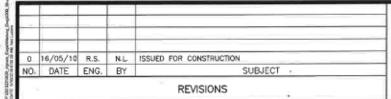


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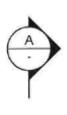


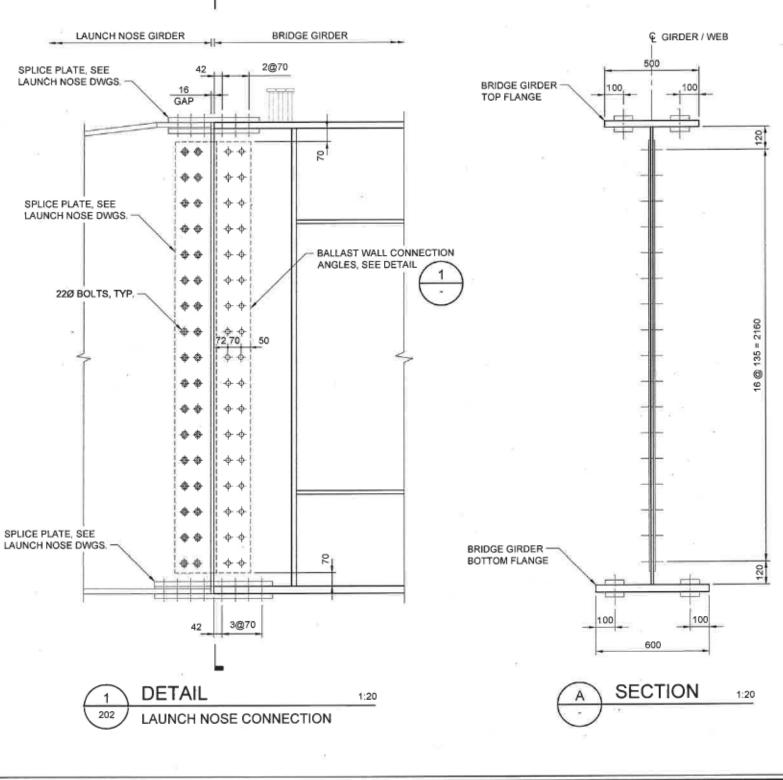


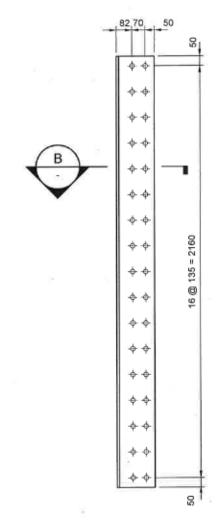
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	DRAWN	N. LUCERO	M	16/04/08	
	DESIGNED	R. SMERTINA	ZS	16/04/08	
	CHECKED	D. HARVEY	DH	16/04/08	G
	APPROVED	J. HENLEY	JH.	16/04/08	ľ
			INITIAL	DATE	

	AGNICO EAGLE				
1	MEADOWBANK TO AMARUQ				
GNICO EAGLE 45.0m SPAN BRIDGE					
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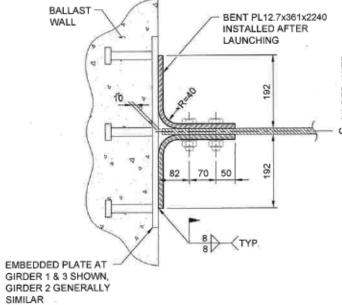






DETAIL 1:20 BALLAST WALL CONNECTION ANGLE





SECTION

0 16/05/10 R.S. N.L. ISSUED FOR CONSTRUCTION NO. DATE ENG. BY REVISIONS



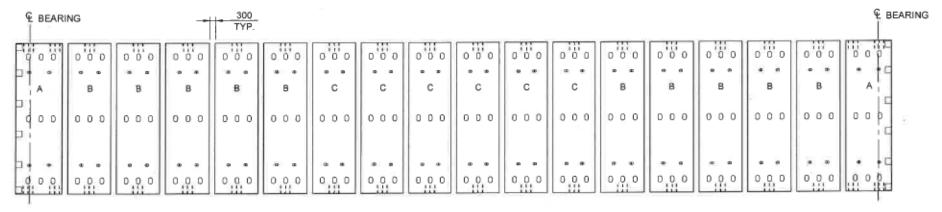


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DESIGNED	R. SMERTINA	145	16/04/08	AGNICO
CHECKED	D. HARVEY	DH	16/04/08	GIRDER DETAILS - SHEET 5
APPROVED	J. HENLEY	JH	16/04/08	
		INITTIAL	DATE	

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AGNICO EAGLE

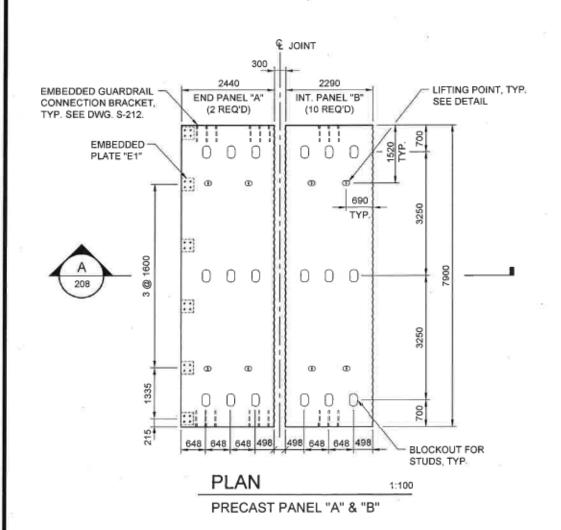
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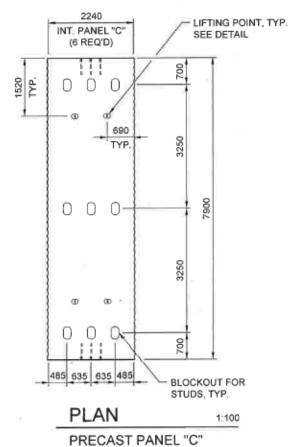
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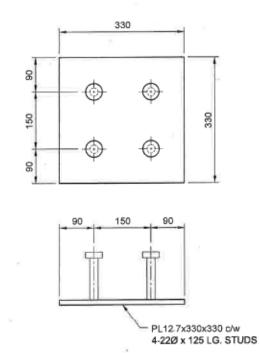


ESTIMATED PANEL WEIGHT = 14,000 kg PLAN 1:150

DECK PANEL LAYOUT



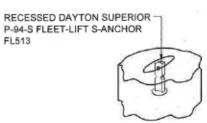




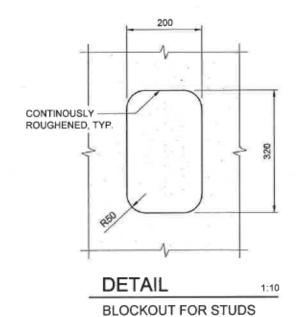




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**DETAIL** LIFTING POINT (4 REQ'D PER PANEL)



