

MECHANICAL SCOPE OF WORK:

THE FOLLOWING LIST IS INTENDED TO BE A GUIDELINE

1. DEMOLITION;
 - 1.1. REMOVE THE EXISTING HYDRAULIC POWER UNIT IN THE CENTRAL PIER VAULT, RETAIN FOR PCA.
 - 1.2. REMOVE ALL EXISTING HYDRAULIC LINES.
 - 1.3. REMOVE ALL HYDRAULIC CYLINDERS, COMPONENTS, ETC. FOR THE SWING BRIDGE, RETAIN FOR PCA.
 - 1.4. REMOVE AND INSPECT EXISTING ROTATION CYLINDER MOUNTING BRACKETS, REFURBISH AND RELOCATE AS REQUIRED.
 - 1.5. REMOVE EXISTING LEVELING JACKS AND ALL ASSOCIATED EQUIPMENT.
 - 1.6. REMOVE AND REPLACE THE EXISTING CENTRAL PIVOT BEARING, RETAIN FOR PCA.
 - 1.7. REMOVE AND DISPOSE ALL EXISTING END SUPPORT WHEELS, MOUNTING PLATES AND BEARING PADS.
 - 1.8. REMOVE AND DISPOSE ALL EXISTING BALANCE WHEELS AND MOUNTING PLATES.
 - 1.9. REMOVE AND DISPOSE THE EXISTING BALANCE RAIL AND ASSOCIATED ANCHOR PADS.
 - 1.10. REMOVE AND DISPOSE OF EXISTING LOCKING PIN AND ALL ASSOCIATED EQUIPMENT.
 - 1.11. REMOVE THE EXISTING HYDRAULIC POWER UNIT IN THE LOCK BUILDING, RETAIN FOR PCA.
2. INSTALLATION;
 - 2.1. INSTALL NEW HYDRAULIC POWER UNIT IN LOCK BUILDING.
 - 2.2. CLEAN AND REPAIR AS REQUIRED THE EXISTING CENTER PIER HYDRAULIC VAULT.
 - 2.3. INSTALL NEW HYDRAULIC BRIDGE CONTROL MANIFOLD IN EXISTING CENTER PIER HYDRAULIC VAULT.
 - 2.4. INSTALL NEW BRIDGE ROTATION HYDRAULIC CYLINDERS, HOSES, LINES, ETC. (REAR CYLINDER BRACKETS MAY REQUIRE MODIFICATIONS TO ALLOW INSTALLATION OF HYDRAULIC MANIFOLD BLOCKS ON CYLINDERS)
 - 2.5. INSTALL NEW CENTRAL BEARING, PROVIDE SEAL OR COVER TO PREVENT WATER AND DEBRIS FROM ENTERING BEARING.
 - 2.6. INSTALL NEW LIVE LOAD/END SUPPORT WHEELS AND ASSOCIATED EQUIPMENT.
 - 2.7. INSTALL NEW CENTER PIER BALANCE RAIL.
 - 2.8. INSTALL NEW BALANCE WHEELS AND ASSOCIATED EQUIPMENT.
 - 2.9. INSTALL NEW LOCKING PIN AND ASSOCIATED EQUIPMENT.
 - 2.10. REFURBISH EXISTING END STOP. INSTALL NEW BEARING PADS.
3. BRIDGE ADJUSTMENT;
 - 3.1. BALANCE AND LEVEL BRIDGE SPAN SO THAT THE BRIDGE IS SUPPORTED IN THE OPEN POSITION BY THE CENTER PIVOT BEARING ONLY, AND THAT THE BRIDGE DECK AT EACH END IS EQUAL DIFFERENCE WITH THE ROAD APPROACHES. IF REQUIRED THE DIFFERENCE OF THE BRIDGE DECK ELEVATIONS AND THE ABUTMENT APPROACHES' ELEVATION IS THE REQUIRED SHIMMING REQUIRED AT THE CENTER PIVOT MINUS 1/4".
 - 3.2. ADJUST THE LIVE LOAD WHEELS/RAMPS AND SUPPORT WHEELS/RAMPS SO THAT THEY ARE IN FULL BEARING. TOP OF CENTER LIVE LOAD WHEEL RAMP TO BE 3mm ABOVE RAIL.
 - 3.3. ADJUST THE BALANCE WHEELS SO AS A GAP OF 3mm IS BETWEEN WHEEL AND RAIL.

HYDRAULIC SYSTEM COMMISSIONING NOTES:

THE FOLLOWING LIST IS INTENDED TO BE A GUIDELINE. THE SPECIFIC PROCEDURES FOR ALL HYDRAULICS IN SCOPE (WHETHER OR NOT THEY ARE NOTED COMPLETELY HERE) MUST BE PERFORMED BY A QUALIFIED HYDRAULICS TEAM. WHERE INDUSTRY BEST PRACTICES DIFFER FROM THE INSTRUCTIONS BELOW, CONSULT A DEPARTMENTAL REPRESENTATIVE BEFORE COMMISSIONING.

1. FOLLOWING ASSEMBLY, HYDRAULIC SYSTEM TO BE CLEANED, PRIMED, CYCLED TO REMOVE AIR AND PRESSURE TESTED (PER SPECIFICATIONS)
2. SET THE PRESSURE RELIEF TO 1500 PSI AS NOTED.
3. EACH HYDRAULIC CONTROL CHANNEL TO BE SET UP AS FOLLOWS:
 - 3.1. OPEN NEEDLE VALVES (OR FLOW CONTROLS) COMPLETELY ON THE CHANNEL TO ALLOW FULL FLOW.
 - 3.2. SET THE ADJUSTABLE PRESSURE RELIEF(S) ON THE CHANNEL TO A MINIMUM PRESSURE.
 - 3.3. WITH ADEQUATE PERSONNEL AVAILABLE FOR OBSERVATION AND TESTING, CYCLE THE CHANNEL. INCREASE THE PRESSURE SETTING ON THE RELIEF SO THAT THE CYLINDER STARTS TO MOVE. (PERFORM THIS OPERATION FOR EXTEND AND RETRACT) UNDER THE DIRECTION OF DEPARTMENTAL REPRESENTATIVE, INCREASE THE PRESSURE SETTING SLIGHTLY TO ALLOW FOR FRICTION, WEEDS, WATER LEVEL DIFFERENTIAL ETC.. THE PRESSURE SHOULD BE SET AS HIGH AS REQUIRED FOR OPERATION, NO HIGHER.
 - 3.4. ONCE THE PRESSURE IS SET, ADJUST THE NEEDLE VALVES (OR FLOW CONTROLS) TO ACHIEVE THE DESIRED SPEED.
 - 3.5. IF ADDITIONAL ADJUSTMENT IS REQUIRED FOR PRESSURE, FIRST OPEN THE NEEDLE VALVES (OR FLOW CONTROLS). A FLOW RESTRICTION CAUSED BY A PARTIALLY CLOSED NEEDLE VALVE (OR FLOW CONTROL VALVE) MAY CAUSE THE OPERATOR TO BELIEVE THAT THE CHANNEL PRESSURE IS PROPERLY CONTROLLED. HOWEVER, NEEDLE VALVES (AND FLOW CONTROLS) ONLY DECREASES DYNAMIC PRESSURE DOWNSTREAM; THEY DO NOT LIMIT STATIC PRESSURE ONCE THE CYLINDER REACHES THE END OF STROKE. AN IMPROPER ADJUSTMENT COULD CAUSE RISK TO EQUIPMENT AND/OR THE PUBLIC.
 - 3.6. ONCE CHANNELS ARE PROPERLY ADJUSTED, DOCUMENT THE SETTINGS FOR ALL PRESSURE RELIEF VALVES, NEEDLE VALVES, FLOW CONTROL AND OTHER ADJUSTMENT POINTS. EXPRESS THE POSITION AS A FUNCTION OF NUMBER OF TURNS (OR FRACTION OF TURNS) FROM COMPLETELY CLOSED OR COMPLETELY OPEN. BE SURE TO SPECIFY DIRECTION OF ROTATION (CLOCKWISE OR COUNTER-CLOCKWISE). PROVIDE DOCUMENTATION TO PUBLIC WORKS/PARKS CANADA FOR POSTING AND FILING.
 - 3.7. IF APPLICABLE, LOCK THE ADJUSTERS IN PLACE USING SUPPLIED LOCK NUTS, CAPS ETC.

GENERAL MACHINING NOTES:

1. ALL EXISTING DIMENSIONS ARE TAKEN FROM EXISTING BRIDGE PLANS. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND NOTIFY THE ENGINEER OF ALL DEVIATIONS, IF ANY, BEFORE WORK BEGINS.
2. PROVIDE ASTM A449 H.S, (HIGH STRENGTH TURNED BOLTS AS REQUIRED TO CONNECT MACHINERY SUPPORTS TO STRUCTURAL STEEL. ALL ASTM A449 H.S.BOLTS FOR STRUCTURAL STEEL CONNECTIONS SHALL BE REAMED TO PROVIDE CLEARANCE OF NOT MORE THAN 0.010 INCH BETWEEN THE BODY OF THE BOLT AND THE HOLE. TURNED BOLTS SHALL BE FITTED IN REAMED HOLES, TO AN LC6 FIT.
3. ALL H.S. FASTENERS SHALL HAVE NUTS CONFORMING TO ASTM A563. ALL NUTS SHALL BE SECURED BY EFFECTIVE LOCKS. IF DOUBLE NUTS ARE USED, BOTH NUTS SHALL BE OF THE SAME THICKNESS. ALL HIGH STRENGTH FASTENERS SHALL HAVE HARDENED PLAIN WASHERS UNDER THER THER HEAD OF THE NUT. ALL HARDENED STEEL PLAIN WASHERS SHALL CONFORM TO ASTM F436, NEW ASTM A449 BOLTS THAT HAVE BEEN TORQUED SHALL NOT BE REUSED.
4. MACHINERY DIMENSIONS SHOWN ON DRAWINGS ARE DIMENSIONS AFTER MACHINING.
5. FITS AND FINISHES FOR MACHINING SHALL BE AS FOLLOWS:

SURFACE	FIT	FINISH (MICROINCHES)
MACHINERY BASE ON STEEL	-	250
MACHINERY PARTS IN FIXED CONTACT	-	125
MACHINERY BASE ON MASONRY	-	500
SHAFT JOURNALS	RC6	8
JOURNAL BUSHINGS	RC6	16
SPLIT BUSHINGS IN BASE	LC1	125
SOLID BUSHING IN BASE (TO 1/4" WALL)	FN1	63
SOLID BUSHING IN BASE (TO OVER 1/4" WALL)	FN1	63
HUBS ON SHAFT (TO 2" BORE)	FN2	32
HUBS ON SHAFT (OVER 2" BORE)	FN2	63
TURNED BOLTS IN FINISHED HOLES	LC6	63
SLIDING BEARINGS	RC6	32
KEYS AND KEYWAYS (TOP AND BOTTOM)	LC4	63
KEYS AND KEYWAYS (SIDES)	FN2	63

6. THE ABOVE FITS FOR CYLINDRICAL PARTS SHALL ALSO APPLY TO THE DIMENSIONS OF NON CYLINDRICAL PARTS.
7. GENERAL MACHINED FINISH, UNLESS NOTED IS 125 MICROINCHES.

MECHANICAL EQUIPMENT SPECIFICATIONS:

SEE MECHANICAL EQUIPMENT SPECIFICATION DOCUMENT IN TENDER PACKAGE

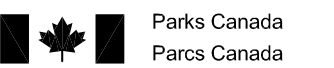
1. DIVISION 11- EQUIPMENT
 - 1.1. 11 99 01 GREASE SYSTEM
 - 1.2. 11 99 02 OIL REMOVAL
 - 1.3. 11 99 03 FASTENERS AND HARDWARE
 - 1.4. 11 99 04 CABLE AND TUBE SUPPORTS
 - 1.5. 11 99 05 LINES, FITTING AND HOSES
 - 1.6. 11 99 06 HYDRAULIC OIL
 - 1.7. 11 99 07 HYDRAULIC SKID AND COMPONENTS
 - 1.8. 11-99-08 HYDRAULIC CYLINDERS

GENERAL PAINT SPECIFICATIONS:

THE FOLLOWING LIST IS INTENDED TO BE A GUIDELINE

1. STEEL TO BE ABRASIVE BLAST CLEANED, PRIMED AND PAINTED WITH ZINC RICH PRIMER.
2. FINAL COATING TO MATCH BRIDGE STRUCTURE.
3. ALL MACHINED SURFACES TO TO BE TREATED WITH RUST INHIBITOR.

Canadä

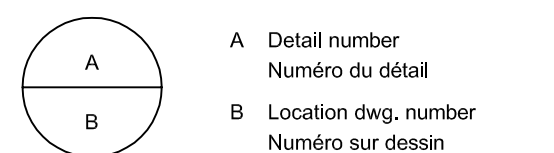


300-2611 QUEENSWAY DRIVE
OTTAWA (ONTARIO)
CANADA K2B 8K2
TELEPHONE: 613-829-2800 FAX: 613-829-8299
WWW.WSPGROUP.COM

01	FOR TENDER	DD	11/07/19
No.	Description	Drawn By Des.Par	Date

Revision / Révision

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



Project title / Titre du projet

**TRENT-SEVERN WATERWAY
BOBCAYGEON SWING
BRIDGE REHABILITATION**

ONTARIO

Drawing title / Titre du dessin

**MECHANICAL
SCOPE OF WORK
AND GENERAL
NOTES**

Drawn by / Dessiné par

D. DAIGLE

Designed by / Conçu par

D. DAIGLE

Approved by / Approuvé par

K SMITH

Drawing Date / Date du dessin

2019/09/20

Project manager / Administrateur de projet

W. LITTLE

Drawing Number / Numéro du Dessin

1356-30030321

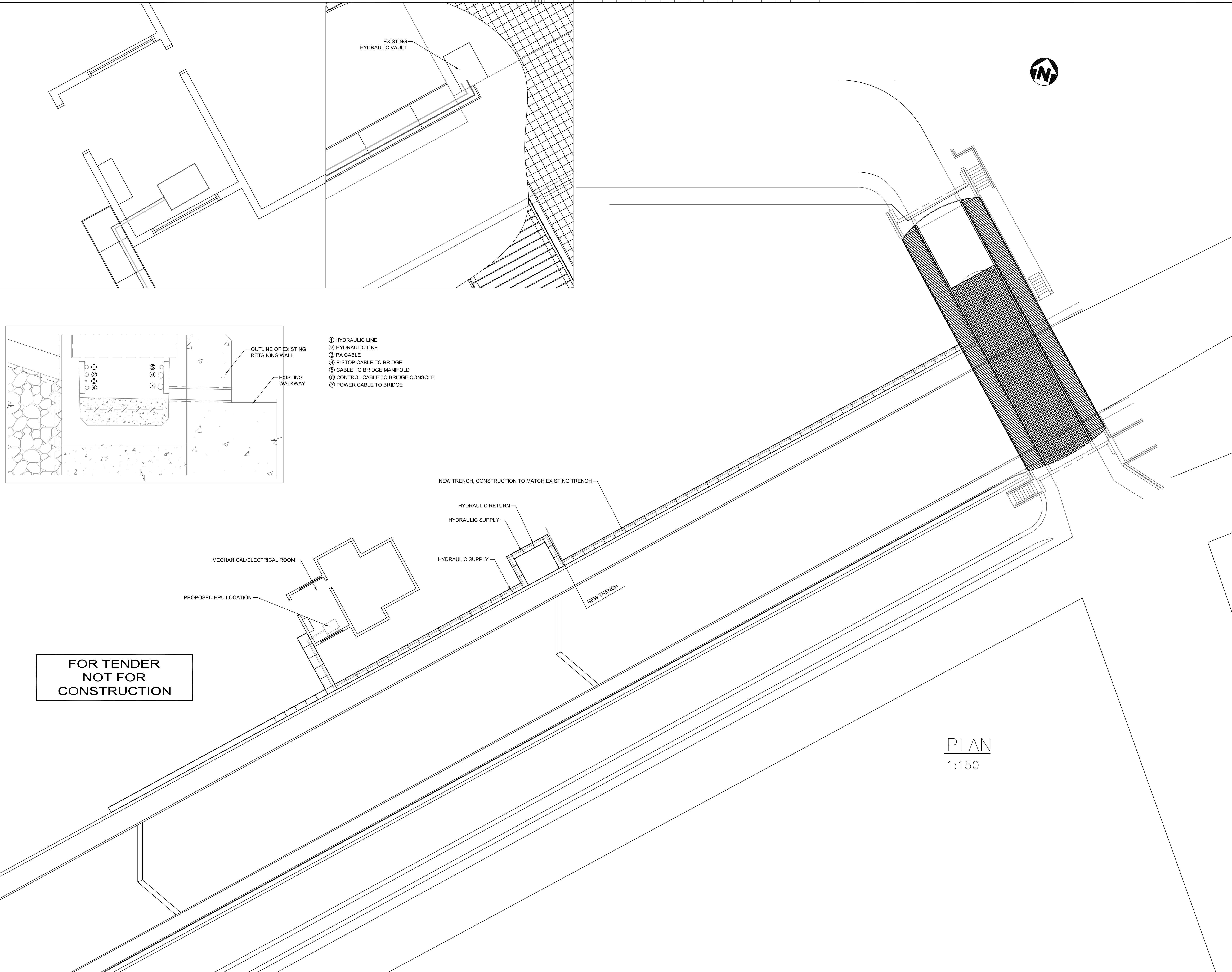
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Sheet / Feuille

0 of 22



EXISTING
HYDRAULIC VAULT



**FOR TENDER
 NOT FOR
 CONSTRUCTION**

PLAN
 1:150

No.	Description	Drawn By Des.Par	Date
01	FOR TENDER	DD	11/07/2019
01	90% APPROVAL	DD	09/07/2019

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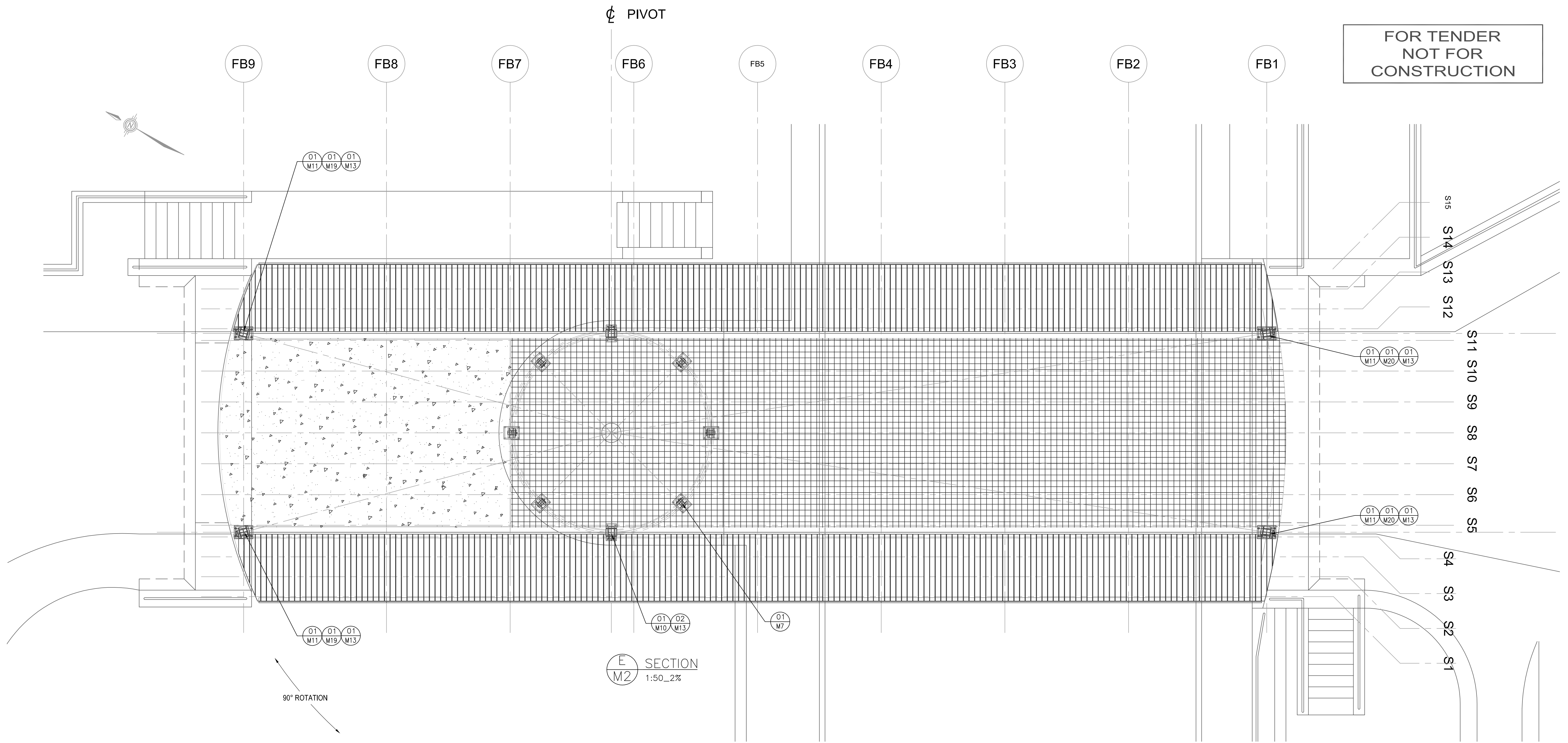
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B	B Location dwg. number Numéro sur dessin

Project title / Titre du projet
**TRENT-SEVERN WATERWAY
 BOBCAYGEON SWING
 BRIDGE REHABILITATION**

Drawing title / Titre du dessin
**MECHANICAL SITE
 PLAN**

Drawn by / Dessiné par D. DAIGLE	Designed by / Conçu par D. DAIGLE
Approved by / Approuvé par K SMITH	Drawing Date / Date du dessin 2019/09/20
Project manager / Administrateur de projet W. LITTLE	Drawing Number / Numéro du Dessin M1
Project Number / Numéro du projet 1356-30030321	Sheet Feuille 01 of 22

FOR TENDER
 NOT FOR
 CONSTRUCTION

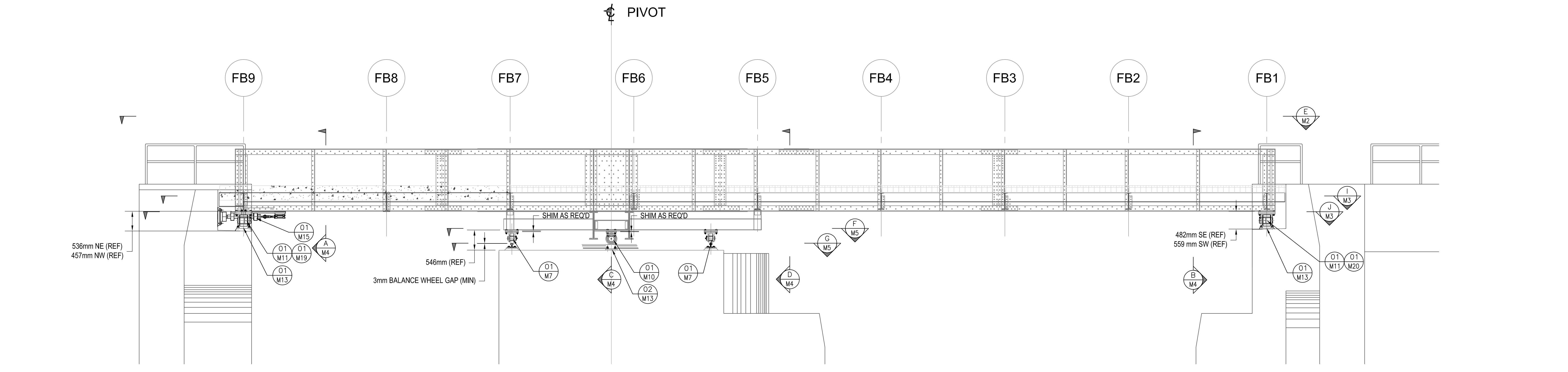


E SECTION
 M2
 1:50_2%

No.	Description	Drawn By / Des. Par	Date
03	FOR TENDER	DD	11/07/2019
02	FOR TENDER	DD	09/25/2019
01	90% APPROVAL	DD	07/19/2019

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A Detail number / Numéro du détail
 B Location dwg. number / Numéro sur dessin

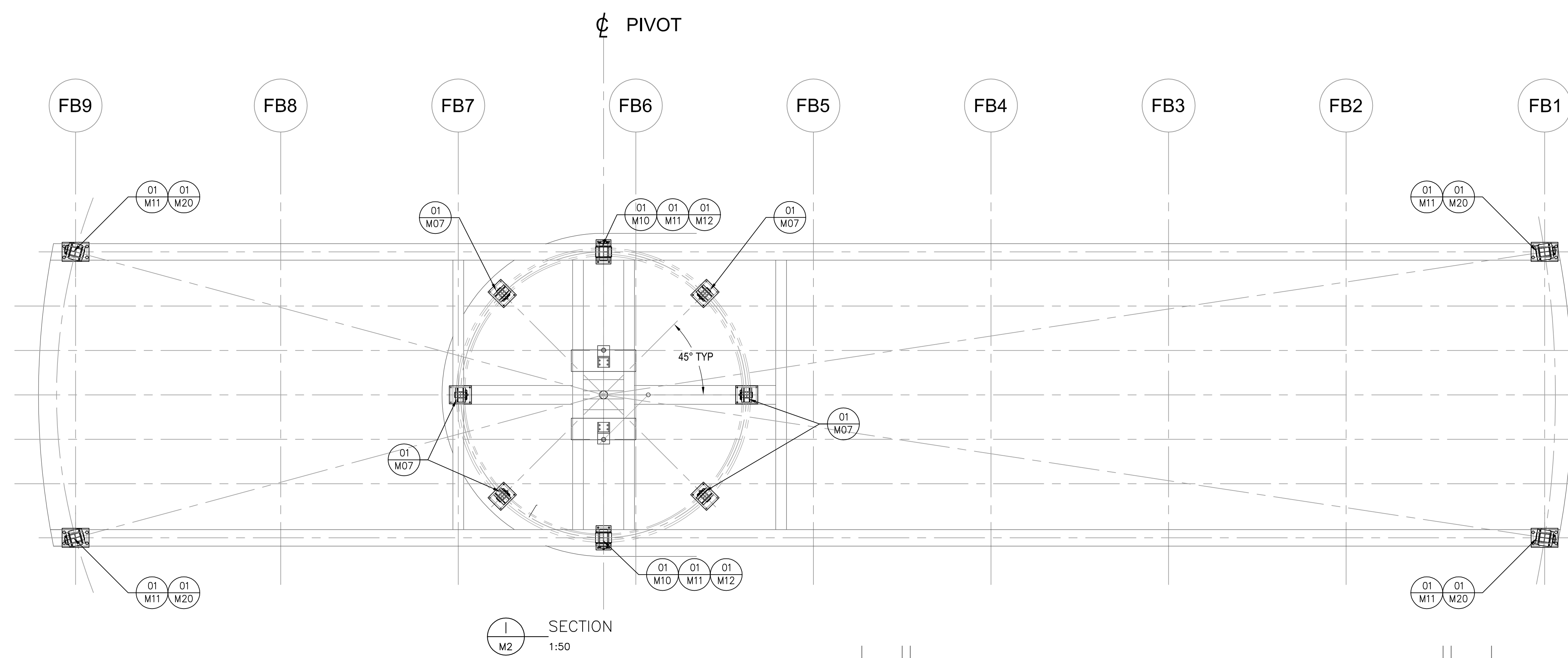


REF = APPROXIMATE MEASURED DIMENSION*
 * CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS

Project title / Titre du projet
**TRENT-SEVERN WATERWAY
 BOBCAYGEON SWING
 BRIDGE REHABILITATION**

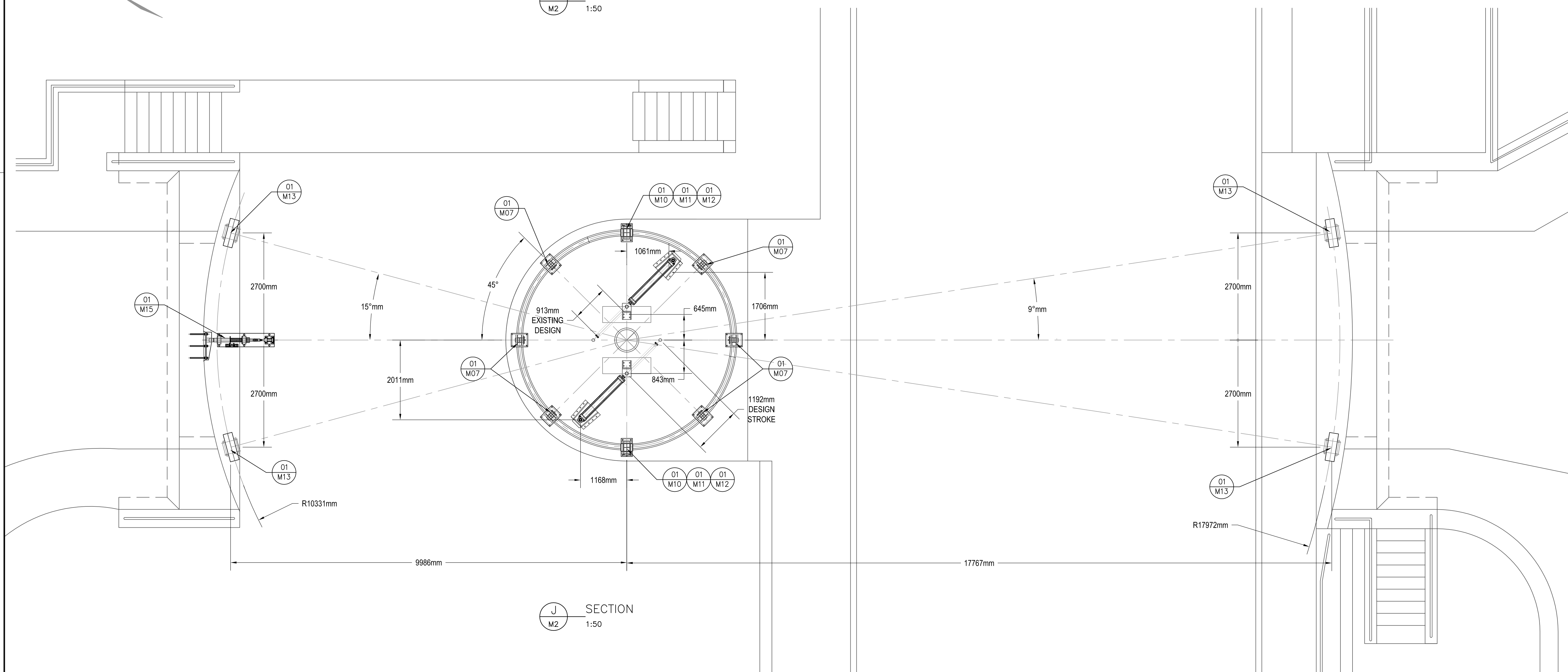
Drawing title / Titre du dessin
PLAN & ELEVATION

Drawn by / Dessiné par D. DAIGLE	Designed by / Conçu par D. DAIGLE
Approved by / Approuvé par K SMITH	Drawing Date / Date du dessin 2019/05/06
Project manager / Administrateur de projet W. LITTLE	Drawing Number / Numéro du Dessin M2
Project Number / Numéro du projet 1356-30030321	Sheet / Feuille 02 of 22



S10
S9
S8
S7
S6

SECTION I
1:50



SECTION J
1:50

No.	Description	Drawn By / Des. Par	Date
03	FOR TENDER	DD	11/07/2019
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01	90% APPROVAL	DD	07/19/2019

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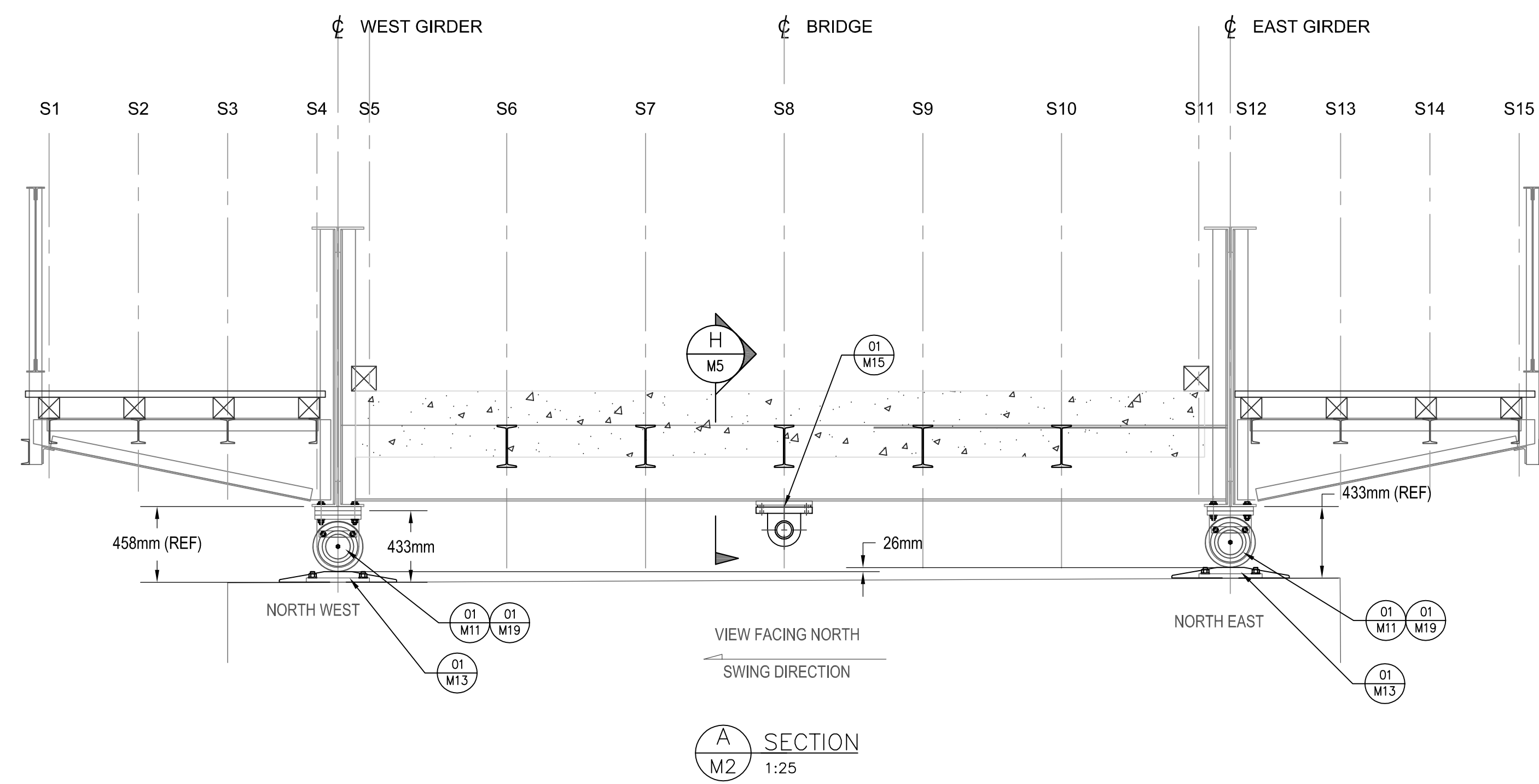
Project title / Titre du projet
**TRENT-SEVERN WATERWAY
BOBCAYGEON SWING
BRIDGE REHABILITATION**

Drawing title / Titre du dessin
**SECTION I-I
SECTION J-J**

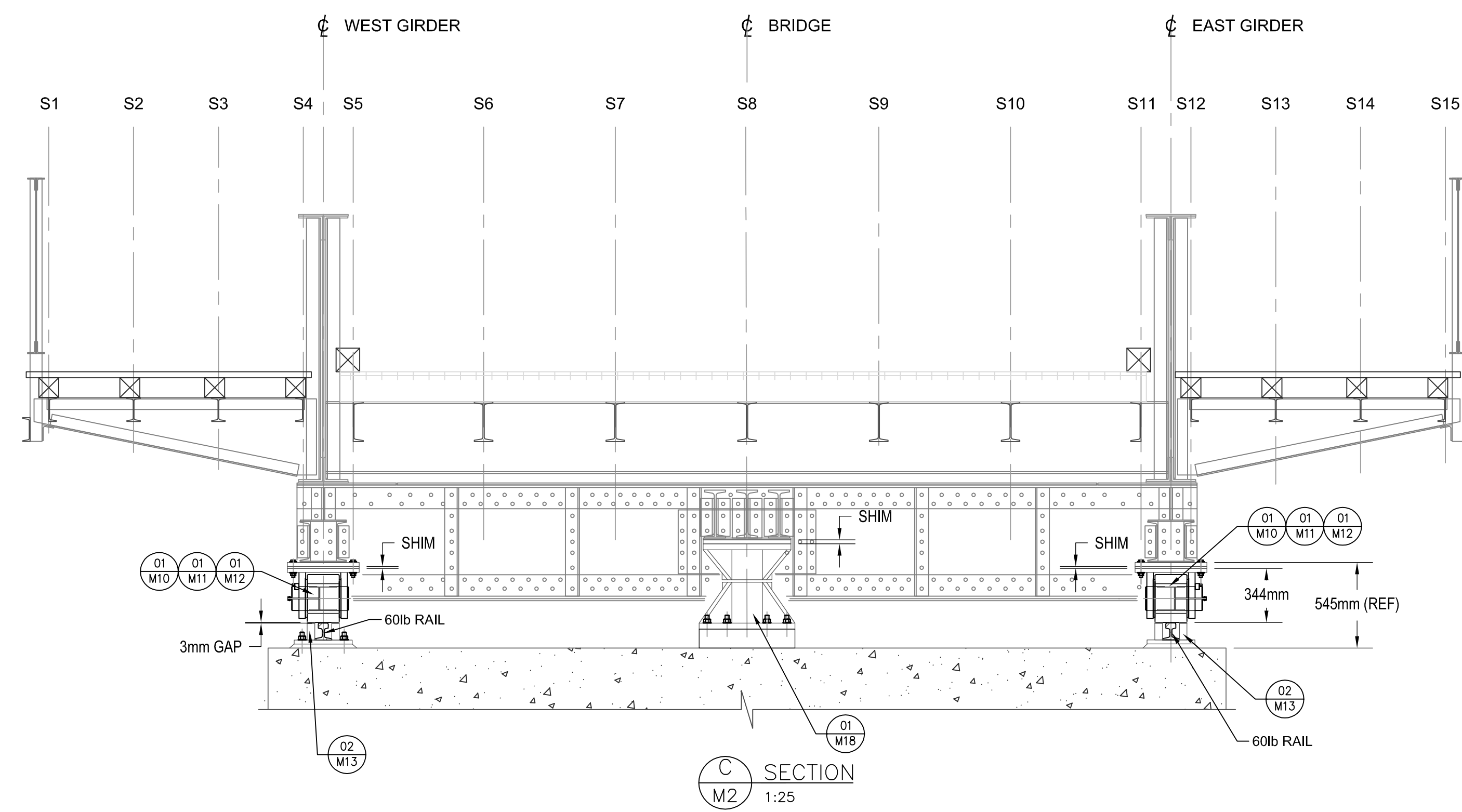
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Approved by / Approuvé par K SMITH	Drawing Date / Date du dessin 2019/09/20
Project manager / Administrateur de projet W. LITTLE	Drawing Number / Numéro du Dessin M3
Project Number / Numéro du projet 1356-30030321	Sheet / Feuille 03 of 22

