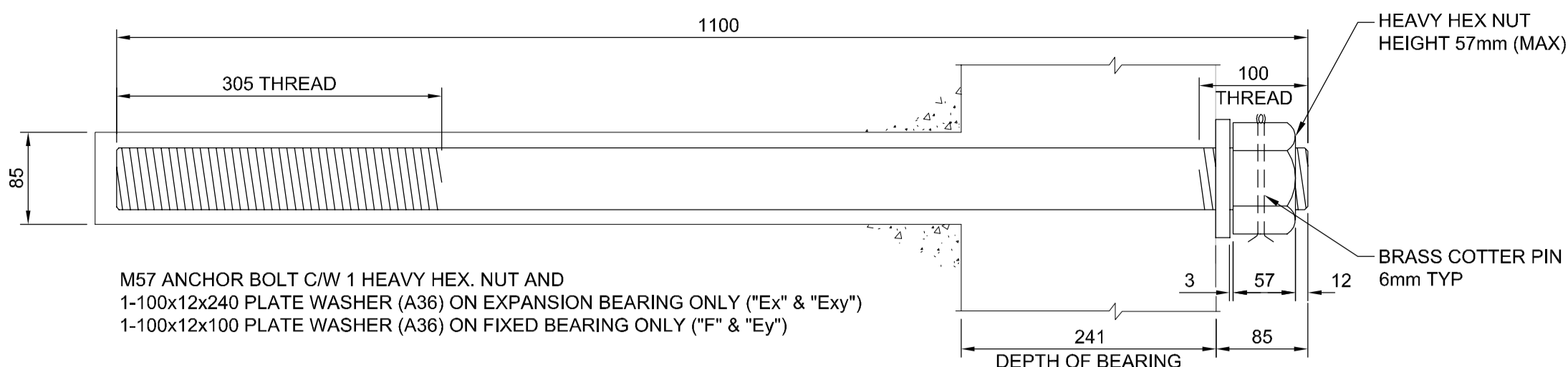


ARRANGEMENT OF BEARINGS

Scale NTS

NOTE:
ARROW INDICATES FREEDOM
OF MOVEMENT DIRECTION



ANCHOR BOLT (GALV.)

Scale 1:5

M57 ANCHOR BOLT C/W 1 HEAVY HEX. NUT AND
1-100x12x240 PLATE WASHER (A36) ON EXPANSION BEARING ONLY ("Ex" & "Exy")
1-100x12x100 PLATE WASHER (A36) ON FIXED BEARING ONLY ("F" & "Ey")

NOTES:
CONCRETE TO BE DRILLED AFTER DETERMINING BOLT
LOCATION, BOLTS TO BE GROUDED USING NON-SHRINK GROUT.
BOLTS, NUTS & WASHERS SHALL BE FULLY GALVANIZED.

BEARING SERVICE LOADS		
	APPLIED	ALLOWABLE
V _{DMin.}	524 kN	
V _{L+I}	1746 kN	
V _{DMax+L+I}	2518 kN	2795 kN
H _{Long}	587 kN	587 kN
H _{Lat(Dmin)}	129 kN	168 kN