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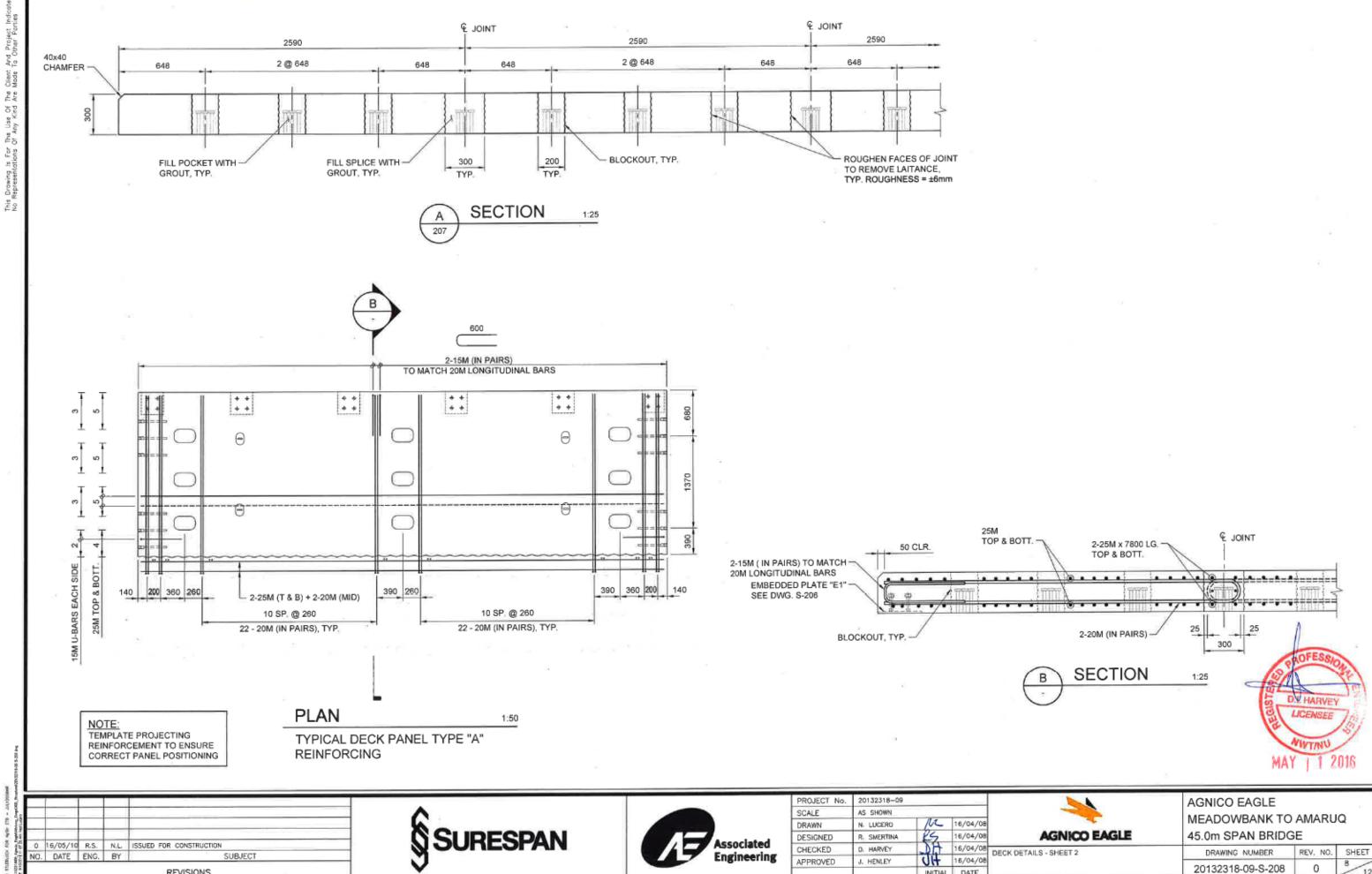


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DESIGNED	R. SMERTINA	25	16/04/08	AGNICO
CHECKED	D. HARVEY	AC	16/04/08	DECK DETAILS - SHEET 1
APPROVED	J. HENLEY	UH	16/04/08	
		INITIAL	DATE	

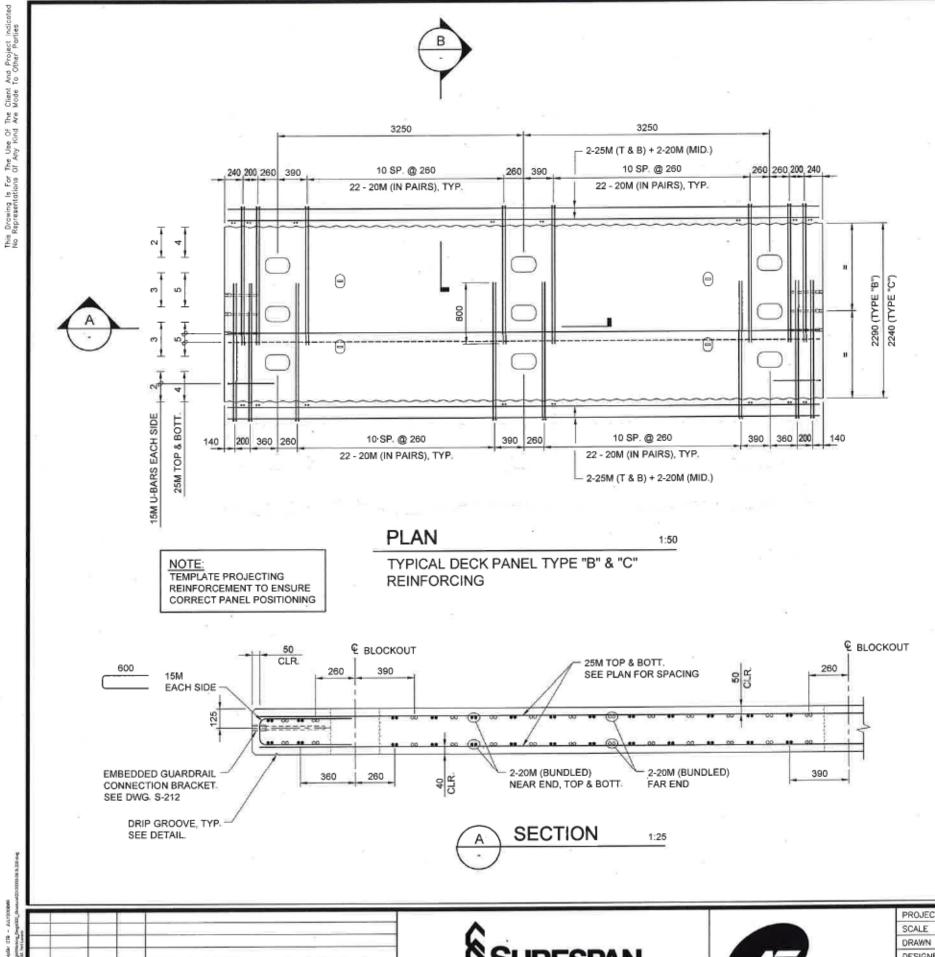
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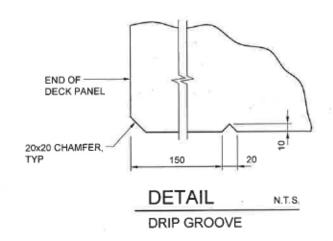
AGNICO EAGLE MEADOWBANK TO AMARUQ 45.0m SPAN BRIDGE

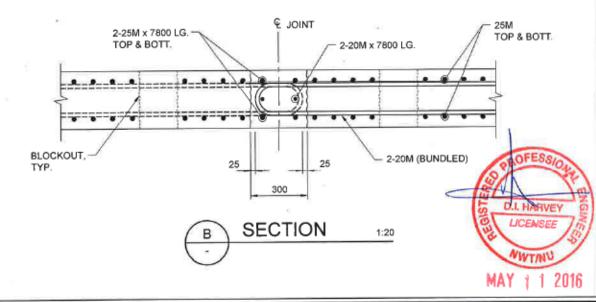
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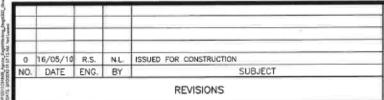


