



Public Services and Procurement Canada

Architectural and Engineering Services

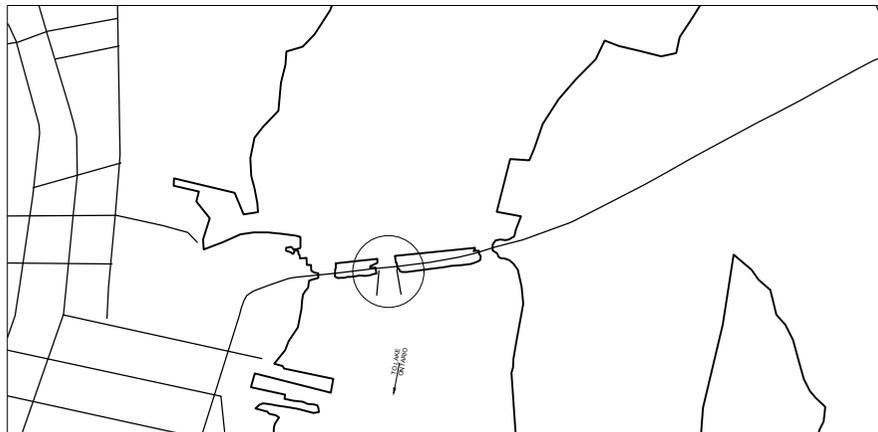
Ontario Region

Services publics et Approvisionnement Canada

Services d'architecture et de génie

Région de l'Ontario

LASALLE CAUSEWAY BASCULE BRIDGE KINGSTON, ONTARIO



SITE PLAN

STRUCTURAL STEEL REPAIRS

PSPC Proj. No.: R.097736.002

Canada

LIST OF DRAWINGS

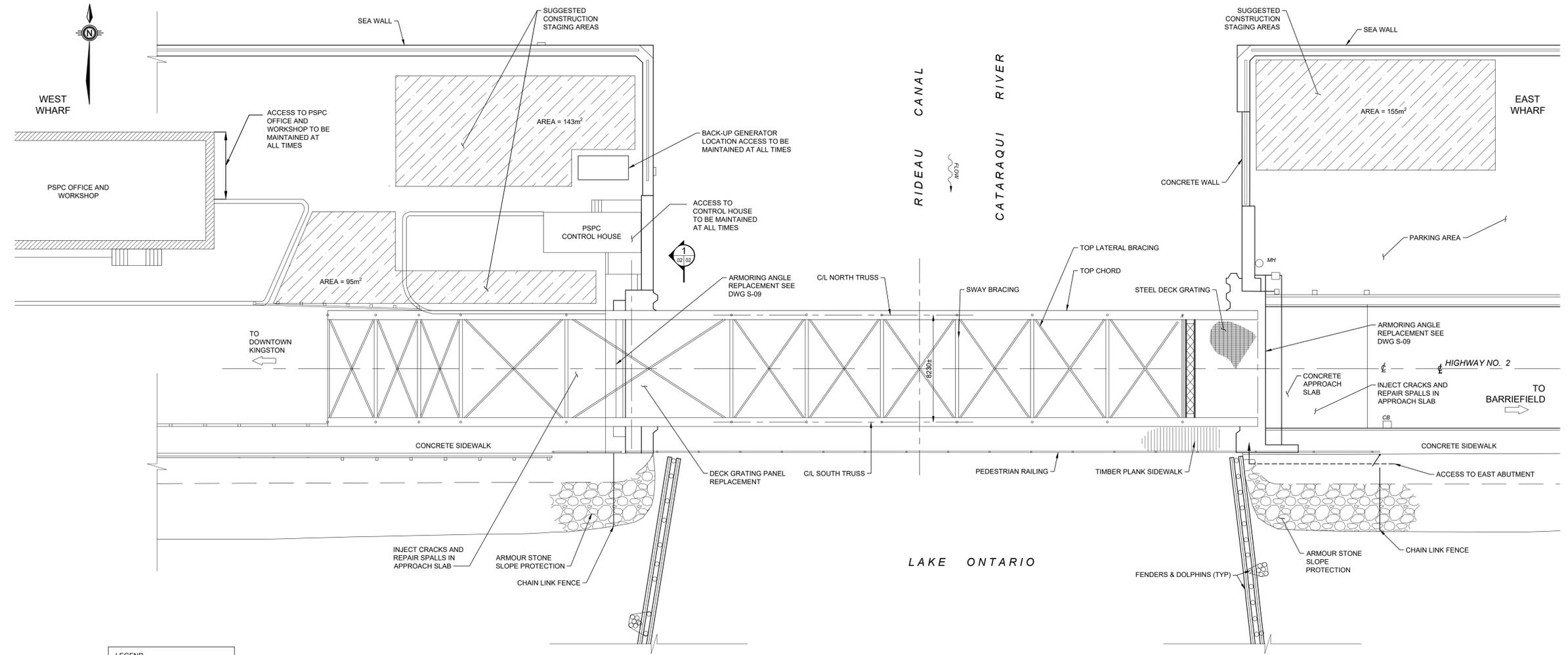
BRIDGE

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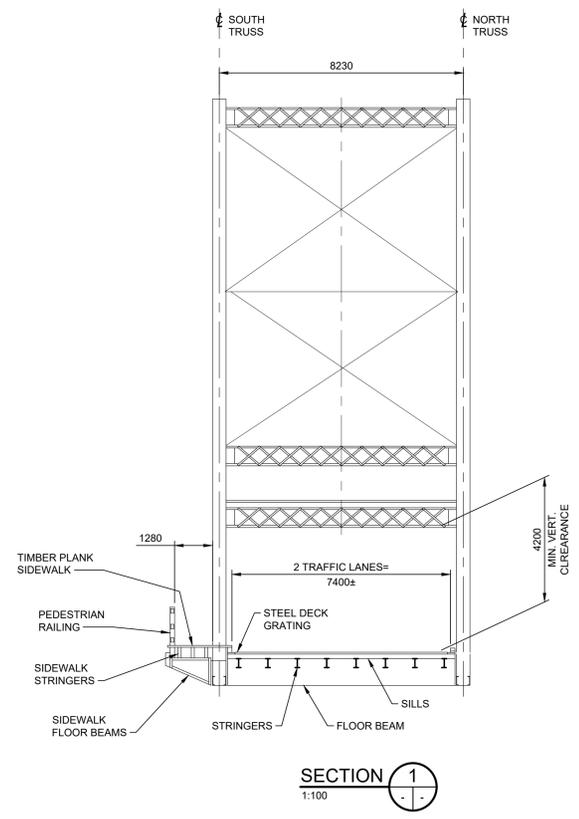
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NOT FOR CONSTRUCTION



LEGEND
 CONSTRUCTION STAGING AREA



NOT FOR CONSTRUCTION



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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	drawing no. - where detail required
C	drawing no. - where detailed

project title
Kingston, Ontario
 PSPC
 LaSalle Causway
 Bascule Bridge
STRUCTURAL STEEL REPAIRS

