

RIDEAU CANAL SYSTEM LOWER BREWERS MILLS SWING BRIDGE No. 45

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 millimetres

LIST of DRAWINGS:

CIVIL:

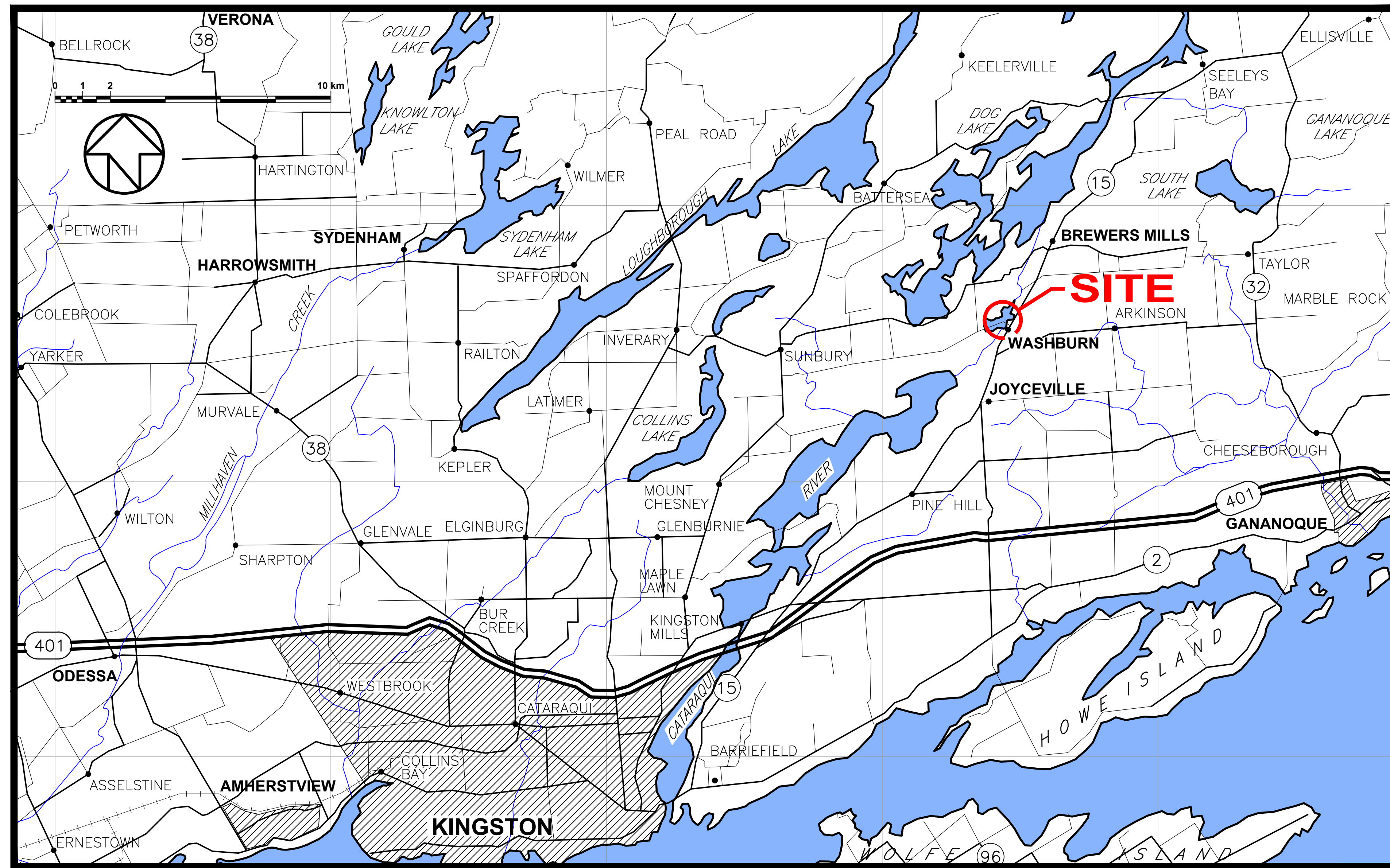
- C1 - WASHBURN ROADWAY GEOMETRY AND GENERAL LAYOUT
- C2 - DETOUR PLAN & OFF-SITE PERMANENT SIGNAGE INSTALLATION
- C3 - WASHBURN ROAD REMOVALS PLAN
- C4 - WEST APPROACH STA. 20+000 TO STA. 20+075
- C5 - EAST APPROACH STA. 20+075 TO STA. 20+150
- C6 - WASHBURN ROAD CROSS SECTIONS
- C7 - WASHBURN ROAD DETAILS

STRUCTURAL:

- S1 - GENERAL ARRANGEMENT
- S2 - BOREHOLES
- S3 - SITE PLAN AND SEQUENCE
- S4 - WEST ABUTMENT, PIVOT PIER, AND WING WALL REMOVALS
- S5 - EAST ABUTMENT AND WING WALLS REMOVALS
- S6 - FOUNDATION LAYOUT
- S7 - FOUNDATION REINFORCEMENT
- S8 - WEST ABUTMENT WITH WING WALL GEOMETRY
- S9 - WEST ABUTMENT WITH WING WALL REINFORCEMENT
- S10 - SOUTH WEST RETAINING WALL FOOTING LAYOUT AND REINFORCING
- S11 - SOUTH WEST RETAINING WALL GEOMETRY AND REINFORCING
- S12 - EAST ABUTMENT AND WING WALL GEOMETRY I
- S13 - EAST ABUTMENT AND WING WALL GEOMETRY II
- S14 - EAST ABUTMENT AND WING WALL REINFORCEMENT I
- S15 - EAST ABUTMENT AND WING WALL REINFORCEMENT II
- S16 - TIMBER SUPERSTRUCTURE LAYOUT
- S17 - TIMBER FRAMING DETAILS I
- S18 - TIMBER FRAMING DETAILS II
- S19 - STEEL WEST END BEAM
- S20 - STEEL PIVOT BEAM AND COUNTERWEIGHT DETAILS
- S21 - STEEL EAST END BEAM
- S22 - STAIRS DETAILS
- S23 - POST DETAILS - WEST ABUTMENT
- S24 - POST DETAILS - EAST ABUTMENT

MECHANICAL:

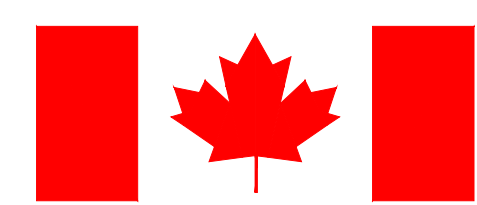
- M01 - MECHANICAL LAYOUT
- M02 - PIVOT BEARING ARRANGEMENT
- M03 - PIVOT BEARING DETAILS
- M04 - SWING CHAIN AND CRAB ARRANGEMENT & DETAILS
- M05 - BALANCE WHEEL AND RAIL ARRANGEMENT
- M06 - BALANCE WHEEL & RAIL DETAILS
- M07 - WEST END LIFT ARRANGEMENT
- M08 - END LIFT MECHANISM PART DETAILS
- M09 - END LIFT ACTUATOR, SHIM AND RAMP DETAILS
- M10 - END LIFT SHAFT, BEARING AND CRANK ARM DETAIL
- M11 - HYDRAULIC AND PNEUMATIC SCHEMATIC
- M12 - EAST END BEARING WHEEL AND RAMP ARRANGEMENT & DETAILS
- M13 - SPAN LOCK AND END STOP BUMPER ARRANGEMENT & DETAILS
- M14 - STAY ROD REGULATOR ARRANGEMENT & DETAILS



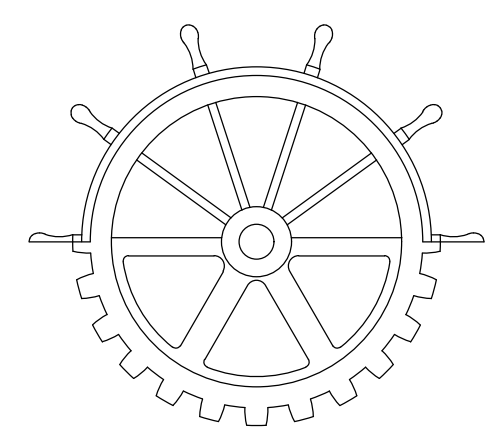
KEY PLAN



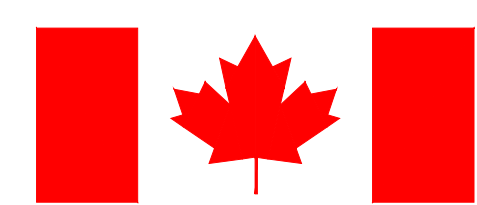
PRPC Project No. 30037015
WSP Project No. 19M-01599-00
OCTOBER 29, 2021



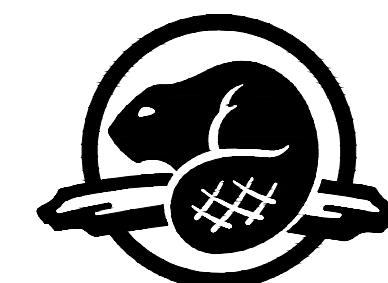
Public Services and Procurement Canada
Services publics et Approvisionnement Canada



Ontario Region
Parks Canada Infrastructure Directorate
Heritage Canals and Engineering Works



Parks Canada **Parcs Canada**



0 10 20mm 40 60 80 100 120 140 160 180 200mm



EXISTING LEGEND:

	EDGE OF PAVEMENT
	BOTTOM OF SLOPE
	TOP OF SLOPE
	OVERHEAD WIRE
	GUY ANCHOR
	MAJOR CONTOUR
	MINOR CONTOUR
	EXISTING GRADE
	BOREHOLE
	SIGN
	UTILITY POLE
	WOODEN POST
	WOODEN GATE
	DECIDUOUS TREE
	CONIFEROUS TREE
	BUILDING ENTRANCE
	CONCRETE
	BUILDING
	BENCH MARK

PROPOSED LEGEND:

	ALIGNMENT
	EDGE OF PAVEMENT
	EDGE OF SHOULDER
	BOTTOM OF SLOPE (FILL LIMITS)
	TOP OF SLOPE
	SWALE c/w SUBDRAIN
	SUBDRAIN
	HEAVY DUTY SILT FENCE
	GRADE ELEVATION
	CATCH BASIN
	TWSI
	SIGN
	FULL DEPTH ASPHALT
	PARTIAL DEPTH ASPHALT
	GRANULAR PARKING
	CONCRETE SIDEWALK
	RELOCATED WOOD POST
	RELOCATED WOOD GATE



04		
03		
02		
01	ISSUED FOR TENDER	2021/10/29
revision		date

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

A	Detail No.		A
B	No. of detail		B
C	drawing no. - where detail required		C
	dessein no. - ou detail exigé		
	drawing no. - where detailed		
	dessein no. - ou détail		

project title
titre du projet
Ontario

LOWER BREWERS
SWING BRIDGE REPLACEMENT
RIDEAU CANAL

drawing title
titre du dessin
WASHBURN ROAD
GEOMETRY & GENERAL LAYOUT

drawn by
dessiné par
M. HUNTER

designed by
conc par
M. HUNTER

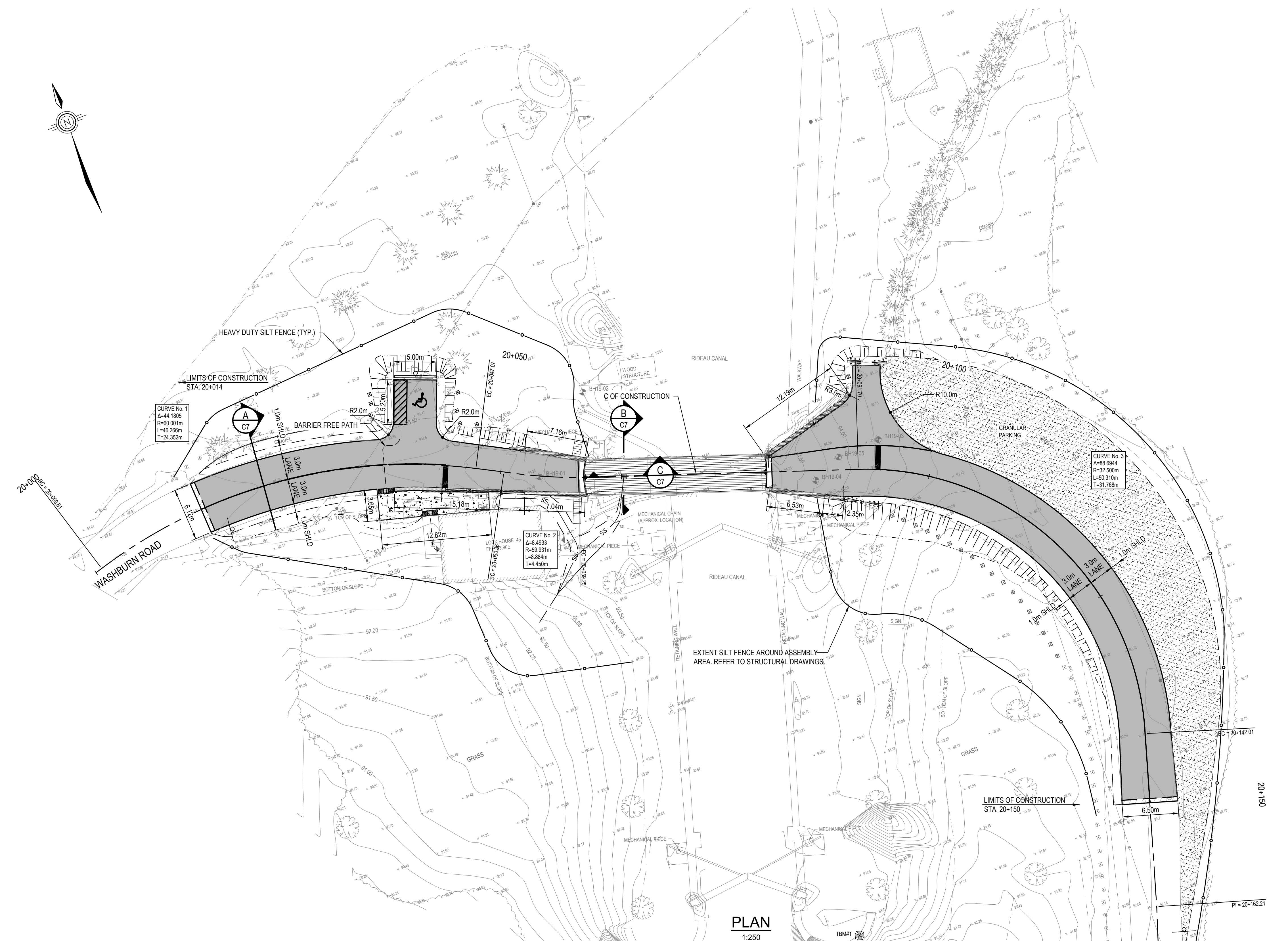
approved by
approuvé par
S. DAVIDSON

bid
offre
TYLER ATKINSON
project manager
administrateur de projets

project date
date du projet
2021-10-29

project no.
no. du projet
20039289

drawing no.
dessiné no.
C1



PLAN
1:250

1. UNLESS OTHERWISE NOTED ON DRAWINGS
- ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE INDICATED.
 - ALL DIMENSIONS ARE TO BE CHECKED AND VERIFIED ON THE SITE AND ANY DISCREPANCIES SHALL BE REPORTED TO THE DEPARTMENTAL REPRESENTATIVE.
 - THIS DRAWING IS PART OF A SET AND MUST BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS, DETAILS, NOTES, AND WRITTEN SPECIFICATIONS INCLUDED IN THE CONTRACT DOCUMENTS.
 - DRAWINGS ARE NOT TO BE SCALED.
 - THE TERM "ENGINEER" REFERS TO THE OWNERS CONSULTING ENGINEER OR REPRESENTATIVE OBSERVING THE WORK BEING PERFORMED BY THE CONTRACTOR FOR COMPLIANCE WITH THE APPLICABLE STANDARDS AND SPECIFICATIONS.
 - THE TERM "GEOTECHNICAL CONSULTANT" REFERS TO THE GEOTECHNICAL ENGINEER OR THEIR REPRESENTATIVE THAT IS PROVIDING GEOTECHNICAL SERVICES TO ENSURE COMPLIANT INSTALLATION AND TESTING OF MATERIALS IN ORDER TO PROVIDE DOCUMENTATION THAT WILL FORM PART OF THE CONSULTING ENGINEER'S CERTIFICATION PACKAGE TO THE OWNER.
 - CONTRACTOR MUST WORK WITH THE LATEST REVISION OF THE CONTRACT DRAWINGS. COORDINATE WITH DEPARTMENTAL REPRESENTATIVE. ALL ENGINEERING DOCUMENTS SHOULD BE ISSUED TO ALL SUBS - ANY DISCREPANCY SHOULD BE REPORTED TO THE DEPARTMENTAL REPRESENTATIVE.

2. GENERAL NOTES
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED BY THE OWNER, INCLUDING A ROAD OCCUPANCY PERMIT FOR WORKS WITHIN THE RIGHT OF WAY.
 - TOPOGRAPHIC SURVEY COMPLETED BY SNC LAVALIN ON SEPTEMBER 10 & 11 2018 WITH THE USE OF A LEICA LASER SCANNER P40, TRIMBLE R8 GNSS GPS RECEIVER AND TRIMBLE TOTAL STATION VX.
 - HORIZONTAL DATUM NAD83 (CANADA) CSRS UTM GRID COORDINATES SYSTEM MTM ZONE 9.
 - ELEVATIONS ARE GEODETIC BASED ON CGVD28.
 - DRAFT GEOTECHNICAL REPORT COMPLETED BY WSP CANADA INC. DATED MARCH 3, 2020.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL UTILITIES AND SERVICES. ALL UTILITIES ARE NOT NECESSARILY SHOWN ON THE DRAWINGS.
 - LOCATION OF ALL EXISTING DETAIL SHOWN ON THE DRAWINGS IS APPROXIMATE AND SHALL BE CONFIRMED IN THE FIELD BY THE CONTRACTOR. FIELD LOCATE UTILITIES AND COORDINATE WITH LOCAL AUTHORITIES.
 - ITEMS ENCOUNTERED BELOW GRADE THAT ARE NOT SHOWN ON THE DRAWINGS SHALL BE REPORTED IMMEDIATELY TO THE DEPARTMENTAL REPRESENTATIVE.
 - ALL WORKS SHALL BE IN COMPLIANCE WITH OWNER STANDARDS AND SPECIFICATIONS, AND THE ONTARIO PROVINCIAL STANDARDS DRAWINGS (OPSD) AND SPECIFICATIONS (OPS) UNLESS OTHERWISE NOTED.
 - THE CONTRACTOR SHALL SUPPLY ALL THE MATERIALS IN NEW CONDITION AND IN LABOUR QUANTITIES SUFFICIENT TO COMPLETE THE WORK SHOWN ON THESE DRAWINGS.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERTICAL AND HORIZONTAL CONTROL, AND FOR THE LAYOUT OF THE WORK. CONTRACTOR TO CONFIRM REFERENCE POINTS PRIOR TO COMMENCEMENT OF THE WORK.
 - TRENCHING, BACKFILLING AND COMPACTING SHALL BE COMPLETED IN ACCORDANCE WITH OPS 401.
 - THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TEMPORARY DRAINAGE MEASURES TO KEEP EXCAVATION AND WORK AREAS FREE FROM WATER DURING CONSTRUCTION IN ACCORDANCE WITH OPS 517 AND OPS 518, AS REQUIRED.
 - EXCAVATING, BACKFILLING AND COMPACTING FOR DRAIN BASINS SHALL BE COMPLETED IN ACCORDANCE WITH OPS 402.

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REINSTATEMENT OF ALL DISTURBED AREAS TO A CONDITION EQUAL TO OR BETTER THAN EXISTING TO THE SATISFACTION OF THE OWNER.
- COMPACTION OF ALL MATERIAL SHALL BE IN ACCORDANCE WITH OPS 501 AND SHALL BE VERIFIED BY GEOTECHNICAL CONSULTANT. REFER TO TESTING AND SUBMITTALS SECTIONS FOR GEOTECHNICAL REQUIREMENTS.
- WHERE THE CONTRACTOR REQUESTS A DEVIATION OR ALTERATION TO A STANDARD OR SPECIFICATION, THE CONTRACTOR SHALL, AT THEIR EXPENSE, AND PRIOR TO ANY NON-STANDARD WORK BEING PERFORMED, SEEK AND OBTAIN WRITTEN AUTHORIZATION FROM THE OWNER, AND PROVIDE THE AUTHORIZATION TO THE DEPARTMENTAL REPRESENTATIVE. REQUESTS MADE BY THE CONTRACTOR TO MODIFY AND/OR DELETE OWNER STANDARDS WILL NOT BE ACCEPTED DURING CONSTRUCTION.
- WHERE THE CONTRACTOR WISHES A MODIFICATION OR DEVIATION FROM THE DESIGN REQUIREMENTS OF THE CONTRACT DRAWINGS OR DOCUMENTS, THE CONTRACTOR WILL SUBMIT A DETAILED REQUEST IN WRITING TO THE DEPARTMENTAL REPRESENTATIVE FOR APPROVAL PRIOR TO ANY MODIFIED OR DEVIATED WORK BEING PERFORMED. SHOULD THE CONTRACTOR MAKE UNAUTHORIZED CHANGES OR DEVIATIONS TO THE DESIGN REQUIREMENTS WITHOUT THE WRITTEN AUTHORIZATION OF THE DEPARTMENTAL REPRESENTATIVE, THEY WILL BE RESPONSIBLE TO PERFORM AND/OR PAY FOR REMEDIES REQUIRED BY THE DEPARTMENTAL REPRESENTATIVE.

3. EROSION AND SEDIMENT CONTROL
- SEDIMENT MITIGATION AND THE CONTROL OF AIRBORNE CONTAMINANTS SHALL FORM A MAJOR COMPONENT IN THIS PROJECT. THE CONTRACTOR SHALL CONSIDER SEDIMENT MITIGATION PRIOR TO UNDERTAKING ANY ACTIVITY ON THE SITE AND TAKE ALL REQUIRED MEASURES AND PRECAUTIONS TO PREVENT SEDIMENT OR OTHER CONTAMINANTS FROM ENTERING THE NATURAL ENVIRONMENT OR AREAS BEYOND LIMITS OF THE WORK AREA. SEDIMENT MITIGATION REQUIREMENTS SHALL BE STRICTLY ENFORCED.
 - SEDIMENT MITIGATION FEATURES SHALL BE INSTALLED TO SUIT THE CONDITIONS. THE FOLLOWING OPS STANDARD DRAWINGS SHALL BE USED TO IMPLEMENT THE SEDIMENT MITIGATION MEASURES AS REQUIRED (ADDITIONAL MEASURES MAY BE REQUIRED):
 - 219.110 LIGHT DUTY SILT FENCE BARRIER
 - 219.150 SANDBAG BARRIER
 - 219.190 SILT FENCE FLOW CHECK DAM
 - THE CONTRACTOR SHALL ENSURE MUNICIPAL ROADWAYS ARE KEPT FREE OF MUD OR DIRT AND PROMPTLY CLEAN THE ROADWAY SHOULD THERE BE AN OCCURRENCE.
 - SEDIMENT MITIGATION MEASURES SHALL BE MONITORED ON A REGULAR BASIS AND REPAIRED OR MAINTAINED AS REQUIRED TO ENSURE SEDIMENT OR AIRBORNE CONTAMINANTS DO NOT ENTER THE NATURAL ENVIRONMENT.
 - ALL SEDIMENT MITIGATION MEASURES ARE TO REMAIN IN PLACE UNTIL VEGETATION IS WELL ESTABLISHED. CONTRACTOR TO REMOVE SEDIMENT MITIGATION ONCE VEGETATION IS WELL ESTABLISHED.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR DUST SUPPRESSION IN ACCORDANCE WITH OPS 506. WATER SHALL BE PROVIDED AS REQUIRED TO PREVENT DUST.

4. LANDSCAPING
- ALL GRASSED AREAS DISTURBED BY CONSTRUCTION SHALL BE RESTORED WITH 100mm TOPSOIL AND SOD IN ACCORDANCE WITH OPS 802 AND 803.
 - SOD PLACED ON SLOPES 2H:1V OR STEEPER SHALL BE STAKED USING 19mmX19mmX300mm WOOD STAKES. STAKES SHALL BE INSTALLED WITHIN 100mm OF THE END OF EACH ROLL OF SOD. EACH ROLL OF SOD SHALL INCLUDE A MINIMUM OF THREE STAKES. SODDING TO BE COUNTERSUNK TO EXISTING SURFACE GRADE LEVEL AT ALL MATCH-IN POINTS.
 - AT THE TIME OF FINAL INSPECTION, ALL SODDED AREAS SHALL BE IN A HEALTHY, VIGOROUS GROWING CONDITION, IN FULL ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS.

BENCH MARKS

BM #	NORTHING (m)	EASTING (m)	ELEVATION (m)	DESCRIPTION
BM 1	4916563.474	318747.433	93.739	BRASS CAP

ISSUED FOR TENDER
29 OCT 2021



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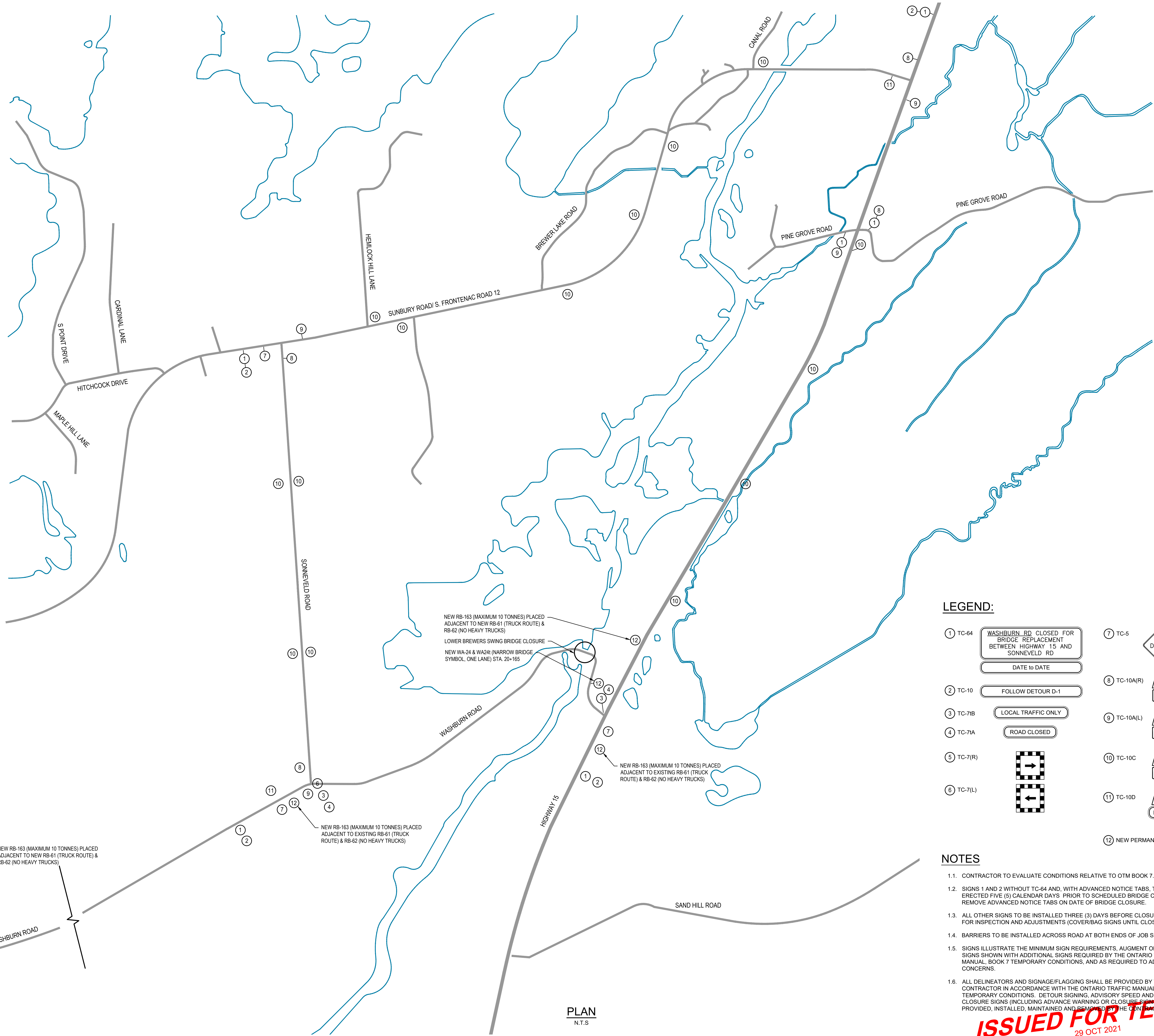
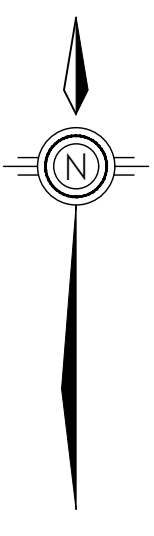
Ontario

LOWER BREWERS SWING BRIDGE REPLACEMENT
 RIDEAU CANAL

drawing title
 titre du dessin

DETOUR PLAN &
 OFF-SITE PERMANENT
 SIGNAGE INSTALLATION

drawn by dessiné par	M. HUNTER
designed by conçu par	M. HUNTER
approved by approuvé par	S. DAVIDSON
bid offre	TYLER ATKINSON
project manager administrateur de projets	
project date date du projet	2021-10-29
project no. no. du projet	20039289
drawing no. dessiné no.	C2



LEGEND:

- 1 TC-64 WASHBURN RD CLOSED FOR BRIDGE REPLACEMENT BETWEEN HIGHWAY 15 AND SONNEVELD RD
 DATE TO DATE
- 2 TC-10 FOLLOW DETOUR D-1
- 3 TC-7(B) LOCAL TRAFFIC ONLY
- 4 TC-7(A) ROAD CLOSED
- 5 TC-7(R)
- 6 TC-7(L)
- 7 TC-5
- 8 TC-10(A)(R)
- 9 TC-10(A)(L)
- 10 TC-10(C)
- 11 TC-10(D)
- 12 NEW PERMANENT SIGNS

NOTES

- 1.1. CONTRACTOR TO EVALUATE CONDITIONS RELATIVE TO OTM BOOK 7.
- 1.2. SIGNS 1 AND 2 WITHOUT TC-64 AND, WITH ADVANCED NOTICE TABS, TO BE ERECTED FIVE (5) CALENDAR DAYS PRIOR TO SCHEDULED BRIDGE CLOSURE DATE. REMOVE ADVANCED NOTICE TABS ON DATE OF BRIDGE CLOSURE.
- 1.3. ALL OTHER SIGNS TO BE INSTALLED THREE (3) DAYS BEFORE CLOSURE TO ALLOW FOR INSPECTION AND ADJUSTMENTS (COVER/BAG SIGNS UNTIL CLOSURE).
- 1.4. BARRIERS TO BE INSTALLED ACROSS ROAD AT BOTH ENDS OF JOB SITE.
- 1.5. SIGNS ILLUSTRATE THE MINIMUM SIGN REQUIREMENTS, AUGMENT OR ADJUST SIGNS SHOWN WITH ADDITIONAL SIGNS REQUIRED BY THE ONTARIO TRAFFIC MANUAL, BOOK 7 TEMPORARY CONDITIONS, AND AS REQUIRED TO ADDRESS CONCERNS.
- 1.6. ALL DELINEATORS AND SIGNAGE/FLAGGING SHALL BE PROVIDED BY THE CONTRACTOR IN ACCORDANCE WITH THE ONTARIO TRAFFIC MANUAL, BOOK 7, TEMPORARY CONDITIONS. DETOUR SIGNING, ADVISORY SPEED AND LANE CLOSURE SIGNS (INCLUDING ADVANCE WARNING OR CLOSURE SIGNS) SHALL BE PROVIDED, INSTALLED, MAINTAINED AND REMOVED BY THE CONTRACTOR.

ISSUED FOR TENDER
 29 OCT 2021

PLAN
 N.T.S.



EXISTING LEGEND:

	EDGE OF PAVEMENT
	BOTTOM OF SLOPE
	TOP OF SLOPE
	OVERHEAD WIRE
	GUY ANCHOR
	MAJOR CONTOUR
	MINOR CONTOUR
	EXISTING GRADE
	SOREHOLE
	SIGN
	UTILITY POLE
	WOODEN POST
	WOODEN GATE
	DECIDUOUS TREE
	CONIFEROUS TREE
	BUILDING ENTRANCE
	CONCRETE
	BUILDING
	BENCH MARK

REMOVAL LEGEND:

	TYPICAL REMOVAL
	RELOCATION
	FULL DEPTH ASPHALT REMOVAL
	PARTIAL DEPTH ASPHALT REMOVAL
	CONCRETE REMOVAL



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

project title
titre du projet
Ontario

LOWER BREWERS SWING BRIDGE REPLACEMENT RIDEAU CANAL

drawing title
titre du dessin
WASHBURN ROAD REMOVALS PLAN

drawn by
dessiné par
M.HUNTER

designed by
conçu par
M.HUNTER

approved by
approuvé par
S.DAVIDSON

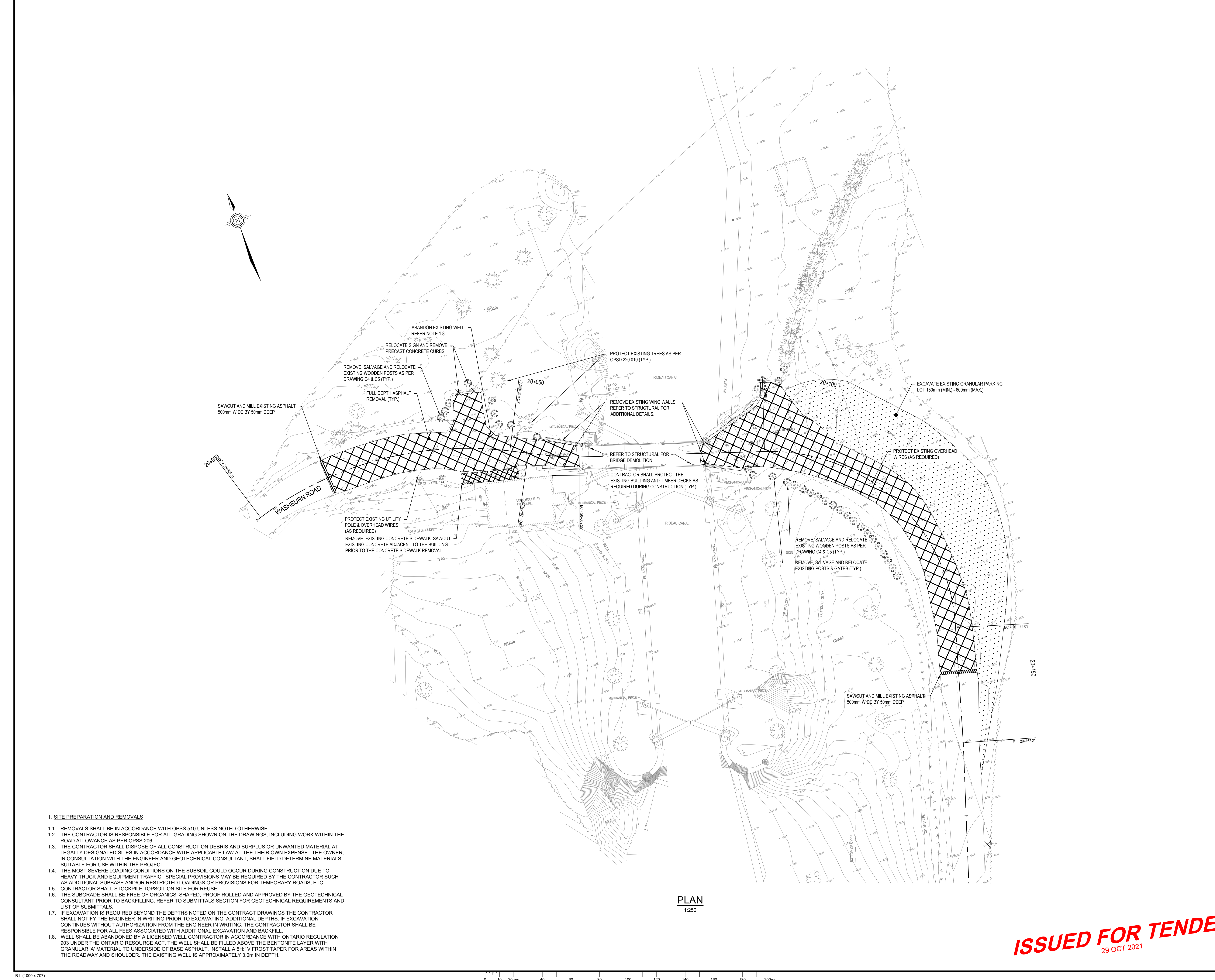
bid
offre
TYLER ATKINSON

project manager
administrateur de projets

project date
date du projet
2021-10-29

project no.
no. du projet
20039289

drawing no.
dessiné no.
C3



PLAN
1:250

- 1. SITE PREPARATION AND REMOVALS**
- REMOVALS SHALL BE IN ACCORDANCE WITH OPSS 510 UNLESS NOTED OTHERWISE.
 - THE CONTRACTOR IS RESPONSIBLE FOR ALL GRADING SHOWN ON THE DRAWINGS, INCLUDING WORK WITHIN THE ROAD ALLOWANCE AS PER OPSS 206.
 - THE CONTRACTOR SHALL DISPOSE OF ALL CONSTRUCTION DEBRIS AND SURPLUS OR UNWANTED MATERIAL AT LEGALLY DESIGNATED SITES IN ACCORDANCE WITH APPLICABLE LAW AT THE THEIR OWN EXPENSE. THE OWNER, IN CONSULTATION WITH THE ENGINEER AND GEOTECHNICAL CONSULTANT, SHALL FIELD DETERMINE MATERIALS SUITABLE FOR USE WITHIN THE PROJECT.
 - THE MOST SEVERE LOADING CONDITIONS ON THE SUBSOIL COULD OCCUR DURING CONSTRUCTION DUE TO HEAVY TRUCK AND EQUIPMENT TRAFFIC. SPECIAL PROVISIONS MAY BE REQUIRED BY THE CONTRACTOR SUCH AS ADDITIONAL SUBBASE AND/OR RESTRICTED LOADINGS OR PROVISIONS FOR TEMPORARY ROADS, ETC.
 - CONTRACTOR SHALL STOCKPILE TOPSOIL ON SITE FOR REUSE.
 - THE SUBGRADE SHALL BE FREE OF ORGANICS, SHAPED, PROOF ROLLED AND APPROVED BY THE GEOTECHNICAL CONSULTANT PRIOR TO BACKFILLING. REFER TO SUBMITTALS SECTION FOR GEOTECHNICAL REQUIREMENTS AND LIST OF SUBMITTALS.
 - IF EXCAVATION IS REQUIRED BEYOND THE DEPTHS NOTED ON THE CONTRACT DRAWINGS THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING PRIOR TO EXCAVATING. ADDITIONAL DEPTHS, IF EXCAVATION CONTINUES WITHOUT AUTHORIZATION FROM THE ENGINEER IN WRITING, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FEES ASSOCIATED WITH ADDITIONAL EXCAVATION AND BACKFILL.
 - WELL SHALL BE ABANDONED BY A LICENSED WELL CONTRACTOR IN ACCORDANCE WITH ONTARIO REGULATION 903 UNDER THE ONTARIO RESOURCE ACT. THE WELL SHALL BE FILLED ABOVE THE BENTONITE LAYER WITH GRANULAR 'A' MATERIAL TO UNDERSIDE OF BASE ASPHALT. INSTALL A 5H:1V FROST TAPER FOR AREAS WITHIN THE ROADWAY AND SHOULDER. THE EXISTING WELL IS APPROXIMATELY 3.0m IN DEPTH.

ISSUED FOR TENDER
29 OCT 2021



- EXISTING LEGEND:**
- EDGE OF PAVEMENT
 - BOTTOM OF SLOPE
 - TOP OF SLOPE
 - OVERHEAD WIRE
 - GUY ANCHOR
 - MAJOR CONTOUR
 - MINOR CONTOUR
 - EXISTING GRADE
 - BENCHMARK
 - SIGN
 - UTILITY POLE
 - WOODEN POST
 - WOODEN GATE
 - DECIDUOUS TREE
 - CONIFEROUS TREE
 - BUILDING ENTRANCE
 - CONCRETE
 - BUILDING
 - BENCH MARK
- PROPOSED LEGEND:**
- ALIGNMENT
 - EDGE OF PAVEMENT
 - EDGE OF SHOULDER
 - BOTTOM OF SLOPE (FILL LIMITS)
 - TOP OF SLOPE
 - SS - SWALE c/w SUBDRAIN
 - SUBDRAIN
 - HEAVY DUTY SILT FENCE
 - GRADE ELEVATION
 - CATCH BASIN
 - TWSI
 - SIGN
 - FULL DEPTH ASPHALT
 - PARTIAL DEPTH ASPHALT
 - GRANULAR PARKING
 - CONCRETE SIDEWALK
 - RELOCATED WOOD POST
 - RELOCATED WOOD GATE
 - 100mm WIDE SOLID YELLOW PAVEMENT MARKINGS
 - 500mm WIDE DURABLE WHITE PAVEMENT MARKINGS

04		
03		
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- A drawing no. - where detail required
 B dessin no. - ou détail exigé
- C drawing no. - where detailed
 C dessin no. - ou détaillé

project title
titre du projet

Ontario

LOWER BREWERS SWING BRIDGE REPLACEMENT
 RIDEAU CANAL

drawing title
titre du dessin

WEST APPROACH
 STA. 20+000 TO STA. 20+075

drawn by
dessiné par M. HUNTER

designed by
conçu par M. HUNTER

approved by
approuvé par S. DAVIDSON

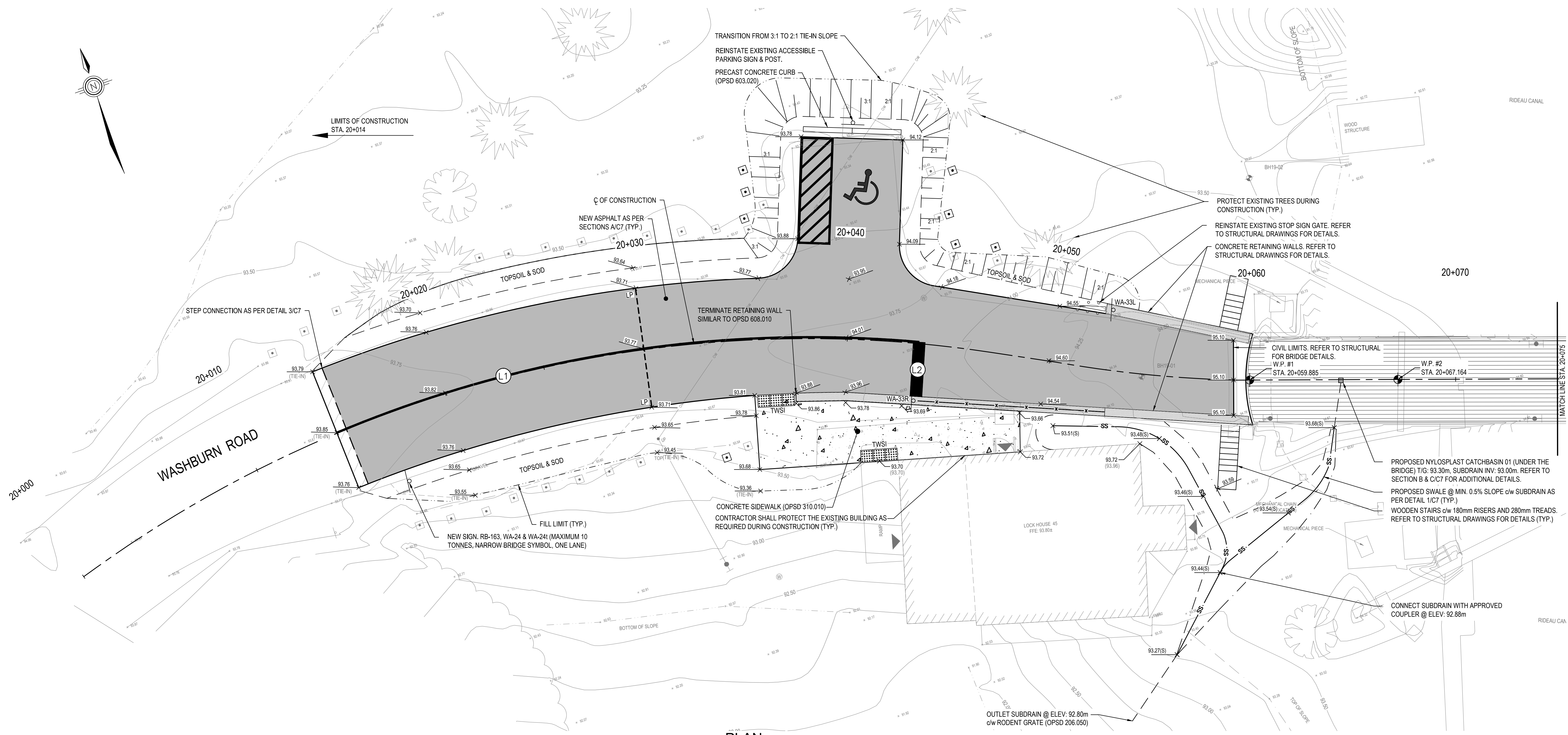
bid office
bureau de soumission TYLER ATKINSON

project manager
administrateur de projets

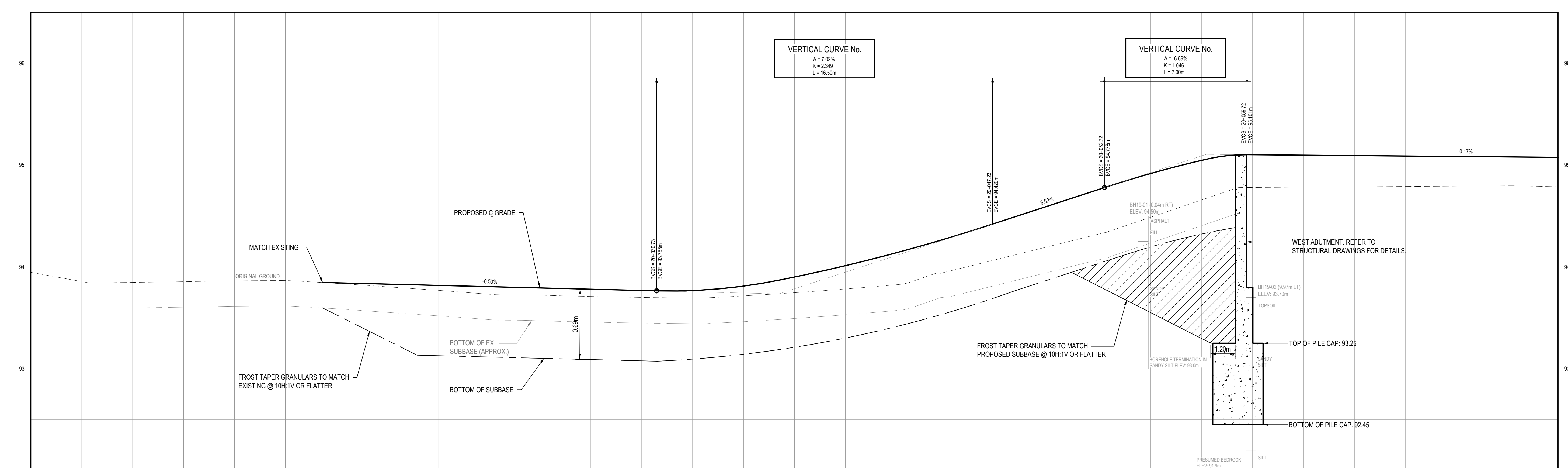
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project no.
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drawing no.
dessiné no. C4



PROFILE
H1:100 V1:20



STATION	20+000	20+005	20+010	20+015	20+020	20+025	20+030	20+035	20+040	20+045	20+050	20+055	20+060	20+065	20+070	20+075
CENTERLINE GRADE FINISHED	93.54	93.55	93.56	93.54	93.51	93.47	93.42	93.37	93.32	93.27	93.22	93.17	93.12	93.07	93.02	92.97
CENTERLINE GRADE EXISTING	93.54	93.55	93.56	93.54	93.51	93.47	93.42	93.37	93.32	93.27	93.22	93.17	93.12	93.07	93.02	92.97

ISSUED FOR TENDER
 29 OCT 2021



- EXISTING LEGEND:**
- EDGE OF PAVEMENT
 - BOTTOM OF SLOPE
 - TOP OF SLOPE
 - OVERHEAD WIRE
 - GUY ANCHOR
 - MAJOR CONTOUR
 - MINOR CONTOUR
 - EXISTING GRADE
 - BENCHMARK
 - SIGN
 - UTILITY POLE
 - WOODEN POST
 - WOODEN GATE
 - DECIDUOUS TREE
 - CONIFEROUS TREE
 - BUILDING ENTRANCE
 - CONCRETE
 - BUILDING
 - BENCH MARK
- PROPOSED LEGEND:**
- ALIGNMENT
 - EDGE OF PAVEMENT
 - EDGE OF SHOULDER
 - BOTTOM OF SLOPE (FILL LIMITS)
 - TOP OF SLOPE
 - SWALE c/w SUBDRAIN
 - SUBDRAIN
 - HEAVY DUTY SILT FENCE
 - GRADE ELEVATION
 - CATCH BASIN
 - TWSI
 - SIGN
 - FULL DEPTH ASPHALT
 - PARTIAL DEPTH ASPHALT
 - GRANULAR PARKING
 - CONCRETE SIDEWALK
 - RELOCATED WOOD POST
 - 100mm WIDE SOLID YELLOW PAVEMENT MARKINGS
 - 600mm WIDE DURABLE WHITE PAVEMENT MARKINGS

04		
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01	ISSUED FOR TENDER	2021/10/29
revision		date

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A	Detail No.	
B	No. of detail	
C	drawing no. - where detail required	
	dessein no. - ou detail exigé	
	drawing no. - where detailed	
	dessein no. - ou détaillé	

project title
titre du projet

Ontario

LOWER BREWERS SWING BRIDGE REPLACEMENT
 RIDEAU CANAL

drawing title
titre du dessin

**EAST APPROACH
 STA. 20+075 TO STA. 20+150**

drawn by
dessiné par

M. HUNTER

designed by
conçu par

M. HUNTER

approved by
approuvé par

S. DAVIDSON

bid office
bureau de soumission

TYLER ATKINSON

project manager
administrateur de projets

project date
date du projet

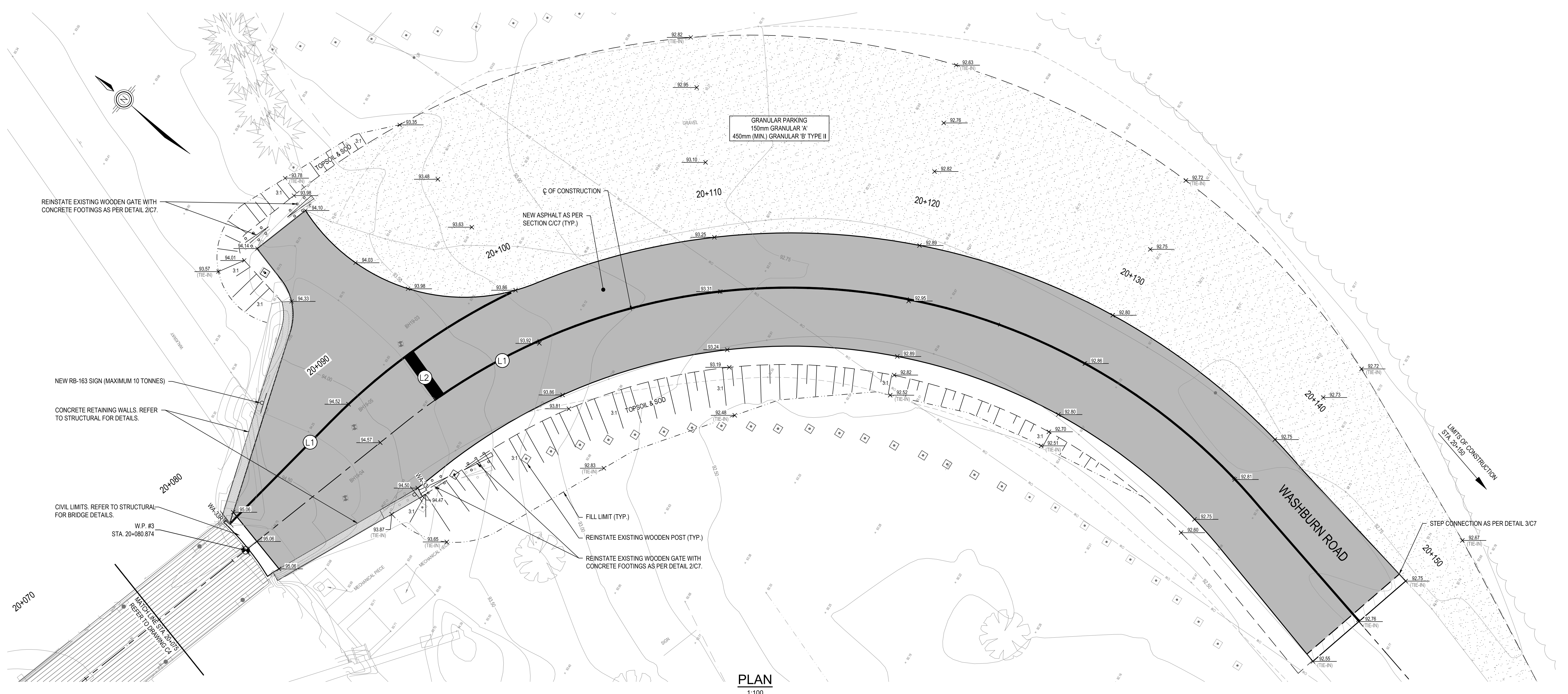
2021-10-29

project no.
no. du projet

20039289

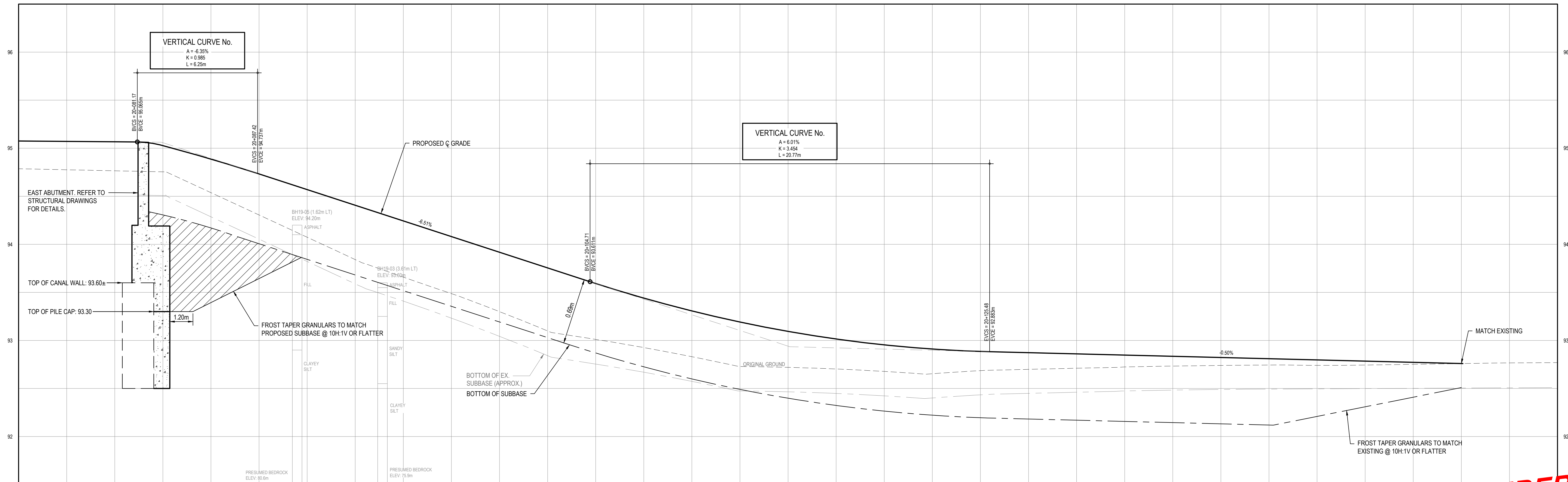
drawing no.
dessiné no.

C5



PLAN
1:100

PROFILE
H1:100 V1:20



STATION	20+080	20+085	20+090	20+095	20+100	20+105	20+110	20+115	20+120	20+125	20+130	20+135	20+140	20+145	20+150
CENTERLINE GRADE	93.77	93.97	94.17	94.37	94.57	94.77	94.97	95.17	95.37	95.57	95.77	95.97	96.17	96.37	96.57
FINISHED	93.77	93.97	94.17	94.37	94.57	94.77	94.97	95.17	95.37	95.57	95.77	95.97	96.17	96.37	96.57
EXISTING	93.77	93.97	94.17	94.37	94.57	94.77	94.97	95.17	95.37	95.57	95.77	95.97	96.17	96.37	96.57

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 29 OCT 2021



NOTES:
 1. REFER TO SECTION A/C7 FOR TYPICAL ASPHALT SECTION.
 2. RETAINING WALLS ARE SHOWN FOR ILLUSTRATIVE PURPOSES ONLY. REFER TO STRUCTURAL DRAWINGS FOR DETAILS.



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	dessin no. - ou détaillé	

project title
 titre du projet

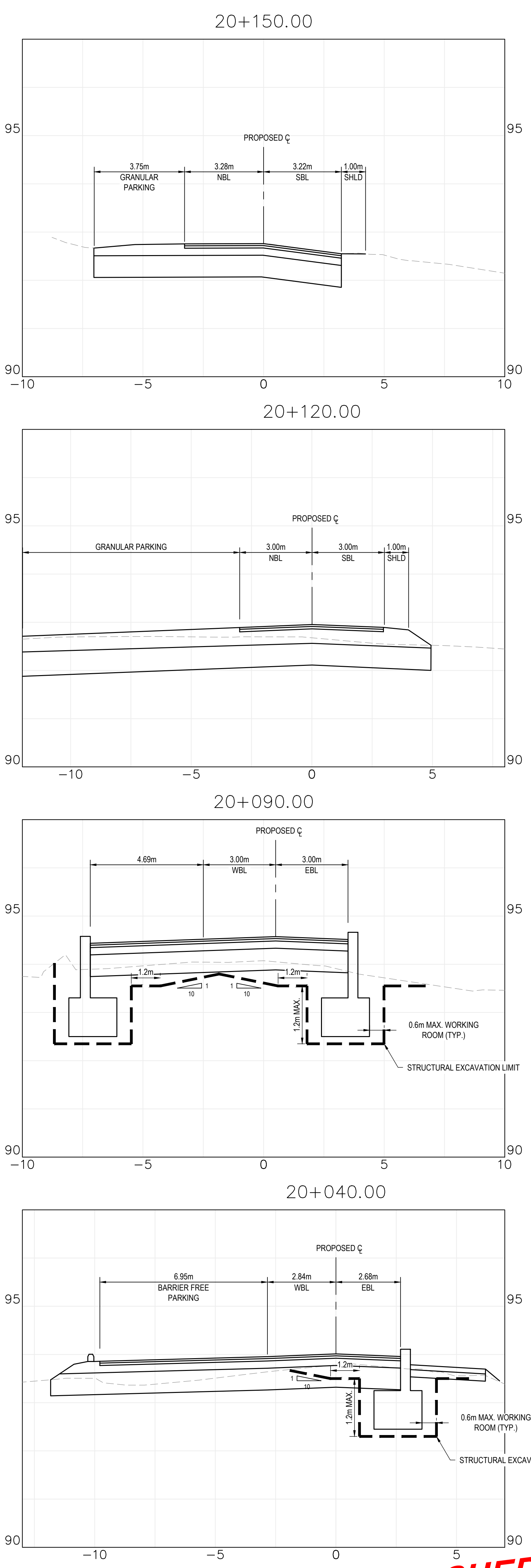
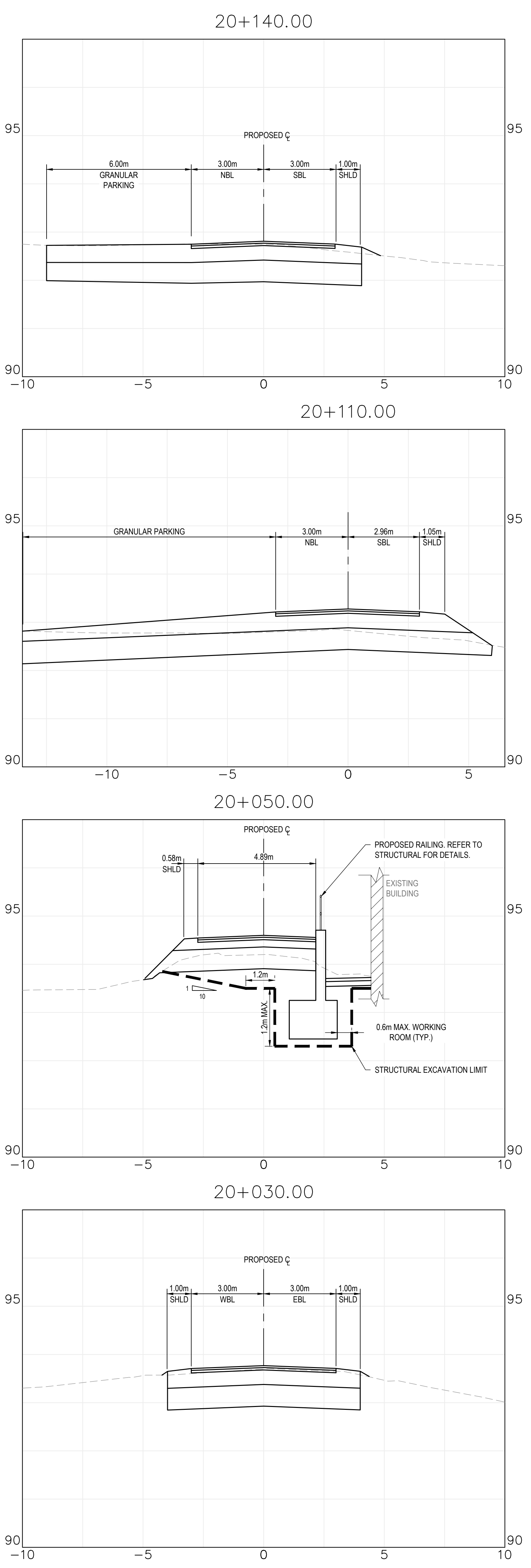
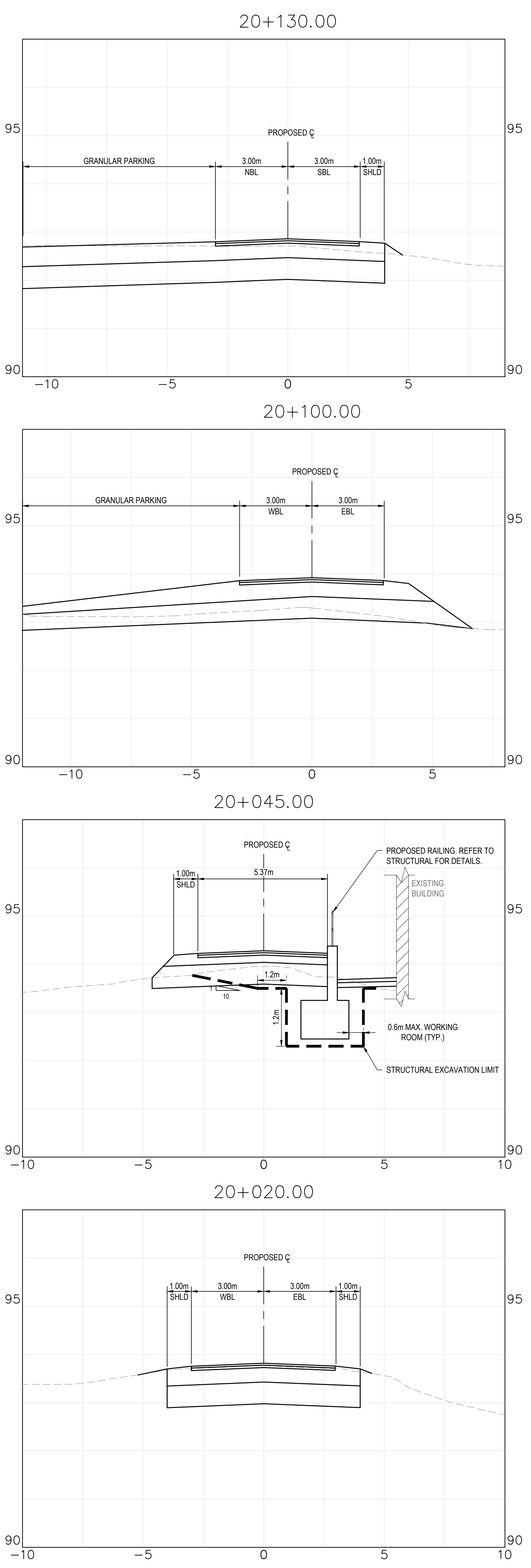
Ontario

LOWER BREWERS SWING BRIDGE REPLACEMENT
 RIDEAU CANAL

drawing title
 titre du dessin

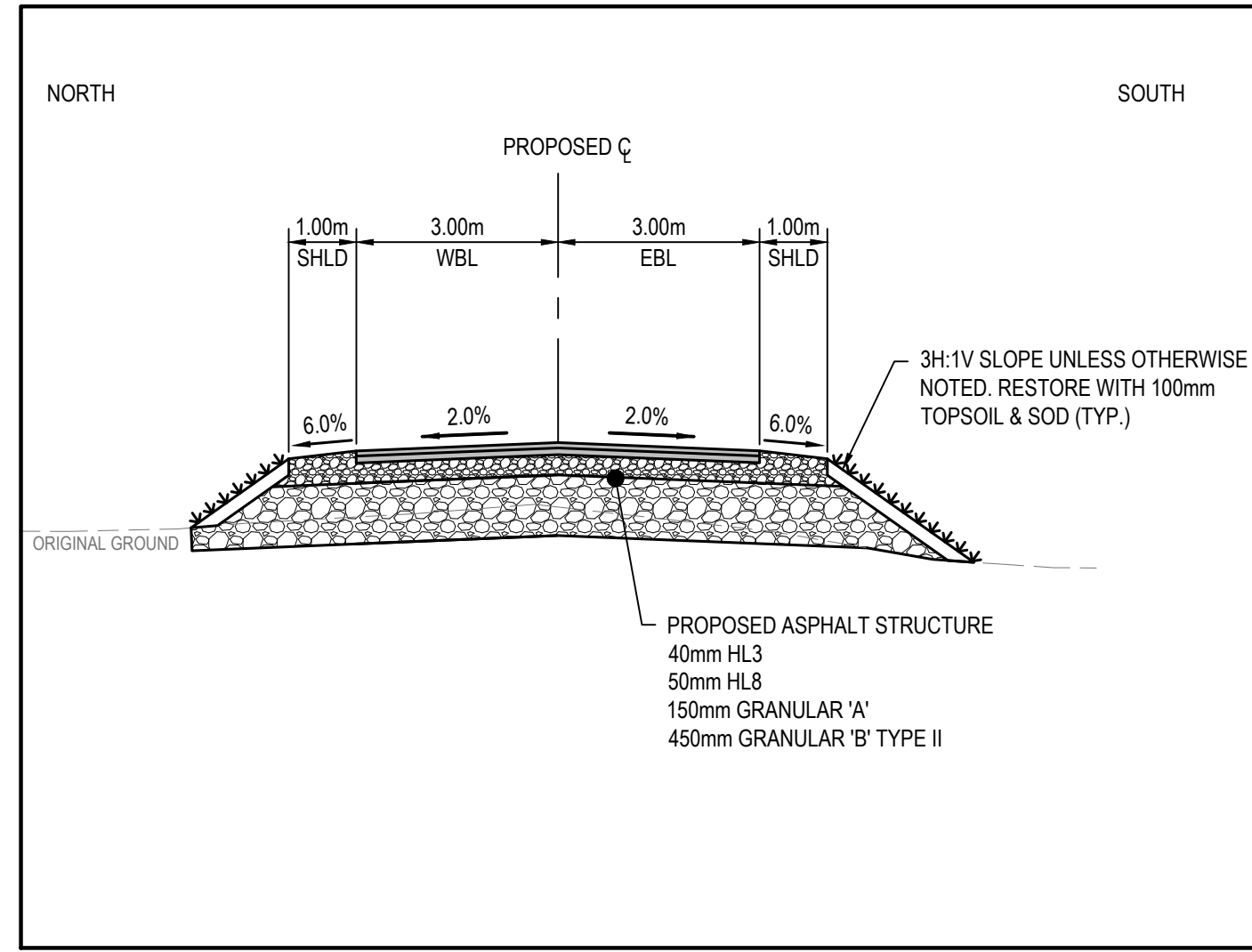
WASHBURN ROAD CROSS SECTIONS

drawn by dessiné par	M.HUNTER
designed by conçu par	M.HUNTER
approved by approuvé par	S.DAVIDSON
bid offre	TYLER ATKINSON
project manager administrateur de projets	
project date date du projet	2021-10-29
project no. no. du projet	20039289
drawing no. dessiné no.	C6

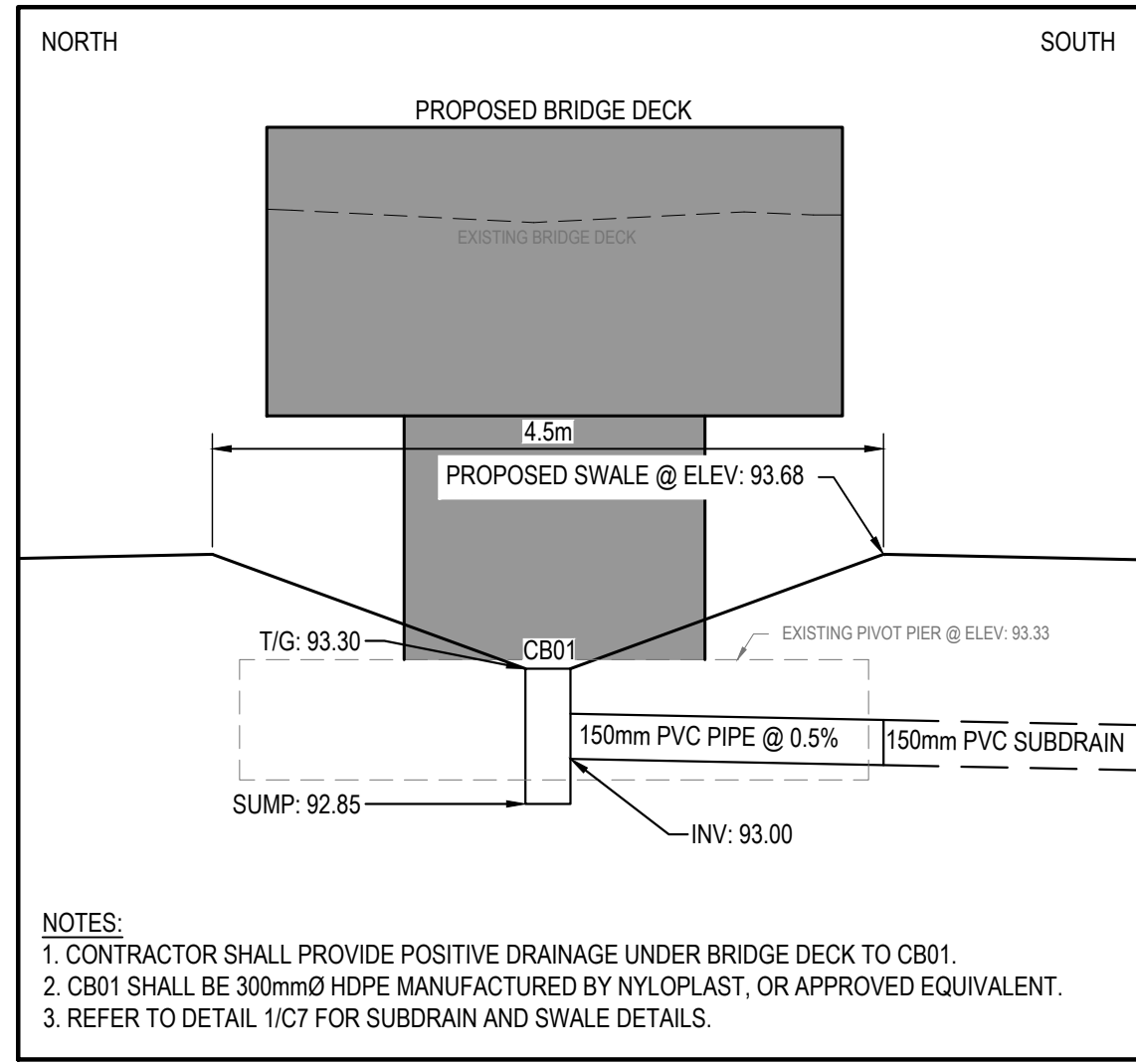


CROSS SECTIONS
 H1:100 V1:50

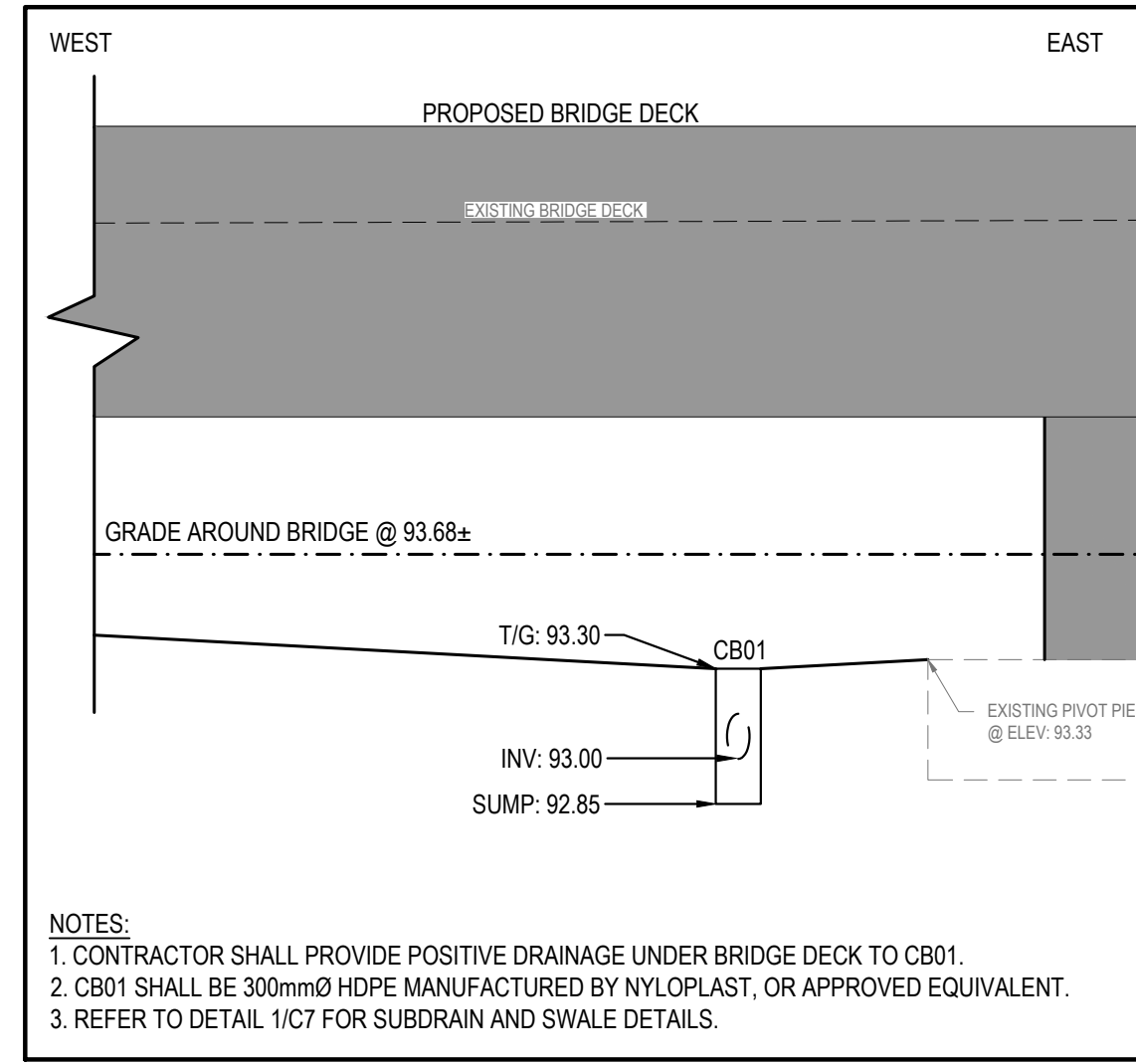
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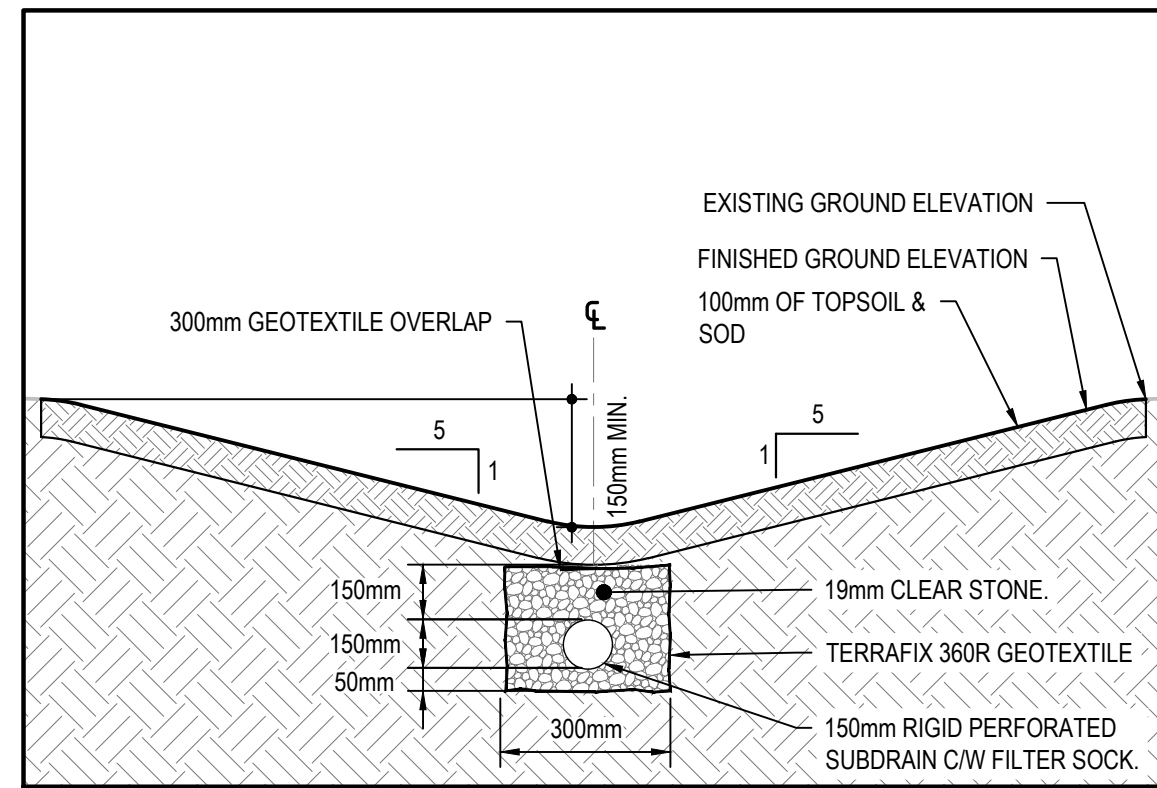
A
C7
TYPICAL ROAD SECTION
SCALE: H1:100 V1:50



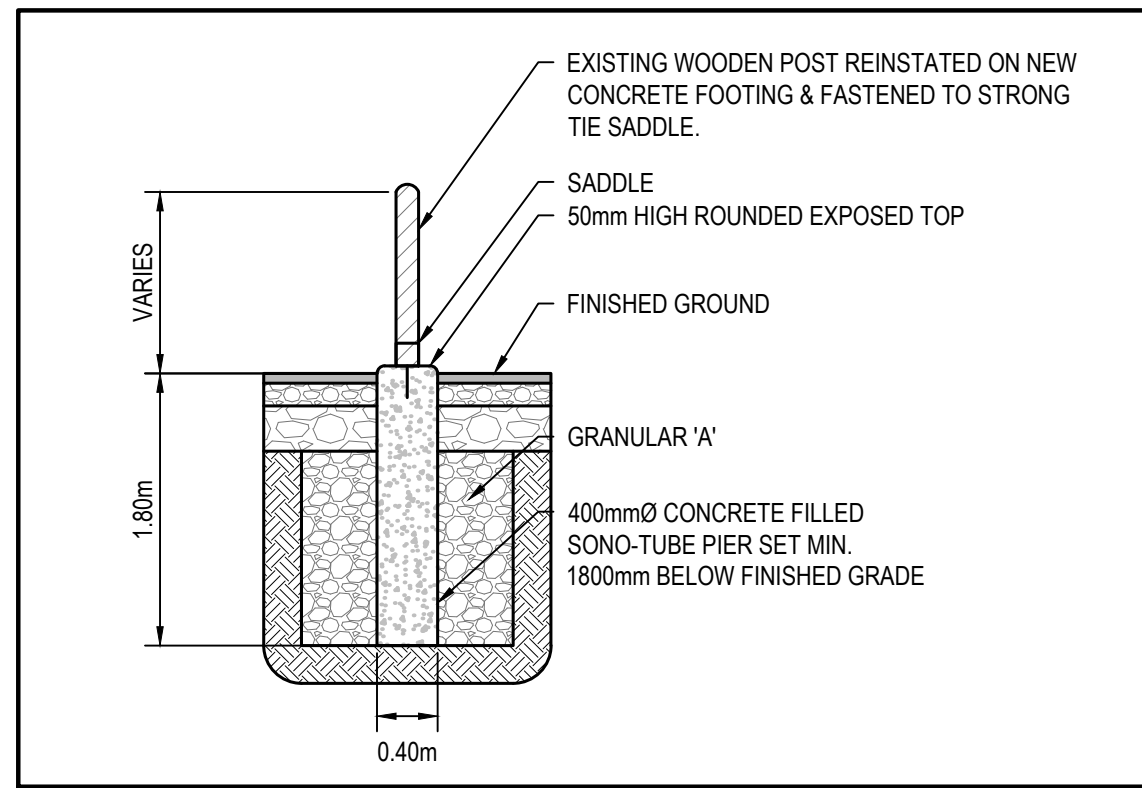
B
C7
CB01 SECTION B
SCALE: H1:50 V1:25



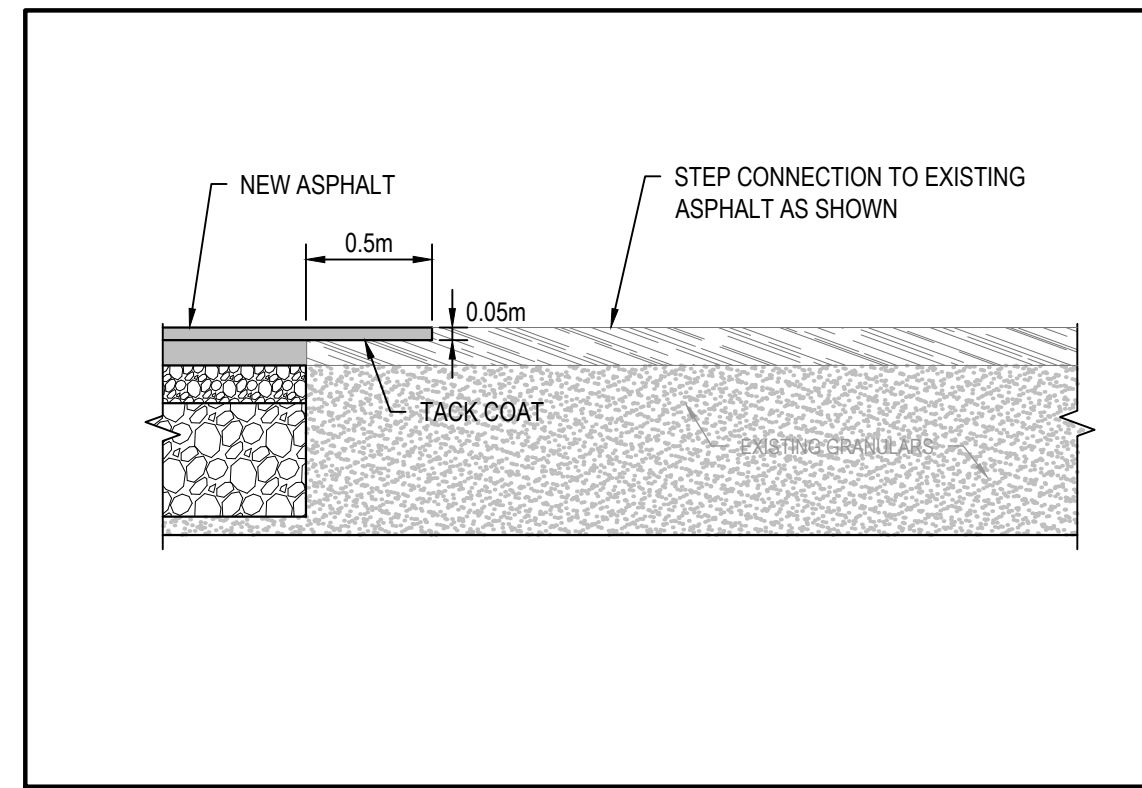
C
C7
CB01 SECTION C
SCALE: H1:50 V1:25



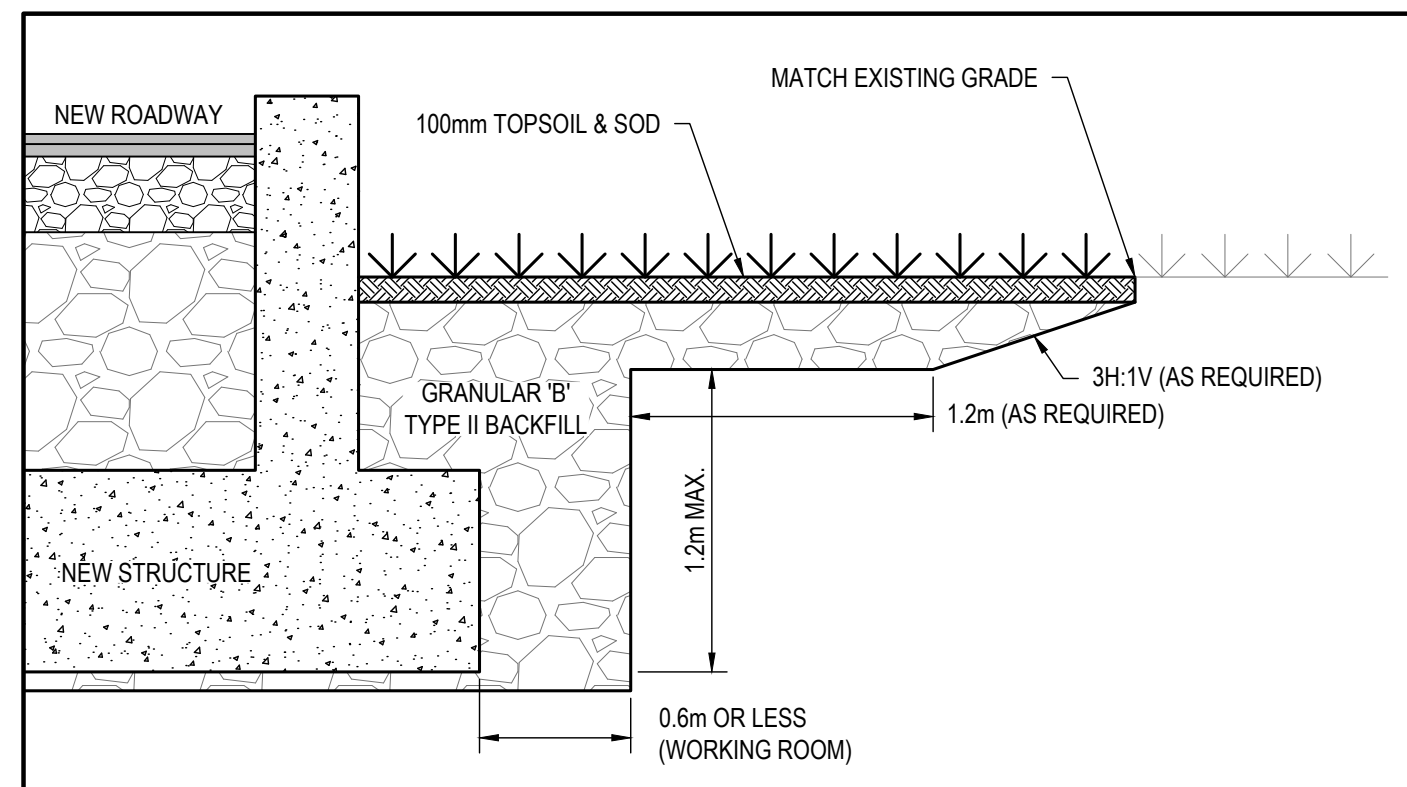
1
C7
TYPICAL SWALE CROSS-SECTION DETAIL
SCALE: N.T.S.



2
C7
TYPICAL POST DETAIL
SCALE: 1:50



3
C7
ASPHALT STEP CONNECTION
SCALE: N.T.S.



4
C7
TYPICAL STRUCTURES BACKFILL (IN LANDSCAPE)
SCALE: N.T.S.



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project title
titre du projet
Ontario
LOWER BREWERS SWING BRIDGE REPLACEMENT RIDEAU CANAL

drawing title
titre du dessin
WASHBURN ROAD DETAILS

drawn by
dessiné par
M.HUNTER

designed by
conçu par
M.HUNTER

approved by
approuvé par
S.DAVIDSON

bid office
bureau de soumission
TYLER ATKINSON

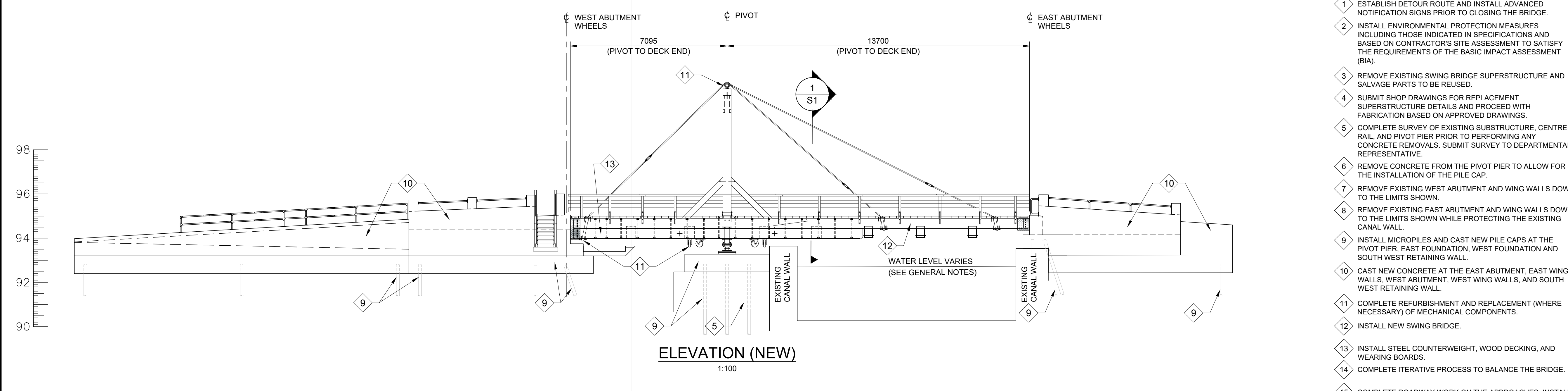
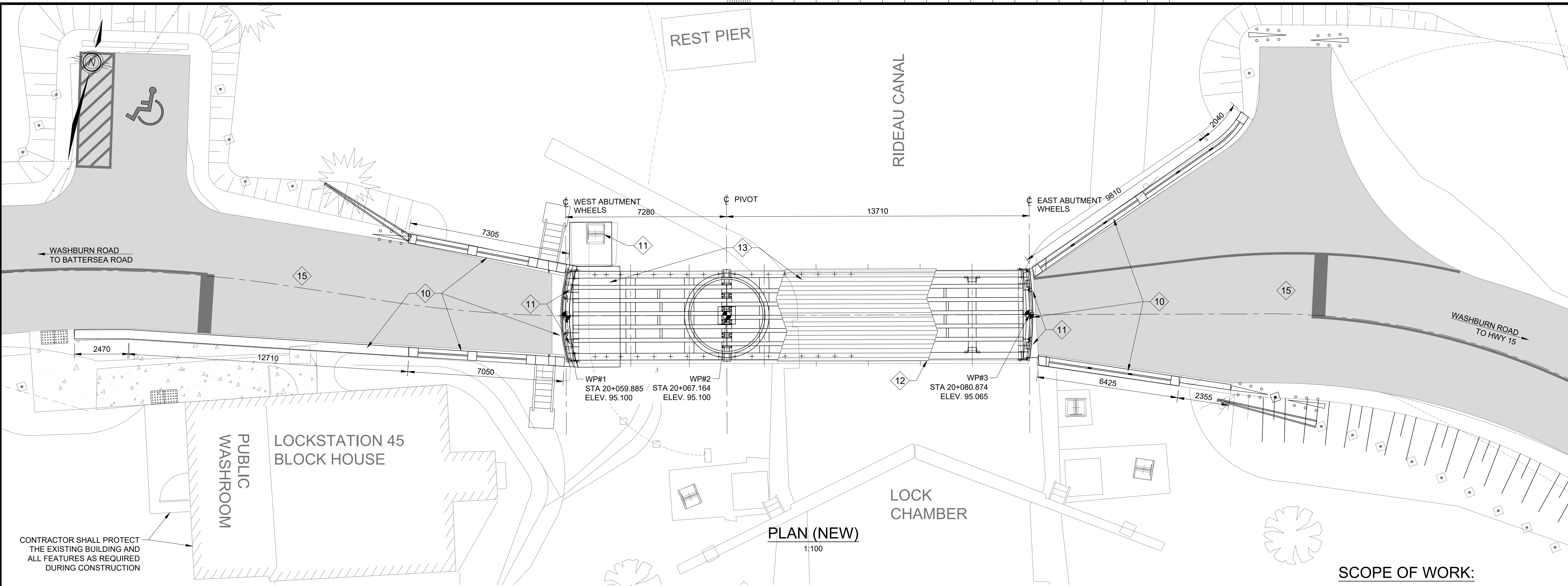
project manager
administrateur de projets

project date
date du projet
2021-10-29

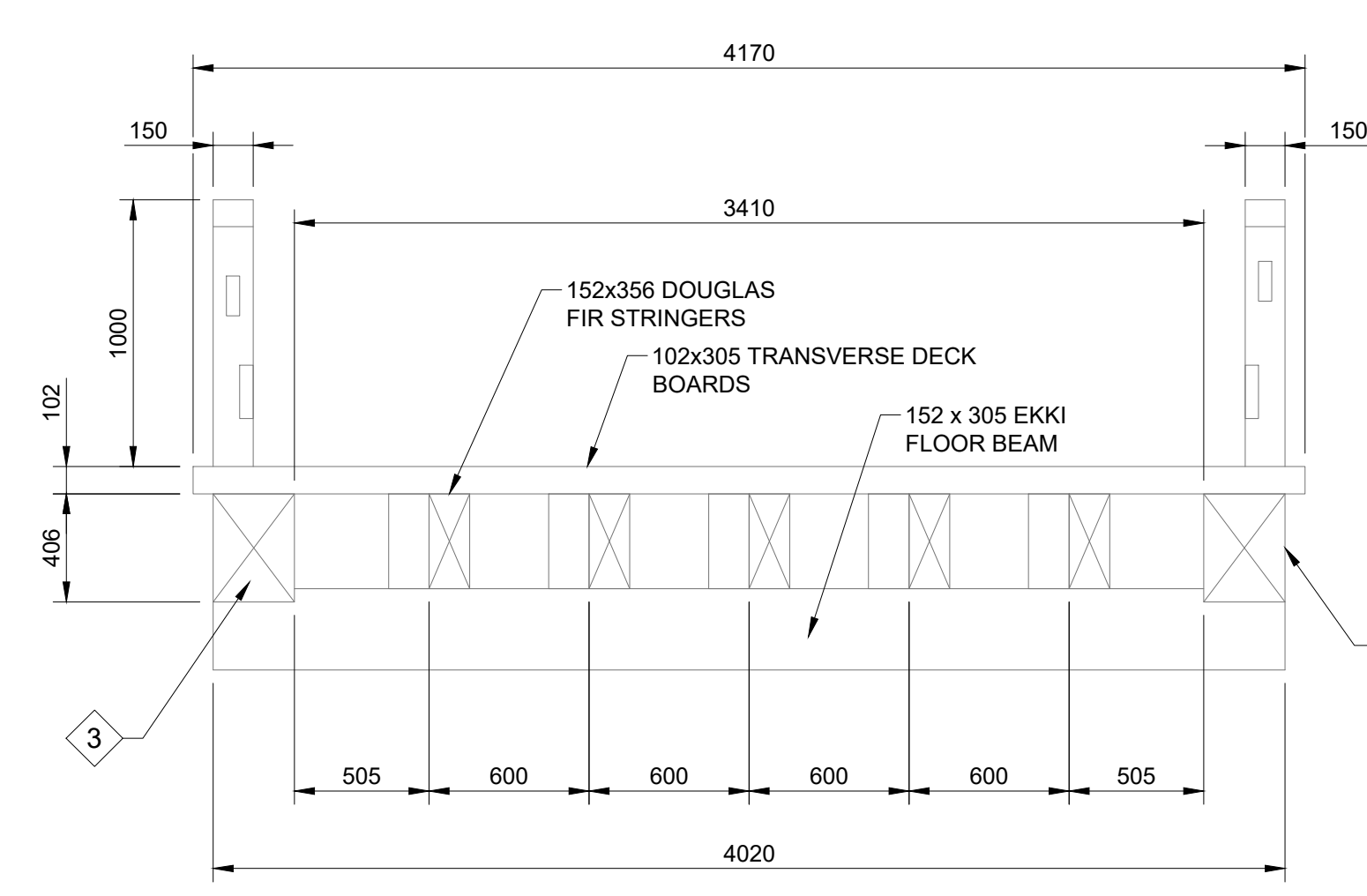
project no.
no. du projet
20039289

drawing no.
dessiné no.
C7

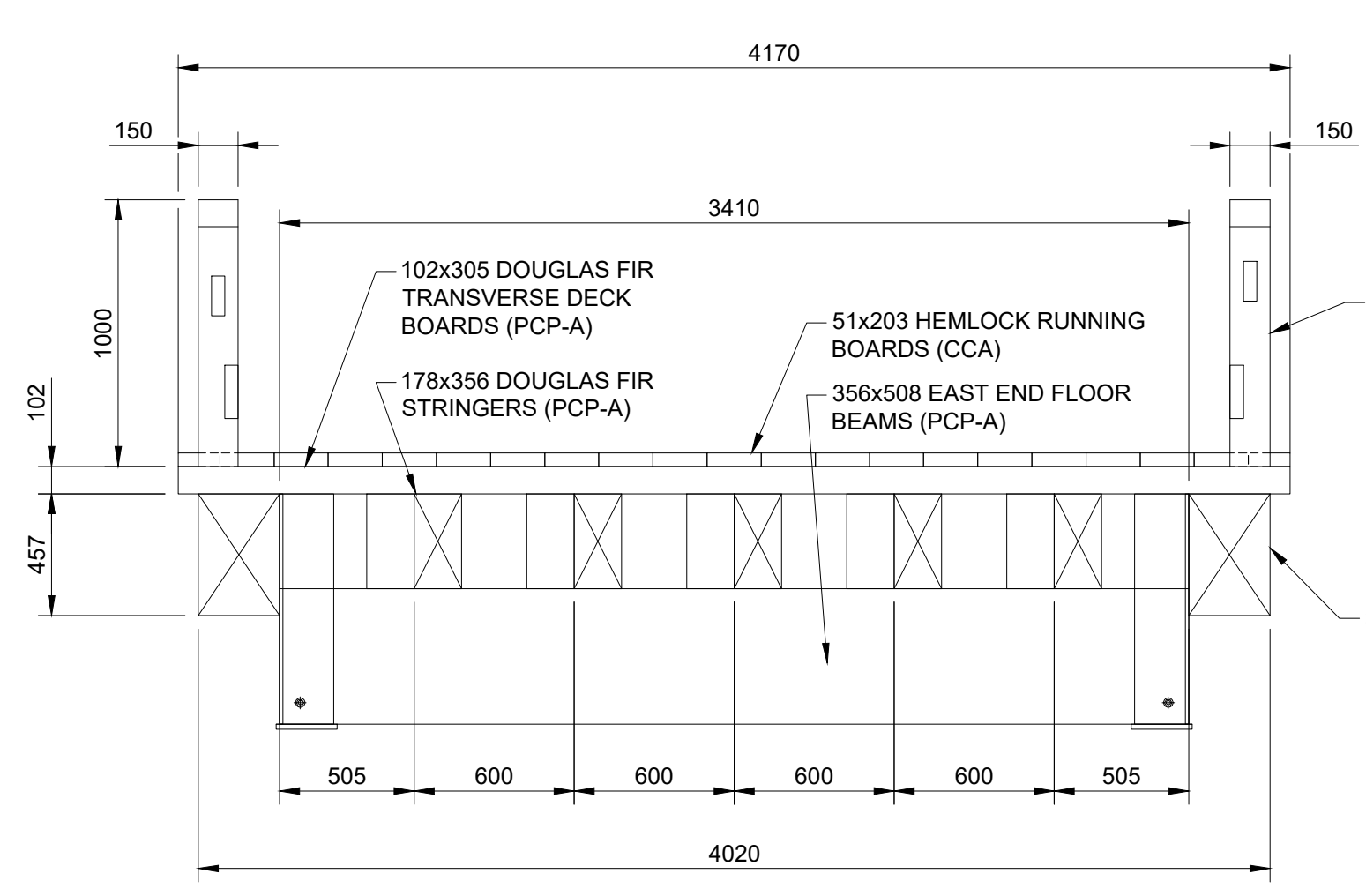
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29 OCT 2021



NOTE:
LOAD LIMIT AFTER REPLACEMENT 10 TONNES



1 EXISTING BRIDGE
S1 1:25



1 NEW BRIDGE
S1 1:25

NOTES:

GENERAL:

- DO NOT SCALE DRAWINGS
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.
- THE LATEST VERSION OF ALL REFERENCED DOCUMENTS SHALL APPLY.
- ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS, CSA, FEDERAL, PROVINCIAL, AND ALL OTHER APPROPRIATE STANDARDS.
- DIMENSIONS RELATING TO EXISTING CONSTRUCTION MUST BE FIELD VERIFIED BY CONTRACTOR BEFORE STARTING ANY SHOP DRAWINGS OR WORK OR FABRICATION.
- THE CONTRACTOR SHALL EXAMINE THE SITE AND SATISFY THEMSELVES OF THE ACTUAL CONDITIONS AND REQUIREMENTS OF THE WORK.
- THE CONTRACTOR IS RESPONSIBLE FOR SAFETY ON THE JOB SITE AND DESIGN, INSTALLATION AND SUPERVISION OF ALL TEMPORARY BRACING, LOADS AND SUPPORTS.
- FEATURES OF CONSTRUCTION NOT FULLY SHOWN SHALL BE OF THE SAME CHARACTER AS SHOWN FOR SIMILAR CONDITIONS.
- INSTALL ALL NECESSARY SCAFFOLDING, HOARDING BARGES, ETC. TO COMPLETE THE WORK, ALL IN ACCORDANCE WITH MINISTRY OF LABOUR REQUIREMENTS.
- ACCESS AND WORK AND STORAGE AREAS SHALL BE LIMITED TO THOSE AREAS DELINEATED ON THE DRAWINGS.
- ALL REMOVALS TO BE COMPLETED SO AS NOT TO CAUSE DAMAGE TO ANY STRUCTURES TO REMAIN.
- ENSURE ALL DEBRIS FROM THE DEMOLITION IS COLLECTED AND REMOVED FROM THE SITE. DEVELOP A CATCHMENT SYSTEM AND/OR WORK METHODS TO ENSURE ALL DEBRIS IS CAPTURED AND REMOVED FROM SITE. ENSURE NO RELEASE OF DELETERIOUS MATERIAL INTO WATER COURSES OR OTHER AREAS ADJACENT TO THE WORK SITE.
- THE LOWER BREWERS WATER CROSSING IS A NATIONAL HISTORIC SITE. STOP WORK AND NOTIFY DEPARTMENTAL REPRESENTATIVE IMMEDIATELY UPON DISCOVERY OF ARCHAEOLOGICAL ARTIFACTS.
- MINIMIZE DUST AND NOISE.
- MAINTAIN WORK SITE IN A NEAT AND ORDERLY MANNER TO THE SATISFACTION OF THE DEPARTMENTAL REPRESENTATIVE.
- ALL DEBRIS SHALL BE REMOVED FROM THE WORK SITE ON A DAILY BASIS THROUGHOUT THE DURATION OF THE PROJECT.
- ALL DISPOSALS SHALL BE IN ACCORDANCE WITH THE RELEVANT SECTIONS OF THE SPECIFICATIONS.
- REINSTATE AND MAKE GOOD ALL DISTURBED AREAS TO THE SATISFACTION OF THE DEPARTMENTAL REPRESENTATIVE AFTER COMPLETION OF THE WORK. ALL DISTURBED AREAS THAT WERE LANDSCAPED (GRASS) AT THE ONSET OF THE PROJECT WILL BE REINSTATED USING SOD.
- DESIGN CODE CHBDC, CSA S6 EVALUATED FOR A REDUCED LOADING. POSTED AT 10 TONNES.
- THE WATER LEVEL FLUCTUATES AND HAS A "TARGET" MAXIMUM HIGH WATER ELEVATION OF 92.800 HOWEVER THE WATER LEVEL HAS BEEN AS HIGH AS 93.160 IN 2011.
- ALL COMPONENTS OF THE NEW SUPERSTRUCTURE SHALL BE PAINTED TO MATCH THE EXISTING. WHERE STEEL MEMBERS HAVE REPLACED TIMBER MEMBERS THE NEW STEEL MEMBERS SHALL BE PAINTED TO MATCH THE ORIGINAL TIMBER MEMBER.

SCOPE OF WORK:

- ESTABLISH DETOUR ROUTE AND INSTALL ADVANCED NOTIFICATION SIGNS PRIOR TO CLOSING THE BRIDGE.
- INSTALL ENVIRONMENTAL PROTECTION MEASURES INCLUDING THOSE INDICATED IN SPECIFICATIONS AND BASED ON CONTRACTOR'S SITE ASSESSMENT TO SATISFY THE REQUIREMENTS OF THE BASIC IMPACT ASSESSMENT (BIA).
- REMOVE EXISTING SWING BRIDGE SUPERSTRUCTURE AND SALVAGE PARTS TO BE REUSED.
- SUBMIT SHOP DRAWINGS FOR REPLACEMENT SUPERSTRUCTURE DETAILS AND PROCEED WITH FABRICATION BASED ON APPROVED DRAWINGS.
- COMPLETE SURVEY OF EXISTING SUBSTRUCTURE, CENTRE RAIL AND PIVOT PIER PRIOR TO PERFORMING ANY CONCRETE REMOVALS. SUBMIT SURVEY TO DEPARTMENTAL REPRESENTATIVE.
- REMOVE CONCRETE FROM THE PIVOT PIER TO ALLOW FOR THE INSTALLATION OF THE PILE CAP.
- REMOVE EXISTING WEST ABUTMENT AND WING WALLS DOWN TO THE LIMITS SHOWN.
- REMOVE EXISTING EAST ABUTMENT AND WING WALLS DOWN TO THE LIMITS SHOWN WHILE PROTECTING THE EXISTING CANAL WALL.
- INSTALL MICROPILES AND CAST NEW PILE CAPS AT THE PIVOT PIER, EAST FOUNDATION, WEST FOUNDATION AND SOUTH WEST RETAINING WALL.
- CAST NEW CONCRETE AT THE EAST ABUTMENT, EAST WING WALLS, WEST ABUTMENT, WEST WING WALLS, AND SOUTH WEST RETAINING WALL.
- COMPLETE REFURBISHMENT AND REPLACEMENT (WHERE NECESSARY) OF MECHANICAL COMPONENTS.
- INSTALL NEW SWING BRIDGE.
- INSTALL STEEL COUNTERWEIGHT, WOOD DECKING, AND WEARING BOARDS.
- COMPLETE ITERATIVE PROCESS TO BALANCE THE BRIDGE.
- COMPLETE ROADWAY WORK ON THE APPROACHES, INSTALL ROADWAY SIGNAGE, AND COMPLETE LINE PAINTING.
- COMPLETE COMMISSIONING AND CONTRACTOR OPERATION PHASE OF OPERATION OF THE SWING BRIDGE.
- COMPLETE SITE CLEAN UP AND RESTORATION.

NOTE:

THE ABOVE IS NOT INTENDED TO BE AN EXHAUSTIVE LIST OF ALL ITEMS REQUIRED TO COMPLETE THE WORK, NOR IS IT INTENDED TO BE A SEQUENCE OF WORK.

WOOD CONSTRUCTION:

- ALL WOOD PRESERVATIVE TREATMENT SHALL BE APPLIED IN CONFORMANCE WITH CAN/CSA O80 SERIES-15.
- ALL WOOD USED FOR PEDESTRIAN RAILING (SPF), LONGITUDINAL RUNNING BOARDS (HEMLOCK) AND WEST ABUTMENT STAIRS (SPF) SHALL BE TREATED WITH THE WATERBORNE PRESERVATIVE TREATED COPPER ARSENATE TYPE C (CCA) CONFORMING TO CSA O80. THE CCA TREATED WOOD SHALL MEET THE REQUIREMENTS OF THE CSA USE CATEGORY UC 4.1.
- ALL WOOD TO BE USED FOR THE DECK STRINGERS (SELECT STRUCTURAL DOUGLAS FIR), TRANSVERSE DECK BOARDS (SELECT STRUCTURAL DOUGLAS FIR), LONGITUDINAL GIRDERS (SELECT STRUCTURAL DOUGLAS FIR), CORBEL FLOOR BEAMS (SELECT STRUCTURAL DOUGLAS FIR), AND ALL KINGSPOST FRAME MEMBERS (SELECT STRUCTURAL DOUGLAS FIR) SHALL BE TREATED WITH OILBORNE PRESERVATIVE PENTACHLOROPHENOL (PENTA) SOLVENT A (PCP-A) CONFORMING TO CSA O80. THE PCP-A TREATED WOOD SHALL MEET THE REQUIREMENTS OF CSA USE CATEGORY UC 4.2.
- NO CHAINS, HOOKS, OR PEAVIES SHALL BE USED IN HANDLING TREATED WOOD. CUTTING, FRAMING, DRILLING, AND GROOVING OF WOOD SHALL BE PERFORMED PRIOR TO PRESERVATIVE TREATMENT. ALL END CUTS, DEFECTS, DRILLED HOLES AND FIELD-DAMAGE IN WOOD MUST BE FIELD-TREATED WITH THREE-THOROUGH SOAKINGS, EACH SEPARATED BY AN ADEQUATE INTERVAL OF DRYING TIME. THE FIELD PRESERVATIVE MUST BE COMPATIBLE WITH THE PRESERVATIVE USED IN THE ORIGINAL PRESERVATIVE TREATMENT. THE ONLY APPROVED FIELD PRESERVATIVE TREATMENT IS COPPER NAPHTHENATE.
- WHEN A BOLT OR LAG-SCREW HEAD OR NUT BEARS DIRECTLY ON A STEEL PLATE, WASHERS MAY BE OMITTED. ALL OTHER HEADS OR NUTS SHALL HAVE WASHERS.
- ALL FASTENERS CONNECTING STEEL TO WOOD SHALL BE HOT DIP GALVANIZED AFTER MANUFACTURING IN CONFORMANCE WITH ASTM A123/A123M-15 AND ASTM A153/A153M-16A, UNLESS NOTED OTHERWISE.

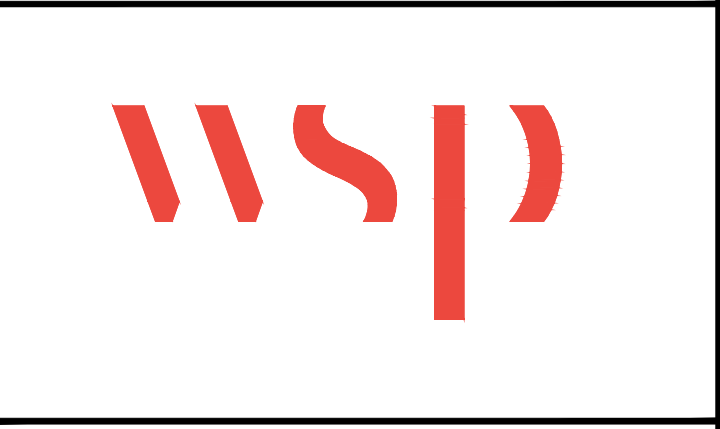
CONCRETE:

- CLASS OF CONCRETE: ALL CONCRETE.....C1
- CLEAR COVER TO REINFORCING STEEL:
 - FOOTING BOTTOM.....100x25
 - TOP AND SIDES.....70x20
 - ABUTMENT, WING WALLS, AND RETAINING WALLS: TOP AND SIDES.....70x20
 - REMAINDER.....70x20 UNLESS NOTED OTHERWISE
- REINFORCING STEEL SHALL BE GRADE 400W UNLESS OTHERWISE SPECIFIED.
- UNLESS SHOWN OTHERWISE ALL LAP SPLICES SHALL BE DETAILED AS CLASS B TENSION LAPS.
- BAR HOOKS SHALL HAVE STANDARD HOOK DIMENSIONS USING MINIMUM BEND DIAMETERS, WHILE STIRRUPS AND TIES SHALL HAVE MINIMUM HOOK DIMENSIONS. ALL HOOKS SHALL BE IN ACCORDANCE WITH THE STRUCTURAL STANDARD DRAWING SS12-1 UNLESS INDICATED OTHERWISE.
- ALL CONCRETE EDGES SHALL RECEIVE A 20mmx20mm CHAMFER UNLESS NOTED OTHERWISE.

STRUCTURAL STEEL:

- ALL STRUCTURAL STEEL SHALL CONFORM TO CAN/CSA G40.20-31/G40.21-13 (R2018). STRUCTURAL STEEL MEMBERS SHALL BE GRADE 350WT UNLESS NOTED OTHERWISE.
- STEEL IS DESIGNED TO AND SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE CISC "CODE OF STANDARD PRACTICE FOR STRUCTURAL STEEL" AND THE CHBDC, CSA S6-14.
- WELDING SHALL BE MADE WITH E480xx ELECTRODES IN ACCORDANCE WITH CSA W59-13 AND SHALL BE PERFORMED BY A WELDER QUALIFIED UNDER CSA W47.1-09(R2014). SURFACES TO BE WELDED SHALL BE THOROUGHLY CLEANED OF ALL FOREIGN MATERIAL.
- THE FABRICATOR SHALL BE DIVISION 1 OR 2 CERTIFIED TO THE REQUIREMENTS OF CSA W47.1-09(R2014).
- ALL NEW STRUCTURAL STEEL COMPONENTS DESIGNATED FOR GALVANIZING SHALL BE HOT DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123/A123M-15 AND ASTM A153/A153M-16A.
- UNLESS OTHERWISE NOTED THE MINIMUM FILLET WELD SHALL BE AS FOLLOWS:

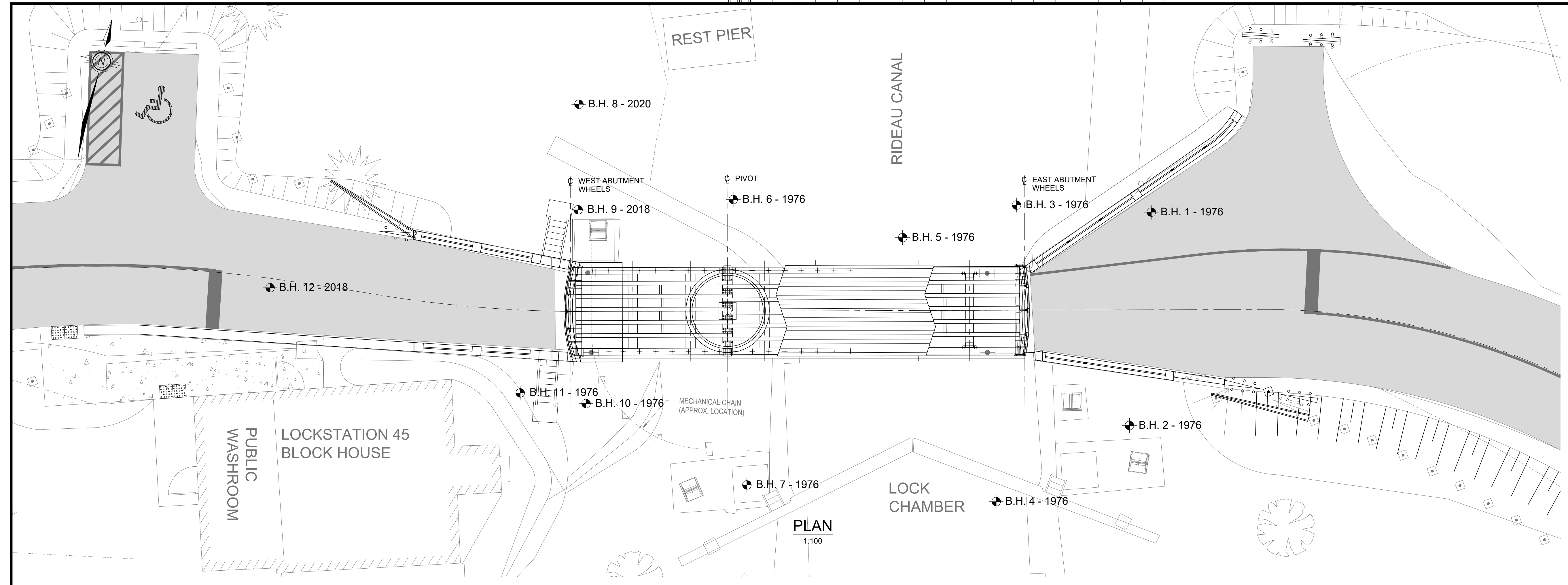
MATERIAL THICKNESS OF THICKER PART JOINED (mm)	MINIMUM SIZE OF FILLET WELD (mm)
TO 12 INCLUSIVE	5
OVER 12 TO 20	6
OVER 20 TO 40	8
OVER 40 TO 60	10
OVER 60 TO 120	12
- THE CONTRACTOR SHALL ENSURE THE STABILITY OF ALL COMPONENTS DURING HANDLING, TRANSPORTATION AND ERECTION AND UNTIL THE STRUCTURAL STEEL IS IN ITS FINAL LOCATION WITH ALL PERTINENT BRACING, CONNECTIONS AND SUPPORTS IN PLACE AND THE GOOD OPERATION OF THE BRIDGE IS CONFIRMED.
- ALL STEEL SHALL BE PAINTED WITH AN ORGANIC-ZINC EPOXY POLYURETHANE COATING SYSTEM UNLESS NOTED OTHERWISE.



04		
03		
02	ISSUED FOR TENDER	10/29/2021
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revision		date

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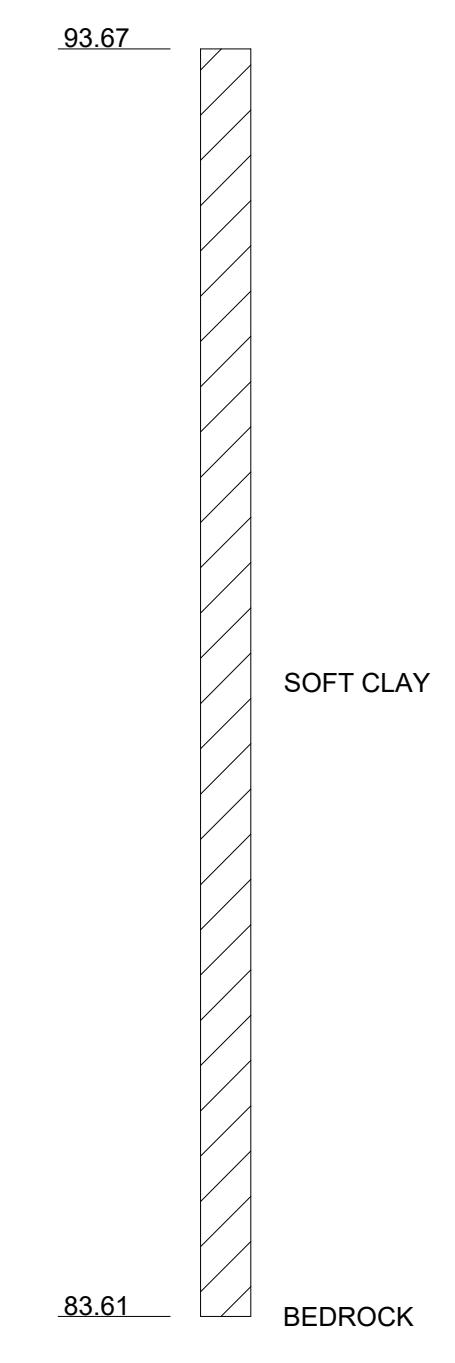
project title titre du projet	ONTARIO
drawing title titre du dessin	LOWER BREWERS SWING BRIDGE REPLACEMENT RIDEAU CANAL
drawn by dessiné par	G. MOTA
designed by conçu par	C. WILLIAMS/L. CUMMING
approved by approuvé par	D.A. HUCTWITH
bid office bureau de soumission	TYLER ATKINSON
project date date du projet	2021-10-29
project no. no. du projet	30037015
drawing no. dessiné no.	S1



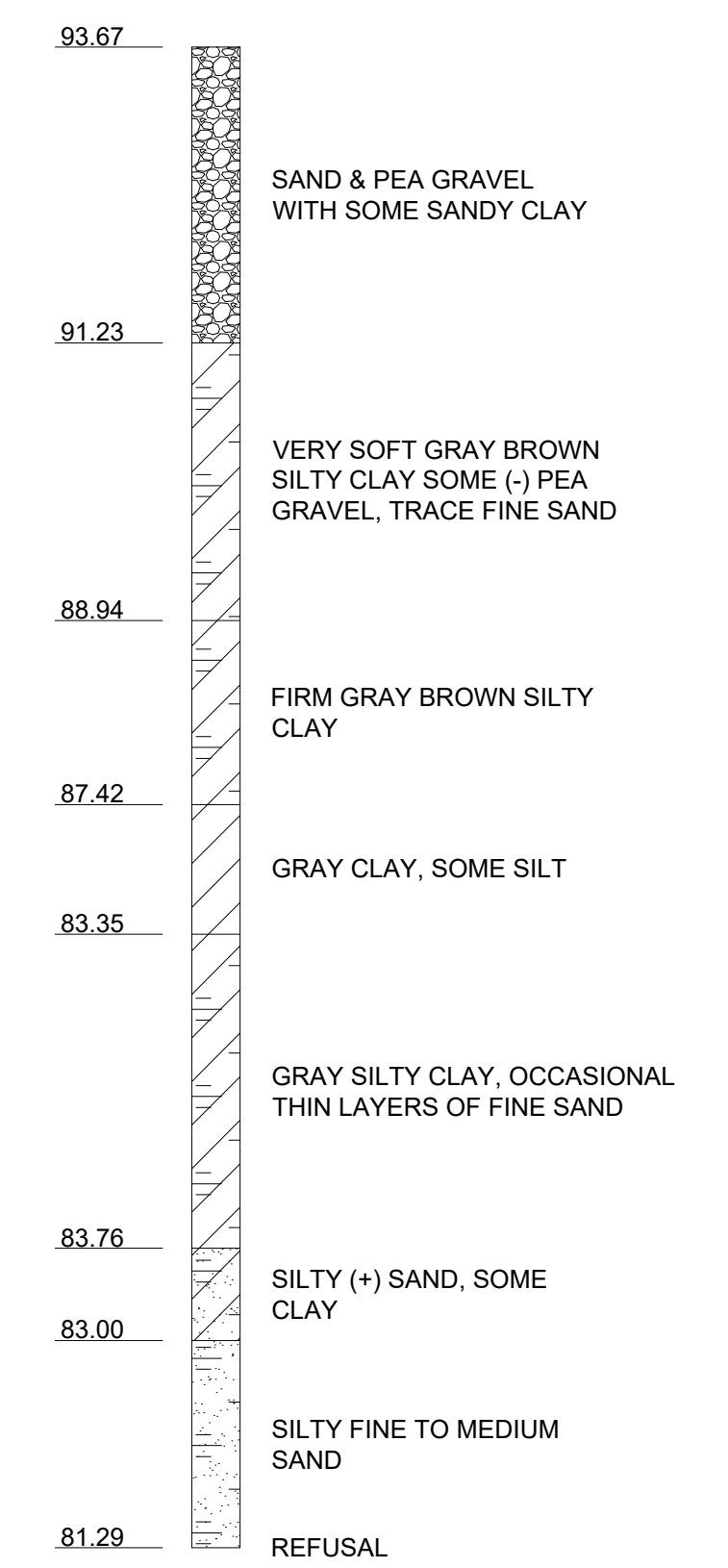
- NOTES:**
- THIS DRAWING IS FOR SUBSURFACE INFORMATION ONLY. THE PROPOSED STRUCTURE DETAILS/WORK ARE SHOWN FOR ILLUSTRATION PURPOSES ONLY AND MAY NOT BE CONSISTENT WITH THE FINAL DESIGN CONFIGURATION AS SHOWN ELSEWHERE IN THE CONTRACT DOCUMENTS.
 - THE BOUNDARIES BETWEEN SOIL STRATA HAVE BEEN ESTABLISHED ONLY AT BOREHOLES LOCATIONS. BETWEEN BOREHOLES THE BOUNDARIES ARE ASSUMED FROM GEOTECHNICAL EVIDENCE.
 - THIS DRAWING IS INTENDED TO PROVIDE A SUMMARY OF RELEVANT BOREHOLE DATA. REFER TO GEOTECHNICAL REPORT DATED MARCH 2020 FROM WSP FOR ALL AVAILABLE BOREHOLE INFORMATION.
 - THE BOREHOLE DATA FOR 1976 BOREHOLES ARE AS REPORTED. WHERE BEDROCK IS LISTED IN THE 1976 BOREHOLES IT SHOULD BE CONSIDERED ASSUMED BEDROCK.