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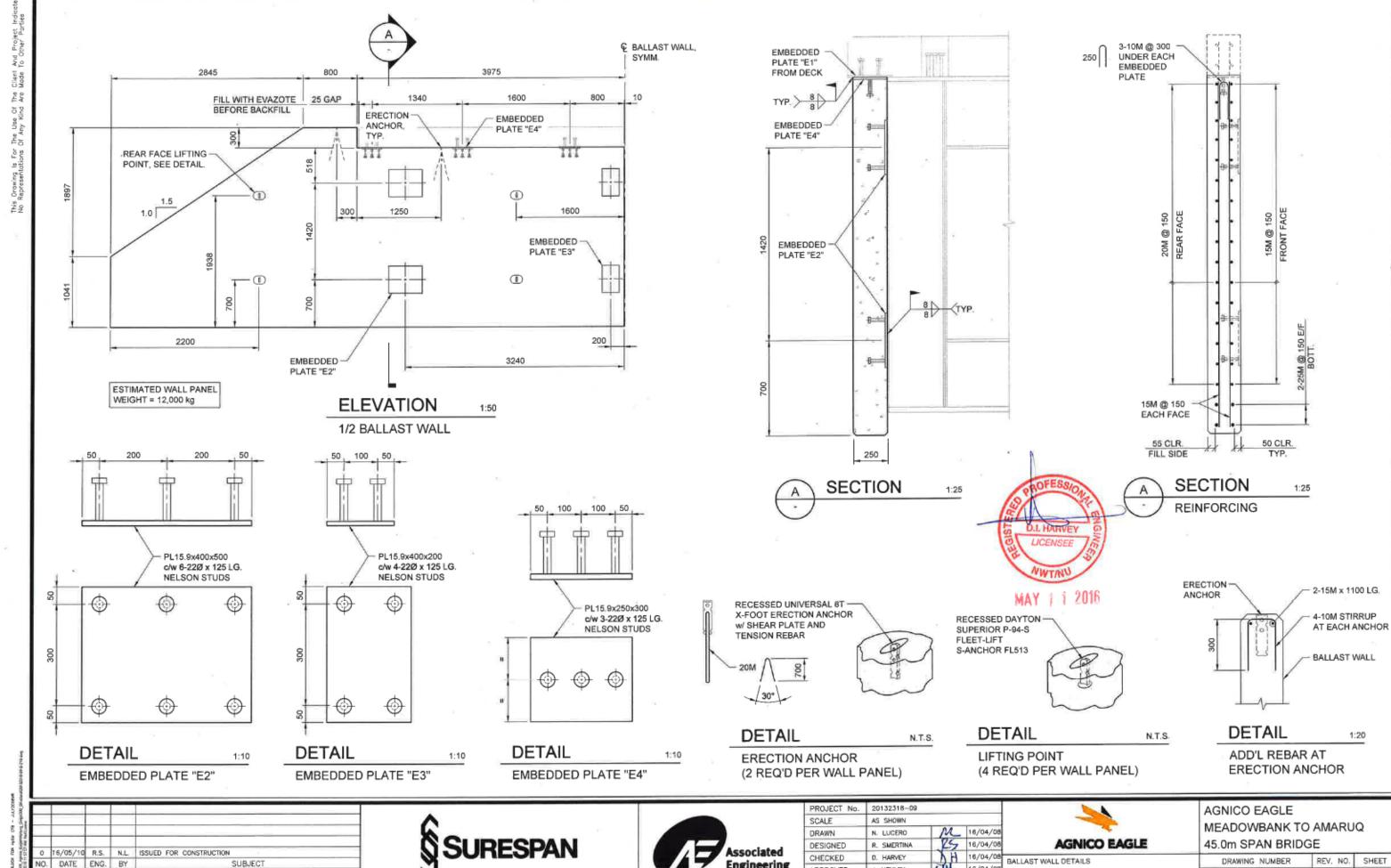


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DESIGNED	R. SMERTINA	65	16/04/08	
CHECKED	D. HARVEY	HG	16/04/08	DI
APPROVED	J. HENLEY	JH	16/04/08	١.
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AGNICO EAGLE MEADOWBANK TO AMARUQ 45.0m SPAN BRIDGE

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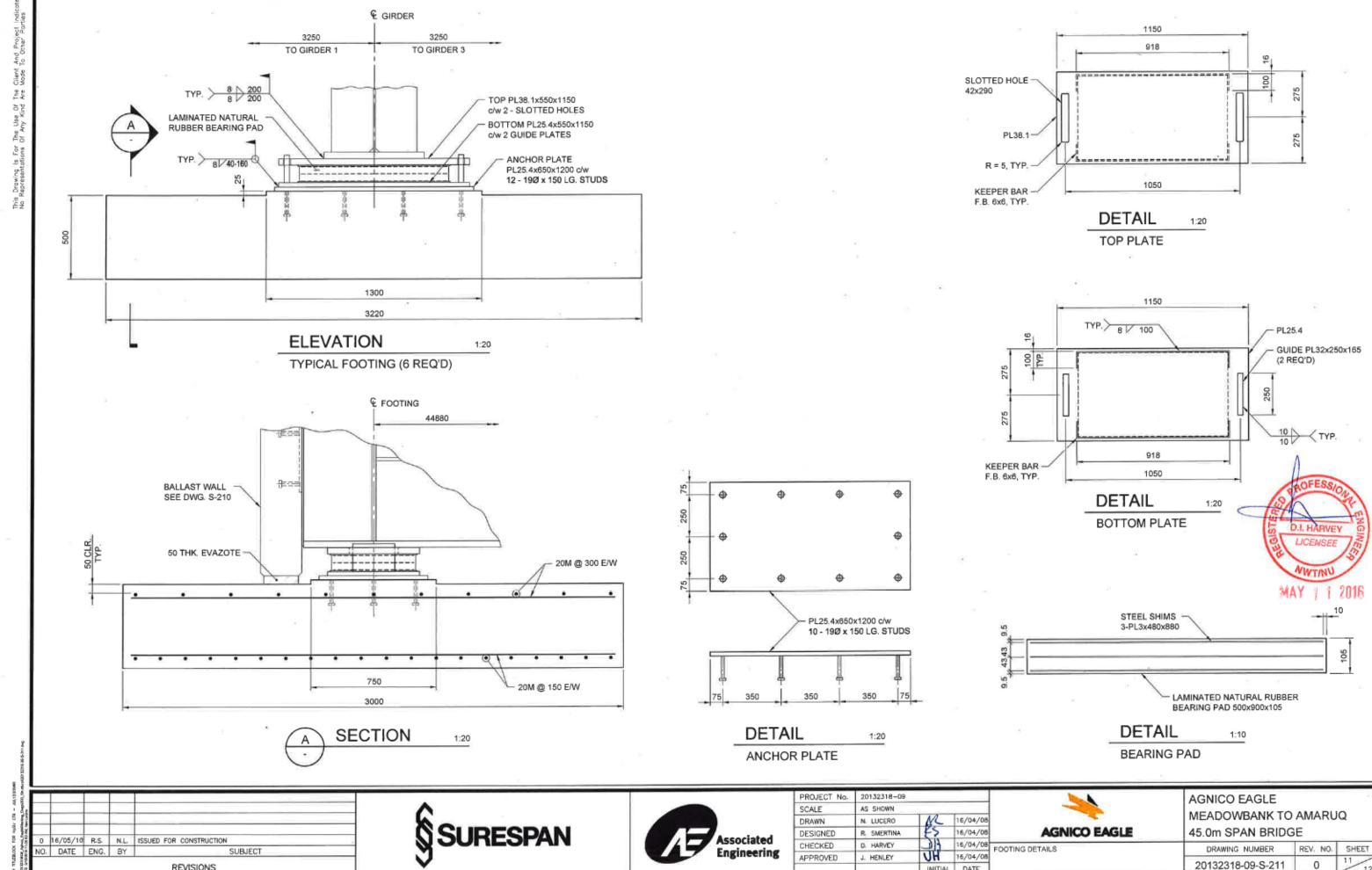


