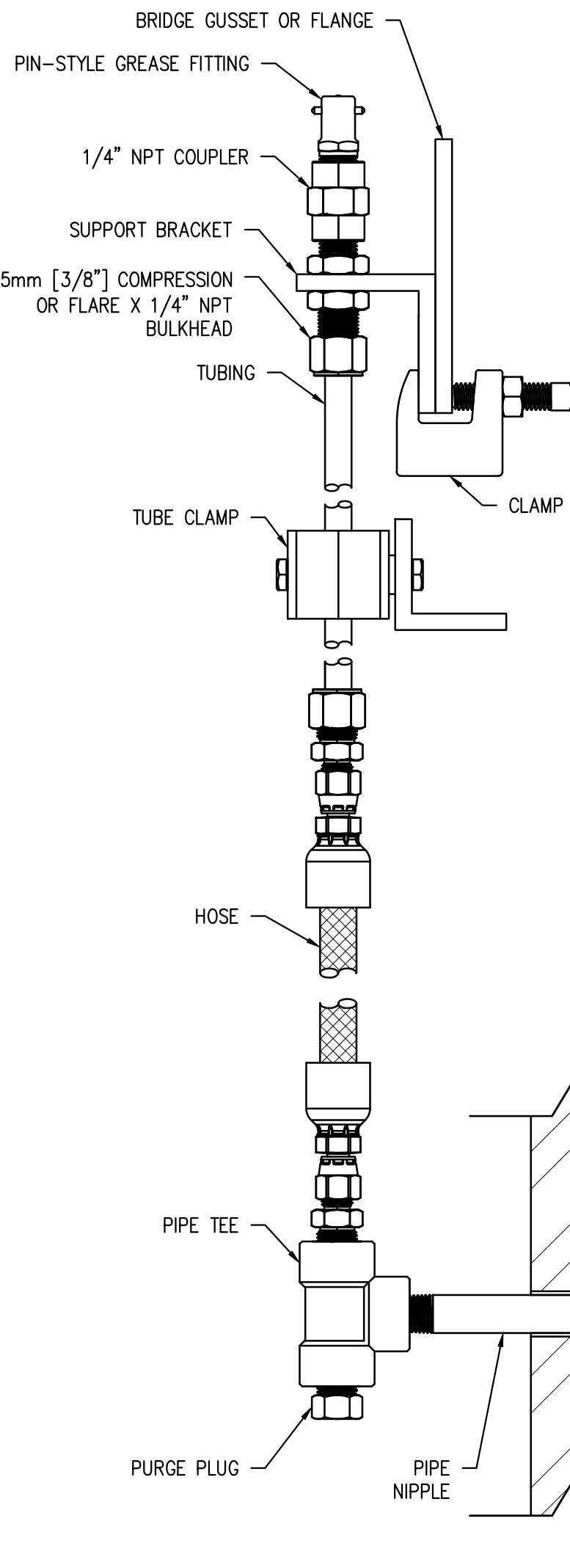


SECTION A-A

SCHEDULE OF LUBE TUBES AND HOSES			
LOCATION	MATERIAL	QUANTITY	APPROXIMATE LENGTH REQUIRED
COUNTERWEIGHT TRUNNION GREASE GROOVES	TUBE	12	1.5m [60"]
COUNTERWEIGHT TRUNNION GREASE GROOVES	HOSE	12	0.6m [24"]
COUNTERWEIGHT TRUNNION BEARING CAP	HOSE	4	0.6m [24"]
SECOND LINK PIN GREASE GROOVES	TUBE	6	1.2m [48"]
SECOND LINK PIN GREASE GROOVES	HOSE	12	0.3m [12"]
OPERATING STRUT BEARING	TUBE	2	1.5m [60"]
OPERATING STRUT BEARING	HOSE	2	0.3m [12"]