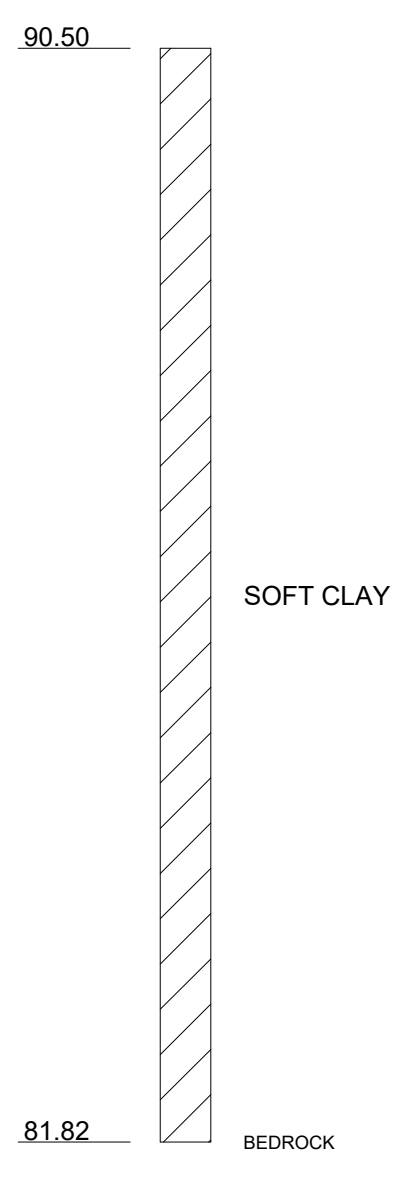
B.H. 1



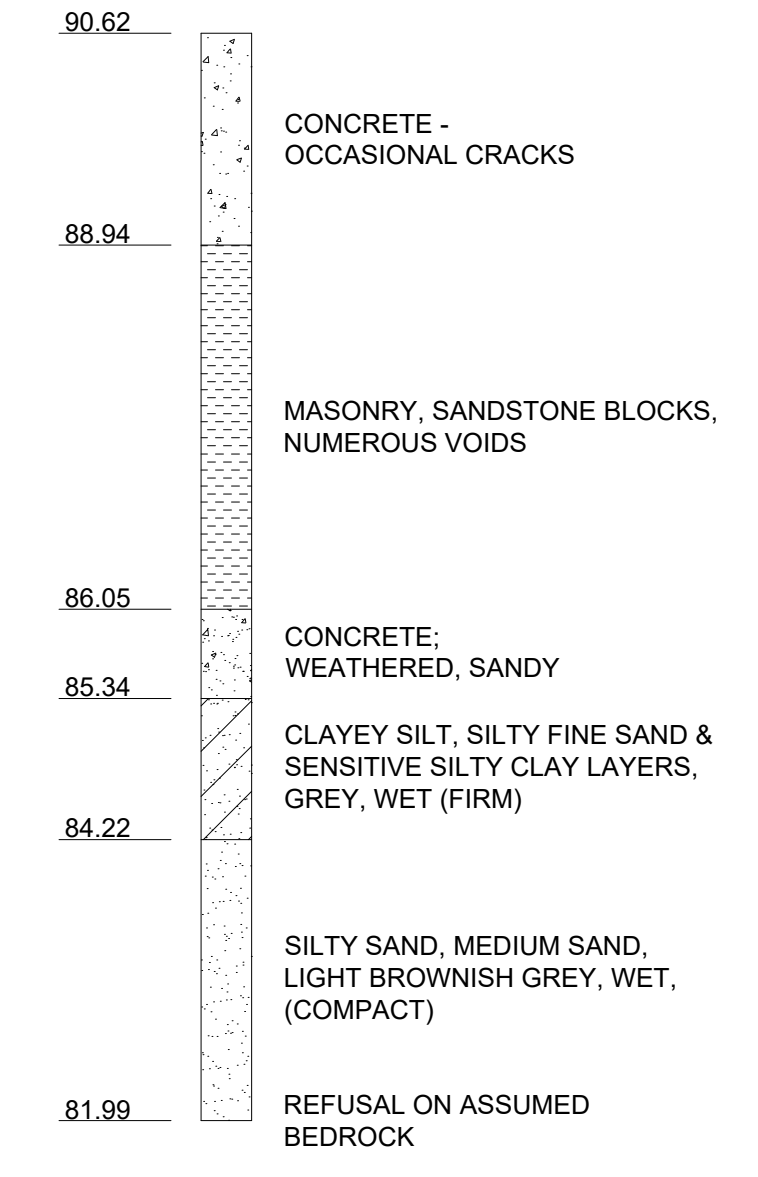
B.H. 2



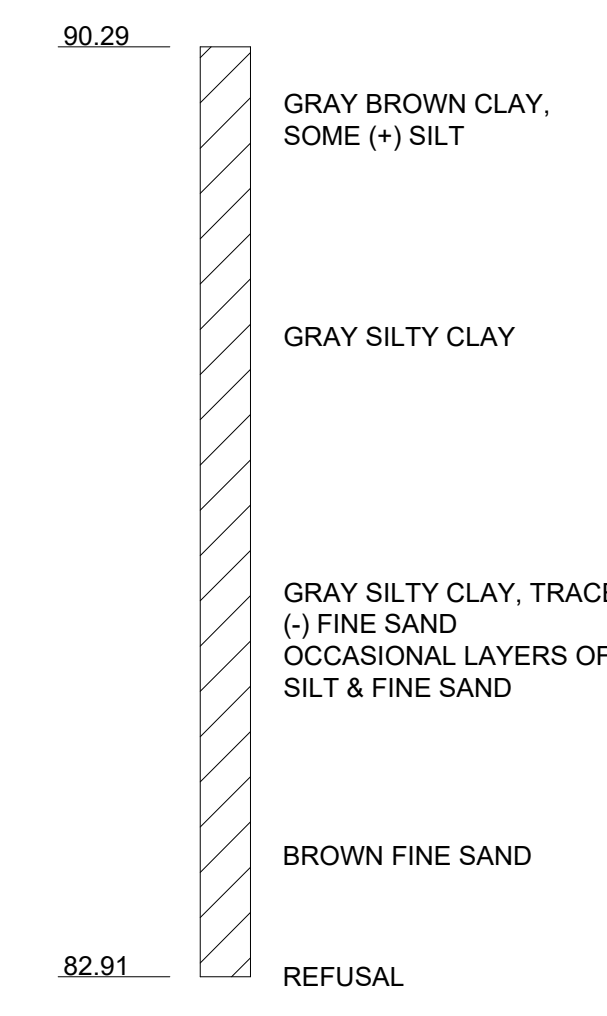
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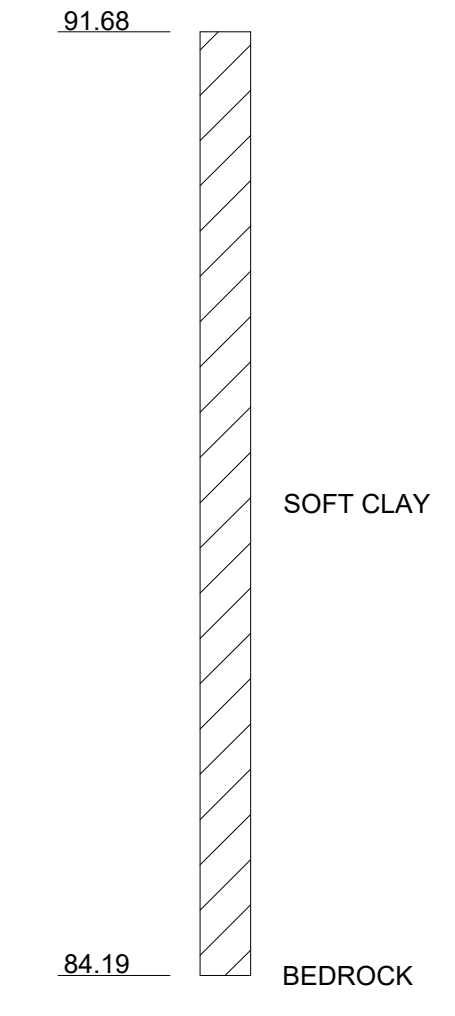
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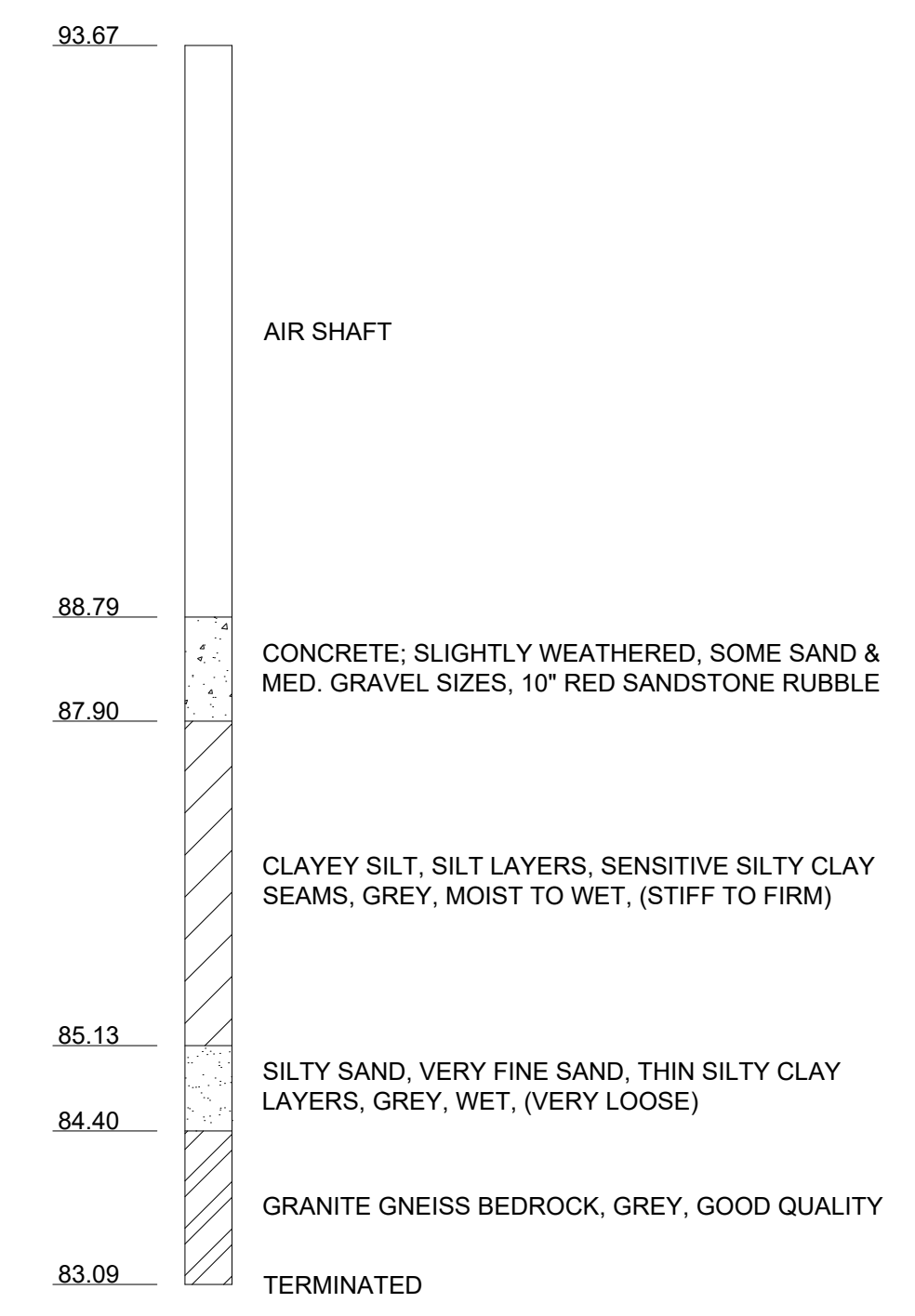
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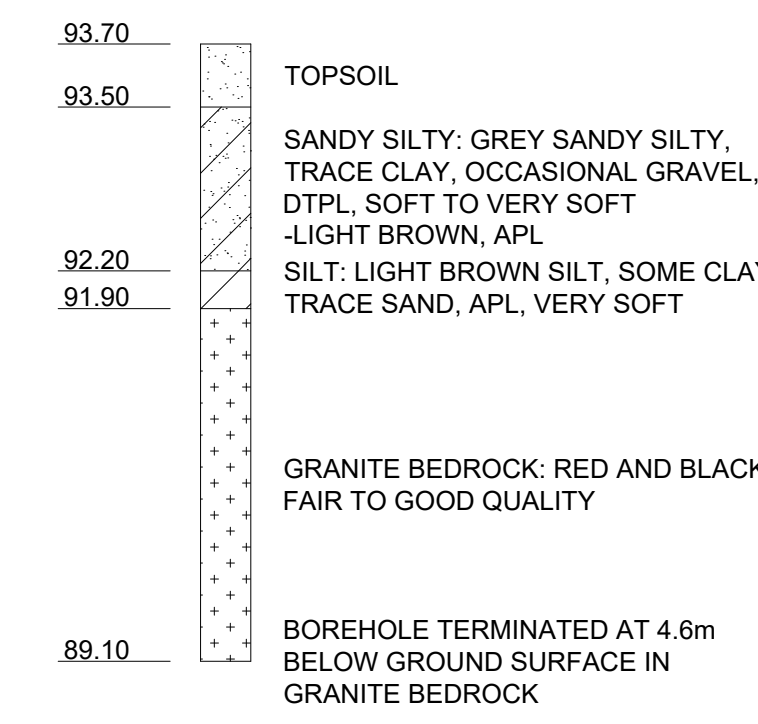
B.H. 6



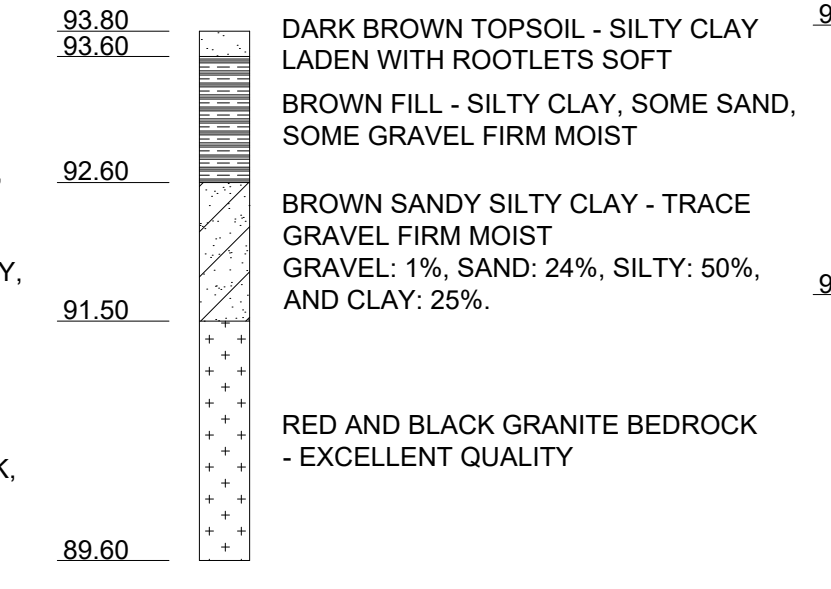
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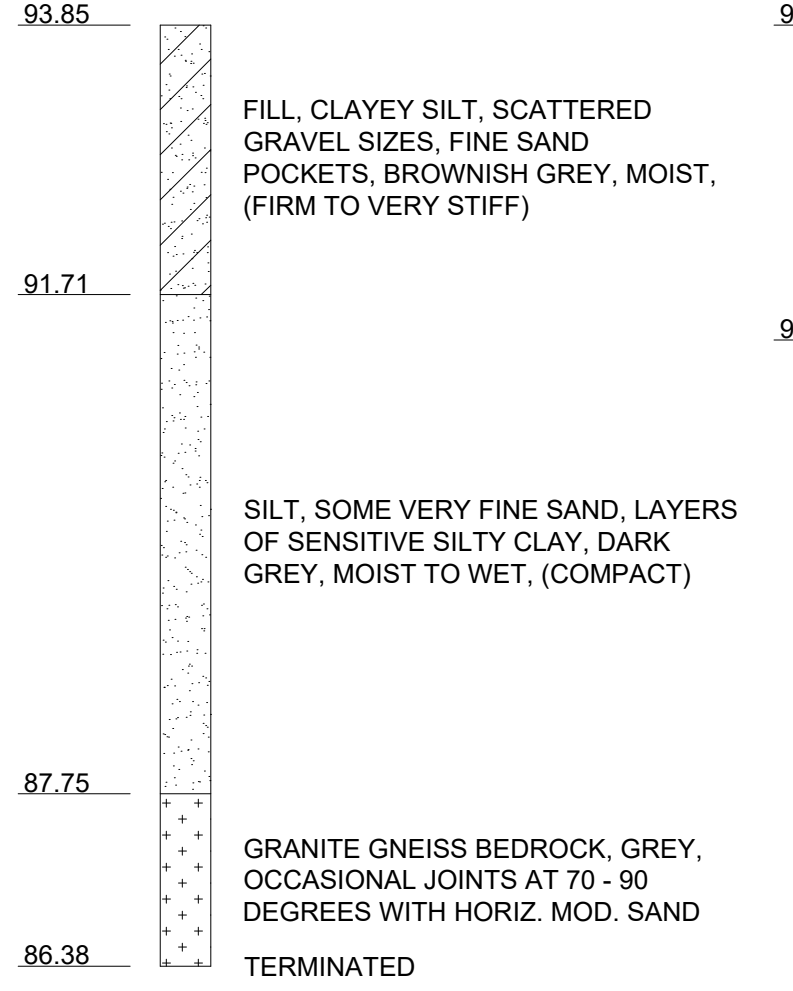
B.H. 8



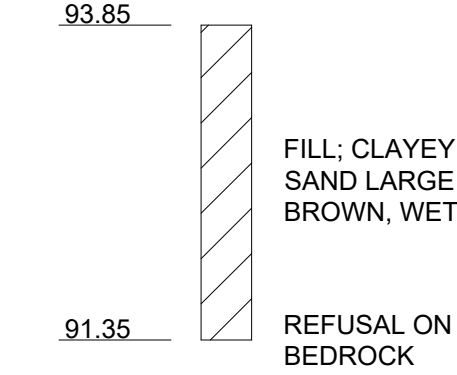
B.H. 9



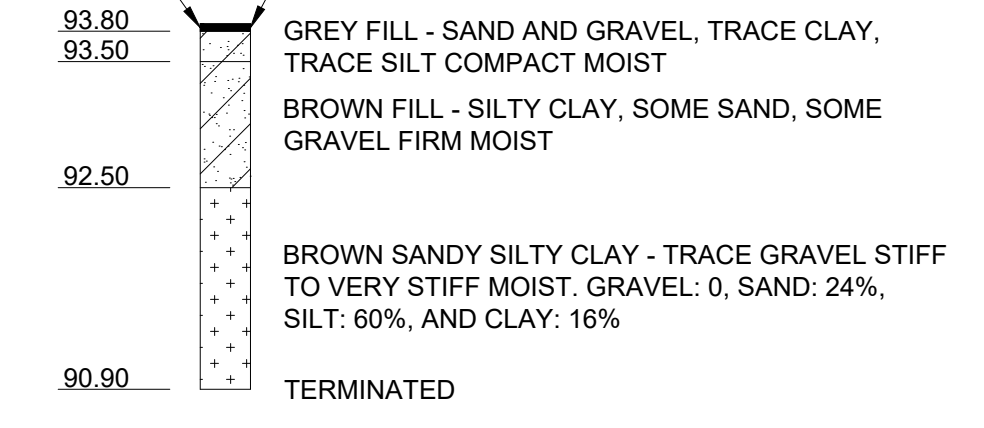
B.H. 10



B.H. 11



B.H. 12



04		
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	dessin no. - ou détaillé	

project title
titre du projet

ONTARIO

LOWER BREWERS SWING BRIDGE REPLACEMENT RIDEAU CANAL

drawing title
titre du dessin

BOREHOLES

drawn by
dessiné par

G. MOTA

designed by
conçu par

C. WILLIAMS/L. CUMMING

approved by
approuvé par

D.A. HUCTWITH

bid
offre

TYLER ATKINSON

project manager
administrateur de projets

project date
date du projet

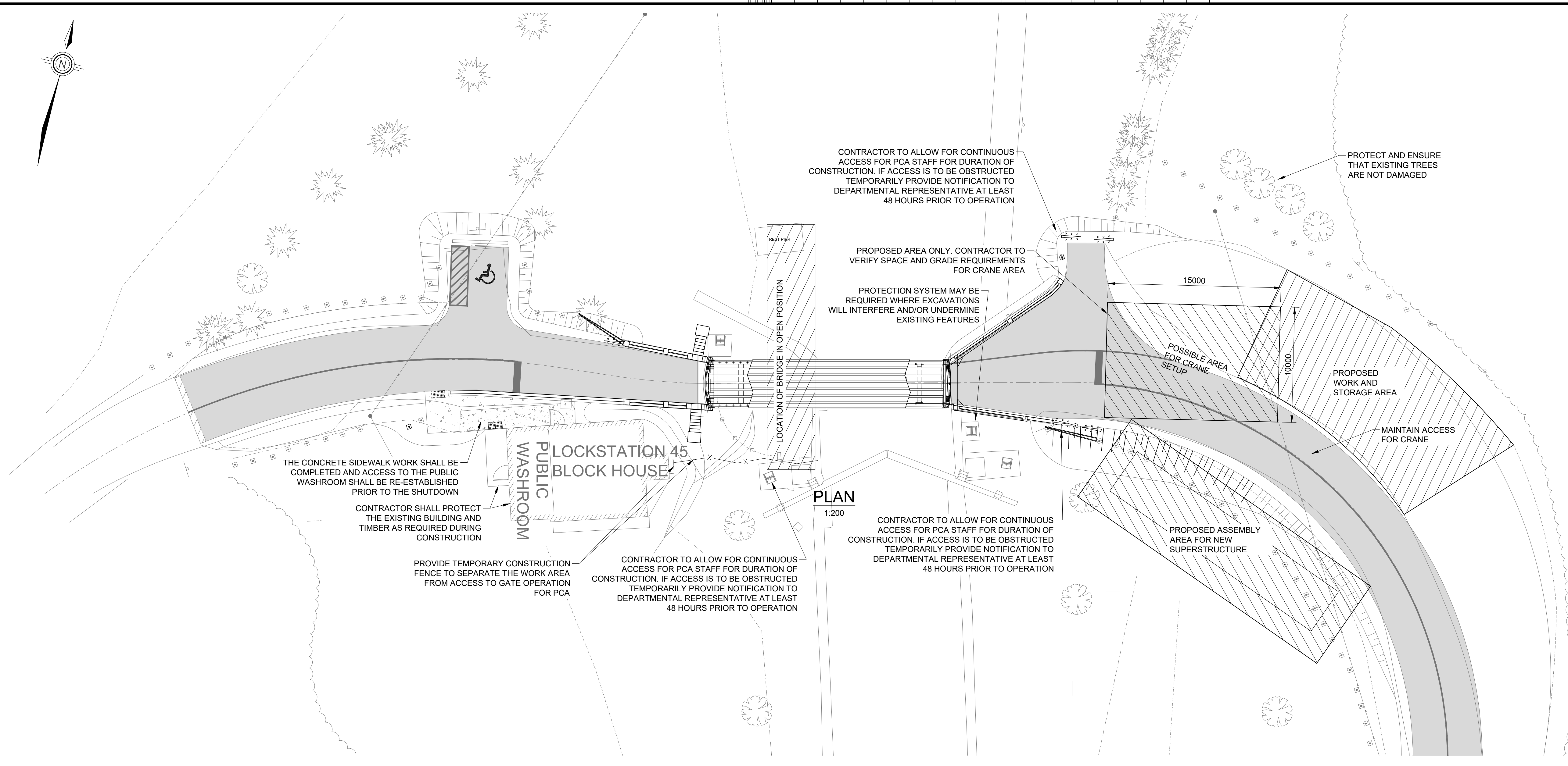
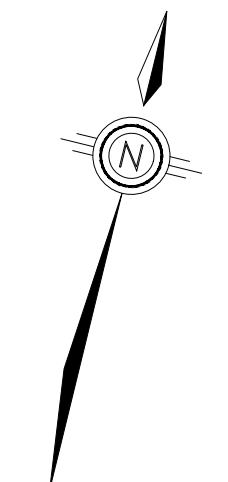
2021-10-29

project no.
no. du projet

30037015

drawing no.
dessiné no.

S2



PLAN
1:200

NOTES:
STAGING AND ACCESS:

- THE CONTRACTOR SHOULD NOTE THAT THE EXISTING SWING BRIDGE IS CURRENTLY LOAD POSTED AT 3 TONNE AND THE CONTRACTOR SHALL NOT TRANSPORT ANY MATERIALS OR EQUIPMENT OVER THE BRIDGE THAT IS MORE THAN THE CURRENT POSTING.
- THE CONTRACTOR WILL BE CONFINED TO THE MINIMUM AREA NECESSARY TO PERFORM THE WORK.
- ENSURE THAT THE LIMITS OF THE STAGING AND ACCESS AREA ARE CONFINED WITHIN SILT FENCE. SEE CIVIL DRAWINGS FOR GENERAL LAYOUT AND REFERENCES.
- IN THE EVENT THAT THE CONTRACTOR REQUIRES A SITE TRAILER, A SITE TRAILER MAY BE MOBILIZED WITH THE EXACT LOCATION TO BE CONFIRMED WITH DEPARTMENTAL REPRESENTATIVE PRIOR TO MOBILIZATION. CONTRACT REQUIREMENTS FOR OFFICES MUST BE SATISFIED.
- PROVIDE SCAFFOLDING, LADDERS, ACCESS LIFTING EQUIPMENT, ETC. AS NECESSARY TO CARRY OUT OF THE WORK OF ALL TRADES. ALL WORK TO BE IN ACCORDANCE WITH OCCUPATIONAL HEALTH AND SAFETY ACT. MAKE ALL CHANGES REQUIRED BY THE MINISTRY OF LABOUR OFFICIALS.
- THE LOCATION DELINEATED ON THIS DRAWING FOR PARKING, SITE TRAILER LOCATION AND STORAGE/WORK SHALL BE THE ONLY LOCATION USED BY THE CONTRACTOR UNLESS OTHERWISE APPROVED BY THE DEPARTMENTAL OF REPRESENTATIVE.
- CONTRACTOR SHALL PROVIDE ADEQUATE PROTECTION FOR ALL MATERIALS USED TO ENSURE TEMPERATURE REQUIREMENTS ARE MAINTAINED AS PER SPECIFICATIONS AND MANUFACTURERS RECOMMENDATIONS, AND AS DIRECTED/APPROVED BY THE DEPARTMENT REPRESENTATIVE.
- CONTRACTOR SHALL PROVIDE THEIR OWN SANITARY FACILITIES.
- INSTALL, MAINTAIN AND REMOVE ALL FENCING, BARRICADES, SIGNS, ETC. TO RESTRICT ACCESS BY PUBLIC TO THE WORK AREA. TEMPORARY FENCING TO BE A MINIMUM, 1.80m IN HEIGHT.
- SECURE ALL MATERIALS AGAINST VANDALISM, THEFT AND ACCIDENTAL SPILLS.
- REINSTATE ANY LANDSCAPED AREAS THAT MAY HAVE BEEN DISTURBED FROM CONSTRUCTION ACTIVITIES WITH 50mm OF TOPSOIL OVERLAIN WITH SOD IN ACCORDANCE WITH SECTION 32 91 21, AND SECTION 32 92 23.
- CANAL OPERATIONS MUST NOT BE AFFECTED BY CONSTRUCTION OPERATIONS OR ANY ACTIVITY ASSOCIATED WITH THIS PROJECT.
- A COMPLETE SHUT DOWN OF CONSTRUCTION ACTIVITIES IS REQUIRED FROM MAY 2nd, 2022 UNTIL SEPTEMBER 6th, 2022. ALL EQUIPMENT AND MATERIALS SHALL BE REMOVED FROM SITE WITH THE EXCEPTION OF ANY MATERIALS AND/OR EQUIPMENT STORED IN THE DESIGNATED AREA IN THE EAST PARKING LOT. PARKS CANADA IS NOT RESPONSIBLE FOR ANY EQUIPMENT/MATERIALS THAT MAY BE STORED IN THE PARKING LOT.

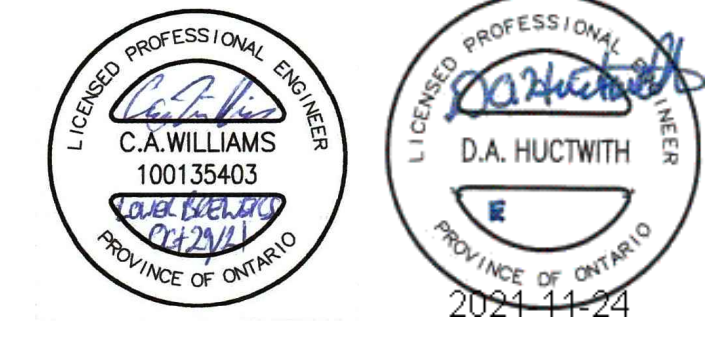
ENVIRONMENTAL PROTECTION:

- TAKE ALL NECESSARY PRECAUTIONS TO ENSURE NO CONTAMINANTS ENTER THE WATERCOURSE.
- SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO AND MAINTAINED DURING CONSTRUCTION TO PREVENT ENTRY OF SEDIMENT INTO THE WATERWAY. AS A MINIMUM INSTALL SEDIMENT CONTROL MEASURES AROUND ALL CONSTRUCTION ACTIVITIES. INSTALL ADDITIONAL MEASURES AS REQUIRED TO PREVENT SEDIMENT ENTERING WATER COURSES. DRAWINGS ARE SCHEMATIC ONLY. EXACT LOCATION TO BE ILLUSTRATED AND DESCRIBED IN THE ENVIRONMENTAL SUBMISSIONS AND VERIFIED WITH DEPARTMENTAL REPRESENTATIVE PRIOR TO INSTALLATION. SEDIMENT AND EROSION CONTROL MEASURES ARE TO BE PLACED IN GENERAL CONFORMANCE WITH OPSS 805 'CONSTRUCTION SPECIFICATION FOR TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES'.
- ALL EQUIPMENT MAINTENANCE AND REFUELING WILL BE CONTROLLED TO PREVENT ANY DISCHARGE OF PETROLEUM PRODUCTS INTO THE WATERCOURSE. VEHICLE AND EQUIPMENT FUELING WILL BE CONDUCTED AT LEAST 30m FROM ANY WATERCOURSE.
- CONTRACTOR SHALL SUPPLY AND MAINTAIN M.O.E. APPROVED "SPILLS KIT" ON SITE AT ALL TIMES.
- TREES ARE NOT TO BE DAMAGED AND SHALL BE PROTECTED FROM CONSTRUCTION OPERATIONS. NO MATERIALS AND/OR EQUIPMENT ARE TO BE STORED OR KEPT WITHIN THE TREE DRIP LINES. INSTALL TREE PROTECTION ACCORDING TO OPSS 801 'CONSTRUCTION SPECIFICATION FOR THE PROTECTION OF TREES'.

BRIDGE ASSEMBLY SEQUENCE:

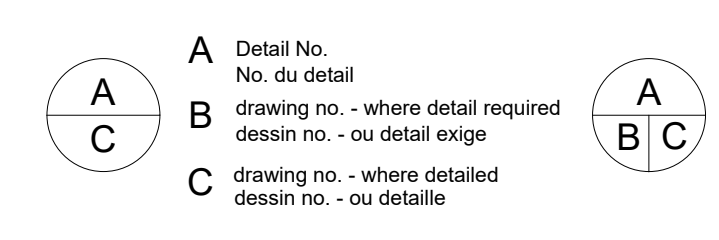
THE CONTRACTOR IS RESPONSIBLE FOR COMPLETING THE BRIDGE BALANCING. ALTHOUGH NOT AN EXHAUSTIVE LIST, THE FOLLOWING REPRESENTS A POSSIBLE SEQUENCE FOR THE BALANCING OF THE SUPERSTRUCTURE. THE INTENT IS TO HAVE A MINIMAL AMOUNT OF PRETENSION IN THE STAY RODS WHILE HAVING ONLY THE PIVOT BEARING SUPPORTING THE BRIDGE WHEN IN THE OPEN POSITION WITH THE HYDRAULIC LIFT MECHANISM RETRACTED.

1. CONSTRUCT NEW BRIDGE IN THE PROPOSED ASSEMBLY AREA ON THE EAST SIDE OF THE EXISTING BRIDGE. CONSTRUCT NEW BRIDGE ON TEMPORARY SUPPORTS SO THAT THE SURFACE OF THE BRIDGE DECK IS HORIZONTAL. ENSURE THAT THE HYDRAULIC LIFT MECHANISM AT THE WEST END BEAM IS IN THE RETRACTED POSITION PRIOR TO BLOCKING.
2. COMPLETE CONSTRUCTION OF NEW BRIDGE WITH THE EXCEPTION OF THE WEST ARM TRANSVERSE DECK BOARDS, COUNTERWEIGHT AND THE FULL LENGTH RUNNING BOARDS.
3. LIFT NEW BRIDGE ONTO PIVOT PIER AND PLACE IN THE OPEN POSITION. ENSURE THE ENDS ARE SUPPORTED SO THE DECK REMAINS HORIZONTAL. THE NEW SUPERSTRUCTURE IS ESTIMATED TO WEIGH 43.5 TONNES WITHOUT THE COUNTERWEIGHT. CONTRACTOR IS TO CONFIRM WEIGHT OF SUPERSTRUCTURE AND PROVIDE TO THE DEPARTMENTAL REPRESENTATIVE PRIOR TO FINALIZING THE COUNTERWEIGHT. CONTRACTOR RESPONSIBLE FOR ALL LIFTING METHODS, RIGGING, SPREADER BEAMS, CONNECTIONS AND METHODS TO LIFT CONTROL AND STABILIZE THE WORK. THE BRIDGE WITHOUT COUNTERWEIGHT WILL BE UNBALANCED. THE LIFTING METHOD MUST NOT REVERSE LOADS IN THE CONNECTIONS OF THE SUPERSTRUCTURE AND THE LIFTING METHOD MUST REPLICATE THE SAME DIRECTIONAL LOADING AS WHEN THE BRIDGE IS SUPPORTED IN THE CLOSED POSITION. SUBMIT LIFTING SCHEME A MINIMUM OF FOUR WEEKS IN ADVANCE OF OPERATION TO ALLOW REVIEW.
4. INSTALL THE ESTIMATED AMOUNT OF COUNTERWEIGHT. THE ESTIMATED AMOUNT OF COUNTERWEIGHT REQUIRED TO BALANCE THE BRIDGE IS ESTIMATED TO BE 13.5 TONNES FOR A TOTAL FINAL SUPERSTRUCTURE WEIGHT OF 57 TONNES (CONTRACTOR TO VERIFY). THE CONTRACTOR SHALL SUPPLY 13,040 L OF "FIXED COUNTERWEIGHT AND 1,215 L OF ADJUSTABLE COUNTERWEIGHT. THE "FIXED" GALVANIZED STEEL COUNTERWEIGHTS SHALL NOT EXCEED 815 kg PER PIECE AND SHOP DRAWINGS SHALL BE PROVIDED SHOWING THE PROPOSED DIMENSIONS. THE "ADJUSTABLE" COUNTERWEIGHT SHALL BE IN THE FORM OF GALVANIZED STEEL BILLETS NOT EXCEEDING 22 kg PER PIECE.
5. INSTALL THE SHORT ARM TRANSVERSE DECK BOARDS AND RUNNING BOARDS.
6. ONCE THE TURNBUCKLES ARE ENGAGED AND THE BRIDGE IS STILL HORIZONTAL, JACK THE ENDS OF THE BRIDGE AND REMOVE THE TEMPORARY SUPPORTS THAT KEEP THE DECK HORIZONTAL AND SLOWLY RELEASE THE JACKS.
7. WHEN TIGHTENING THE STAY RODS, TIGHTEN FROM THE OUTSIDE IN, BEGINNING AT THE ENDS OF THE BRIDGE AND THEN THE MIDDLE SET OF RODS. ENSURE WITH EACH SET OF RODS THAT THE NORTH AND SOUTH RODS ARE TIGHTENED THE SAME AMOUNT.
8. OBSERVE AND RECORD GAP BETWEEN THE BALANCE RAIL AND THE UNDERSIDE OF THE BALANCE BEAMS AT ALL SIX BALANCE WHEEL LOCATIONS. RECORD THE TOP OF DECK ELEVATIONS AT THE ENDS OF THE BRIDGE AND THE PIVOT. ALSO RECORD THE AMBIENT TEMPERATURE AT THE TIME OF STAY ROD INSTALLATION. PROVIDE MEASUREMENTS/RECORDS TO THE DEPARTMENTAL REPRESENTATIVE FOR REVIEW AND DISCUSSION.
9. MODIFY THE COUNTERWEIGHT ACCORDINGLY DEPENDING ON THE DIFFERENTIAL BETWEEN EAST AND WEST AT EACH OF THE BALANCE WHEEL LOCATIONS UNTIL THE GAPS ARE THE SAME BETWEEN EAST AND WEST. THIS MAY REQUIRE A NUMBER OF ITERATIONS.
10. INSTALL THE BALANCE WHEELS ALLOWING FOR A 3MM GAP BETWEEN THE WHEEL AND THE TOP OF THE BALANCE RAIL.
11. SWING BRIDGE INTO CLOSED POSITION (SPANNING EAST/WEST) AND RECORD DEFLECTION AT BRIDGE ENDS (EAST AND WEST) RELATIVE TO HORIZONTAL DECK POSITION. VERIFY REQUIRED FINISHED BEARING SEAT ELEVATIONS AND RADII WITH DEPARTMENTAL REPRESENTATIVE ACCOUNTING FOR AMBIENT TEMPERATURE AT TIME OF ROD INSTALLATION.



04		
03		
02	ISSUED FOR TENDER	10/29/2021
01	ISSUED FOR REVIEW	08/06/2021
revision		date

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project title
titre du projet

ONTARIO

LOWER BREWERS
SWING BRIDGE REPLACEMENT
RIDEAU CANAL

drawing title
titre du dessin

SITE PLAN AND SEQUENCE

drawn by
dessiné par

G. MOTA

designed by
conçu par

C. WILLIAMS/L. CUMMING

approved by
approuvé par

D.A. HUETWATH

bid
offre

TYLER ATKINSON

project manager
administrateur de projets

project date
date du projet

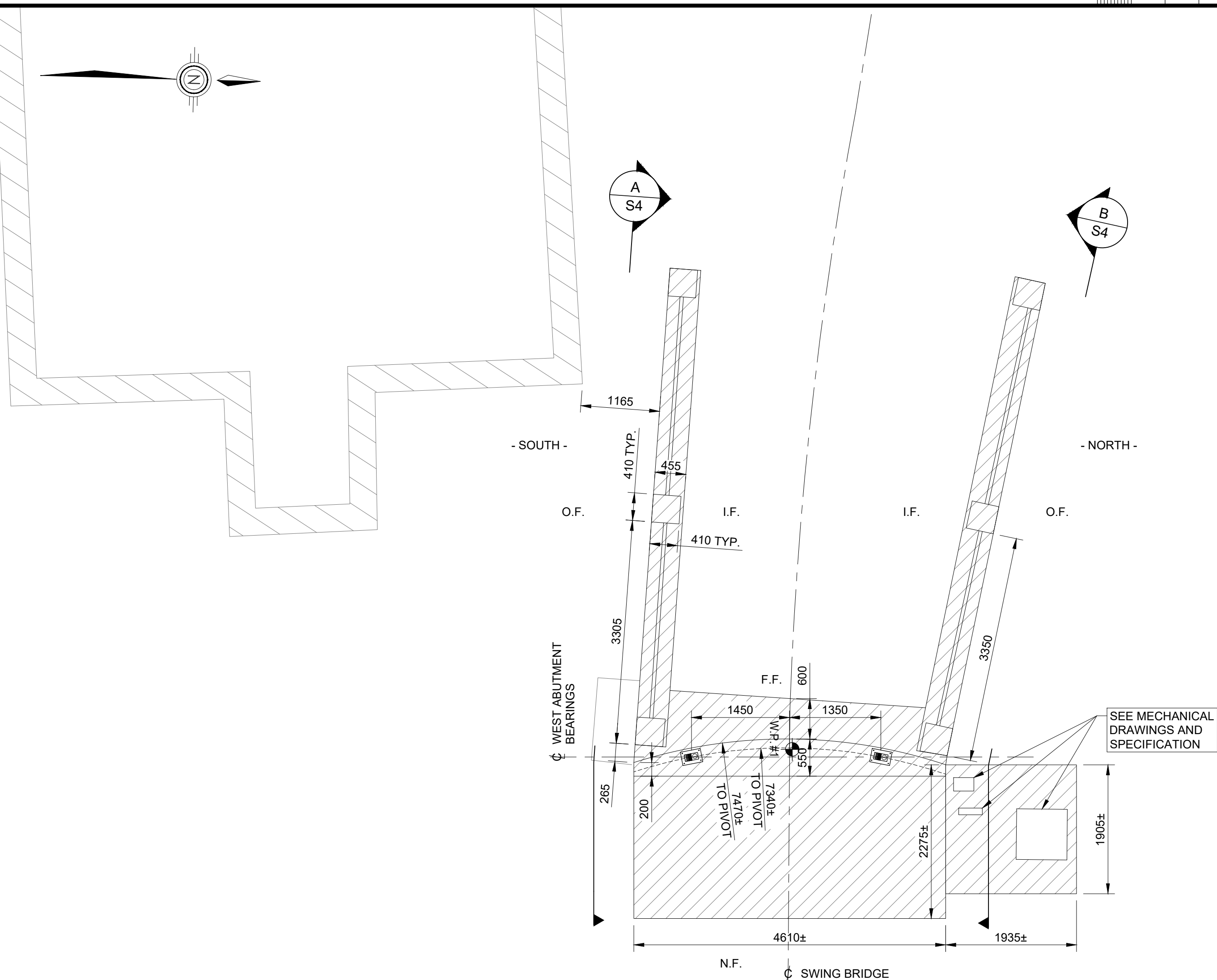
2021-10-29

project no.
no. du projet

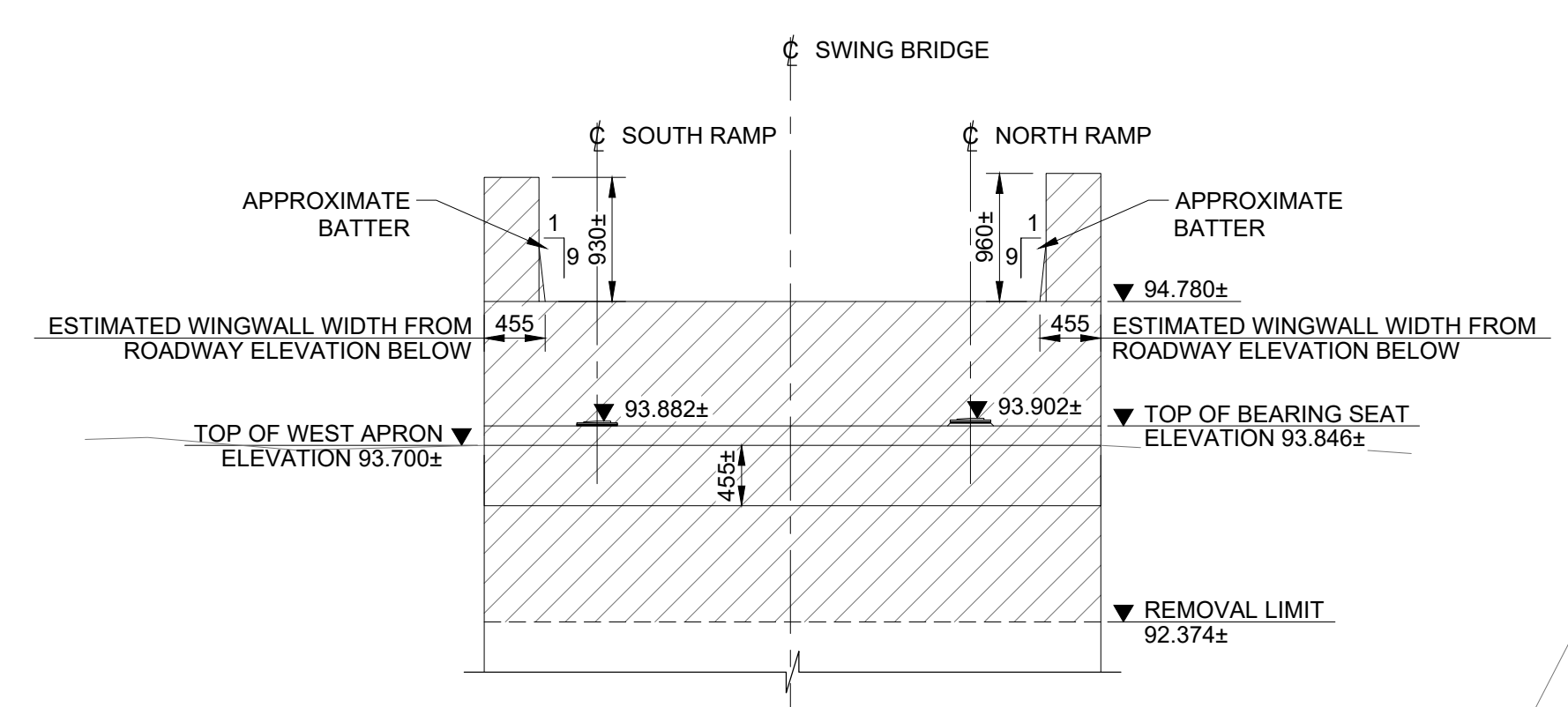
30037015

drawing no.
dessiné no.

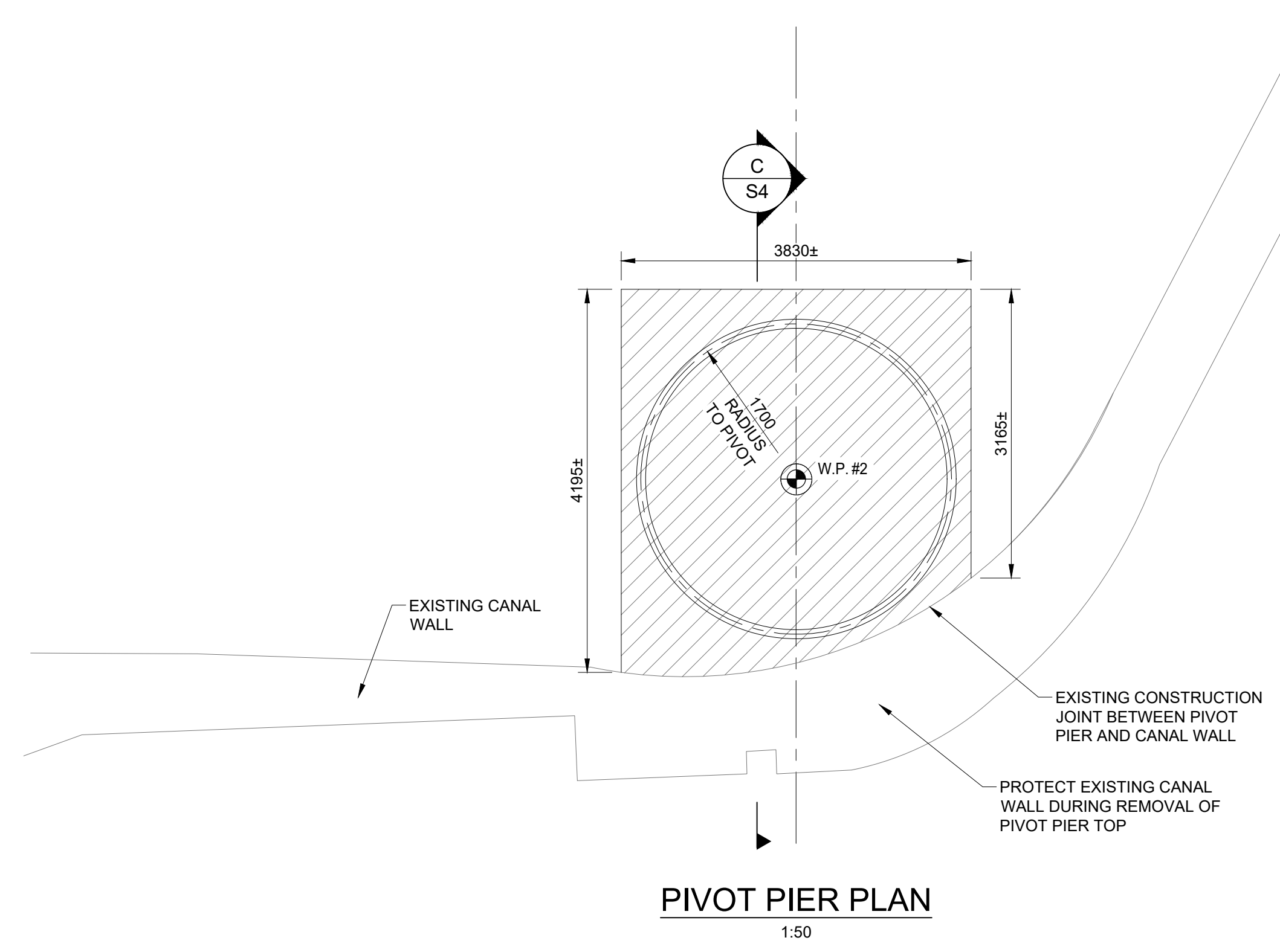
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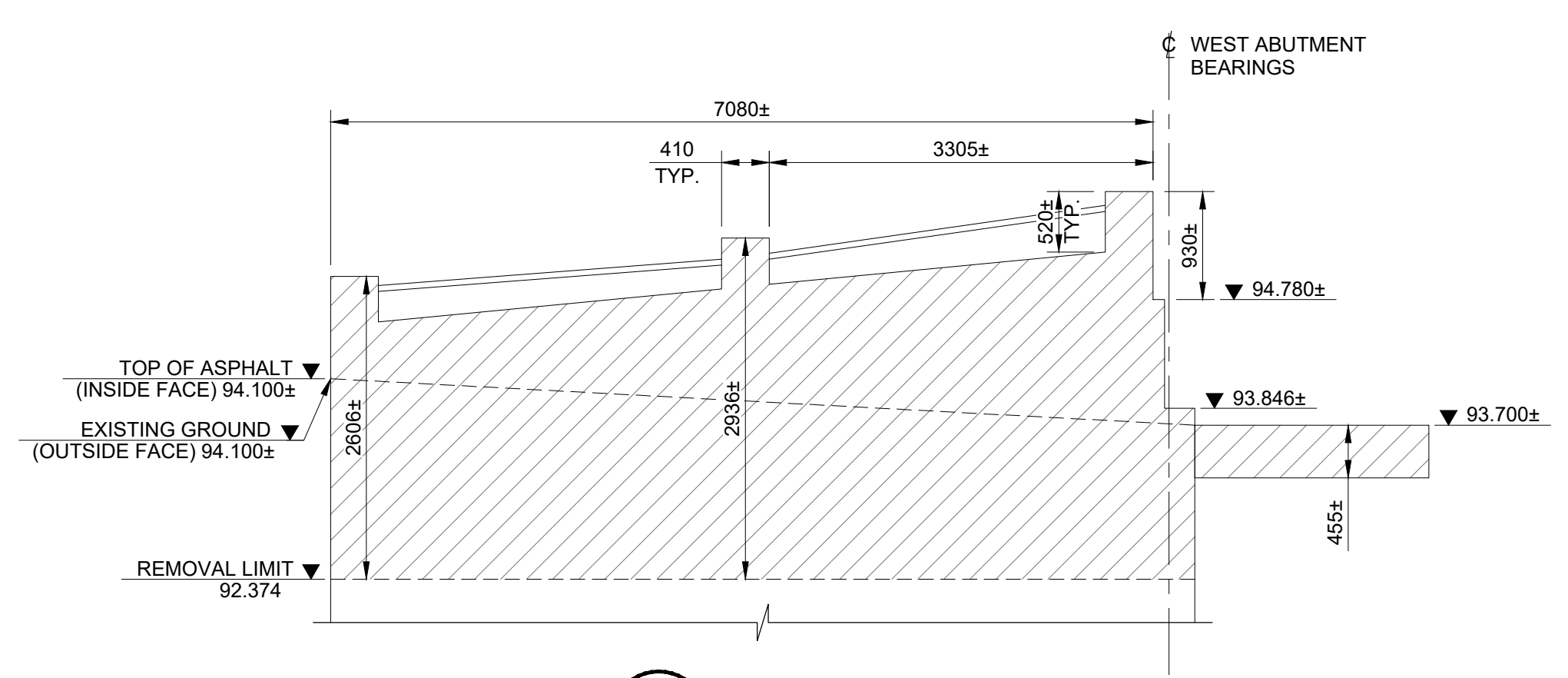
PLAN
1:50



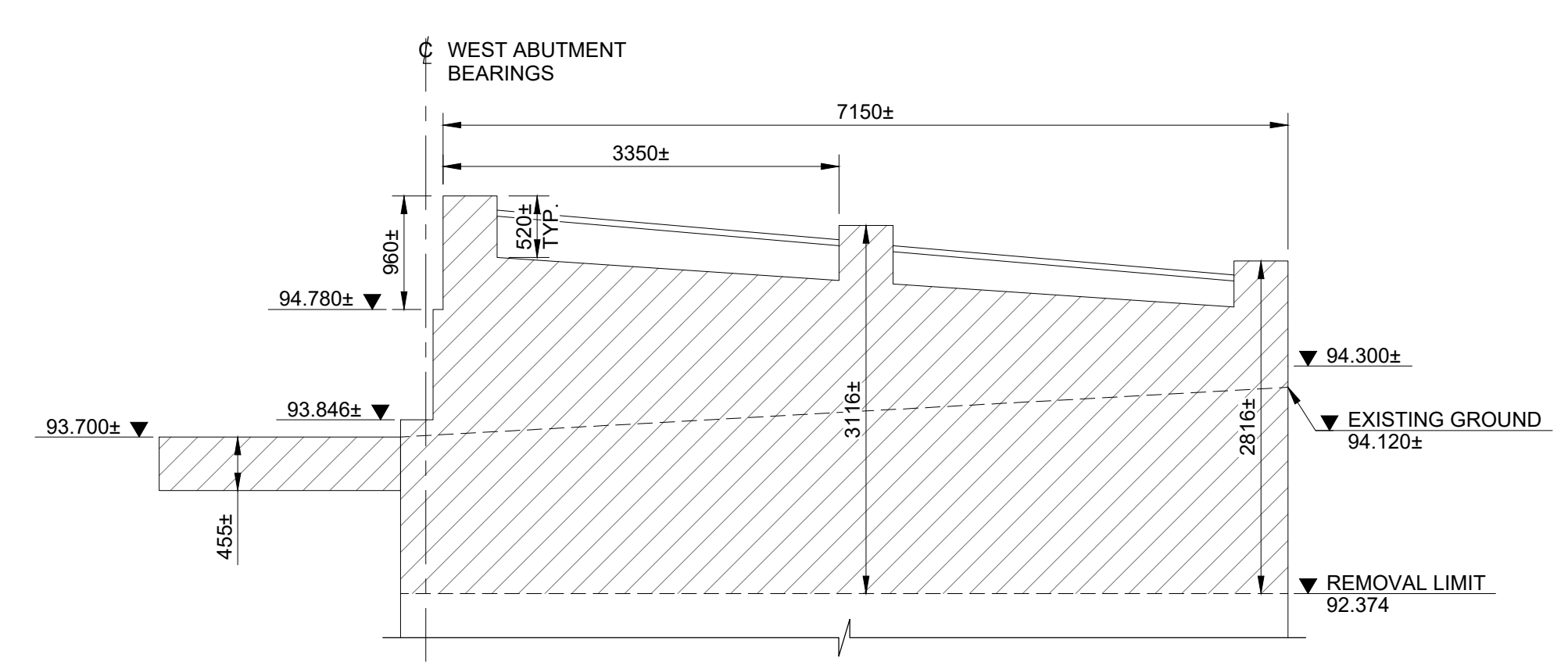
ELEVATION
1:50



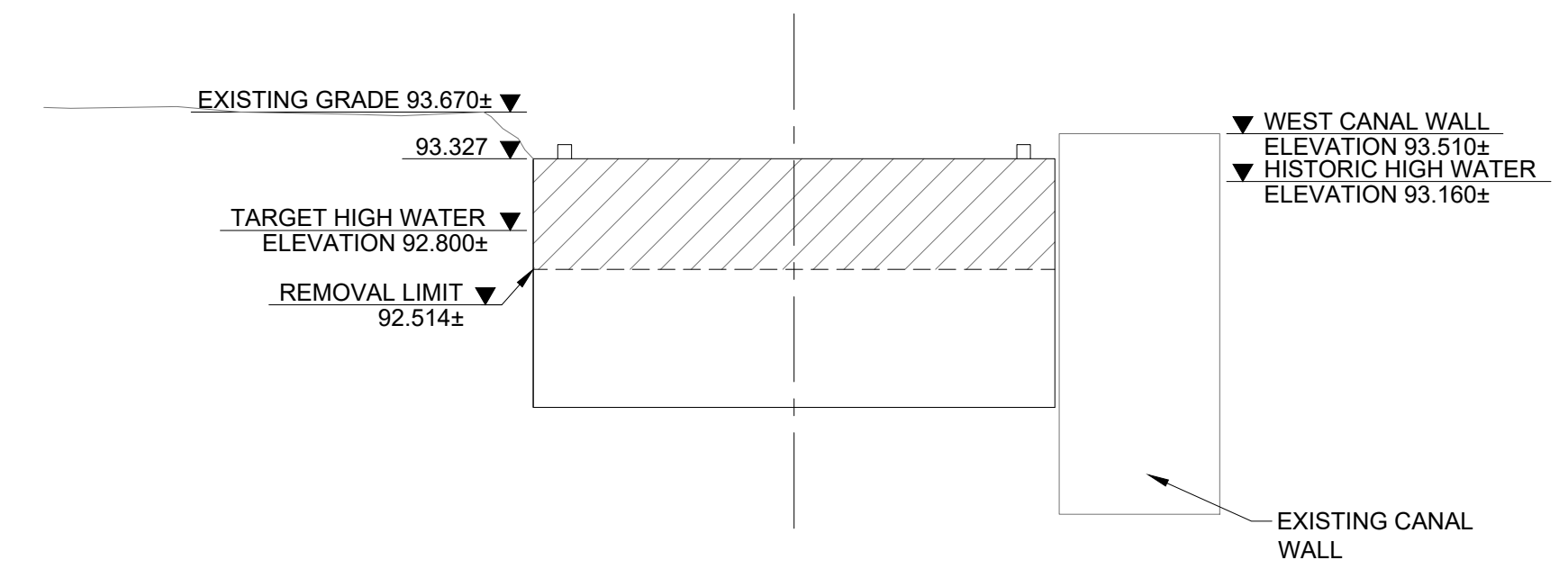
PIVOT PIER PLAN
1:50



A SOUTH WINGWALL
1:50



B NORTH WINGWALL
1:50



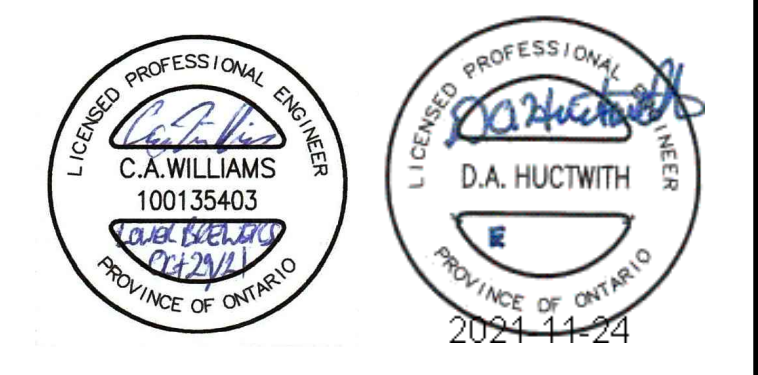
C ELEVATION
1:50

NOTES:

- THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING S1 (GENERAL ARRANGEMENT).
- ALL REINFORCING STEEL TO BE REMOVED IN AREAS OF FULL DEPTH REMOVAL EXCEPT AS NOTED.
- EXISTING DIMENSIONS, ELEVATIONS AND DETAILS GIVEN ARE THEORETICAL AND ESTABLISHED FROM THE ORIGINAL STRUCTURE DRAWINGS. THE CONTRACTOR SHALL CONFIRM DIMENSIONS, ELEVATIONS AND DETAILS THROUGH FIELD MEASUREMENTS AND REPORT ANY DISCREPANCIES TO THE DEPARTMENTAL REPRESENTATIVE BEFORE PROCEEDING WITH THE WORK.
- THE CONTRACTOR IS RESPONSIBLE FOR LOCATES PRIOR TO PERFORMING ANY EXCAVATION AT THE SITES.
- THE CONTRACTOR IS TO COMMUNICATE WITH PARKS CANADA STAFF ONCE THE EXCAVATION LIMITS ARE CONFIRMED THAT THERE ARE NO PARKS CANADA UTILITY CONFLICTS.
- ADDITIONAL CARE MUST BE TAKEN WHEN WORKING ADJACENT TO THE HISTORIC CANAL WALLS. ALL EXCAVATION AND WORK SHALL BE COMPLETED USING METHODS THAT PUT NO ADDITIONAL LOAD ON THE CANAL WALL.

LEGEND:

- CONCRETE REMOVAL FULL DEPTH
- CONCRETE REMOVAL PARTIAL DEPTH



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B	No. du détail	B
C	drawing no. - where detail required	C
	dessin no. - ou détail exigé	
	drawing no. - where detailed	
	dessin no. - ou détaillé	

project title
titre du projet

ONTARIO

LOWER BREWERS
SWING BRIDGE REPLACEMENT
RIDEAU CANAL

drawing title
titre du dessin

**WEST ABUTMENT, PIVOT PIER,
AND WING WALLS REMOVALS**

drawn by
dessiné par G. MOTA

designed by
conçu par C. WILLIAMS/L. CUMMING

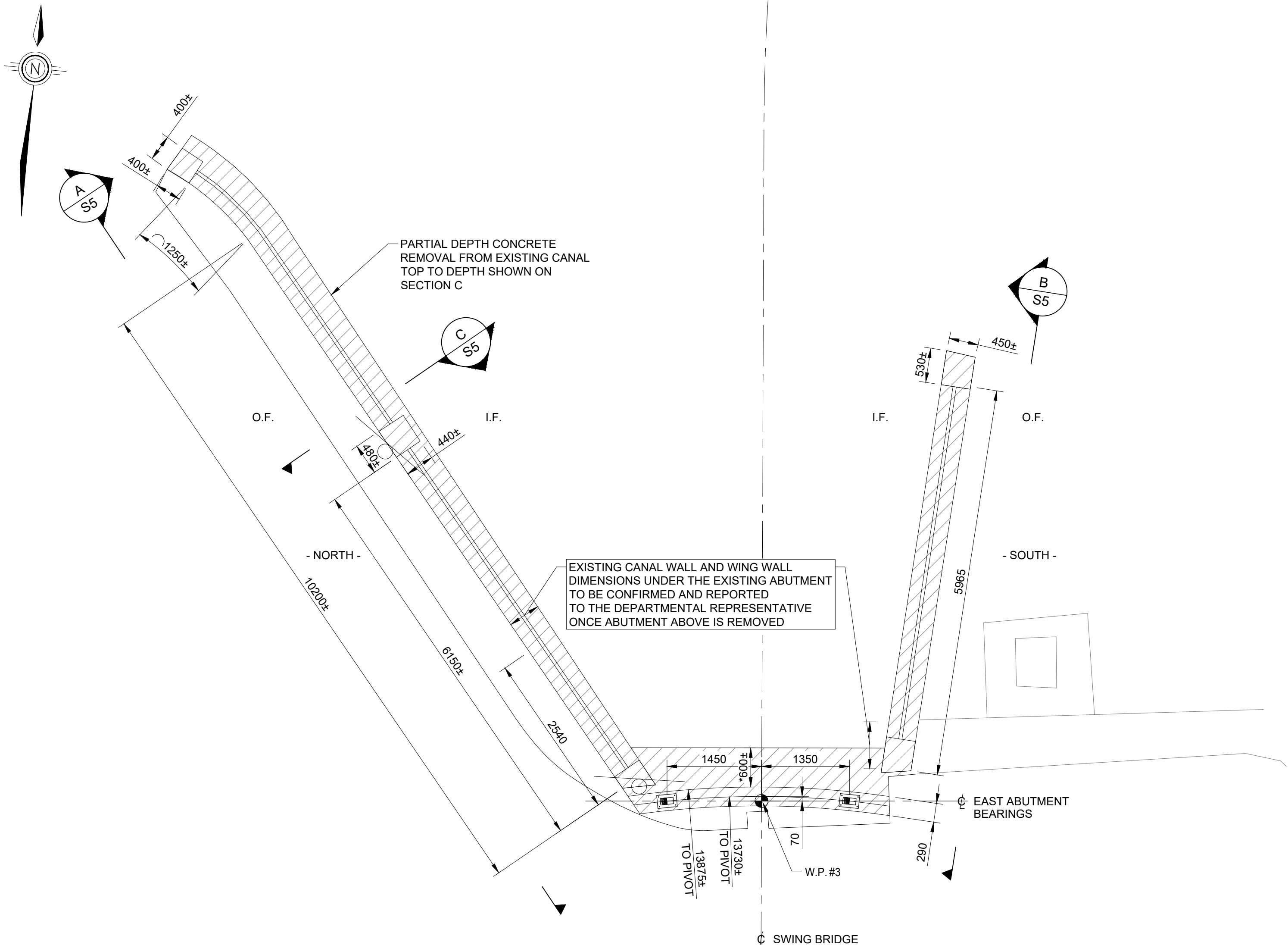
approved by
approuvé par D.A. HUETWICH

bid
offre TYLER ATKINSON project manager
administrateur de projets

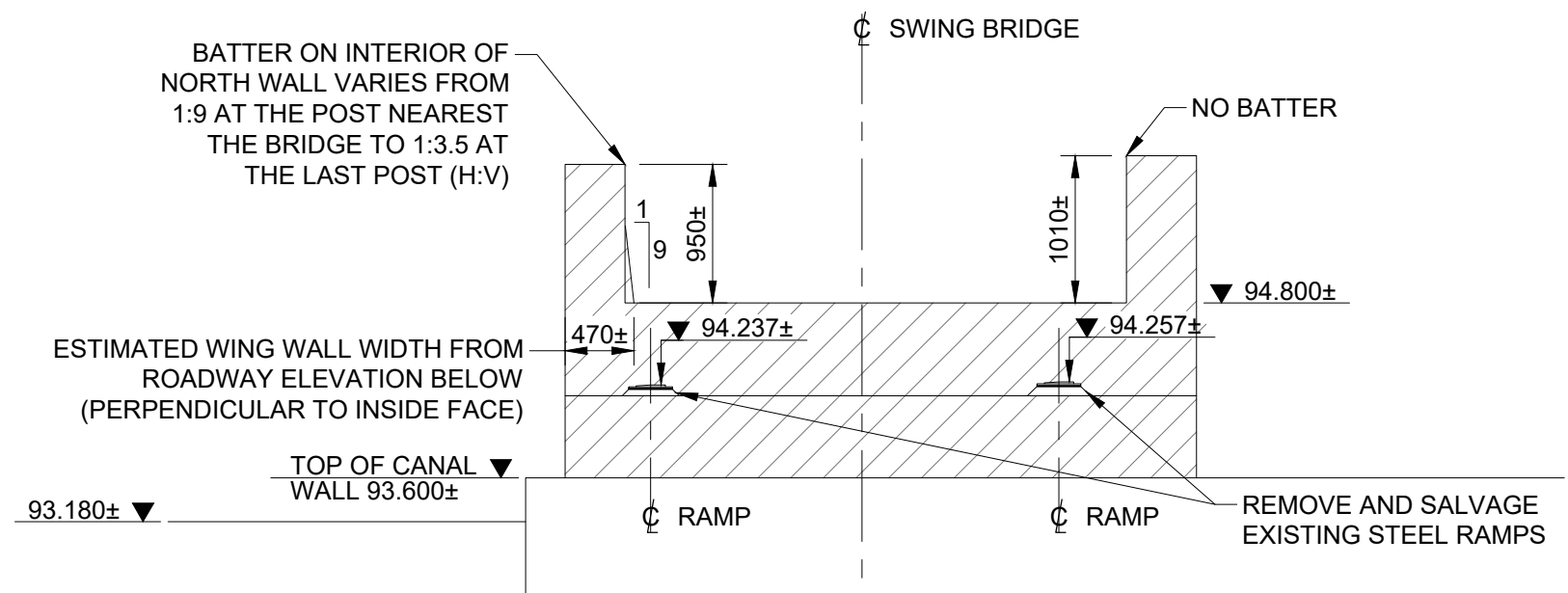
project date
date du projet 2021-10-29

project no.
no. du projet 30037015

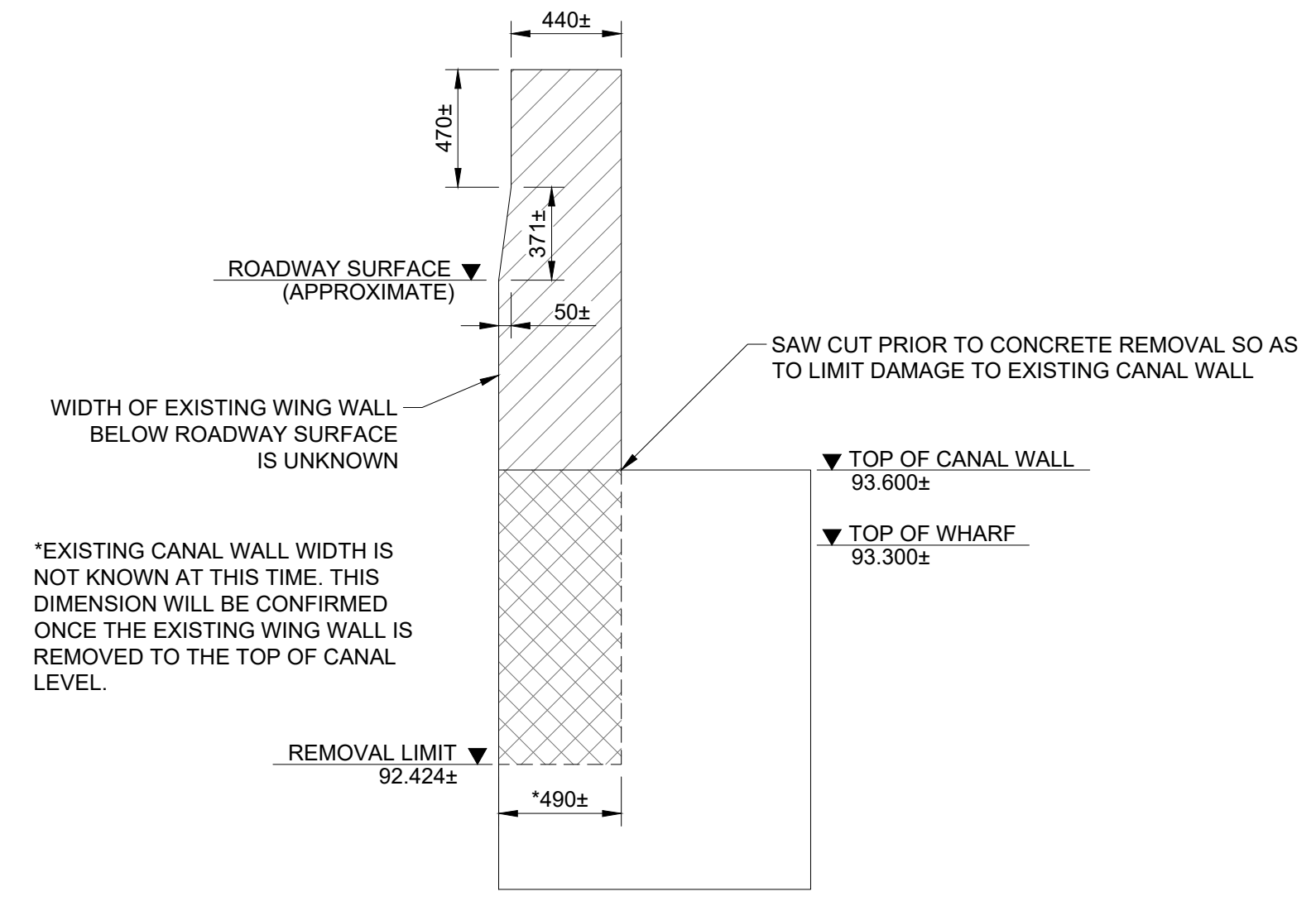
drawing no.
dessiné no. S4



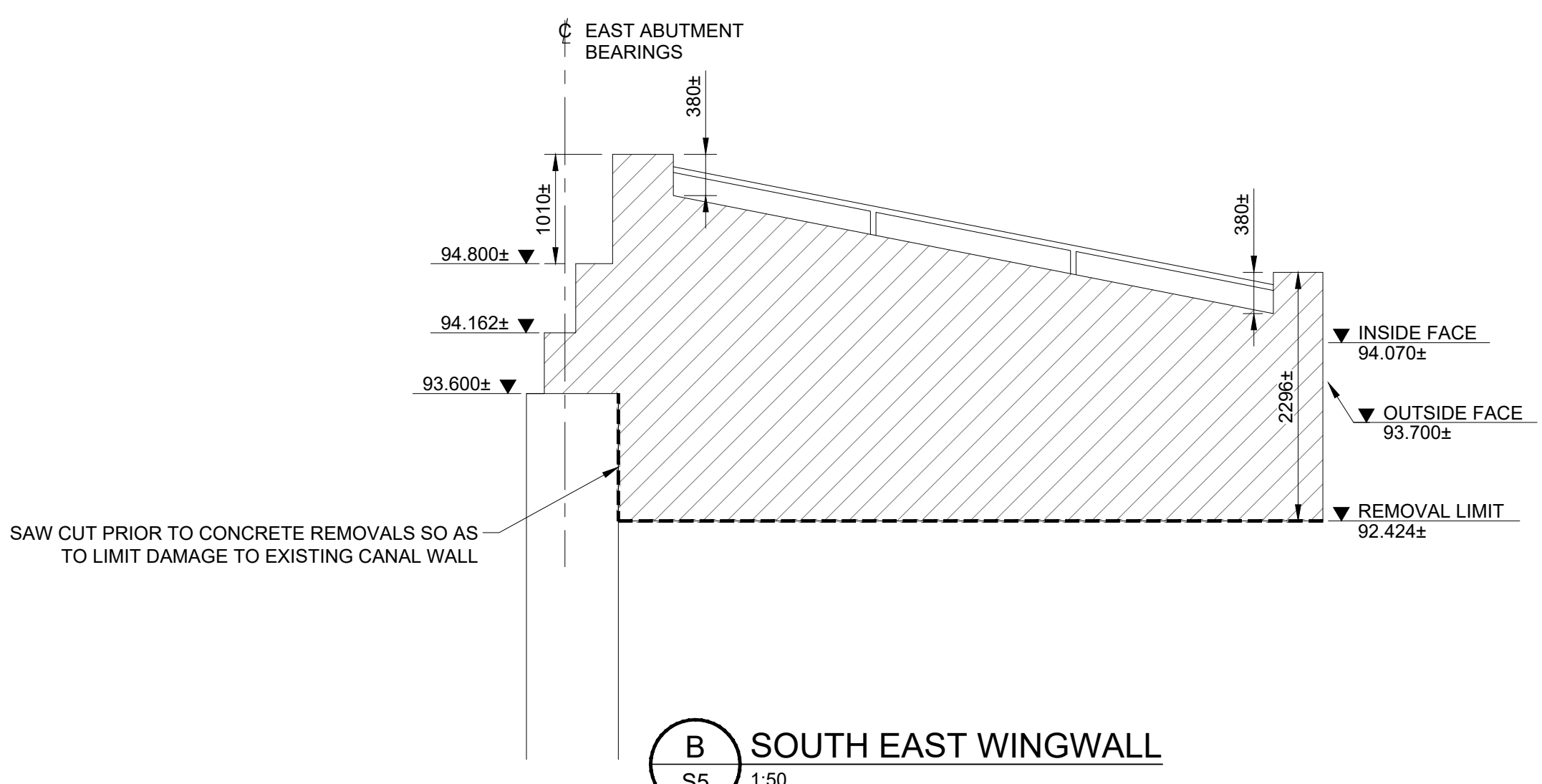
PLAN
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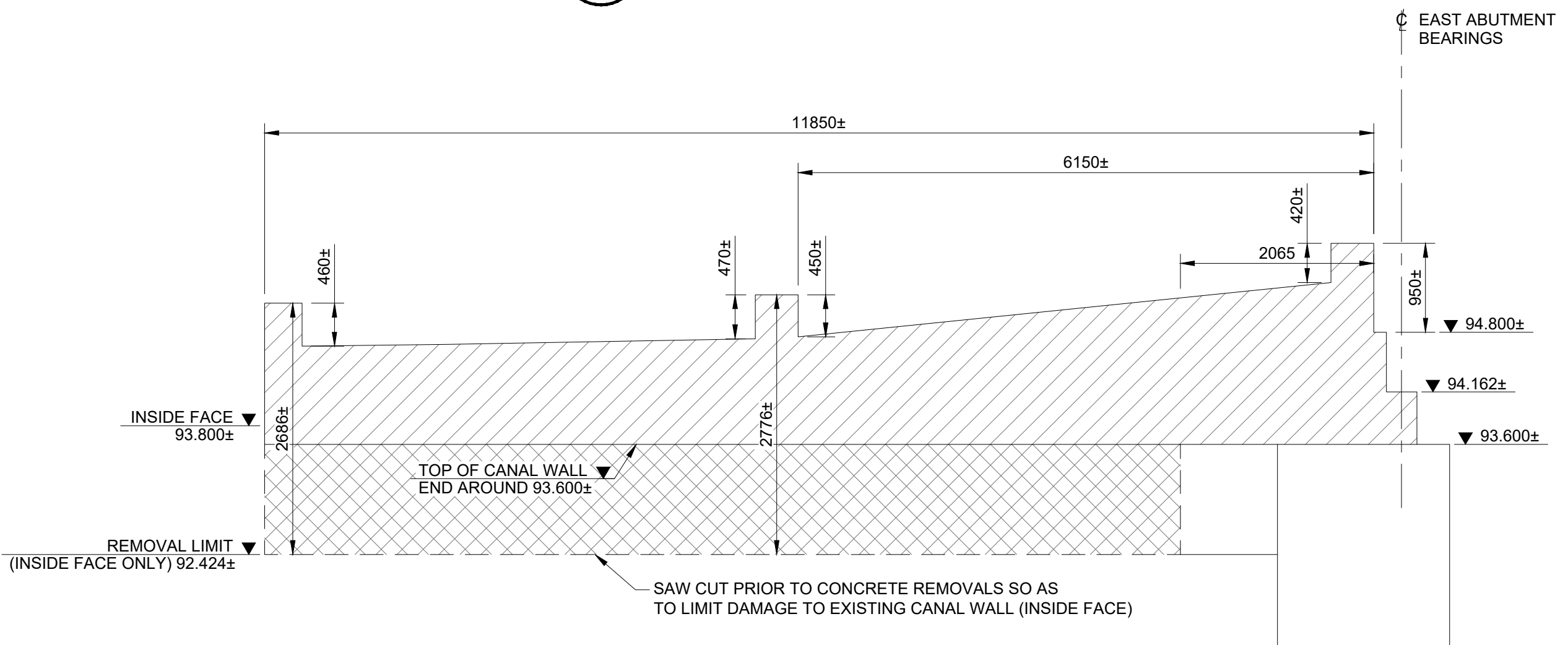
ELEVATION
1:50



C SECTION
S5 1:25



B SOUTH EAST WINGWALL
S5 1:50



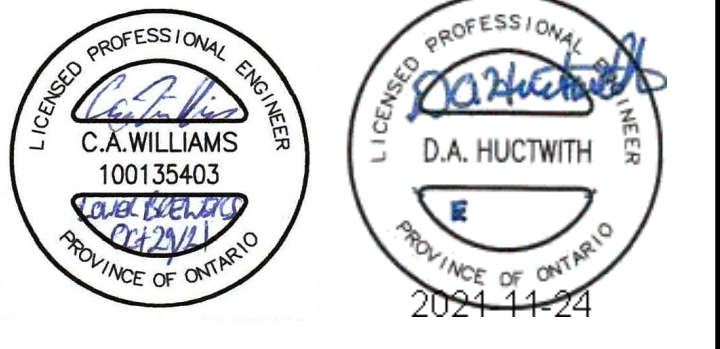
A NORTH EAST WINGWALL
S5 1:50

NOTES:

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- THE CONTRACTOR IS RESPONSIBLE FOR LOCATES PRIOR TO PERFORMING ANY EXCAVATION AT THE SITES.
- THE CONTRACTOR IS TO COMMUNICATE WITH PARKS CANADA STAFF ONCE THE EXCAVATION LIMITS ARE CONFIRMED THAT THERE ARE NO PARKS CANADA UTILITY CONFLICTS.
- EXISTING CANAL WALL AND ASSOCIATED FEATURES ARE NOT TO BE DAMAGED DURING REMOVAL PROCESS. SAW CUT PRIOR TO REMOVAL FOR PARTIAL DEPTH REMOVALS AND USE CHIPPING HAMMERS ONLY WHERE PARTIAL DEPTH REMOVALS ARE DESIGNATED.
- ADDITIONAL CARE MUST BE TAKEN WHEN WORKING NEAR OR ADJACENT TO THE HISTORIC CANAL WALLS. ALL EXCAVATION AND WORK SHALL BE COMPLETED USING THAT PUT NO ADDITIONAL LOAD ON THE CANAL WALL.
- ONLY CHIPPING HAMMERS SHALL BE USED FOR ALL PARTIAL DEPTH CONCRETE REMOVALS AND REMOVALS DIRECTLY OVER THE CANAL WALL. CHIPPING HAMMERS SHALL HAVE A MAXIMUM WEIGHT OF 9.0KG PRIOR TO ANY HANDLE MODIFICATION AND A MAXIMUM PISTON STROKE OF 102mm.

LEGEND:

- CONCRETE REMOVAL FULL DEPTH
- CONCRETE REMOVAL PARTIAL DEPTH



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	dessin no. - ou detail exigé	
	drawing no. - where detailed	
	dessin no. - ou détaillé	

project title
titre du projet

ONTARIO

LOWER BREWERS
SWING BRIDGE REPLACEMENT
RIDEAU CANAL

drawing title
titre du dessin

EAST ABUTMENT AND WING WALLS REMOVALS

drawn by
dessiné par

G. MOTA

designed by
conçu par

C. WILLIAMS/L. CUMMING

approved by
approuvé par

D.A. HUCTWITH

bid
offre

TYLER ATKINSON

project manager
administrateur de projets

project date
date du projet

2021-10-29

project no.
no. du projet

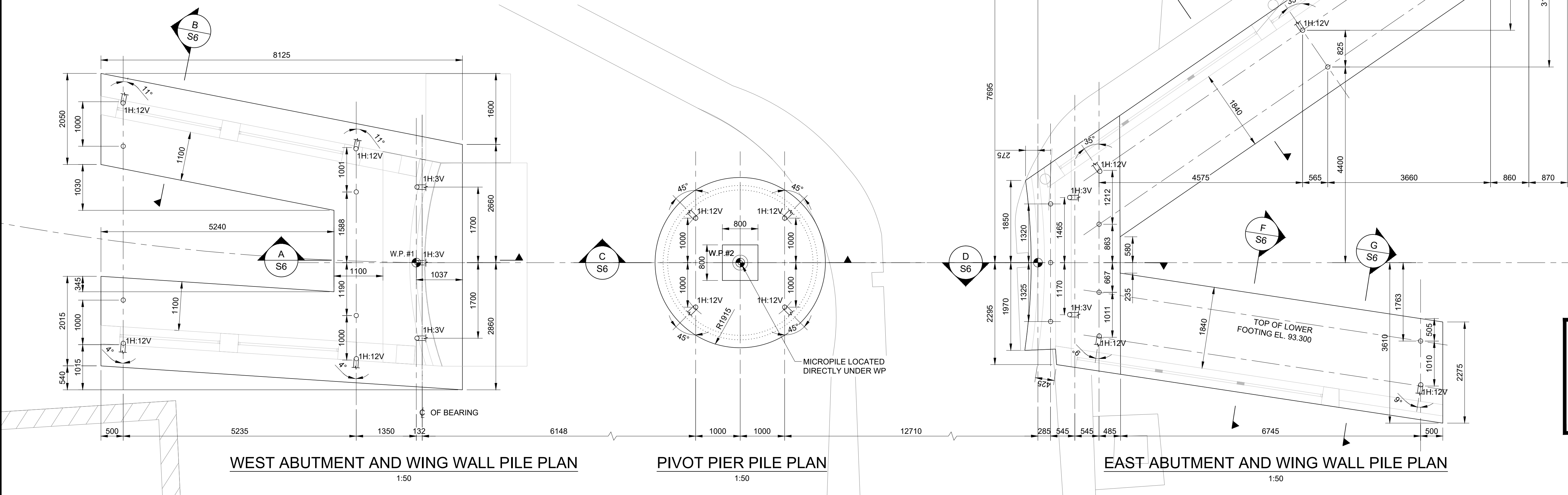
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drawing no.
dessiné no.

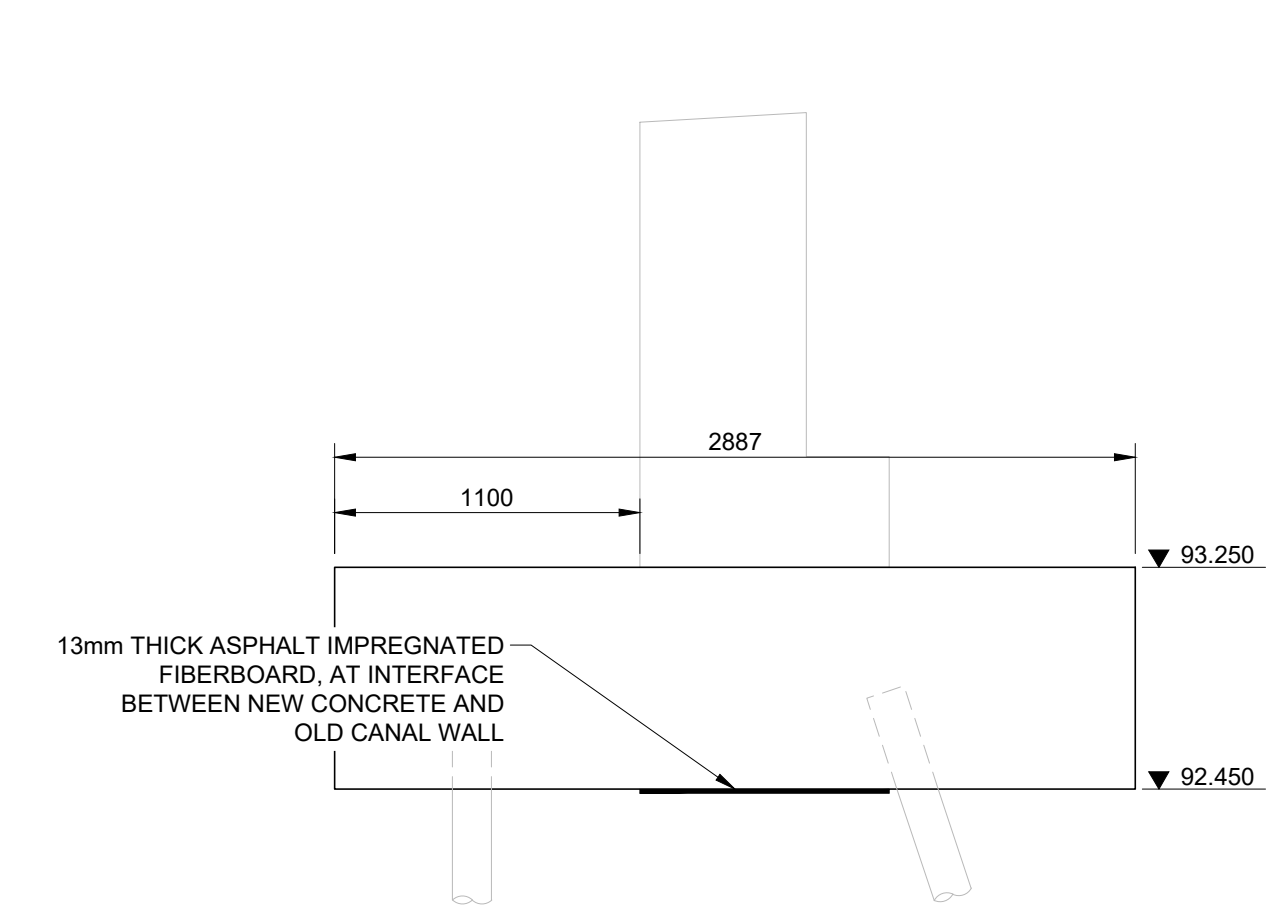
S5

PILE DATA TABLE					
FEATURE	NUMBER OF PILES	ESTIMATED MICROPILE DIAMETER (mm)	ESTIMATED AVERAGE LENGTH FROM BOTTOM OF PILE CAP TO TOP OF ROCK (m)	MINIMUM PILE RESISTANCES (kN)	
				(COMPRESSION)	(TENSION)
				ULS	ULS
WEST ABUTMENT	11	101	3.0	785	50
PIVOT PIER	5	101	9.0	840	NA
EAST ABUTMENT	15	101	9.5	1160	840

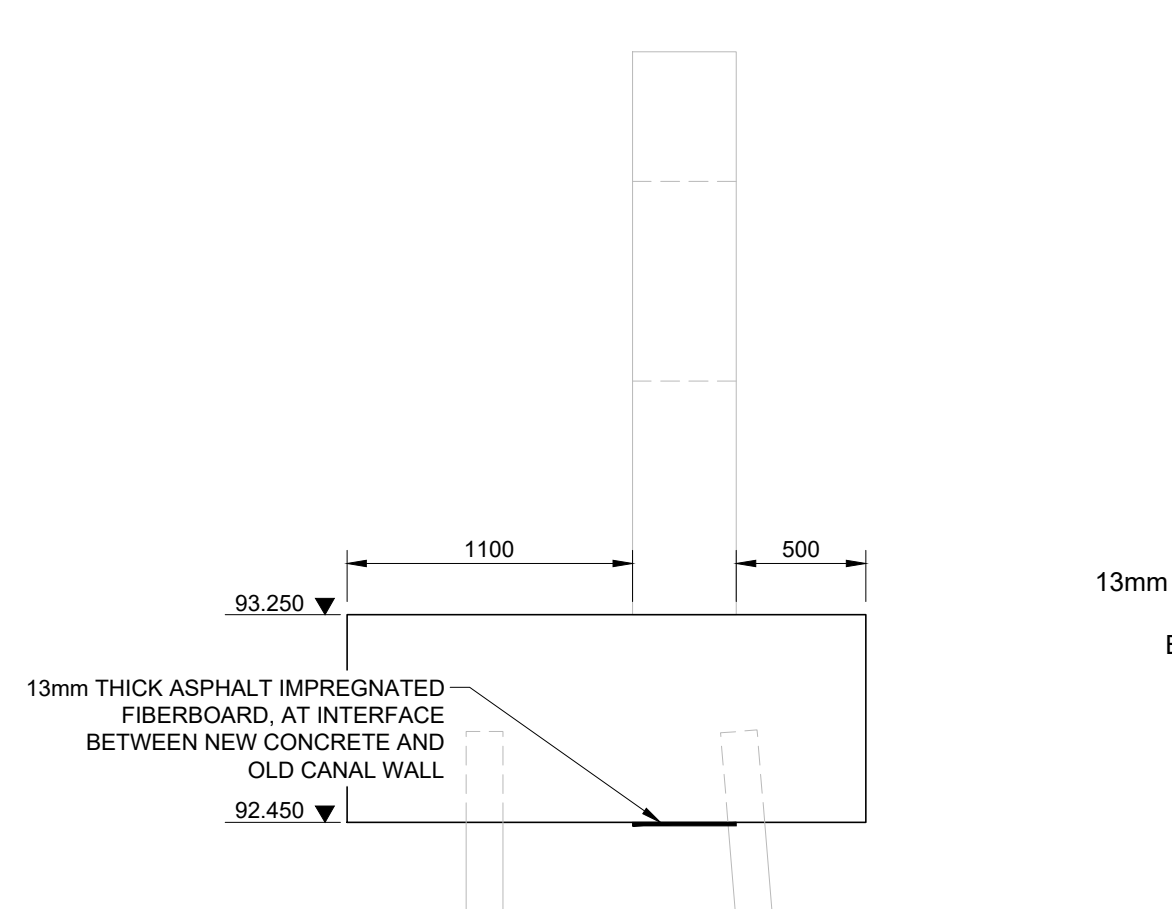
- NOTES:**
- PILE SPACING IS MEASURED AT THE UNDERSIDE OF FOOTINGS.
 - CASED UPPER MICROPILE LENGTHS SHOWN ARE THE THEORETICAL. REFER TO CURRENT AND HISTORIC GEOTECHNICAL REPORTS.
 - THE MICROPILE CONTRACTOR SHALL DESIGN AND INSTALL MICROPILES THAT WILL DEVELOP THE LOAD CAPACITIES INDICATED ON THE PILE DATA TABLE.
 - THE MICROPILE CONTRACTOR'S EXPERIENCE MUST MEET THE REQUIREMENTS AS DESCRIBED IN THE SPECIFICATION SECTION 31 63 19.
 - DETAILING OF CONCRETE JOINTS PER OPSD 3950.100 JOINTS CONCRETE EXPANSION AND CONSTRUCTION ON STRUCTURE.
 - PREFORMED JOINT FILLER SHALL BE IN CONFORMANCE WITH ASTM D994/D994M-11 (2016).
 - DURING WINTER CONSTRUCTION, EXPOSED SURFACES/EXCAVATIONS THAT WILL BE IN DIRECT CONTACT WITH CONCRETE OR ARE INTENDED TO SUPPORT THE STRUCTURE (TEMPORARY OR PERMANENT) MUST BE PROTECTED AGAINST FREEZING.



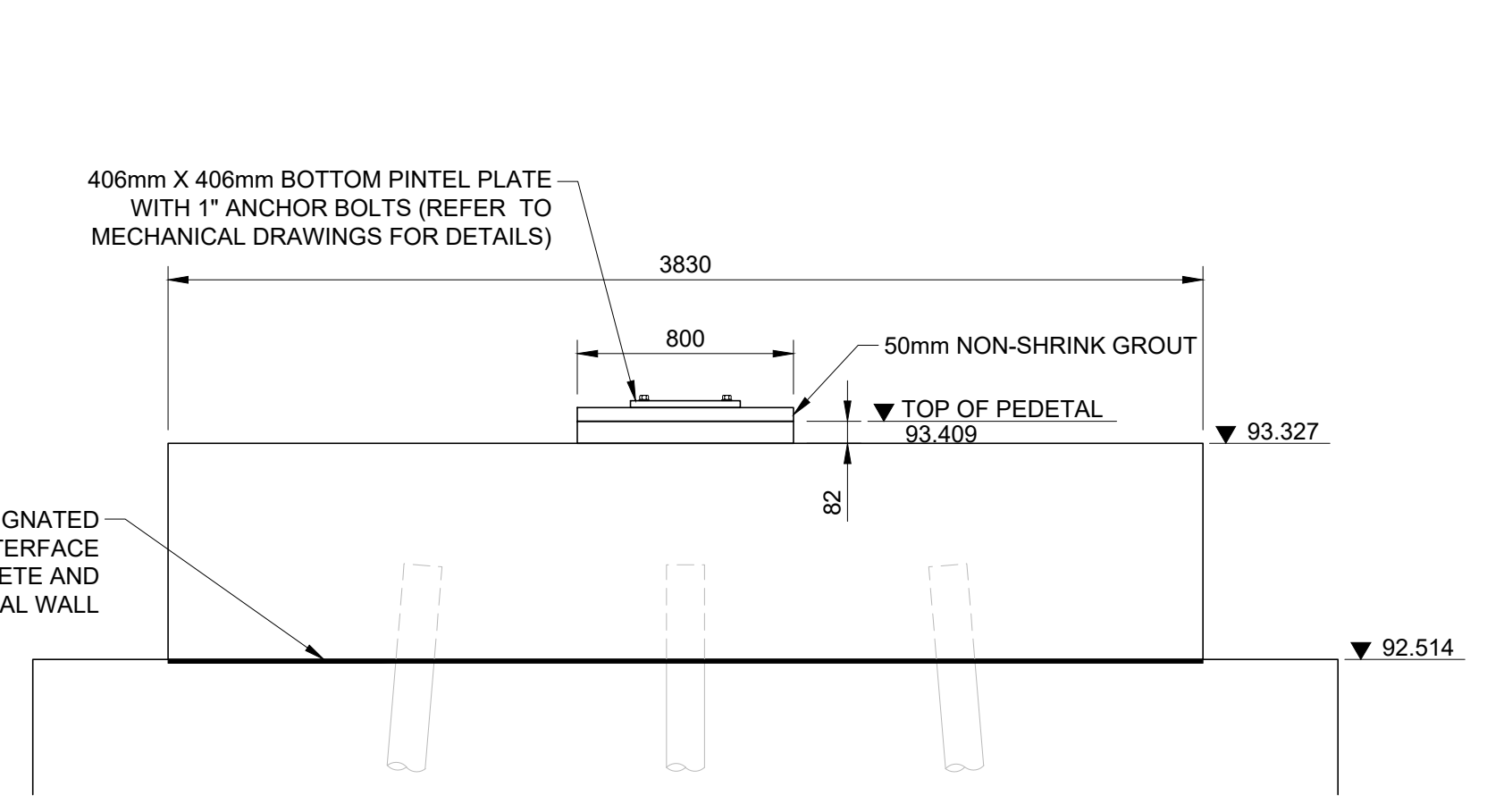
NOTE: DESIGN LIMITATIONS
 THE MICROPILE SPECIALTY CONTRACTOR IS RESPONSIBLE FOR FURNISHING OF ALL DESIGN, MATERIALS, PRODUCTS, ACCESSORIES, TOOLS, EQUIPMENT, SERVICES, TRANSPORTATION, LABOR AND SUPERVISION, AND MANUFACTURING TECHNIQUES REQUIRED FOR DESIGN, INSTALLATION AND TESTING OF MICROPILES AND PILE TOP ATTACHMENTS FOR THIS PROJECT. **THE DESIGN OF THE FOUNDATIONS SHOWN ON THIS DRAWING COMPLETED BY WSP IS LIMITED TO THE FOOTINGS AND LOADING THAT GETS TRANSFERRED TO THE PILES.**



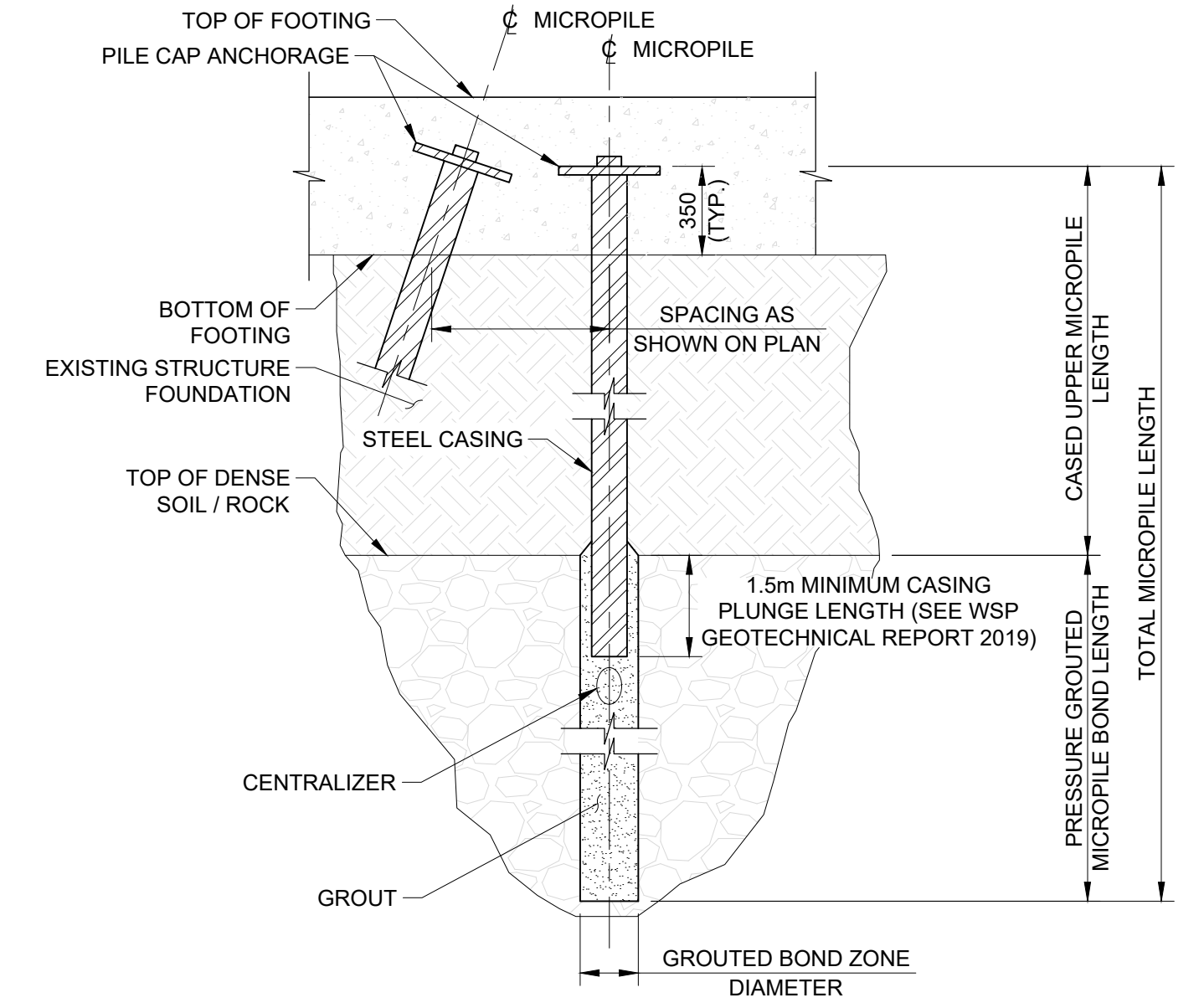
A SECTION: WEST ABUTMENT FOOTING
1:25



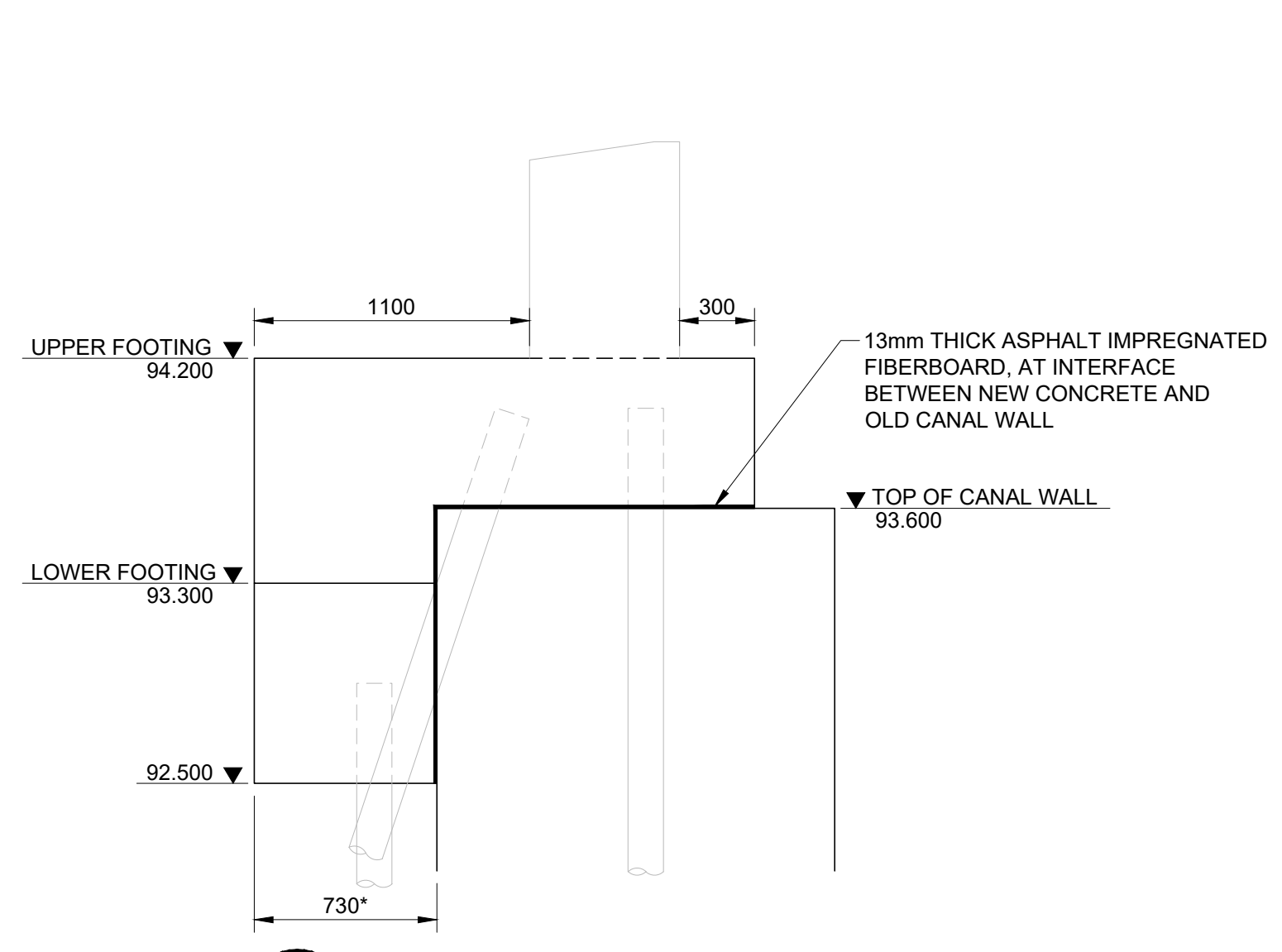
B SECTION: WING WALL AT CONCRETE POST
1:25 (NORTH SHOWN, SOUTH SIMILAR)



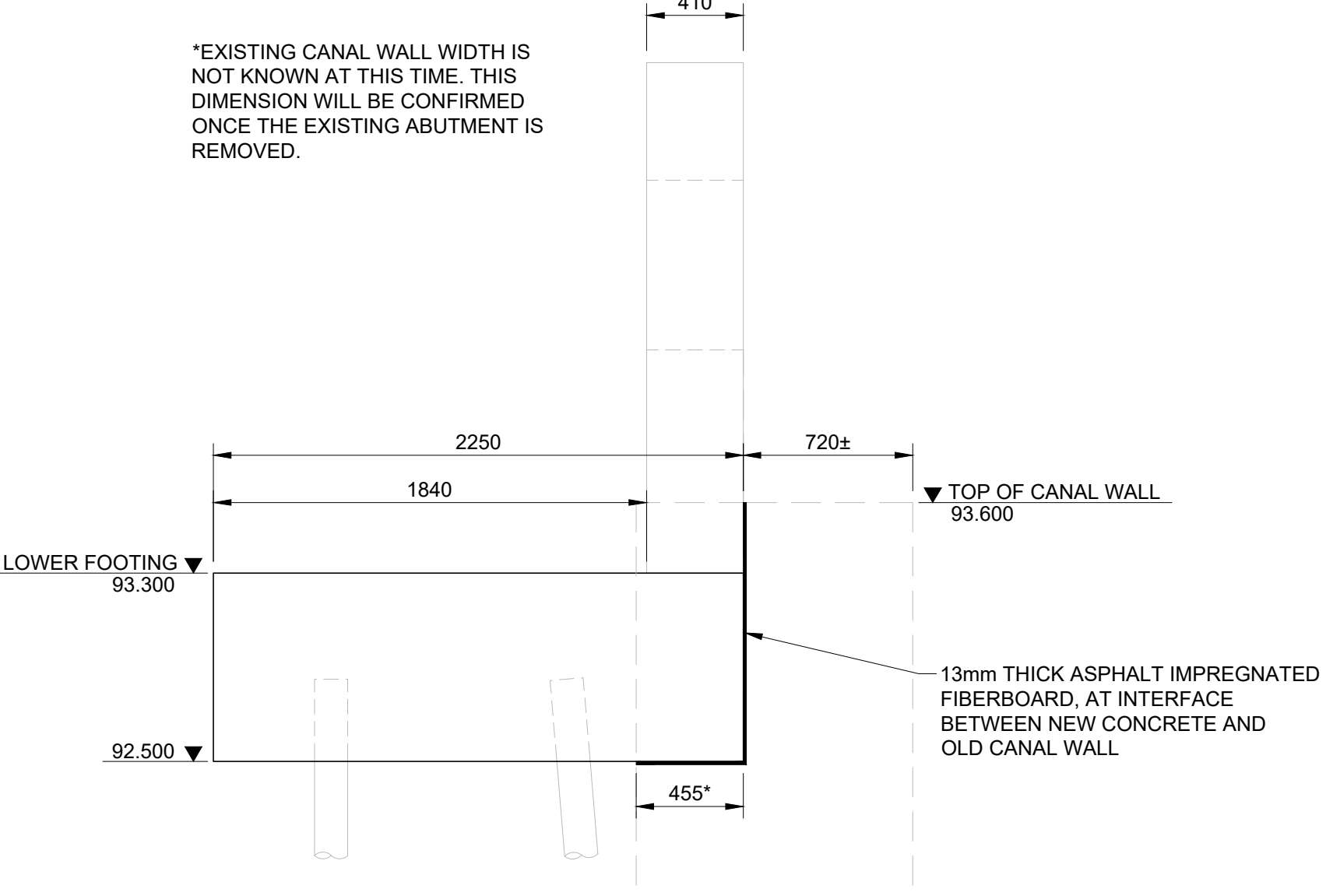
C SECTION: PIVOT PIER
1:25



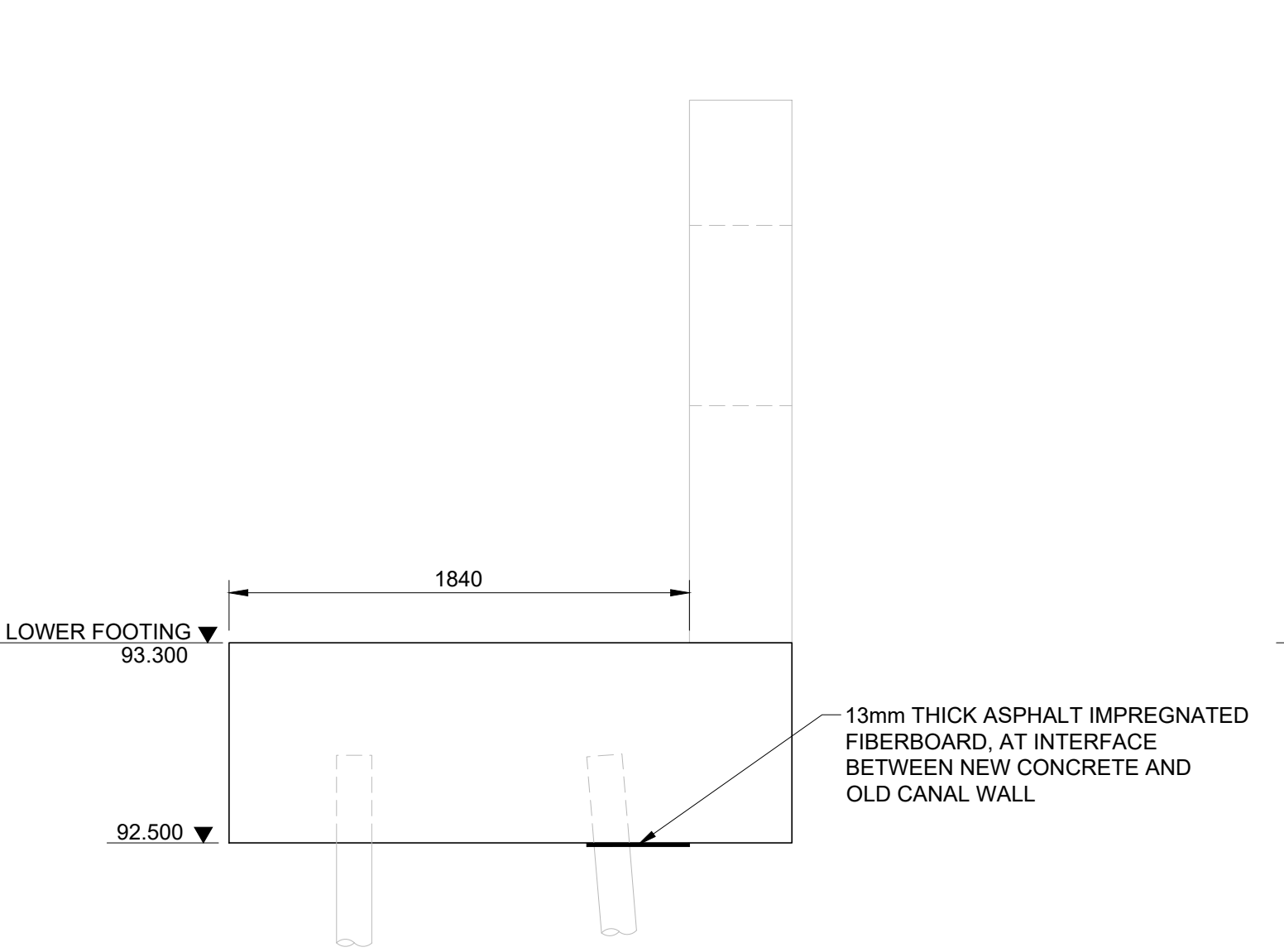
MICROPILE (TYPICAL)
N.T.S.



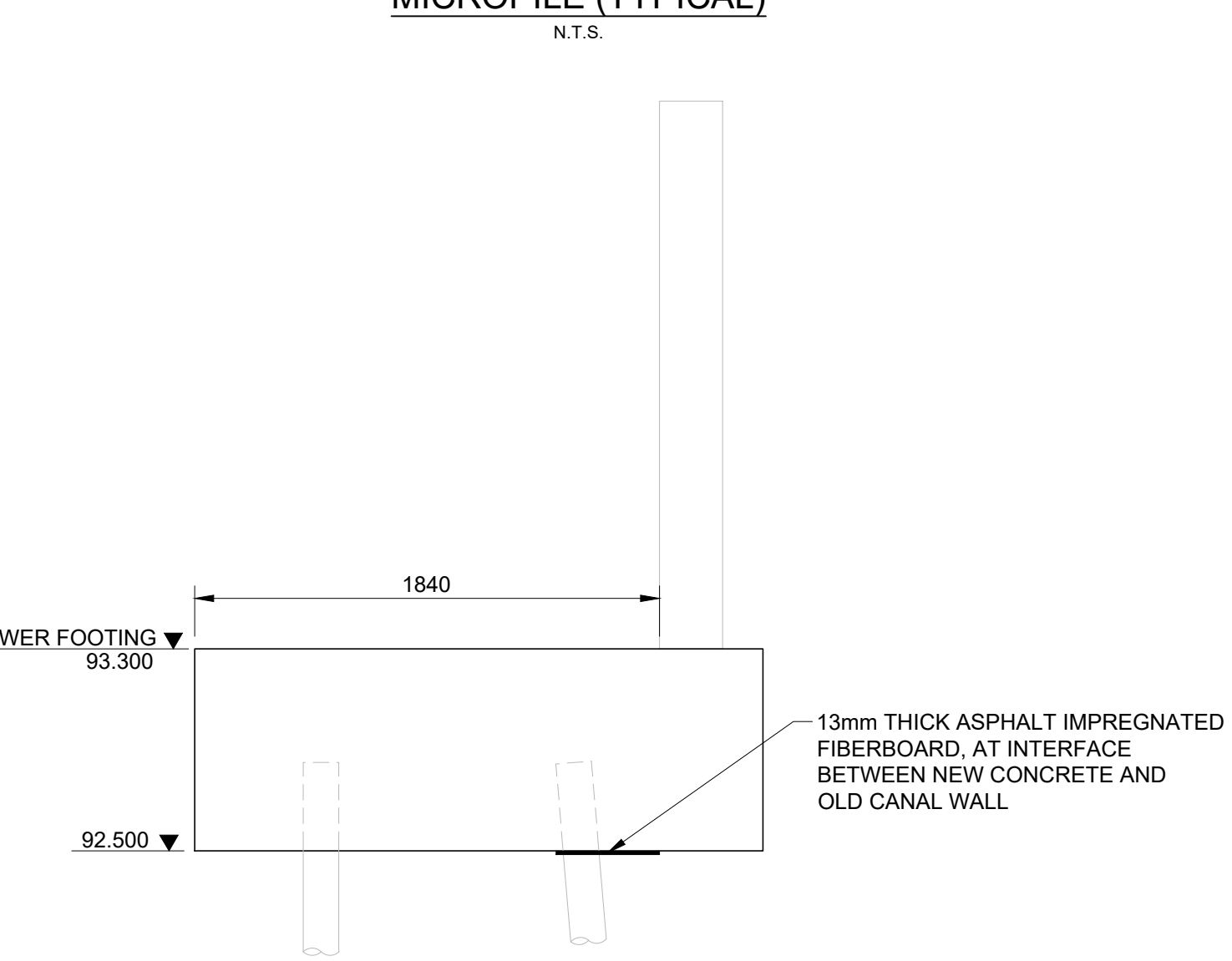
D SECTION: EAST ABUTMENT
1:25



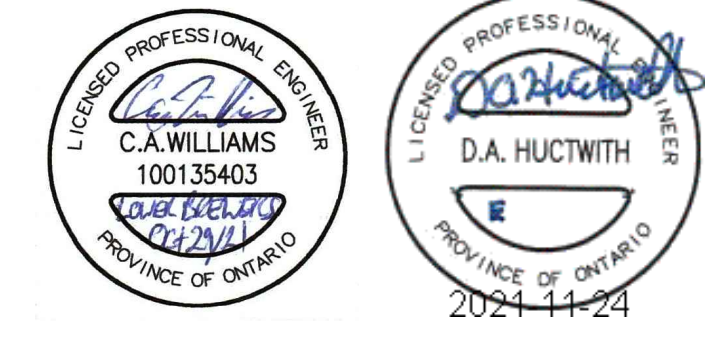
E NORTH EAST WING WALL FOOTING
1:25



F SECTION: SOUTH EAST WINGWALL AT CONCRETE POST
1:25



G SECTION: SOUTH EAST WINGWALL AT CONCRETE POST
1:25



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	dessein no. - ou detail exige	
	drawing no. - where detailed	
	dessein no. - ou detaille	

project title
titre du projet

ONTARIO
 LOWER BREWERS SWING BRIDGE REPLACEMENT
 RIDEAU CANAL

drawing title
titre du dessin

FOUNDATION LAYOUT

drawn by
dessine par

G. MOTA

designed by
conc par

C. WILLIAMS/L. CUMMING

approved by
approuve par

D.A. HUCTWITH

bid
offre

TYLER ATKINSON

project manager
administrateur de projets

project date
date du projet

2021-10-29

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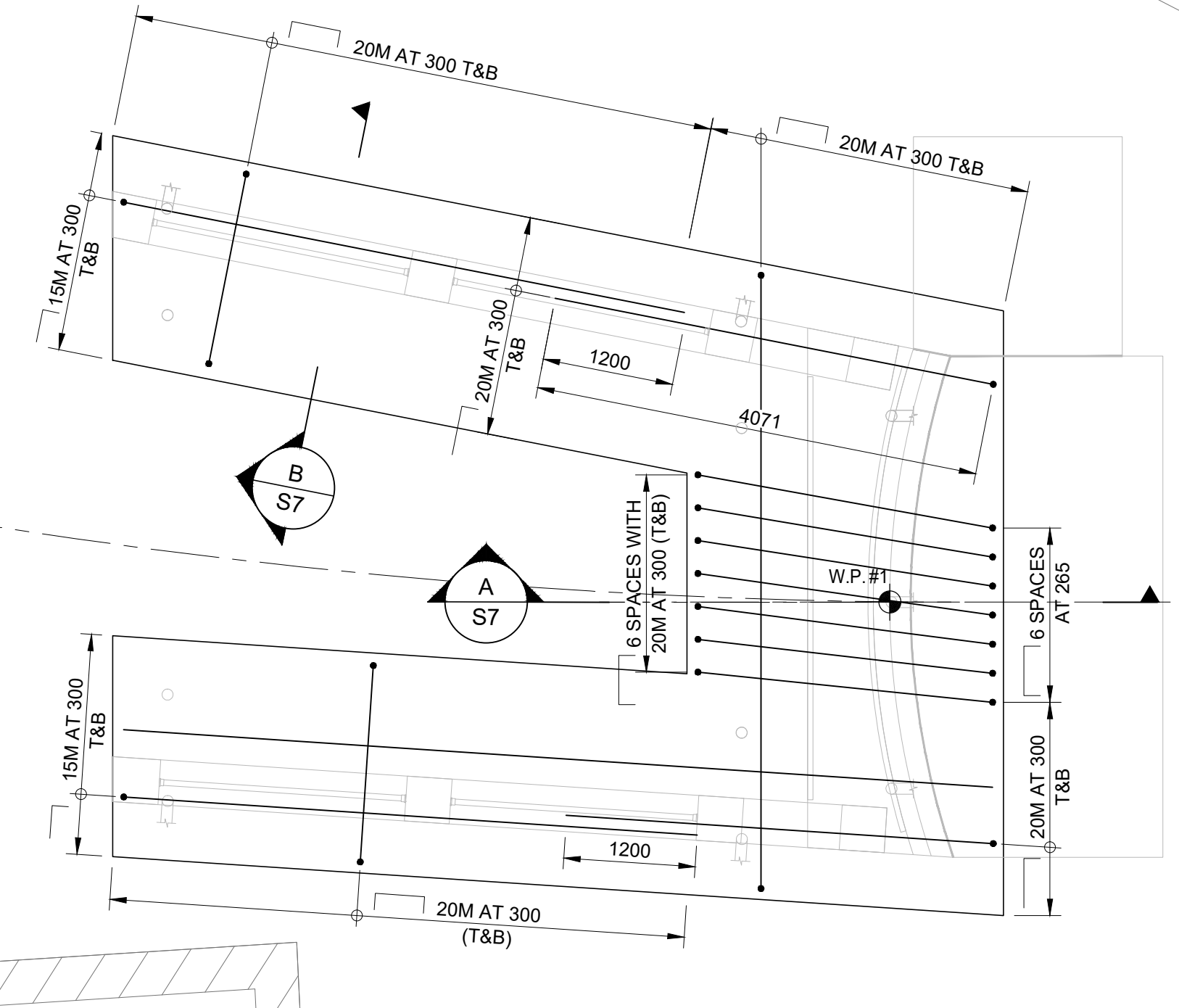
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drawing no.
dessine no.

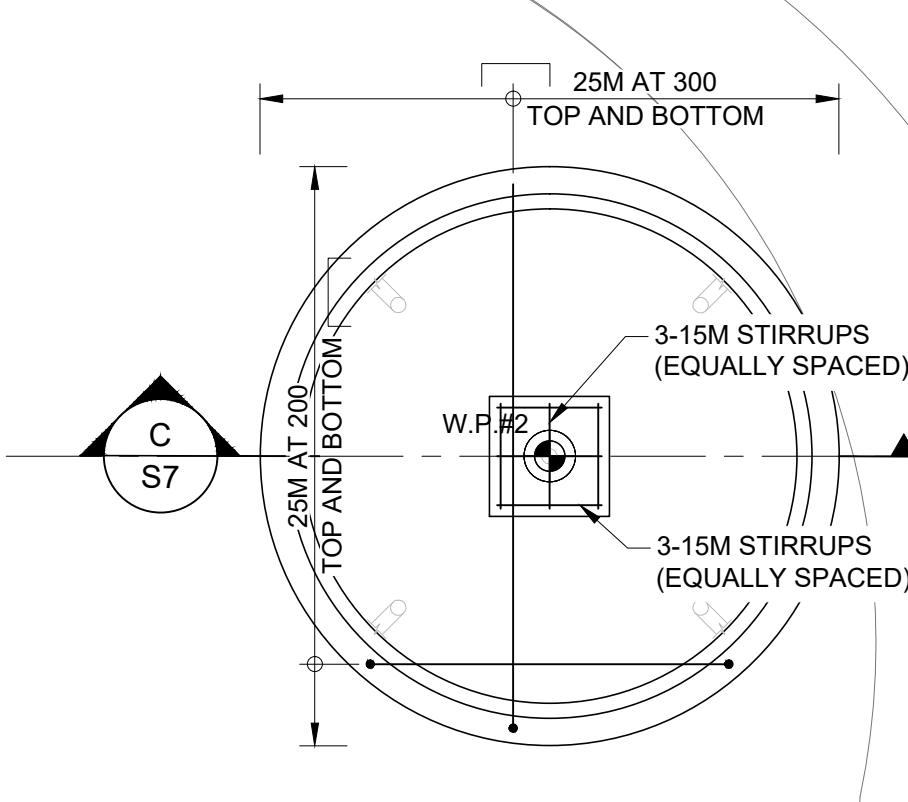
S6

NOTES:
 • THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING S1 (GA).

