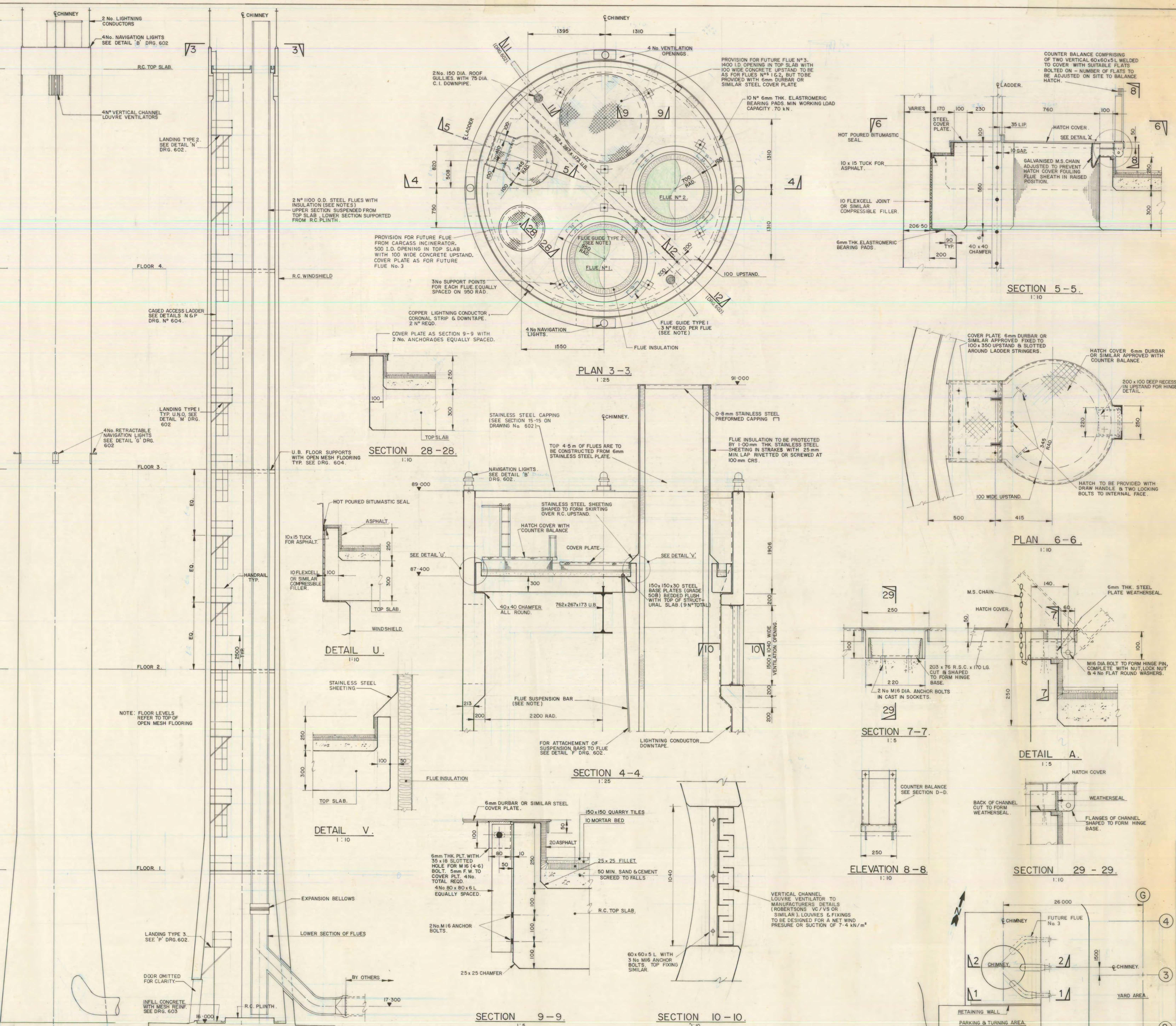


LEVEL (m)	OUTSIDE DIA. (mm)	INSIDE DIA. (mm)	HORIZ. WALL THK. (mm)	TOP OF FLUES
91.000				
89.000	5200	4800	200	
87.400				
81.625	5250	4800	225	
74.250	5300	4800	250	
72.400				
66.875	5350	4800	275	
59.500	5400	4800	300	
57.400				
52.125	5450	4800	325	
44.750	5500	4800	350	
42.400				
37.375	5550	4800	375	
30.000	5600	4800	400	
28.250	5900	4800	550	
27.400				
26.500	6200	4800	700	
21.250	7100	5700	700	
16.000	8000	6600	700	



- NOTES:**
- ALL DIMENSIONS ARE IN MILLIMETERS AND ALL LEVELS ARE IN METRES UNLESS OTHERWISE STATED.
  - CONCRETE CLASSES**  
WINDSHIELD AND TOP SLAB C40 WITH AIR-ENTRAINING AGENT  
INFILL CONCRETE GRADE 20 TO FLOOR
  - CONCRETE SURFACE FINISHES**  
FORMED SURFACES F2  
UNFORMED SURFACES U2
  - ALL EXPOSED CONCRETE ARRISSES SHALL HAVE 25 x 25 CHAMFER UNLESS OTHERWISE NOTED.
  - THE EXTERIOR CONCRETE SURFACES OF THE WINDSHIELD, INCLUDING THE INSIDE SURFACE ABOVE THE TOP SLAB, SHALL RECEIVE TWO COATS OF ANPAX M20 TEXTURED COMPOSITION (COLOUR "CRETA-1") AS MANUFACTURED BY W. & J. LEIGH & CO. BOLTON, ENGLAND. APPLICATION SHALL BE STRICTLY IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
  - FLUE CONSTRUCTION**  
EACH FLUE SHALL HAVE AN EXTERNAL DIAMETER OF 1100mm. FLUES TO BE FABRICATED FROM 6mm THICK PLATE THROUGHOUT WITH FULL STRENGTH BUTT WELDS AT ALL JOINTS. MILD STEEL CONSTRUCTION GENERALLY, EXCEPT FOR TOP 4.5 METRES WHICH SHALL BE OF STAINLESS STEEL.  
THE UPPER SECTION OF EACH FLUE SHALL BE SUSPENDED FROM THE TOP SLAB AS DETAILED WITH THE LOWER SECTION BEING SUPPORTED AT THE BASE FROM THE R.C. PLINTH. EXPANSION BELLOWS SHALL BE PROVIDED BETWEEN THE UPPER AND LOWER SECTIONS, AND SHALL BE CAPABLE OF ACCOMMODATING AN AXIAL EXPANSION OF THE FLUE OF 150mm.
  - ALTERNATIVE FLUE CONSTRUCTION**  
THE FLUES HAVE BEEN DESIGNED TO BE TOP SUPPORTED. THE CONTRACTOR MAY PREPARE ALTERNATIVE DESIGNS FOR BOTTOM SUPPORTED FLUES TO THE APPROVAL OF THE ENGINEER.
  - INSULATION OF FLUES**  
EACH FLUE SHALL BE WRAPPED WITH A 100mm THICKNESS OF MINERAL WOOL OR SIMILAR THERMAL INSULATION HAVING A MAXIMUM VALUE OF THERMAL TRANSMITTANCE OF U = 0.5 WATTS / (m<sup>2</sup> °K). THE INSULATION SHALL BE REINFORCED WITH 20g x 25 REIN WIRE MESH AND SHALL BE WRAPPED WITH 20g x 10 STAINLESS STEEL BARS @ 500 PITCH. THE INSULATION SHALL BE PROVIDED FOR THE FULL HEIGHT OF THE FLUES, AND EQUIVALENT INSULATION PROVIDED TO THE EXPANSION BELLOWS.
  - FLUE SUSPENSION BARS**  
FLUE SUSPENSION BARS SHALL BE 40mm DIA. HIGH YIELD STEEL (GRADE 508) THREADED TIE BARS AS SUPPLIED BY B.S.C. OR SIMILAR, WITH 3 NO. BARS REQUIRED PER FLUE. BARS SHALL BE WRAPPED WITH ONE LAYER OF DENSOTAPE AND ONE LAYER OF DENSOTHEM OR SIMILAR.  
FOR FLUES NO. 1 & 2, BARS TO BE 9.0m LONG AND SHALL BE ATTACHED TO THE FLUE AS SHOWN AT DETAIL F ON DRG. NO. 8626/602. FOR FUTURE FLUE NO. 3, BARS TO BE 1.5m LONG WITH LOWER ENDS THREADED TO FACILITATE THE FUTURE EXTENSION OF THE BARS BY MEANS OF FULL STRENGTH SCREWED COUPLERS.
  - FLUE GUIDES AT TOP SLAB**  
EACH FLUE SHALL BE LATERALLY RESTRAINED BY 3 NO. FLUE GUIDES TYPE 1 FIXED TO THE UNDERSIDE OF THE TOP SLAB AND 1 NO. FLUE GUIDE TYPE 2 FIXED TO THE U.B. THESE GUIDES ARE SHOWN ON DETAILS D & E ON DRG. NO. 8626/602. PROVISION SHALL BE MADE FOR THE FUTURE ATTACHMENT OF GUIDES FOR FLUE NO. 3 BY CASTING-IN STAINLESS STEEL SOCKETS FOR THE 3 NO. GUIDES TYPE 1 AND BY DRILLING THE NECESSARY HOLES IN THE U.B. FOR GUIDES TYPE 2.
  - FOR SECTIONS 11-11 AND 12-12 SEE DRG. NO. 8626/602.
  - THIS DRAWING SHALL BE READ IN CONJUNCTION WITH DRAWINGS NO. 8626/602-610.
  - FOR NOTES NO. 14 TO 20 SEE DRG. NO. 8626/602, NOTES 21 TO 22 SEE DRG. NO. 8626/603.

**DRAWING REFERENCES.**  
FOR DRAWING REFERENCES SEE DRAWING NO. 8626/602.

Rev	Description	Date	Checked

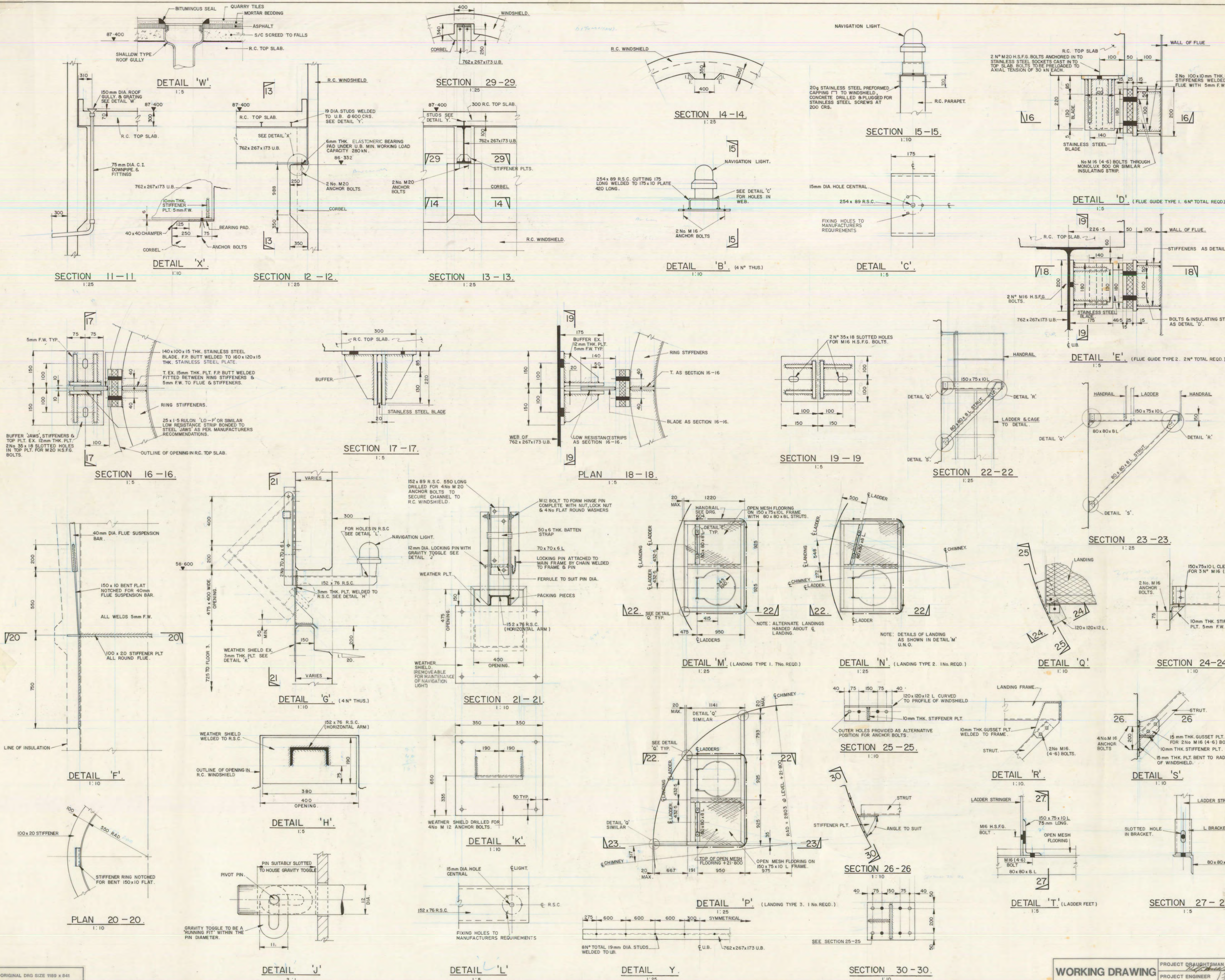
**GOVERNMENT OF BERMUDA**  
**TYNES BAY WASTE TREATMENT FACILITY**