drawing title
GENERAL ARRANGEMENT SHEET 1

drawn by
 RICHARD DYNKA / THOMAS NIEDZWIADK

designed by
 JEAN-BERNARD CHARRON

approved by
 PETER HARVEY

tender
 RANYA EL SADAWY project manager

project date
 2021/01/22

project no.
 R.097736.002

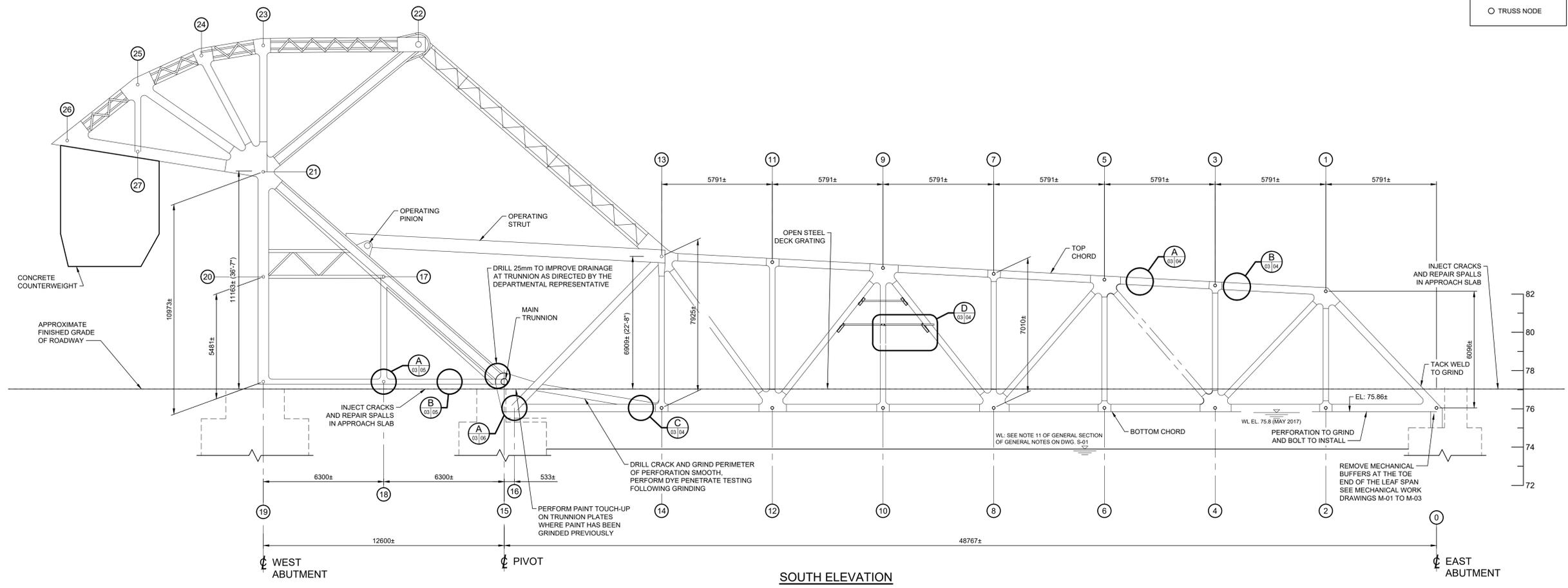
drawing no.
 S-02

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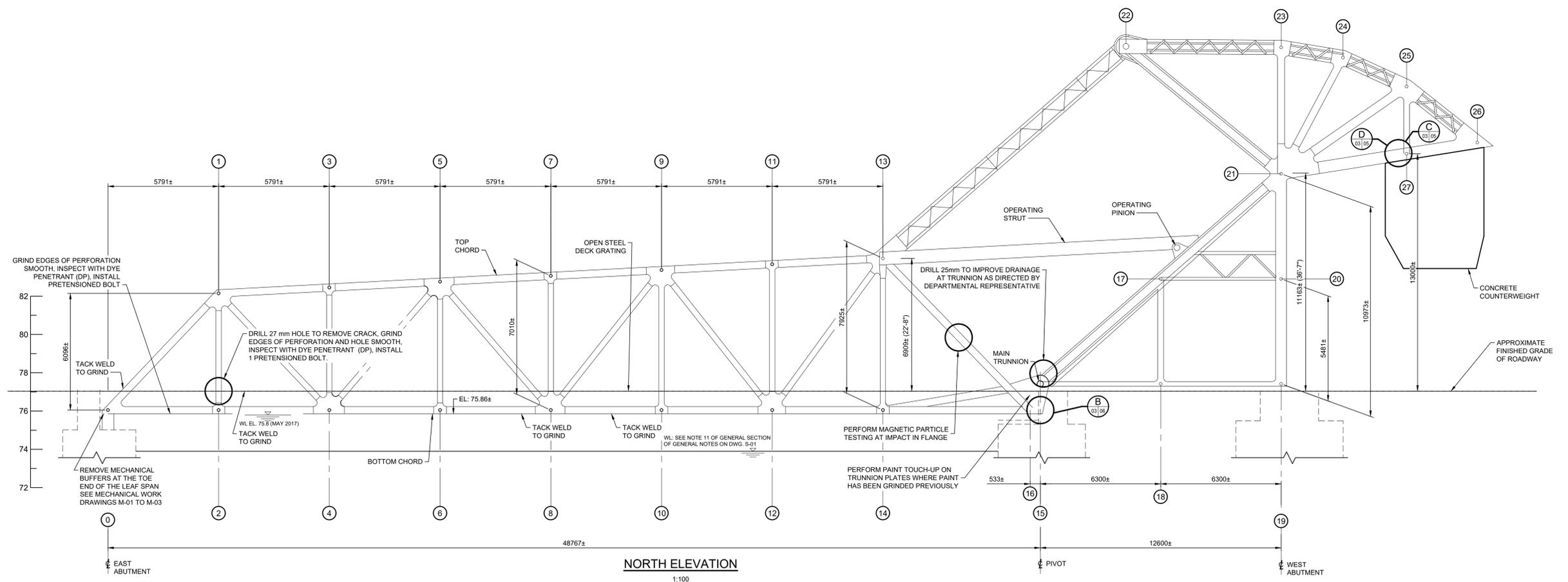
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Région de l'Ontario



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SOUTH ELEVATION
1:100



NORTH ELEVATION
1:100

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2	-	-
1	ISSUED FOR TENDER	01/22/2021
revision	description	date

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A	Detail No.
B	drawing no. - where detail required
C	drawing no. - where detailed

project title
Kingston, Ontario
PSPC
LaSalle Causway
Bascule Bridge

STRUCTURAL STEEL REPAIRS

drawing title
GENERAL ARRANGEMENT SHEET 2

drawn by
RICHARD DYNKA / THOMAS NIEDZWIADK

designed by
JEAN-BERNARD CHARRON

approved by
PETER HARVEY

tender
RANYA EL SADAWY

project date
2021/01/22

project no.
R.097736.002

drawing no.
S-03



NOT FOR CONSTRUCTION



GENERAL NOTES:

GENERAL:

- 1. DO NOT SCALE DRAWINGS.
2. THE LATEST VERSION OF ALL REFERENCE DOCUMENTS SHALL APPLY.
3. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH THE CANADIAN HIGHWAY BRIDGE DESIGN CODE CSA S6-19 (LATEST EDITION).
4. FOR EACH REPAIR/REPLACEMENT/MODIFICATION DETAIL, DETAILS DEPICT ONE LOCATION ONLY AND ARE INCLUDED TO INDICATE DESIGN INTENT AT SIMILAR LOCATIONS. THE DIMENSIONS CAN VARY FROM ONE LOCATION TO ANOTHER, SINCE CONNECTIONS OF SAME GEOMETRY ARE NEVER IDENTICAL.
5. DIMENSIONS RELATING TO EXISTING CONSTRUCTION OR IDENTIFIED AS REQUIRING FIELD VERIFICATION MUST BE FIELD VERIFIED BY CONTRACTOR BEFORE COMMENCING SHOP DRAWING PREPARATION, FABRICATION OR WORK.
6. THE CONTRACTOR SHALL EXAMINE THE SITE AND SATISFY HIMSELF OF THE ACTUAL CONDITIONS AND REQUIREMENTS OF THE WORK.
7. RIVETS ARE NOTED ON THE ORIGINAL DRAWING AS BEING 3/4" RIVETS IN 13/16" HOLES. ORIGINAL CONSTRUCTION 1916.
8. MANY RIVETS HAVE BEEN PREVIOUSLY REPLACED WITH BOLTS.
9. FIT-UP ADJUSTMENT TO ALIGN COMPONENTS MAYBE REQUIRED.
10. FOR ALL NOTES IN THE DRAWINGS, THE MENTION OF "APPROVED BY THE DEPARTMENTAL REPRESENTATIVE" MEANS "APPROVED IN WRITING BY THE DEPARTMENTAL REPRESENTATIVE".
11. HISTORICAL WATER LEVEL DATA IS AVAILABLE ON THE FOLLOWING WEBSITES:
https://waterlevels.gc.ca/eng/station/Month?sid=13988&tz=EST&pres=2&type=1 [waterlevels.gc.ca]
https://waterlevels.gc.ca/C&A/bulletin-eng.html [waterlevels.gc.ca]
https://jic.org/en/loslrb/watershed/water-levels [jic.org]

STRUCTURAL STEEL:

- 1. NEW STRUCTURAL STEEL SHALL CONFORM TO CSA G40.20 AND CSA G40.21 GRADE 350WT FOR PLATE PRODUCTS, ROLLED SECTIONS SHALL CONFORM TO CSA STANDARD G40.20/G40.21 350WT OR ASTM SPECIFICATION A588. ASTM A588 MAY BE SUBSTITUTED FOR G40.21 GRADE 350A STEEL, AND WHEN THE CHARPY IMPACT ENERGY REQUIREMENTS ARE VERIFIED BY THE SUBMISSION OF TEST DOCUMENTATION, ASTM A588 MAY BE SUBSTITUTED FOR G40.21 GRADE 350WT STEEL.
2. STEEL IS DESIGNED AND SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH CSA S6-19.
3. ALL BOLTS SHALL BE NEW M20 OR 3/4" DIAMETER AND CONFORM TO ASTM STANDARD F3125/F3125M, GRADES A325M OR A325 TYPE 1 RESPECTIVELY UNLESS NOTED OTHERWISE. HOLES SHALL BE NOT MORE THAN 2MM LARGER THAN THE ACTUAL SIZE OF THE BOLT. BOLT THREADS TO BE EXCLUDED FROM ALL SHEAR PLANES, UNLESS NOTED OTHERWISE. INSTALLATION TO CONFORM WITH "TURN-OF-NUT METHOD" DESCRIBED IN ANNEX A10.1 OF CHBDC S6-19 CHAPTER 10. ALL A325 BOLTS TO BE GALVANIZED. GALVANIZED A490 BOLTS MUST NOT BE USED. A490 TYPE 3 BOLTS TO BE PAINTED.
4. NO FIELD WELDING IS PERMITTED, UNLESS NOTED OTHERWISE.
5. WELDING SHALL BE IN ACCORDANCE WITH CSA W59 AND SHALL BE PERFORMED BY A WELDER QUALIFIED UNDER CSA W47.1. SURFACES TO BE WELDED SHALL BE THOROUGHLY CLEANED OF ALL FOREIGN MATTER INCLUDING PAINT FILM.
6. THE SHOP FABRICATOR SHALL BE CERTIFIED TO THE REQUIREMENTS OF CSA STANDARD W47.1 (DIVISION 1 OR 2.1).
7. STRUCTURAL STEEL MEMBERS SHALL BE PAINTED WITH THREE COAT PAINT SYSTEM SPECIFIED. FAYING SURFACES OF ALL BOLTED CONNECTIONS MUST BE CLASS B OR BETTER. THE MEAN SLIP COEFFICIENT FOR CLASS B SHALL BE 0.5 MINIMUM. TOUCH-UP DAMAGED AREAS AFTER ERECTION. PAINT ALL SURFACES AFFECTED BY WORK WITH PAINT SYSTEM SPECIFIED.
8. ALL WELDS SHALL BE SHOWN ON SUBMITTED SHOP DRAWINGS. WELDS SHALL COMPLY WITH MINIMUM SIZES STIPULATED IN CSA W59.
9. WHERE HOLE LOCATIONS MUST BE LOCATED TO SUIT EXISTING BOLT HOLES, PLATE DIMENSIONS SHALL BE ADJUSTED TO PROVIDE BOLT EDGE/END DISTANCE IN ACCORDANCE WITH CSA S6-19.
10. ALL MAIN TRUSS MEMBERS ARE FRACTURE CRITICAL MEMBERS (FCMS). ALL FLOOR BEAMS ARE PRIMARY TENSION MEMBERS (PTMS), STRINGERS AND SILLS ARE NOT FCMS NOR PTMS. ALL NEW STRUCTURAL STEEL FOR PLATES PRODUCTS AND ROLLED SHAPES USED ON PTMS AND FCMS SHALL COMPLY WITH THE RELEVANT CHBDC S6-19 (LATEST EDITION) TABLE 10.14 (PTM) AND 10.15 (FCM) REQUIREMENTS FOR IMPACT TEST TEMPERATURES AND CHARPY IMPACT ENERGY FOR A MINIMUM SERVICE TEMPERATURE OF -30°C.
11. NO STRUCTURAL STEEL SHALL BE SHEAR CUT.

STEEL FABRICATION AND ERECTION:

- 1. SHOP DRAWINGS SHALL BE SUBMITTED TO DEPARTMENTAL REPRESENTATIVE FOR APPROVAL FOR ALL ITEMS.
2. NEW HOLES IN EXISTING MATERIAL SHALL BE DRILLED TO A TEMPLATE OR MATCH DRILLED ON SITE.
3. EXACT LOCATIONS OF DRILLED HOLES AT CRACK ENDS SHALL BE DETERMINED BY MAGNETIC PARTICLE TESTING (MT) AND APPROVED BY THE DEPARTMENTAL REPRESENTATIVE PRIOR TO START OF DRILLING. DYE PENETRANT INSPECTION (DPI) SHALL BE PERFORMED AFTER DRILLING ON THE INSIDE SURFACE (THICKNESS) OF THE MATERIAL TO CONFIRM THE CRACK TIP HAS BEEN REMOVED. IF CRACK NOT COMPLETELY REMOVED, REPEAT DRILLING AT NO COST TO DEPARTMENTAL REPRESENTATIVE WITH LARGER SIZE HOLE, FOLLOWING THE DIRECTION OF THE DEPARTMENTAL REPRESENTATIVE.

CONCRETE REQUIREMENTS:

- 1. CONCRETE FOR THE NEW ARMOURING ANGLE REPLACEMENT SHALL BE A FAST SET, RAPID STRENGTH GAIN CONCRETE WITH FINAL 28 DAY PROPERTIES CONFORMING TO EXPOSURE CLASS C-1 FROM CSA A23.1 AND HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 35 MPa.
2. CONCRETE SHALL BE CAPABLE OF ACHIEVING 75% OF THE SPECIFIED STRENGTH WITHIN 24 hrs.

REINFORCING STEEL REQUIREMENTS:

- 1. REINFORCING STEEL SHALL BE GRADE 400W, UNLESS NOTED OTHERWISE.
2. BAR MARKS WITH PREFIX "G" DENOTE GALVANIZED BARS.
3. BAR HOOKS SHALL HAVE STANDARD HOOK DIMENSIONS USING MINIMUM BEND DIMENSIONS. ALL HOOKS SHALL BE IN ACCORDANCE WITH THE MINISTRY OF TRANSPORTATION OF ONTARIO'S STRUCTURAL STANDARD DRAWINGS SS12-1 AND SS12-2, UNLESS INDICATED OTHERWISE.
4. EXPOSED EXISTING REINFORCING STEEL SHALL BE ABRASIVE BLAST CLEANED AND COATED WITH A CORROSION INHIBITING COATING COMPATIBLE WITH THE APPROVED CONCRETE.

GENERAL CONSTRUCTION AND PROCEDURES:

- 1. 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.
2. 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.
3. IF THE CONTRACTOR DAMAGES ANY MATERIALS WHICH ARE TO REMAIN IN PLACE, OR WHICH ARE TO REMAIN ON THE STRUCTURE, THE DAMAGED MATERIALS SHALL BE REPAIRED OR REPLACED IN A MANNER SATISFACTORY TO THE DEPARTMENTAL REPRESENTATIVE AT THE EXPENSE OF THE CONTRACTOR.
4. 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.
5. 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. RECORD DRAWINGS DO NOT EXACTLY REFLECT THE AS-BUILT CONDITION AND THEY SHOULD BE USED ONLY IN CONJUNCTION WITH FIELD MEASUREMENTS. 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.
6. RECORD DRAWINGS OF THE EXISTING STRUCTURE WILL BE MADE AVAILABLE TO THE SUCCESSFUL BIDDER FOR REFERENCE.
7. WHERE EXISTING MATERIAL IS TO BE CONNECTED TO NEW MATERIAL, UNLESS OTHERWISE NOTED, THE EXISTING SURFACE SHALL BE CLEANED TO SSPC-SP11, POWER TOOL CLEANING OF ALL PAINT, LOOSE RUST, OR OTHER FOREIGN MATERIAL PRIOR TO INSTALLATION OF NEW MATERIAL. THE SSPC-SP11 SHALL BE ATTAINED WITH A MONTI BRISTLE BLASTER EQUIPPED WITH A HEPA FILTER OR ANY OTHER POWER TOOL PROVIDING THE SAME SURFACE PROFILE (SUBJECT TO DEPARTMENTAL REPRESENTATIVE APPROVAL). FAYING SURFACES SHALL BE PRIMED ONLY. AFTER NEW MATERIAL IS INSTALLED, THE AFFECTED SURFACES MUST BE PRIMED AND PAINTED WITH PRESCRIBED PAINT SYSTEM. PRIMER SHALL COMPLY TO COATING CLASS B OR BETTER. THE MEAN SLIP COEFFICIENT FOR CLASS B SHALL BE 0.5 MINIMUM.
8. REMOVAL OF RIVETS SHALL BE PERFORMED IN A MANNER SUCH THAT EXISTING MATERIAL TO REMAIN IS NOT DAMAGED. REMOVAL METHODS SHALL BE IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS.
9. ANY WORK OVER THE NAVIGATION CHANNEL MUST BE COORDINATED WITH THE BRIDGE OPERATOR. THE CONTRACTOR SHALL SUBMIT TO THE DEPARTMENTAL REPRESENTATIVE FOR APPROVAL TWO (2) COPIES OF THE PLANS AND SCHEDULE OF OPERATIONS FOR WORK OVER THE NAVIGATIONAL CHANNEL AT LEAST 14 DAYS PRIOR TO THE COMMENCEMENT OF ANY WORK OVER THE NAVIGATIONAL CHANNEL. DEPARTMENTAL REPRESENTATIVE SHALL NOT BE HELD RESPONSIBLE FOR ANY DELAYS SUFFERED BY THE CONTRACTOR FOR FAILURE TO ADHERE TO THIS REQUIREMENT.
10. BOLT LAYOUT AND SPACING NOT INDICATED ON THE DRAWINGS SHALL BE IN ACCORDANCE WITH CHBDC CSA S6-19 AND SHALL BE DETAILED ON SUBMITTED SHOP DRAWINGS.
11. ONLY 1 RIVET/BOLT ON THE STRUCTURAL STEEL TRUSS MEMBERS MAY BE REMOVED AT ANY ONE TIME UNLESS OTHERWISE INDICATED ON THE CONTRACT DRAWINGS OR APPROVED BY THE DEPARTMENTAL REPRESENTATIVE.
12. ALL CUTTING OF STEEL IN THE FIELD SHALL BE BY MECHANICAL CUTTING WHEEL, SAW CUTTING OR DRILLING UNLESS OTHERWISE DIRECTED. THE CUT SURFACES SHALL BE GROUND SMOOTH. THERMAL CUTTING INCLUDING USE OF TORCHES IS PROHIBITED.
13. 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.
14. 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.
15. 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 OR PEDESTRIANS 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.
16. 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 ANY WATERCOURSE.
17. PROTECTIVE SHIELDS SHALL BE USED TO CATCH POTENTIAL FALLING MATERIAL AND SHIELD THE AREA BELOW THE WORK INCLUDING THE SIDEWALK WHERE NECESSARY. 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 DEPARTMENTAL REPRESENTATIVE DETERMINES THAT ADEQUATE PROTECTIVE SHIELDS ARE NOT BEING PROVIDED, THE WORK SHALL BE SUSPENDED UNTIL ADEQUATE WORK SHIELDS ARE EMPLOYED.
18. THE CONTRACTOR SHALL SUBMIT TO THE DEPARTMENTAL REPRESENTATIVE FINAL DESIGN DRAWINGS 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 SHALL 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.
19. 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.
20. EXCEPT WHILE INCLUDED WITHIN A PARTICULAR PHASE OF CONSTRUCTION, THE BRIDGE MAINTENANCE WALKS, 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.
21. THE CONTRACTOR SHALL SUBMIT TO DEPARTMENTAL REPRESENTATIVE FOR APPROVAL, HIS PLAN AND SCHEDULE FOR ERECTING ALL NEW STRUCTURAL STEEL ON THE BRIDGE SUPERSTRUCTURE. THIS PLAN MUST BE SUBMITTED AT LEAST 14 DAYS PRIOR TO THE COMMENCEMENT OF ANY REMOVAL WORK.
22. UNLESS OTHERWISE DIRECTED BY THE DEPARTMENTAL REPRESENTATIVE, ALL EXISTING OPEN BOLT OR RIVET HOLES REMAINING AFTER THE REMOVAL OF EXISTING MATERIAL THAT ARE NOT TO BE USED FOR A NEW CONNECTION, SHALL BE FILLED WITH THE APPROPRIATE SIZE FULLY TENSIONED HIGH STRENGTH BOLT.
23. ALL FULLY PAINTED UPWARD-FACING EDGES OF NEW STRUCTURAL STEEL MEMBERS AND OTHER ELEMENTS MATED TO GUSSET PLATES, SPLICE PLATES, SHEAR TABS, CLIP ANGLES, BEAM WEBS, TO EACH OTHER, ETC. ARE TO BE SEALED WITH SILICONE BASED CAULKING PERMANENTLY AGAINST ACCUMULATION AND/OR PENETRATION OF MOISTURE BETWEEN THE FAYING SURFACES OF CONNECTIONS.
24. CONTRACTOR TO SUBMIT SITE-SPECIFIC HEALTH AND SAFETY PLAN PER SPECIFICATION REQUIREMENTS.
25. ENSURE THE STABILITY OF ALL NEW AND EXISTING STRUCTURAL COMPONENTS, IMPACTED DIRECTLY OR INDIRECTLY BY THE WORK, DURING STEEL STRENGTHENING AND RETROFITTING/REPLACEMENT AND UNTIL THE STRUCTURAL STEEL IS IN ITS FINAL LOCATION. GLOBAL AND LOCAL STABILITY OF COMPONENTS SHALL BE TAKEN INTO ACCOUNT, INCLUDING THEIR STRENGTH TO RESIST LOADS APPLIED TO THEM.
26. BRIDGE TO REMAIN OPERABLE AS DESCRIBED IN SPECIFICATIONS.

TRAFFIC AND PEDESTRIAN CONTROL:

- 1. CONTRACTOR SHALL PROVIDE SCHEDULE OF LANE CLOSURES FOR APPROVAL AT LEAST 14 DAYS PRIOR TO WORK COMMENCEMENT.
2. CONTRACTOR SHALL CONFIRM WORK OR CANCELLATION OF LANE CLOSURES PRIOR TO WORK COMMENCEMENT. NIGHTLY LANE CLOSURES ARE ONLY PERMITTED FROM 20:00 TO 06:00 BUT FOR DECK JOINT ARMORING ANGLE REPLACEMENT, APPROACH SLAB CRACK INJECTION AND CONCRETE PATCH REPAIRS LANE CLOSURE FROM FRIDAY 20:00 TO MONDAY 06:00 WILL BE PERMITTED. FULL BRIDGE CLOSURE WILL NOT BE PERMITTED, EXCEPT FOR THE BUFFER REMOVAL, BALLAST PLATES INSTALLATION AND BRIDGE BALANCING CHECKS. SUCH CLOSURES ARE TO BE PERFORMED ON WEEKEND NIGHTS (FRIDAY, SATURDAY OR SUNDAY) BETWEEN 22:00 AND 6:00. ONLY THREE ALL NIGHT CLOSURES WILL BE ALLOWED TO COMPLETE THE BUFFER REMOVAL, BALLAST PLATES INSTALLATION AND THE BRIDGE BALANCING CHECKS. LIMITED DURATION FULL BRIDGE CLOSURE OF 20 MINUTES MAXIMUM ARE ALLOWED ON FRIDAY, SATURDAY AND SUNDAY NIGHTS BETWEEN 22:00 AND 6:00.
3. CONTRACTOR SHALL FOLLOW PUBLIC NOTICE REQUIREMENTS AS PER LASALLE CAUSEWAY ROAD CLOSURE PROTOCOL DOCUMENT (PROVIDED AS ATTACHMENT TO THE CONTRACT SPECIFICATIONS).
4. ALL NIGHTLY DETOUR SIGNAGE, PORTABLE TEMPORARY TRAFFIC SIGNALS AND TEMPORARY BARRIERS TO BE STORED AND/OR PLACED OUT OF TRAFFIC SIGHT LINES BETWEEN CLOSURE PERIODS.
5. PORTABLE TEMPORARY TRAFFIC SIGNAL AND REFLECTIVE SIGNS SHALL FOLLOW PUBLIC NOTICE REQUIREMENTS AS PER LASALLE CAUSEWAY ROAD CLOSURE PROTOCOL DOCUMENT (PROVIDED AS ATTACHMENT TO THE CONTRACT SPECIFICATIONS).
6. ADVANCED WARNING SIGNS SHALL FOLLOW PUBLIC NOTICE REQUIREMENTS AS PER LASALLE CAUSEWAY ROAD CLOSURE PROTOCOL DOCUMENT (PROVIDED AS ATTACHMENT TO THE CONTRACT SPECIFICATIONS).
7. TRAFFIC CONTROL PLAN FOR TEMPORARY CONDITIONS (LANE CLOSURES) SHALL BE PROVIDED BY CONTRACTOR AND BE IN ACCORDANCE WITH OTM-BOOK 7. THE TRAFFIC CONTROL PLAN SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE DEPARTMENTAL REPRESENTATIVE.
8. THE CONTRACTOR SHALL MAINTAIN SIDEWALK ACCESS OR PROVIDE A SAFE TEMPORARY WALKWAY AT LEAST THE SAME WIDTH AS THE EXISTING SIDEWALK THROUGH THE WORK ZONE. 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.