**FOR TENDER
NOT FOR
CONSTRUCTION**

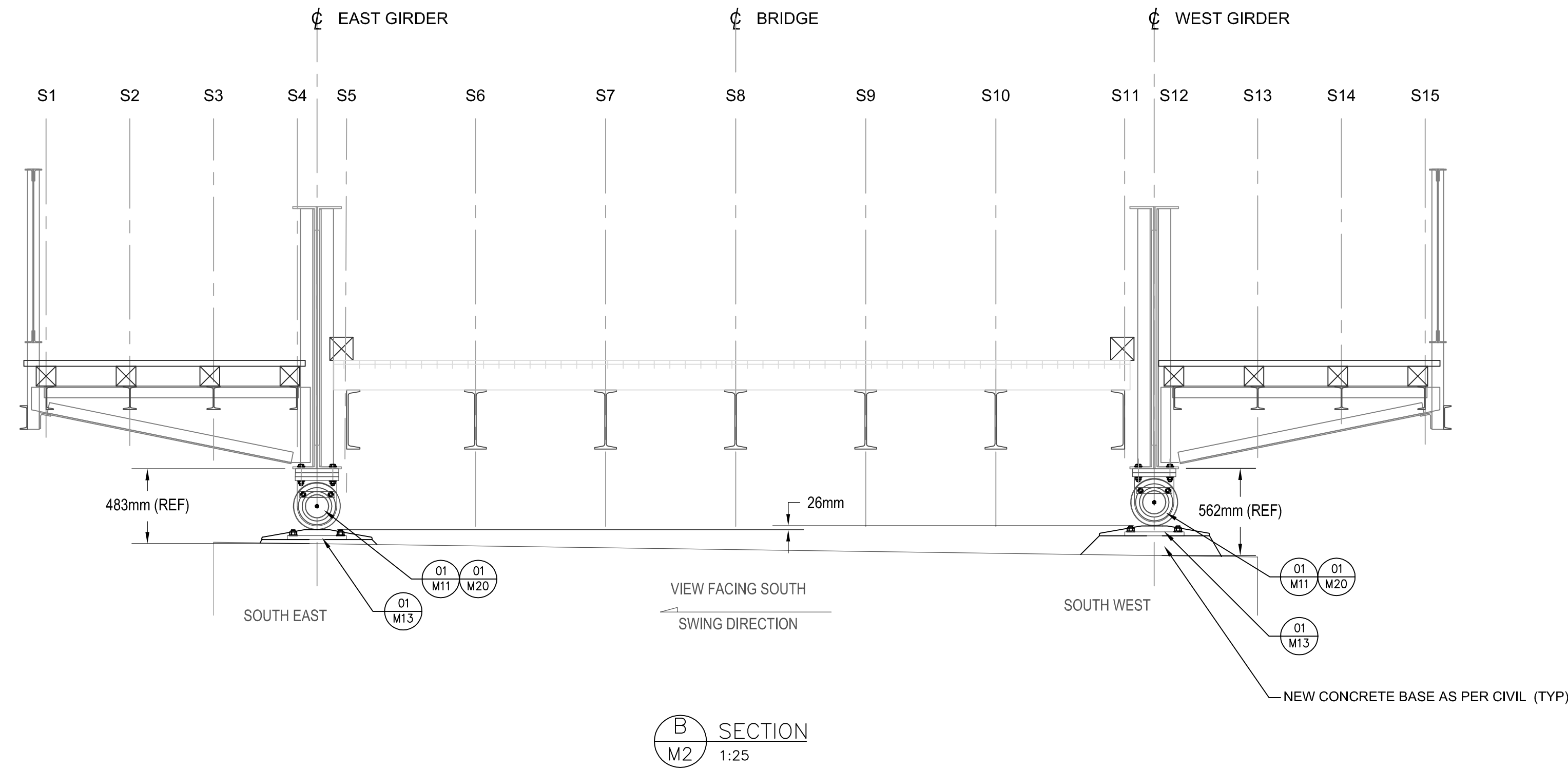
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* CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS



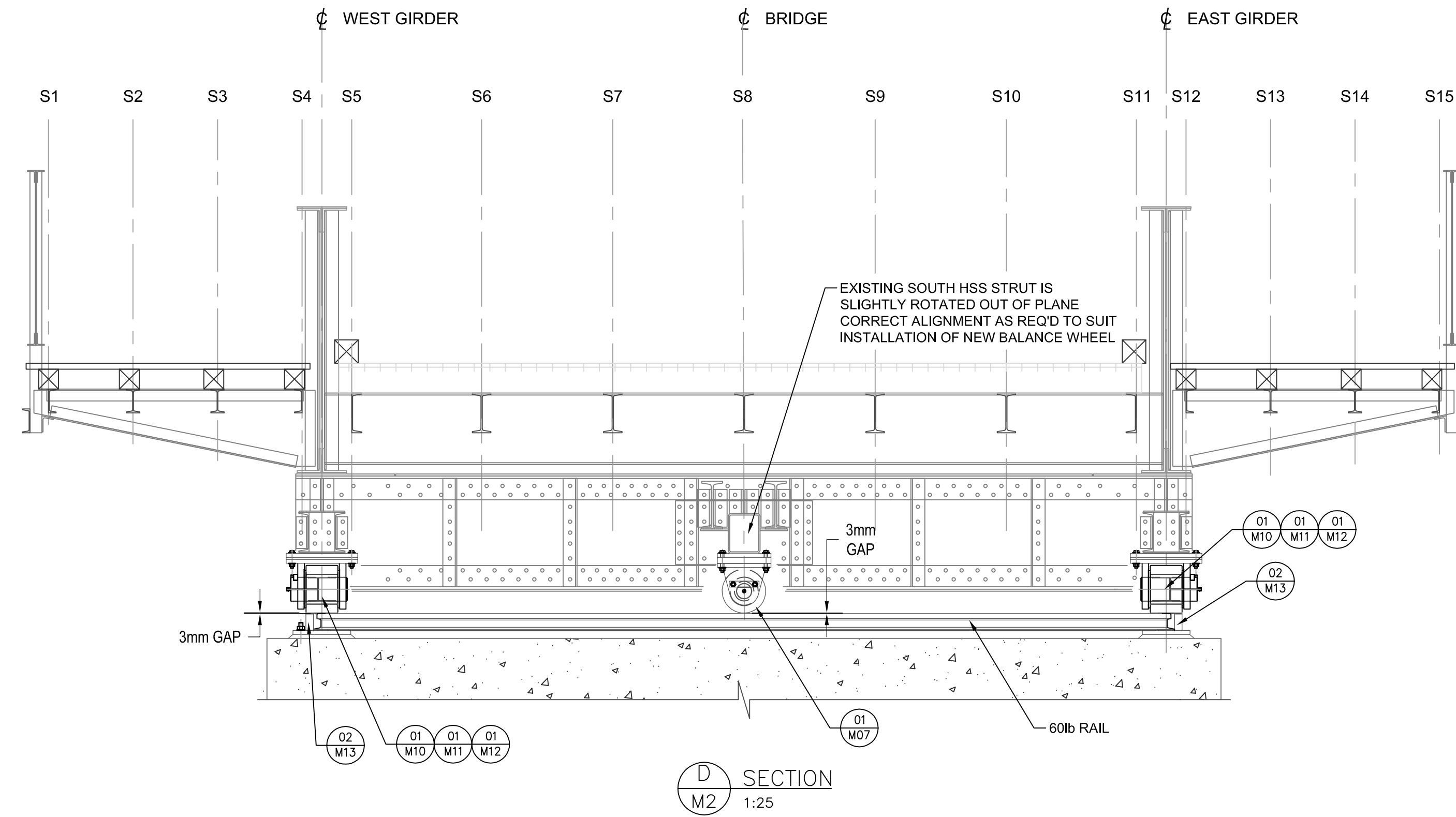
A SECTION
 M2 1:25



C SECTION
 M2 1:25



B SECTION
 M2 1:25



D SECTION
 M2 1:25

REF = APPROXIMATE MEASURED DIMENSION*
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01	FOR APPROVAL, 90%	DD		07/19/2019

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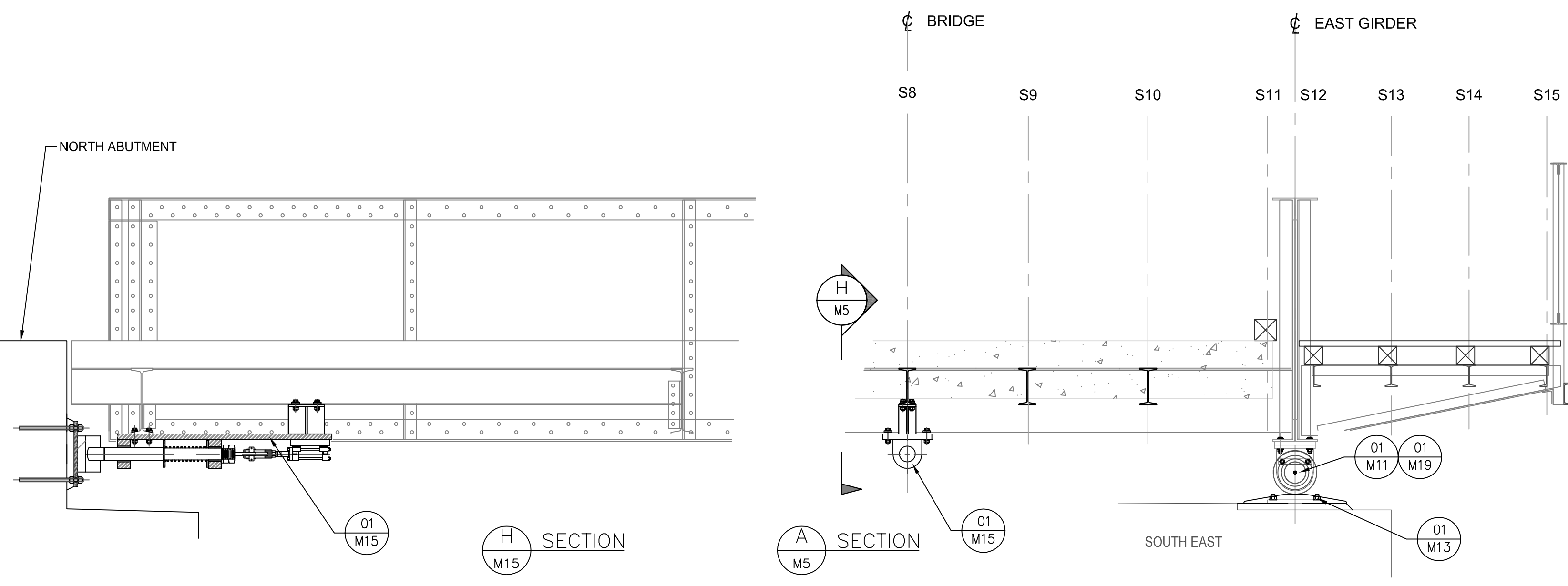
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**TRENT-SEVERN WATERWAY
 BOBCAYGEON SWING
 BRIDGE REHABILITATION**

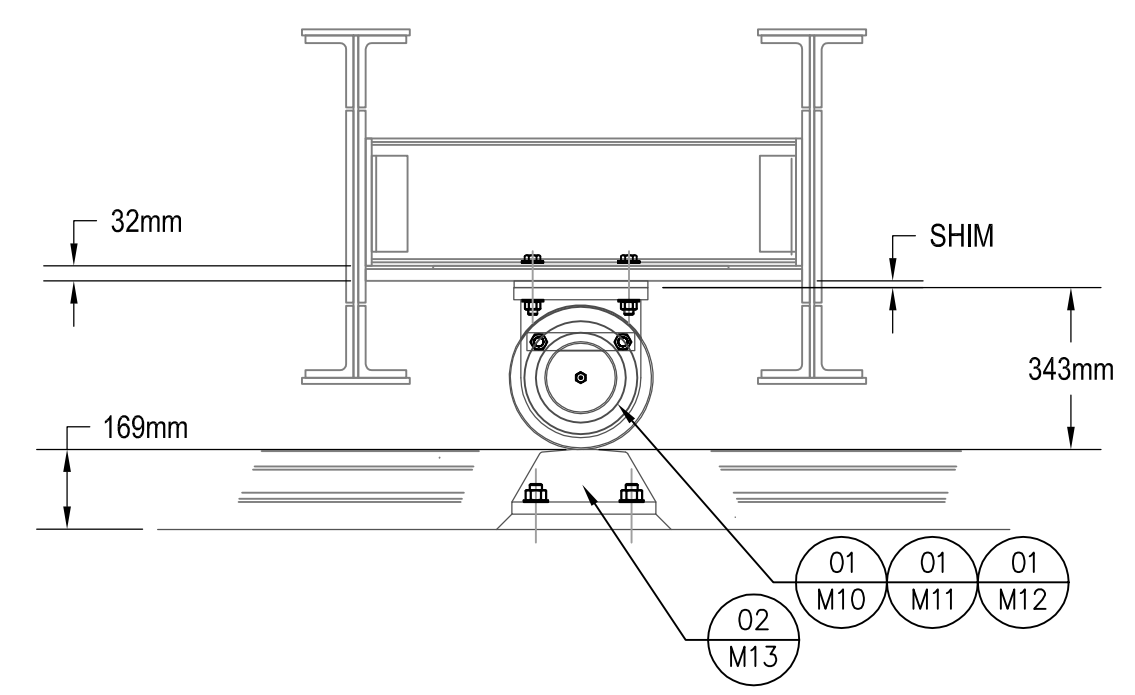
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Drawing title / Titre du dessin
**SECTION A-A
 SECTION B-B
 SECTION C-C
 SECTION D-D**

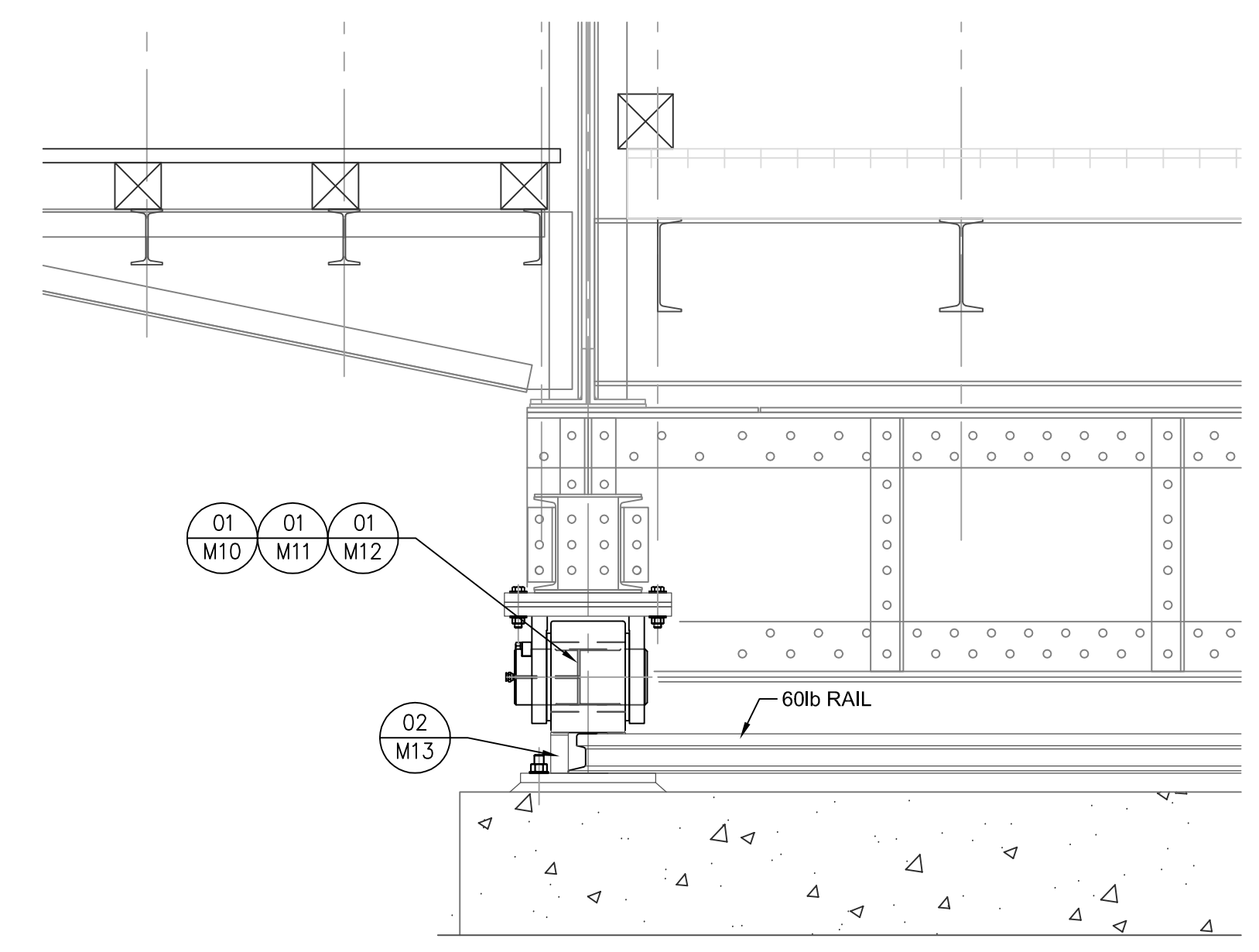
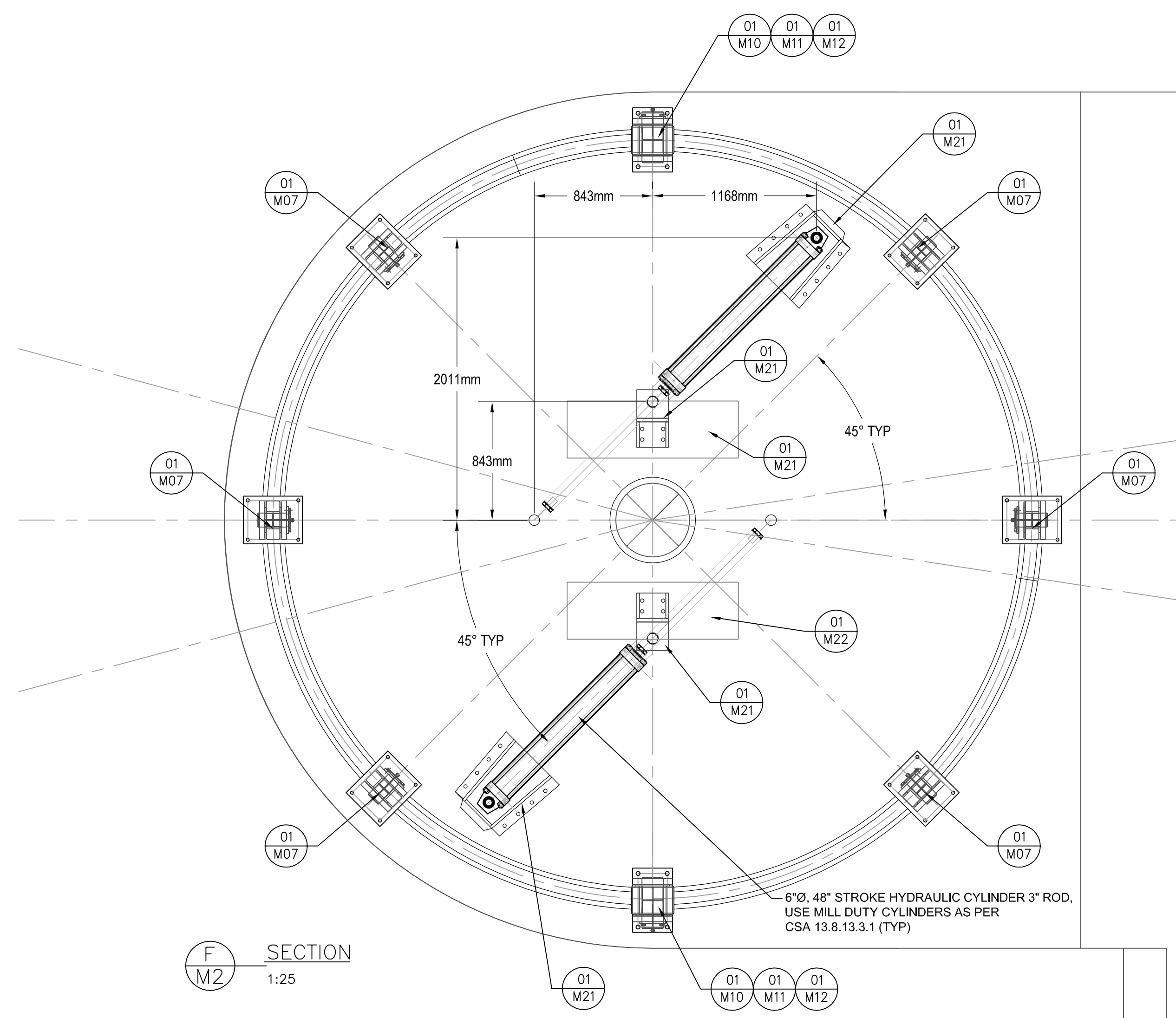
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Approved by / Approuvé par K. SMITH	Drawing Date / Date du dessin 2019/09/20
Project manager / Administrateur de projet W. LITTLE	Drawing Number / Numéro du Dessin M4
Project Number / Numéro du projet 1356-30030321	Sheet / Feuille 04 of 22



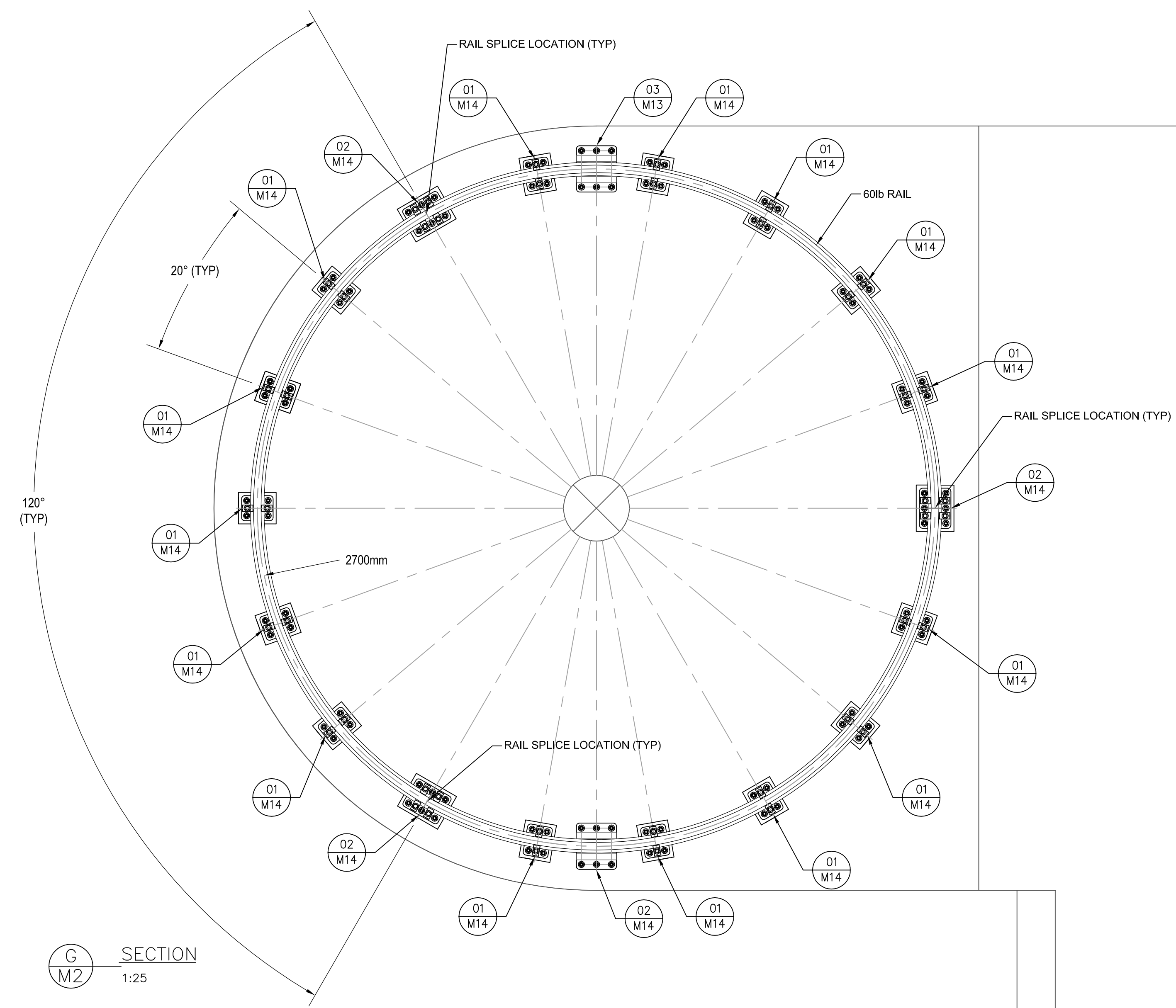
LOCKING PIN
1:25



LIVE LOAD WHEEL
1:16



LIVE LOAD WHEEL
1:16



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CONSTRUCTION

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CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS

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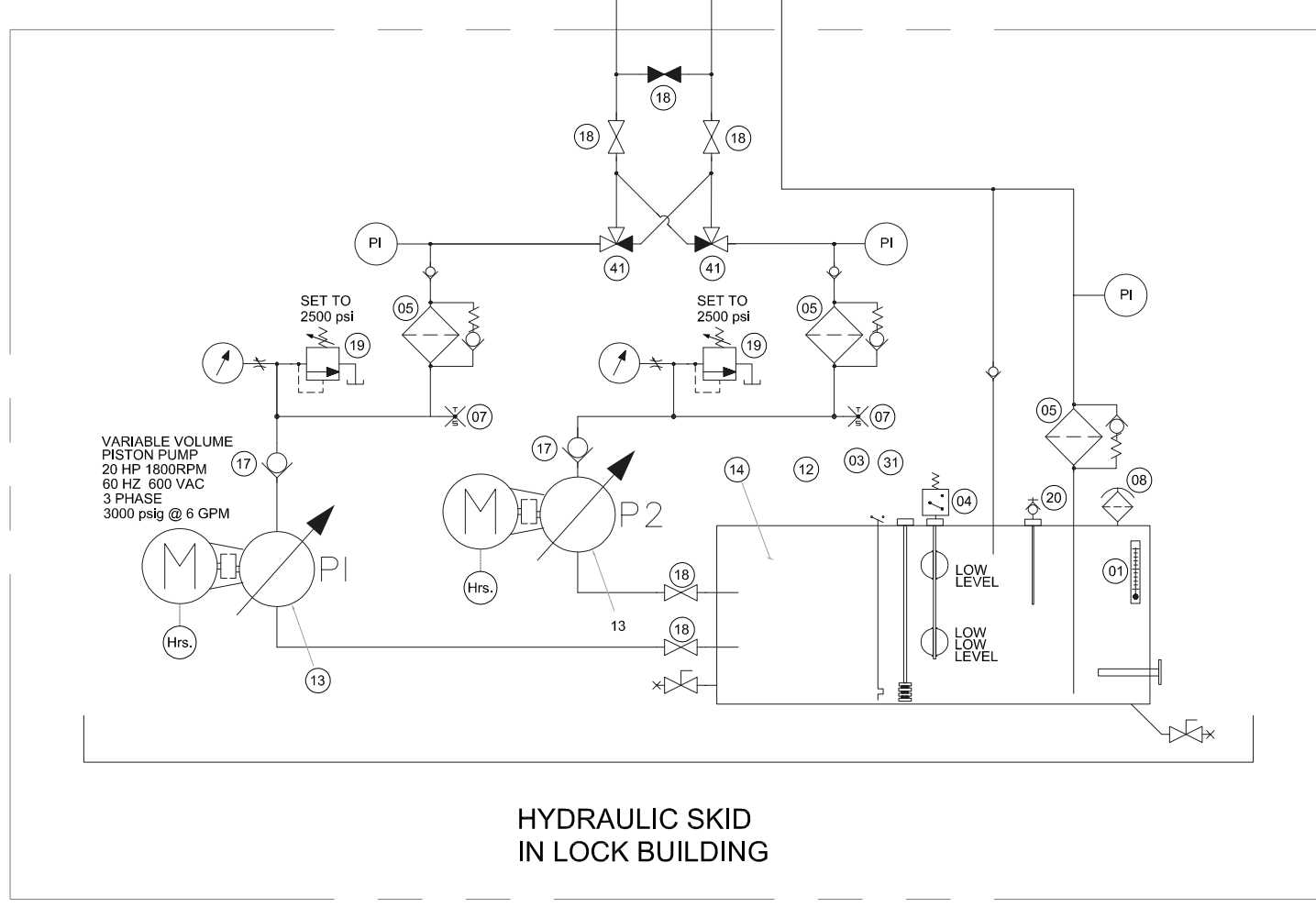
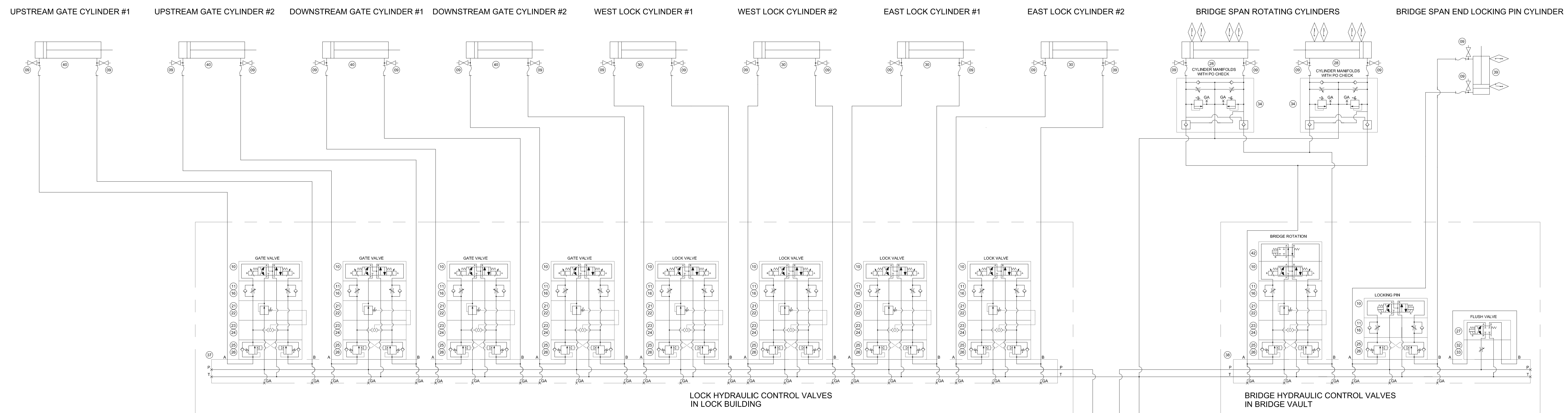
Revision / Révision	
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**TRENT-SEVERN WATERWAY
BOBCAYGEON SWING
BRIDGE REHABILITATION**

ONTARIO

Drawing title / Titre du dessin
**SECTION F-F
SECTION G-G**

Drawn by / Dessiné par D. DAIGLE	Designed by / Conçu par D. DAIGLE
Approved by / Approuvé par K SMITH	Drawing Date / Date du dessin 2019/09/20
Project manager / Administrateur de projet W. LITTLE	Drawing Number / Numéro du Dessin M5
Project Number / Numéro du projet 1356-30030321	Sheet / Feuille 05 of 22



BILL OF MATERIALS		
ITEM#	DESCRIPTION	SPECIFICATION No.
01	PUMP SKID SIGHT GLASS	SEE MECHANICAL SPECIFICATIONS
02	FLOW DIVIDER CARTRIDGE	
03	TEMPERATURE SWITCH	
04	LEVEL SWITCH	
05	HYDRAULIC OIL FILTER	
06		
07	PUMP SKID TEST PORTS	
08	OIL RESERVOIR BREATHER	DESICCANT TYPE BREATHER
09	CYLINDER BLEED VALVES	
10	PROPORTIONAL CONTROL VALVE	
11	FLOW CONTROL CARTRIDGE	
12	OIL RESERVOIR	
13	PRIMARY HYDRAULIC GEAR PUMP	
14	HYDRAULIC FLUID	
15	EMERGENCY GEAR PUMP	
16	FLOW CONTROL SANDWICH METER IN BODY	
17	CHECK VALVE	
18	BALL VALVE	
19	PRESSURE RELIEF CARTRIDGE VALVE	
20	SAMPLING PORT	
21	PRESSURE REDUCING VALVE CARTRIDGE	
22	PRESSURE REDUCING VALVE BODY	
23	SHUTTLE VALVE CARTRIDGE	
24	SHUTTLE VALVE BODY	
25	DUAL COUNTERBALANCE VALVE CARTRIDGE	
26	DUAL COUNTERBALANCE VALVE BODY	
27	DIRECTIONAL CONTROL VALVE	
28	BRIDGE SWING CYLINDER	
29	BRIDGE JACK CYLINDER	
30	LOCK CYLINDERS	
31	TANK MAGNET	
32	NEEDLE VALVE CARTRIDGE	
33	NEEDLE VALVE BODY	
34	CYLINDER MANIFOLD WITH PO CHECK	LYNCH E17-0949-51
35		
36		
37	MANIFOLD, 8 STATIONS	
38	MANIFOLD, 3 STATIONS	
39	BRIDGE LOCK CYLINDER	
40	SLUICE GATE CYLINDERS	
41	3 WAY VALVE	
42	2 WAY, 2 POSITION EMERGENCY CLOSE VALVE	

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 - 3.2. SET THE ADJUSTABLE PRESSURE RELIEF(S) ON THE CHANNEL TO A MINIMUM PRESSURE.
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 - 3.7. IF APPLICABLE, LOCK THE ADJUSTERS IN PLACE USING SUPPLIED LOCK NUTS, CAPS ETC.

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NOT FOR
CONSTRUCTION**

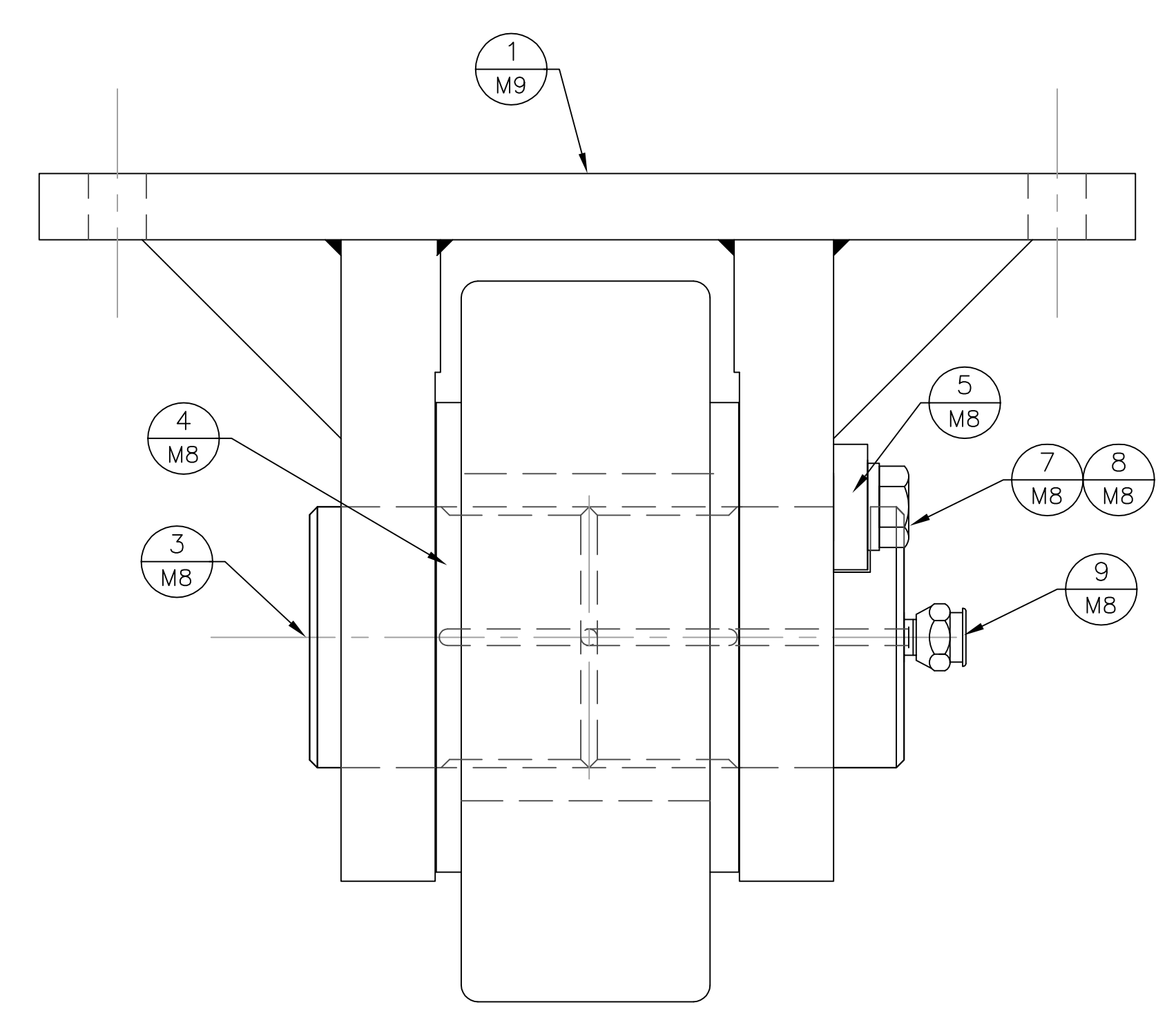
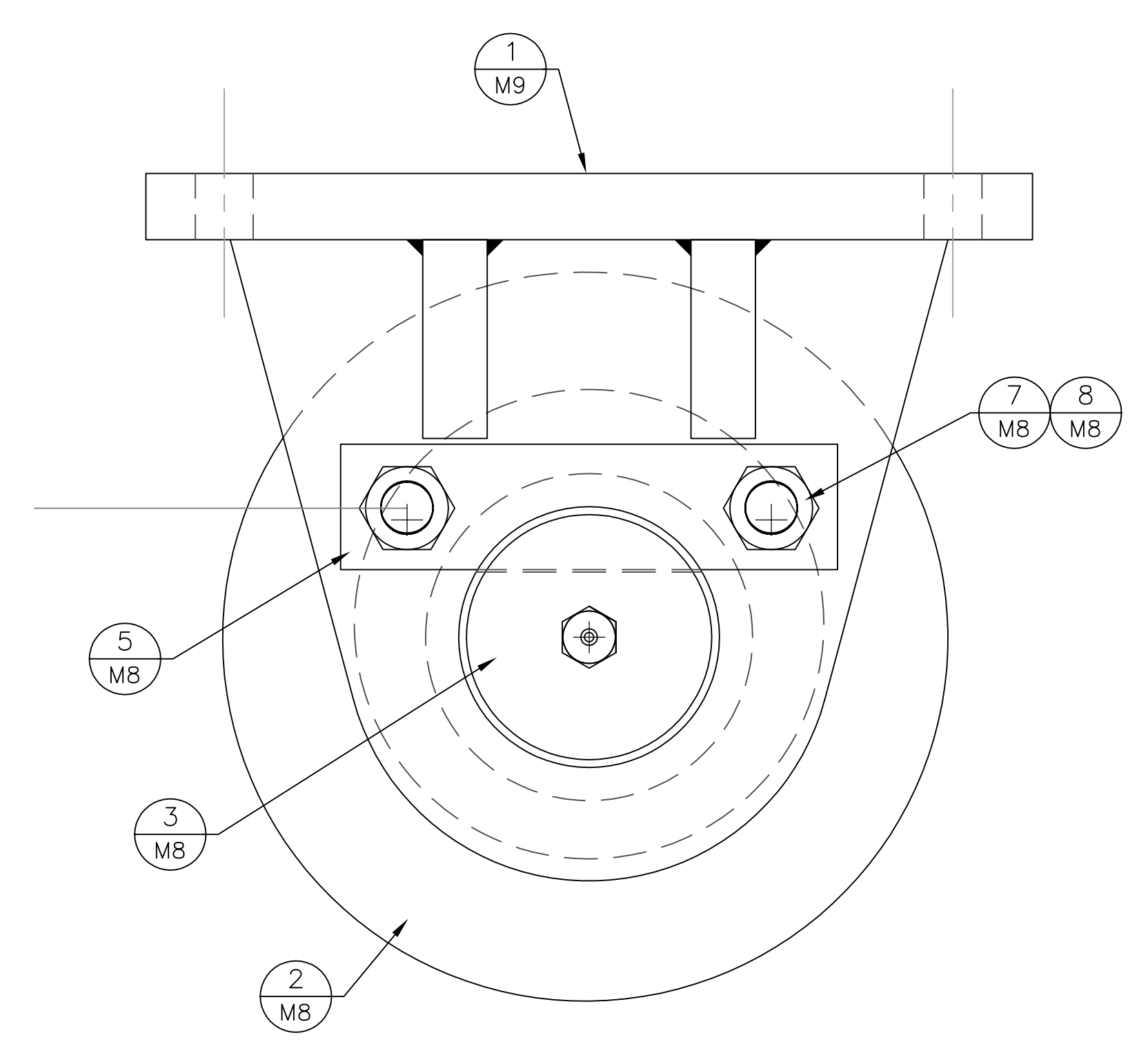
02	FOR TENDER	DD	11/07/19
01	FOR 90% APPROVAL	DD	07/19/19
No.	Description	Drawn By / Des. Par	Date
Revision / Révision			

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

A Detail number
Numéro du détail
B Location dwg. number
Numéro sur dessin

Project title / Titre du projet
**TRENT-SEVERN WATERWAY
BOBCAYGEON SWING
BRIDGE REHABILITATION**
ONTARIO

Drawing title / Titre du dessin HYDRAULIC SCHEMATIC AND COMMISSIONING NOTES	
Drawn by / Dessiné par D. DAIGLE	Designed by / Conçu par D. DAIGLE
Approved by / Approuvé par K SMITH	Drawing Date / Date du dessin 2019/11/07
Project manager / Administrateur de projet W. LITTLE	Drawing Number / Numéro du Dessin M6
Project Number / Numéro du projet 1356-30030321	Sheet / Feuille 6 of 22



ITEM	REQ'D	DESCRIPTION
1	6	BALANCE WHEEL SUPPORT BRACKET
2	6	BALANCE WHEEL
3	6	AXIAL
4	12	THRUST WASHER
5	6	KEEPER PLATE
6	6	BUSHING
7	12	M20 x 2.5 x 40Lg CLASS 10.9 - YELLOW ZINC PLATED HEXAGON CAP SCREW
8	12	20 mm SPLIT TYPE HELICAL LOCKWASHERS DIN 7980 ZINC PLATED
9	6	M12 x 1.5 GREASE NIPPLE
10	6	BALANCE WHEEL MOUNTING PLATE
11	SEE TABLE 1	MOUNTING SHIMS
12		DRILL FOR 20mm Ø HIGH STRENGTH BOLTS