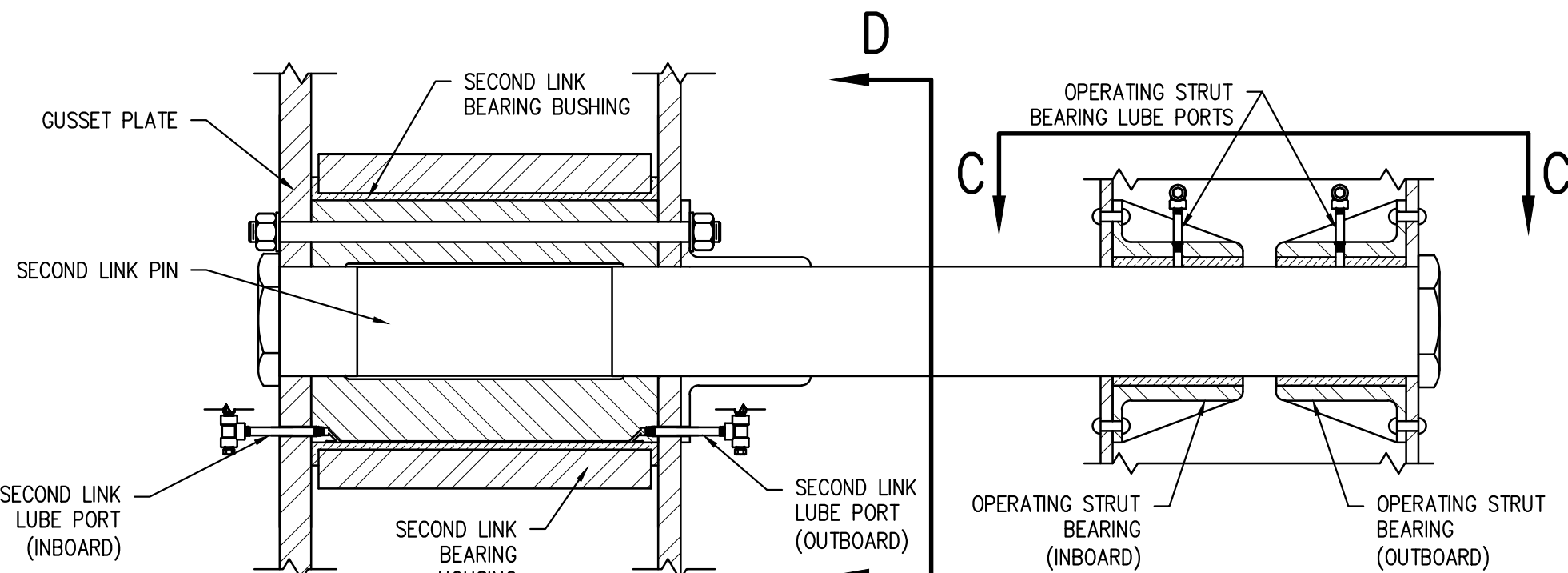
NOTES:

- SEE DRAWING M-1 FOR GENERAL NOTES.
- REMOVE ALL EXISTING LUBE PIPING AND FITTINGS AT THE COUNTERWEIGHT TRUNNIONS AND SECOND LINK PINS. EXISTING LUBE LINES CONSIST OF PIPE NIPPLES, FITTINGS, AND PLUGS WITH NPT THREADED CONNECTIONS. REMOVE ANY PLUGS OR BROKEN PIPING THAT IS THREADED INTO THE LUBE PORTS.
- PROVIDE NEW LUBRICATION LINES TO ALL COUNTERWEIGHT TRUNNION AND SECOND LINK PIN LUBRICATION PORTS. LUBRICATION LINES SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS:
 - TUBING: 9.5mm [3/8"] x 2.11mm [0.083"] SEAMLESS STAINLESS STEEL TUBING, ASTM A269 TP316.
 - TUBE CLAMPS: IN ACCORDANCE WITH DIN 3015 PART 2, POLY PROPYLENE BODY, 316SS PLATES AND HARDWARE.
 - TUBE FITTINGS: 316SS DOUBLE FERRULE COMPRESSION OR 37° JIC TUBE FITTINGS, 1/4" NPT FITTING CONNECTIONS.
 - LUBE FITTINGS: STEEL 1/4" NPT PIN TYPE GREASE FITTING, TO MATCH THE EXISTING FITTINGS.
 - BRACKETS AND SUPPORTS: 304/316 STAINLESS STEEL, MINIMUM 6mm [1/4"] THICKNESS. FASTENERS SHALL BE TYPE 316 STAINLESS STEEL, MINIMUM 12.7mm [1/2"] DIAMETER. STRUT CHANNEL IS ALSO ACCEPTABLE AND SHALL BE 304/316 STAINLESS STEEL. BRACKETS AND SUPPORTS SHALL BE MOUNTED TO RIGID STRUCTURAL MEMBERS VIA STAINLESS STEEL CLAMPS TO AVOID DRILLING INTO STRUCTURAL MEMBERS.
 - HOSE: HIGH PRESSURE HYDRAULIC HOSE, 6mm [1/4"] BORE, 6000 PSI WORKING PRESSURE. PROVIDE STEEL SPIRAL EXTERNAL WIRE SPRING TO PROVIDE DAMAGE PROTECTION. PROVIDE ANY CLAMPS OR GUIDES REQUIRED TO PREVENT THE POSSIBILITY OF THE HOSE SNAGGING DURING THE FULL RANGE OF BRIDGE OPERATION. STAINLESS STEEL 37° JIC SWIVEL FEMALE ENDS.
 - PIPE NIPPLE AND TEE: ASTM A733, A312 TYPE 316 SEAMLESS PIPE. 1/4" NPT CONNECTIONS. PIPE AND CONNECTIONS RATED FOR 10,000 PSI.
- LUBRICATION LINES SHALL FOLLOW THE GENERAL ROUTING SHOWN IN THESE PLANS. THE CONTRACTOR MAY PROPOSE ALTERNATE ROUTING FOR REVIEW BY THE DEPARTMENTAL REPRESENTATIVE. FINAL ROUTING TO BE REVIEWED AND AGREED UPON IN FIELD WITH DEPARTMENTAL REPRESENTATIVE.
- VERIFY THAT GREASE GROOVES ARE PURGED/UNBLOCKED. THIS SHALL BE ACCOMPLISHED BY PUMPING GREASE UNDER PRESSURE INTO ONE END OF THE GROOVE WITH THE OTHER END OPEN TO ALLOW OLD GREASE TO FLOW THROUGH THE GROOVE AND OUT THE END. IF GREASE GROOVES CANNOT BE CLEARED BY PRESSURE, SUBMIT FOR REVIEW ALTERNATIVE MEANS OF CLEARING GROOVES TO DEPARTMENTAL REPRESENTATIVE.
- ROUTE HOSE FOR EACH LUBE PORT IN COUNTERWEIGHT TRUNNION BEARING CAPS TO FITTINGS MOUNTED AT THE CHANNEL SIDE WEBS OF THE COUNTERWEIGHT TRUNNION BEARING HOUSING BASES.