SCOPE OF WORK

THE FOLLOWING SCOPE OF WORK SHALL BE CARRIED OUT IN STAGES AND IS NOT INTENDED TO BE A COMPREHENSIVE LIST OF ALL ITEMS REQUIRED TO COMPLETE THE REHABILITATION WORK, NOR IS IT TO BE A SEQUENCE OF WORK

- 1. MOBILIZE TO SITE;
2. PROCURE AND INSTALL ACCESS, IMPLEMENT TRAFFIC CONTROL PLAN AS DESCRIBED IN SPECIFICATIONS;
3. PERFORM SURVEY OF EXISTING CONDITIONS AND TAKE MEASUREMENTS TO ENABLE PREPARATION OF SHOP DRAWINGS, ALLOW DEPARTMENTAL REPRESENTATIVE ACCESS TO WITNESS SURVEY;
4. PROVIDE ACCESS AND TRAFFIC CONTROL. START REPAIRS AND MODIFICATIONS TO STRUCTURE THAT DO NOT REQUIRE FABRICATION, SUCH AS, BUT NOT LIMITED TO: MODIFICATIONS AND REPAIRS TO ALL STRINGERS TOP AND BOTTOM COPES, INSPECTION OF ALL FLOOR BEAM END PLATE WELDS, GRINDING OF PRIMARY MEMBER TACK WELDS, GRINDING OF SHARP EDGES OF PERFORATIONS AND CORRODED AREAS, NON-DESTRUCTIVE TESTING AND GRINDING OF PERFORATIONS AT LOCATIONS REQUIRING REINFORCEMENT, PAINT TOUCH-UP REPAIRS ON TRUNNION PLATES AND AT LOCATIONS WHERE STRAIN GAUGES WERE INSTALLED IN 2019 (REFER TO SPECIFICATION APPENDIX LaSalle Strain gauges for paint touchup), REPAIRS TO LEAF TRUSS VERTICAL 9S-10S AND DIAGONAL 9S-8S CRACKS, PROVIDE ACCESS FOR CHARPY IMPACT TESTING COUPON SAMPLING (BY OTHERS), NDT INSPECTION AND REPAIR OF TOP CHORD 1S-3S FATIGUE CRACKING, DRILLING OF DRAINAGE HOLES IN TOWER TRUSS MEMBERS 15S-17S AND 15N-17N, DRILLING AND INSTALLATION OF BOLTS AT MAIN TRUSS MEMBER FATIGUE CRACKS, 1 LEAF TRUSS DIAGONAL 13N-16N NDT INSPECTION AND GRINDING, AND REMOVAL OF THE MECHANICAL BUFFERS AT THE TOE END OF THE LEAF SPAN;
5. SUBMIT SIGNED AND SEALED SHOP DRAWINGS FOR NEW STEEL FOR REINFORCEMENTS;
6. AFTER RECEIVING SHOP DRAWING APPROVAL, PROCEED TO FABRICATION;
7. PROCEED TO INSTALLATION OF REINFORCEMENT PLATES, INCLUDING EXISTING SURFACE PREPARATION, PRIMING AND PAINTING OF NEW AND EXISTING SURFACES. REMOVE EXISTING LATTICES/COVER PLATES TO PROVIDE ACCESS WHERE NEEDED AND AS APPROVED BY DEPARTMENTAL REPRESENTATIVE. LOCATIONS TO REINFORCE/REPAIR ARE: 16N VERTICAL GUSSET PLATE, 16S VERTICAL GUSSET PLATE, 1S-3S TOP CHORD (PROVISIONAL), 3S-5S TOP CHORD, 14S-16S BOTTOM CHORD, 15S-18S TOWER TRUSS MEMBER, 18S-19S TOWER TRUSS MEMBER, 21N-27N COUNTERWEIGHT TRUSS MEMBER, 21S-27N COUNTERWEIGHT BRACING AT 27N, DECK GRATING PANELS (REPLACEMENT OF 2 PANELS), LOOSE/MISSING BOLTS AND REPLACEMENT OF MISSING SILL SHIMS, SOUTH SPAN LOCK RECEIVER, AND NORTH LIVE LOAD SUPPORT; COATING TOUCH-UP REPAIRS; REPLACE DECK JOINT ARMORING ANGLES (BOTH JOINTS) ON ABUTMENTS INCLUDING CONCRETE TO LIMITS SHOWN, INJECT APPROACH SLAB CRACKS (BOTH SLABS), REPAIR APPROACH SLAB SPALLS (BOTH SLABS), REMOVE ACCESS.
8. AFTER COMPLETION OF ALL REPAIRS, PROCEED TO BALANCE CHECK OF BRIDGE, AS DIRECTED AND UNDER THE SUPERVISION OF THE DEPARTMENTAL REPRESENTATIVE;
9. REINSTATE STAGING AREAS TO THEIR INITIAL STATE OR BETTER AND CLEAN SITE TO DEPARTMENTAL REPRESENTATIVE'S SATISFACTION;
10. DEMOBILIZE.

Table with 3 columns: Item No., Description, Date. Row 1: 4, -, -. Row 2: 3, -, -. Row 3: 2, -, -. Row 4: 1, ISSUED FOR TENDER, 01/22/2021.

Table with 2 columns: revision, description, date. Row 1: 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 drawing no. - where detail required
C drawing no. - where detailed

project title: Kingston, Ontario
PSPC
LaSalle Causeway
Bascule Bridge

STRUCTURAL STEEL REPAIRS

NOTES SHEET

Table with 2 columns: field, value. Fields include: drawn by (RICHARD DYNKA / THOMAS NIEDZWIADK), designed by (JEAN-BERNARD CHARRON), approved by (PETER HARVEY), tender (RANYA EL SADAWY), project date (2021/01/22), project no. (R.097736.002), drawing no. (S-01).