**CHIMNEY GENERAL ARRANGEMENT & DETAILS SHEET 1.**

**MINISTRY OF WORKS & ENGINEERING**  
IN ASSOCIATION WITH  
G. MAUNSELL & PARTNERS CONSULTING ENGINEERS LONDON  
KENNEDY & DONKIN CONSULTING ENGINEERS MANCHESTER

Scales	Designed	Drawn
AS SHOWN	Checked LEF	Approved LEF

Date: AUG '91  
Drawing Number: 8626 / 601  
Revision:

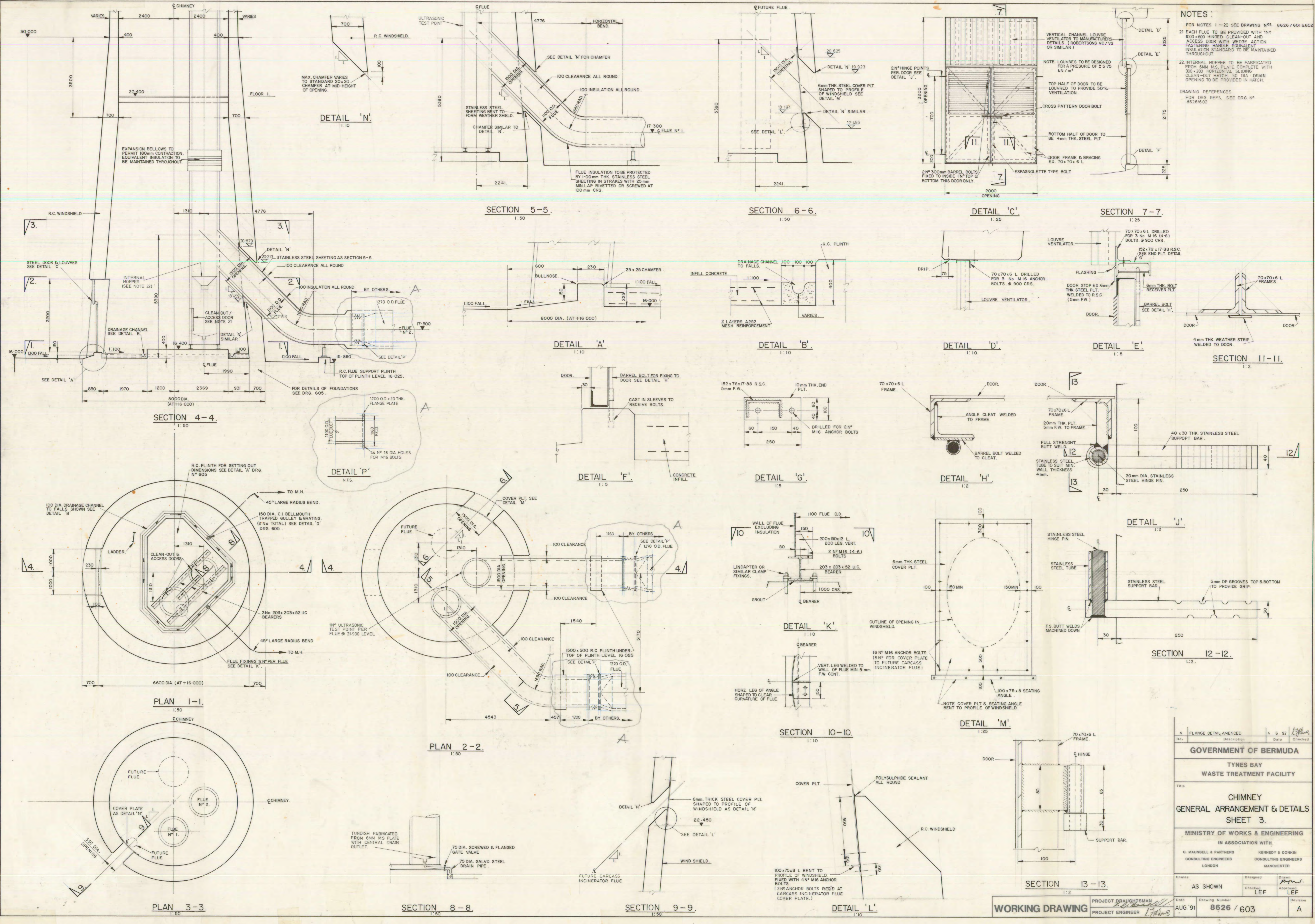


**NOTES :**

- FOR NOTES NO. 1 TO 13 SEE DRG. NO. 8626/601-21 TO 22 SEE DRG. NO. 8626/603
  - ALL BOLTED STEEL SECTIONS AND PLATES SHALL BE TO BS 4360:1998 GRADE 500 OR SIMILAR, UNLESS OTHERWISE NOTED. ALL STEELWORK SHALL BE GALVANISED.
  - BOLTS**  
HIGH STRENGTH FRICTION GRIP (HSFG) BOLTS SHALL BE TO BS 4395:PART 1: GENERAL GRADE OR SIMILAR. ALL OTHER BOLTS, INCLUDING ANCHOR BOLTS, SHALL BE TO BS 4190 GRADE 4.6 OR SIMILAR, UNLESS OTHERWISE NOTED. ALL BOLTS, NUTS AND WASHERS SHALL BE SUPPLIED WITH A SHERARDISED SURFACE COATING.
  - ANCHOR BOLTS SHALL BE PROVIDED WITH SUITABLE ANCHORAGES INTO THE CONCRETE, TO THE APPROVAL OF THE ENGINEER, WHICH ARE CAPABLE OF PROVIDING THE FOLLOWING RESISTANCES TO THE COMBINED EFFECTS OF AXIAL LOAD AND SHEAR.
- | mm  | AXIAL SHEAR |
|-----|-------------|
| M16 | 10          |
| M20 | 15          |
|     | 20          |
- THE SIZE OF ALL FILLET WELDS SHALL BE 5mm UNLESS OTHERWISE NOTED.
  - OPEN MESH FLOORING TO BE FLOWFORM OR SIMILAR APPROVED, AND SHALL BE SUPPLIED AND FIXED IN PREFORMED PANELS COMPLETE WITH ALL NECESSARY EDGINGS, LOCATION CLIPS AND ADDITIONAL SUPPORTING MEMBERS AS REQUIRED TO SAFELY SUPPORT A UNIFORMLY DISTRIBUTED WORKING LOAD OF 5kN/m<sup>2</sup> OR POINT LOAD OF 10kN. ALL COMPONENTS OF THE FLOORING SHALL BE GALVANISED.
  - PANELS OF FLOORING AND ANY ADDITIONAL SUPPORTING STEELWORK SHALL BE EASILY REMOVABLE WHERE NECESSARY TO FACILITATE THE FUTURE INSTALLATION OF FLOOR NO. 3. STEELWORK SHALL BE DRILLED AS NECESSARY TO FACILITATE THE FIXING OF THE FUTURE REPLACEMENT FLOORING AND ANY ASSOCIATED SECONDARY SUPPORTING STEELWORK AROUND FLOOR NO. 3.
  - THE ABOVE REQUIREMENTS ARE ALSO APPLICABLE TO THE AREA OF FLOORING AT THE FUTURE CARCASS INCINERATOR FLUE.
  - GROUT STRENGTH SHALL BE THE SAME AS THAT SPECIFIED FOR THE ADJACENT STRUCTURAL CONCRETE UNLESS OTHERWISE NOTED.

- DRAWING REFERENCES:
- 8626/601 GENERAL ARRANGEMENT AND DETAILS TO 604 SHEET 1 TO 4
  - 8626/605 FOUNDATION GENERAL ARRANGEMENT
- FOR REINFORCEMENT:
- 8626/608 WINDSHIELD R.C. DETAILS TO 610 SHEET 1 TO 3
- FOR LIGHTING AND POWER DISTRIBUTION:
- 8626/606 LIGHTING AND POWER - CHIMNEY
  - 8626/617 CHIMNEY AREA DISTRIBUTION
- FOR EARTHING REQUIREMENTS:
- 8626/650 SCHEMATIC OF EQUIPMENT EARTHING SYSTEM.

<b>GOVERNMENT OF BERMUDA</b> <b>TYNES BAY WASTE TREATMENT FACILITY</b>			
<b>CHIMNEY GENERAL ARRANGEMENT &amp; DETAILS SHEET 2.</b>			
<b>MINISTRY OF WORKS &amp; ENGINEERING</b> IN ASSOCIATION WITH B. MAUNSELL & PARTNERS CONSULTING ENGINEERS LONDON		KENNEDY & DONKIN CONSULTING ENGINEERS MANCHESTER	
Scales AS SHOWN.	Designed L.F.F.	Drawn L.F.F.	Checked L.F.F.
PROJECT ENGINEER PROJECT DRAUGHTSMAN		DATE AUG '91	
DRAWING NUMBER 8626/602		REVISION	



**NOTES:**

FOR NOTES 1 - 20 SEE DRAWING No. 8626/601 & 602

21. EACH FLUE TO BE PROVIDED WITH 1 No 100 x 600 HINGED CLEAN-OUT AND ACCESS DOOR WITH WEDGE ACTION FASTENING HANDLE EQUIVALENT INSULATION STANDARD TO BE MAINTAINED THROUGHOUT.

22. INTERNAL HOPPER TO BE FABRICATED FROM 6MM M.S. PLATE COMPLETE WITH 300 x 200 HORIZONTAL SLIDING CLEAN-OUT HATCH, 50 DIA. DRAIN OPENING TO BE PROVIDED IN HATCH.

DRAWING REFERENCES FOR DRG. REFS. SEE DRG. No 8626/602

Rev	Description	Date	Checked
A	FLANGE DETAIL AMENDED	6. 92	LEF

**GOVERNMENT OF BERMUDA**

**TYNES BAY WASTE TREATMENT FACILITY**

Title: **CHIMNEY GENERAL ARRANGEMENT & DETAILS SHEET 3.**

MINISTRY OF WORKS & ENGINEERING

IN ASSOCIATION WITH

G. MAUNSELL & PARTNERS CONSULTING ENGINEERS LONDON

KENNEDY & DONKIN CONSULTING ENGINEERS MANCHESTER

Scale: AS SHOWN

Project: PROJECT DRAUGHTSMAN [Signature] PROJECT ENGINEER [Signature]

