

PLANS OF PROPOSED P.P.C.C. BRIDGE OVER ON

LENGTH 36 394 OUT TO OUT OF ABUTMENT PRECAST BACKWALL PANELS

SUPERSTRUCTURE THREE SIMPLY SUPPORTED SPANS OF PRECAST PRESTRESSED CONCRETE CHANNEL GIRDERS WITH ASPHALT OVERLAY

SUBSTRUCTURE TWO PRECAST CONCRETE ABUTMENTS AND TWO INTERMEDIATE BENT WITH STEEL H-FILES

ROADWAY WIDTH 8 400 OUT TO OUT OF GIRDERS

LOCATION IN R.M. OF

SHEET LEGEND

1. COVER SHEET
2. GENERAL ELEVATION
3. BORING LOGS
4. SITE AND EROSION CONTROL DETAILS
5. ASSEMBLY DETAILS
6. ASSEMBLY DETAILS
7. STEEL PILE CAP DETAILS
8. STEEL PILE CAP DETAILS
9. BEARING AND ERECTION DETAILS
10. RAILING LAYOUT AND DETAILS
11. RAILING DETAILS
12. RAILPOST DETAILS

- P1. PRECAST PANEL DETAILS
- P2. PRECAST PANEL DETAILS

- G1. PRECAST PRESTRESSED CHANNEL GIRDER DETAILS
- G2. PRECAST PRESTRESSED CHANNEL GIRDER DETAILS
- G3. PRECAST PRESTRESSED CHANNEL GIRDER DETAILS
- G4. PRECAST PRESTRESSED CHANNEL GIRDER DETAILS
- G5. PRECAST PRESTRESSED CHANNEL GIRDER DETAILS

DESIGN DATA

SPECIFICATIONS

AASHTO LRFD Bridge Design Specifications, First Edition, 1994 plus 1996/97 Interims

VEHICULAR LIVE LOADING

1. Modified AASHTO HSS-25 Truck
2. AASHTO LRFD "HL-93" Loading

STRUCTURAL CONCRETE

CSA A23.1, Exposure Class C-1 Air content category 1

1. PRECAST PRESTRESSED CONCRETE CHANNEL GIRDERS - $f_c = 45$ MPa at 28 days $f_{ci} = 35$ MPa at time of de-stressing
2. PRECAST PANELS - $f_c = 35$ MPa

REINFORCING STEEL

1. PRECAST PRESTRESSED CONCRETE CHANNEL GIRDERS - CAN/CSA-G30.18-M92 Grade 400W black (i.e no epoxy coating)
2. PRECAST PANELS - CAN/CSA-G30.18-M92 Grade 400W black (i.e no epoxy coating)

STRUCTURAL STEEL

1. All Structural Steel shall conform to CAN/CSA G40.21-M92 Grade 300W
2. HSS Tubing for Bridge Rail shall conform to CAN/CSA- G40.21-M92 Grade 350W

PRESTRESSING STRAND

20-13 # low relaxation strands, $f_{pu} = 1860$ MPa

PILE LOADING

MAXIMUM FACTORED LOAD FACTORED BEARING RESISTANCE	END PILE BENTS 582 kN	INTERMEDIATE PILE BENTS 531 kN
		

HYDRAULIC DESIGN DATA

DESIGN DISCHARGE

Q m^3/sec

SURVEY CONTROL

HORIZONTAL DATUM: NAD83CSRS

VERTICAL DATUM: CGVD28

ELLIPSOID: GRS 1980

GEOID (HT2.0): _____

UTM: ZONE _____

SCALE FACTOR: _____

SITE CONTROL POINT DATA

CONTROL POINT # _____	NORTHING: _____	EASTING: _____	ELEVATION: _____	DATE: _____
CONTROL POINT # _____	NORTHING: _____	EASTING: _____	ELEVATION: _____	DATE: _____
CONTROL POINT # _____	NORTHING: _____	EASTING: _____	ELEVATION: _____	DATE: _____



TP. -
PLACE LOCATION
MAP HERE

RGE. -
LOCATION MAP
Not to Scale

MANITOBA INFRASTRUCTURE

WATER MANAGEMENT AND STRUCTURES

ENVIRONMENTAL APPROVALS

- | | | |
|--------------------------|---|--------------|
| <input type="checkbox"/> | MANITOBA ENVIRONMENT ACT LICENCE | DATE : _____ |
| | FILE # : _____ | |
| <input type="checkbox"/> | FISHERIES AND OCEANS CANADA - AUTHORIZATION OR REVIEW | DATE : _____ |
| | FILE # : _____ | |
| <input type="checkbox"/> | TRANSPORT CANADA - NAVIGATION ACT | DATE : _____ |
| | FILE # : _____ | |
| <input type="checkbox"/> | MANITOBA INFRASTRUCTURE ENVIRONMENTAL APPROVAL | DATE : _____ |
| | FILE # : _____ | |
| <input type="checkbox"/> | ENVIRONMENTAL REVIEW COMPLETED | DATE : _____ |
| | COMPLETED BY : _____ | |

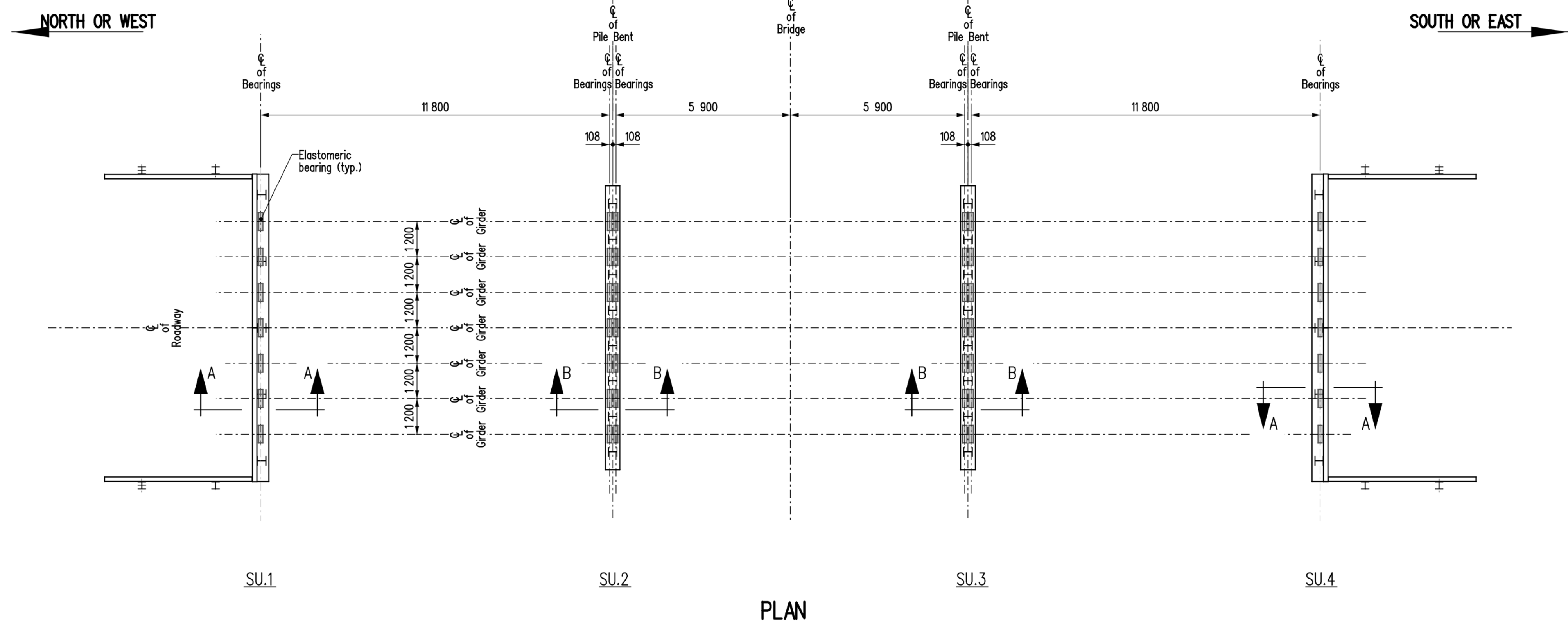
ALL DIMENSIONS ARE IN MILLIMETRES (mm) AND ALL ELEVATIONS AND STATIONS ARE IN METRES (m) UNLESS SHOWN OTHERWISE.