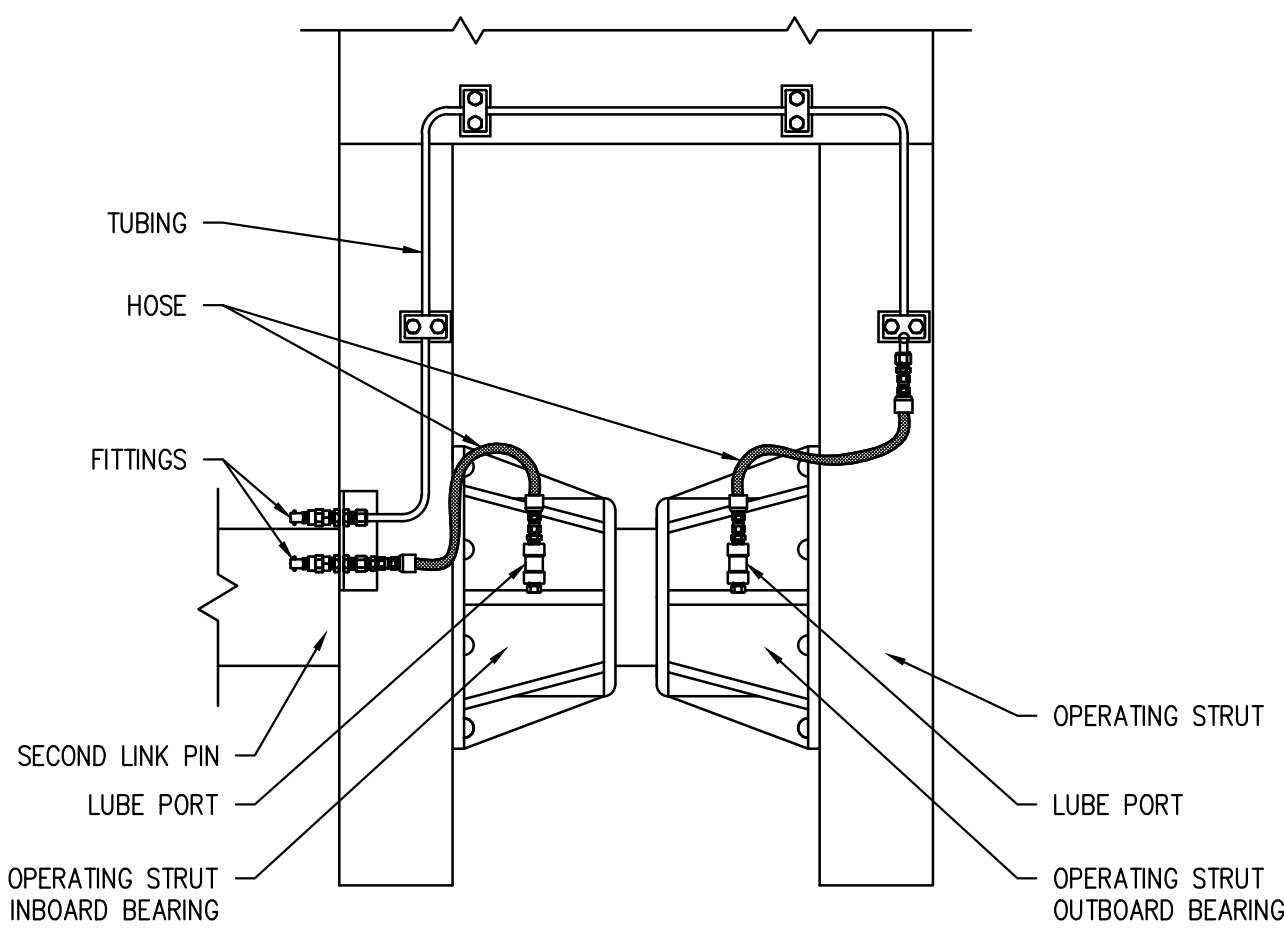
GREASE FITTING DETAIL

TYPICAL DETAIL SHOWN FOR COUNTERWEIGHT TRUNNION BEARING, SECOND LINK PIN BEARING, AND OPERATING STRUT BEARING LUBE LINES. TUBING NOT REQUIRED AT COUNTERWEIGHT TRUNNION CAP LUBE PORTS, OUTBOARD SECOND LINK PIN LUBE PORTS, AND INBOARD OPERATING STRUT BEARING LUBE PORT.