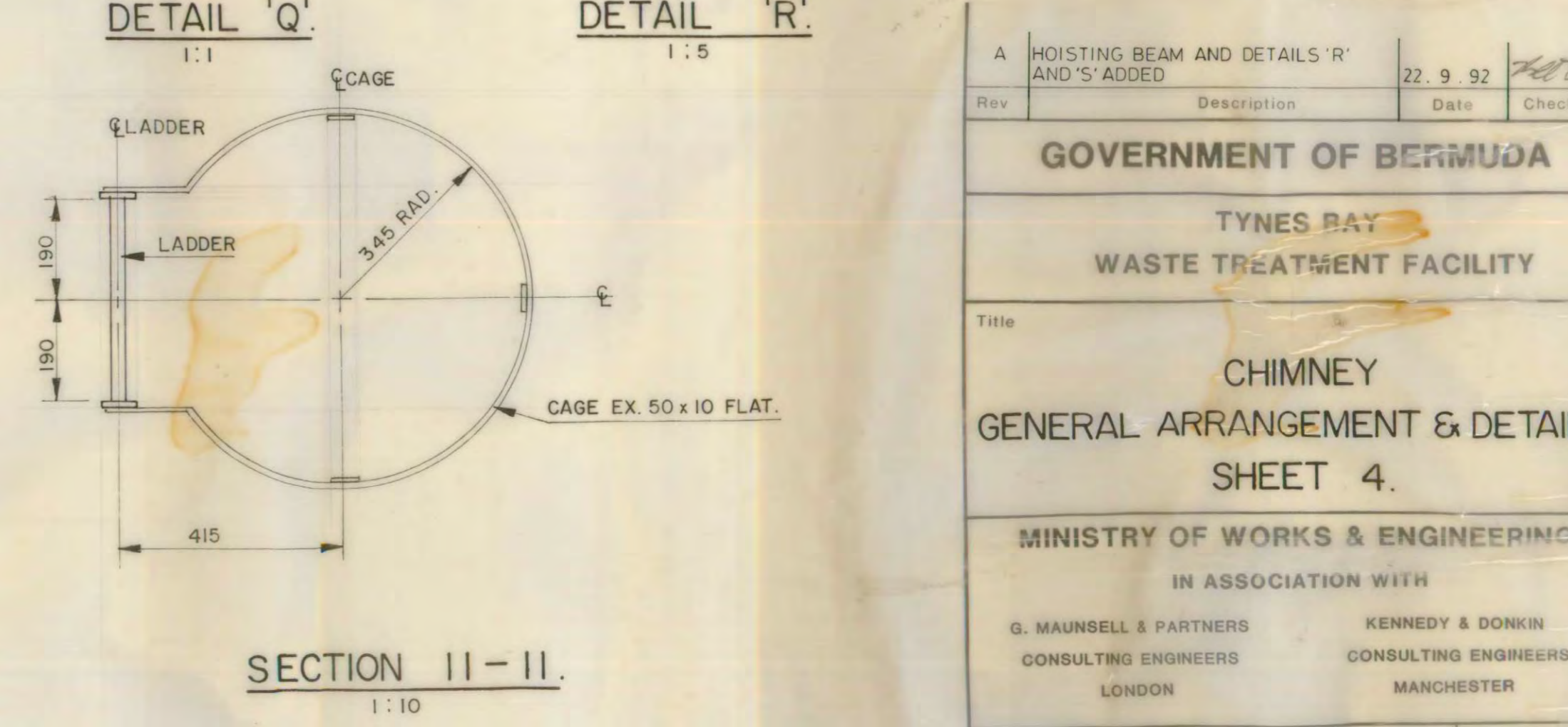
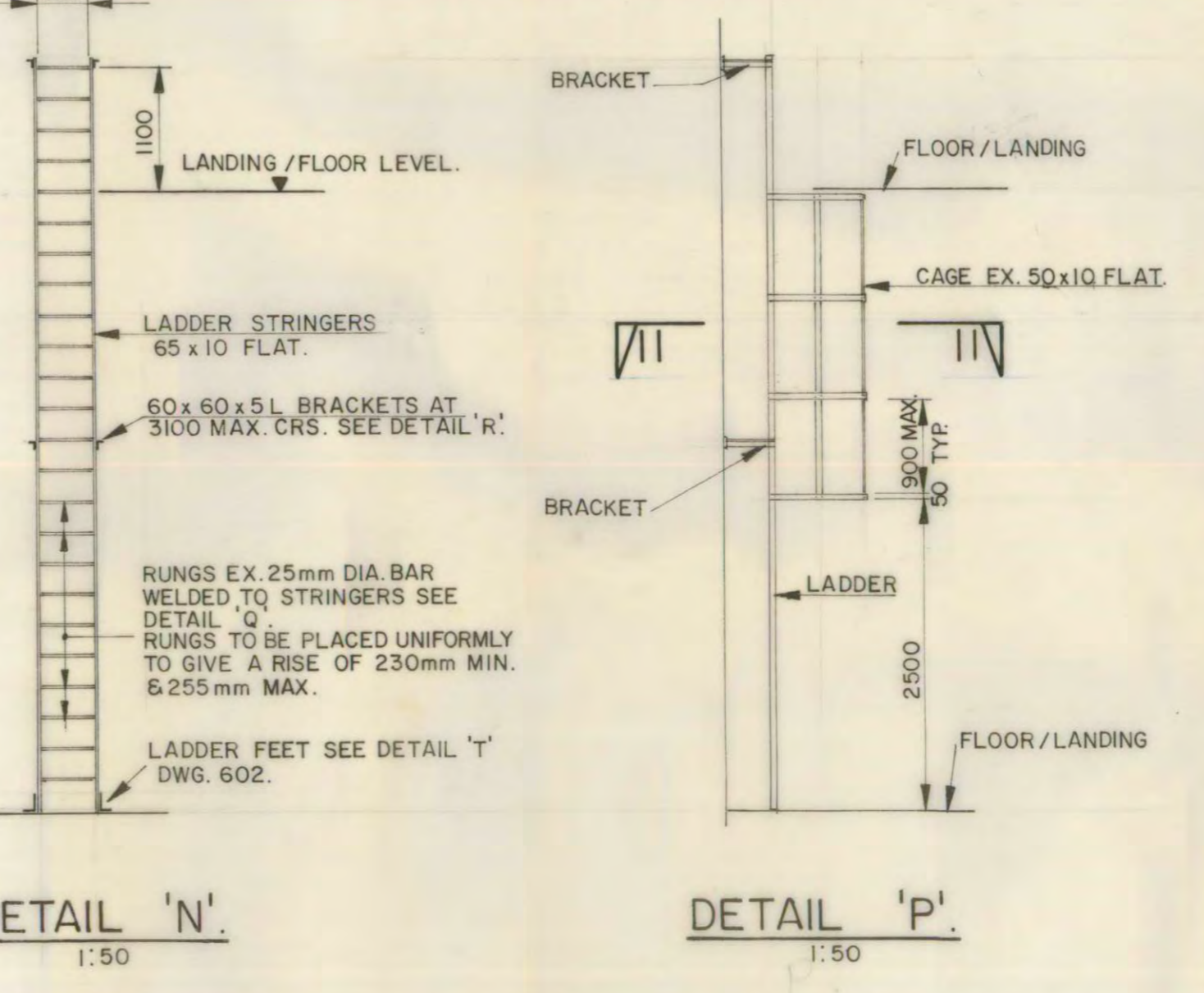
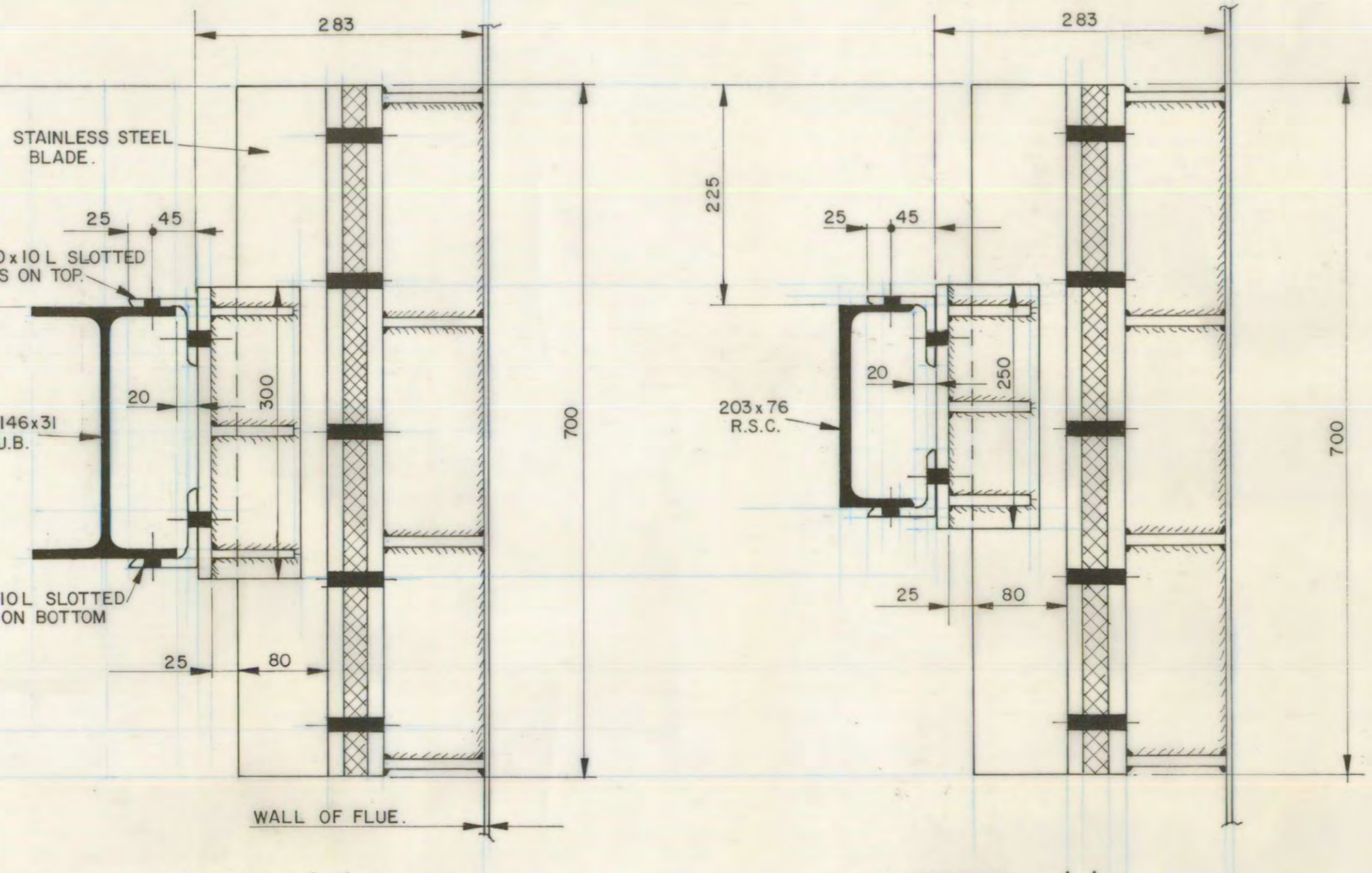
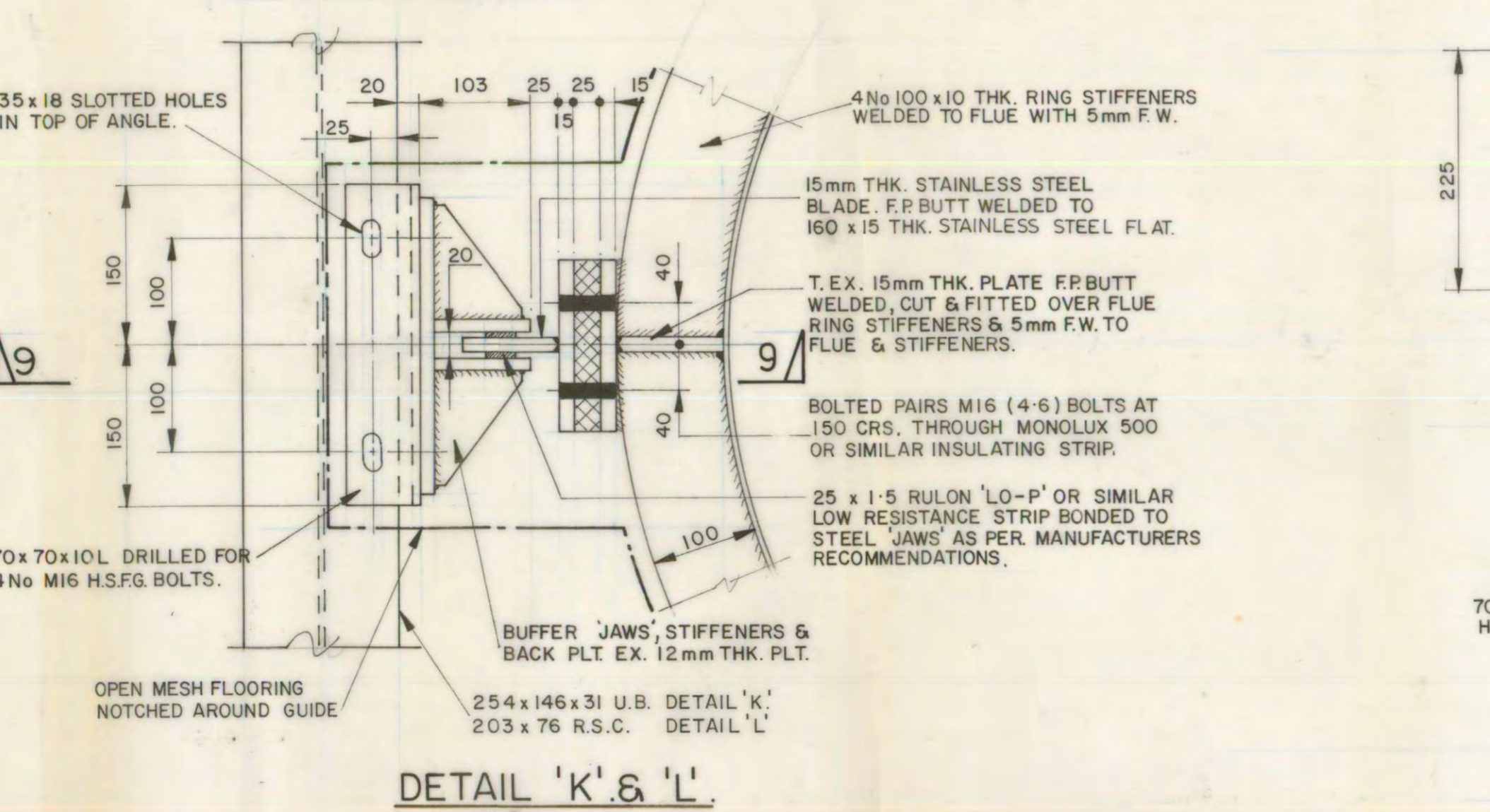
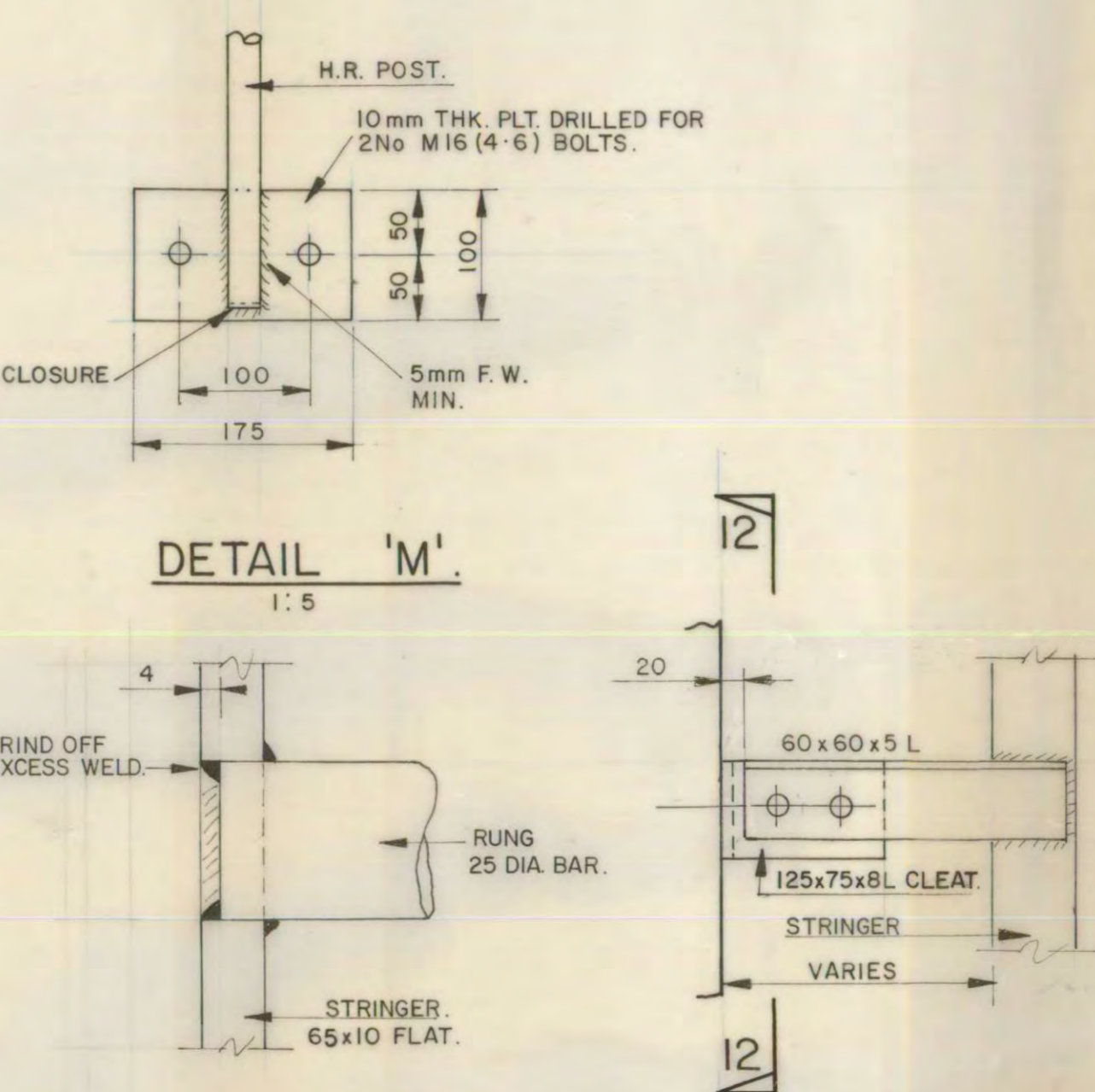