RELEASED FOR CONSTRUCTION BY : _____
EXECUTIVE DIRECTOR OF STRUCTURES

DATE _____

DRAWN BY: _____	DATE: _____	SHEET No. 1
CHECKED BY: _____	DATE: _____	SITE No. _____





PLAN

BILL OF BEARINGS			8 400 ROADWAY WIDTH - 3 SPAN	Site No.
No.	LOCATION	DESCRIPTION	REMARKS	
42	SU.1 - SU.4	Elastomeric bearings	As detailed	

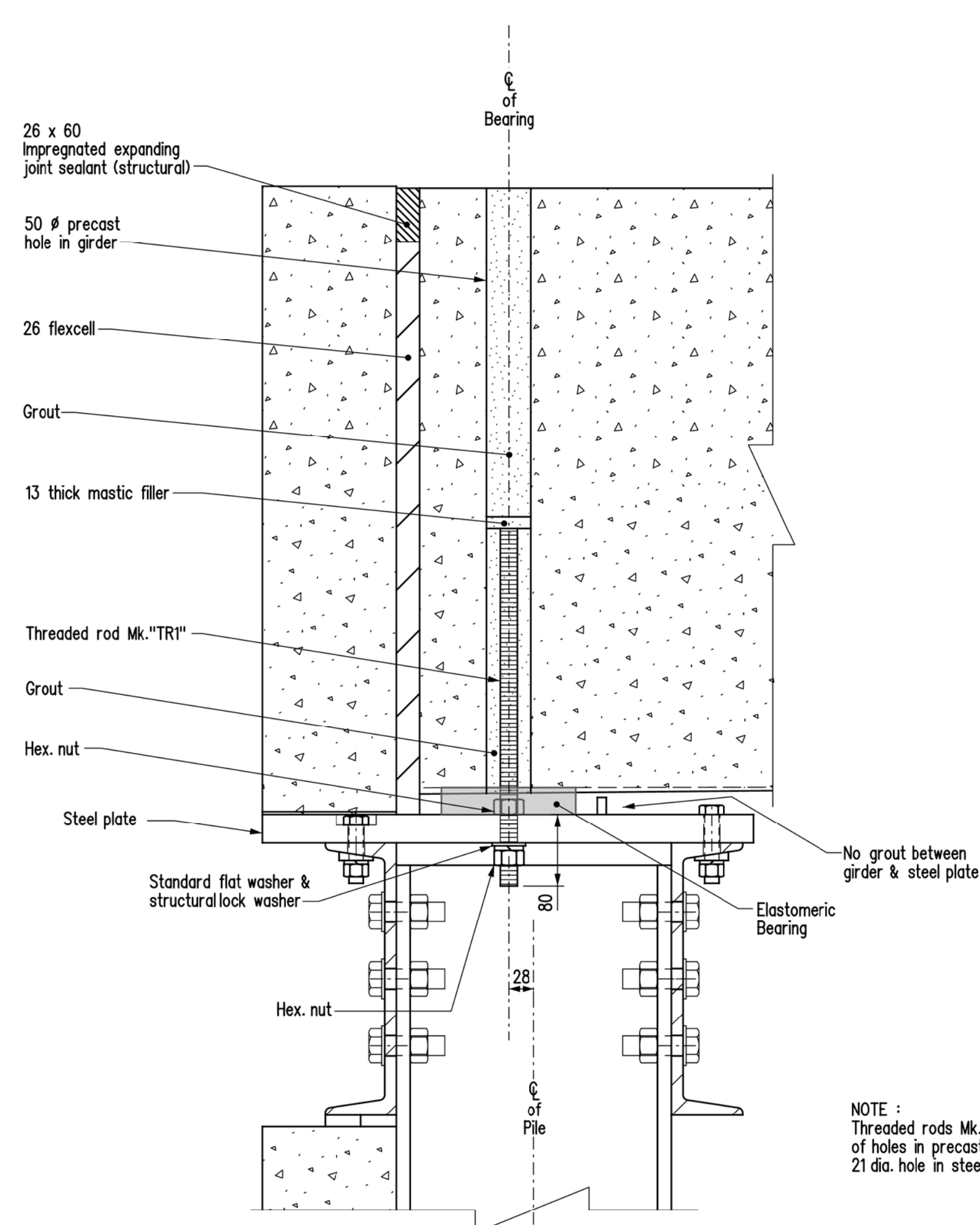
NOTE:

- Elastomer shall be natural rubber. Elastomer shall be AASHTO low temperature Grade 5 with a minimum shear modulus $G \geq 0.9$ MPa and a 60 durometer Shore A hardness.
- Internal steel reinforcing plates for laminate bearings shall be rolled mild steel with a minimum yield strength of 300 Mpa.