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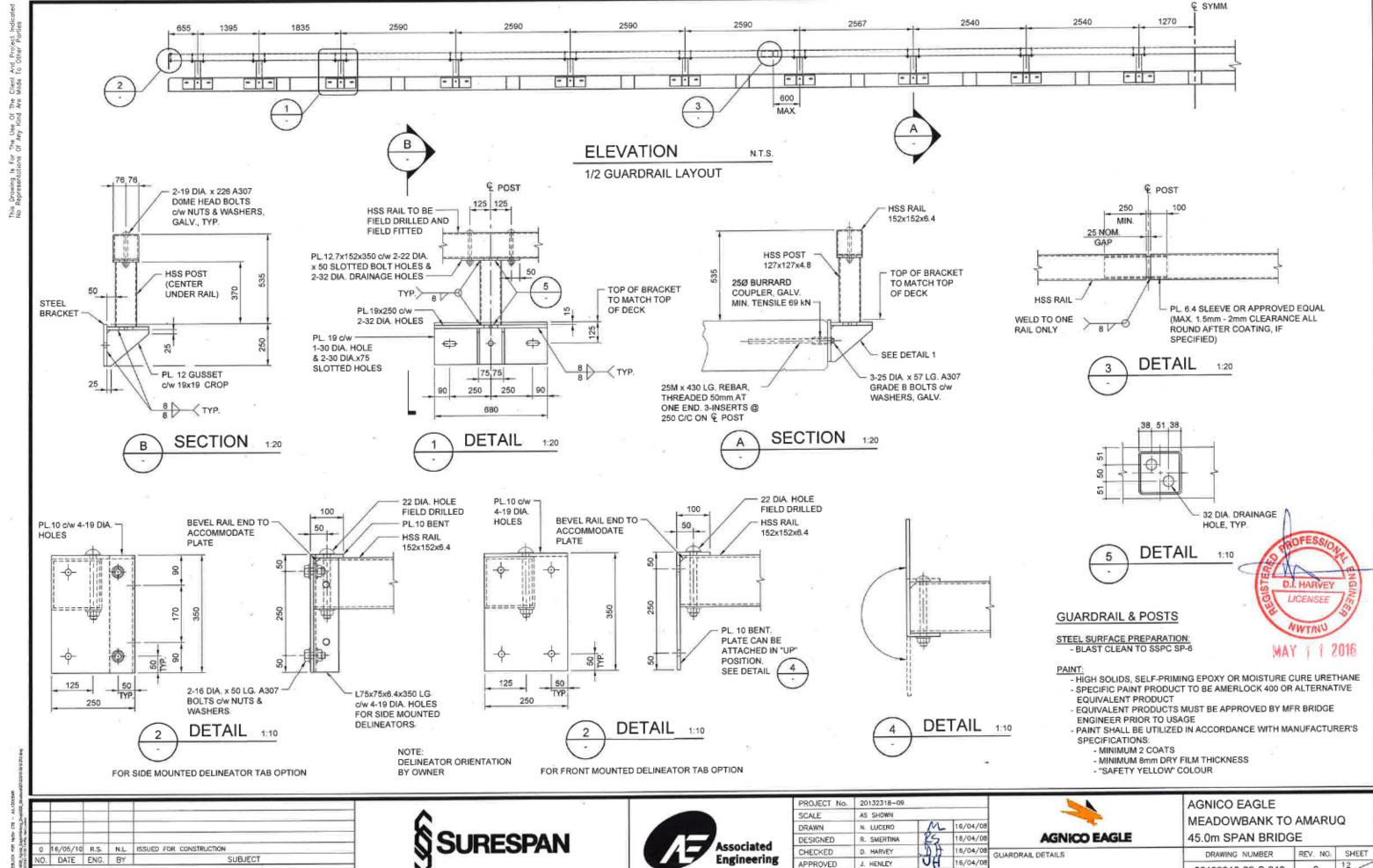


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j	DESIGNED	R. SMERTINA	125	16/04/08	
į	CHECKED	D. HARVEY	JH	16/04/08	В
	APPROVED	J. HENLEY	CH	16/04/08	
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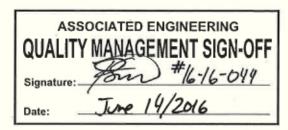




# AGNICO EAGLE MEADOWBANK TO AMARUQ 66.0m SPAN BRIDGE

AE Project Number: 20132318-09

LIST OF DRAWINGS					
DRAWING NO.	TITLE	REV.	DATE		
20132318-09-S-301	GENERAL NOTES	0	16/06/13		
20132318-09-8-302	GIRDER DETAILS - SHEET 1	0	16/06/1		
20132318-09-8-303	GIRDER DETAILS - SHEET 2	0	16/06/13		
20132318-09-S-304	GIRDER DETAILS - SHEET 3	0	16/06/13		
20132318-09-8-305	GIRDER DETAILS - SHEET 4	0	16/06/13		
20132318-09-S-306	GIRDER DETAILS - SHEET 5	0	16/06/13		
20132318-09-S-307	GIRDER DETAILS - SHEET 6	0	16/06/13		
20132318-09-S-308	GIRDER DETAILS - SHEET 7	0	16/06/13		
20132318-09-S-309	GIRDER DETAILS - SHEET 8	0	16/06/13		
20132318-09-S-310	DECK DETAILS - SHEET 1	0	16/06/12		
20132318-09-S-311	DECK DETAILS - SHEET 2	0	16/06/13		
20132318-09-8-312	DECK DETAILS - SHEET 3	0	16/06/13		
20132318-09-\$-313	BALLAST WALL DETAILS	0	18/06/13		
20132318-09-S-314	FOOTING DETAILS	0	16/06/13		
20132318-09-S-315	GUARDRAIL DETAILS	0	16/06/13		





#### GENERAL

- FOR INSTALLATION BY OTHERS; NO RESPONSIBILITY CAN BE ACCEPTED FOR WORK BY OTHERS.
- FIELD CONFIRM ALL DIMENSIONS OF EXISTING COMPONENTS PRIOR TO FABRICATION, IF DISCREPANCIES ARE IDENTIFIED, NOTIFY OWNER IMMEDIATELY TO ALLOW MODIFICATION OF DESIGN PRIOR TO FABRICATION.
- METRIC SYSTEM IS USED. ELEVATIONS AND STATIONS ARE IN METERS AND ALL OTHER DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.
- 4. THIS ASSIGNMENT ONLY COVERS THE DETAILED DESIGN OF BRIDGES COMPONENTS SHOWN IN THE DRAWINGS. THE PROVISION OF FABRICATION AND FIELD INSPECTION SERVICES IS NOT INCLUDED IN THE SCOPE OF SERVICES BEING PROVIDED BY ASSOCIATED ENGINEERING (B.C.) LTD.
- 5. THESE DRAWINGS APPLY TO THE BRIDGE SITE, "MEADOWBANK TO AMARUQ", BRIDGE AT KM 23.9 AND APPLY ONLY TO THIS STRUCTURE; REFER TO THE FOLLOWING WSP DRAWINGS FOR HYDROLOGIC, HYDRAULIC, SITE PLAN AND BRIDGE LAYOUT. DESIGN AND FABRICATION OF ADDITIONAL BRIDGES BASED ON THIS DESIGN IS PROHIBITED WITHOUT THE EXPRESS PERMISSION FROM ASSOCIATED ENGINEERING. ASSOCIATED ENGINEERING ACCEPTS NO LIABILITY FOR PROHIBITED APPLICATION OF THE CONTENT OF THESE DRAWINGS: 6103-117-230-284
- ANY DESIGN CHANGES PROPOSED DURING CONSTRUCTION SHALL REQUIRE PRIOR WRITTEN APPROVAL FROM THE COORDINATING REGISTERED PROFESSIONAL.

## GEOTECHNICAL

6103-117-230-285

I. GEOTECHNICAL ENGINEERING IS NOT INCLUDED WITHIN THE SCOPE OF SERVICES BEING PROVIDED BY ASSOCIATED ENGINEERING (B.C.) LTD. THEREFORE THIS DESIGN HAS BEEN PREPARED WITHOUT THE BENEFIT OF GEOTECHNICAL FIELD INVESTIGATION OR ADVICE. GROUND CONDITIONS MAY VARY. THE FOUNDATION REQUIREMENTS MAY NEED TO BE MODIFIED TO ACCOMMODATE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION. ASSOCIATED ENGINEERING (B.C.) LTD. ACCEPTS NO LIABILITY OR RESPONSIBILITY FOR DELAY OR ADDITIONAL COSTS THAT MAY RESULT IF GROUND CONDITIONS VARY FROM THOSE ASSUMED. PLEASE CONTACT ASSOCIATED ENGINEERING (B.C.) LTD. IF GEOTECHNICAL DATA AND RECOMMENDATIONS ARE AVAILABLE FOR THIS BRIDGE CROSSING OR IF THE OWNER WISHES TO EXPAND THE ENGINEERING SERVICES TO INCORPORATE THIS EXTRA WORK.



#### BRIDGE DESIGN

- 1. CONFORM TO CAN/CSA-S6-14 (MODIFIED FOR INDUSTRIAL BRIDGES).
- 2. BRIDGE DESIGN LIFE IS 75 YEARS.
- LOADING: BIS INDUSTRIES' 4 TRAILER 310T DPRT (430,338 kg GVW).

AXLE LOAD: 177 kN 505 kN 674 kN 505 kN 505 kN 674 kN 505 kN 674 kN 505 kN 674 kN SPACING: 6m 7.95m 10.53 7.53m 6.96m 7.73m 8.96m

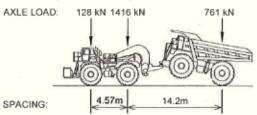
OCCASIONAL LOADING:

EMPTY 785D TRUCK (117,597 kg GVW).