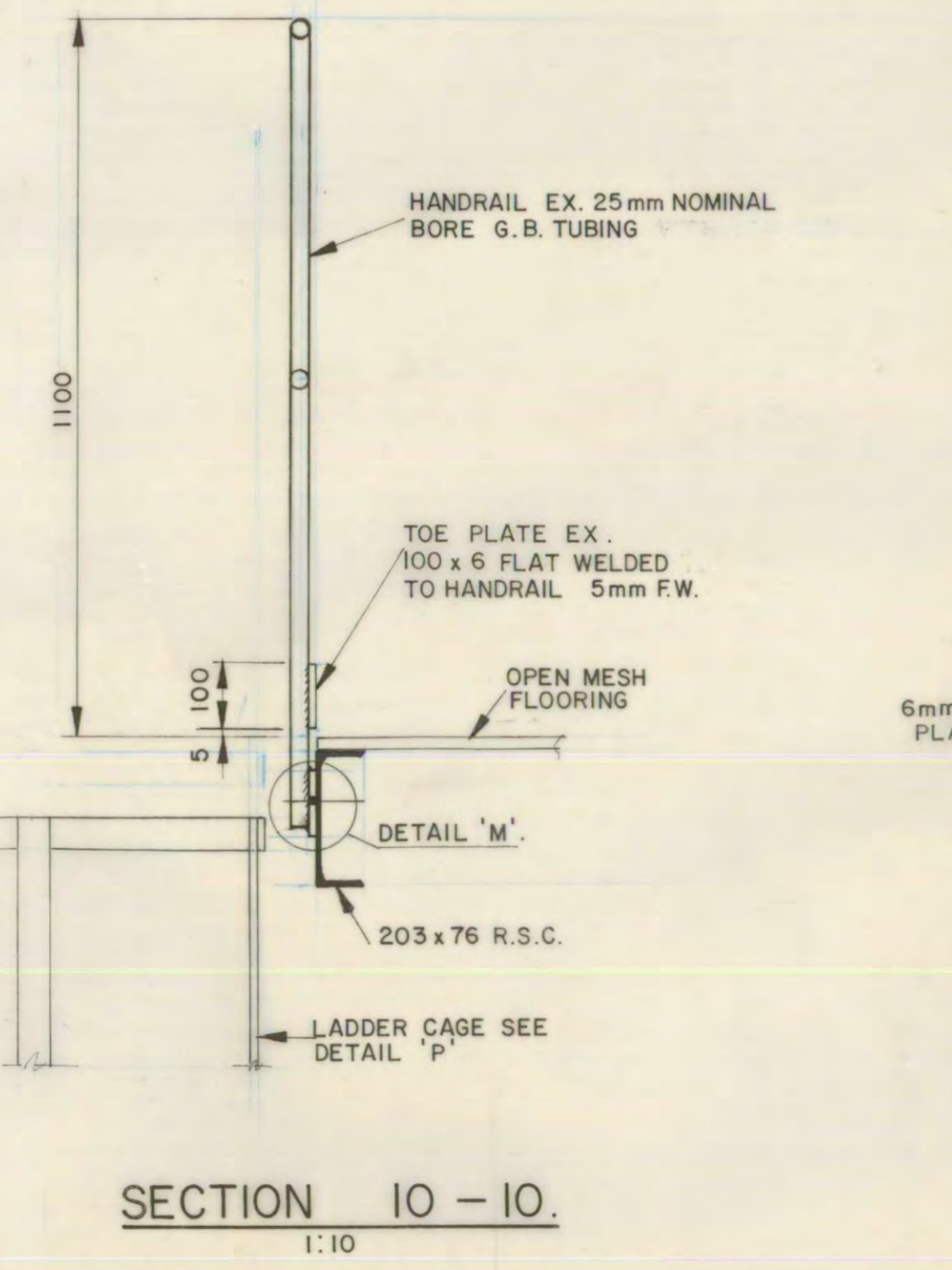
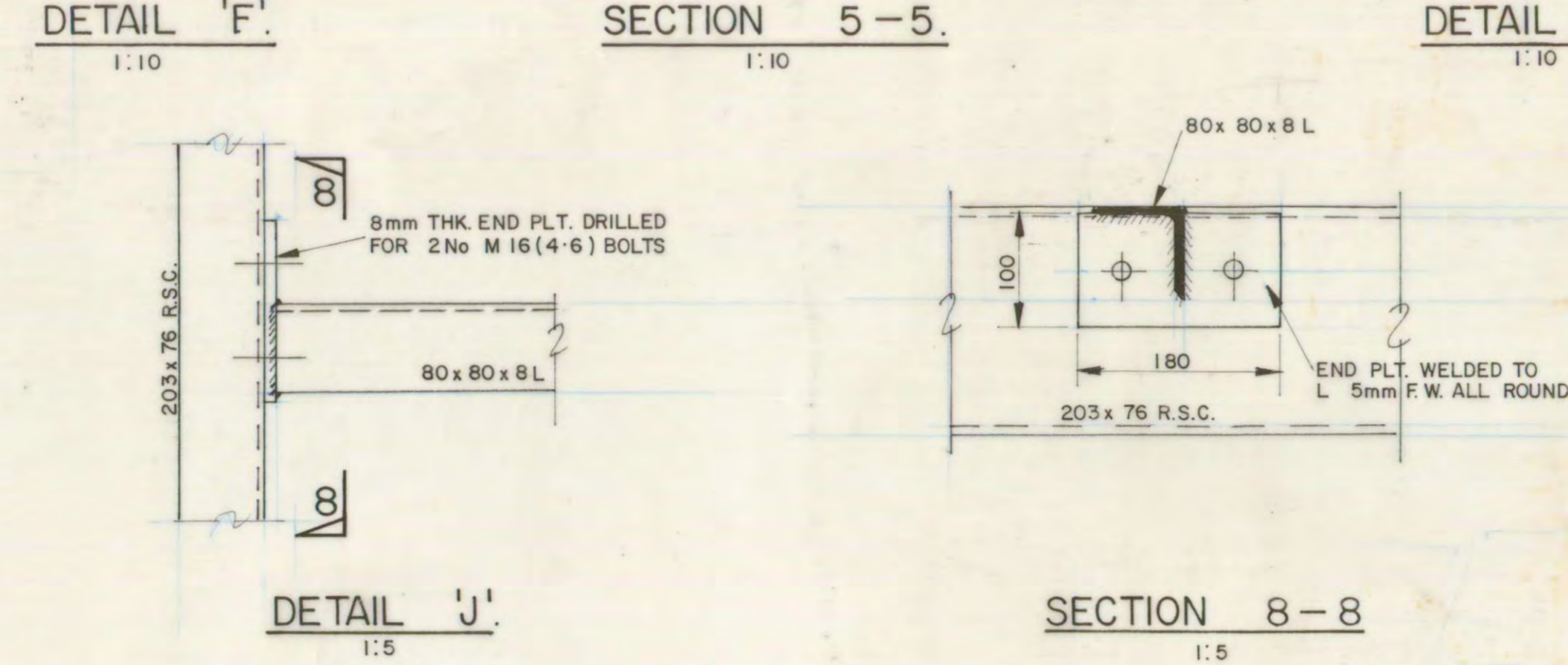
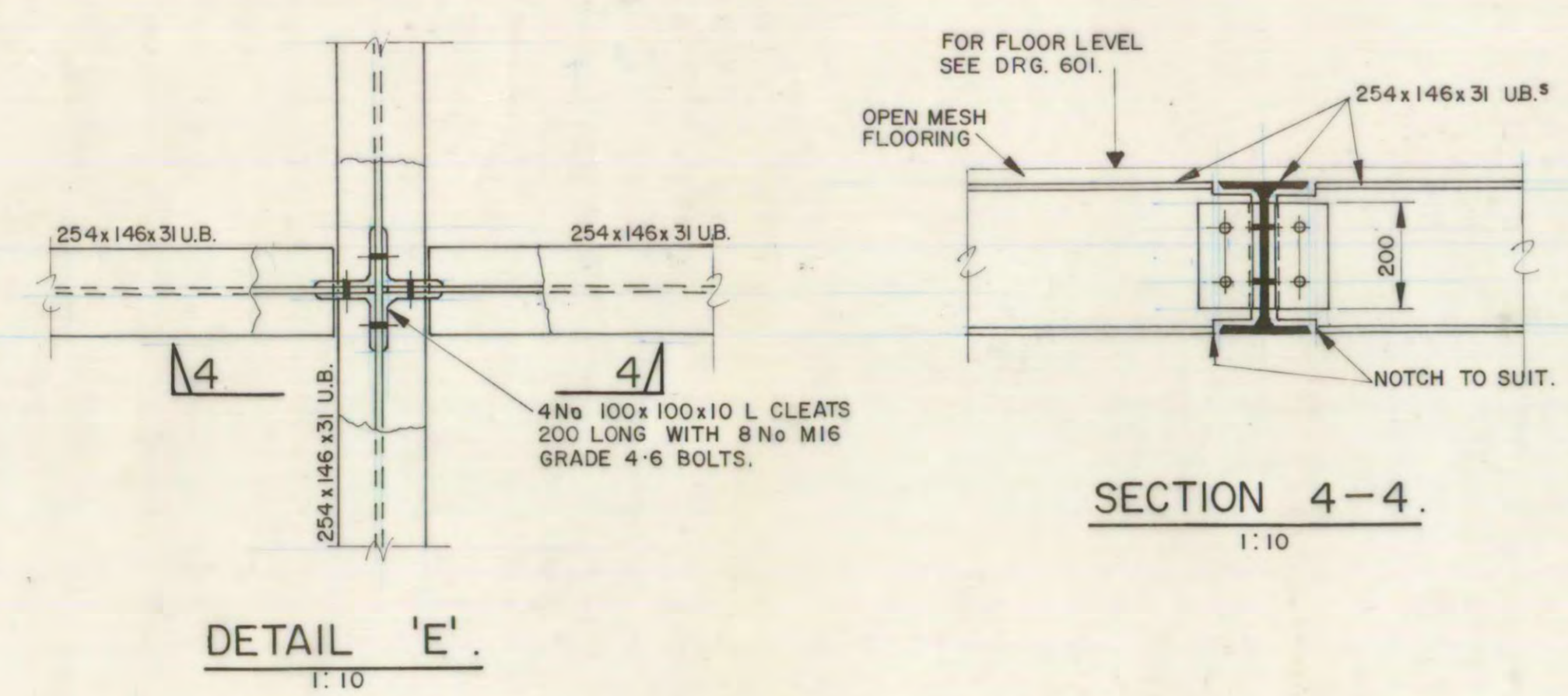
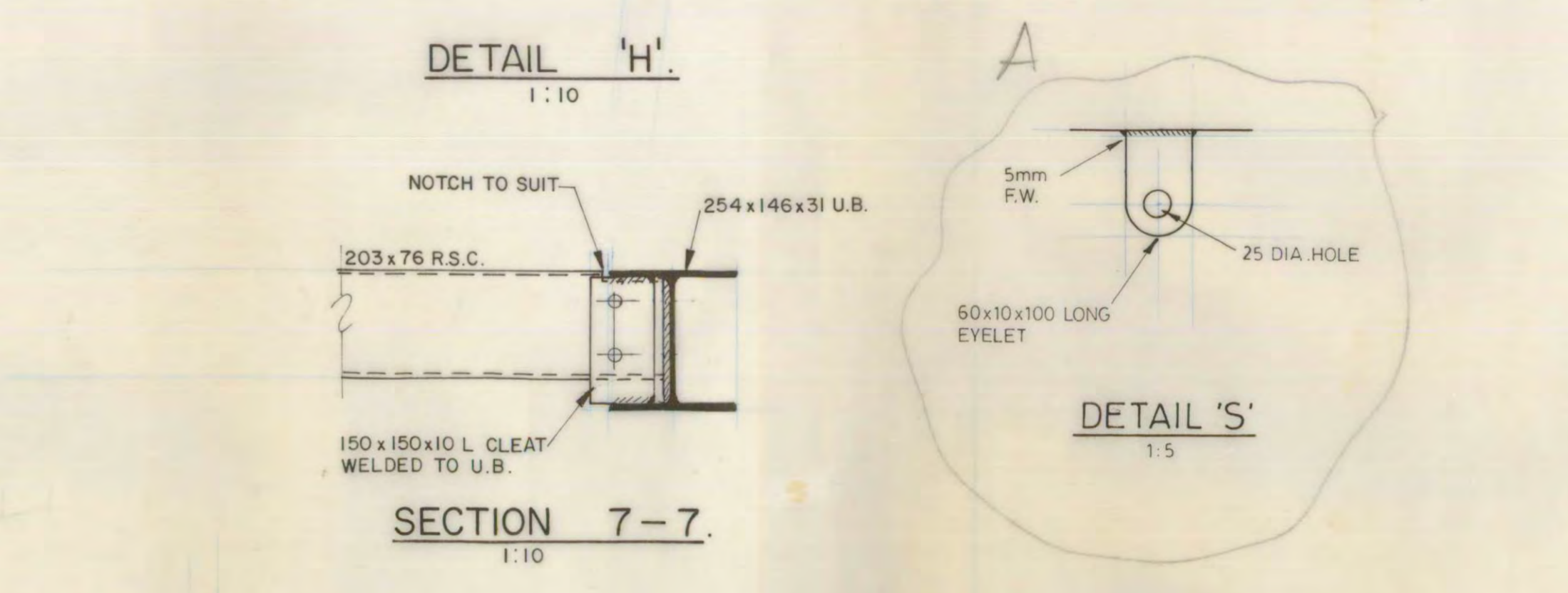
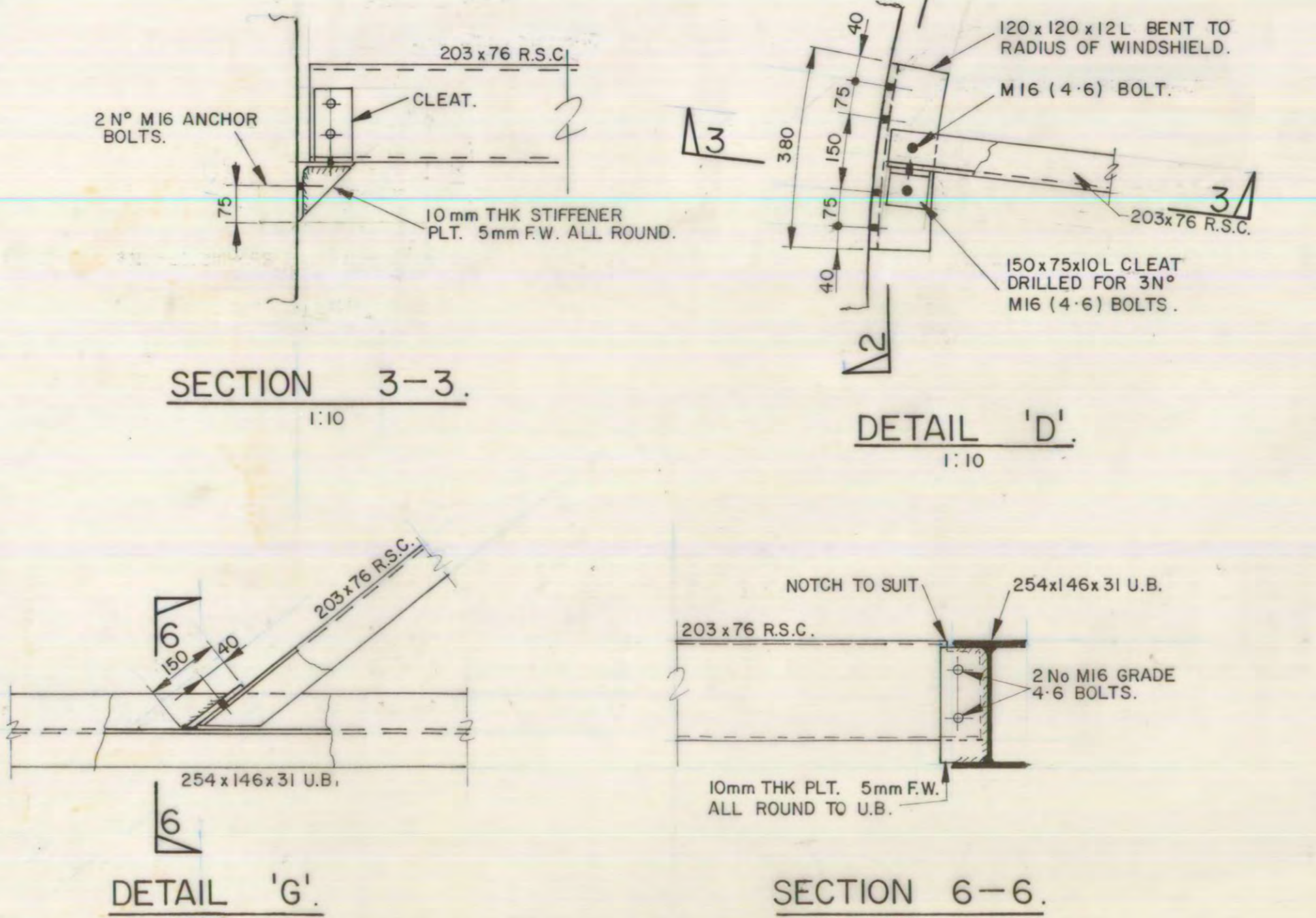