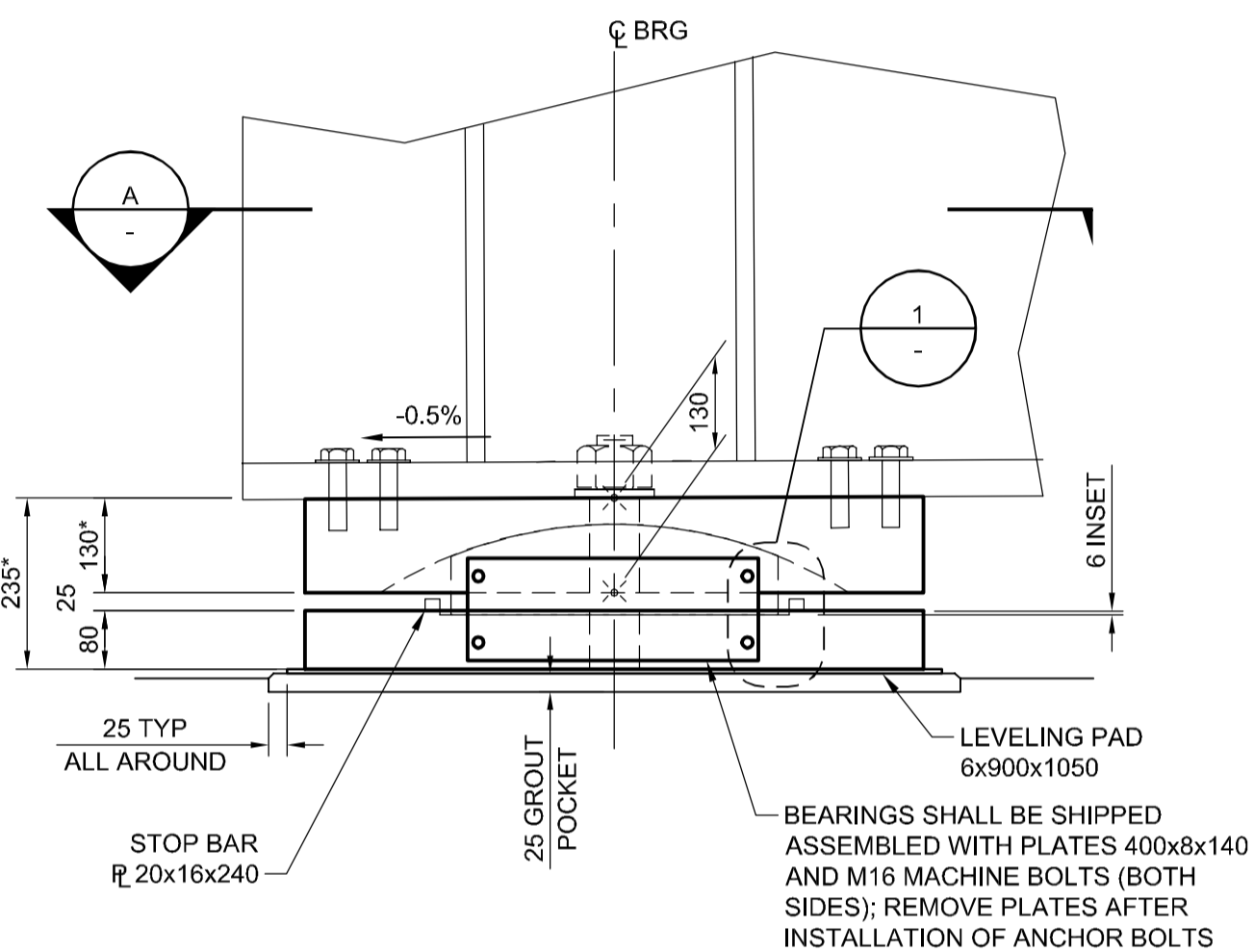
BEARING NOTES:

- FOR GENERAL NOTES SEE SHEET CS-0001
- BEARINGS SHALL BE SHIPPED ASSEMBLED WITH TRANSIT PLATES AND M16 STAINLESS MACHINE BOLTS. PLATES SHALL BE REMOVED AFTER ANCHOR BOLTS HAVE BEEN INSTALLED.
- AFTER REMOVAL OF TRANSIT PLATES, STAINLESS BOLTS SHALL BE FIXED AGAIN TO PROTECT THREADS FROM CORROSION.
- WORKMANSHIP SHALL BE IN ACCORDANCE WITH AREMA MANUAL CHAPTER 15.
- MATERIAL SHALL BE IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:

STRUCTURAL STEEL	CAN/CSA-G40.21-13, GRADE 300W
FOR BEARING PLATES	
BRONZE PLATES	ASTM B22-13 COPPER ALLOY UNS C91100
WELDING	CAN/CSA W59-13
ANCHOR BOLTS	ASTM F1554 GRADE 105
HS BOLTS	ASTM A325M
- GROUT POCKET AND ANCHOR BOLT VOIDS SHALL BE GROUDED WITH SIKA 212 FLOWABLE GROUT OR APPROVED EQUIVALENT. GROUT SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 35MPa.
- ALL NON-SLIDING SURFACES OF BEARINGS SHALL BE ZINC-METALLIZED IN ACCORDANCE WITH SSPC CS23.00 /AWS C2.23M. ZINC COATING SHALL NOT BE LESS THEN 0.25mm.
- FLATNESS OF PLATES SHALL BE 1:500
- BRONZE BEARINGS ARE CENTRED BETWEEN STOP BARS WHEN GIRDER STEEL TEMPERATURE IS +15°C.
- STEEL ERECTOR IS RESPONSIBLE TO ADJUST THE PLACEMENT OF THE BRONZE BEARINGS FOR OTHER TEMPERATURE CONDITIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR BEARING DESIGN. BEARING DIMENSIONS SHOWN ARE FOR REFERENCE ONLY, EXCEPT THE BEARING HEIGHT WHICH IS TO BE FIXED.
- EPOXY MASTIC COATING TO BE SUITABLE FOR APPLICATION ON GALVANIZED STEEL TO PREVENT CONTACT BETWEEN THE ZINC AND THE GROUT OR BETWEEN GALVANIZED AND NON-GALVANIZED STEEL. IT SHALL BE USED ON UNDERSIDE OF BED PLATES AND TOP OF SHOE PLATES.
- ANCHOR BOLTS, NUTS AND WASHERS TO BE HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM A123/A123M.
- WHERE GALVANIZING IS DAMAGED, REPAIR WITH TWO COATS OF A COMPONENT ZINC-RICH COATING CONTAINING 96% NON-TOXIC ELECTROLYTIC ZINC POWDER (PURE TO 99.995%) AND NON-TOXIC SOLVENT.

ESTIMATED QUANTITIES: (ONE TPG SPAN)

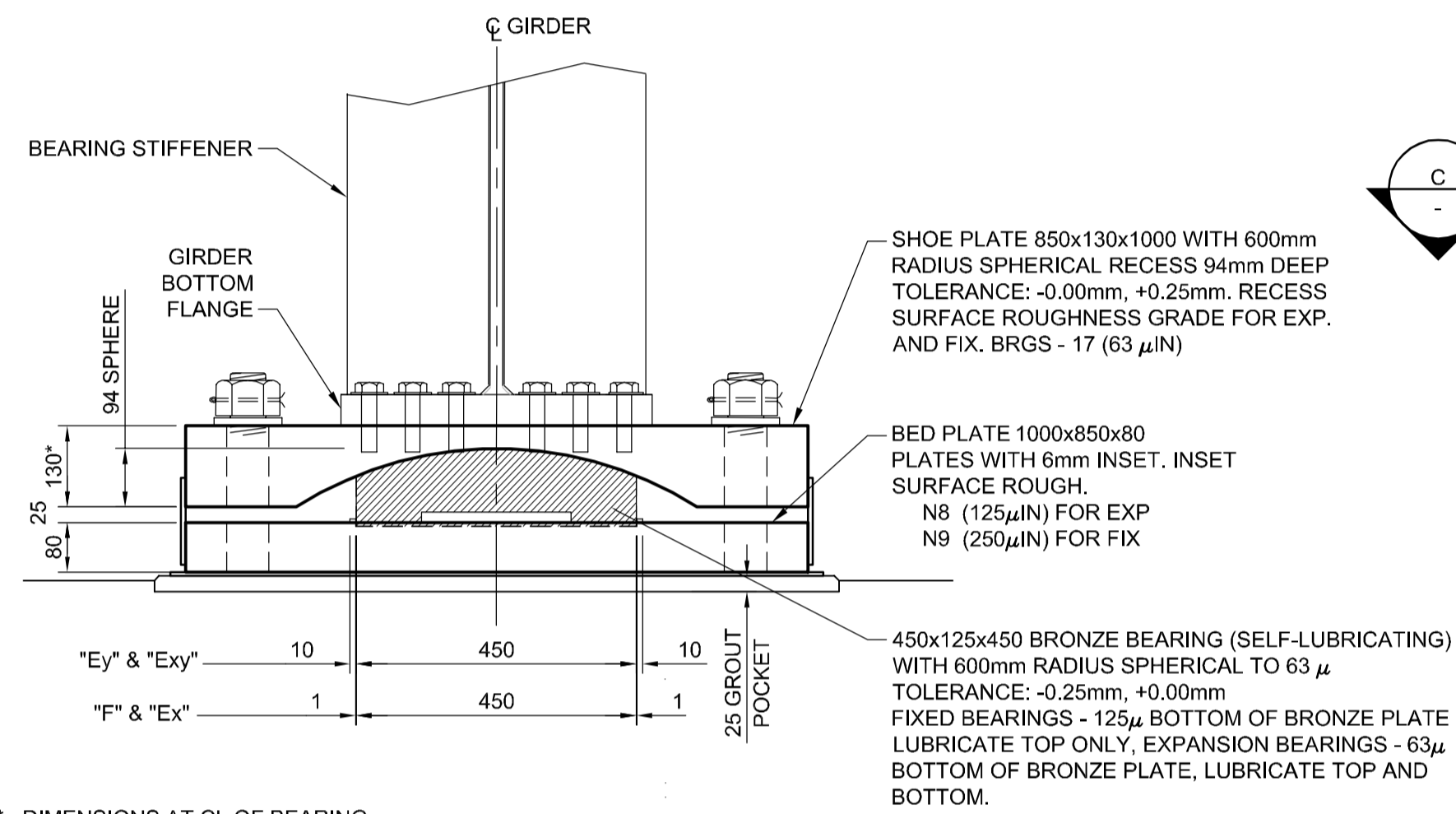
- STRUCTURAL STEEL PER SPAN BEARINGS 5610 kg