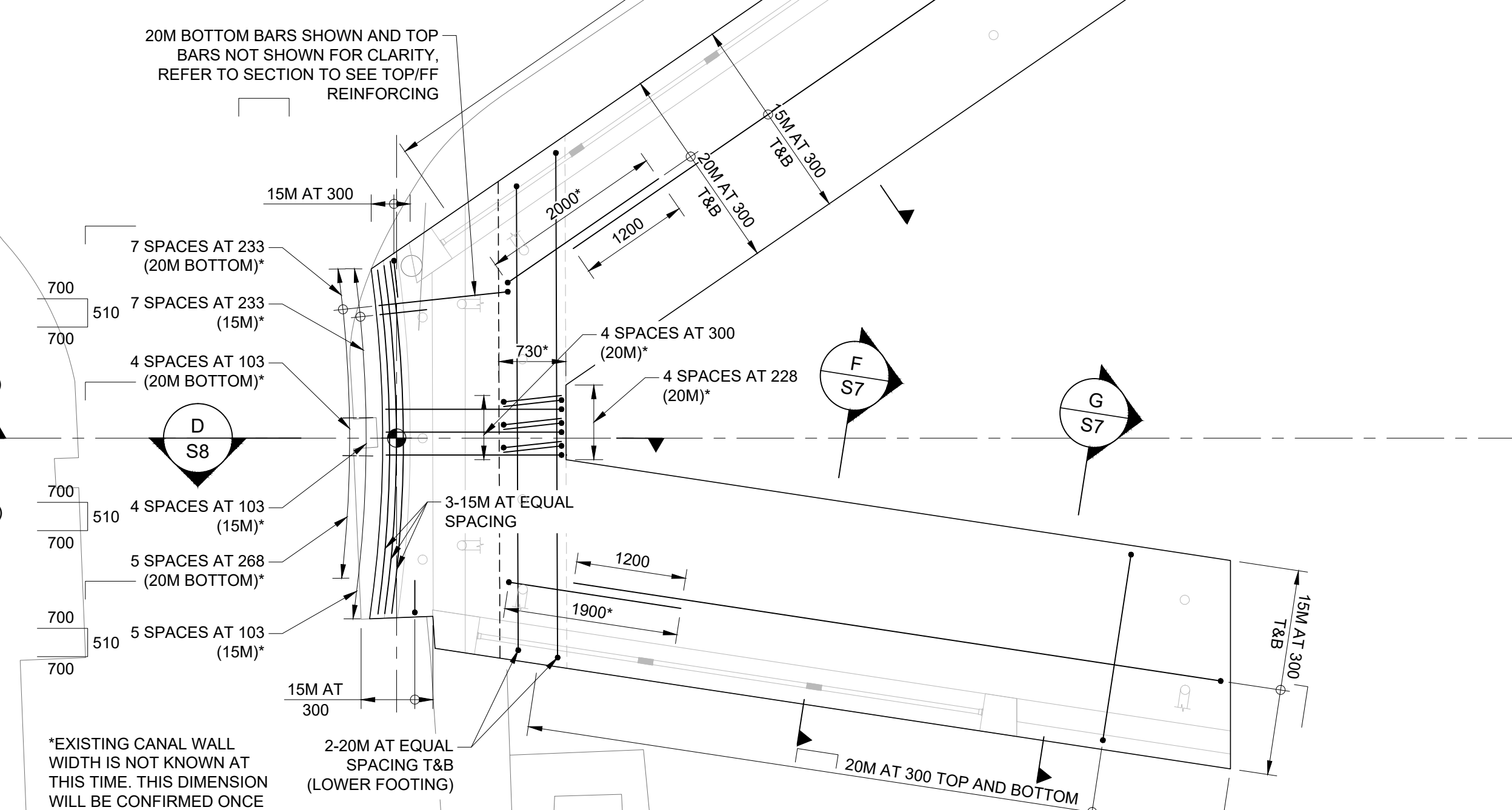
LEGEND:
 E.F. - DENOTES EACH FACE
 I.F. - DENOTES INSIDE FACE
 O.F. - DENOTES OUTSIDE FACE
 N.F. - DENOTES NEAR FACE
 F.F. - DENOTES FAR FACE
 C.J. - CONSTRUCTION JOINTS
 L.S. - LAP SPLICE



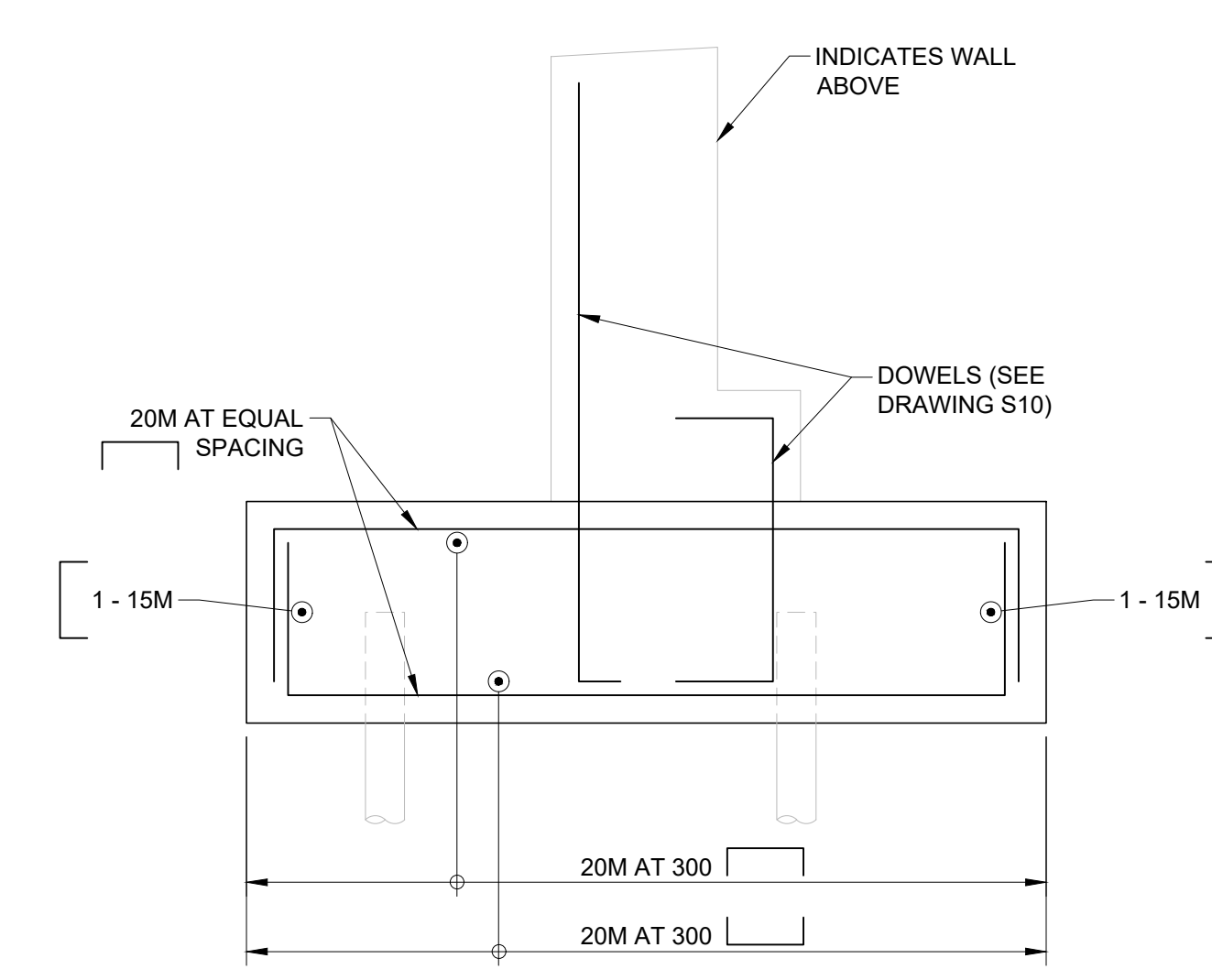
WEST ABUTMENT AND WING WALL PILE PLAN
1:50



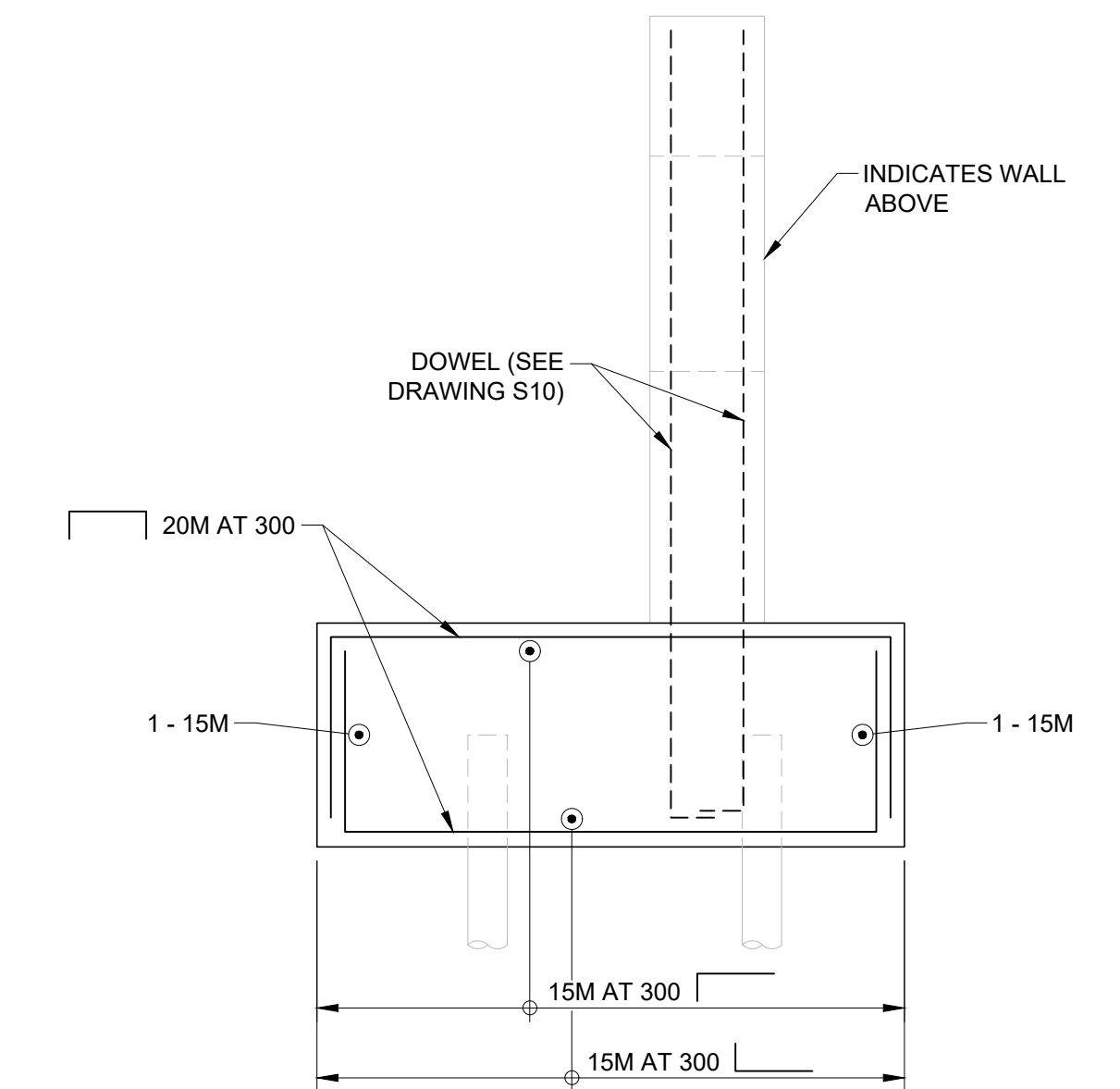
PIVOT PIER PILE PLAN
1:50



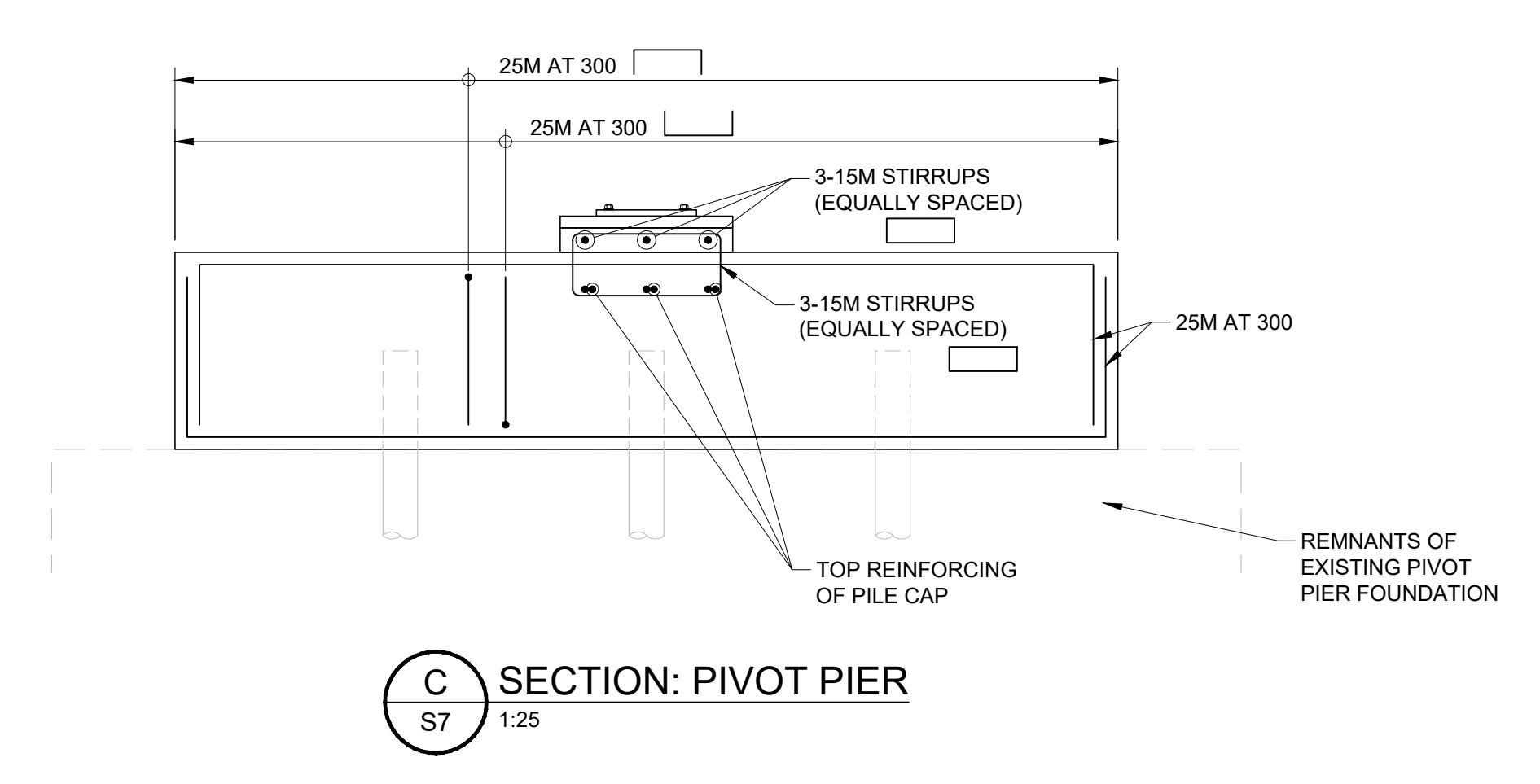
EAST ABUTMENT AND WING WALL PILE PLAN
1:50



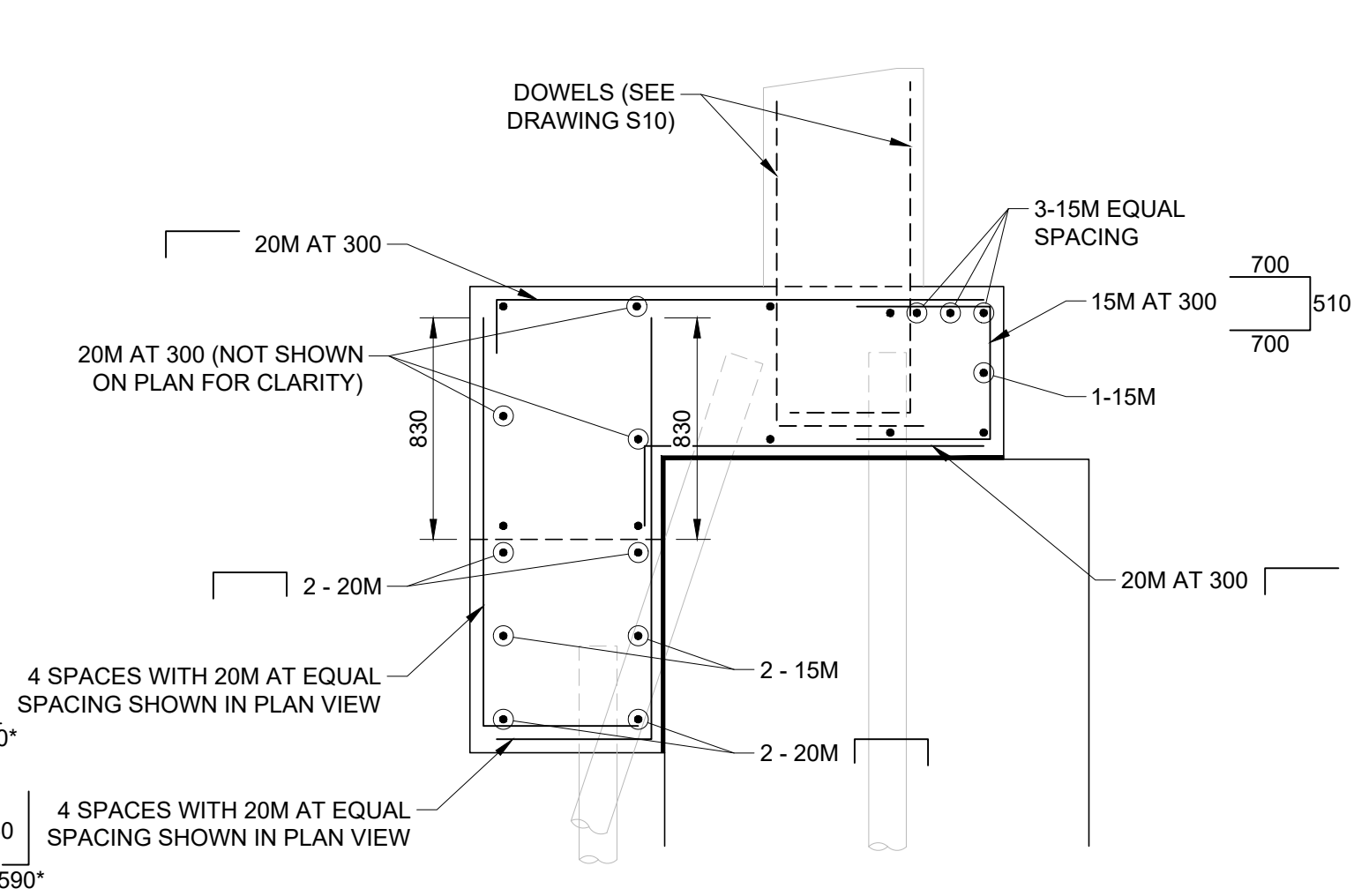
A SECTION: WEST ABUTMENT FOOTING
1:25



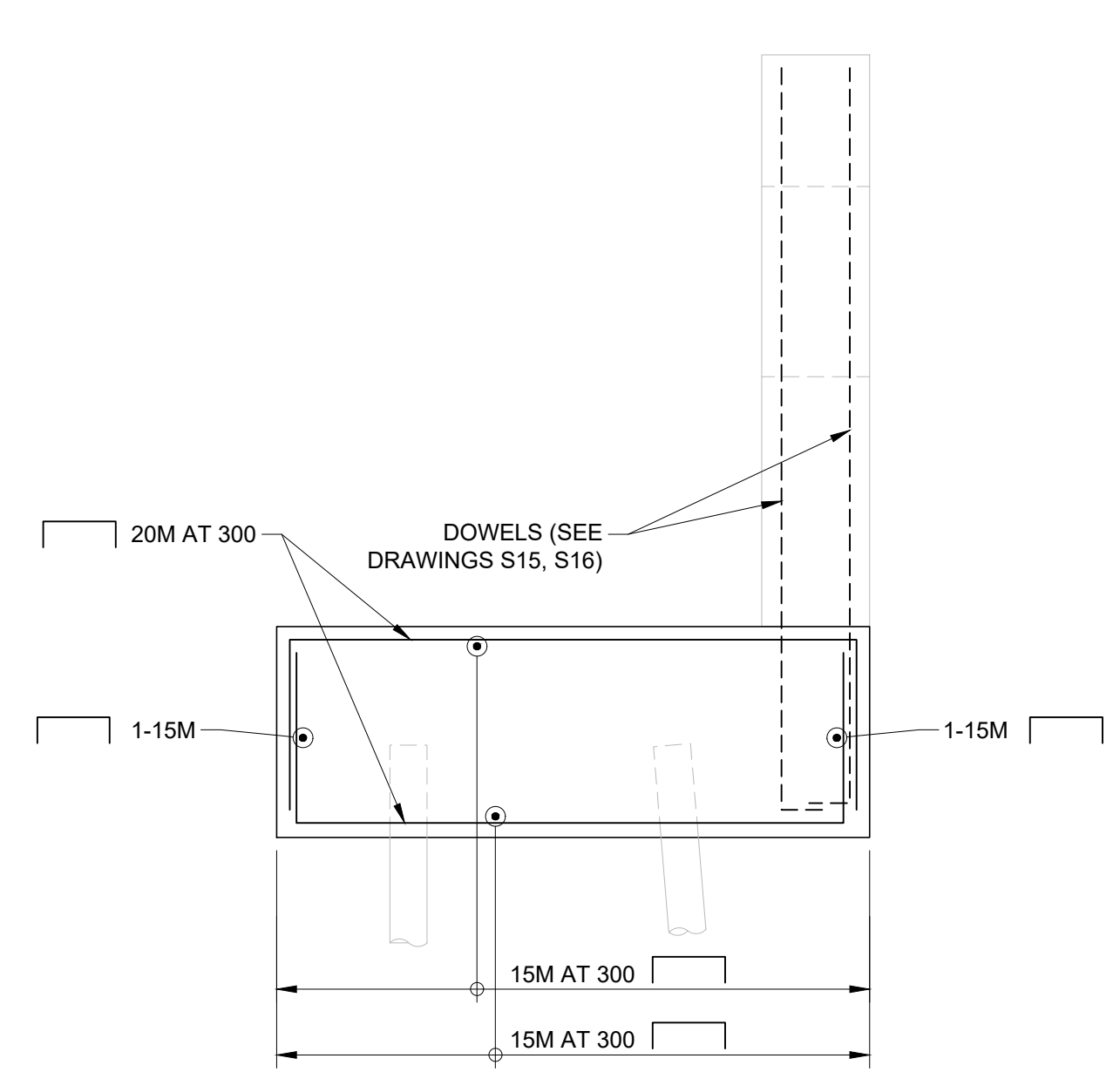
B SECTION: WING WALL AT CONCRETE POST
1:25 (NORTH SHOWN, SOUTH SIMILAR)



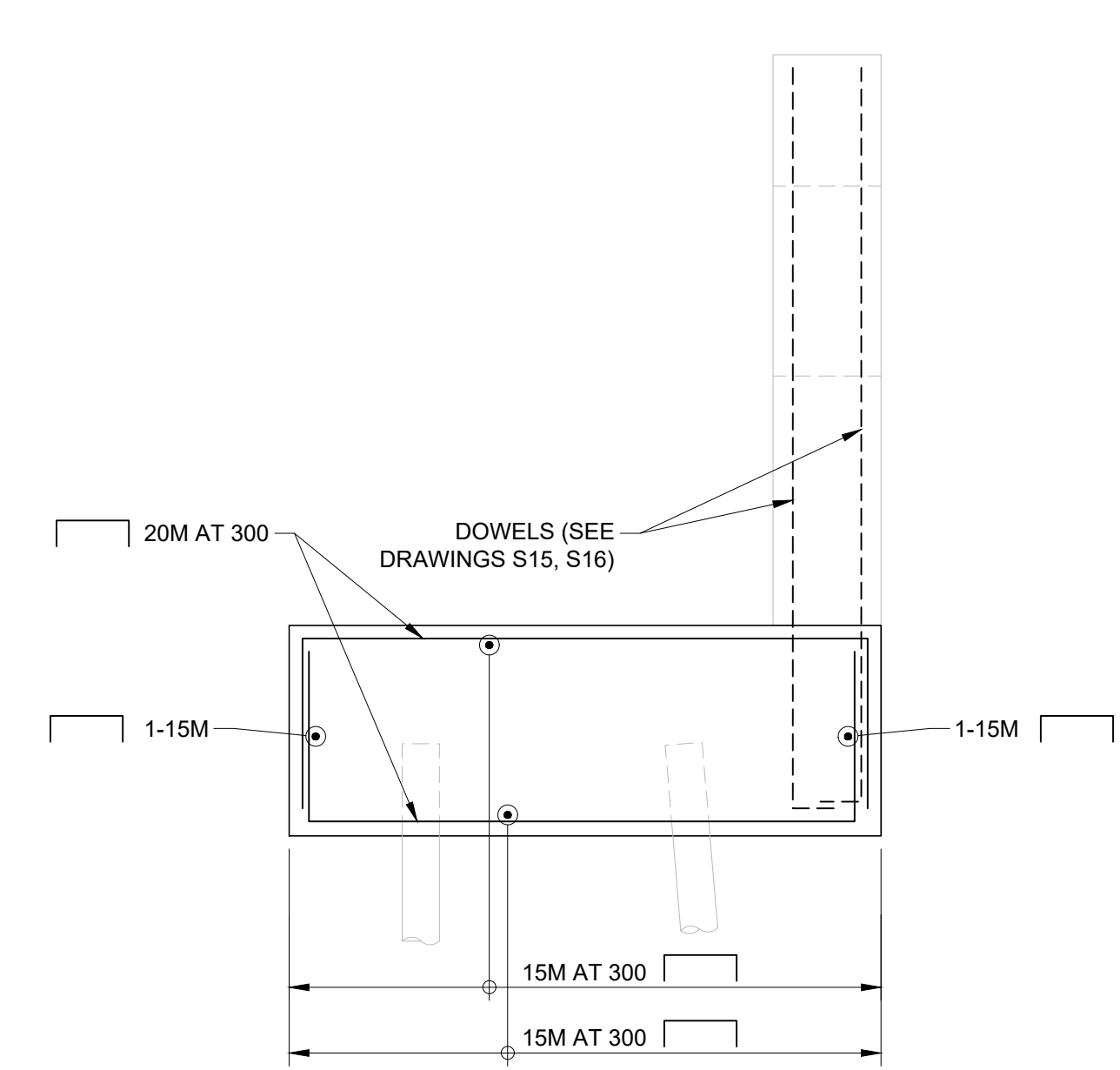
C SECTION: PIVOT PIER
1:25



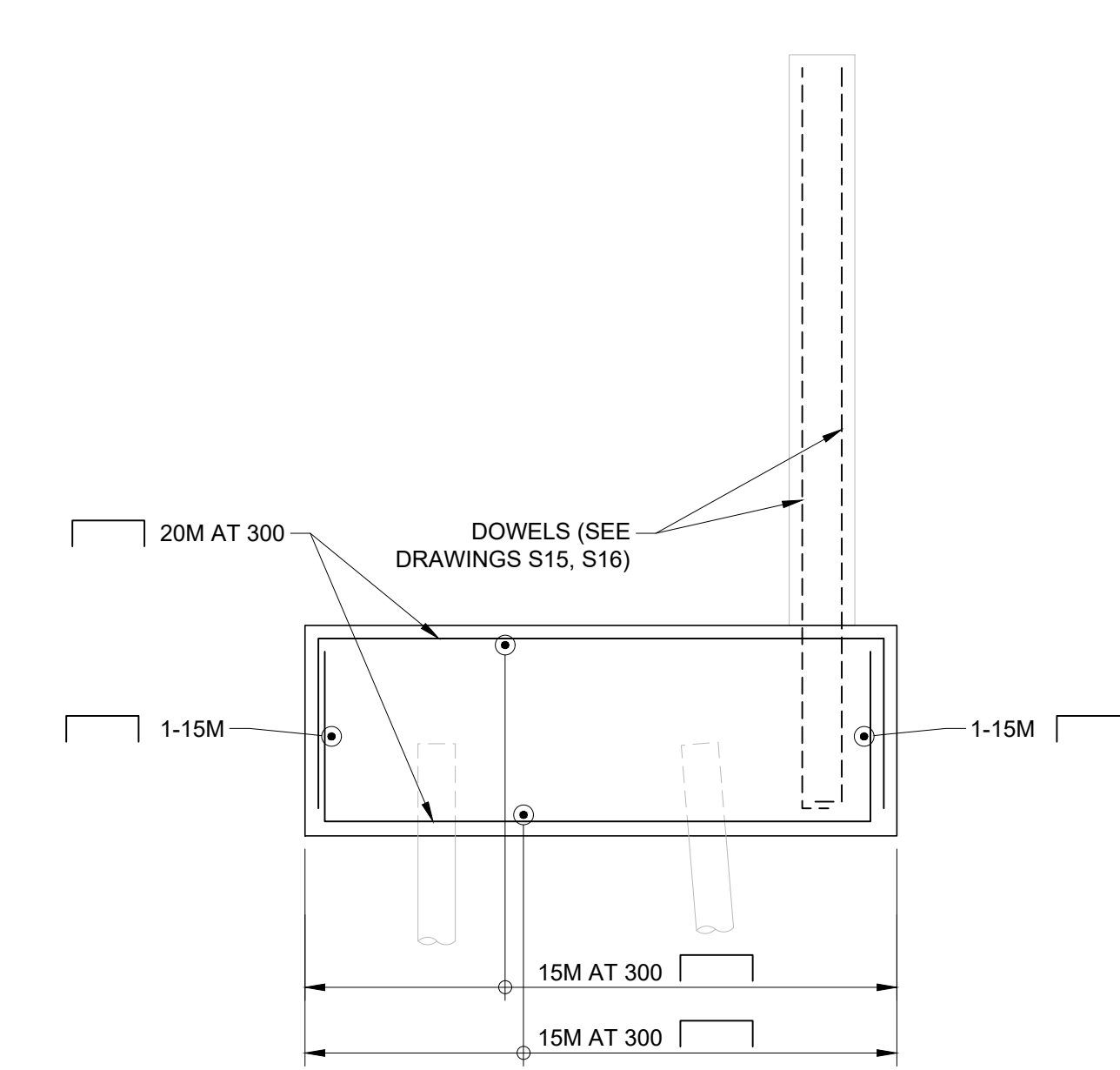
D EAST ABUTMENT
1:25



E NORTH EAST WING WALL FOOTING
1:25



F SOUTH EAST WINGWALL AT CONCRETE POST
1:25



G SOUTH EAST RETAINING WALL
1:25



04		
03		
02	ISSUED FOR TENDER	10/29/2021
01	ISSUED FOR REVIEW	08/06/2021
revision		date

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

A	Detail No.		A
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C	drawing no. - where detail required		C
	dessin no. - ou detail exigé		
	drawing no. - where detailed		
	dessin no. - ou détaillé		

project title
titre du projet

ONTARIO

LOWER BREWERS SWING BRIDGE REPLACEMENT
RIDEAU CANAL

drawing title
titre du dessin

FOUDATION REINFORCEMENT

drawn by
dessiné par G. MOTA

designed by
conçue par C. WILLIAMS/L. CUMMING

approved by
approuvée par D.A. HUETWICH

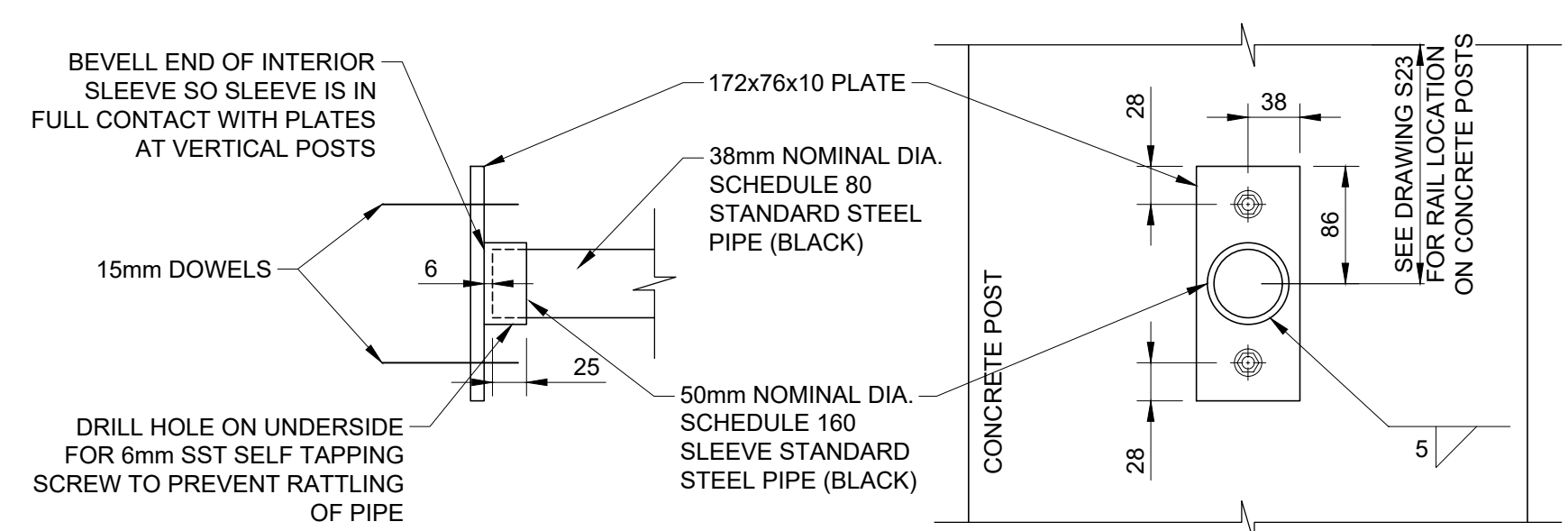
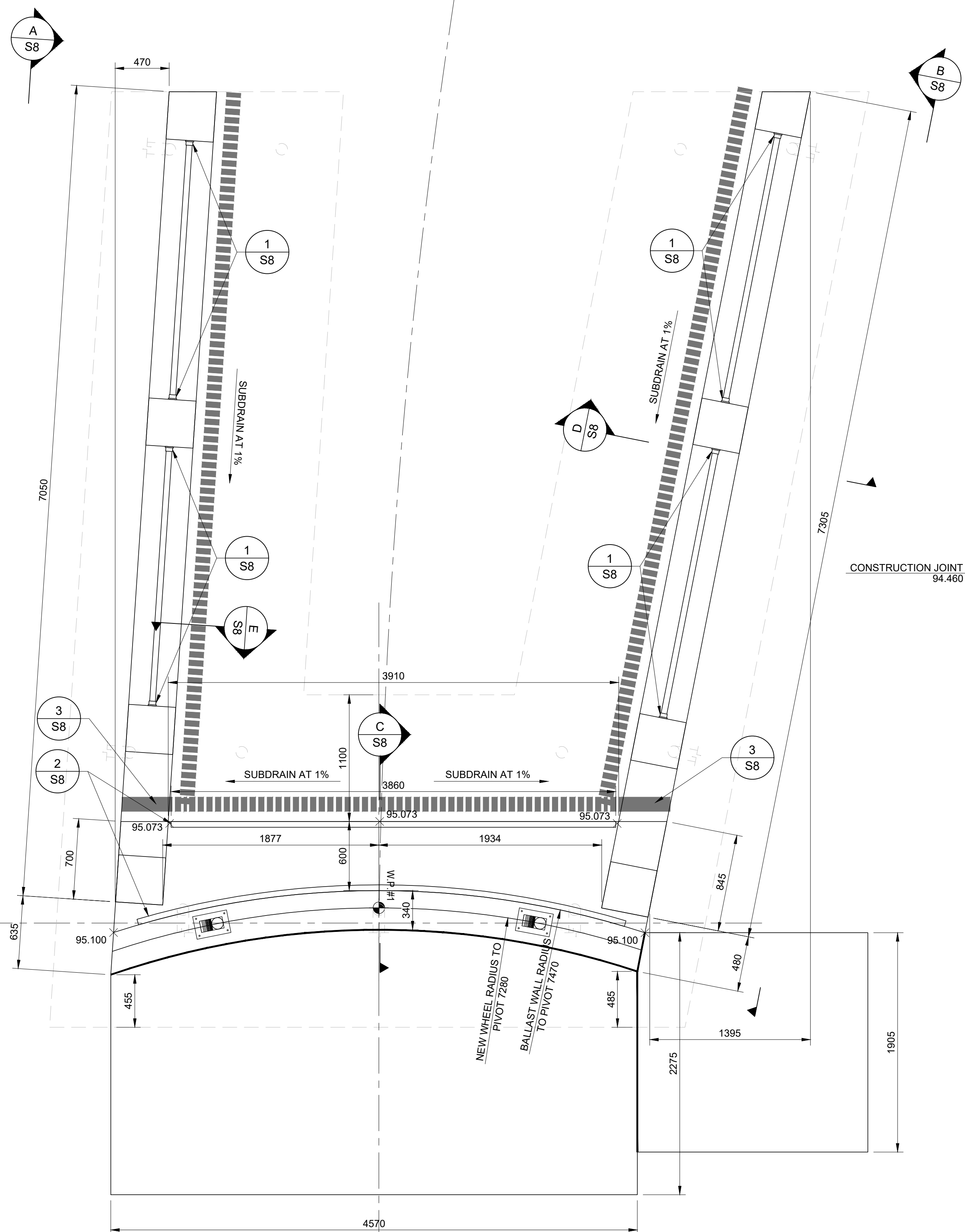
bid
offre TYLER ATKINSON

project manager
administrateur de projets

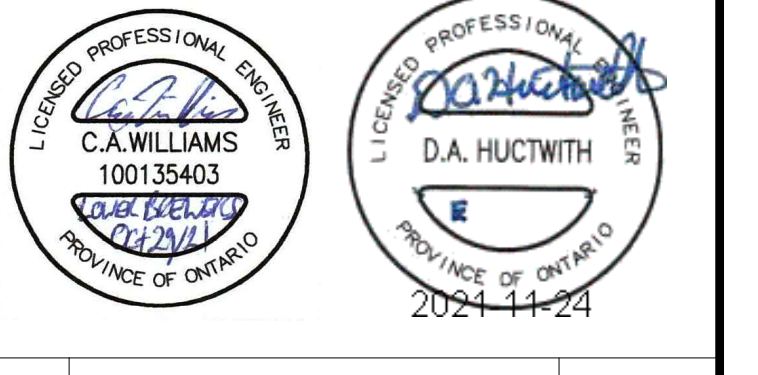
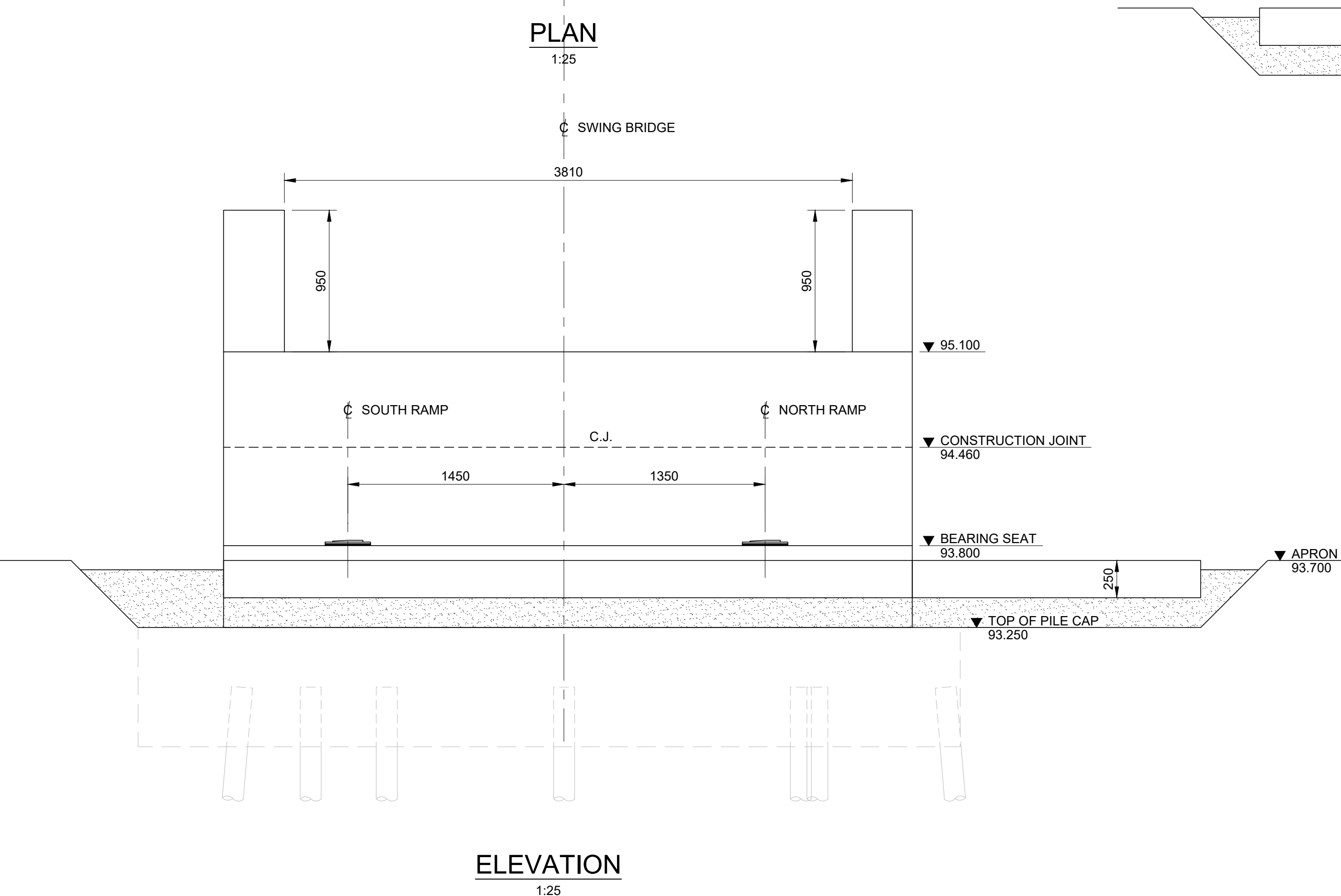
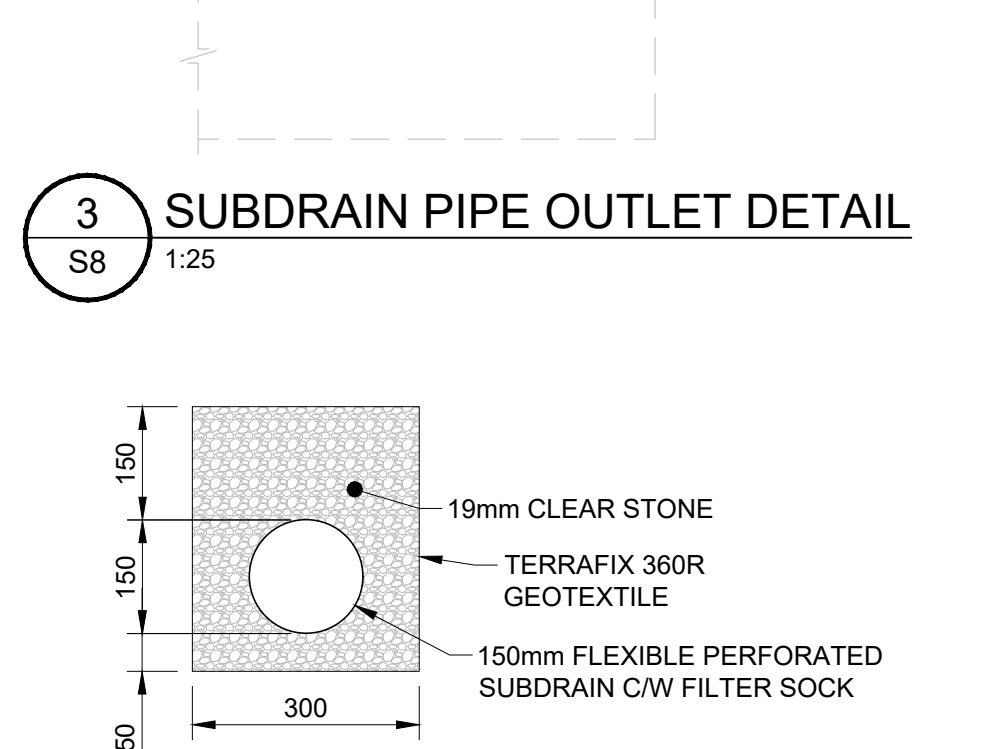
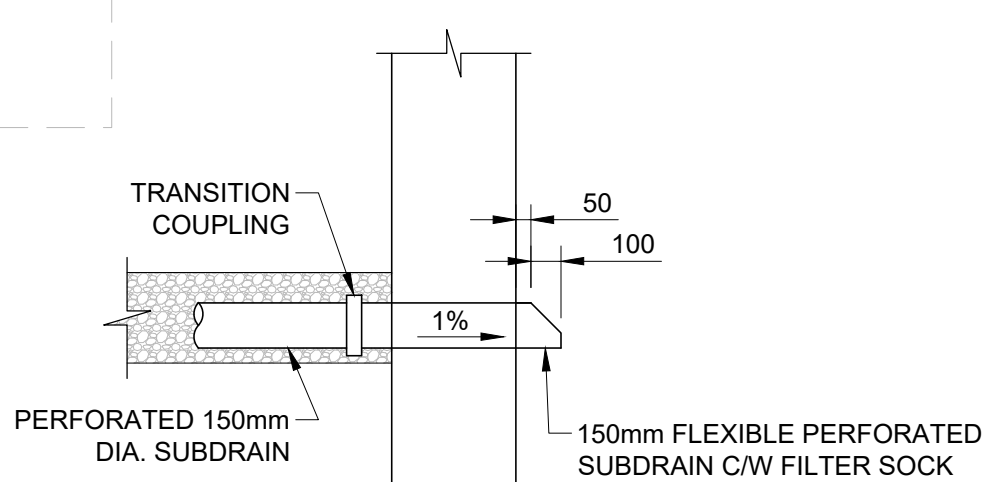
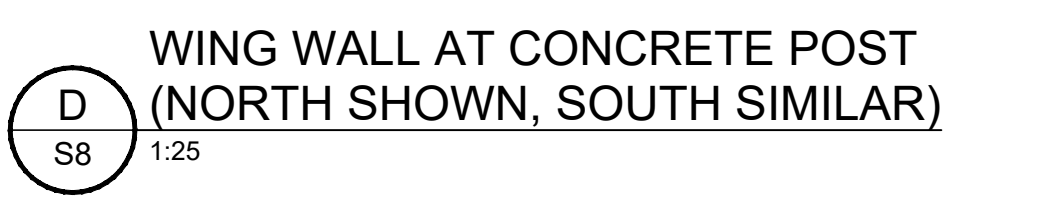
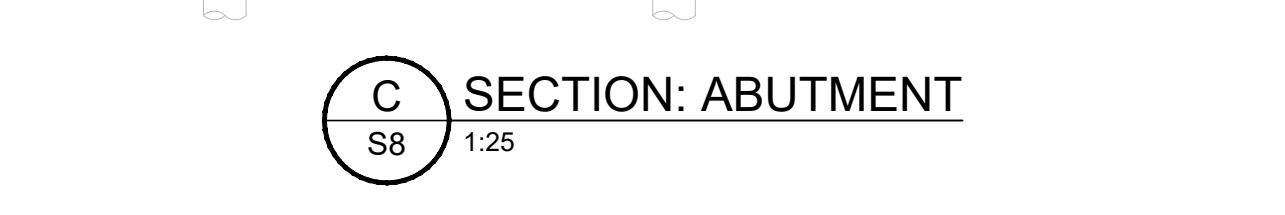
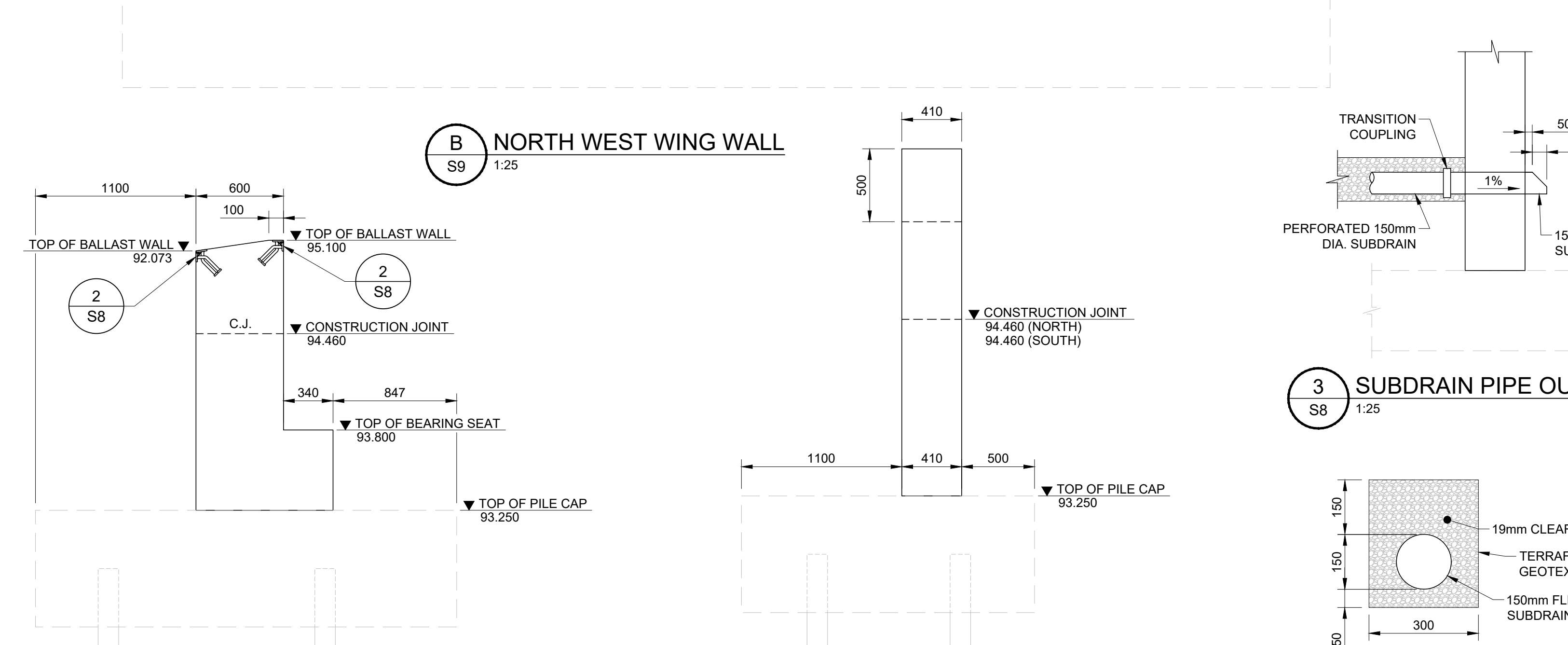
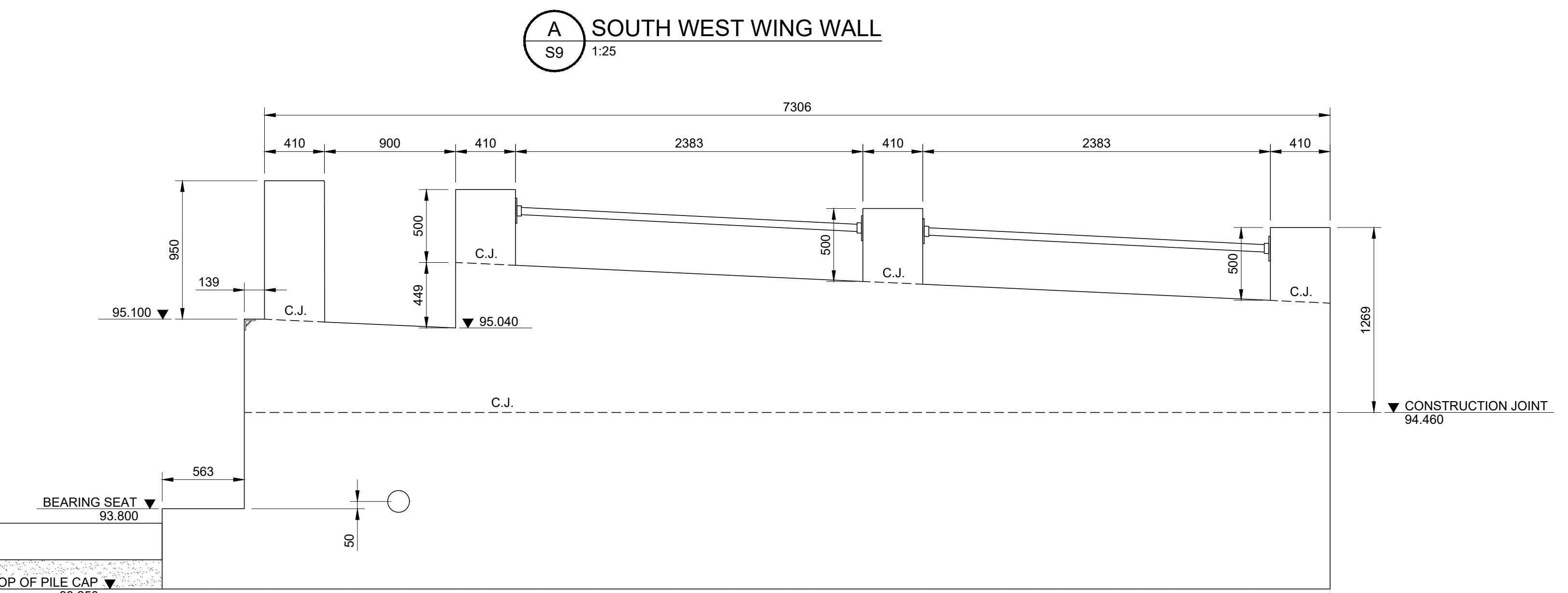
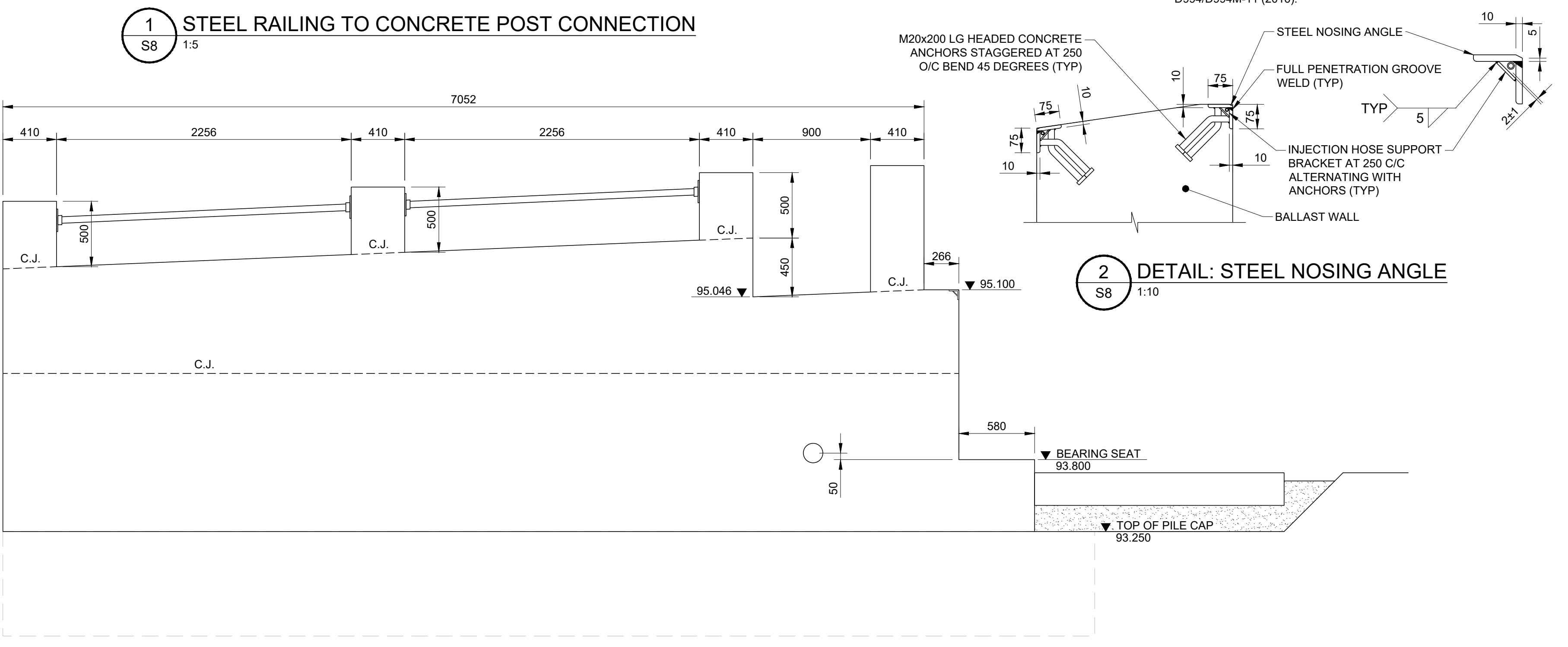
project date
date du projet 2021-10-29

project no.
no. du projet 30037015

drawing no.
dessiné no. S7



- NOTES:**
- STEEL NOSING ANGLE, INJECTION HOSE SUPPORT BRACKET AND CONCRETE ANCHORS TO BE HOT DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123/A123M-15 AND ASTM A153/A153M-17A.
 - NOSING ANGLE TO BE MADE UP OF 2-10mm THICK PLATES ON EITHER SIDE OF BALLAST WALL. ENSURE NOSING ANGLE MATCHES CURVATURE OF BRIDGE ON NEAR FACE OF BALLAST WALL.
 - NEW CONCRETE TO BE COATED WITH ELASTOMERIC COATING (SEE SPECIFICATION) TO MATCH THE LIMITS OF EXISTING CONCRETE FEATURES (POSTS, WALLS, ETC).
 - DETAILING OF CONCRETE JOINTS PER OPSD 3950.100 JOINTS CONCRETE EXPANSION AND CONSTRUCTION ON STRUCTURE.
 - PREFORMED JOINT FILLER SHALL BE IN CONFORMANCE WITH ASTM D994/D994M-11 (2016).



04		
03		
02	ISSUED FOR TENDER	10/29/2021
01	ISSUED FOR REVIEW	08/06/2021
revision		date

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A	Detail No.	A
B	No. du detail	B
C	drawing no. - where detail required	C
	dessin no. - ou detail exigé	
	drawing no. - where detailed	
	dessin no. - ou détaillé	

project title
titre du projet

ONTARIO

LOWER BREWERS
SWING BRIDGE REPLACEMENT
RIDEAU CANAL

drawing title
titre du dessin

WEST ABUTMENT AND
WING WALL GEOMETRY

drawn by
dessiné par G. MOTA

designed by
conçu par C. WILLIAMS/L. CUMMING

approved by
approuvé par D.A. HUCTWITH

bid
offre TYLER ATKINSON project manager
administrateur de projets

project date
date du projet 2021-10-29

project no.
no. du projet 30037015

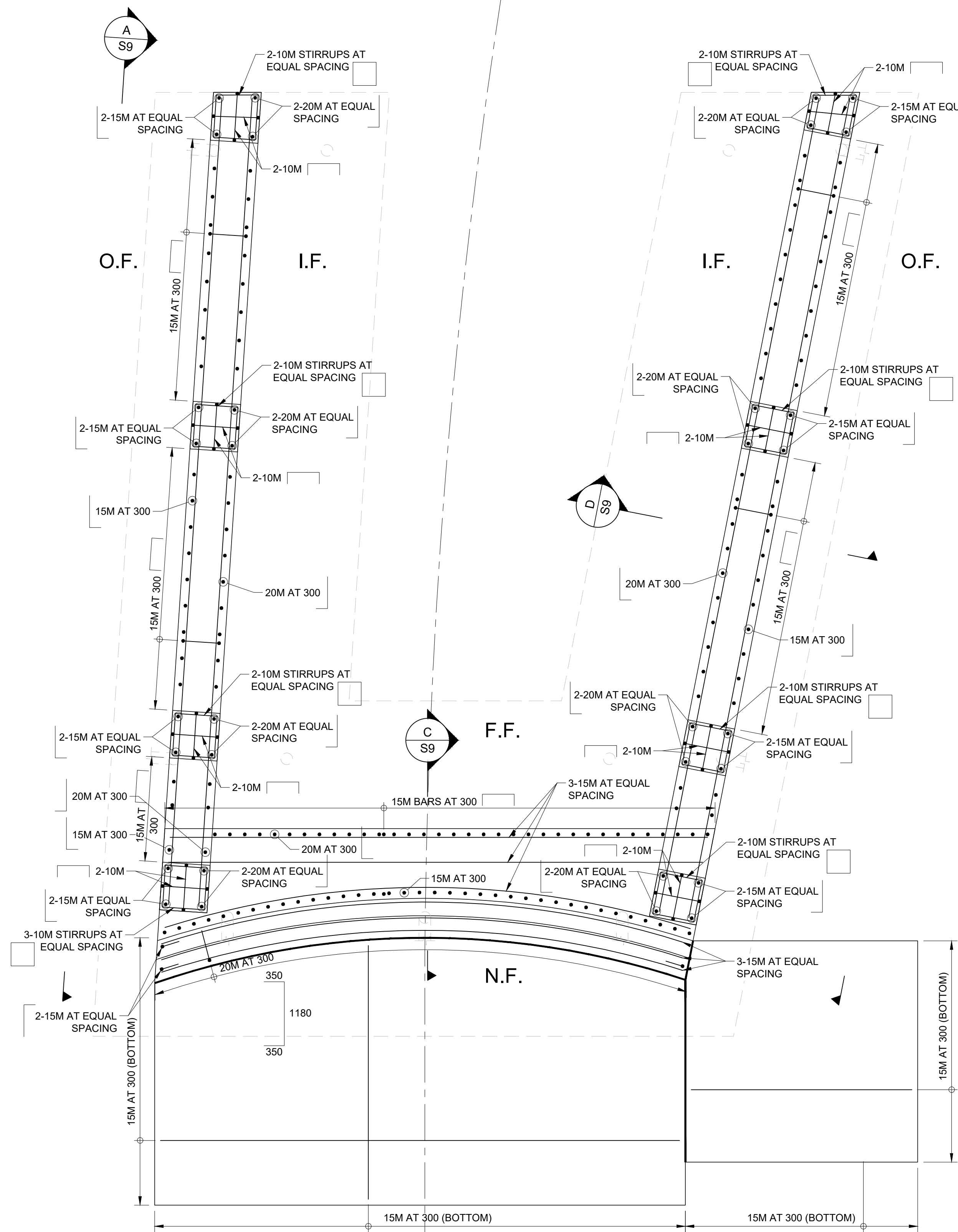
drawing no.
dessiné no. S8

NOTES:

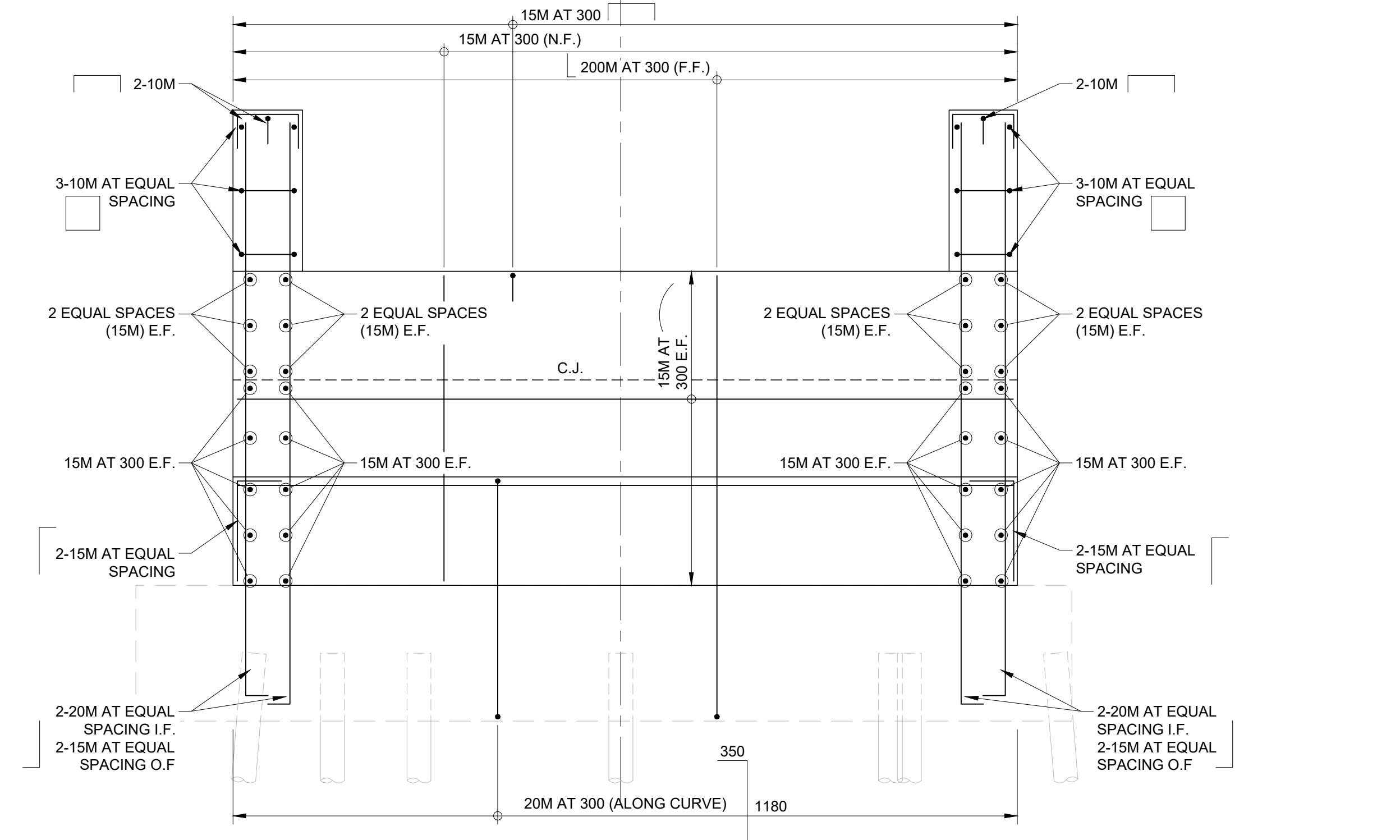
- THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING S1 (GA).
- AT MINIMUM THE CONCRETE OF THE ABUTMENT CAP ABOVE THE CONSTRUCTION JOINT MUST BE CAST AFTER THE BRIDGE IS OPERATING AND THE FINAL ELEVATION OF THE END OF THE BRIDGE HAS BEEN ESTABLISHED.

LEGEND:

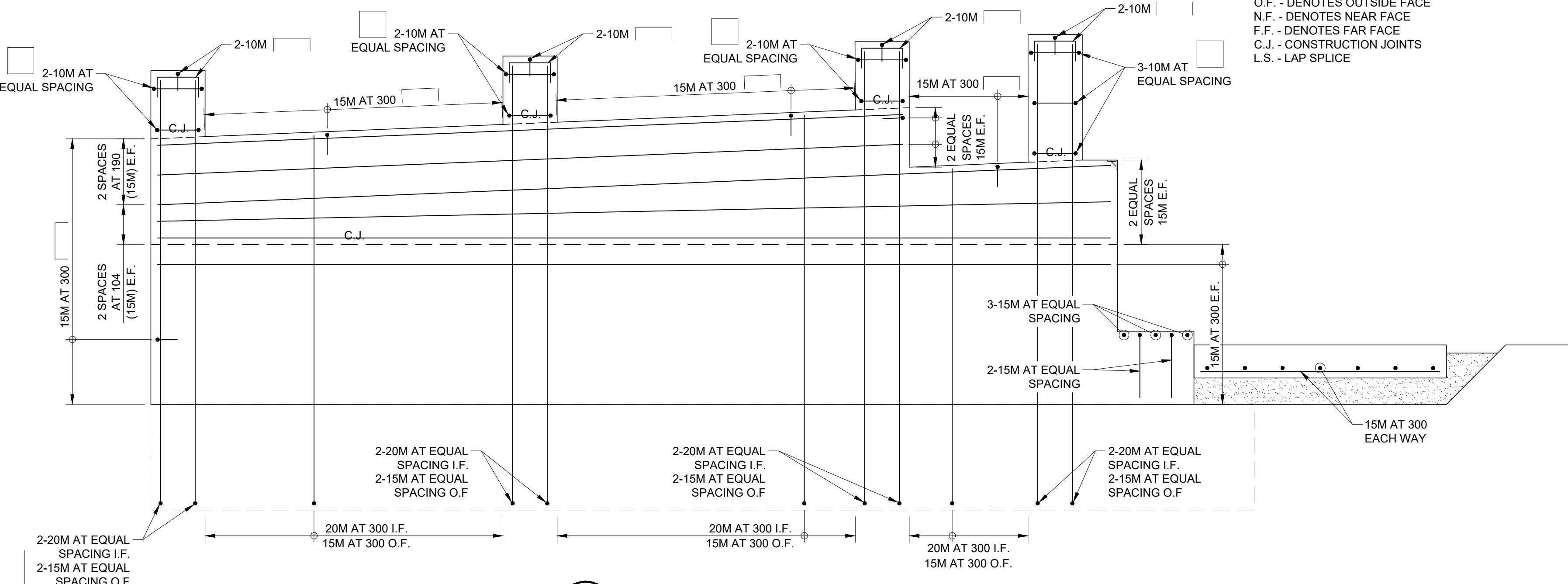
- E.F. - DENOTES EACH FACE
- I.F. - DENOTES INSIDE FACE
- O.F. - DENOTES OUTSIDE FACE
- N.F. - DENOTES NEAR FACE
- F.F. - DENOTES FAR FACE
- C.J. - CONSTRUCTION JOINTS
- L.S. - LAP SPLICE



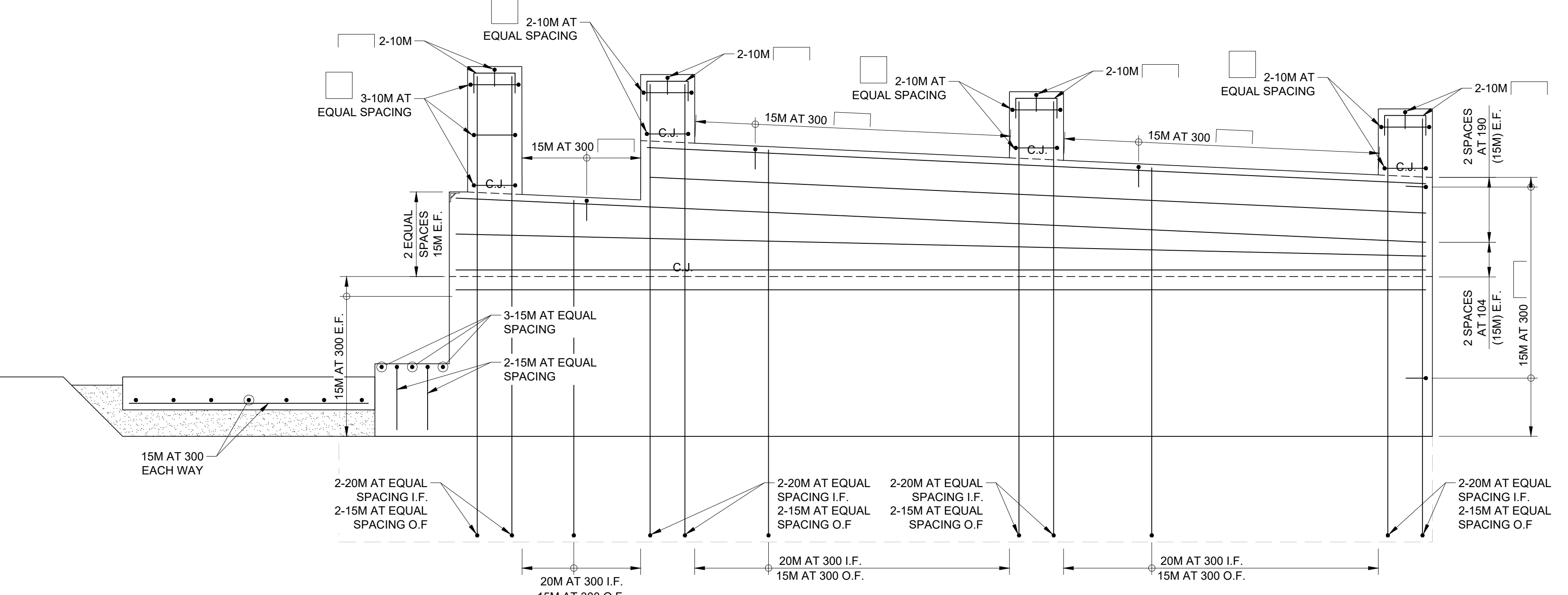
PLAN
1:25
SWING BRIDGE



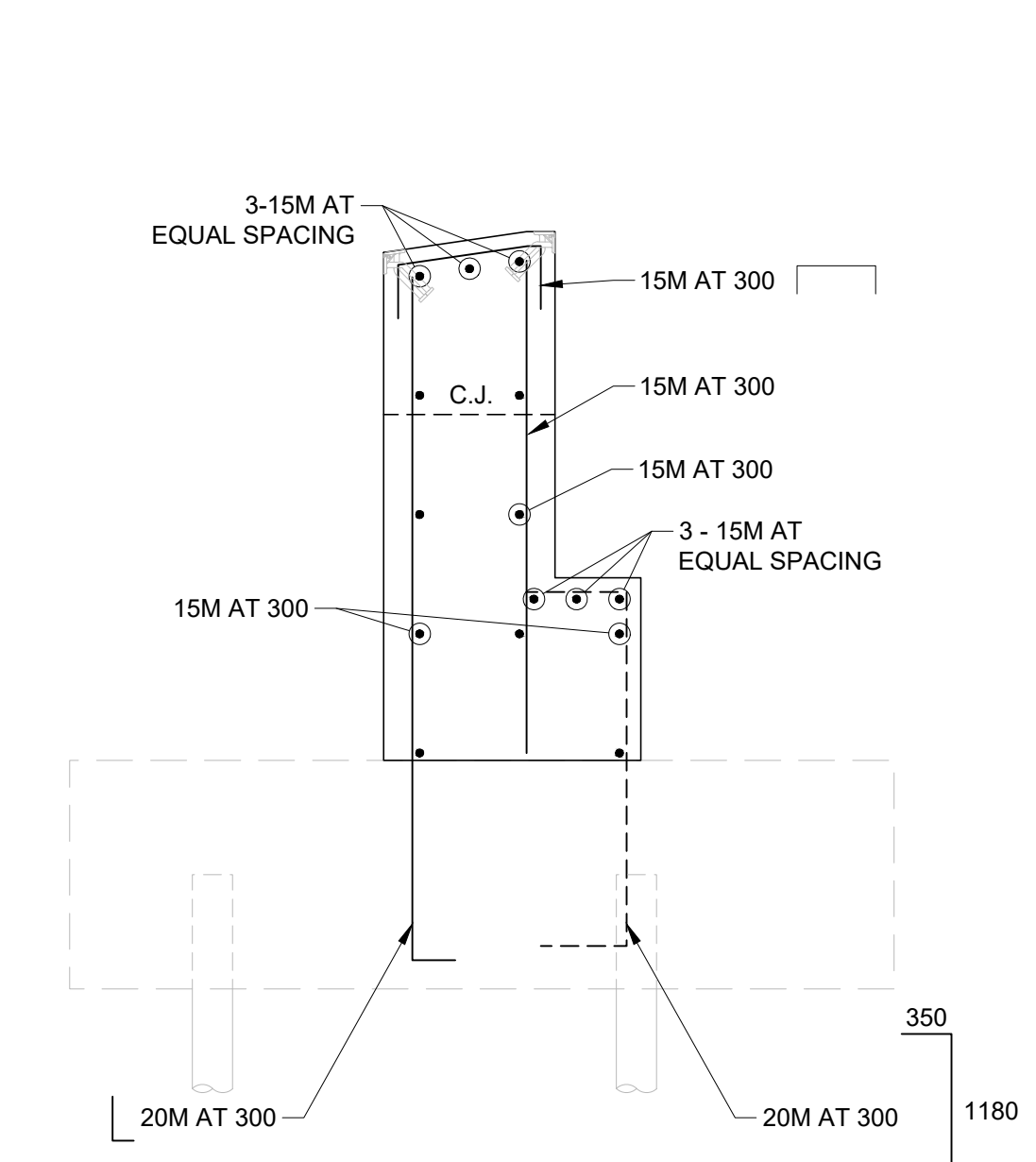
ELEVATION
1:25



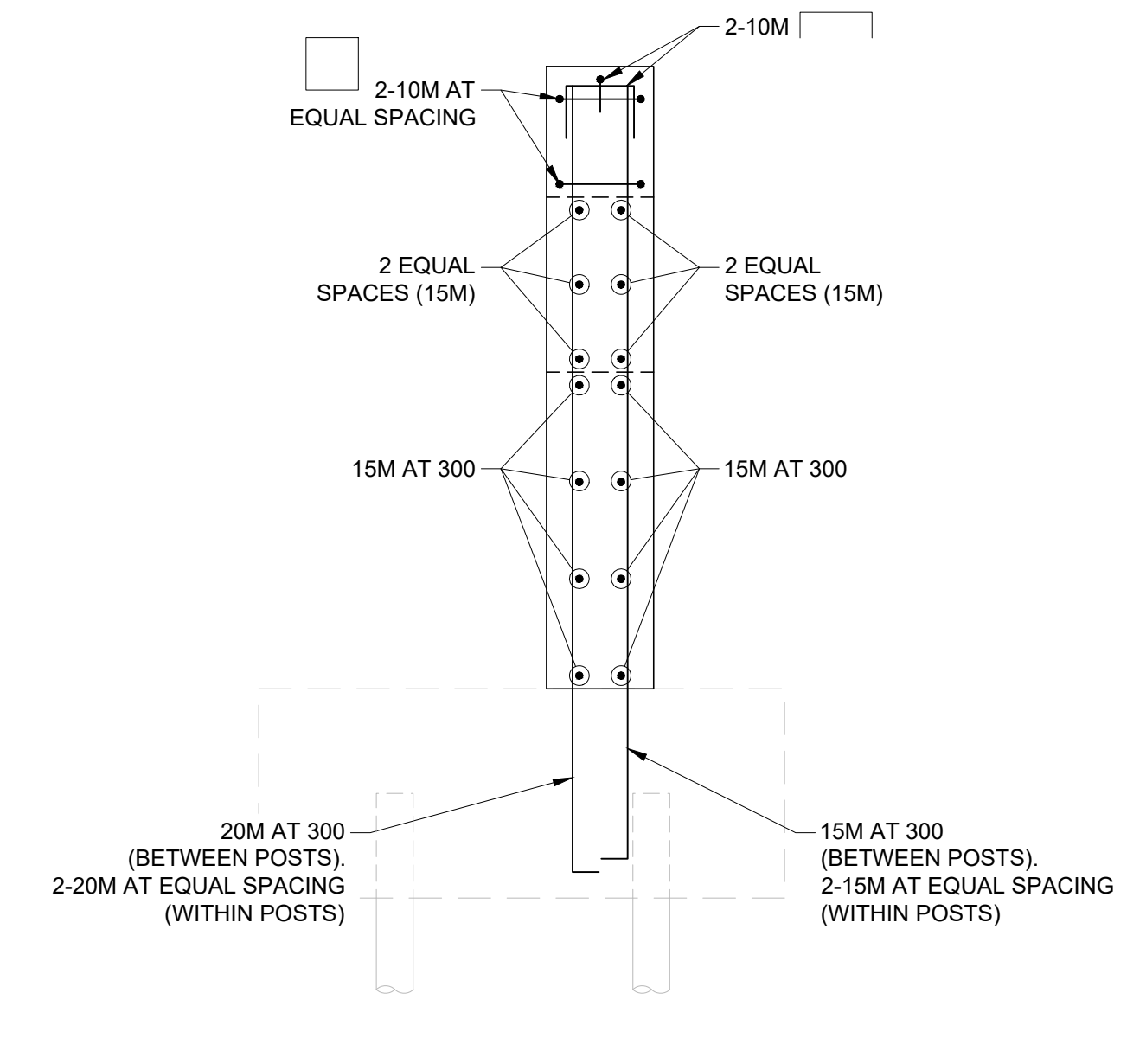
A ELEVATION: SOUTH WEST WING WALL
1:25



B ELEVATION: NORTH WEST WING WALL
1:25



C SECTION: ABUTMENT
1:25



D WING WALL AT CONCRETE POST (SOUTH SHOWN, NORTH SIMILAR)
1:25

04		
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	dessin no. - où détail exigé	
	drawing no. - where detailed	
	dessin no. - où détaillé	

project title
titre du projet
ONTARIO

LOWER BREWERS SWING BRIDGE REPLACEMENT RIDEAU CANAL

drawing title
titre du dessin
WEST ABUTMENT AND WING WALL REINFORCEMENT

drawn by
dessiné par
G. MOTA

designed by
conçu par
C. WILLIAMS/L. CUMMING

approved by
approuvé par
D.A. HUCTION

bid office
bureau de soumission
TYLER ATKINSON

project no.
no. du projet
2021-10-29

drawing no.
dessiné no.
30037015

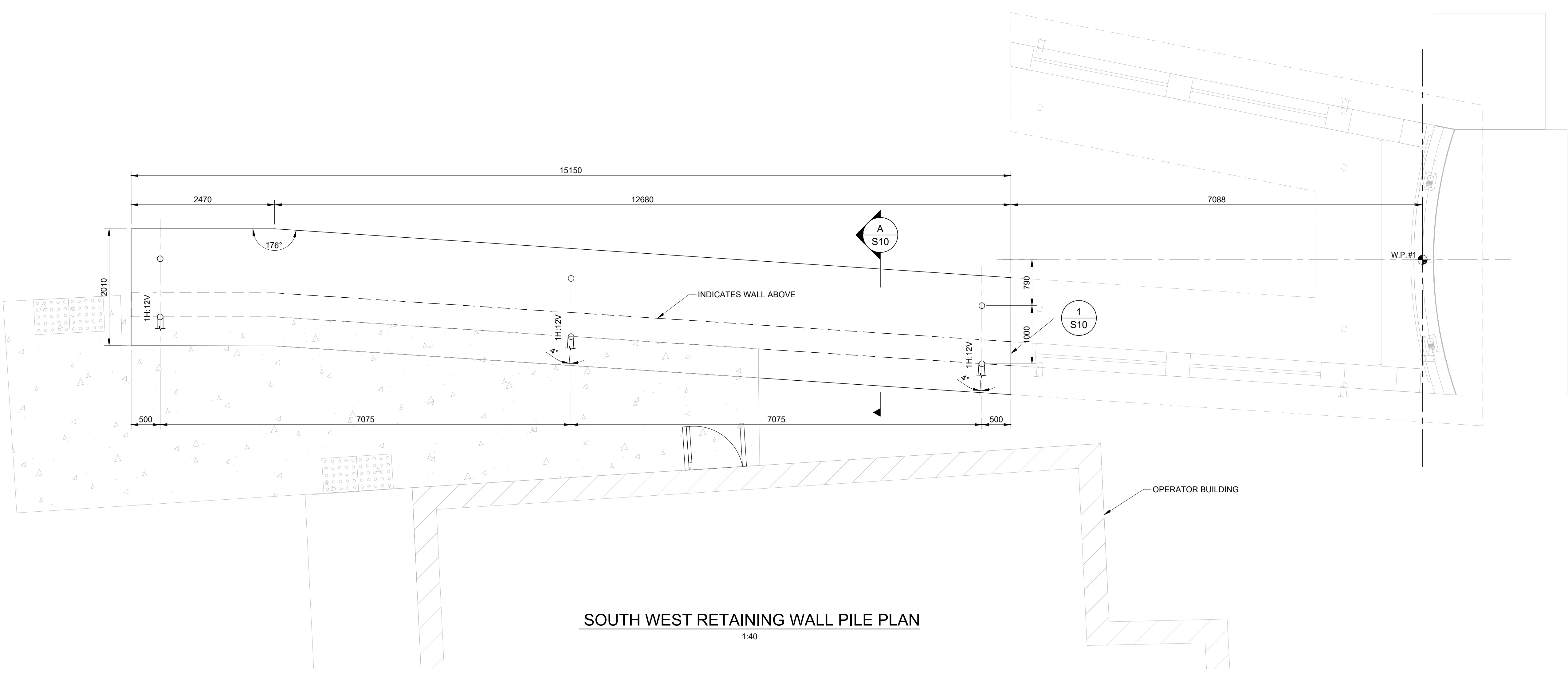


NOTES:

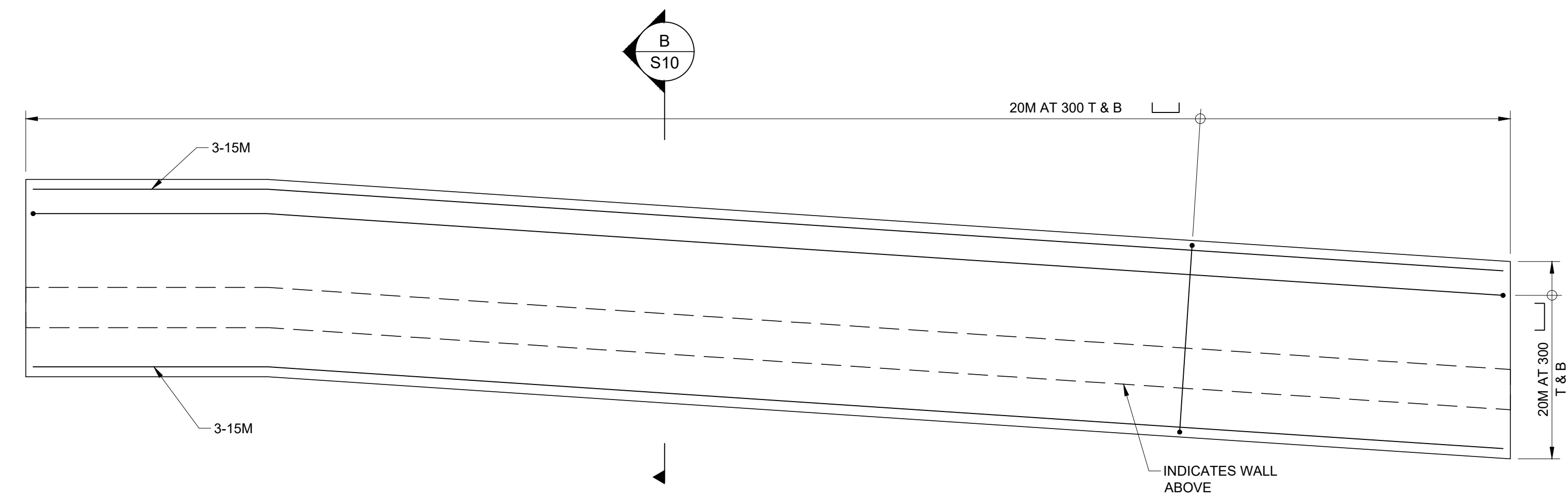
- THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING S1 (GA).
- PILE SPACING IS MEASURED AT THE UNDERSIDE OF FOOTINGS.
- CASE UPER MICROPILE LENGTHS SHOWN ARE THE THEORETICAL, REFER TO CURRENT AND HISTORIC GEOTECHNICAL REPORTS.
- THE MICROPILE CONTRACTOR SHALL DESIGN AND INSTALL MICROPILES THAT WILL DEVELOP THE LOAD CAPACITIES INDICATED ON THE PILE DATA TABLE.
- THE MICROPILE CONTRACTOR'S EXPERIENCE MUST MEET THE REQUIREMENTS AS DESCRIBED IN THE SPECIFICATION SECTION 31 63 19.
- PREFORMED JOINT FILLER SHALL BE IN CONFORMANCE WITH ASTM D994/D994M-11 (2016)

LEGEND:

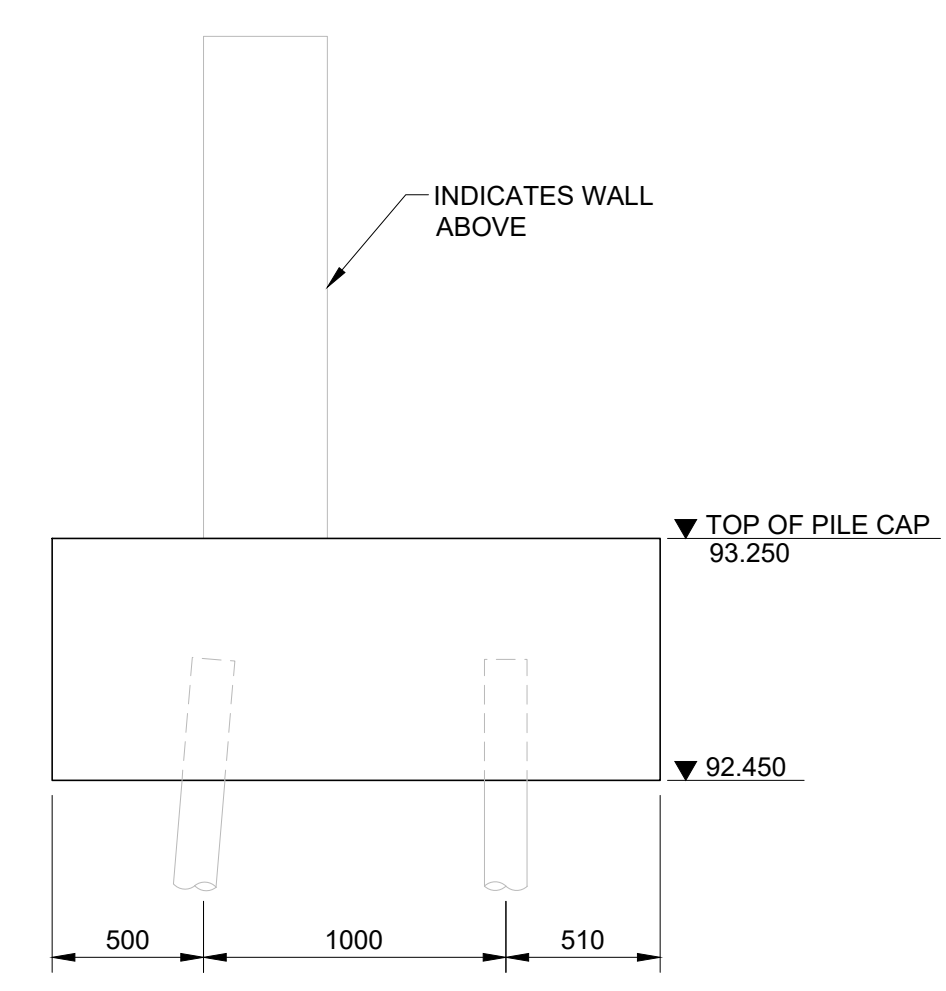
- E.F. - DENOTES EACH FACE
- I.F. - DENOTES INSIDE FACE
- O.F. - DENOTES OUTSIDE FACE
- N.F. - DENOTES NEAR FACE
- F.F. - DENOTES FAR FACE
- C.J. - CONSTRUCTION JOINTS
- L.S. - LAP SPLICE
- T & B - TOP AND BOTTOM



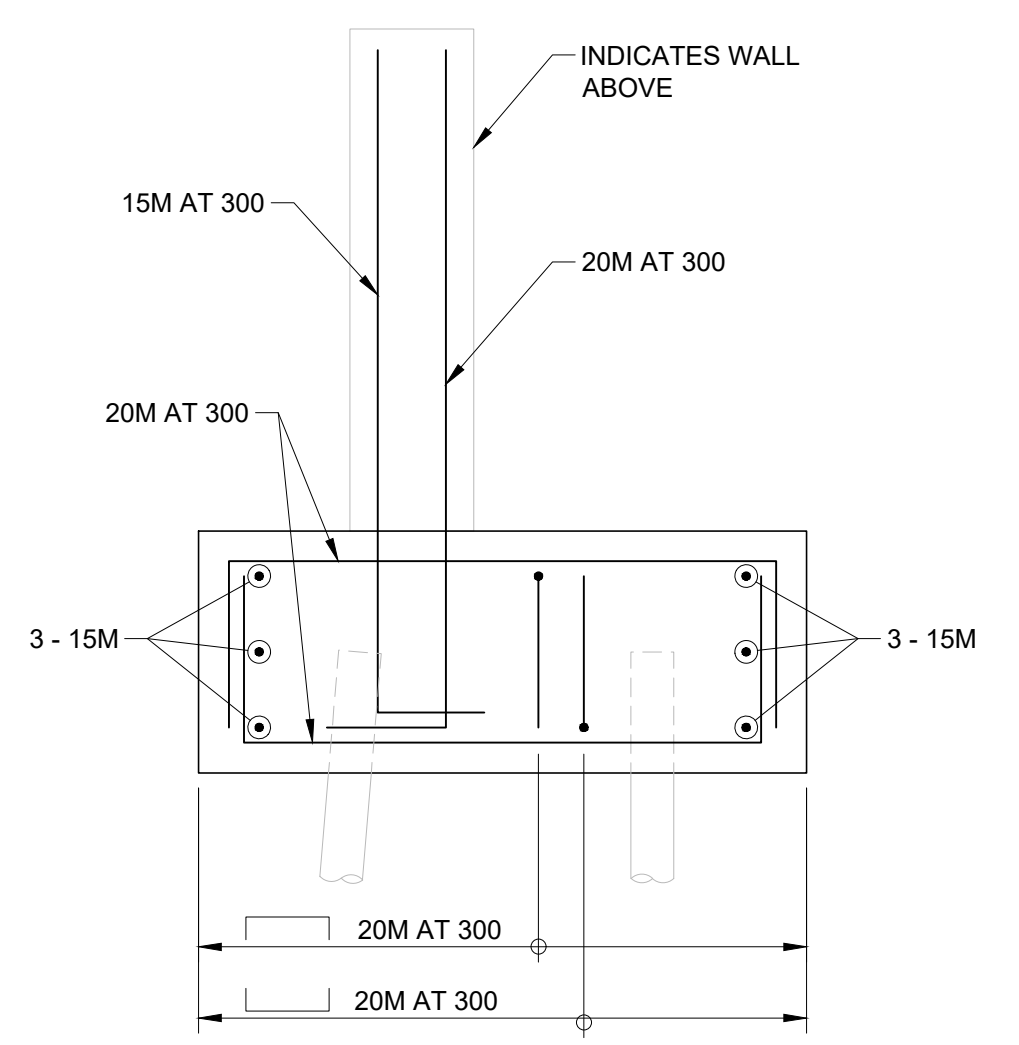
SOUTH WEST RETAINING WALL PILE PLAN
1:40



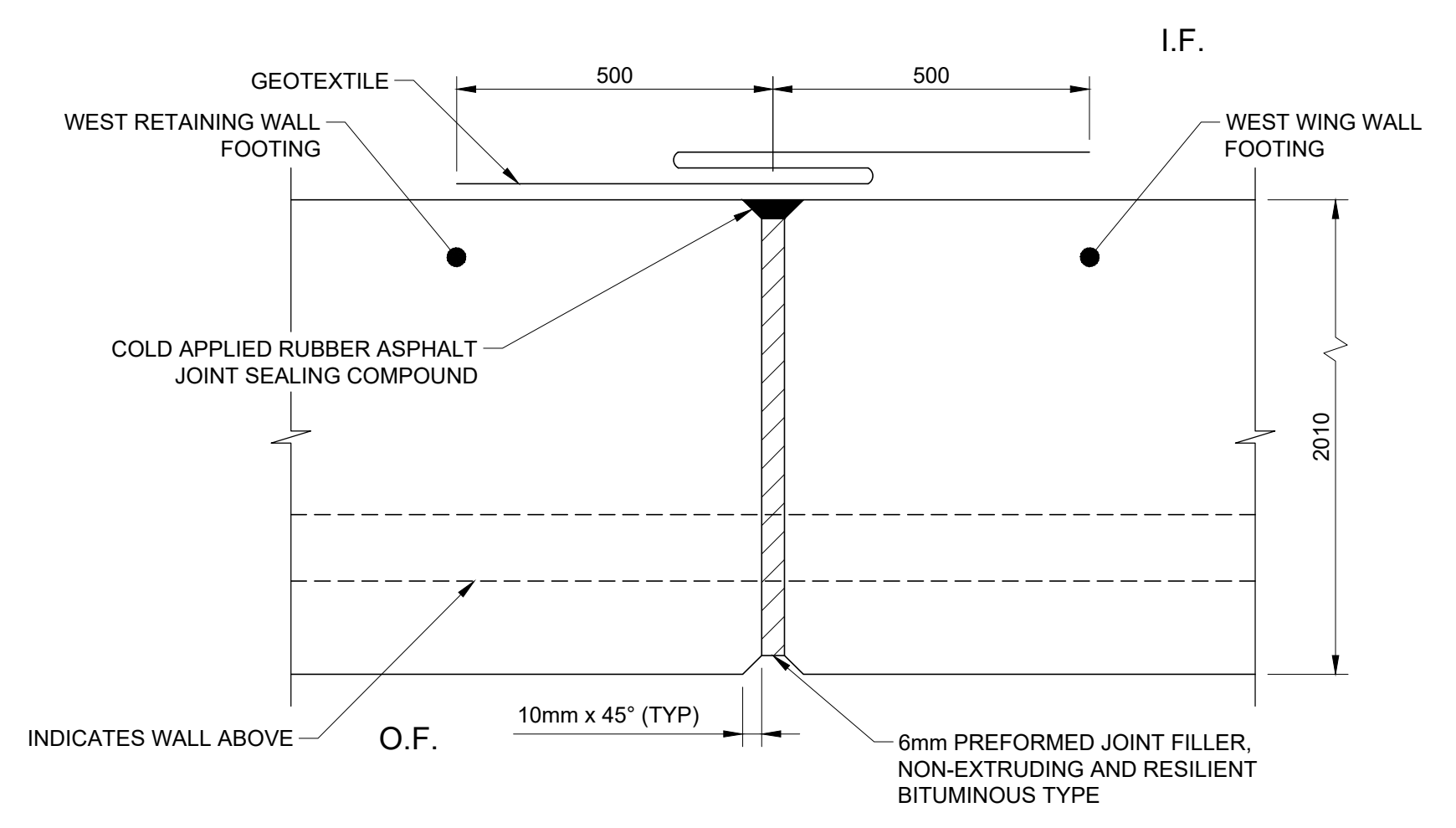
SOUTH WEST RETAINING WALL FOOTING REINFORCEMENT
1:40



A SECTION: SOUTH WEST RETAINING WALL FOOTING
1:25



B SECTION: SOUTH WEST RETAINING WALL FOOTING REINFORCING
1:25



1 PLAN: CONCRETE EXPANSION JOINT
1:10

PILE DATA TABLE					
FEATURE	NUMBER OF PILES	ESTIMATED MICROPILE DIAMETER (mm)	ESTIMATED AVERAGE LENGTH FROM BOTTOM OF PILE CAP TO TOP OF ROCK (m)	MINIMUM PILE RESISTANCE (kN) (COMPRESSION)	MINIMUM PILE RESISTANCE (kN) (TENSION)
				ULS	ULS
SOUTH WEST RETAINING WALL	6	101	1.55	750	155

04		
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	dessin no. - ou detail exigé	
	drawing no. - where detailed	
	dessin no. - ou détaillé	

project title
titre du projet

ONTARIO

LOWER BREWERS SWING BRIDGE REPLACEMENT
RIDEAU CANAL

drawing title
titre du dessin

SOUTH WEST RETAINING WALL FOOTING LAYOUT AND REINFORCING

drawn by
dessiné par

G. MOTA

designed by
conçu par

C. WILLIAMS/L. CUMMING

approved by
approuvé par

D.A. HUCTWITH

bid
offre

TYLER ATKINSON

project manager
administrateur de projets

project date
date du projet

2021-10-29

project no.
no. du projet

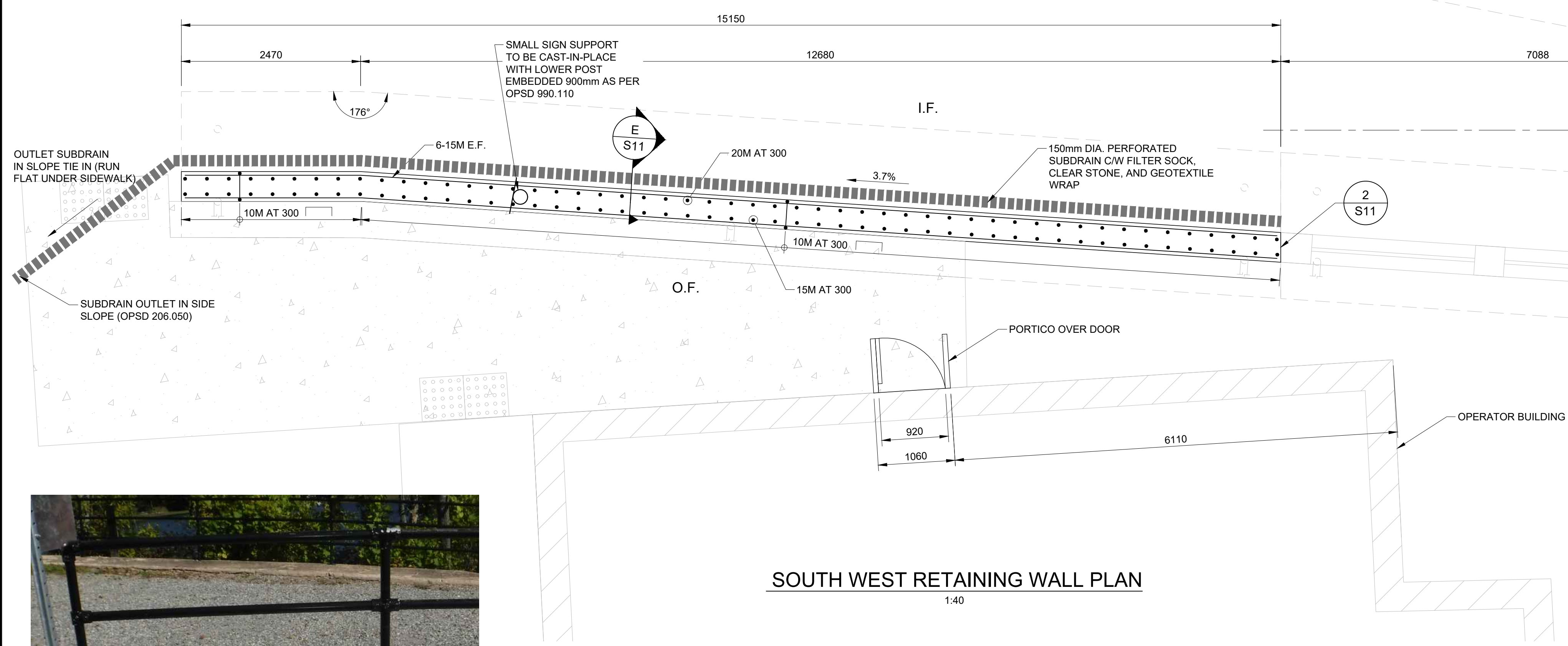
30037015

drawing no.
dessiné no.

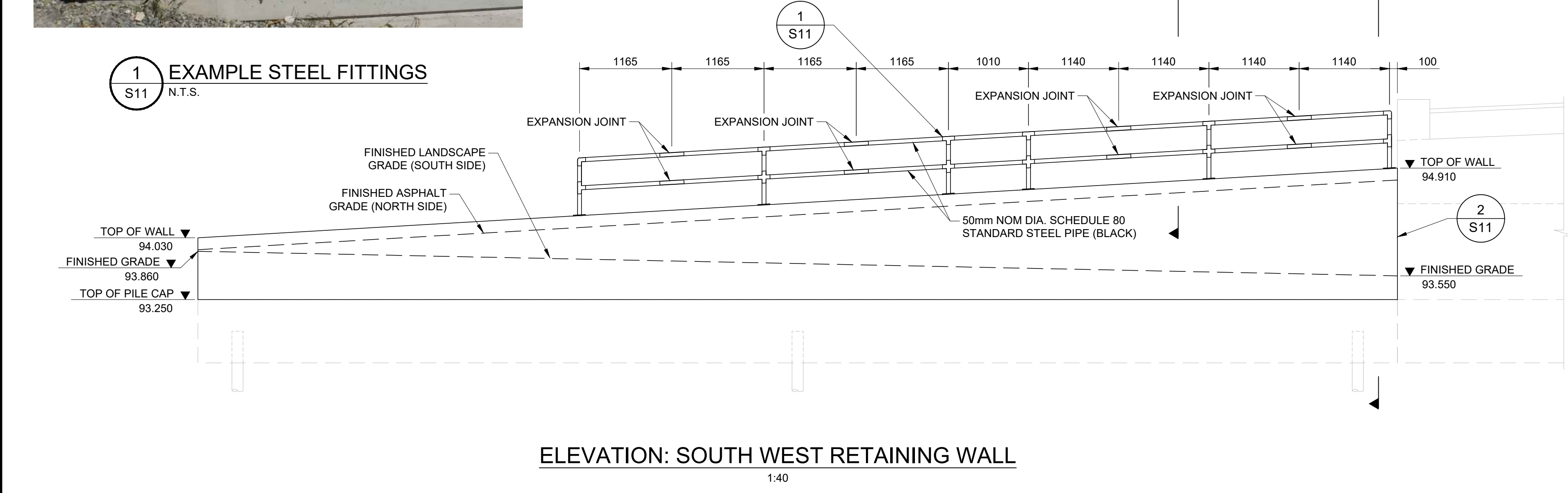
S10

NOTE: DESIGN LIMITATIONS

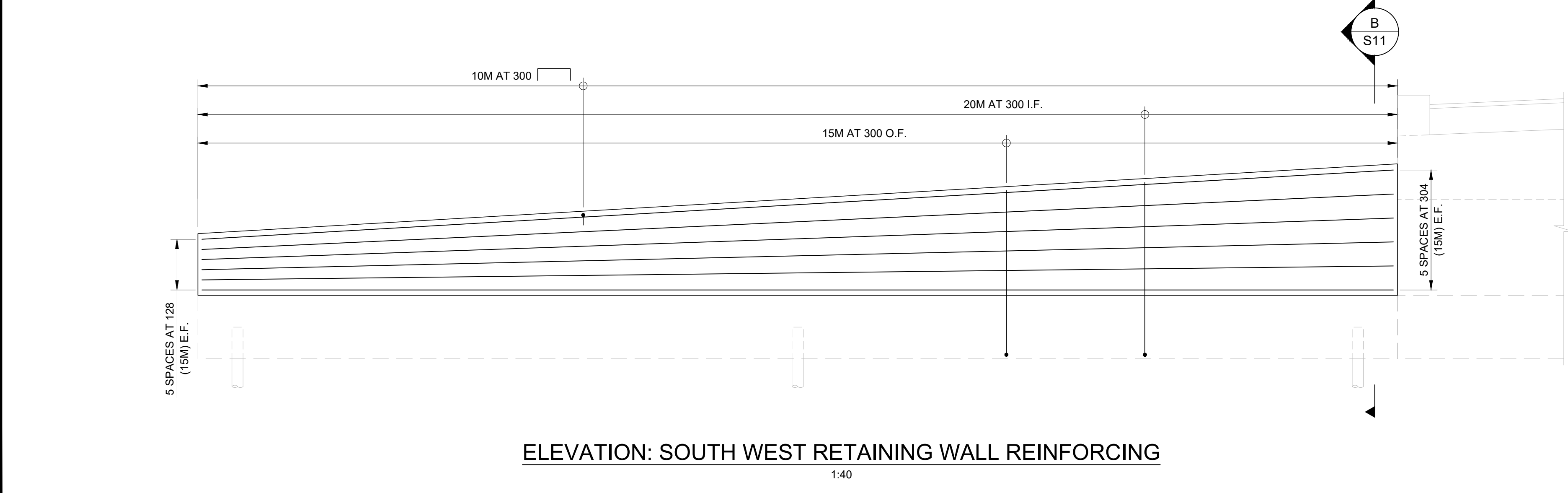
- PARKS CANADA HAS REQUESTED THAT THE WEST RETAINING WALL RAILING DESIGN BE VISUALLY CONSISTENT WITH THE ADJACENT WEST WING WALL AND RAILING. THE RESULTING CONFIGURATION OF THE RETAINING WALL RAILING DOES NOT MEET CURRENT NATIONAL BUILDING CODE STANDARDS FOR RAILINGS AND GUARDRAILS. PARKS CANADA IS ASSUMING LIABILITY FOR THIS CONDITION.



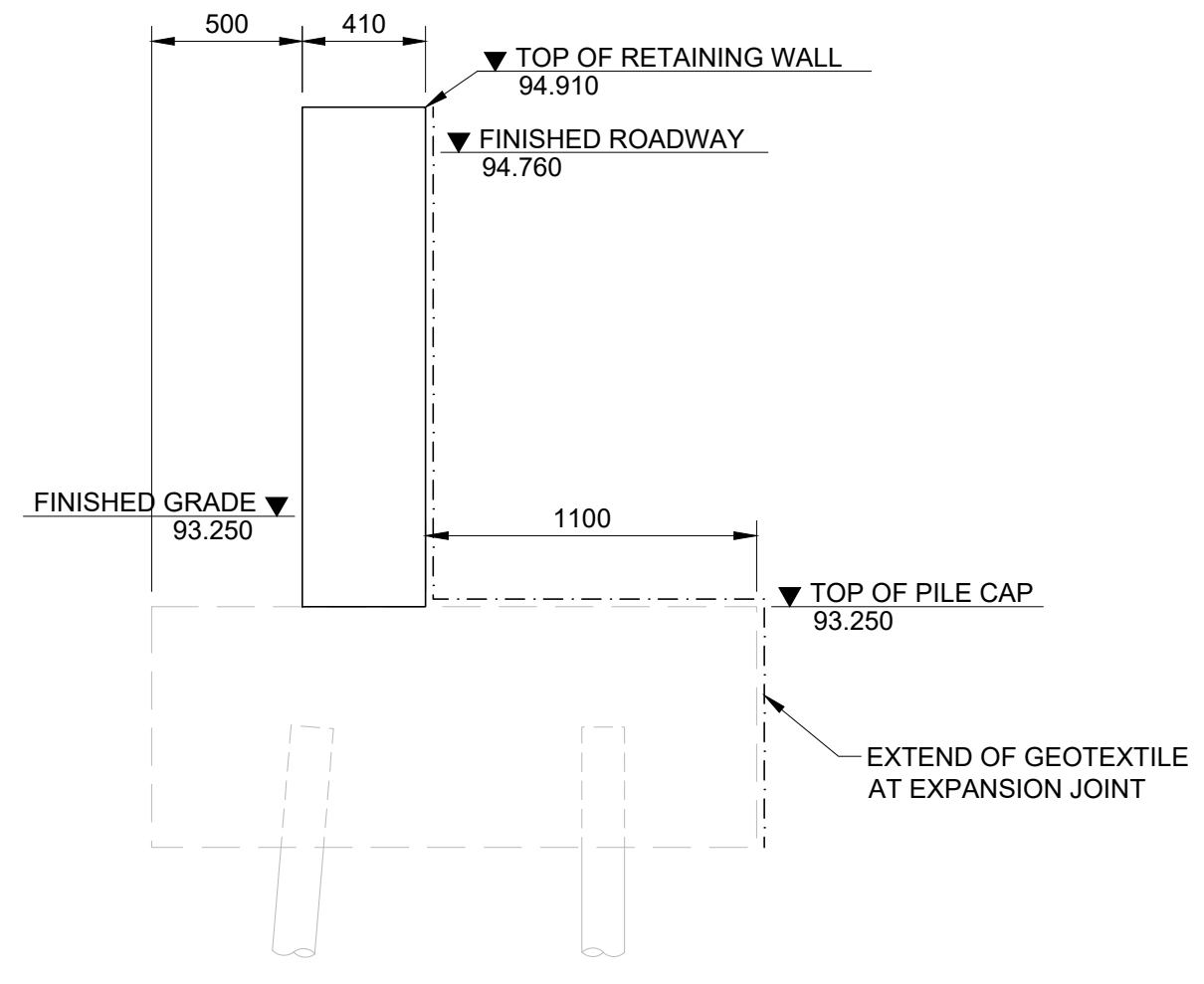
1 S11 N.T.S. **EXAMPLE STEEL FITTINGS**



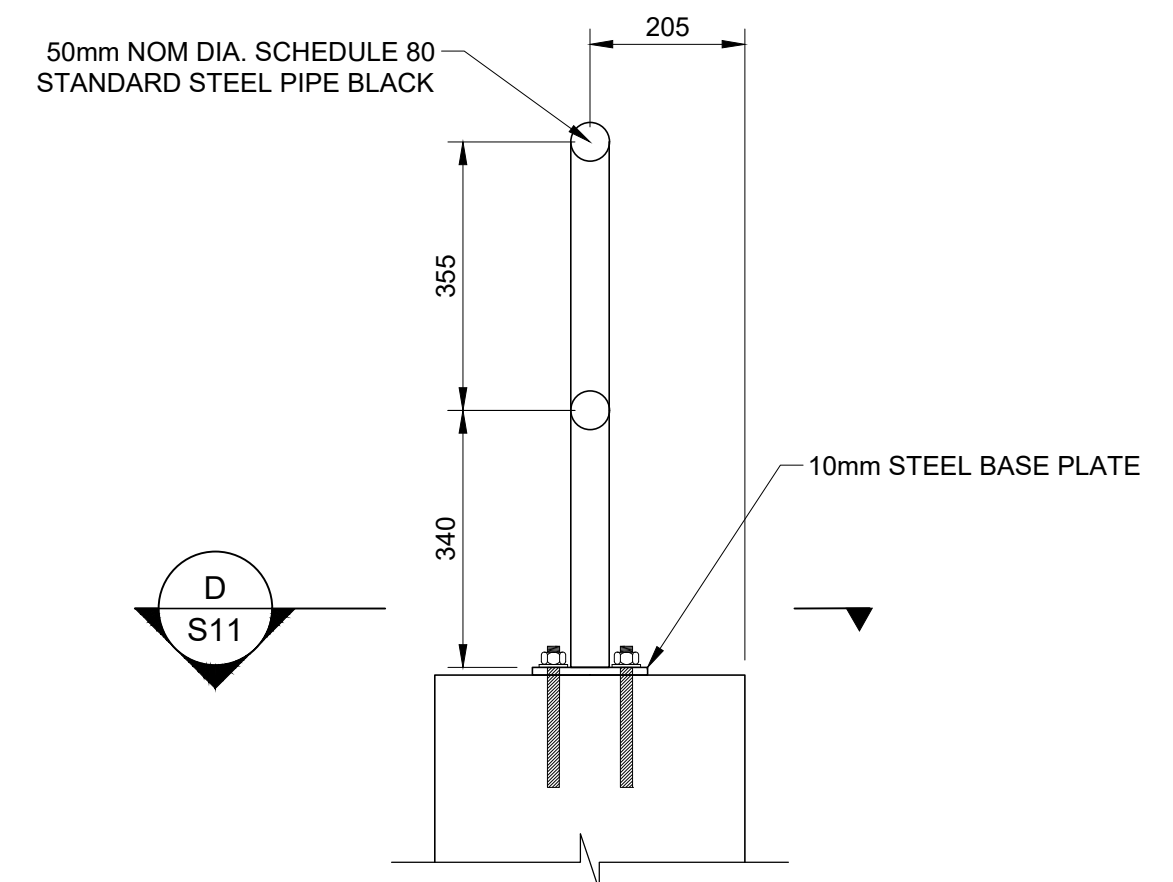
ELEVATION: SOUTH WEST RETAINING WALL
1:40



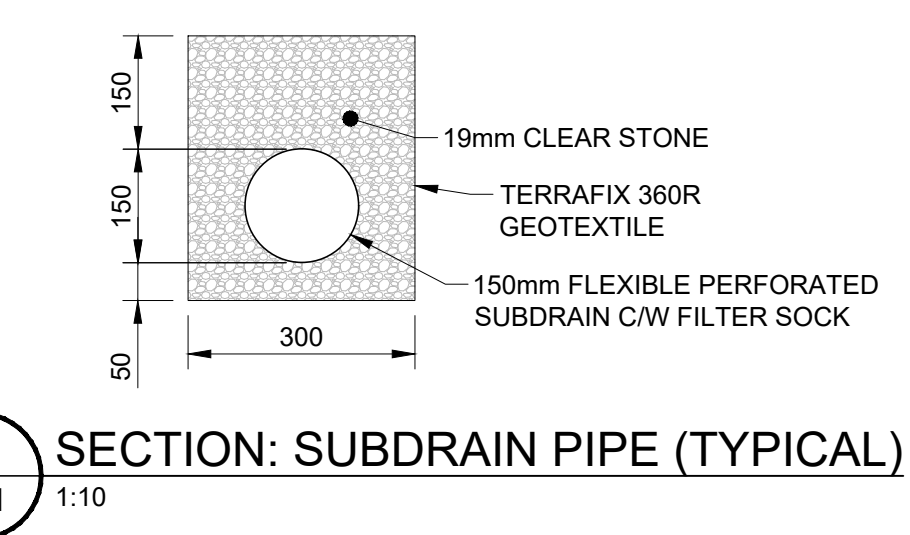
ELEVATION: SOUTH WEST RETAINING WALL REINFORCING
1:40



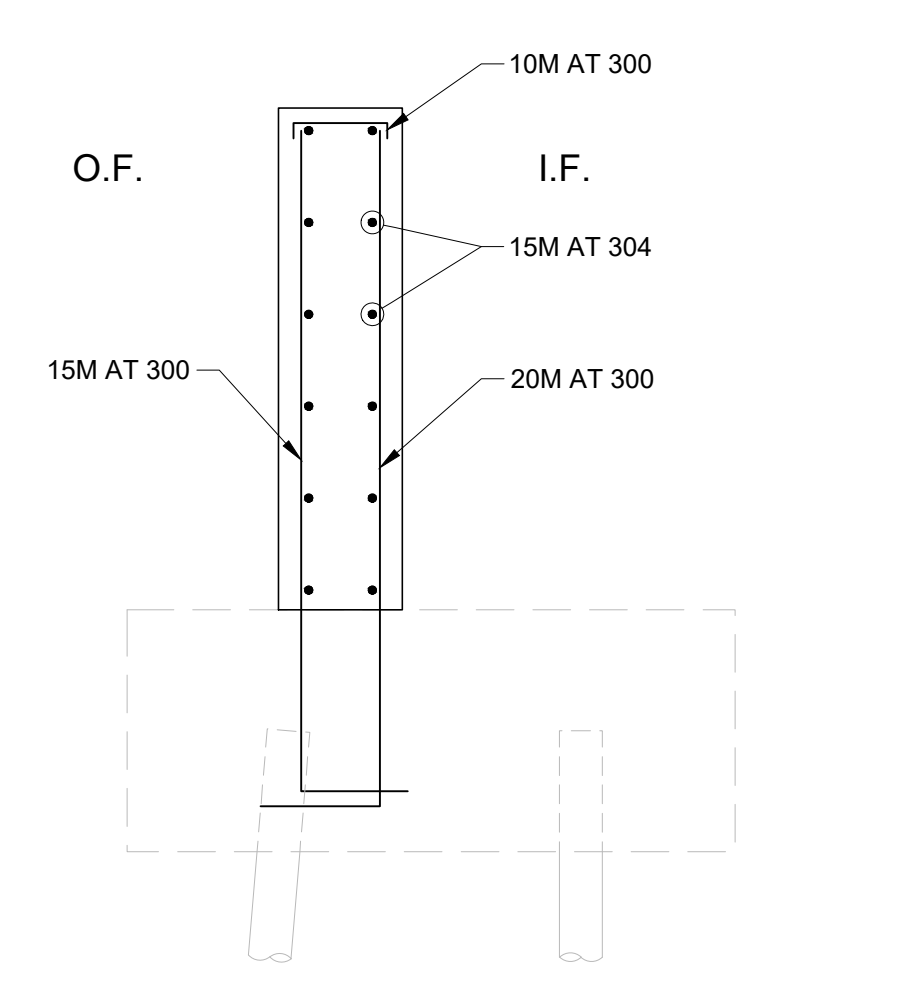
A S11 1:25 **SECTION: SOUTH WEST RETAINING WALL**



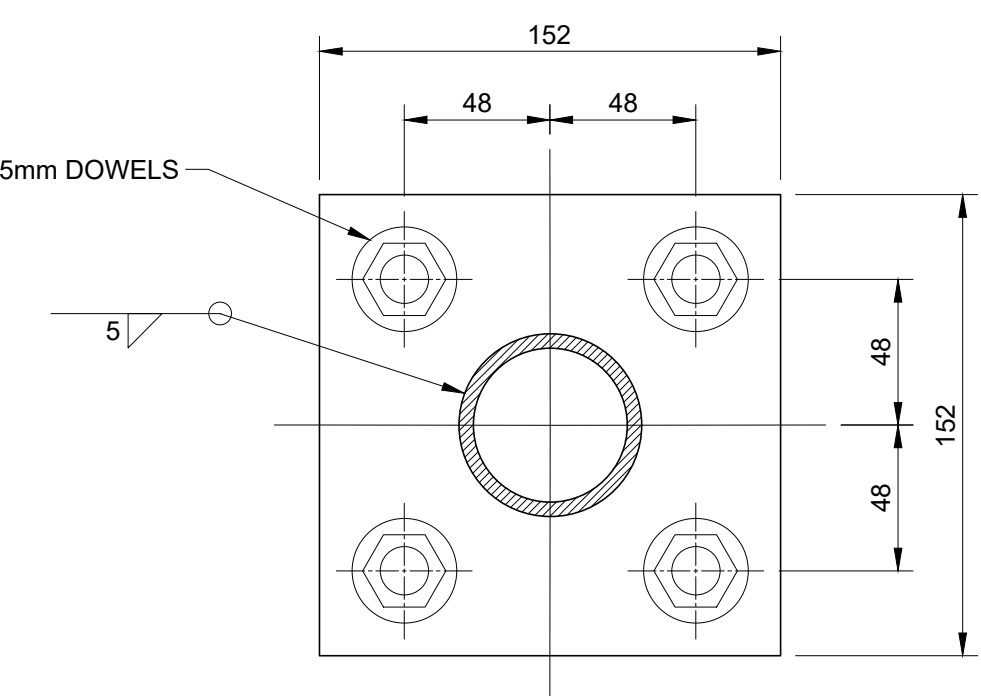
D S11 1:2.5 **SECTION: BASE PLATE DETAIL**



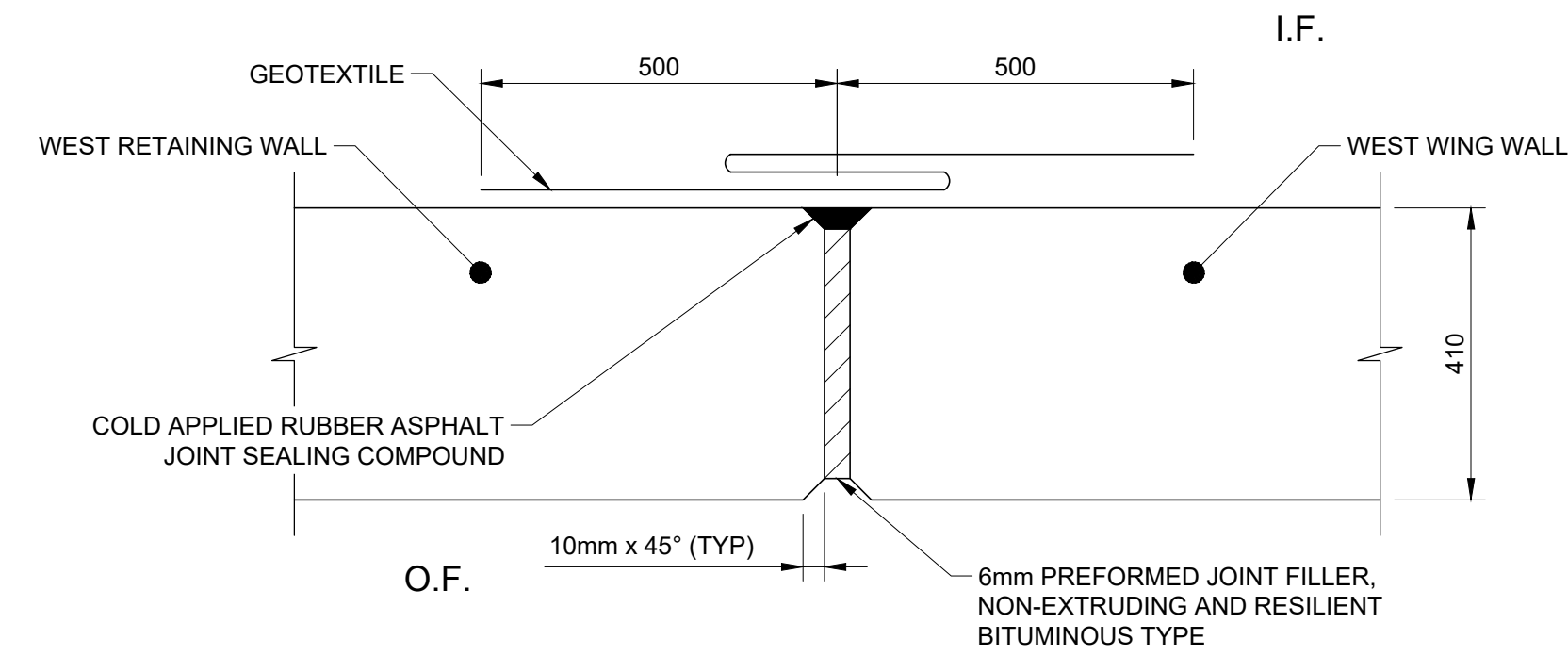
E S11 1:10 **SECTION: SUBDRAIN PIPE (TYPICAL)**



B S11 1:25 **SECTION: SOUTH WEST RETAINING WALL REINFORCING**



C S11 1:10 **SECTION: RAILING DETAILS**



1 S10 N.T.S. **PLAN: CONCRETE EXPANSION JOINT**

NOTES:

- THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING S1 (GA).
- CONTRACTOR IS TO CONFIRM ALL MEASUREMENTS AND POST SPACING IN THE FIELD PRIOR TO FABRICATION AND INSTALLATION OF THE RAILINGS.
- MAINTAIN 100mm GAP BETWEEN WEST ABUTMENT POST AND START OF RETAINING WALL RAILING TO ENSURE POST END DETAILS ARE VISIBLE.
- THE 990 SPAN OF THE RAILING IS TO BE CENTERED ON THE PORITCO OVER THE DOORWAY OF THE BLOCK HOUSE WITH EVEN SPANS ON EITHER SIDE. THE FAR WEST POST IS TO BE ALIGNED WITH THE WEST EDGE OF THE BUILDING.
- WHEN PLACING REINFORCING STEEL CONTRACTOR IS TO ENSURE THAT TOP OF WALL STIRRUPS WILL NOT INTERFERE WITH THE 15mm THREADED ROD DOWELS ON THE RAILING POST BASES.
- 15mm STAINLESS STEEL DIA. THREADED ROD DOWELS TO BE INSTALLED IN 20mm DIAMETER DRILLED HOLES USING EPOXY ADHESIVE. EMBEDMENT DEPTH TO BE 150mm UNLESS NOTED OTHERWISE.
- PREFORMED JOINT FILLER SHALL BE IN CONFORMANCE WITH ASTM D994/D994M-11 (2016).
- ASPHALT EXPANSION JOINT SHOULD BE RECESSED 1/4" (6.35mm) BELOW THE CONCRETE SURFACE.
- THE RETAINING WALL SHALL NOT BE COATED AND SHALL BE LEFT AS A NATURAL CONCRETE FINISH.

LEGEND:

- E.F. - DENOTES EACH FACE
- I.F. - DENOTES INSIDE FACE
- O.F. - DENOTES OUTSIDE FACE
- N.F. - DENOTES NEAR FACE
- F.F. - DENOTES FAR FACE
- C.J. - CONSTRUCTION JOINTS
- L.S. - LAP SPLICE
- T & B - TOP AND BOTTOM



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

project title
titre du projet

ONTARIO

LOWER BREWERS
SWING BRIDGE REPLACEMENT
RIDEAU CANAL

drawing title
titre du dessin

**SOUTH WEST RETAINING WALL
GEOMETRY AND REINFORCING**

drawn by
dessiné par

G. MOTA

designed by
conçue par

C. WILLIAMS/L. CUMMING

approved by
approuvée par

D.A. HUXTWICH

bid
offre

TYLER ATKINSON

project manager
administrateur de projets

project date
date du projet

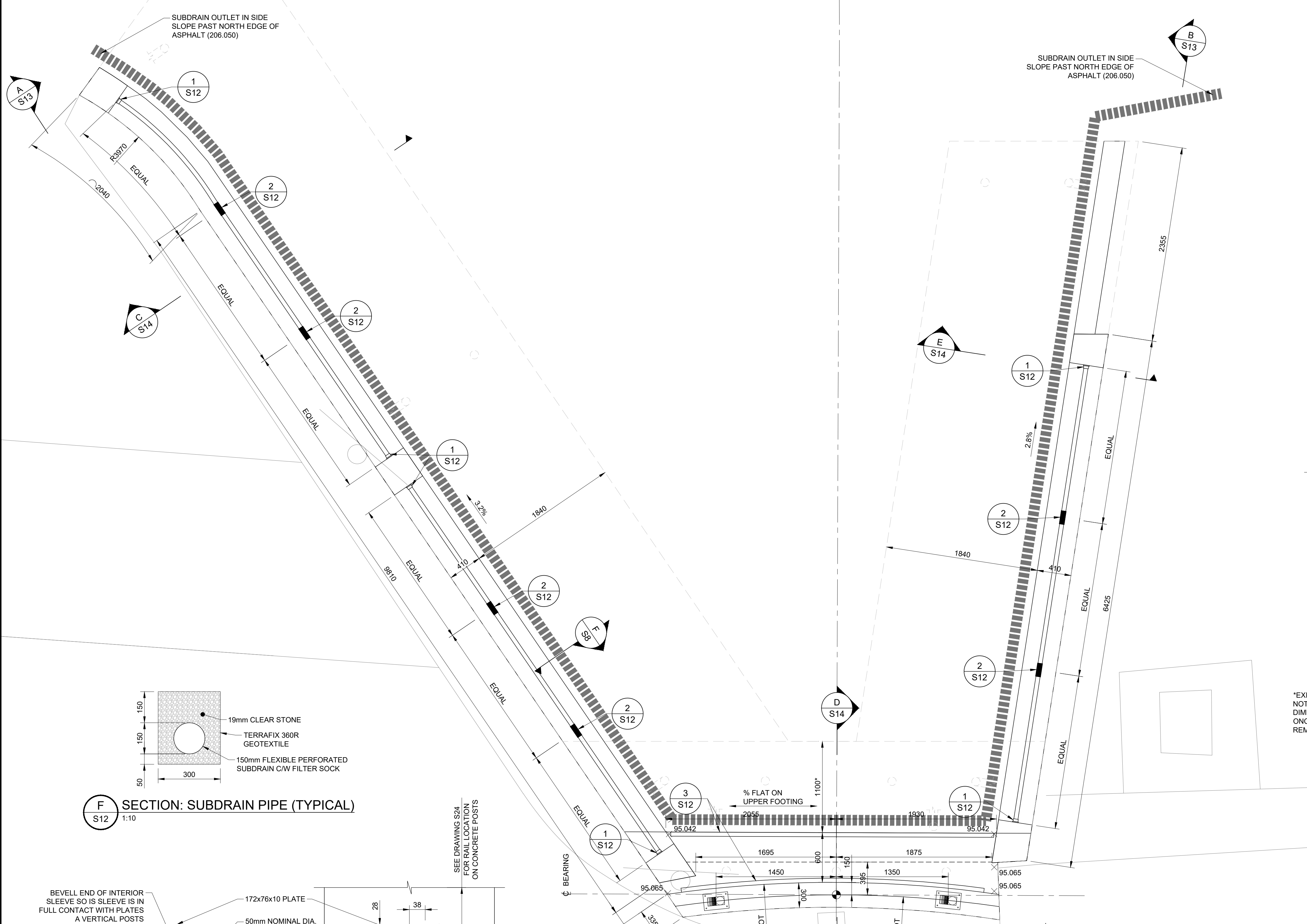
2021-10-29

project no.
no. du projet

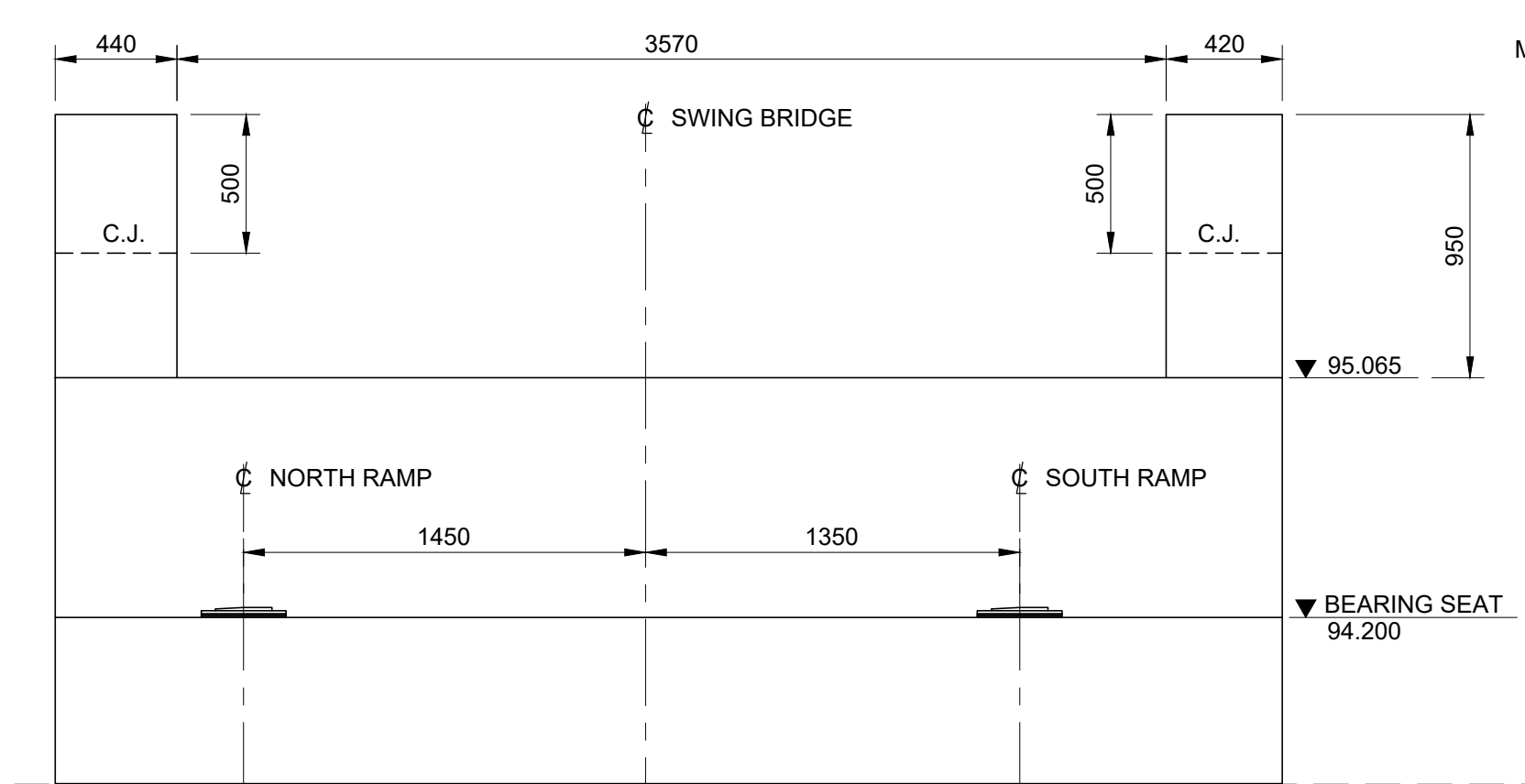
30037015

drawing no.
dessiné no.