GENERAL NOTES:

GENERAL:

1. DO NOT SCALE DRAWINGS.
2. THE LATEST VERSION OF ALL REFERENCE DOCUMENTS SHALL APPLY.
3. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH THE CANADIAN HIGHWAY BRIDGE DESIGN CODE CSA S6-19 (LATEST EDITION).
4. FOR EACH REPAIR/REPLACEMENT/MODIFICATION DETAIL, DETAILS DEPICT ONE LOCATION ONLY AND ARE INCLUDED TO INDICATE DESIGN INTENT AT SIMILAR LOCATIONS. THE DIMENSIONS CAN VARY FROM ONE LOCATION TO ANOTHER, SINCE CONNECTIONS OF SAME GEOMETRY ARE NEVER IDENTICAL.
5. DIMENSIONS RELATING TO EXISTING CONSTRUCTION OR IDENTIFIED AS REQUIRING FIELD VERIFICATION MUST BE FIELD VERIFIED BY CONTRACTOR BEFORE COMMENCING SHOP DRAWING PREPARATION, FABRICATION OR WORK.
6. THE CONTRACTOR SHALL EXAMINE THE SITE AND SATISFY HIMSELF OF THE ACTUAL CONDITIONS AND REQUIREMENTS OF THE WORK.
7. RIVETS ARE NOTED ON THE ORIGINAL DRAWING AS BEING 3/4" RIVETS IN 13/16" HOLES. ORIGINAL CONSTRUCTION 1916.
8. MANY RIVETS HAVE BEEN PREVIOUSLY REPLACED WITH BOLTS.
9. FIT-UP ADJUSTMENT TO ALIGN COMPONENTS MAYBE REQUIRED.
10. FOR ALL NOTES IN THE DRAWINGS, THE MENTION OF "APPROVED BY THE DEPARTMENTAL REPRESENTATIVE" MEANS "APPROVED IN WRITING BY THE DEPARTMENTAL REPRESENTATIVE".
11. HISTORICAL WATER LEVEL DATA IS AVAILABLE ON THE FOLLOWING WEBSITES:
<https://waterlevels.gc.ca/eng/station/Month?sid=13988&tz=EST&pres=2&type=1> [waterlevels.gc.ca]
<https://waterlevels.gc.ca/C&A/bulletin-eng.html> [waterlevels.gc.ca]
<https://ipc.org/en/loslrb/watershed/water-levels> [ipc.org]

STRUCTURAL STEEL:

1. NEW STRUCTURAL STEEL SHALL CONFORM TO CSA G40.20 AND CSA G40.21 GRADE 350WT FOR PLATE PRODUCTS, ROLLED SECTIONS SHALL CONFORM TO CSA STANDARD G40.20/G40.21 350WT OR ASTM SPECIFICATION A588. ASTM A588 MAY BE SUBSTITUTED FOR G40.21 GRADE 350A STEEL, AND WHEN THE CHARPY IMPACT ENERGY REQUIREMENTS ARE VERIFIED BY THE SUBMISSION OF TEST DOCUMENTATION, ASTM A588 MAY BE SUBSTITUTED FOR G40.21 GRADE 350WT STEEL.
2. STEEL IS DESIGNED AND SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH CSA S6-19.
3. ALL BOLTS SHALL BE NEW M20 OR 3/4" DIAMETER AND CONFORM TO ASTM STANDARD F3125/F3125M, GRADES A325M OR A325 TYPE 1 RESPECTIVELY UNLESS NOTED OTHERWISE. HOLES SHALL BE NOT MORE THAN 2MM LARGER THAN THE ACTUAL SIZE OF THE BOLT. BOLT THREADS TO BE EXCLUDED FROM ALL SHEAR PLANES, UNLESS NOTED OTHERWISE. INSTALLATION TO CONFORM WITH "TURN-OF-NUT METHOD" DESCRIBED IN ANNEX A10.1 OF CHDC S6-19 CHAPTER 10. ALL A325 BOLTS TO BE GALVANIZED. GALVANIZED A490 BOLTS MUST NOT BE USED. A490 TYPE 3 BOLTS TO BE PAINTED.
4. NO FIELD WELDING IS PERMITTED, UNLESS NOTED OTHERWISE.
5. WELDING SHALL BE IN ACCORDANCE WITH CSA W59 AND SHALL BE PERFORMED BY A WELDER QUALIFIED UNDER CSA W47.1. SURFACES TO BE WELDED SHALL BE THOROUGHLY CLEANED OF ALL FOREIGN MATTER INCLUDING PAINT FILM.
6. THE SHOP FABRICATOR SHALL BE CERTIFIED TO THE REQUIREMENTS OF CSA STANDARD W47.1 (DIVISION 1 OR 2.1).
7. STRUCTURAL STEEL MEMBERS SHALL BE PAINTED WITH THREE COAT PAINT SYSTEM SPECIFIED, FAYING SURFACES OF ALL BOLTED CONNECTIONS MUST BE CLASS B OR BETTER. THE MEAN SLIP COEFFICIENT FOR CLASS B SHALL BE 0.5 MINIMUM. TOUCH-UP DAMAGED AREAS AFTER ERECTION. PAINT ALL SURFACES AFFECTED BY WORK WITH PAINT SYSTEM SPECIFIED.
8. ALL WELDS SHALL BE SHOWN ON SUBMITTED SHOP DRAWINGS. WELDS SHALL COMPLY WITH MINIMUM SIZES STIPULATED IN CSA W59.
9. WHERE HOLE LOCATIONS MUST BE LOCATED TO SUIT EXISTING BOLT HOLES, PLATE DIMENSIONS SHALL BE ADJUSTED TO PROVIDE BOLT EDGE/END DISTANCE IN ACCORDANCE WITH CSA S6-19.
10. ALL MAIN TRUSS MEMBERS ARE FRACTURE CRITICAL MEMBERS (FCMS). ALL FLOOR BEAMS ARE PRIMARY TENSION MEMBERS (PTMS), STRINGERS AND SILLS ARE NOT FCMS NOR PTMS. ALL NEW STRUCTURAL STEEL FOR PLATES PRODUCTS AND ROLLED SHAPES USED ON PTMS AND FCMS SHALL COMPLY WITH THE RELEVANT CHDC S6-19 (LATEST EDITION) TABLE 10.14 (PTM) AND 10.15 (FCM) REQUIREMENTS FOR IMPACT TEST TEMPERATURES AND CHARPY IMPACT ENERGY FOR A MINIMUM SERVICE TEMPERATURE OF -30°C.
11. NO STRUCTURAL STEEL SHALL BE SHEAR CUT.

STEEL FABRICATION AND ERECTION:

1. SHOP DRAWINGS SHALL BE SUBMITTED TO DEPARTMENTAL REPRESENTATIVE FOR APPROVAL FOR ALL ITEMS.
2. NEW HOLES IN EXISTING MATERIAL SHALL BE DRILLED TO A TEMPLATE OR MATCH DRILLED ON SITE.
3. EXACT LOCATIONS OF DRILLED HOLES AT CRACK ENDS SHALL BE DETERMINED BY MAGNETIC PARTICLE TESTING (MT) AND APPROVED BY THE DEPARTMENTAL REPRESENTATIVE PRIOR TO START OF DRILLING. DYE PENETRANT INSPECTION (DPI) SHALL BE PERFORMED AFTER DRILLING ON THE INSIDE SURFACE (THICKNESS) OF THE MATERIAL TO CONFIRM THE CRACK TIP HAS BEEN REMOVED. IF CRACK NOT COMPLETELY REMOVED, REPEAT DRILLING AT NO COST TO DEPARTMENTAL REPRESENTATIVE WITH LARGER SIZE HOLE, FOLLOWING THE DIRECTION OF THE DEPARTMENTAL REPRESENTATIVE.

CONCRETE REQUIREMENTS:

1. CONCRETE FOR THE NEW ARMOURING ANGLE REPLACEMENT SHALL BE A FAST SET, RAPID STRENGTH GAIN CONCRETE WITH FINAL 28 DAY PROPERTIES CONFORMING TO EXPOSURE CLASS C-1 FROM CSA A23.1 AND HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 35 MPa.
2. CONCRETE SHALL BE CAPABLE OF ACHIEVING 75% OF THE SPECIFIED STRENGTH WITHIN 24 hrs.

REINFORCING STEEL REQUIREMENTS:

1. REINFORCING STEEL SHALL BE GRADE 400W, UNLESS NOTED OTHERWISE.
2. BAR MARKS WITH PREFIX "G" DENOTE GALVANIZED BARS.
3. BAR HOOKS SHALL HAVE STANDARD HOOK DIMENSIONS USING MINIMUM BEND DIMENSIONS. ALL HOOKS SHALL BE IN ACCORDANCE WITH THE MINISTRY OF TRANSPORTATION OF ONTARIO'S STRUCTURAL STANDARD DRAWINGS SS12-1 AND SS12-2, UNLESS INDICATED OTHERWISE.
4. EXPOSED EXISTING REINFORCING STEEL SHALL BE ABRASIVE BLAST CLEANED AND COATED WITH A CORROSION INHIBITING COATING COMPATIBLE WITH THE APPROVED CONCRETE.