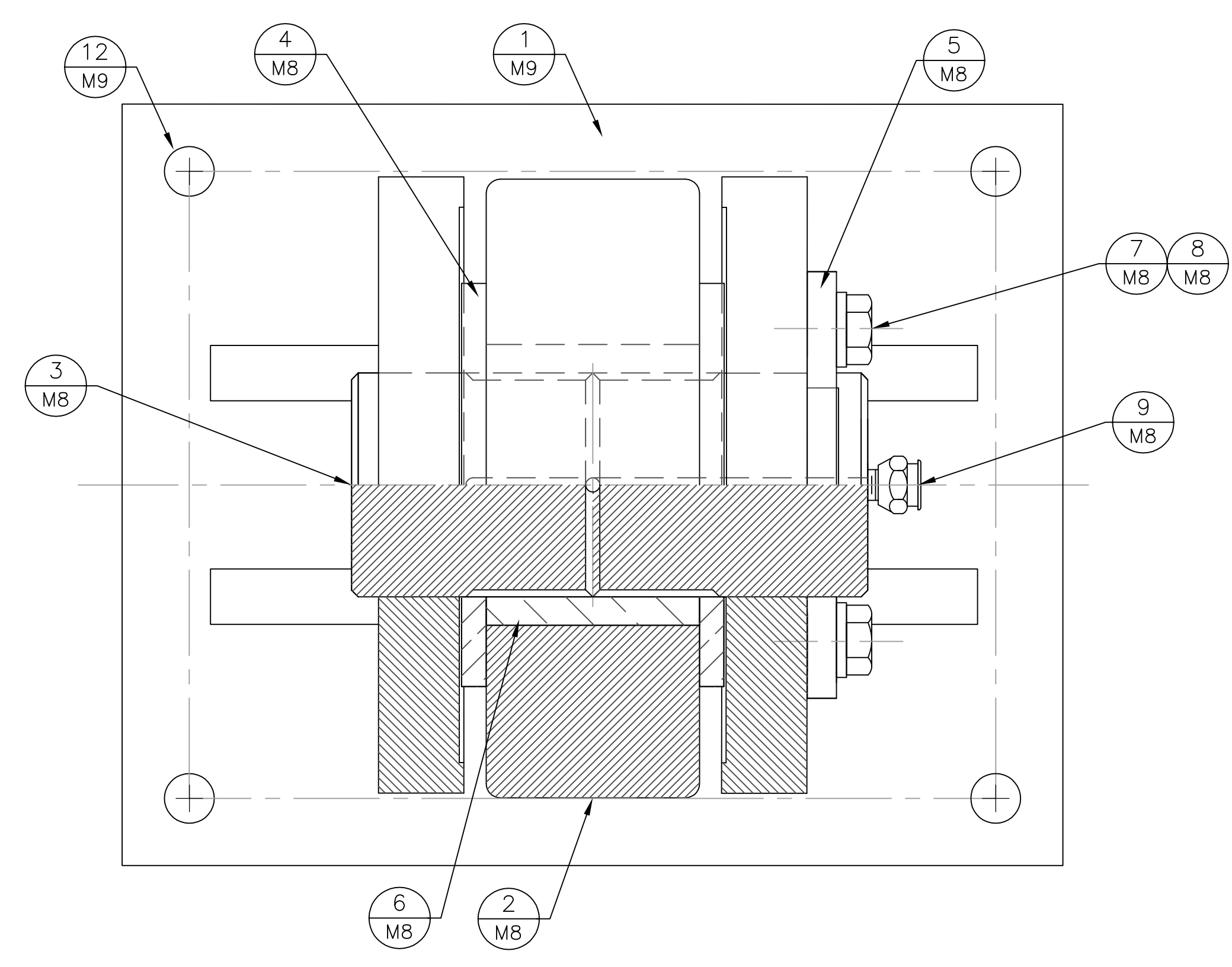


TABLE 1

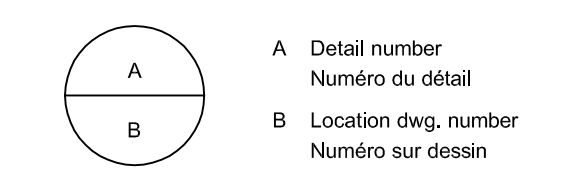
REQ'D	
6	1"
6	1/2"
6	1/4"
6	1/8"
6	1/16"
12	1/32"

BALANCE WHEEL
 REQ'D: 6
 SCALE: 1:2

**FOR TENDER
 NOT FOR
 CONSTRUCTION**

No.	Description	Des.Par	Date
03	FOR TENDER	DD	11/07/19
02	FOR TENDER	DD	09/25/19
01	FOR 90% APPROVAL	DD	07/19/19

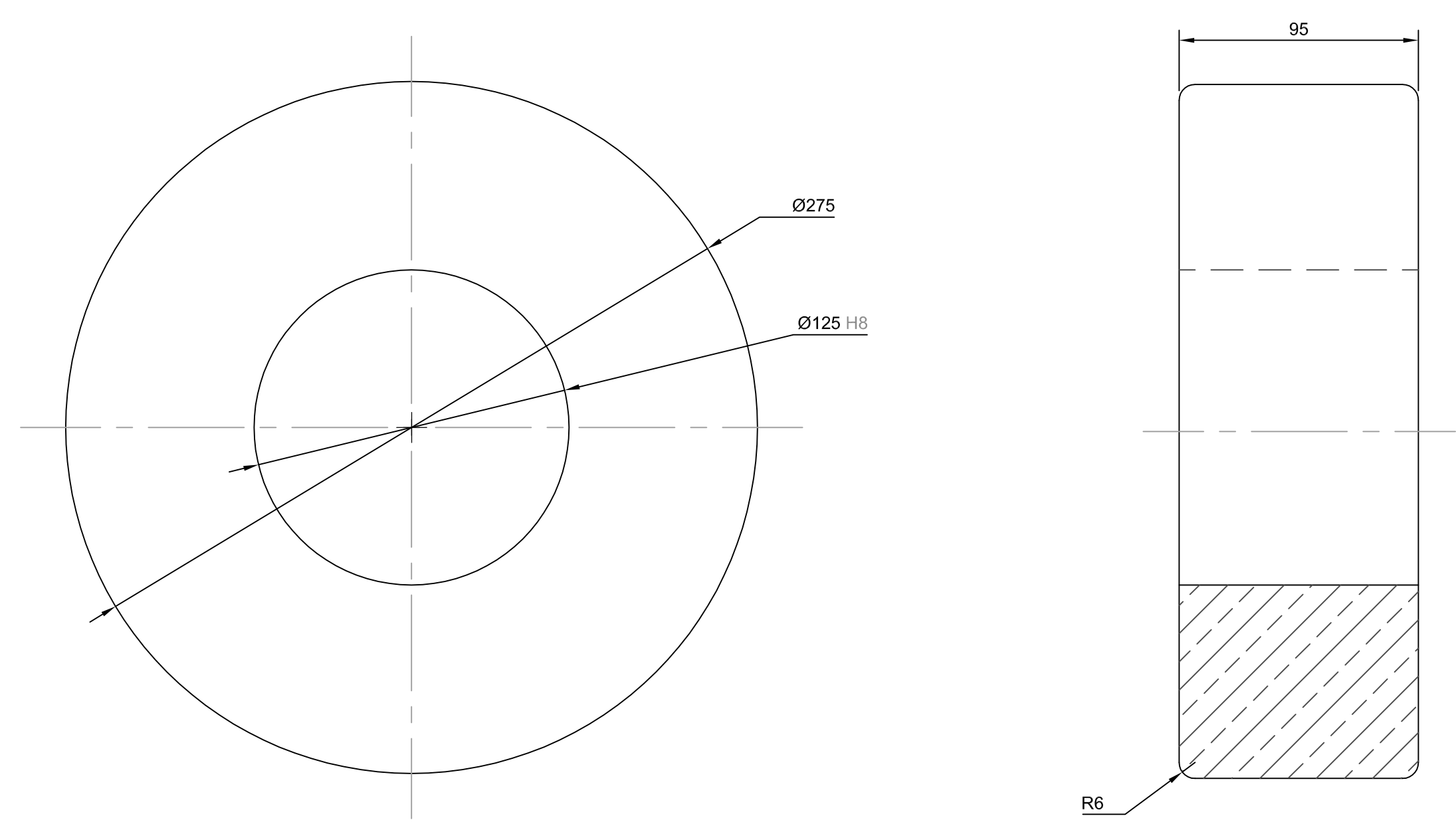
Revision / Révision
 Do not scale drawings. Verify all dimensions and conditions on site and immediately notify the Departmental Representative of all discrepancies.



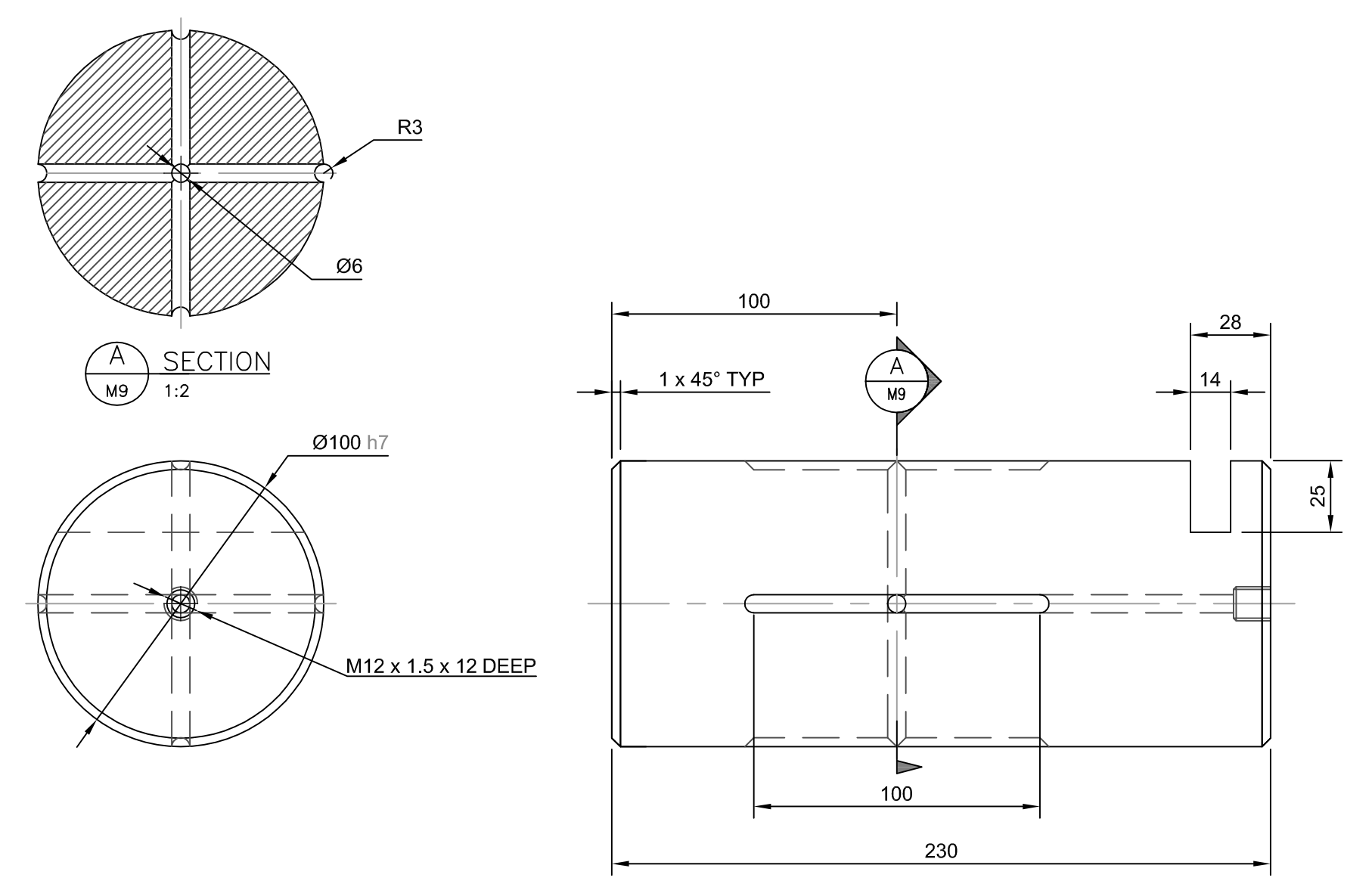
Project title / Titre du projet
**TRENT-SEVERN WATERWAY
 BOBCAYGEON SWING
 BRIDGE REHABILITATION**

ONTARIO
**BALANCE
 WHEEL
 ASSEMBLY**

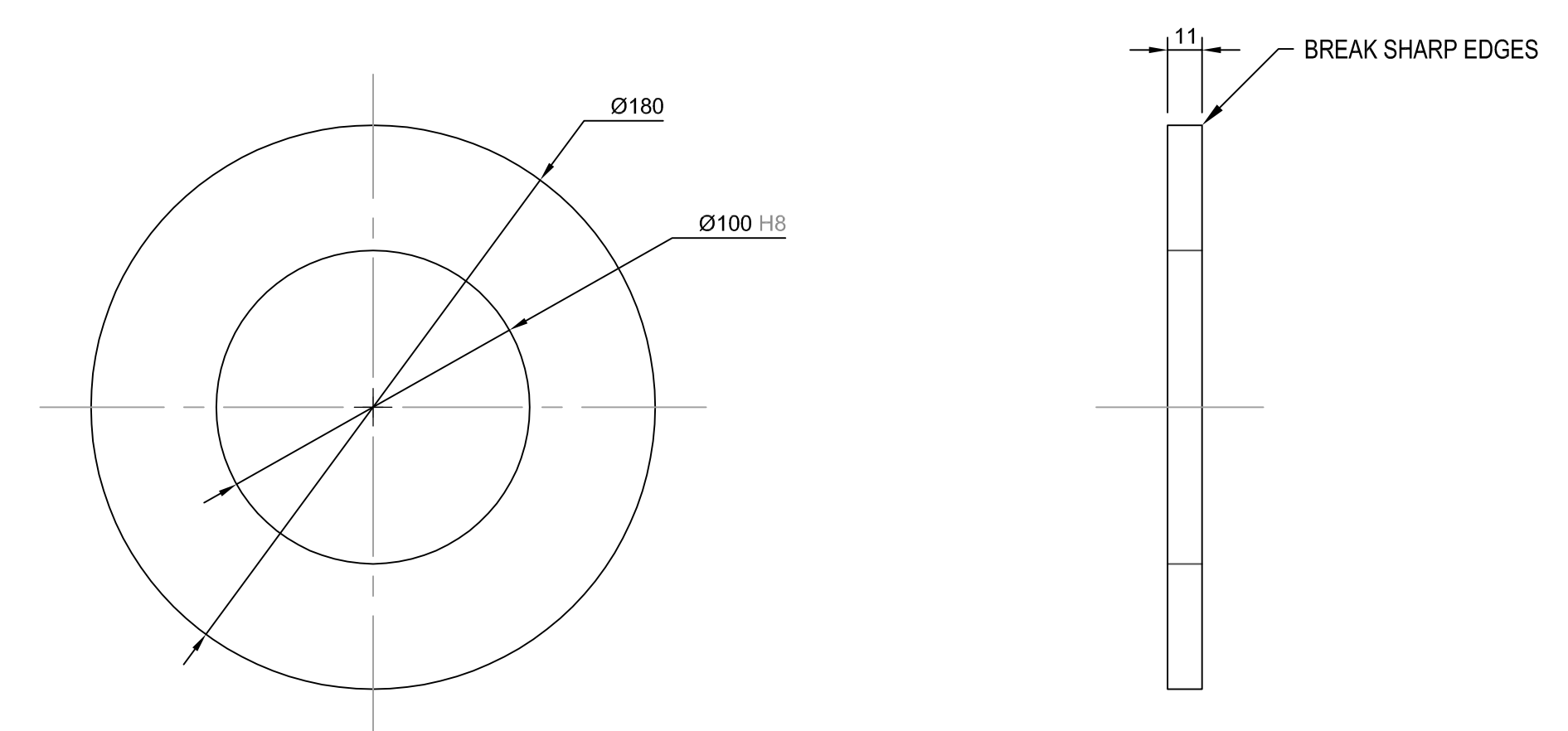
Drawn by / Dessiné par D. DAIGLE	Designed by / Conçu par D. DAIGLE
Approved by / Approuvé par K SMITH	Drawing Date / Date du dessin 2019/09/20
Project manager / Administrateur de projet W. LITTLE	Drawing Number / Numéro du Dessin M7
Project Number / Numéro du projet 1356-30030321	Sheet / Feuille 07 of 22



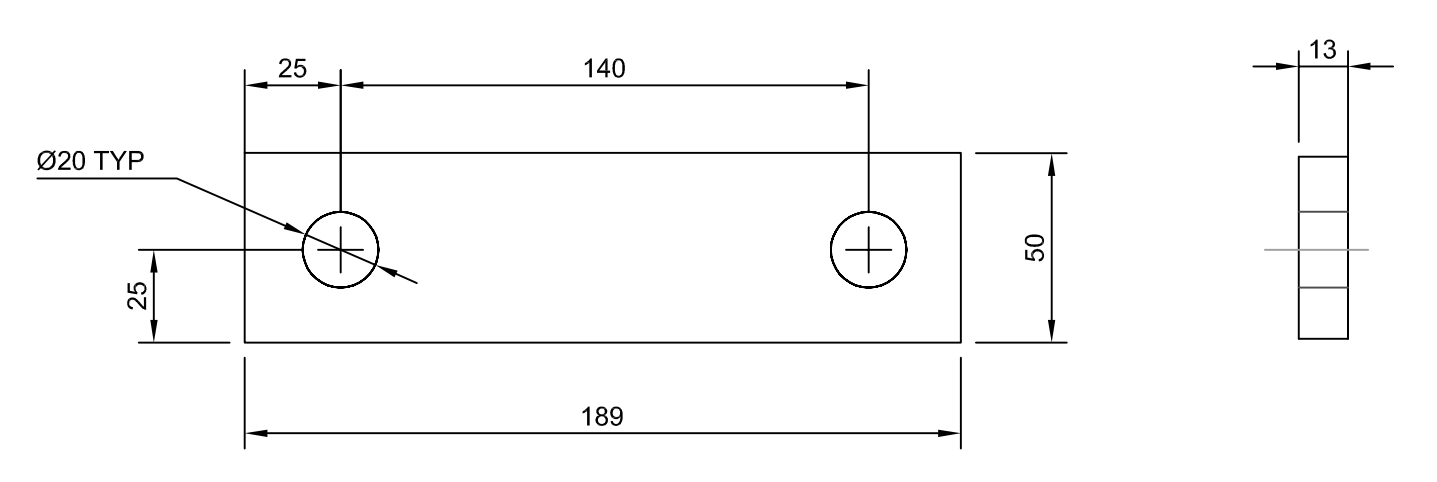
2
 M7 **BALANCE WHEEL**
 REQ'D: 6
 MATERIAL: ASTM A668 CLASS G
 SCALE: 1:2



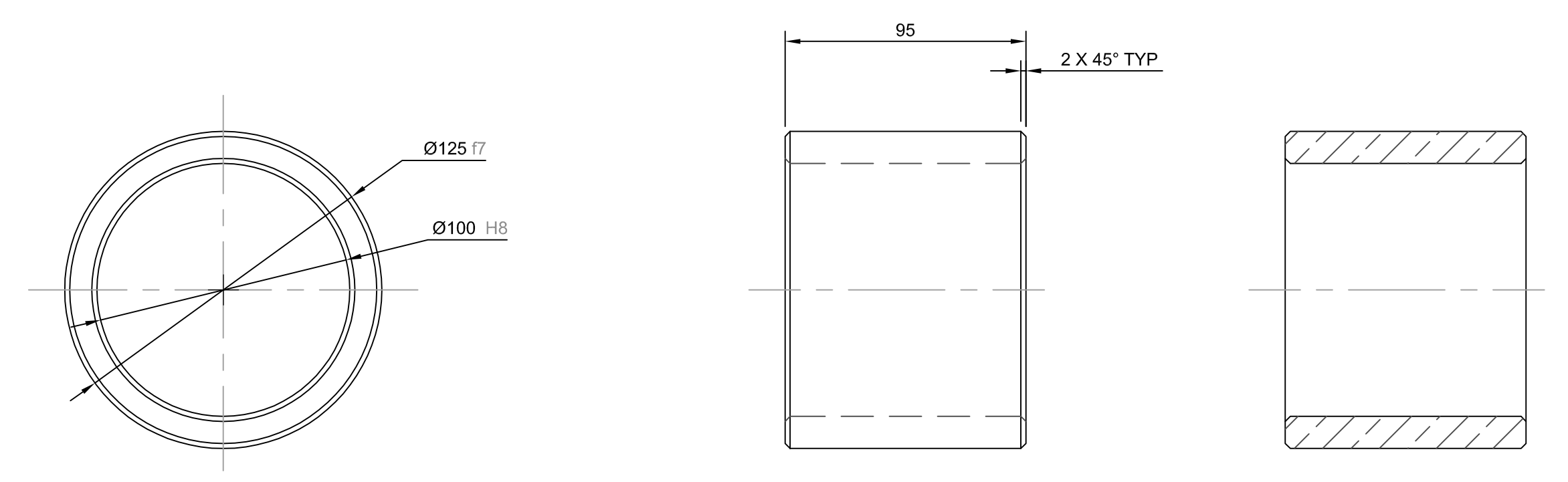
3
 M7 **AXIAL**
 REQ'D: 6
 MATERIAL: ASTM A668 CLASS D
 SCALE: 1:2



4
 M7 **THRUST WASHER**
 REQ'D: 12
 MATERIAL: ASTM B22 ALLOY C91300
 SCALE: 1:2



5
 M7 **KEEPER PLATE**
 REQ'D: 12
 MATERIAL: ASTM A709 Gr 50
 SCALE: 1:2



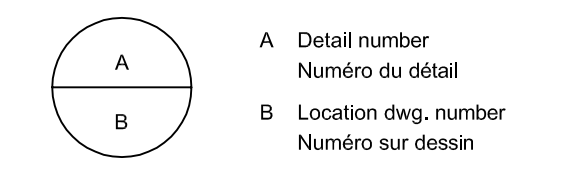
6
 M7 **BUSHING**
 REQ'D: 12
 MATERIAL: ASTM B22 ALLOY C91300
 SCALE: 1:2

**FOR TENDER
 NOT FOR
 CONSTRUCTION**

- NOTE:**
1. SEE M0 FOR PAINT SPECIFICATIONS
 2. REMOVE ALL SHARP EDGES
 3. UNLESS OTHERWISE NOTED ALL FINISHES TO BE 3.2 MICRON

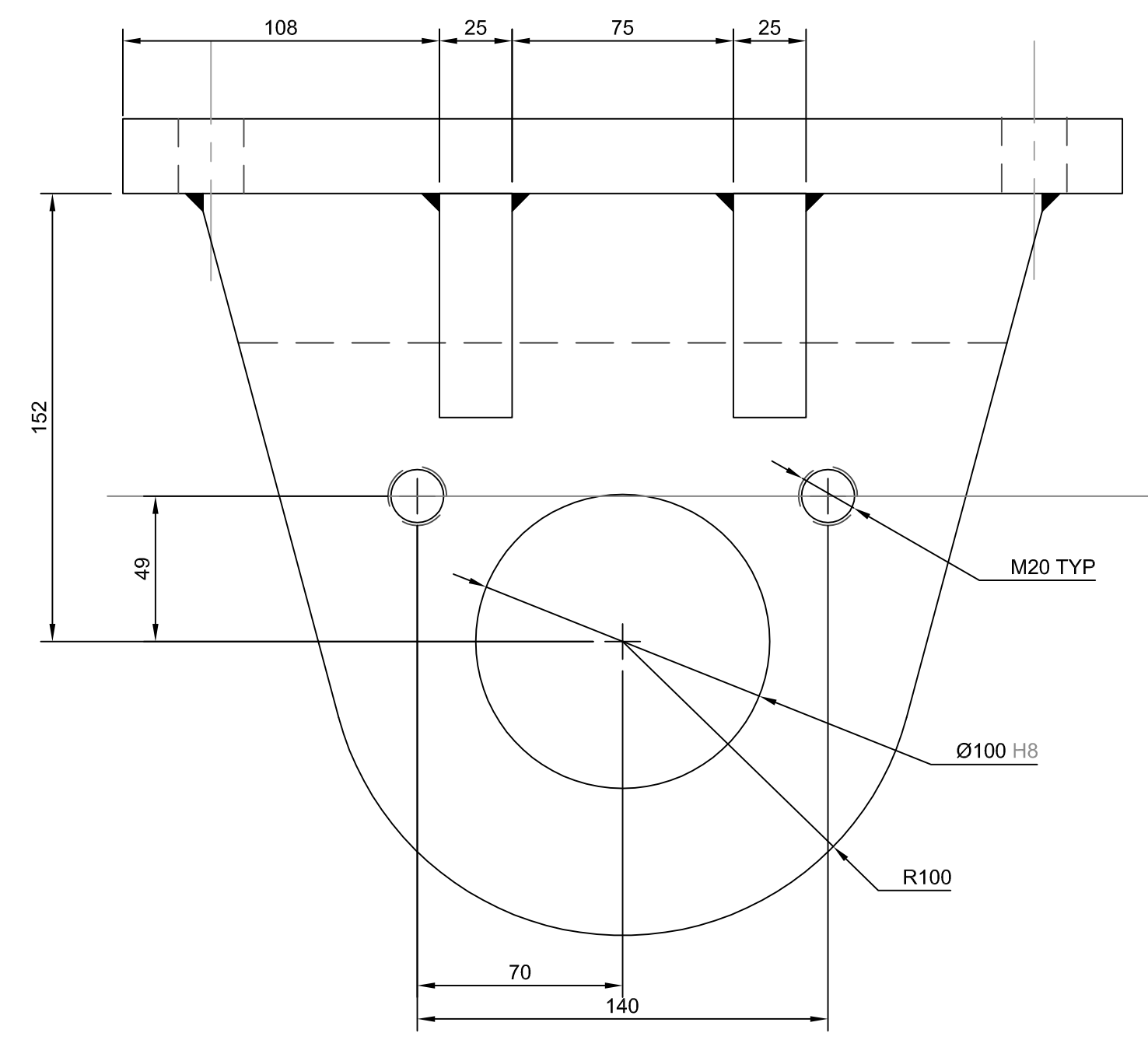
No.	Description	Drawn By / Des.Par	Date
03	FOR TENDER	DD	11/07/19
02	FOR TENDER	DD	09/25/19
01	FOR 90% APPROVAL	DD	07/19/19

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

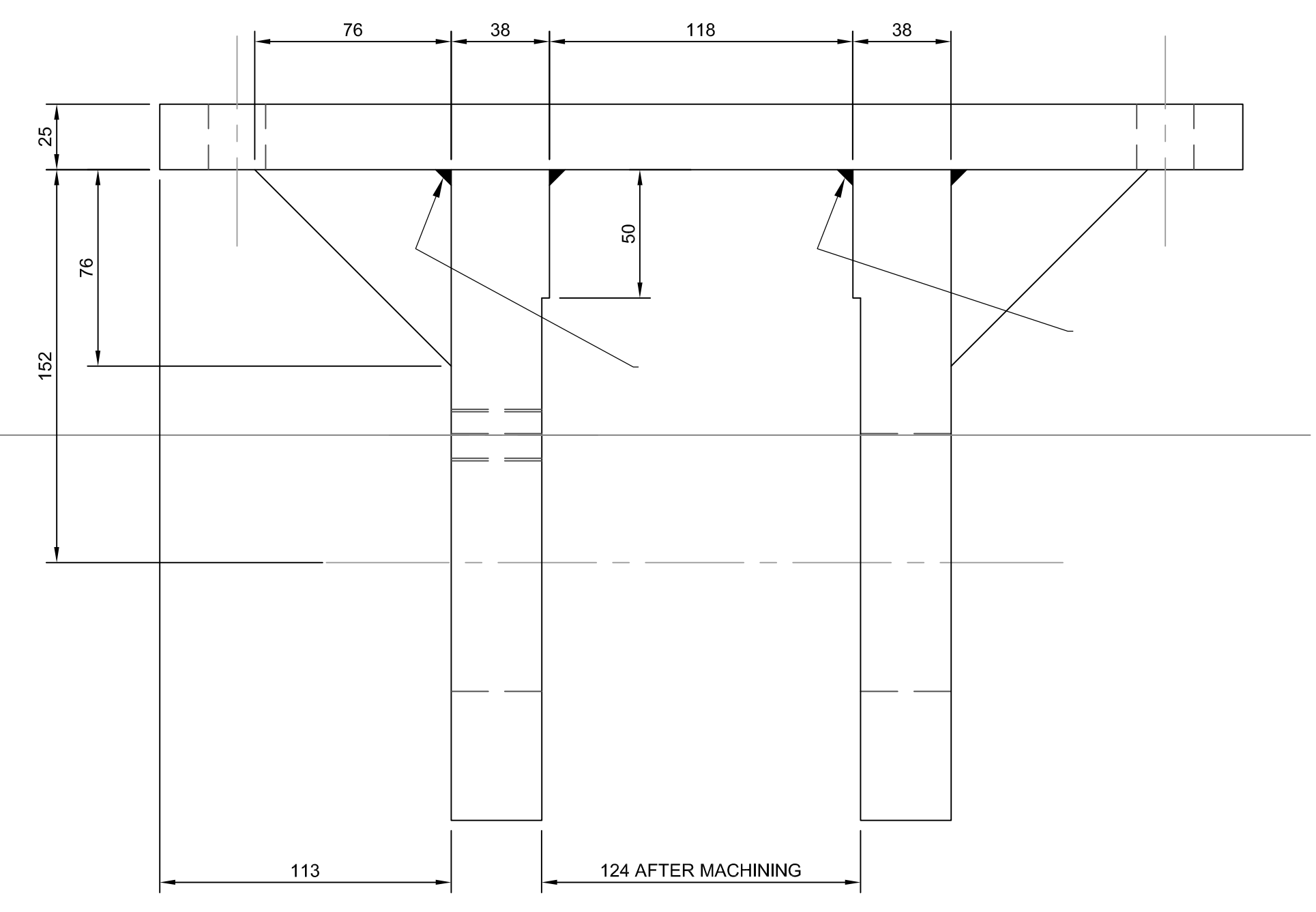


Project title / Titre du projet
**TRENT-SEVERN WATERWAY
 BOBCAYGEON SWING
 BRIDGE REHABILITATION**
 ONTARIO

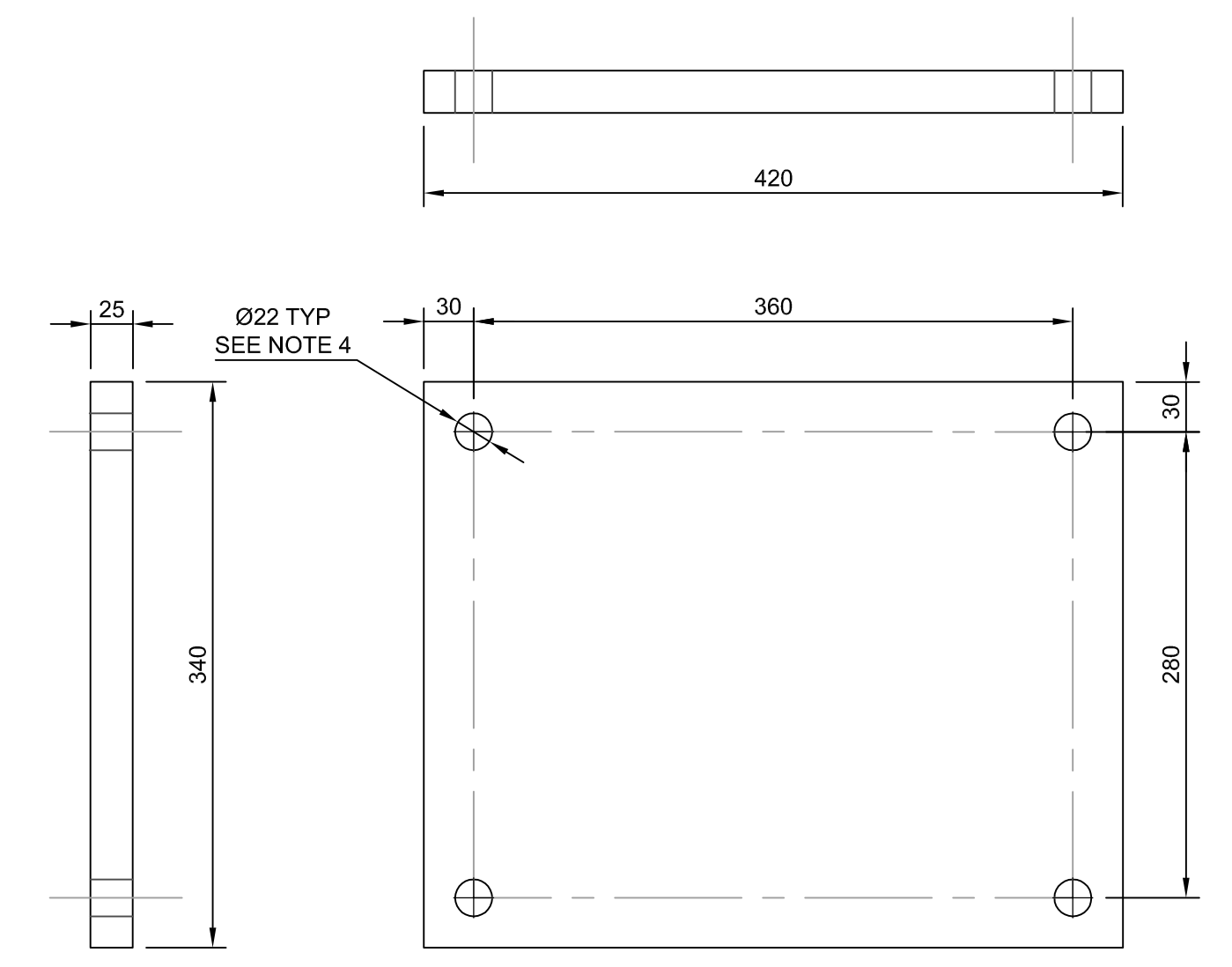
BALANCE WHEEL DETAILS 1	
Drawn by / Dessiné par D. DAIGLE	Designed by / Conçu par D. DAIGLE
Approved by / Approuvé par K SMITH	Drawing Date / Date du dessin 2019/09/20
Project manager / Administrateur de projet W. LITTLE	Drawing Number / Numéro du Dessin M8
Project Number / Numéro du projet 1356-30030321	Sheet / Feuille 08 of 22



1
M7 **BALANCE WHEEL MOUNTING BRACKET**
 REQ'D: 8
 MATERIAL: ASTM A709 Gr 50
 SCALE: 1:2



10
M7 **BALANCE WHEEL MOUNTING PLATE**
 REQ'D: 6
 MATERIAL: ASTM A709 Gr 50
 SCALE: 1:4



11
M7 **BALANCE WHEEL SHIMS**
 REQ'D: SEE TABLE 1
 MATERIAL: 304 STAINLESS STEEL
 SCALE: 1:4

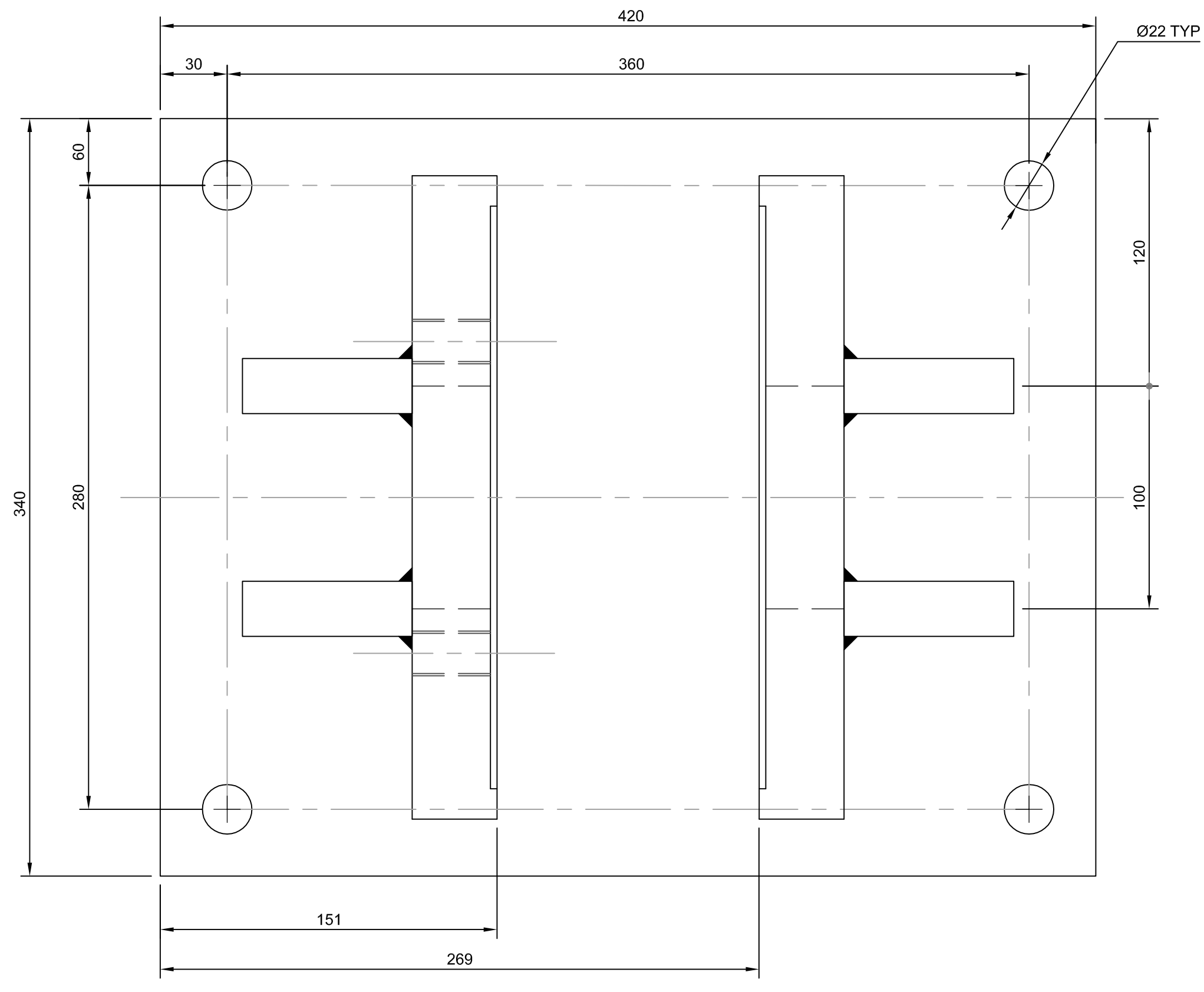
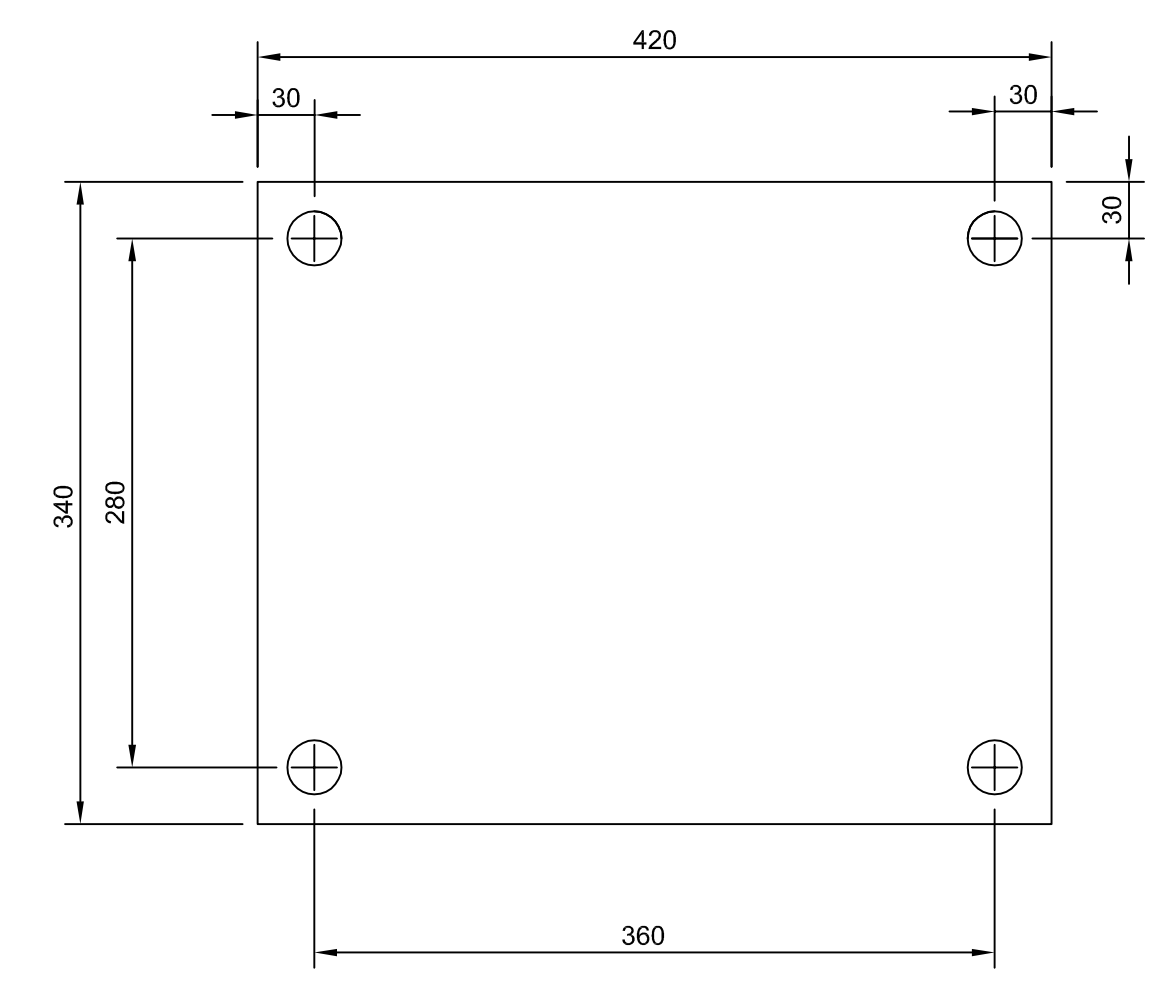