S11

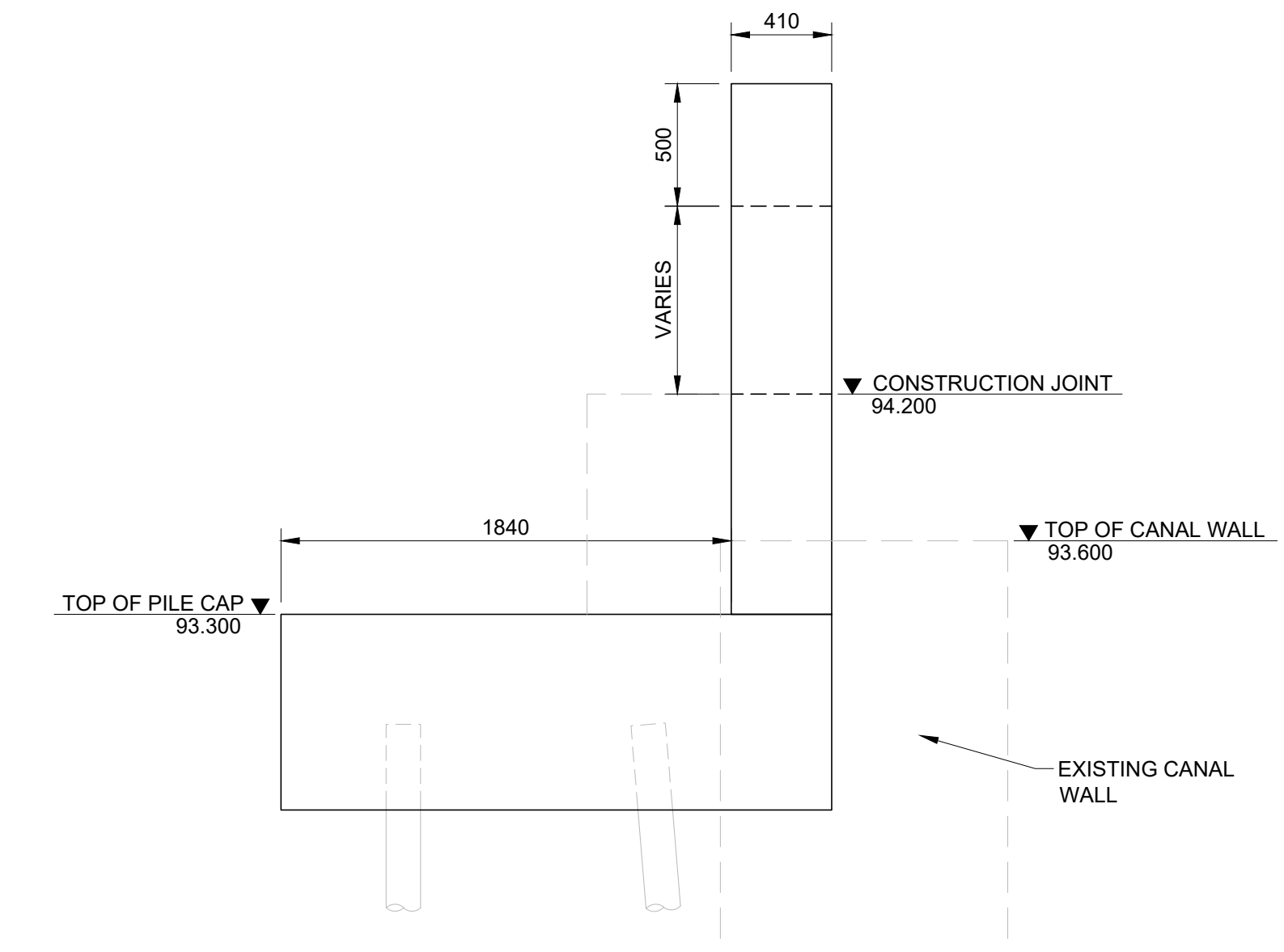


PLAN
1:25

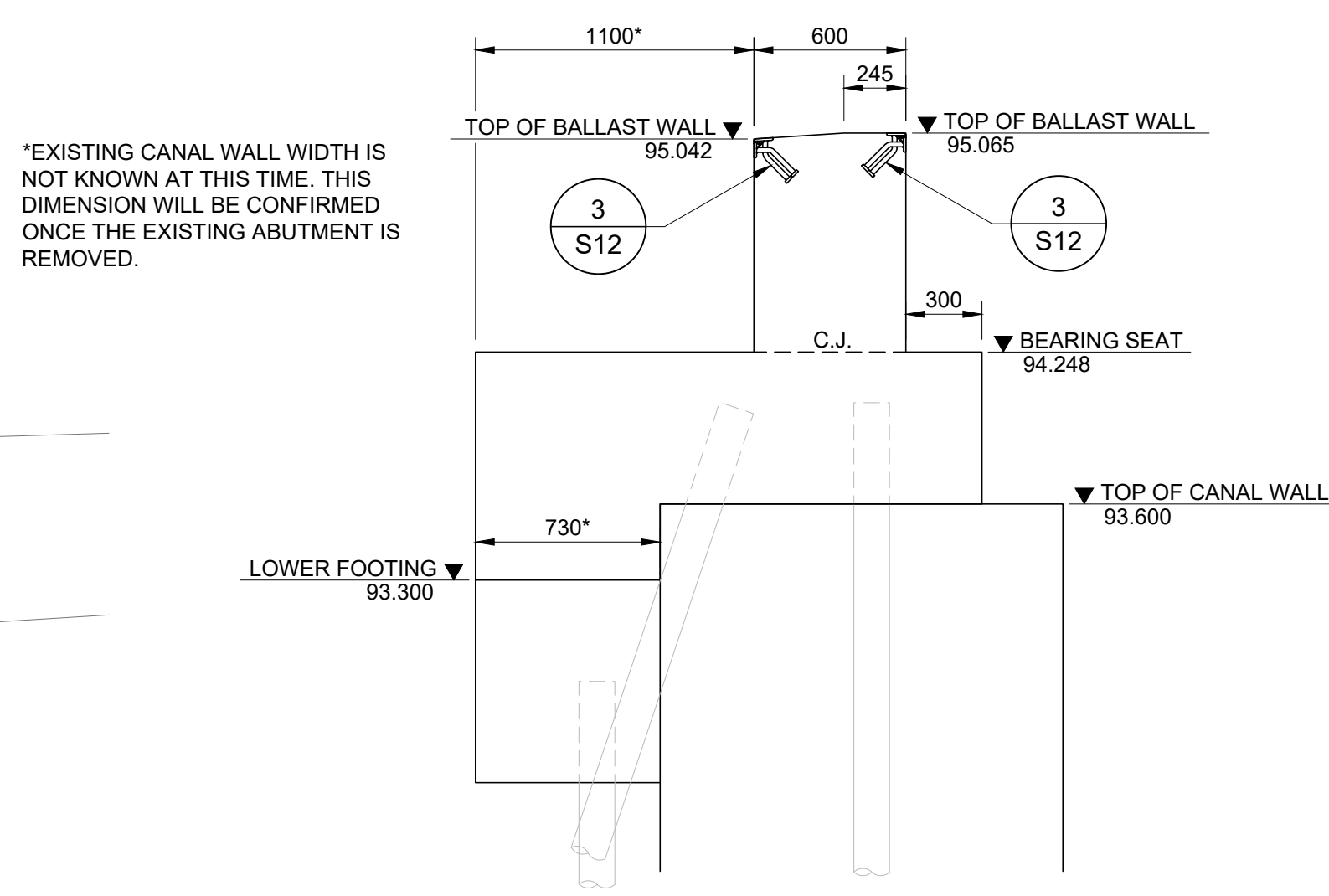


ELEVATION
1:25

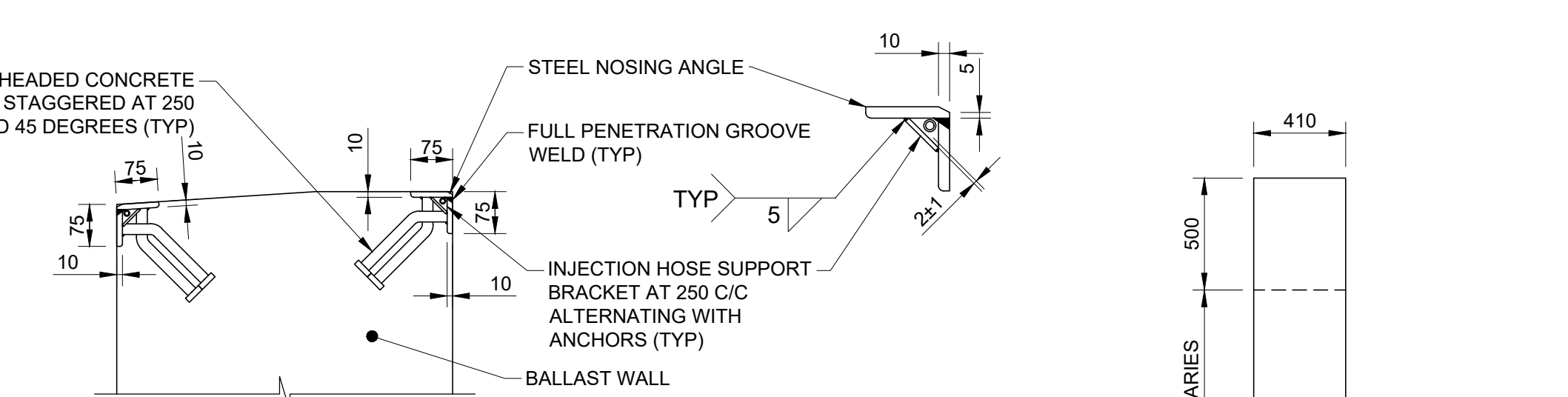
- NOTES:**
- 15mm DIA. STAINLESS STEEL THREADED ROD DOWELS TO BE INSTALLED IN 20mm DIAMETER DRILLED HOLES USING EPOXY ADHESIVE. EMBEDMENT DEPTH TO BE 150mm.
 - NEW CONCRETE TO BE COATED WITH ELASTOMERIC COATING (SEE SPECIFICATION) TO MATCH THE LIMITS OF EXISTING CONCRETE FEATURES (POSTS, WALLS, ETC)
 - STEEL NOSING ANGLE, INJECTION HOSE SUPPORT BRACKET AND CONCRETE ANCHORS TO BE HOT DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123/A123M-15 AND ASTM A153/153M-17A.
 - NOSING ANGLE TO BE MADE UP OF 2-10mm THICK PLATES ON EITHER SIDE OF BALLAST WALL. ENSURE NOSING ANGLE MATCHES CURVATURE OF BRIDGE ON NEAR FACE OF BALLAST WALL. ENSURE NOSING ANGLE PROTECTS AND EXTENDS FOR THE FULL WIDTH OF THE ROADWAY ON EITHER SIDE.
 - AT MINIMUM THE CONCRETE OF THE ABUTMENT CAP ABOVE THE CONSTRUCTION JOINT MUST BE CAST AFTER THE BRIDGE IS OPERATION AND THE FINAL ELEVATION OF THE END OF THE BRIDGE HAS BEEN ESTABLISHED.
 - PREFORMED JOINT FILLER SHALL BE IN CONFORMANCE WITH ASTM D994/D994M-11 (2016).



C NORTH EAST WING WALL
S12 1:25

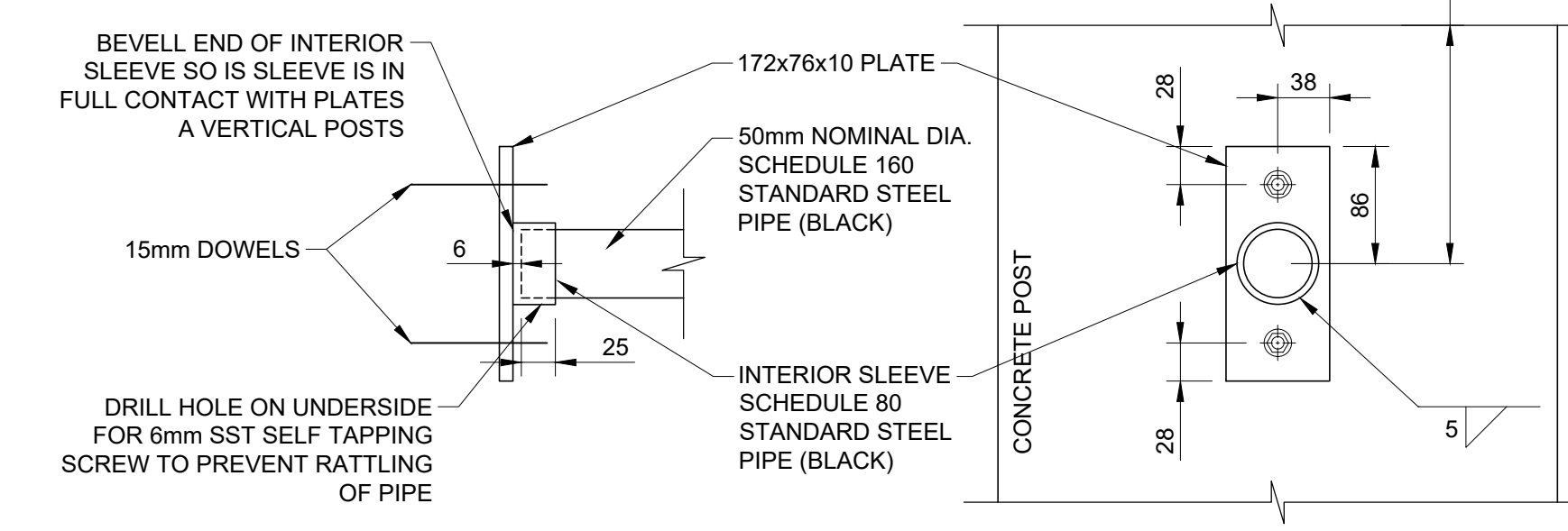
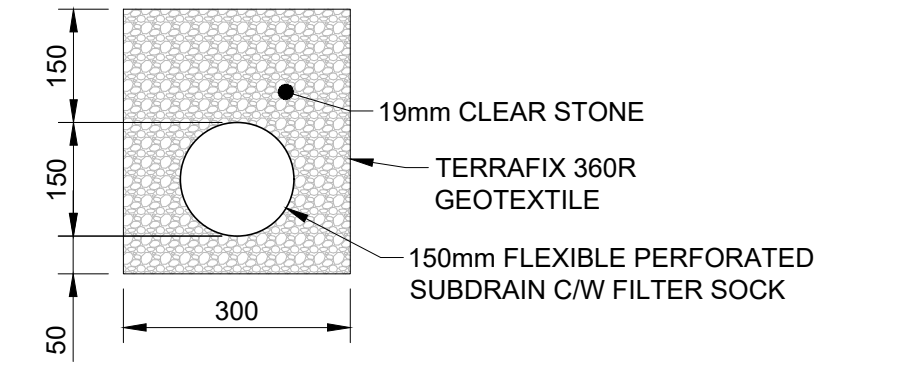


D SECTION: EAST ABUTMENT
S12 1:25

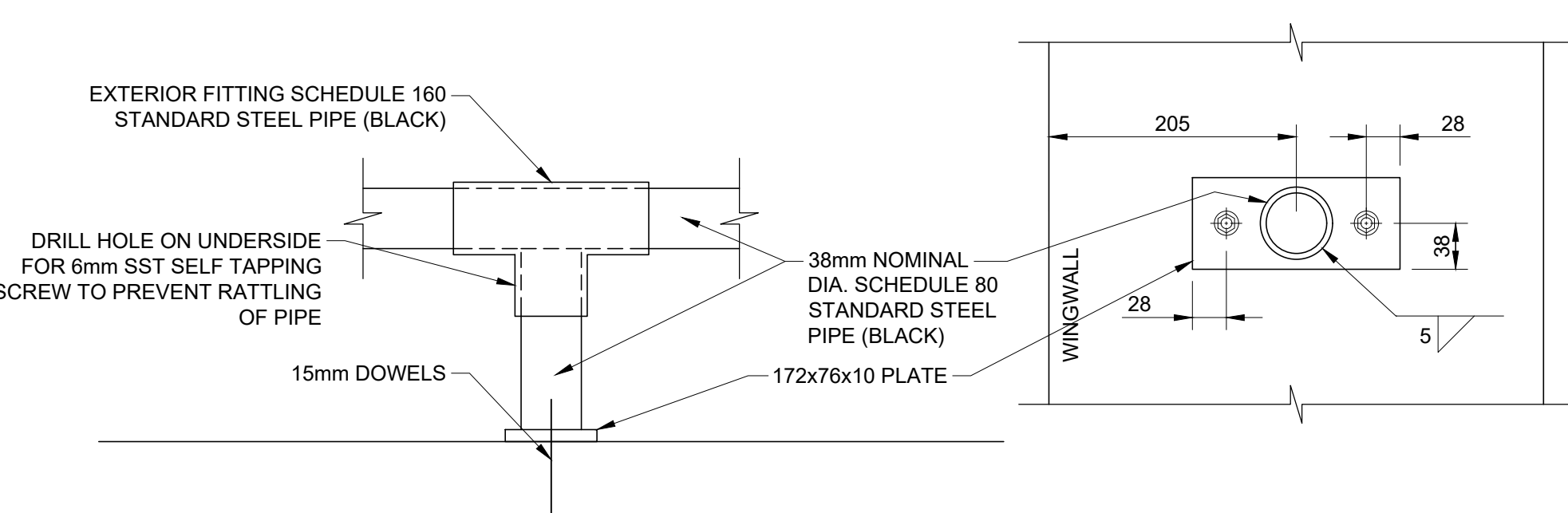


E SECTION: SOUTH EAST WINGWALL AT CONCRETE POST
S12 1:25

F SECTION: SUBDRAIN PIPE (TYPICAL)
S12 1:10

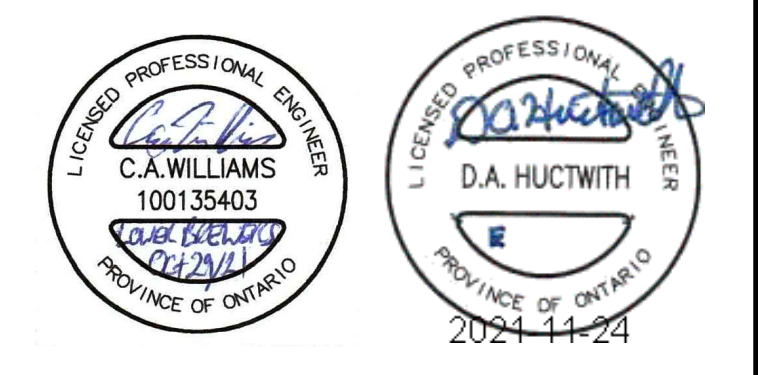
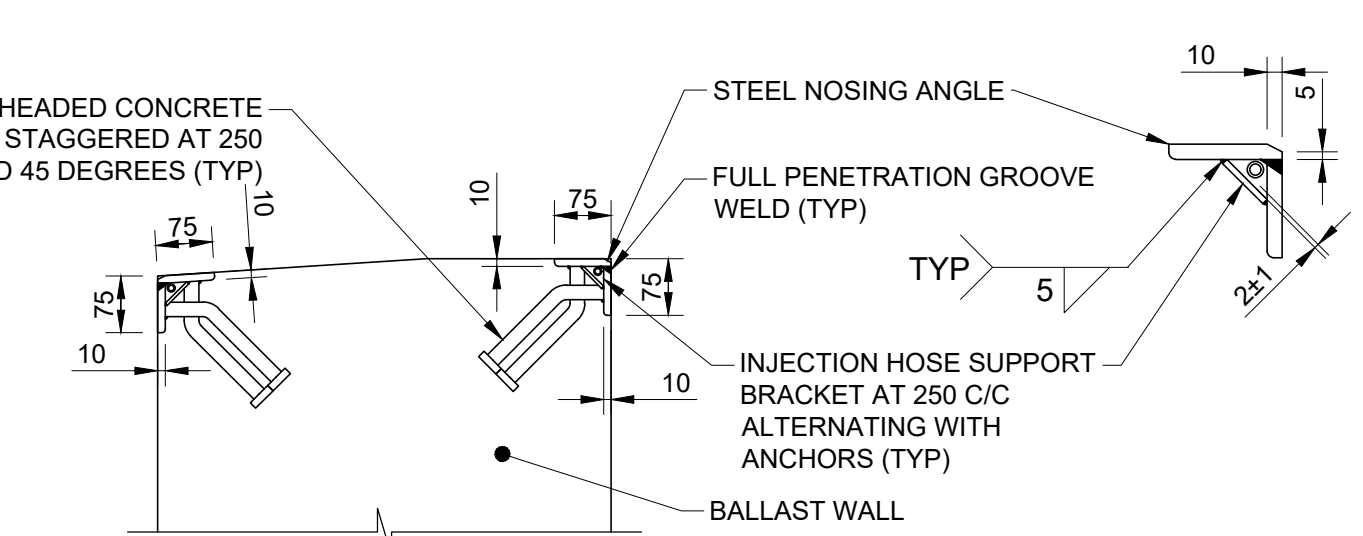


1 STEEL RAILING TO CONCRETE POST CONNECTION
S12 1:5



2 STEEL RAILING TO CONCRETE WINGWALL CONNECTION
S12 1:5

3 DETAIL: STEEL NOSING ANGLE
S12 1:10



04		
03		
02	ISSUED FOR TENDER	10/29/2021
01	ISSUED FOR REVIEW	08/06/2021
revision		date

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

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

project title
titre du projet

ONTARIO

LOWER BREWERS SWING BRIDGE REPLACEMENT RIDEAU CANAL

drawing title
titre du dessin

EAST ABUTMENT AND WING WALL GEOMETRY I

drawn by
dessiné par G. MOTA

designed by
conçu par C. WILLIAMS/L. CUMMING

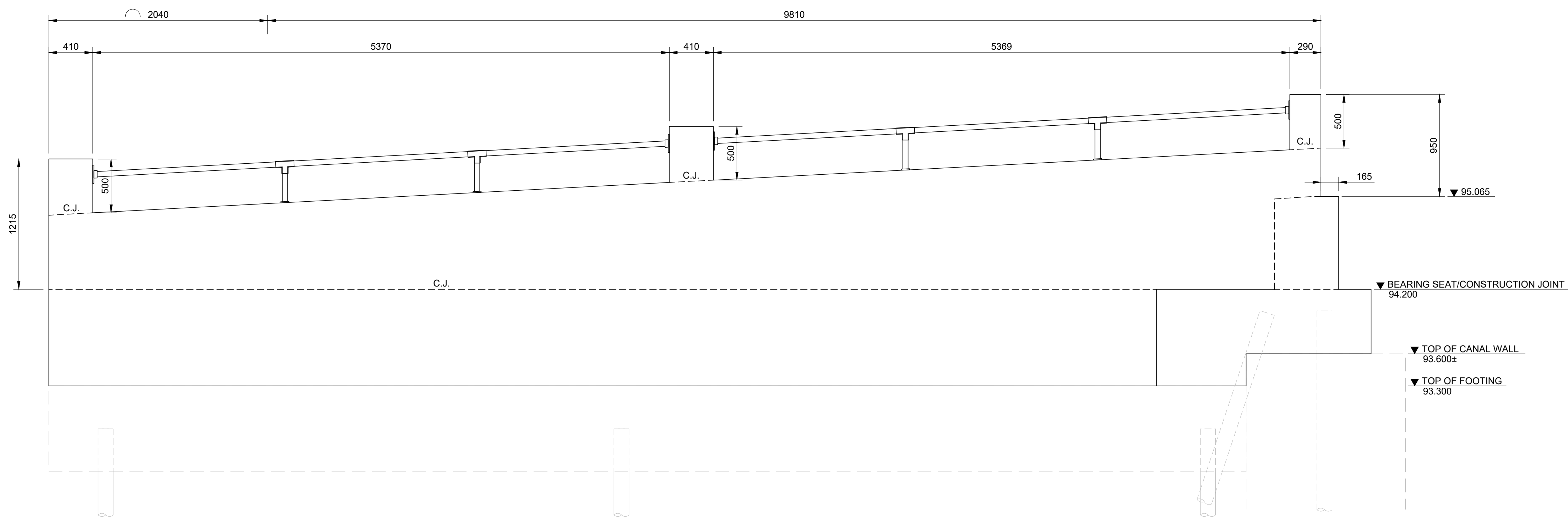
approved by
approuvé par D.A. HUCTWITH

bid
offre TYLER ATKINSON project manager
administrateur de projets

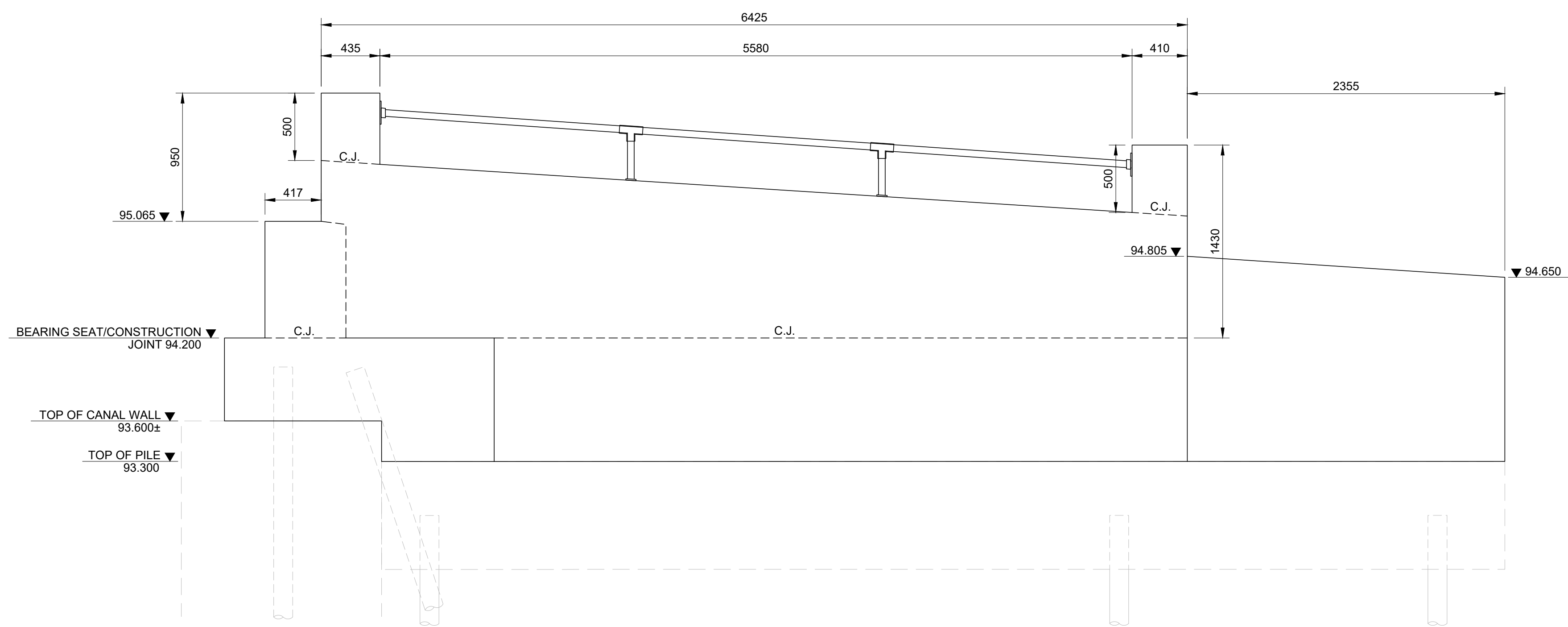
project date
date du projet 2021-10-29

project no.
no. du projet 30037015

drawing no.
dessiné no. S12



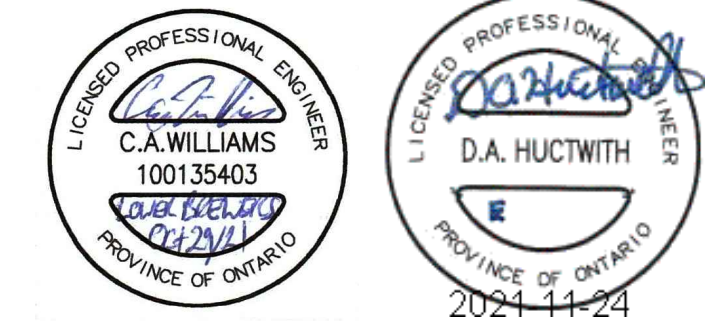
A NORTH EAST WING WALL
S13 1:25



B ELEVATION: SOUTH EAST WING WALL
S13 1:25

NOTES:

- 15mm DIA. STAINLESS STEEL THREADED ROD DOWELS TO BE INSTALLED IN 20mm DIAMETER DRILLED HOLES USING EPOXY ADHESIVE. EMBEDMENT DEPTH TO BE 150mm.
- NEW CONCRETE TO BE COATED WITH ELASTOMERIC COATING (SEE SPECIFICATION) TO MATCH THE LIMITS OF EXISTING CONCRETE FEATURES (POSTS, WALLS, ETC)



04		
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	dessin no. - ou détaillé	

project title
titre du projet
ONTARIO

LOWER BREWERS SWING BRIDGE REPLACEMENT RIDEAU CANAL

drawing title
titre du dessin
EAST ABUTMENT AND WING WALL GEOMETRY II

drawn by
dessiné par
G. MOTA

designed by
conçu par
C. WILLIAMS/L. CUMMING

approved by
approuvé par
D.A. HUETWICH

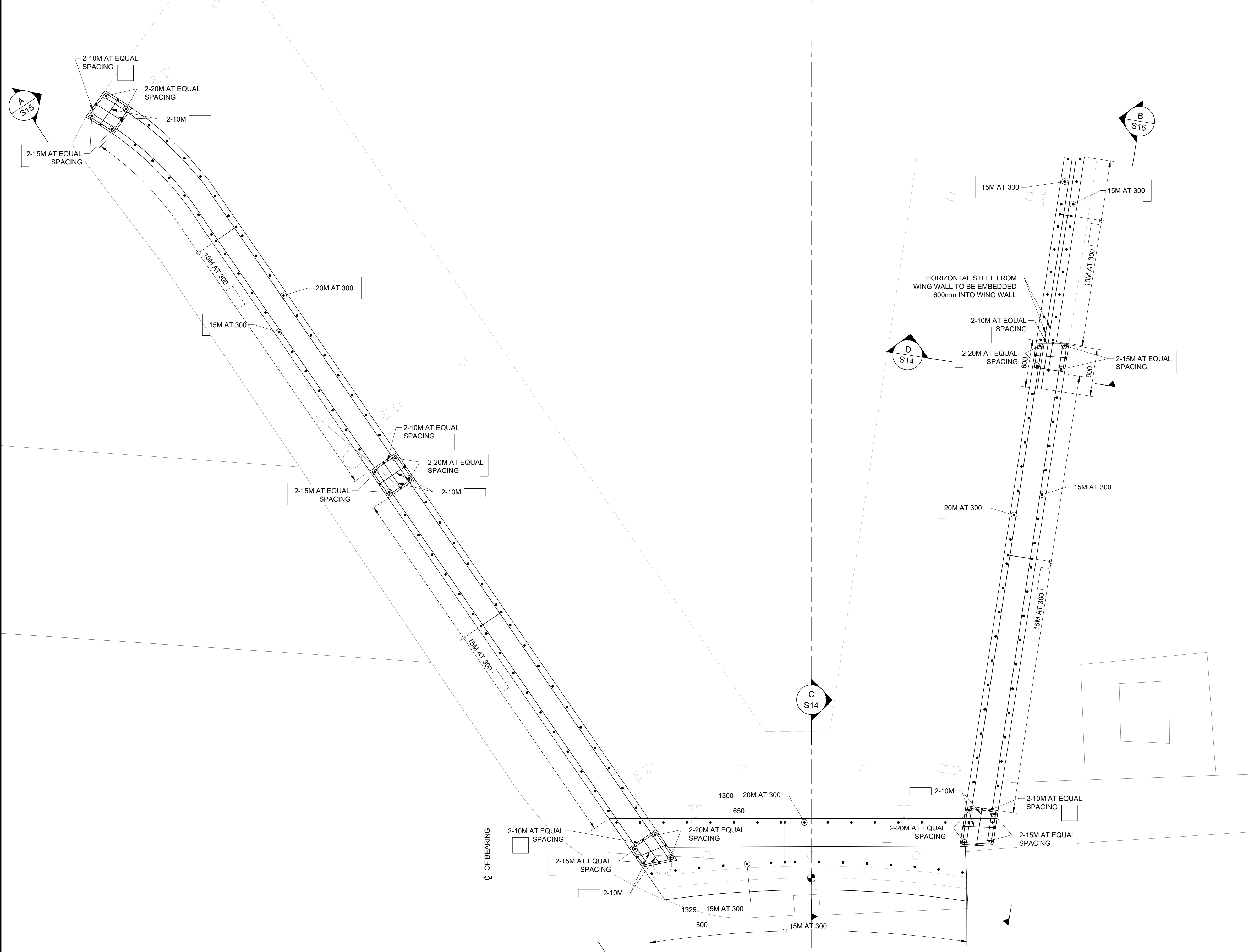
bid
offre
TYLER ATKINSON

project manager
administrateur de projets

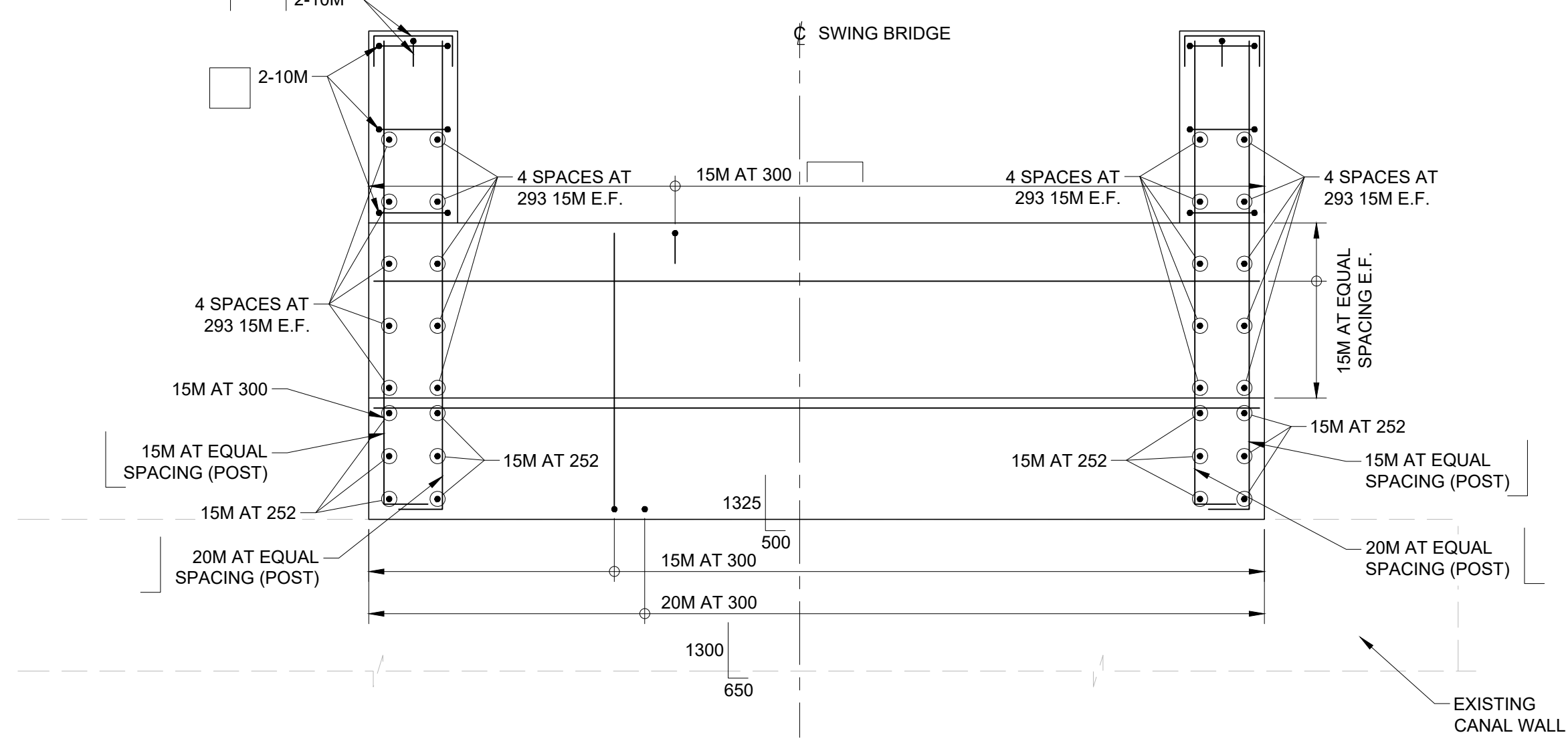
project date
date du projet
2021-10-29

project no.
no. du projet
30037015

drawing no.
dessiné no.
S13



PLAN
1:25



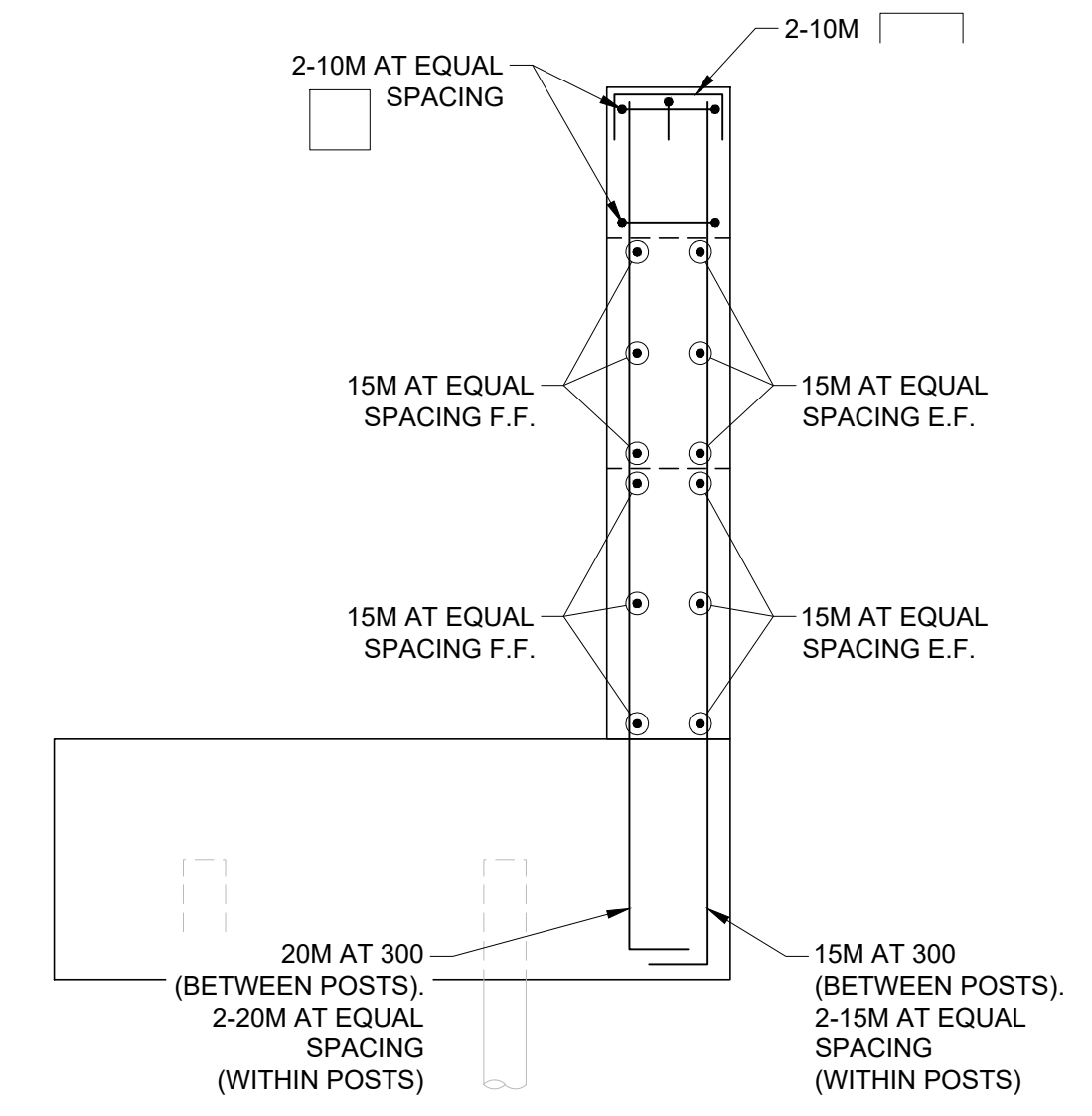
ELEVATION
1:25

NOTES:

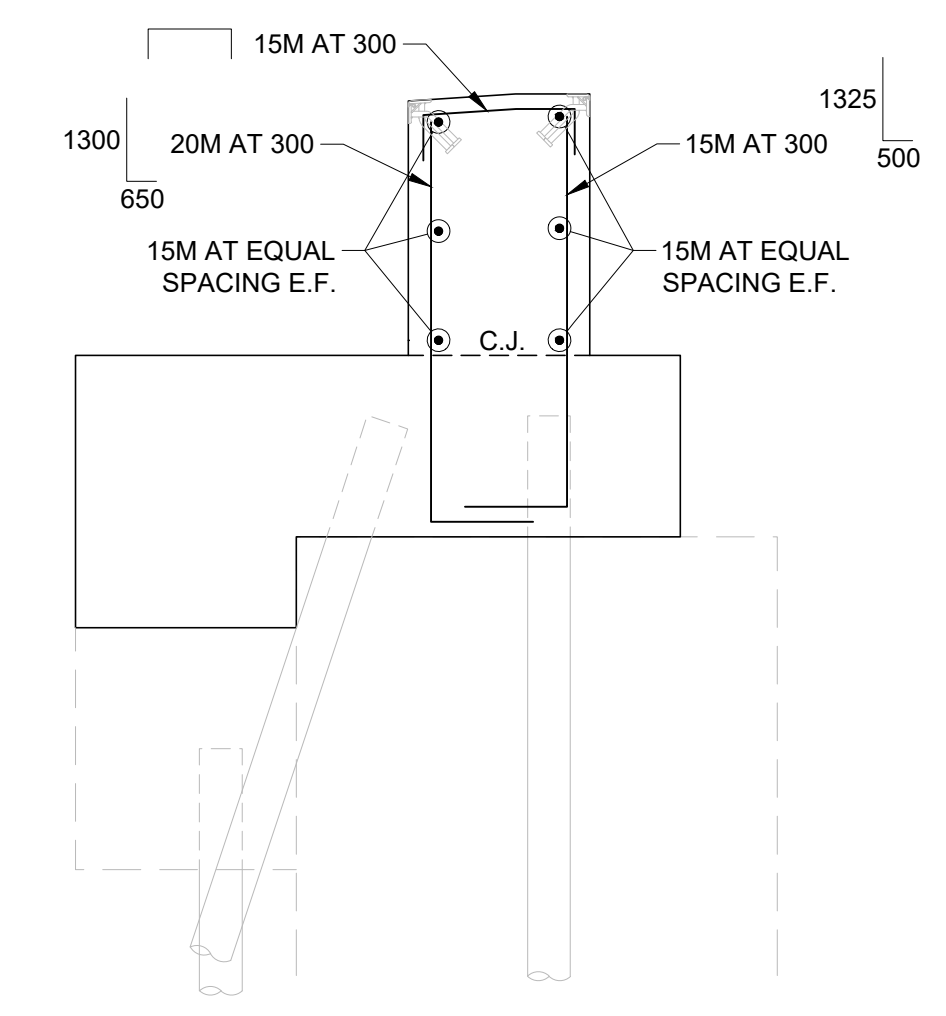
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LEGEND:

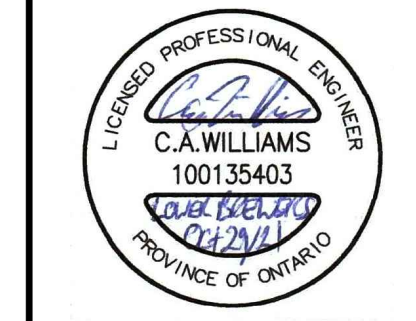
E.F. - DENOTES EACH FACE
 I.F. - DENOTES INSIDE FACE
 O.F. - DENOTES OUTSIDE FACE
 N.F. - DENOTES NEAR FACE
 F.F. - DENOTES FAR FACE
 C.J. - CONSTRUCTION JOINTS
 L.S. - LAP SPLICE



D SECTION: SOUTH EAST WINGWALL AT CONCRETE POST
1:25



C SECTION: EAST ABUTMENT
1:25



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

project title
 titre du projet
ONTARIO
LOWER BREWERS SWING BRIDGE REPLACEMENT RIDEAU CANAL

drawing title
 titre du dessin
EAST ABUTMENT AND WING WALL REINFORCEMENT I

drawn by
 dessiné par
 G. MOTA

designed by
 conçu par
 C. WILLIAMS/L. CUMMING

approved by
 approuvé par
 D.A. HUETWICH

bid
 offre
 TYLER ATKINSON

project date
 date du projet
 2021-10-29

project no.
 no. du projet
 30037015

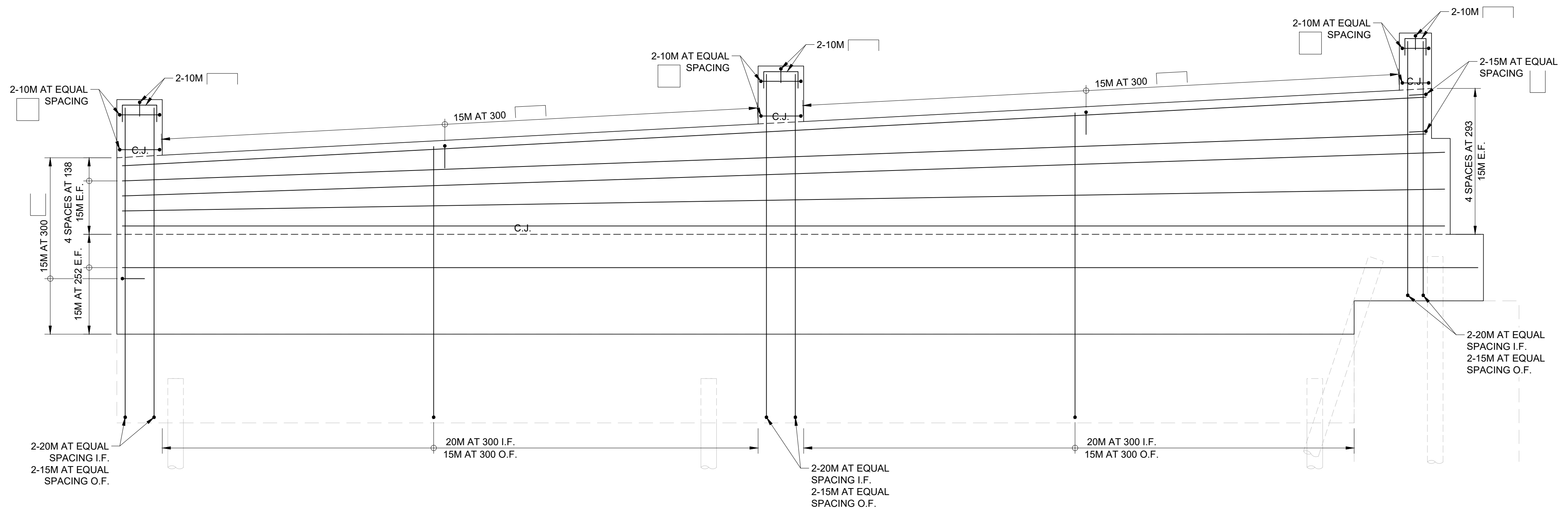
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 dessiné no.
 S14

NOTES:

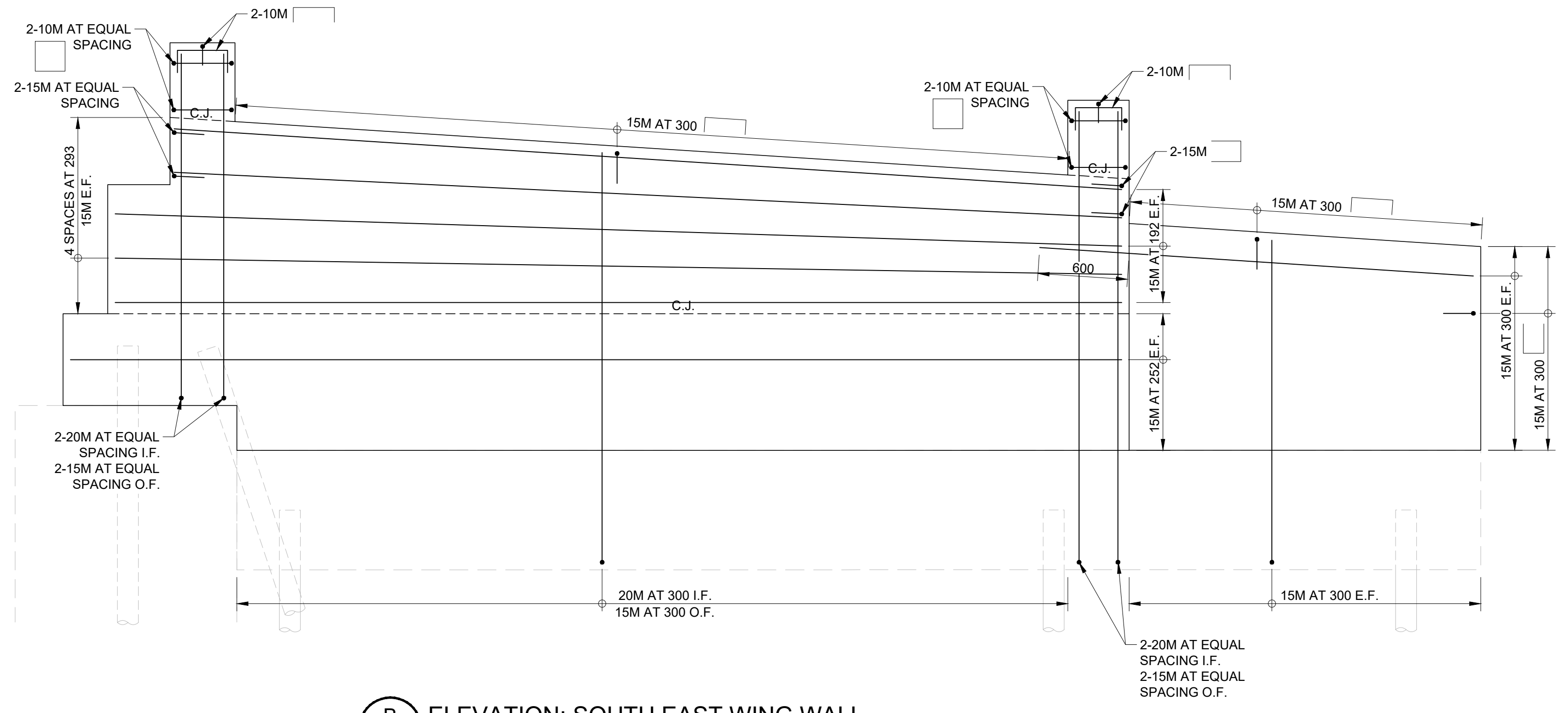
• THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING S1 (GA).

LEGEND:

E.F. - DENOTES EACH FACE
 I.F. - DENOTES INSIDE FACE
 O.F. - DENOTES OUTSIDE FACE
 N.F. - DENOTES NEAR FACE
 F.F. - DENOTES FAR FACE
 C.J. - CONSTRUCTION JOINTS
 L.S. - LAP SPLICE



E NORTH EAST WING WALL
 S15 1:25



B ELEVATION: SOUTH EAST WING WALL
 S15 1:25



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

project title
 titre du projet
 ONTARIO
 LOWER BREWERS
 SWING BRIDGE REPLACEMENT
 RIDEAU CANAL

drawing title
 titre du dessin
 EAST ABUTMENT AND
 WING WALL REINFORCEMENT II

drawn by
 dessiné par
 G. MOTA

designed by
 conçu par
 C. WILLIAMS/L. CUMMING

approved by
 approuvé par
 D.A. HUCTWITH

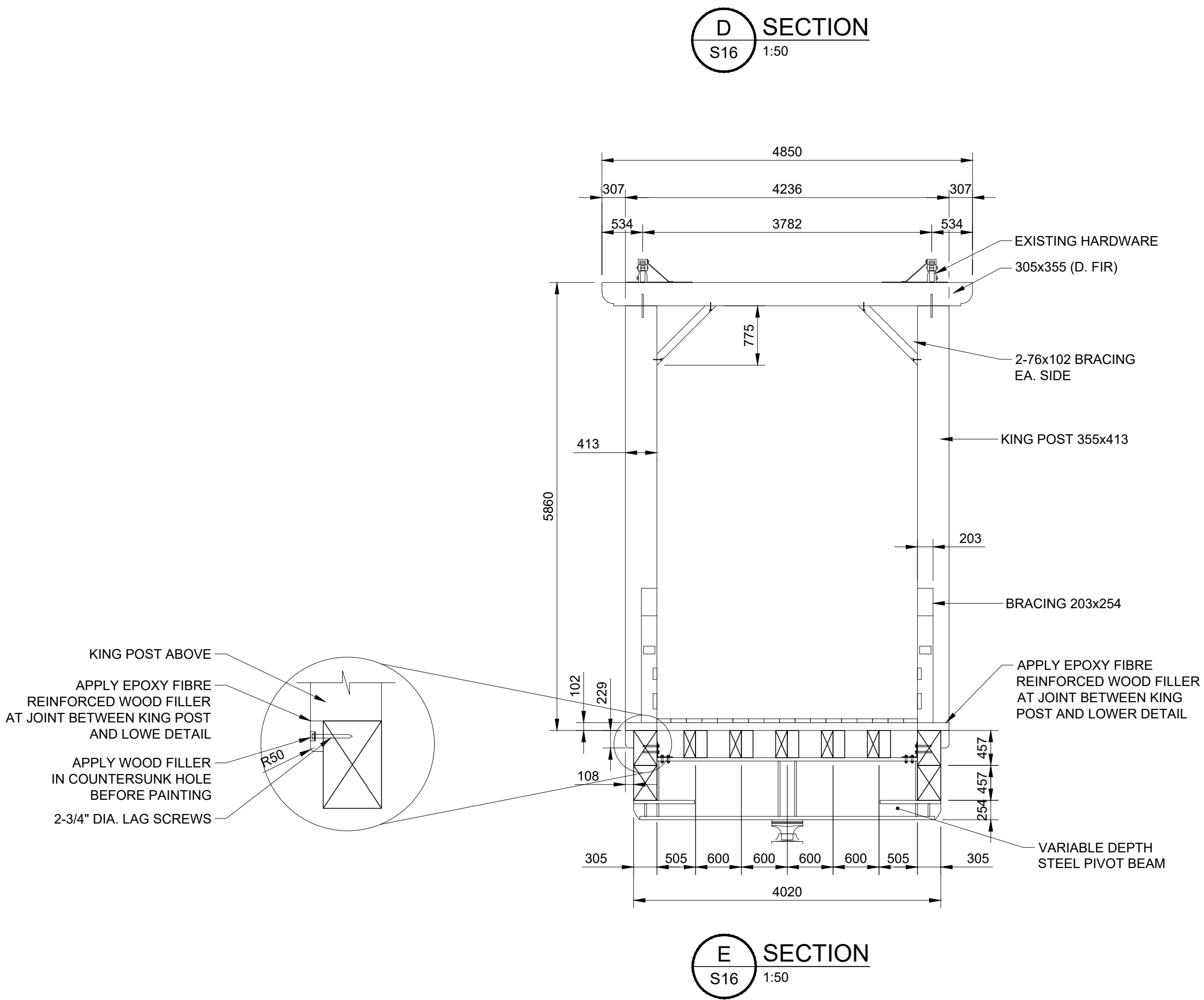
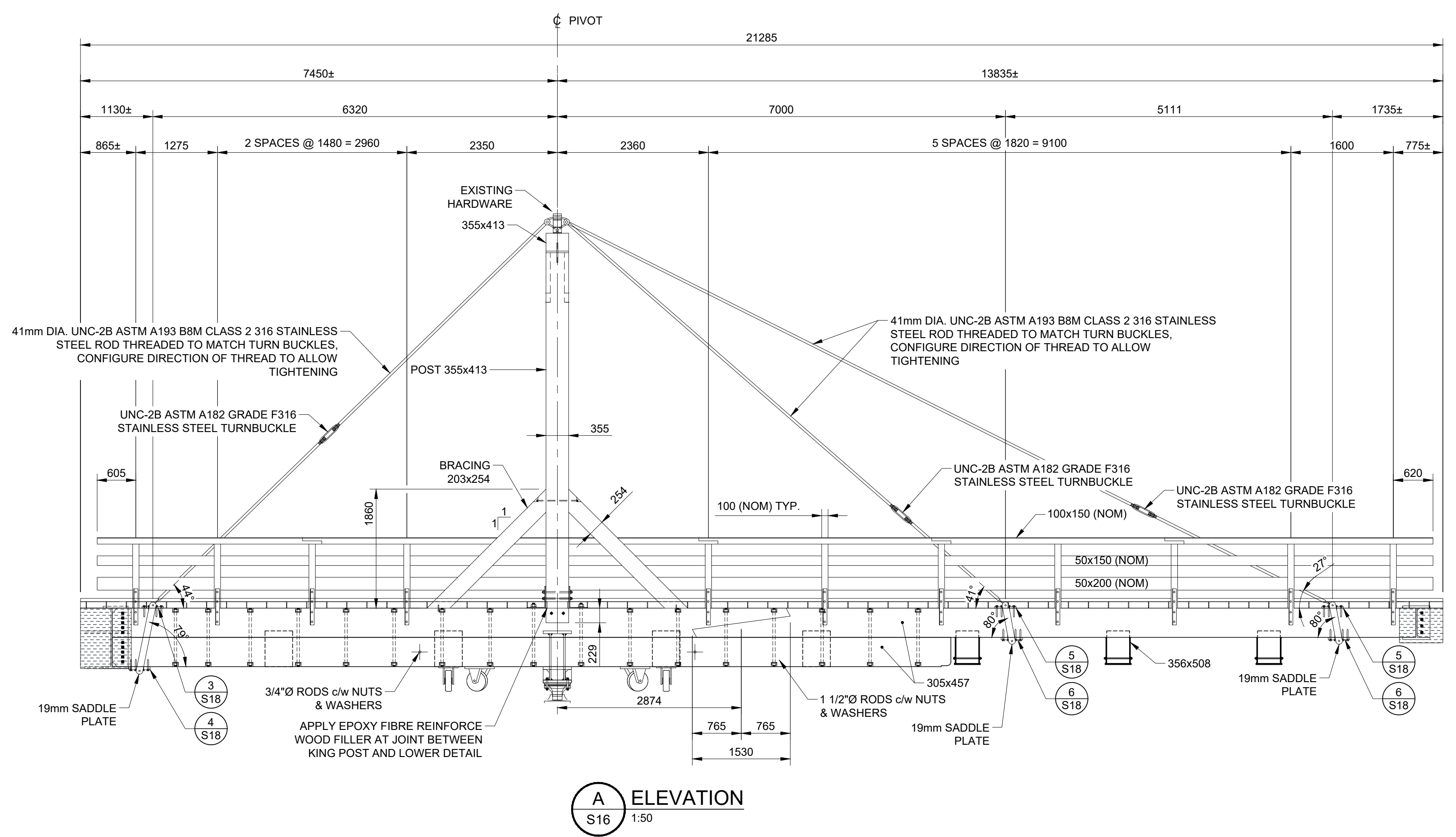
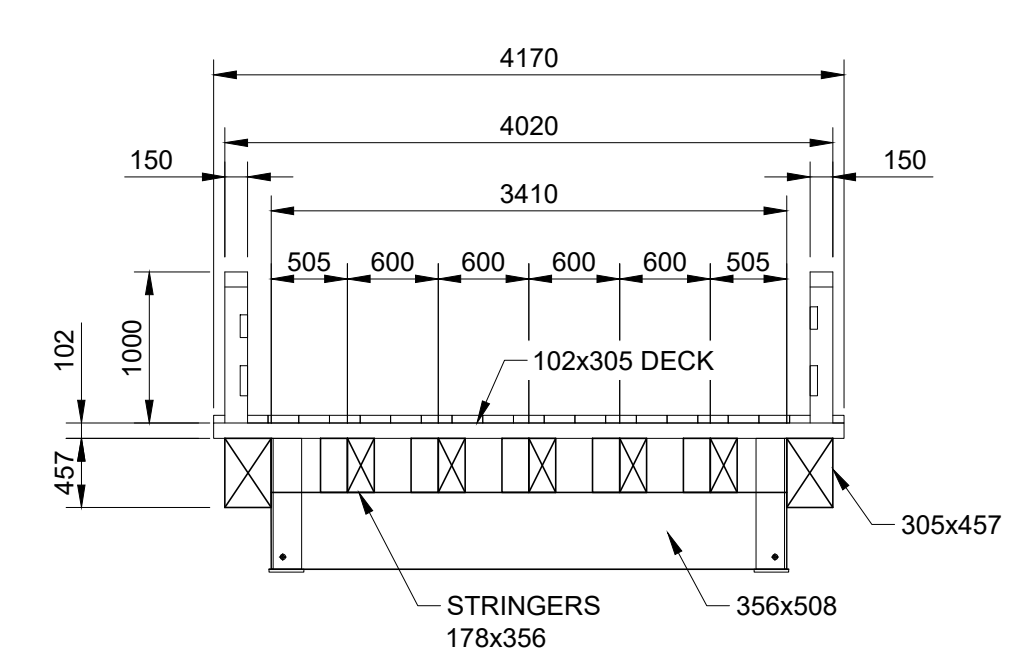
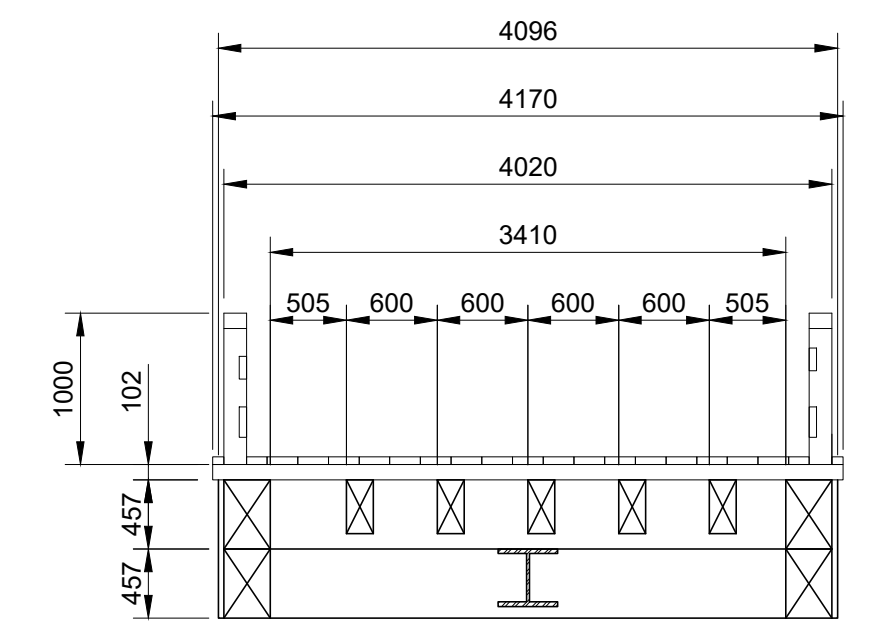
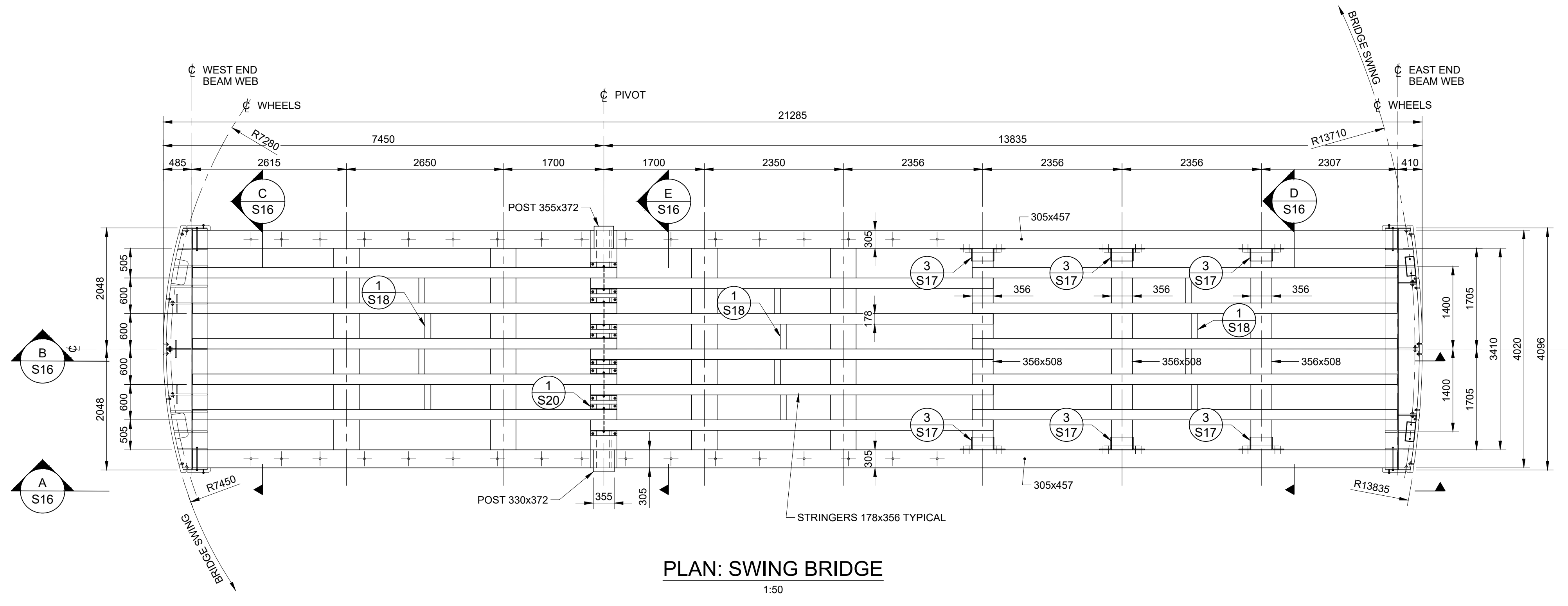
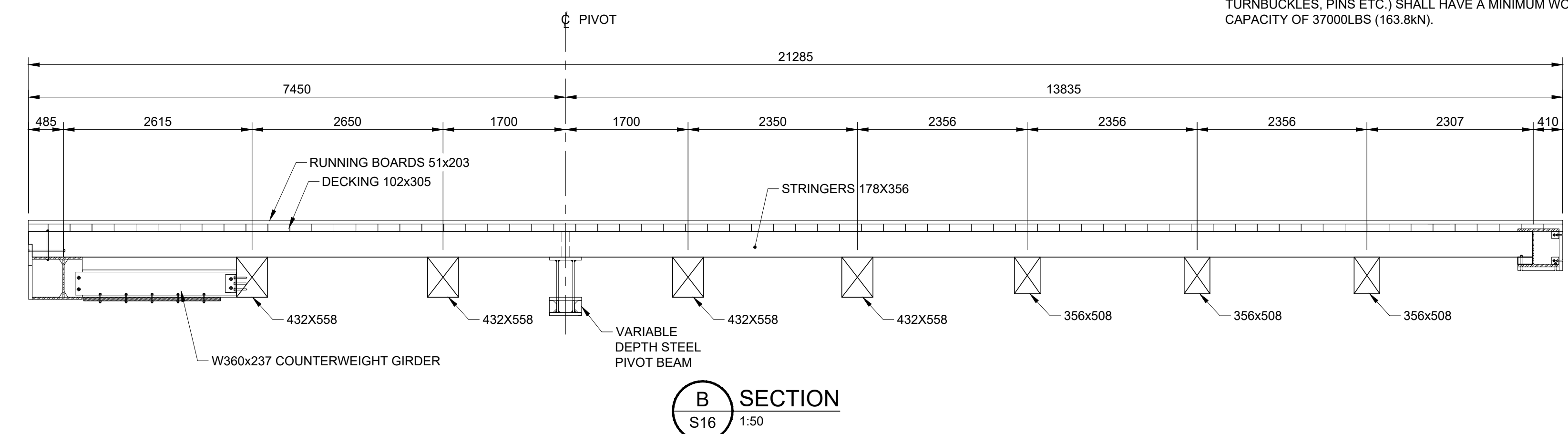
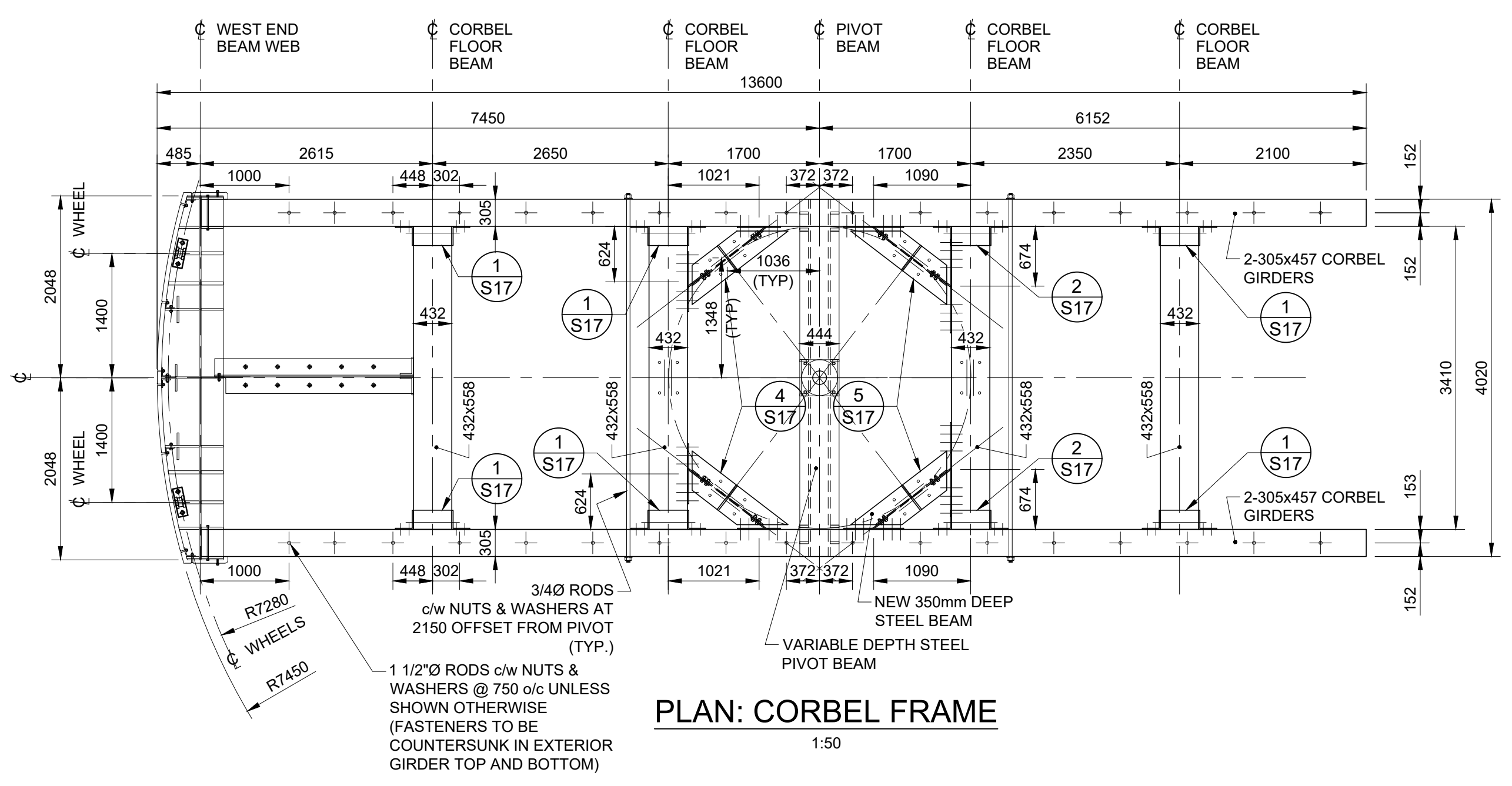
bid
 offre
 TYLER ATKINSON
 project manager
 administrateur
 de projets

project date
 date du projet
 2021-10-29

project no.
 no. du projet
 30037015

drawing no.
 dessiné no.
 S15

- NOTES:**
- SEE GENERAL ARRANGEMENT DRAWING FOR WOOD NOTES AND TIMBER FRAMING DETAILS I DRAWING FOR NOTES REGARDING FASTENERS.
 - THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS SHOWING ALL THE MEMBERS, THEIR LOCATION, SIZE OF HOLES TO BE DRILLED, AND THE LENGTHS OF THE MEMBERS.
 - THE CONTRACTOR SHALL COORDINATE WITH THE SUPPLIERS AND SUBCONTRACTORS TO ENSURE THAT ALL HOLES AND CUTS ARE MADE PRIOR TO PRESERVATIVE TREATMENT. APPLICATIONS FOR EXCEPTIONS MAY BE ACCEPTED IN CERTAIN CIRCUMSTANCES.
 - STRENGTH OF STEEL STAY ROD ASSEMBLY (JAWS, RODS, TURNBUCKLES, PINS ETC.) SHALL HAVE A MINIMUM WORKING FORCE CAPACITY OF 37000LBS (163.8kN).



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	dessin no. - ou détaillé	

project title
titre du projet

ONTARIO

LOWER BREWERS SWING BRIDGE REPLACEMENT RIDEAU CANAL

drawing title
titre du dessin

TIMBER SUPERSTRUCTURE LAYOUT

drawn by
dessiné par

G. MOTA

designed by
conçu par

C. WILLIAMS/L. CUMMING

approved by
approuvé par

D.A. HUCTION

bid
offre

TYLER ATKINSON

project manager
administrateur de projets

project date
date du projet

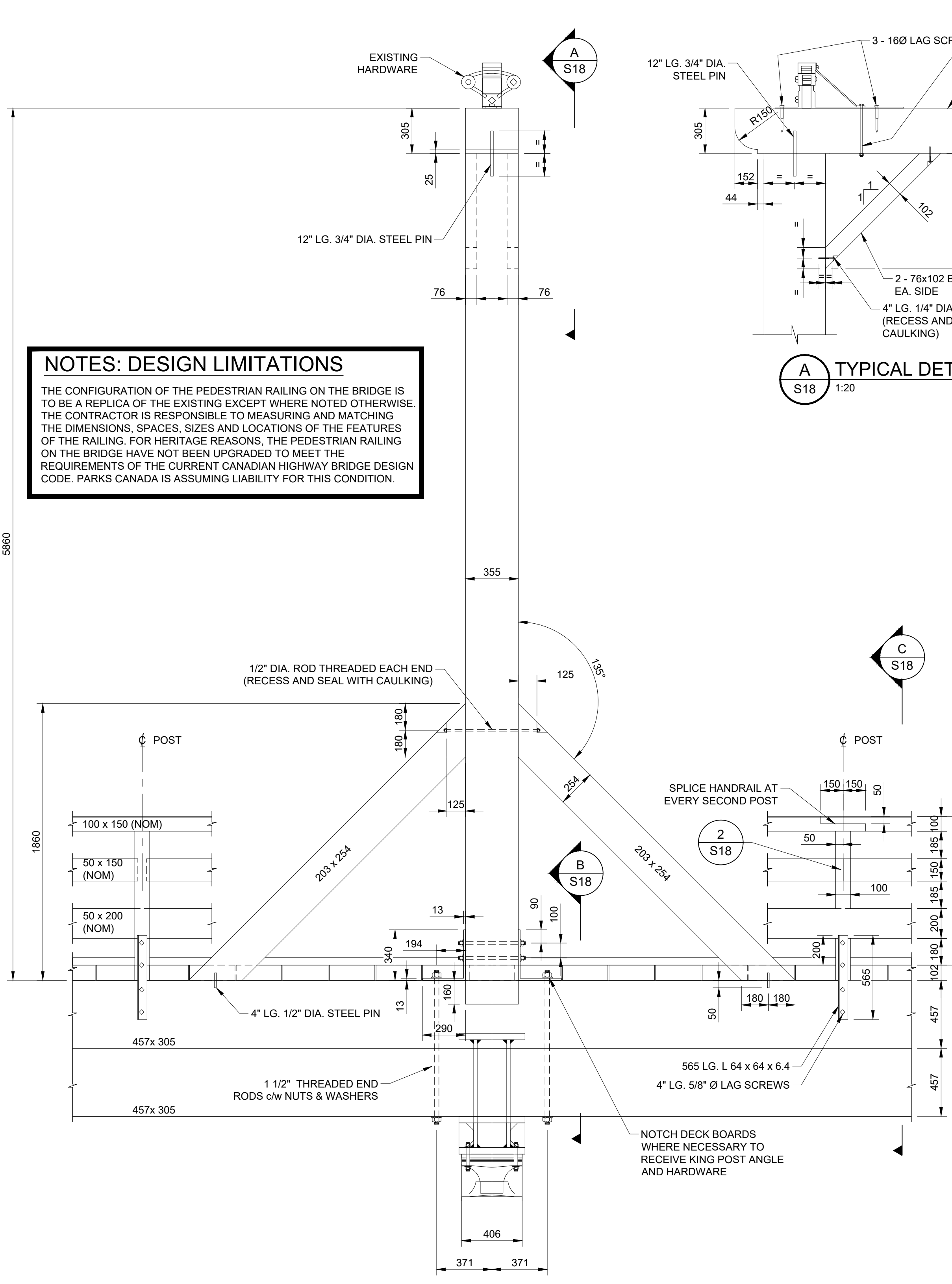
2021-10-29

project no.
no. du projet

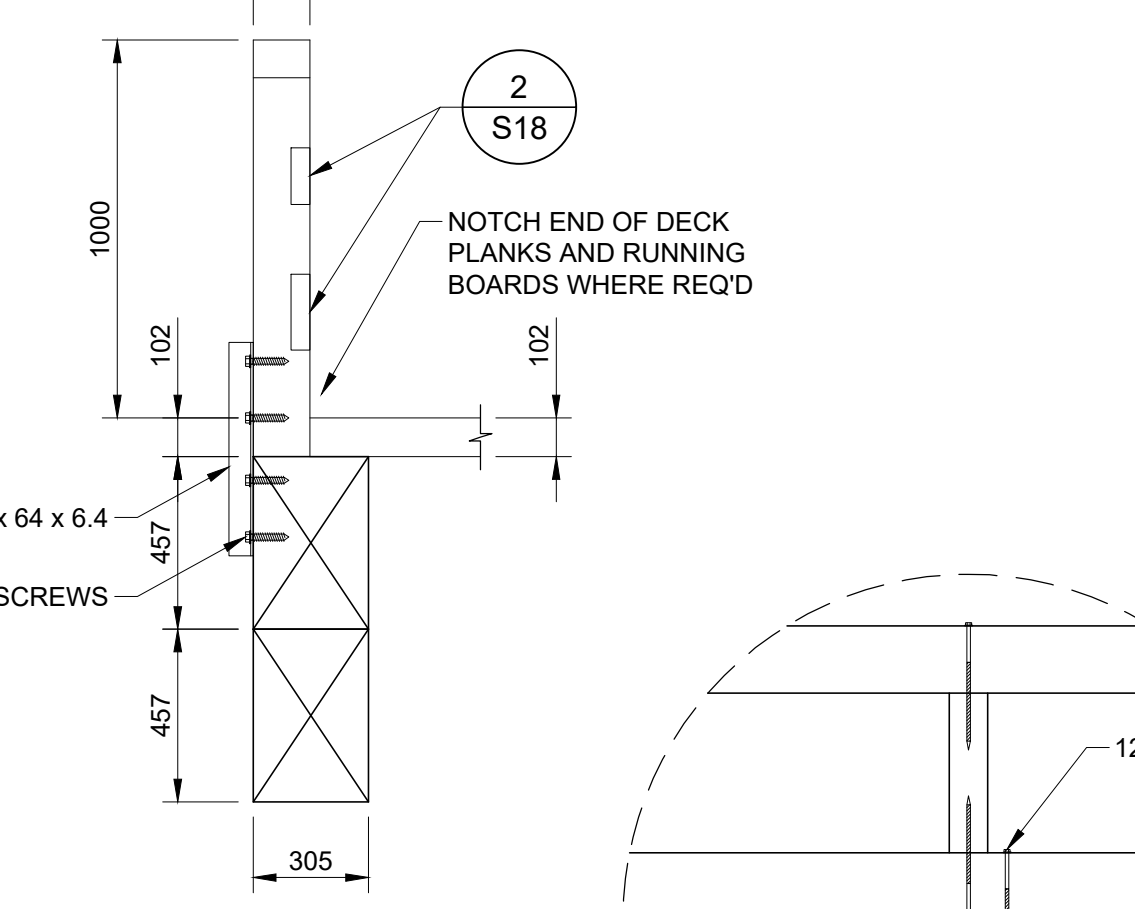
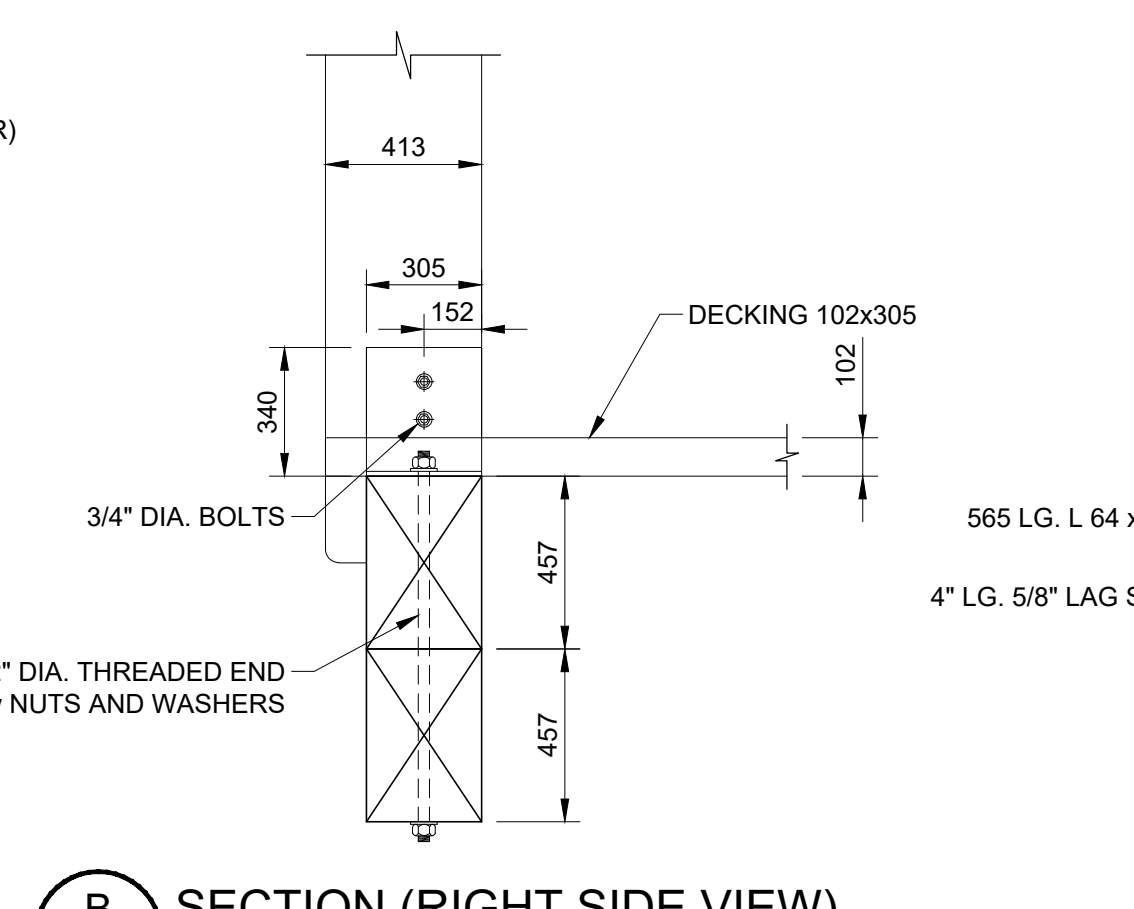
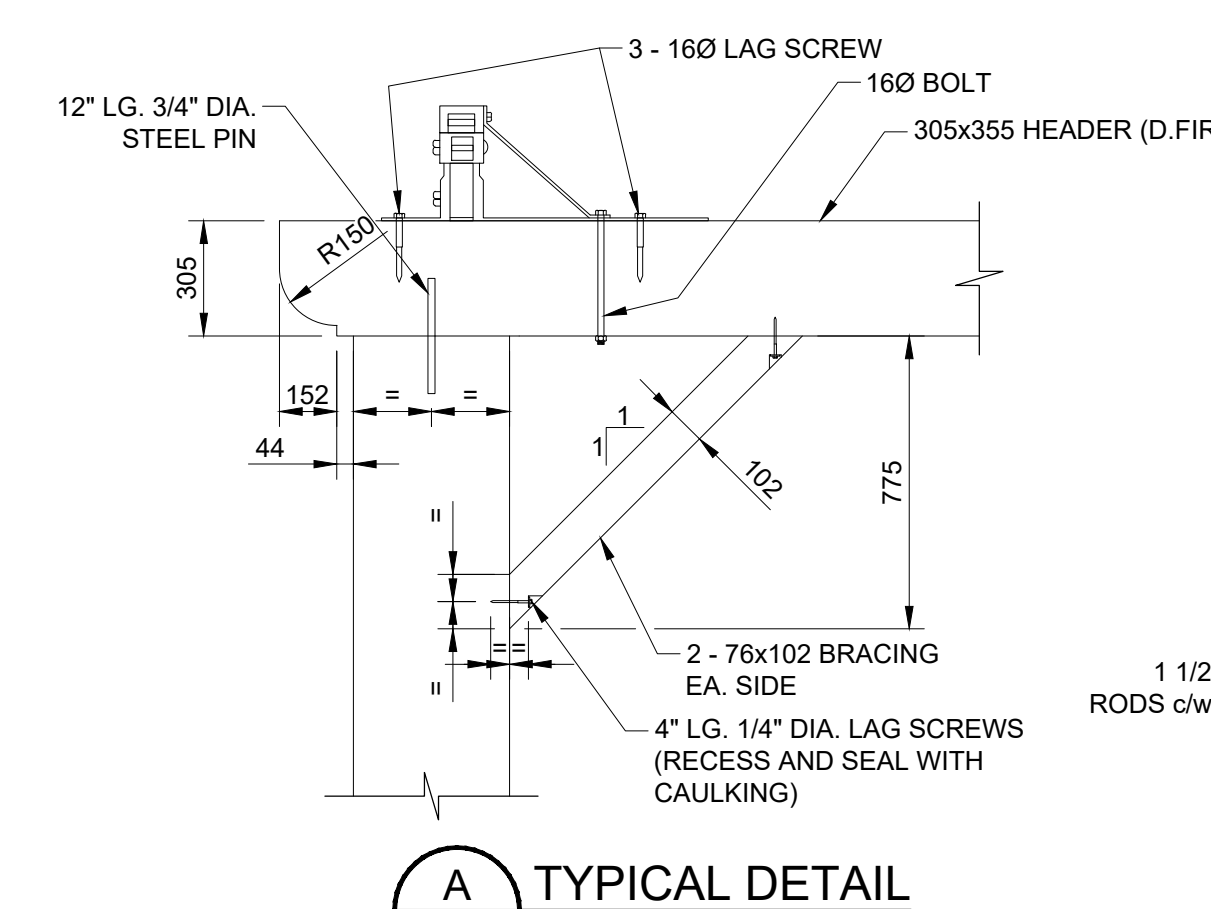
30037015

drawing no.
dessiné no.

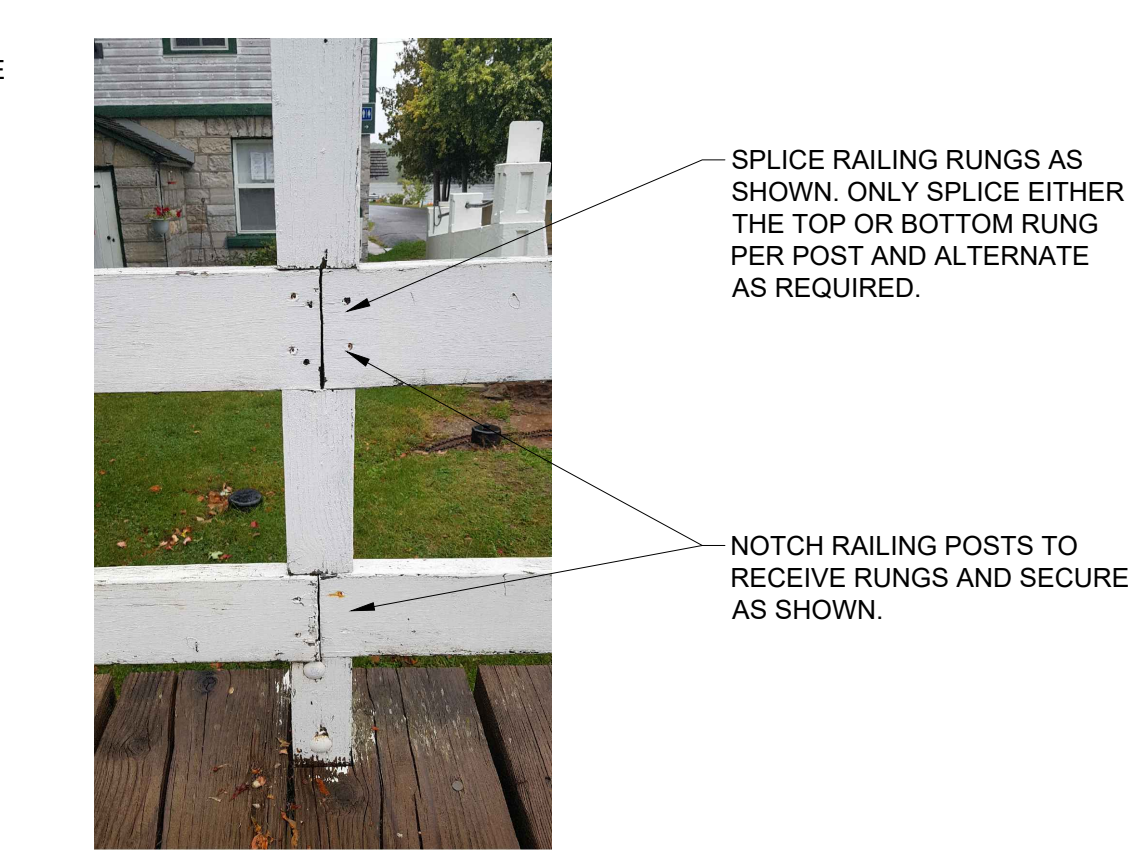
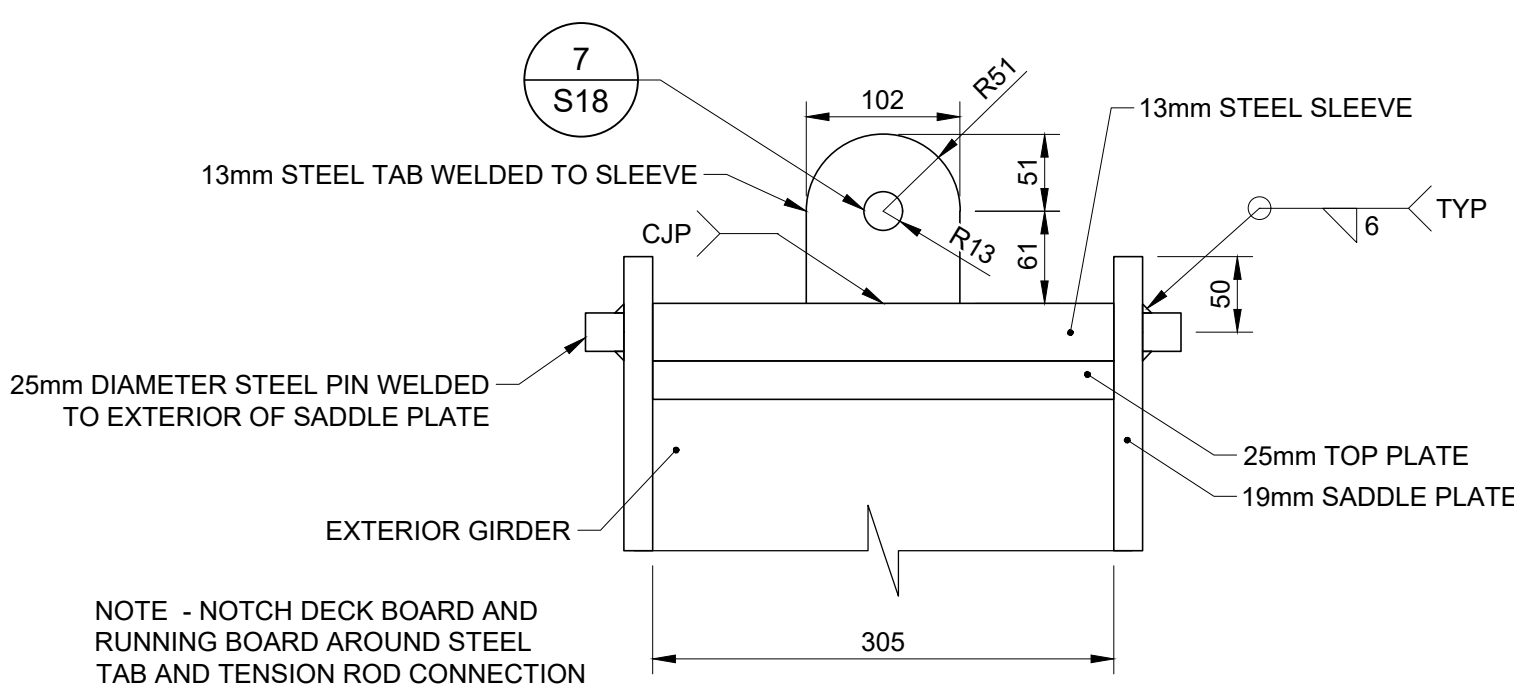
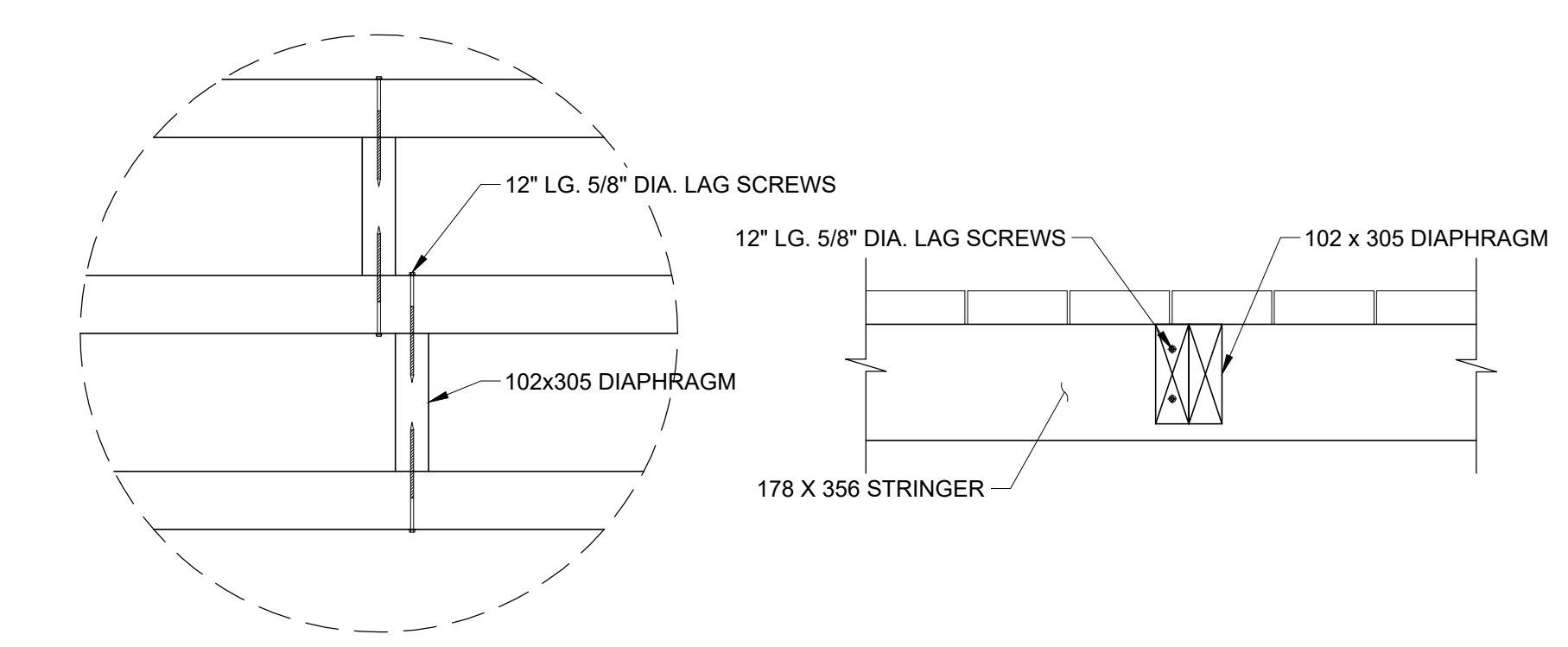
S16



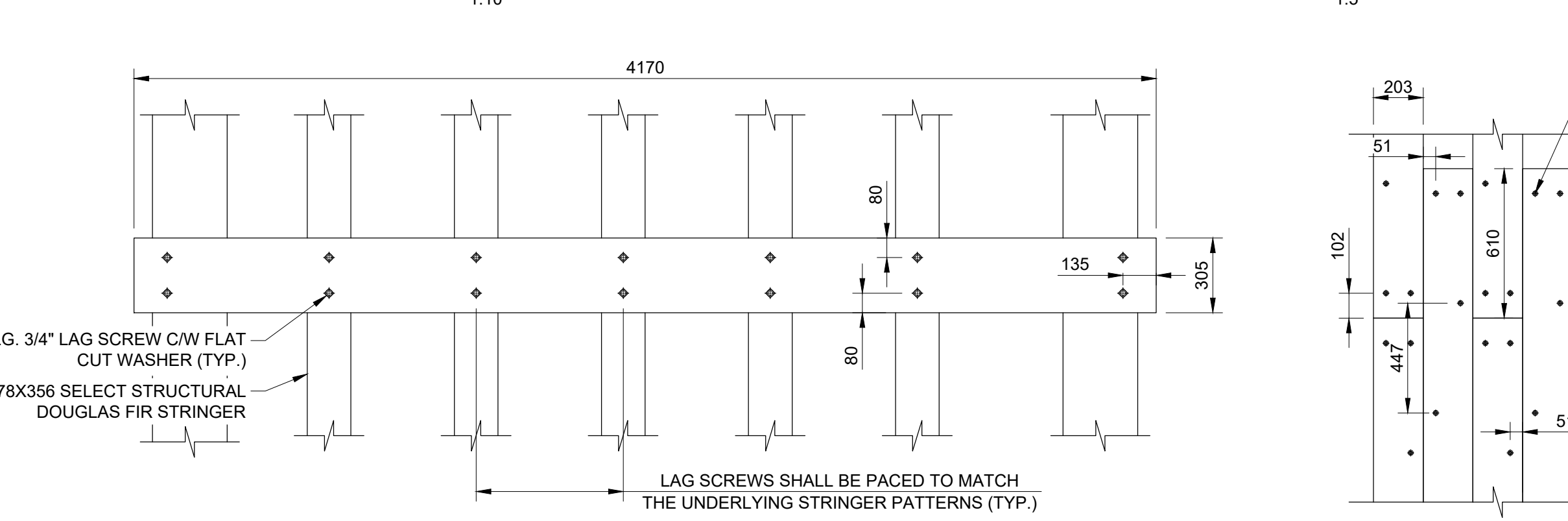
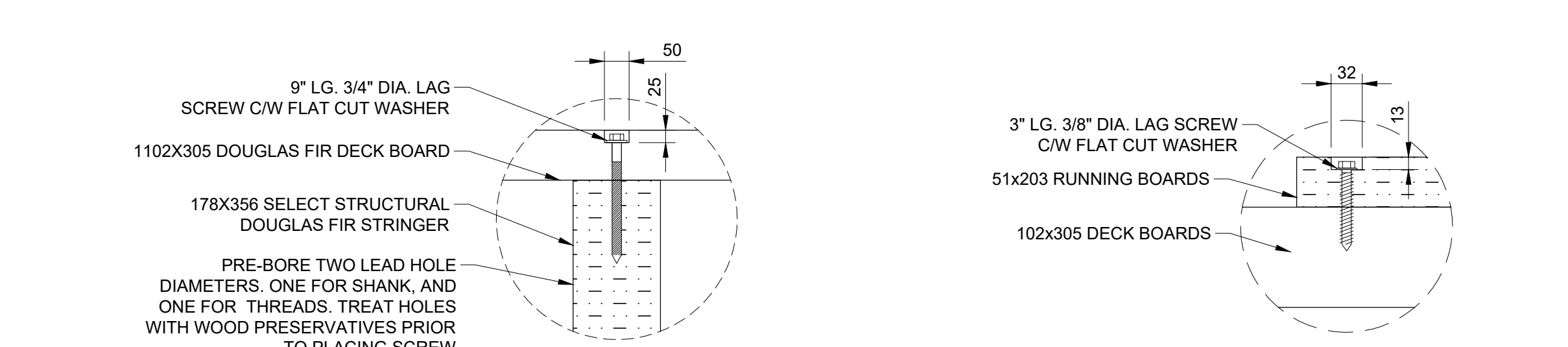
NOTES: DESIGN LIMITATIONS
 THE CONFIGURATION OF THE PEDESTRIAN RAILING ON THE BRIDGE IS TO BE A REPLICA OF THE EXISTING EXCEPT WHERE NOTED OTHERWISE. THE CONTRACTOR IS RESPONSIBLE TO MEASURING AND MATCHING THE DIMENSIONS, SPACES, SIZES AND LOCATIONS OF THE FEATURES OF THE RAILING. FOR HERITAGE REASONS, THE PEDESTRIAN RAILING ON THE BRIDGE HAVE NOT BEEN UPGRADED TO MEET THE REQUIREMENTS OF THE CURRENT CANADIAN HIGHWAY BRIDGE DESIGN CODE. PARKS CANADA IS ASSUMING LIABILITY FOR THIS CONDITION.



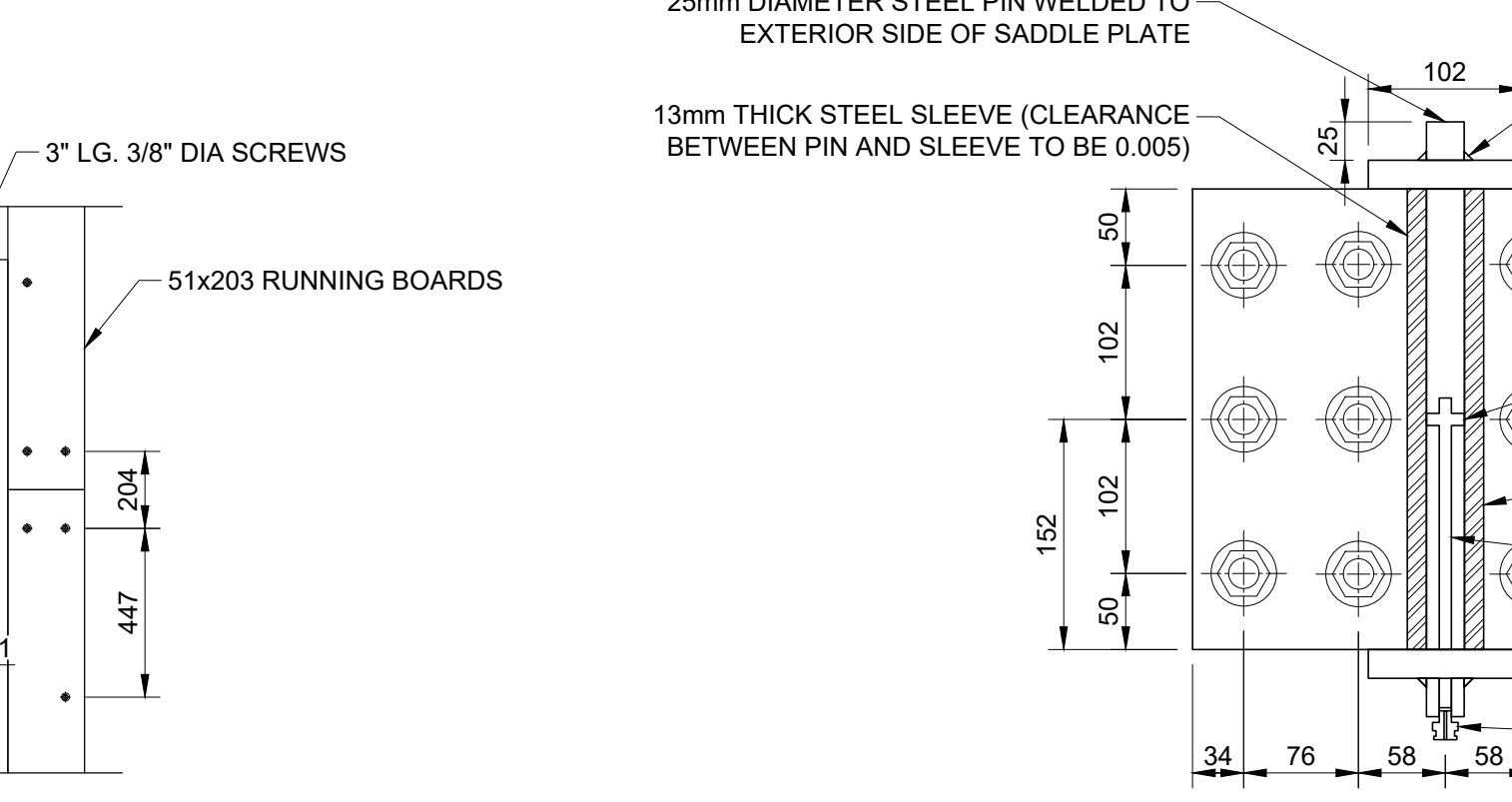
NOTES:
 • SEE GENERAL ARRANGEMENT DRAWING FOR WOOD NOTES AND TIMBER FRAMING DETAILS I DRAWING FOR NOTES REGARDING FASTENERS.



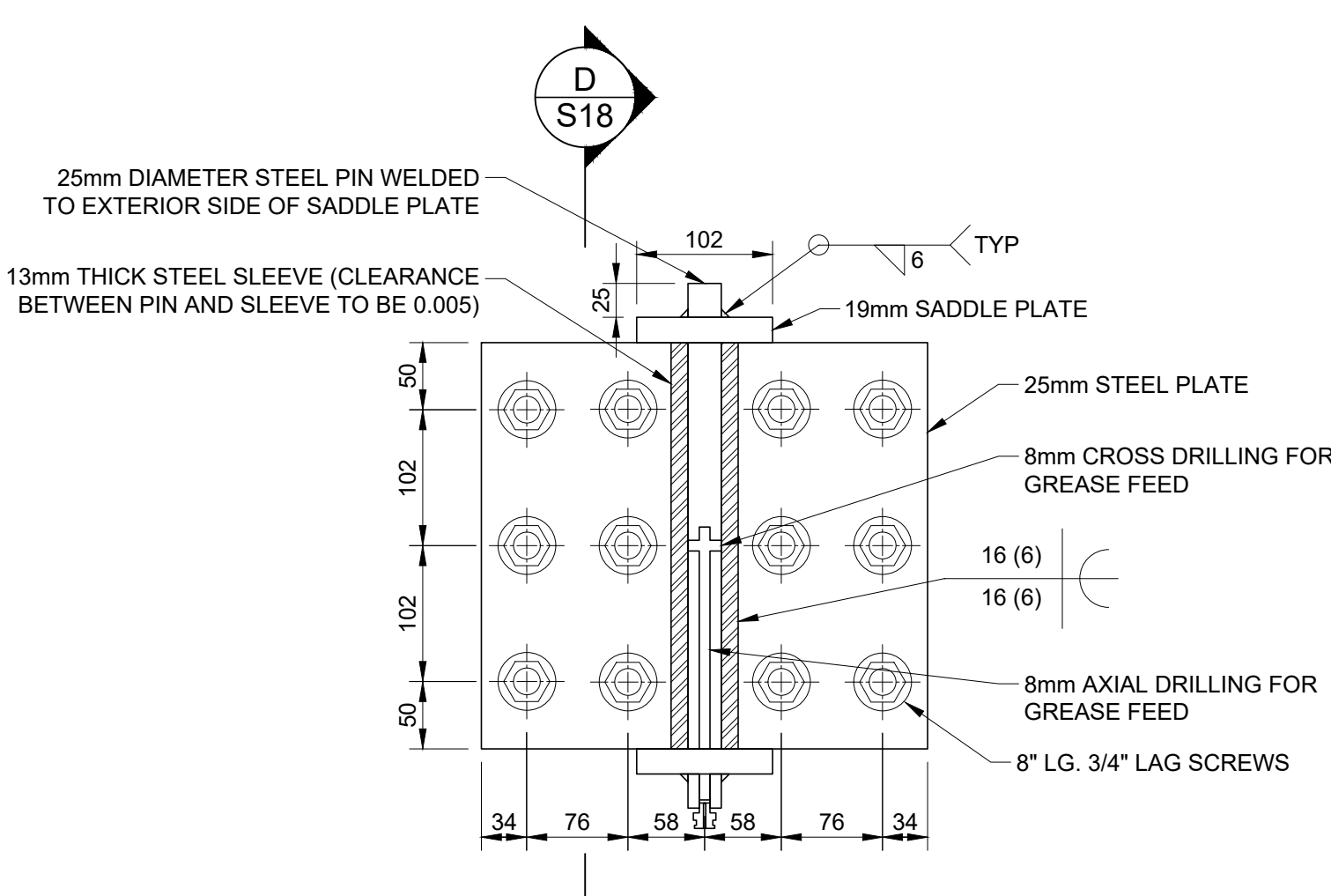
PART ELEVATION - SWING BRIDGE
 1:20



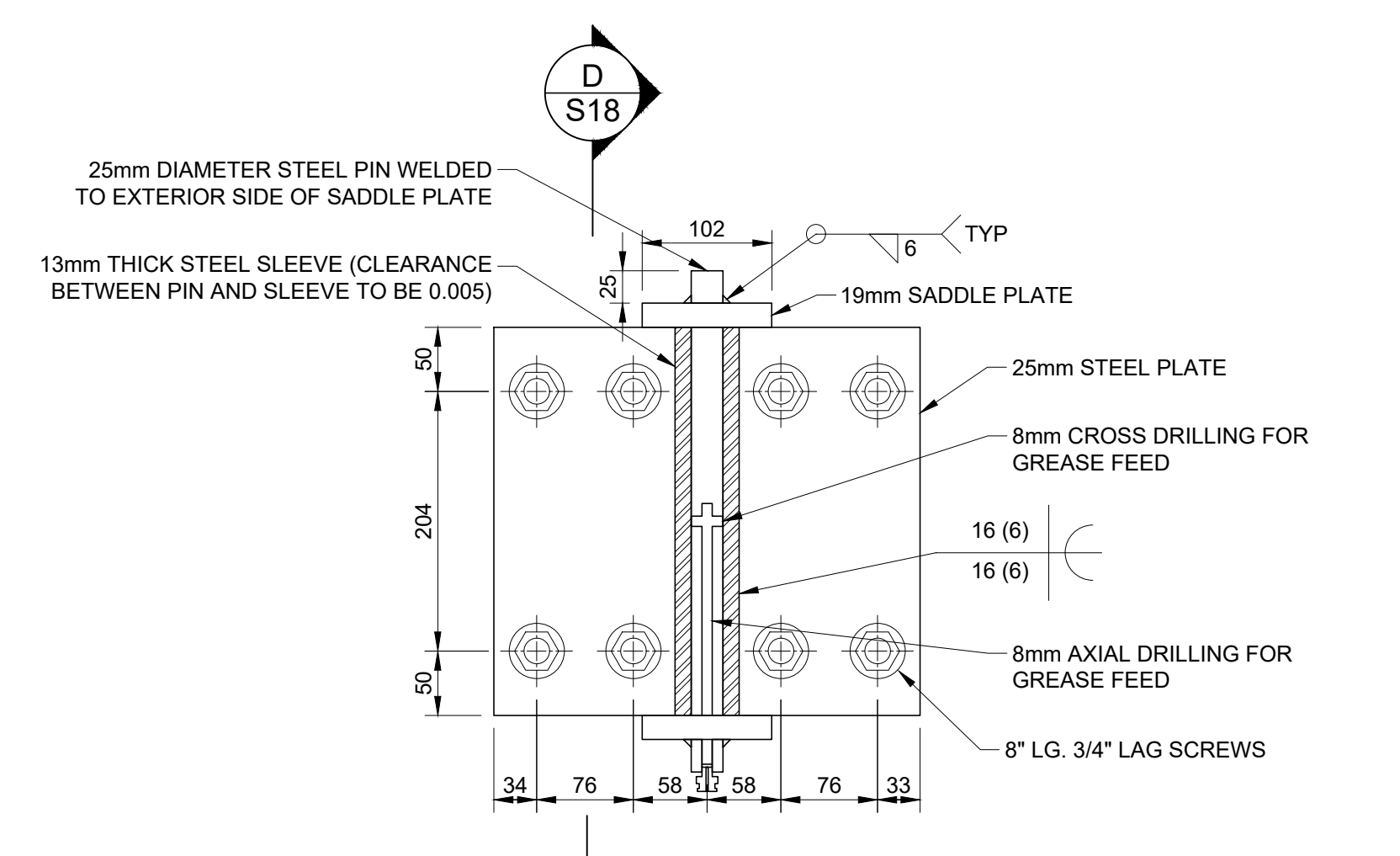
DECK TO STRINGER LAG SCREW PATTERN
 1:20



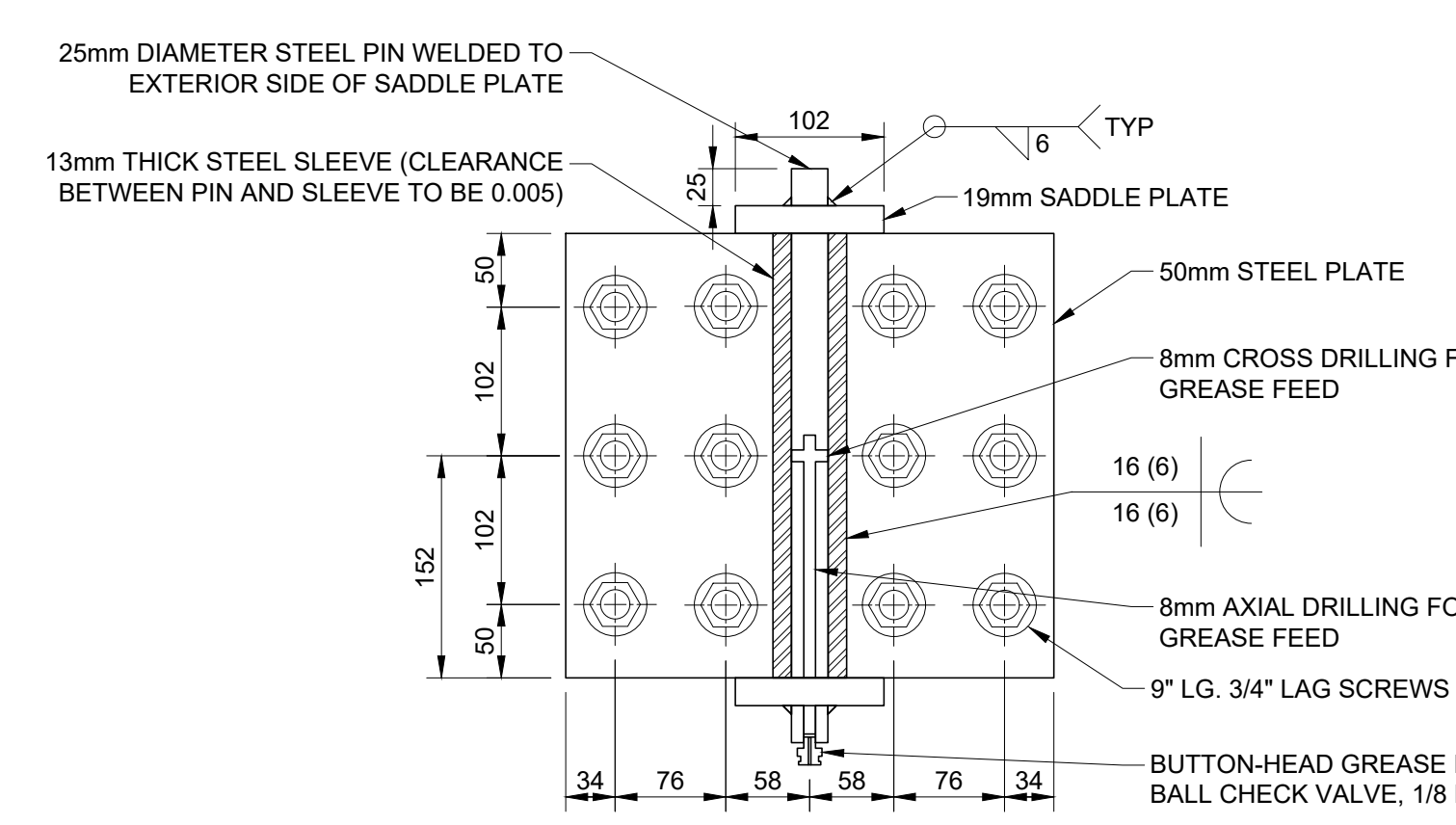
RUNNING BOARD OFFSET AND LAG PATTERN
 1:20



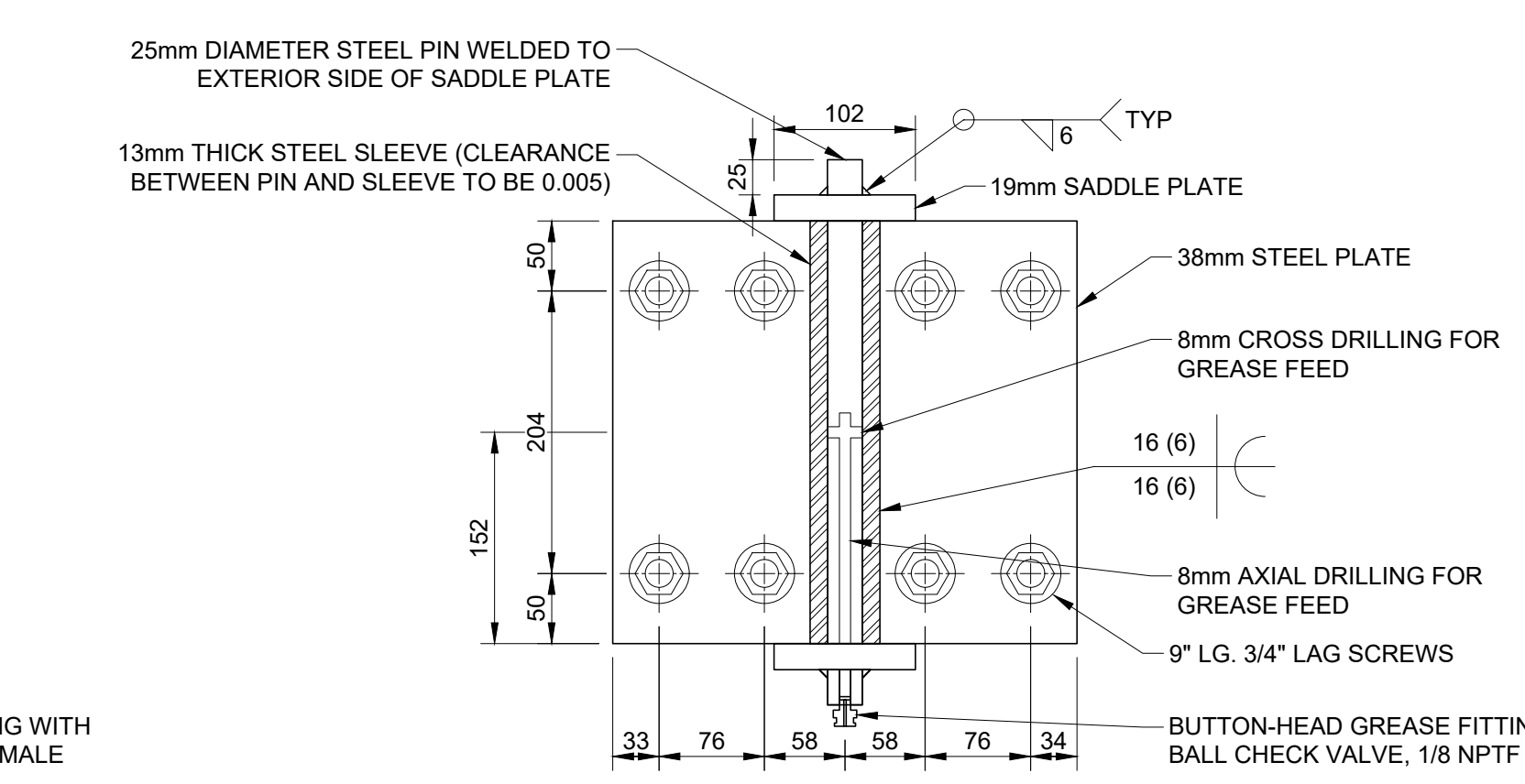
3 WEST TENSION ROD CONNECTION - TOP PLATE DETAIL
 1:5



5 EAST TENSION ROD CONNECTION - TOP PLATE DETAIL
 1:5



4 WEST TENSION ROD CONNECTION - BOTTOM PLATE DETAIL
 1:5



6 EAST TENSION ROD CONNECTION - BOTTOM PLATE DETAIL
 1:5



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 No. du détail
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 dessin no. - où détail exigé
 C drawing no. - where detailed
 dessin no. - où détaillé

project title
 titre du projet
 LOWER BREWERS SWING BRIDGE REPLACEMENT RIDEAU CANAL
 ONTARIO

drawing title
 titre du dessin
 TIMBER FRAMING DETAILS II

drawn by
 dessiné par
 G. MOTA

designed by
 conçu par
 C. WILLIAMS/L. CUMMING

approved by
 approuvé par
 D.A. HUCTION

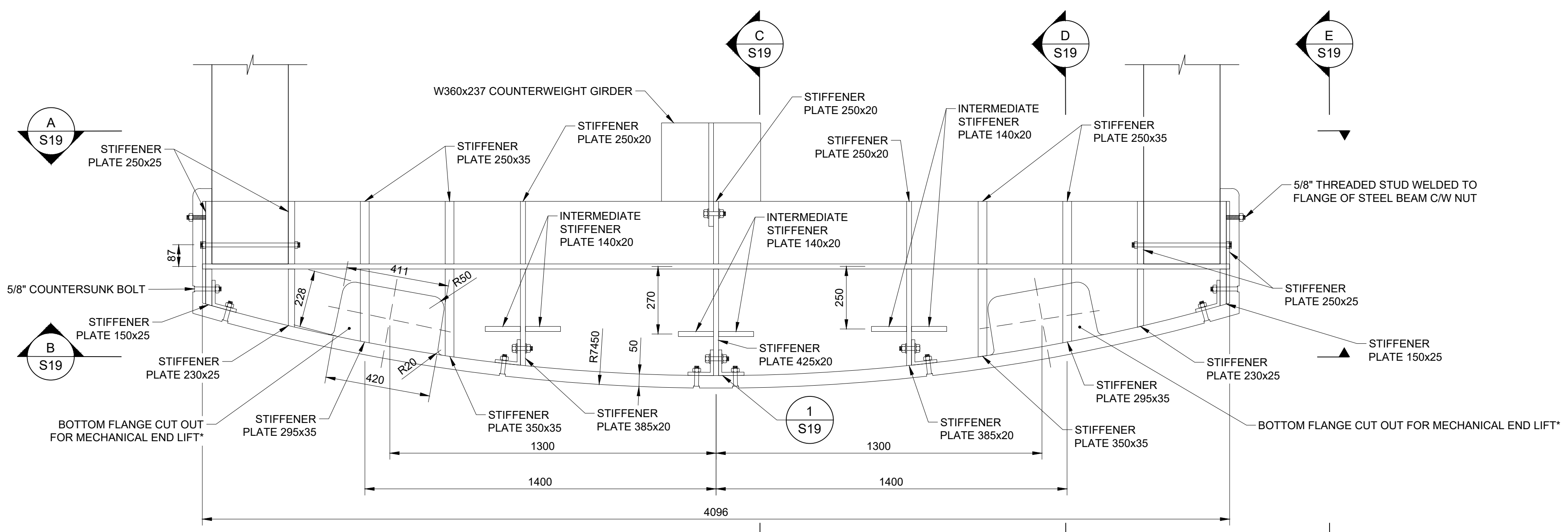
bid office
 bureau de soumission
 TYLER ATKINSON

project manager
 administrateur de projets
 D.A. HUCTION

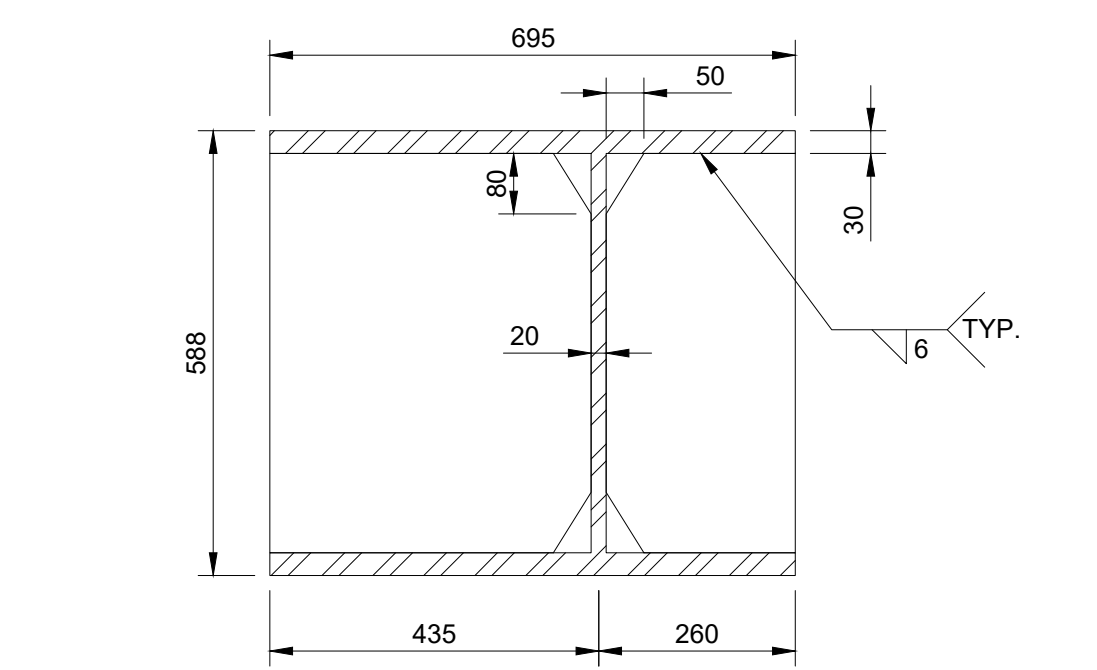
project date
 date du projet
 2021-10-29

project no.
 no. du projet
 30037015

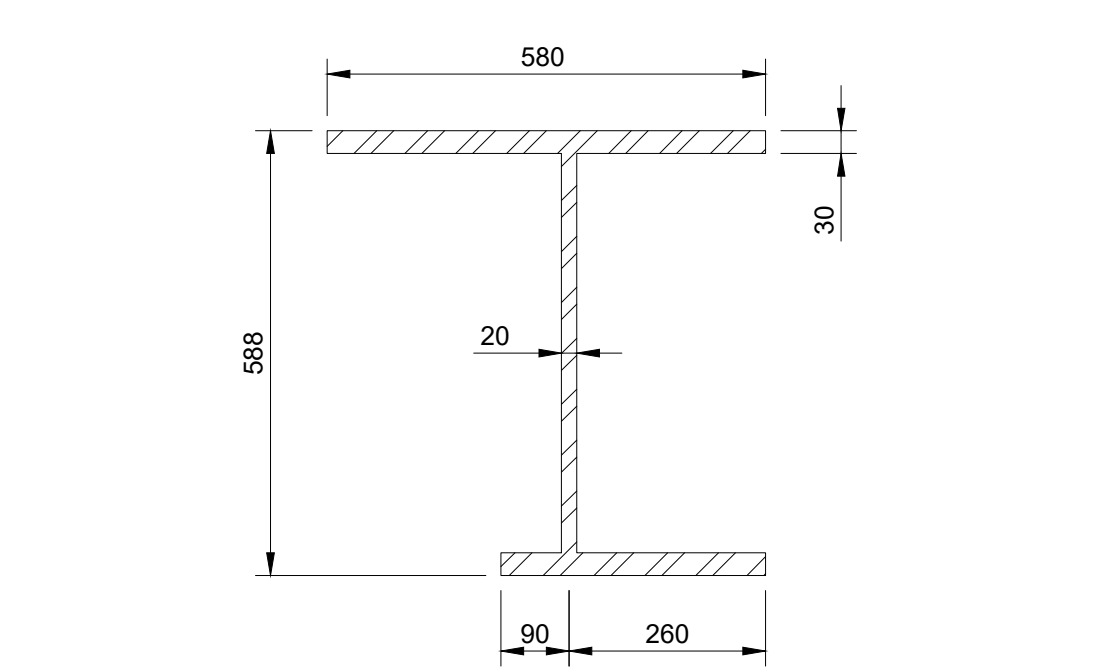
drawing no.
 dessin no.
 S18



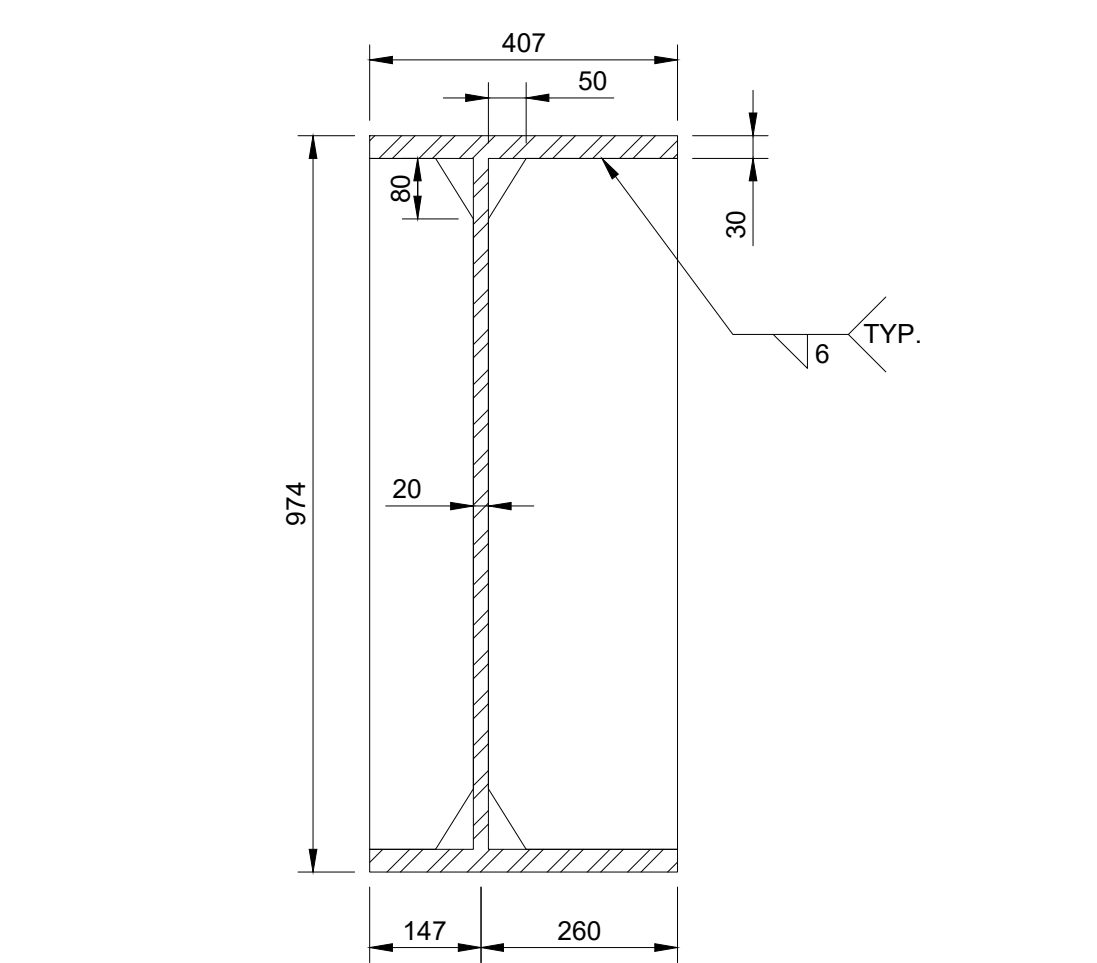
PLAN: WEST END BEAM
1:12.5



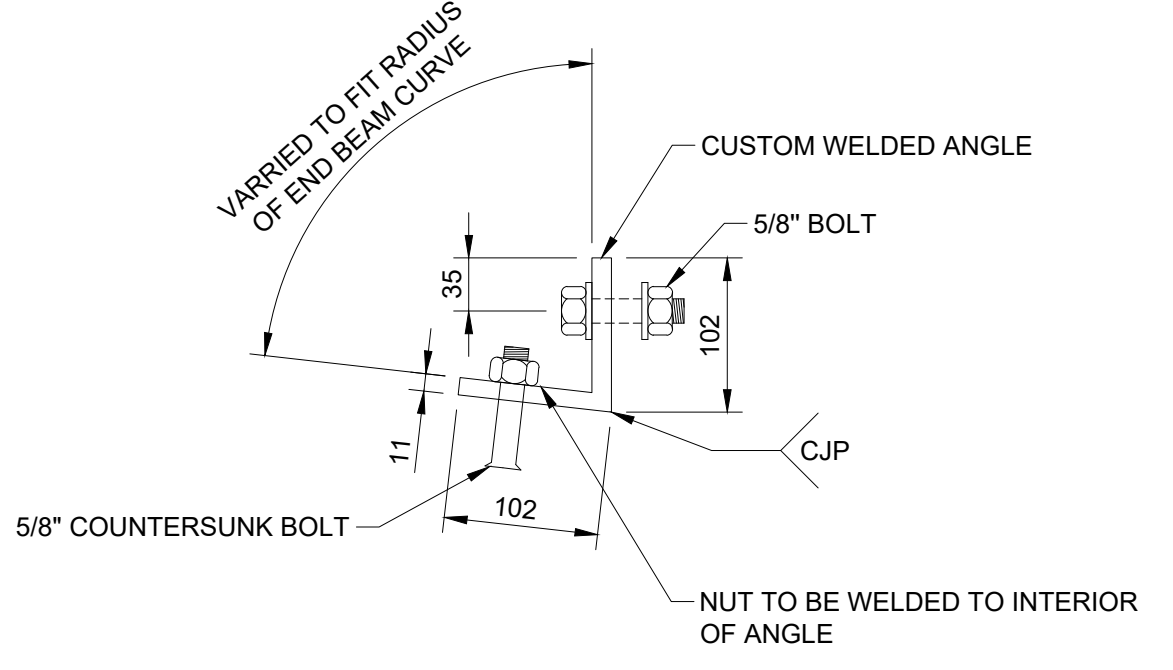
C SECTION: WEST END BEAM AT MIDSPAN
1:10



D SECTION: WEST END BEAM AT END LIFT
1:10

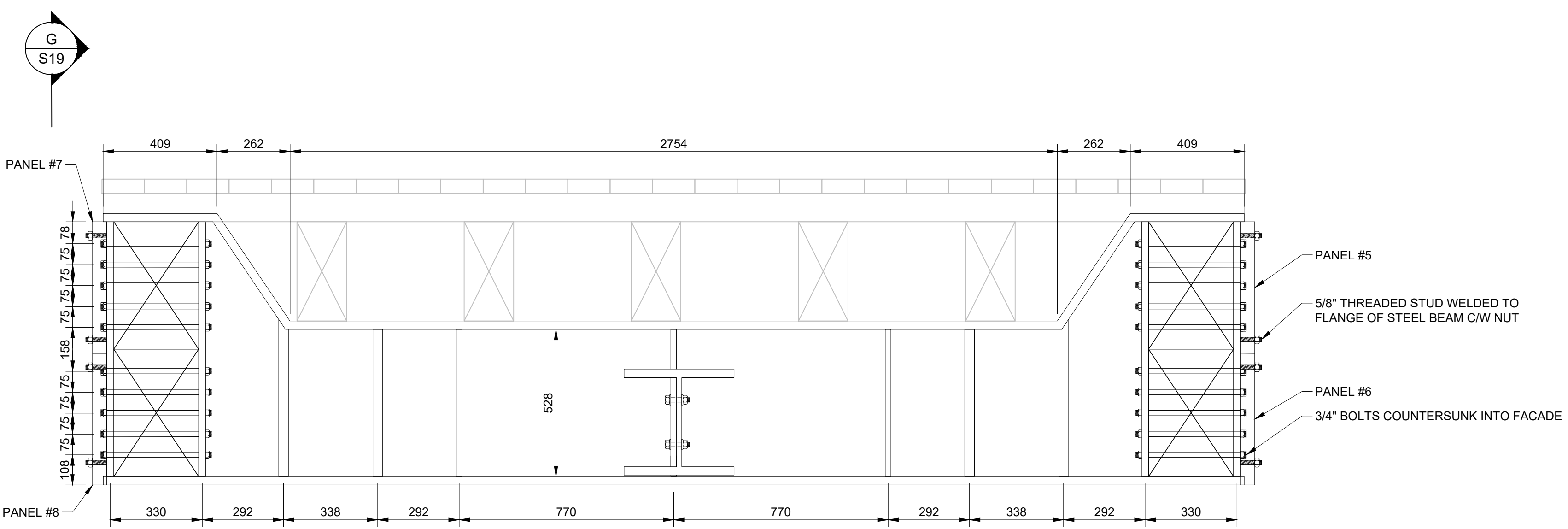


E SECTION: WEST END BEAM AT END
1:10

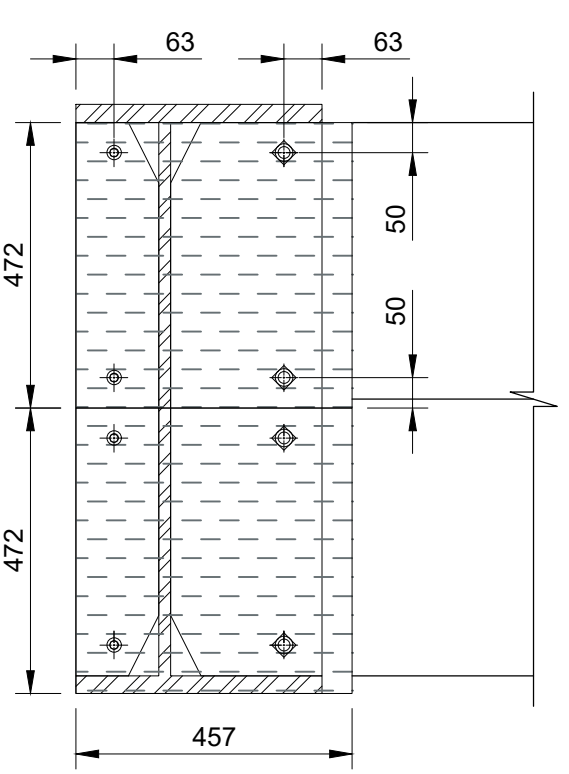


1 FACADE CONNECTION DETAIL
1:5

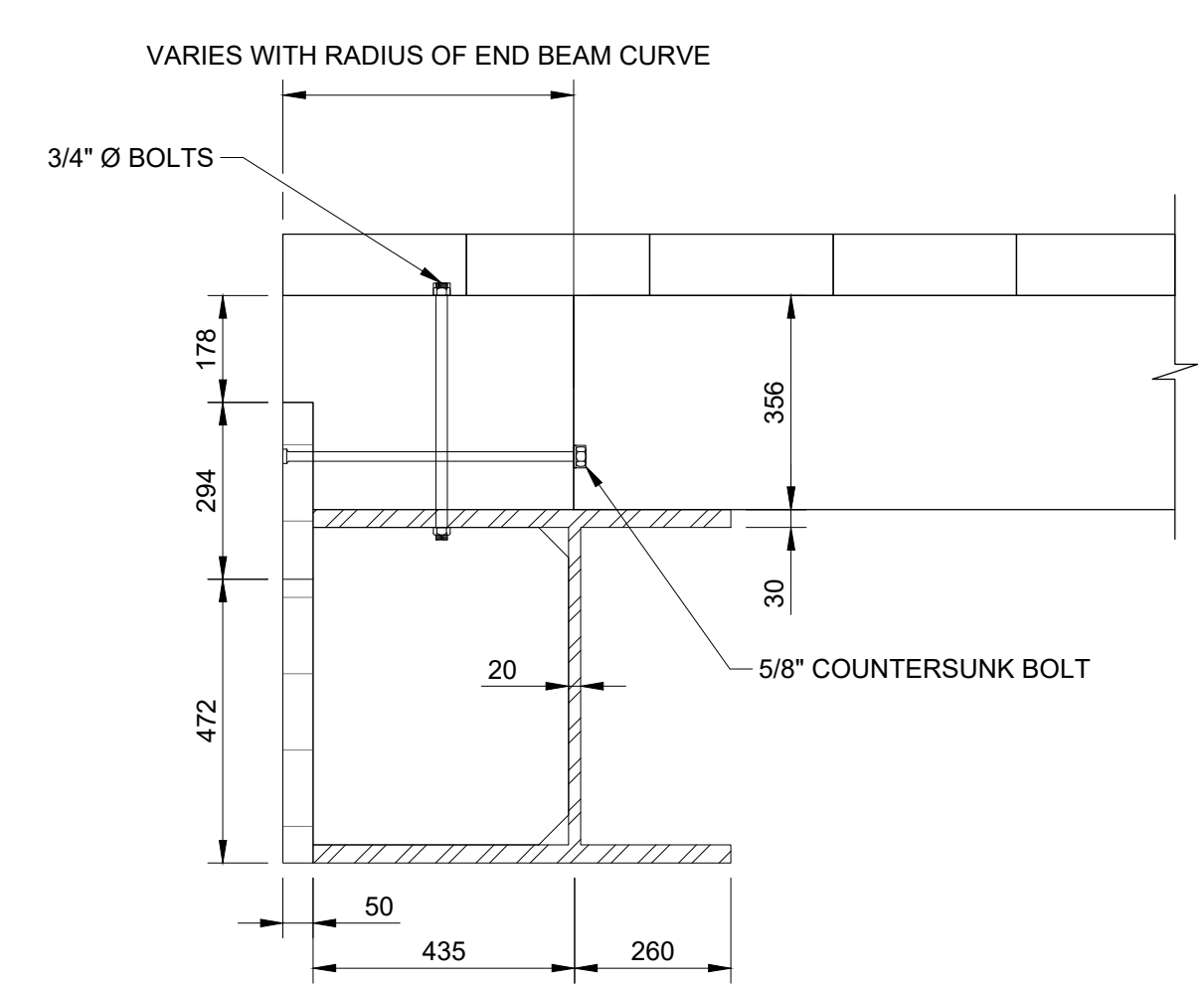
ENSURE THERE ARE NO CONFLICTS WITH MECHANICAL EQUIPMENT PRIOR TO FINALIZING STEEL SHOP DRAWINGS.