GENERAL CONSTRUCTION AND PROCEDURES:

1. 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.
2. 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.
3. IF THE CONTRACTOR DAMAGES ANY MATERIALS WHICH ARE TO REMAIN IN PLACE, OR WHICH ARE TO REMAIN ON THE STRUCTURE, THE DAMAGED MATERIALS SHALL BE REPAIRED OR REPLACED IN A MANNER SATISFACTORY TO THE DEPARTMENTAL REPRESENTATIVE AT THE EXPENSE OF THE CONTRACTOR.
4. 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.
5. 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. RECORD DRAWINGS DO NOT EXACTLY REFLECT THE AS-BUILT CONDITION AND THEY SHOULD BE USED ONLY IN CONJUNCTION WITH FIELD MEASUREMENTS. 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.
6. RECORD DRAWINGS OF THE EXISTING STRUCTURE WILL BE MADE AVAILABLE TO THE SUCCESSFUL BIDDER FOR REFERENCE.
7. WHERE EXISTING MATERIAL IS TO BE CONNECTED TO NEW MATERIAL, UNLESS OTHERWISE NOTED, THE EXISTING SURFACE SHALL BE CLEANED TO SSPC-SP11, POWER TOOL CLEANING OF ALL PAINT, LOOSE RUST, OR OTHER FOREIGN MATERIAL PRIOR TO INSTALLATION OF NEW MATERIAL. THE SSPC-SP11 SHALL BE ATTAINED WITH A MONTI BRISTLE BLASTER EQUIPPED WITH A HEPA FILTER OR ANY OTHER POWER TOOL PROVIDING THE SAME SURFACE PROFILE (SUBJECT TO DEPARTMENTAL REPRESENTATIVE APPROVAL). FAYING SURFACES SHALL BE PRIMED ONLY AFTER NEW MATERIAL IS INSTALLED. THE AFFECTED SURFACES MUST BE PRIMED AND PAINTED WITH PRESCRIBED PAINT SYSTEM. PRIMER SHALL COMPLY TO COATING CLASS B OR BETTER. THE MEAN SLIP COEFFICIENT FOR CLASS B SHALL BE 0.5 MINIMUM.
8. REMOVAL OF RIVETS SHALL BE PERFORMED IN A MANNER SUCH THAT EXISTING MATERIAL TO REMAIN IS NOT DAMAGED. REMOVAL METHODS SHALL BE IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS.
9. ANY WORK OVER THE NAVIGATION CHANNEL MUST BE COORDINATED WITH THE BRIDGE OPERATOR. THE CONTRACTOR SHALL SUBMIT TO THE DEPARTMENTAL REPRESENTATIVE FOR APPROVAL TWO (2) COPIES OF THE PLANS AND SCHEDULE OF OPERATIONS FOR WORK OVER THE NAVIGATIONAL CHANNEL AT LEAST 14 DAYS PRIOR TO THE COMMENCEMENT OF ANY WORK OVER THE NAVIGATIONAL CHANNEL. DEPARTMENTAL REPRESENTATIVE SHALL NOT BE HELD RESPONSIBLE FOR ANY DELAYS SUFFERED BY THE CONTRACTOR FOR FAILURE TO ADHERE TO THIS REQUIREMENT.
10. BOLT LAYOUT AND SPACING NOT INDICATED ON THE DRAWINGS SHALL BE IN ACCORDANCE WITH CHDC CSA S6-19 AND SHALL BE DETAILED ON SUBMITTED SHOP DRAWINGS.
11. ONLY 1 RIVET/BOLT ON THE STRUCTURAL STEEL TRUSS MEMBERS MAY BE REMOVED AT ANY ONE TIME UNLESS OTHERWISE INDICATED ON THE CONTRACT DRAWINGS OR APPROVED BY THE DEPARTMENTAL REPRESENTATIVE.
12. ALL CUTTING OF STEEL IN THE FIELD SHALL BE BY MECHANICAL CUTTING WHEEL, SAW CUTTING OR DRILLING UNLESS OTHERWISE DIRECTED. THE CUT SURFACES SHALL BE GROUND SMOOTH. THERMAL CUTTING INCLUDING USE OF TORCHES IS PROHIBITED.
13. 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.
14. 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.
15. 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 OR PEDESTRIANS 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.

16. 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 ANY WATERCOURSE.
17. PROTECTIVE SHIELDS SHALL BE USED TO CATCH POTENTIAL FALLING MATERIAL AND SHIELD THE AREA BELOW THE WORK INCLUDING THE SIDEWALK WHERE NECESSARY. 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 DEPARTMENTAL REPRESENTATIVE DETERMINES THAT ADEQUATE PROTECTIVE SHIELDS ARE NOT BEING PROVIDED, THE WORK SHALL BE SUSPENDED UNTIL ADEQUATE WORK SHIELDS ARE EMPLOYED.
18. THE CONTRACTOR SHALL SUBMIT TO THE DEPARTMENTAL REPRESENTATIVE FINAL DESIGN DRAWINGS 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 SHALL 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.
19. 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.
20. EXCEPT WHILE INCLUDED WITHIN A PARTICULAR PHASE OF CONSTRUCTION, THE BRIDGE MAINTENANCE WALKS, 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.
21. THE CONTRACTOR SHALL SUBMIT TO DEPARTMENTAL REPRESENTATIVE FOR APPROVAL, HIS PLAN AND SCHEDULE FOR ERECTING ALL NEW STRUCTURAL STEEL ON THE BRIDGE SUPERSTRUCTURE. THIS PLAN MUST BE SUBMITTED AT LEAST 14 DAYS PRIOR TO THE COMMENCEMENT OF ANY REMOVAL WORK.
22. UNLESS OTHERWISE DIRECTED BY THE DEPARTMENTAL REPRESENTATIVE, ALL EXISTING OPEN BOLT OR RIVET HOLES REMAINING AFTER THE REMOVAL OF EXISTING MATERIAL THAT ARE NOT TO BE USED FOR A NEW CONNECTION, SHALL BE FILLED WITH THE APPROPRIATE SIZE FULLY TENSIONED HIGH STRENGTH BOLT.
23. ALL FULLY PAINTED UPWARD-FACING EDGES OF NEW STRUCTURAL STEEL MEMBERS AND OTHER ELEMENTS MATED TO GUSSET PLATES, SPLICE PLATES, SHEAR TABS, CLIP ANGLES, BEAM WEBS, TO EACH OTHER, ETC. ARE TO BE SEALED WITH SILICONE BASED CAULKING PERMANENTLY AGAINST ACCUMULATION AND/OR PENETRATION OF MOISTURE BETWEEN THE FAYING SURFACES OF CONNECTIONS.
24. CONTRACTOR TO SUBMIT SITE-SPECIFIC HEALTH AND SAFETY PLAN PER SPECIFICATION REQUIREMENTS.
25. ENSURE THE STABILITY OF ALL NEW AND EXISTING STRUCTURAL COMPONENTS, IMPACTED DIRECTLY OR INDIRECTLY BY THE WORK, DURING STEEL STRENGTHENING AND RETROFITTING/REPLACEMENT AND UNTIL THE STRUCTURAL STEEL IS IN ITS FINAL LOCATION. GLOBAL AND LOCAL STABILITY OF COMPONENTS SHALL BE TAKEN INTO ACCOUNT, INCLUDING THEIR STRENGTH TO RESIST LOADS APPLIED TO THEM.
26. BRIDGE TO REMAIN OPERABLE AS DESCRIBED IN SPECIFICATIONS.