EMPTY 777F TRUCK (73,976 kg GVW).

TOW HAUL MODIFIED CAT 777F WITH 116,763 lbs GVW LOWBOY) & LOADER 992K (97,499 kg GVW) - APPROX. 214,364 kg GVW TOTAL. TOW HAUL (MODIFIED CAT 777F WITH RGS/LPM-120-42-20 LOWBOY) & PAYLOAD PC1250-7 (112,225 kg GVW) - APPROX. 229,090 kg GVW TOTAL.

TOW HAUL (MODIFIED 777F) & 785D.



- MAXIMUM TRUCK DRIVING ECCENTRICITY: 400mm
- 6. 777F AND 785D TRUCK DRIVING ECCENTRICITY: 300mm
- WHEEL LOADS 50% OF AXLE
- FATIGUE: DESIGN TO BE COMPLETED IN ACCORDANCE WITH CAN/CSA-S6-14 -250,000 CYCLES.
- 9. THE FOOTINGS HAVE BEEN DESIGNED FOR A 300 kPa MAXIMUM SERVICE LIMIT STATE COMBINATION 1 AND 470 kPa MAXIMUM ULTIMATE LIMIT STATE COMBINATION 1 BEARING PRESSURES IN ACCORDANCE WITH SECTIONS 3 AND 6 OF CAN/CSA-S6-14. THE OWNER SHALL CONFIRM THAT THE FOUNDATION MATERIALS PROVIDE THIS RESISTANCE PRIOR TO INSTALLATION OF FOUNDATIONS. THE OWNER SHALL BE RESPONSIBLE TO STIPULATE MEASURES TO MEET THE DESIGN REQUIREMENTS AND CONSULT THE BRIDGE DESIGN ENGINEER AS REQUIRED. THE COORDINATING REGISTERED PROFESSIONAL SHALL INCLUDE THE PRESCRIBED MEASURES IN THE CERTIFICATION DOCUMENT.
- GIRDERS TO BE FABRICATED AS FRACTURE CRITICAL COMPONENTS IN ACCORDANCE WITH CAN/CSA-S6-14 AND CSA W59.
- 11. GUARDRAIL DELINEATES DECK EDGE ONLY.
- BEARING DISPLACEMENT TO BE CENTERED AT THE TIME OF GIRDER INSTALLATION. (ASSUMED INSTALLATION TEMPERATURE RANGE: -35°C TO +15°C)
- ALL PRECAST CONCRETE ELEMENTS TO BE LIFTED USING APPROPRIATE SLINGS. MAXIMUM SLING ANGLE 30°.



14. THE BRIDGE HAS BEEN DESIGNED FOR THE FOLLOWING MAXIMUM CONSTRUCTION LOADS:

SELF WEIGHT OF THE STRUCTURE, SUPPORTED AT THE BEARINGS, INCLUDING ALL DECK PANELS IN POSITION BUT UN-GROUTED.

A VERTICAL LIVE LOAD OF 640 kN (110,000 lbs EQUIPMENT + 150 kN PANEL) DISTRIBUTED OVER A LENGTH OF 4m, POSITIONED ON THE BRIDGE TO PRODUCE THE MAXIMUM EFFECT; THE LOAD IS ASSUMED CENTERED ON THE ROADWAY AND THAT THE MACHINE TRAVELS AT CRAWL SPEED TO MINIMIZE DYNAMIC LOAD EFFECTS.

 THE GIRDERS HAVE BEEN DESIGNED FOR ERECTION WHEN THE WIND SPEED IS LESS THAN 10 km/hr.

### MATERIALS

2. STRUCTURAL BOLTS:

6. STEEL FABRICATION:

1. STEEL: TO CSA G40.21M

ALL STEEL FABRICATION, INCLUDING QUALITY CONTROL AS PER

CAN/CSA S6-14.

PLATE:

GRADE 350AT CAT 3 PLATE (FOR STEEL GIRDERS)

GRADE 350A (OTHER STRUCTURAL STEEL)

SECTIONS: GRADE 350A

HSS: GRADE 350A (UNCOATED)

GRADE 350W (COATED)

ASTM A325 TYPE 3, 22 DIAMETER U.N.O., INSTALLED BY "TURN-OF-NUT" METHOD IN ACCORDANCE WITH CAN/CSA-S6-14.

3. ANCHOR BOLTS: ASTM A193 GRADE B7 THREADED ROD.

4. CURB ANCHORS: ASTM A307 GRADE B GALV.

STUDS: ASTM A108 GRADE 1015, 1018 OR 1020.

FABRICATOR TO BE CERTIFIED FOR DIVISION 1 OR 2, IN ACCORDANCE WITH CSA W47.

ALL WELDS TO BE COMPLETED IN ACCORDANCE WITH CSA W59.

WELD TESTING / INSPECTION TO BE COMPLETED AS PER CAN/CSA S6-14,

PARTICULARLY CLAUSE A10.1.8. LONGITUDINAL STIFFENER - WEB CONNECTION TO BE TESTED AS PER CAN/CSA S6-14 CLAUSE A10.1.8.2(C).

MIN. 6mm FILLET WELD UNLESS OTHERWISE NOTED. FIELD WELDING BY COMPANY CERTIFIED TO CSA W47.1.

SPLICE: , GIRDER SPLICE FAYING SURFACE SHALL BE BLAST CLEANED TO MEET THE

REQUIREMENTS FOR CLASS "B" SURFACE, IN ACCORDANCE WITH

CAN/CSA-S6-14.

8. PAINTING: SUPERSTRUCTURE: ALL HSS SECTIONS TO BE PAINTED WITH 2 COATS

AMERLOCK 400 AS PER MANUFACTURERS SPECIFICATIONS.

(SURFACE PREPARATION SSPC-SP6).

COLOR: BY OWNER.

9. GALVANIZING: HARDWARE TO BE GALVANIZED TO ASTM A123M AND ASTM A385, AS NOTED

ON DRAWINGS.

SAFEGUARD AGAINST EMBRITTLEMENT TO ASTM PRACTICE A143.

MINIMUM 610 g/m2 THICKNESS OF COATING.

10. REINFORCING:

TO CAN/CSA G30.18M GRADE 400R

11. CAST-IN-PLACE CONCRETE:

CSA A23.1 EXPOSURE CLASS C1, fc = 35 MPa AT 28 DAYS.

CHAMFER ALL CORNERS 20x20 U.N.O.

PRECAST CONCRETE:

13. CONCRETE FINISHES:

CSA A23.1 EXPOSURE CLASS C1, fc = 35 MPa AT 28 DAYS.

CHAMFER ALL CORNERS 20x20 U.N.O.

PRECAST CONCRETE TO BE FABRICATED IN ACCORDANCE WITH CSA A23.4 BY

CSA CERTIFIED PLANT.

MINIMUM CONCRETE STRENGTH FOR STRIPPING = 20 MPa.
MINIMUM CONCRETE STRENGTH FOR SHIPPING AND HANDLING = 25 MPa.

MINIMONI CONC

FORMED SURFACES: SMOOTH FORMED FINISH

DECK TOP

DECK TOP SURFACE: TRANSVERSE COARSE BROOM

MIN

MIN fc' = 35 MPa AT 28 DAYS TO BE INSTALLED ACCORDING TO

MANUFACTURERS INSTRUCTIONS.

15. BEARINGS:

14. GROUT:

NATURAL RUBBER, (POLYISOPRENE) MEETING THE REQUIREMENTS OF AASHTO M251 WITH DUROMETER HARDNESS OF 60 AND CLASSIFIED AS

LOW-TEMPERATURE ZONE E, GRADE 5 MEETING THE REQUIREMENTS OF AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, TABLE 14.7.5.2-1.