TABLE 1

REQ'D	
6	1"
6	1/2"
6	1/4"
6	1/8"
6	1/16"
12	1/32"

- NOTE:**
1. SEE M0 FOR PAINT SPECIFICATIONS
 2. REMOVE ALL SHARP EDGES
 3. UNLESS OTHERWISE NOTED ALL FINISHES TO BE 3.2 MICRON
 4. DRILL FOR 3/4"Ø HIGH STRENGTH BOLTS

**FOR TENDER
 NOT FOR
 CONSTRUCTION**

No.	Description	Drawn By / Des.Par	Date
03	FOR TENDER	DD	11/07/19
02	FOR TENDER	DD	09/25/19
01	FOR 90% APPROVAL	DD	07/19/19

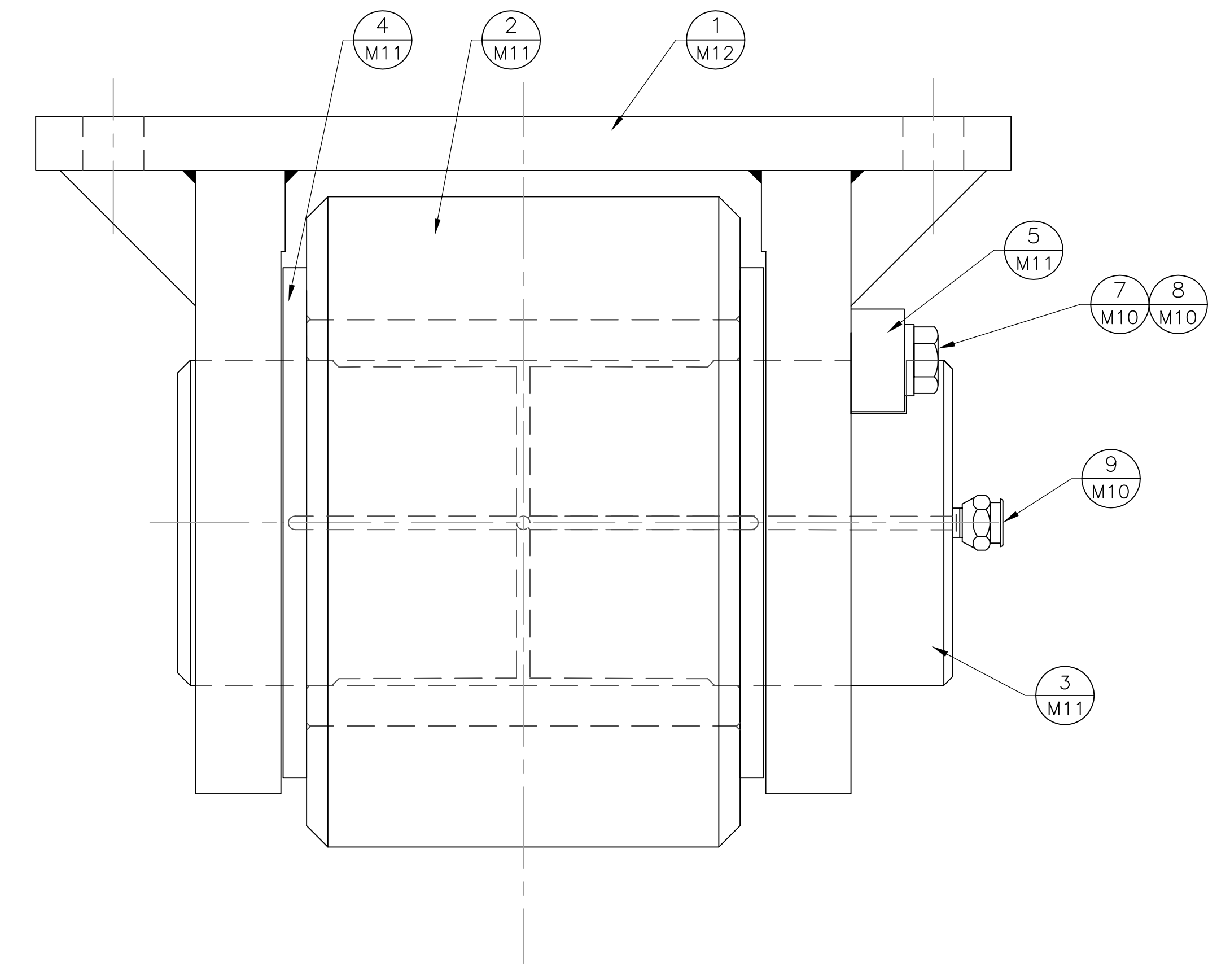
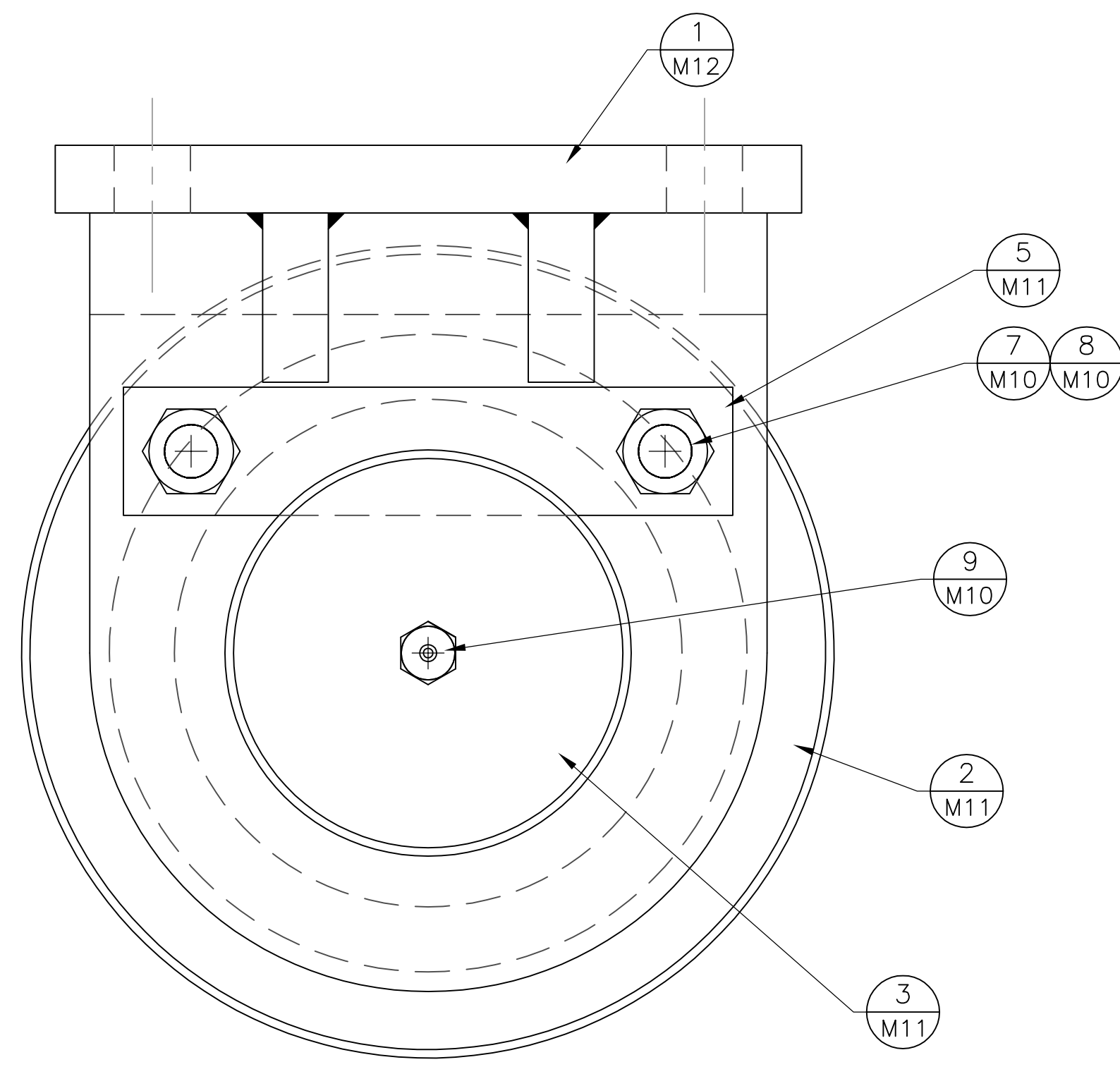
Do not scale drawings. Verify all dimensions and conditions on site and immediately notify the Departmental Representative of all discrepancies.

A	B
A Detail number Numéro du détail	B Location dwg. number Numéro sur dessin

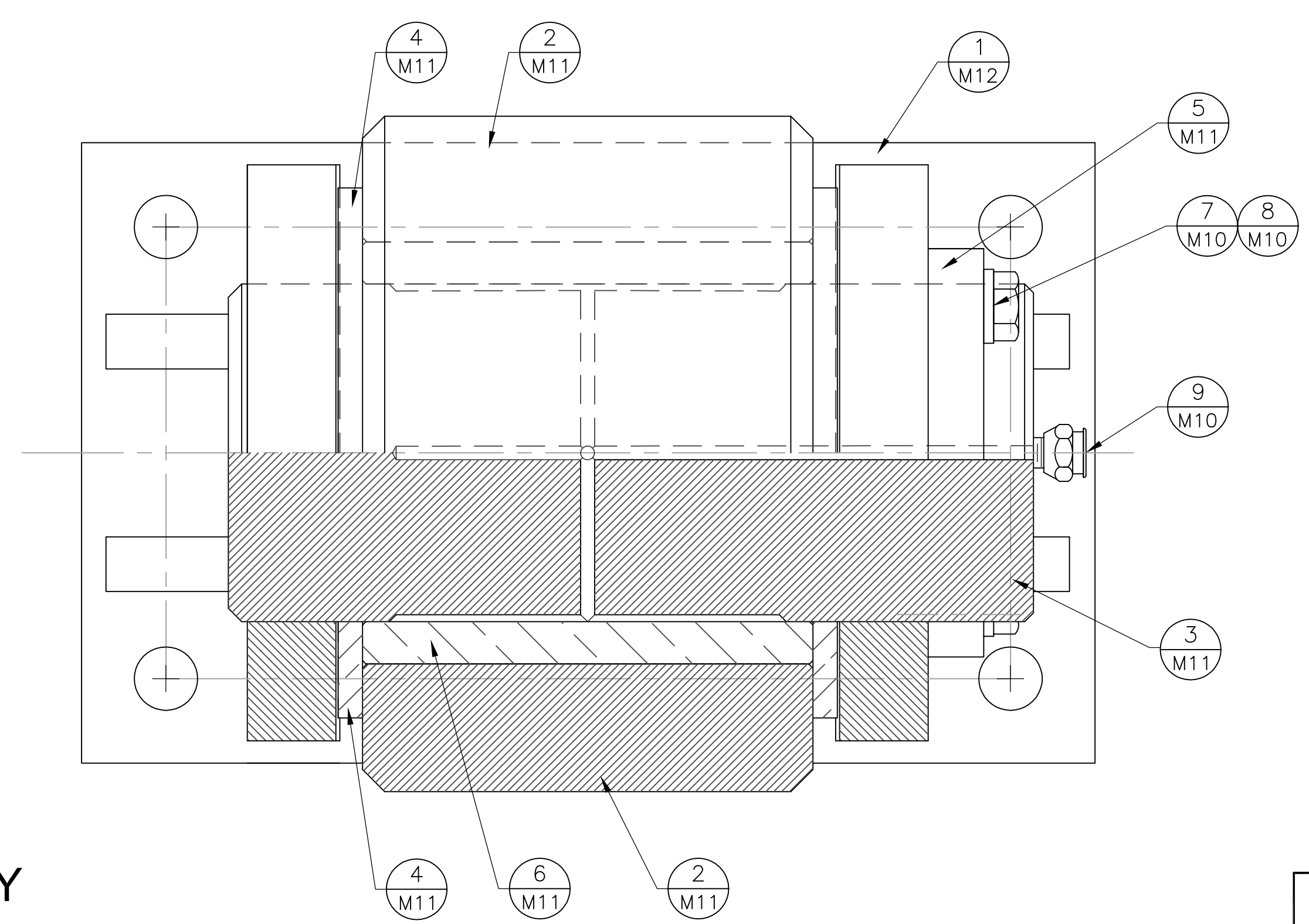
Project title / Titre du projet
**22
 BOBCAYGEON SWING
 BRIDGE REHABILITATION**
 ONTARIO

Drawing title / Titre du dessin
**BALANCE
 WHEEL
 DETAILS 2**

Drawn by / Dessiné par D. DAIGLE	Designed by / Conçu par D. DAIGLE
Approved by / Approuvé par K SMITH	Drawing Date / Date du dessin 2019/09/20
Project manager / Administrateur de projet W. LITTLE	Drawing Number / Numéro du Dessin M9
Project Number / Numéro du projet 1356-30030321	Sheet / Feuille 09 of 18



ITEM	REQ'D	DESCRIPTION
1	6	LIVE LOAD SUPPORT WHEEL
2	6	LIVE LOAD WHEEL
3	6	AXIAL
4	12	THRUST WASHER
5	6	KEEPER PLATE
6	6	BUSHING
7	12	M20 x 2.5 x 40Lg CLASS 10.9 - YELLOW ZINC PLATED HEXAGON CAP SCREW
8	12	20mm SPLIT TYPE HELICAL LOCKWASHERS DIN 7980 PLATED
9	6	M12 x 1.5 GREASE NIPPLE
10	6	LIVE LOAD MOUNTING PLATE
11	SEE TABLE 2, M12	MOUNTING SHIMS
12		



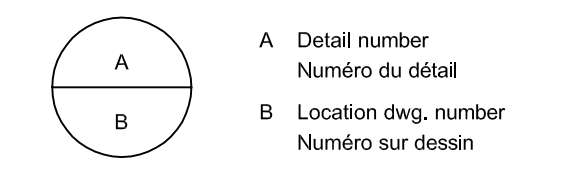
LIVE LOAD & END SUPPORT WHEEL ASSEMBLY
 REQ'D: 6
 SCALE: 1:4

**FOR TENDER
 NOT FOR
 CONSTRUCTION**

No.	Description	Drawn By / Des.Par	Date
02	FOR TENDER	DD	11/07/19
01	FOR 90% APPROVAL	DD	07/19/19

Revision / Révision

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



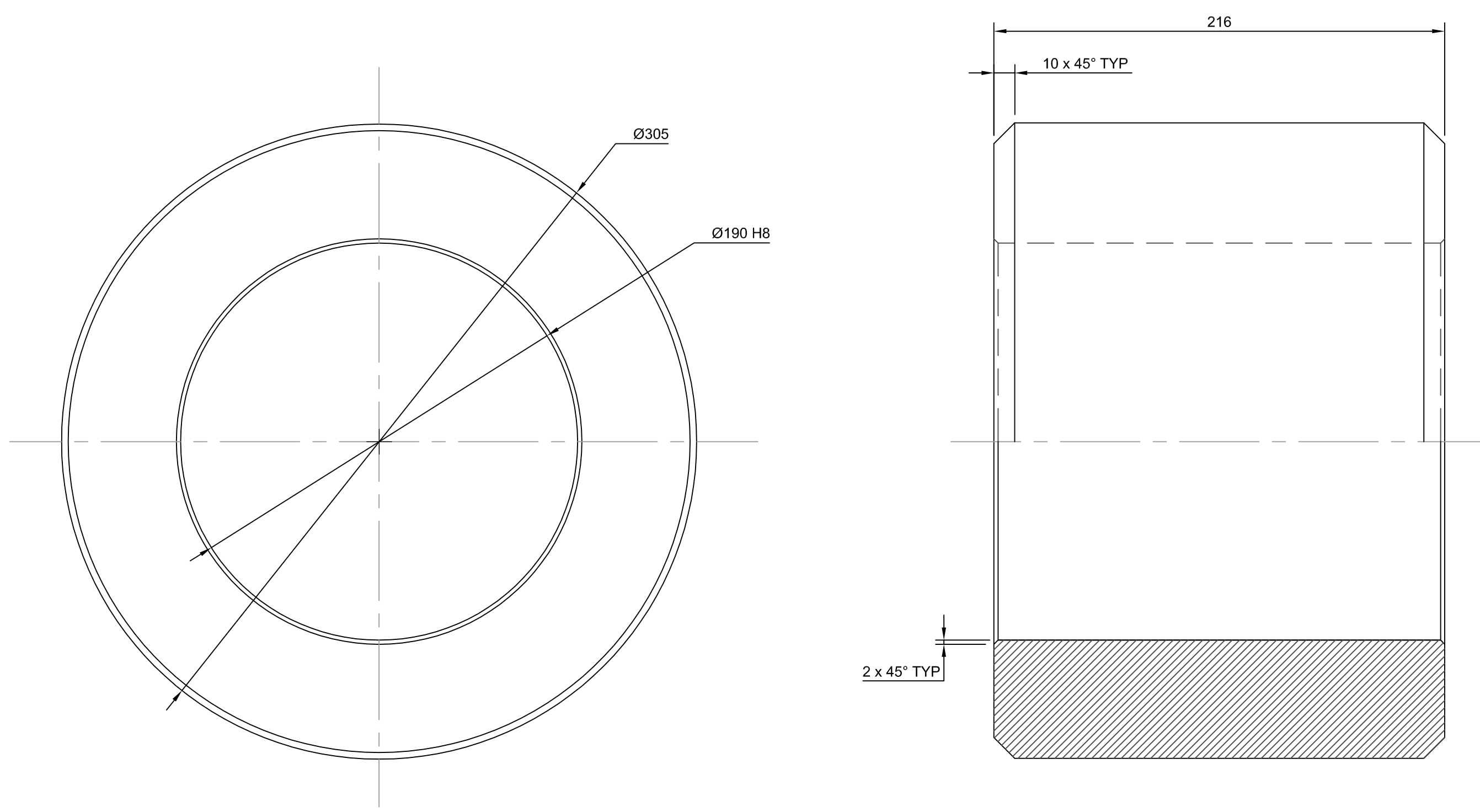
Project title / Titre du projet

**TRENT-SEVERN WATERWAY
 BOBCAYGEON SWING
 BRIDGE REHABILITATION**
 ONTARIO

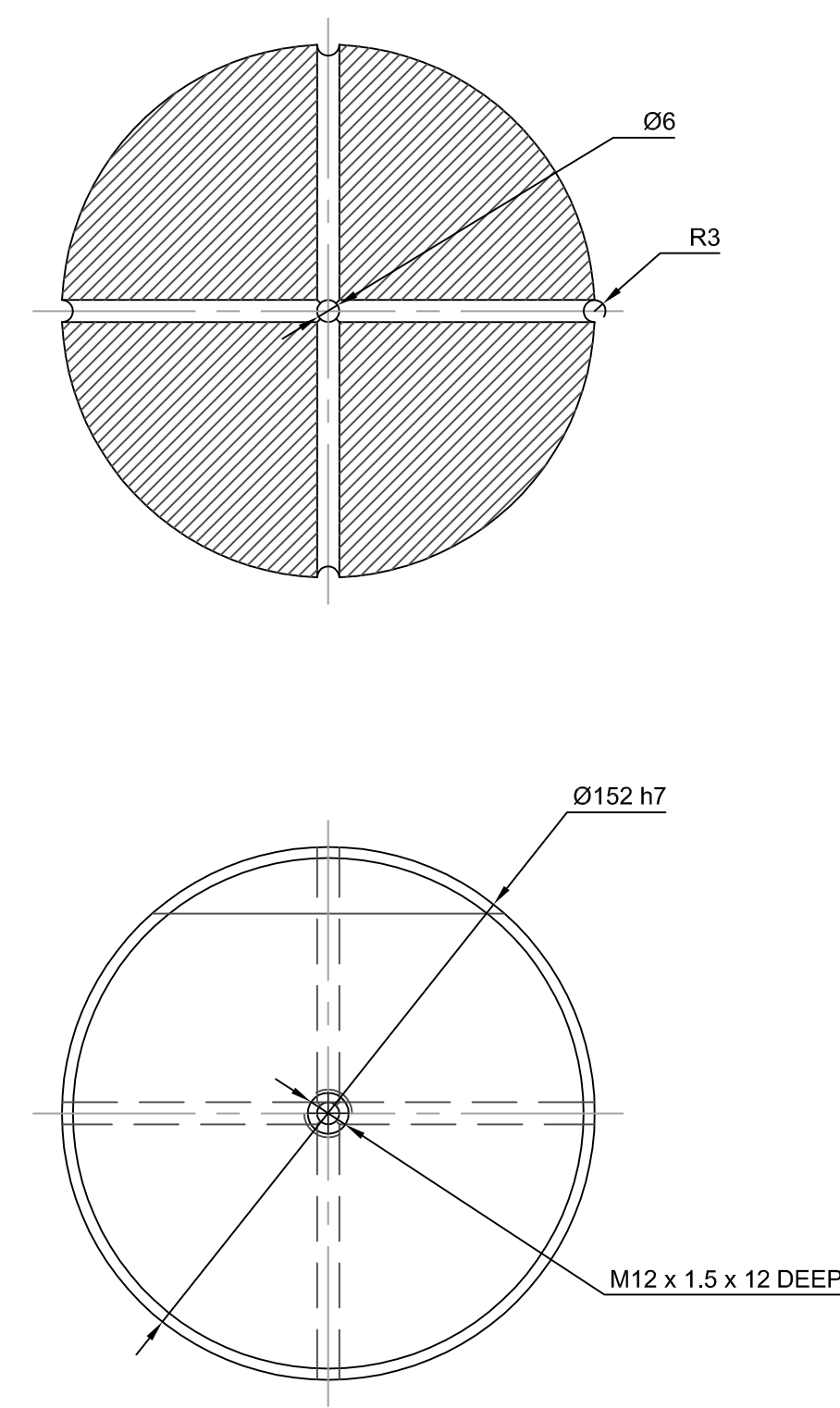
Drawing title / Titre du dessin

**LIVE LOAD
 AND
 END SUPPORT
 WHEEL ASSEMBLY**

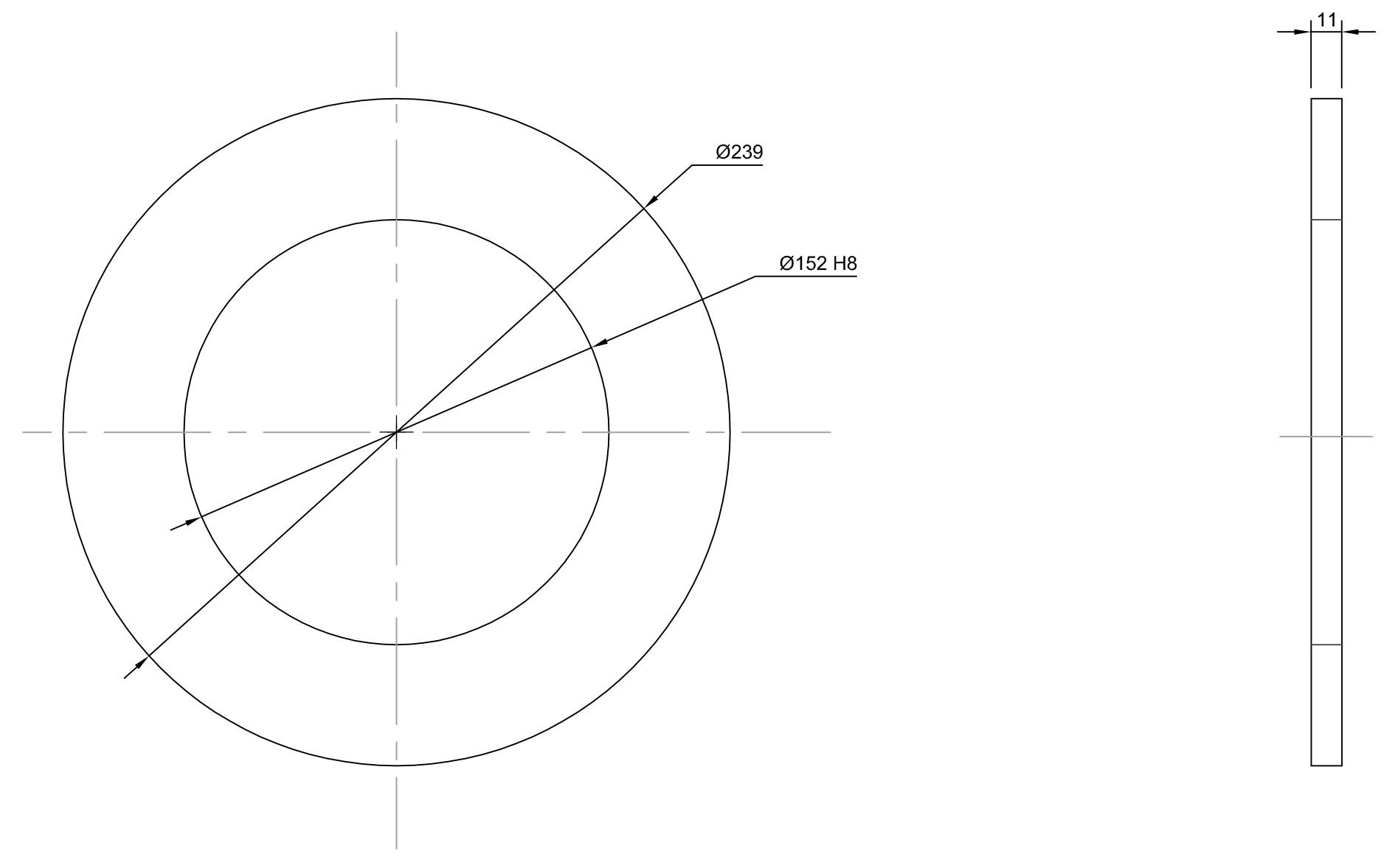
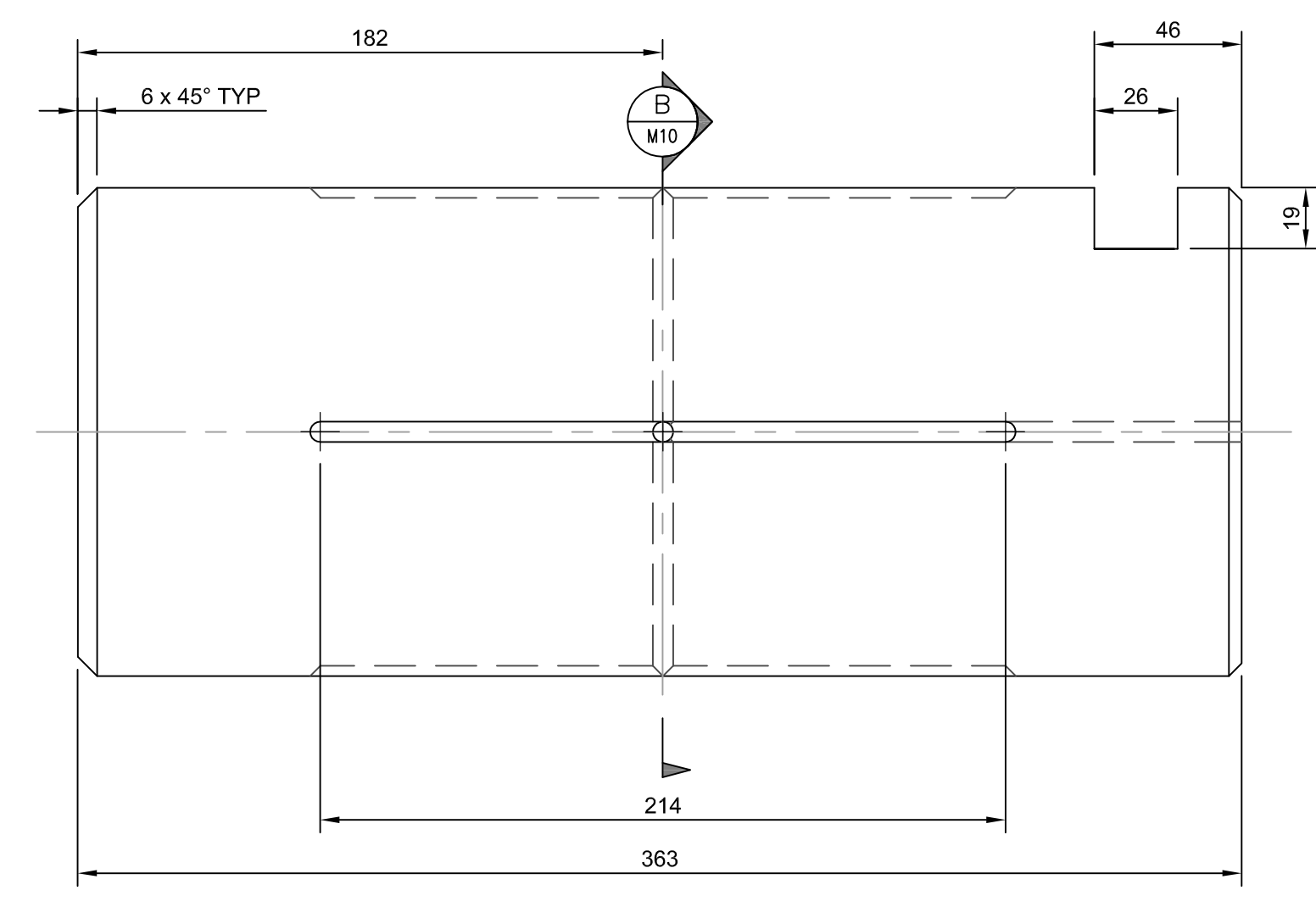
Drawn by / Dessiné par D. DAIGLE	Designed by / Conçu par D. DAIGLE
Approved by / Approuvé par K SMITH	Drawing Date / Date du dessin 2019/09/20
Project manager / Administrateur de projet W. LITTLE	Drawing Number / Numéro du Dessin M10
Project Number / Numéro du projet 1356-30030321	Sheet of / Feuille de 10 of 18



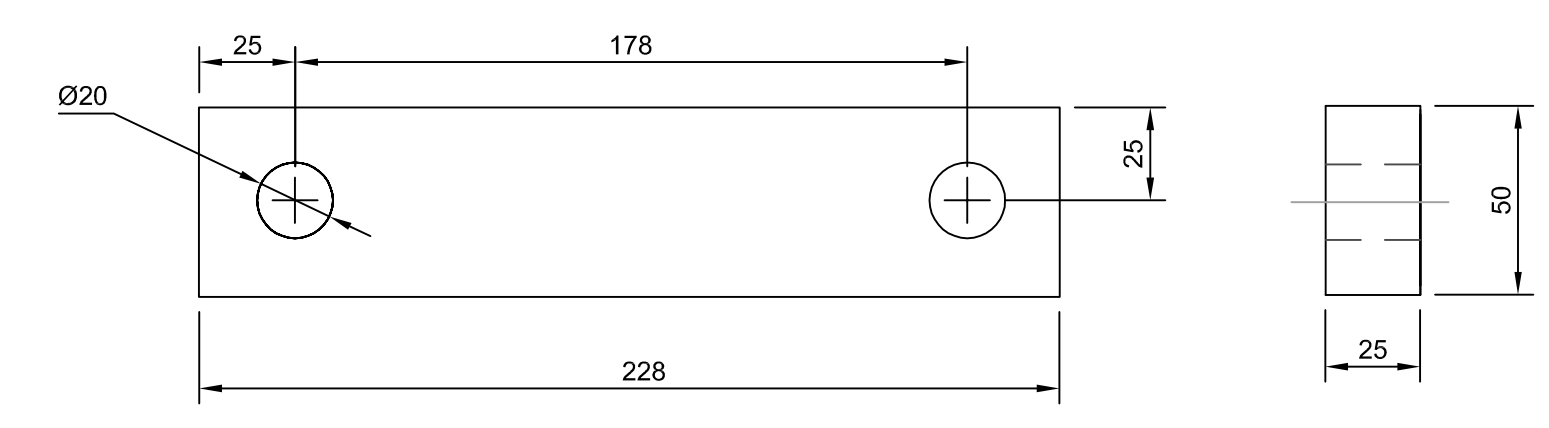
2
 M10 **LIVE LOAD WHEEL**
 REQ'D: 6
 MATERIAL: ASTM A668 CLASS M
 SCALE: 1:2



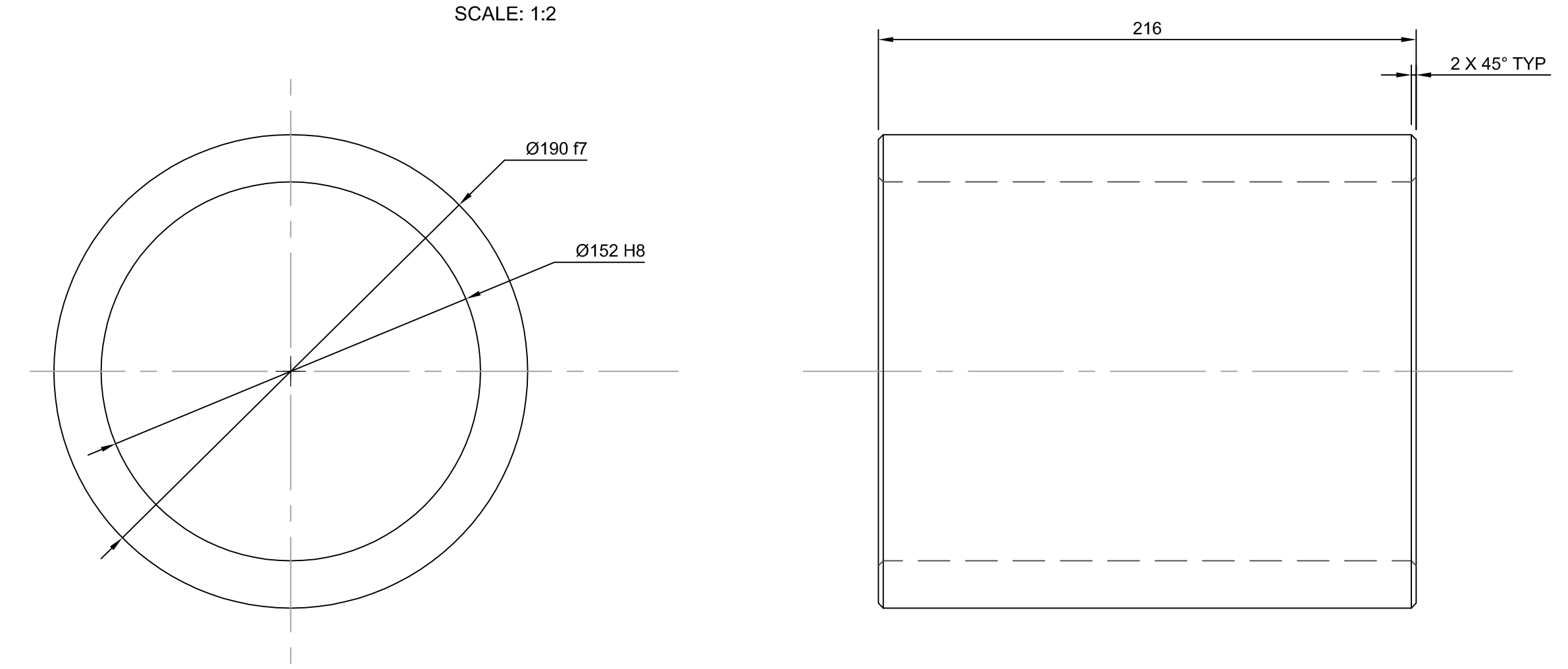
3
 M10 **AXIAL**
 REQ'D: 6
 MATERIAL: ASTM A668 CLASS G
 SCALE: 1:2



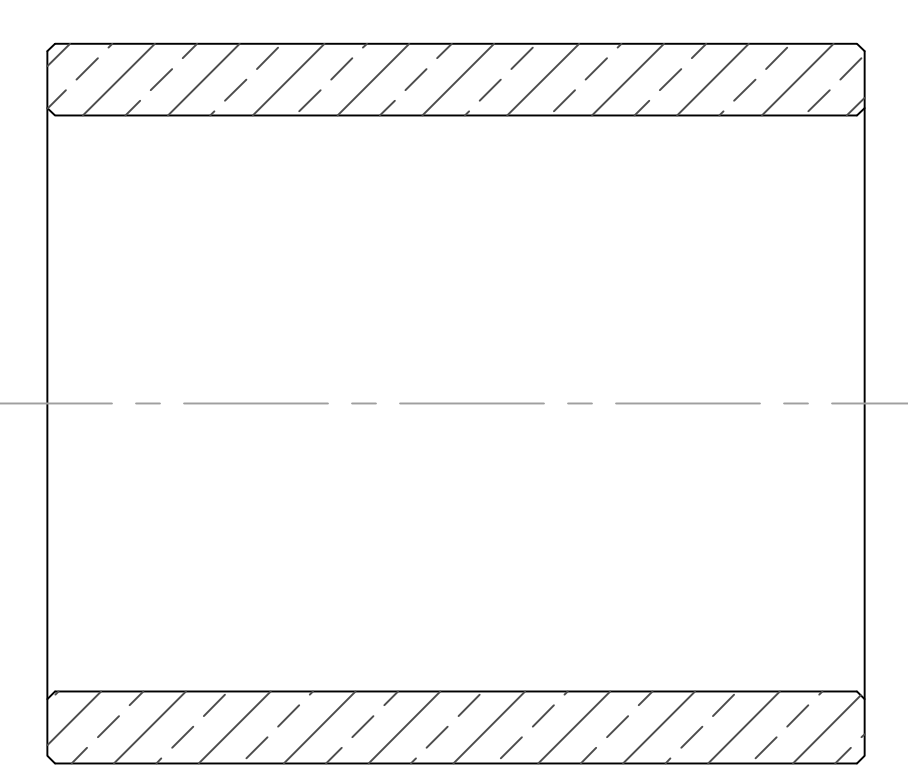
4
 M10 **THRUST WASHER**
 REQ'D: 6
 MATERIAL: ASTM B22 ALLOY C91300
 SCALE: 1:2



5
 M10 **KEEPER PLATE**
 REQ'D: 6
 MATERIAL: ASTM A709 Gr 50
 SCALE: 1:2



6
 M10 **BUSHING**
 REQ'D: 6
 MATERIAL: ASTM B22 ALLOY C91300
 SCALE: 1:2



**FOR TENDER
 NOT FOR
 CONSTRUCTION**

- NOTE:**
1. SEE M0 FOR PAINT SPECIFICATIONS
 2. REMOVE ALL SHARP EDGES
 3. UNLESS OTHERWISE NOTED ALL FINISHES TO BE 3.2 MICRON

No.	Description	Drawn By / Des.Par	Date
03	FOR TENDER	DD	11/07/19
02	FOR TENDER	DD	09/25/19
01	FOR 90% APPROVAL	DD	07/19/19

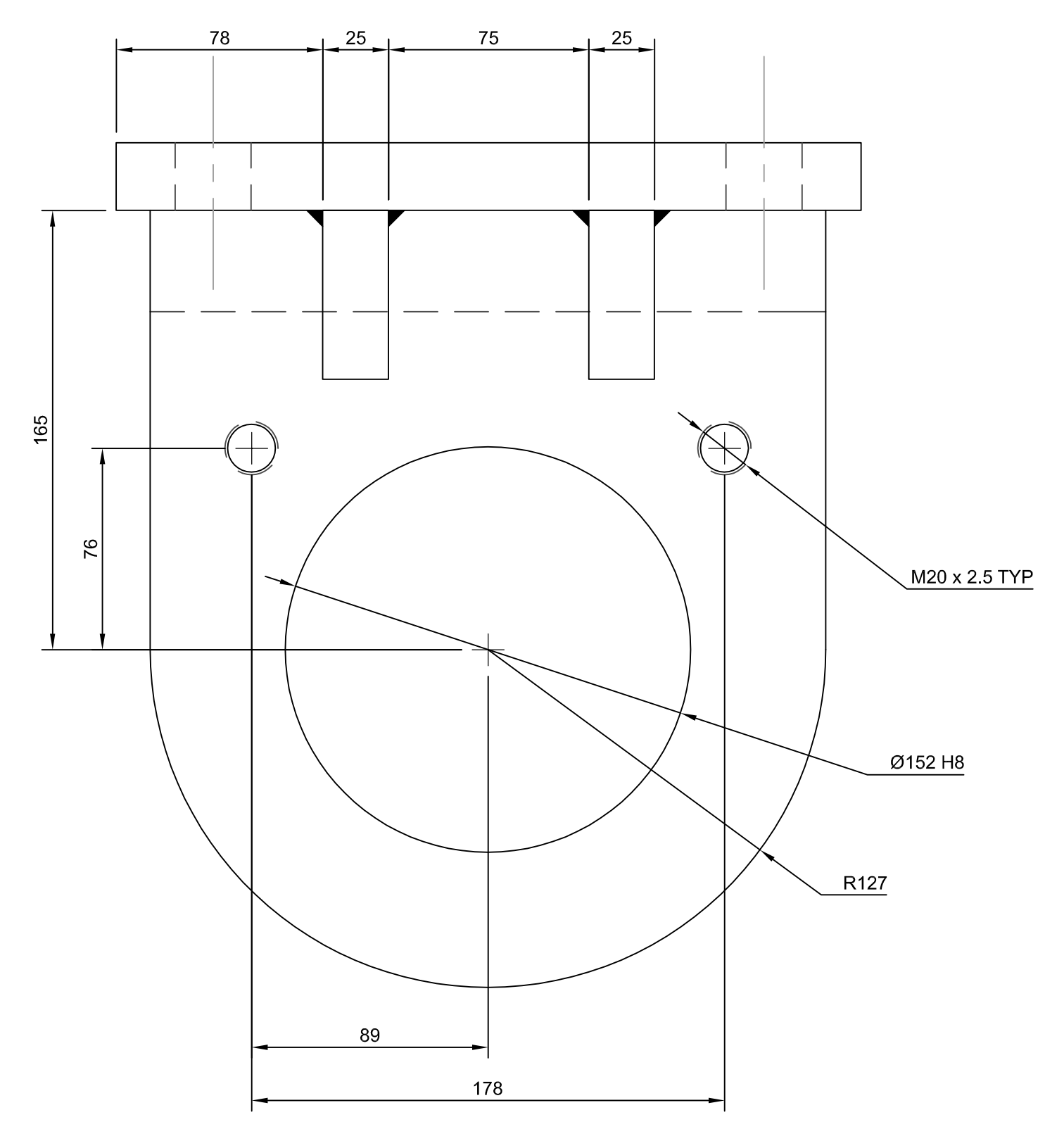
Do not scale drawings. Verify all dimensions and conditions on site and immediately notify the Departmental Representative of all discrepancies.