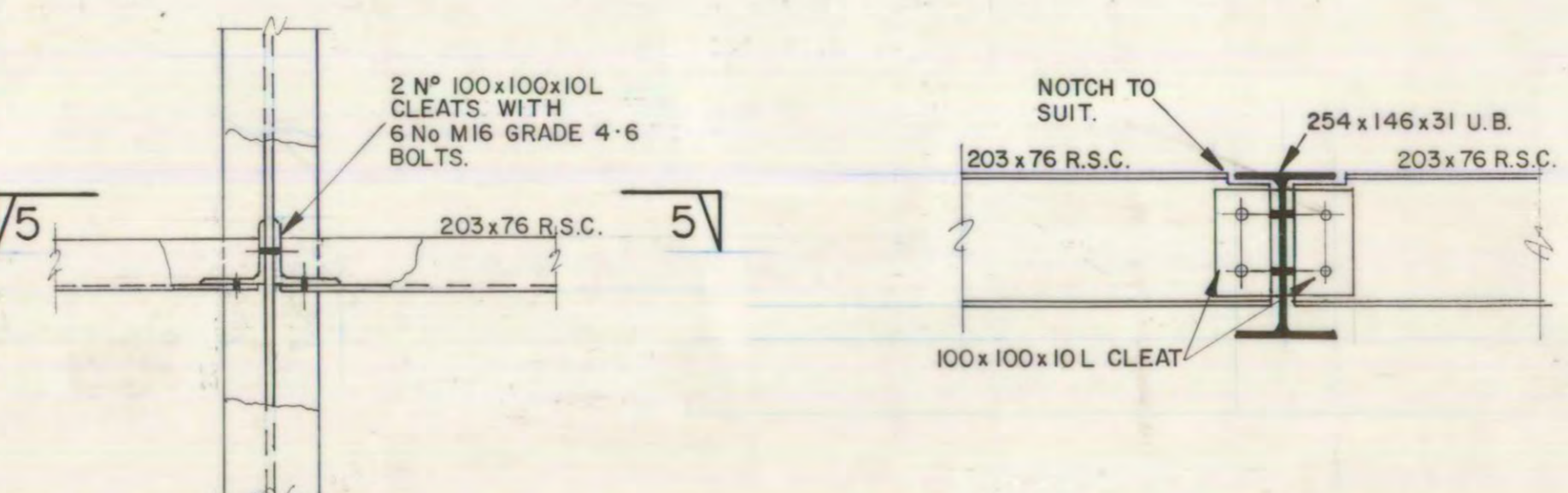
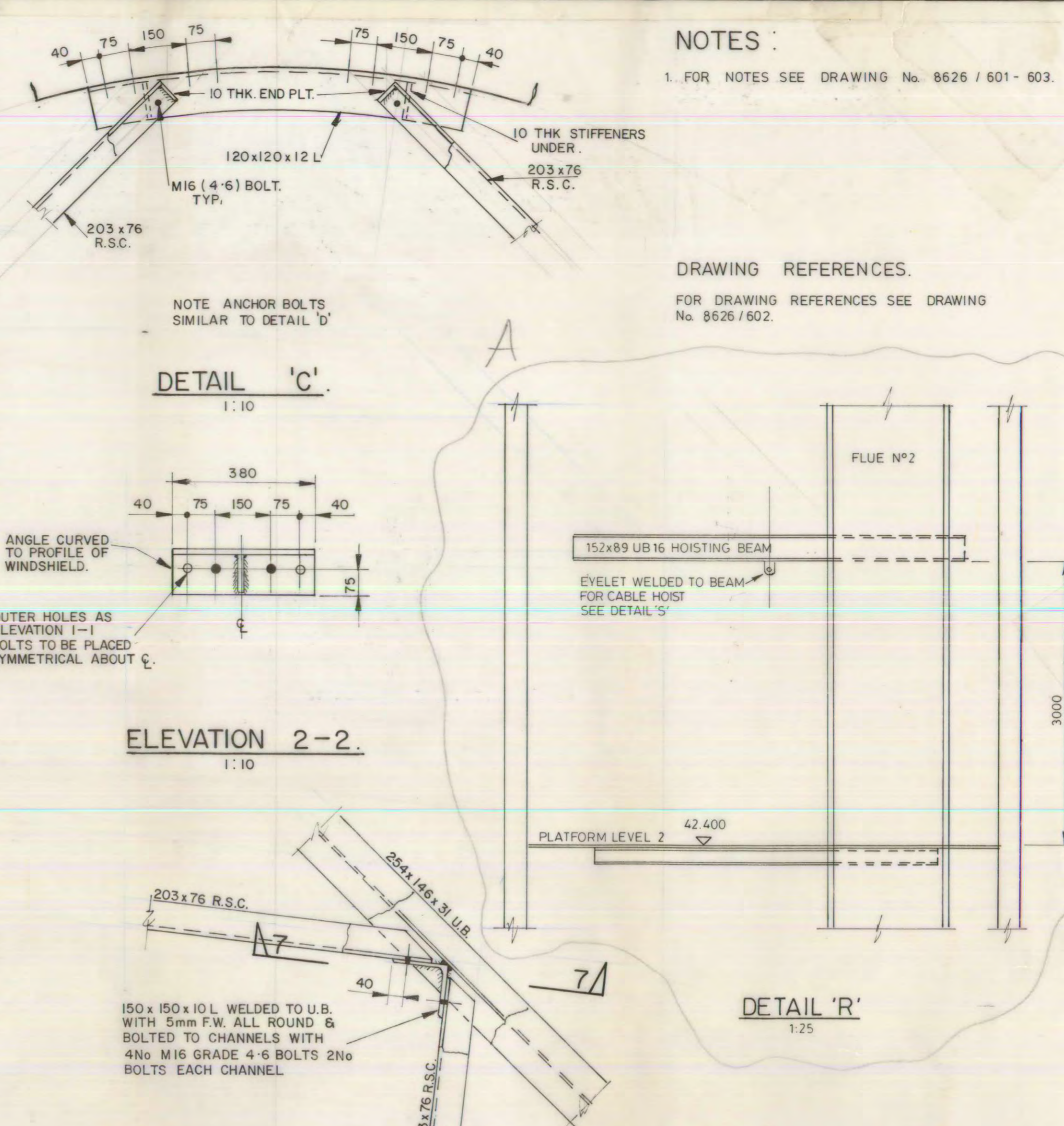
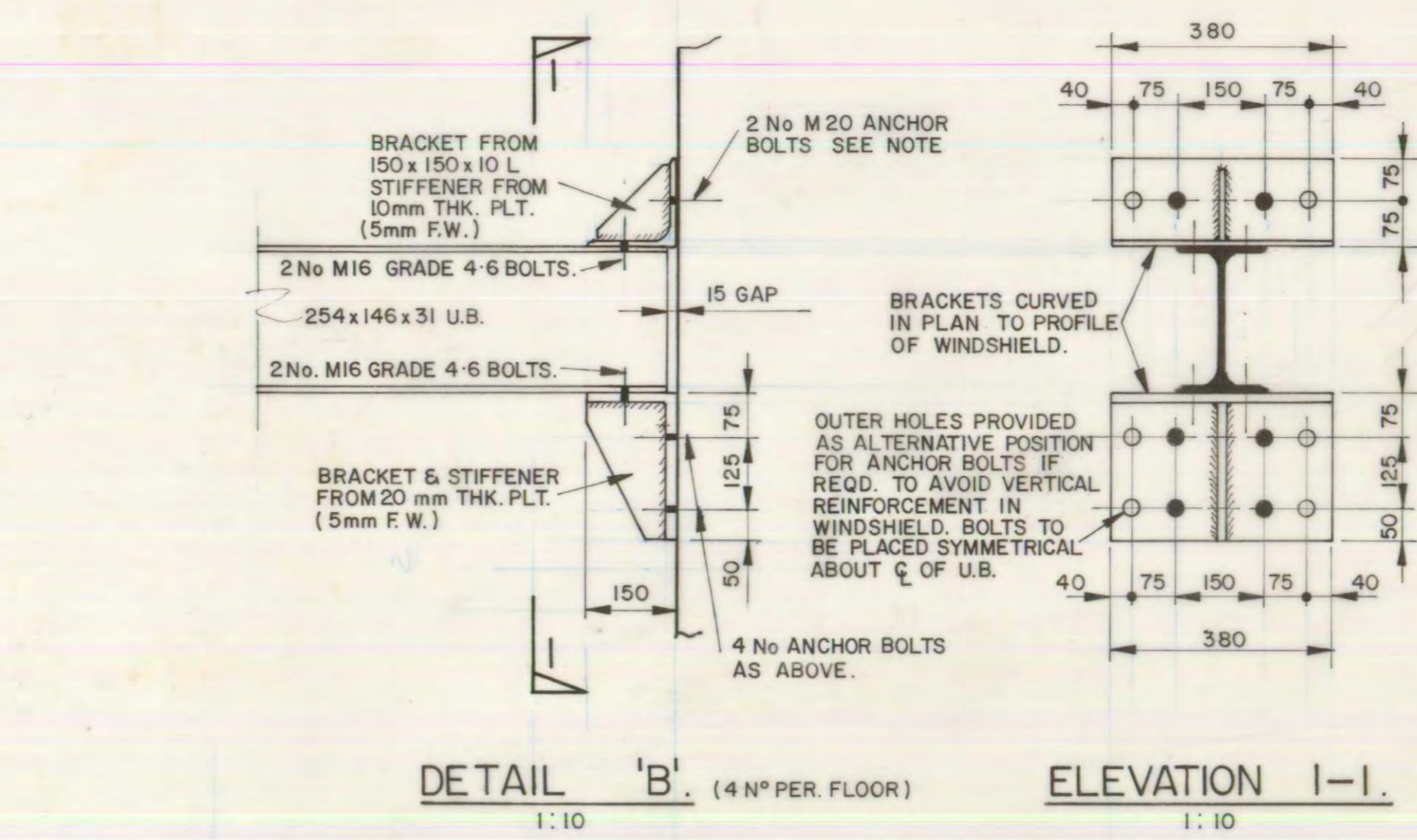
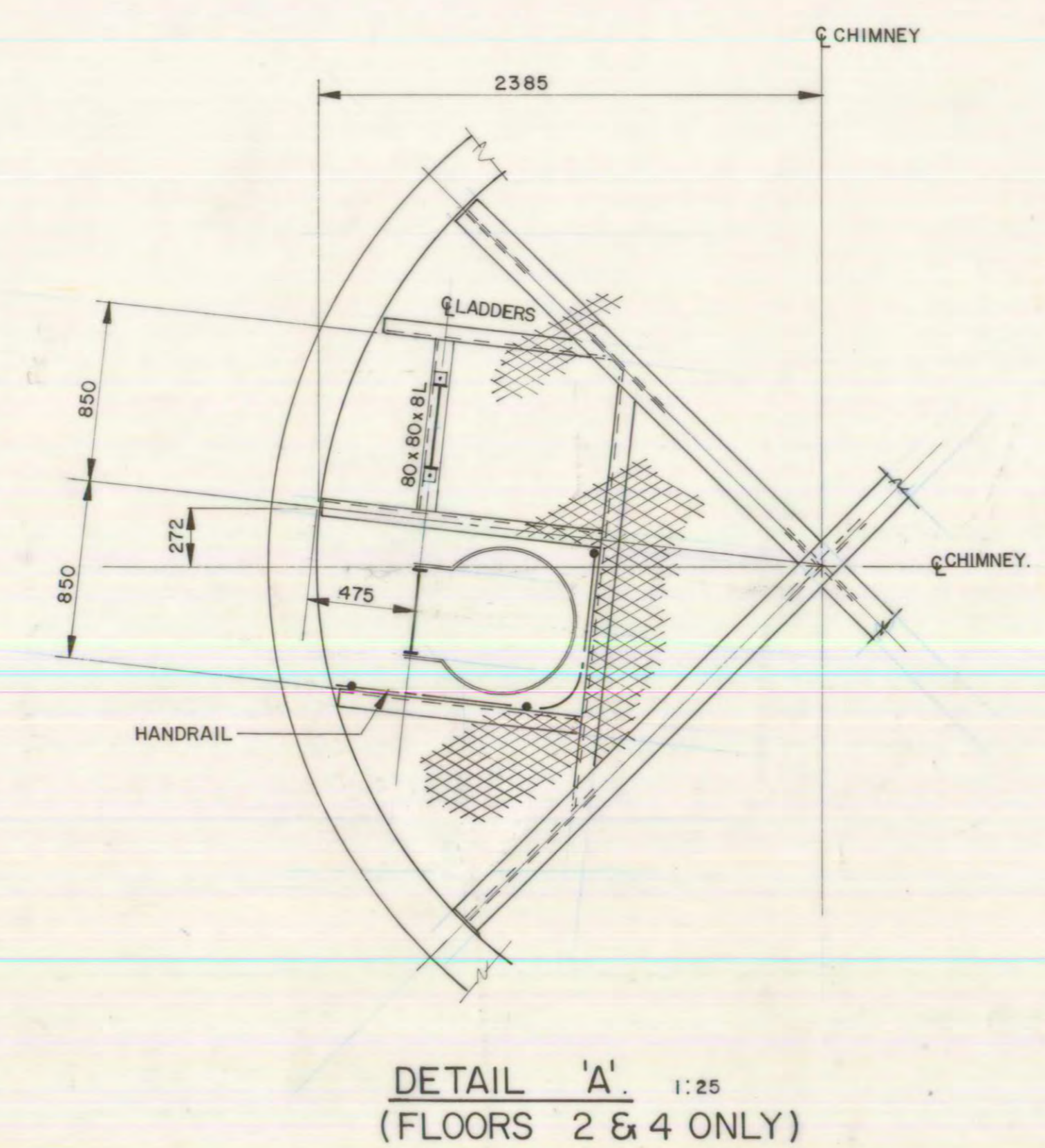
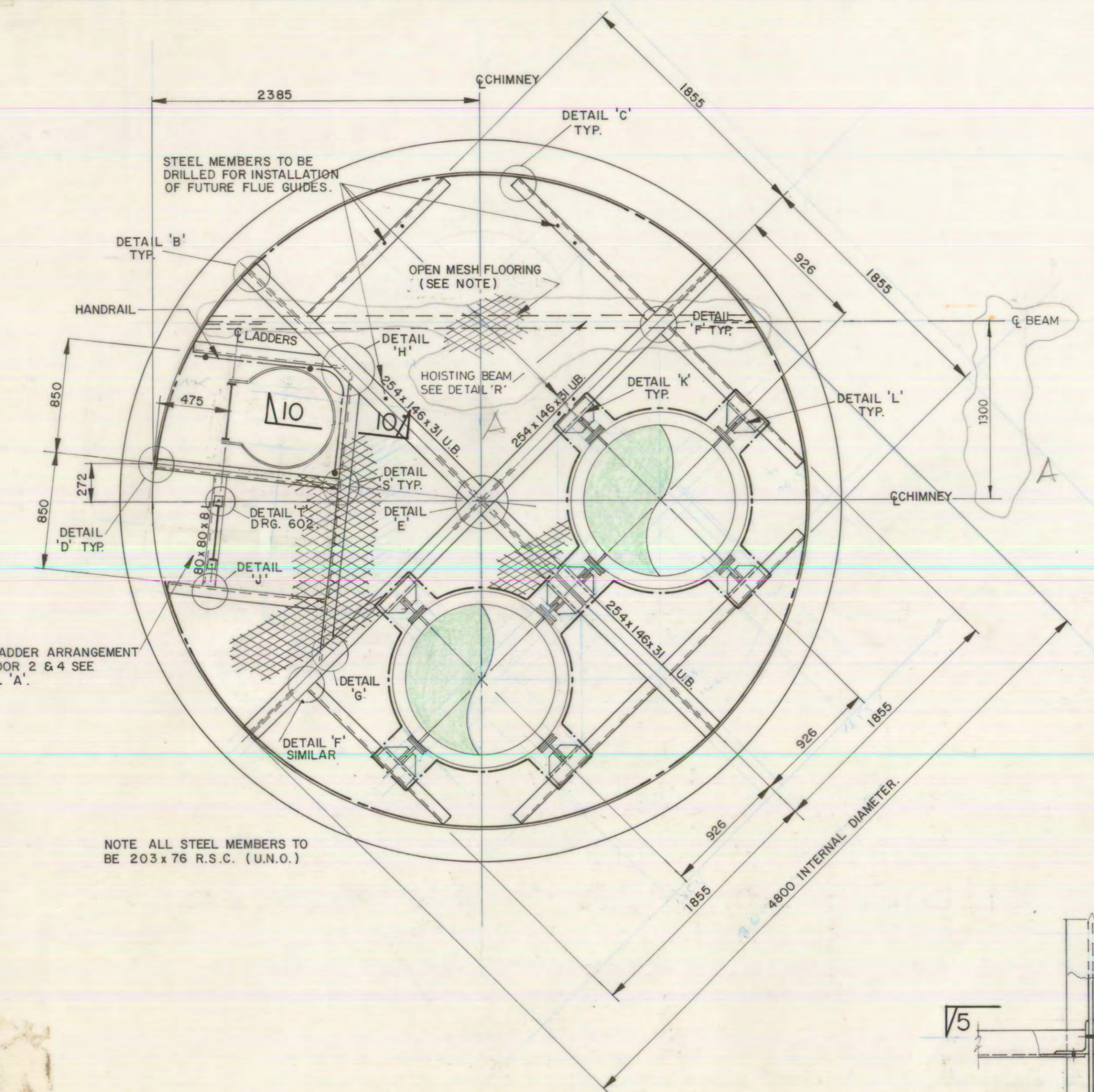
Date: AUG '91