LAMINAE SHALL BE MADE OF MILD STEEL WITH A MINIMUM YIELD STRENGTH OF

230 MPa OR OTHER APPROVED MATERIAL.

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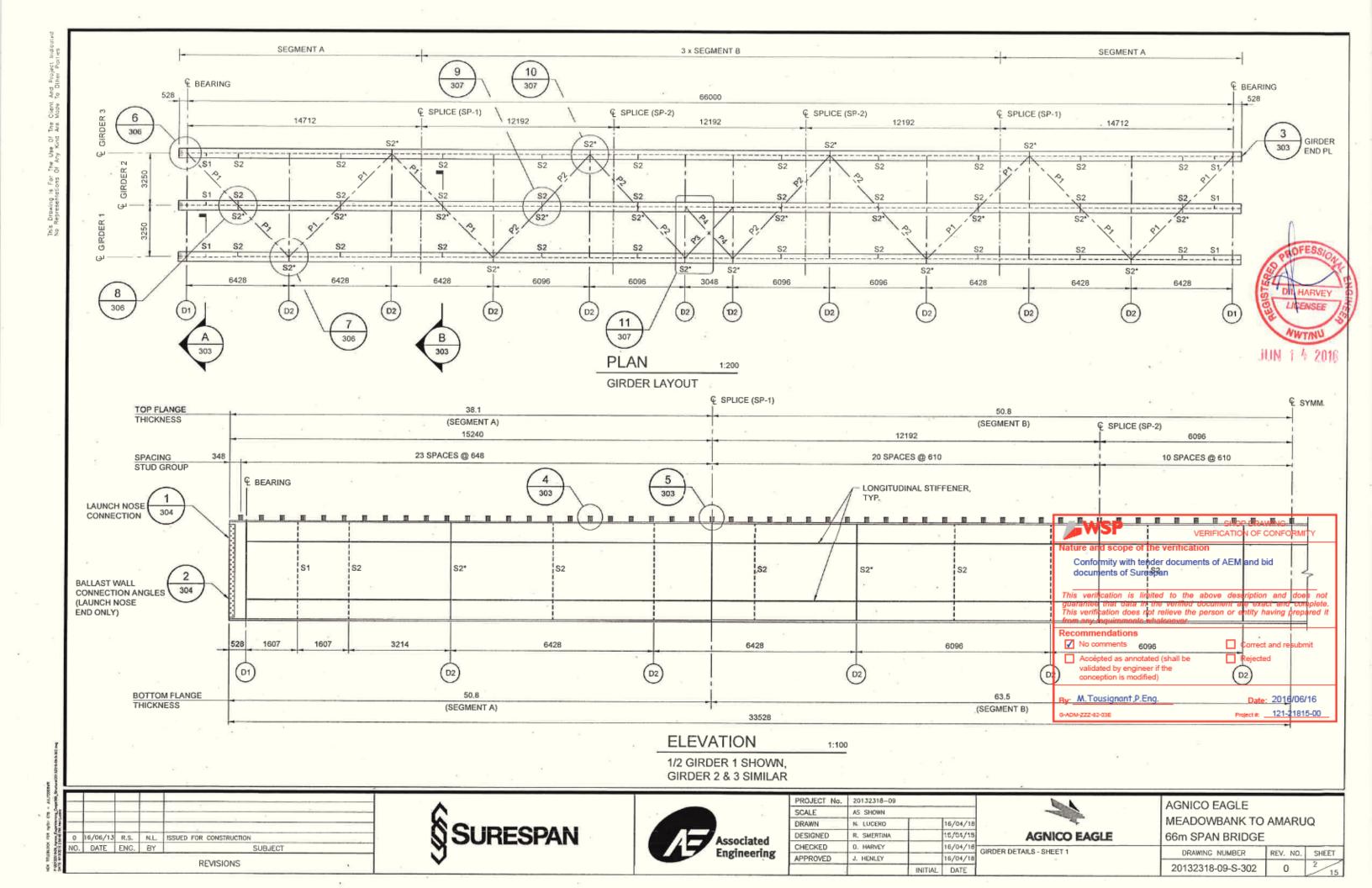
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SCALE	AS SHOWN		
DRAWN	N. LUCERO		16/04/18
DESIGNED	R. SMERTINA		16/04/18
CHECKED	D. HARVEY		16/04/18
APPROVED	J. HENLEY		16/04/18
		INITIAL	DATE