A Detail number / Numéro du détail
 B Location dwg. number / Numéro sur dessin

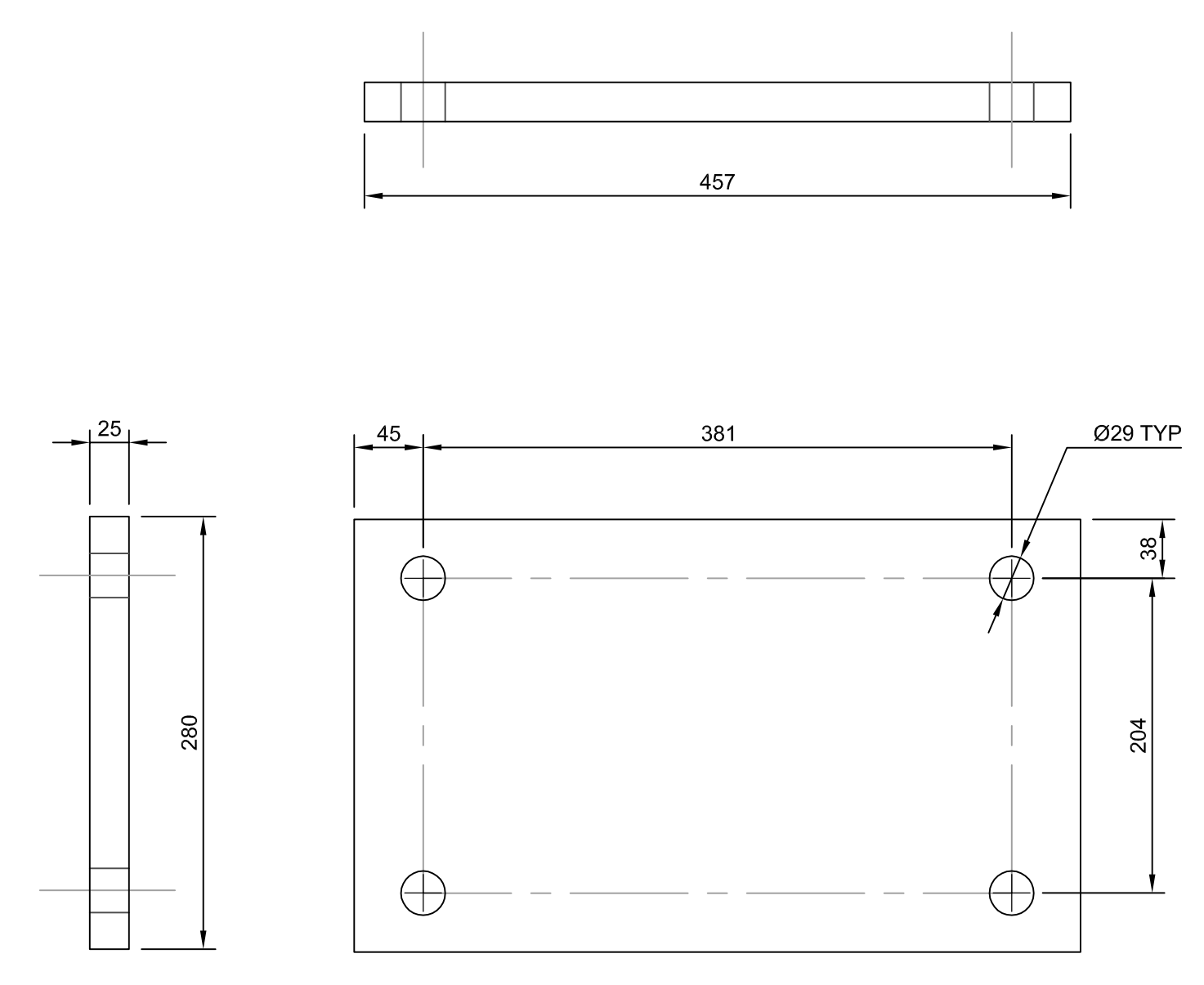
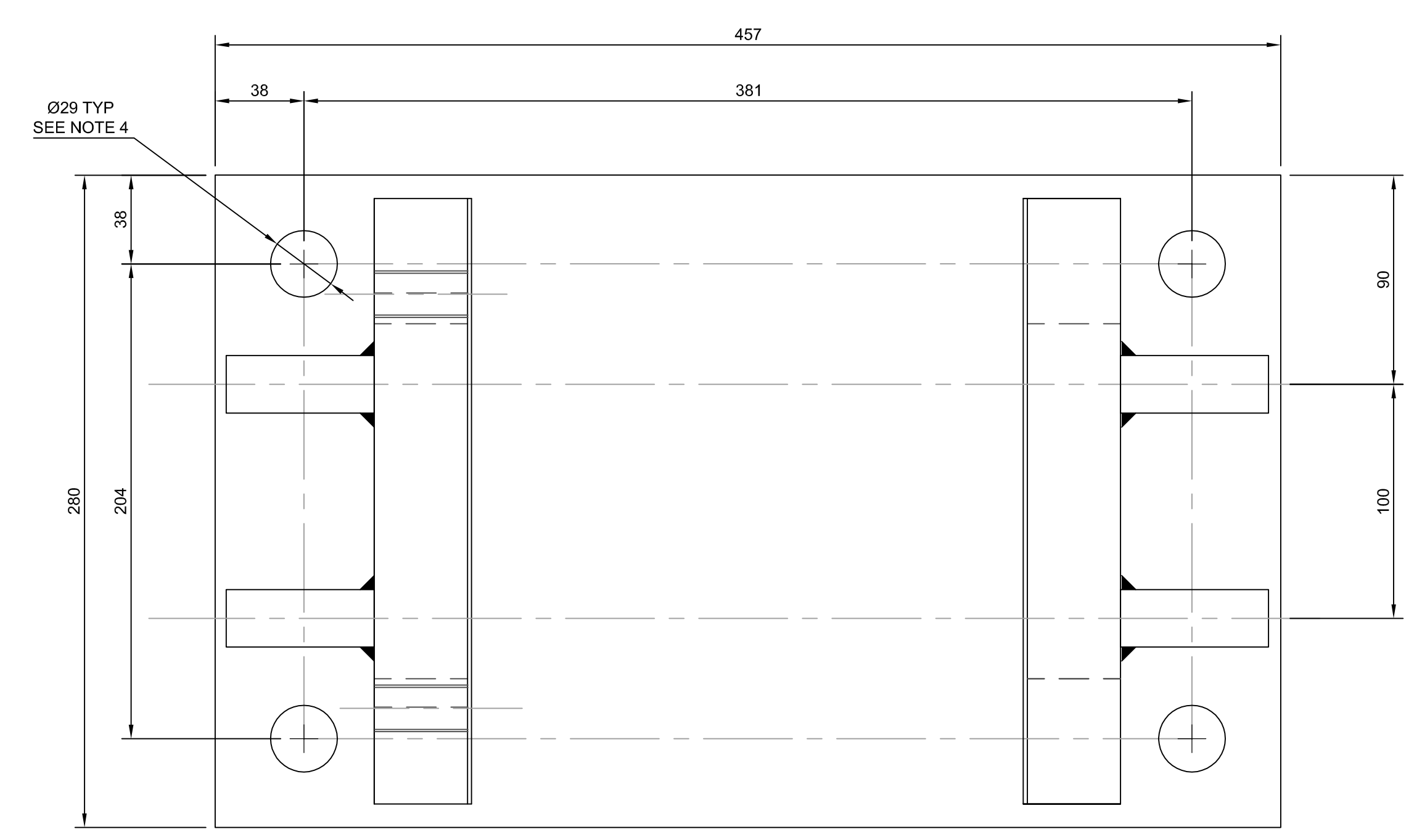
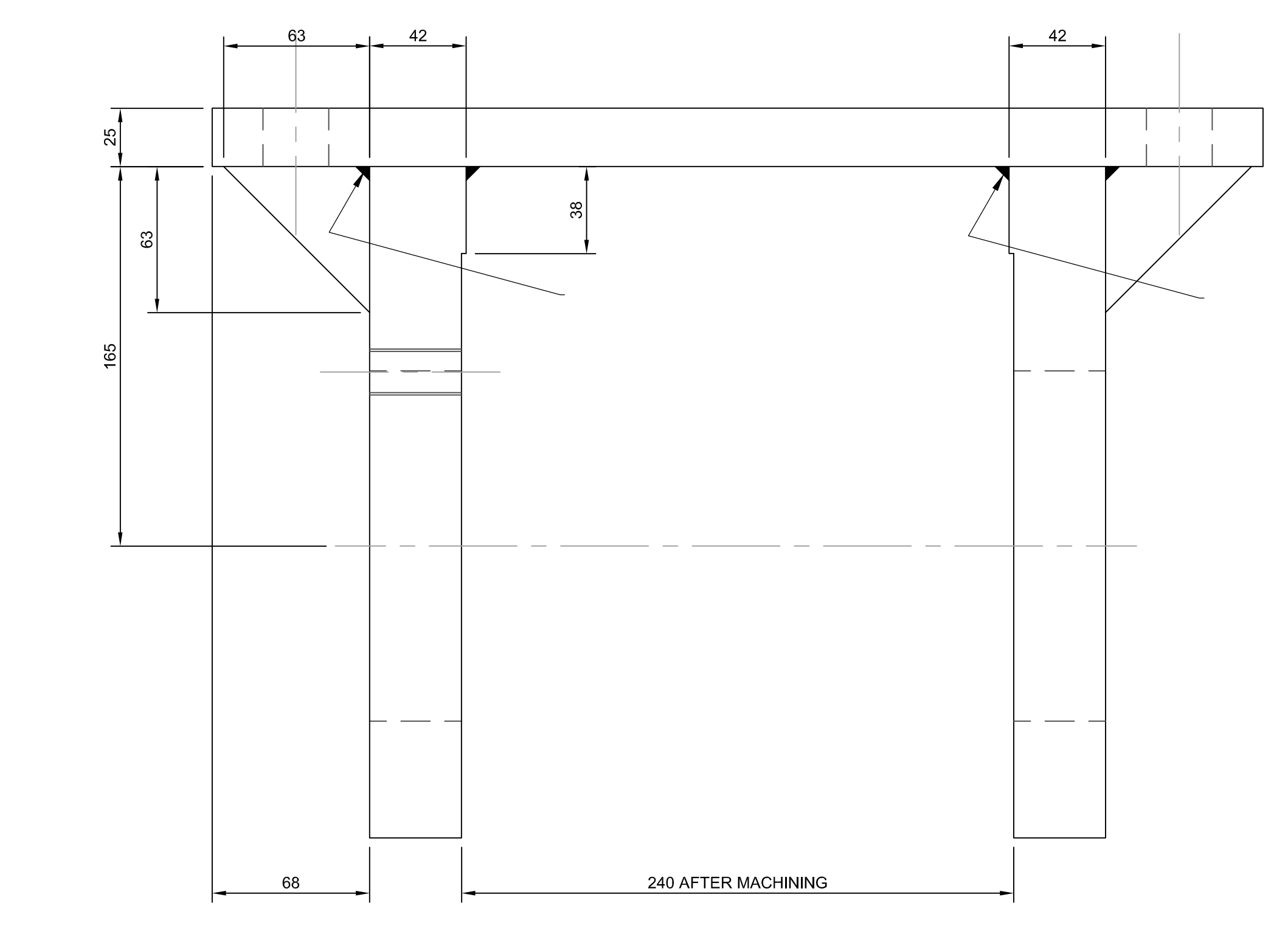
Project title / Titre du projet
**TRENT-SEVERN WATERWAY
 BOBCAYGEON SWING
 BRIDGE REHABILITATION**
 ONTARIO

Drawing title / Titre du dessin
**LIVE LOAD
 AND
 END SUPPORT WHEEL
 DETAILS 1**

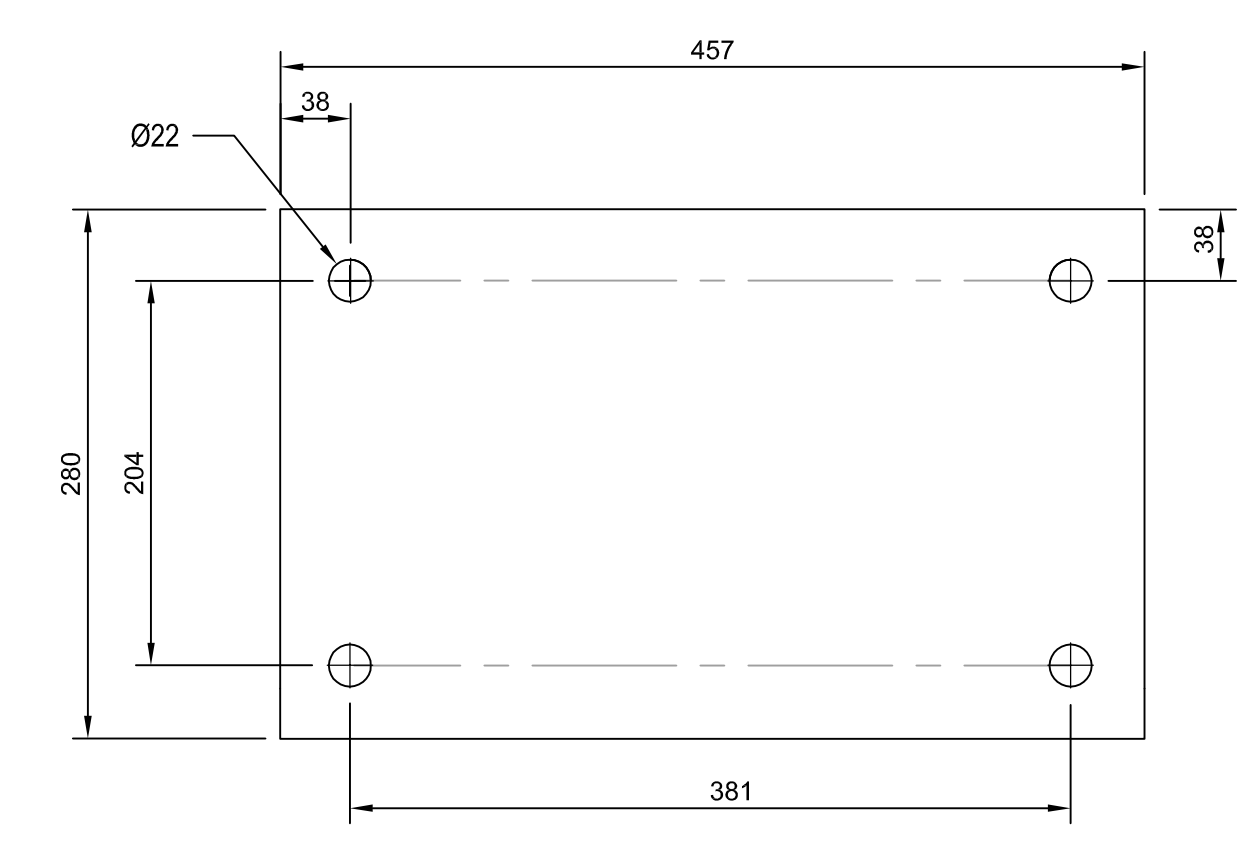
Drawn by / Dessiné par D. DAIGLE	Designed by / Conçu par D. DAIGLE
Approved by / Approuvé par K SMITH	Drawing Date / Date du dessin 2019/09/20
Project manager / Administrateur de projet W. LITTLE	Drawing Number / Numéro du Dessin M11
Project Number / Numéro du projet 1356-30030321	Sheet / Feuille 11 of 22



1
M10 LIVE LOAD WHEEL MOUNTING BRACKET
 REQ'D: 6
 MATERIAL: ASTM A709 Gr 50
 SCALE: 1:2



10
M10 LIVE LOAD WHEEL MOUNTING PLATE
 REQ'D: 6
 MATERIAL: ASTM A36
 SCALE: 1:2



11
M10 LIVE LOAD WHEEL SHIMS
 REQ'D: 6
 MATERIAL: 304 STAINLESS STEEL
 SCALE: 1:2

TABLE 2	
REQ'D	
6	1"
6	1/2"
6	1/4"
6	1/8"
6	1/16"
6	1/32"

**FOR TENDER
 NOT FOR
 CONSTRUCTION**

- NOTE:**
- SEE M0 FOR PAINT SPECIFICATIONS
 - REMOVE ALL SHARP EDGES
 - UNLESS OTHERWISE NOTED ALL FINISHES TO BE 3.2 MICRON
 - DRILL FOR 24mm HIGHT STRENGTH BOLTS

No.	Description	Dwn.By Des.Par	Date
03	FOR TENDER	DD	11/07/19
02	FOR TENDER	DD	09/25/19
01	FOR 90% APPROVAL	DD	07/19/19

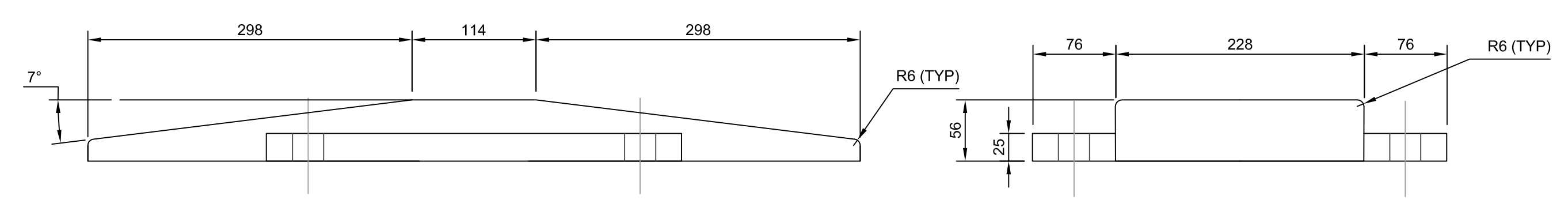
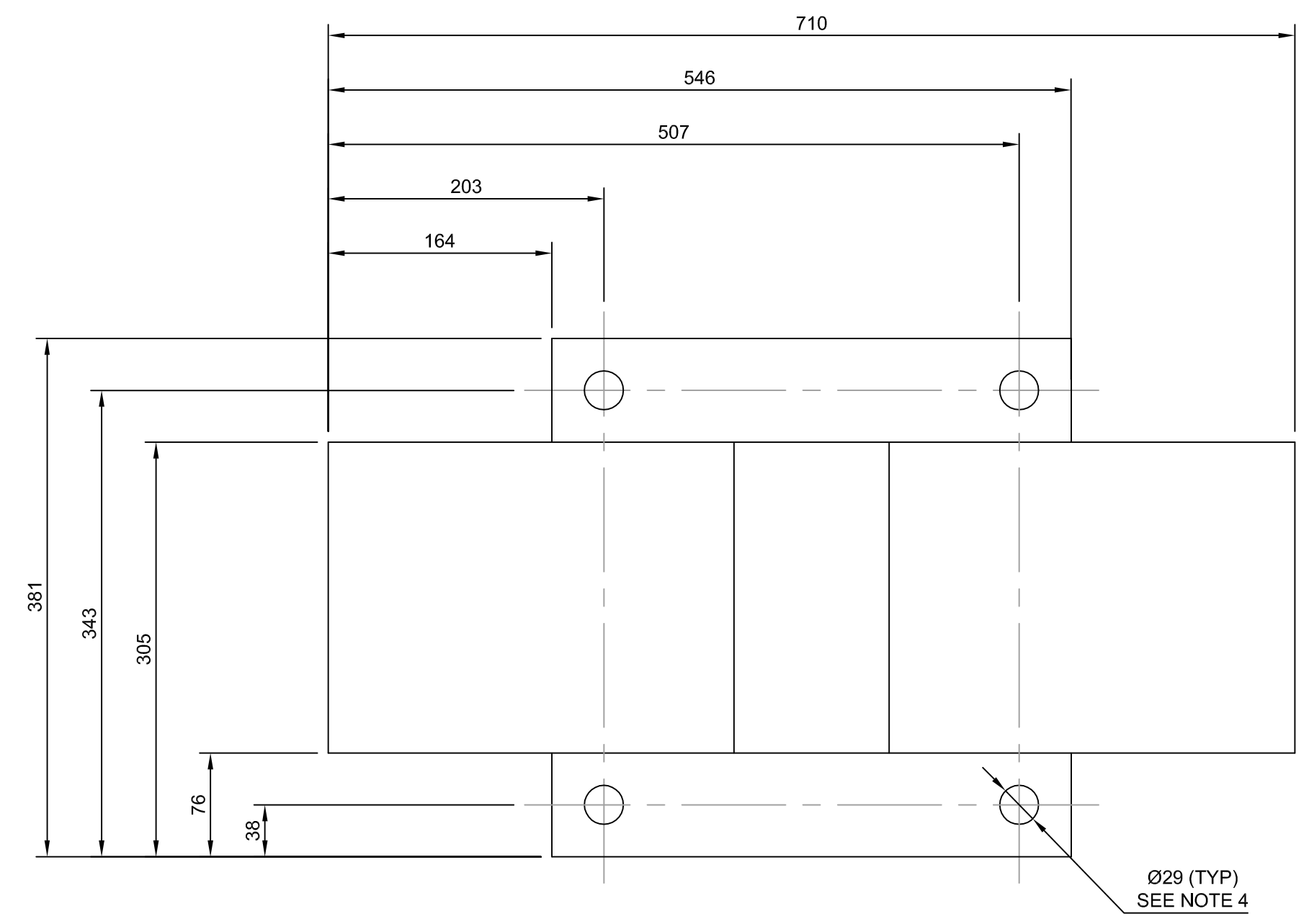
Do not scale drawings. Verify all dimensions and conditions on site and immediately notify the Departmental Representative of all discrepancies.

A	A Detail number Numéro du détail
B	B Location dwg. number Numéro sur dessin

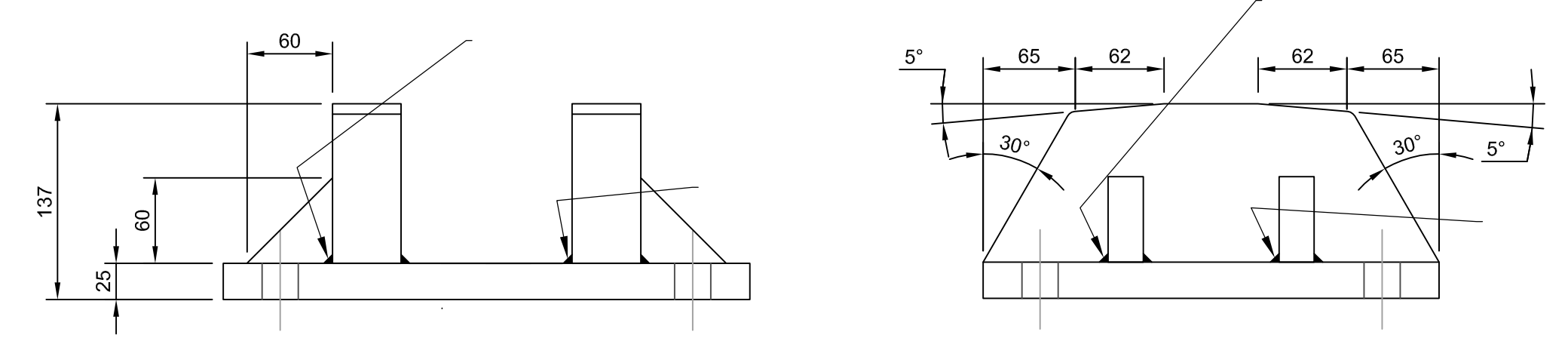
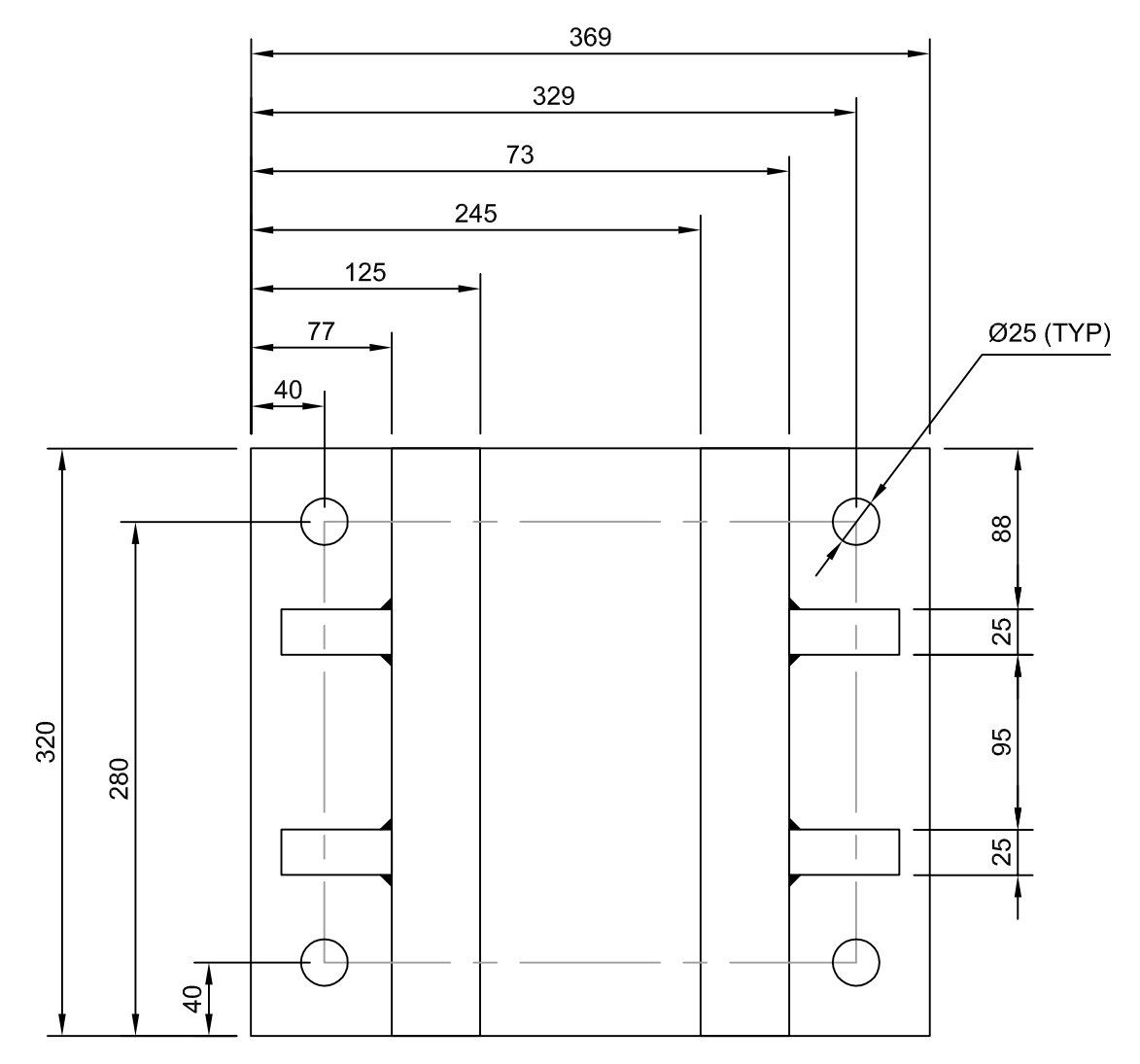
Project title / Titre du projet
**TRENT-SEVERN WATERWAY
 BOBCAYGEON SWING
 BRIDGE REHABILITATION**
 ONTARIO

Drawing title / Titre du dessin
**LIVE LOAD
 AND
 END SUPPORT WHEEL
 DETAILS 2**

Drawn by / Dessiné par D. DAIGLE	Designed by / Conçu par D. DAIGLE
Approved by / Approuvé par K SMITH	Drawing Date / Date du dessin 2019/09/20
Project manager / Administrateur de projet W. LITTLE	Drawing Number / Numéro du Dessin M12
Project Number / Numéro du projet 1356-30030321	Sheet / Feuille 12 of 22



01
M5 **BRIDGE END SUPPORT RAMP**
 REQ'D: 4
 MATERIAL: ASTM A709 Gr 50
 SCALE: 1:2



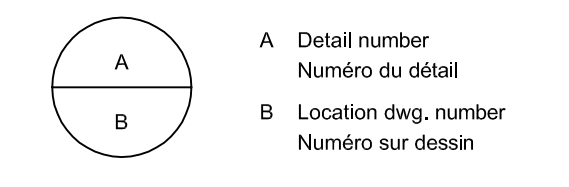
02
M5 **LIVE LOAD RAMP**
 REQ'D: 2
 MATERIAL: ASTM A709 Gr 50
 SCALE: 1:2

**FOR TENDER
 NOT FOR
 CONSTRUCTION**

- NOTE:**
1. SEE M0 FOR PAINT SPECIFICATIONS
 2. REMOVE ALL SHARP EDGES
 3. UNLESS OTHERWISE NOTED ALL FINISHES TO BE 3.2 MICRON
 4. DRILL FOR 1"Ø HIGH STRENGTH BOLTS

No.	Description	Dwn.By Des.Par	Date
03	FOR TENDER	DD	11/07/19
02	FOR TENDER	DD	09/25/19
01	FOR 90% APPROVAL	DD	07/19/19

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



Project title / Titre du projet

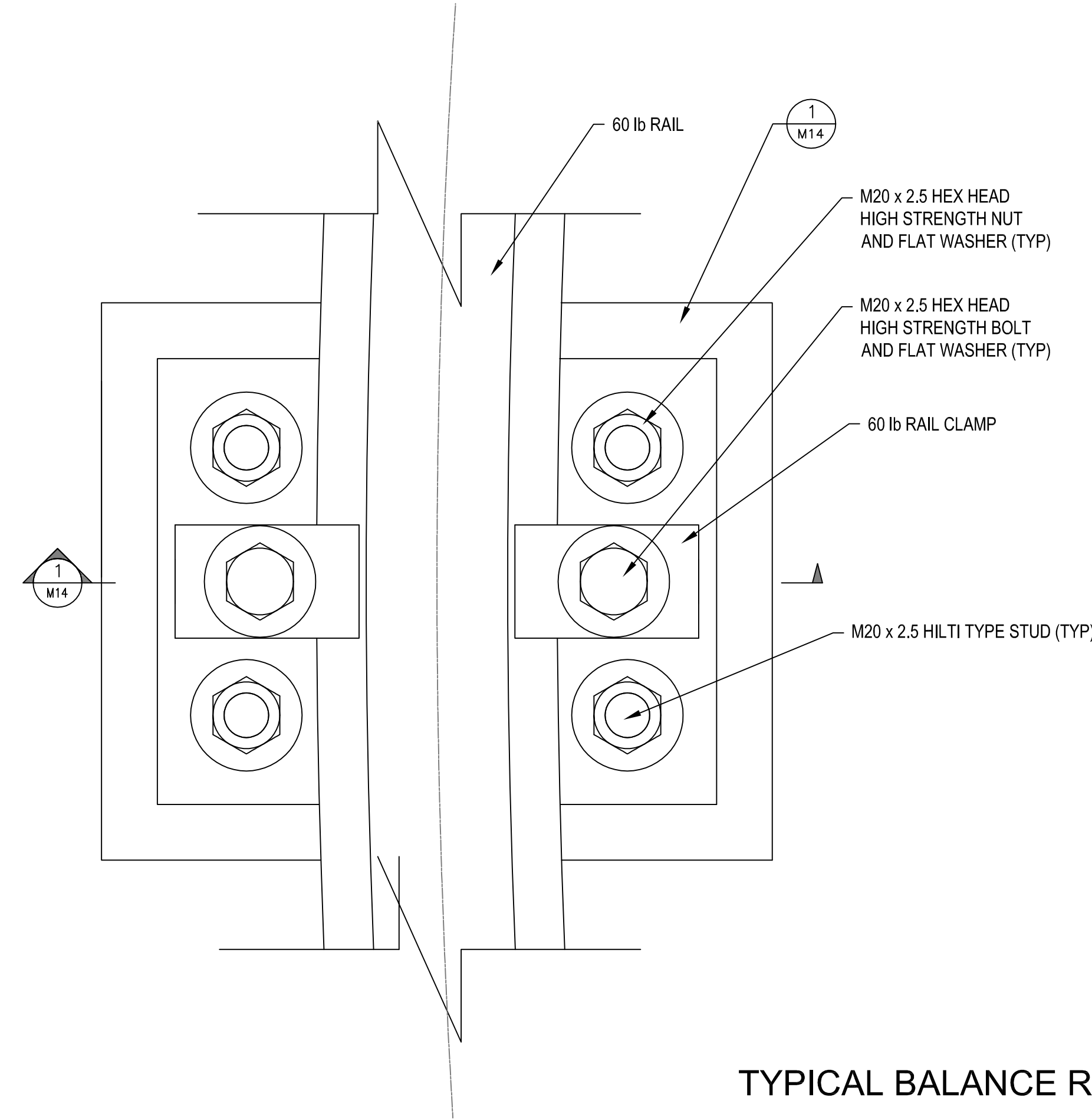
**TRENT-SEVERN WATERWAY
 BOBCAYGEON SWING
 BRIDGE REHABILITATION**

ONTARIO

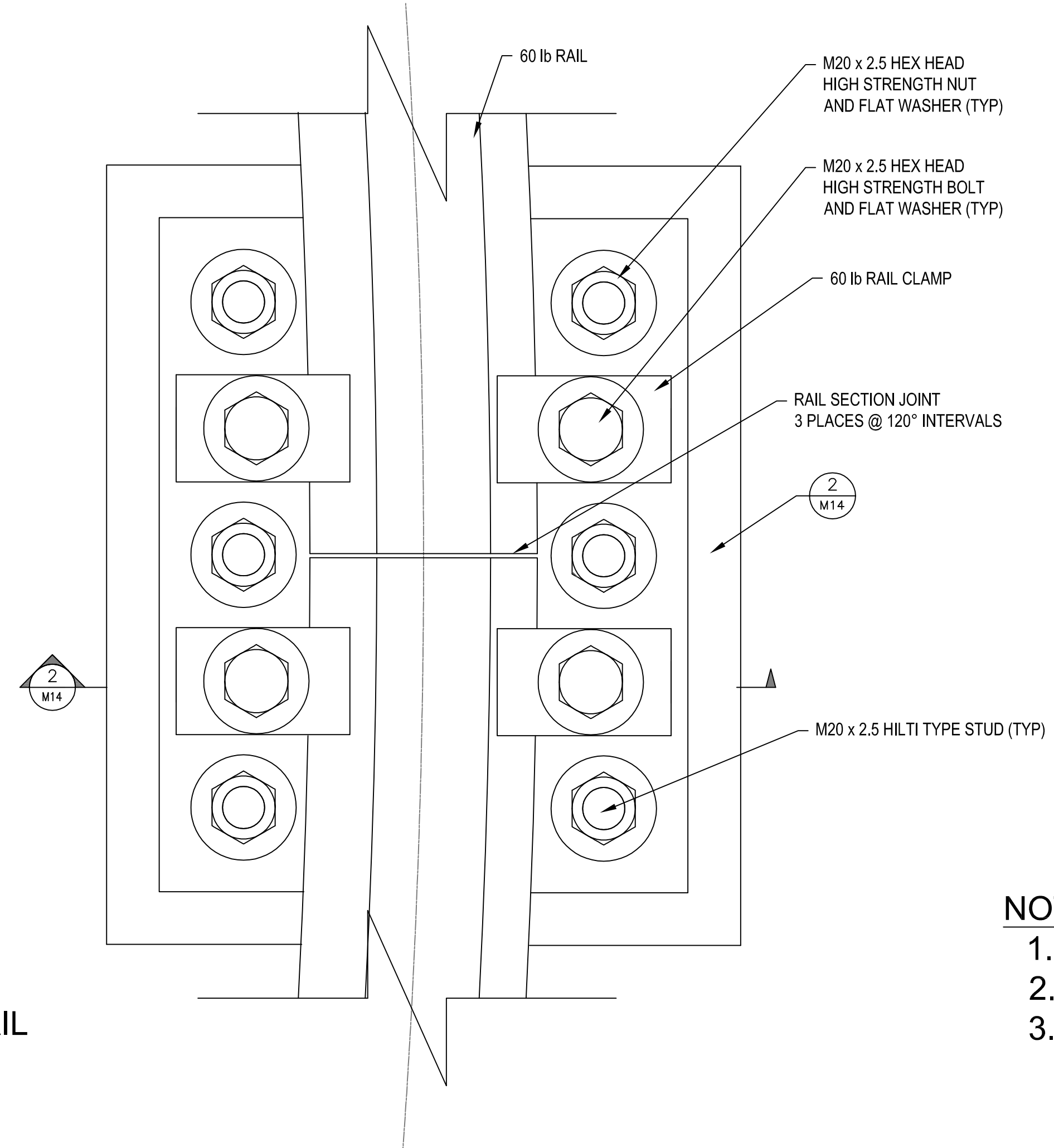
Drawing title / Titre du dessin

**LIVE LOAD
 AND
 END SUPPORT
 RAMP DETAILS**

Drawn by / Dessiné par D. DAIGLE	Designed by / Conçu par D. DAIGLE
Approved by / Approuvé par K SMITH	Drawing Date / Date du dessin 2019/09/20
Project manager / Administrateur de projet W. LITTLE	Drawing Number / Numéro du Dessin M13
Project Number / Numéro du projet 1356-30030321	Sheet / Feuille 13 of 22