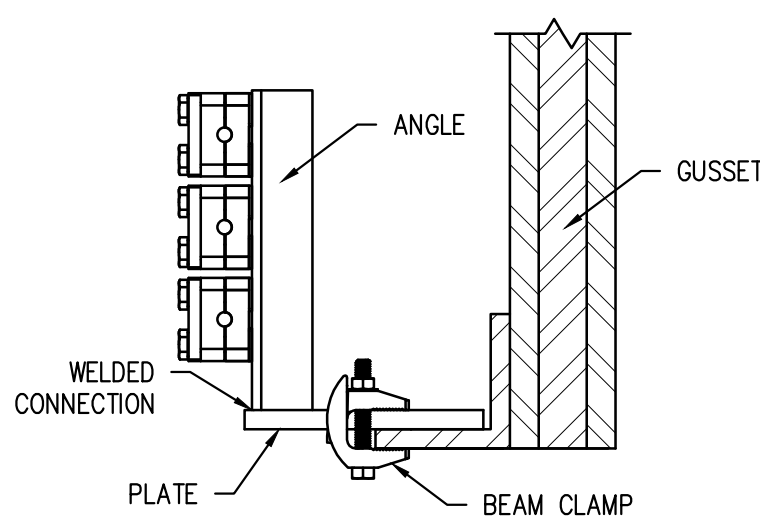
MK3
SECOND LINK PIN
SECTION VIEW

SCALE: NTS



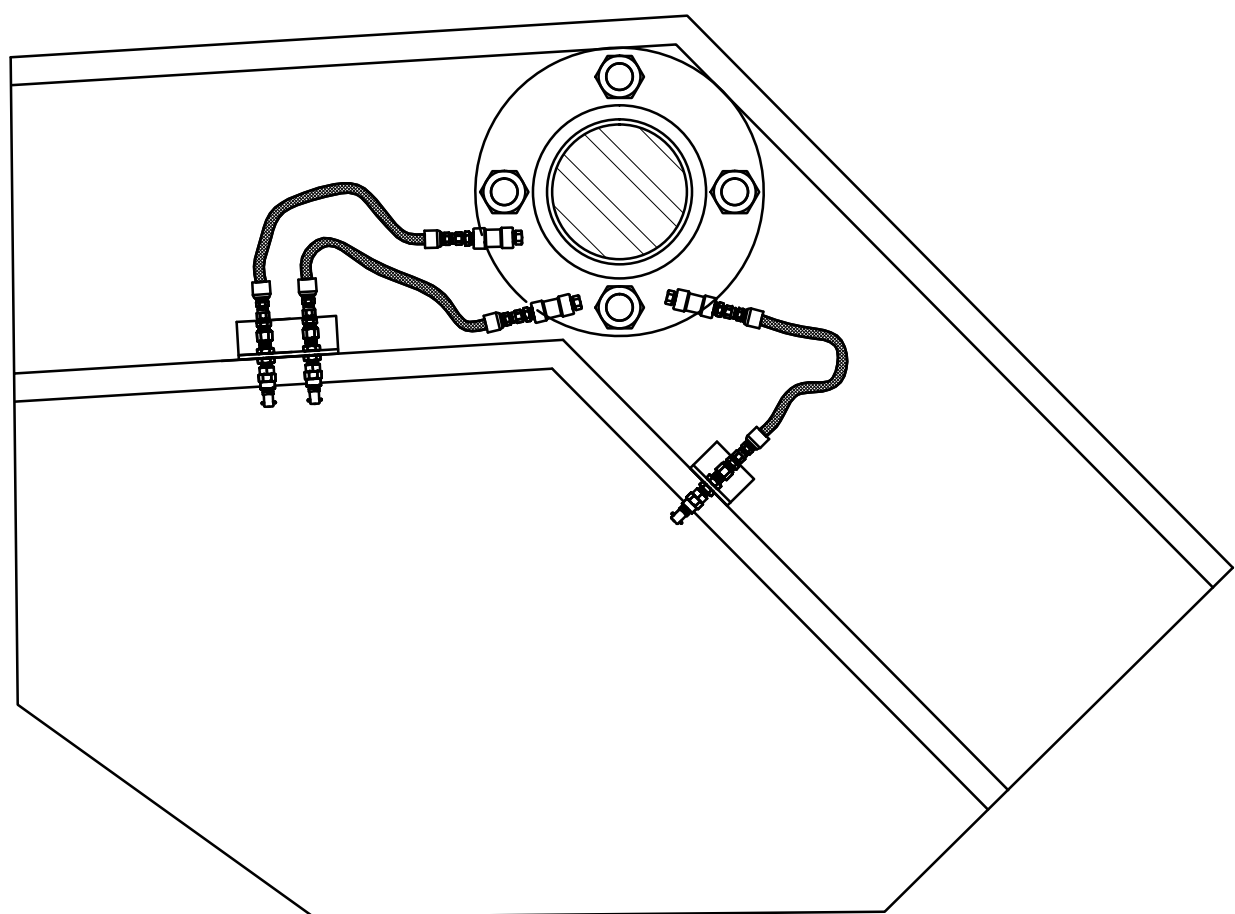
VIEW C-C

VIEW LOOKING DOWN FROM ABOVE OPERATING STRUT



VIEW B-B

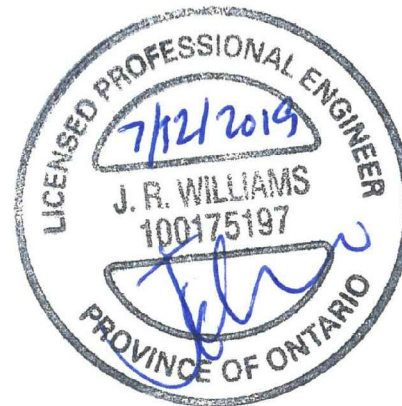
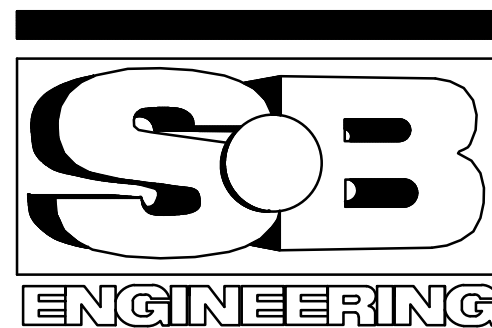
TYPICAL TUBE SUPPORT ARRANGEMENT



SECTION D-D

OUTBOARD GUSSET OF SECOND LINK SHOWN, LOCATE GREASE FITTINGS FOR INBOARD LUBE LINES AT INBOARD GUSSET.

PARSONS



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revision	description	date

Do not scale drawings.
Verify all dimensions and conditions on site and
immediately notify the engineer of all discrepancies.

	A	Detail No.
	B	No. du détail
	C	drawing no. — where detail required dessin no. — où détail exigé

project title
titre du projet

Ontario
LASALLE CAUSEWAY
BASCULE BRIDGE

MECHANICAL SYSTEMS REPAIR

drawing title
titre du dessin
**COUNTERWEIGHT TRUNNION
AND SECOND LINK PIN
LUBE LINES**