PLAN
Scale 1:10

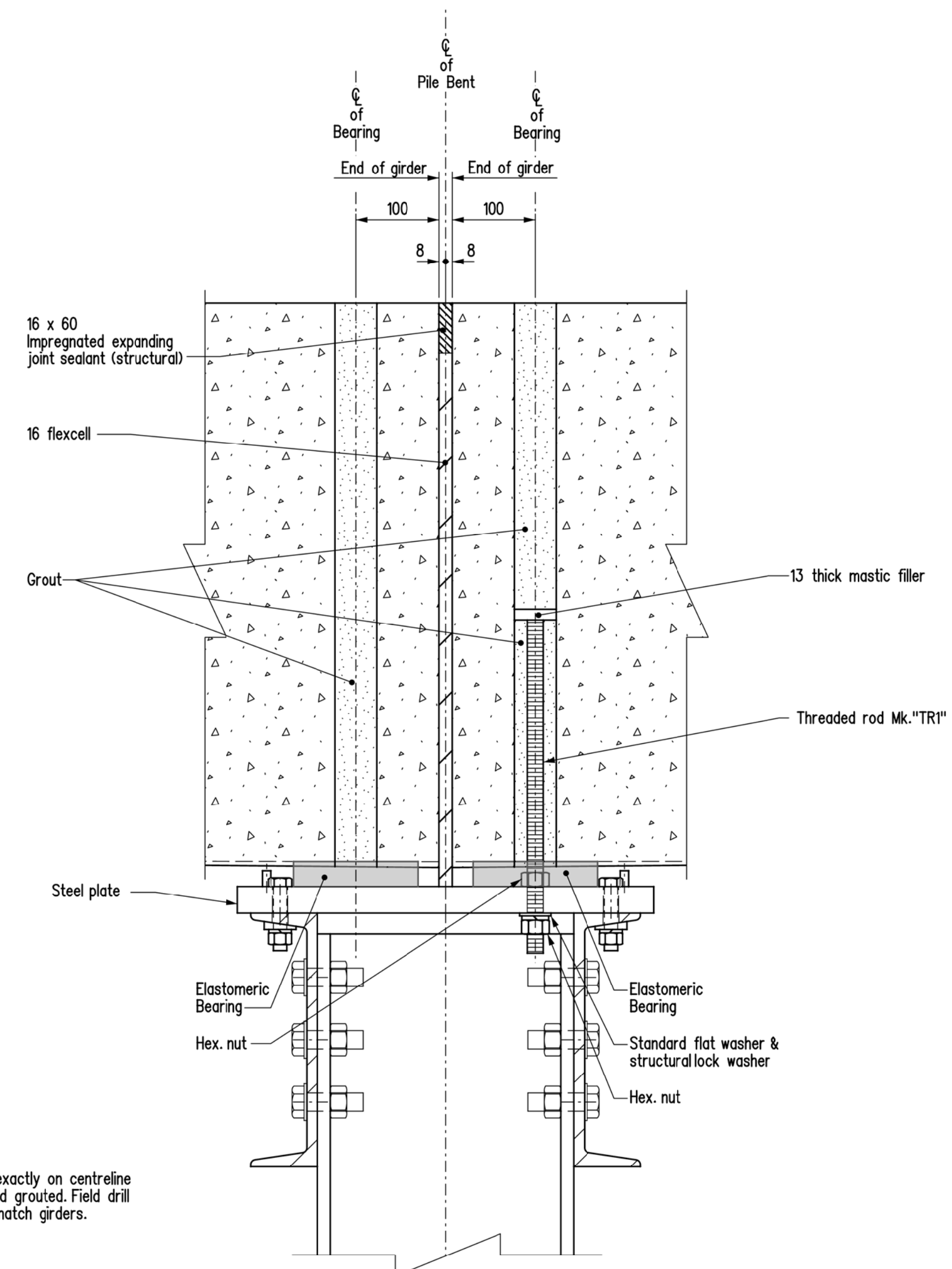
PART CROSS SECTION
Scale 1:2

ELASTOMERIC BEARINGS



SECTION "A-A"

Threaded rods at SU.1 & SU.4. See sheet No. 6 for layout. Scale 1:5



SECTION "B-B"

Threaded rods at SU.2 & SU.3. See Sheet No. 6 for layout. Scale 1:5

NOTE :
Threaded rods Mk. "TRI", set exactly on centreline of holes in precast girders and grouted. Field drill 21 dia. hole in steel plate to match girders.

NOTES:

Re: Girder Erection Operations Behind Abutment Ballast Walls

- Surcharge loading on the backfill resulting from girder erection operations shall be minimized near the precast concrete ballast walls and wingwalls.
- Where possible, girder erection equipment shall be positioned such that there are no surcharge loads behind the back face of the precast panels within a distance equal to the depth of backfill to the bottom of the panels at the time of girder erection.
- Should the Contractor propose to encroach on this zone, the following requirements must be satisfied:
 - Submit a girder erection procedure for approval outlining type, configuration, weights and locations of equipment including expected tipping forces on crane outriggers, etc.
 - Perform all precautionary measures outlined by the Department as a result of that submission.
 - All surcharge loads encroaching in this zone must be distributed over an area not less than 2.0 m².

REVISIONS		BEARING AND ERECTION DETAILS	
DATE	BY		
		<p>Infrastructure Water Management and Structures</p>	
		<p>EXECUTIVE DIRECTOR OF STRUCTURES</p> <p>DATE</p>	
		<p>SCALE: 1:100</p> <p>SHEET No. 10</p>	
		<p>or as shown</p> <p>SITE No. 111</p>	

DESIGN BY: B.A.N.

CHECKED: _____

DETAILS BY: K.P.