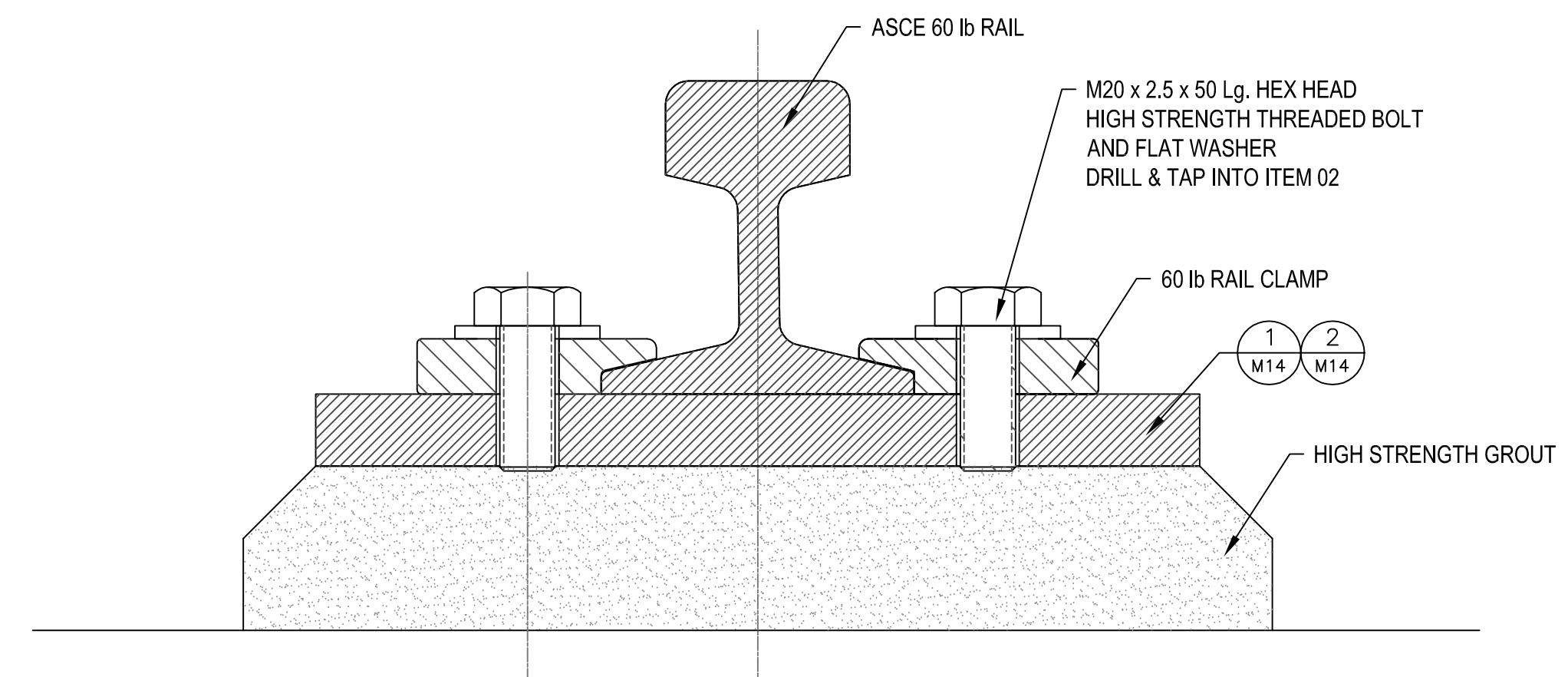


TYPICAL BALANCE RAIL SUPPORT DETAIL

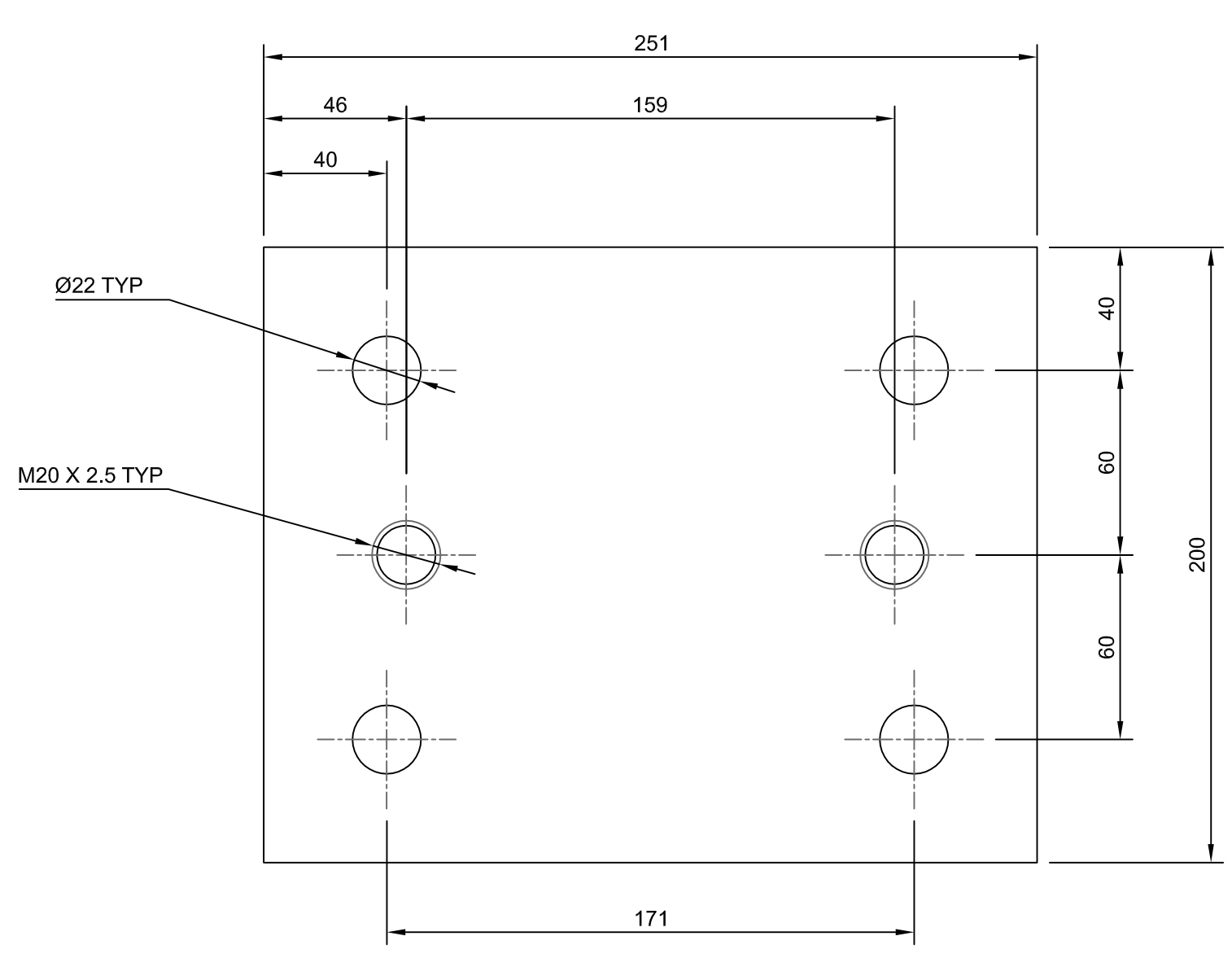
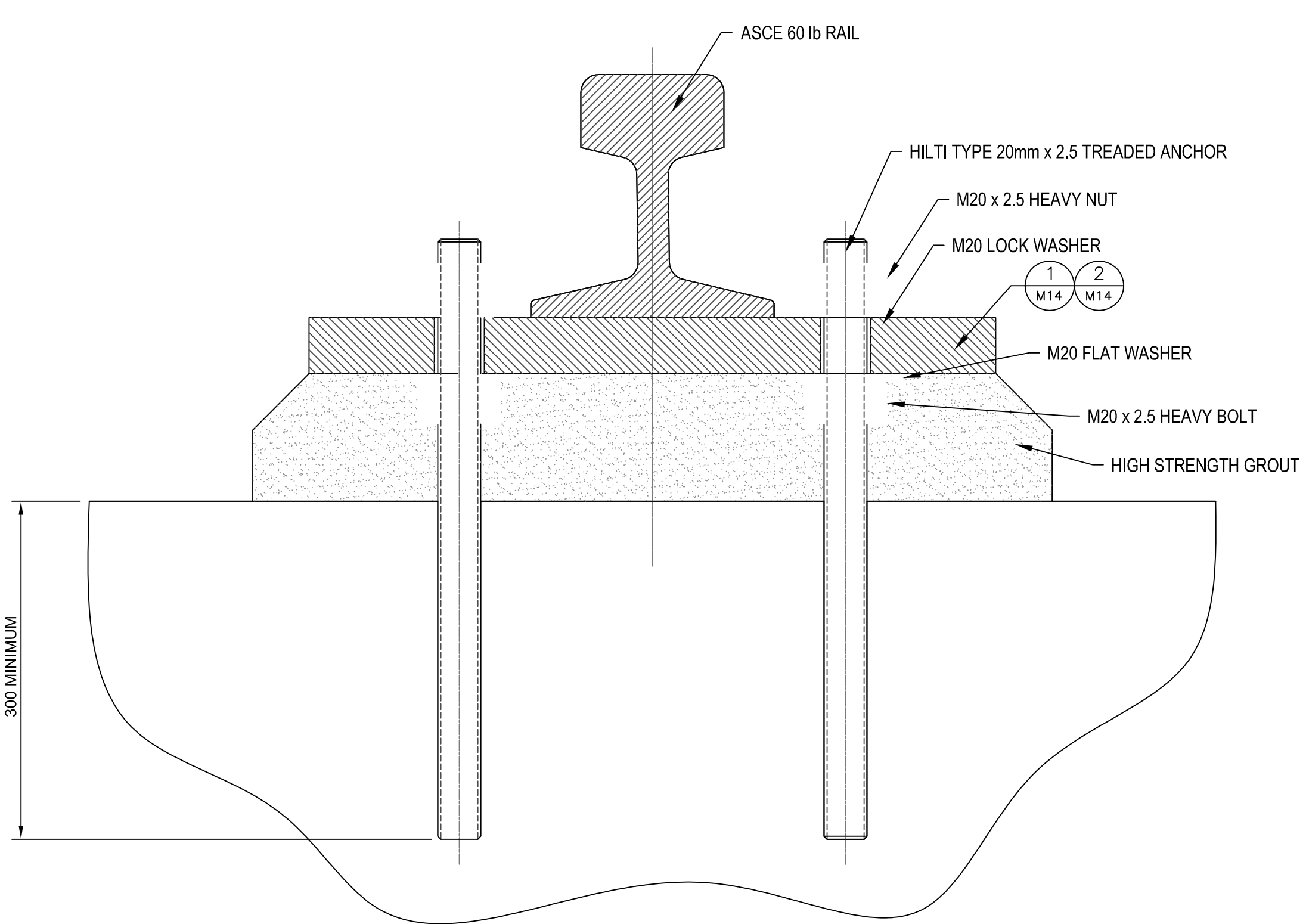


FOR TENDER
NOT FOR
CONSTRUCTION

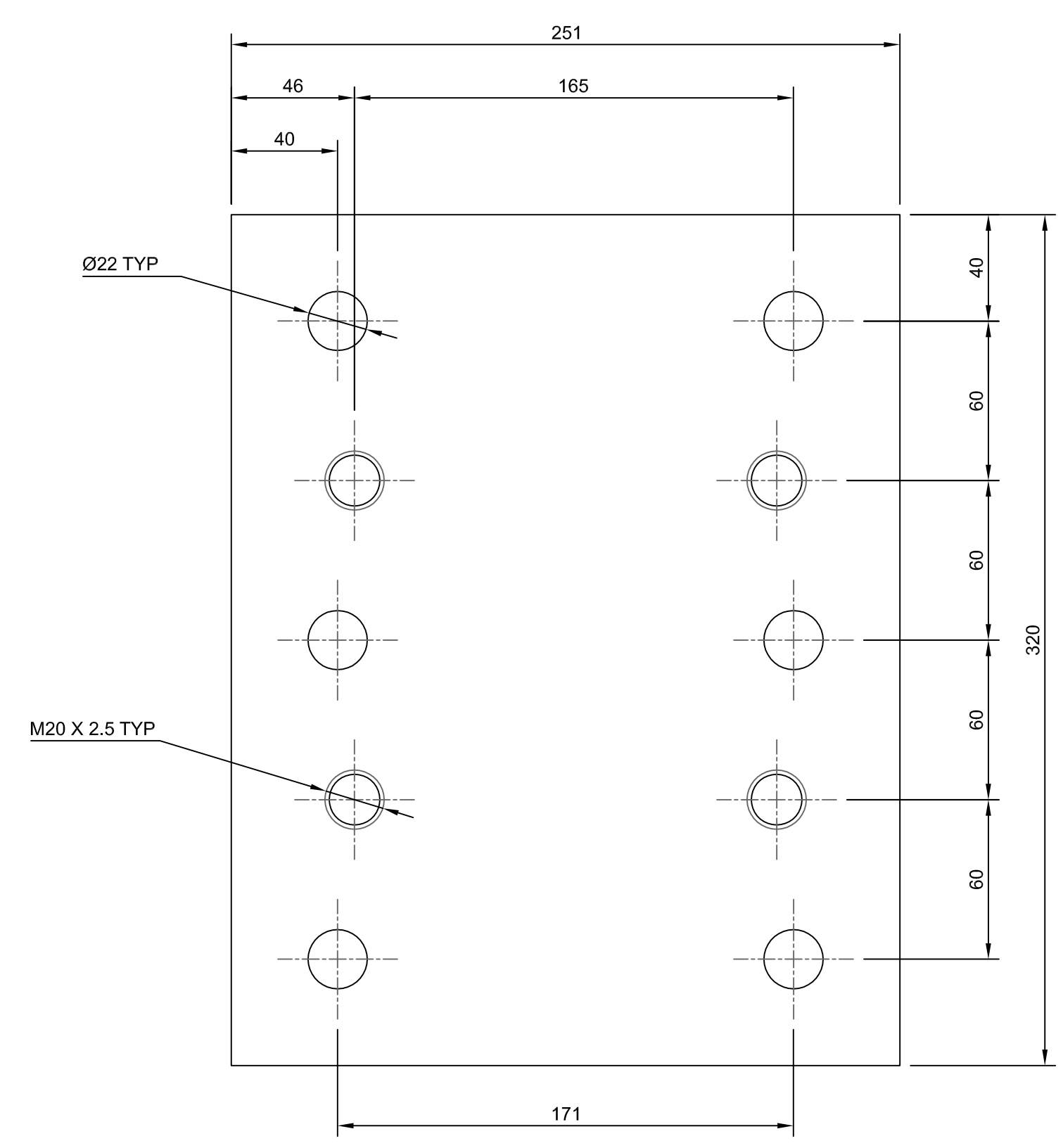
- NOTE:
1. SEE M0 FOR PAINT SPECIFICATIONS
 2. REMOVE ALL SHARP EDGES
 3. UNLESS OTHERWISE NOTED ALL FINISHES TO BE 3.2 MICRON



SECTION 1 SECTION 2
M14 1:2 M14 1:2



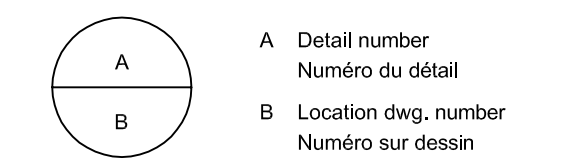
01
M14 BALANCE RAIL SUPPORT PLATE
REQ'D: 15
MATERIAL: ASTM A36
SCALE: 1:2



02
M14 BALANCE RAIL SPLICE PLATE
REQ'D: 3
MATERIAL: ASTM A36
SCALE: 1:2

No.	Description	Drawn By / Des.Par	Date
02	FOR TENDER	DD	11/07/19
01	FOR 90% APPROVAL	DD	07/19/19

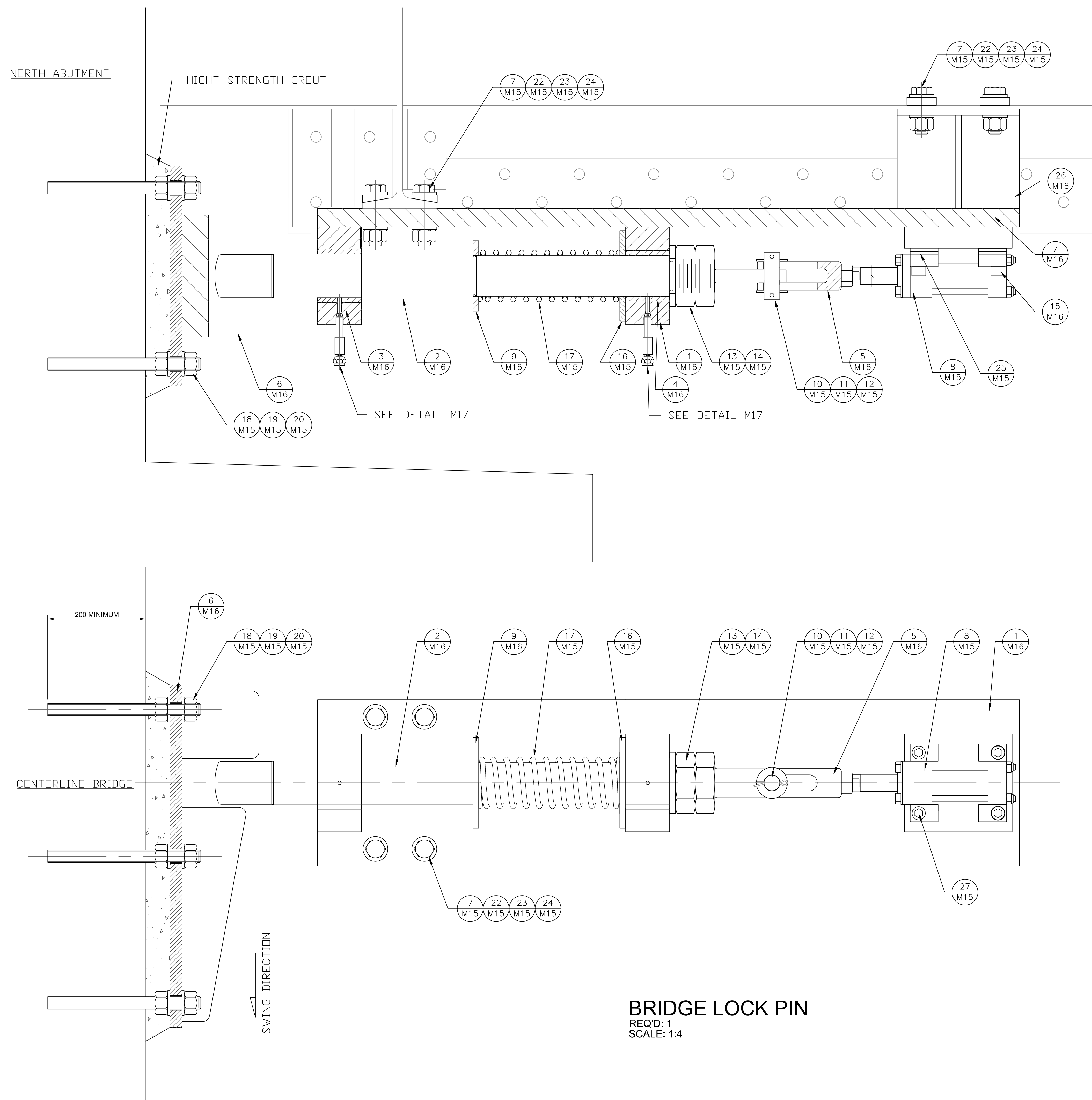
Do not scale drawings. Verify all dimensions and conditions on site and immediately notify the Departmental Representative of all discrepancies.



Project title / Titre du projet
**TRENT-SEVERN WATERWAY
BOBCAYGEON SWING
BRIDGE REHABILITATION**

Drawing title / Titre du dessin
**BALANCE RAIL
BEARING PLATES
ASSEMBLY
& DETAILS**

Drawn by / Dessiné par D. DAIGLE	Designed by / Conçu par D. DAIGLE
Approved by / Approuvé par K SMITH	Drawing Date / Date du dessin 2019/09/20
Project manager / Administrateur de projet W. LITTLE	Drawing Number / Numéro du Dessin M14
Project Number / Numéro du projet 1356-30030321	



BRIDGE LOCK PIN
REQ'D: 1
SCALE: 1:4

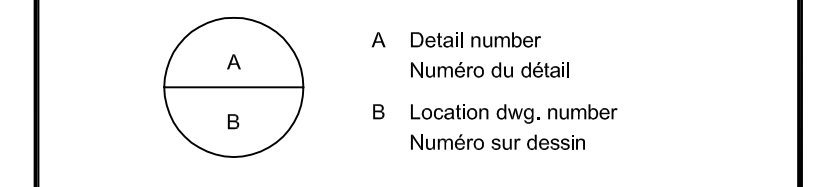
BILL OF MATERIALS				
ITEM	REQ'D	COMPONENT	DESCRIPTION	REF. DWG.
1	1	LATCH PIN GUIDE WELDMENT	STEEL PLATE, CSA G40.21.04 GRADE 350W	M15, M16
2	1	LATCH PIN	STEEL FORGING, ASTM A668 CLASS K	M15, M16
3	1	GUIDE BUSHING 1	BRONZE BUSHING ASTM B22 ALLOY C90500	M15, M16
4	1	GUIDE BUSHING 2	BRONZE BUSHING ASTM B22 ALLOY C90500	M15, M16
5	1	CLEVIS	STEEL PLATE, CSA G40.21.04 GRADE 350W	M15, M16
6	1	LATCH PLATE	STEEL PLATE, CSA G40.21.04 GRADE 350W, SEE NOTE 7	M15, M16
7	8	LEVELING WASHER	3/4" HOT DIPPED GALV. LEVELING WASHER	M15
8	1	HYDRAULIC CYLINDER	Ø63mm (2.48") BORE, Ø45mm (1.77) ROD, 75mm (2.95) STROKE, TIE ROD CYLINDER, C/W MAGNETIC PISTON & 4 ADJUSTABLE REED SWITCHES.	M15
9	1	WASHER 1	O.D. 185mm, I.D. 84mm, THICKNESS 12mm, BRONZE PLATE ASTM B505 ALLOW 932	M15, M16
10	1	PIN	STEEL FORGING, ASTM A668 CLASS K,	M15, M16
11	2	COTTER PIN	6.4mm Ø x 2" Lg.	M15
12	2	WASHER	M33 FLAT WASHER	M15
13	1	WASHER	2 1/4 FLAT WASHER	
14	2	JAM NUT	2 1/4 - 4 JAM NUT	
15	AS REQ'D	SHIM		
16	1	WASHER 2	O.D. 125mm, I.D. 72mm, THICKNESS 12mm, BRONZE PLATE ASTM B505 ALLOW 932	M15, M16
17	1	SPRING	STEEL COMPRESSION SPRING, SEE NOTE 1	
18	12	NUT	1 - 8 UNC HEAVY NUT GRADE 8	
19	12	WASHER	1" FLAT WASHER	
20	6	THREADED ANCHOR	1 - 8 UNC HILTI TYPE TREADED ANCHORS	
21	6	SPACER		M15 M16
22	8	NUT	3/4-10 UNC HEAVY NUT	
23	8	WASHER	3/4" FLAT WASHER	
24	8	BOLT	3/4-10 UNC x 5" Lg. GRADE 8	
25	4	MACHINE SCREW	SOCKET HEAD CAP SCREW TO SUIT CYLINDER	
26				
27				
28				
29				
30				

NOTES:

1. **SPRING DATA:**
 MATERIAL - SPRING TEMPERED STEEL
 END TYPE - CLOSED AND FLAT
 OVERALL LENGTH - 304.8mm (12")
 OD - 105.6mm (4.156")
 ID - 84.9mm (3.344")
 WIRE DIAMETER - 10.3mm (0.406")
 WIRE SHAPE - ROUND
 COMPRESSED LENGTH - 121.2mm (4.77")
 MAXIMUM LOAD - 2.46kN (553.00 LBS)
 RATE - 13.3 N/mm (76 LBS/IN)

**FOR TENDER
NOT FOR
CONSTRUCTION**

02	FOR TENDER	DD	11/07/19
01	FOR 90% APPROVAL	DD	07/19/19
No.	Description	Drawn By / Des.Par	Date

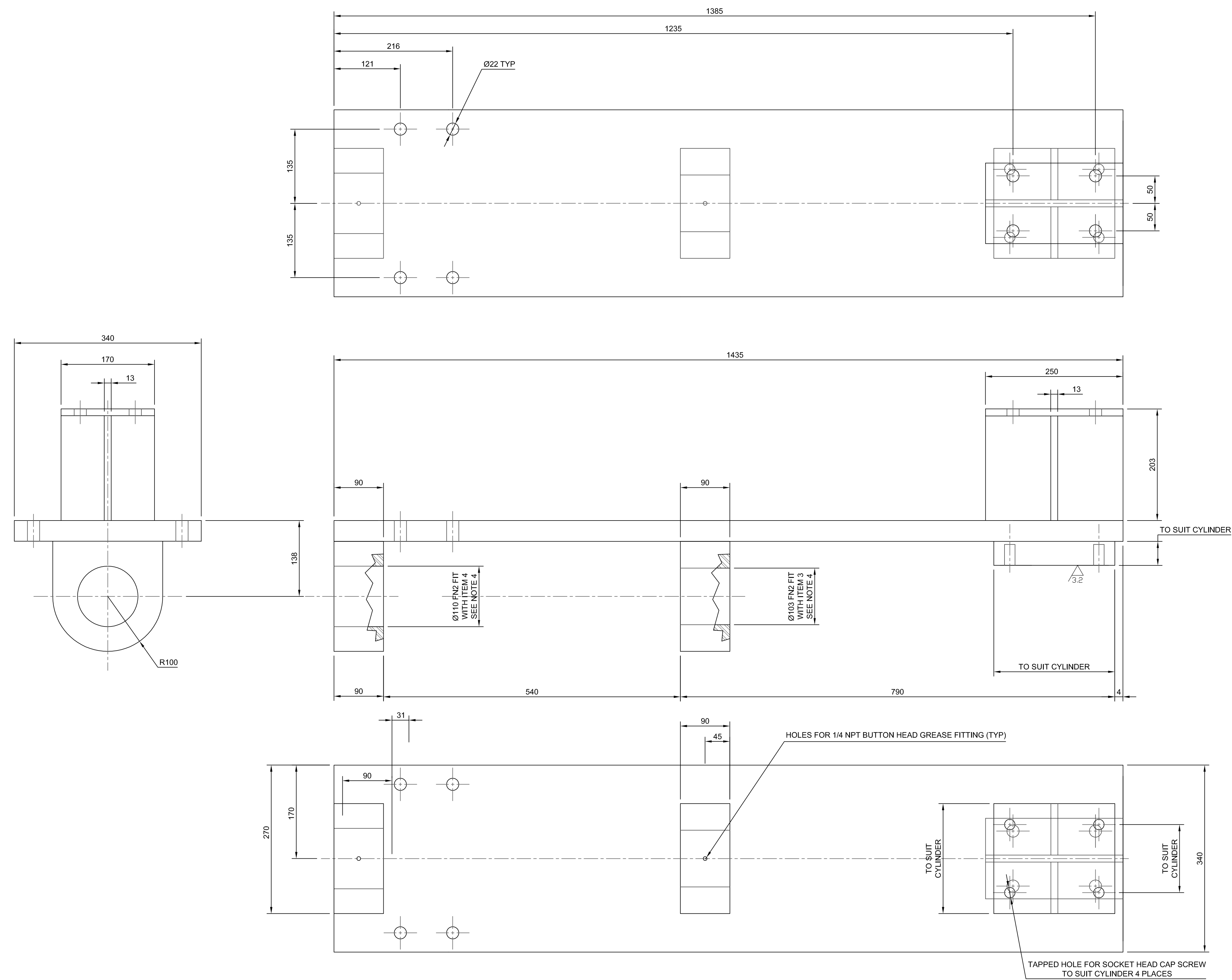


Project title / Titre du projet
**TRENT-SEVERN WATERWAY
BOBCAYGEON SWING
BRIDGE REHABILITATION**

Drawing title / Titre du dessin
**BRIDGE LOCKING PIN
ASSEMBLY**

Drawn by / Dessiné par D. DAIGLE	Designed by / Conçu par D. DAIGLE
Approved by / Approuvé par K SMITH	Drawing Date / Date du dessin 2019/09/20
Project manager / Administrateur de projet W. LITTLE	Drawing Number / Numéro du Dessin M15
Project Number / Numéro du projet 1356-30030321	Sheet / Feuille 15 of 18

**FOR TENDER
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 CONSTRUCTION**

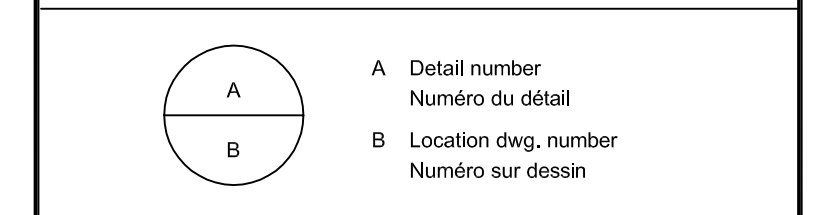


1
M15 **BRIDGE LOCK GUIDE WELDMENT**
 REQ'D: 1
 MATERIAL: ASTM A709 GR50
 SCALE: 1:4

- NOTE:**
1. SEE M0 FOR PAINT SPECIFICATIONS
 2. REMOVE ALL SHARP EDGES
 3. UNLESS OTHERWISE NOTED ALL FINISHES TO BE 3.2 MICRON

No.	Description	Drawn By / Des.Par	Date
02	FOR TENDER	DD	11/07/19
01	FOR 90% APPROVAL	DD	07/19/19

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

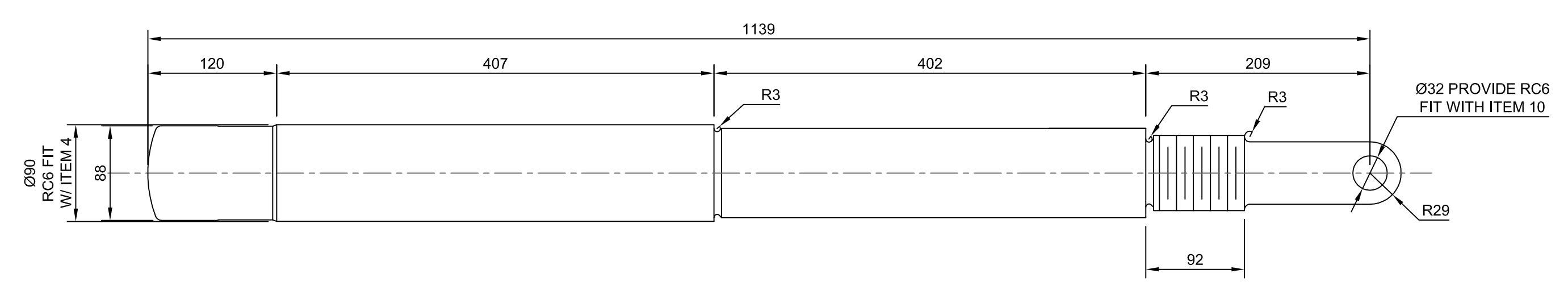


Project title / Titre du projet
**TRENT-SEVERN WATERWAY
 BOBCAYGEON SWING
 BRIDGE REHABILITATION**
 ONTARIO

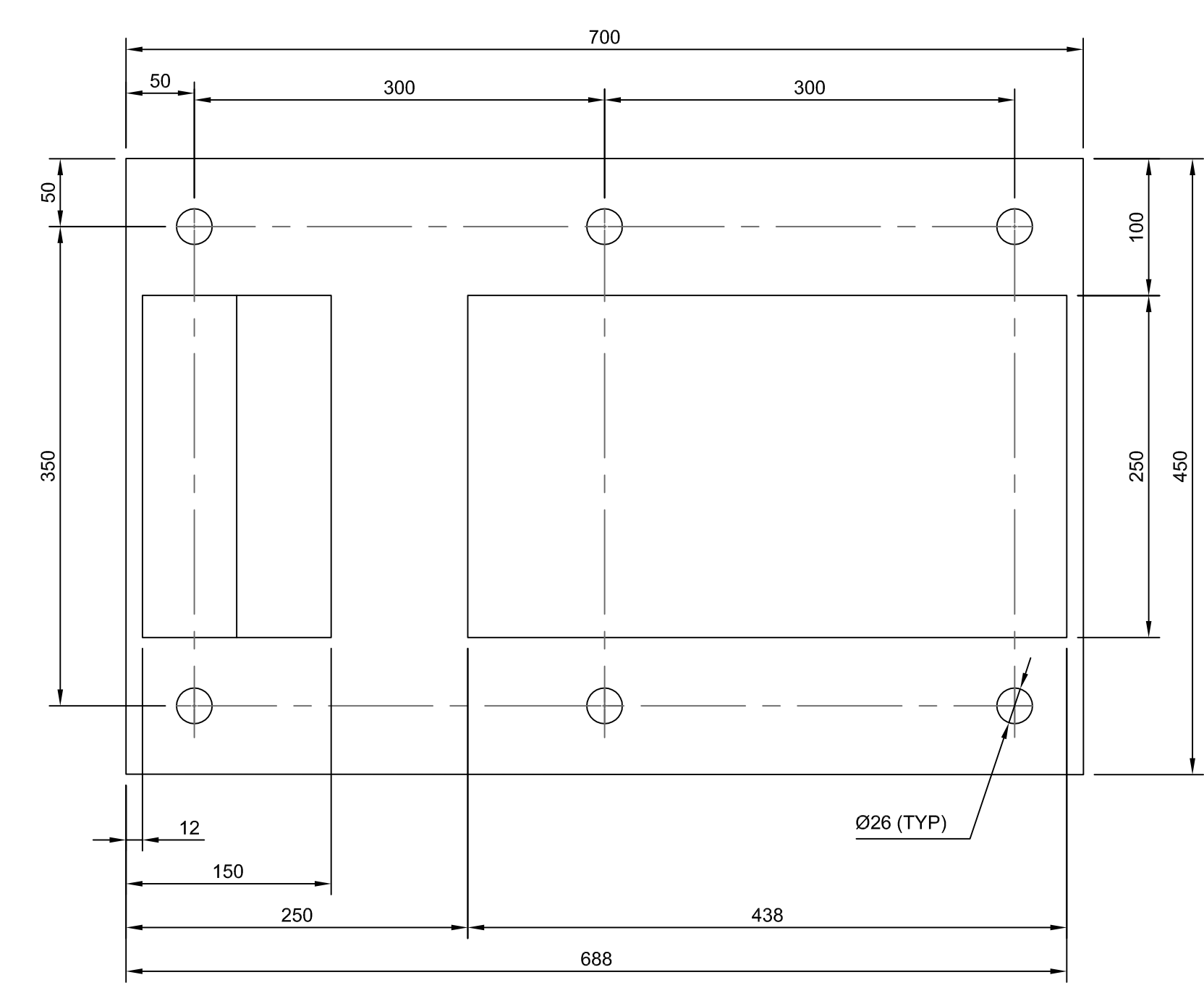
Drawing title / Titre du dessin
**BRIDGE LOCKING PIN
 DETAILS 1**

Drawn by / Dessiné par D. DAIGLE	Designed by / Conçu par D. DAIGLE
Approved by / Approuvé par K SMITH	Drawing Date / Date du dessin 2019/09/20
Project manager / Administrateur de projet W. LITTLE	Drawing Number / Numéro du Dessin M16
Project Number / Numéro du projet 1356-30030321	Sheet / Feuille 16 of 18

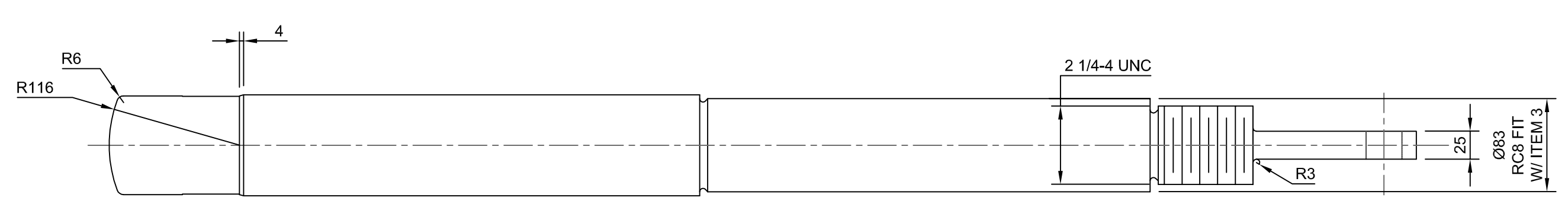
**FOR TENDER
 NOT FOR
 CONSTRUCTION**



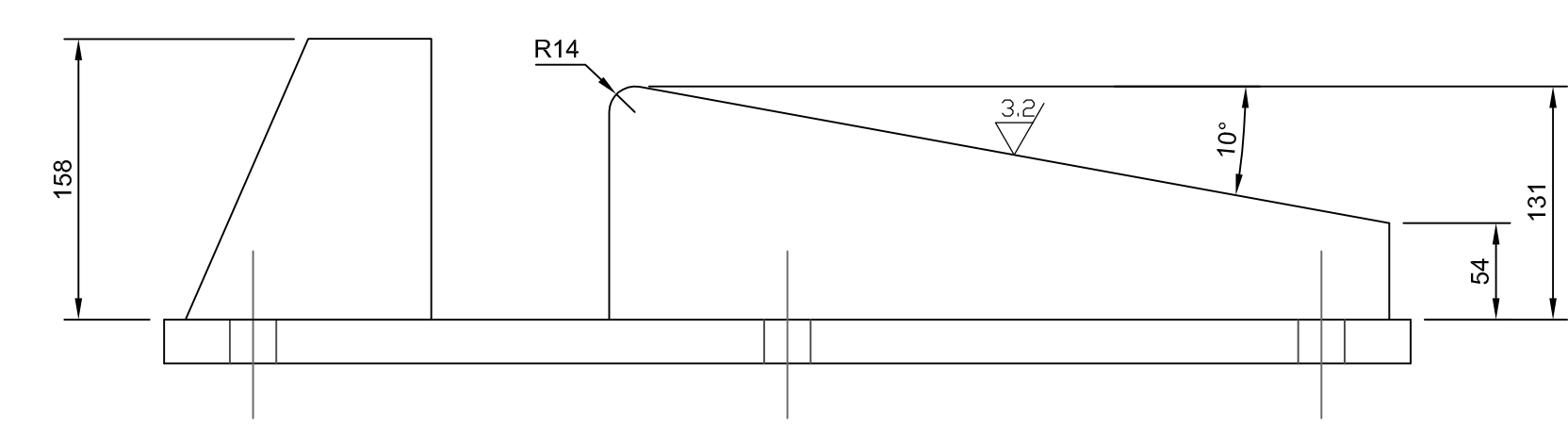
2
 M15 **BRIDGE LATCH PIN**
 REQ'D: 1
 MATERIAL: ASTM A668 CLASS M
 SCALE: 1:4



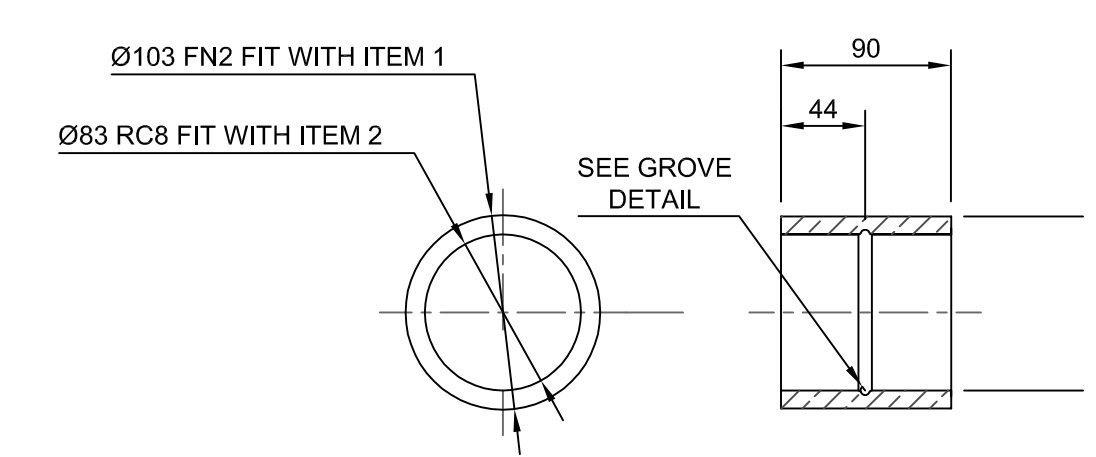
6
 M15 **BRIDGE LATCH PLATE**
 REQ'D: 1
 MATERIAL: ASTM A709 GR 50
 SCALE: 1:4



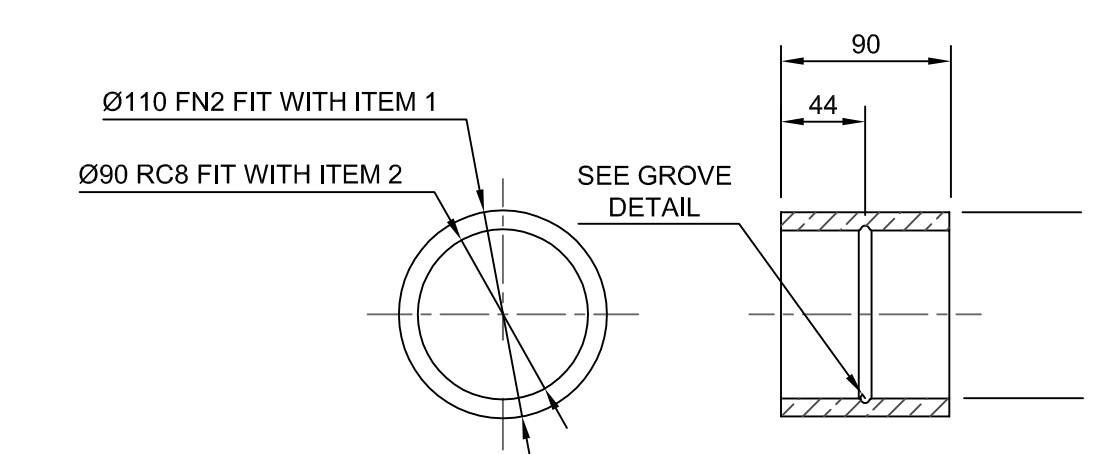
3
 M15 **BRIDGE LOCK PIN BUSHING**
 REQ'D: 1
 MATERIAL: ASTM B22 ALLOY C91300
 SCALE: 1:4