Drawing Number: 8626 / 603

Revision: A

NOTES:  
1. FOR NOTES SEE DRAWING No. 8626 / 601 - 603.

DRAWING REFERENCES:  
FOR DRAWING REFERENCES SEE DRAWING No. 8626 / 602.



GOVERNMENT OF BERMUDA  
TYNES BAY WASTE TREATMENT FACILITY  
CHIMNEY GENERAL ARRANGEMENT & DETAILS SHEET 4.  
MINISTRY OF WORKS & ENGINEERING  
IN ASSOCIATION WITH  
G. MAUNSELL & PARTNERS CONSULTING ENGINEERS LONDON  
KENNEDY & DONKIN CONSULTING ENGINEERS MANCHESTER

WORKING DRAWING  
PROJECT DRAUGHTSMAN  
PROJECT ENGINEER  
AUG '91  
8626 / 604  
AS SHOWN  
DESIGNED  
DRAWN  
CHECKED  
REVISOR  
LEF  
LEF  
A

NOTES:

- CONCRETE CLASSES
  - FOUNDATION ANCHORS GRADE 25
  - BLINDING GRADE 7
  - BASE SLAB AND WALLS OF FOUNDATION C30
  - RETAINING WALLS C30
  - TOP SLAB OF FOUNDATION C40 WITH AIR-ENTRAINING AGENT