drawn by
dessiné par
M. BROGLIE

designed by
conçue par
M. BROGLIE

approved by
approuvé par
J. WILLIAMS

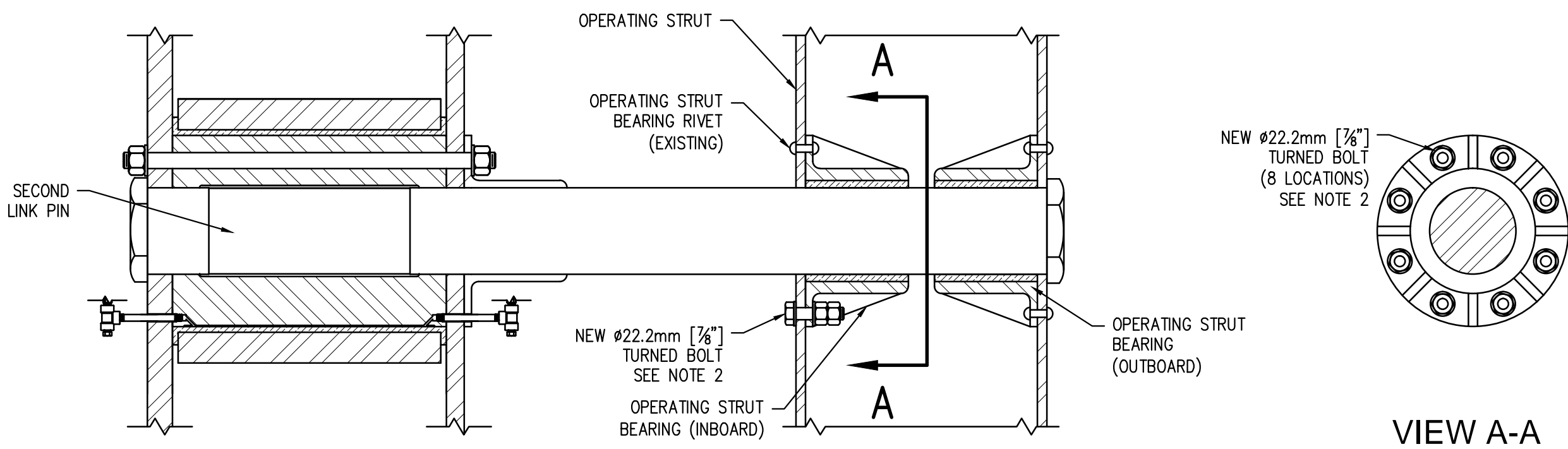
tender
soumission
S. FRANCHUK

project manager
administrateur
de projets

project date
date du projet
JULY 2019

project no.
no. du projet
R.100019.001

drawing no.
dessiné no.
M-3



MK4
SOUTH OPERATING STRUT INBOARD
BEARING RIVET REPLACEMENT

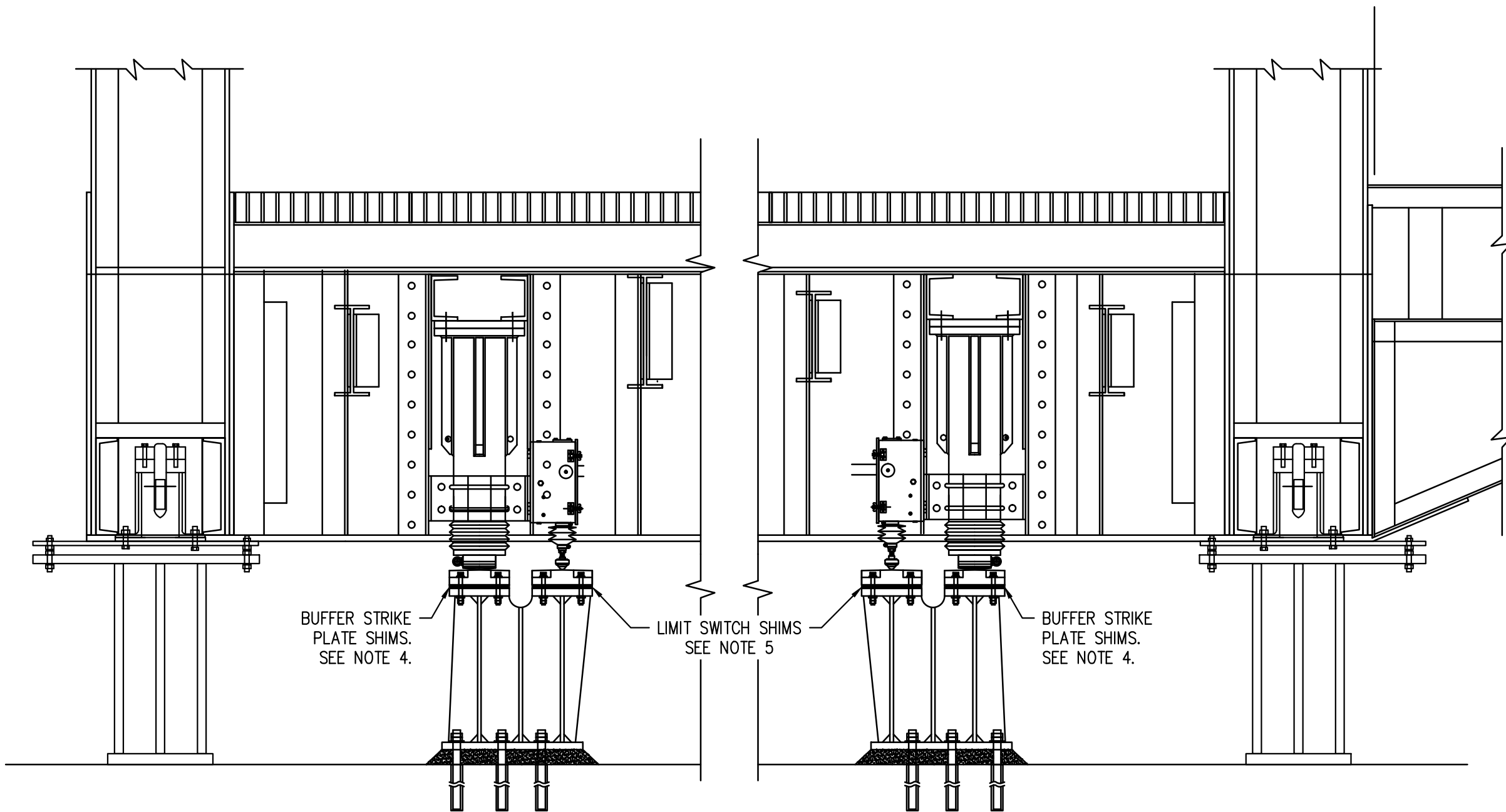
SCALE: NTS
SOUTH OPERATING STRUT ONLY



SEE NOTE 6

MK6
INSTALLATION OF OVER-TRAVEL BUMPER BLOCKS

SCALE: NTS
QUANTITY: 2 LOCATIONS



MK5
ADJUSTMENT OF BUFFER
STRIKE PLATE SHIMS

SCALE: NTS

NOTES:

- SEE DRAWING M-1 FOR GENERAL NOTES.
- REMOVE THE SOUTH INBOARD OPERATING STRUT BEARING RIVETS ONE AT A TIME. REAM HOLES AND INSTALL TURNED BOLTS. SEE SPECIFICATION FOR ADDITIONAL TURNED BOLT DETAILS.
- IF RIVET REMOVAL, HOLE REAMING, AND TURNED BOLT INSTALLATION CANNOT BE COMPLETED IN A SINGLE WORK SHIFT, SECURE BEARING WITH Ø22.2mm [7/8"] HIGH STRENGTH BOLTS IN OPEN HOLES WHICH A TURNED BOLT HAS YET TO BE INSTALLED UNTIL WORK CAN RESUME.
- REMOVE EXISTING SHIMS AT THE BUFFER STRIKE PLATE AS REQUIRED TO FULLY SEAT THE BRIDGE ON THE LIVE LOAD SUPPORTS. COORDINATE QUANTITY AND REMOVE SHIMS AT LIMIT SWITCH IN CONJUNCTION WITH BUFFER STRIKE PLATE SHIMS. SEE SPECIFICATION FOR ADDITIONAL DETAILS.
- FOLLOWING THE SHIM ADJUSTMENTS, PERFORM OPERATIONAL TESTING TO VERIFY THAT THE SPAN WILL SEAT FIRMLY ON THE LIVE LOAD SUPPORTS DURING A NORMAL BRIDGE CLOSING OPERATION AND REMAIN IN CONTACT WITH THE SUPPORTS WITH TRAFFIC PASSING OVER THE SPAN.
 - ADDITIONAL LIMIT SWITCH SHIM ADJUSTMENTS MAY BE REQUIRED TO ENSURE PROPER LIMIT SWITCH INDICATION. ANY ADJUSTMENTS REQUIRED AT THE LIMIT SWITCH SHIMS IS CONSIDERED INCIDENTAL TO THE WORK.
- CONTRACTOR SHALL INSTALL TWO (2) NEW WOOD OVER-TRAVEL BUMPER BLOCKS, ONE AT EACH OPERATING STRUT BRACKET.
 - BUMPER BLOCKS SHALL CONSIST OF 30mm [12"] X 500mm [20"] X 75mm [3"] SOLID BLOCKS OF RED OR WHITE OAK.
 - DRILL BUMPER BLOCKS FOR MOUNTING BOLTS TO SUIT THE EXISTING SUPPORT BRACKETS. COUNTERSINK TO RECESS MOUNTING BOLT HEADS 6mm [1/4"] EXISTING MOUNTING BOLTS ARE APPROXIMATELY 150mm [6"] LONG, CONTRACTOR SHALL FIELD VERIFY LENGTH OF EXISTING MOUNTING BOLTS AND ADJUST LENGTH TO SUIT NEW BUMPER BLOCKS.
 - EACH BUMPER BLOCK SHALL BE SECURED WITH FOUR (4) Ø25.4mm [1"] ASTM F3125 GRADE A325 BOLTS. PROVIDE DOUBLE HEX NUTS CONFORMING TO ASTM A563 AND TWO (2) HARDENED STEEL WASHERS CONFORMING TO ASTM F436 AT EACH MOUNTING BOLT. ALL MOUNTING BOLTS AND HARDWARE SHALL BE GALVANIZED.

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A	Detail No.
B	No. du détail
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	drawing no. — where detailed dessin no. — où détaillé

project title titre du projet	Ontario
LASALLE CAUSEWAY BASCULE BRIDGE	
MECHANICAL SYSTEMS REPAIR	

drawing title titre du dessin	
SOUTH OPERATING STRUT BEARING RIVET REPLACEMENT, BUFFER SHIM, BUMPER BLOCK	

drawn by dessiné par	M. BROGLIE
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designed by conc par	M. BROGLIE
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approved by approuvé par	J. WILLIAMS
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tender soumission	S. FRANCHUK	project manager administrateur de projets
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project date date du projet	JULY 2019
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project no. no. du projet	R.100019.001
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drawing no. dessiné no.	M-4
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