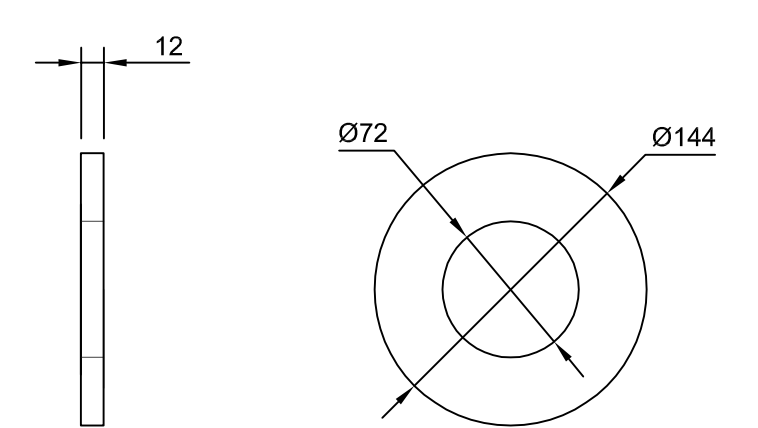
4
 M15 **BRIDGE LOCK GUIDE BUSHING**
 REQ'D: 1
 MATERIAL: ASTM B22 ALLOY C91300
 SCALE: 1:4



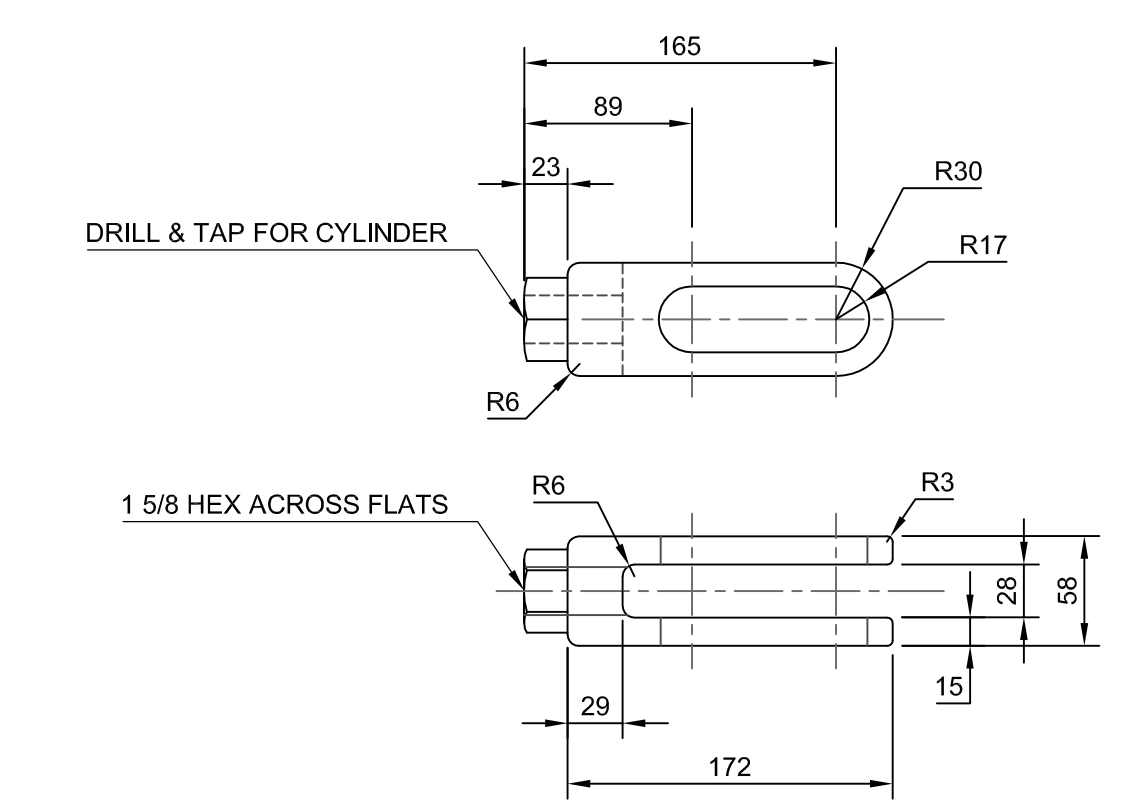
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 M15 **BRIDGE LATCH WASHER**
 REQ'D: 1
 MATERIAL: ASTM A709 GR 50
 SCALE: 1:4



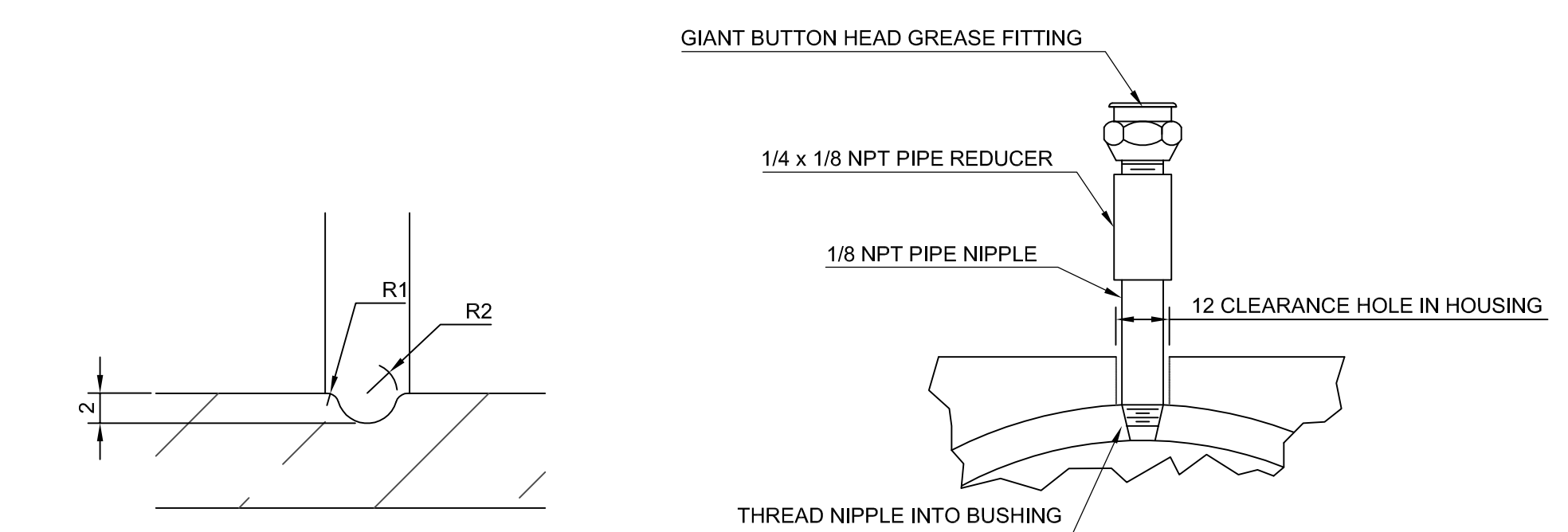
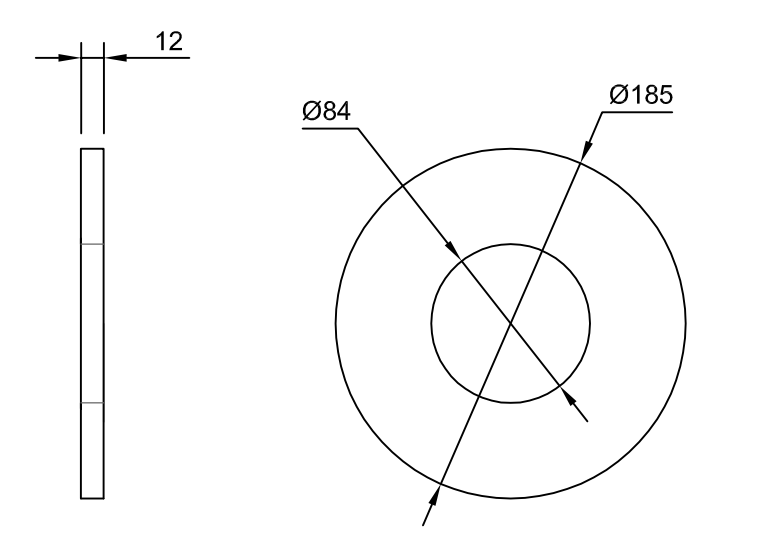
16
 M15 **BRIDGE LATCH WASHER**
 REQ'D: 1
 MATERIAL: ASTM A709 GR 50
 SCALE: 1:4



10
 M15 **BRIDGE LOCK CLEVIS PIN**
 REQ'D: 1
 MATERIAL: ASTM A709 GR 50
 SCALE: 1:4



5
 M15 **BRIDGE LATCH CLEVIS**
 REQ'D: 1
 MATERIAL: C1045 STEEL
 SCALE: 1:4



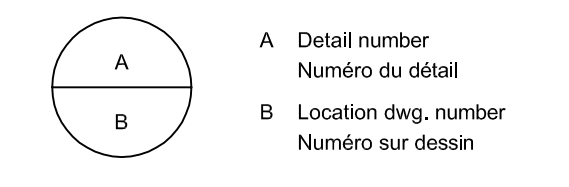
GREASE GROOVE DETAIL

GREASE FITTING DETAIL

- NOTE:**
- SEE M0 FOR PAINT SPECIFICATIONS
 - REMOVE ALL SHARP EDGES
 - UNLESS OTHERWISE NOTED ALL FINISHES TO BE 3.2 MICRON

02	FOR TENDER	DD	11/07/19
01	FOR 90% APPROVAL	DD	07/19/19
No.	Description	Drawn By / Des.Par	Date
Revision / Révision			

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Project title / Titre du projet

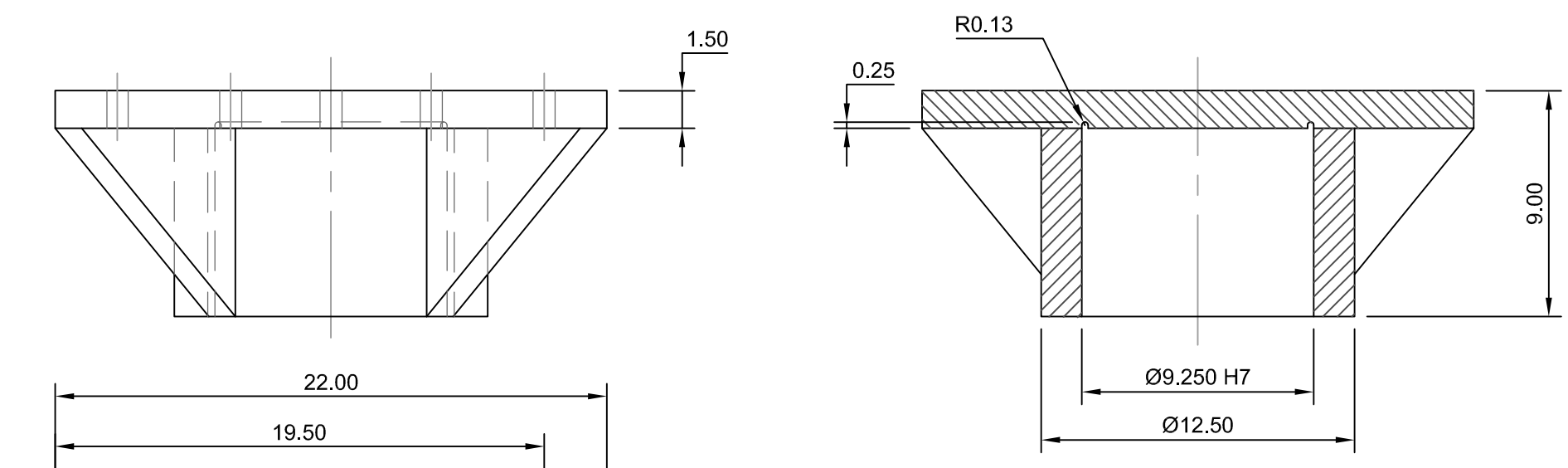
**TRENT-SEVERN WATERWAY
 BOBCAYGEON SWING
 BRIDGE REHABILITATION**

ONTARIO

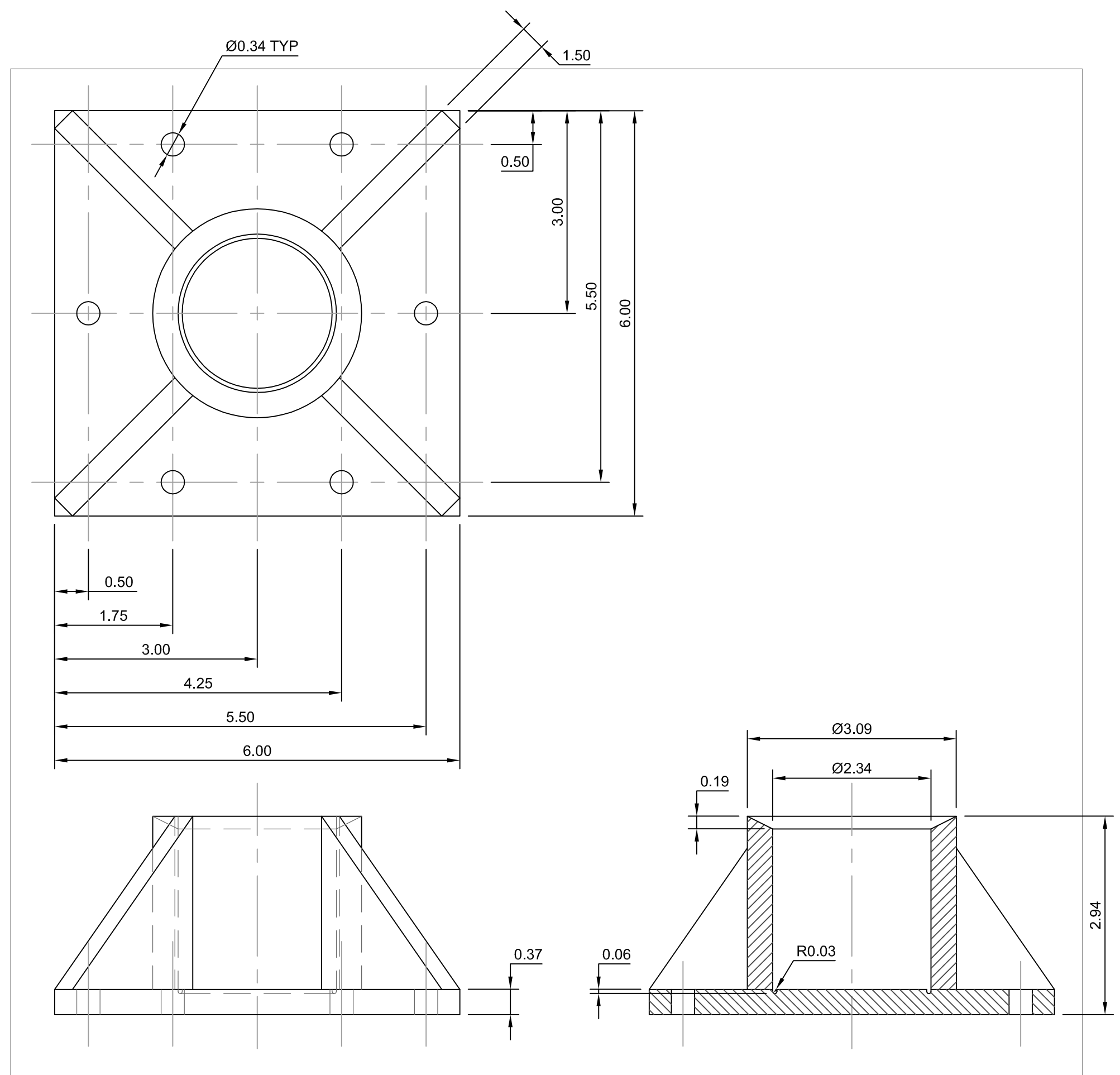
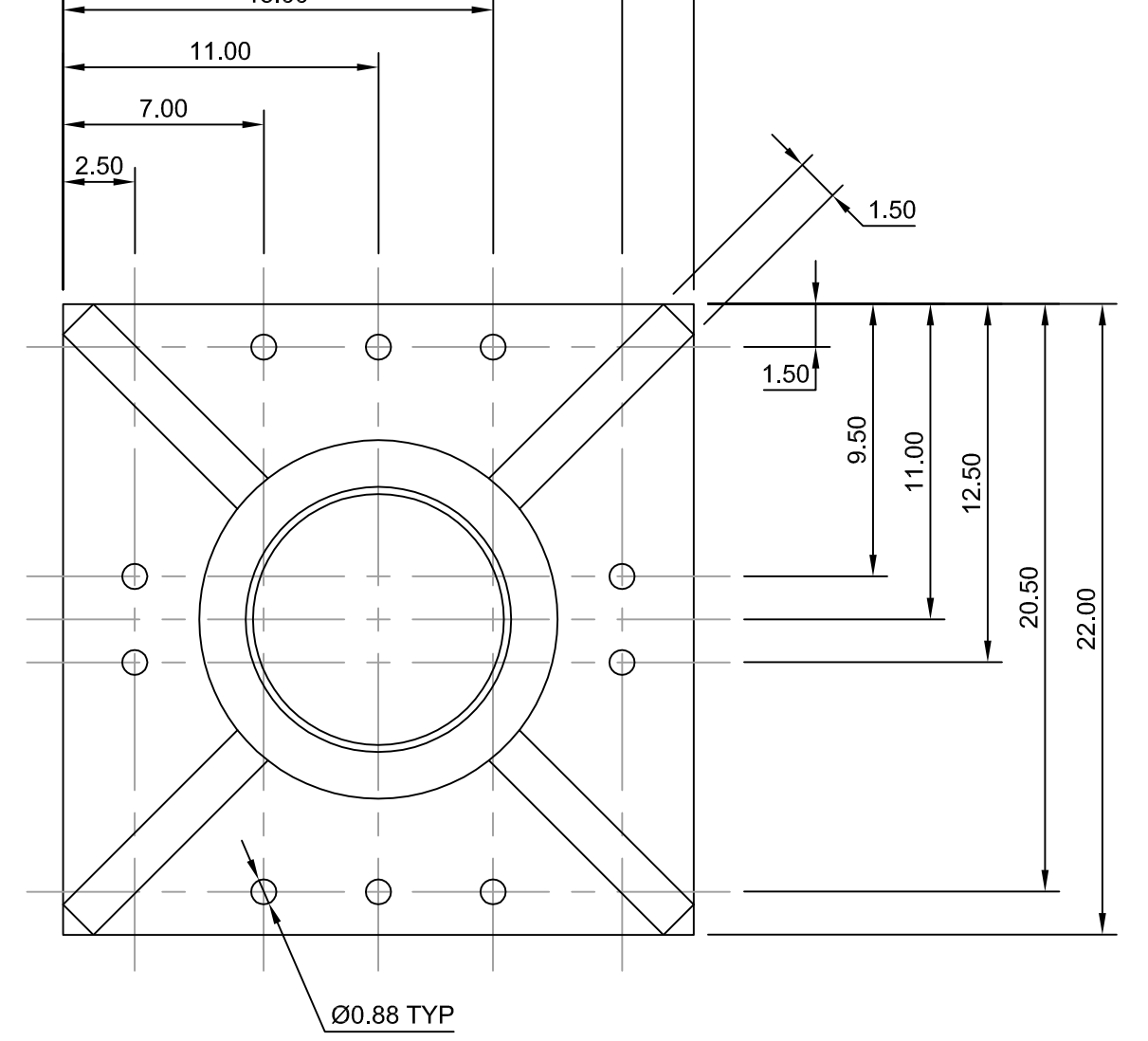
Drawing title / Titre du dessin

**BRIDGE LOCKING PIN
 DETAILS 2**

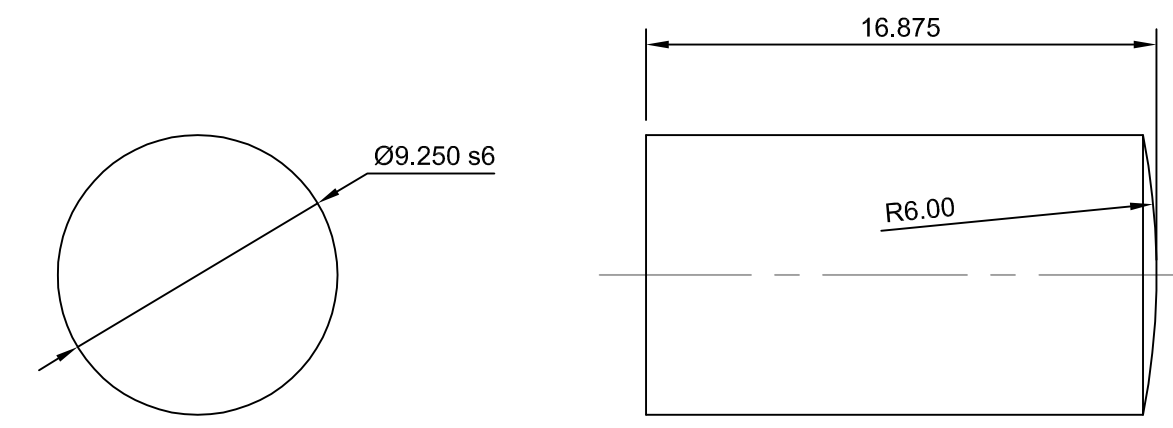
Drawn by / Dessiné par D. DAIGLE	Designed by / Conçu par D. DAIGLE
Approved by / Approuvé par K SMITH	Drawing Date / Date du dessin 2019/09/20
Project manager / Administrateur de projet W. LITTLE	Drawing Number / Numéro du Dessin M17
Project Number / Numéro du projet 1356-30030321	Sheet / Feuille 17 of 18



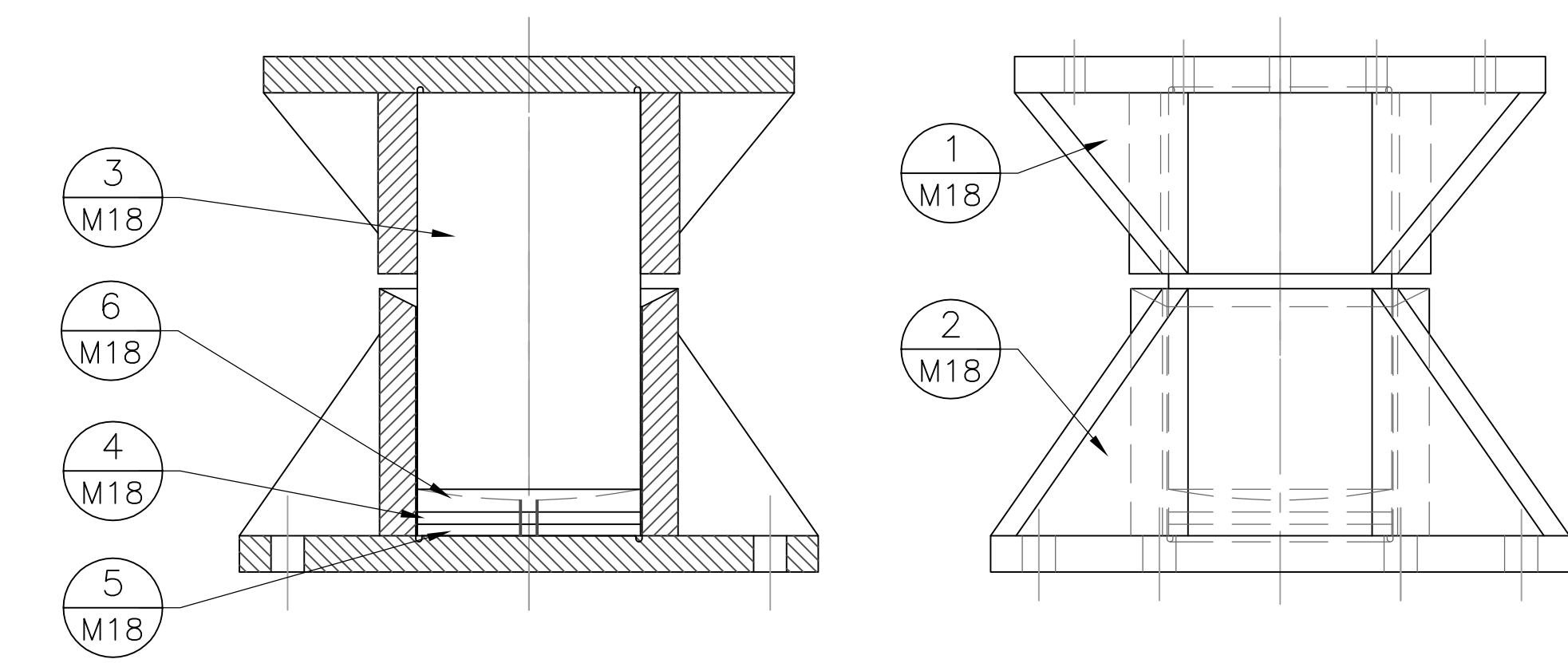
1 PIVOT UPPER SHOE
 REQ'D: 1
 MATERIAL: ASTM A709 GR 50
 SCALE: 1:4



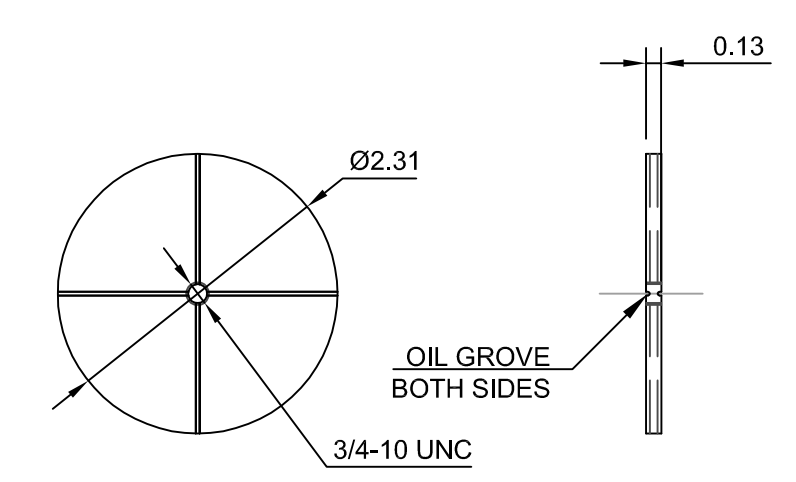
2 PIVOT LOWER SHOE
 REQ'D: 1
 MATERIAL: ASTM A709 GR 50
 SCALE: 1:4



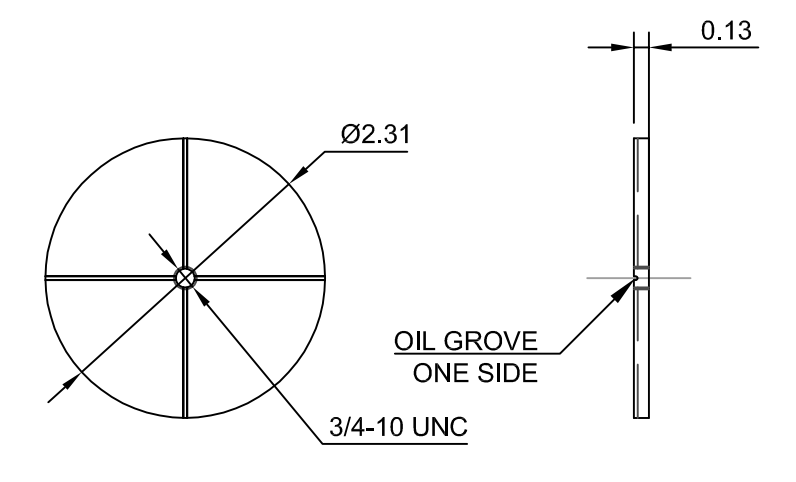
3 PIVOT PIN
 REQ'D: 1
 MATERIAL: ASTM A668 CLASS G
 SCALE: 1:4



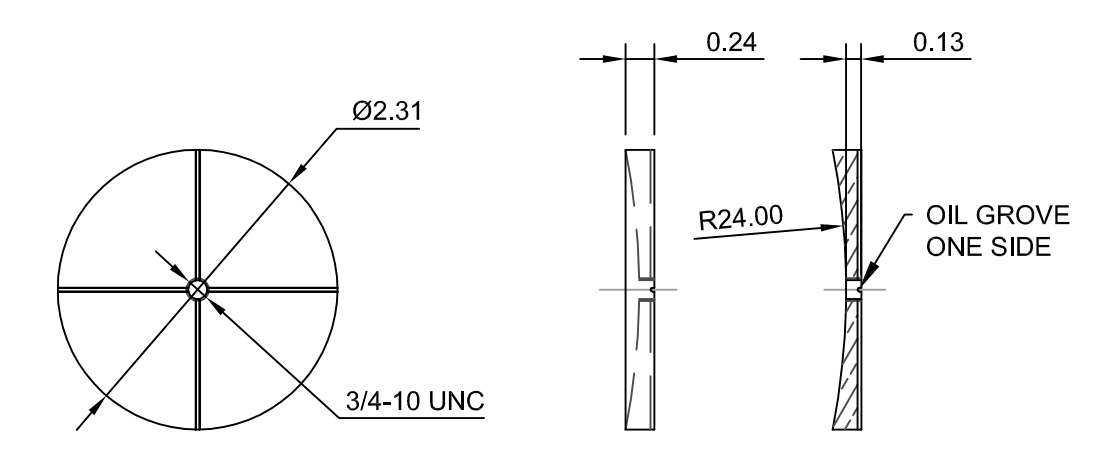
PIVOT ASSEMBLY



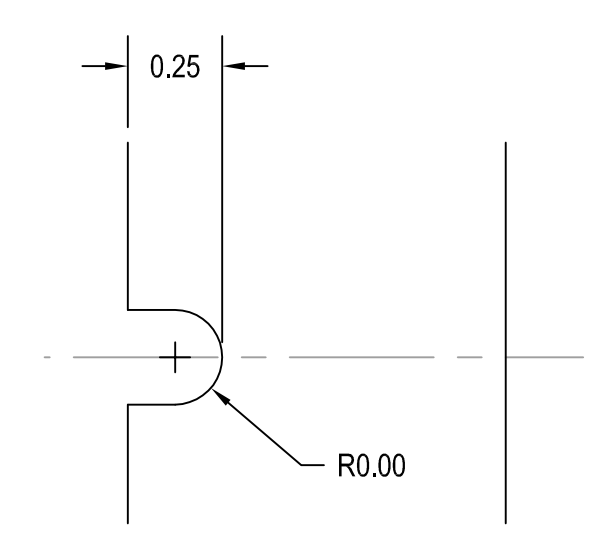
4 PIVOT BEARING
 REQ'D: 1
 MATERIAL: ASTM B22 ALLOY C91300
 SCALE: 1:4



5 PIVOT SPACER
 REQ'D: 1
 MATERIAL: ASTM A668 CLASS G
 SCALE: 1:4



6 PIVOT SEAT
 REQ'D: 1
 MATERIAL: ASTM A668 CLASS G
 SCALE: 1:4



OIL GROOVE DETAIL TYP

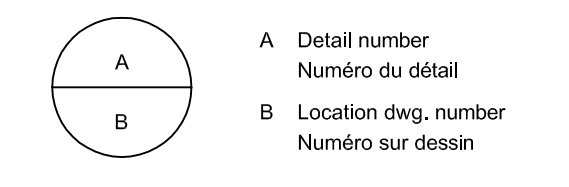
**DRAWINGS ARE IN IMPERIAL UNITS
 AND ARE BASED ON ORIGINAL 1921 DRAWINGS**

**FOR TENDER
 NOT FOR
 CONSTRUCTION**

- NOTE:**
1. SEE M0 FOR PAINT SPECIFICATIONS
 2. REMOVE ALL SHARP EDGES
 3. UNLESS OTHERWISE NOTED ALL FINISHES TO BE 3.2 MICRON

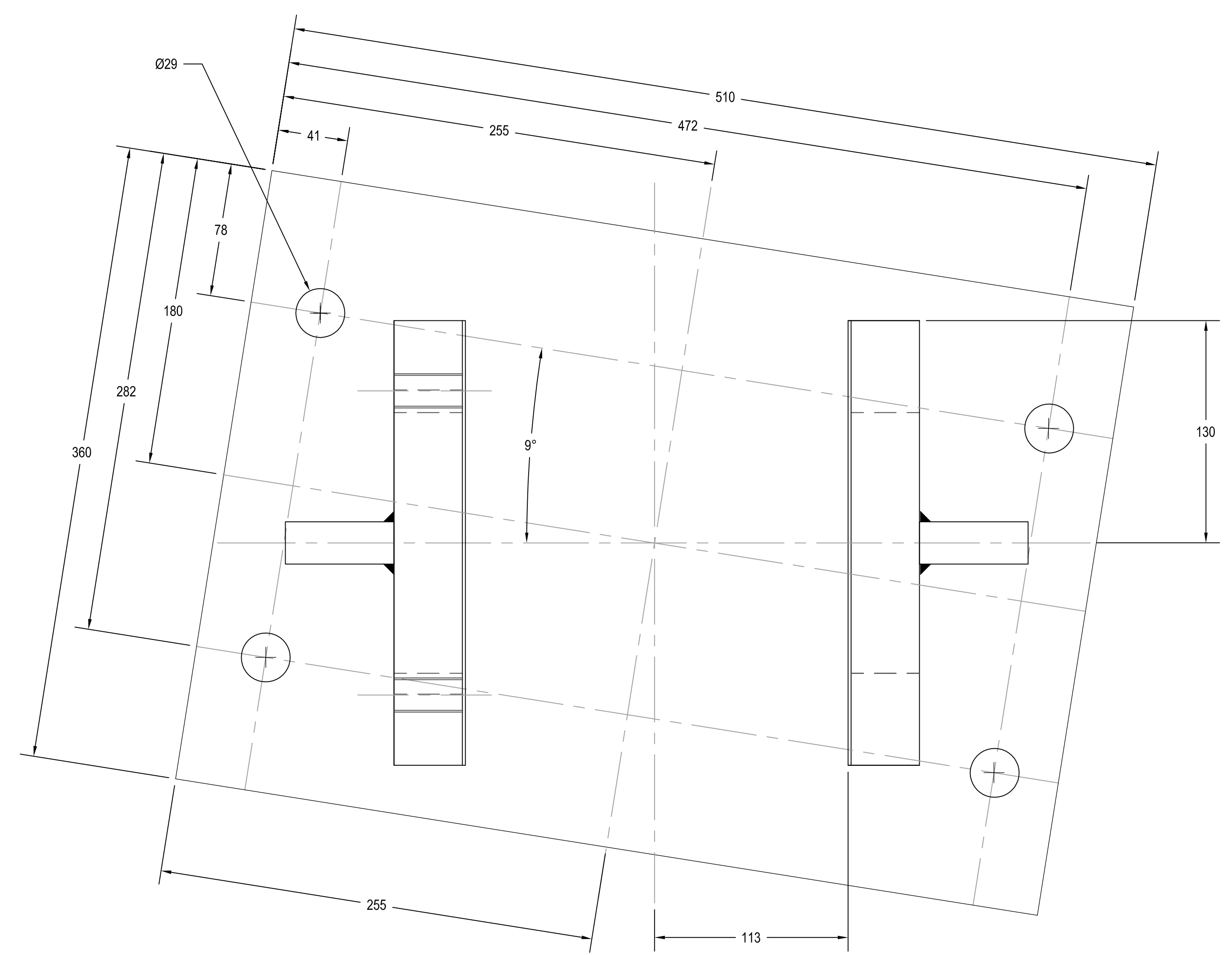
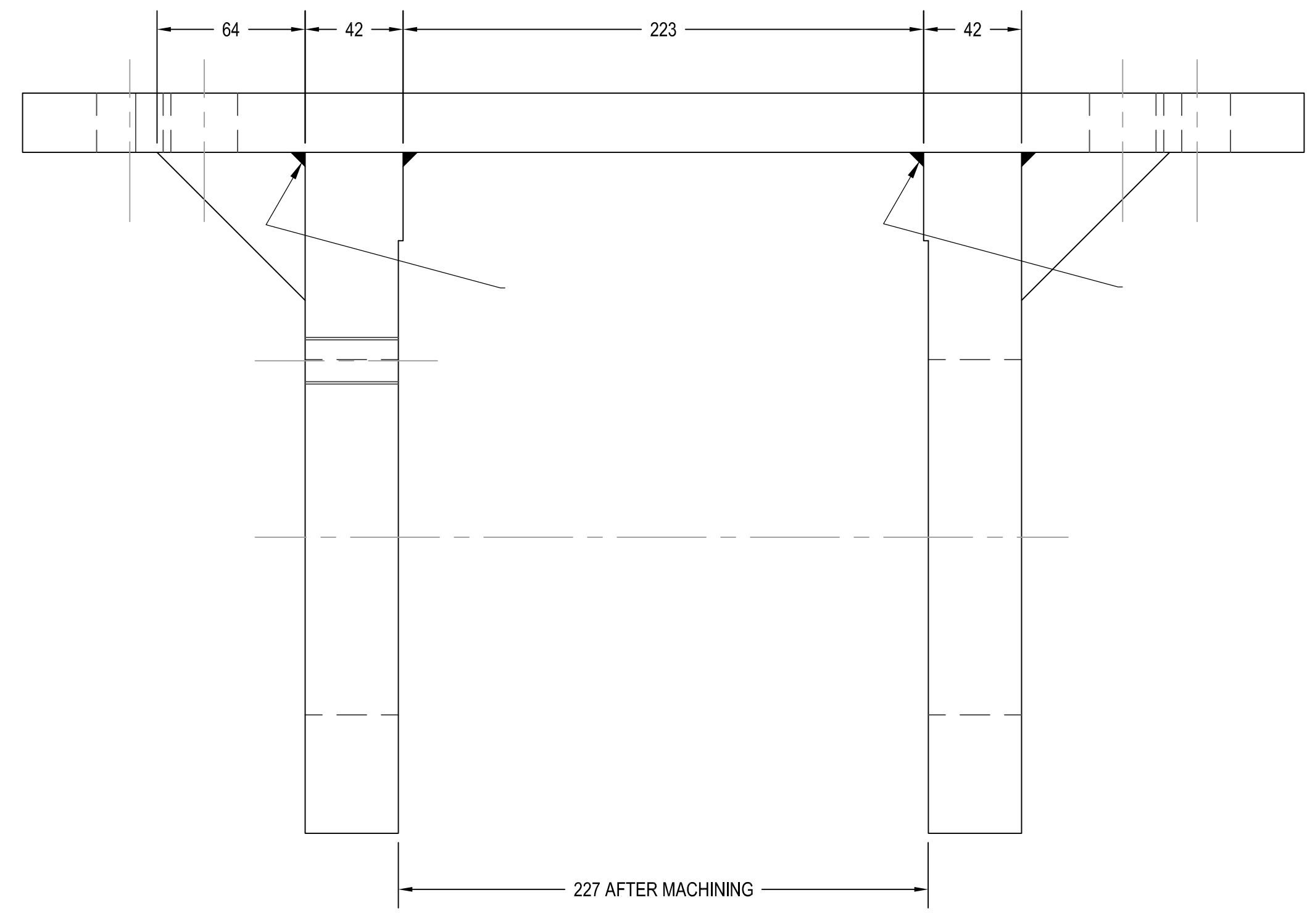
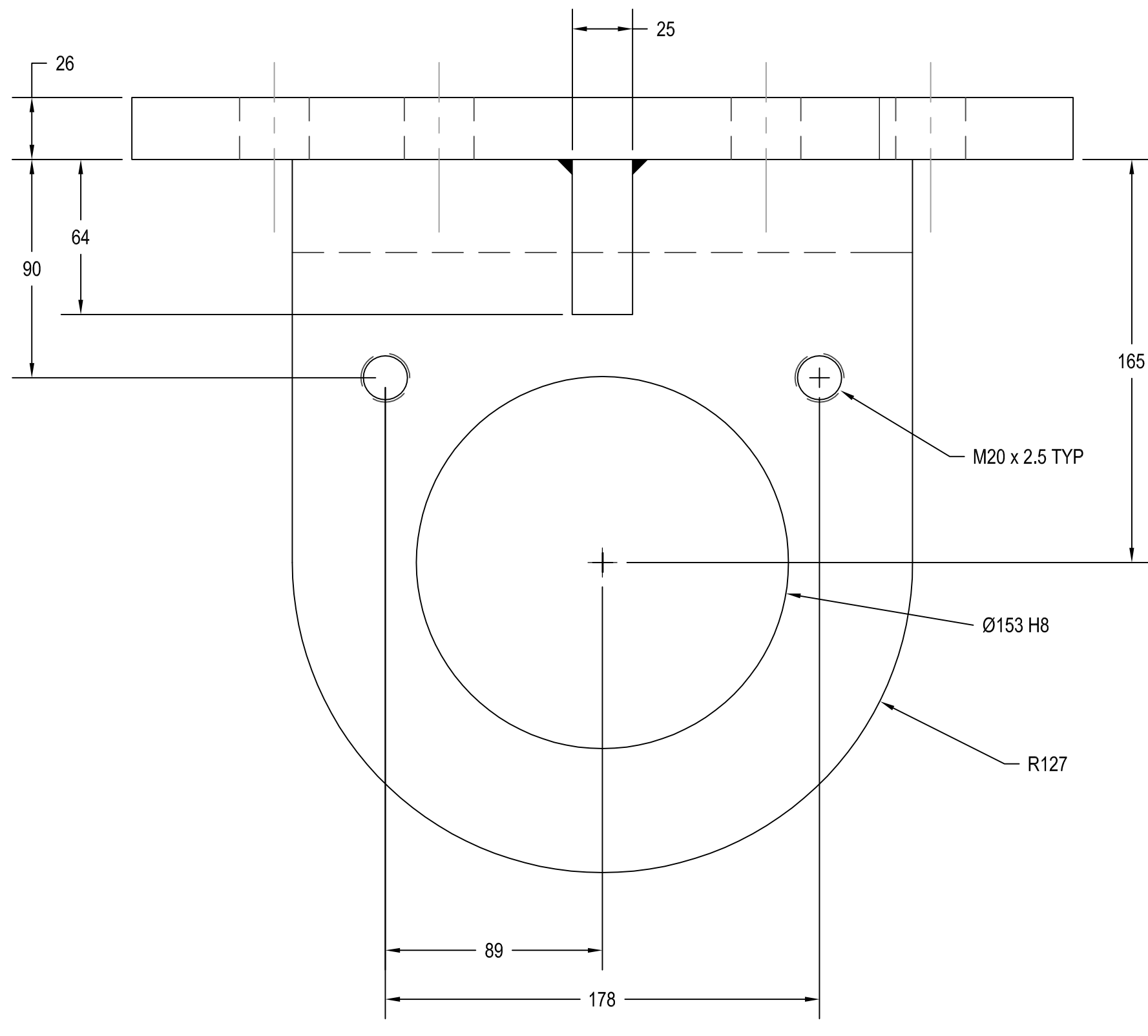
No.	Description	Drawn By / Des.Par	Date
02	FOR TENDER	DD	11/07/19
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Do not scale drawings. Verify all dimensions and conditions on site and immediately notify the Departmental Representative of all discrepancies.