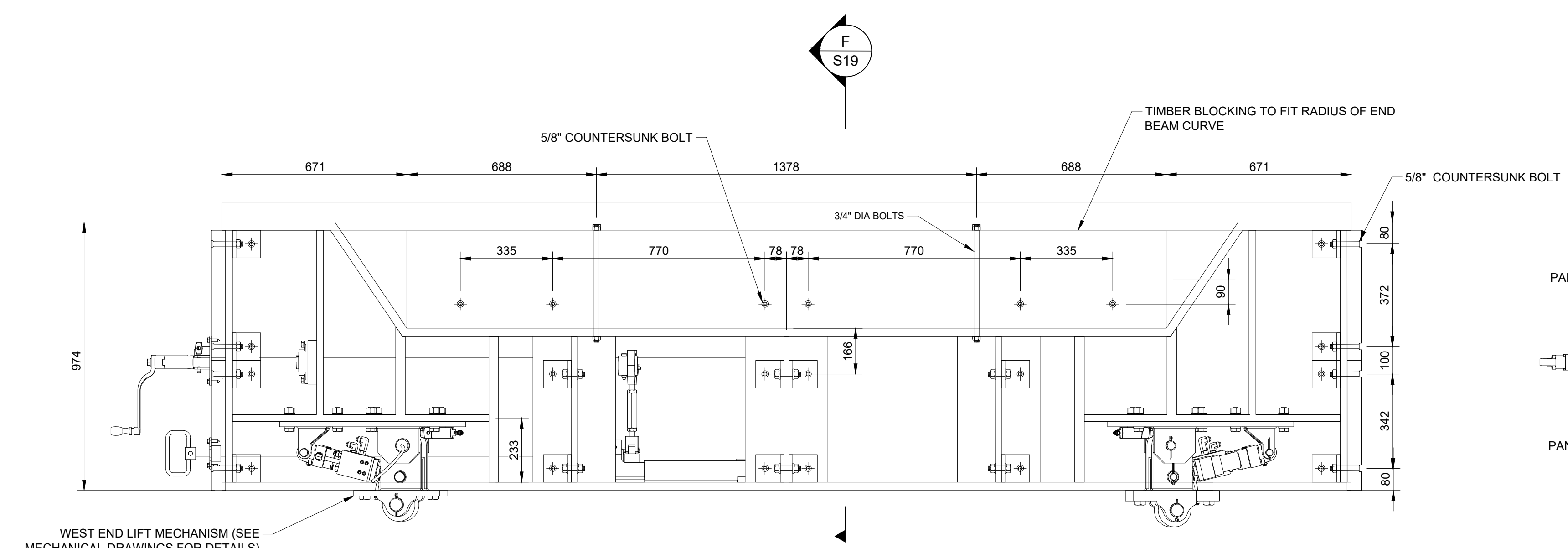
A INTERIOR VIEW OF WEST END BEAM
1:12.5



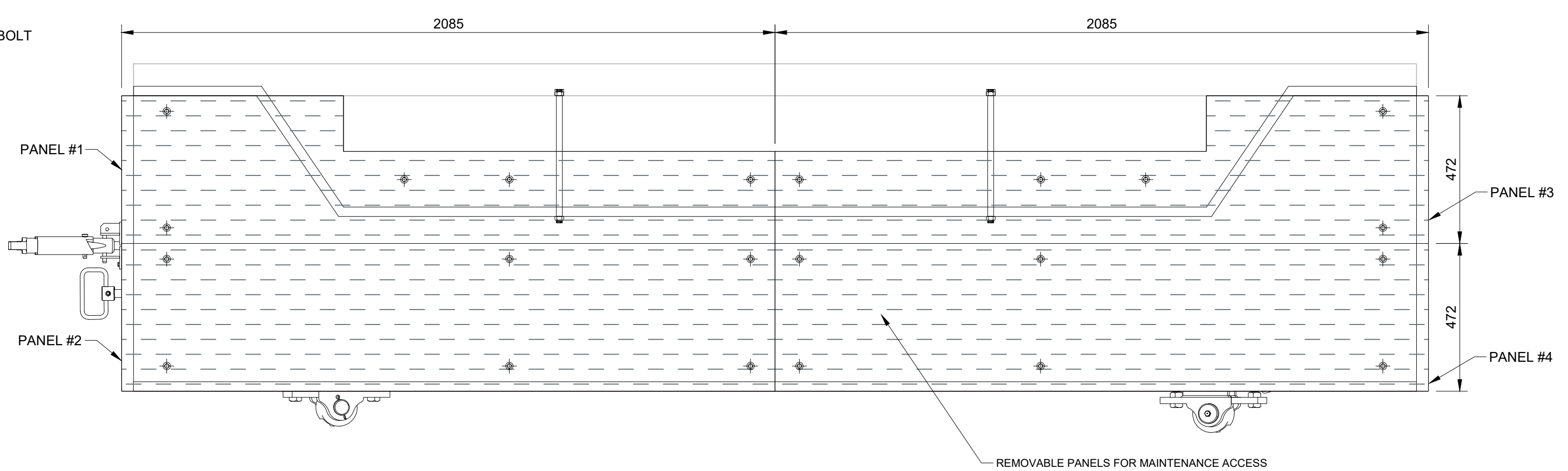
G SECTION: END OF BEAM WITH FACADE
1:12.5



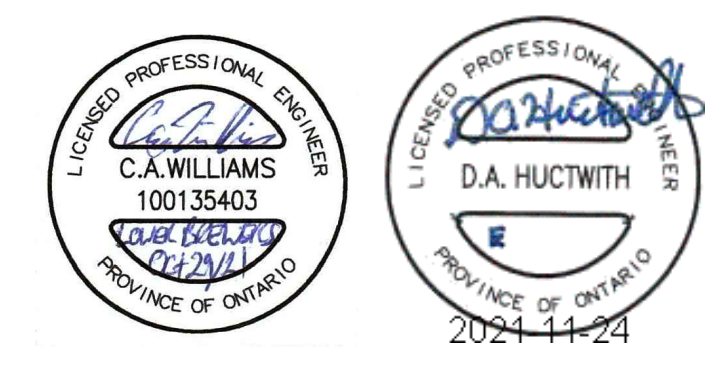
F SECTION: MIDSPAN WITH FACADE
1:12.5



B EXTERIOR VIEW OF WEST END BEAM (WITHOUT FACADE)
1:12.5



B EXTERIOR VIEW OF WEST END BEAM (WITH FACADE)
1:12.5



04		
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project title
titre du projet
ONTARIO
LOWER BREWERS SWING BRIDGE REPLACEMENT RIDEAU CANAL

drawing title
titre du dessin
STEEL WEST END BEAM

drawn by
dessiné par
G. MOTA

designed by
conçu par
C. WILLIAMS/L. CUMMING

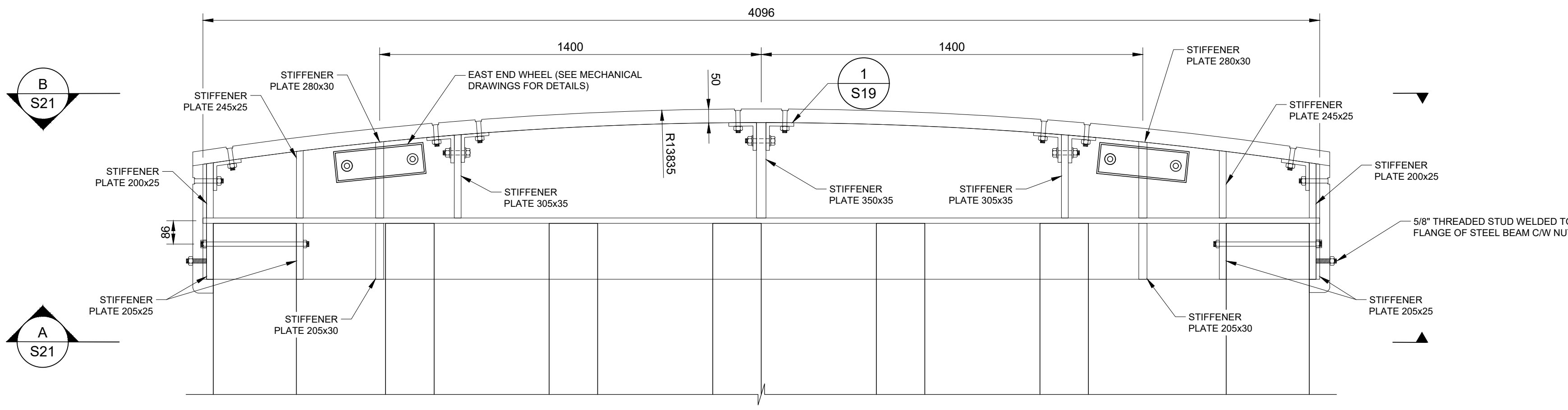
approved by
approuvé par
D.A. HUCTWITH

bid
offre
TYLER ATKINSON

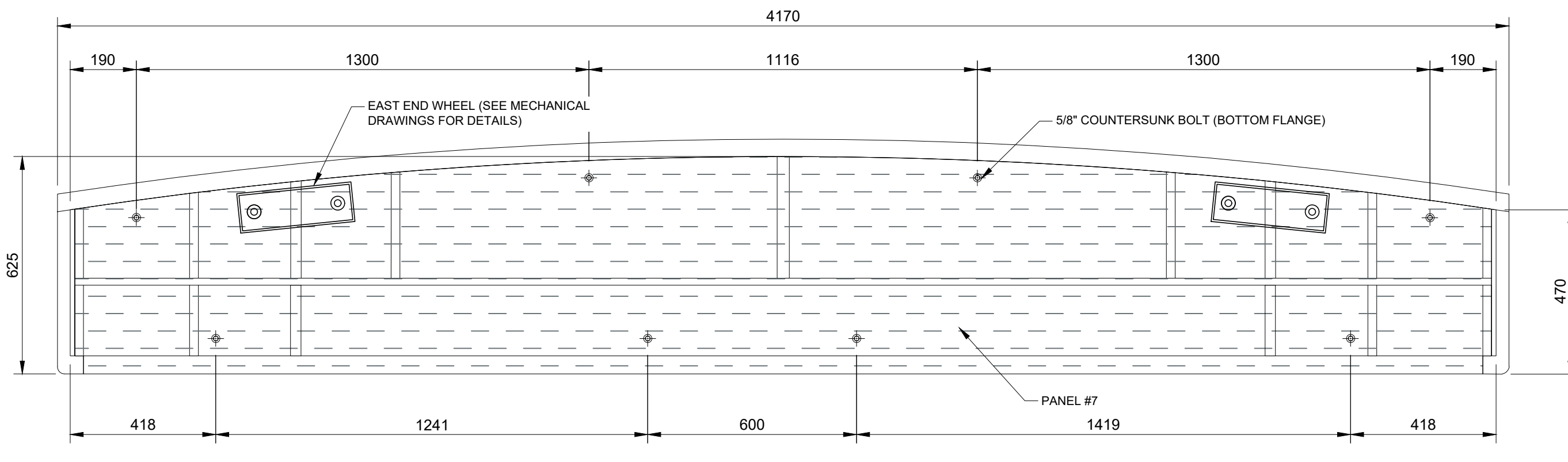
project date
date du projet
2021-10-29

project no.
no. du projet
30037015

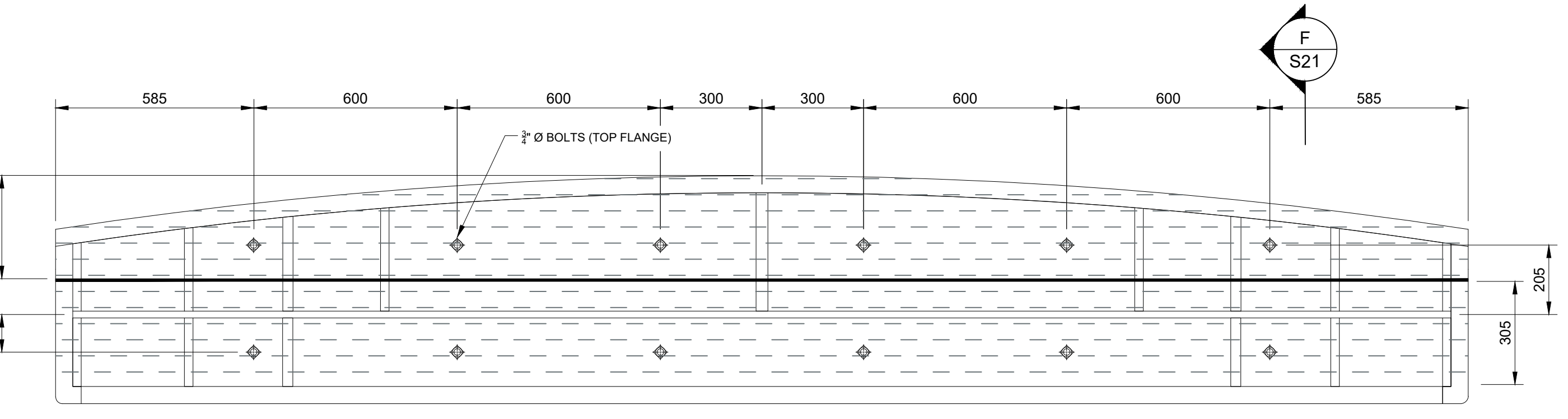
drawing no.
dessiné no.
S19



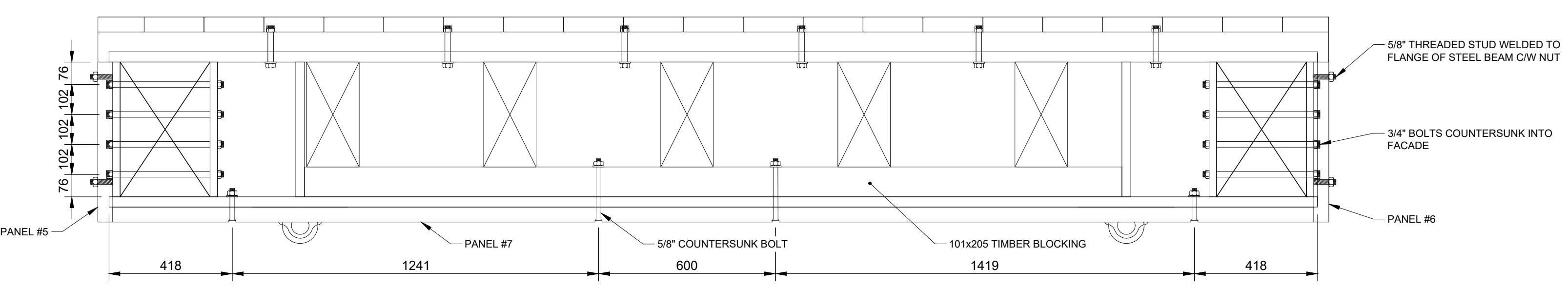
PLAN: EAST END BEAM
1:12.5



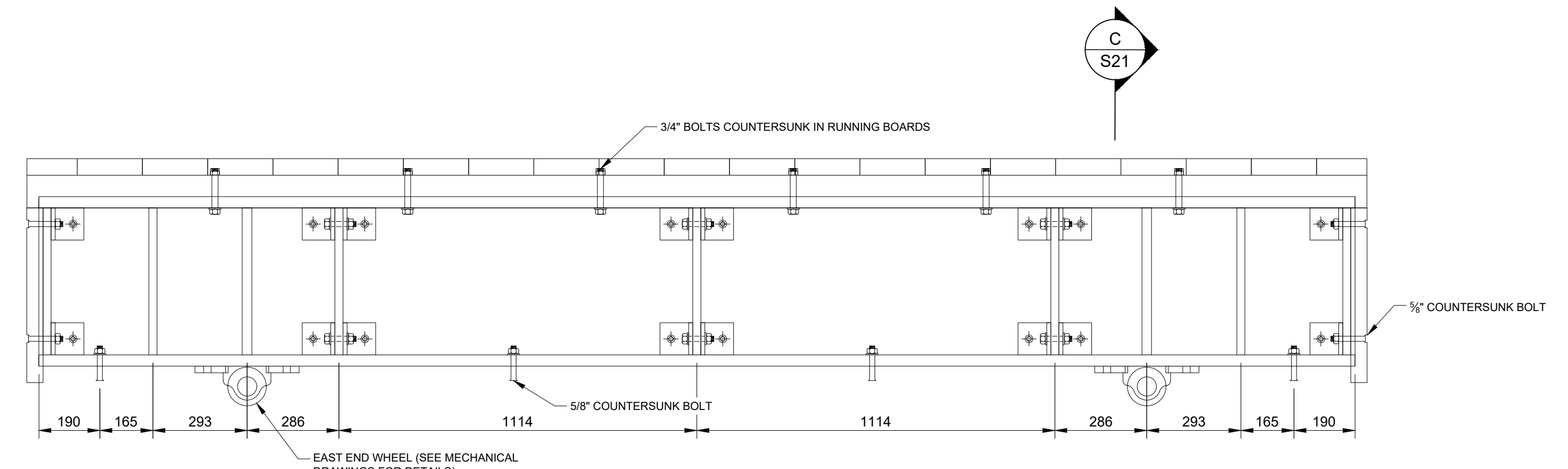
PLAN: BOTTOM FLANGE FACADE
1:12.5



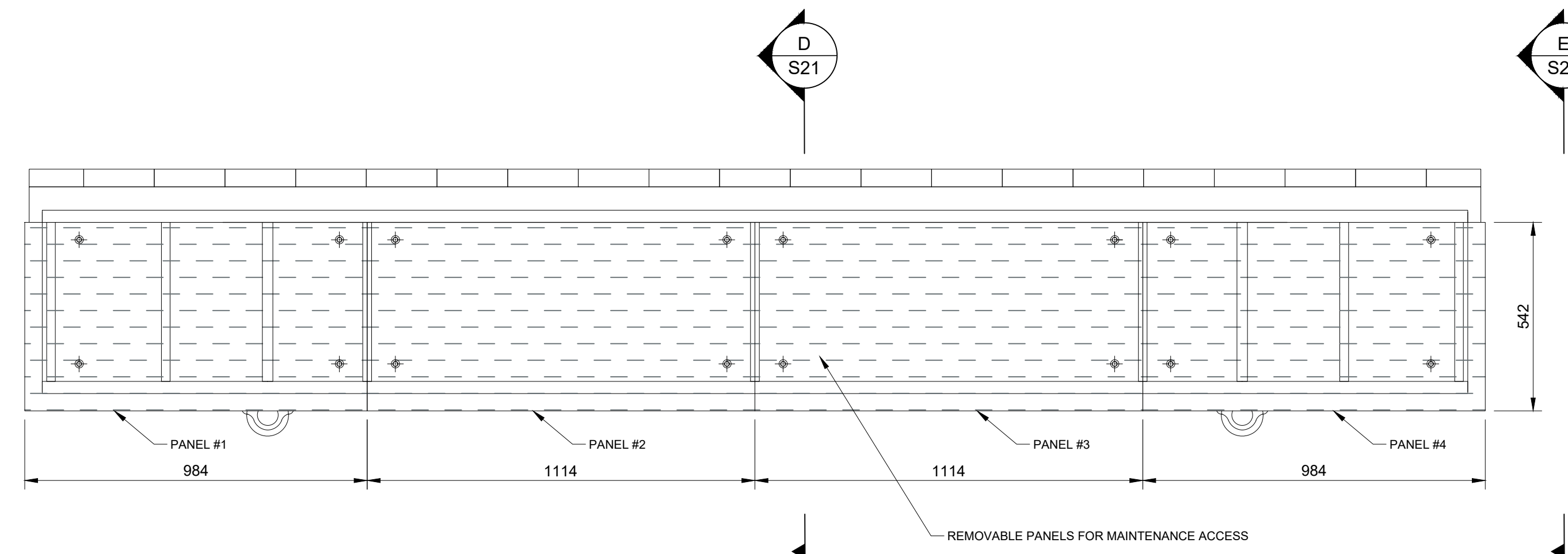
PLAN: TOP FLANGE WITH DECK BOARDS
1:12.5



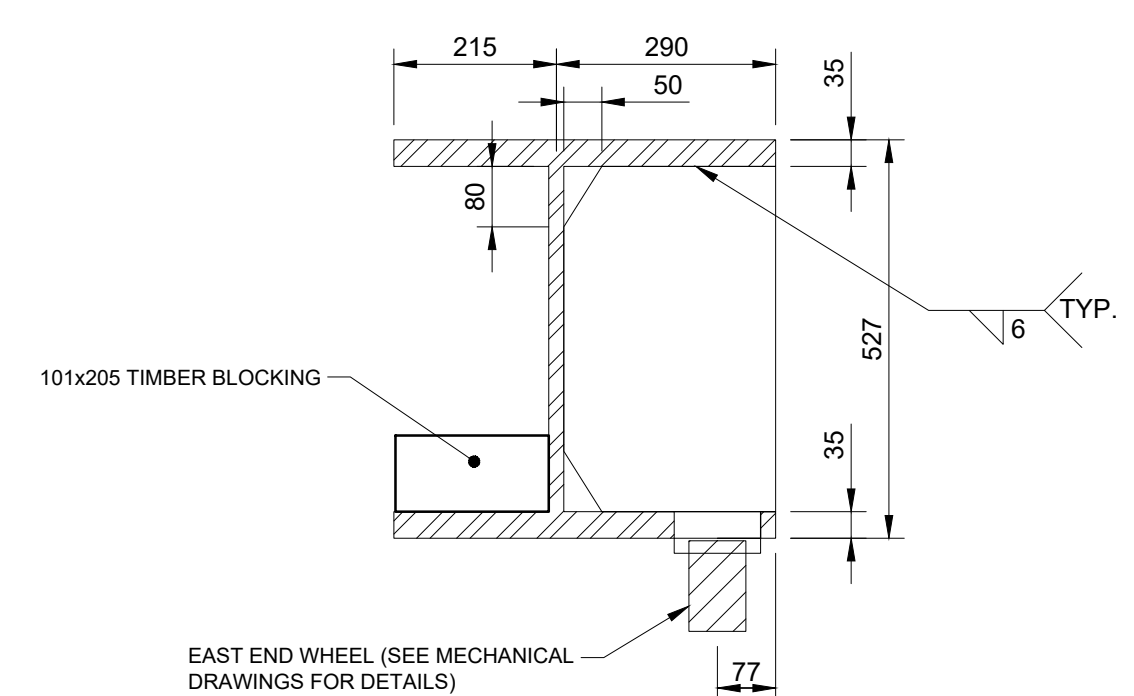
INTERIOR VIEW OF EAST END BEAM
1:12.5



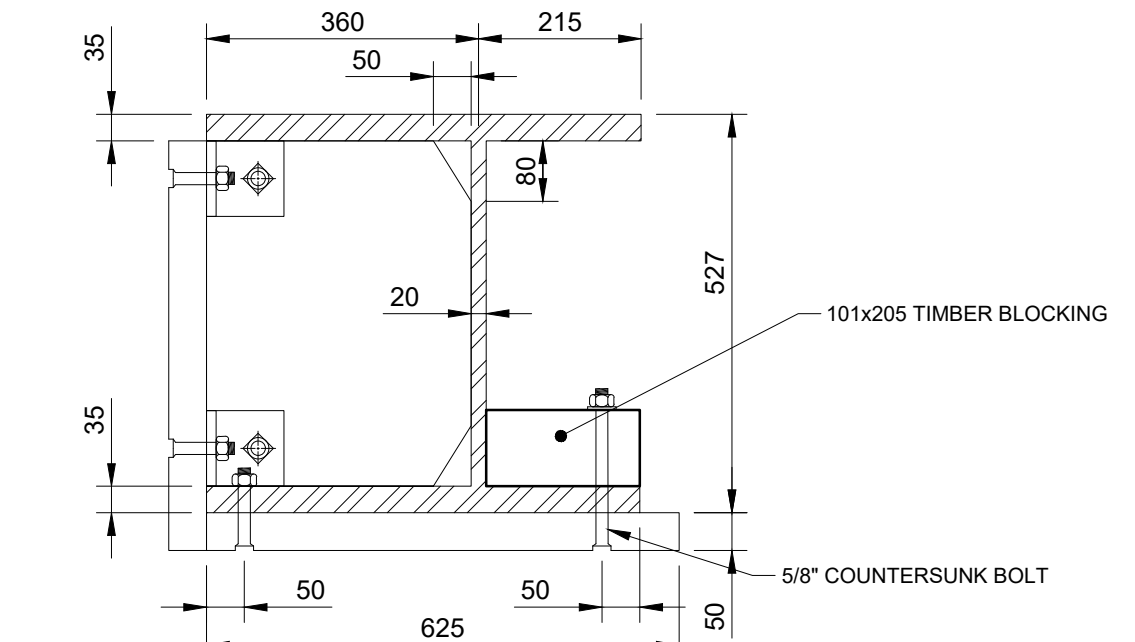
EXTERIOR VIEW OF EAST END BEAM (WITHOUT FACADE)
1:12.5



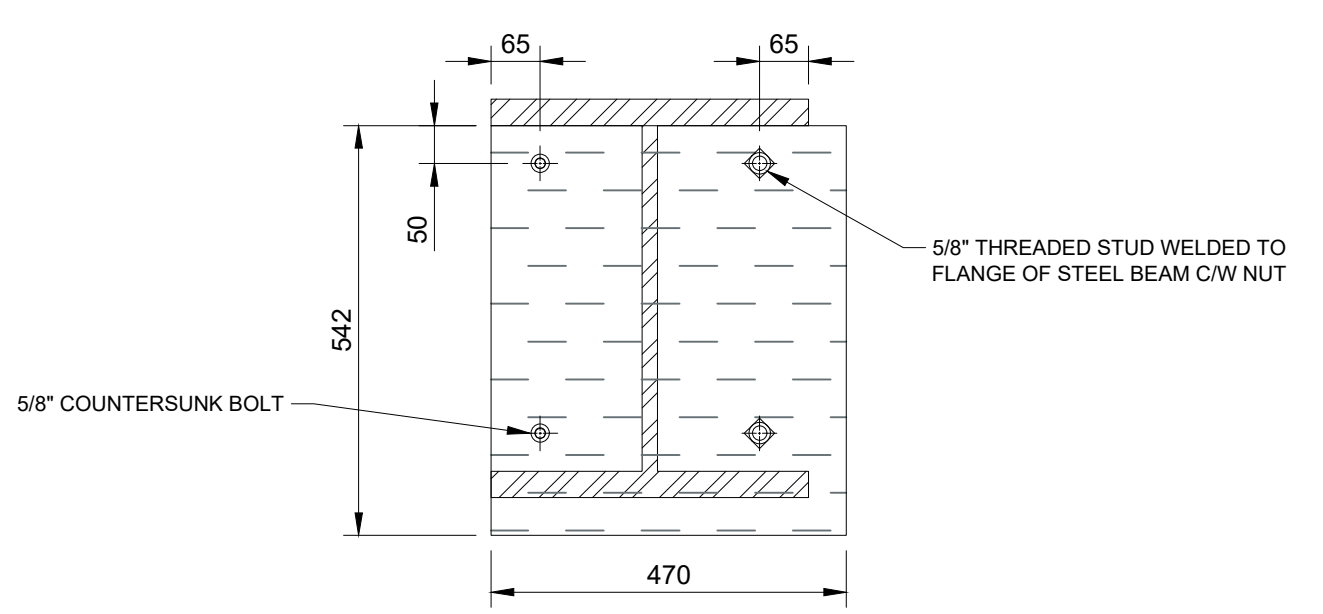
EXTERIOR VIEW OF EAST END BEAM (WITH FACADE)
1:12.5



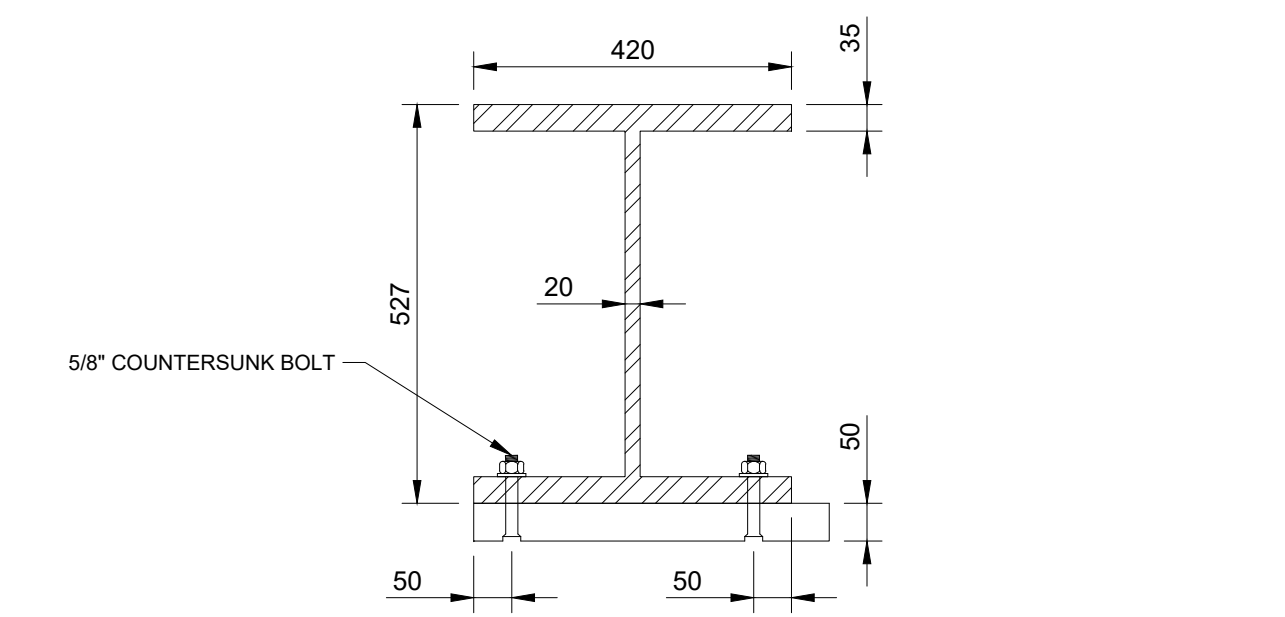
SECTION: EAST END BEAM AT SUPPORT
1:10



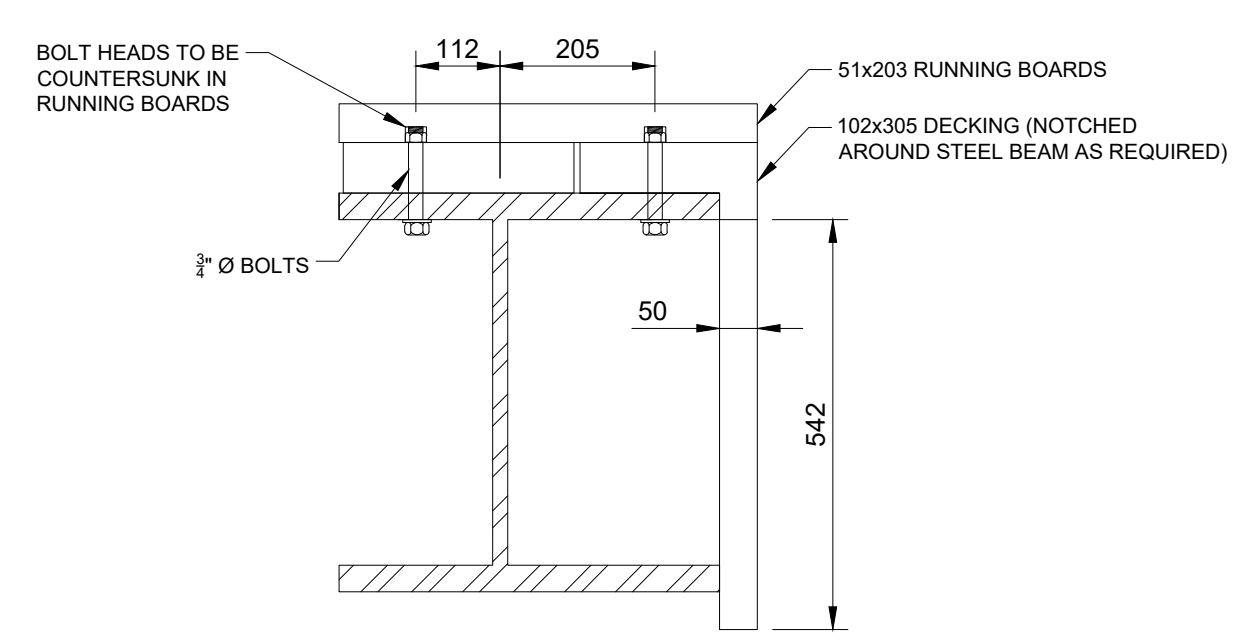
SECTION: BEAM AT MIDSPAN WITH FACADE
1:10



SECTION: END OF BEAM WITH FACADE
1:10



SECTION: END OF BEAM BOTTOM FACADE ONLY
1:10



SECTION: DECK CONNECTION DETAIL
1:10



04		
03		
02	ISSUED FOR TENDER	10/29/2021
01	ISSUED FOR REVIEW	08/06/2021
revision		date

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

A	Detail No.		A
B	No. du dessin		B
C	drawing no. - where detail required		C
	dessin no. - ou detail exigé		
	drawing no. - where detailed		
	dessin no. - ou détaillé		

project title
titre du projet

ONTARIO

LOWER BREWERS
SWING BRIDGE REPLACEMENT
RIDEAU CANAL

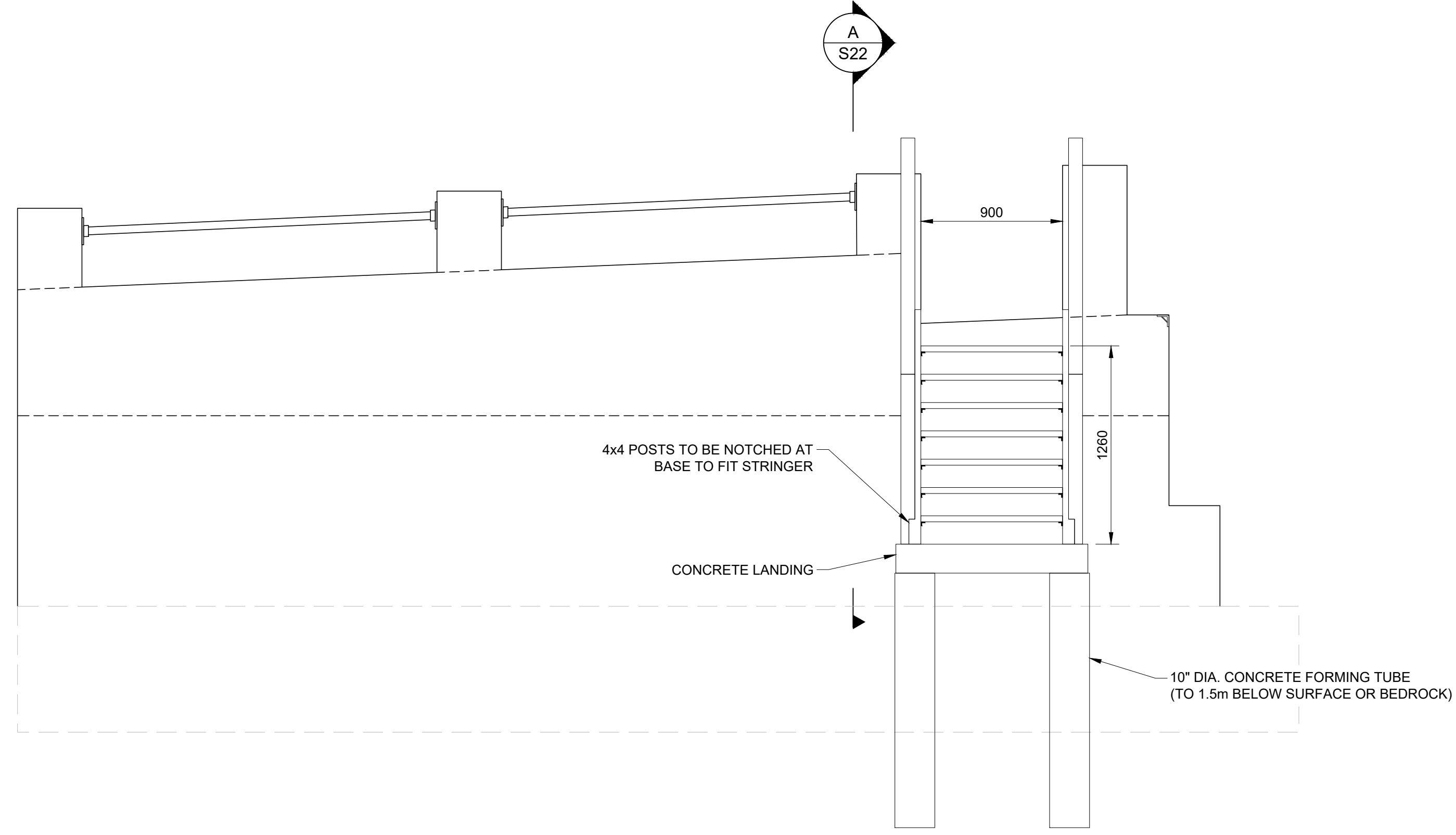
drawing title
titre du dessin

STEEL EAST END BEAM

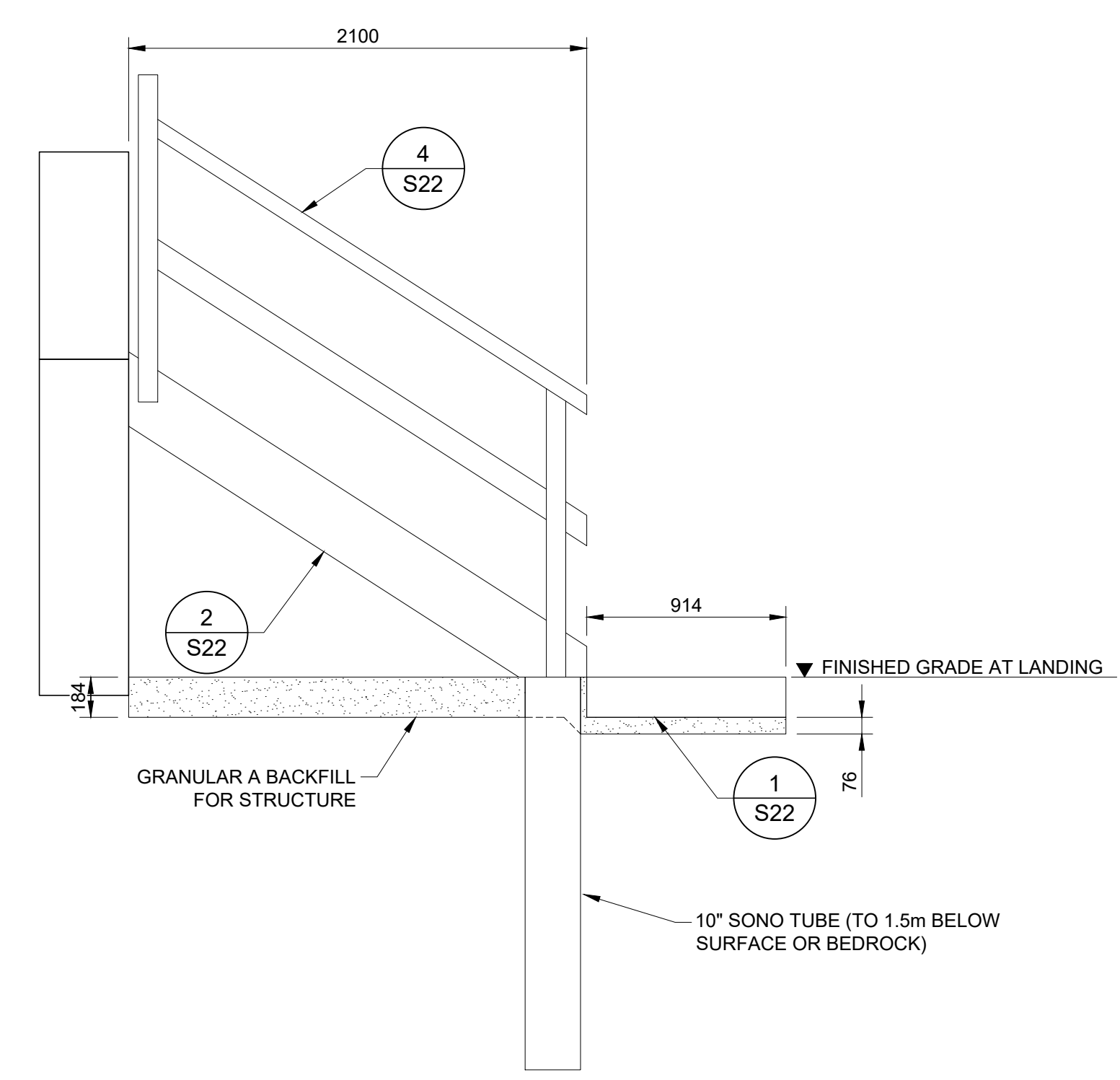
drawn by dessiné par	G. MOTA
designed by conçu par	C. WILLIAMS/L. CUMMING
approved by approuvé par	D.A. HUETHWITZ
bid offre	TYLER ATKINSON
project manager administrateur de projets	
project date date du projet	2021-10-29
project no. no. du projet	30037015
drawing no. dessiné no.	S21

NOTES:

- THE WEST ABUTMENT STAIRS SHALL BE CONSTRUCTED OF SELECT STRUCTURAL GRADE SPF AND SHALL BE TREATED WITH THE WATERBORNE PRESERVATIVE CHROMATED COPPER ARSENATE TYPE C (CCA) CONFORMING TO CSA 080.
- CUTTING, FRAMING, DRILLING AND GROOVING OF WOOD SHALL BE PERFORMED PRIOR TO PRESERVATIVE TREATMENT.
- ALL WOOD MEMBERS OF THE STAIRS SHALL BE PAINTED WHITE.



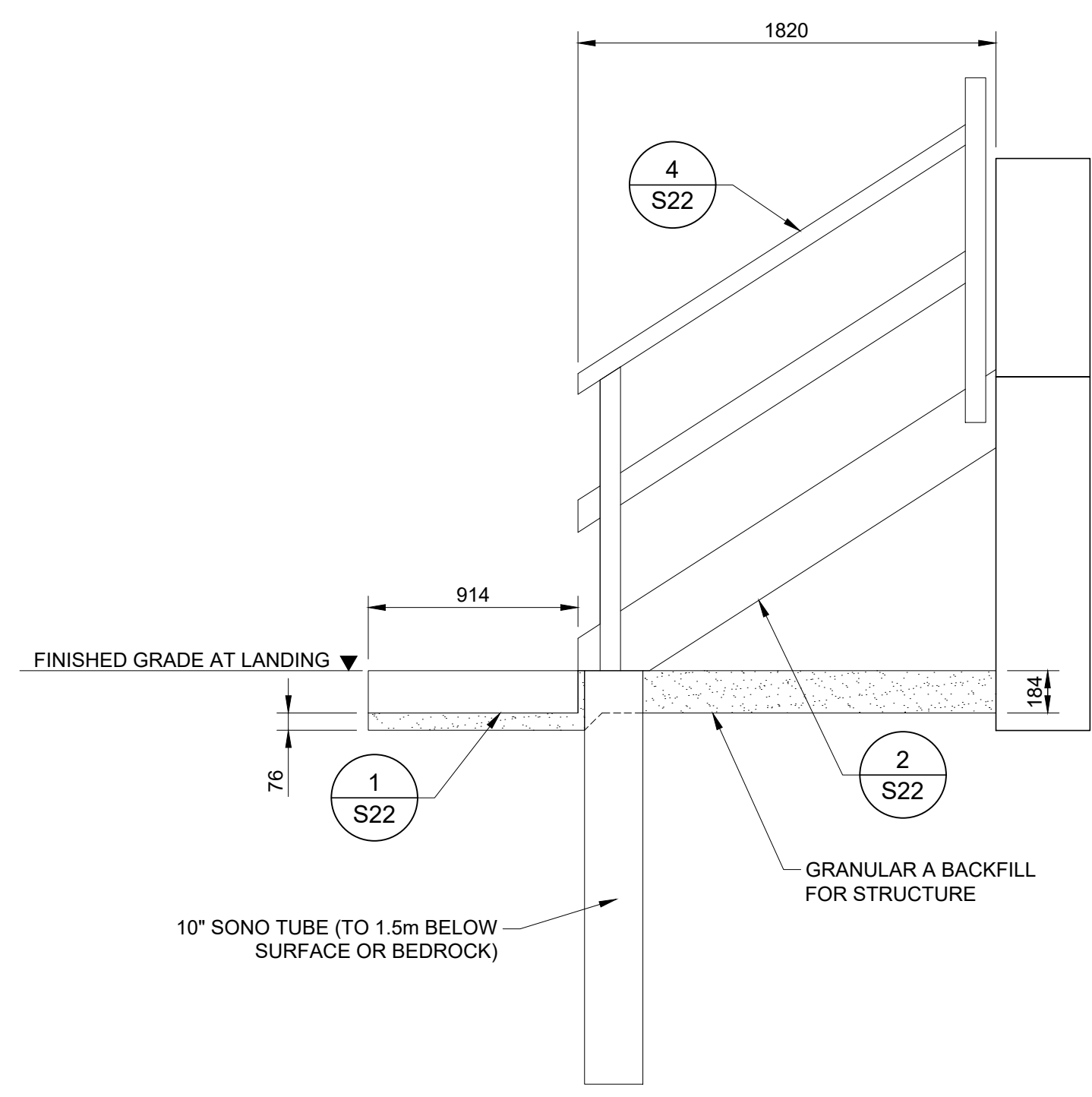
ELEVATION: SOUTH WEST WING WALL STAIRS
1:25



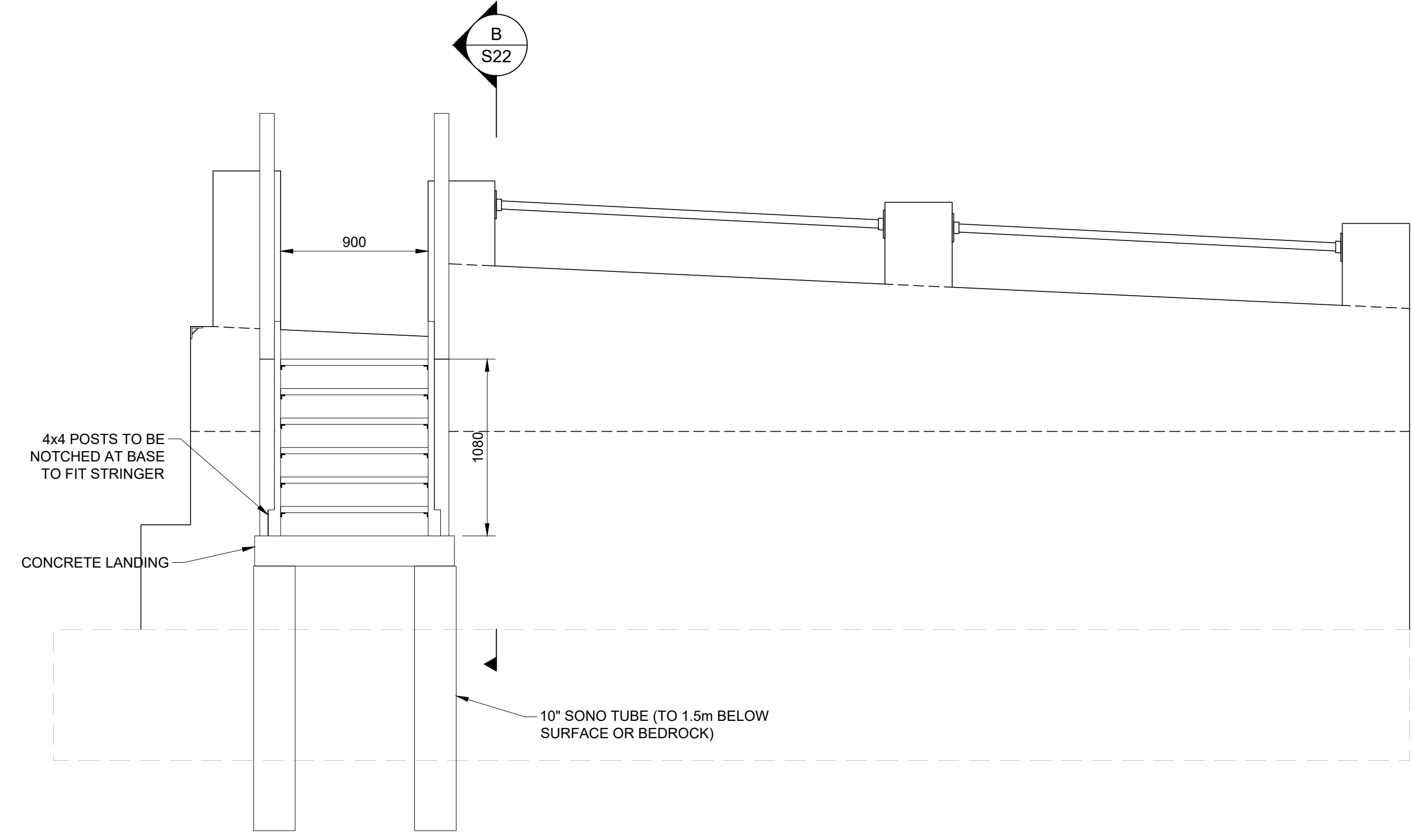
A SECTION: SOUTH WEST WING WALL STAIRS
1:25

NOTE: DESIGN LIMITATIONS

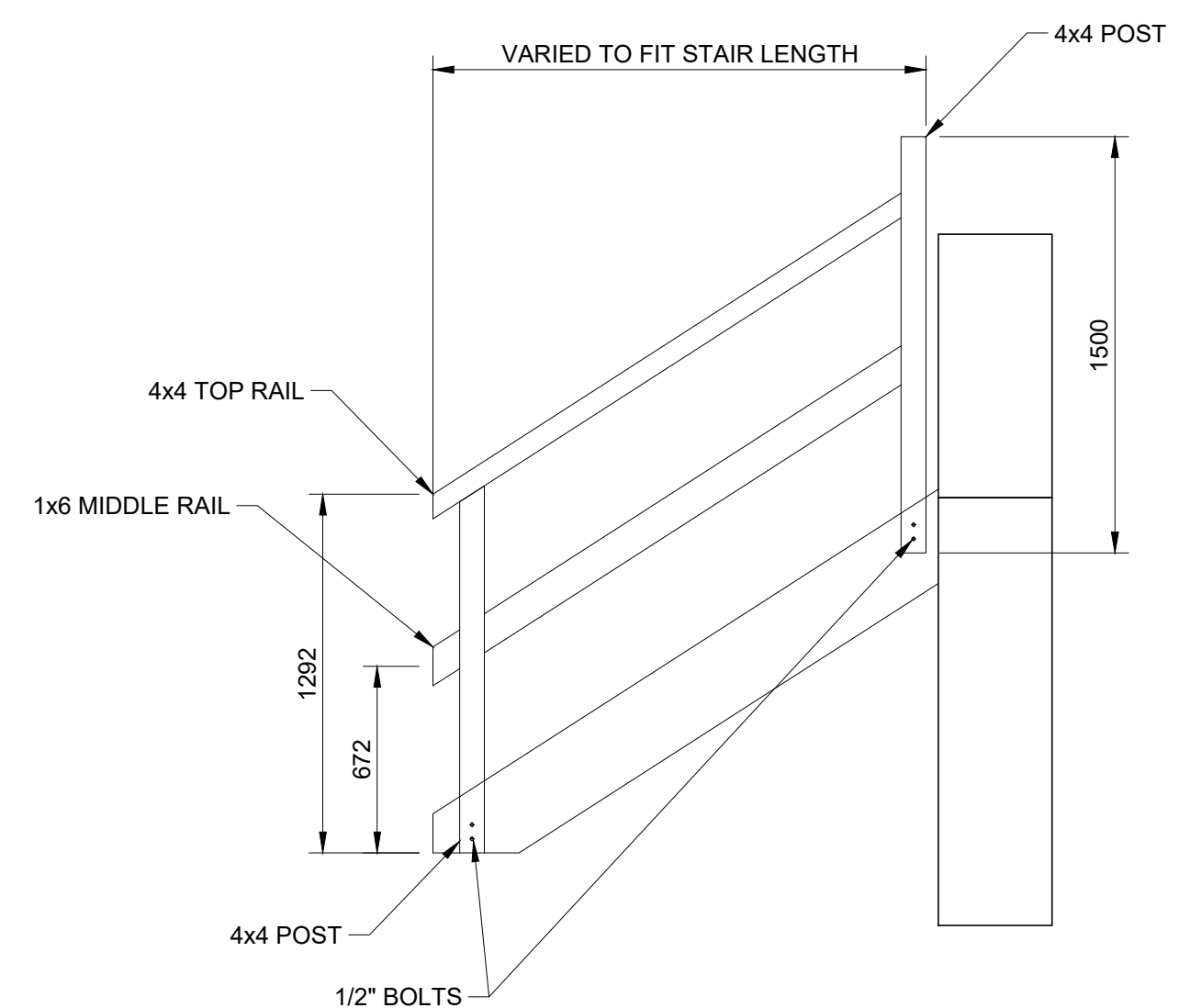
- PARKS CANADA HAS REQUESTED THAT THE WEST ABUTMENT STAIRS BE DESIGNED TO MATCH EXISTING STAIRS AT OTHER SITES ALONG THE RIDEAU CANAL. THE EXAMPLE STAIRS PROVIDED IN PHOTOGRAPHS FROM PARKS CANADA DO NOT MEET CURRENT NATIONAL BUILDING CODE STANDARDS (E.G. RAILINGS).
- THEREFORE THE DESIGN OF THE WEST ABUTMENT STAIRS DOES NOT MEET CURRENT CODES AND STANDARDS PERTAINING TO SUCH STRUCTURES AND PARKS CANADA IS ASSUMING LIABILITY FOR THIS CONDITION.



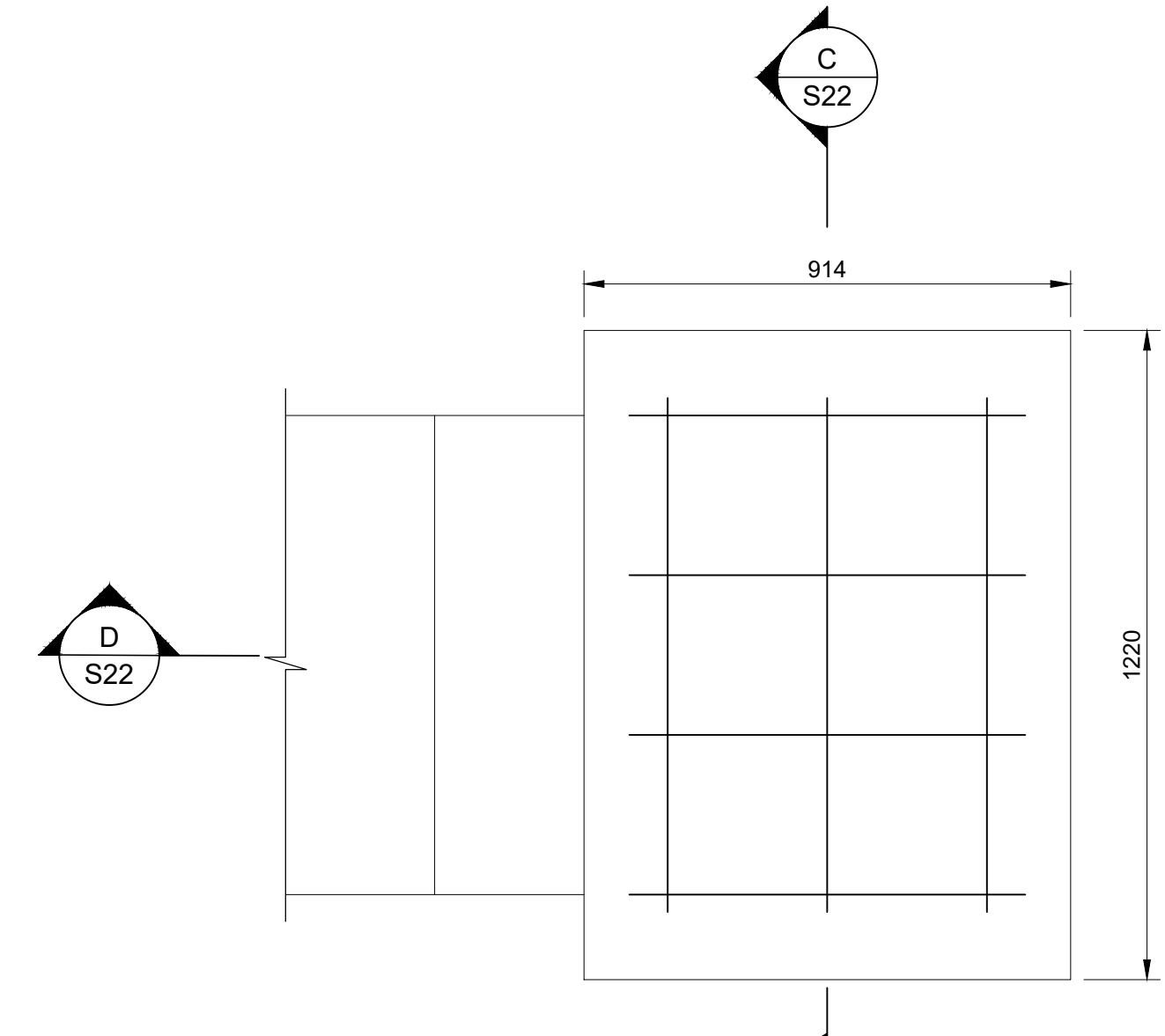
B SECTION: NORTH WEST WING WALL STAIRS
1:25



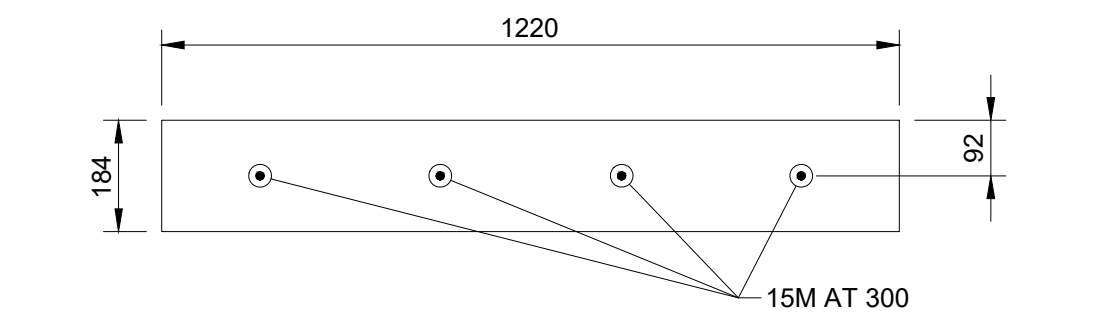
ELEVATION: NORTH WEST WING WALL STAIRS
1:25



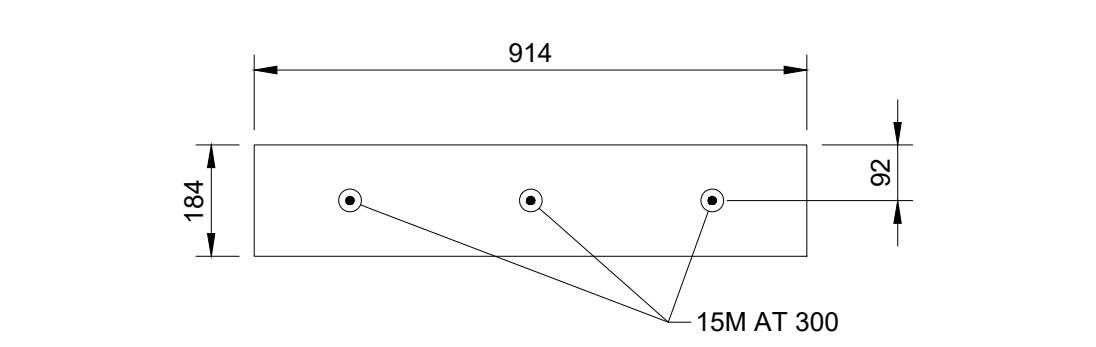
4 HANDRAIL DETAIL (EXTERIOR)
1:25



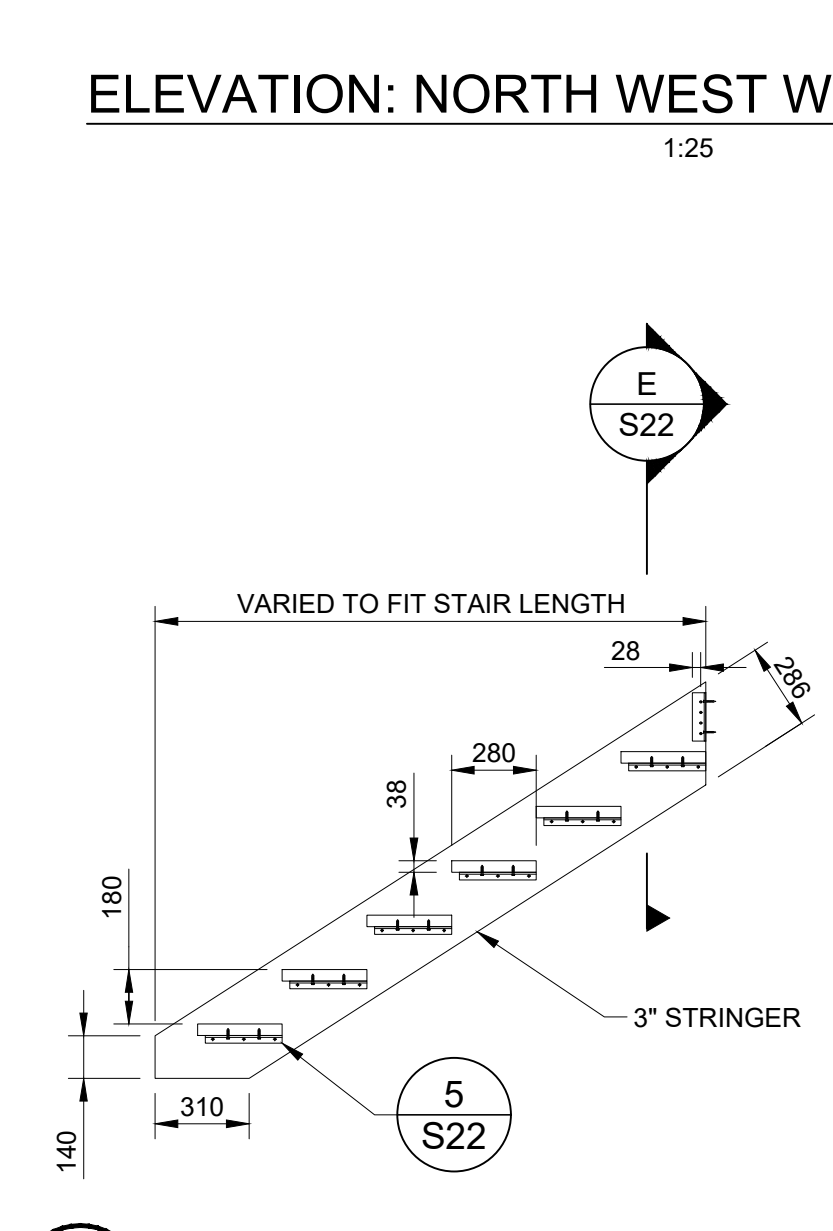
1 PLAN: CONCRETE LANDING
1:12.5



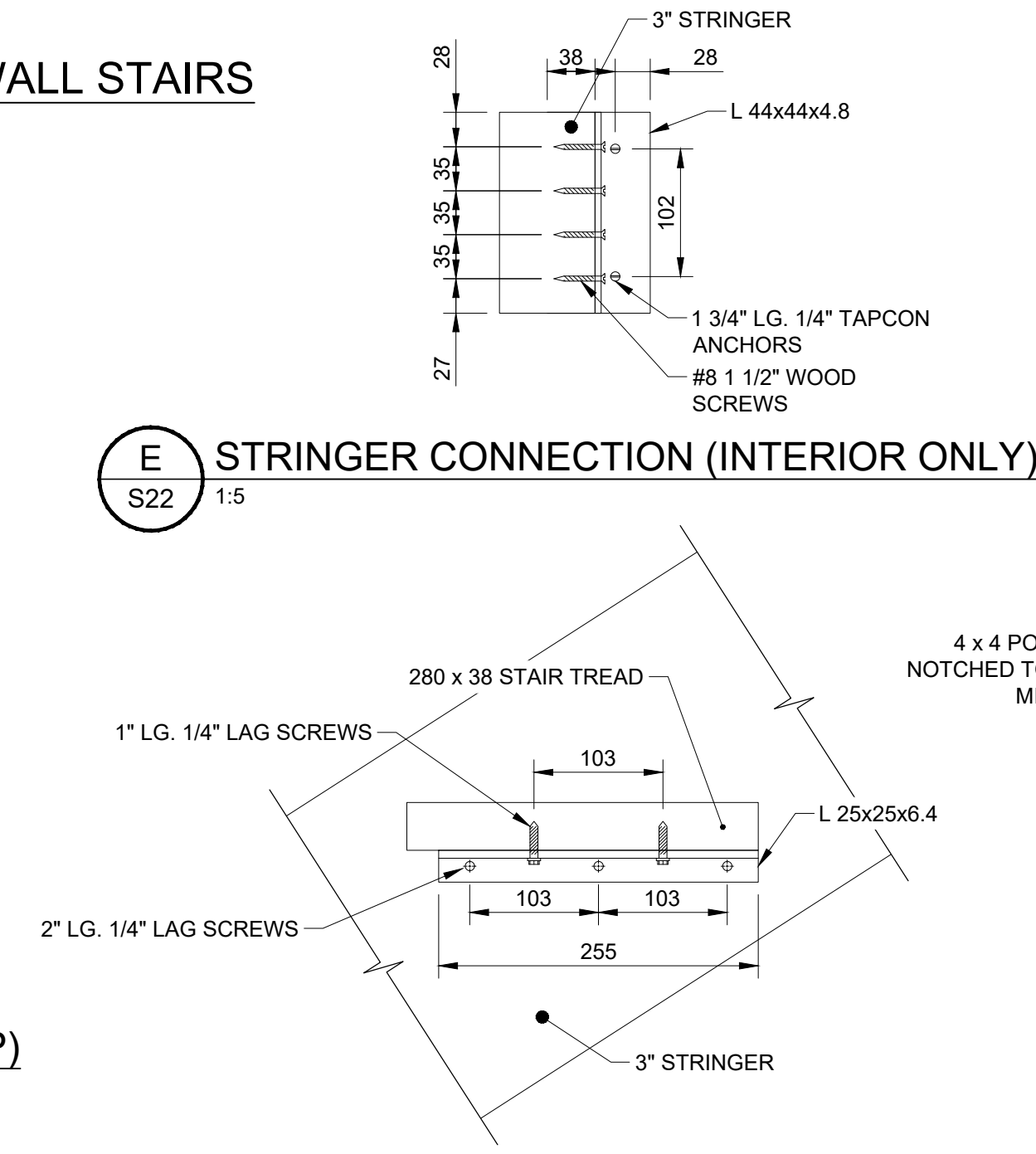
C SECTION: TRANSVERSE REINFORCING
1:12.5



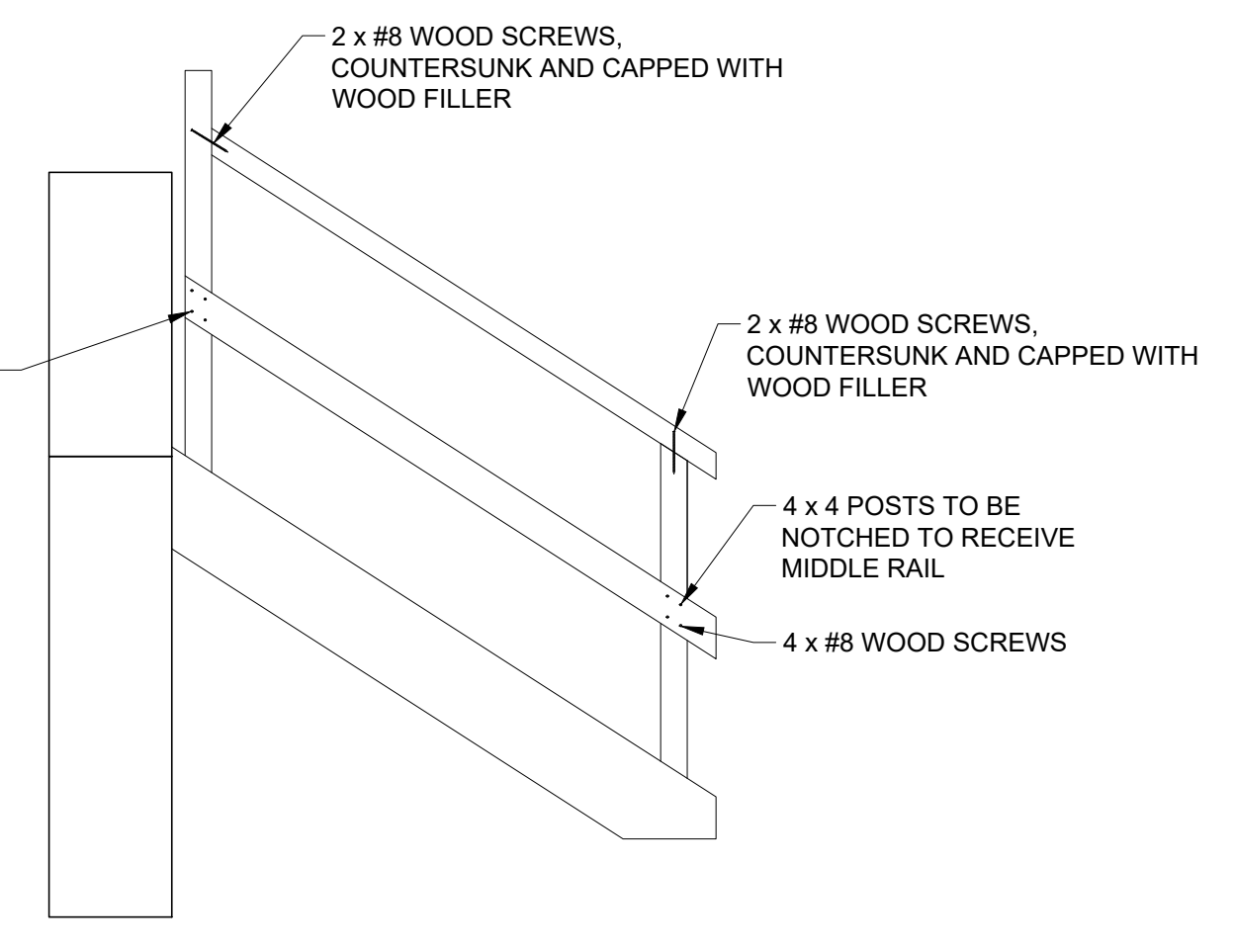
D SECTION: LONGITUDINAL REINFORCING
1:12.5



2 STRINGER AND TREAD DETAIL (TYP)
1:25



5 TREAD TO STRINGER CONNECTION
1:5



4 HANDRAIL DETAIL (INTERIOR)
1:25



04		
03		
02	ISSUED FOR TENDER	10/29/2021
01	ISSUED FOR REVIEW	08/06/2021
revision		date

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

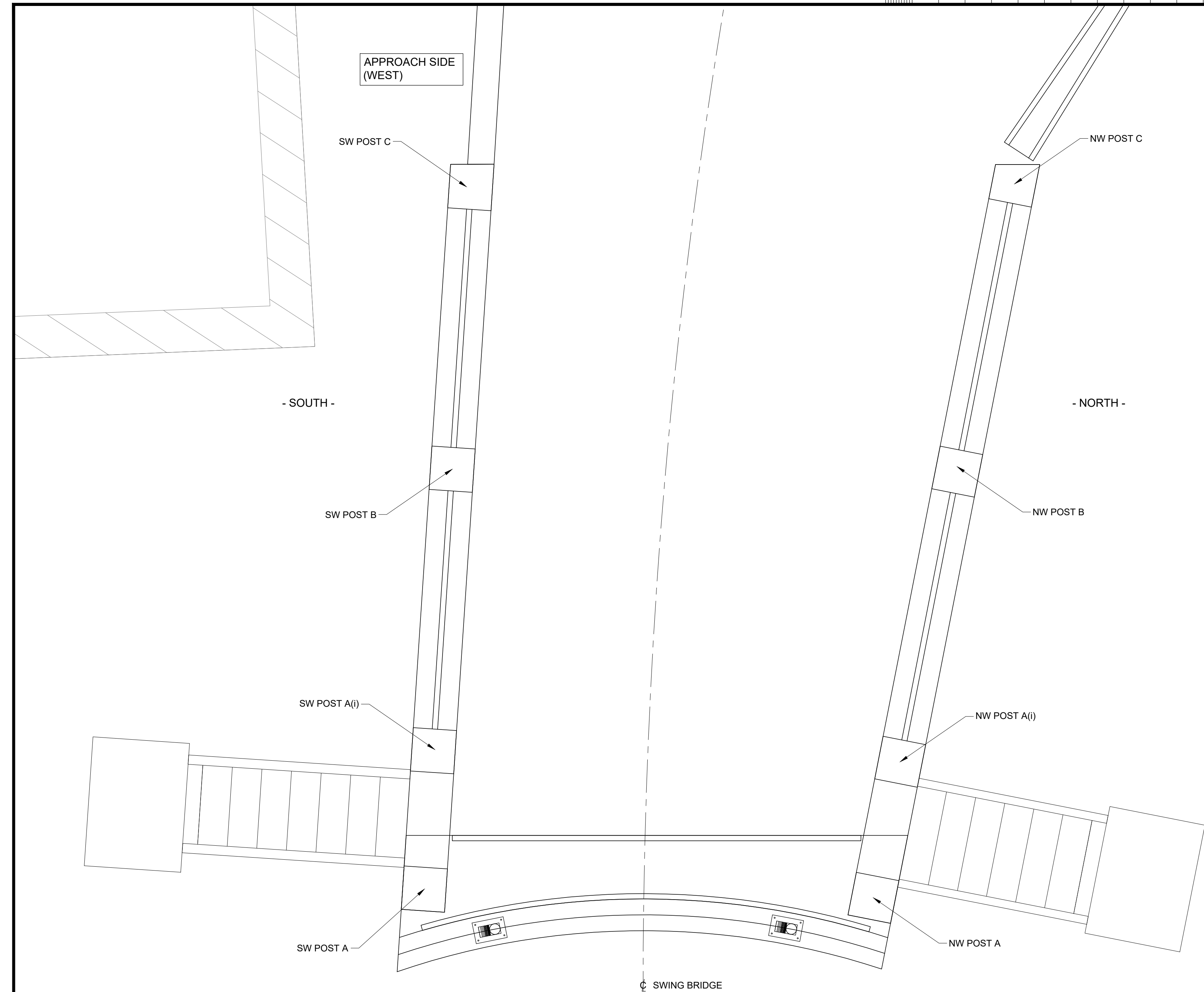
A	Detail No.	A
B	No. du detail	B
C	drawing no. - where detail required	C
	dessin no. - ou detail exigé	
	drawing no. - where detailed	
	dessin no. - ou détaillé	

project title
titre du projet
ONTARIO

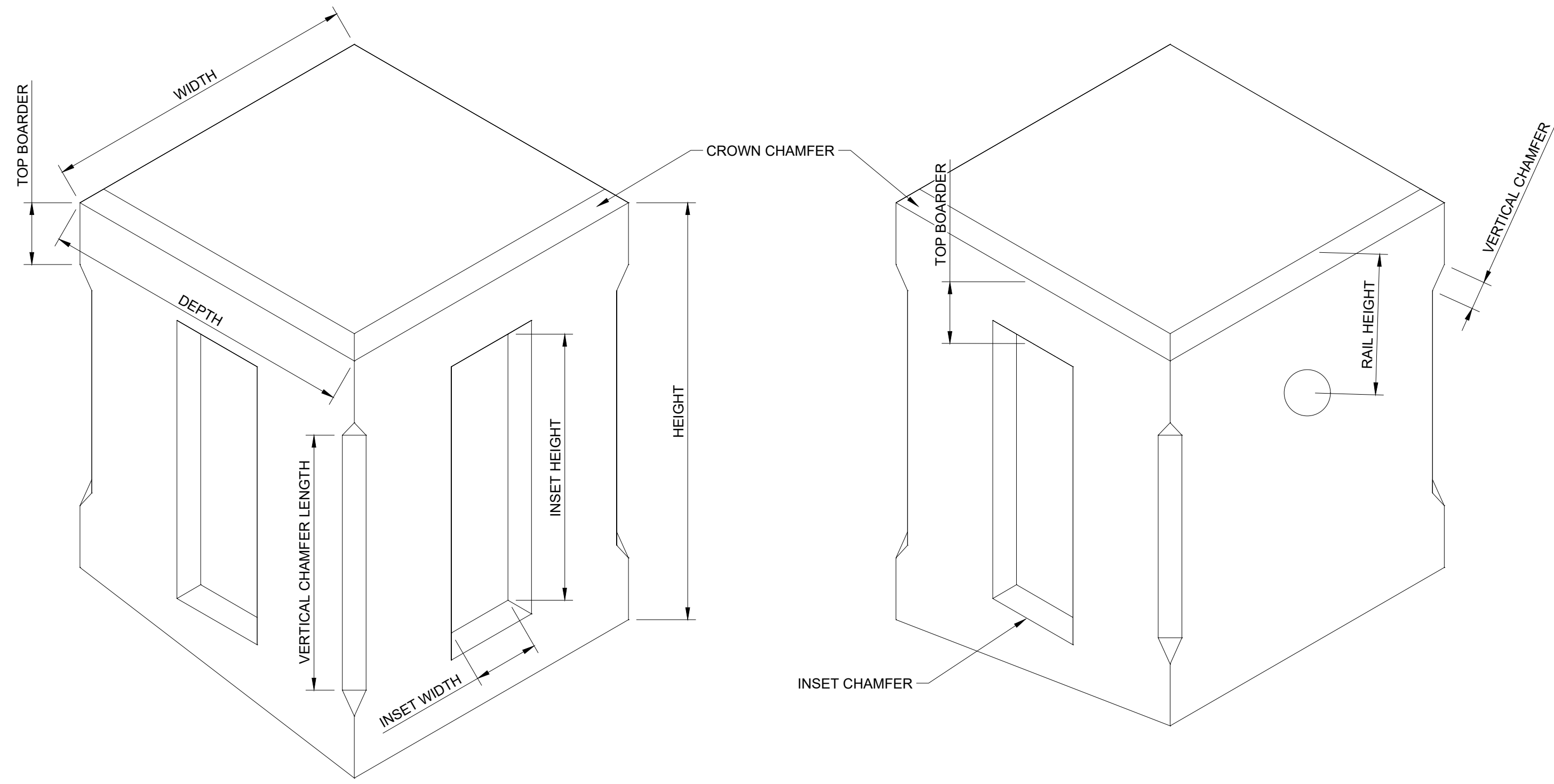
LOWER BREWERS SWING BRIDGE REPLACEMENT RIDEAU CANAL

drawing title
titre du dessin
STAIRS DETAILS

drawn by dessiné par	G. MOTA
designed by conçu par	C. WILLIAMS/L. CUMMING
approved by approuvé par	D.A. HUCTWITH
bid offre	TYLER ATKINSON
project manager administrateur de projets	
project date date du projet	2021-10-29
project no. no. du projet	30037015
drawing no. dessiné no.	S22



PLAN - WEST ABUTMENT
1:25



DIMENSION LABELS
N.T.S.

NOTE - STANDARD 20mm CONCRETE CHAMFER NOT APPLICABLE TO POST DETAILS. CHAMFERS SHALL BE AS SHOWN IN THE ABOVE DIMENSION LABEL DIAGRAM

POST ID		CONCRETE POST FEATURES (VARIABLE)					
WING WALL	POST	HEIGHT (WEST)	HEIGHT (EAST)	INSET HEIGHT (WEST)	INSET HEIGHT (EAST)	RAIL FROM TOP (WEST)	RAIL FROM TOP (EAST)
SW	A	970	950	350	350	N/A	N/A
SW	A (i)	520	500	N/A	350	210	N/A
SW	B	520	500	N/A	N/A	210	190
SW	C	520	500	350	N/A	N/A	190
NW	A	970	950	350	350	N/A	N/A
NW	A (i)	520	500	N/A	350	210	N/A
NW	B	520	500	N/A	N/A	210	190
NW	C	520	500	350	N/A	N/A	190

POST ID		CONCRETE POST FEATURES (CONSISTENT)										
WING WALL	POST	WIDTH (EAST / WEST)	DEPTH (NORTH / SOUTH)	TOP BORDER	CROWN CHAMFERS	INSET CHAMFERS	INSET DEPTH	INSET WIDTH	INSET HEIGHT (NORTH / SOUTH)	VERTICAL CHAMFERS	VERTICAL CHAMFER LENGTH (WEST)	VERTICAL CHAMFER LENGTH (EAST)
ALL		410	410	80	20	40	30	65	350	30	320	300

NOTE - THERE ARE NO INSET DETAILS ON EAST/WEST POST SIDES THAT HAVE A RAIL ATTACHMENT.

NOTES:

- RAILS ARE TO BE CENTERED ON THE POST IN THE NORTH/SOUTH DIRECTION.
- WIDTH AND DEPTH IS MEASURED TO THE OUTSIDE EDGE OF THE CROWN CHAMFER.
- POST HEIGHT MEASUREMENTS ARE TAKEN FROM THE TOP OF THE WING WALL TO THE TOP ELEVATION OF THE POST.
- TOP BOARDER HEIGHT IS MEASURED FROM BOTTOM OF CROWN CHAMFER TO TOP OF INSET CHAMFER.
- VERTICAL CHAMFER LENGTH IS MEASURED FROM INTERIOR EDGES OF VERTICAL CHAMFER.
- INSET HEIGHT AND WIDTH ARE MEASURED FROM INTERIOR EDGES OF CHAMFERS.
- RAIL HEIGHT IS MEASURED FROM TOP ELEVATION OF POST TO THE CENTERLINE OF RAILING.
- NORTH EAST POST A AND SOUTH EAST POST A ARE NOT SQUARE - SEE PLAN VIEW FOR POST DIMENSIONS.
- VERTICAL CHAMFER LENGTHS INDICATED AS N/A START AT THE BOTTOM EDGE OF THE CROWN CHAMFER AND EXTEND TO THE BASE OF THE POST/WING WALL.
- SEE DRAWING S8 FOR STEEL RAILING DETAILS.



04		
03		
02	ISSUED FOR TENDER	10/29/2021
01	ISSUED FOR REVIEW	08/06/2021
revision		date

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

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

project title
titre du projet
ONTARIO
LOWER BREWERS
SWING BRIDGE REPLACEMENT
RIDEAU CANAL

drawing title
titre du dessin
POST DETAILS -
WEST ABUTMENT

drawn by
dessiné par
G. MOTA

designed by
conçu par
C. WILLIAMS/L. CUMMING

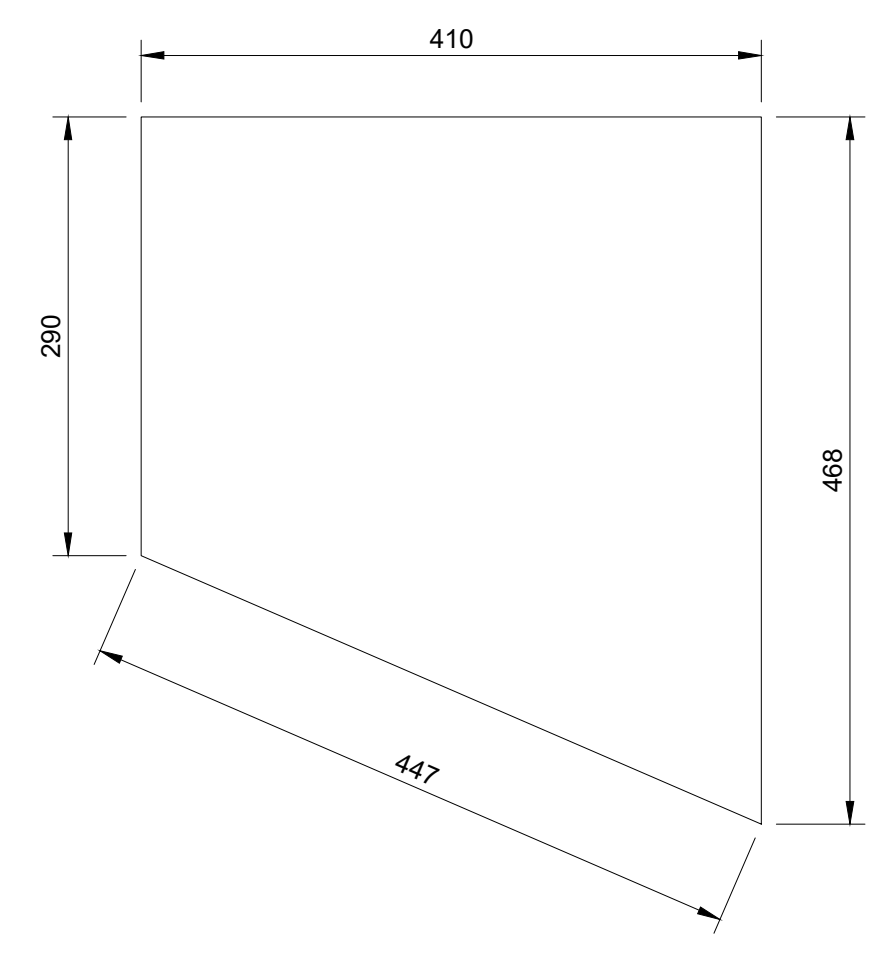
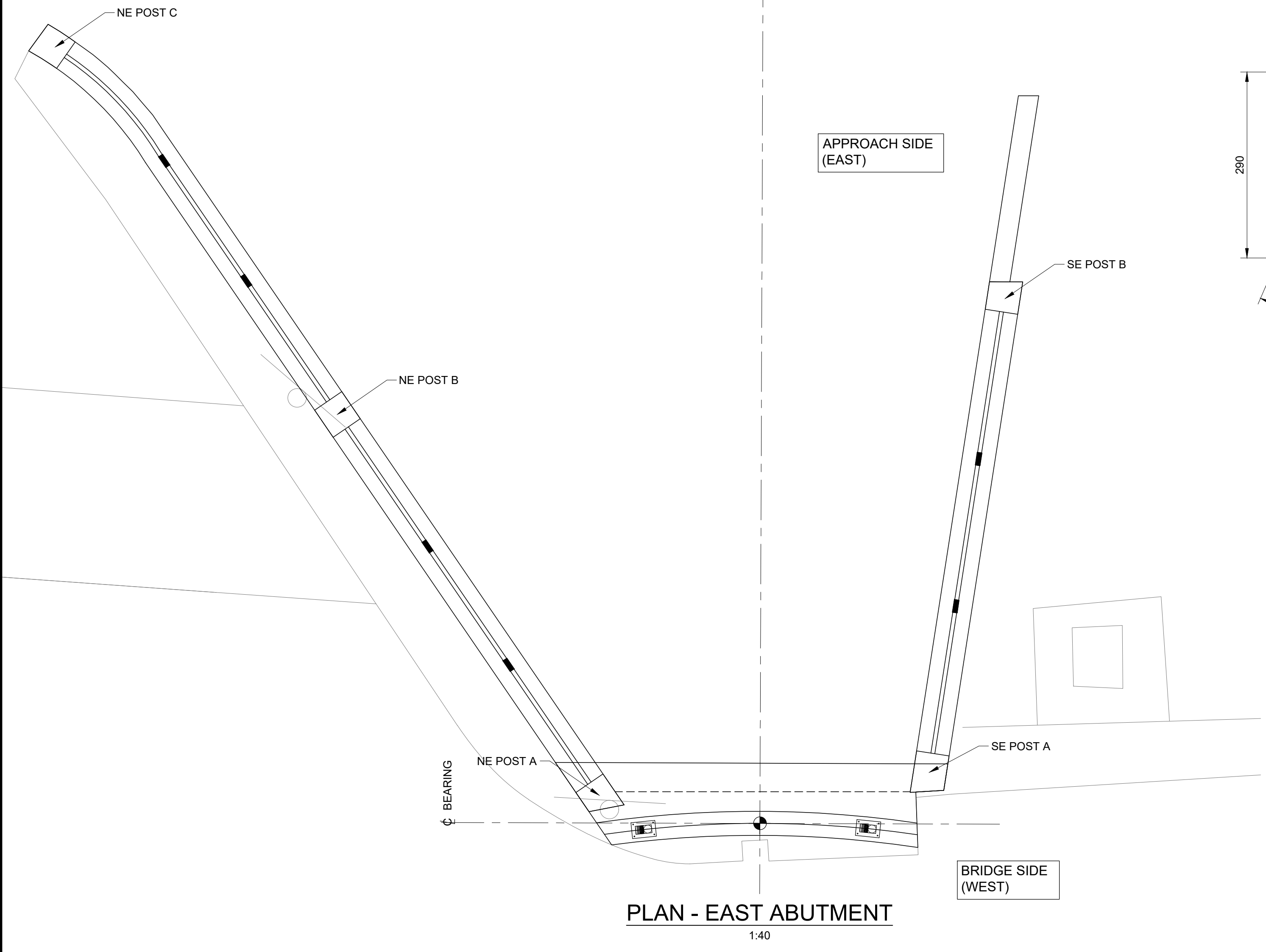
approved by
approuvé par
D.A. HUCTWITH

bid
offre
TYLER ATKINSON
project manager
administrateur
de projets

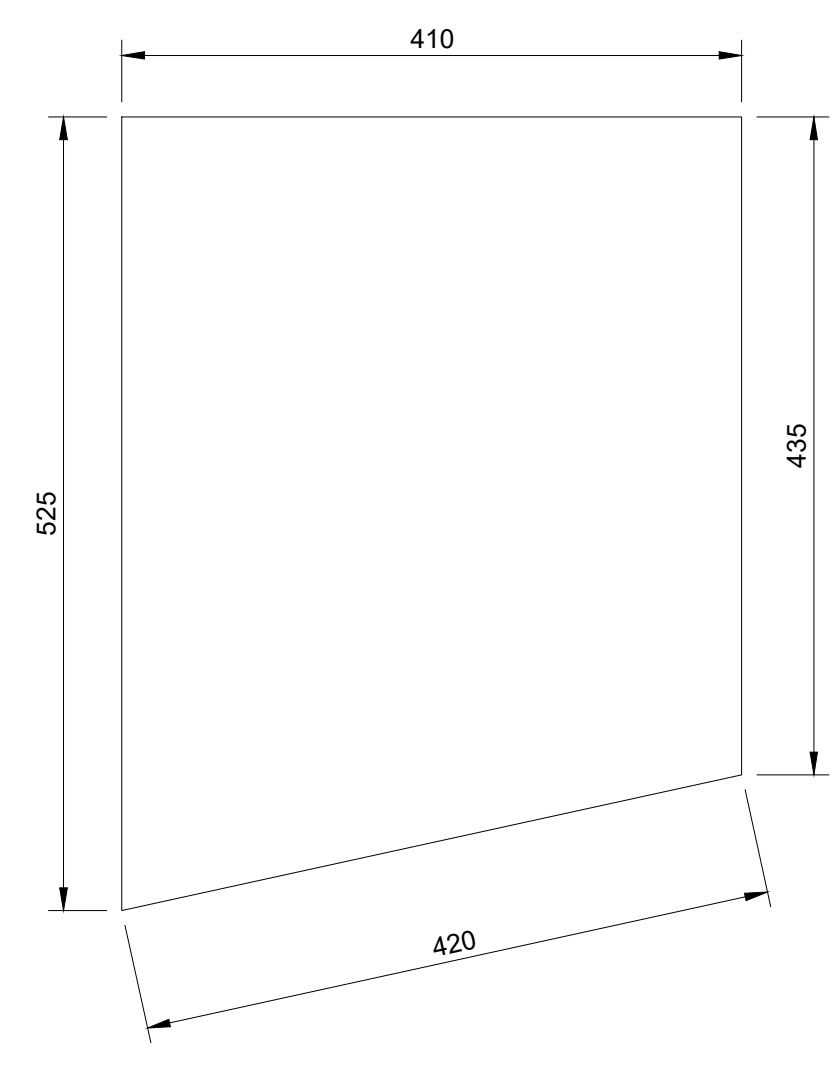
project date
date du projet
2021-10-29

project no.
no. du projet
30037015

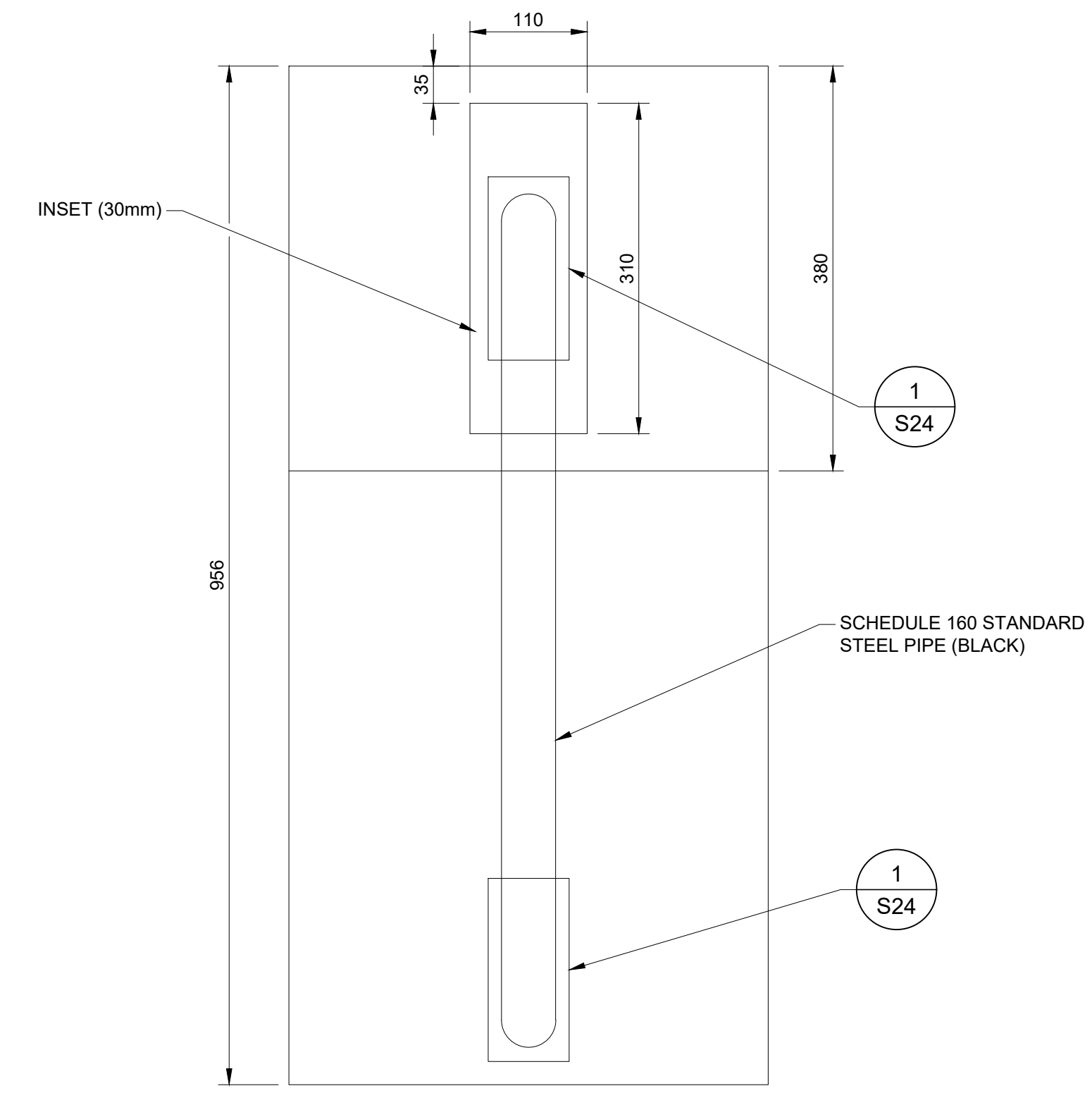
drawing no.
dessiné no.
S23



PLAN VIEW - NE POST A
1:5



PLAN VIEW - SE POST A
1:5



WEST ELEVATION - SE POST A
1:5



WEST ELEVATION - SE POST A (PHOTO)
N.T.S.

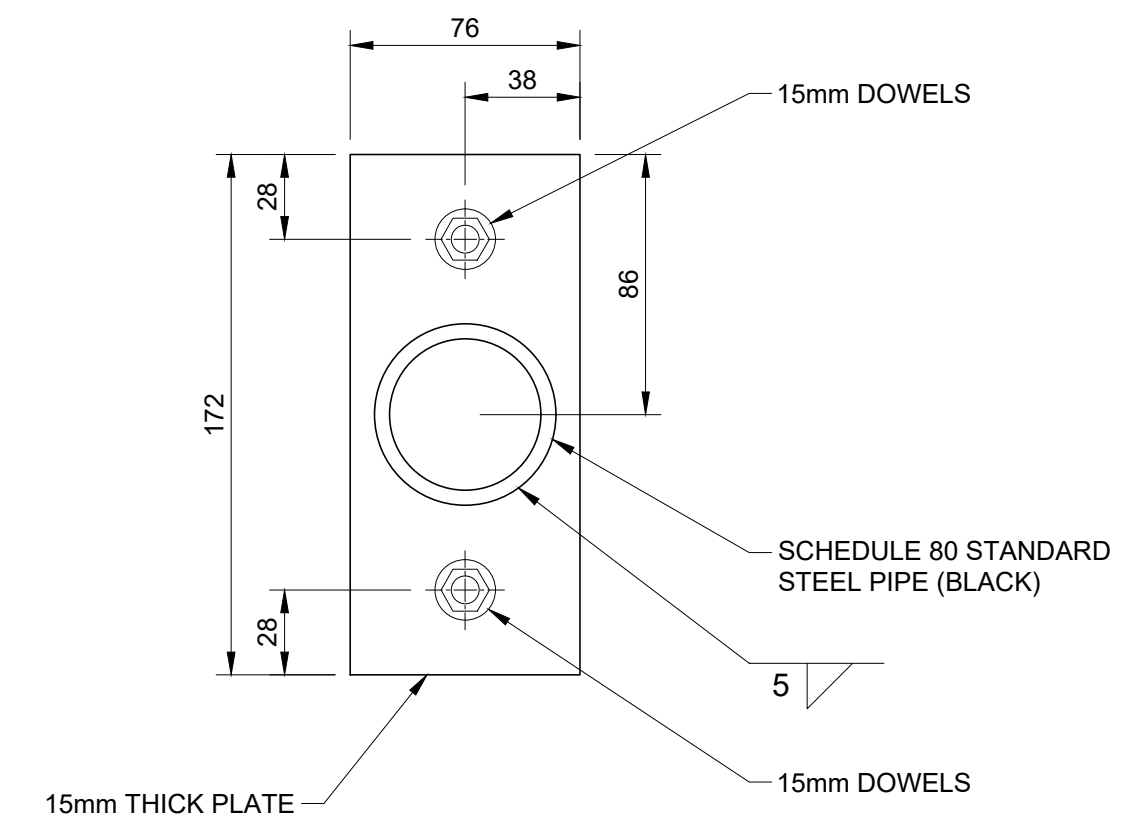
NOTE - STANDARD 20mm CONCRETE CHAMFER NOT APPLICABLE TO POST DETAILS. CHAMFERS SHALL BE AS SHOWN IN THE ABOVE DIMENSION LABEL DIAGRAM

NOTE - DIMENSIONS (HEIGHT, PROJECTION AND RADIUS) OF NEW RAIL ON SE POST A TO MATCH EXISTING.

POST ID		CONCRETE POST FEATURES (CONSISTENT)						
WING WALL	POST	CROWN CHAMFERS	VERTICAL CHAMFERS	INSET DEPTH	INSET CHAMFERS	INSET WIDTH	INSET HEIGHT (NORTH/SOUTH)	TOP BORDER
ALL		20	30	30	40	65	350	80

POST ID		CONCRETE POST FEATURES (VARIABLE)									
WING WALL	POST	VERTICAL CHAMFER LENGTH (WEST)	VERTICAL CHAMFER LENGTH (EAST)	HEIGHT (WEST)	HEIGHT (EAST)	WIDTH (EAST / WEST)	DEPTH (NORTH / SOUTH)	INSET HEIGHT (WEST)	INSET HEIGHT (EAST)	RAIL HEIGHT FROM TOP (WEST)	RAIL HEIGHT FROM TOP (EAST)
SE	A	300	328	500	528	SEE PLAN VIEW DETAIL	N/A	N/A	N/A	N/A	140
SE	B	300	328	500	528	410	410	N/A	350	110	N/A
NE	A	300	315	500	515	SEE PLAN VIEW DETAIL	350	N/A	N/A	N/A	140
NE	B	300	322	500	522	410	410	N/A	N/A	125	140
NE	C	300	325	500	525	410	410	N/A	350	120	N/A

NOTE - THERE ARE NO INSET DETAILS ON EAST/WEST POST SIDES THAT HAVE A RAIL ATTACHMENT.



1 S24 STEEL RAILING TO CONCRETE POST CONNECTION
1:2.5

NOTES:

- RAILS ARE TO BE CENTERED ON THE POST IN THE NORTH/SOUTH DIRECTION.
- WIDTH AND DEPTH IS MEASURED TO THE OUTSIDE EDGE OF THE CROWN CHAMFER.
- POST HEIGHT MEASUREMENTS ARE TAKEN FROM THE TOP OF THE WING WALL TO THE TOP ELEVATION OF THE POST.
- TOP BOARDER HEIGHT IS MEASURED FROM BOTTOM OF CROWN CHAMFER TO TOP OF INSET CHAMFER.
- VERTICAL CHAMFER LENGTH IS MEASURED FROM INTERIOR EDGES OF VERTICAL CHAMFER.
- INSET HEIGHT AND WIDTH ARE MEASURED FROM INTERIOR EDGES OF CHAMFERS.
- RAIL HEIGHT IS MEASURED FROM TOP ELEVATION OF POST TO THE CENTERLINE OF THE RAILING.
- NORTH EAST POST A AND SOUTH EAST POST A ARE NOT SQUARE - SEE PLAN VIEW FOR POST DIMENSIONS.
- VERTICAL CHAMFER LENGTHS INDICATED AS N/A START AT THE BOTTOM EDGE OF THE CROWN CHAMFER AND EXTEND TO THE BASE OF THE POST/WING WALL.
- SEE DIMENSION LABEL DIAGRAM ON WEST ABUTMENT POST DETAIL DRAWING.
- SEE DRAWING S12 FOR STEEL RAILING DETAILS.



04		
03		
02	ISSUED FOR TENDER	10/29/2021
01	ISSUED FOR REVIEW	08/06/2021
revision		date

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

project title
titre du projet

ONTARIO

LOWER BREWERS SWING BRIDGE REPLACEMENT
RIDEAU CANAL

drawing title
titre du dessin

POST DETAILS - EAST ABUTMENT

drawn by
dessiné par

G. MOTA

designed by
conçu par

C. WILLIAMS/L. CUMMING

approved by
approuvé par

D.A. HUCTWITH

bid
offre

TYLER ATKINSON

project manager
administrateur de projets

project date
date du projet

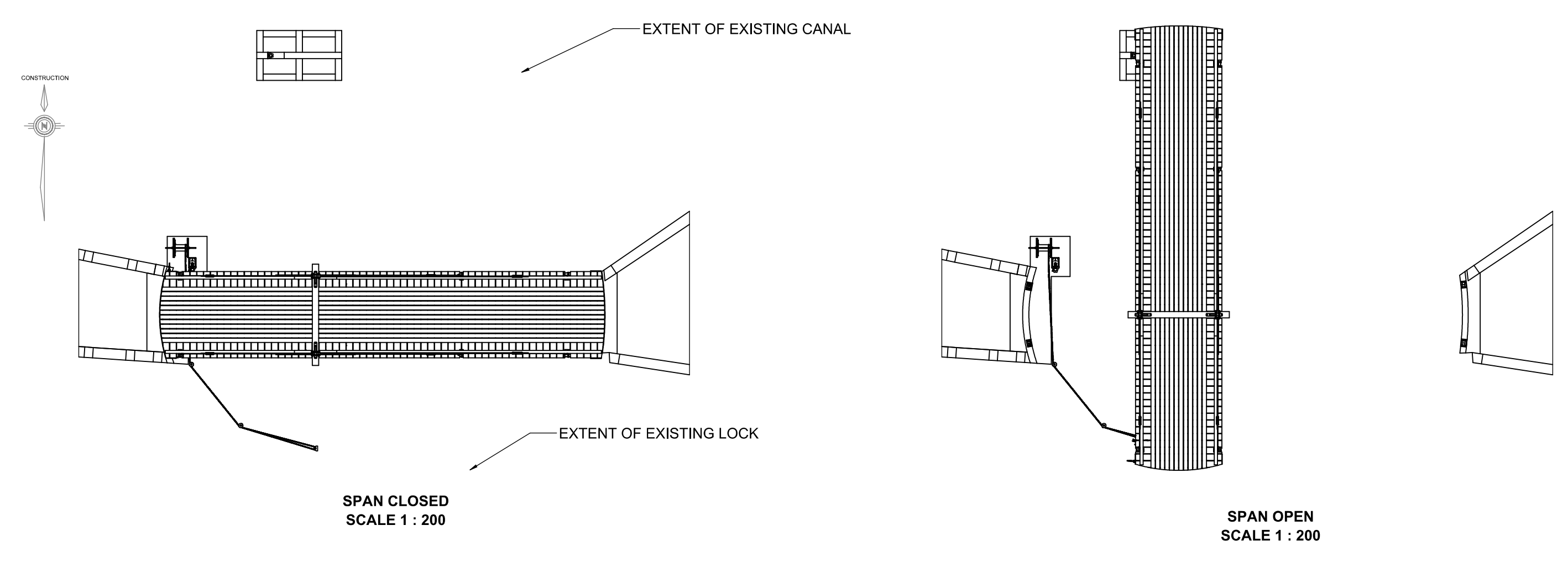
10/29/2021

project no.
no. du projet

30037015

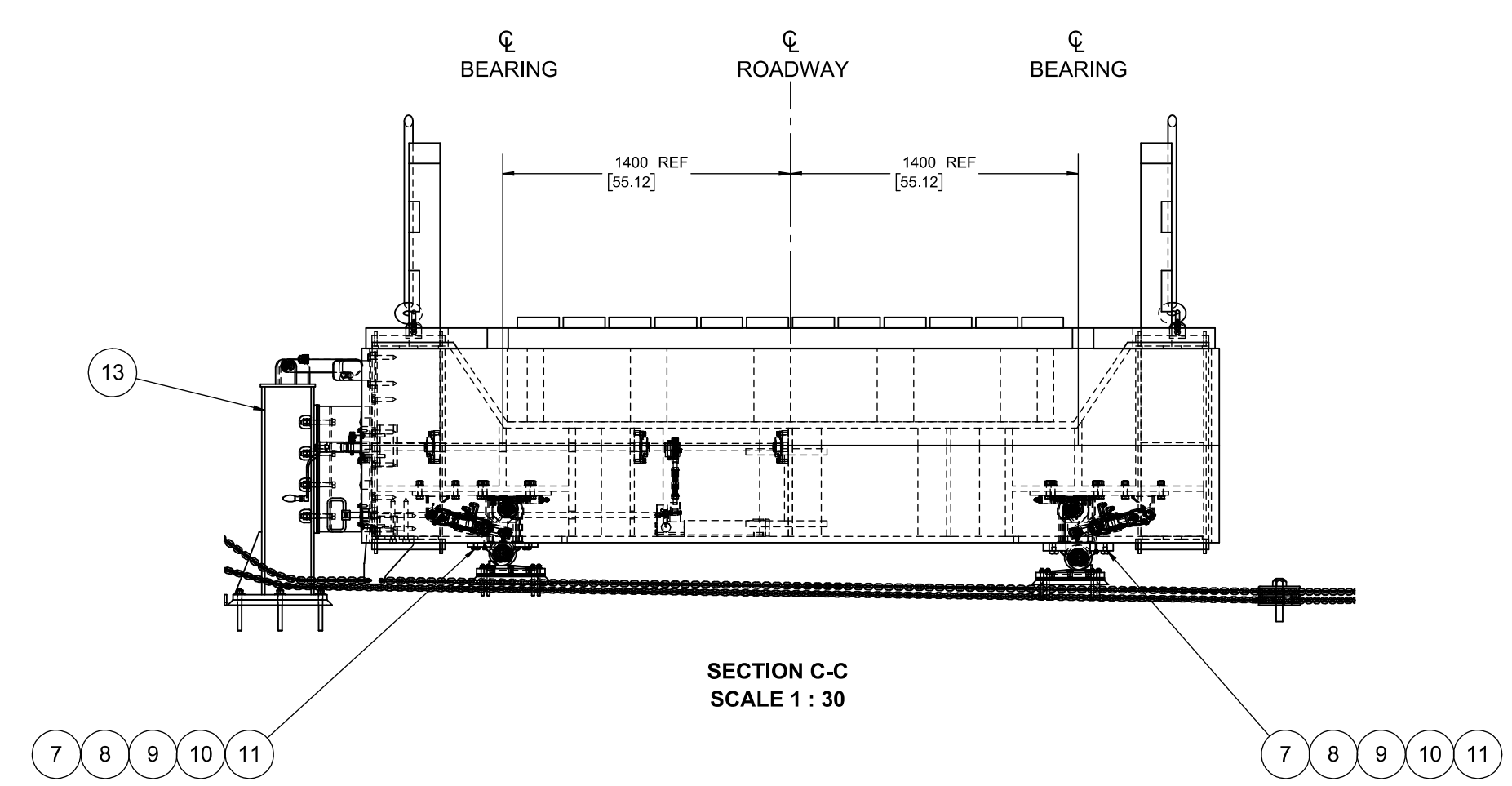
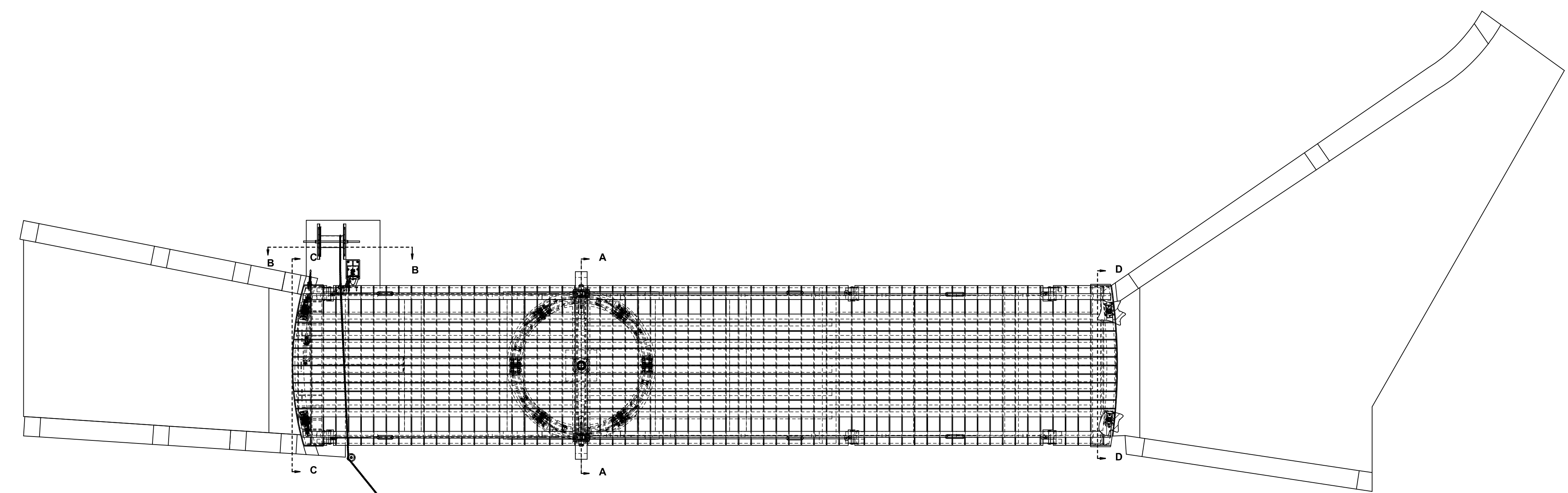
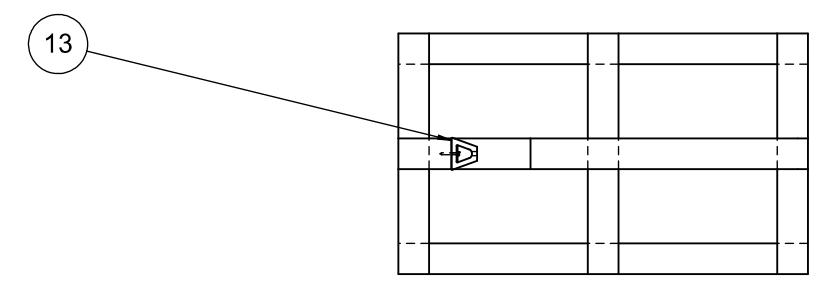
drawing no.
dessiné no.

S24

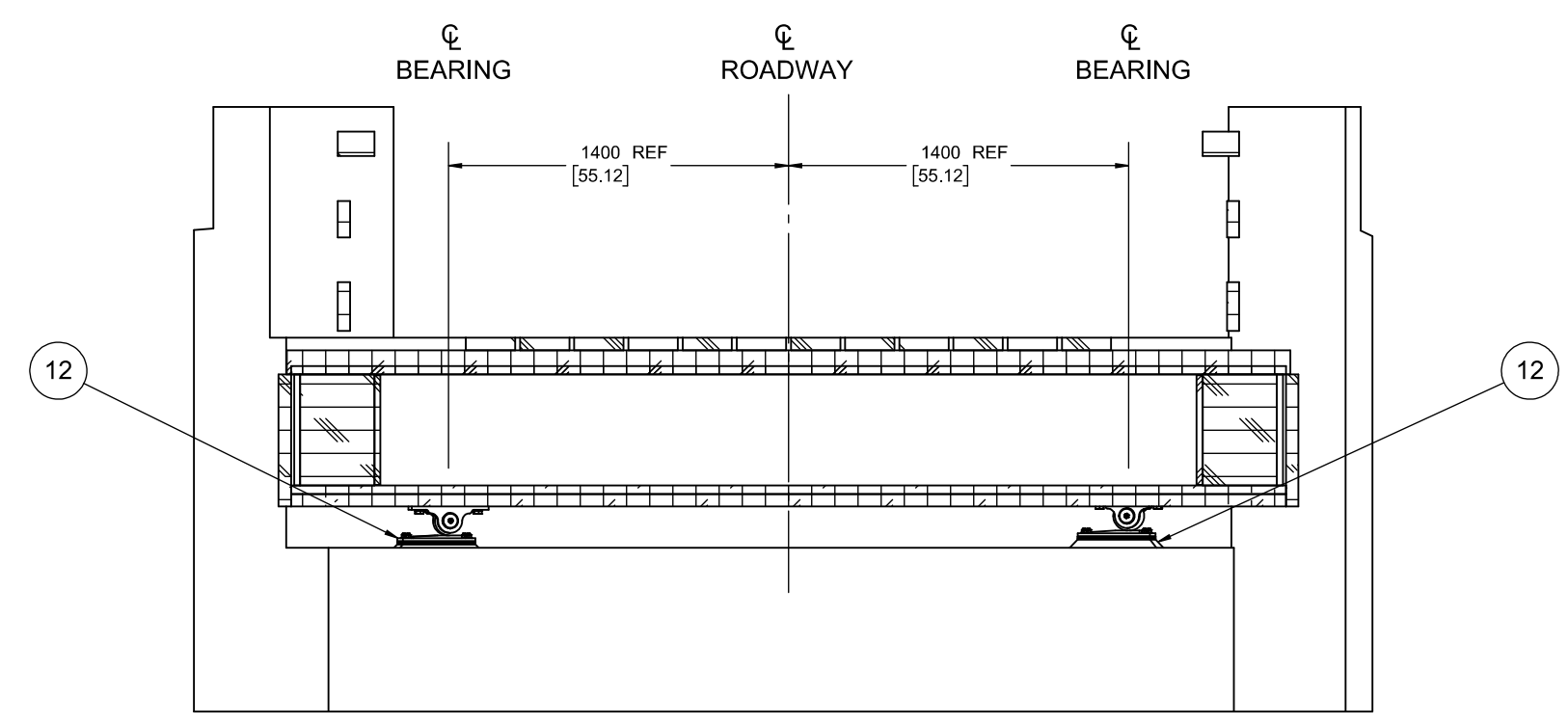


SPAN CLOSED
SCALE 1 : 200

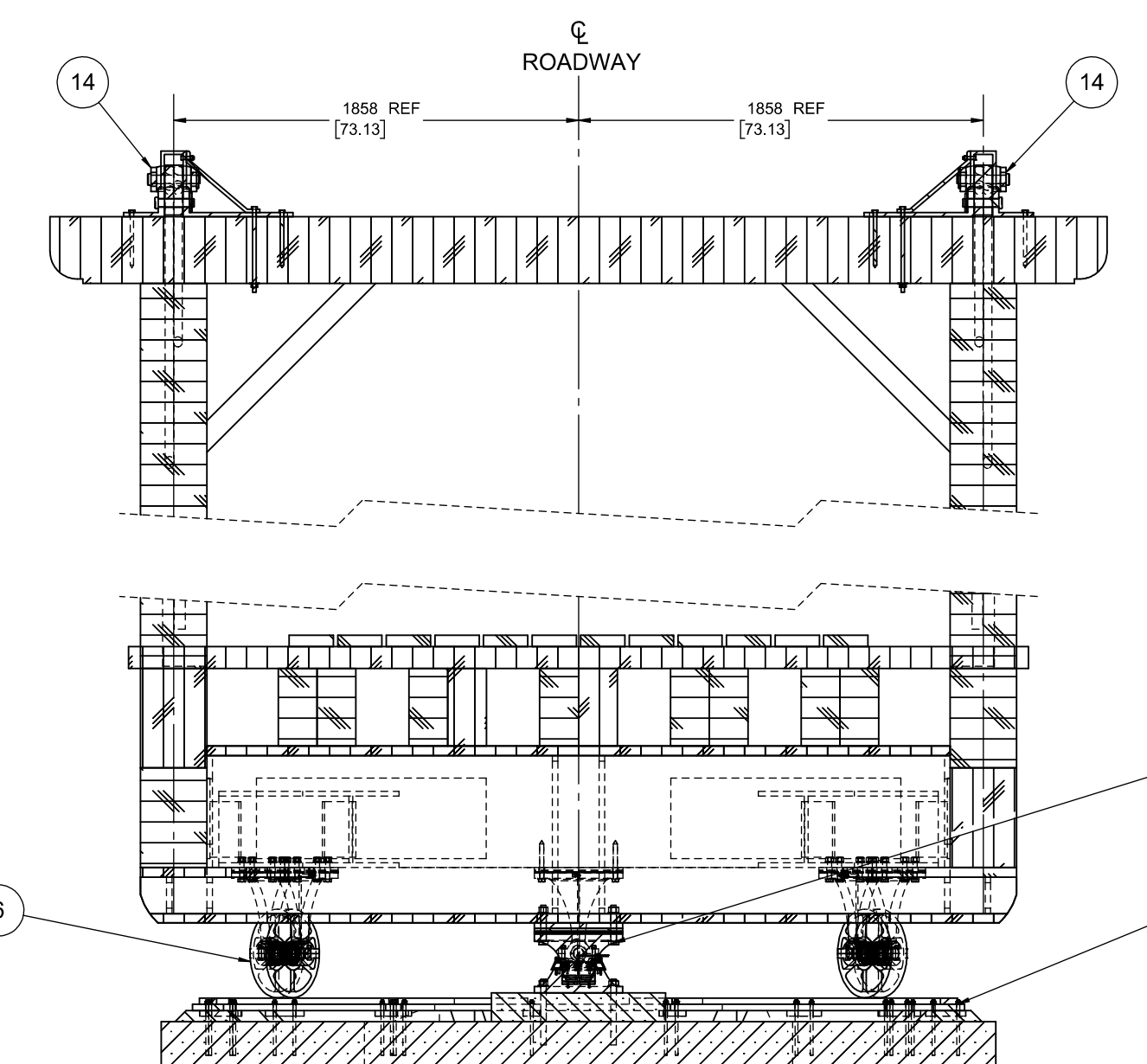
SPAN OPEN
SCALE 1 : 200



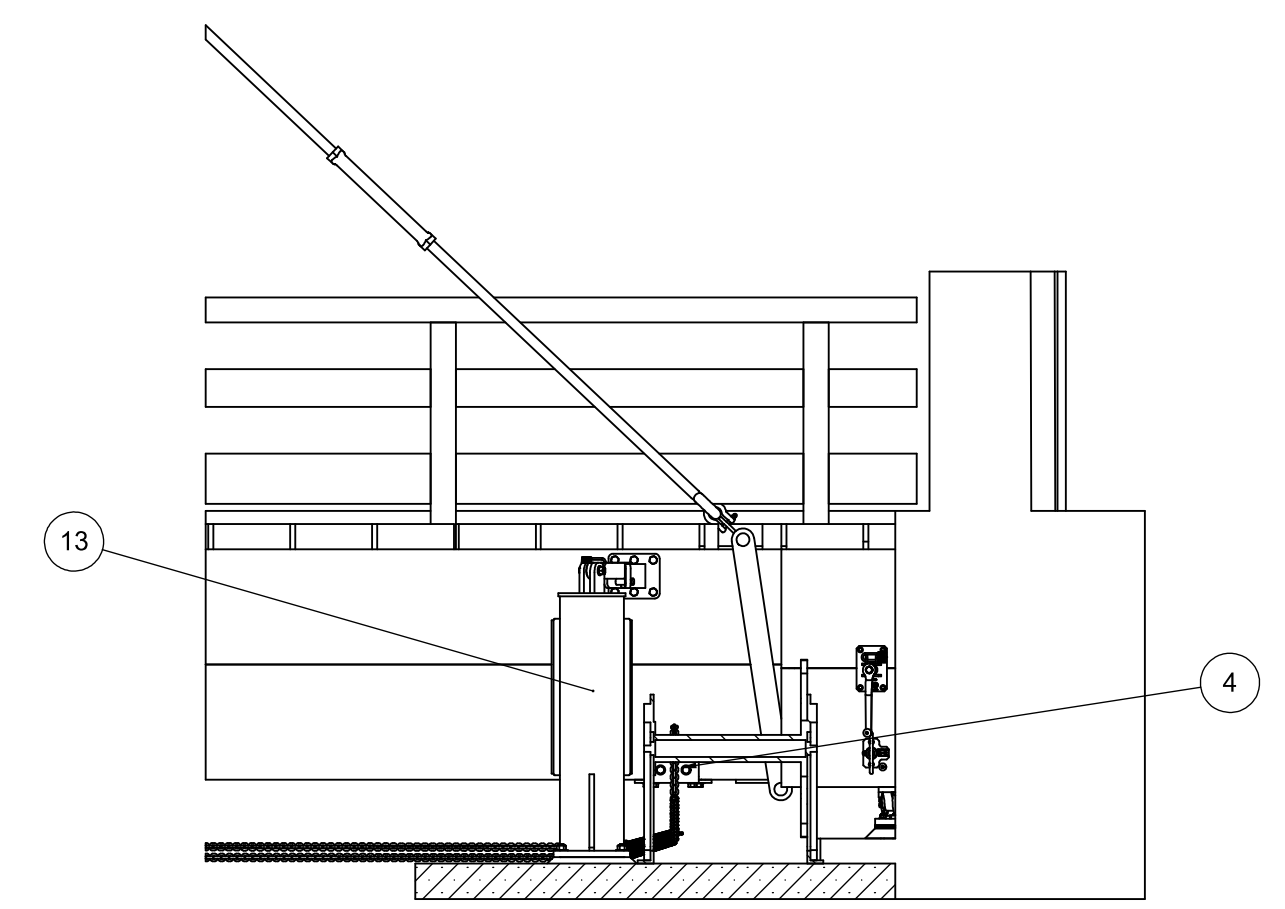
SECTION C-C
SCALE 1 : 30



SECTION D-D
SCALE 1 : 30



SECTION A-A
SCALE 1 : 30



SECTION B-B
SCALE 1 : 30

ITEM NO.	DRAWING NO.	DESCRIPTION
2	M02	PIVOT BEARING ARRANGEMENT
3	M03	PIVOT BEARING DETAILS
4	M04	SWING CHAIN AND CRAB ARRANGEMENT & DETAILS
5	M05	BALANCE WHEEL AND RAIL ARRANGEMENT
6	M06	BALANCE WHEEL & RAIL DETAILS
7	M07	WEST END LIFT ARRANGEMENT
8	M08	END LIFT MECHANISM PART DETAILS
9	M09	END LIFT ACTUATOR, SHIM AND RAMP DETAILS
10	M10	END LIFT SHAFT, BEARING AND CRANK ARM DETAILS
11	M11	HYDRAULIC AND PNEUMATIC SCHEMATIC
12	M12	EAST END BEARING WHEEL AND RAMP ARRANGEMENT & DETAILS
13	M13	SPAN LOCK AND END STOP BUMPER ARRANGMT & DETAILS
14	M14	STAY ROD REGULATOR ARRANGEMENT & DETAILS

NOTES:
1. SEE SPECIFICATION SECTION 13.10.00 FOR FURTHER DETAILS APPLICABLE TO THIS DRAWING.