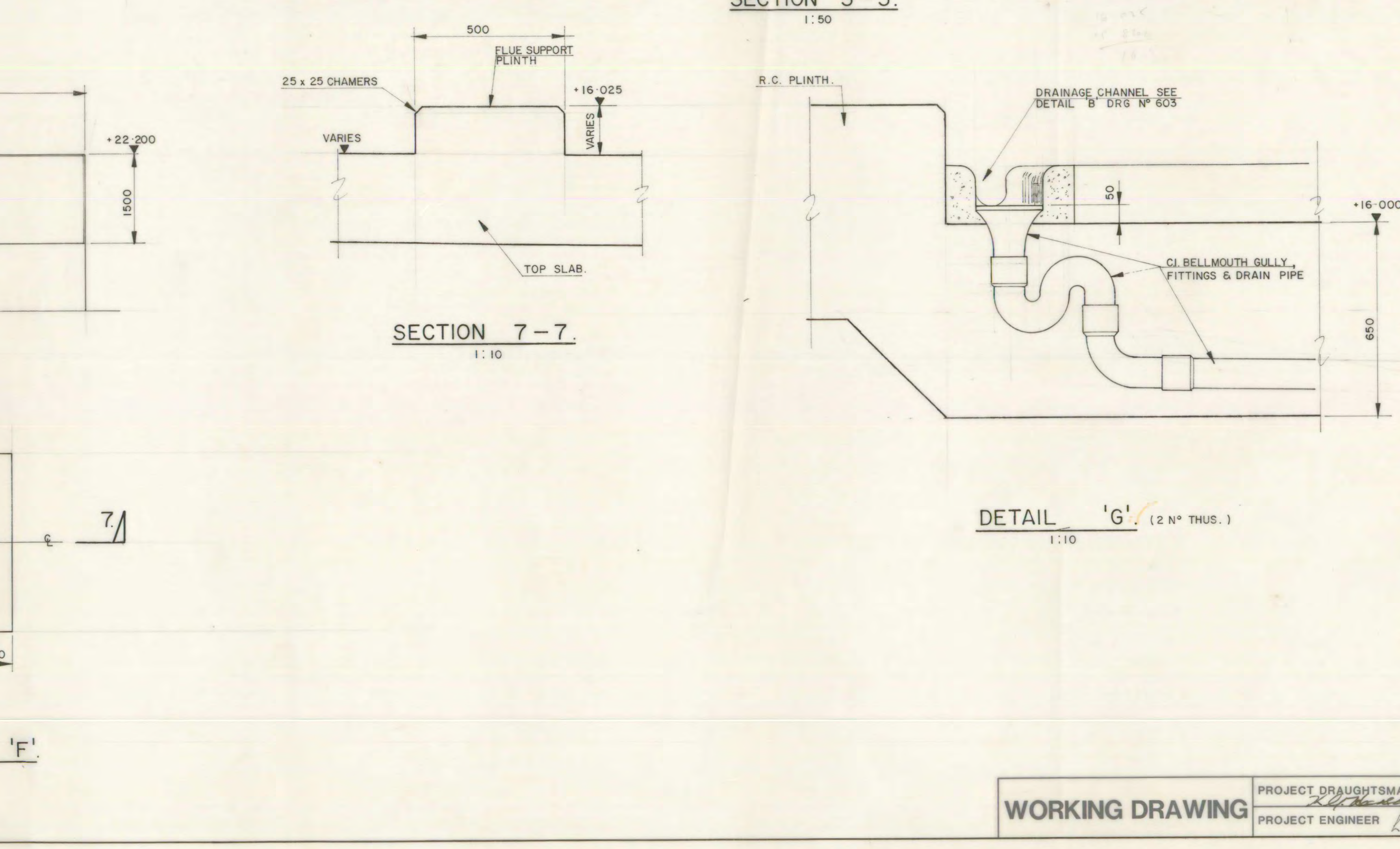
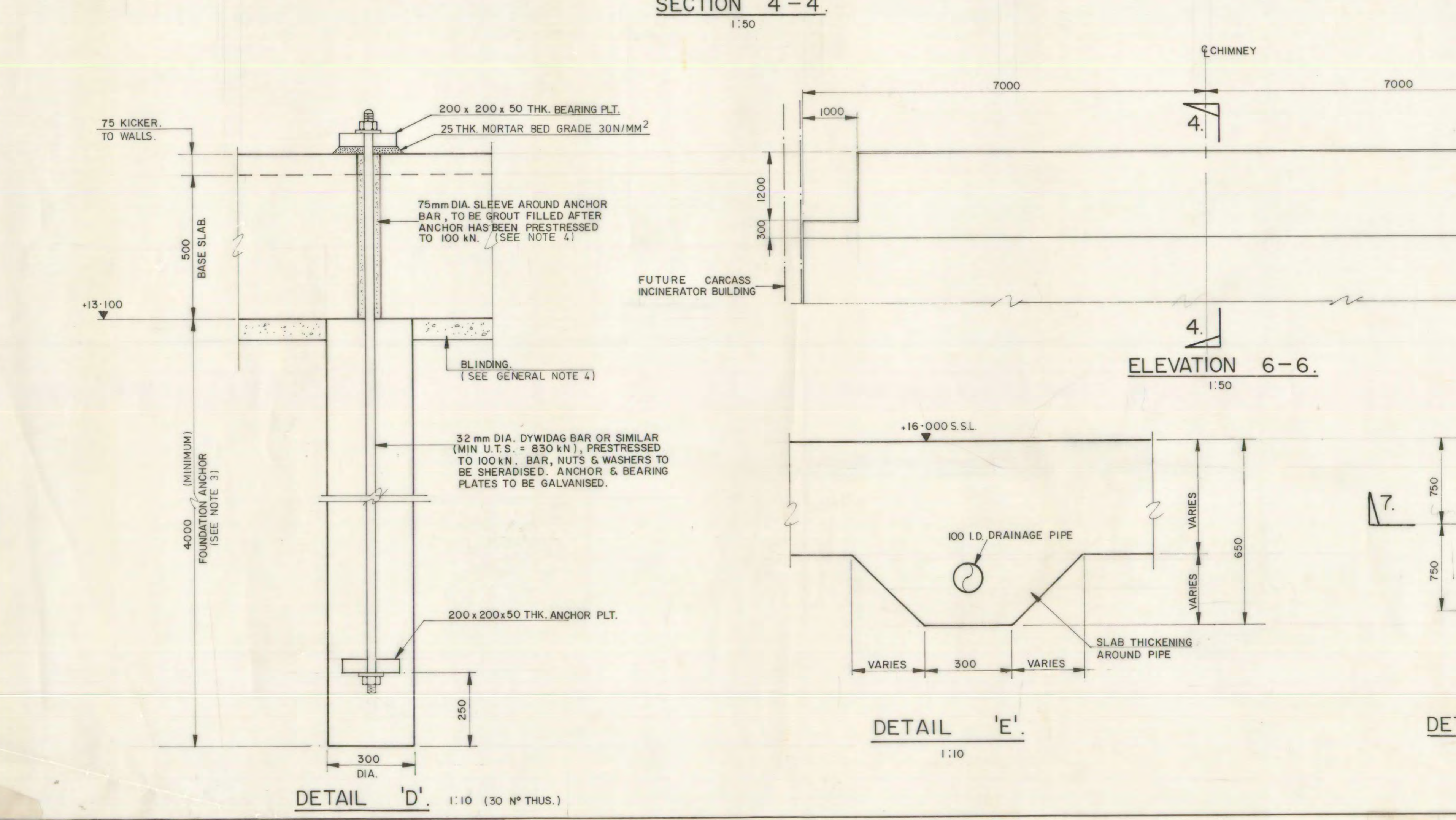
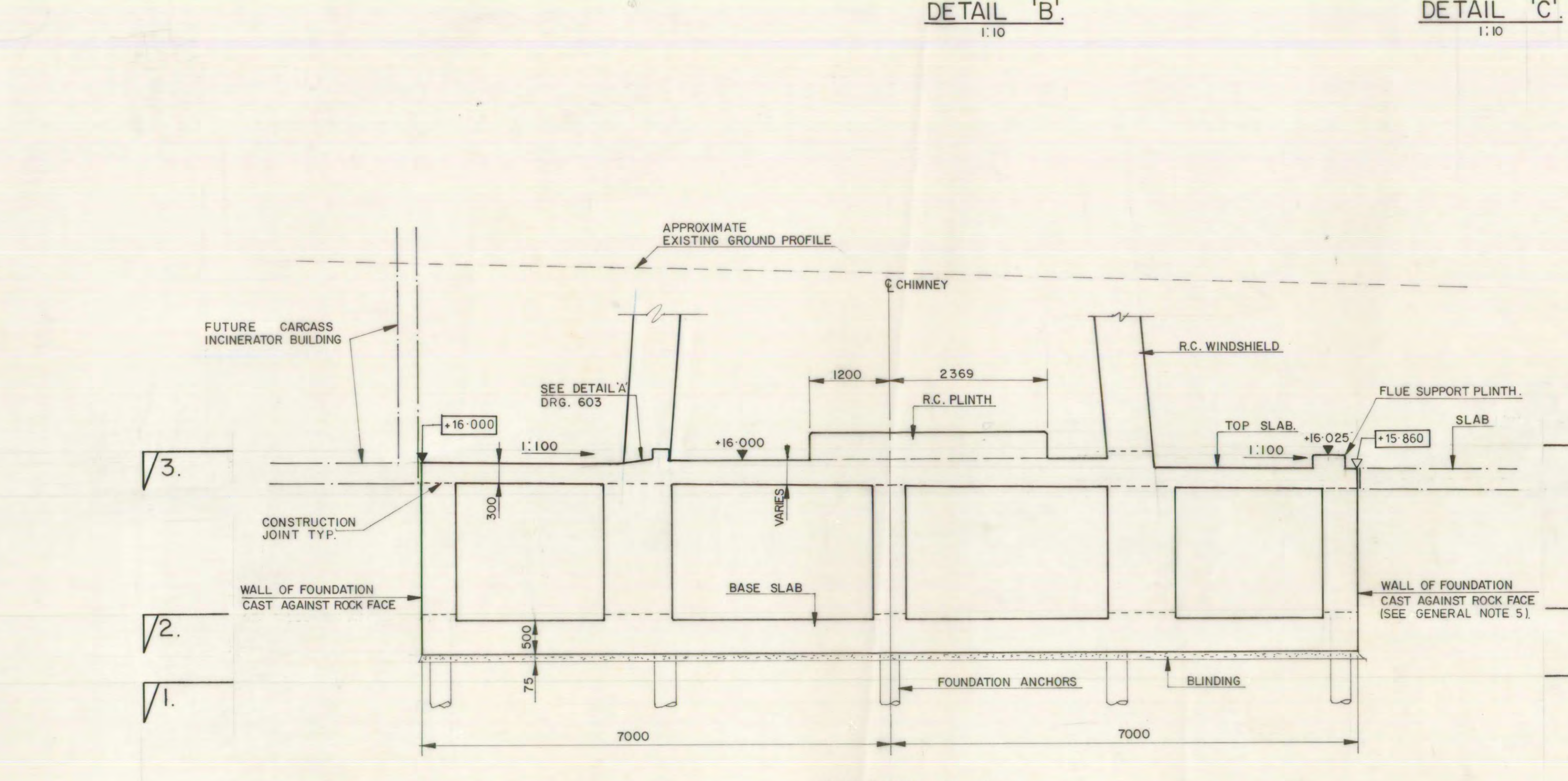
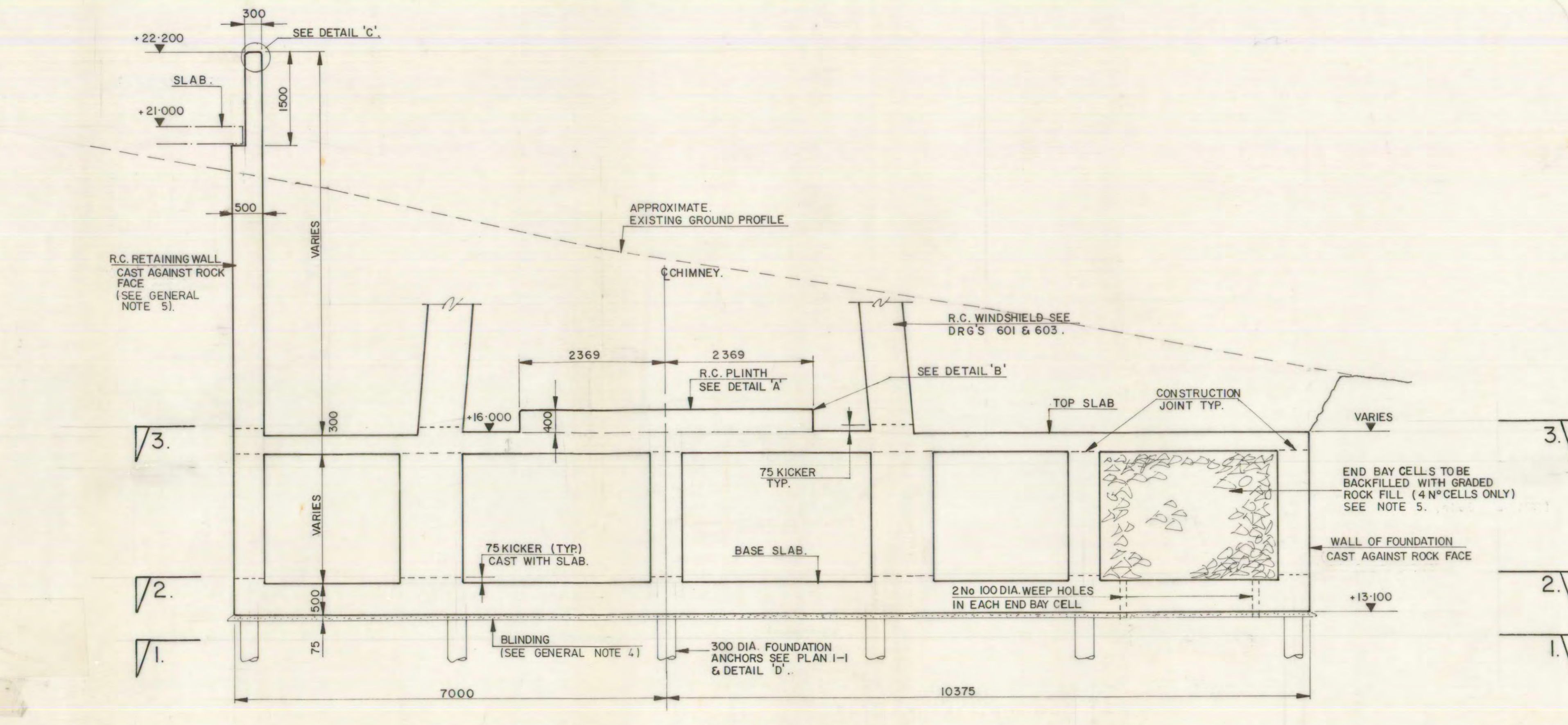
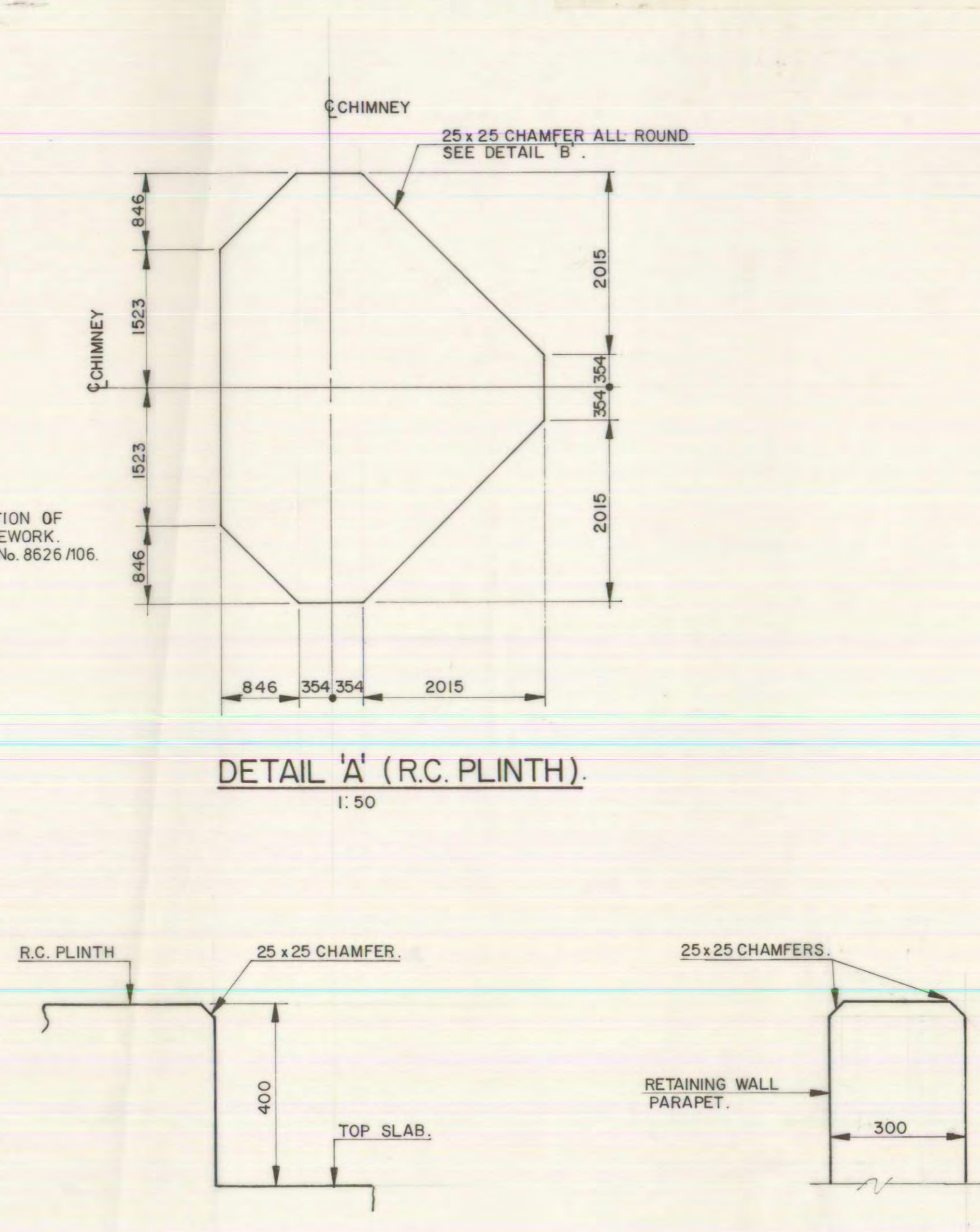
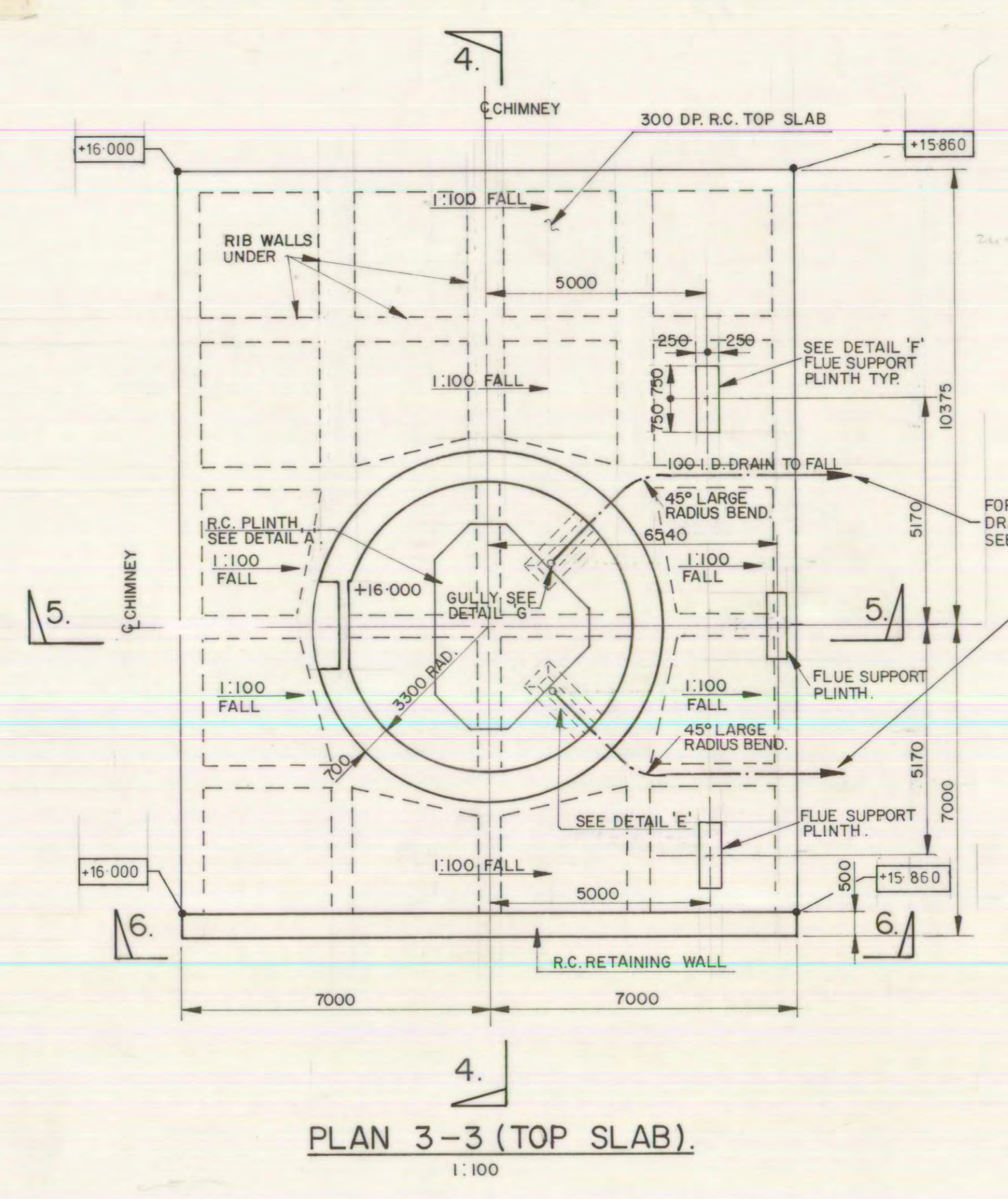
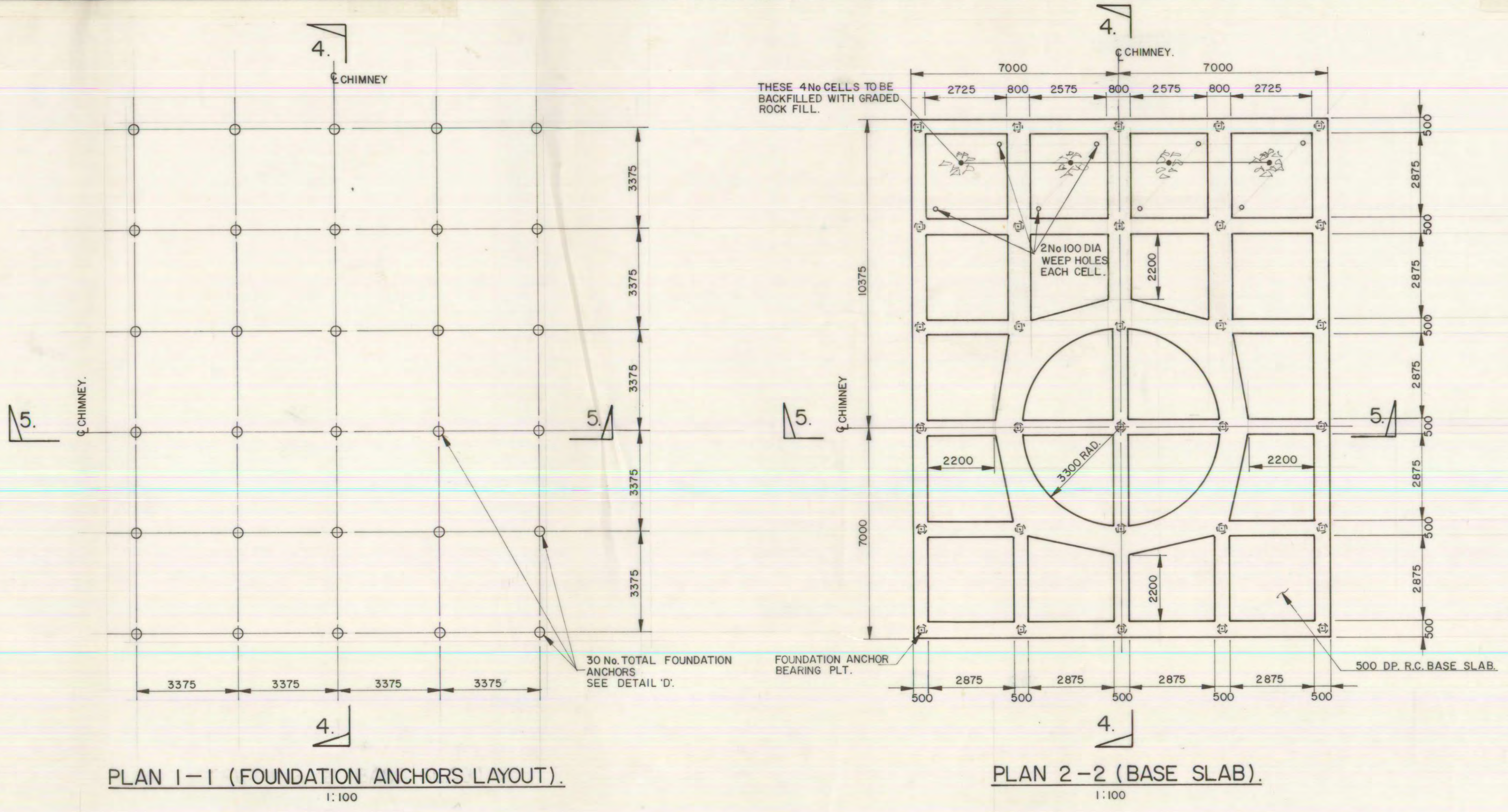
- CONCRETE SURFACE FINISHES
  - FORMED SURFACES:
    - INTERNAL FACES OF WALLS AND SOFFIT OF TOP SLAB OF FOUNDATION F1
    - ELSEWHERE F2
  - UNFORMED SURFACES:
    - TOP OF BASE SLAB U1
    - ELSEWHERE U2