FIXED BEARING ("F" & "Ey")

Scale 1:10

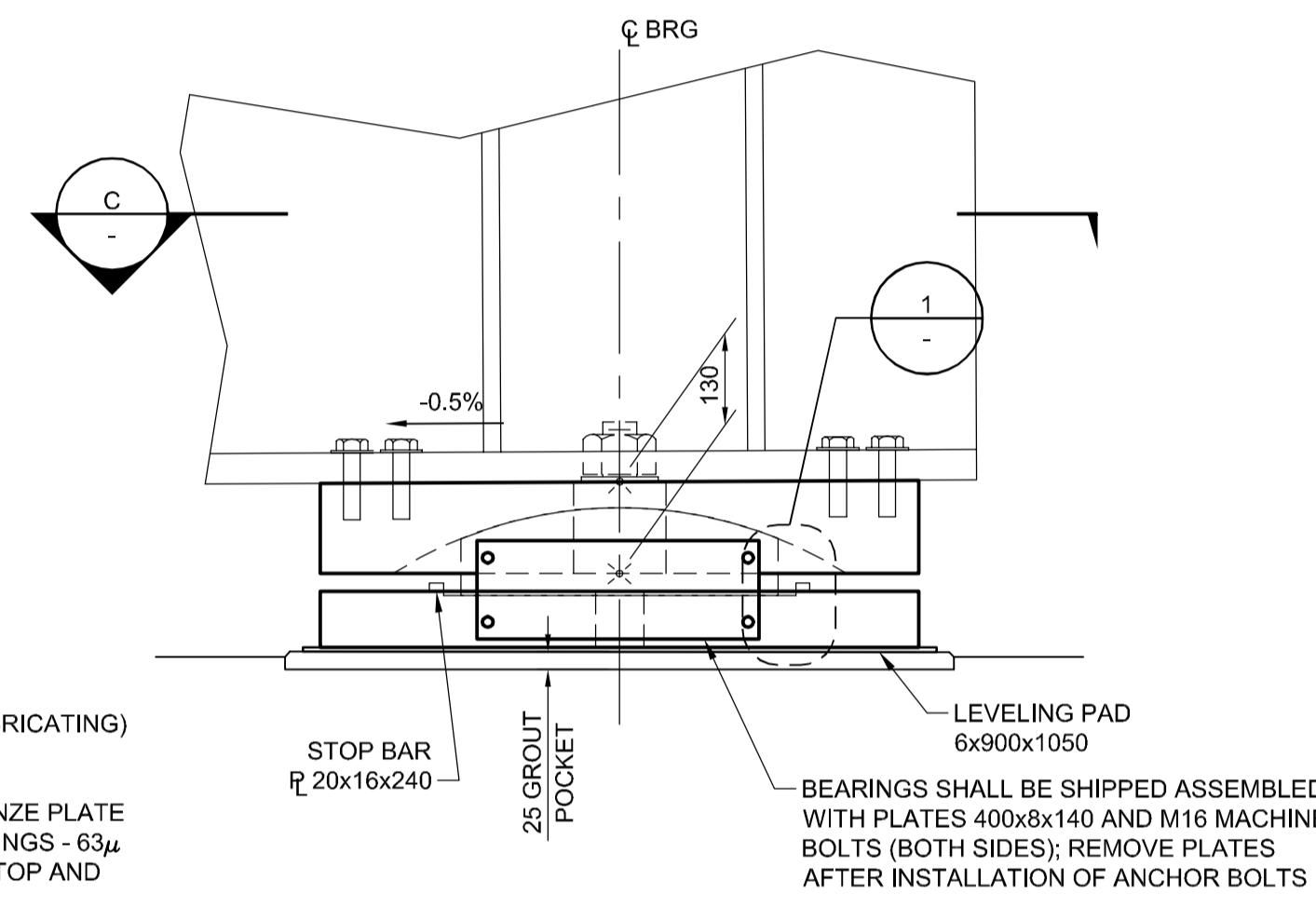
* DIMENSIONS AT CL OF BEARING



B SECTION

Scale 1:10

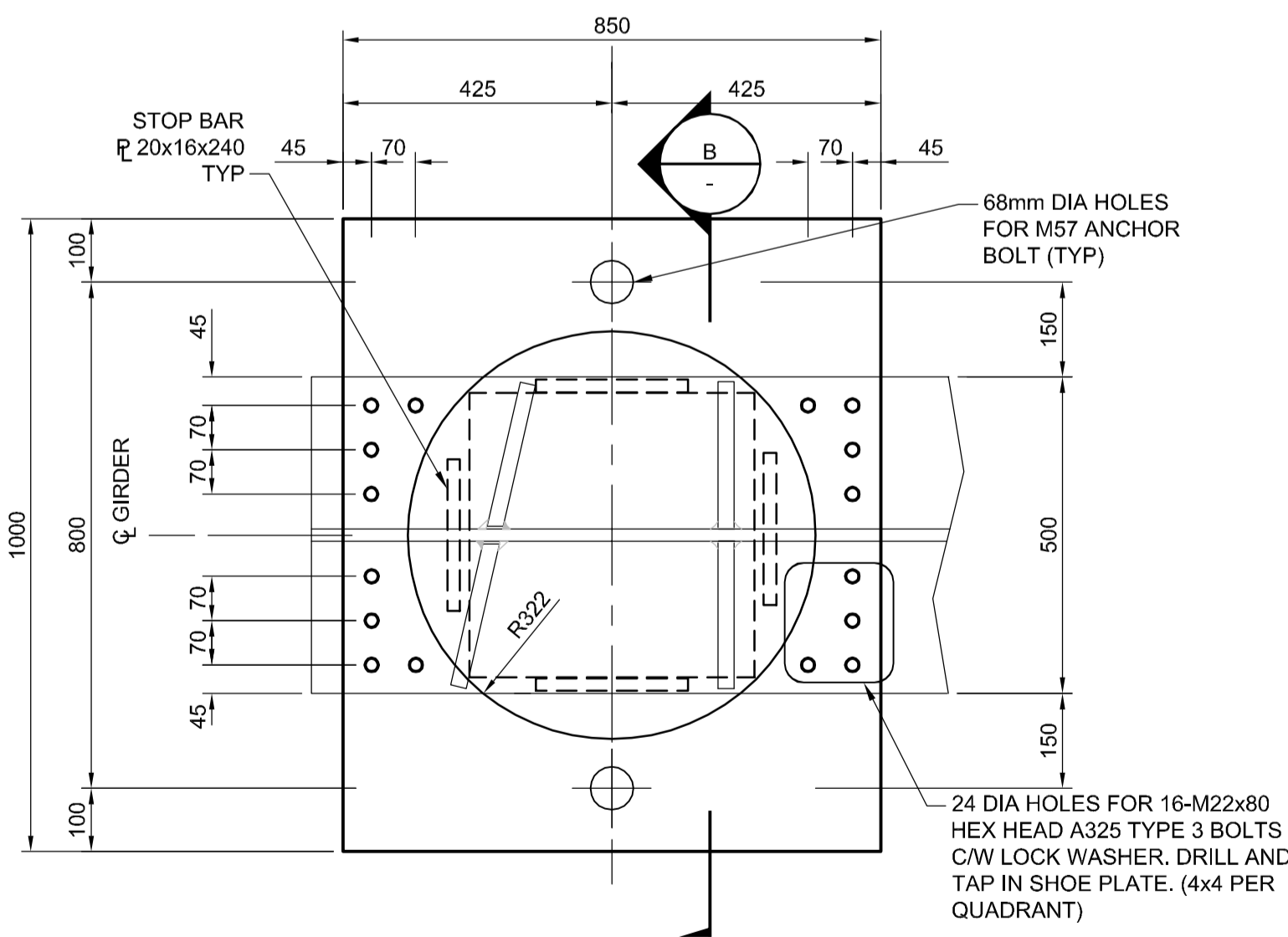
* DIMENSIONS AT CL OF BEARING