Public Services and Procurement Canada
Services publics et Approvisionnement Canada

Ontario Region
Parcs Canada Infrastructure Directorate
Heritage Canada and Engineering Works
Région de l'Ontario
Direction de l'infrastructure de Parcs Canada
Parcs historiques et travaux d'ingénierie

Parcs Canada

WSP

Chadwick Engineering Ltd.
www.chadwickengineering.com



REVISION	DATE
2	ISSUED FOR TENDER 2021-10-29
1	ISSUED FOR REVIEW 2021-08-06

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

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

LOWER BREWERS SWING BRIDGE REHABILITATION

drawing title
titre du dessin

MECHANICAL LAYOUT

drawn by
dessiné par

MJB

designed by
conçu par

DAF

approved by
approuvé par

DPC

bid offer

TYLER ATKINSON

project manager
administrateur de projets

project date
date du projet

2021-10-29

project no.
no. du projet

30037015

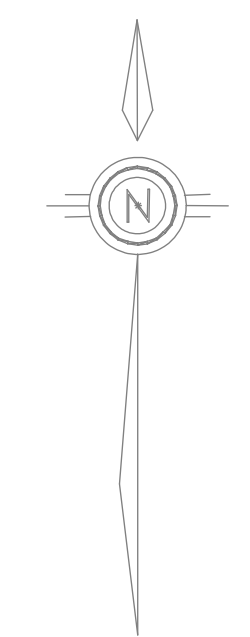
drawing no.
dessiné no.

M01

ISSUED FOR TENDER
OCTOBER 29, 2021

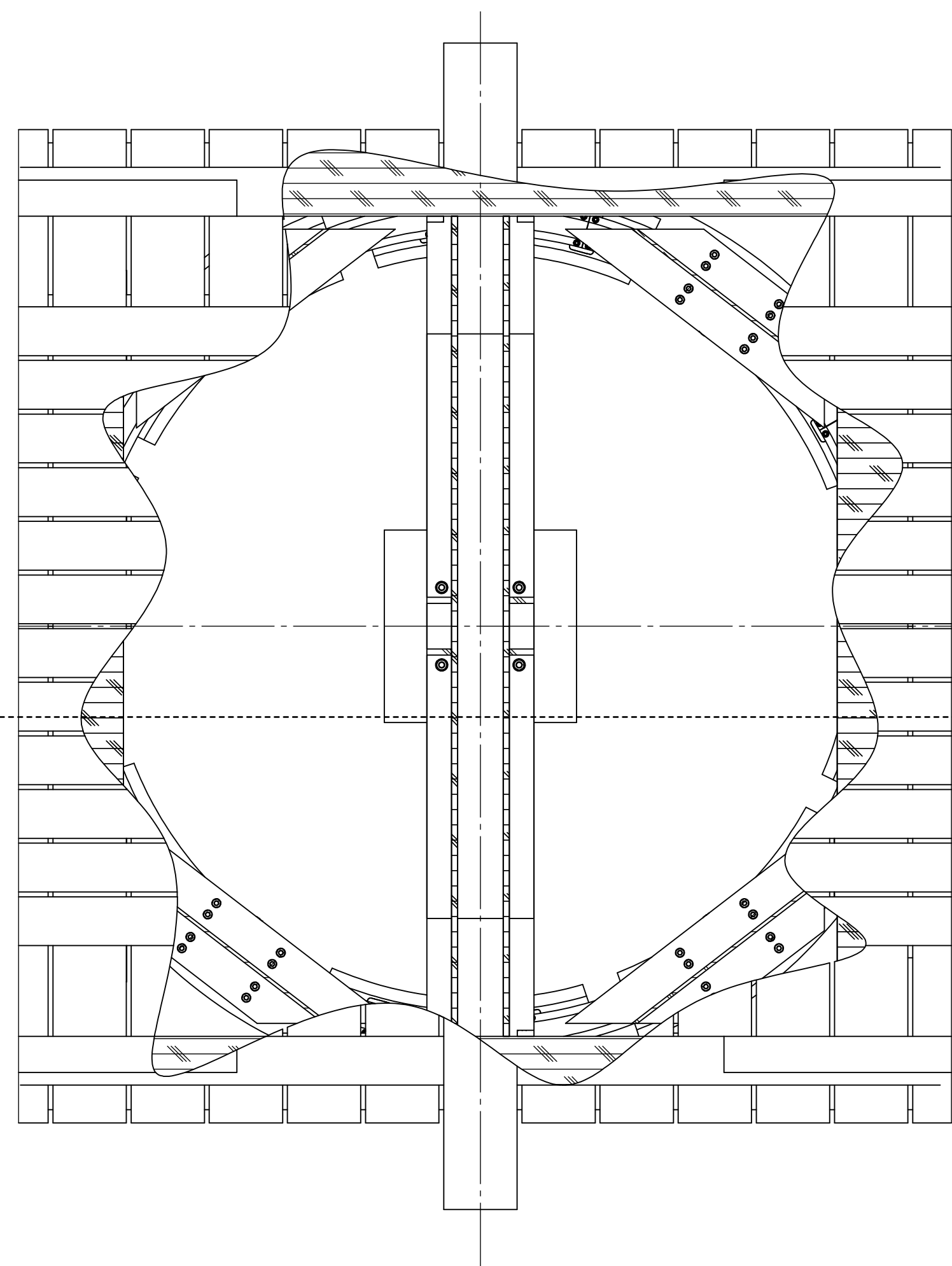
DEFAULT TOLERANCES

1.	ALL DIMENSIONS ARE IN MILLIMETERS.
2.	TOLERANCES:
X	DECIMALS ± 0.5
XX	DECIMALS ± 0.1
XXX	DECIMALS ± 0.05
	ANGLES ± 0.5°
	HOLE SIZES ± 1mm
	SURFACES ± 3.2 µm

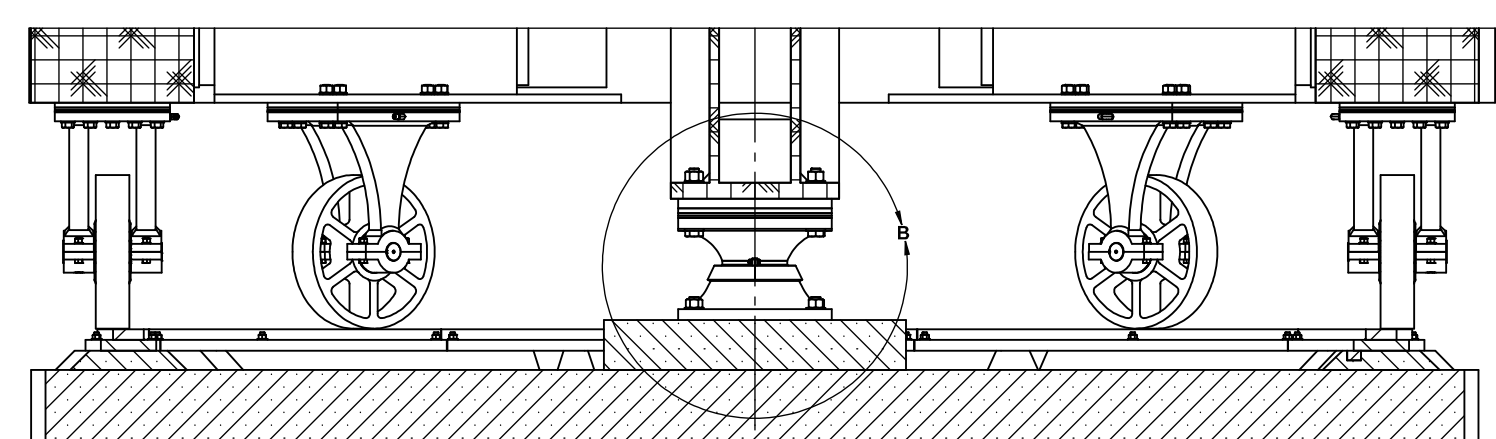


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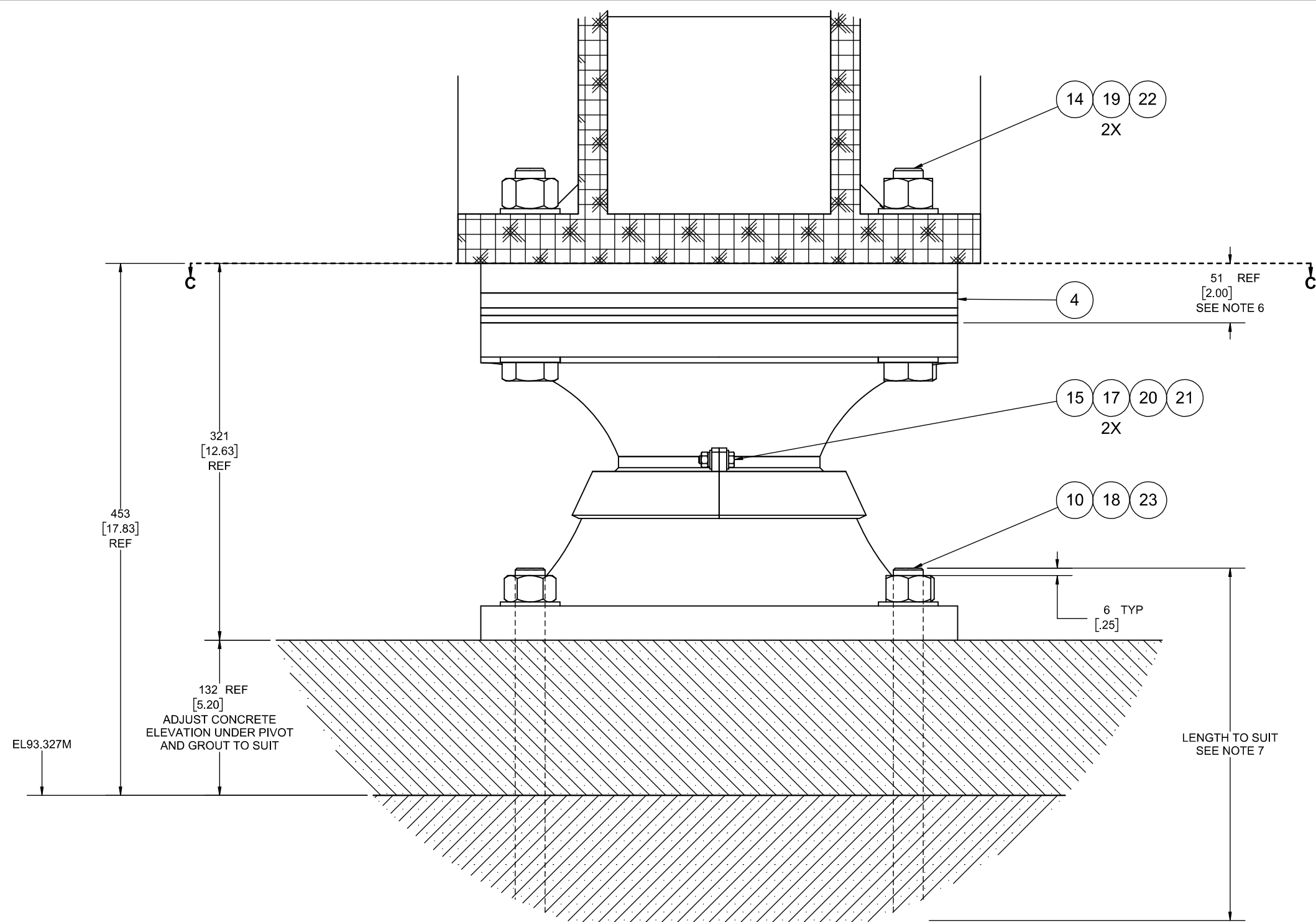
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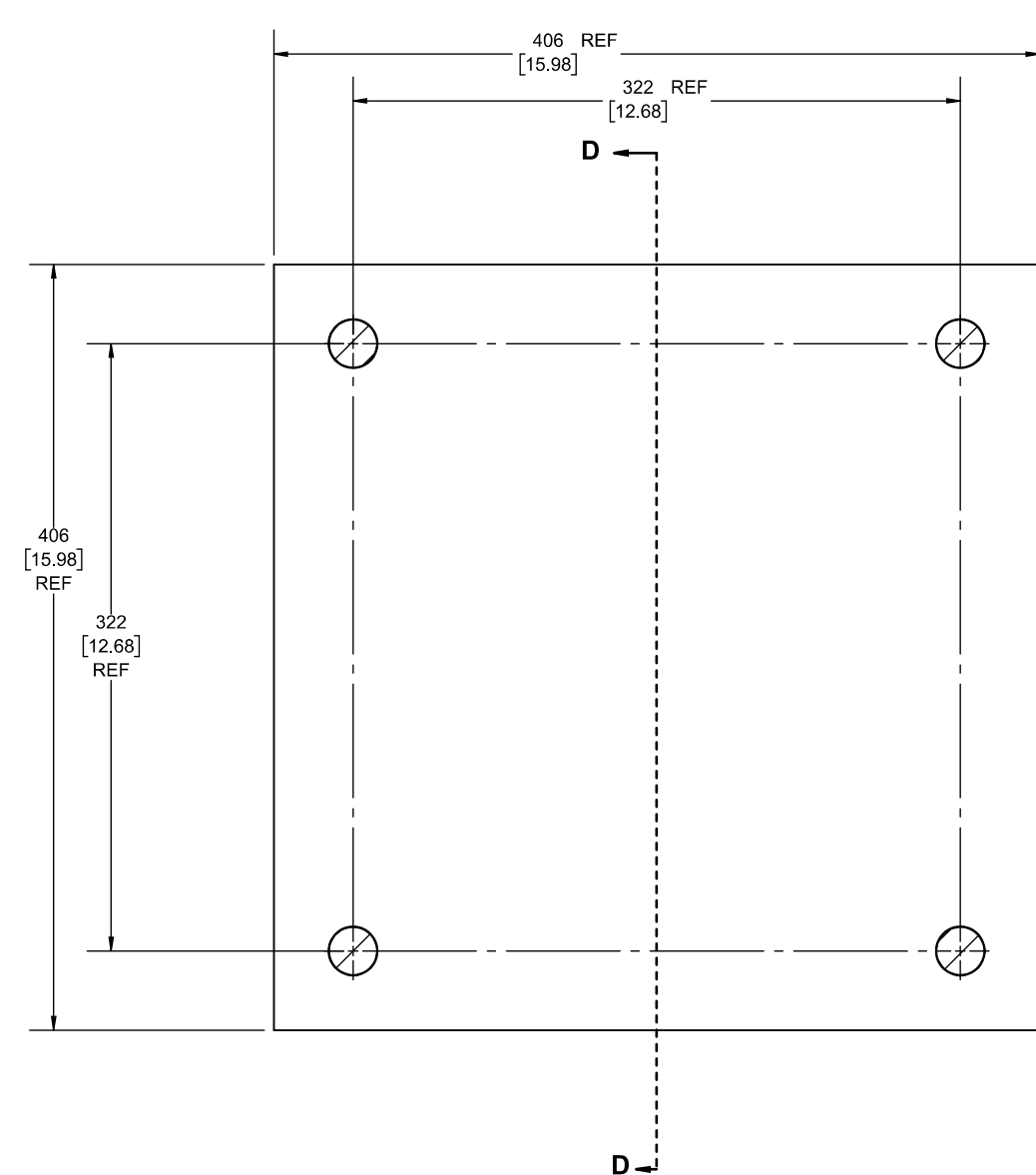
PIVOT



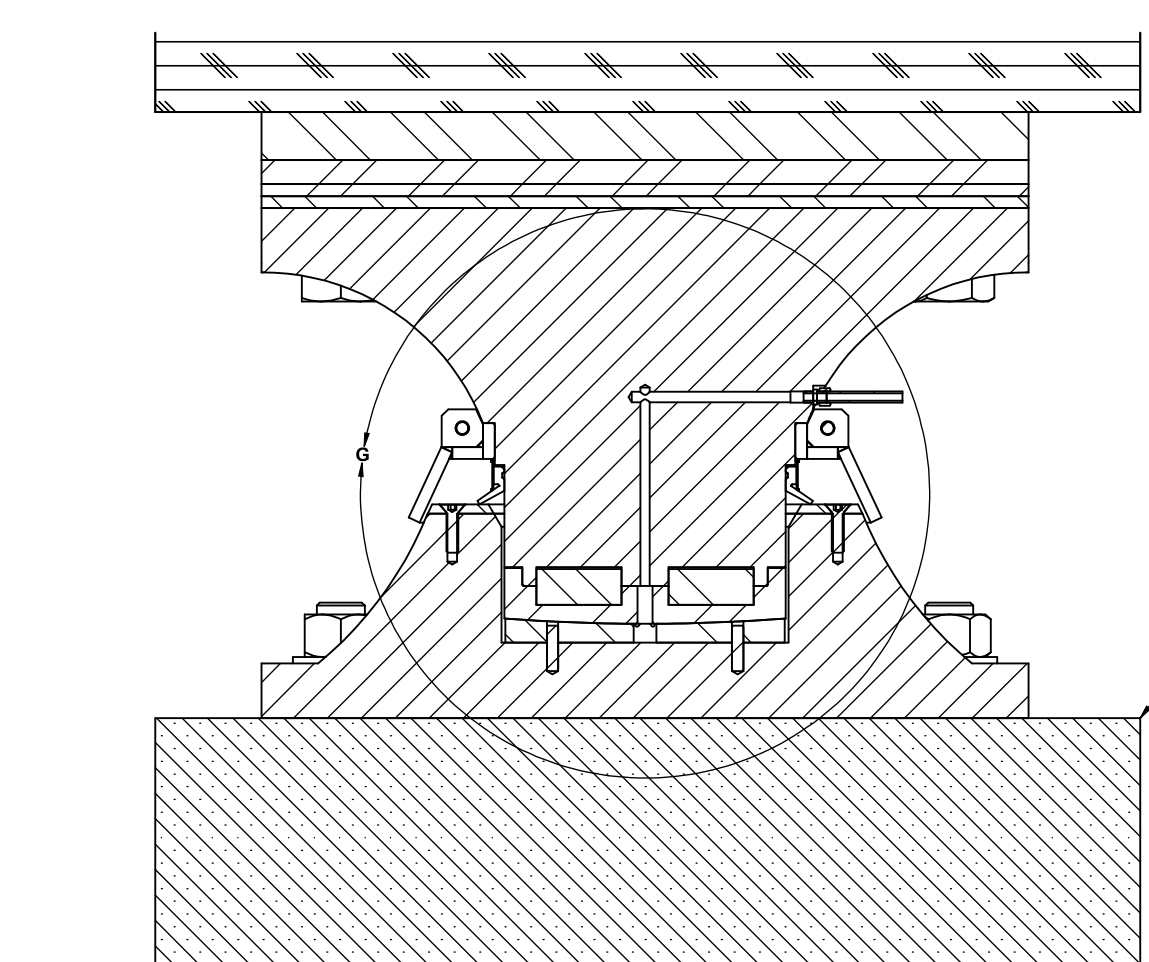
SECTION A-A
SCALE 1 : 20



DETAIL B
SCALE 1 : 4

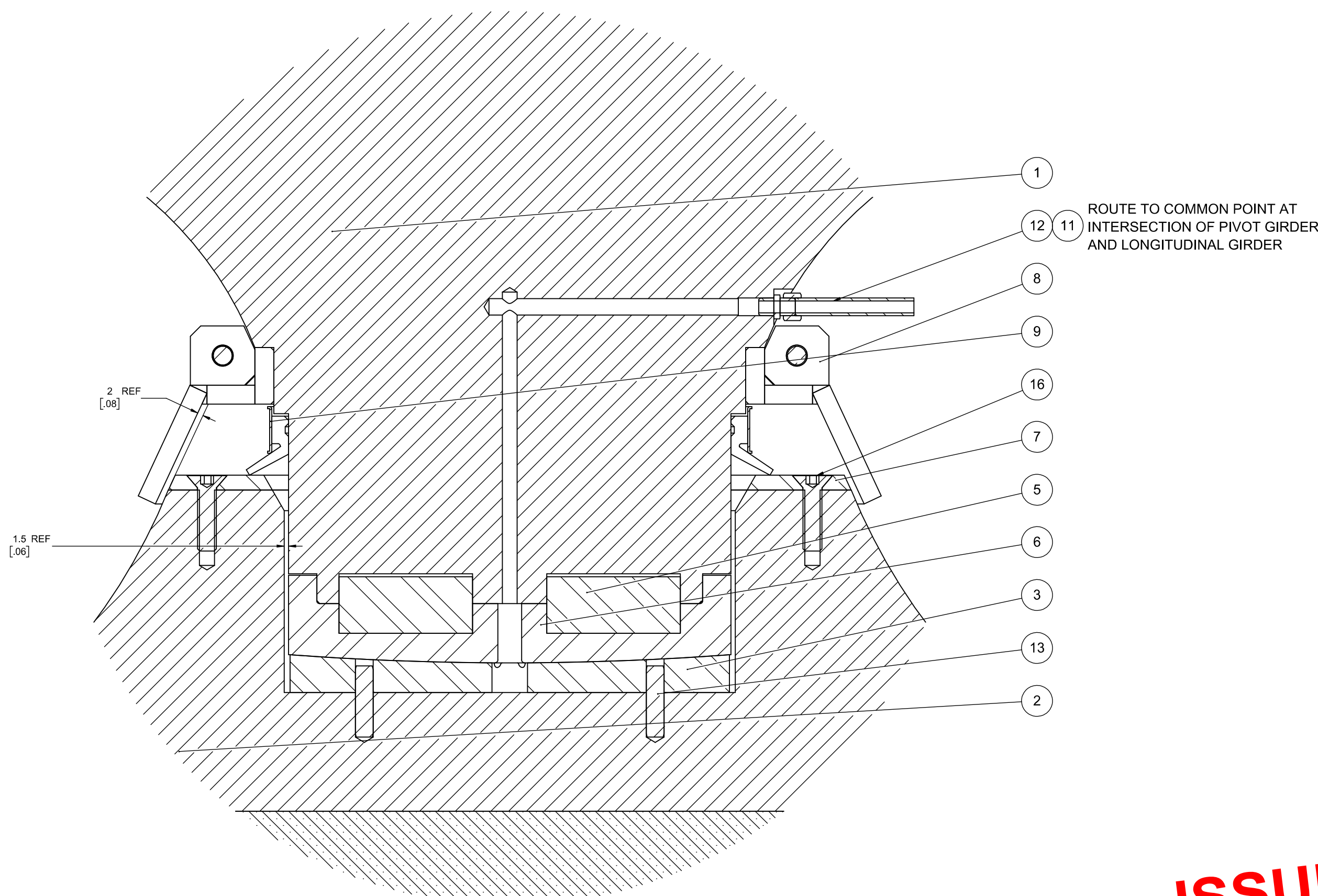


SECTION C-C
SCALE 1 : 4



SECTION D-D
SCALE 1 : 4

REFER TO STRUCTURAL DRAWINGS FOR DETAILS ON CONCRETE AND GROUT.



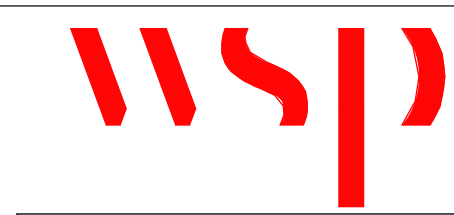
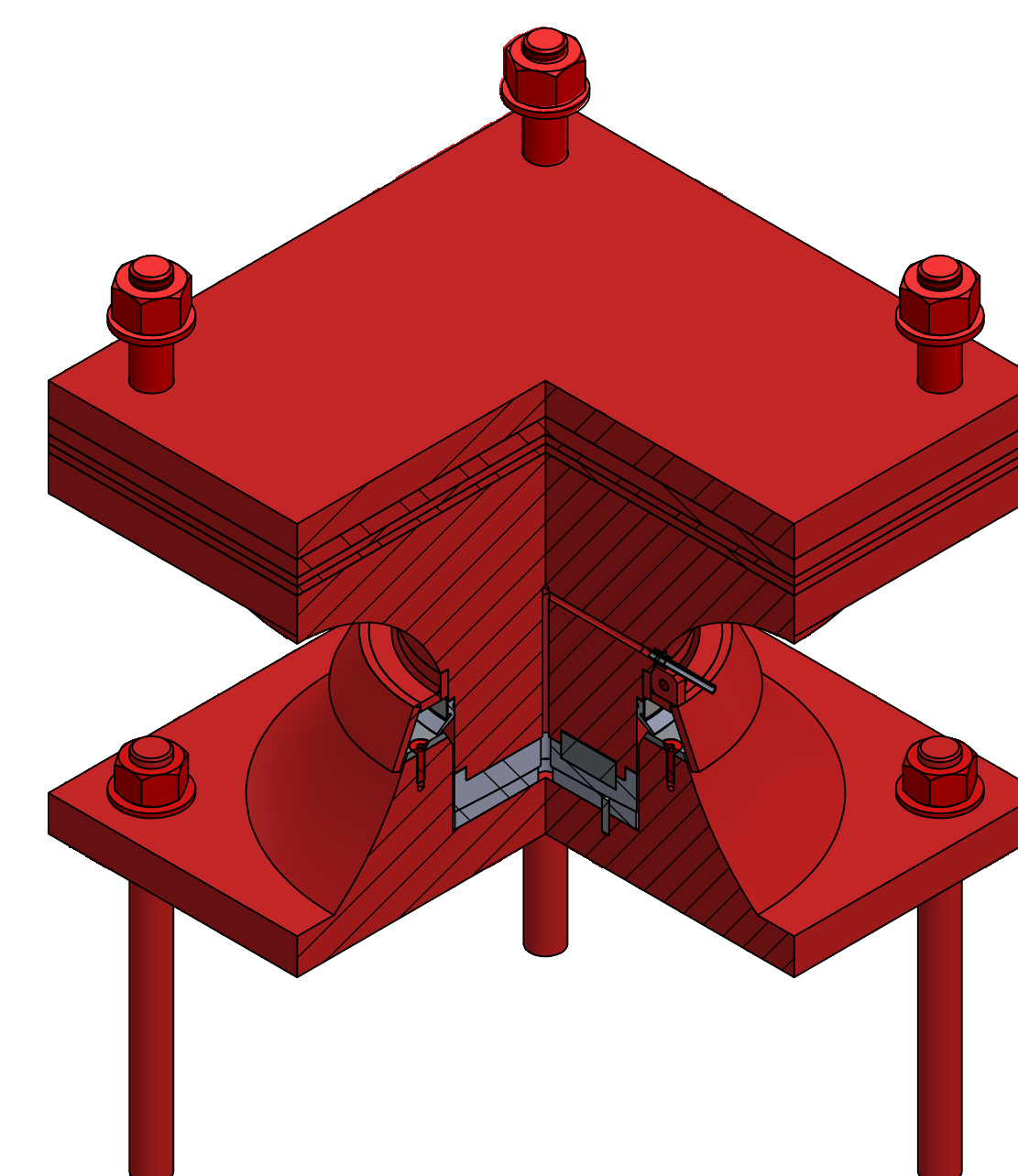
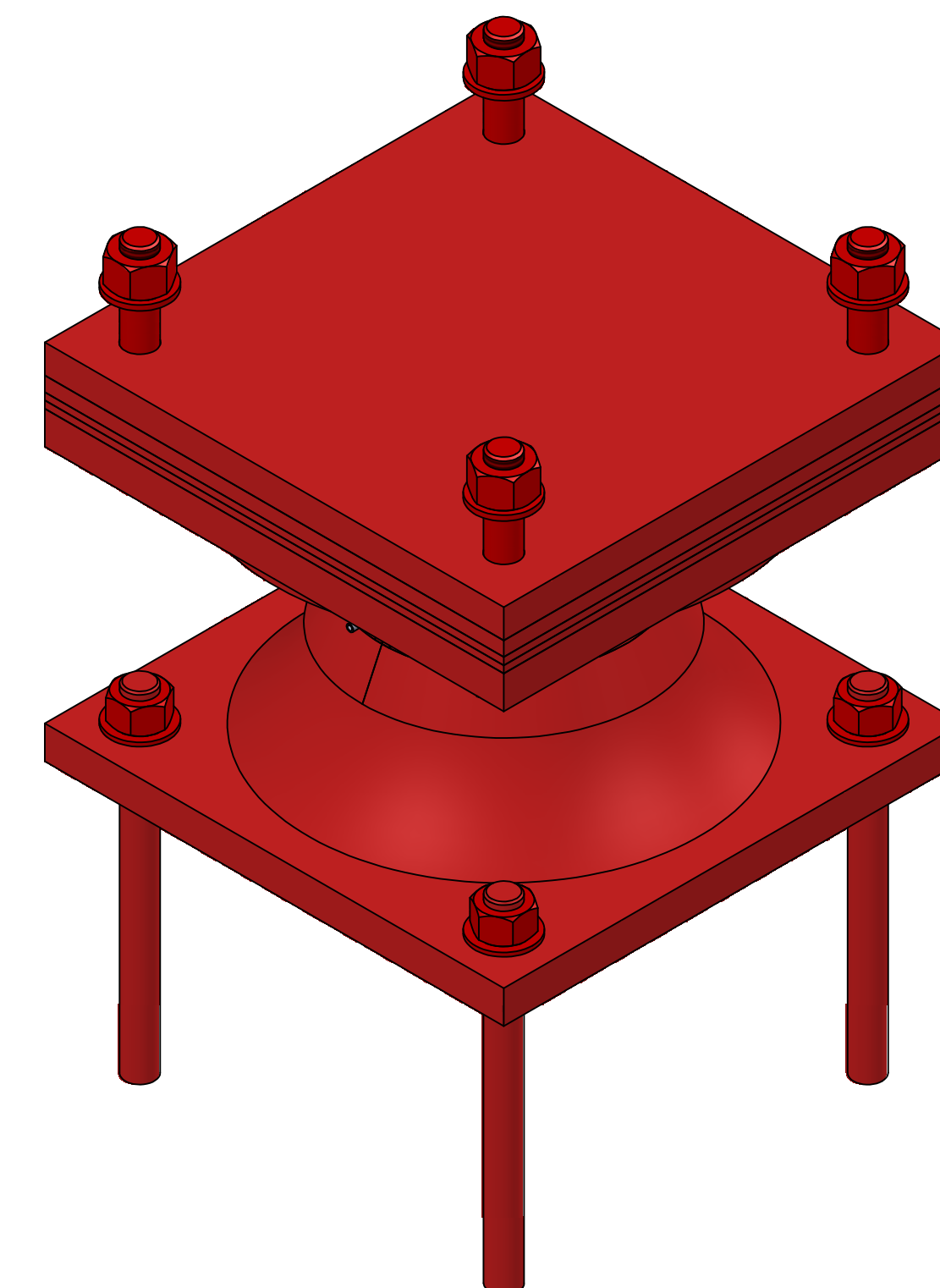
DETAIL G
SCALE 3 : 4

ROUTE TO COMMON POINT AT INTERSECTION OF PIVOT GIRDER AND LONGITUDINAL GIRDER

ITEM NO.	QTY.	DESCRIPTION	MATERIAL	WEIGHT (KG)
1	1	MODIFIED PIVOT TOP	GRAY CAST IRON	75.7
2	1	MODIFIED PIVOT BOTTOM	GRAY CAST IRON	60.1
3	1	BOTTOM BEARING DISC	ASTM B148 C9500	1.7
4	1	SHIM PACK	ASTM A240/A240M TYPE 316	66.1
5	2	SHEAR KEY	ASTM A240/A240M TYPE 316	0.1
6	1	TOP BEARING DISC	ASTM A693 TYPE 630 CONDITION A	2.8
7	2	SEAL INTERFACE PLATE	ASTM A240/A240M TYPE 316	0.4
8	2	SPLIT DEBRIS SHIELD	ASTM A240/A240M TYPE 316	1.3
9	1	GARLOCK KLOZURE 144W2 SPLIT TYPE FACE SEAL EXCLUDER RING	NBR 80 DUREOMETER	0.1
10	4	ANCHOR BOLT Ø 1" - 8UNC	AISI TYPE 316 ASTM F593 CW2	1.2
11	1	6mm GREASE ADAPTER	ASTM A240/A240M TYPE 316	
12	1	6mm COPPER TUBE	COPPER	
13	2	6mm x 24mm HARDENED STEEL DOWEL	STEEL	
14	4	HEAVY HEX STRUCTURAL BOLT, 1" X 6.5 LG	ASTM A325/A325M GR. C. GALV	
15	2	HEX HEAD CAP SCREW 1/4-20 UNC x 1 LG. PARTIAL THREAD	A4 (316) ASTM F893 GR. 2	
16	12	SOCKET HEX COUNTERSUNK HEAD CAP SCREW 1/4-20 UNC x 1" LG. FULL THREAD	A4 (316) ASTM F879 GR. 2	
17	4	NARROW FLAT WASHER 1/4", TYPE A	A4 (316) ASTM A240/A240M	
18	4	NARROW FLAT WASHER 1", TYPE A	A4 (316) ASTM A240/A240M	
19	8	STRUCTURAL WASHER, 1"	ASTM F436, TYPE 1, GALV	
20	2	SPRING LOCK WASHER 1/4", REGULAR	A4 (316) ASTM A240/A240M	
21	2	HEX NUT 1/4-20 UNC	A4 (316) ASTM F594	
22	4	HEAVY HEX STRUCTURAL NUT, 1-8 UNC	ASTM A563/A563M GR DH, GALV	
23	4	HEX NUT 1-8 UNC	A4 (316) ASTM F594F594M	

NOTES:

- SEE DRAWING M01 FOR FURTHER DETAILS APPLICABLE TO THIS ASSEMBLY.
- REFER TO DRAWING M03 FOR PART DETAILS.
- SEE SPECIFICATION SECTION 13 10 00 FOR FURTHER DETAILS APPLICABLE TO THIS DRAWING.
- CONTRACTOR SHALL CLEAN SPHERICAL SURFACES OF BOTH DISCS AND COAT THEM WITH OIL IMMEDIATELY PRIOR TO LOWERING TWO HALVES OF BEARING TOGETHER.
- SHOP ASSEMBLE AND TEST PRIOR TO INSTALLATION ON SITE.
- ADJUST NOMINAL SHIM VALUE TO MEET BRIDGE ELEVATION AND END LIFT LOAD REQUIREMENTS.
- CONTRACTOR TO SIZE ANCHOR LENGTH TO SUIT APPLICATION REQUIREMENTS.



Chadwick Engineering Ltd.
www.chadwickengineering.com



REVISION	DATE
2	ISSUED FOR TENDER 2021-10-29
1	ISSUED FOR REVIEW 2021-08-06

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

Detail No.	No. du detail
A	drawing no. - where detail required
B	dessin no. - ou detail exige
C	drawing no. - where detailed
	dessin no. - ou detaille

project title
titre du projet
Ontario
LOWER BREWERS SWING BRIDGE REHABILITATION

drawing title
titre du dessin
PIVOT BEARING ARRANGEMENT

drawn by
dessine par
MJB

designed by
conc par
DAF

approved by
approuve par
DPC

bid offer
offre
TYLER ATKINSON project manager
administrateur de projets

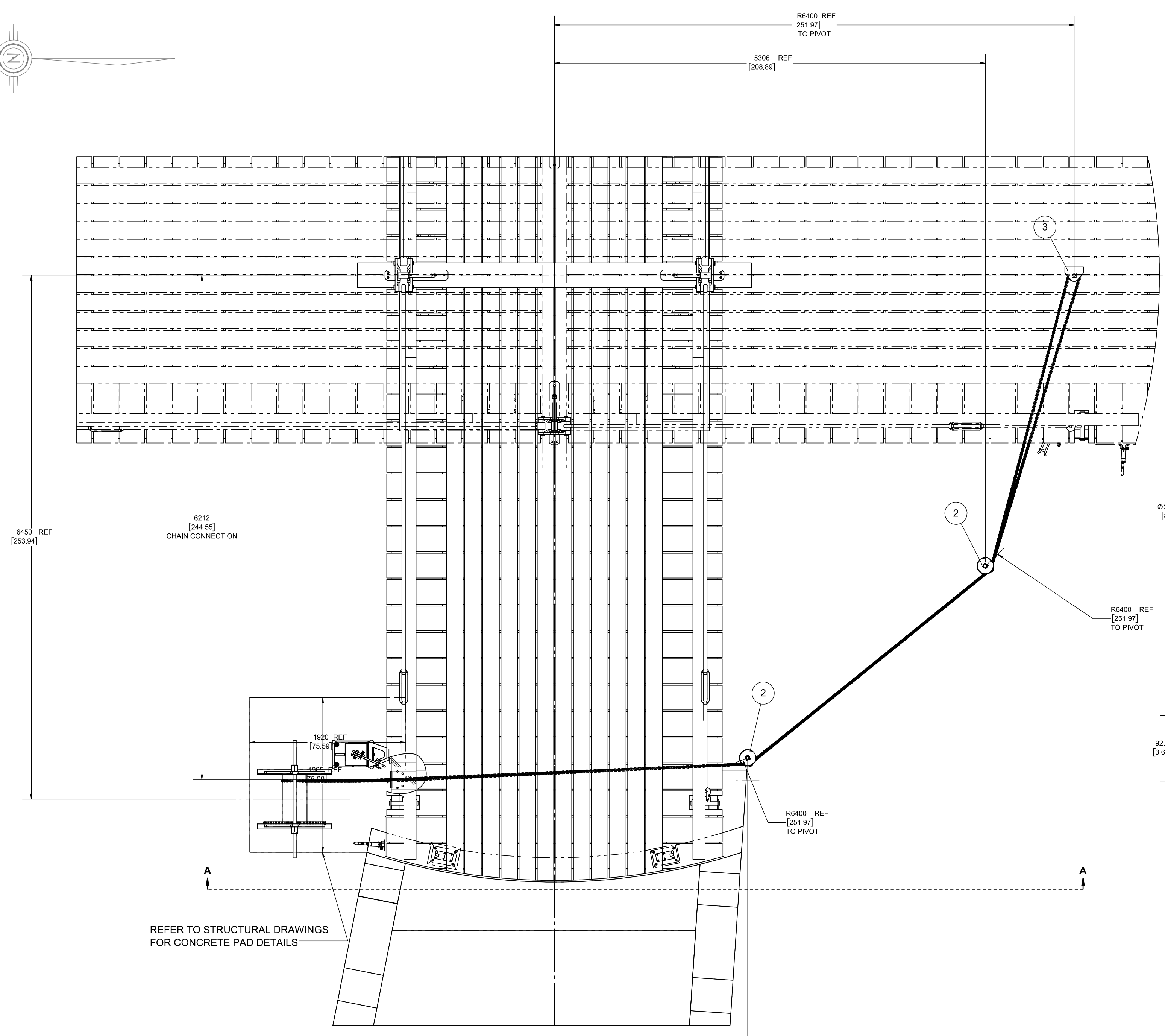
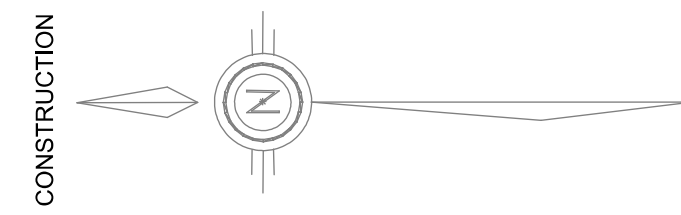
project date
date du projet
2021-10-29

project no.
no. du projet
30037015

drawing no.
dessine no.
M02

ISSUED FOR TENDER
OCTOBER 29, 2021

DEFAULT TOLERANCES	
1. ALL DIMENSIONS ARE IN MILLIMETERS.	
2. TOLERANCES:	
X.	DECIMALS ± 0.5
XX	DECIMALS ± 0.1
XXX	DECIMALS ± 0.05
	ANGLES ± 0.5°
	HOLE SIZES ± 1mm
	SURFACES ± 3.2 µm



- NOTES:**
- SEE DRAWING M01 FOR FURTHER DETAILS APPLICABLE TO THIS ASSEMBLY.
 - SEE SPECIFICATION SECTION 13 10 00 FOR FURTHER DETAILS APPLICABLE TO THIS DRAWING.
 - CONTRACTOR TO SIZE ANCHOR LENGTH TO SUIT APPLICATION REQUIREMENTS.
 - IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL DIMENSIONS, DETAILS AND ELEVATIONS OF THE PULLEYS AND CHAIN CRAB. ANY DISCREPANCIES SHALL BE REPORTED TO THE DEPARTMENTAL REPRESENTATIVE AND THE PROPOSED ADJUSTMENT OF THE WORK REQUIRED TO MATCH THE EXISTING STRUCTURE SHALL BE SUBMITTED FOR APPROVAL.
 - CONTRACTOR TO REMOVE AND REINSTALL PULLEYS WITHOUT DAMAGE TO ANCHORS OR FOUNDATIONS. UPON REMOVAL, CONTRACTOR SHALL INSPECT FOUNDATIONS AND ANCHORS AND PROVIDE RECOMMENDATIONS TO THE DEPARTMENTAL REPRESENTATIVE REGARDING REUSE OR REFURBISHMENT.
 - HEIGHT OF BRACKET TO BE CONFIRMED BASED ON FIELD MEASUREMENTS TO EXISTING PULLEY ELEVATIONS.

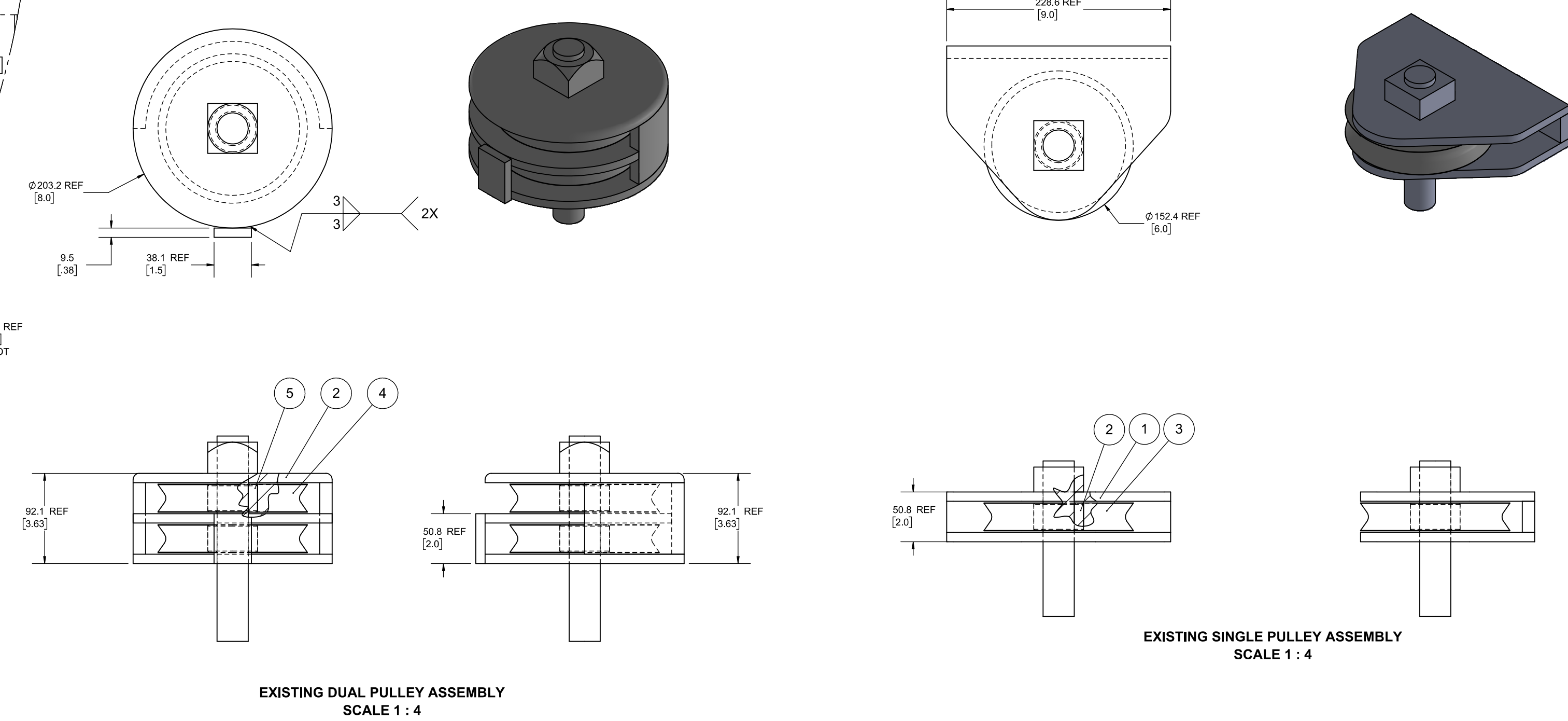
ITEM NO.	QTY.	DESCRIPTION	MATERIAL	WEIGHT (KG)
1	1	EXISTING CHAIN CRAB	GRAY CAST IRON	145.3
2	2	CAST DUAL PULLEY HOUSING	GRAY CAST IRON	9.9
3	1	CAST SINGLE PULLEY HOUSING	GRAY CAST IRON	6.1
4	5	CHAIN PULLEY	ASTM A564/A564M TYPE 630 COND H1150	3.2
5	5	PULLEY BUSHING	CS1100 ASTM B22	0.3
6	1	CHAIN CONNECTION BRACKET	ASTM A240/A240M TYPE 316	11.9
7	1096	CHAIN LINK M10 (3/8), 3,500 LB CAPACITY	ASTM A240/A240M TYPE 316	0.1
8	2	SCREW PIN SHACKLE	ASTM A240/A240M TYPE 316	
9	8	HEX LAG SCREW, 3/4" X 8" LG.	A4 (316) ASTM A240/A240M	
10	8	NARROW FLAT WASHER 3/4", TYPE A	A4 (316) ASTM A240/A240M	

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Heritage Canada and Engineering Works
Région de l'Ontario
Division de l'infrastructure de Parcs Canada
Parcs Canada et travaux d'ingénierie

Parcs Canada

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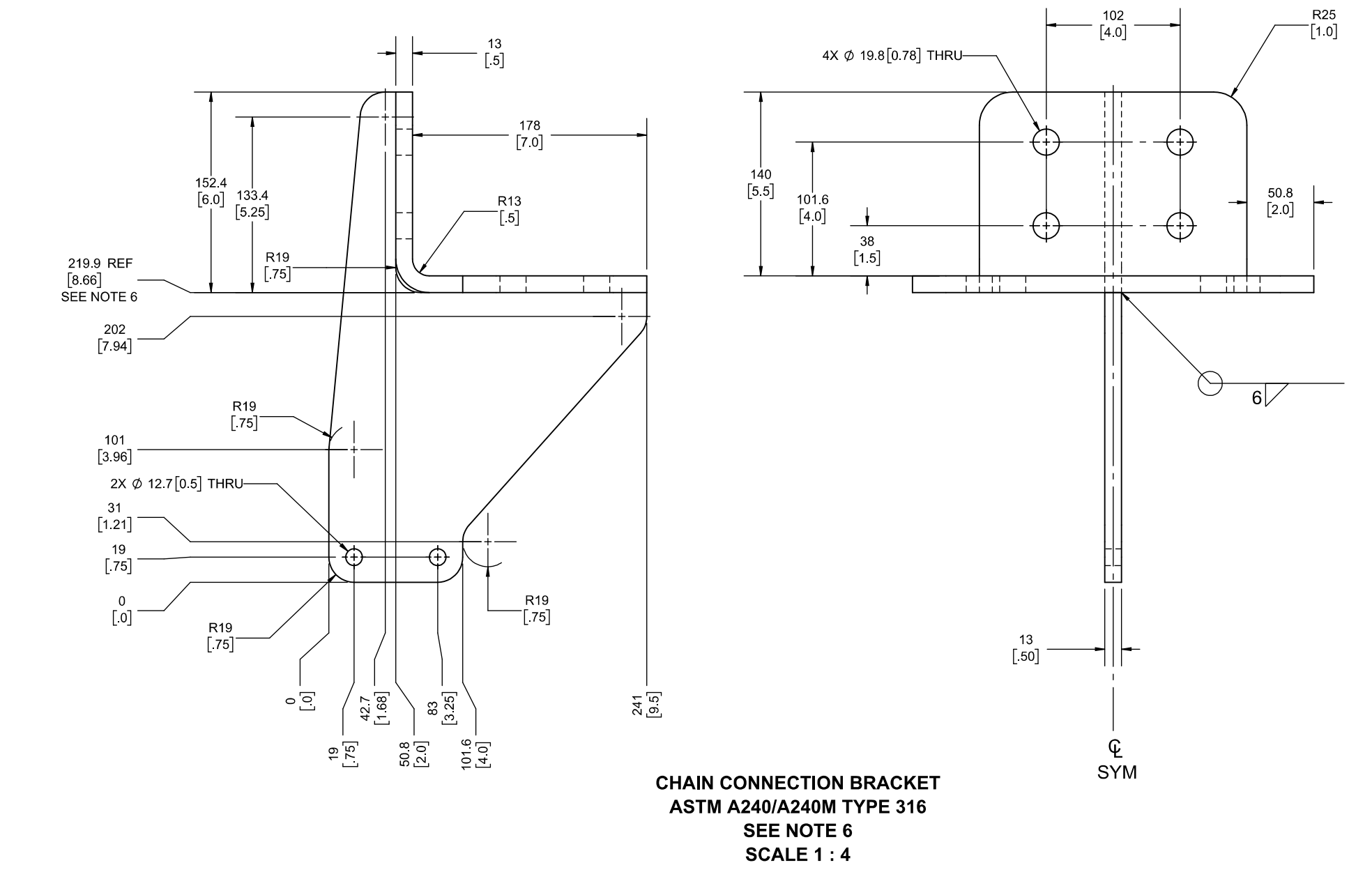
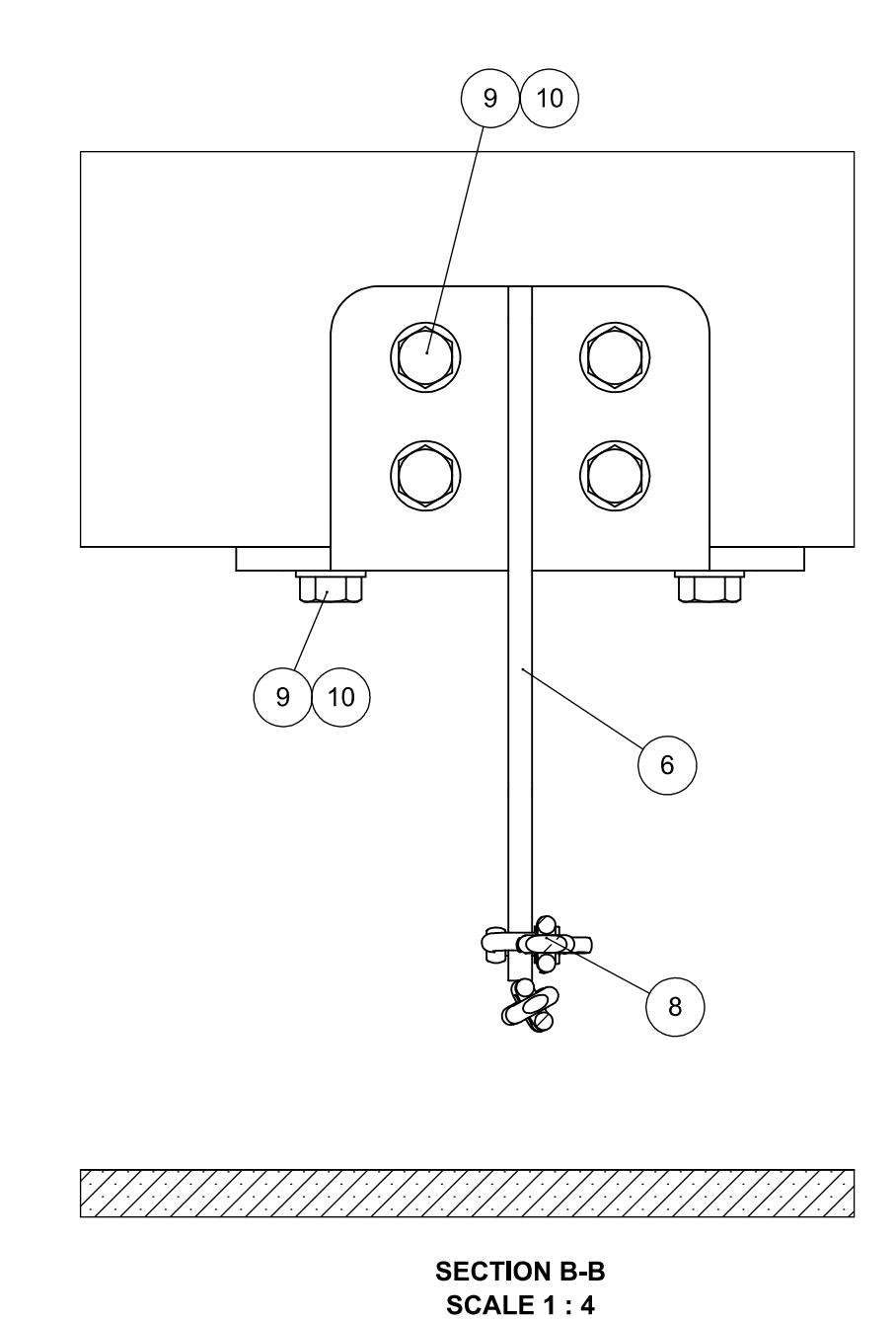
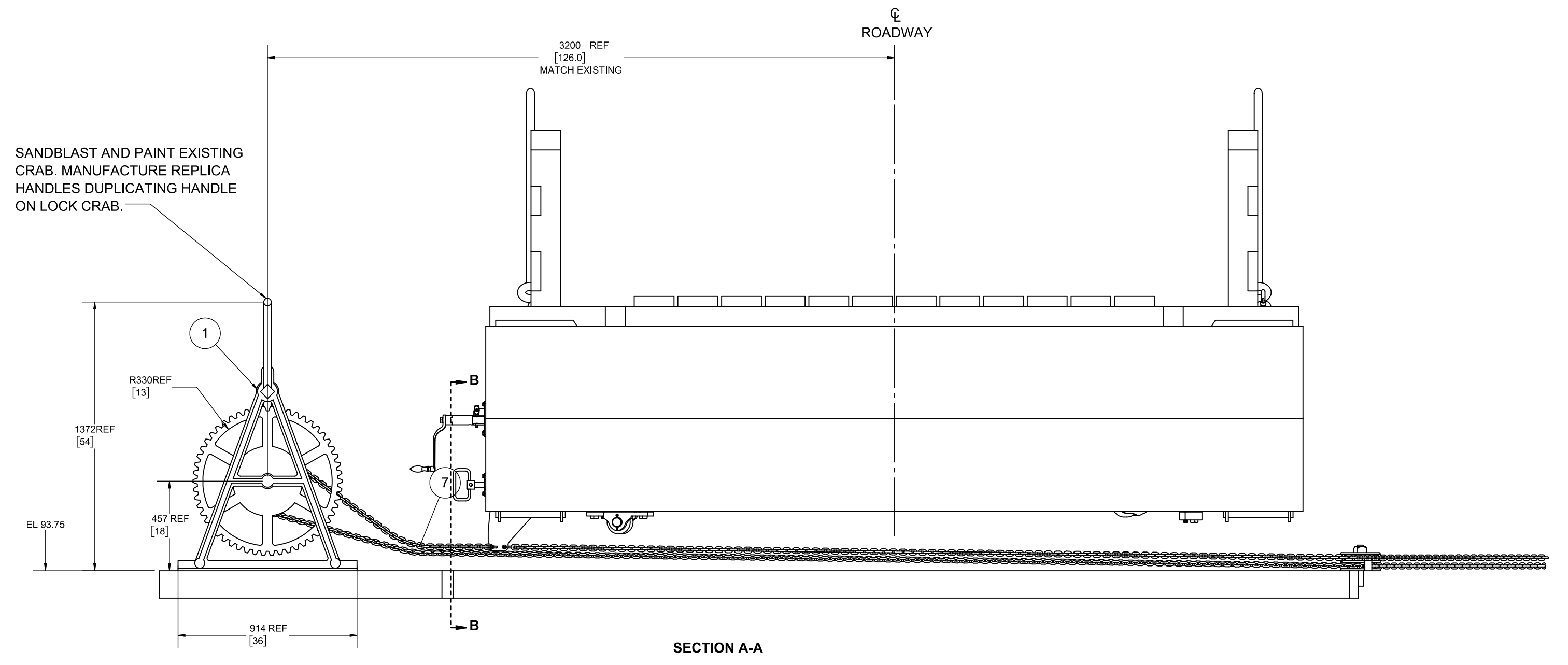
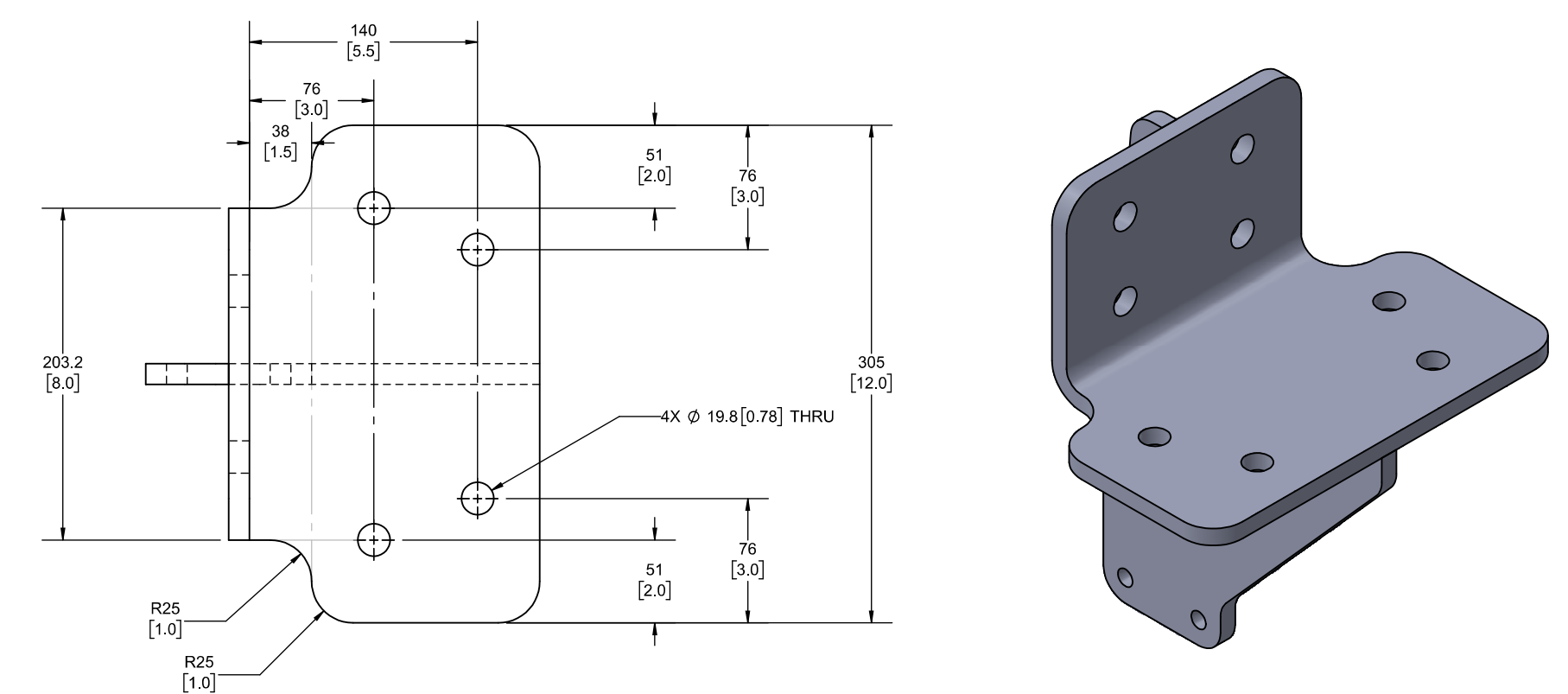


REFER TO STRUCTURAL DRAWINGS FOR CONCRETE PAD DETAILS

SALVAGE MOTOR AND PINION FROM EXISTING CRAB



- REMOVE NUT, INSPECT ANCHOR
- REMOVE CHAIN RETAINER
- INSPECT CONCRETE FOOTING



DEFAULT TOLERANCES

- ALL DIMENSIONS ARE IN MILLIMETERS.
- TOLERANCES:
 - DECIMALS ± 0.5
 - XX DECIMALS ± 0.1
 - XXX DECIMALS ± 0.05
 - ANGLES ± 0.5°
 - HOLE SIZES ± 1mm
 - SURFACES ± 3.2 µm

ISSUED FOR TENDER
OCTOBER 29, 2021

REVISION	DATE	DESCRIPTION
2	2021-10-29	ISSUED FOR TENDER
1	2021-08-06	ISSUED FOR REVIEW

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

Detail No.	No. du détail
A	A
B	B
C	C

project title
titre du projet: **LOWER BREWERS SWING BRIDGE REHABILITATION**

Ontario

drawing title
titre du dessin: **SWING CHAIN AND CRAB ARRANGEMENT & DETAILS**

drawn by / dessiné par: **MJB**

designed by / conçu par: **DAF**

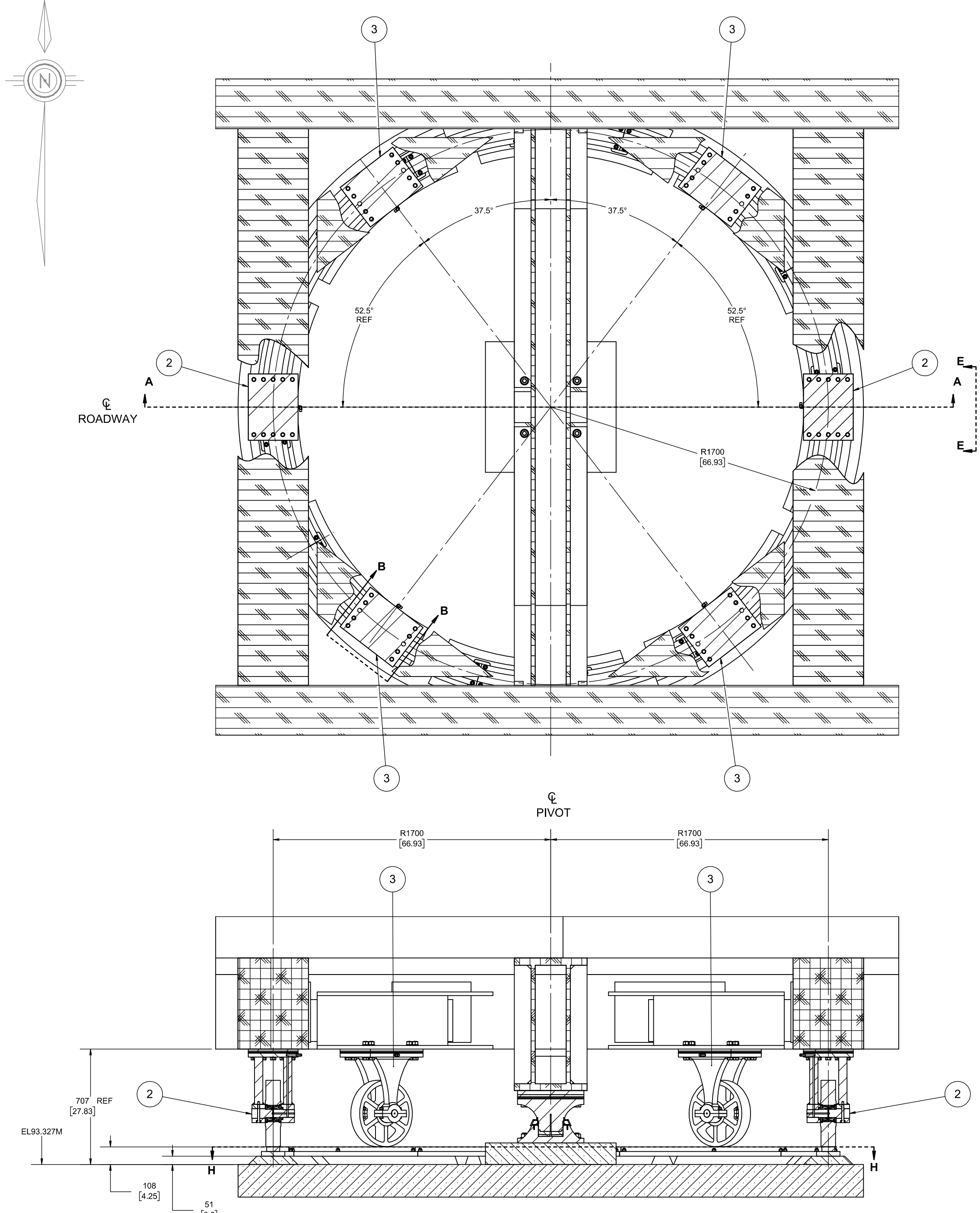
approved by / approuvé par: **DPC**

bid / offre: **TYLER ATKINSON** project manager / administrateur de projets

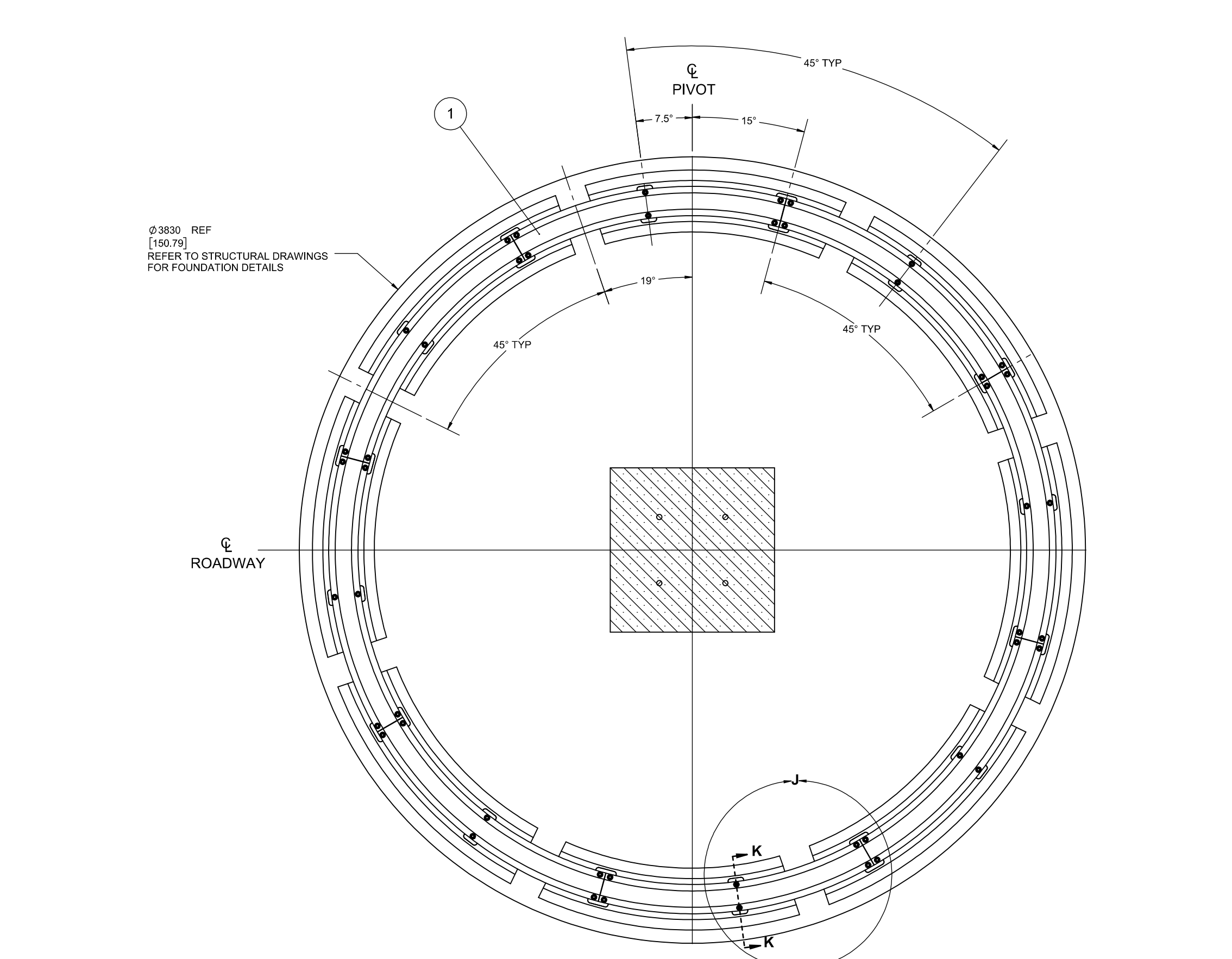
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project no. / no. du projet: **30037015**

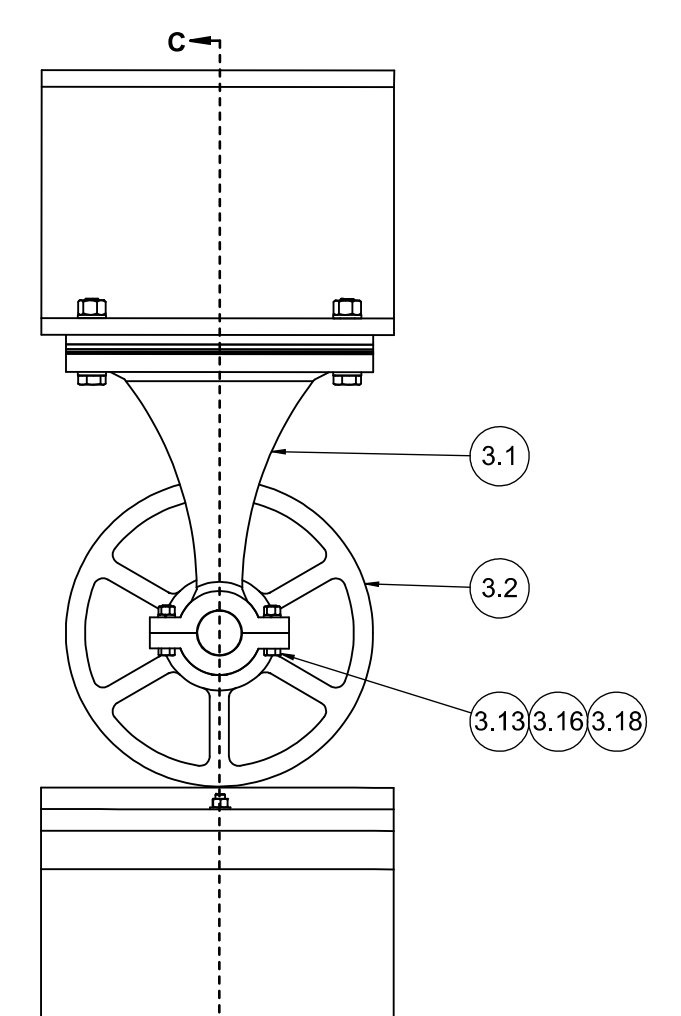
drawing no. / dessiné no.: **M04**



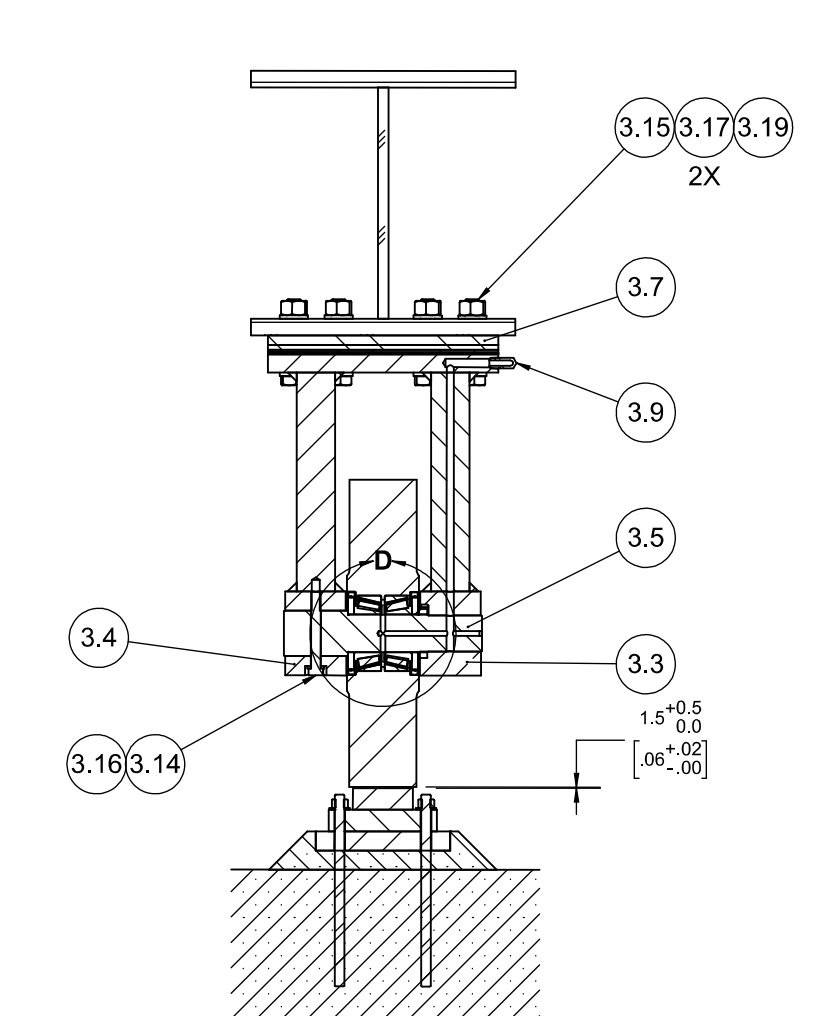
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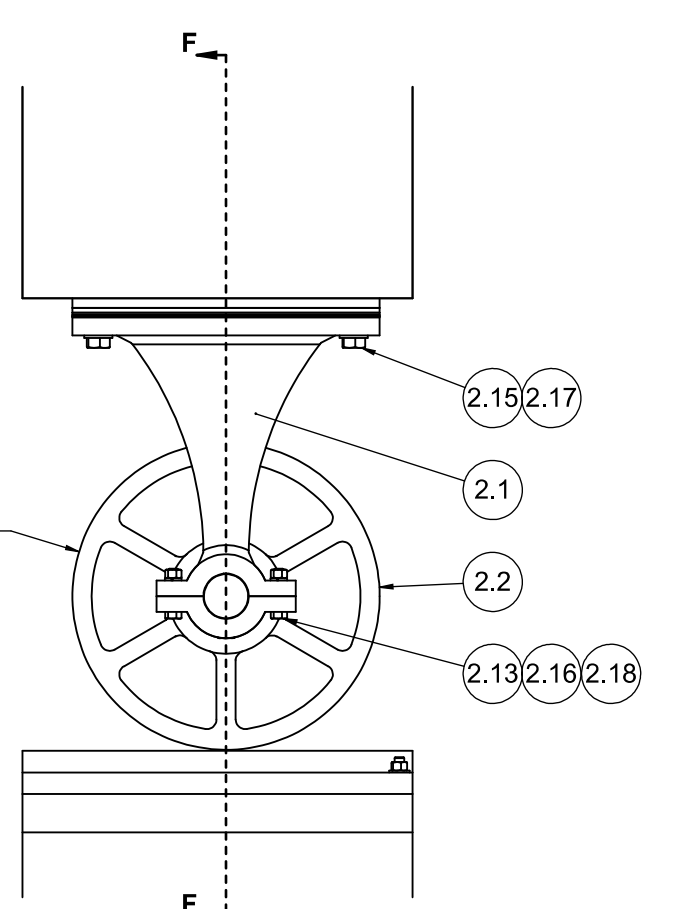
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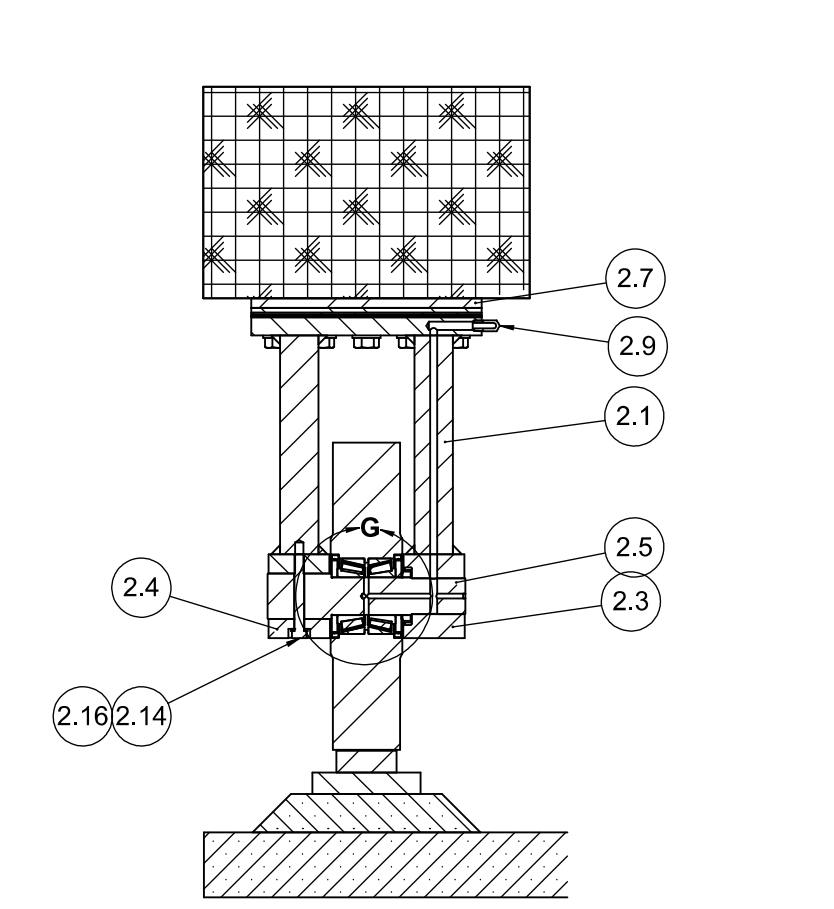
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SCALE 1 : 10



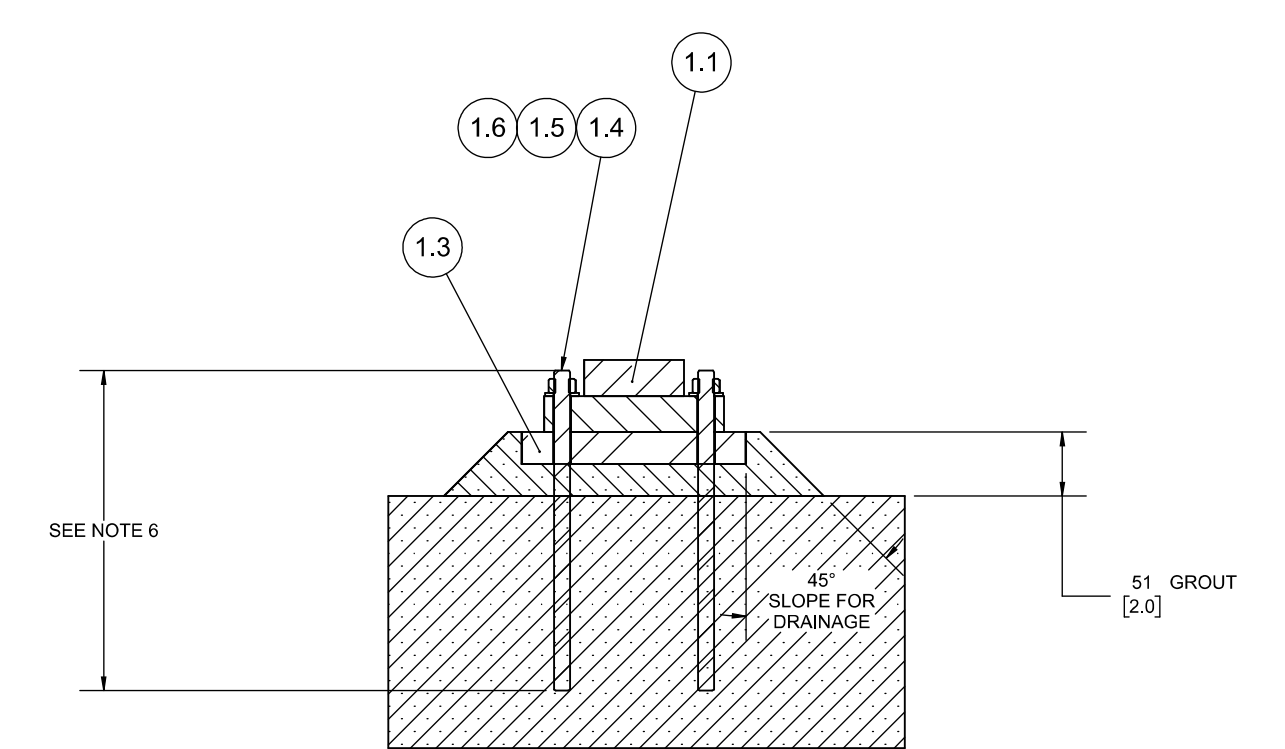
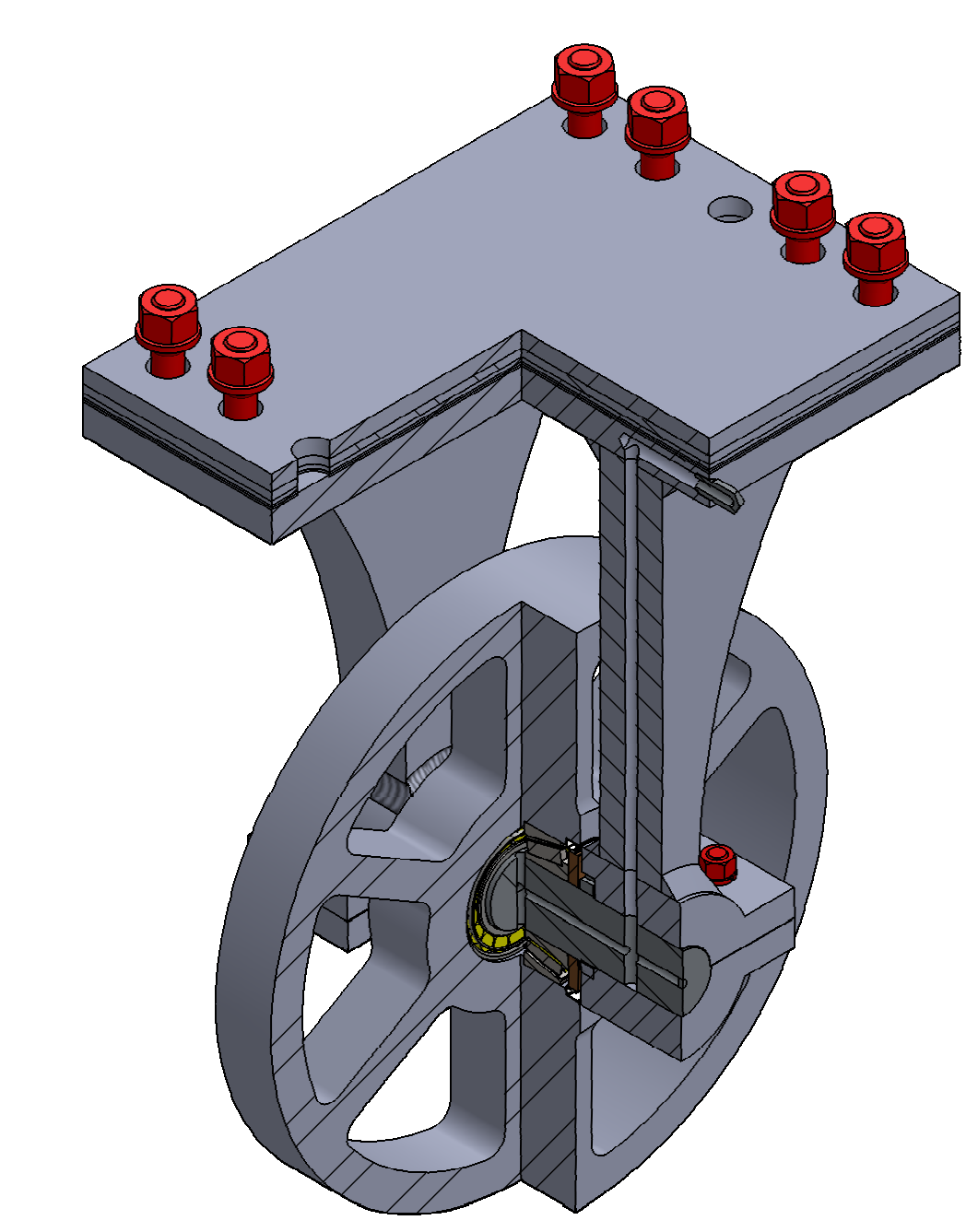
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SCALE 1 : 10



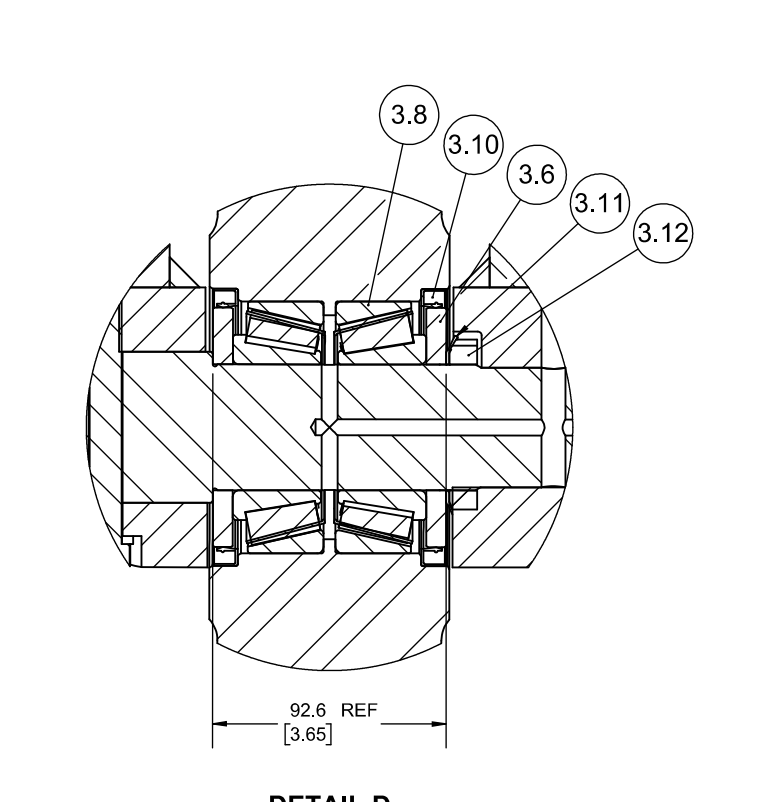
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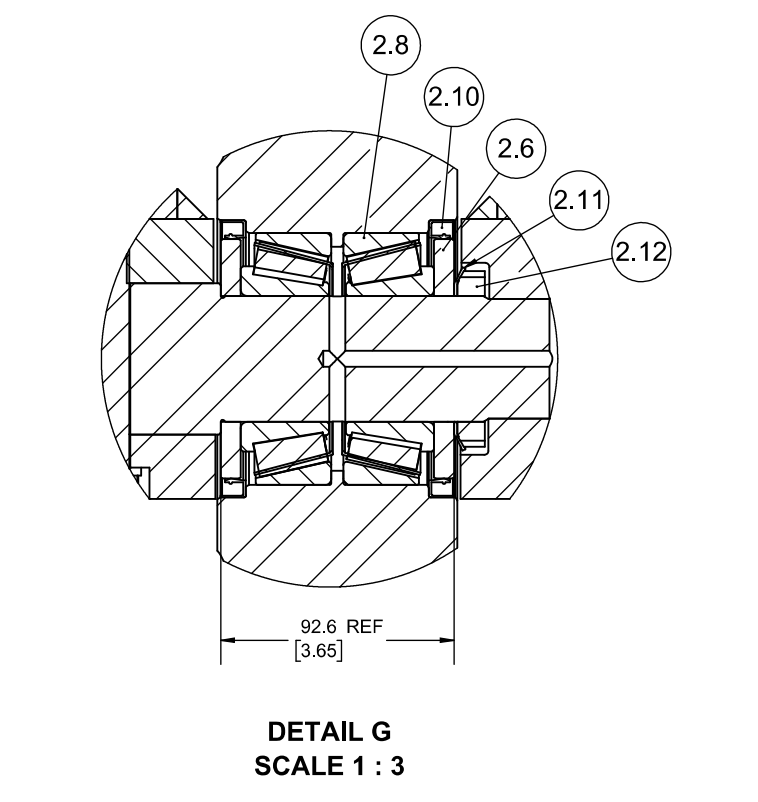
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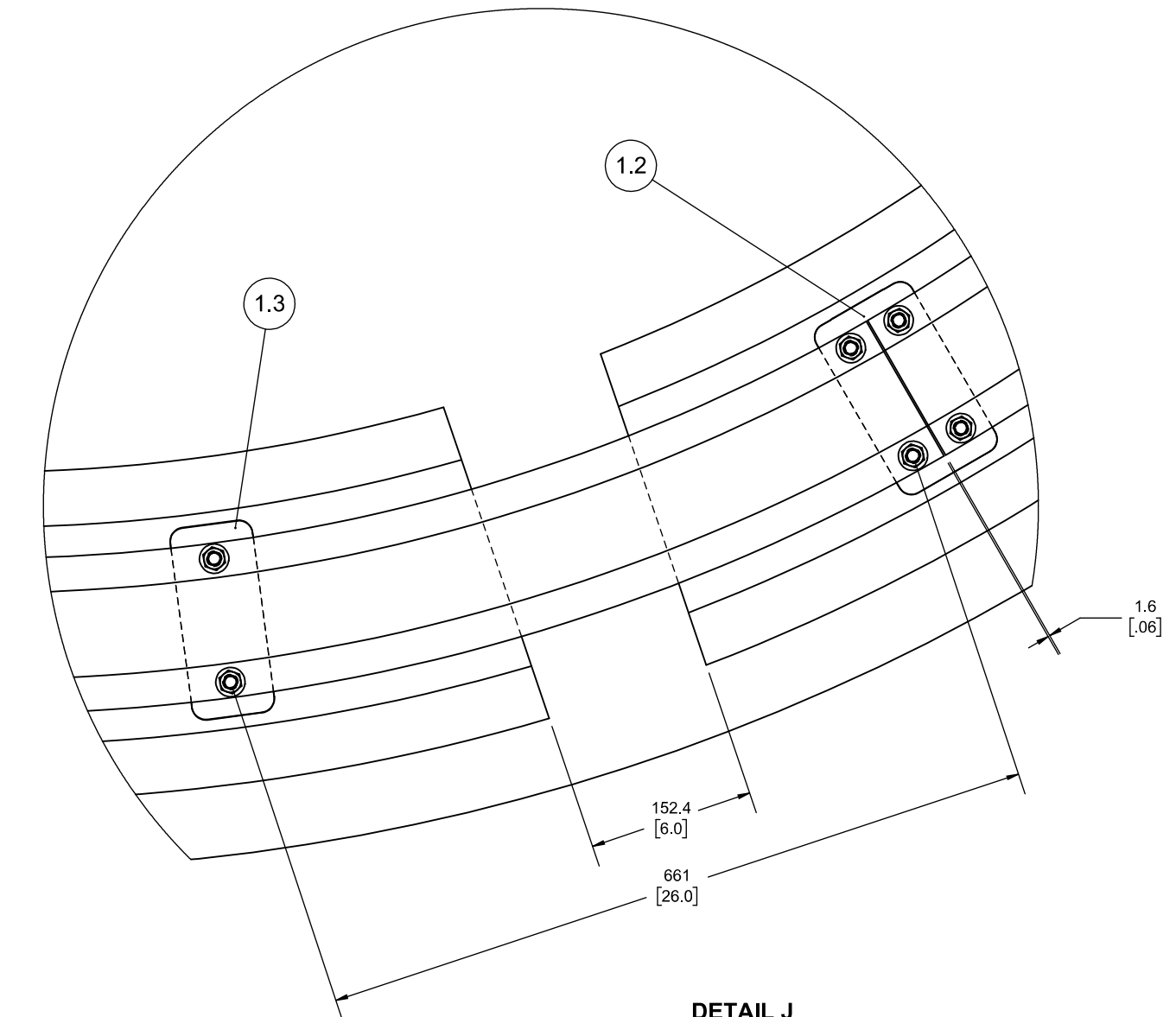
SECTION K-K
SCALE 1 : 6



DETAIL D
SCALE 1 : 3



DETAIL G
SCALE 1 : 3



DETAIL J
SCALE 1 : 6

ITEM NO.	QTY.	DESCRIPTION	MATERIAL	WEIGHT (KG)
1	1	BALANCE RAIL ASSEMBLY		867.0
1.1	8	BALANCE RAIL	ASSI 4140	86.3
1.2	8	RAIL FASTENING PLATE, WIDE	ASTM A240A240M TYPE 316	3.5
1.3	8	RAIL FASTENING PLATE	ASTM A240A240M TYPE 316	2.7
1.4	48	THREADED ROD ANCHOR 1/2"	ASSI TYPE 316 ASTM F593 CW2	0.3
1.5	48	NARROW FLAT WASHER 1/2", TYPE A	A4 (316) ASTM A240A240M	
1.6	48	HEX NUT 1/2-13 UNC	A4 (316) ASTM F594 GR. 2	
2	2	LAG SCREW BALANCE WHEEL ASSY		145.1
2.1	1	LAG SCREW CLEVIS	CSA C40.21 44W / 300W	60.3
2.2	1	BALANCE WHEEL	ASTM A564A564M TYPE 630 COND H1150	40.9
2.3	1	CLEVIS CLAMP	ASTM A36A36M	3.3
2.4	1	CLEVIS CLAMP WITH RETAINER	ASTM A36A36M	3.1
2.5	1	ROLLER PIN	ASTM A564A564M TYPE 630 COND H1150	4.4
2.6	2	THRUST WASHER	ASTM B22 C86300	0.8
2.7	1	SHIM PACK	ASTM A240A240M TYPE 316	24.1
2.8	2	TAPERED ROLLER BEARING T2ED-050, OD Ø 100MM, ID Ø 50, 36MM WIDE	STEEL	1.3
2.9	1	BALANCE WHEEL AND RAIL	ASTM A240A240M TYPE 316	0.1
2.10	2	BALANCE WHEEL AND RAIL	NR	
2.11	1	BEARING LOCKWASHER, 50mm, MB 10 SS	ASTM A240A240M TYPE 304	
2.12	1	BEARING LOCKNUT, 50X1.5mm, KM 10 SS	ASTM A240A240M TYPE 304	0.3
2.13	4	HEX HEAD CAP SCREW 1/2-13 UNC X 2.25" LG. PARTIAL THREAD	A4 (316) ASTM F593F593M TYPE 2	
2.14	1	HEX HEAD CAP SCREW 1/2-13 UNC X 4" LG. PARTIAL THREAD	A4 (316) ASTM F593F593M TYPE 2	
2.15	10	3/4" X 7" LAG SCREW	A4 (316) ASTM A240A240M	
2.16	5	SPRING LOCK WASHER 1/2", REGULAR	A4 (316) ASTM A240A240M	
2.17	10	NARROW FLAT WASHER 3/4", TYPE A	A4 (316) ASTM A240A240M	
2.18	4	HEX NUT 1/2-13 UNC	A4 (316) ASTM F594 GR. 2	
3	4	BOLTED BALANCE WHEEL ASSY		144.2
3.1	1	BOLTED CLEVIS	CSA C40.21 44W / 300W	60.4
3.2	1	BALANCE WHEEL	ASTM A564A564M TYPE 630 COND H1150	40.9
3.3	1	CLEVIS CLAMP	ASTM A36A36M	3.5
3.4	1	CLEVIS CLAMP WITH RETAINER	ASTM A36A36M	3.1
3.5	1	ROLLER PIN	ASTM A564A564M TYPE 630 COND H1150	4.4
3.6	2	THRUST WASHER	ASTM B22 C86300	0.8
3.7	1	SHIM PACK	ASTM A240A240M TYPE 316	24.1
3.8	2	TAPERED ROLLER BEARING T2ED-050, OD Ø 100MM, ID Ø 50, 36MM WIDE	STEEL	1.3
3.9	1	BALANCE WHEEL AND RAIL	ASTM A240A240M TYPE 316	0.1
3.10	2	BALANCE WHEEL AND RAIL	NR	
3.11	1	BEARING LOCKWASHER, 50mm, MB 10 SS	ASTM A240A240M TYPE 304	
3.12	1	BEARING LOCKNUT, 50X1.5mm, KM 10 SS	ASTM A240A240M TYPE 304	0.3
3.13	4	HEX HEAD CAP SCREW 1/2-13 UNC X 2.25" LG. PARTIAL THREAD	A4 (316) ASTM F593F593M TYPE 2	
3.14	1	HEX HEAD CAP SCREW 1/2-13 UNC X 4" LG. PARTIAL THREAD	A4 (316) ASTM F593F593M TYPE 2	
3.15	8	HEAVY HEX STRUCTURAL BOLT, 3/4" X 4 LG	ASTM A325, GALV	
3.16	5	SPRING LOCK WASHER 1/2", REGULAR	A4 (316) ASTM A240A240M	
3.17	16	STRUCTURAL WASHER, 3/4"	ASTM F436F436M, GALV	
3.18	4	HEX NUT 1/2-13 UNC	A4 (316) ASTM F594 GR. 2	
3.19	8	HEAVY HEX STRUCTURAL NUT, 3/4-10 UNC	ASTM A303 GR. C, GALV	

NOTES:

- SEE DRAWING M01 FOR FURTHER DETAILS APPLICABLE TO THIS ASSEMBLY.
- REFER TO DRAWING M06 FOR PART DETAILS.
- SEE SPECIFICATION SECTION 13 10 00 FOR FURTHER DETAILS APPLICABLE TO THIS DRAWING.
- SHOP ASSEMBLE AND TEST WHEEL ASSEMBLIES PRIOR TO INSTALLATION ON SITE.
- ADJUST NOMINAL SHIM VALUE TO PROVIDE FOR 1.5-2MM CLEARANCE BETWEEN EACH WHEEL AND RAIL WHEN BRIDGE IS IN CLOSED POSITION AND END LIFTS ARE ENGAGED.
- CONTRACTOR TO SIZE ANCHOR LENGTH TO SUIT APPLICATION REQUIREMENTS.
- ORIENT WHEEL LUBRICATION FITTINGS TOWARDS PIVOT BEARING AND PLUMB WITH COPPER TUBES TO COMMON LUBRICATION POINT AT INTERSECTION OF PIVOT AND LONGITUDINAL GIRDERS.
- COORDINATE HOLES AND SUPPORT WITH SPAN STRUCTURE.
- MOUNT ON SPAN LOADING GIRDER, Laterally Centred, COORDINATE HOLES WITH SPAN STRUCTURE.
- SHIM RAIL UNDERNEATH FASTENING PLATES TO ELEVATION INDICATED, TORQUE ANCHOR NUTS AND GROUT AS SHOWN ENSURING FULL BEARING CONTACT UNDERNEATH FASTENING PLATES AND RAIL.

2	ISSUED FOR TENDER	2021-10-29
1	ISSUED FOR REVIEW	2021-08-06
REVISION		DATE

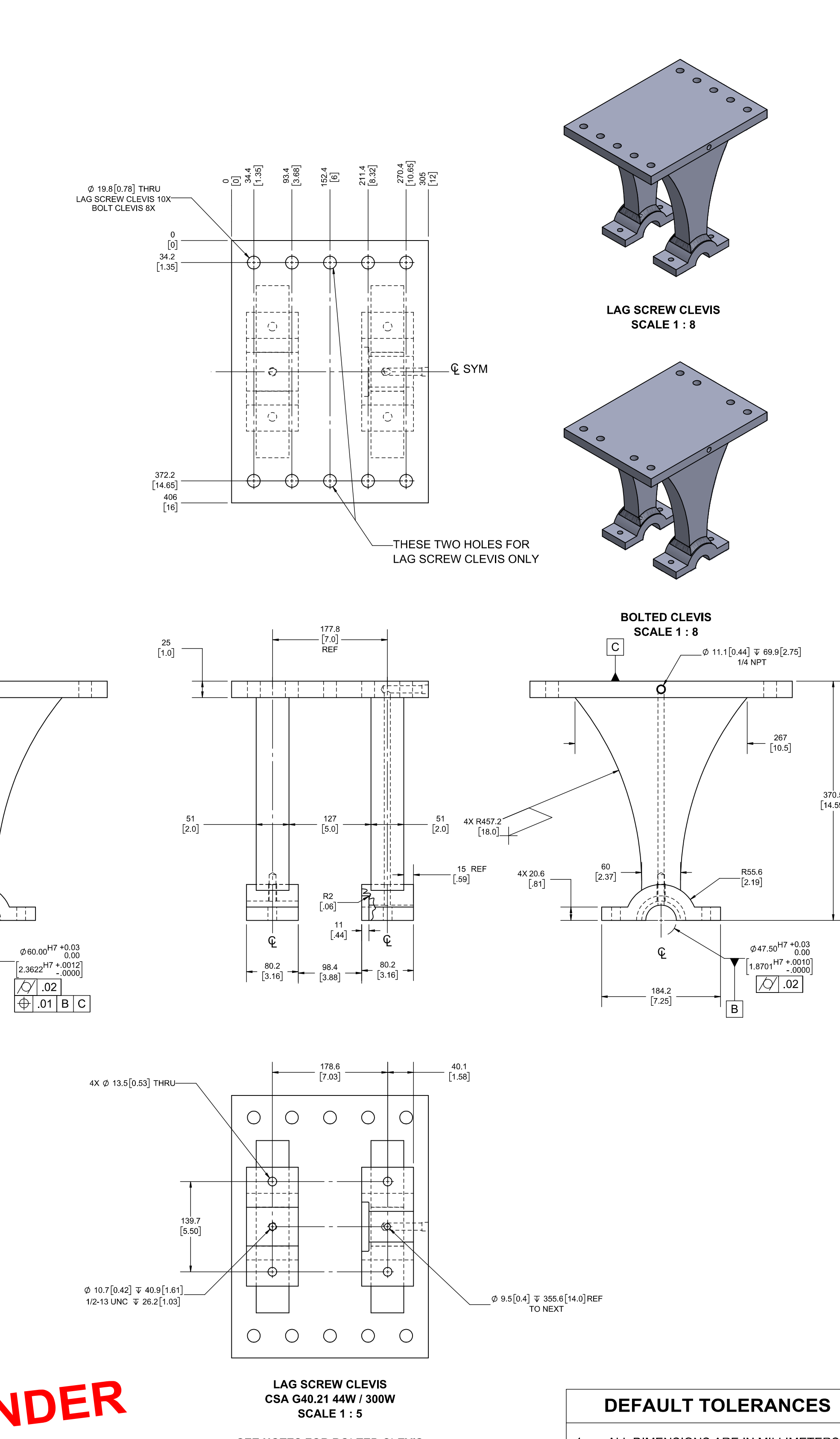
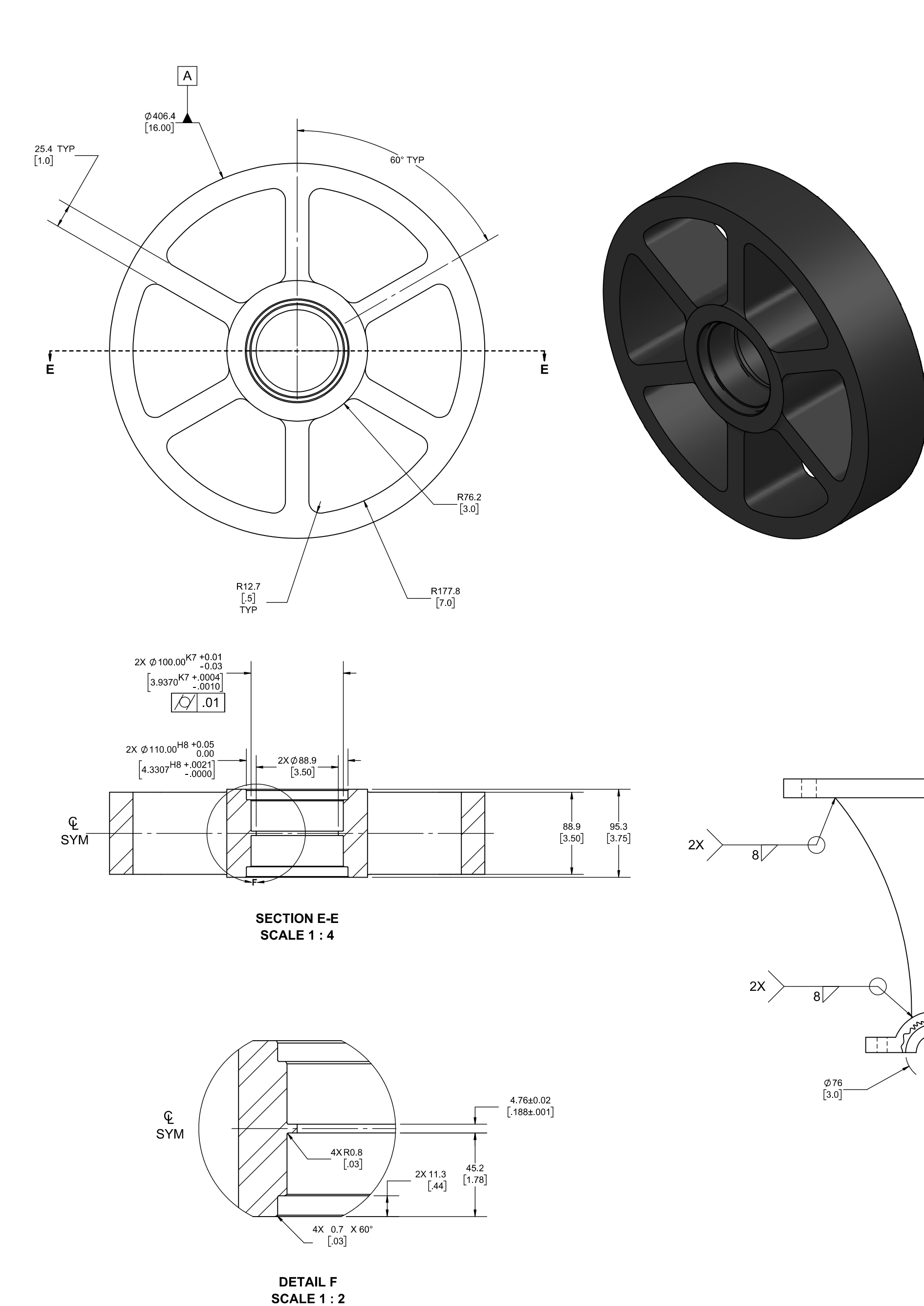
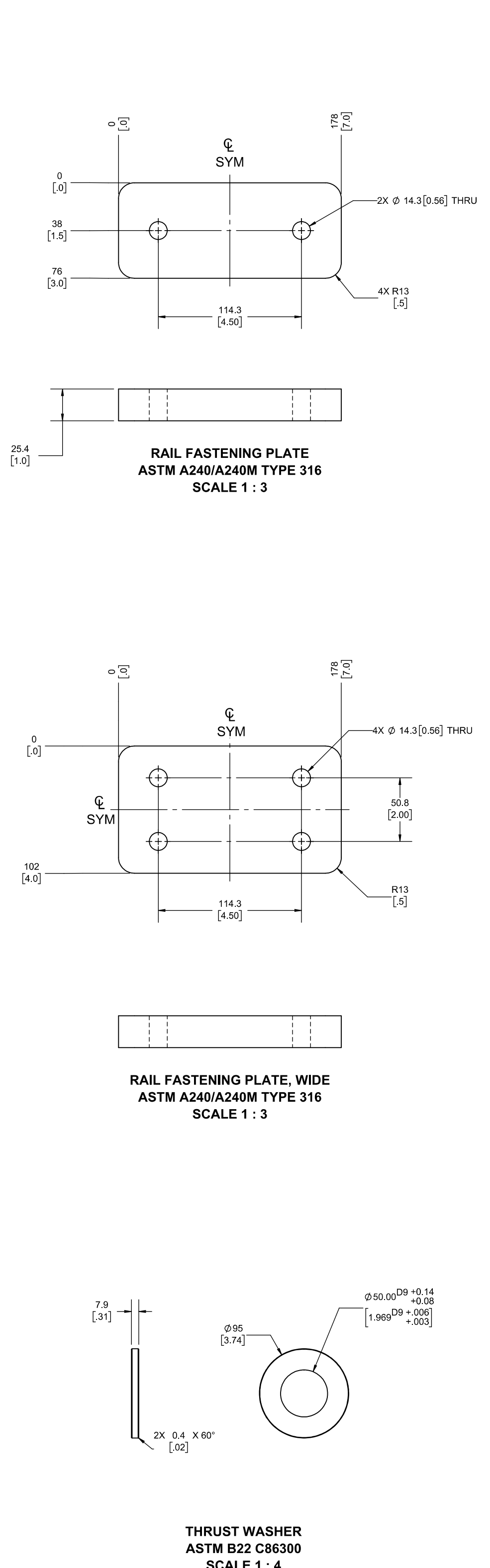
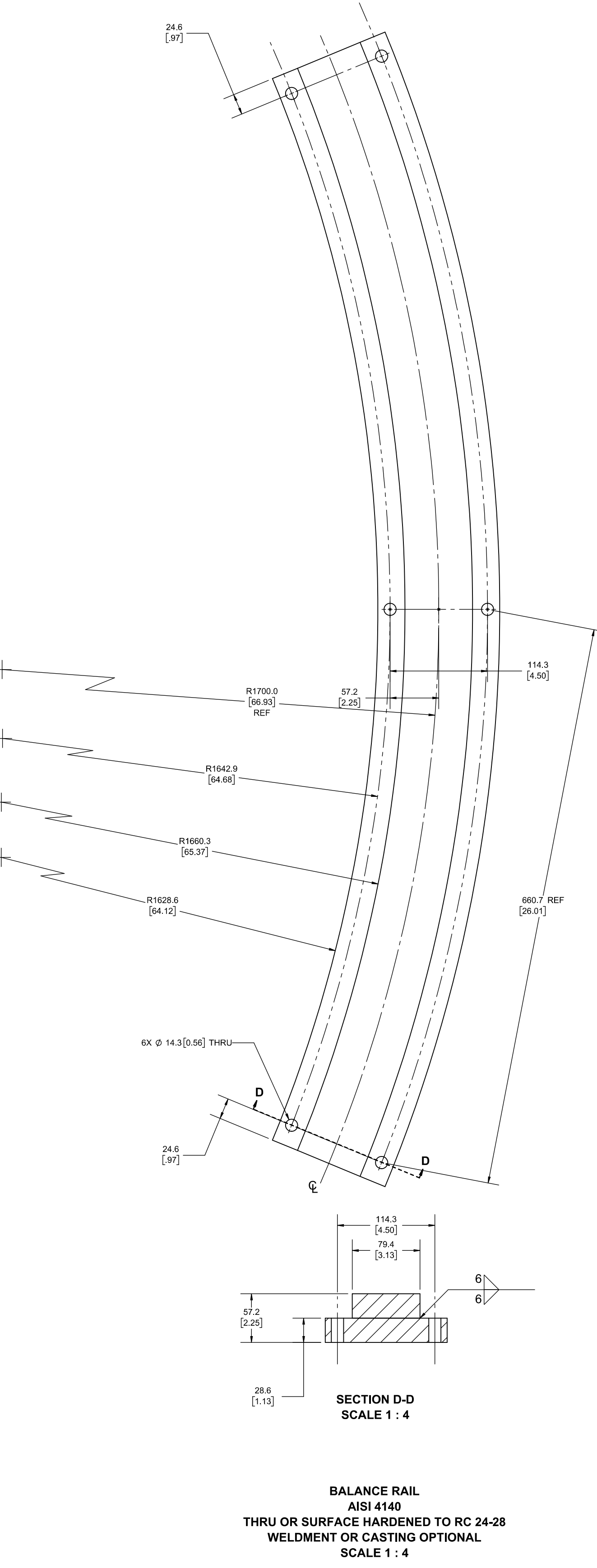
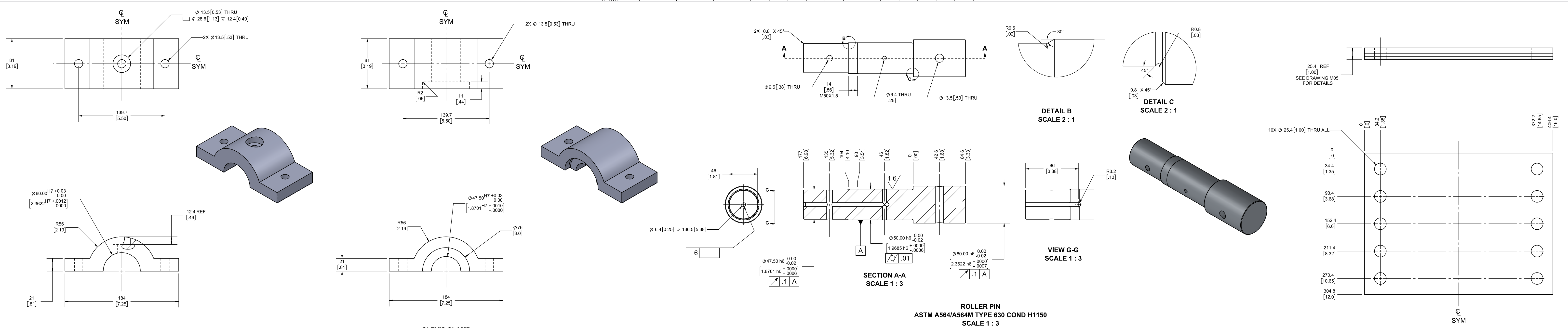
Do not scale drawings. Verify all dimensions and conditions on site and immediately notify the Departmental Representative of all discrepancies.