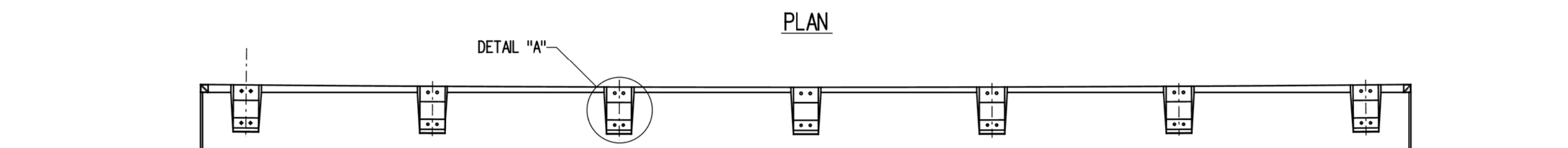
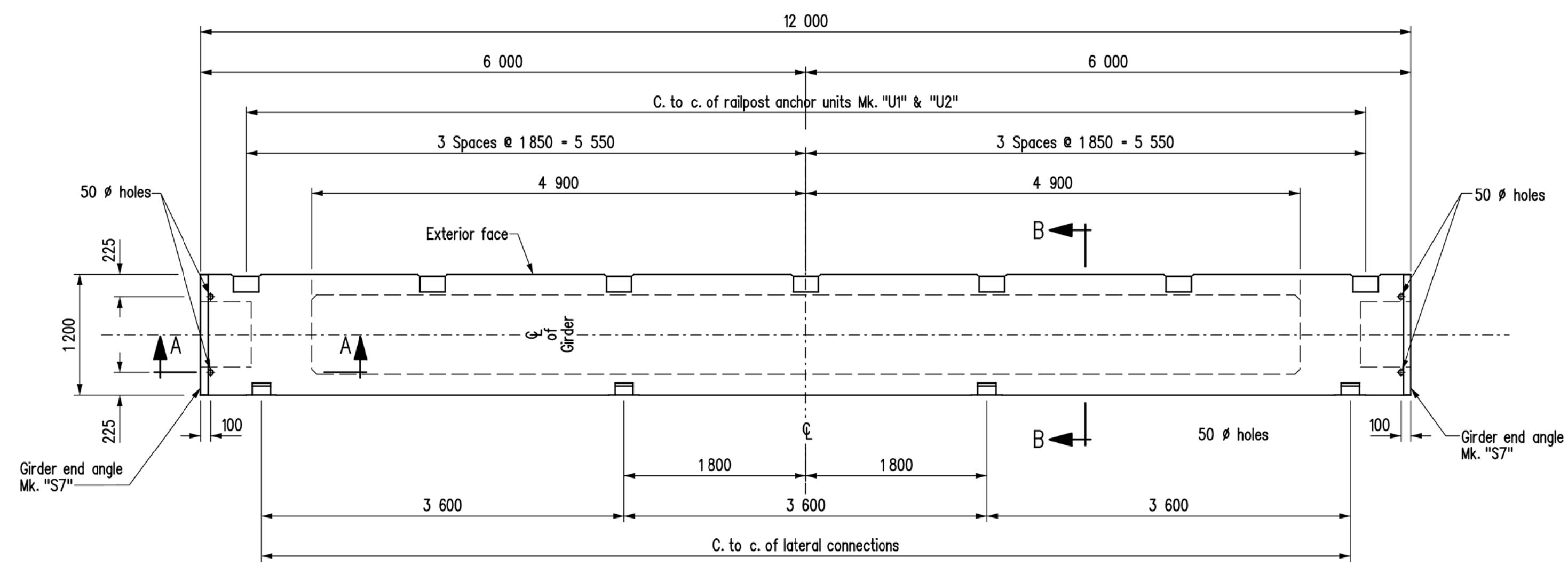
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RELEASED FOR CONSTRUCTION

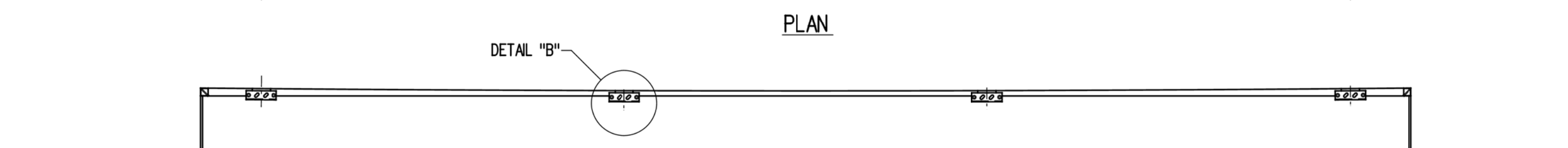
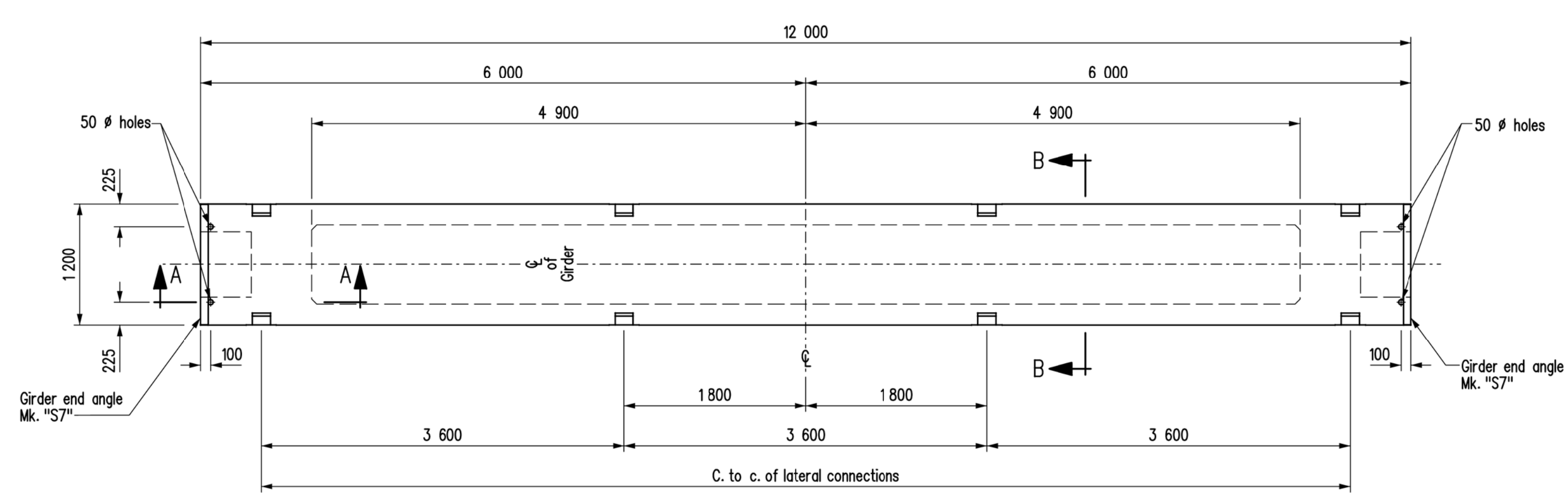
BY: _____