Project title / Titre du projet
**TRENT-SEVERN WATERWAY
 BOBCAYGEON SWING
 BRIDGE REHABILITATION**
 ONTARIO

Drawing title / Titre du dessin	
BRIDGE PIVOT PIN ASSEMBLY & DETAILS	
Drawn by / Dessiné par D. DAIGLE	Designed by / Conçu par D. DAIGLE
Approved by / Approuvé par K. SMITH	Drawing Date / Date du dessin 2019/09/20
Project manager / Administrateur de projet W. LITTLE	Drawing Number / Numéro du Dessin M18
Project Number / Numéro du projet 1356-30030321	Sheet / Feuille 18 of 18



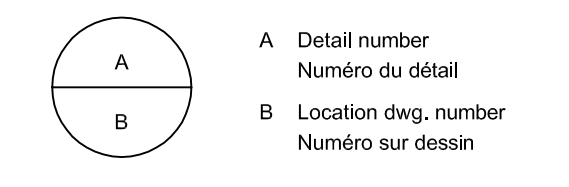
1
M20 **LIVE LOAD WHEEL MOUNTING BRACKET**
 REQ'D: 2. ONE AS SHOWN, ONE OPPOSITE HAND
 MATERIAL: ASTM A709 Gr 50
 SCALE: 1:2

- NOTE:**
1. SEE M0 FOR PAINT SPECIFICATIONS
 2. REMOVE ALL SHARP EDGES
 3. UNLESS OTHERWISE NOTED ALL FINISHES TO BE 3.2 MICRON

**FOR TENDER
 NOT FOR
 CONSTRUCTION**

No.	Description	Dwn.By Des.Par	Date
03	FOR TENDER	DD	11/07/19
02	FOR TENDER	DD	10/09/19
01	FOR 90% APPROVAL	DD	07/19/19

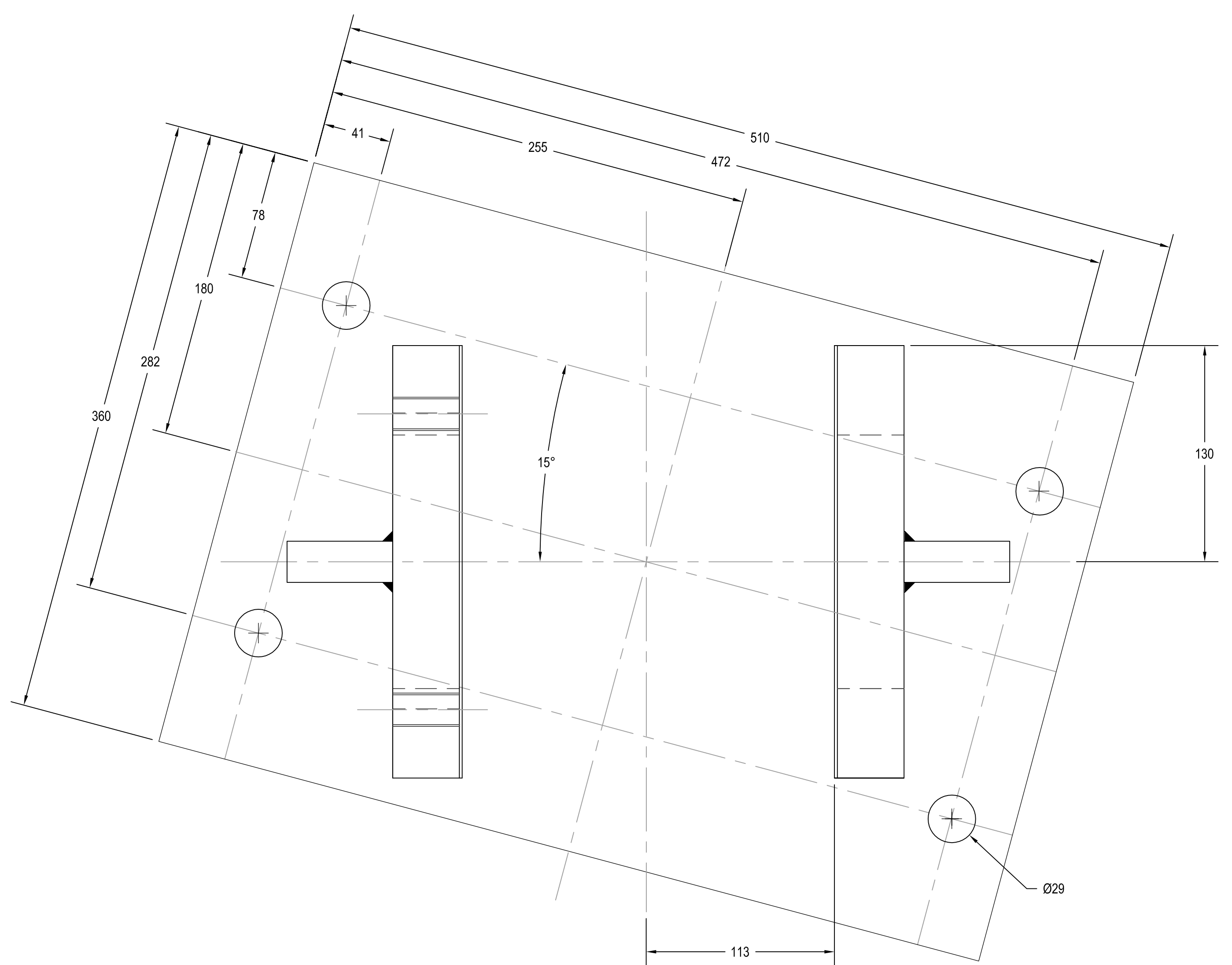
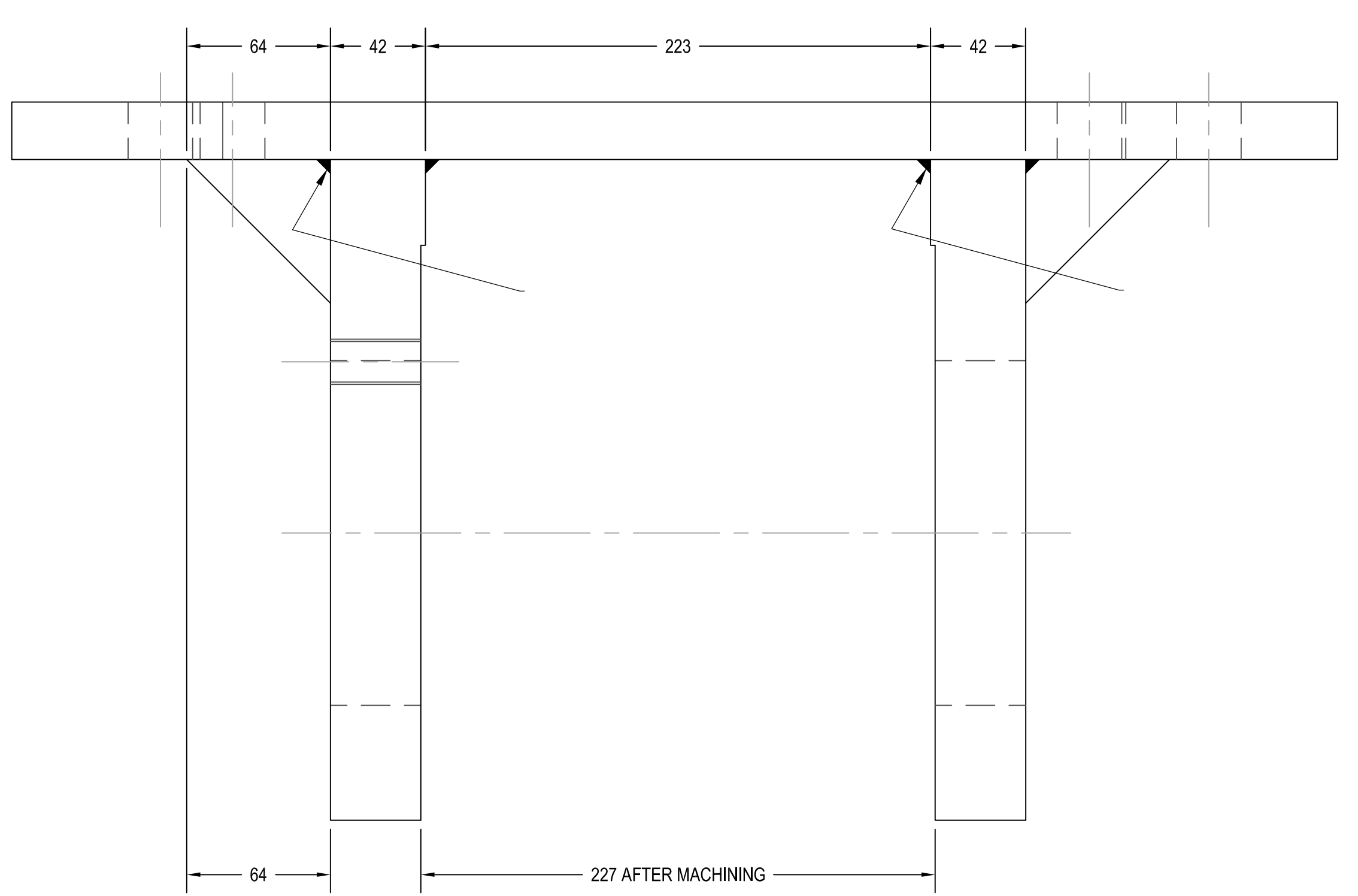
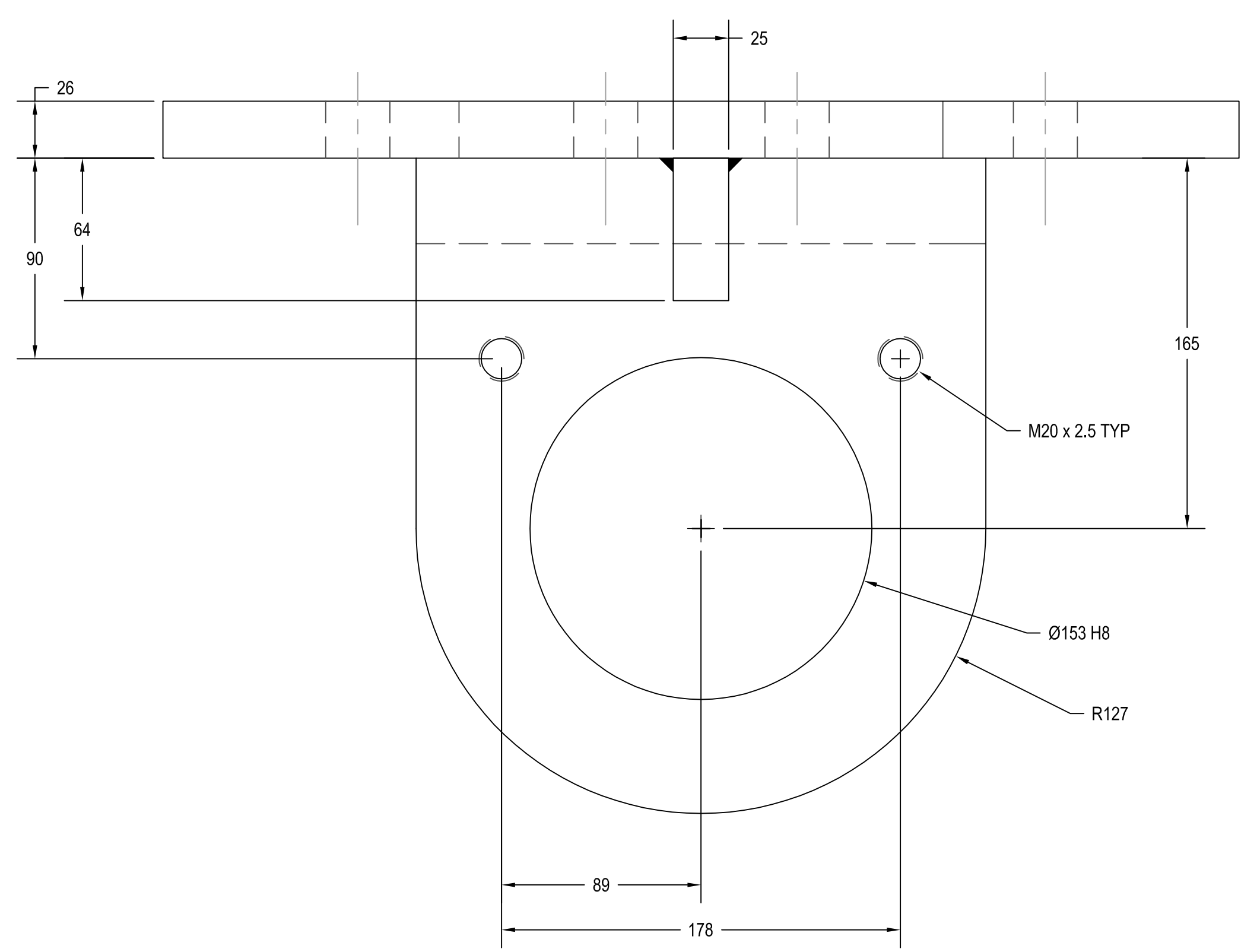
Do not scale drawings. Verify all dimensions and conditions on site and immediately notify the Departmental Representative of all discrepancies.



Project title / Titre du projet
**TRENT-SEVERN WATERWAY
 BOBCAYGEON SWING
 BRIDGE REHABILITATION**
 ONTARIO

Drawing title / Titre du dessin
**LIVE LOAD
 AND
 END SUPPORT WHEEL
 DETAILS 3**

Drawn by / Dessiné par D. DAIGLE	Designed by / Conçu par D. DAIGLE
Approved by / Approuvé par K SMITH	Drawing Date / Date du dessin 2019/10/09
Project manager / Administrateur de projet W. LITTLE	Drawing Number / Numéro du Dessin M19
Project Number / Numéro du projet 1356-30030321	Sheet of / Feuille de 19 of 22



1
M19 LIVE LOAD WHEEL MOUNTING BRACKET
 REQ'D: 2, ONE AS SHOWN, ONE OPPOSITE HAND
 MATERIAL: ASTM A709 Gr 50
 SCALE: 1:2

- NOTE:**
1. SEE M0 FOR PAINT SPECIFICATIONS
 2. REMOVE ALL SHARP EDGES
 3. UNLESS OTHERWISE NOTED ALL FINISHES TO BE 3.2 MICRON

**FOR TENDER
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 CONSTRUCTION**

No.	Description	Drawn By / Des.Par	Date
03	FOR TENDER	DD	11/07/19
02	FOR TENDER	DD	10/09/19
01	FOR 90% APPROVAL	DD	07/19/19

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

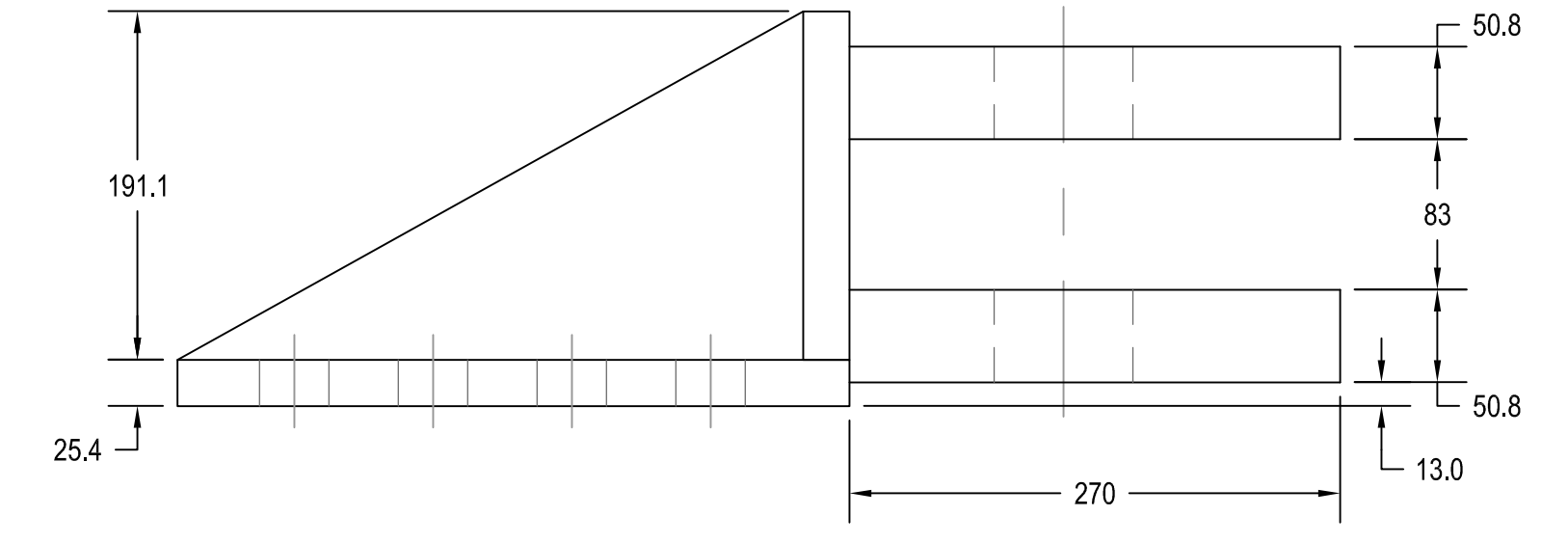
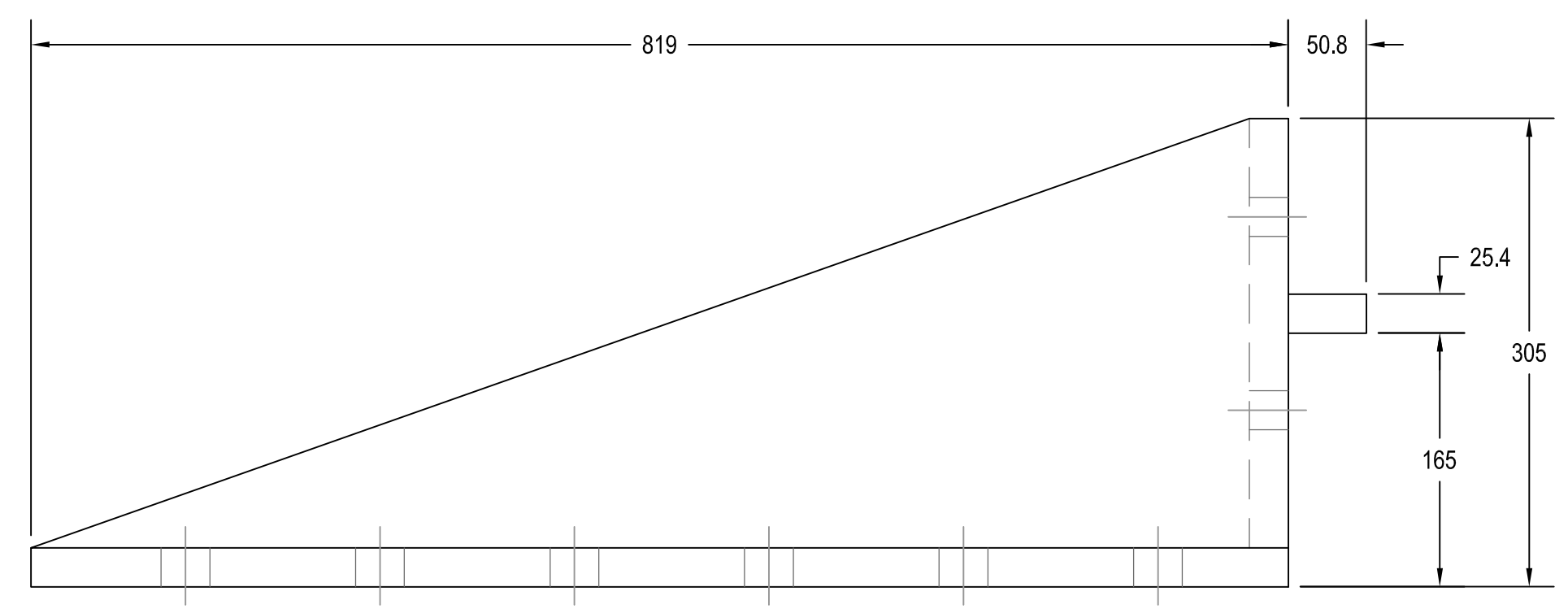
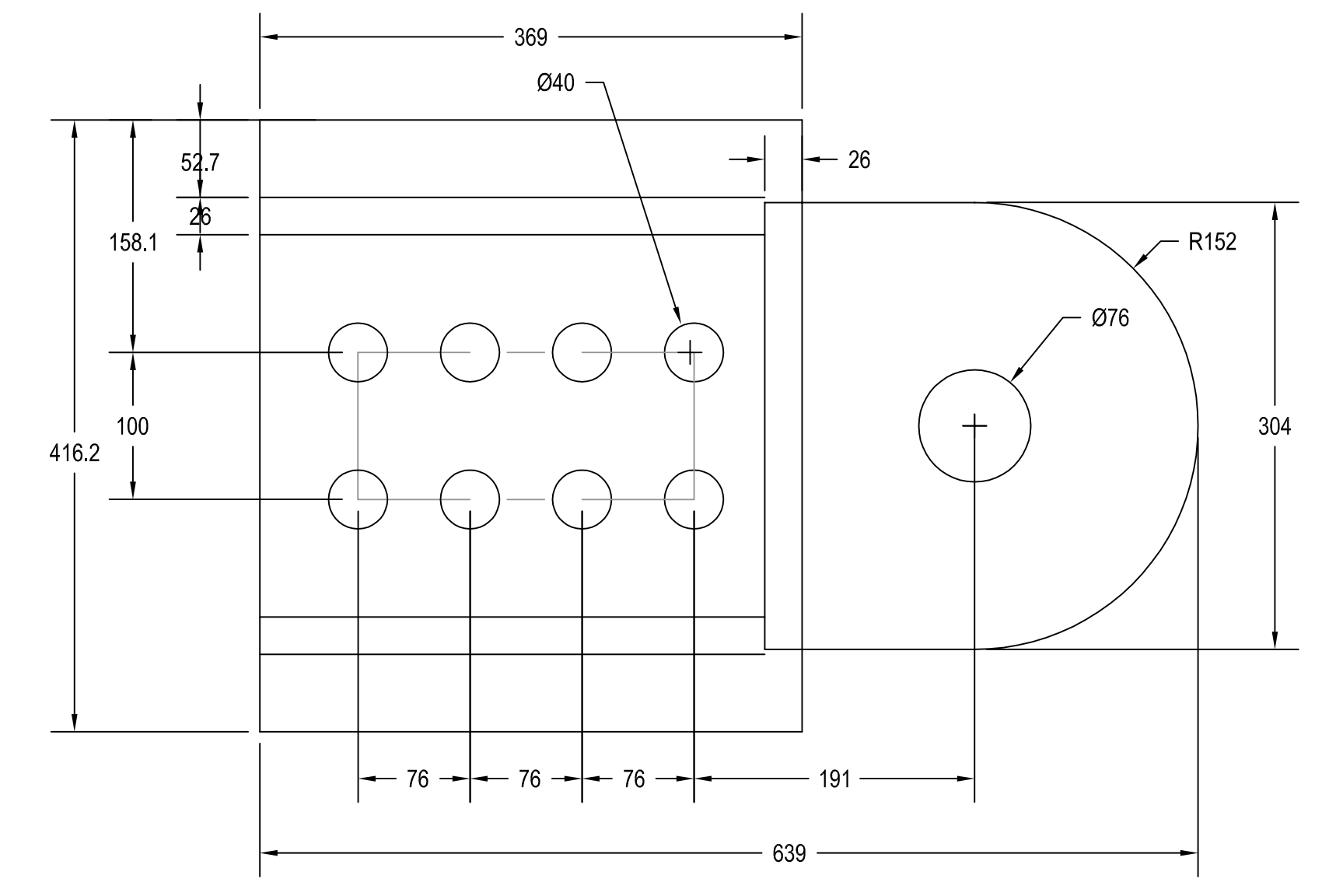
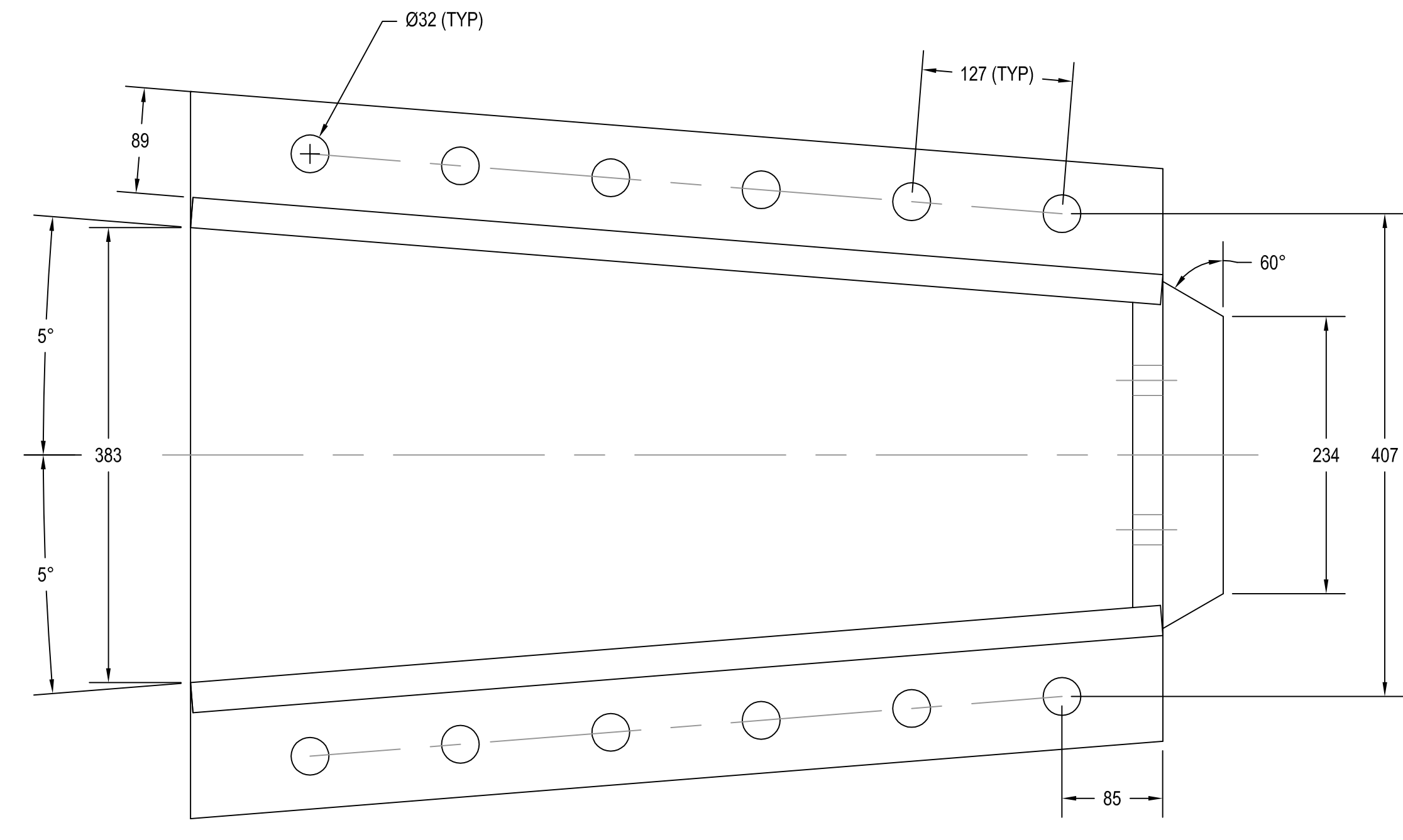
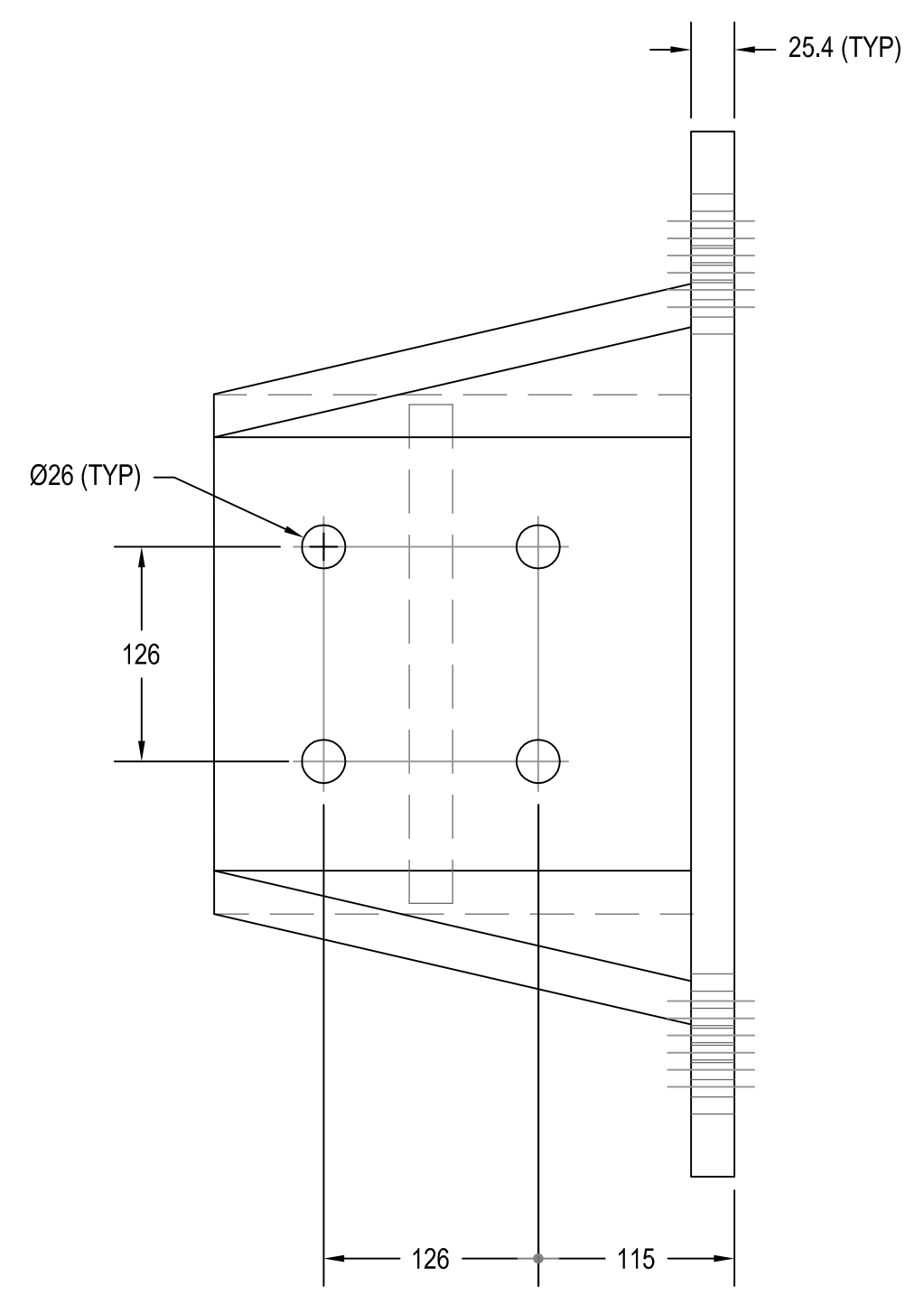
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B	B Location dwp, number Numéro sur dessin

Project title / Titre du projet
**TRENT-SEVERN WATERWAY
 BOBCAYGEON SWING
 BRIDGE REHABILITATION**

ONTARIO

Drawing title / Titre du dessin
**LIVE LOAD
 AND
 END SUPPORT WHEEL
 DETAILS 4**

Drawn by / Dessiné par D. DAIGLE	Designed by / Conçu par D. DAIGLE
Approved by / Approuvé par K SMITH	Drawing Date / Date du dessin 2019/10/09
Project manager / Administrateur de projet W. LITTLE	Drawing Number / Numéro du Dessin M20
Project Number / Numéro du projet 1356-30030321	Sheet / Feuille 20 of 22



2
 M3
ROTATION CYLINDER MOUNTING BRACKET
 REQ'D: 2
 MATERIAL: ASTM A709 Gr 50
 SCALE: 1:4

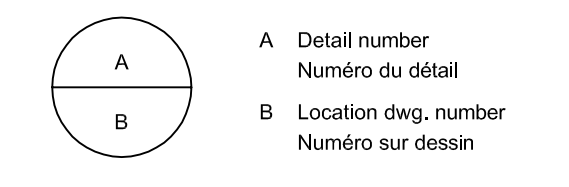
1
 M3
ROTATION CYLINDER MOUNTING BRACKET
 REQ'D: 2
 MATERIAL: ASTM A709 Gr 50
 SCALE: 1:4

- NOTE:**
1. SEE M0 FOR PAINT SPECIFICATIONS
 2. REMOVE ALL SHARP EDGES
 3. UNLESS OTHERWISE NOTED ALL FINISHES TO BE 3.2 MICRON

**FOR TENDER
 NOT FOR
 CONSTRUCTION**

03	FOR TENDER	DD	11/07/19
02	FOR TENDER	DD	10/09/19
01	FOR 90% APPROVAL	DD	07/19/19
No.	Description	Drawn By / Des.Par	Date

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



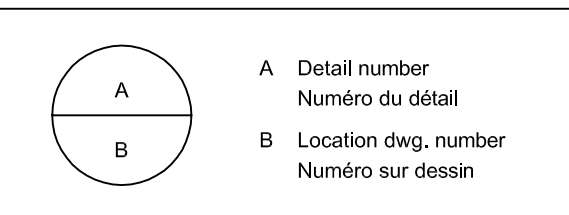
Project title / Titre du projet
**TRENT-SEVERN WATERWAY
 BOBCAYGEON SWING
 BRIDGE REHABILITATION**
 ONTARIO

Drawing title / Titre du dessin
**ROTATION CYLINDER
 MOUNTING
 BRACKETS**

Drawn by / Dessiné par D. DAIGLE	Designed by / Conçu par D. DAIGLE
Approved by / Approuvé par K SMITH	Drawing Date / Date du dessin 2019/10/09
Project manager / Administrateur de projet W. LITTLE	Drawing Number / Numéro du Dessin M21
Project Number / Numéro du projet 1356-30030321	Sheet / Feuille 21 of 22

No.	Description	Dwn.By Des.Par	Date
03	FOR TENDER	DD	11/07/19
02	FOR TENDER	DD	10/09/19
01	FOR 90% APPROVAL	DD	07/19/19

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Project title / Titre du projet

**TRENT-SEVERN WATERWAY
 BOBCAYGEON SWING
 BRIDGE REHABILITATION**

ONTARIO

Drawing title / Titre du dessin

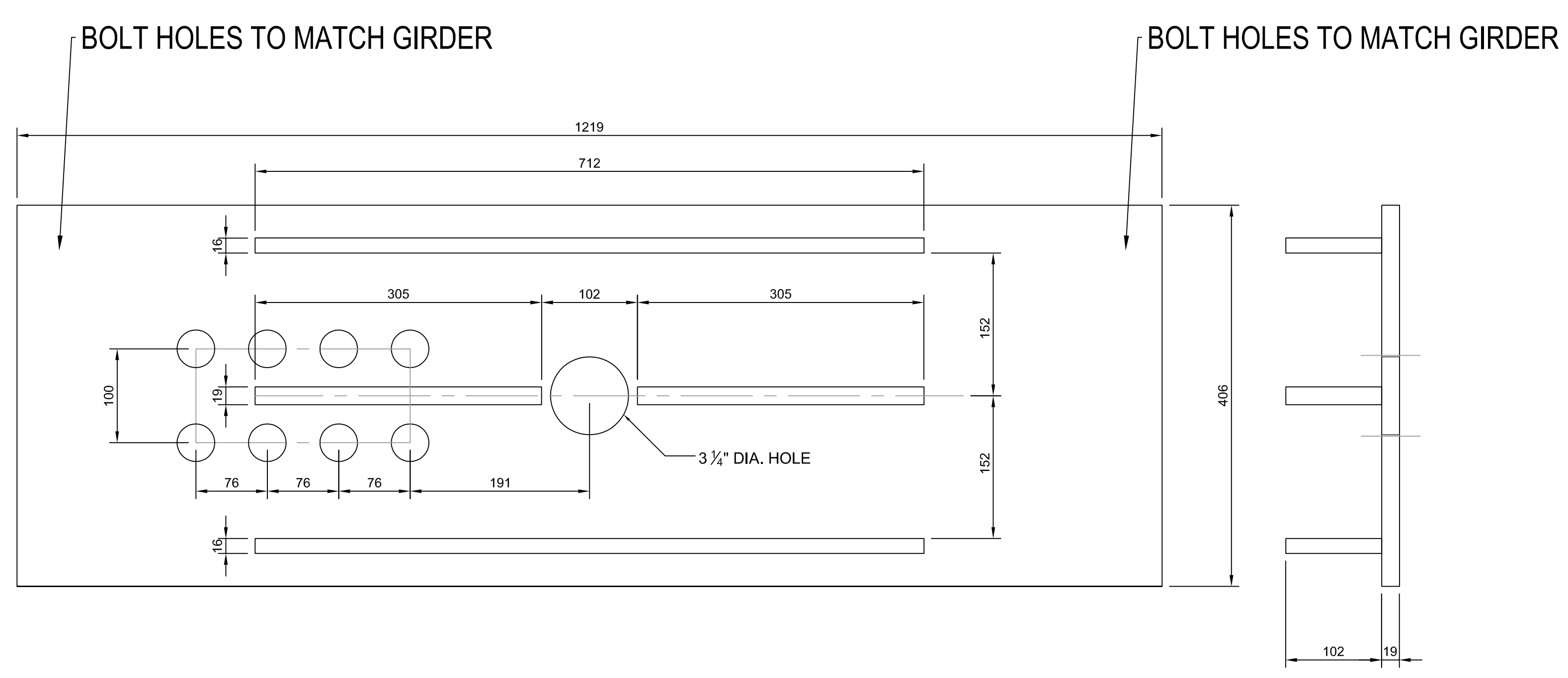
**ROD CLEVIS BRACKET
 MOUNTING PLATE**

Drawn by / Dessiné par: D. DAIGLE
 Designed by / Conçu par: D. DAIGLE

Approved by / Approuvé par: K SMITH
 Drawing Date / Date du dessin: 2019/10/09

Project manager / Administrateur de projet: W. LITTLE
 Drawing Number / Numéro du Dessin: M22

Project Number / Numéro du projet: 1356-30030321
 Sheet / Feuille: 22 of 22



1
M19 LIVE LOAD WHEEL MOUNTING BRACKET
 REQ'D: 2, ONE AS SHOWN, ONE OPPOSITE HAND
 MATERIAL: ASTM A709 Gr 50
 SCALE: 1:2

- NOTE:**
- SEE M0 FOR PAINT SPECIFICATIONS
 - REMOVE ALL SHARP EDGES
 - UNLESS OTHERWISE NOTED ALL FINISHES TO BE 3.2 MICRON

**FOR TENDER
 NOT FOR
 CONSTRUCTION**