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	
LOWER BREWERS SWING BRIDGE REHABILITATION		
drawing title titre du dessin	BALANCE WHEEL AND RAIL ARRANGEMENT	
drawn by dessiné par	MJB	
designed by conçu par	DAF	
approved by approuvé par	DPC	
bid offer	TYLER ATKINSON	project manager administrateur de projets
project date date du projet	2021-10-29	
project no. no. du projet	30037015	
drawing no. dessiné no.	M05	

ISSUED FOR TENDER
OCTOBER 29, 2021

DEFAULT TOLERANCES	
1. ALL DIMENSIONS ARE IN MILLIMETERS.	
TOLERANCES:	
X	DECIMALS ± 0.5
XX	DECIMALS ± 0.1
XXX	DECIMALS ± 0.05
	ANGLES ± 0.5°
	HOLE SIZES ± 1mm
	SURFACES ± 3.2 µm



DEFAULT TOLERANCES

- ALL DIMENSIONS ARE IN MILLIMETERS.
- TOLERANCES:
 - X DECIMALS ± 0.1
 - XX DECIMALS ± 0.05
 - XXX DECIMALS ± 0.025
 - ANGLES ± 0.5°
 - HOLE SIZES ± 1mm
 - SURFACES ± 3.2 µm

ISSUED FOR TENDER
OCTOBER 29, 2021

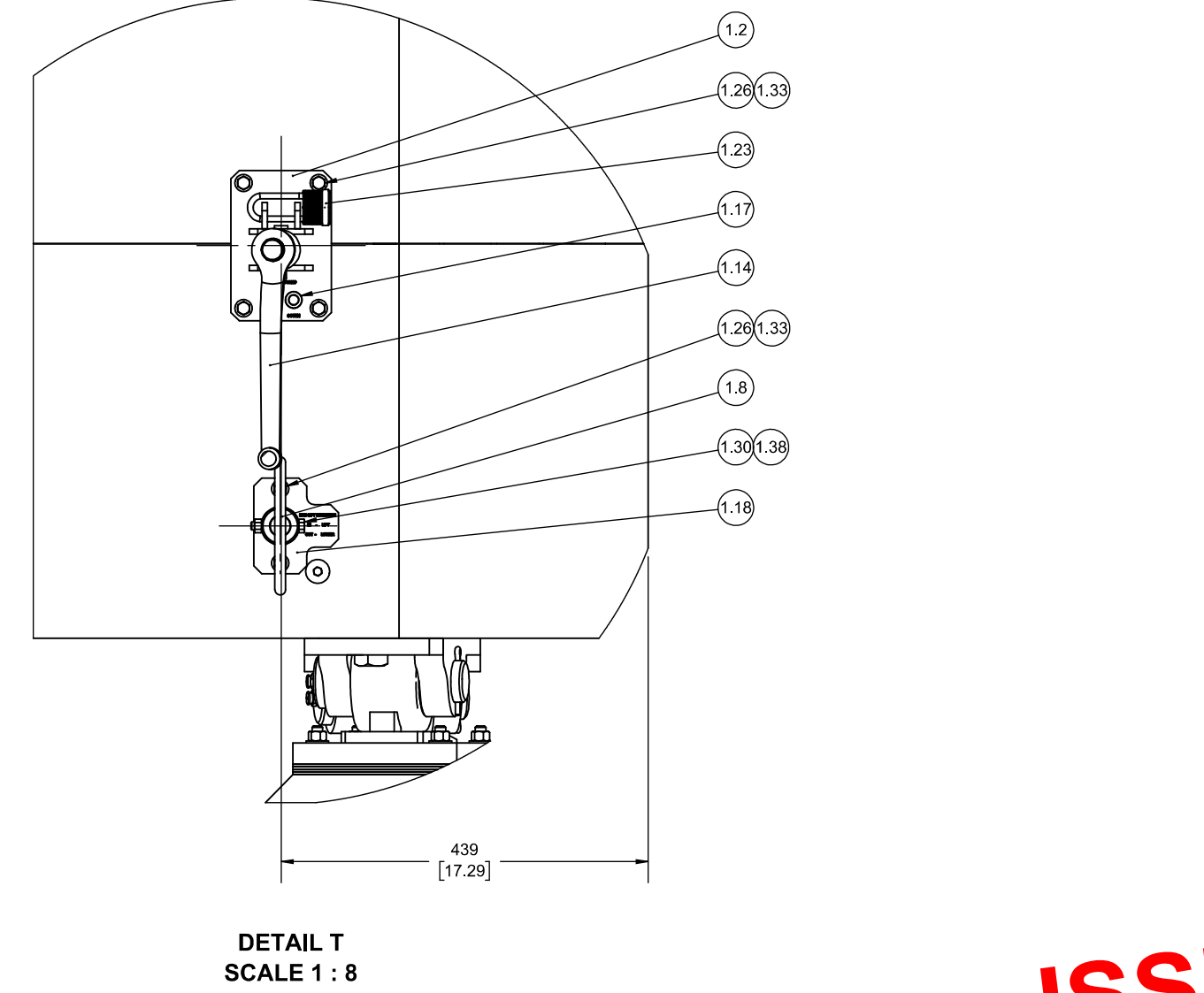
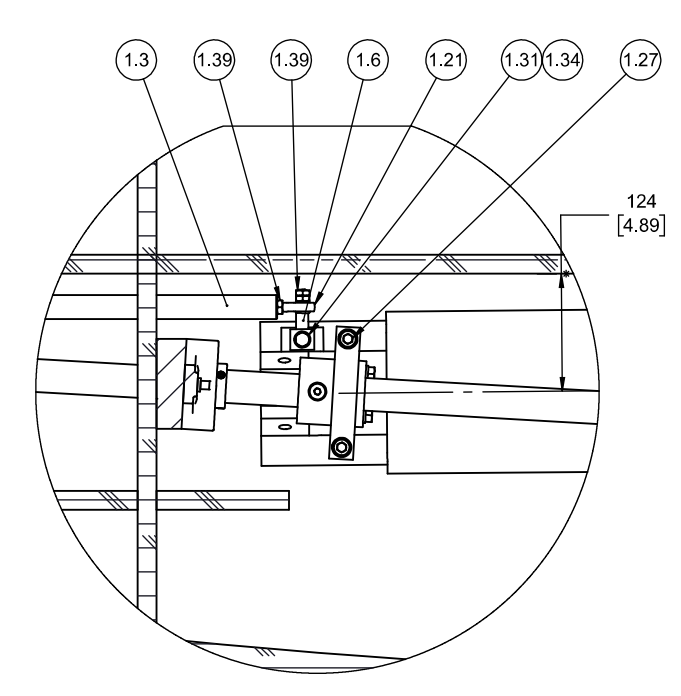
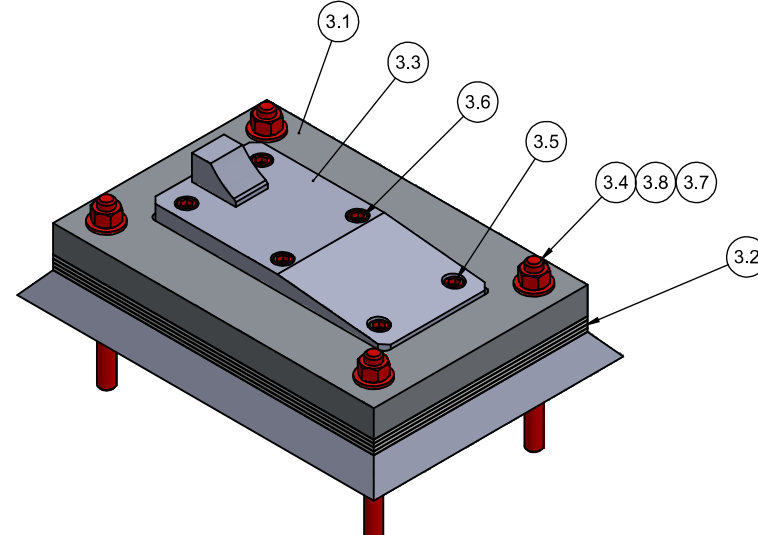
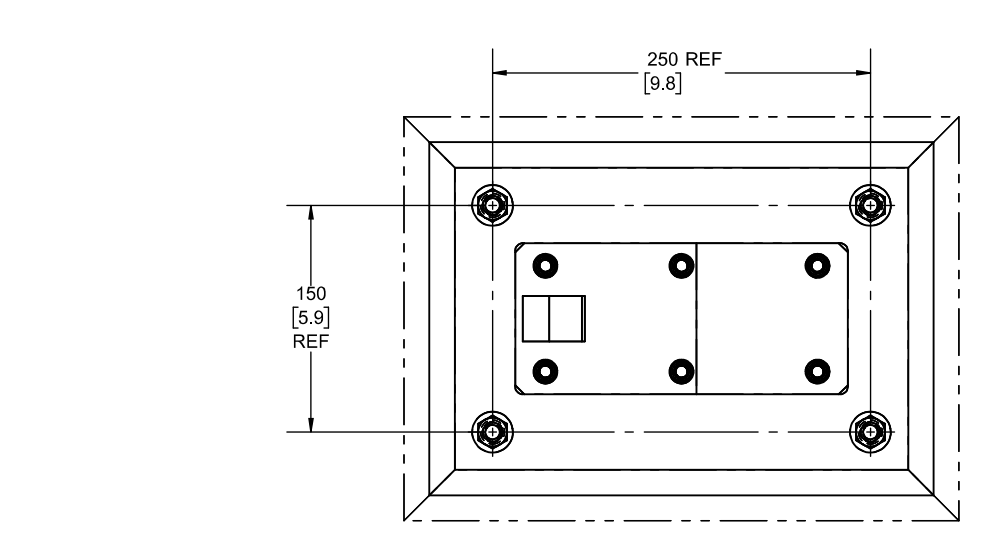
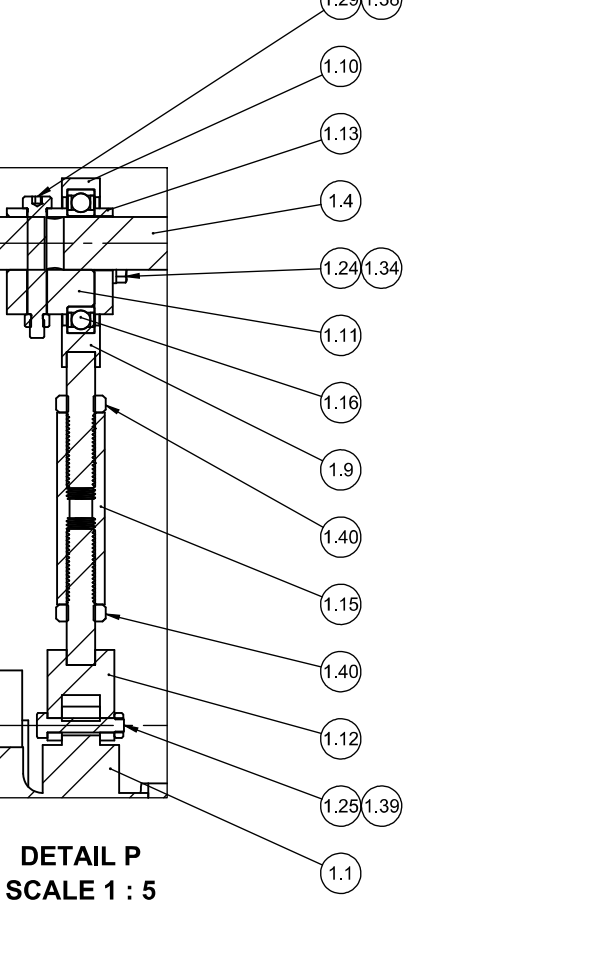
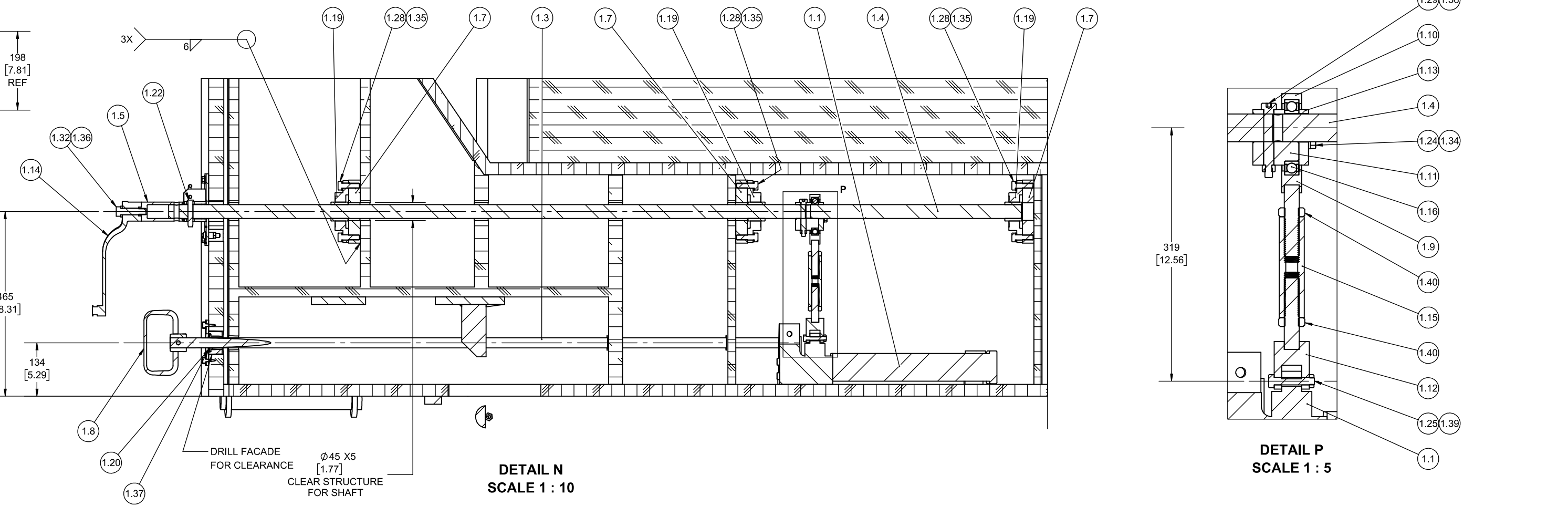
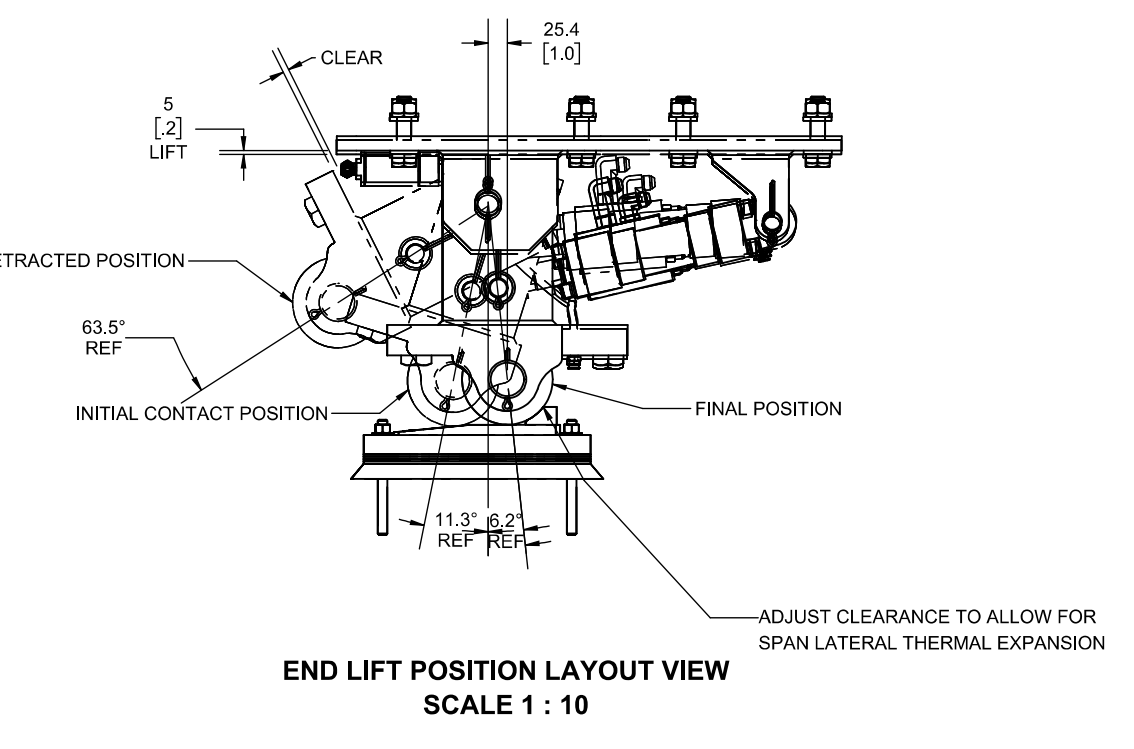
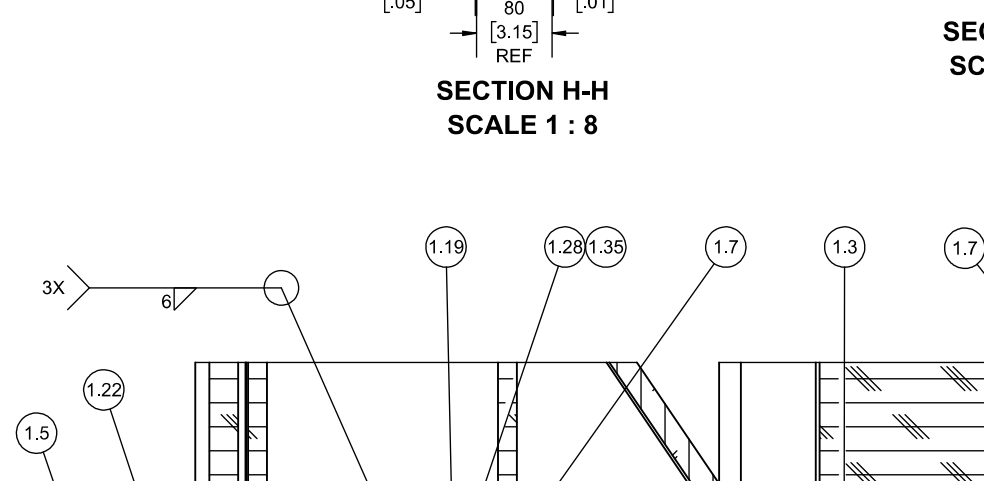
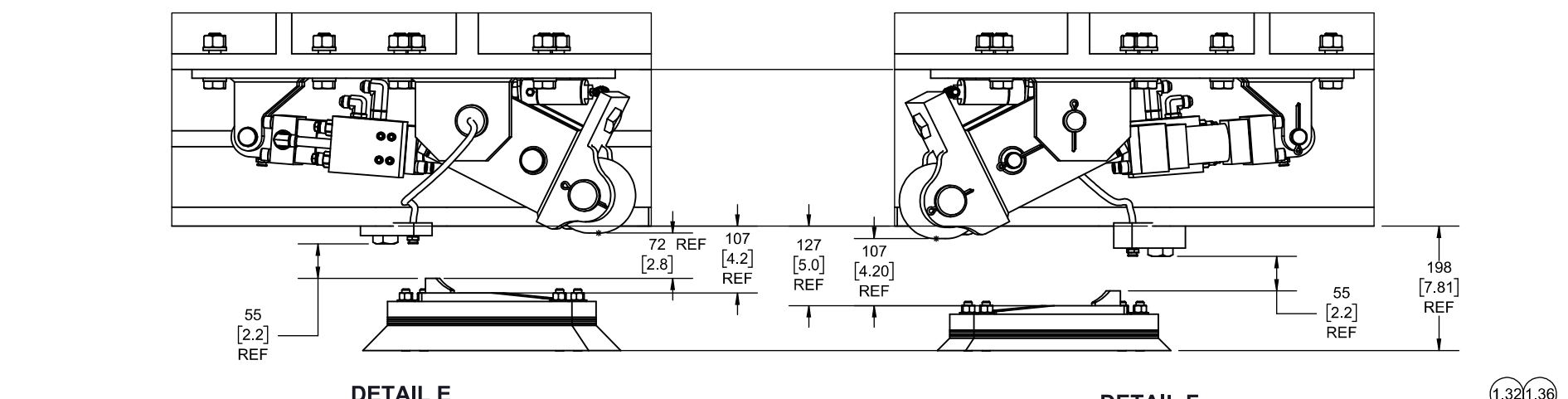
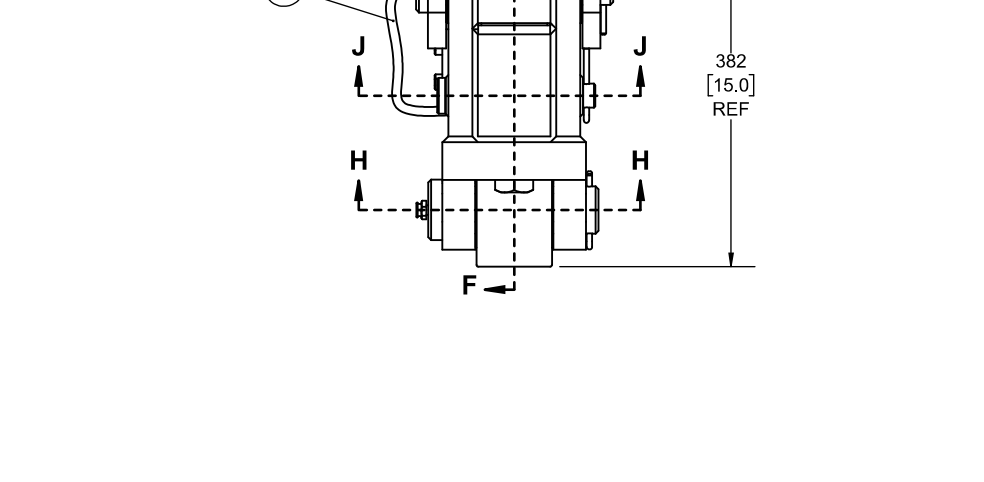
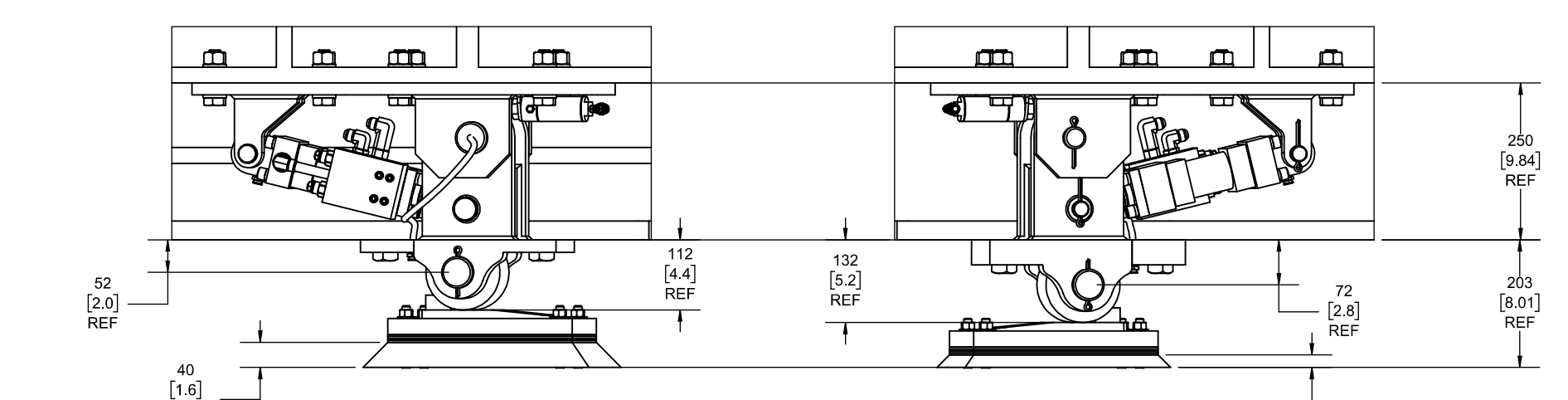
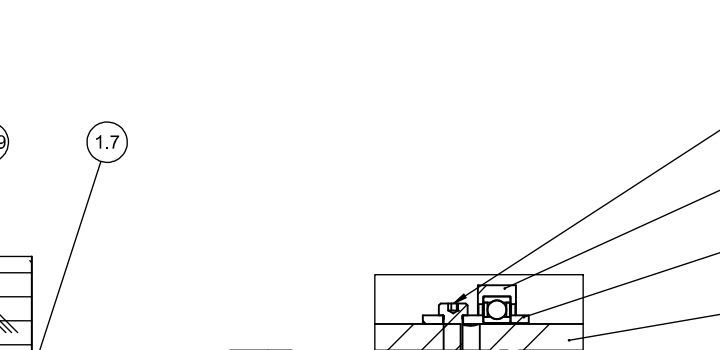
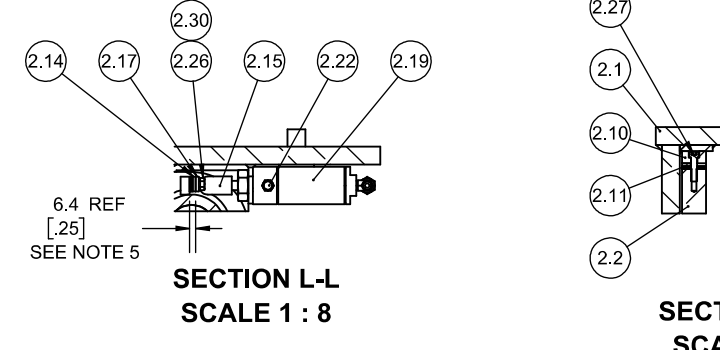
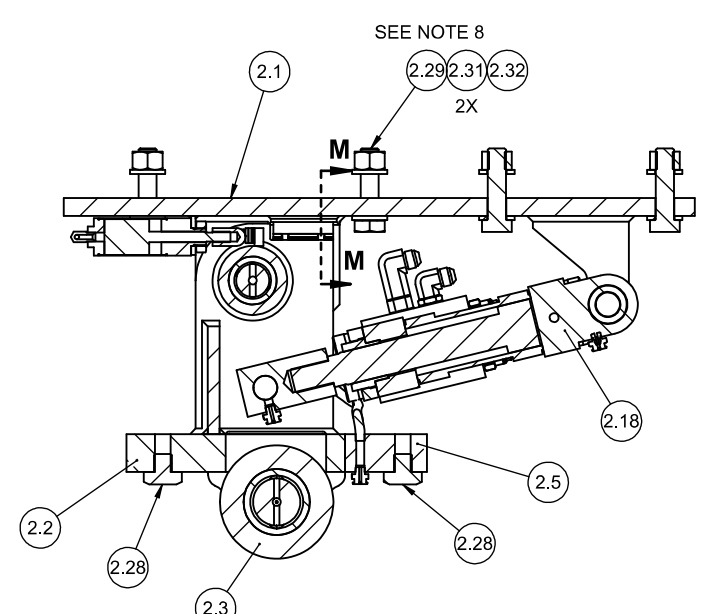
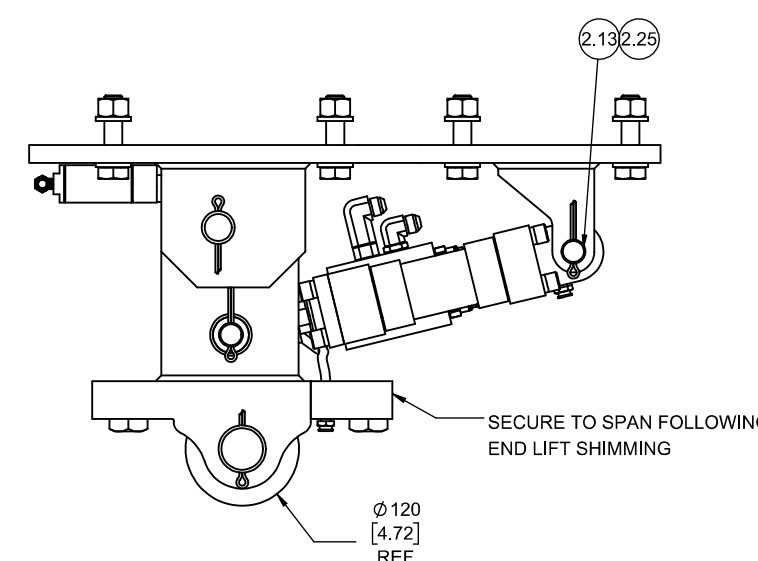
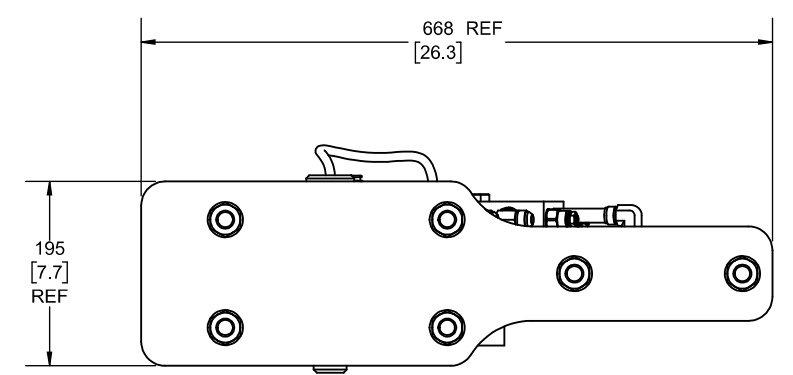
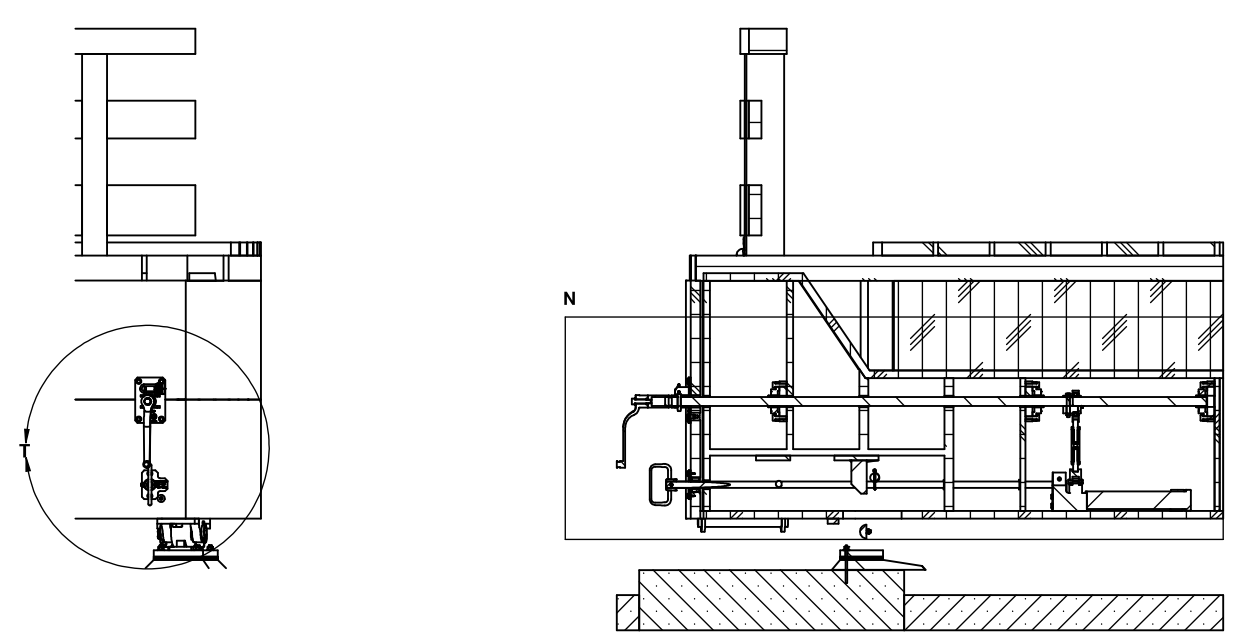
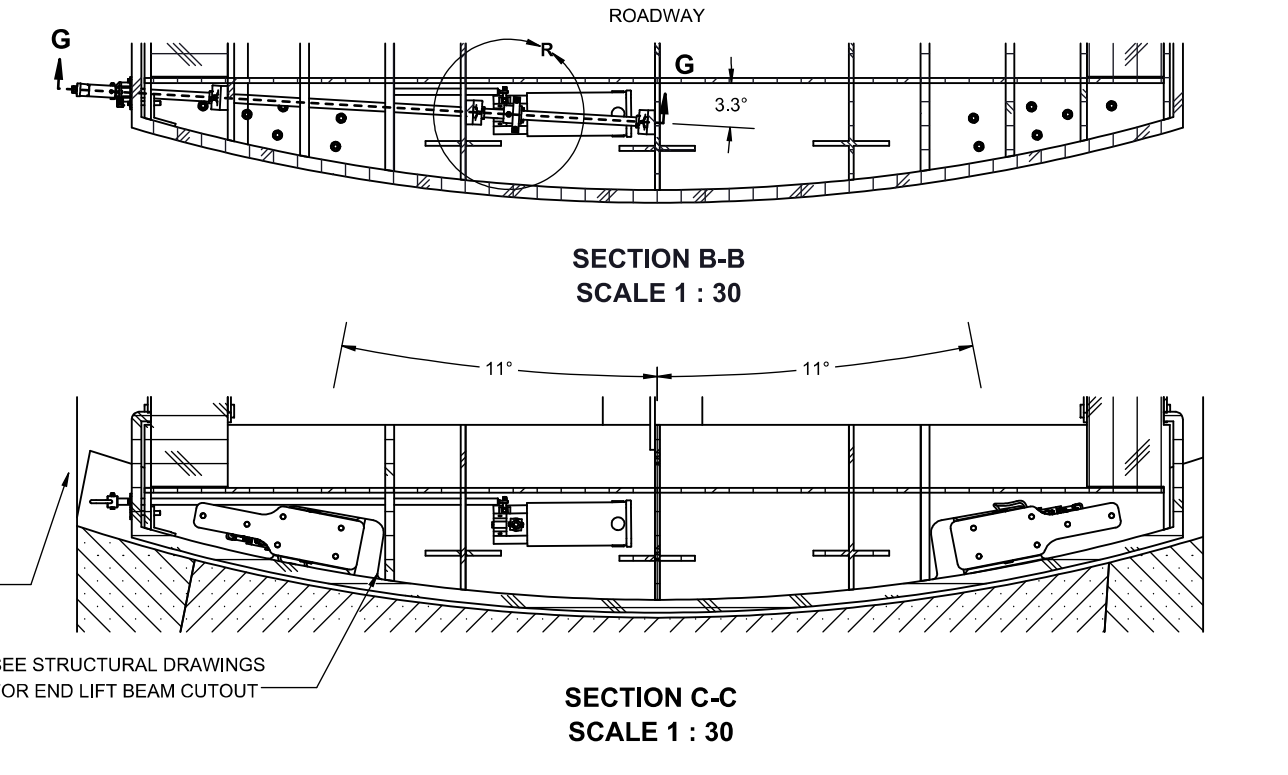
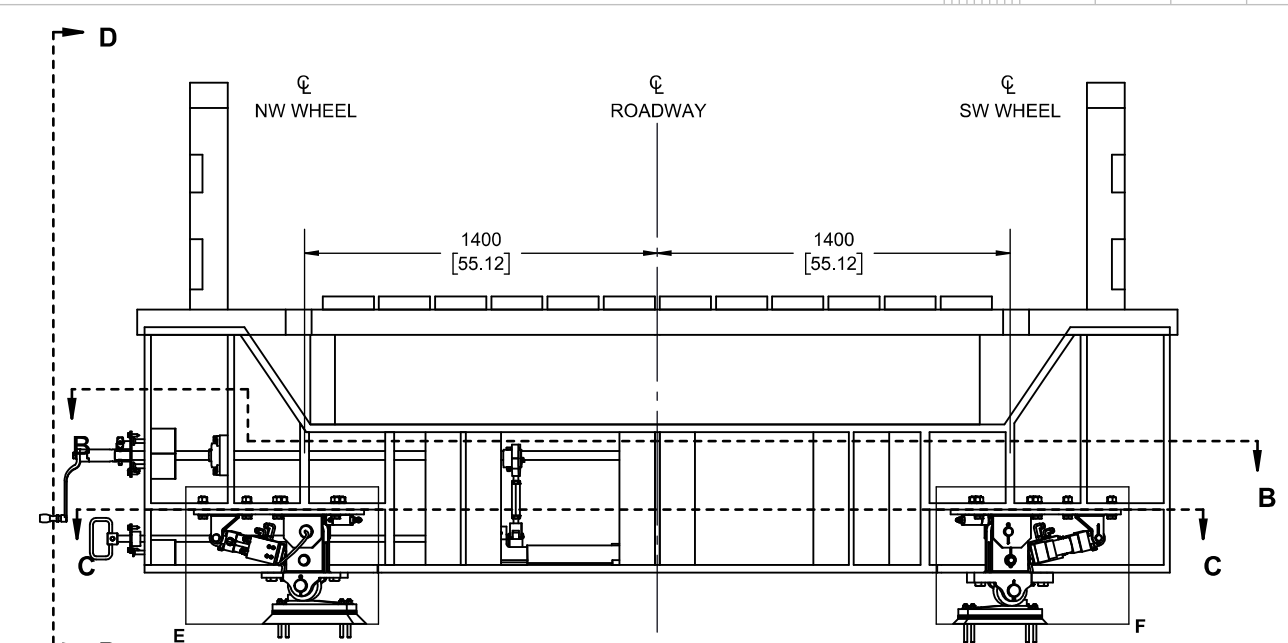
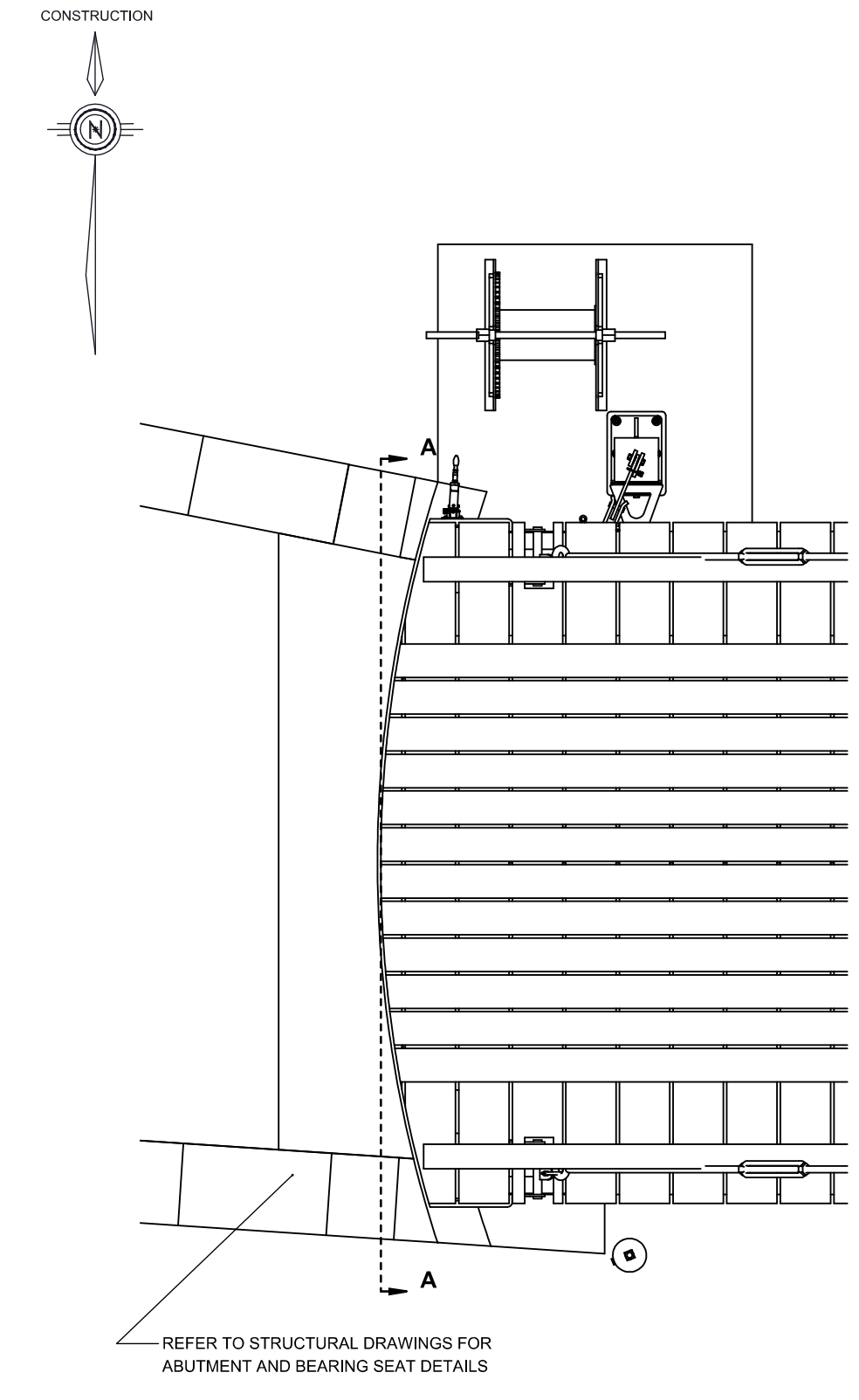


REVISION	DATE
2	ISSUED FOR TENDER 2021-10-29
1	ISSUED FOR REVIEW 2021-08-06

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

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	Ontario
project no. no. du projet	30037015
drawing no. dessine no.	M06
project date date du projet	2021-10-29
approved by approuvé par	DPC
designed by conçu par	DAF
drawn by dessiné par	MJB
approved by approuvé par	DPC
bid offer	TYLER ATKINSON
project manager administrateur de projets	



ITEM NO.	QTY.	DESCRIPTION	MATERIAL	DWG #	WEIGHT (KG)
1	1	ENDLIFT SHAFT, BEARING AND CRANK ARM DETAILS			99.3
1.1	1	HYDRAULIC HAND PUMP TWO SPEED ENERPAC P842 OR EQUIVALENT	GLASS FILLED NYLON RESERVOIR WITH NYLON ENCAPSULATED ALUMINUM BASE	M09	10.0
1.2	1	HAND CRANK LOCKING BRACKET	ASTM A240/A240M TYPE 316	M09	1.5
1.3	1	DIRECTIONAL CONTROL SHAFT	ASTM A240/A240M TYPE 316	M10	6.3
1.4	1	HAND CRANK SHAFT	ASTM A240/A240M TYPE 316	M10	16.4
1.5	1	HAND CRANK EXTENDER	ASTM A240/A240M TYPE 316	M10	0.8
1.6	1	DIRECTIONAL VALVE ADAPTER BAR	ASTM A240/A240M TYPE 316	M10	0.2
1.7	3	BEARING MOUNT BLOCK	ASIS C1018/C1020	M10	3.1
1.8	1	HANDLE	ASTM A240/A240M TYPE 316	M10	0.7
1.9	1	CONNECTING ROD	ASTM A240/A240M TYPE 316	M10	1.3
1.10	1	CONNECTING ROD CLEVIS	ASTM A240/A240M TYPE 316	M10	0.7
1.11	1	ECCENTRIC CRANK	ASTM A240/A240M TYPE 316	M10	1.1
1.12	1	PUMP CLEVIS	ASTM A240/A240M TYPE 316	M10	0.8
1.13	1	RETAINER PLATE	ASTM A240/A240M TYPE 316	M10	0.3
1.14	1	HAND CRANK	STAINLESS STEEL	M10	1.5
1.15	1	LEFT-HAND TO RIGHT-HAND FEMALE HEX THREAD ADAPTER	ASTM A240/A240M TYPE 316	M10	1.4
1.16	1	PERMANENTLY LUBRICATED BALL BEARING, SEALED, 6012-2RS	STAINLESS STEEL	M10	0.4
1.17	2	NORGREN ROTOWINK PRESSURE INDICATOR	BRASS OR ALUMINUM	M10	
1.18	1	BUSHING MOUNTING PLATE	ASTM A240/A240M TYPE 316	M09	0.8
1.19	3	WASHDOWN MOUNTED BALL BEARING WITH TWO BOLT FLANGE, 1-3/8" SHAFT, SEE SCREW SHAFT MOUNT	ASTM A240/A240M TYPE 316	M10	3.8
1.20	1	OIL EMBEDDED FLANGED SLEEVE BEARING, 1-1/8" ID	SAE 841	M09	0.2
1.21	1	PTFE LINED CORROSION-RESISTANT BALL JOINT ROD END 3/8"-24 THREAD	ASTM A240/A240M TYPE 304	M10	
1.22	1	QUICK RELEASE CLEVIS PIN, 1/2", 2" USABLE LENGTH	ASTM A240/A240M TYPE 316		0.2
1.23	1	PADLOCK, 2" MIN SHACKLE LENGTH, WEATHER RESISTANT	STAINLESS STEEL		
1.24	2	HEX HEAD CAP SCREW 3/8-16 UNC X 2" LG. PARTIAL THREAD	A4 (316) ASTM F937/F937M TYPE 2		
1.25	1	HEX HEAD CAP SCREW 3/8-16 UNC X 2" LG. PARTIAL THREAD	A4 (316) ASTM F937/F937M TYPE 2		
1.26	8	LAG SCREW 3/8 X 1.5 LG.	A4 (316) ASTM A240/A240M		
1.27	2	SOCKET HEX HEAD CAP SCREW 1/2-13 UNC X 2 1/2" LG. THREAD LENGTH 1.75"	A4 (316) ASTM F837/F837M TYPE 2		
1.28	8	HEX HEAD CAP SCREW 1/2-13 UNC X 1.75" LG. PARTIAL THREAD	A4 (316) ASTM F937/F937M TYPE 2		
1.29	1	SOCKET HEX SHOULDER SCREW 1/2 DIAMETER X 2 3/4" LG. 3/8X16 UNC THREAD	A4 (316) ASTM F837/F837M TYPE 2		
1.30	1	HEX HEAD CAP SCREW 3/8-16 UNC X 2 1/4" LG. PARTIAL THREAD	A4 (316) ASTM F937/F937M TYPE 2		
1.31	1	HEX HEAD CAP SCREW 3/8-16 UNC X 2 1/2" LG. PARTIAL THREAD	A4 (316) ASTM F937/F937M TYPE 2		
1.32	1	HEX HEAD CAP SCREW 5/8-11 UNC X 2 1/2" LG. PARTIAL THREAD	A4 (316) ASTM F937/F937M TYPE 2		
1.33	8	NARROW FLAT WASHER 3/8", TYPE A	A4 (316) ASTM A240/A240M		
1.34	3	SPRING LOCK WASHER 3/8", REGULAR	A4 (316) ASTM A240/A240M		
1.35	6	SPRING LOCK WASHER 1/2", REGULAR	A4 (316) ASTM A240/A240M		
1.36	1	SPRING LOCK WASHER 5/8", REGULAR	A4 (316) ASTM A240/A240M		
1.37	1	STAINLESS STEEL INTERNAL RETAINING RING	ASTM A240/A240M TYPE 316		
1.38	2	HEX NUT 3/8-16 UNC	A4 (316) ASTM F594 GR. 2		
1.39	4	HEX JAM NUT 3/8-16 UNC	A4 (316) ASTM F594 GR. 2		
1.40	2	HEX JAM NUT 3/4-10 UNC	A4 (316) ASTM F594 GR. 2		
2	2	END LIFT ARRANGEMENT			83.1
2.1	1	END LIFT MOUNTING BRACKET	CSA G40.21 44W / 300W	M08	22.5
2.2	1	SWING BRACKET	CSA G40.21 44W / 300W	M08	20.8
2.3	1	ROLLER WHEEL	ASTM A564/A564M TYPE 630 COND H1150	M08	4.7
2.4	1	ROLLER PIN	ASTM A564/A564M TYPE 630 COND H1150	M08	2.9
2.5	1	FALSE MOUNT	CSA G40.21 44W / 300W	M08	2.0
2.6	1	ROLLER WHEEL BUSHING	ASTM B22 C95800	M08	1.1
2.7	2	ROLLER WHEEL THRUST WASHER	C91100 ASTM B22	M08	0.2
2.8	2	GUIDE WASHER	C91100 ASTM B22	M08	0.2
2.9	1	SWING BRACKET BUSHING	ASTM B22 C95800	M08	1.2
2.10	2	STOP BLOCK	ASTM A240/A240M TYPE 316	M09	0.1
2.11	2	STOP SHIM STACK	ASTM A240/A240M TYPE 316	M09	0.1
2.12	1	CYLINDER ROD END PIN	ASTM A564/A564M TYPE 630 COND H1150	M08	0.7
2.13	1	CYLINDER CAP END PIN	ASTM A564/A564M TYPE 630 COND H1150	M08	0.4
2.14	1	LIMIT SHIM STACK	ASTM A240/A240M TYPE 316	M09	0.1
2.15	1	LIMIT ACTUATOR	ASTM A240/A240M TYPE 316	M09	0.1
2.16	1	SWING BRACKET PIN	ASTM A564/A564M TYPE 630 COND H1150	M08	1.6
2.17	1	LIMIT ACTUATOR PLATE	ASTM A240/A240M TYPE 316	M09	
2.18	1	HYDRAULIC CYLINDER 2" BORE 1.313" ROD X 4" STROKE, MILL DUTY CW COORDINATE BALANCE MANIFOLD AND CLEVIS	STEEL	M09	13.5
2.19	1	1/2" X 1 1/2" STROKE STAINLESS STEEL PNEUMATIC CYLINDER, SR SERIES, SPRING EXTEND	STAINLESS STEEL	M09	1.0
2.20	1	GREASE TUBE, 1/8"	COPPER		0.2
2.21	1	CHECK VALVE, 0.33 PSI CRACK, 1/8 NPT	ASTM A240/A240M TYPE 316		0.1
2.22	2	BREATHER VENT, CORROSION RESISTANT, 1/8 NPT	ASTM A240/A240M TYPE 316		
2.23	1	BRANCH TEE, 1/8 NPT	ASTM A240/A240M TYPE 316		
2.24	3	BUTTONHEAD GREASE FITTING WITH BALL CHECK VALVE, 1/8 NPTF MALE	ASTM A240/A240M TYPE 316		
2.25	4	COTTER PIN 1/16 X 63.5mm LONG	ASTM A240/A240M TYPE 316		
2.26	2	HEX HEAD CAP SCREW 1/4-20 UNC X 0.75" LG. FULL THREAD	GR. 5 SAE J429		
2.27	4	SOCKET HEX HEAD CAP SCREW 1/4-20 UNC X 1" LG. FULL THREAD	ASTM A574		
2.28	2	SQUARE HEAD BOLT 3/4-10 UNC X 0.75 LG.	A4 (316) ASTM A240/A240M		
2.29	6	HEAVY HEX STRUCTURAL BOLT, 3/4" X 3 LG.	ASTM A325, GALV		
2.30	2	SPRING LOCK WASHER 1/4", REGULAR	A4 (316) ASTM A240/A240M		
2.31	12	STRUCTURAL WASHER, 3/4"	ASTM F436/F436M, GALV		
2.32	8	HEAVY HEX STRUCTURAL NUT, 3/4-10 UNC	ASTM A563 GR. C, GALV		
3	2	END LIFT RAMP ARRANGEMENT			20.9
3.1	1	RAMP BASE	ASTM A240/A240M TYPE 316	M09	10.6
3.2	1	RAMP SHIM	ASTM A240/A240M TYPE 316	M09	6.0
3.3	1	RAMP	ASTM A564/A564M TYPE 630 COND H1150	M09	3.4
3.4	4	THREADED ROD ANCHOR 1/2-13UNC	ASIS TYPE 316 ASTM F959 CH2		0.2
3.5	2	SOCKET HEX HEAD CAP SCREW 3/8-16 UNC X 3/4" LG. FULL THREAD	A4 (316) ASTM F837/F837M TYPE 2		
3.6	4	SOCKET HEX HEAD CAP SCREW 3/8-16 UNC X 1" LG. FULL THREAD	A4 (316) ASTM F837/F837M TYPE 2		
3.7	4	NARROW FLAT WASHER 1/2", TYPE A	A4 (316) ASTM A240/A240M		
3.8	4	HEX NUT 1/2-13 UNC	A4 (316) ASTM F594 GR. 2		

NOTES:

- SEE DRAWING M01 FOR FURTHER DETAILS APPLICABLE TO THIS ASSEMBLY.
- SEE SPECIFICATION SECTION 13.10.00 FOR FURTHER DETAILS APPLICABLE TO THIS DRAWING.
- SHOP ASSEMBLE AND TEST PRIOR TO INSTALLATION ON SITE.
- ADJUST NOMINAL SHIM VALUE UNTIL WEST END OF SPAN DEFLECTS 5MM TO SUPPORT 7KN DEAD WEIGHT.
- ADJUST NOMINAL SHIM VALUE UNTIL PRESSURE ACTUATES VISUAL INDICATOR TO INDICATE END LIFT IS IN PLACE.
- ADJUST NOMINAL SHIM VALUE UNTIL WHEEL HAS TRAVELLED OVER CENTRE TO LOCATION SHOWN IN END LIFT POSITION LAYOUT VIEW.
- CONTRACTOR TO SIZE ANCHOR LENGTH TO SUIT APPLICATION REQUIREMENTS.
- COORDINATE HOLES WITH SPAN STRUCTURE.
- ADJUST CRANK ECCENTRIC AND CONNECTIONS TO MATCH SELECTED HYDRAULIC PUMP.

DEFAULT TOLERANCES	
1. ALL DIMENSIONS ARE IN MILLIMETERS.	
2. TOLERANCES:	
X	DECIMALS ± 0.1
XX	DECIMALS ± 0.05
XXX	DECIMALS ± 0.025
	ANGLES ± 0.5°
	HOLE SIZES ± 1mm
	SURFACES ± 3.2 µm

ISSUED FOR TENDER
OCTOBER 29, 2021

Public Services and Procurement Canada
Services publics et Approvisionnement Canada

Ontario Program
Parcs Canada Infrastructure Directorate
Heritage Canada and Engineering Works
Région de l'Ontario
Direction de l'infrastructure de Parcs Canada
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Chadwick Engineering Ltd.
www.chadwickengineering.com

PROFESSIONAL ENGINEER
D. N. FAUX
100075238
29 Oct 2021
PROVINCE OF ONTARIO

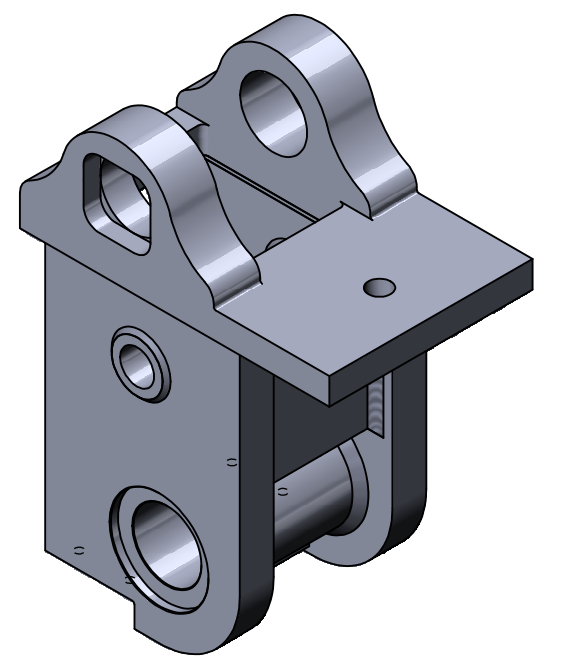
REVISION	DATE
02	ISSUED FOR TENDER 2021-10-29
01	ISSUED FOR REVIEW 2021-08-06

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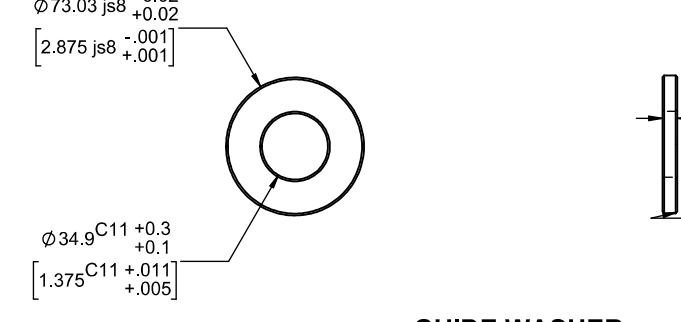
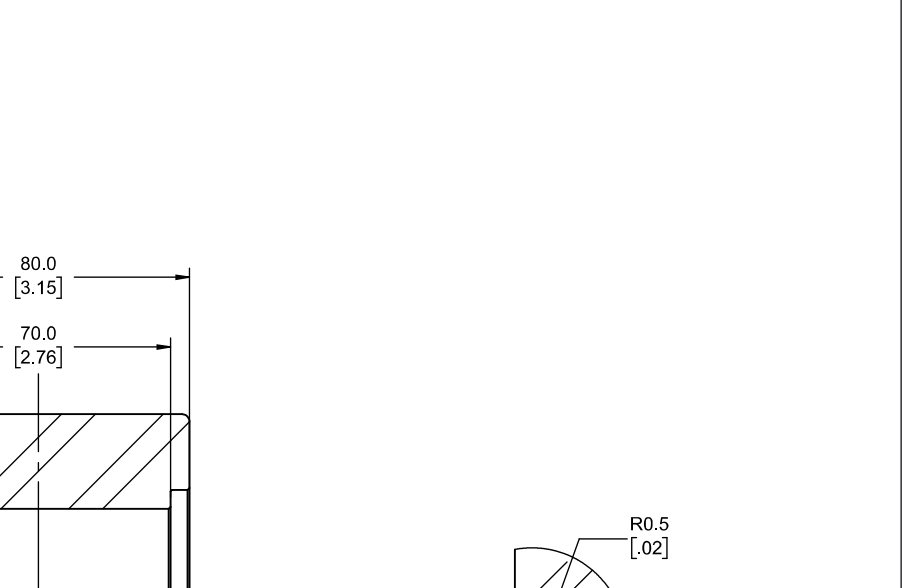
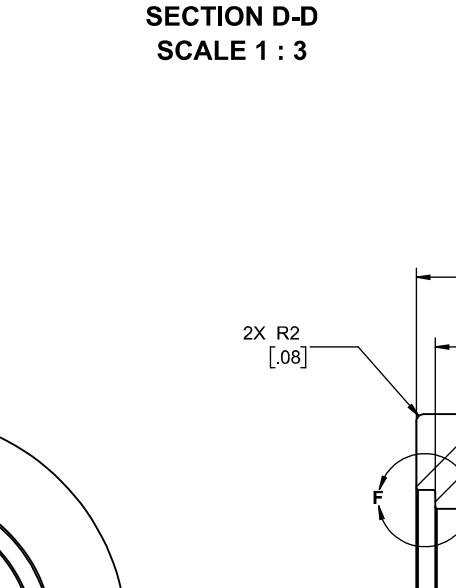
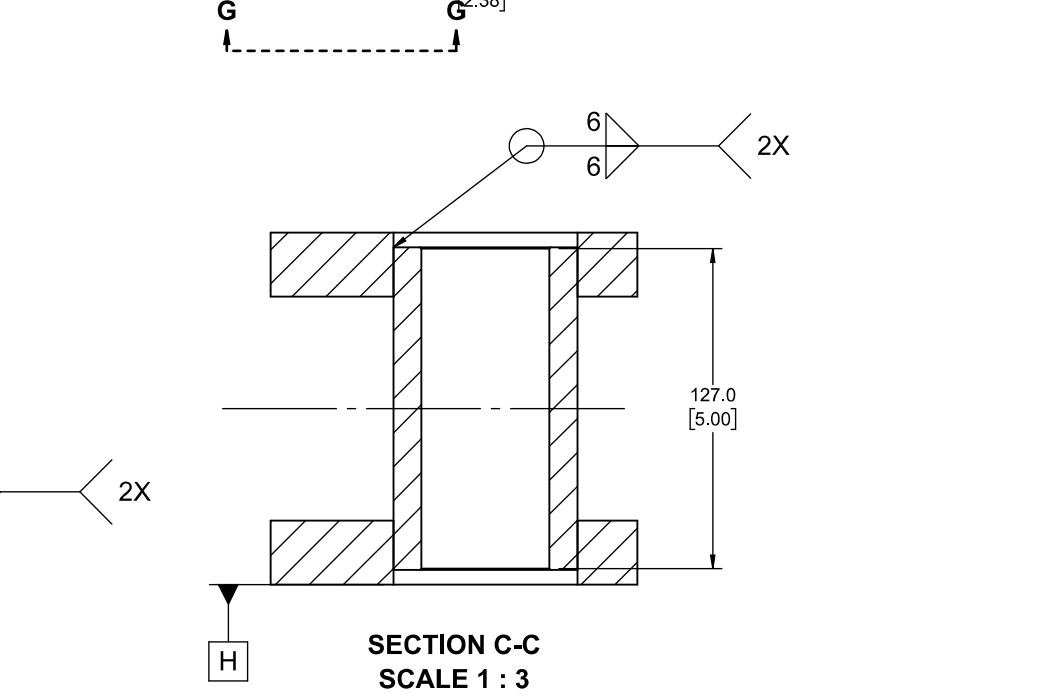
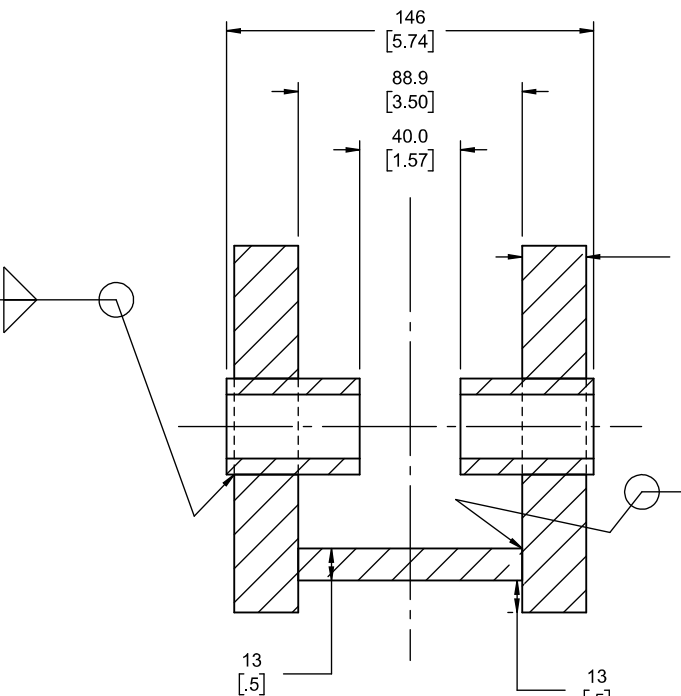
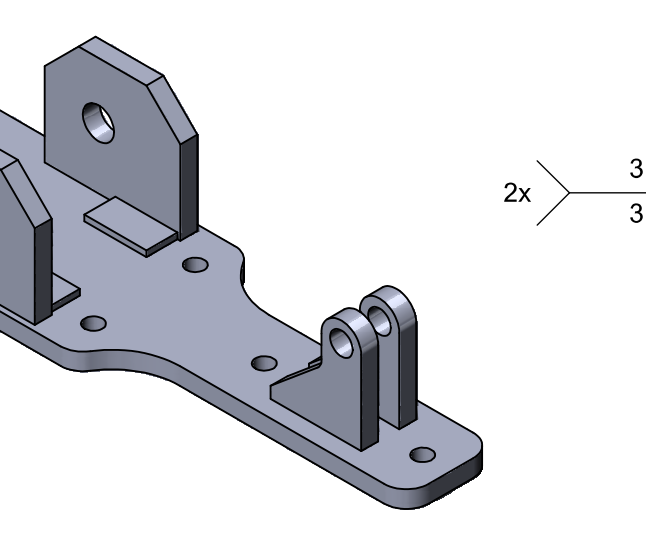
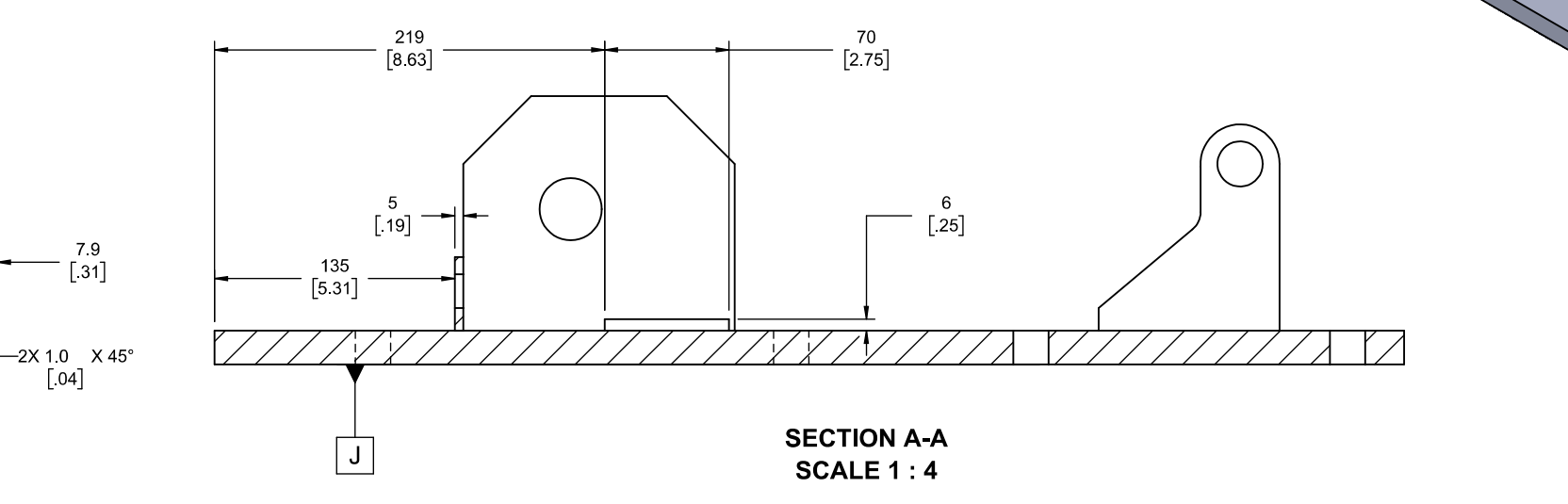
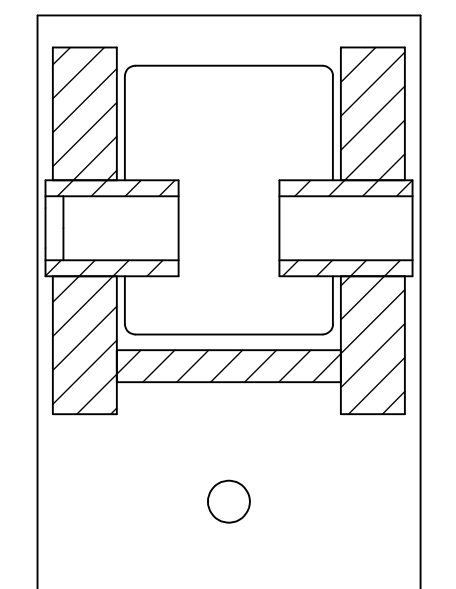
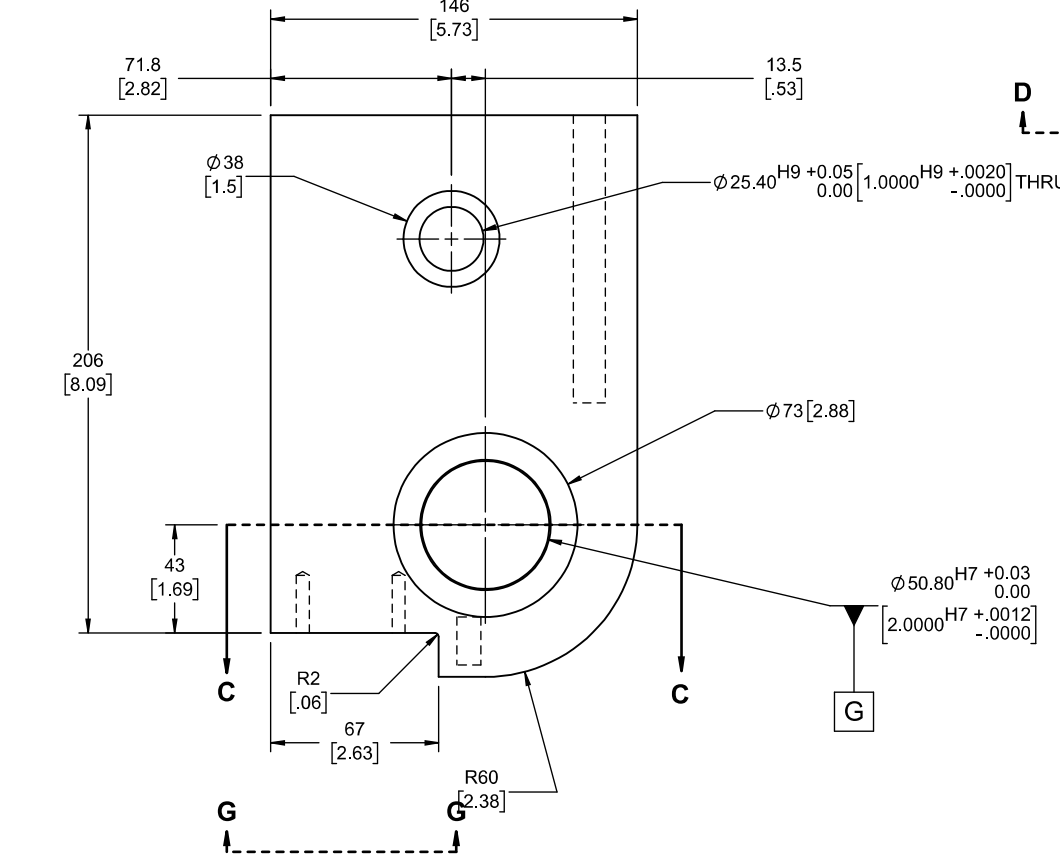
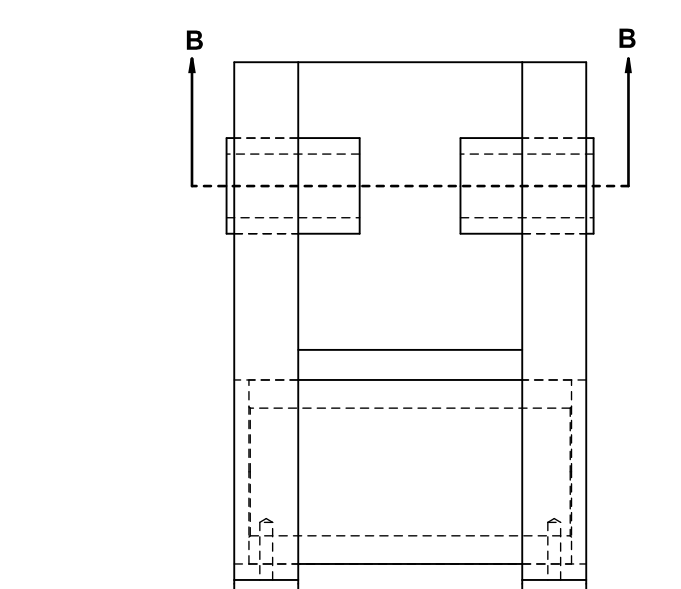
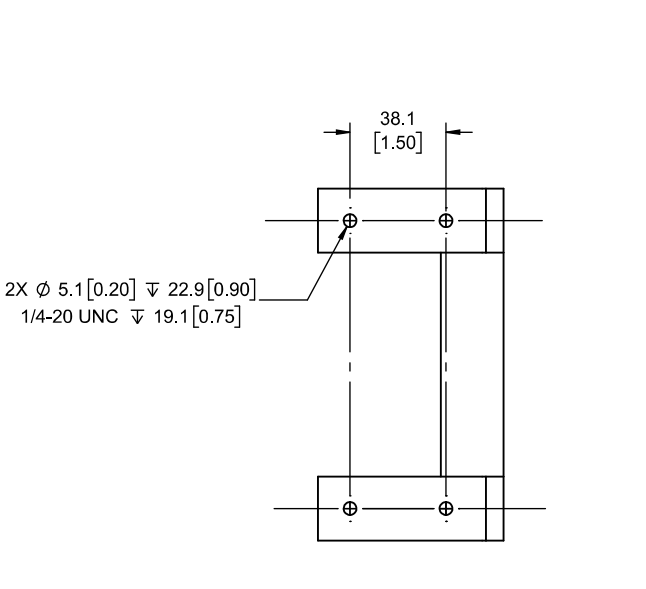
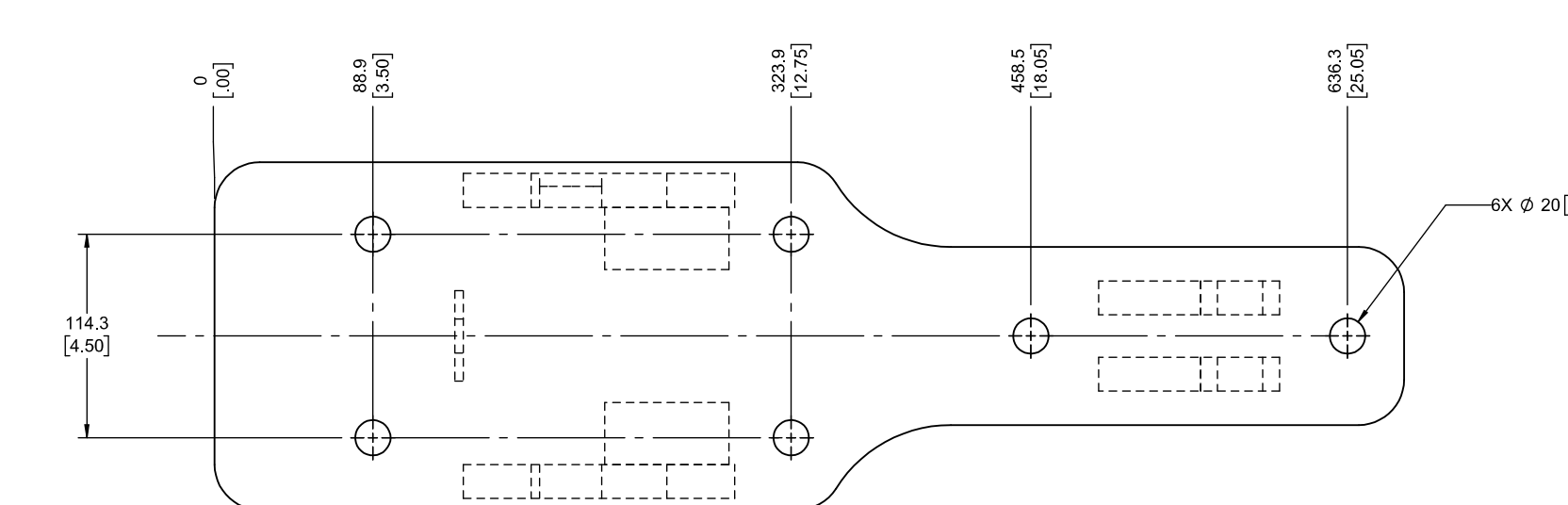
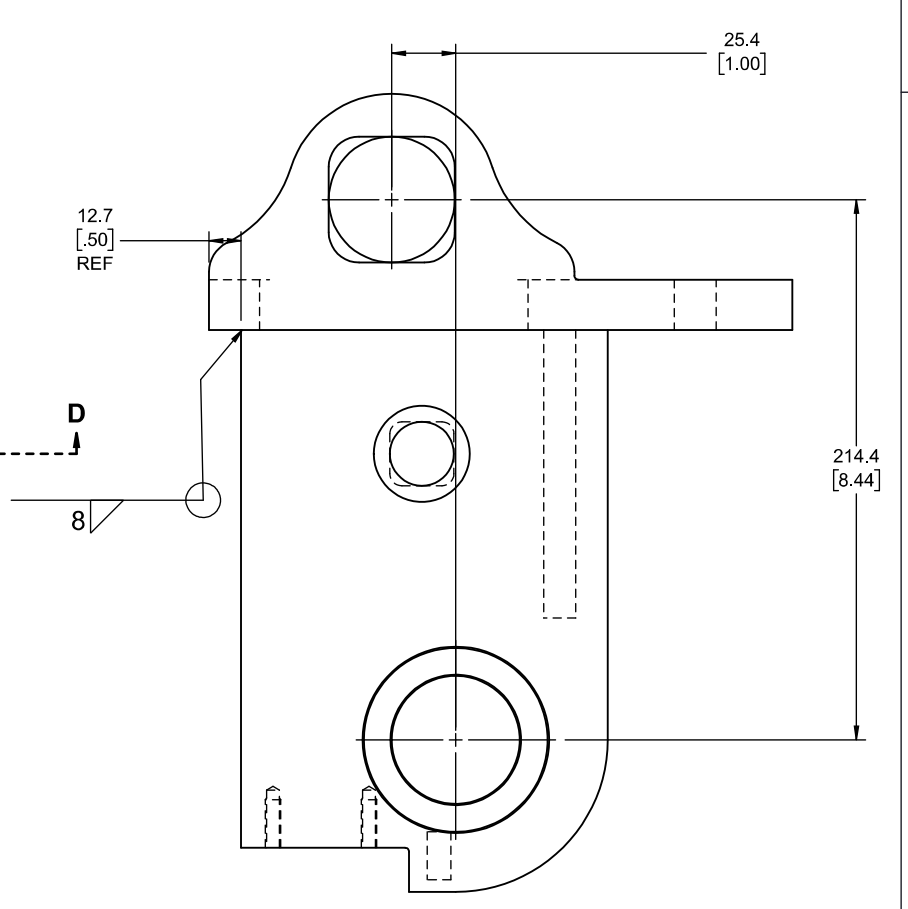
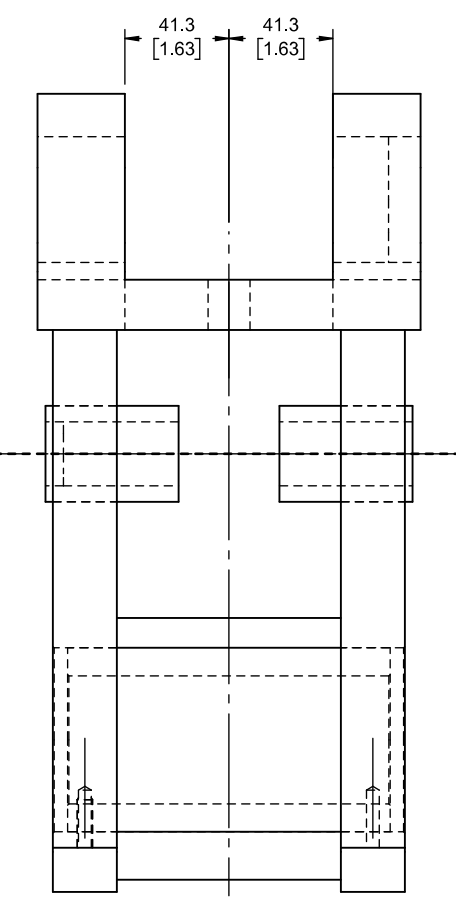
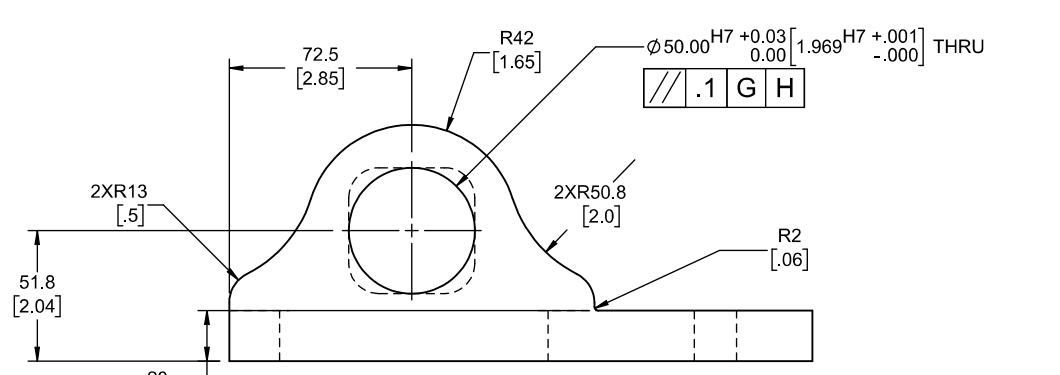
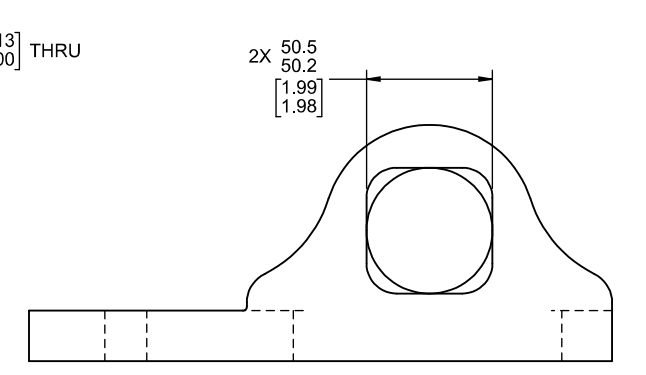
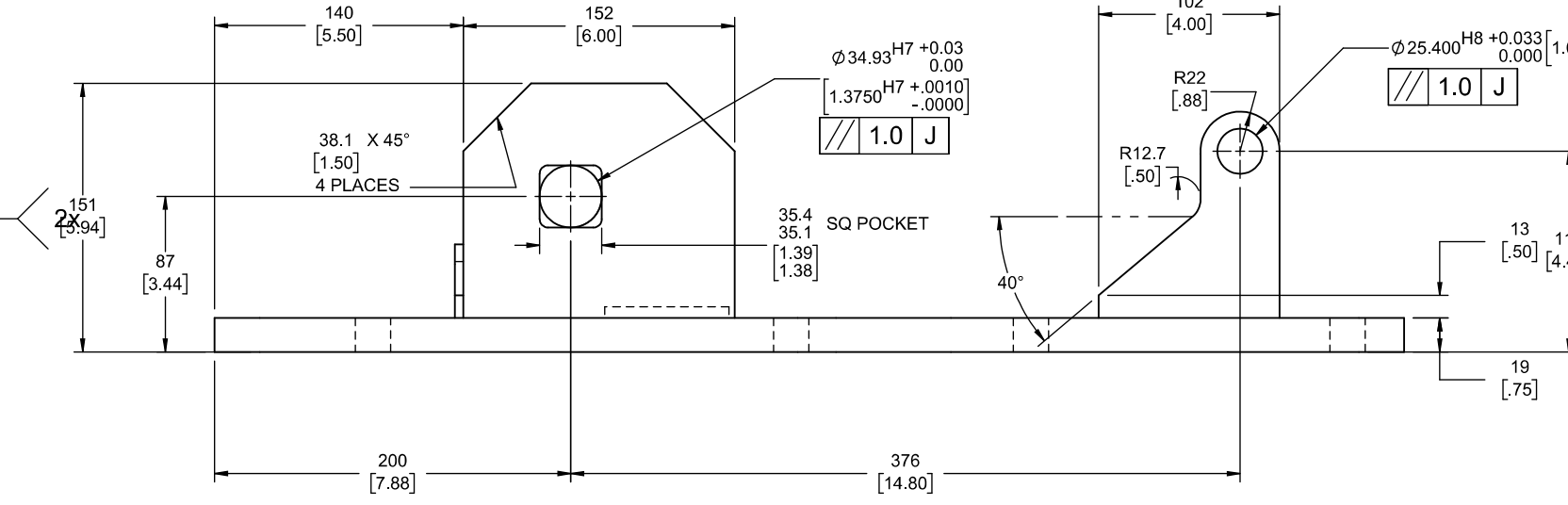
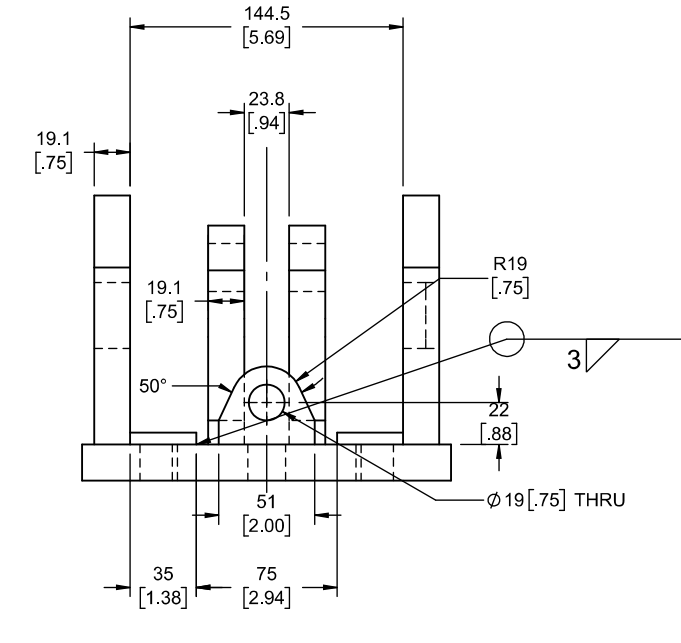
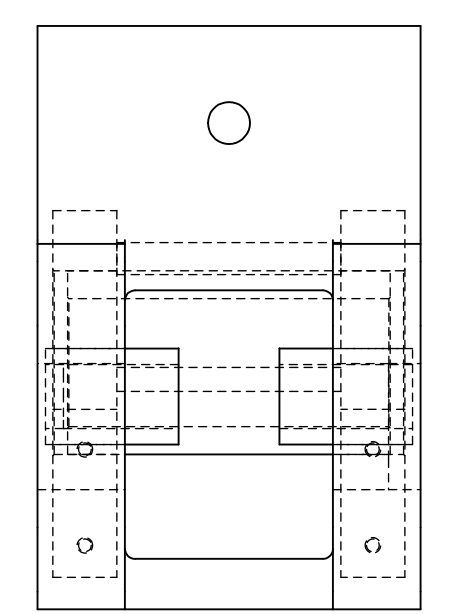
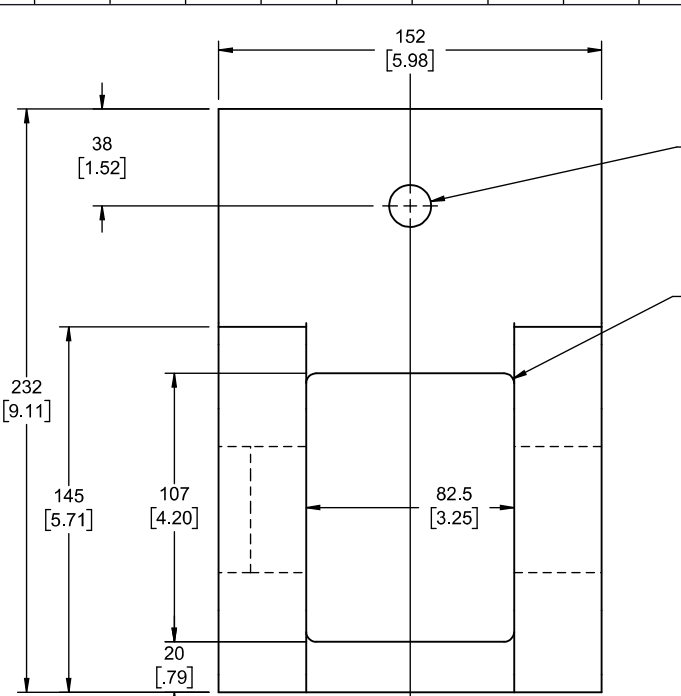
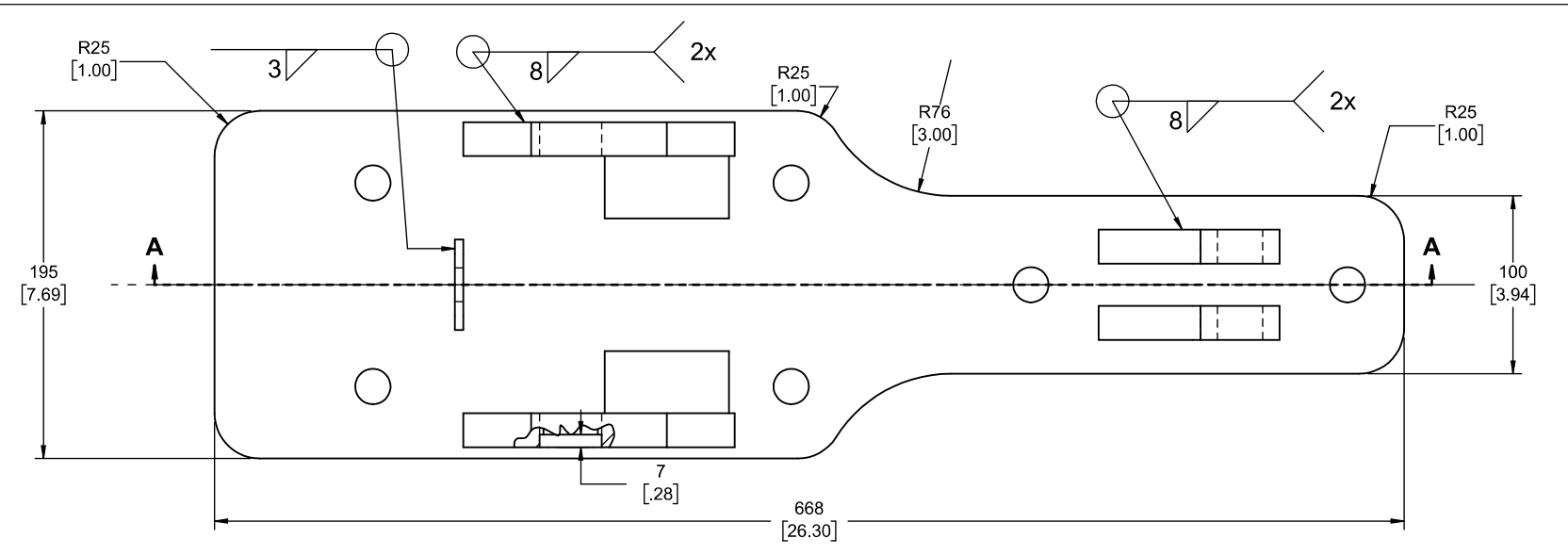
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C drawing no. - where detail desired

project title	titre du projet	Ontario
LOWER BREWERS SWING BRIDGE REHABILITATION		

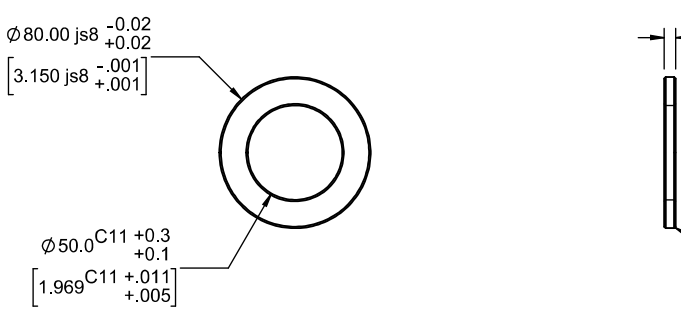
drawing title	WEST END LIFT ARRANGEMENT
drawn by	DAF
designed by	DAF
approved by	DPC
bid offer	TYLER ATKINSON
project date	2021-10-29
project no.	30037015
dessineur	M07



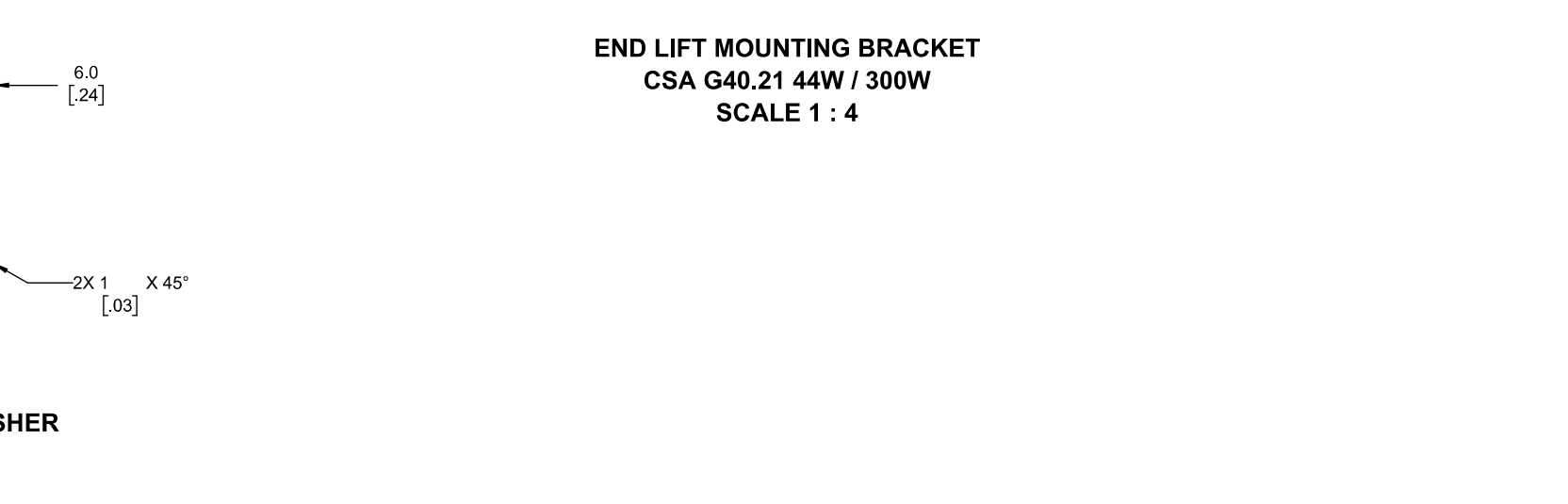
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 SCALE 1 : 4



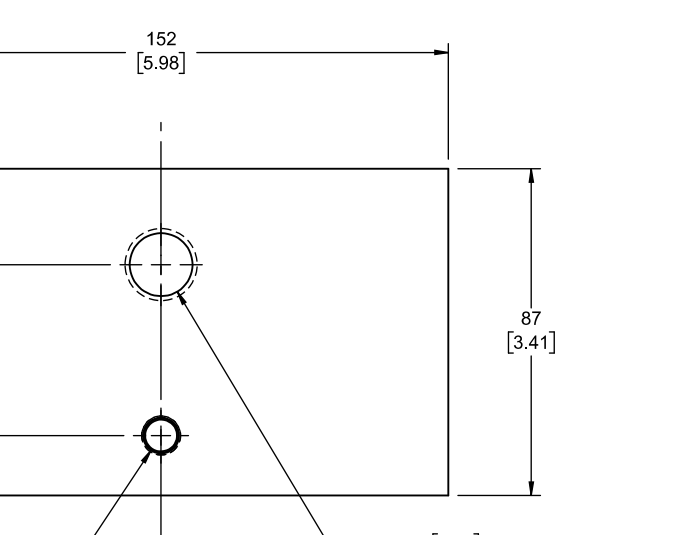
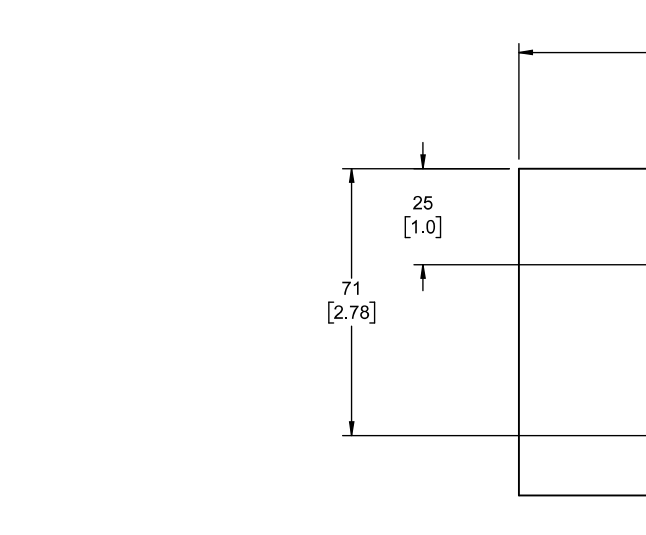
GUIDE WASHER
 C91100 ASTM B22
 SCALE 1 : 4



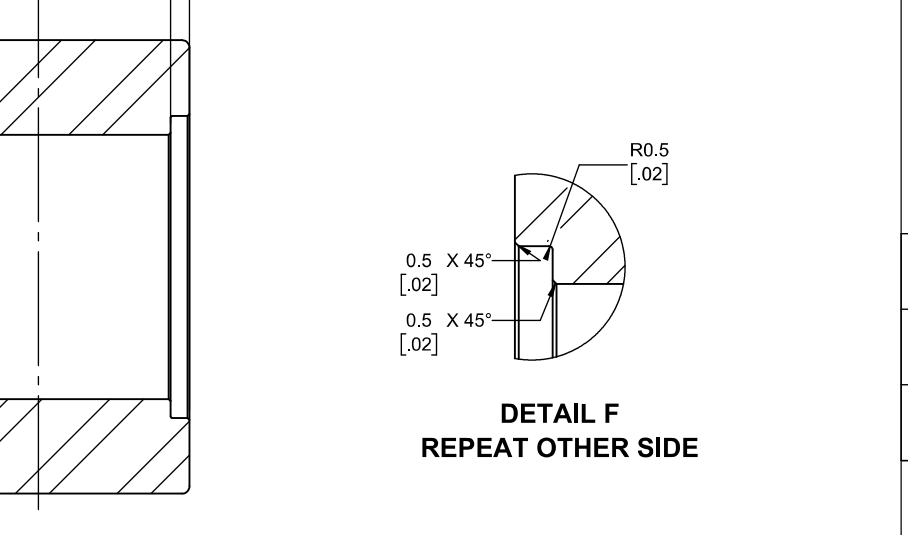
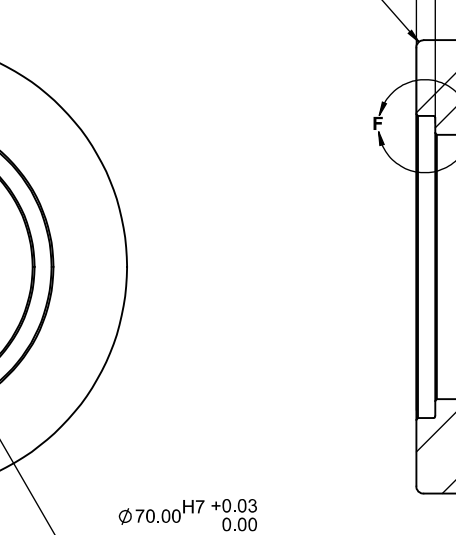
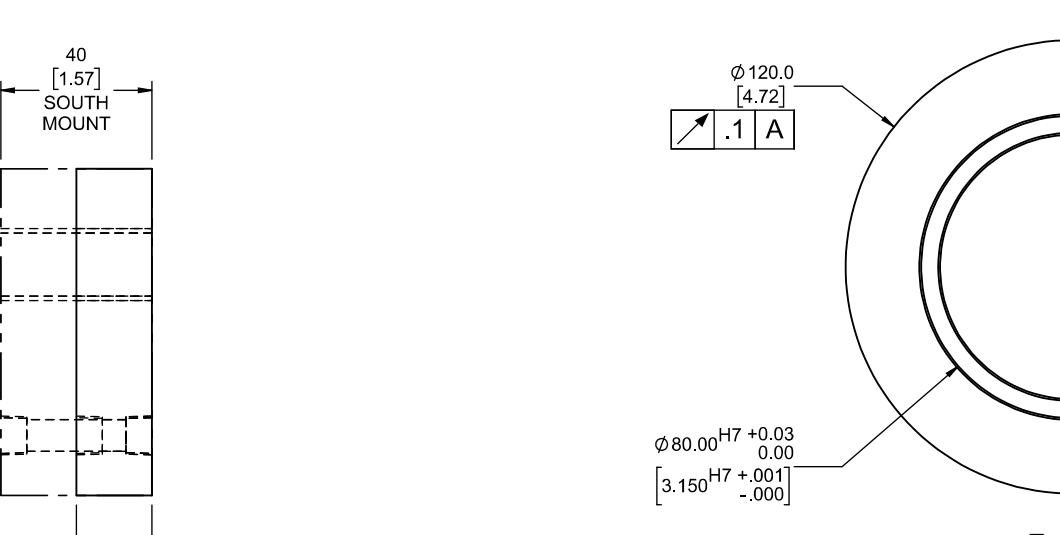
ROLLER WHEEL THRUST WASHER
 C91100 ASTM B22
 SCALE 1 : 4



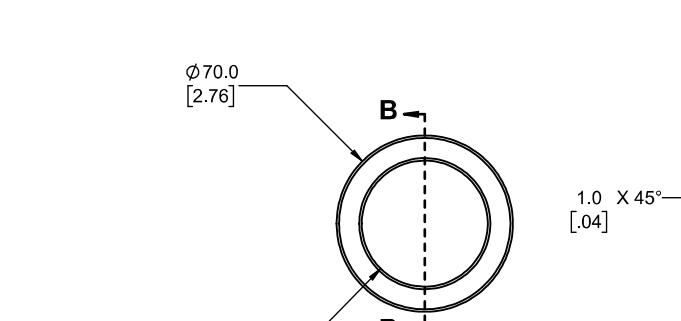
END LIFT MOUNTING BRACKET
 CSA G40.21 44W / 300W
 SCALE 1 : 4



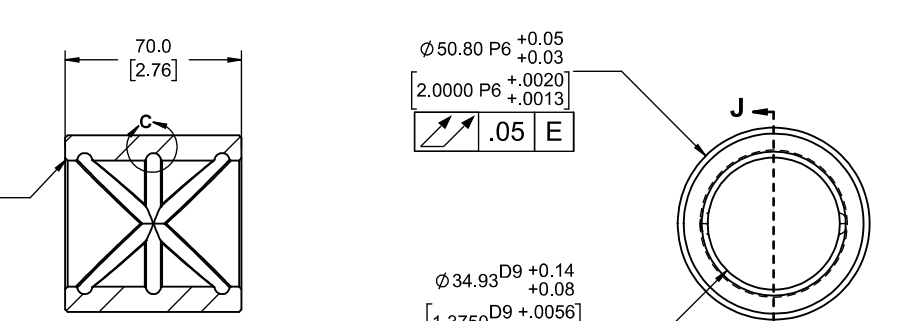
FALSE MOUNT
 CSA G40.21 44W / 300W
 SCALE 1 : 2



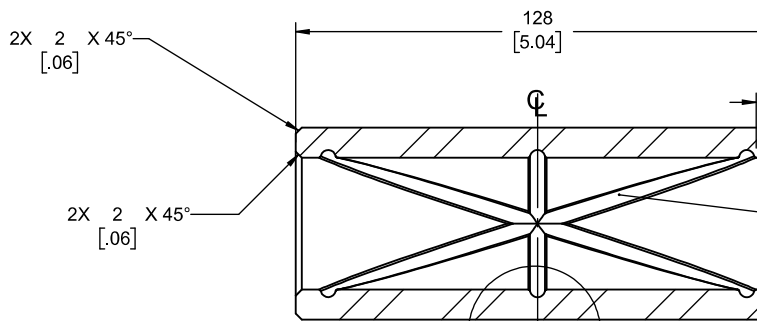
ROLLER WHEEL
 ASTM A564/A564M TYPE 630 COND H1150
 SCALE 1 : 2



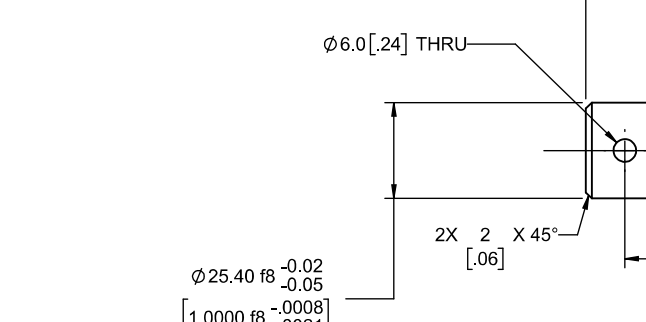
ROLLER WHEEL BUSHING
 ASTM B22 C95800
 SCALE 1 : 3



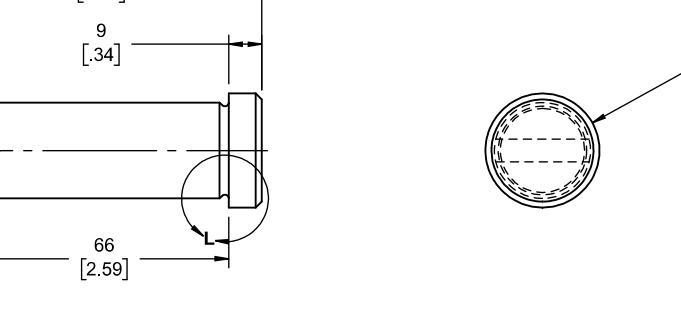
SWING BRACKET BUSHING
 ASTM B22 C95800
 SCALE 1 : 2



FALSE MOUNT
 CSA G40.21 44W / 300W
 SCALE 1 : 2



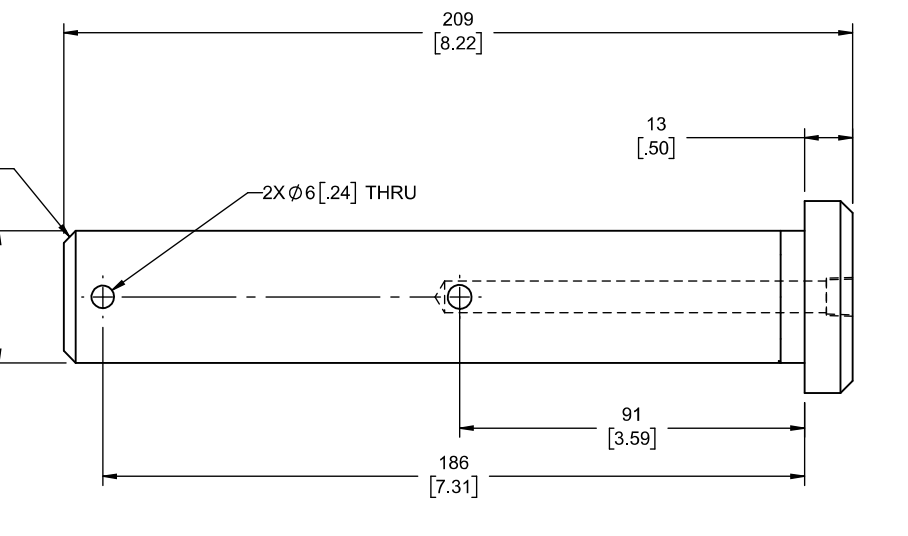
CYLINDER CAP END PIN
 ASTM A564/A564M TYPE 630 COND H1150
 SCALE 1 : 2



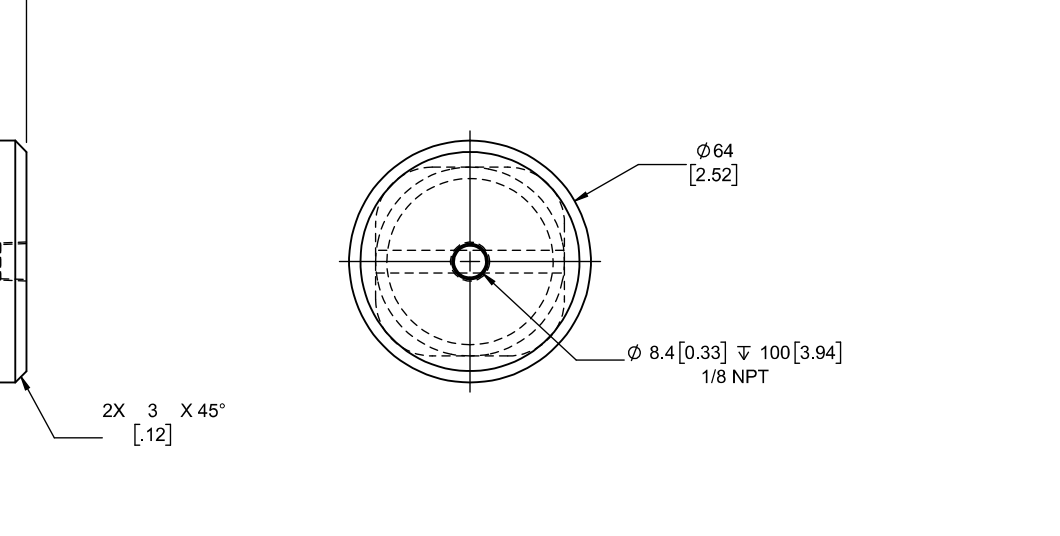
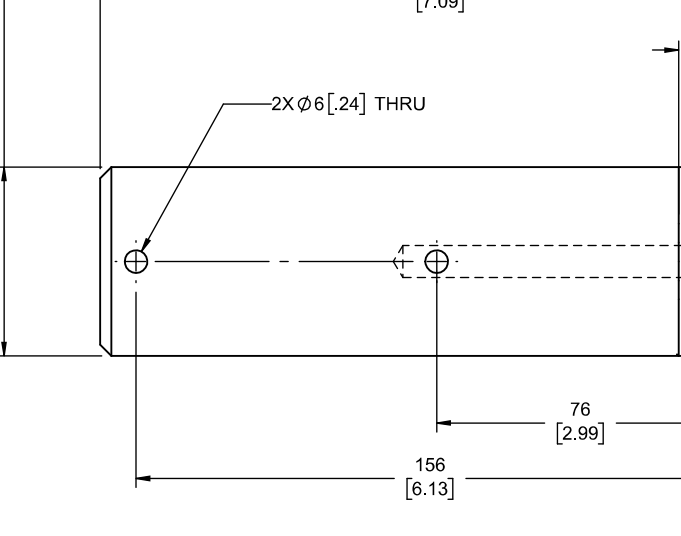
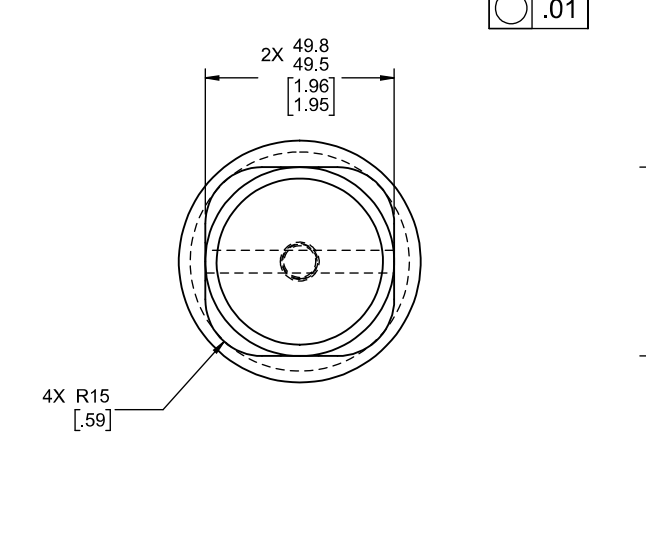
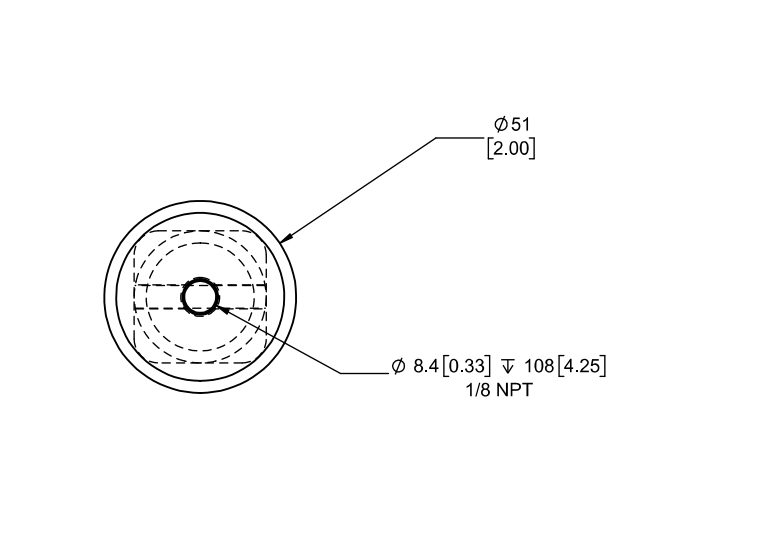
ROLLER PIN
 ASTM A564/A564M TYPE 630 COND H1150
 SCALE 1 : 2



CYLINDER ROD END PIN
 ASTM A564/A564M TYPE 630 COND H1150
 SCALE 1 : 2



SWING BRACKET PIN
 ASTM A564/A564M TYPE 630 COND H1150
 SCALE 1 : 2



ISSUED FOR TENDER
 OCTOBER 29, 2021

DEFAULT TOLERANCES

1. ALL DIMENSIONS ARE IN MILLIMETERS.	
2. TOLERANCES:	
X DECIMALS	± 0.5
XX DECIMALS	± 0.1
XXX DECIMALS	± 0.05
ANGLES	± 0.5°
HOLE SIZES	± 1mm
SURFACES	± 3.2 µm

2	ISSUED FOR TENDER	2021-10-29
1	ISSUED FOR REVIEW	2021-08-06
REVISION		DATE

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

A	Detail No.	
B	No. du detail	
C	drawing no. - where detail required	
	dessin no. - ou detail exigé	
	drawing no. - where detailed	
	dessin no. - ou detaillé	

project title
 titre du projet
 Ontario

LOWER BREWERS SWING BRIDGE REHABILITATION

drawing title
 titre du dessin
END LIFT MECHANISM PART DETAILS

drawn by
 dessiné par
 MJB

designed by
 conçu par
 DAF

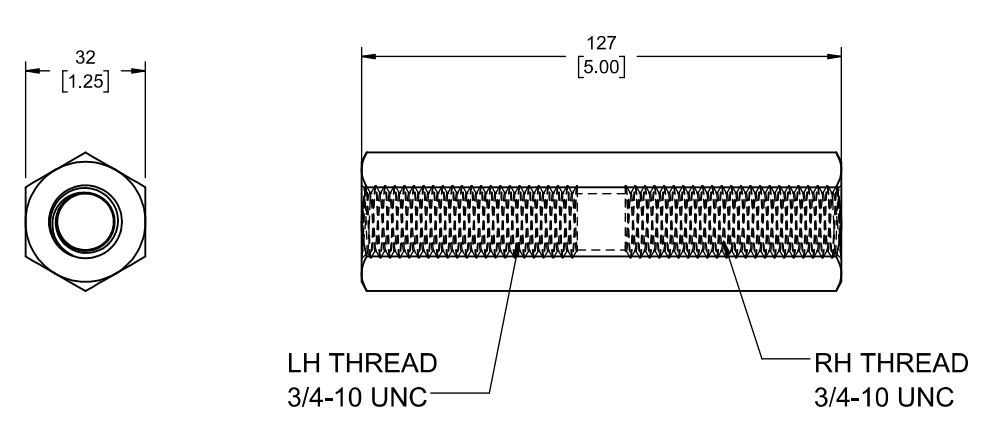
approved by
 approuvé par
 DPC

bid office
 bureau de soumission
 TYLER ATKINSON
 project manager
 administrateur de projets

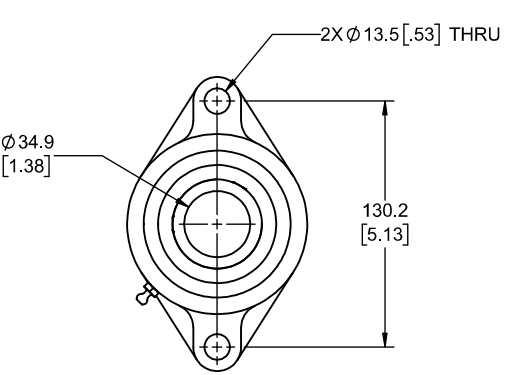
project date
 date du projet
 2021-10-29

project no.
 no. du projet
 30037015

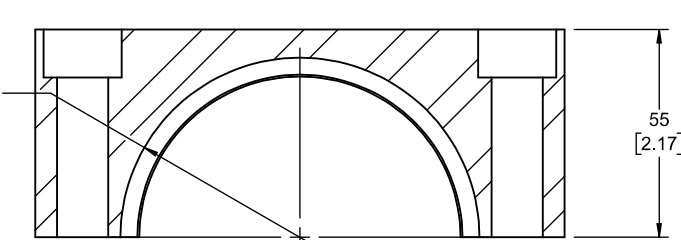
drawing no.
 dessiné no.
 M08



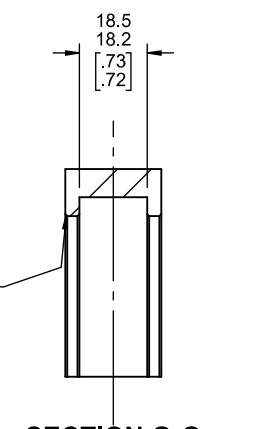
LEFT-HAND TO RIGHT-HAND FEMALE HEX THREAD ADAPTER
ASTM A240/A240M TYPE 316
SCALE 1 : 2



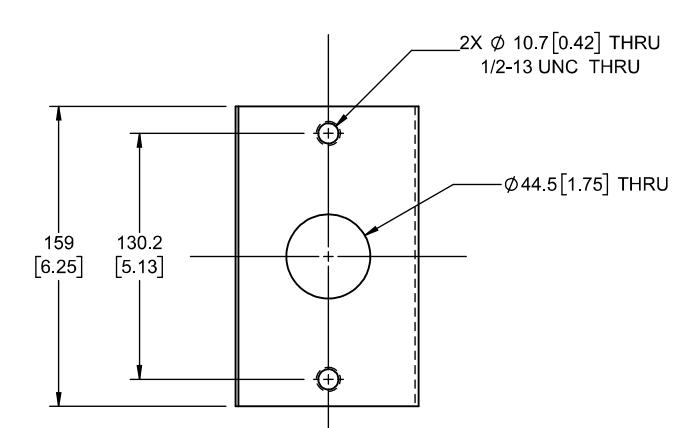
CONNECTING ROD CLEVIS
ASTM A240/A240M TYPE 316
SCALE 1 : 2



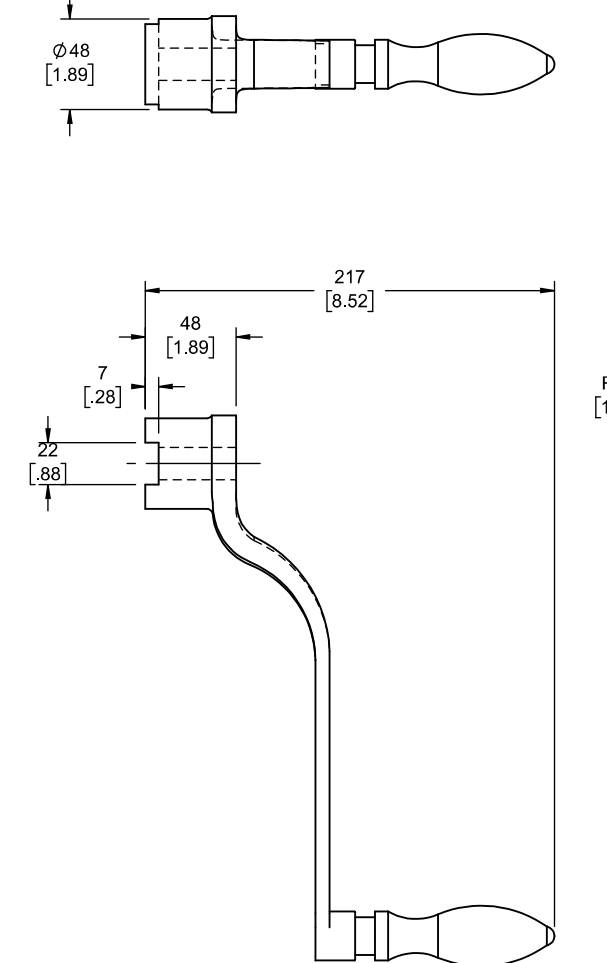
SECTION F-F
SCALE 1 : 2



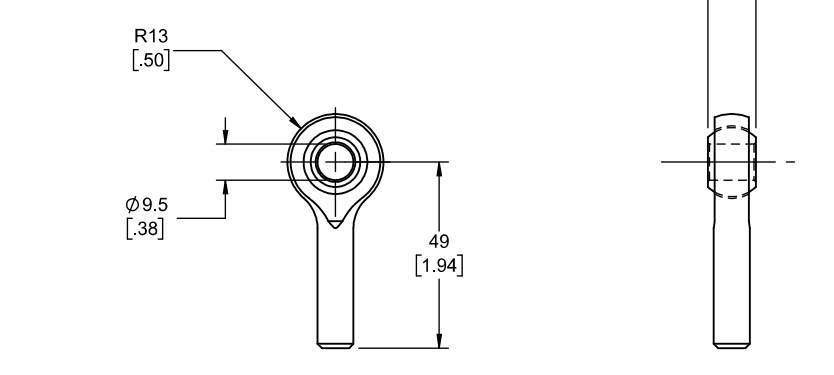
SECTION G-G
SCALE 1 : 2



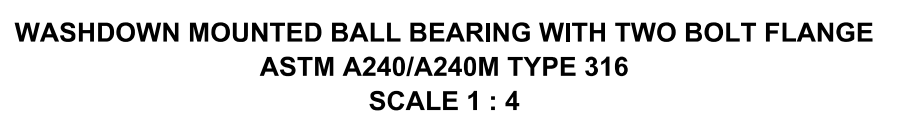
BEARING MOUNT BLOCK
AISI C1018/C1020
SCALE 1 : 4



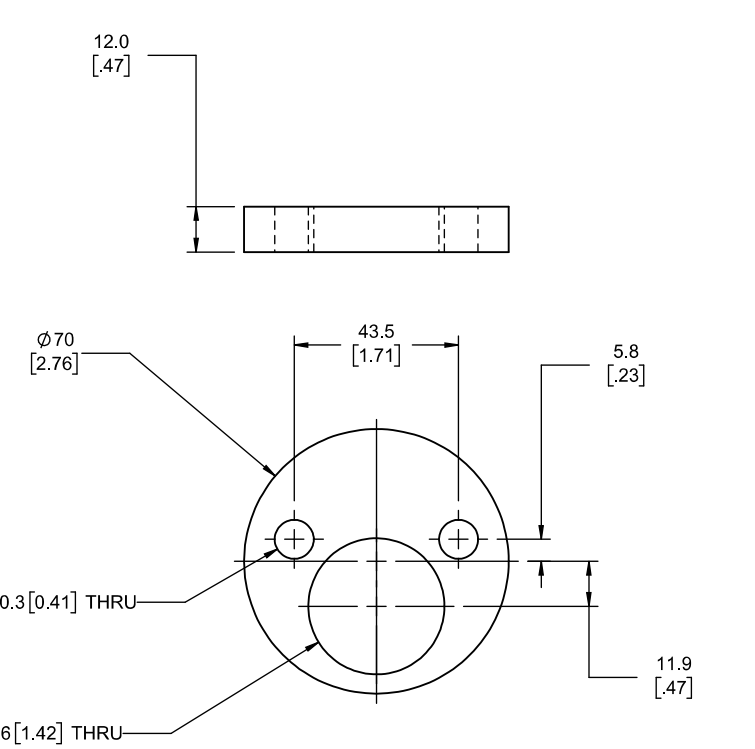
HAND CRANK
STAINLESS STEEL
SCALE 1 : 4



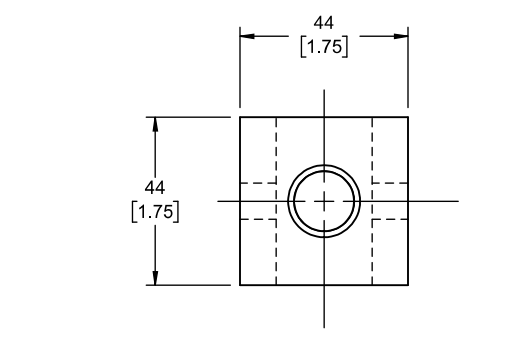
PTFE LINED CORROSION-RESISTANT BALL JOINT ROD END 3/8"-24 THREAD
RIGHT HAND
SCALE 1 : 2



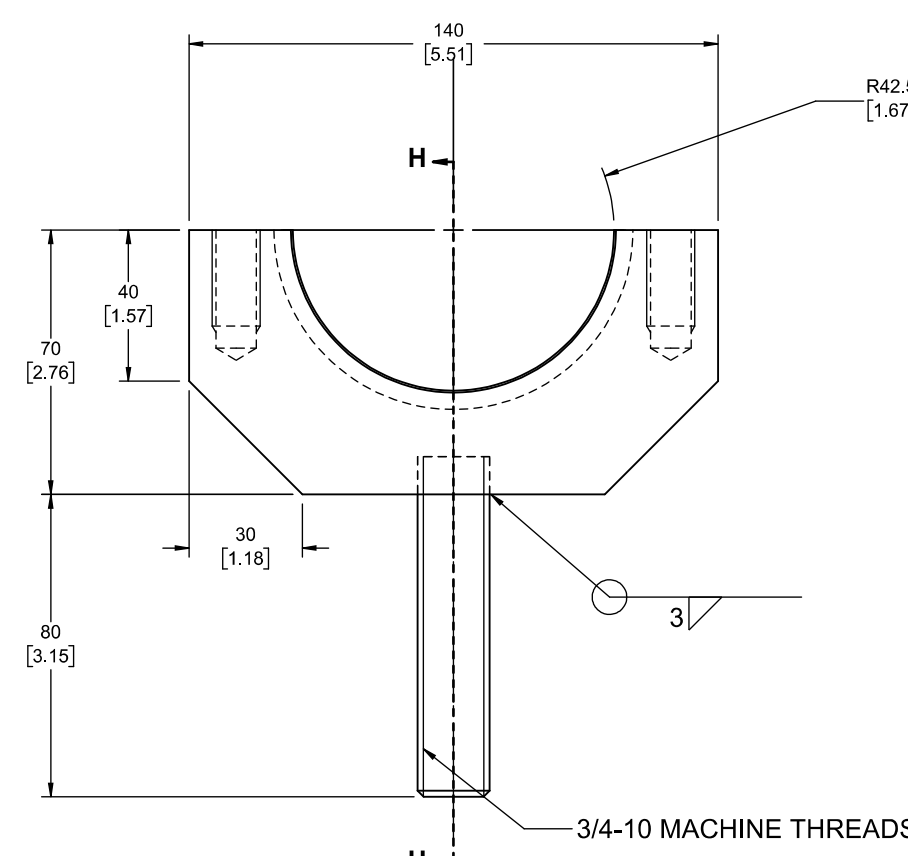
WASHDOWN MOUNTED BALL BEARING WITH TWO BOLT FLANGE
ASTM A240/A240M TYPE 316
SCALE 1 : 4



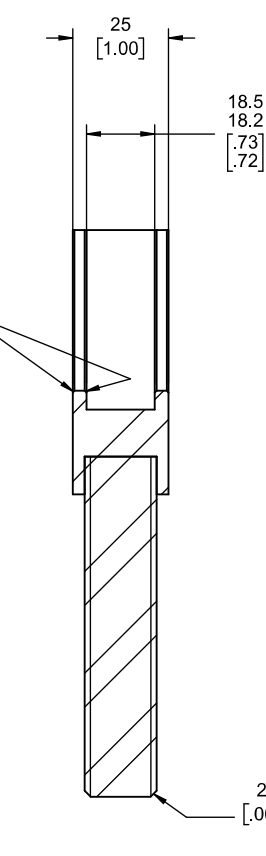
RETAINER PLATE
ASTM A240/A240M TYPE 316
SCALE 1 : 2



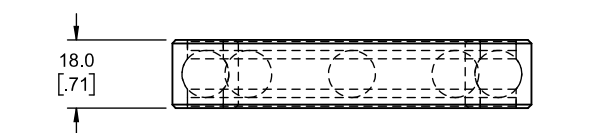
PUMP CLEVIS
ASTM A240/A240M TYPE 316
SCALE 1 : 2



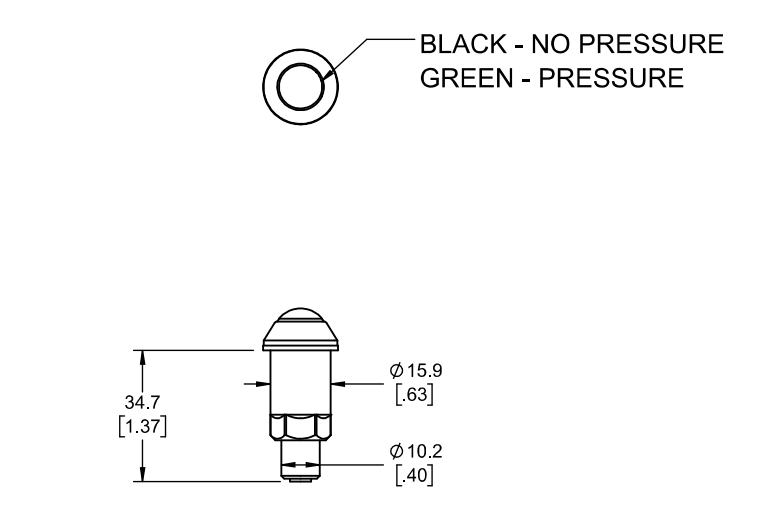
CONNECTING ROD
ASTM A240/A240M TYPE 316
SCALE 1 : 2



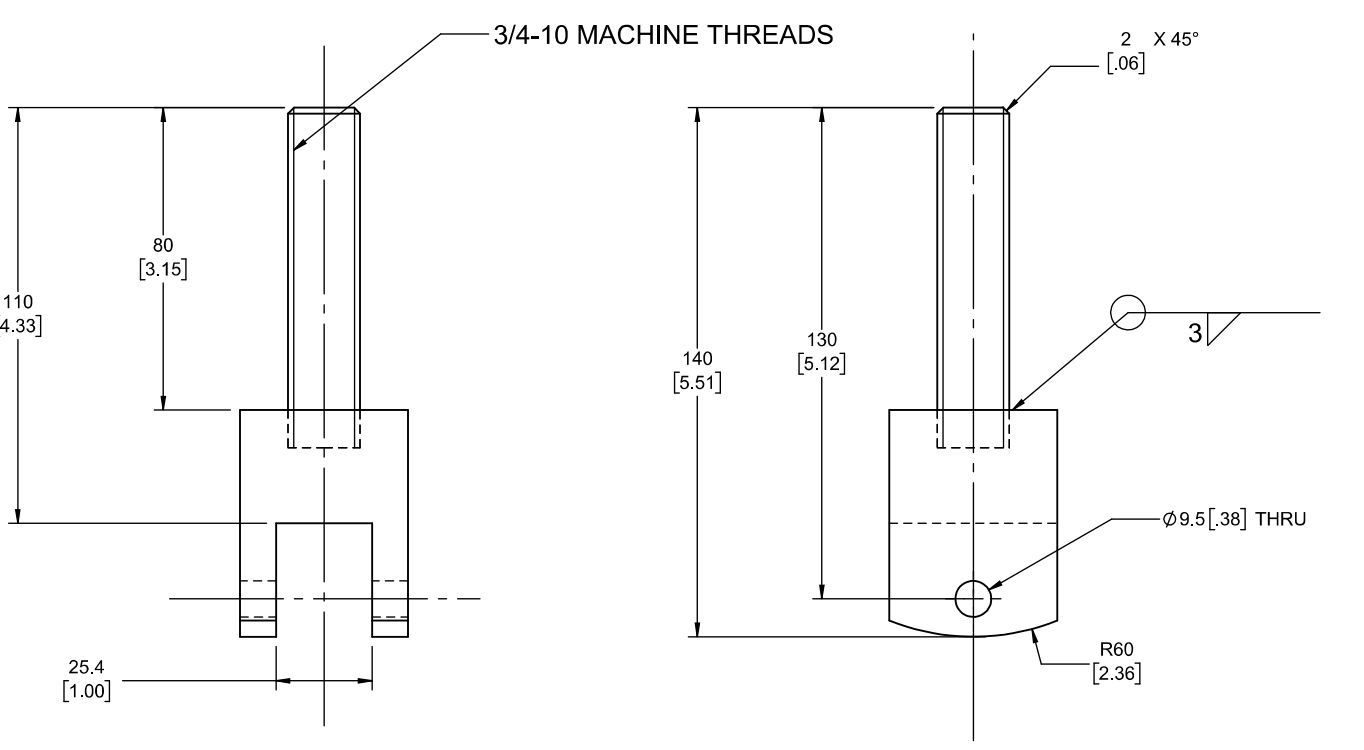
SECTION H-H
SCALE 1 : 2



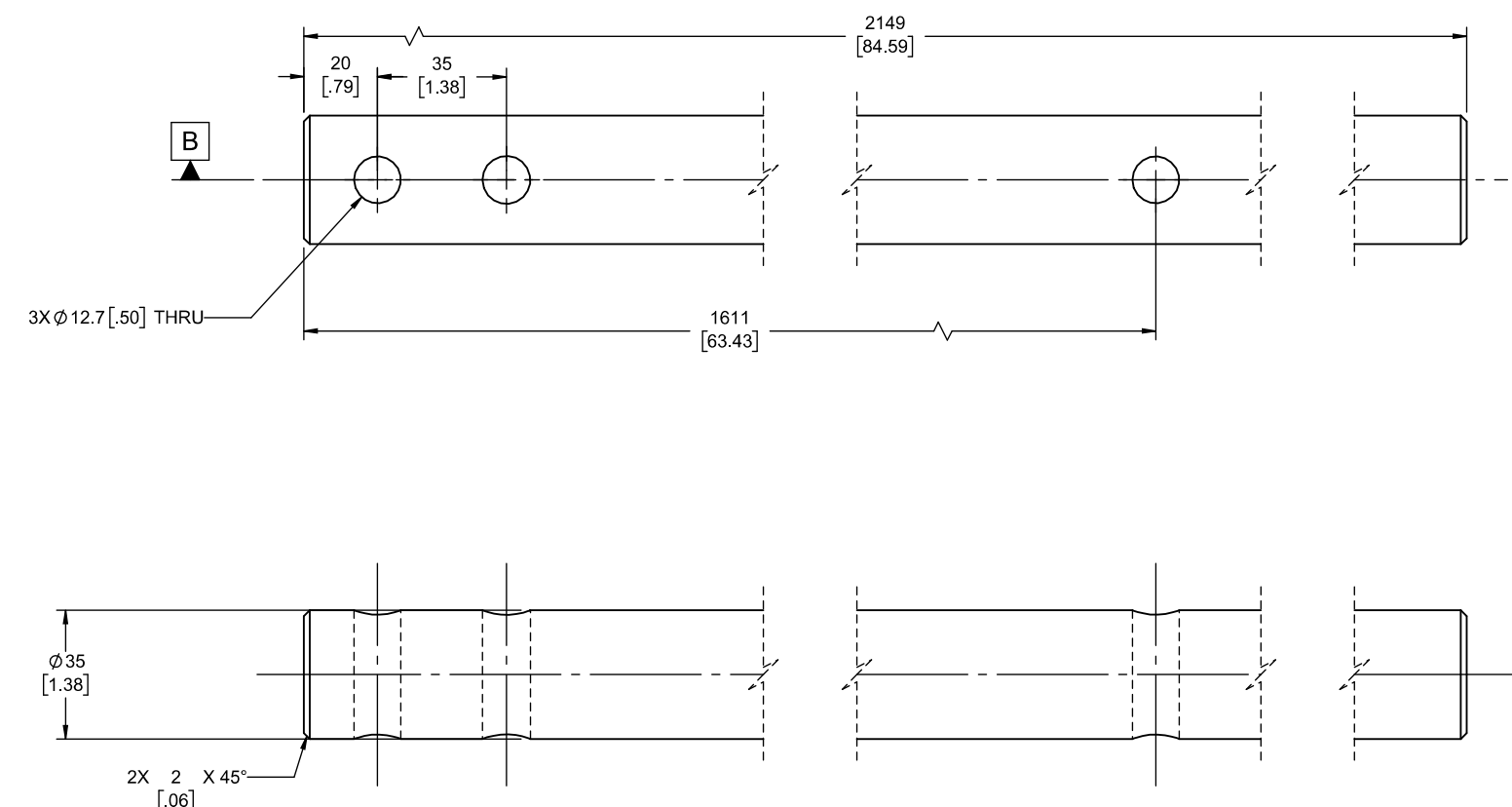
PERMANENTLY LUBRICATED BALL BEARING, SEALED, 6012-2RS
STAINLESS STEEL
SCALE 1 : 2



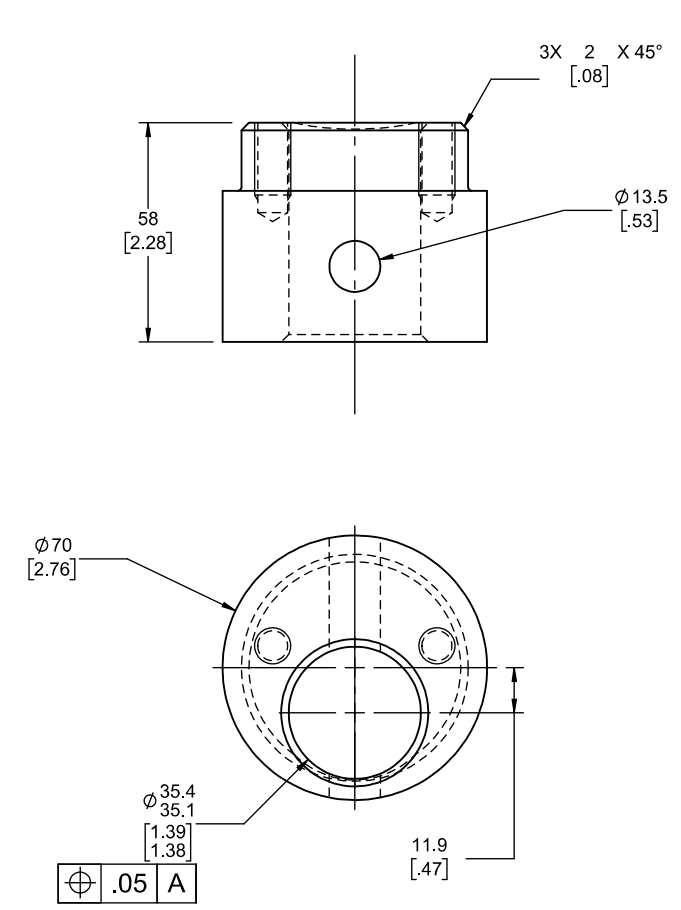
NORGEN ROTOWINK PRESSURE INDICATOR
SCALE 1 : 2



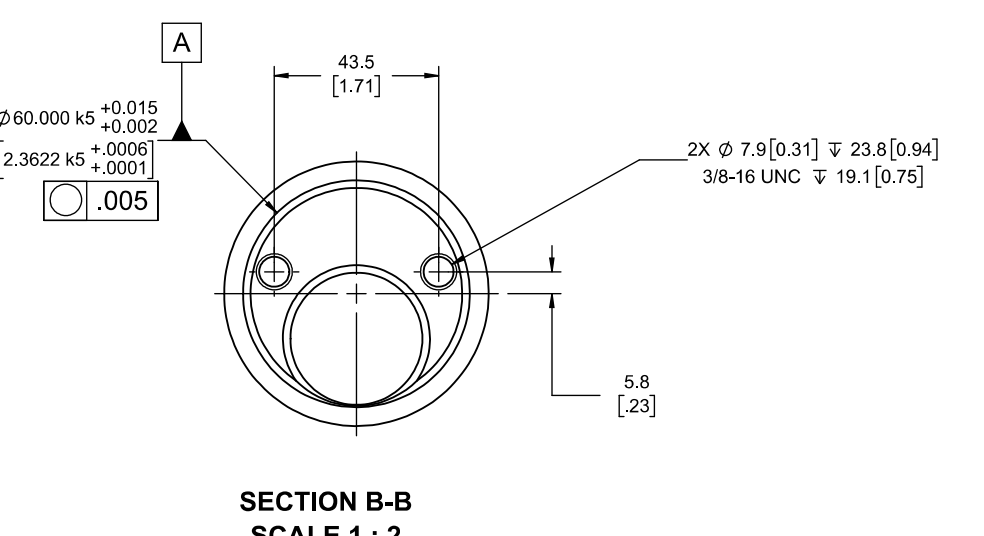
HANDLE
ASTM A240/A240M TYPE 316
SCALE 1 : 2



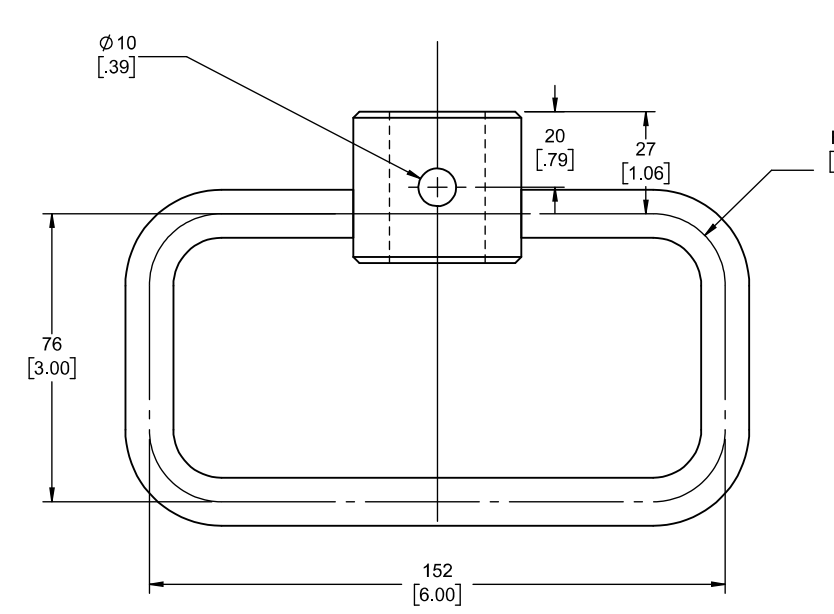
HAND CRANK SHAFT
ASTM A240/A240M TYPE 316
SCALE 1 : 2



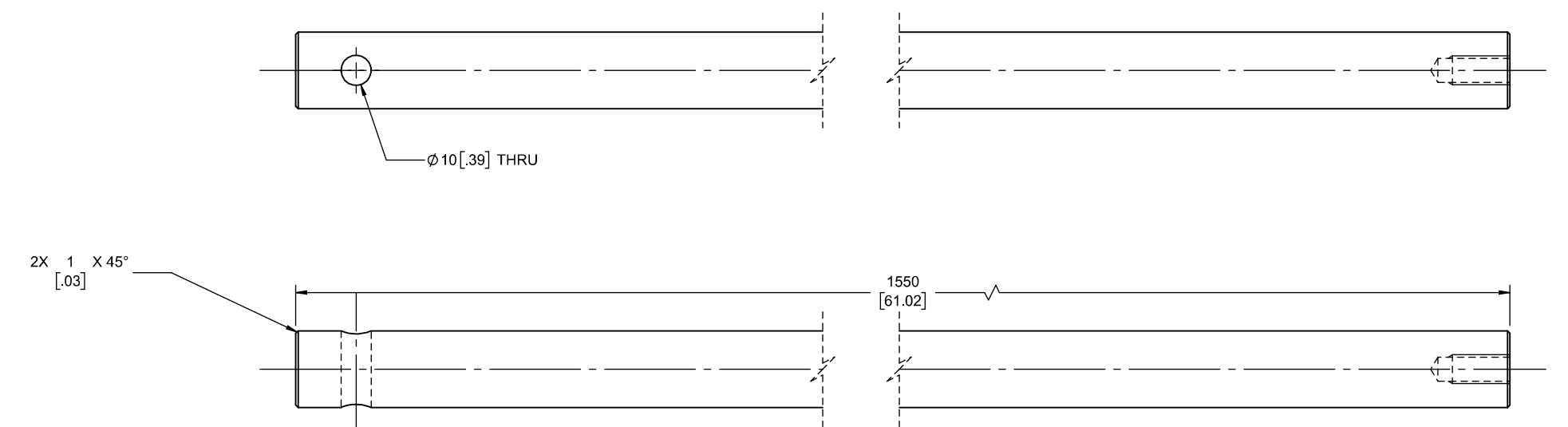
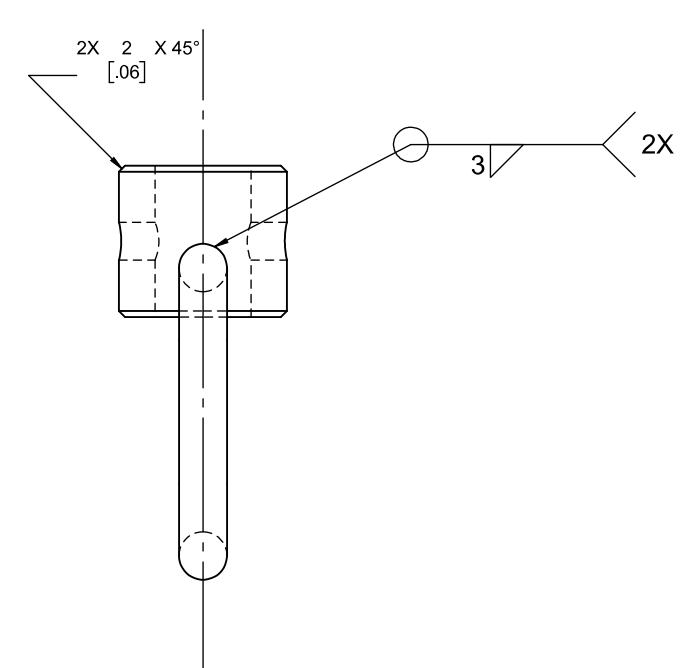
ECCENTRIC CRANK
ASTM A240/A240M TYPE 316
SCALE 1 : 2



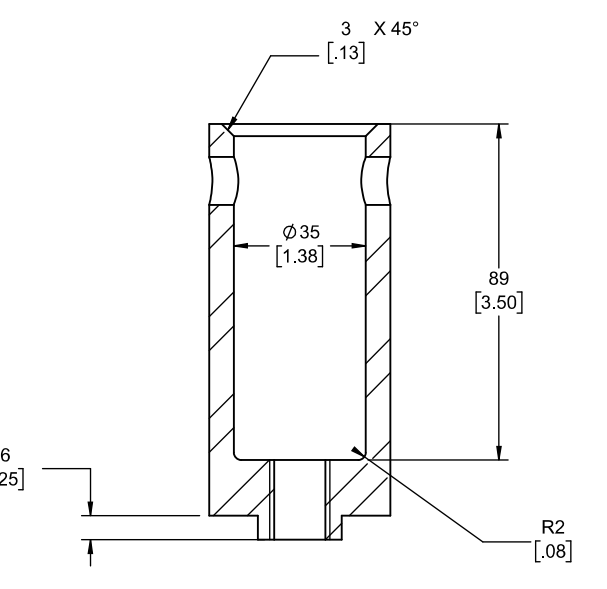
SECTION B-B
SCALE 1 : 2



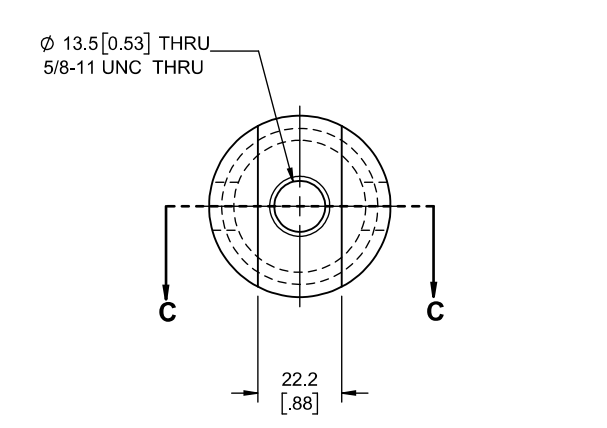
DIRECTIONAL VALVE ADAPTER BAR
ASTM A240/A240M TYPE 316
SCALE 1 : 2



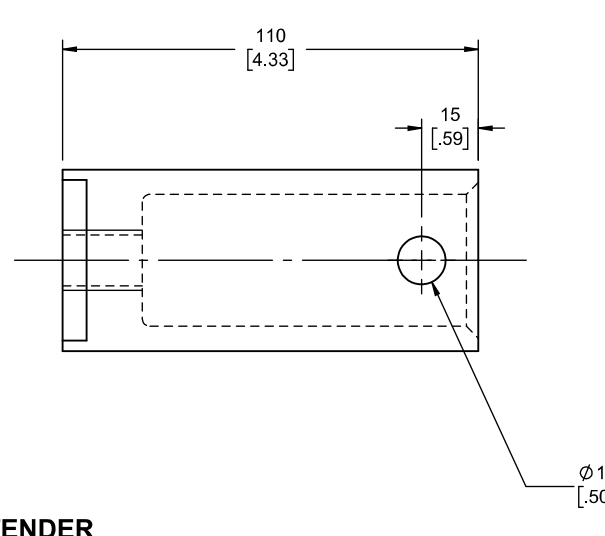
DIRECTIONAL CONTROL SHAFT
ASTM A240/A240M TYPE 316
SCALE 1 : 2



SECTION C-C
SCALE 1 : 2



HAND CRANK EXTENDER
ASTM A240/A240M TYPE 316
SCALE 1 : 2



2	ISSUED FOR TENDER	2021-10-29
1	ISSUED FOR REVIEW	2021-08-06
REVISION		DATE

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

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

project title / titre du projet: Ontario
LOWER BREWERS SWING BRIDGE REHABILITATION

drawing title / titre du dessin: **ENDLIFT SHAFT, BEARING AND CRANK ARM DETAILS**

drawn by / dessiné par: MJB
designed by / conçu par: DAF
approved by / approuvé par: DPC
bid offer / offre: TYLER ATKINSON
project manager / administrateur de projets: TYLER ATKINSON

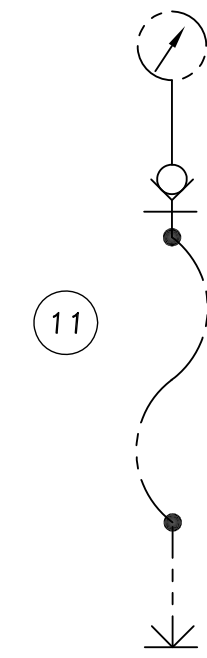
project date / date du projet: 2021-10-29
project no. / no. du projet: 30037015
drawing no. / dessiné no.: M10

DEFAULT TOLERANCES

- ALL DIMENSIONS ARE IN MILLIMETERS.
- TOLERANCES:

X	DECIMALS	± 0.5
XX	DECIMALS	± 0.1
XXX	DECIMALS	± 0.05
	ANGLES	± 0.5°
	HOLE SIZES	± 1mm
	SURFACES	± 3.2 µm

ISSUED FOR TENDER
OCTOBER 29, 2021



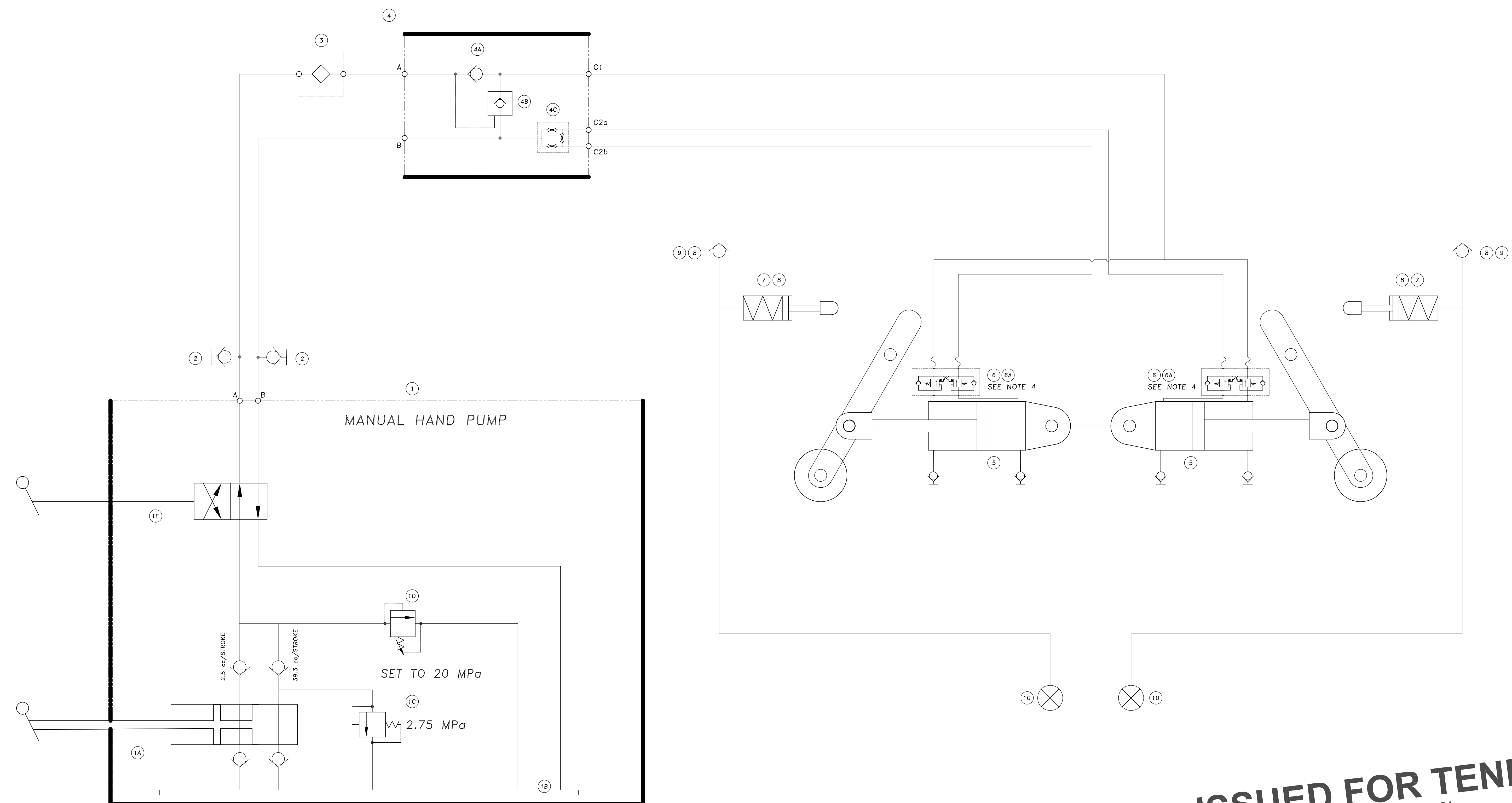
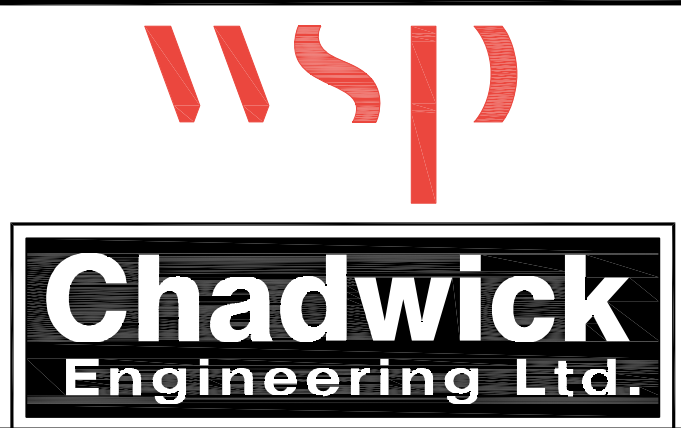
ITEM	QTY	DESCRIPTION	PART NO.
1	1	MANUAL HYDRAULIC PUMP, 2 SPEED, DOUBLE ACTING	ENERPAC - PB42
1A	1	TWO SPEED PUMP, 2.5-39.3cc/STROKE	
1B	1	INTEGRAL OIL RESERVOIR, 2540cc MIN	
1C	1	UNLOADING VALVE, FIXED, 2.75 MPa	
1D	1	RELIEF VALVE, VARIABLE, 6.9 - 69 MPa	
1E	1	DIRECTIONAL CONTROL VALVE, 2W2P	
2	2	HYDRAULIC TEST POINT	LYNCH - MMHY01015
3	1	INLINE HIGH-PRESSURE FILTER, 20 MICRON	ENERPAC - FL-2201
4	1	HYDRAULIC MANIFOLD, CUSTOM, 316 STAINLESS STEEL	
4A	1	FREE FLOW SIDE TO NOSE CHECK VALVE, STAINLESS	SUN - CXCE XCN/AP
4B	1	PILOT TO CLOSE CHECK VALVE, STAINLESS	SUN - COBA XCN/AP
4C	1	HIGH ACCURACY SYNCHRO FLOW DIVIDER-COMBINER, STAINLESS	SUN - FSAS XAN/AP
5	2	HYD. CYLINDER, 2.0" BORE, 1.38" ROD, 4.0" STROKE	SEE DWG NO. M08
6	2	DIRECT MOUNT DUAL COUNTERBALANCE MANIFOLD, CUSTOM	
6A	4	COUNTERBALANCE VALVE, 4 PORT VENTED, 3:1 PILOT	SUN - CWCA-LHN
7	2	PNEUMATIC CYL, 1.0" BORE X 0.5" STROKE, SPRING EXTEND	SEE DWG NO. M08
8	4	BREATHER VENT, CORROSION RESISTANT, 304 STAINLESS, NPT	McMASTER - 4456K11
9	2	CHECK VALVE, 0.33 PSI CRACK PRESSURE, 316 STAINLESS STEEL	McMASTER - 7838K53
10	2	PRESSURE INDICATOR, VISUAL, DIAPHRAGM OPERATED	NORGREN - 5VS-402-800
11	1	TEST HOSE C/W 0-3000 PSI GAUGE	

- NOTES:
1. FLUID SHALL BE GREENPLUS HYDRAULIC FLUID ES.
 2. ALL SEAL MATERIAL SHALL BE BUNA "N".
 3. ALL TUBING SHALL BE 0.50" X 0.065" WALL ASTM A269 316 STAINLESS.
 4. DIRECT MOUNT MANIFOLD ON CYLINDER ROD PORT. CONNECT WITH STAINLESS TUBING TO CAP PORT.
 5. ALL HOSE SHALL BE SAE 100R2.