DATE: _____

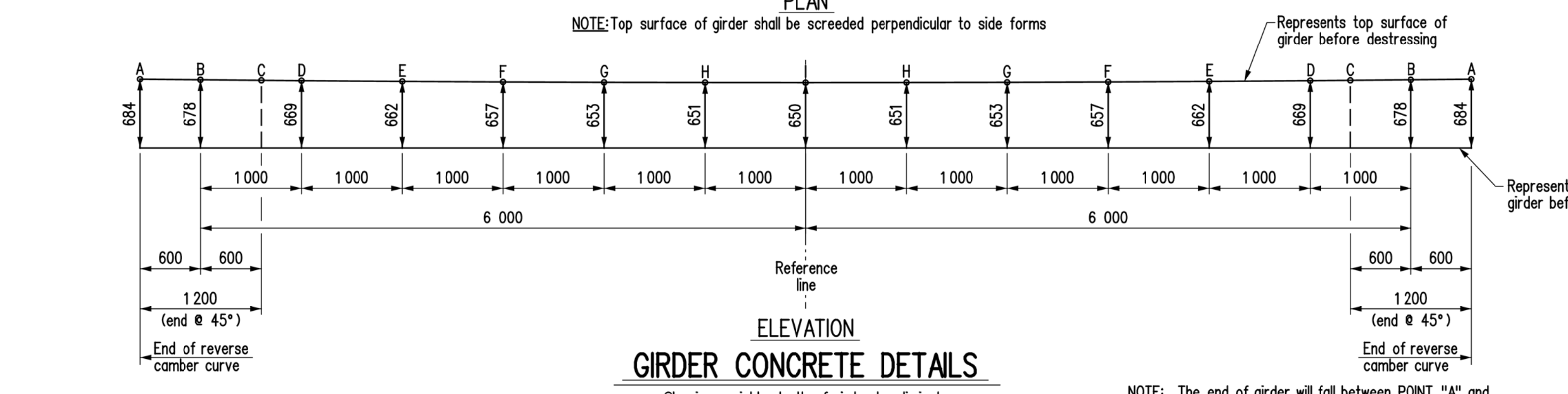
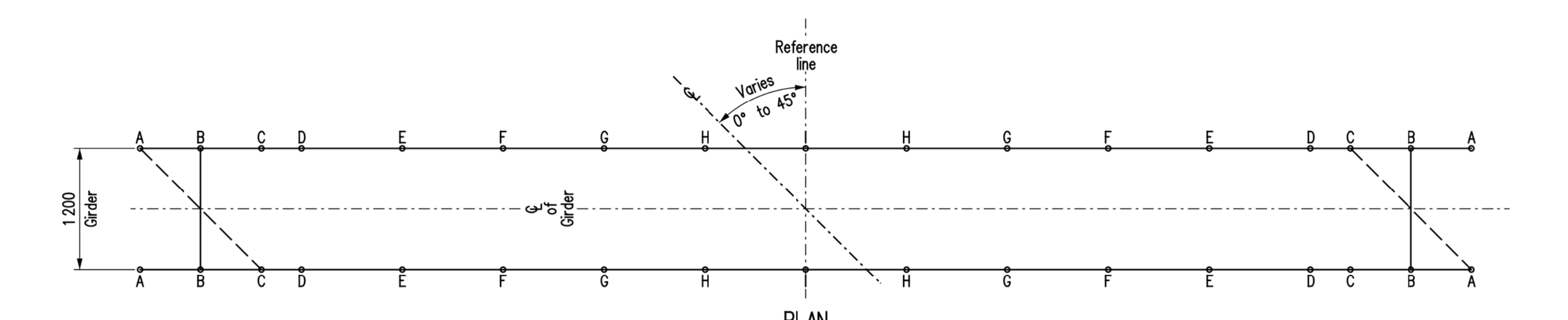
PLACE ENGINEERS ELECTRONIC SEAL HERE



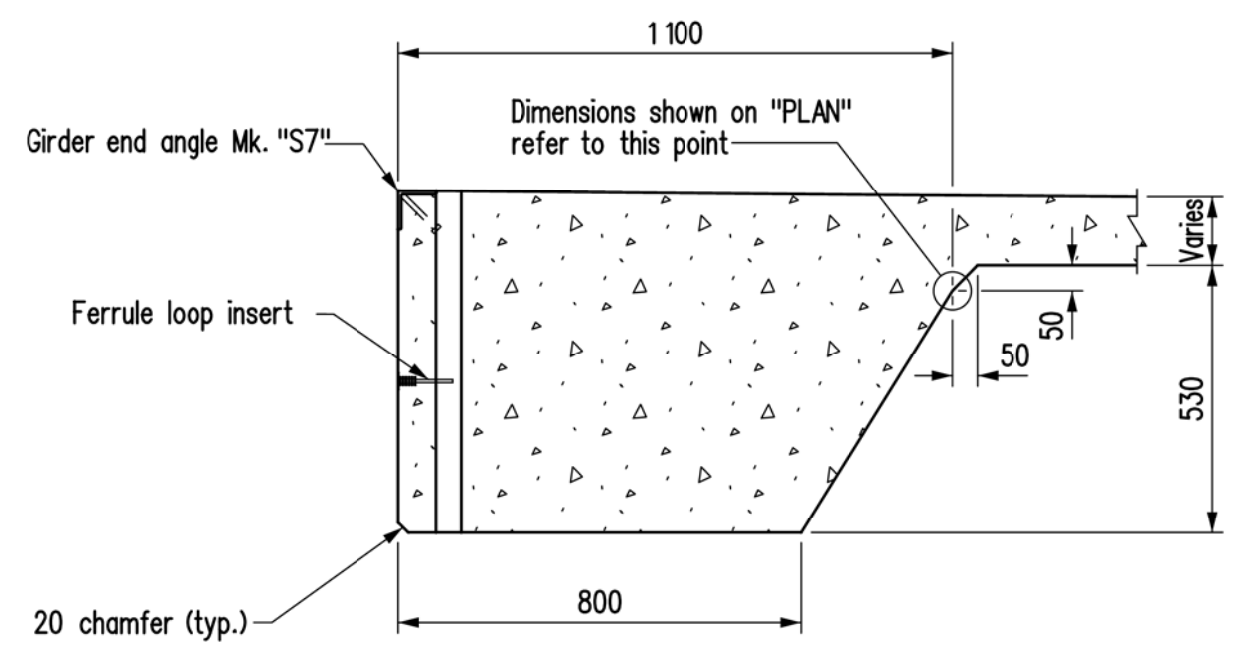
EXTERIOR GIRDER MK. "G1"