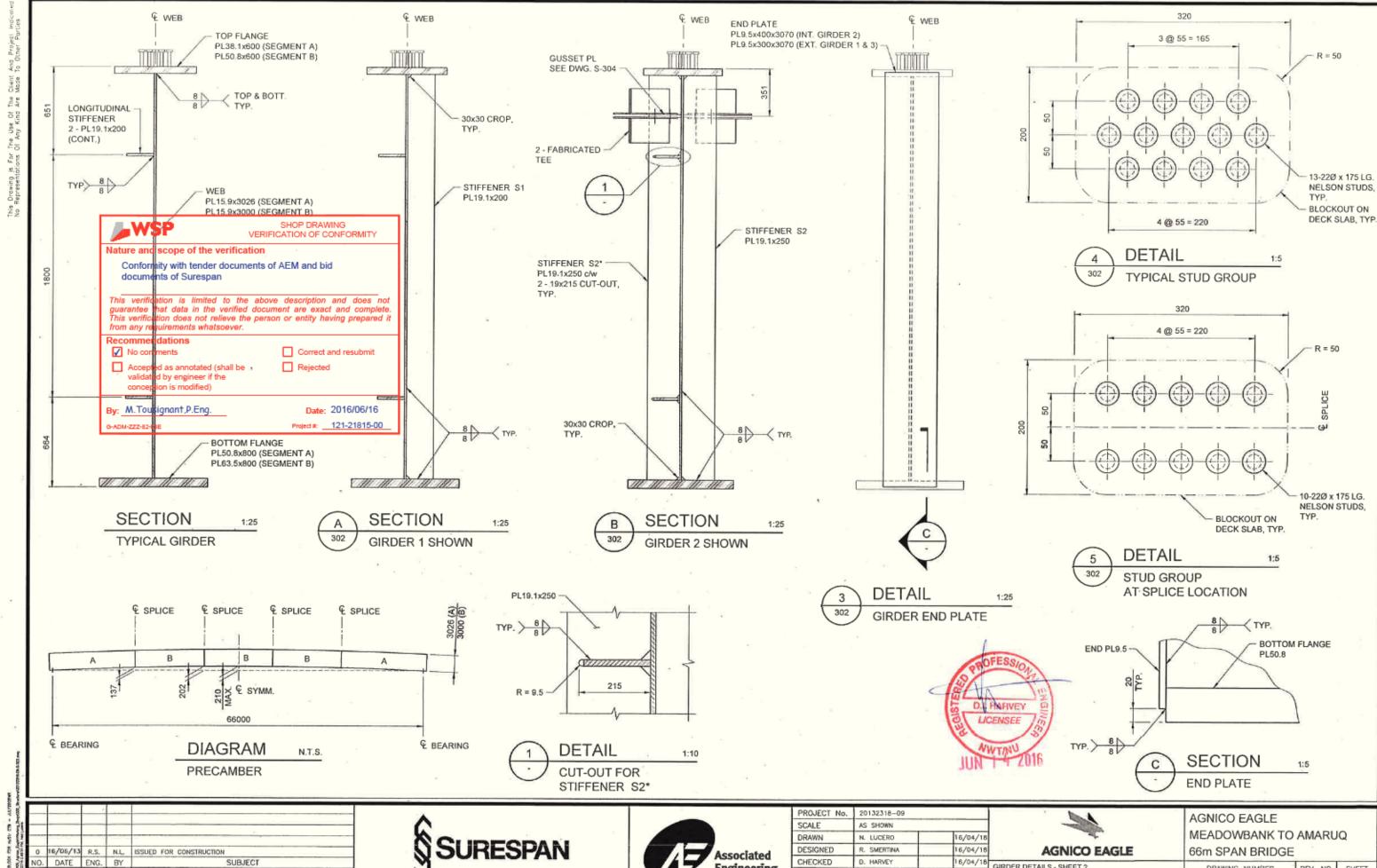


AGNICO EAGLE MEADOWBANK TO AMARUQ 66m SPAN BRIDGE

ENERAL NOTES

DRAWING NUMBER REV. NO. SHEET 20132318-09-S-301 0 1





Engineering

APPROVED

J. HENLEY

GIRDER DETAILS - SHEET 2

6/04/18

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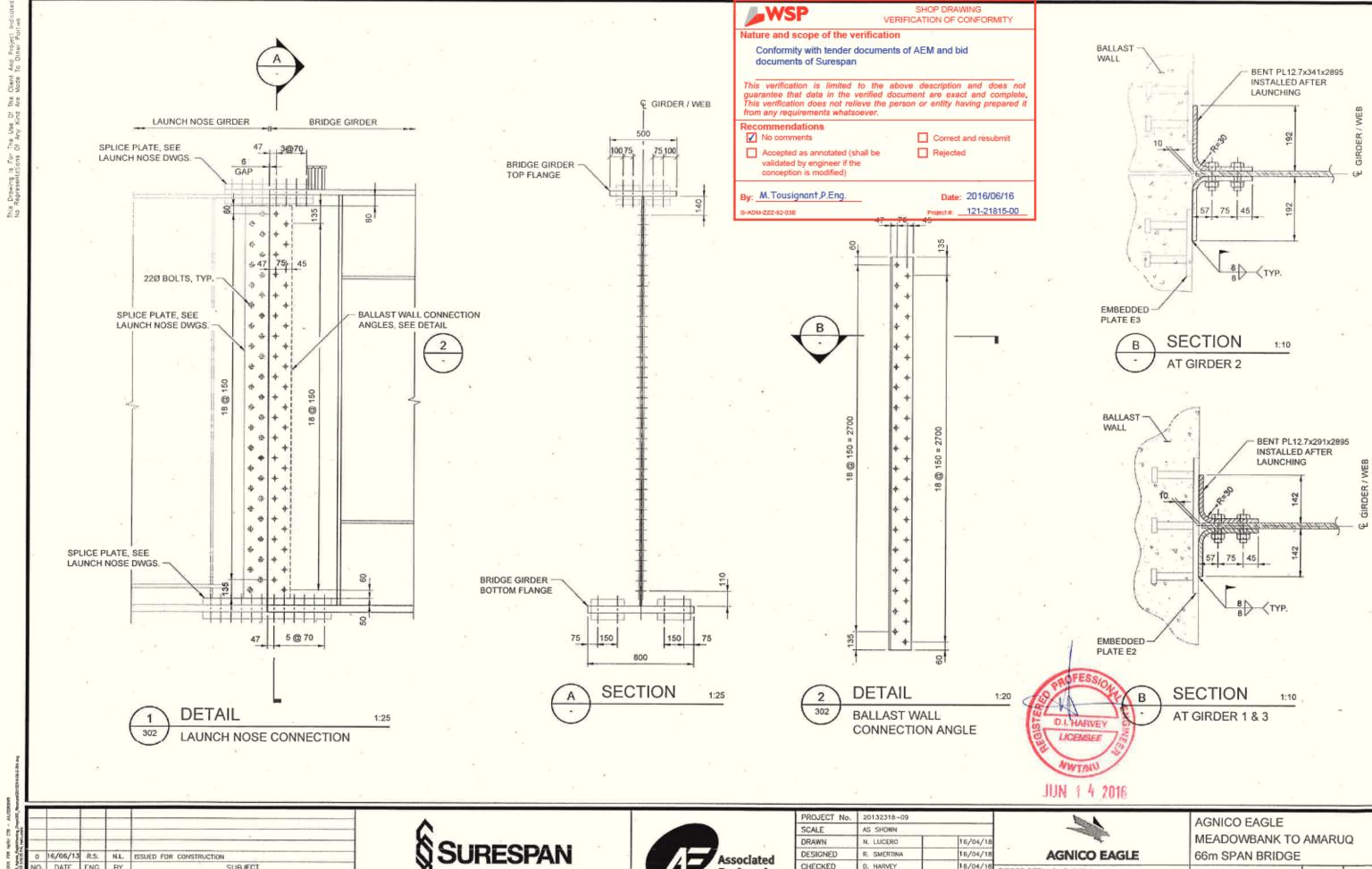
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CHECKED

APPROVED

Engineering

D. HARVEY

J. HENLEY

16/04/18

16/04/18

INITIAL DATE

GIRDER DETAILS - SHEET 3

DRAWING NUMBER

20132318-09-S-304

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APPROVED	J. HENLEY		16/04/18	""
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	66m SPAN BRIDGE
	MEADOWBANK TO AMARUQ
	AGNICO EAGLE