Public Services and Procurement Canada
Services publics et Approvisionnement Canada

Ontario Region
Parcs Canada Infrastructure Directorate
Heritage Canada and Engineering Works
Région de l'Ontario
Direction de l'Infrastructure de Parcs Canada
Canaux historiques et travaux d'ingénierie

Parcs Canada
Canada



revision	date
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Detail No.	No. of detail	drawing no. - where detail required	design no. - ou detail existe
A			
B			
C			

project title
titre du projet

Ontario

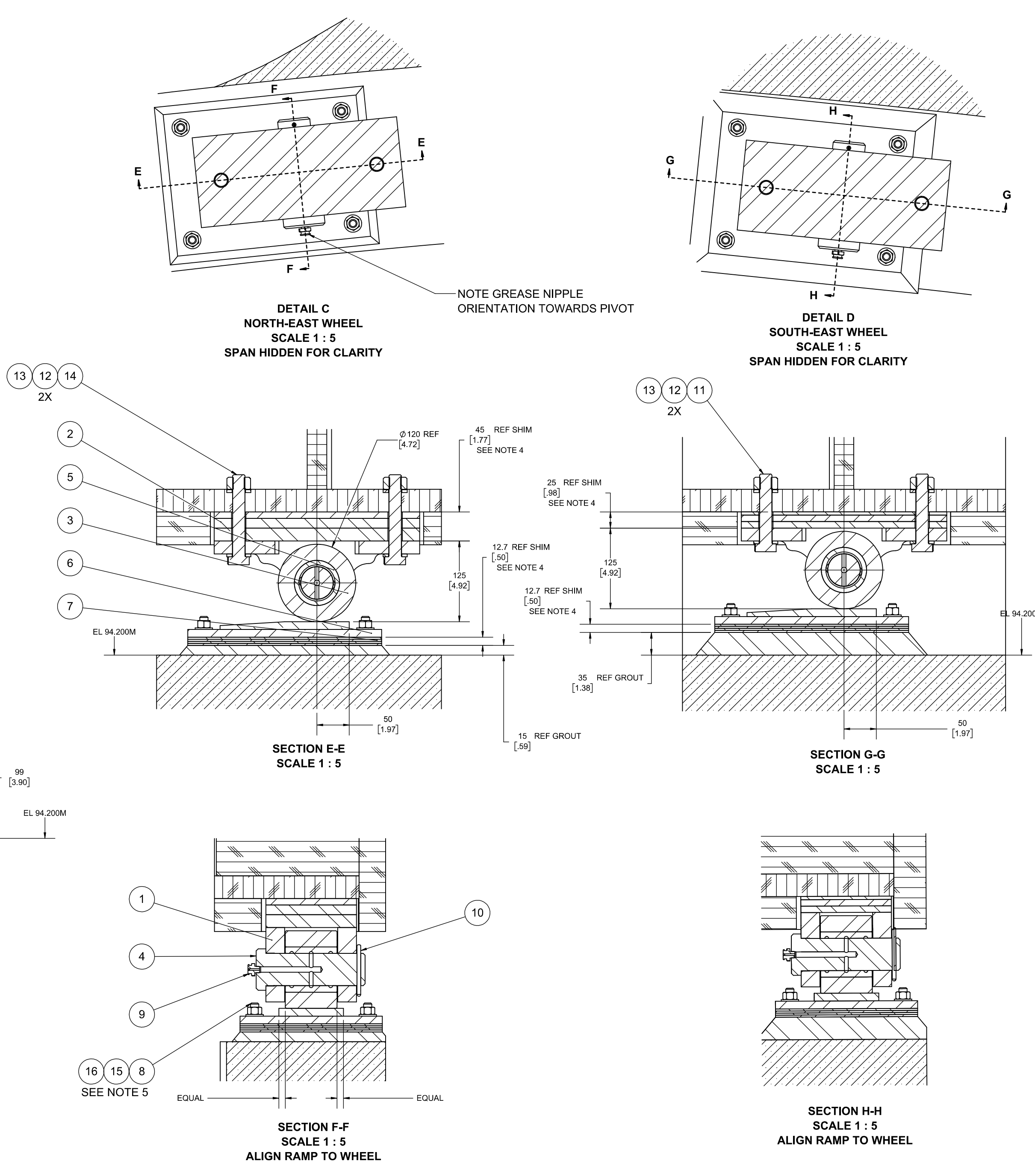
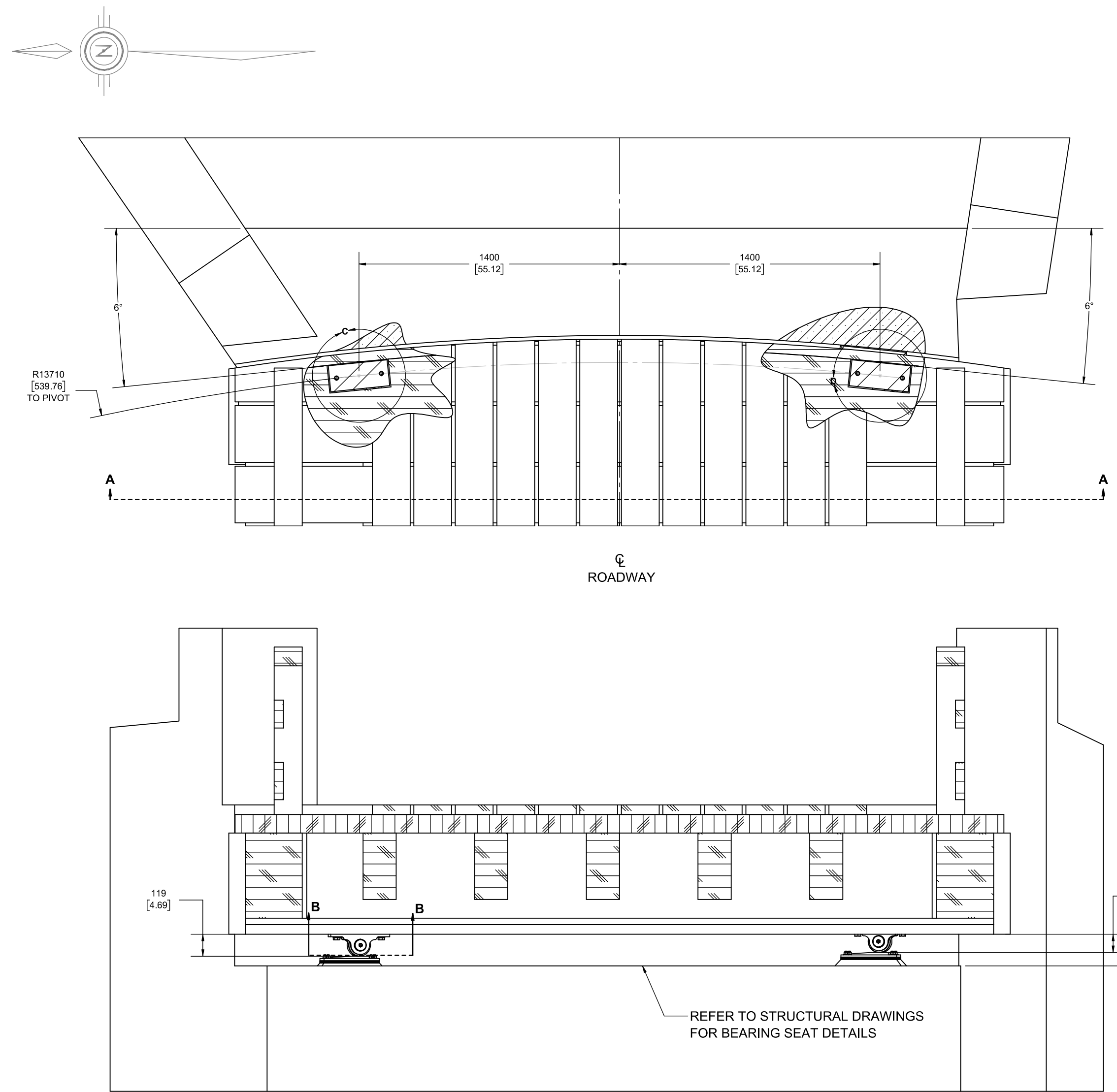
LOWER BREWERS SWING BRIDGE
REHABILITATION
RIDEAU CANAL

drawing title
titre du dessin

HYDRAULIC AND PNEUMATIC
SCHEMATIC

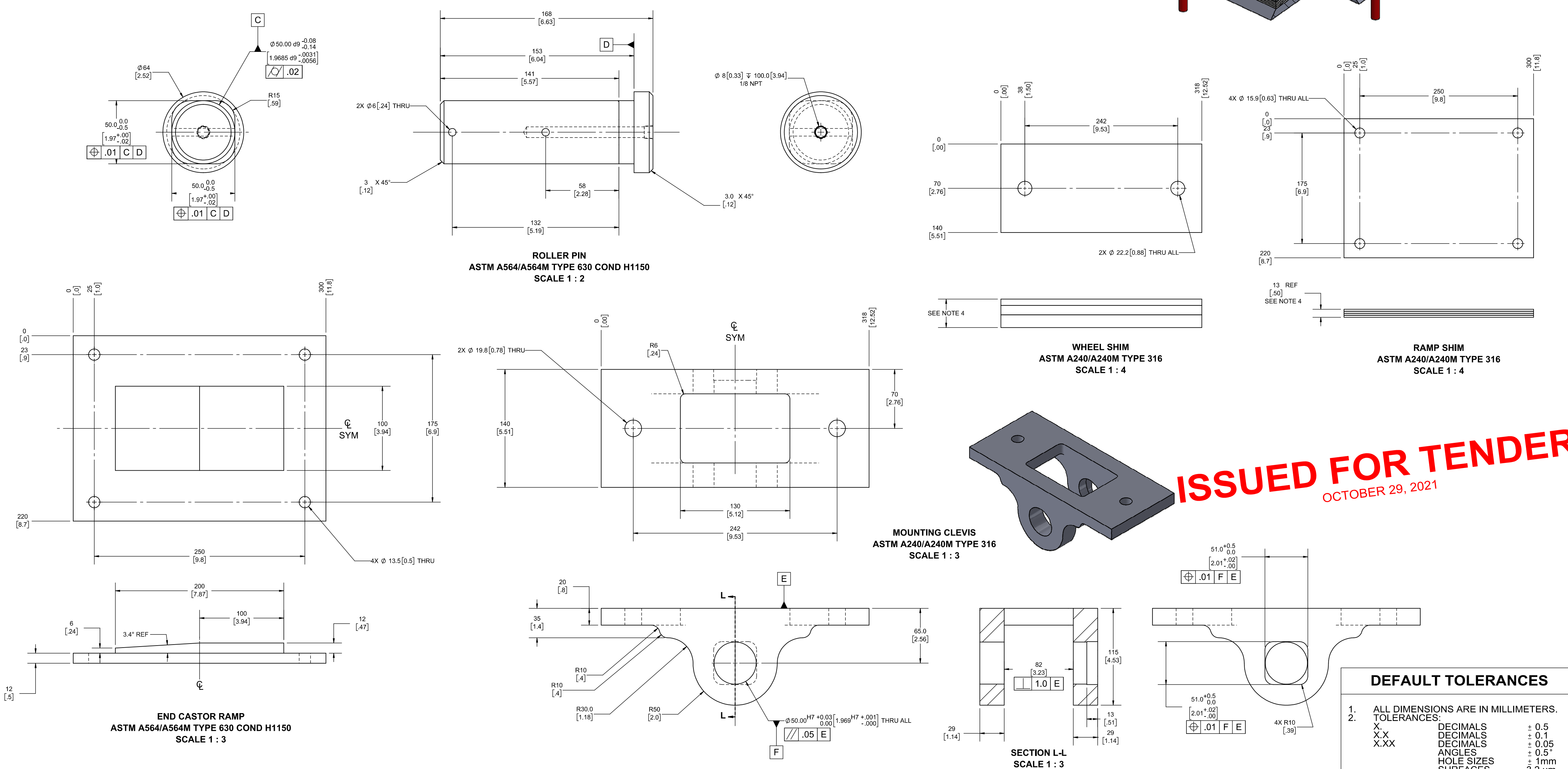
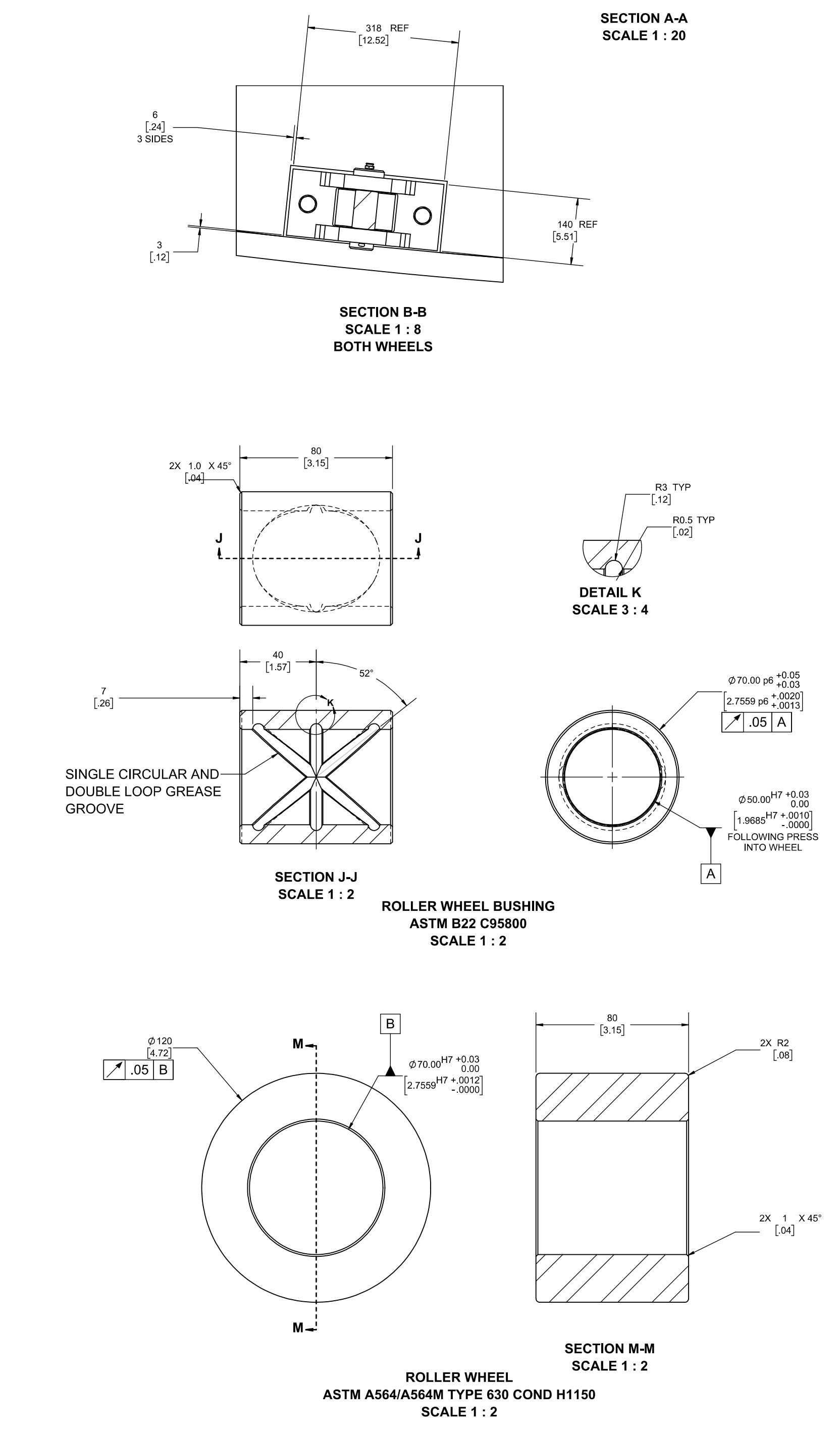
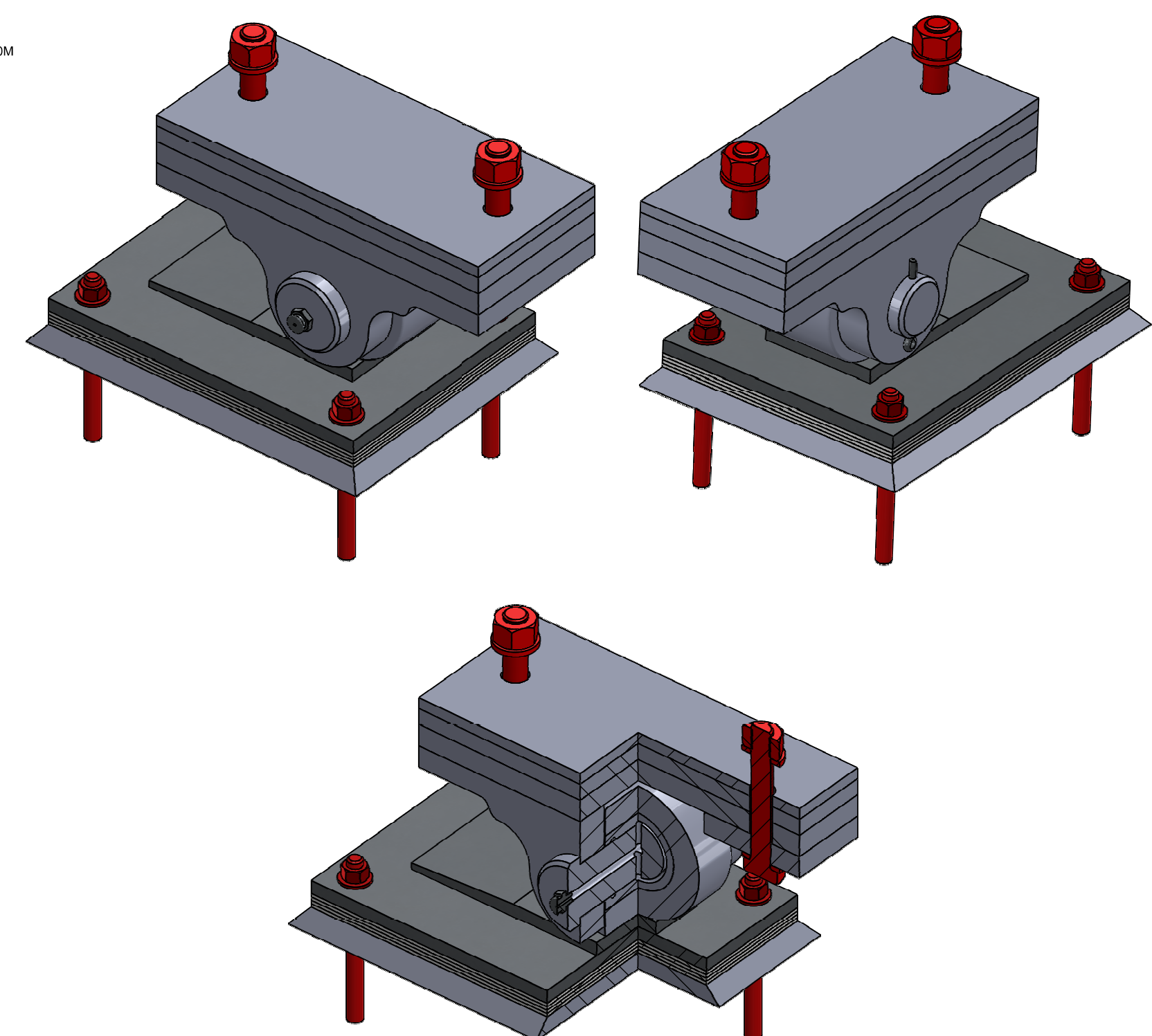
drawn by dessiné par	DAF
designed by conc par	DAF
approved by approuvé par	DPC
bid offre	TYLER ATKINSON
project manager administrateur de projets	
project date date du projet	2021-09-03
project no. no. du projet	30037015
drawing no. dessiné no.	M11

ISSUED FOR TENDER
OCTOBER 29, 2021



ITEM NO.	QTY.	DESCRIPTION	MATERIAL	WEIGHT (KG)
1	2	MOUNTING CLEVIS	ASTM A240/A240M TYPE 316	9.0
2	2	WHEEL SHIM	ASTM A240/A240M TYPE 316	15.7
3	2	ROLLER WHEEL	ASTM A564/A564M TYPE 630 COND H1150	4.8
4	2	ROLLER PIN	ASTM A564/A564M TYPE 630 COND H1150	2.7
5	2	ROLLER WHEEL BUSHING	ASTM B22 C95800	1.3
6	2	END CASTOR RAMP	ASTM A564/A564M TYPE 630 COND H1150	8.0
7	2	RAMP SHIM	ASTM A240/A240M TYPE 316	6.6
8	8	THREADED ROD ANCHOR ϕ 1/2-13UNC	AISI TYPE 316 ASTM F593 CW2	0.2
9	2	BUTTON-HEAD GREASE FITTING WITH BALL CHECK VALVE, 1/8" NPTF MALE	ASTM A240/A240M TYPE 316	
10	2	COTTER PIN ϕ 6.3mm X 63.5mm LONG	ASTM A240/A240M TYPE 316	
11	2	HEAVY HEX STRUCTURAL BOLT, 3/4" X 4.25 LG	ASTM A252/A252M GR. C, GALV	
12	8	STRUCTURAL WASHER, 3/4"	ASTM F436/F436M, GALV	
13	4	HEAVY HEX STRUCTURAL NUT, 3/4-10 UNC	ASTM A563 GR. C, GALV	
14	2	HEAVY HEX STRUCTURAL BOLT, 3/4" X 5 LG	ASTM A252/A252M GR. C, GALV	
15	8	NARROW FLAT WASHER 1/2", TYPE A	A4 (316) ASTM A240/A240M	
16	8	HEX NUT 1/2-13 UNC	A4 (316) ASTM F594 GR. 2	

- NOTES:
- SEE DRAWING M01 FOR FURTHER DETAILS APPLICABLE TO THIS ASSEMBLY.
 - SEE SPECIFICATION SECTION 13.10.00 FOR FURTHER DETAILS APPLICABLE TO THIS DRAWING.
 - SHOP ASSEMBLE AND TEST PRIOR TO INSTALLATION ON SITE.
 - ADJUST NOMINAL SHIM VALUE UNTIL WHEEL CLEARS RAMP BY 0.5-1.0mm WHEN BRIDGE IS CLOSED AND END LIFTS ARE RETRACTED.
 - CONTRACTOR TO SIZE ANCHOR LENGTH TO SUIT APPLICATION REQUIREMENTS.



ISSUED FOR TENDER
OCTOBER 29, 2021

DEFAULT TOLERANCES

- ALL DIMENSIONS ARE IN MILLIMETERS.
- TOLERANCES:
 - DECIMALS: ± 0.5
 - DECIMALS: ± 0.1
 - DECIMALS: ± 0.05
 - ANGLES: ± 0.5°
 - HOLE SIZES: ± 1mm
 - SURFACES: ± 3.2 µm

Public Services and Procurement Canada
Services publiques et Approvisionnement Canada

Ontario Region
Parcs Canada Infrastructure Directorate
Heritage Canada and Engineering Works
Région du Estrie
Direction de l'infrastructure de Parcs Canada
Parcs historiques et travaux d'ingénierie

Parcs Canada

WSP

Chadwick Engineering Ltd.
www.chadwickengineering.com

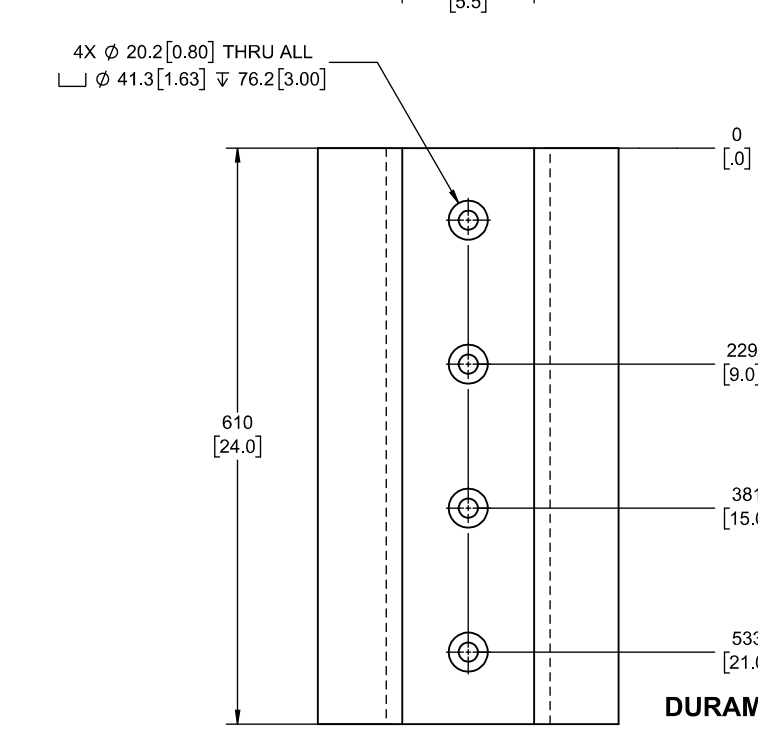
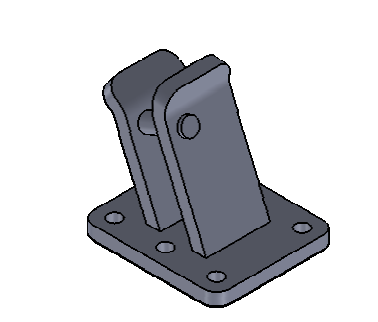
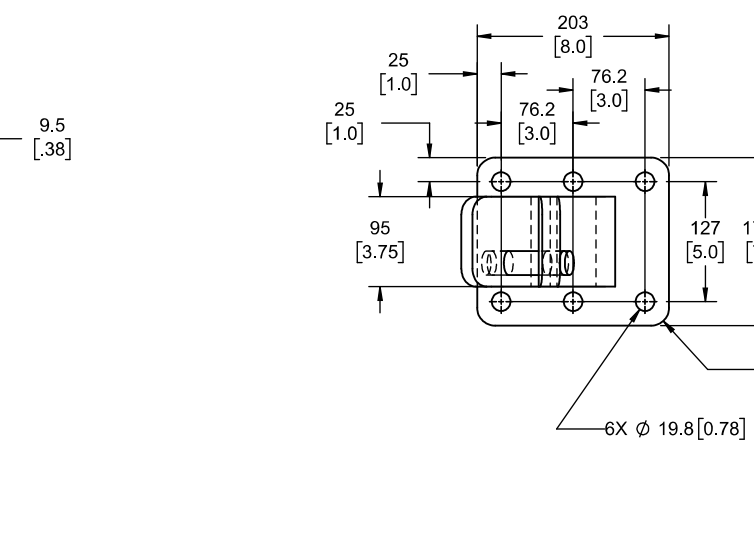
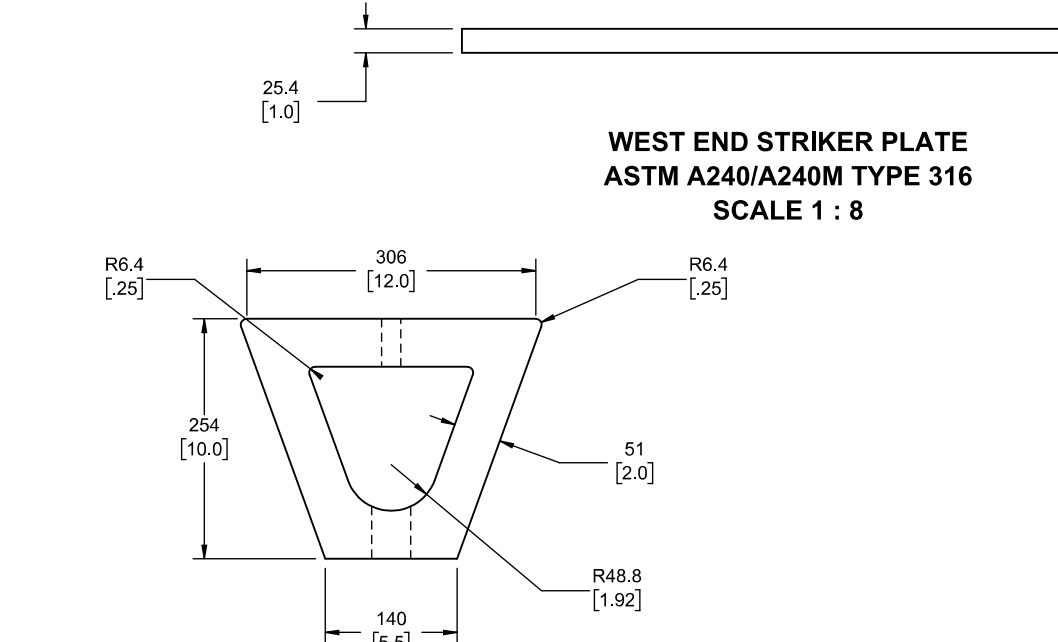
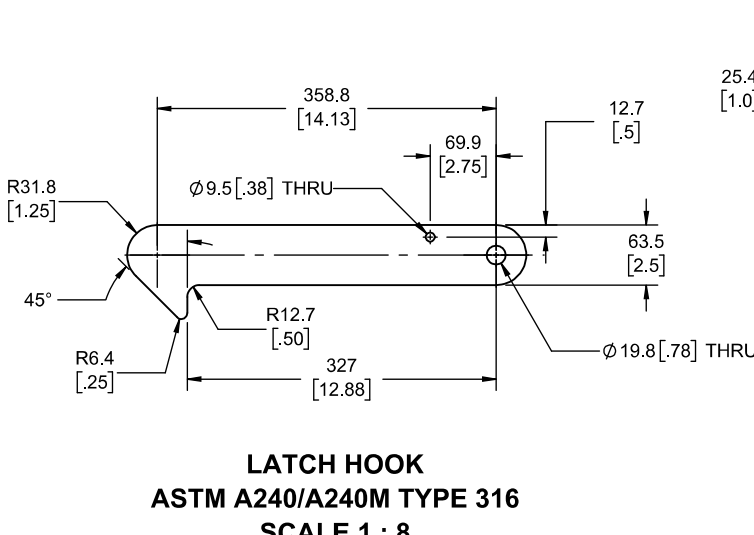
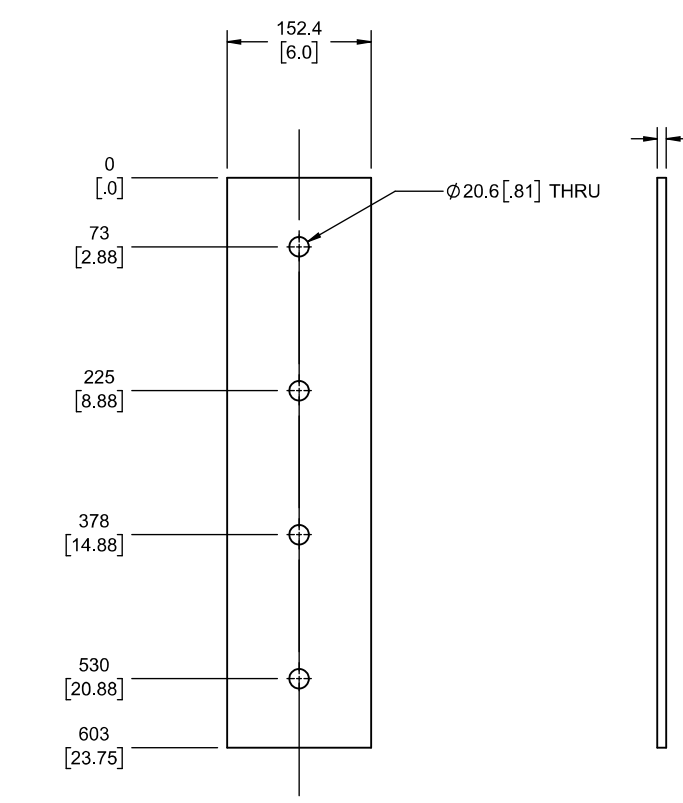
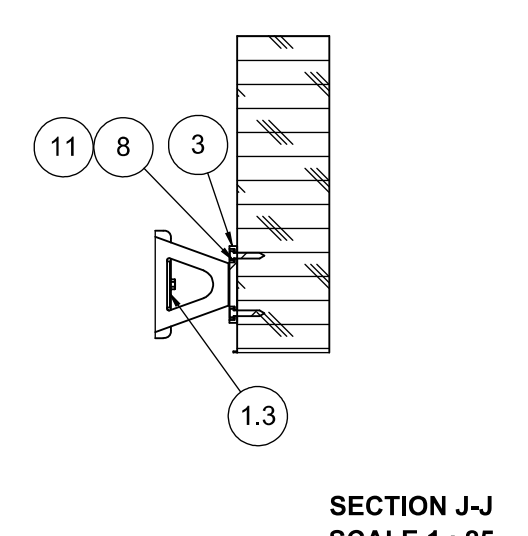
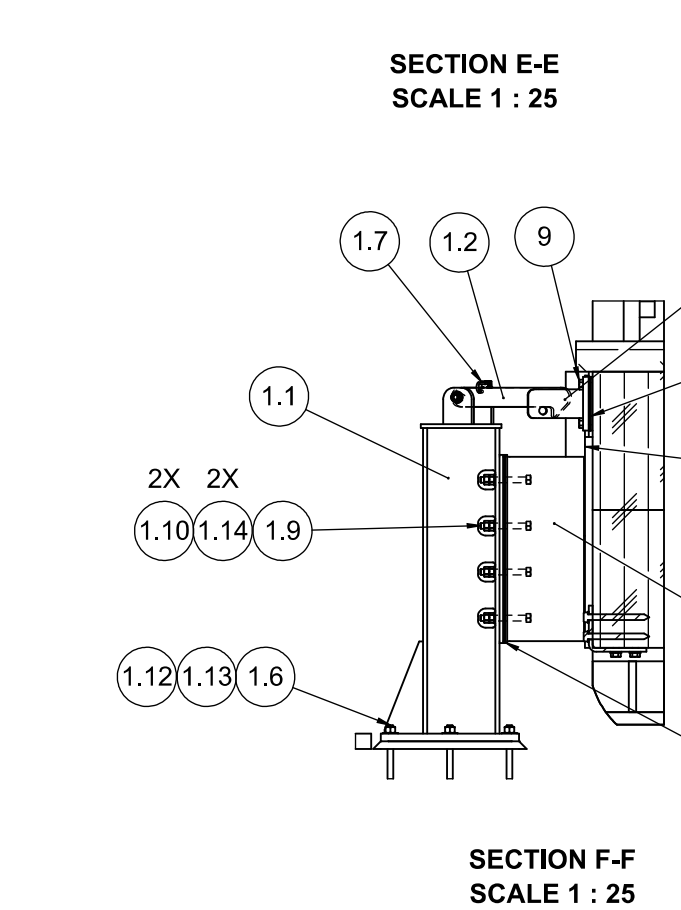
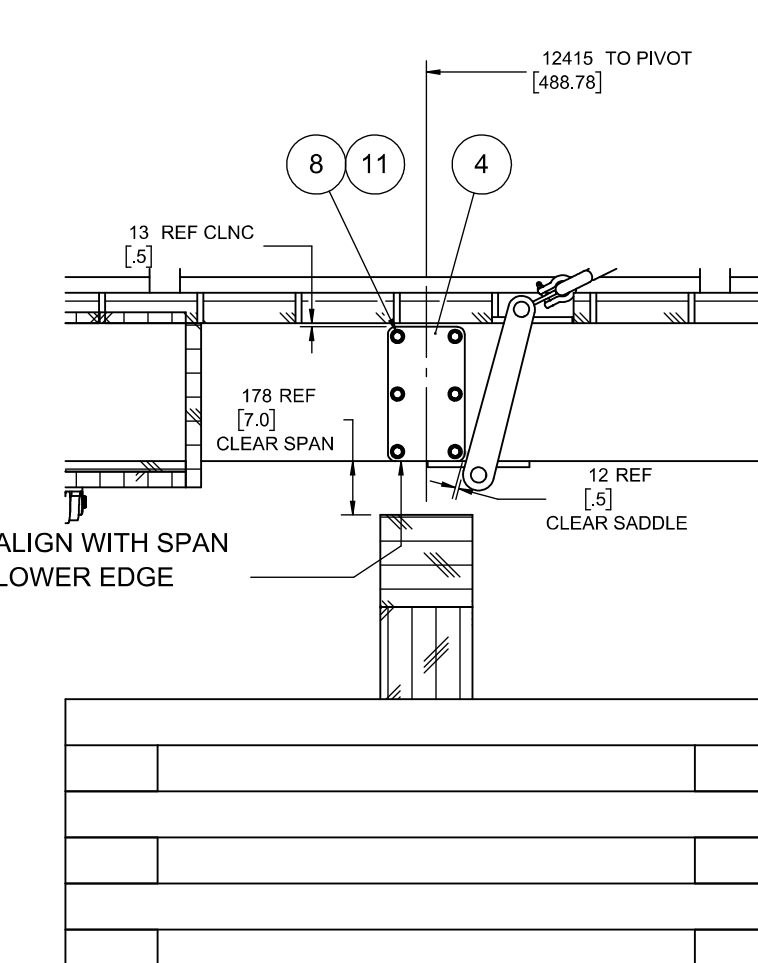
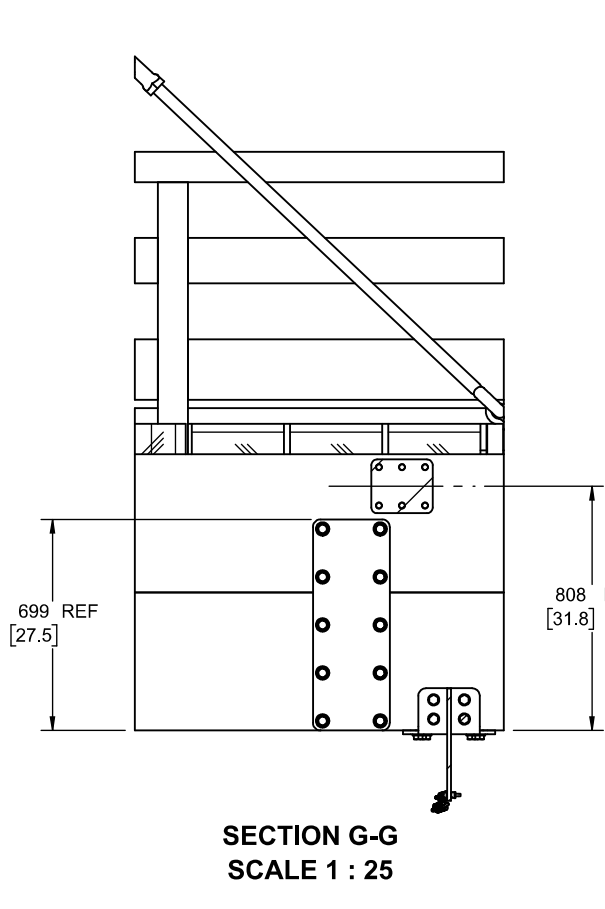
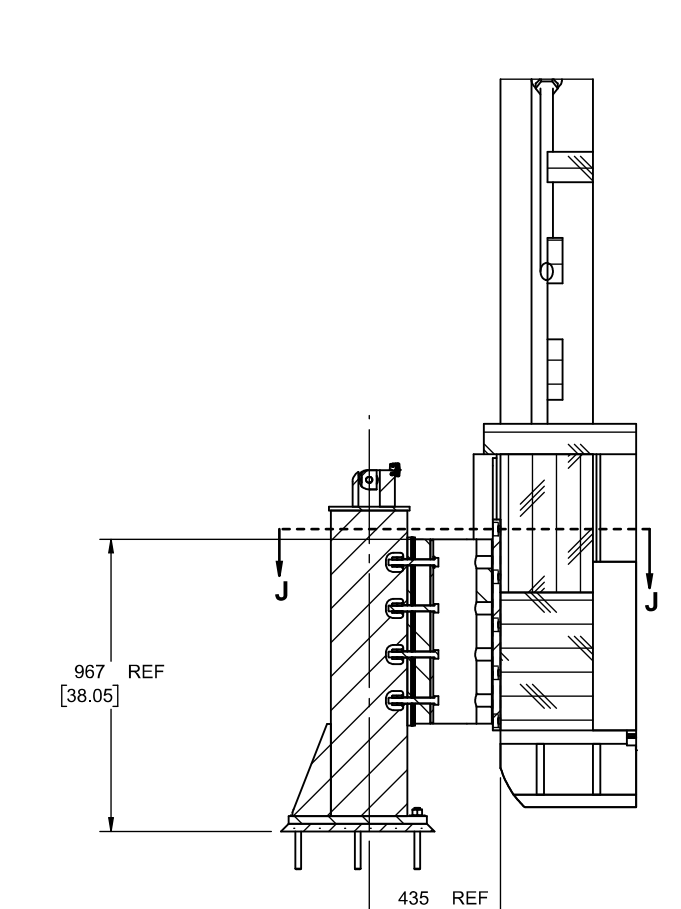
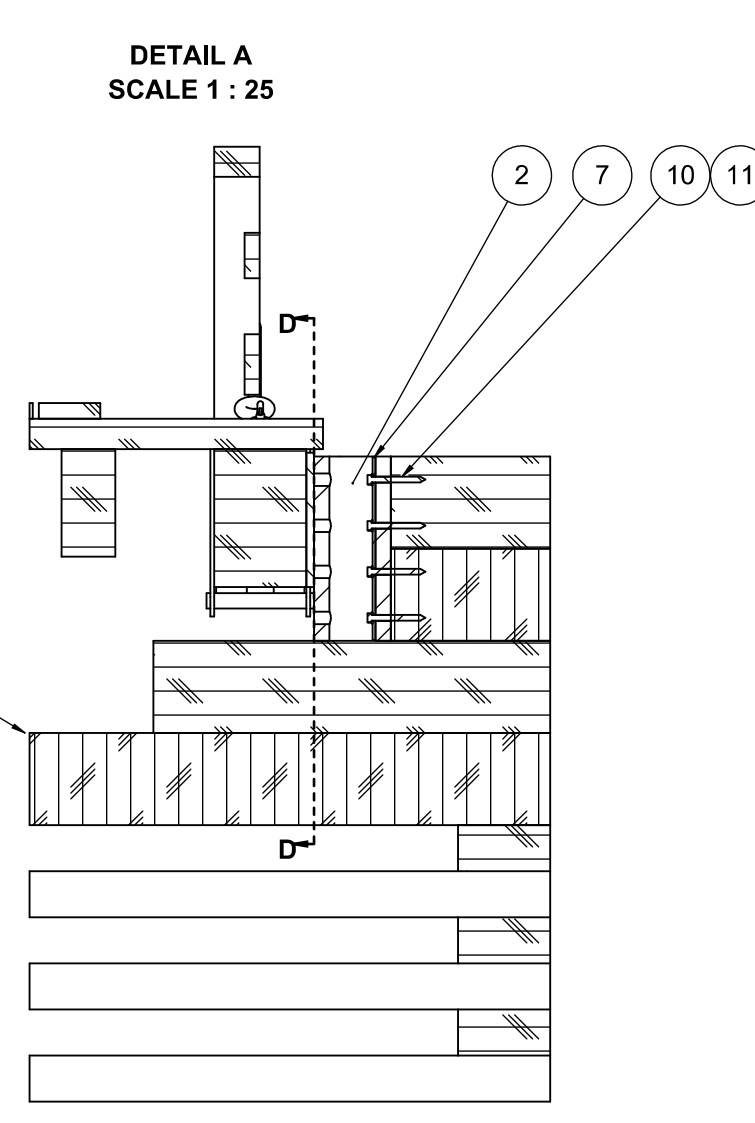
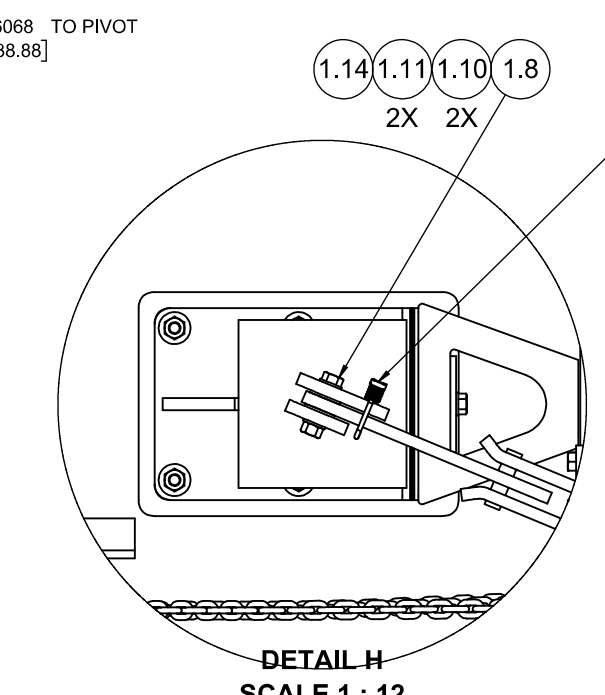
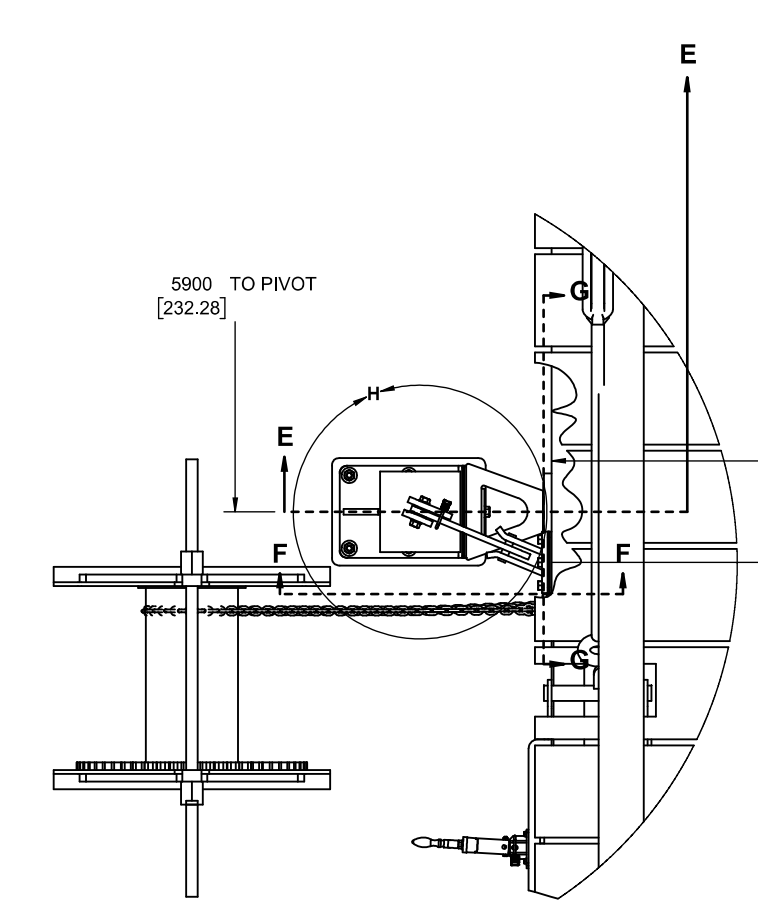
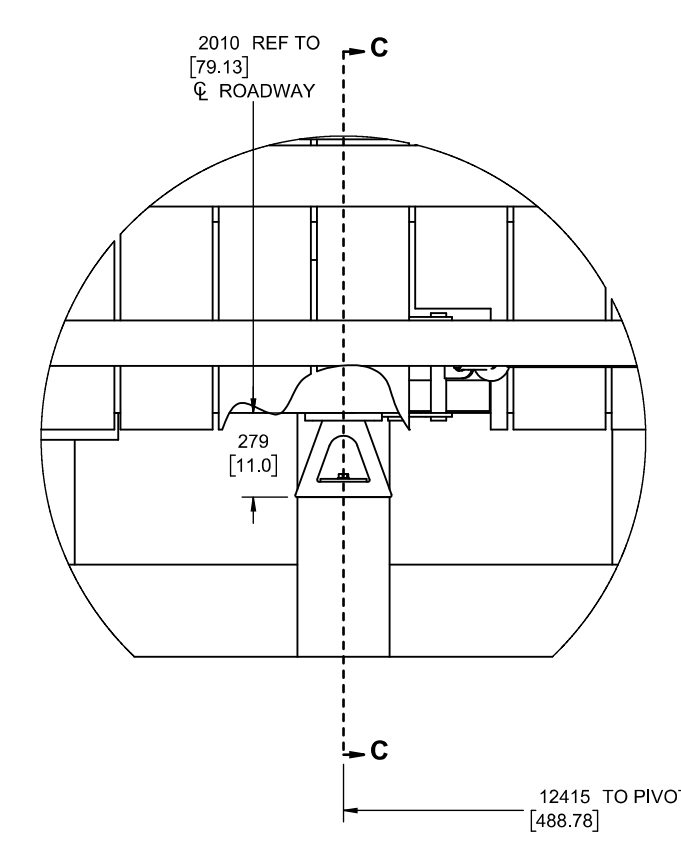
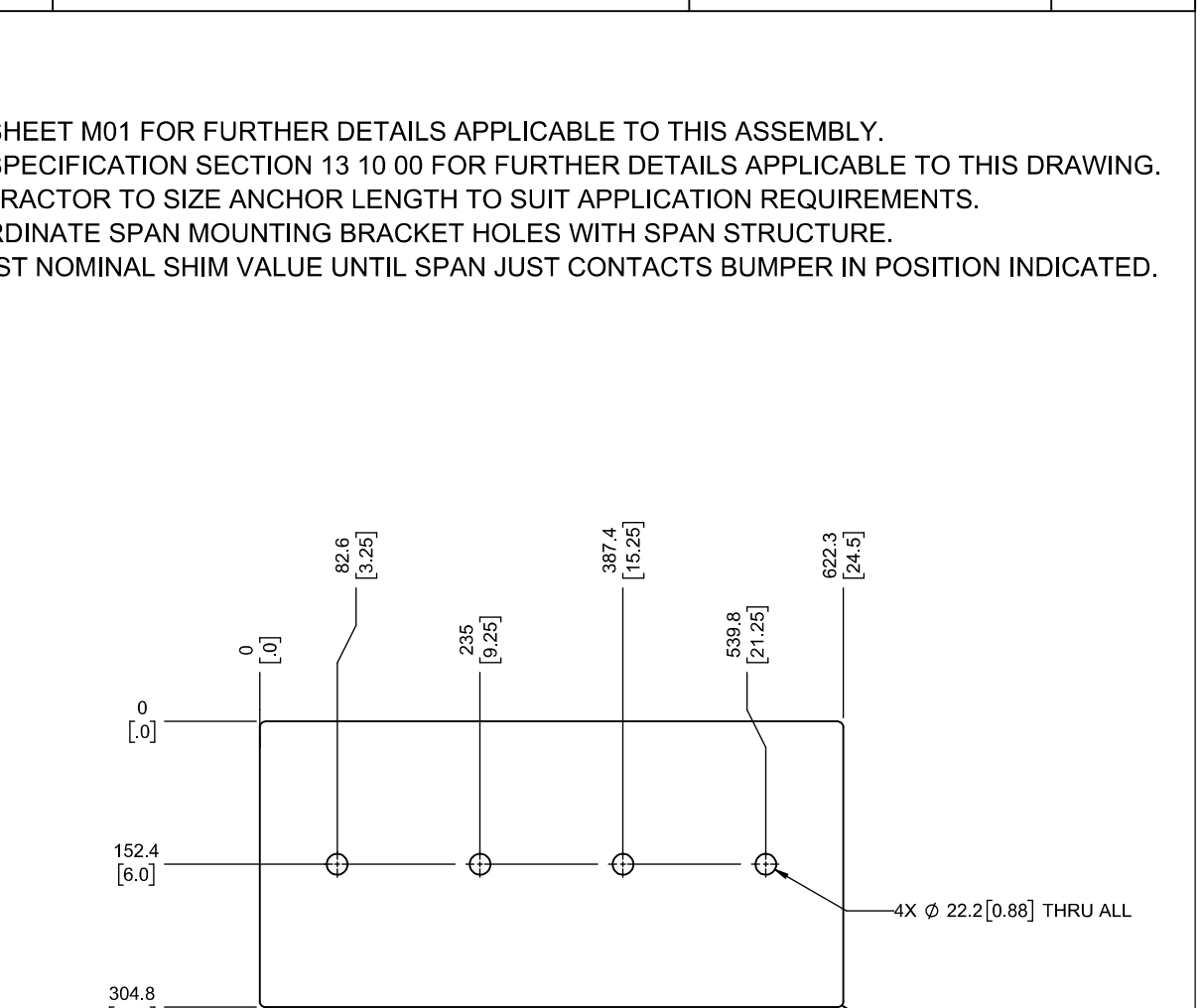
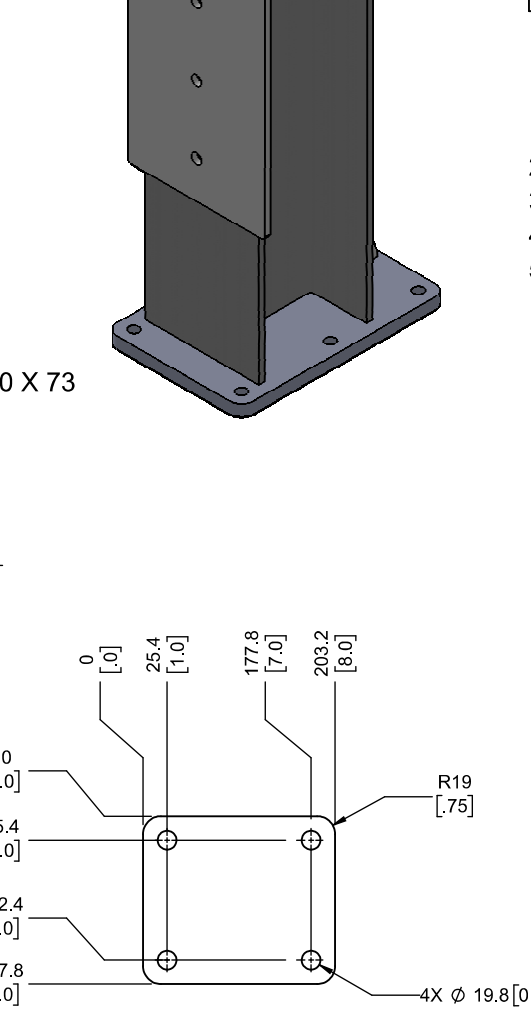
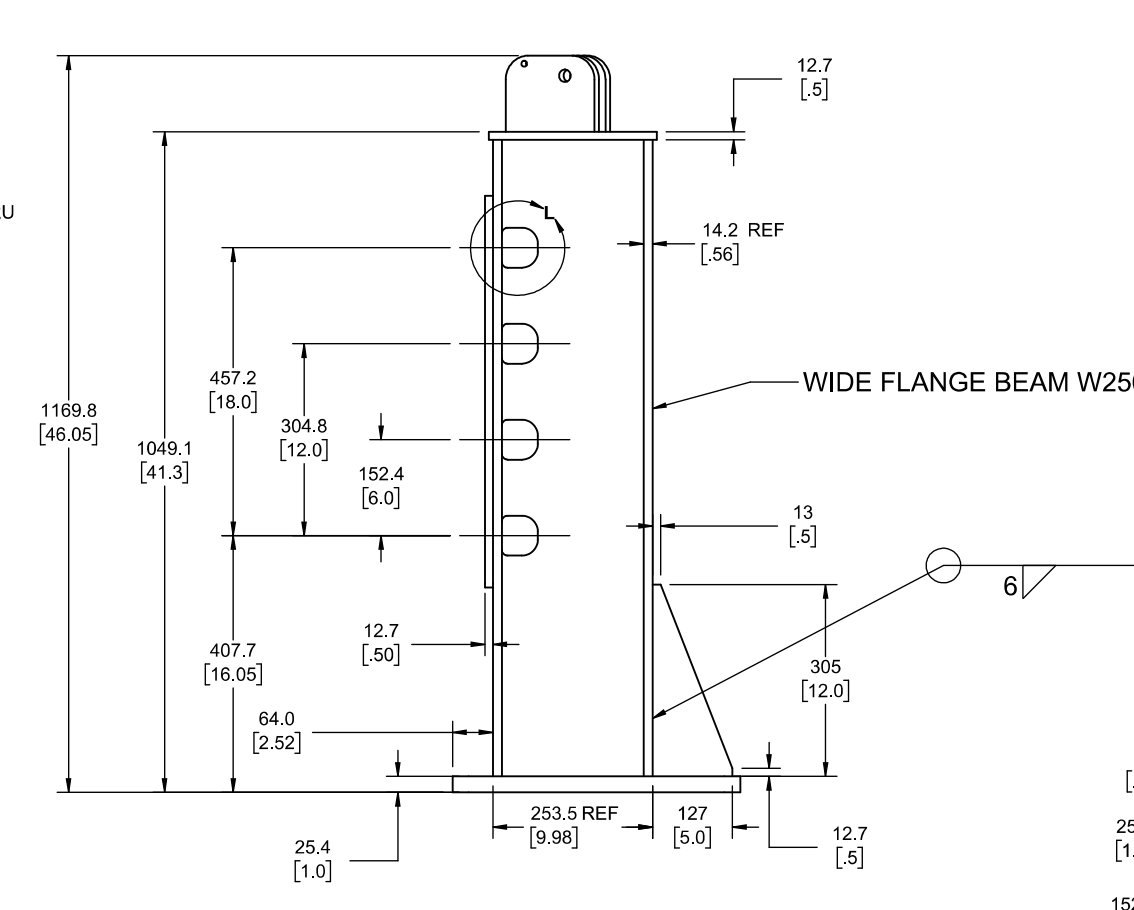
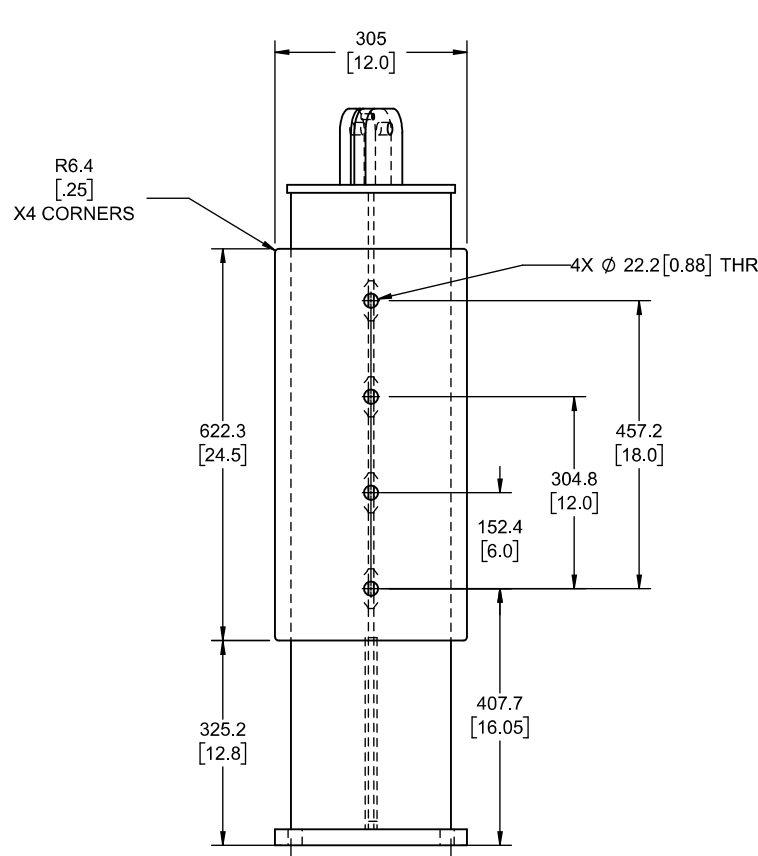
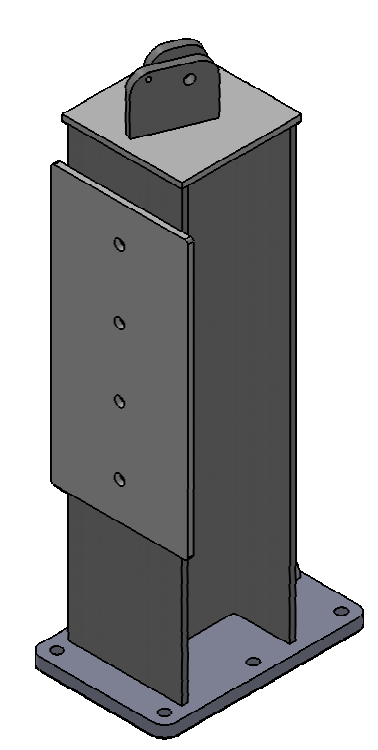
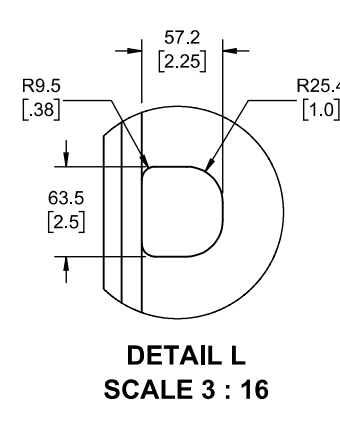
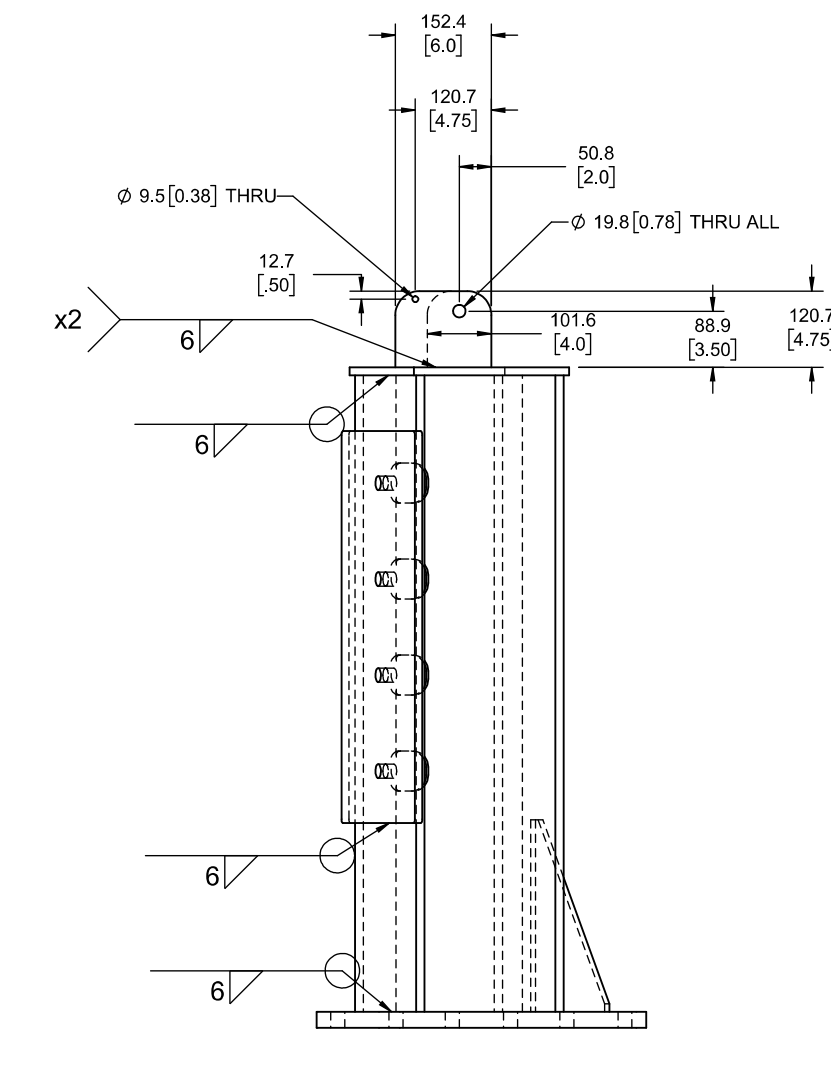
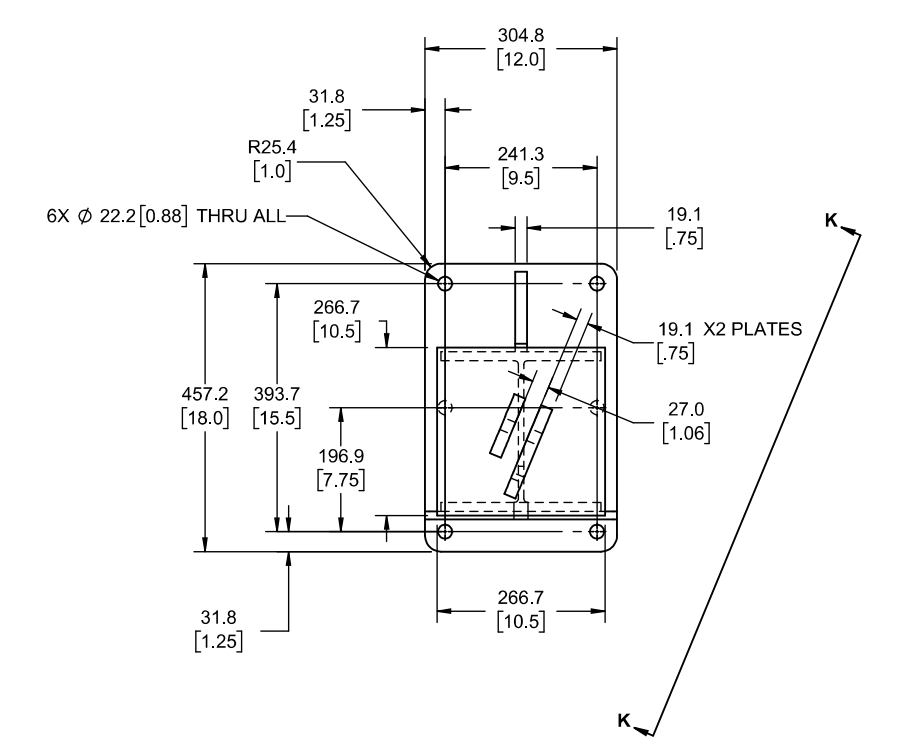
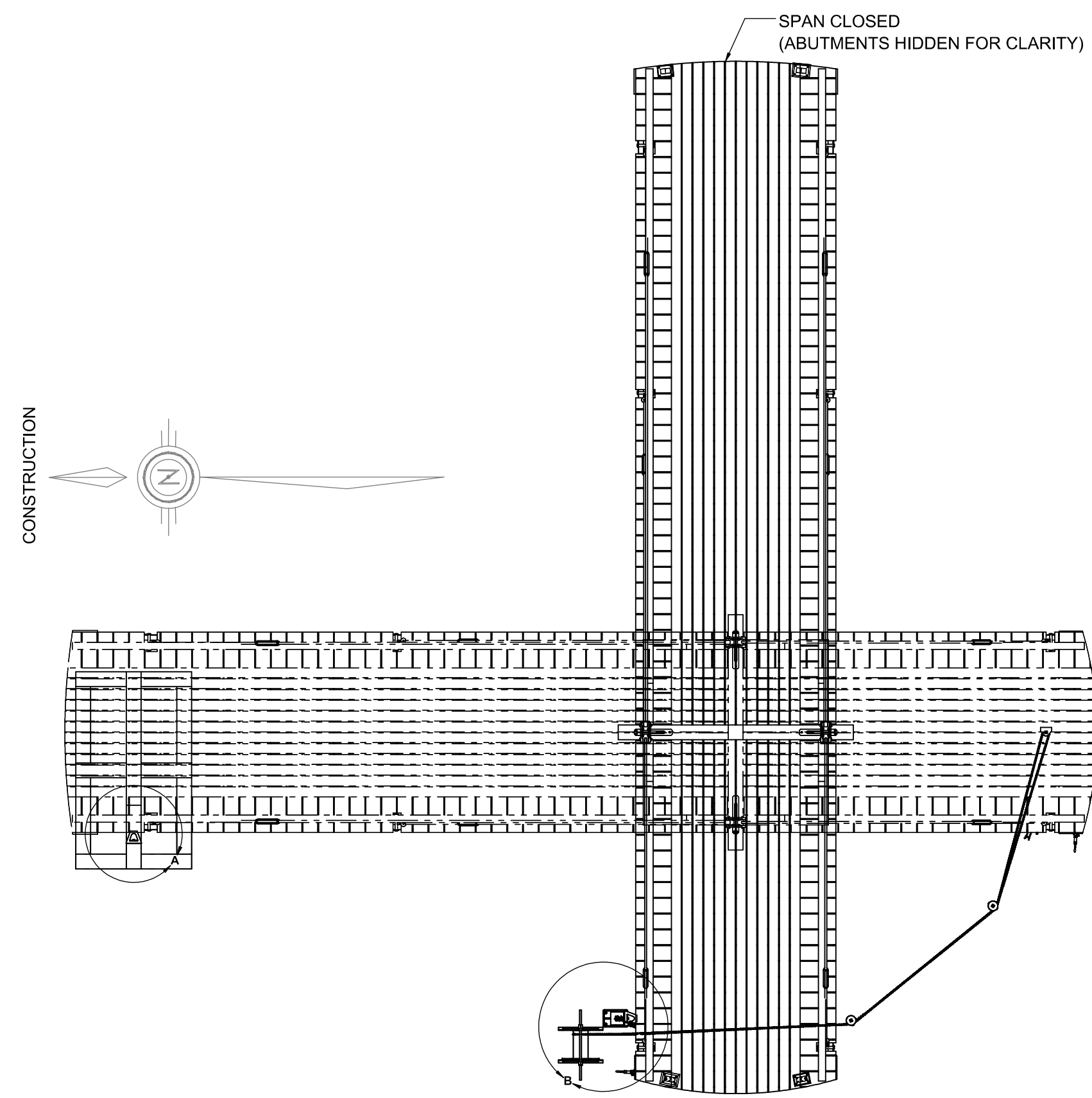


REVISION	DATE
2	ISSUED FOR TENDER 2021-10-29
1	ISSUED FOR REVIEW 2021-08-06

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

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	Ontario
project title titre du dessin	LOWER BREWERS SWING BRIDGE REHABILITATION
drawing title titre du dessin	EAST END BEARING WHEEL AND RAMP ARRANGEMENT & DETAILS
drawn by dessiné par	MJB
designed by conçu par	DAF
approved by approuvé par	DPC
bid offer	TYLER ATKINSON project manager administrateur de projets
project date date du projet	2021-10-29
project no. no. du projet	30037015
drawing no. dessiné no.	M12



ISSUED FOR TENDER
OCTOBER 29, 2021

ITEM NO.	QTY.	DESCRIPTION	MATERIAL	WEIGHT (KG)
1	1	END STOP BEAM ASSEMBLY		207.3
1.1	1	END STOP BEAM WELDMENT	CSA G40.21 50W / 350W	132.6
1.2	1	LATCH HOOK	ASTM A240/A240M TYPE 316	4.1
1.3	1	RETAINER PLATE	ASTM A240/A240M TYPE 316	6.9
1.4	1	DURAMAX MARINE TAPERED TRAPEZOIDAL BUMPER	EPDM 70A DUROMETER	28.7
1.5	1	BUMPER SHIM PACK	ASTM A240/A240M TYPE 316	19.1
1.6	6	THREADED ROD ANCHOR Ø 19MM	AISI TYPE 316 ASTM F593 CW2	0.5
1.7	1	PADLOCK, 2" MIN SHACKLE LENGTH, WEATHER RESISTENT	STAINLESS STEEL	
1.8	1	HEX HEAD CAP SCREW 3/4-10 UNC x 3.25" LG. PARTIAL THREAD	A4 (316) ASTM F593F593M TYPE 2	
1.9	4	HEX HEAD CAP SCREW 3/4-10 UNC x 6" LG. PARTIAL THREAD	A4 (316) ASTM F593F593M TYPE 2	
1.10	7	NARROW FLAT WASHER 3/4", TYPE A	A4 (316) ASTM A240/A240M	
1.11	2	WIDE FLAT WASHER 3/4", TYPE A	A4 (316) ASTM A240/A240M	
1.12	6	FLAT WASHER 3/4", TYPE B	A4 (316) ASTM A240/A240M	
1.13	6	HEAVY HEX NUT, 3/4-10 UNC	A4 (316) ASTM F594 GR. 2	
1.14	9	HEX NUT 3/4-10 UNC	A4 (316) ASTM F594 GR. 2	
2	1	DURAMAX MARINE TAPERED TRAPEZOIDAL BUMPER	EPDM 70A DUROMETER	28.7
3	1	WEST END STRIKER PLATE	ASTM A240/A240M TYPE 316	33.6
4	1	EAST END STRIKER PLATE	ASTM A240/A240M TYPE 316	21.4
5	1	LATCH PIN	ASTM A240/A240M TYPE 316	10.6
6	1	LATCH SHIM PACK	ASTM A240/A240M TYPE 316	3.5
7	1	RETAINER PLATE	ASTM A240/A240M TYPE 316	6.9
8	16	3/4" X 4" LAG SCREW	A4 (316) ASTM A240/A240M	
9	6	3/4" X 5" LAG SCREW	A4 (316) ASTM A240/A240M	
10	4	3/4" X 7" LAG SCREW	A4 (316) ASTM A240/A240M	
11	20	NARROW FLAT WASHER 3/4", TYPE A	A4 (316) ASTM A240/A240M	

- NOTES:
- SEE SHEET M01 FOR FURTHER DETAILS APPLICABLE TO THIS ASSEMBLY.
 - SEE SPECIFICATION SECTION 13 10 00 FOR FURTHER DETAILS APPLICABLE TO THIS DRAWING.
 - CONTRACTOR TO SIZE ANCHOR LENGTH TO SUIT APPLICATION REQUIREMENTS.
 - COORDINATE SPAN MOUNTING BRACKET HOLES WITH SPAN STRUCTURE.
 - ADJUST NOMINAL SHIM VALUE UNTIL SPAN JUST CONTACTS BUMPER IN POSITION INDICATED.



REVISION	DATE	DESCRIPTION
2	2021-10-29	ISSUED FOR TENDER
1	2021-08-06	ISSUED FOR REVIEW

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

Detail No.	No. of detail
A	
B	
C	

project title
titre du projet

Ontario

LOWER BREWERS SWING BRIDGE REHABILITATION

drawing title
titre du dessin

SPAN LOCK AND END STOP BUMPER ARRGMT & DETAILS

drawn by
dessiné par: **MJB**

designed by
conçu par: **DAF**

approved by
approuvé par: **DPC**

bid offer
projet manager / administrateur de projets: **TYLER ATKINSON**

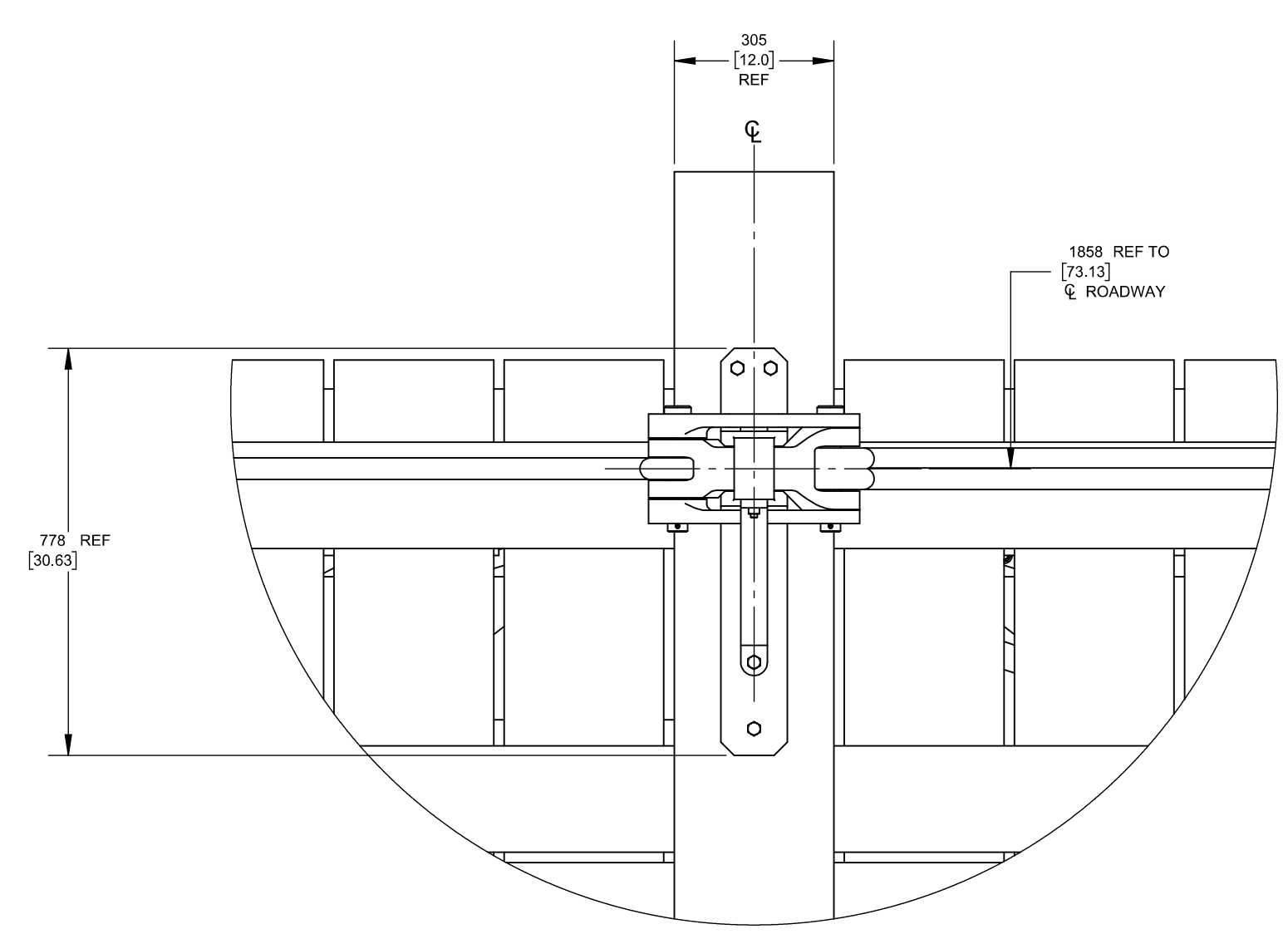
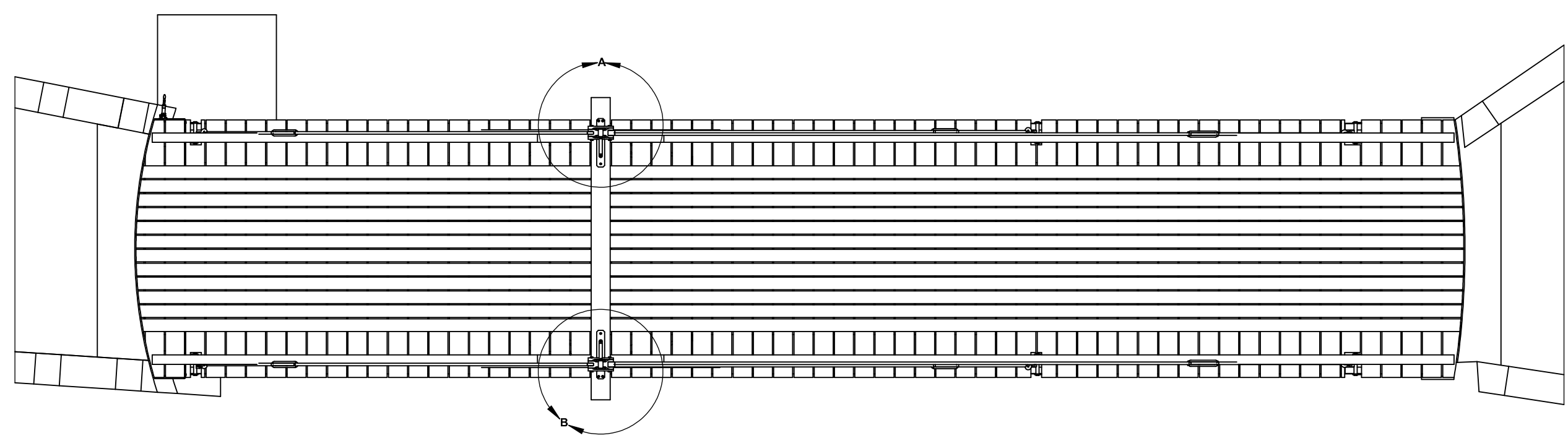
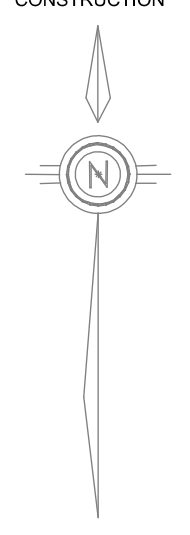
project date
date du projet: **2021-10-29**

project no.
no. du projet: **30037015**

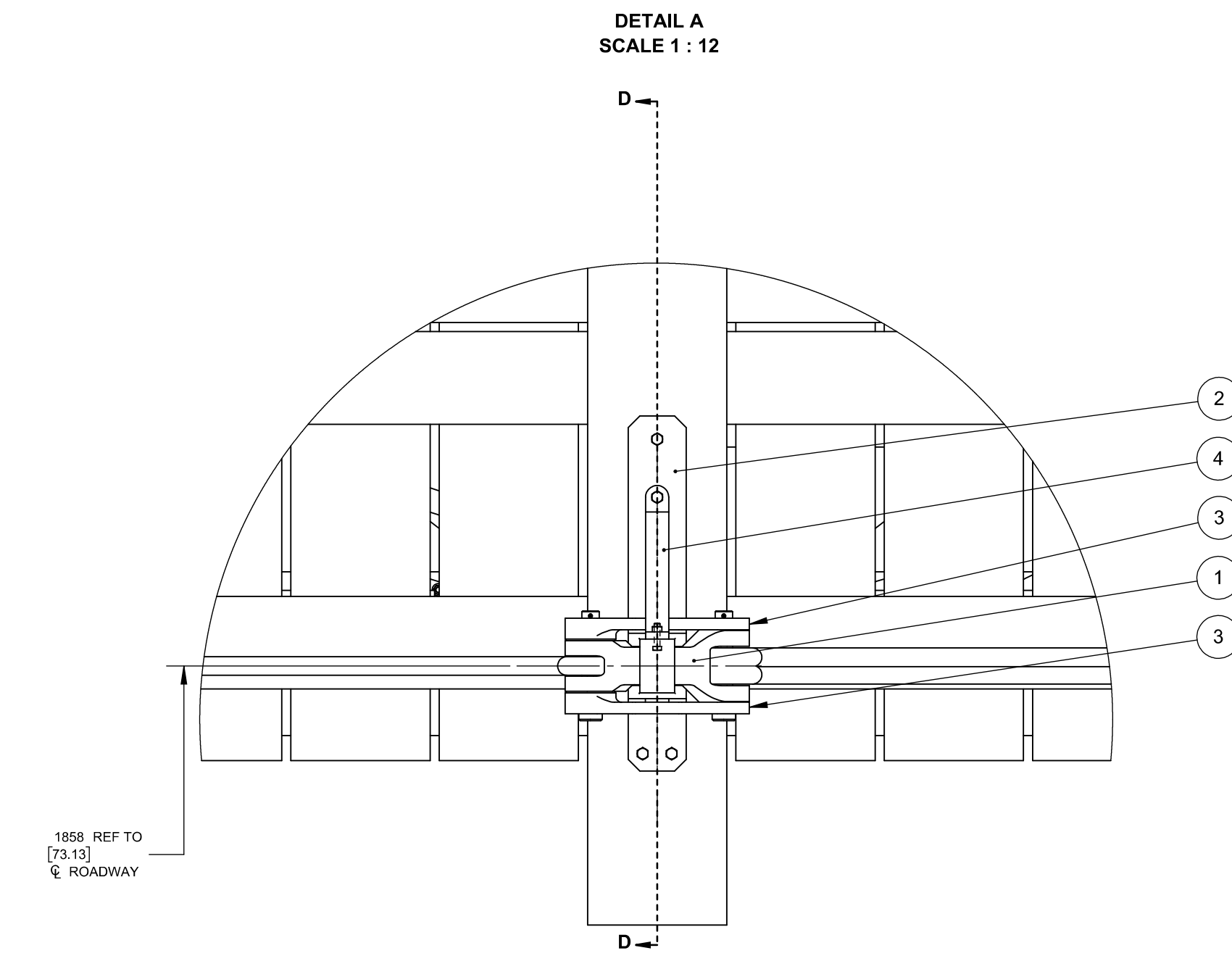
drawing no.
dessiné no.: **M13**

DEFAULT TOLERANCES

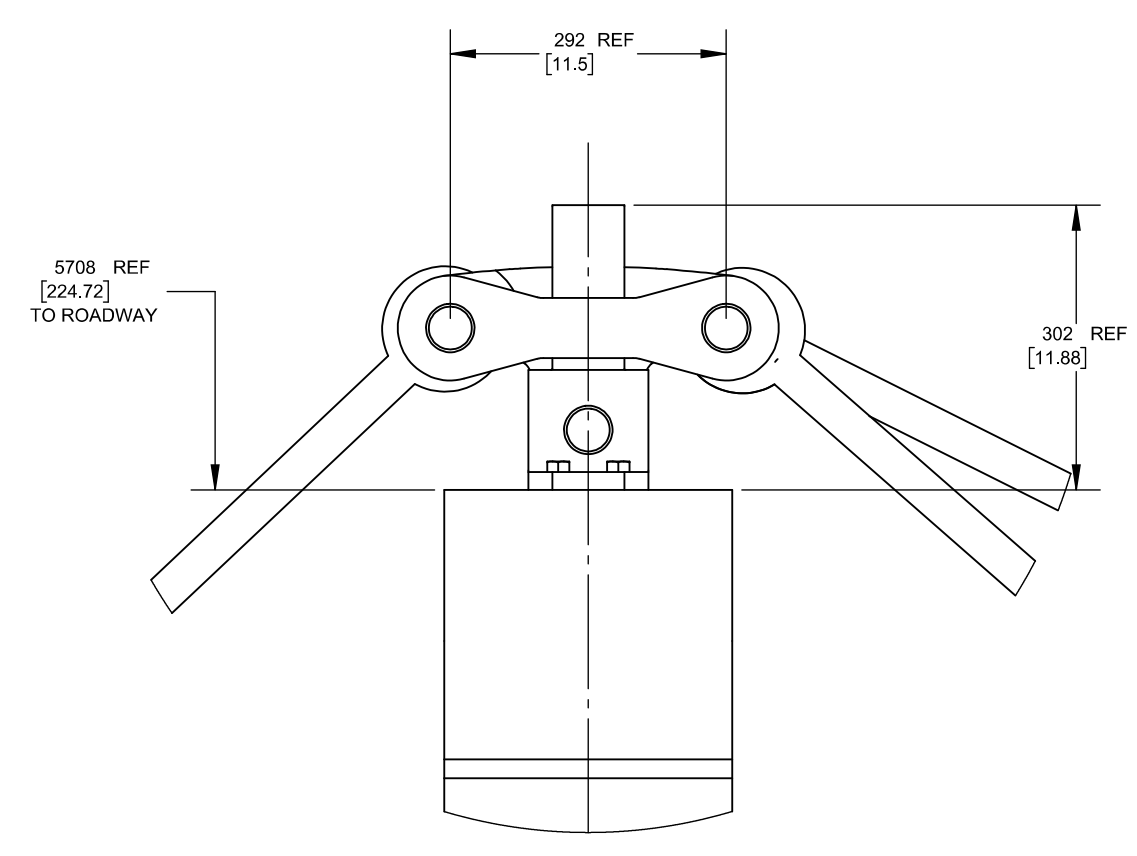
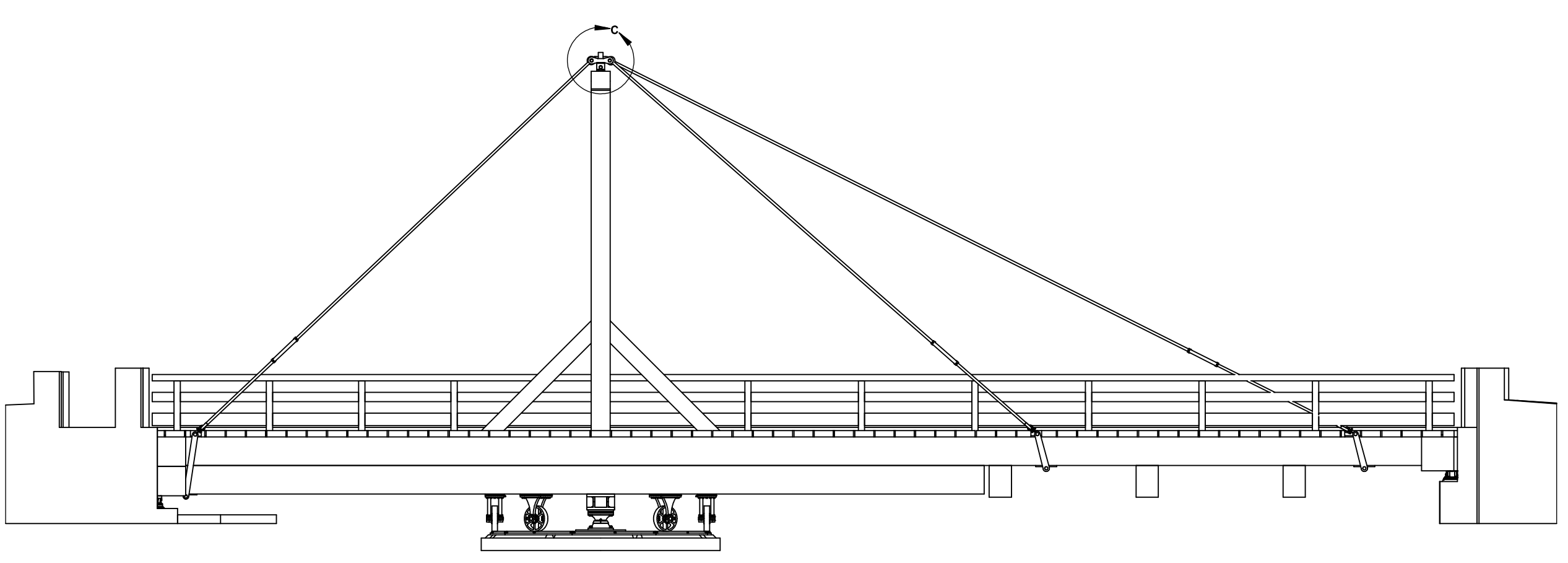
TOLERANCES:	DECIMALS	ANGLES	HOLE SIZES	SURFACES
1.	± 0.5	± 0.5°	± 0.5	± 1mm
2.	± 0.1	± 0.05°	± 0.5	± 0.2mm



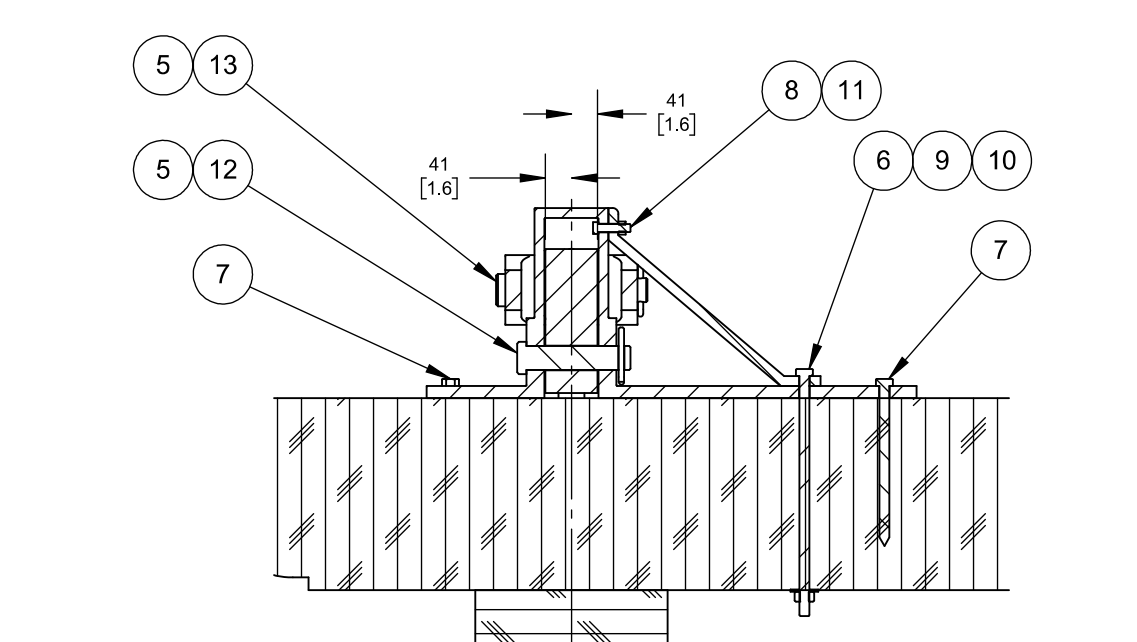
DETAIL A SCALE 1:12



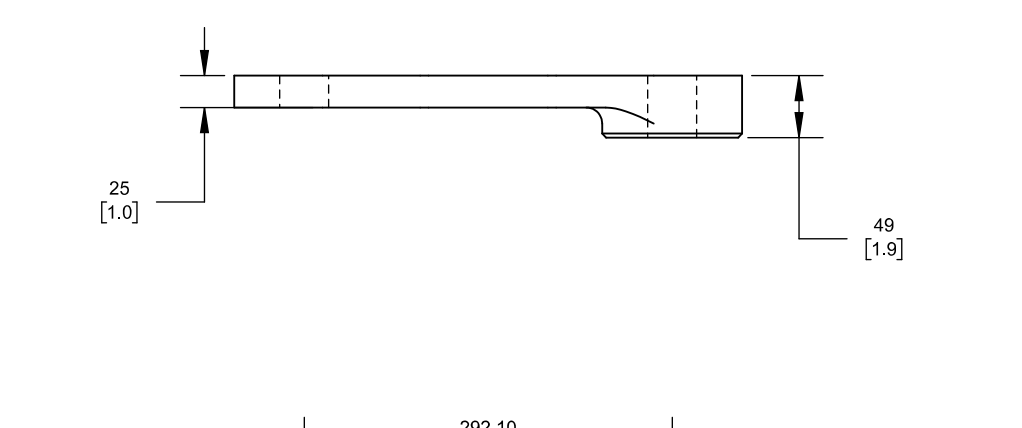
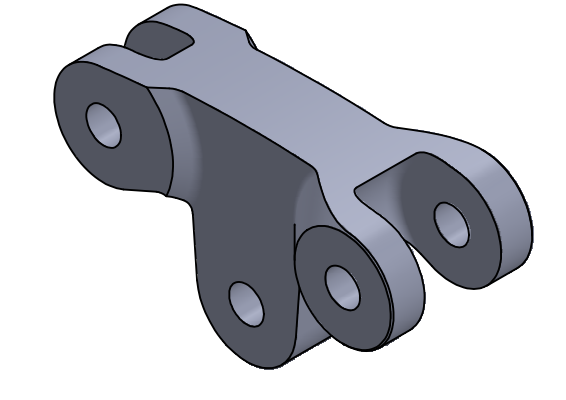
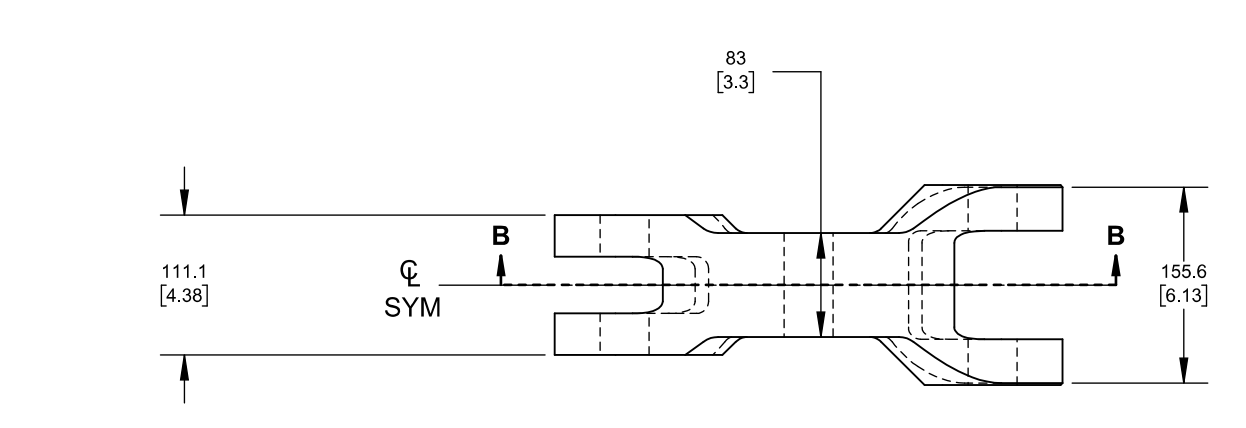
DETAIL B SCALE 1:12



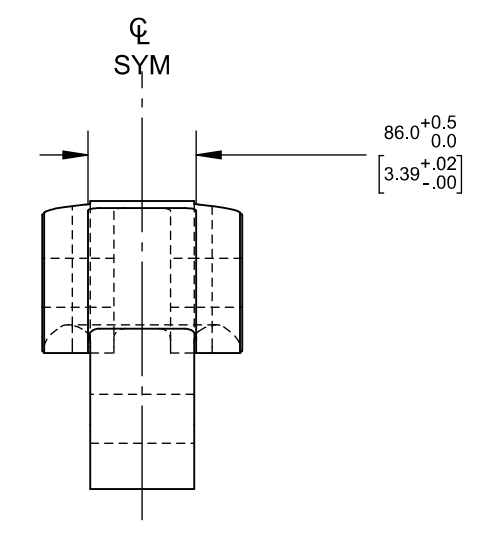
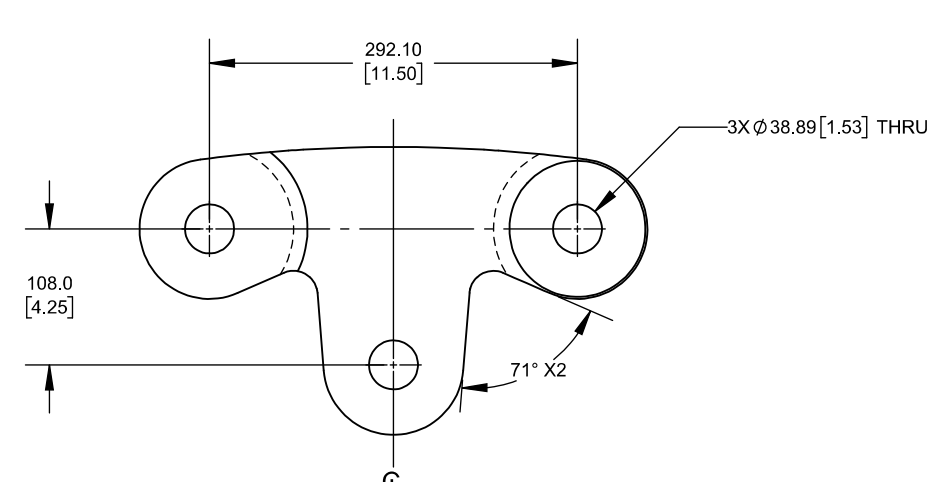
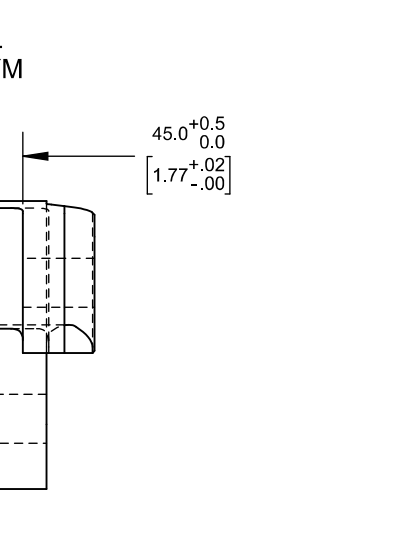
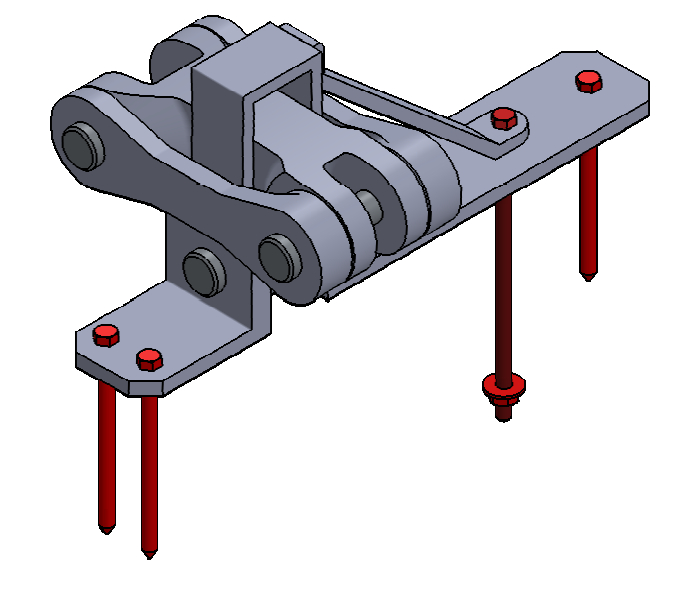
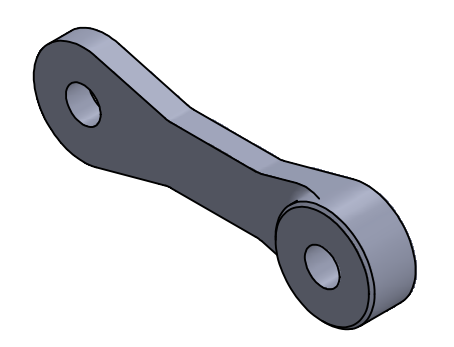
DETAIL C SCALE 1:8



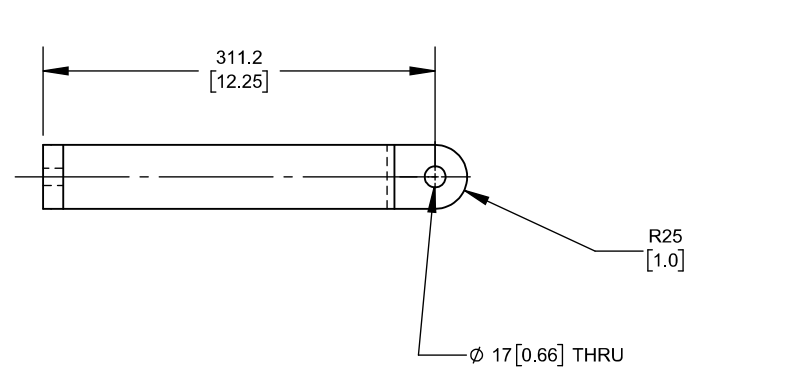
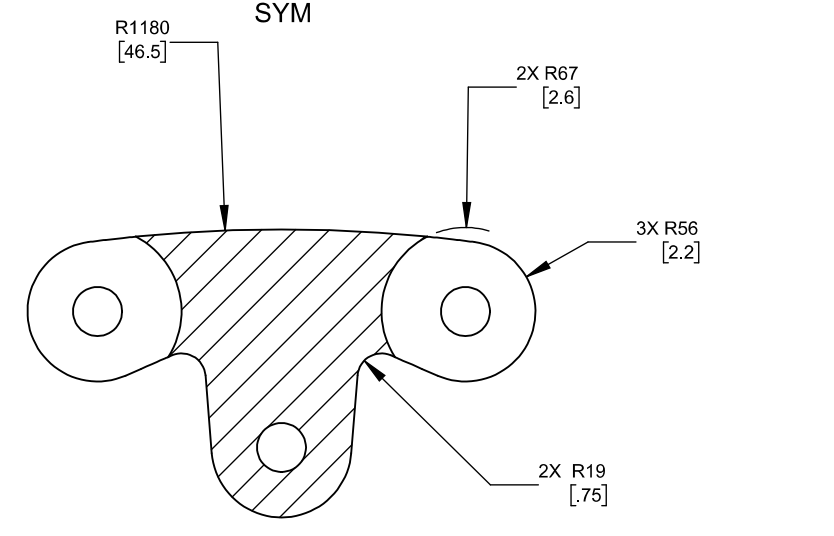
TYP SECTION D-D SCALE 1:12



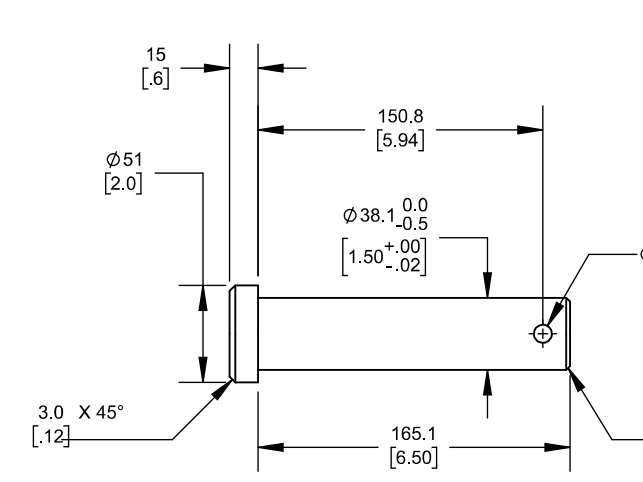
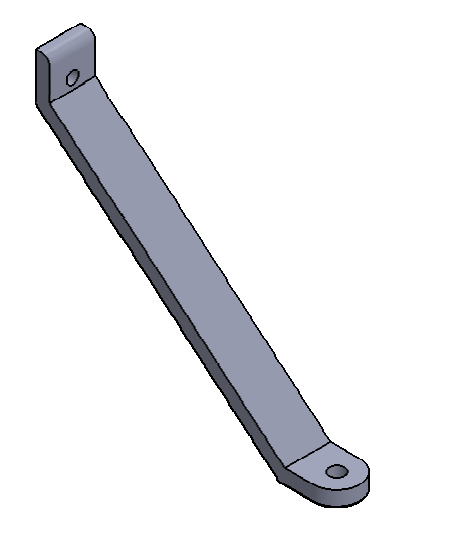
RETAINER AISI 4140 PH RC24-28 SCALE 1:6



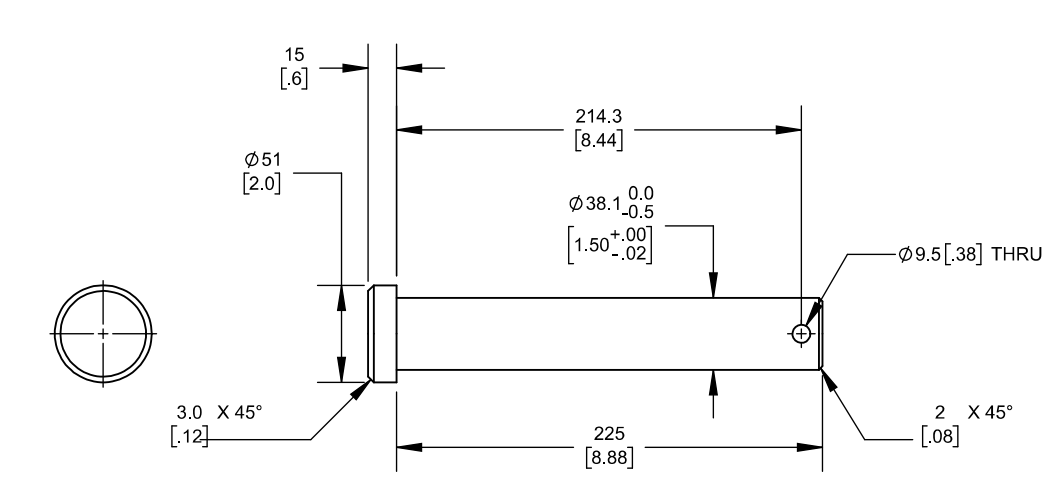
REGULATOR LINK AISI 4140 PH RC24-28 SCALE 1:6



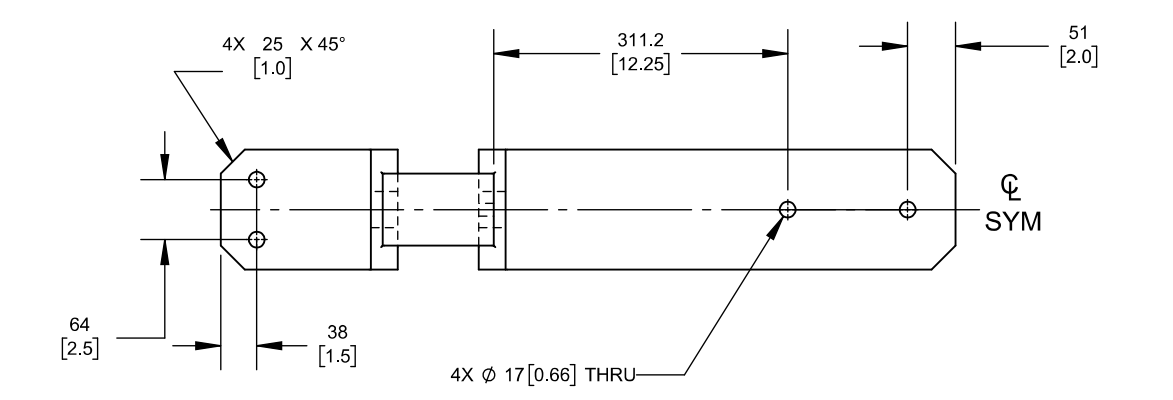
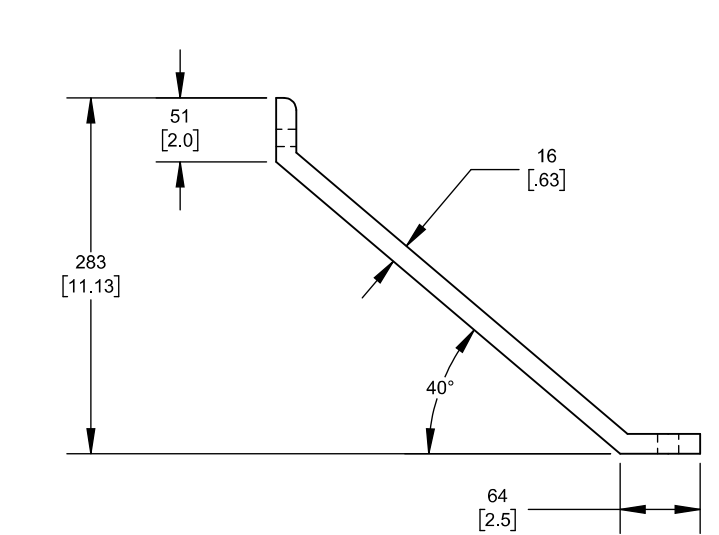
SUPPORT ASTM A36/A36M SCALE 1:6



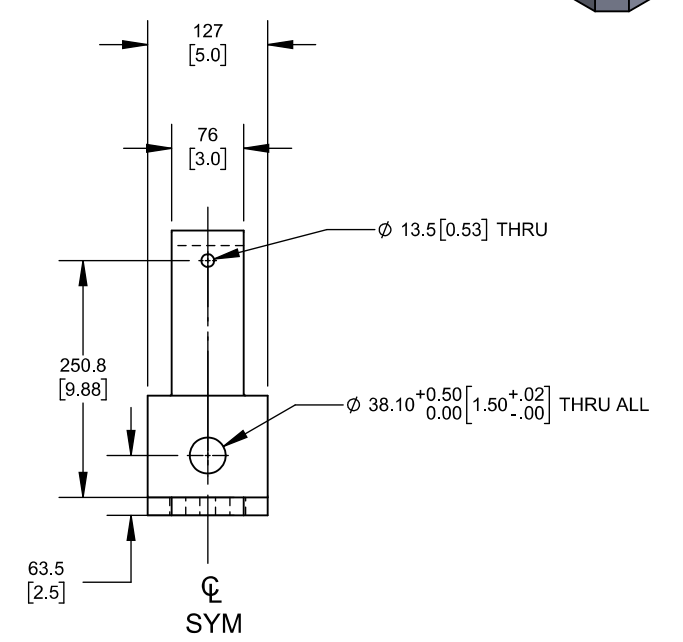
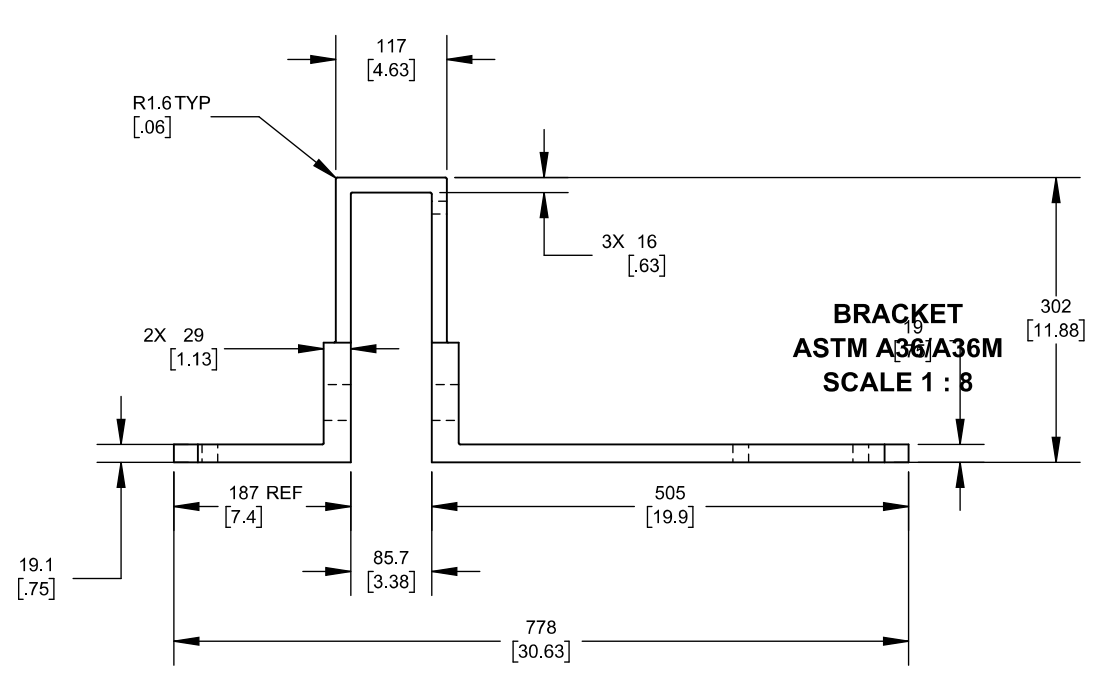
CLEVIS PIN Ø 1.5 X 5.75 USABLE LG. AISI TYPE 316 ASTM F593 CW2 SCALE 1:4



CLEVIS PIN Ø 1.5 X 8.25 USABLE LG. AISI TYPE 316 ASTM F593 CW2 SCALE 1:4



BRACKET ASTM A36/A36M SCALE 1:8



ISSUED FOR TENDER OCTOBER 29, 2021

DEFAULT TOLERANCES	
1. ALL DIMENSIONS ARE IN MILLIMETERS.	
2. TOLERANCES:	
X. DECIMALS	± 0.5
XX. DECIMALS	± 0.1
XXX. DECIMALS	± 0.05
ANGLES	± 0.5°
HOLE SIZES	± 1mm
SURFACES	± 3.2 µm

ITEM NO.	QTY.	DESCRIPTION	MATERIAL	WEIGHT (KG)
1	2	REGULATOR LINK	AISI 4140 PH	30.9
2	2	BRACKET	ASTM A36/A36M	22.6
3	4	RETAINER	AISI 4140 PH	7.7
4	2	SUPPORT	ASTM A36/A36M	2.8
5	6	COTTER PIN Ø3/8" X 2.5" LONG	ASTM A240/A240M TYPE 316	
6	2	HEX HEAD CAP SCREW 5/8-11 UNC X 15 LG. PARTIAL THREAD	A4 (316) ASTM F593 GR. 2	
7	6	HEX HEAD LAG SCREW, 5/8" X 10" LG.	BLACK OXIDE STEEL	
8	2	SQUARE HEAD BOLT 1/2-13 UNC X 2.0 LG. PARTIAL THREAD	A4 (316) ASTM A240/A240M	
9	2	WIDE FLAT WASHER 5/8", TYPE A	A4 (316) ASTM A240/A240M	
10	2	HEAVY HEX NUT, 5/8-11 UNC	A4 (316) ASTM F594 GR. 2	
11	2	SQUARE NUT 1/2-13 UNC	A4 (316) ASTM A240/A240M	
12	2	CLEVIS PIN Ø 1.5 X 5.75 USABLE LG.	AISI TYPE 316 ASTM F593 CW2	3.8
13	4	CLEVIS PIN Ø 1.5 X 8.25 USABLE LG.	AISI TYPE 316 ASTM F593 CW2	5.0

NOTES:

- SEE DRAWING M01 FOR FURTHER DETAILS APPLICABLE TO THIS ASSEMBLY.
- SEE SPECIFICATION SECTION 13 10 00 FOR FURTHER DETAILS APPLICABLE TO THIS DRAWING.
- SALVAGE EXISTING REGULATOR MECHANISMS AND PROVIDE TO DEPARTMENTAL REPRESENTATIVE FOR REVIEW AND POTENTIAL INCORPORATION INTO FINAL DESIGN. COMPONENTS SHOWN ARE FOR REFERENCE ONLY UNTIL IT IS DETERMINED IF EXISTING REGULATOR SHALL BE REUSED.
- SHOP ASSEMBLE AND TEST PRIOR TO INSTALLATION ON SITE.
- COORDINATE HOLES WITH SPAN STRUCTURE.

Public Services and Procurement Canada
Services publics et Approvisionnement Canada

Ontario Region
Parcs Canada Infrastructure Directorate
Heritage Canada and Engineering Works
Région de l'Ontario
Direction de l'Infrastructure de Parcs Canada
Canaux historiques et travaux d'ingénierie

Parcs Canada

WSP

Chadwick Engineering Ltd.
www.chadwickengineering.com



REVISION	DATE
2	ISSUED FOR TENDER 2021-10-29
1	ISSUED FOR REVIEW 2021-08-06

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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

LOWER BREWERS SWING BRIDGE REHABILITATION

drawing title
titre du dessin

STAY ROD REGULATOR ARRANGEMENT & DETAILS

drawn by
dessiné par

MJB

designed by
conçu par

DAF

approved by
approuvé par

DPC

bid offer
offre

TYLER ATKINSON project manager / administrateur de projets

project date
date du projet

2021-10-29

project no.
no. du projet

30037015

drawing no.
dessiné no.

M14