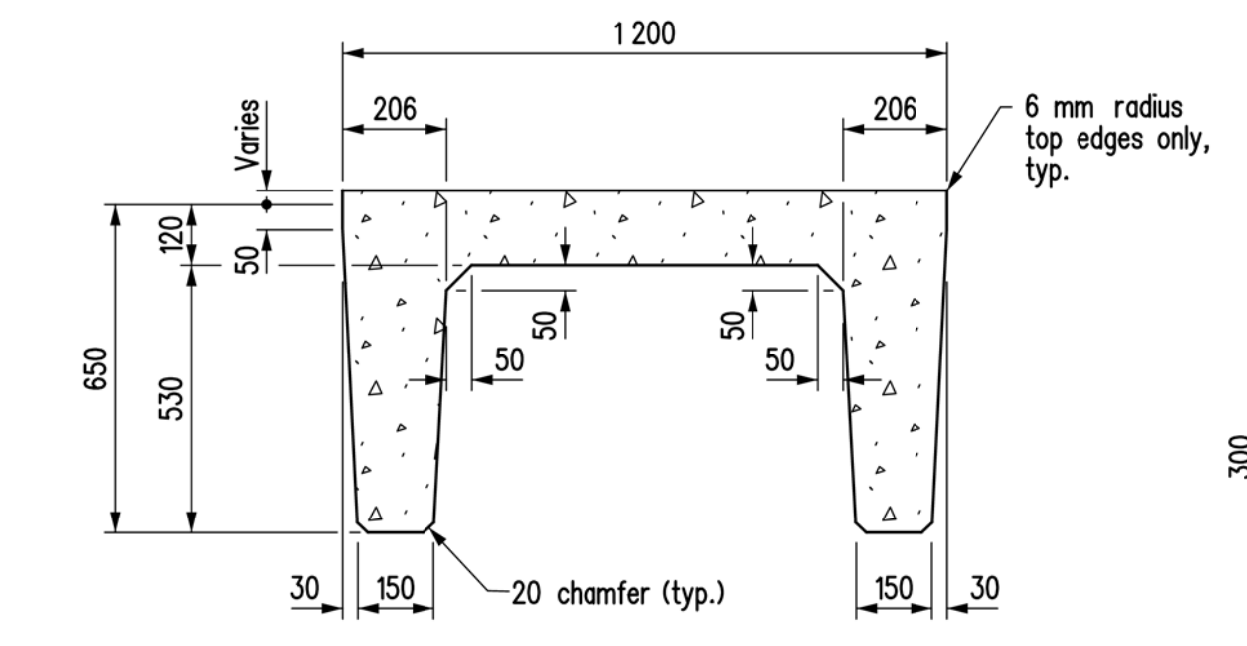
INTERIOR GIRDER MK. "G2"