EXPANSION BEARING ("Ex" & "Exy")

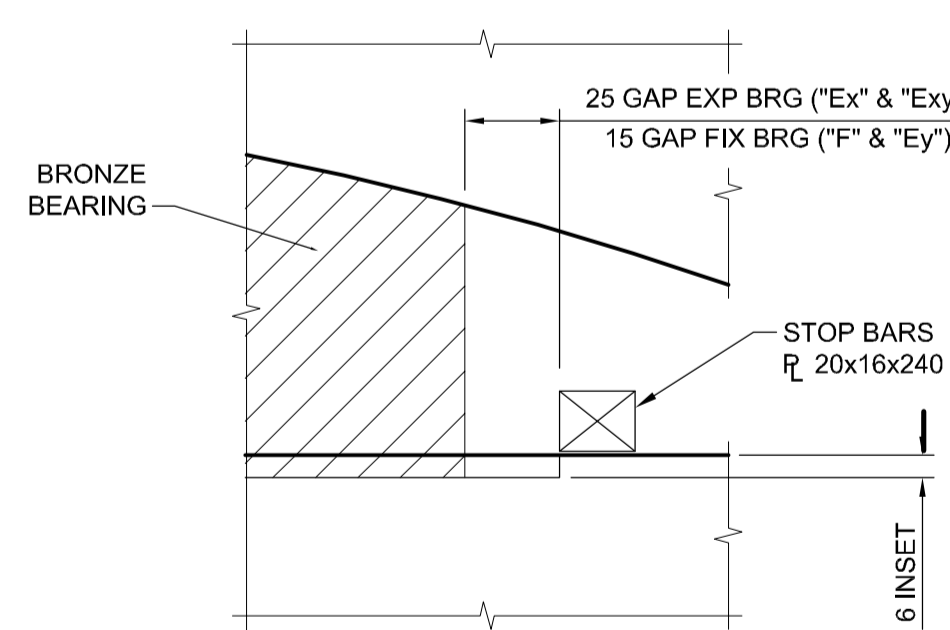
Scale 1:10

BEARINGS SHALL BE SHIPPED ASSEMBLED WITH PLATES 400x8x140 AND M16 MACHINE BOLTS (BOTH SIDES); REMOVE PLATES AFTER INSTALLATION OF ANCHOR BOLTS