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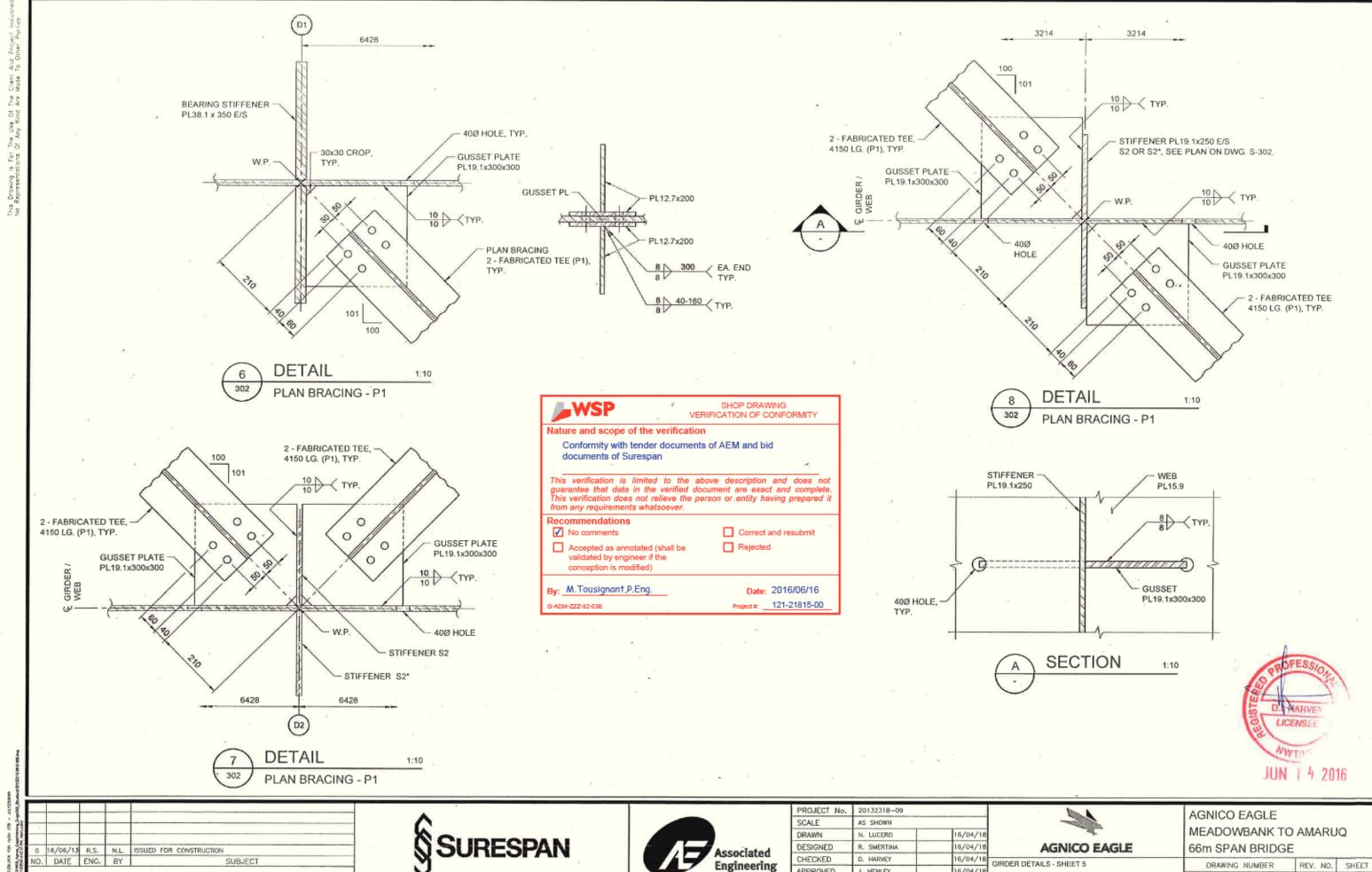
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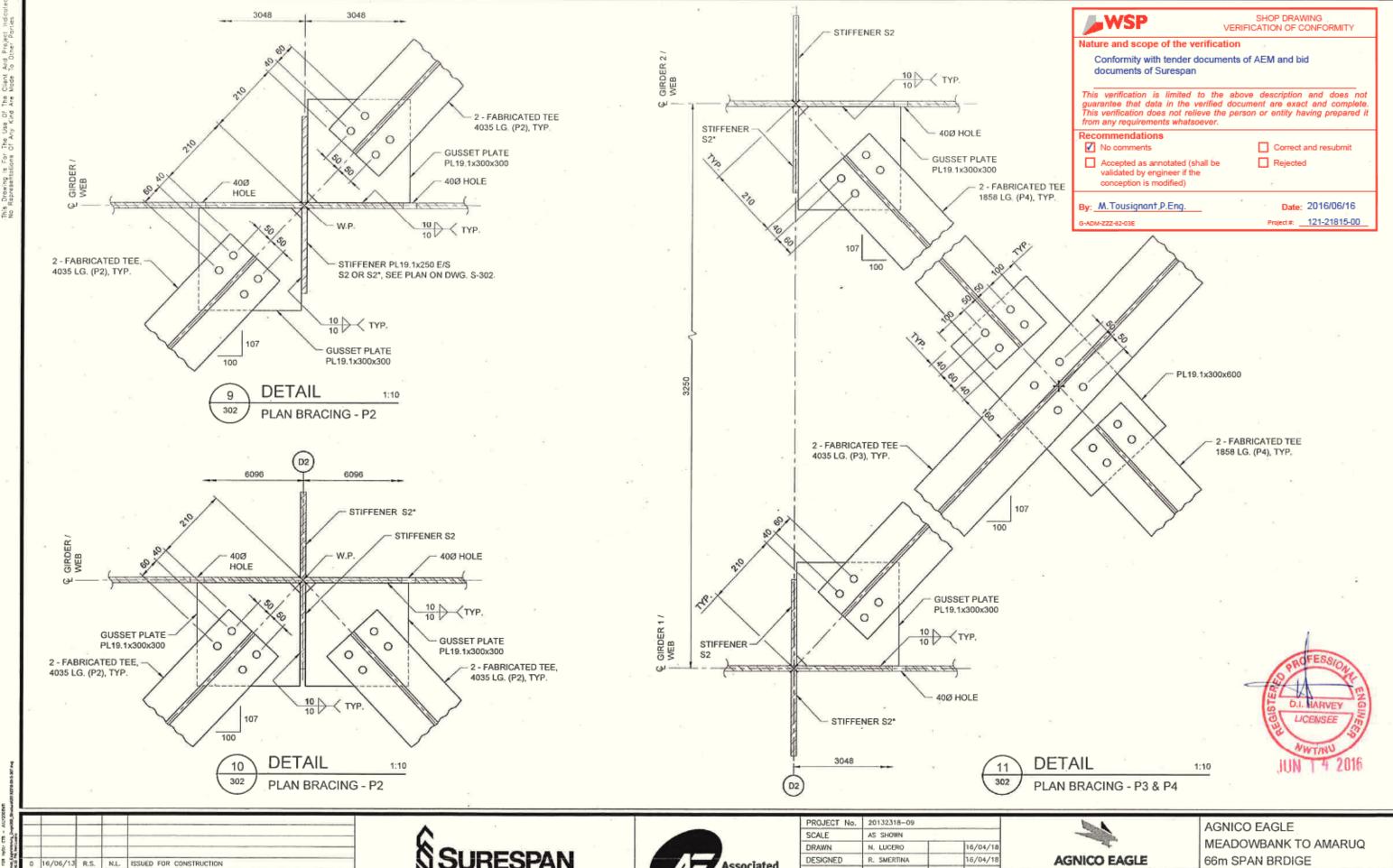
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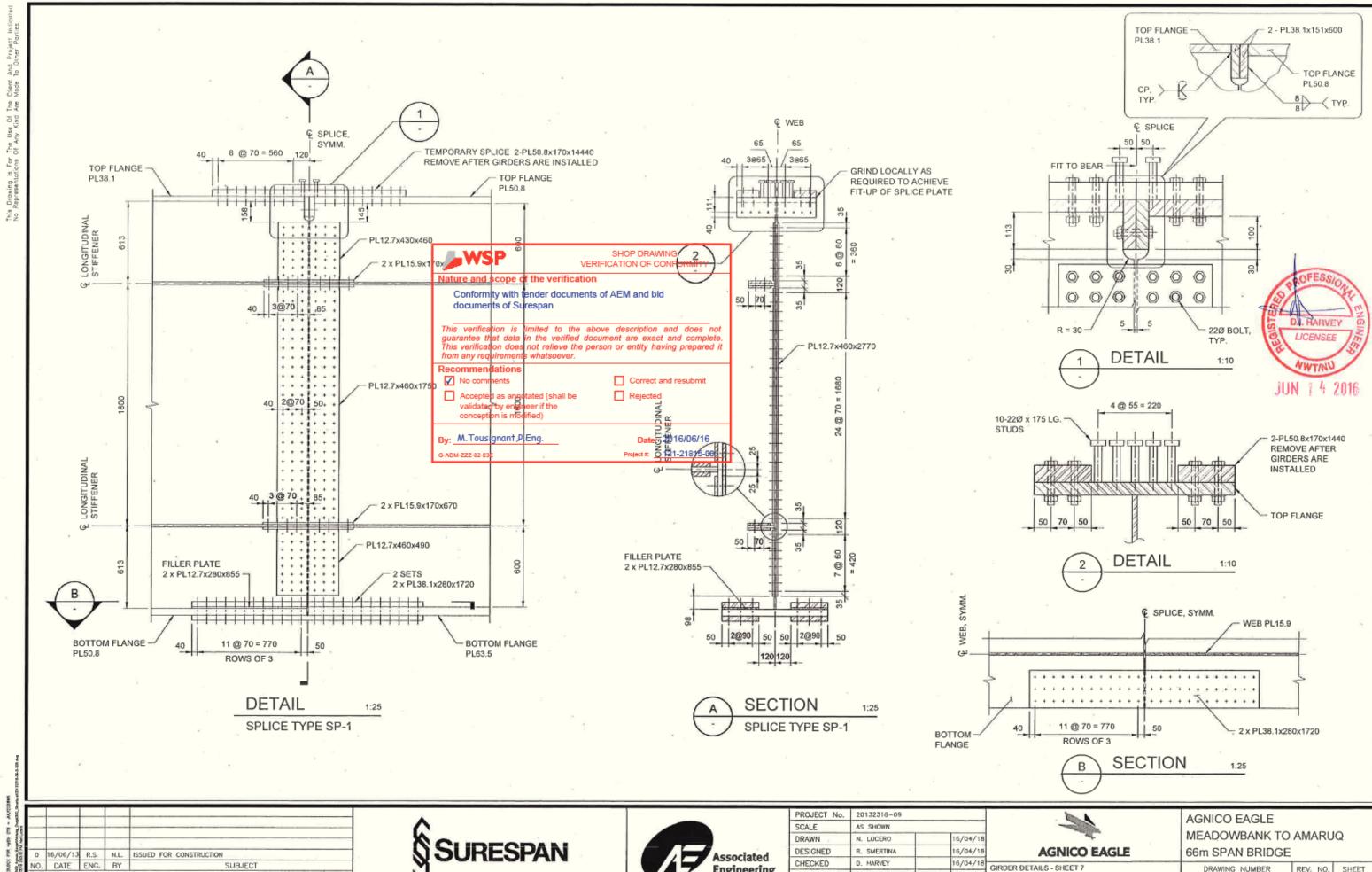
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DRAWN	N. LUCERO		16/04/18	
DESIGNED	R. SMERTINA		16/04/18	
CHECKED	D. HARVEY		16/04/18	GIRD
APPROVED	J. HENLEY		16/04/18	Jane
		INITIAL	DATE	1

DER DETAILS - SHEET 6 DRAWING NUMBER

REV. NO. SHEET 20132318-09-S-307 0



Engineering

APPROVED

16/04/18

INITIAL DATE

REV: NO.

20132318-09-S-308

SHEET