TRAFFIC AND PEDESTRIAN CONTROL:

1. CONTRACTOR SHALL PROVIDE SCHEDULE OF LANE CLOSURES FOR APPROVAL AT LEAST 14 DAYS PRIOR TO WORK COMMENCEMENT.
2. CONTRACTOR SHALL CONFIRM WORK OR CANCELLATION OF LANE CLOSURES PRIOR TO WORK COMMENCEMENT. NIGHTLY LANE CLOSURES ARE ONLY PERMITTED FROM 20:00 TO 06:00 BUT FOR DECK JOINT ARMORING ANGLE REPLACEMENT, APPROACH SLAB CRACK INJECTION AND CONCRETE PATCH REPAIRS LANE CLOSURE FROM FRIDAY 20:00 TO MONDAY 06:00 WILL BE PERMITTED. FULL BRIDGE CLOSURE WILL NOT BE PERMITTED, EXCEPT FOR THE BUFFER REMOVAL, BALLAST PLATES INSTALLATION AND BRIDGE BALANCING CHECKS. SUCH CLOSURES ARE TO BE PERFORMED ON WEEKEND NIGHTS (FRIDAY, SATURDAY OR SUNDAY) BETWEEN 22:00 AND 6:00. ONLY THREE ALL NIGHT CLOSURES WILL BE ALLOWED TO COMPLETE THE BUFFER REMOVAL, BALLAST PLATES INSTALLATION AND THE BRIDGE BALANCING CHECKS. LIMITED DURATION FULL BRIDGE CLOSURE OF 20 MINUTES MAXIMUM ARE ALLOWED ON FRIDAY, SATURDAY AND SUNDAY NIGHTS BETWEEN 22:00 AND 6:00.
3. CONTRACTOR SHALL FOLLOW PUBLIC NOTICE REQUIREMENTS AS PER LASALLE CAUSEWAY ROAD CLOSURE PROTOCOL DOCUMENT (PROVIDED AS ATTACHMENT TO THE CONTRACT SPECIFICATIONS).
4. ALL NIGHTLY DETOUR SIGNAGE, PORTABLE TEMPORARY TRAFFIC SIGNALS AND TEMPORARY BARRIERS TO BE STORED AND/OR PLACED OUT OF TRAFFIC SIGHT LINES BETWEEN CLOSURE PERIODS.
5. PORTABLE TEMPORARY TRAFFIC SIGNAL AND REFLECTIVE SIGNS SHALL FOLLOW PUBLIC NOTICE REQUIREMENTS AS PER LASALLE CAUSEWAY ROAD CLOSURE PROTOCOL DOCUMENT (PROVIDED AS ATTACHMENT TO THE CONTRACT SPECIFICATIONS).
6. ADVANCED WARNING SIGNS SHALL FOLLOW PUBLIC NOTICE REQUIREMENTS AS PER LASALLE CAUSEWAY ROAD CLOSURE PROTOCOL DOCUMENT (PROVIDED AS ATTACHMENT TO THE CONTRACT SPECIFICATIONS).
7. TRAFFIC CONTROL PLAN FOR TEMPORARY CONDITIONS (LANE CLOSURES) SHALL BE PROVIDED BY CONTRACTOR AND BE IN ACCORDANCE WITH OTM-BOOK 7. THE TRAFFIC CONTROL PLAN SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE DEPARTMENTAL REPRESENTATIVE.
8. THE CONTRACTOR SHALL MAINTAIN SIDEWALK ACCESS OR PROVIDE A SAFE TEMPORARY WALKWAY AT LEAST THE SAME WIDTH AS THE EXISTING SIDEWALK THROUGH THE WORK ZONE. 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.

SCOPE OF WORK

THE FOLLOWING SCOPE OF WORK SHALL BE CARRIED OUT IN STAGES AND IS NOT INTENDED TO BE A COMPREHENSIVE LIST OF ALL ITEMS REQUIRED TO COMPLETE THE REHABILITATION WORK, NOR IS IT TO BE A SEQUENCE OF WORK

1. MOBILIZE TO SITE;
2. PROCURE AND INSTALL ACCESS, IMPLEMENT TRAFFIC CONTROL PLAN AS DESCRIBED IN SPECIFICATIONS;
3. PERFORM SURVEY OF EXISTING CONDITIONS AND TAKE MEASUREMENTS TO ENABLE PREPARATION OF SHOP DRAWINGS, ALLOW DEPARTMENTAL REPRESENTATIVE ACCESS TO WITNESS SURVEY;
4. PROVIDE ACCESS AND TRAFFIC CONTROL. START REPAIRS AND MODIFICATIONS TO STRUCTURE THAT DO NOT REQUIRE FABRICATION, SUCH AS, BUT NOT LIMITED TO: MODIFICATIONS AND REPAIRS TO ALL STRINGERS TOP AND BOTTOM COPES. INSPECTION OF ALL FLOOR BEAM END PLATE WELDS. GRINDING OF PRIMARY MEMBER TACK WELDS, GRINDING OF SHARP EDGES OF PERFORATIONS AND CORRODED AREAS. NON-DESTRUCTIVE TESTING AND GRINDING OF PERFORATIONS AT LOCATIONS REQUIRING REINFORCEMENT. PAINT TOUCH-UP REPAIRS ON TRUNNION PLATES AND AT LOCATIONS WHERE STRAIN GAUGES WERE INSTALLED IN 2019 (REFER TO SPECIFICATION APPENDIX LaSalle Strain gauges for paint touchup). REPAIRS TO LEAF TRUSS VERTICAL 9S-10S AND DIAGONAL 9S-8S CRACKS, PROVIDE ACCESS FOR CHARPY IMPACT TESTING COUPON SAMPLING (BY OTHERS), NDT INSPECTION AND REPAIR OF TOP CHORD 1S-3S FATIGUE CRACKING. DRILLING OF DRAINAGE HOLES IN TOWER TRUSS MEMBERS 15S-17S AND 15N-17N, DRILLING AND INSTALLATION OF BOLTS AT MAIN TRUSS MEMBER FATIGUE CRACKS. 1 LEAF TRUSS DIAGONAL 13N-16N NDT INSPECTION AND GRINDING, AND REMOVAL OF THE MECHANICAL BUFFERS AT THE TOE END OF THE LEAF SPAN;
5. SUBMIT SIGNED AND SEALED SHOP DRAWINGS FOR NEW STEEL FOR REINFORCEMENTS;
6. AFTER RECEIVING SHOP DRAWING APPROVAL, PROCEED TO FABRICATION;
7. PROCEED TO INSTALLATION OF REINFORCEMENT PLATES, INCLUDING EXISTING SURFACE PREPARATION, PRIMING AND PAINTING OF NEW AND EXISTING SURFACES. REMOVE EXISTING LATTICES/COVER PLATES TO PROVIDE ACCESS WHERE NEEDED AND AS APPROVED BY DEPARTMENTAL REPRESENTATIVE. LOCATIONS TO REINFORCE/REPAIR ARE: 16N VERTICAL GUSSET PLATE, 16S VERTICAL GUSSET PLATE, 1S-3S TOP CHORD (PROVISIONAL), 3S-5S TOP CHORD, 14S-16S BOTTOM CHORD, 15S-18S TOWER TRUSS MEMBER, 18S-19S TOWER TRUSS MEMBER, 21N-27N COUNTERWEIGHT TRUSS MEMBER, 21S-27N COUNTERWEIGHT BRACING AT 27N, DECK GRATING PANELS (REPLACEMENT OF 2 PANELS), LOOSEMISSING BOLTS AND REPLACEMENT OF MISSING SILL SHIMS, SOUTH SPAN LOCK RECEIVER, AND NORTH LIVE LOAD SUPPORT; COATING TOUCH-UP REPAIRS; REPLACE DECK JOINT ARMORING ANGLES (BOTH JOINTS) ON ABUTMENTS INCLUDING CONCRETE TO LIMITS SHOWN, INJECT APPROACH SLAB CRACKS (BOTH SLABS), REPAIR APPROACH SLAB SPALLS (BOTH SLABS), REMOVE ACCESS.
8. AFTER COMPLETION OF ALL REPAIRS, PROCEED TO BALANCE CHECK OF BRIDGE, AS DIRECTED AND UNDER THE SUPERVISION OF THE DEPARTMENTAL REPRESENTATIVE;
9. REINSTATE STAGING AREAS TO THEIR INITIAL STATE OR BETTER AND CLEAN SITE TO DEPARTMENTAL REPRESENTATIVE'S SATISFACTION.
10. DEMOBILIZE.

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3	-	-
2	-	-
1	ISSUED FOR TENDER	01/22/2021

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

	A Detail No., B drawing no. - where detail required C drawing no. - where detailed
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project title	Kingston, Ontario
	PSPC
	LaSalle Causeway
	Bascule Bridge

STRUCTURAL STEEL REPAIRS

drawing title

NOTES SHEET

drawn by
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project date
2021/01/22

project no.
R.097736.002

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S-01