- DEPTH OF FOUNDATION ANCHOR TO BE CONFIRMED BY PULL-OUT TESTS IN ACCORDANCE WITH SPECIFICATION CLAUSE 2-12.
- THE CONTRACTOR SHALL PROVIDE GROUT TUBES FOR THIS PURPOSE TO THE APPROVAL OF THE ENGINEER.

- DRY DENSITY OF GRADED ROCK FILL SHALL BE NOT LESS THAN 15 KN/M<sup>3</sup> AND NOT MORE THAN 18 KN/M<sup>3</sup>.

- GENERAL NOTES:
- ALL DIMENSIONS ARE IN MILLIMETRES.
  - ALL LEVELS ARE IN METRES RELATIVE TO O.S. DATUM LEVELS SHOWN THUS (+16.000) ARE TO TOP OF STRUCTURAL CONCRETE.
  - FOR CO-ORDINATES OF SITE GRID SEE DRG. NO. 8526/101.
  - 50mm THICK BLINDING LAYER TO BE PLACED BENEATH ALL GROUND BEARING BEAMS, SLABS AND FOUNDATIONS.
  - PRIOR TO CASTING ANY CONCRETE DIRECTLY AGAINST AN EXCAVATED FACE, THE SURFACE OF THE EXCAVATION SHALL BE SEALED IN ACCORDANCE WITH SPECIFICATION CLAUSE 3-32(g).
  - ALL PERMANENTLY EXPOSED ARRISSES ARE TO BE CHAMFERED 25x25mm UNLESS OTHERWISE NOTED.

- DRAWING REFERENCES:
- 8526/601 GENERAL ARRANGEMENT AND DETAILS TO SHEET 1 TO 4.
  - 8526/606 FOUNDATION R.C. DETAILS - SHEET 1 FOR REINFORCEMENT.
  - 8526/607 FOUNDATION R.C. DETAILS - SHEET 2 FOR LIGHTING, POWER AND DISTRIBUTION.
  - 8526/608 LIGHTING AND POWER - CHIMNEY.
  - 8526/617 CHIMNEY AREA DISTRIBUTION.
  - 8526/650 SCHEMATIC OF EQUIPMENT EARTHING SYSTEM.



Rev	Description	Date	Checked
<b>GOVERNMENT OF BERMUDA</b>			
<b>TYNES BAY WASTE TREATMENT FACILITY</b>			
<b>CHIMNEY FOUNDATION GENERAL ARRANGEMENT</b>			
<b>MINISTRY OF WORKS &amp; ENGINEERING</b>			
IN ASSOCIATION WITH			
G. MAUNSELL & PARTNERS CONSULTING ENGINEERS LONDON		KENNEDY & DONKIN CONSULTING ENGINEERS MANCHESTER	
AS SHOWN.	Designed	Drawn	Checked
	LEF	LEF	LEF
Date	Drawing Number	Approved	Revision
AUG '91	8626 / 605		

WORKING DRAWING

PROJECT DRAUGHTSMAN  
PROJECT ENGINEER