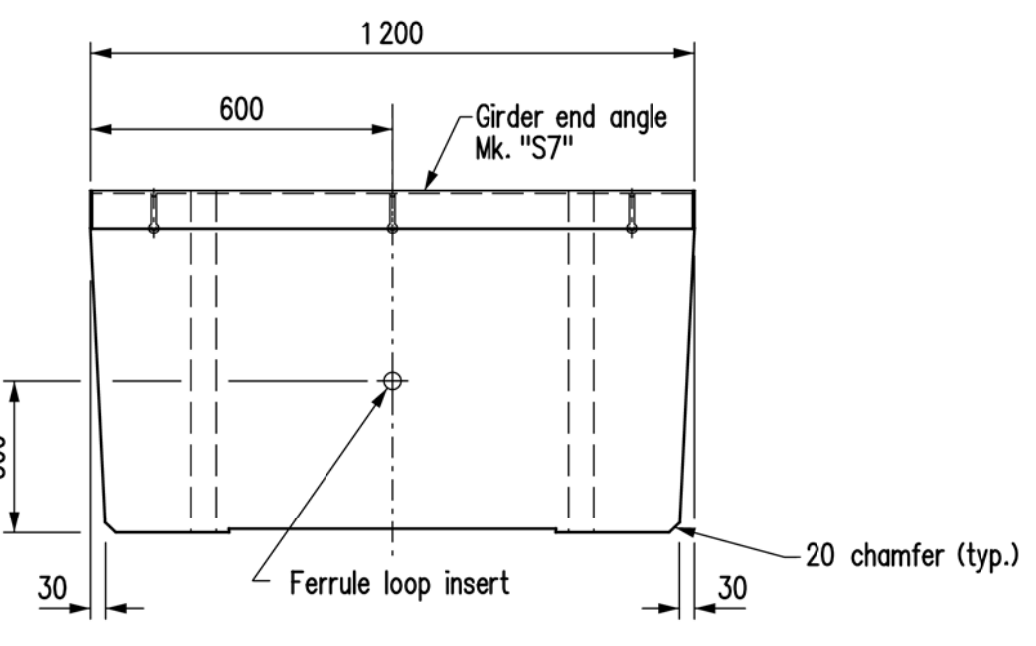
GIRDER CONCRETE DETAILS



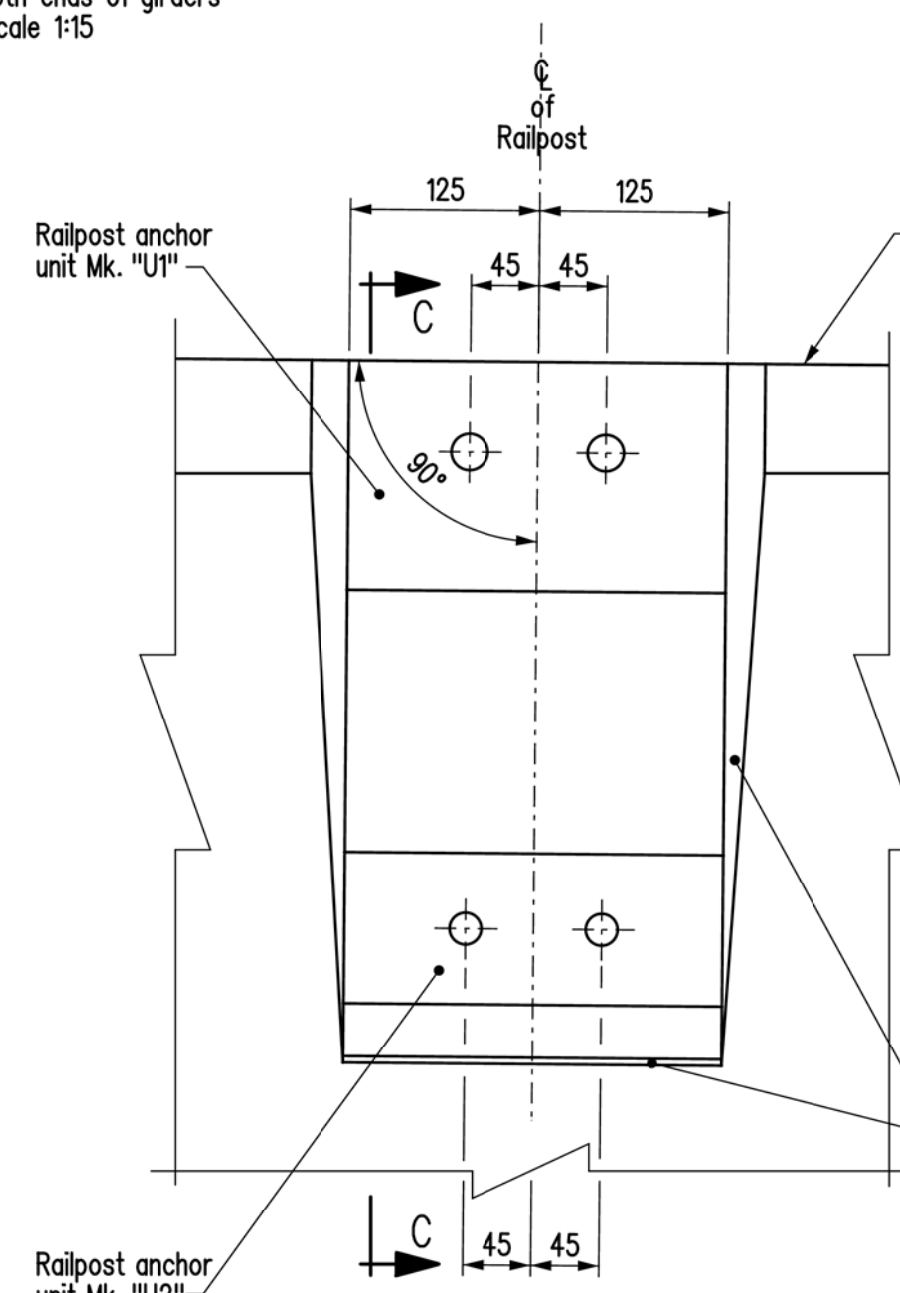
SECTION A-A



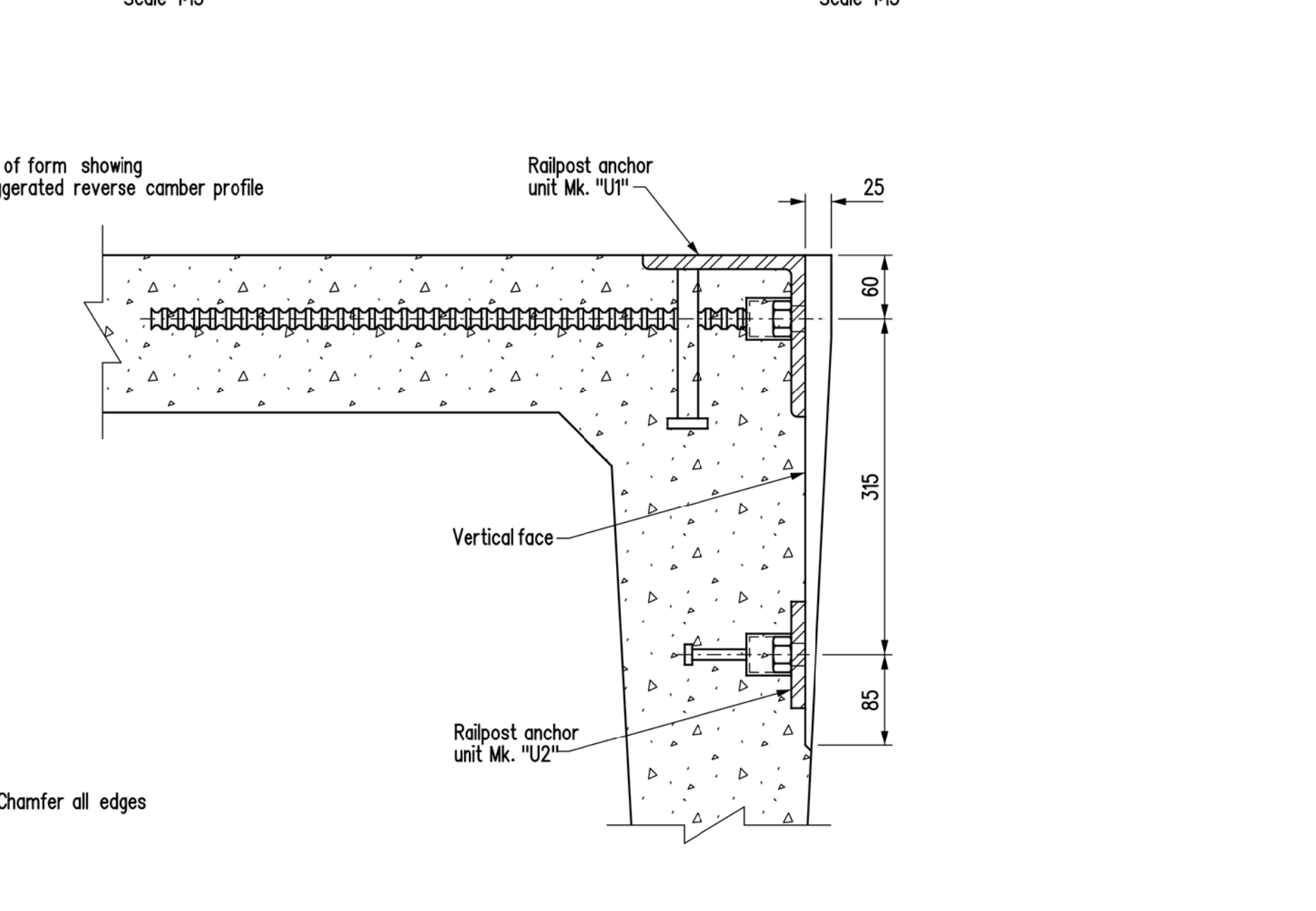
SECTION B-B



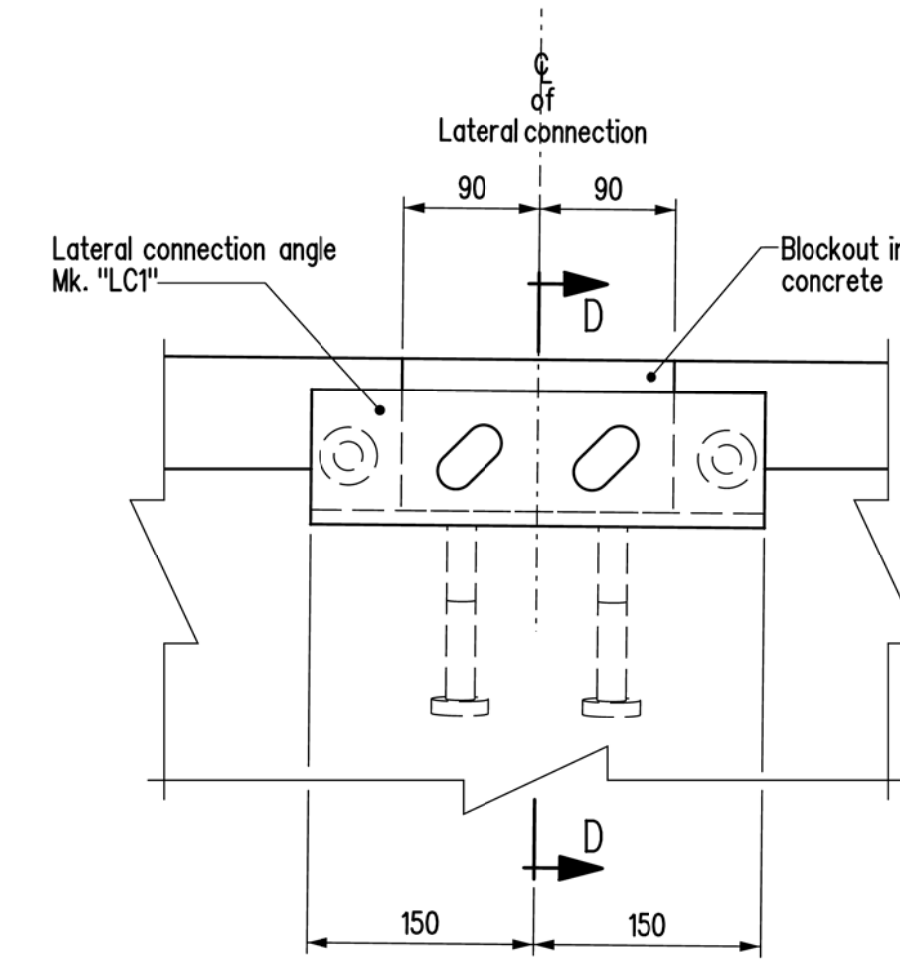
END VIEW



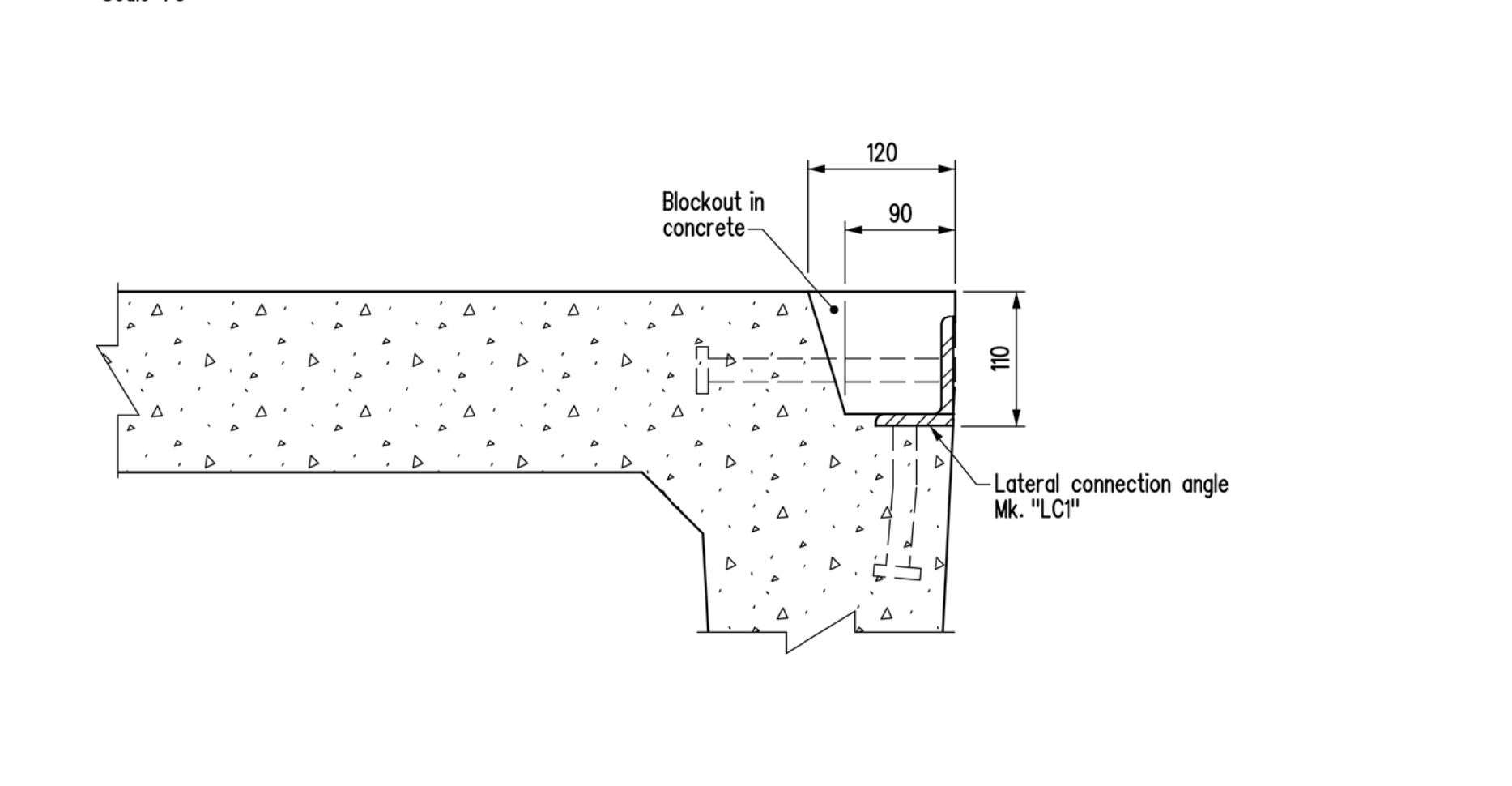
ELEVATION



SECTION C-C



ELEVATION



SECTION D-D

DETAIL "A"

DETAIL "B"

- NOTES:
- Design in accordance with AASHTO LRFD Bridge Design Specifications, First Edition, 1994 plus 1996/1997 interim's.
 - Design Vehicular Live Load: Modified AASHTO HSS-25 AASHTO LRFD "HL-93"
 - Design distribution factor - 0.5 lanes/girder.
 - Concrete strength: f_c transfer, f_{ci} = 35 MPa @ 28 days, f_c = 45 MPa
 - Prestressing steel: 13 mm ϕ low relaxation strands Minimum ultimate strength, f_{pu} = 1 860 MPa Jacking force/strand, f_{pj} = 128.5 kN/strand
 - Girder dimensioning tolerances: Length 3 mm \pm Cross section 2 mm \pm
 - Approximate mass per girder = 12 000 kg

REVISIONS		PRECAST PRESTRESSED CHANNEL GIRDER DETAILS	
DATE	BY	DESIGN SEAL	RECORD SEAL
<p>PLACE ENGINEERS ELECTRONIC SEAL HERE</p>		<p>Manitoba Infrastructure Water Management and Structures</p>	
<p>DESIGN BY: B.A.N.</p>		<p>RELEASED FOR CONSTRUCTION BY:</p>	
<p>DETAILS BY: K.P.</p>		<p>EXECUTIVE DIRECTOR OF STRUCTURES DATE</p>	
<p>CHECKED:</p>		<p>SCALE: 1:40 SHEET No. G1</p>	
<p>CHECKED:</p>		<p>or as shown SITE No.</p>	

NOTE: The end of girder will fall between POINT "A" and POINT "C" on curve because of various skew angles.