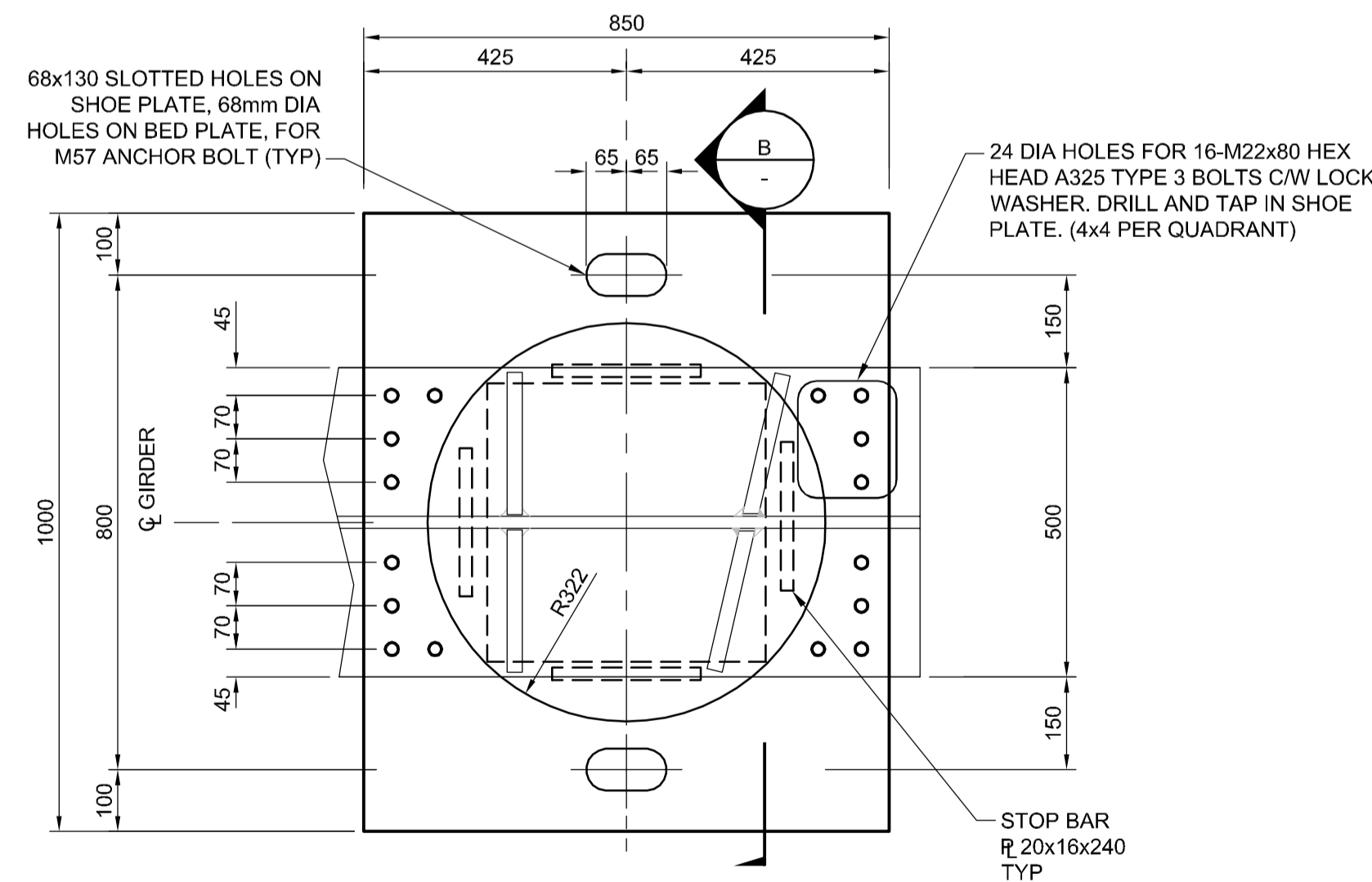
A SECTION

Scale 1:10



1 DETAIL

Scale 1:2



C SECTION

Scale 1:10

LOCATION APPROVED UNDERGROUND STRUCTURES

SUPV. U/G STRUCTURES COMMITTEE DATE

NOTE:
LOCATION OF UNDERGROUND STRUCTURES AS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE, BUT NO GUARANTEE IS GIVEN THAT ALL EXISTING UTILITIES ARE SHOWN OR THAT THE GIVEN LOCATIONS ARE EXACT. CONFIRMATION OF EXISTENCE AND EXACT LOCATION OF ALL SERVICES MUST BE OBTAINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION.

B.M. ELEV.	NO.	ISSUED FOR TENDER	DATE	BY
	0	ISSUED FOR TENDER	2013/11/21	KC
		REVISIONS		

AECOM			
DESIGNED BY	FT	CHECKED BY	CD
DRAWN BY	KC	APPROVED BY	EBL
HOR. SCALE:	AS NOTED	RELEASED FOR CONSTRUCTION BY:	
VERTICAL:	AS NOTED		
DATE	2013-06-04	DATE	

ENGINEER'S SEAL
PROVINCE OF MANITOBA
F. TABET
Member 33659
REGISTERED PROFESSIONAL ENGINEER
CONSULTANT DRAWING NO.
60273041-01-CS-301

THE CITY OF WINNIPEG
PUBLIC WORKS DEPARTMENT

PLESSIS ROAD TWINNING AND GRADE SEPARATION AT CN REDDITT SUBDIVISION CONTRACT 3

CITY DRAWING NUMBER U238-2014-2021
SHEET 21 OF 37

BEARINGS

CS-0021

BID OPPORTUNITY NO. 712-2013