Bonneagar Iompair Éireann
Transport Infrastructure Ireland

TII Publications

GE PE DN CC OP AM RE

Standard Construction Details - Series 1800

September 2024

CC Construction & Commissioning

Standard Construction Details (SCDs) – Series 1800

TII Publications contains Standard Construction Details (SCDs) for use on National Road schemes in Ireland. This composite document brings together all the Series 1800 SCDs from TII Publications current at the date of this document's publication, into a single location for convenience.

Every effort has been made to keep this composite document updated and available from the TII Publications website (http://www.tiipublications.ie/). Please note that the SCD drawings available from the TII Publications website (individually linked below) are the controlled versions for all SCDs.

The SCDs contained in this document are as follows:

Series 1800 Structural Steelwork

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CC-SCD-01802	Gantry Group 1 - Details of Gantry Group 1 Sheet 2 of 3
CC-SCD-01803	Gantry Group 1 - Details of Gantry Group 1 Sheet 3 of 3
CC-SCD-01804	Gantry Group 2 - General Arrangement of Gantry Group 2 Sheet 1 of 3
CC-SCD-01805	Gantry Group 2 - Details of Gantry Group 2 Sheet 2 of 3
CC-SCD-01806	Gantry Group 2 - Details of Gantry Group 2 Sheet 3 of 3
CC-SCD-01807	Gantry Group 3 - General Arrangement of Gantry Group 3 Sheet 1 of 3
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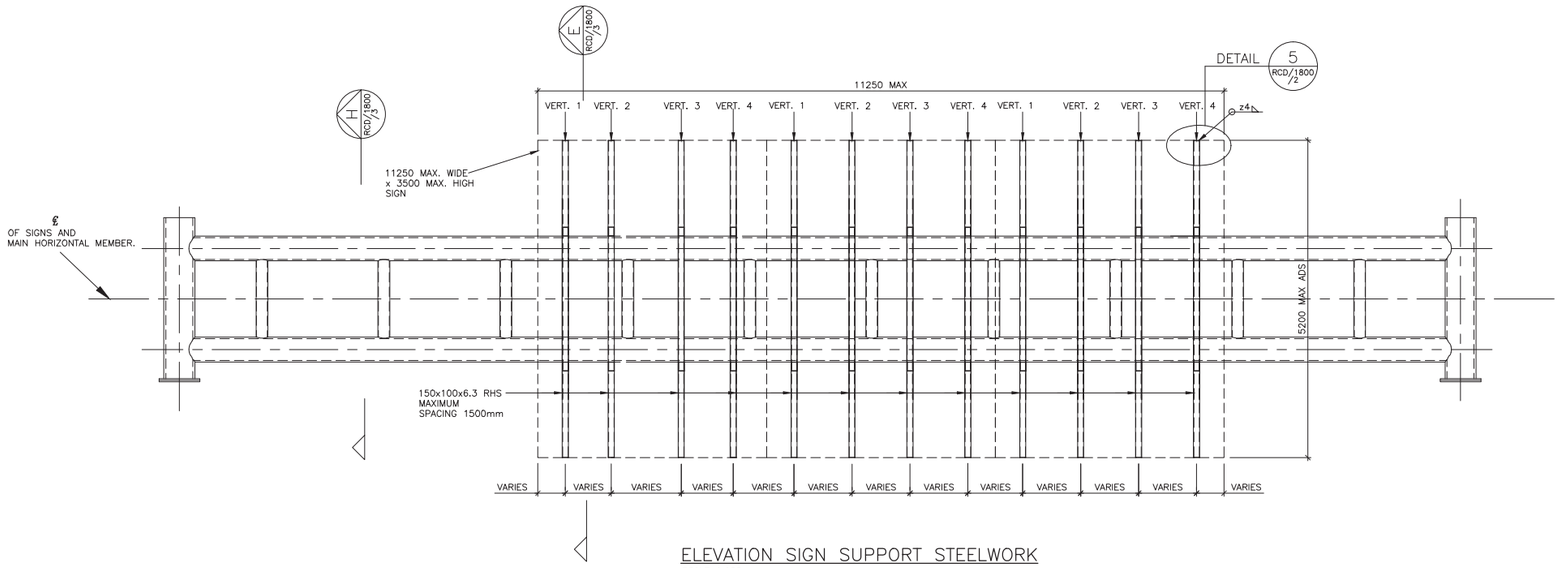
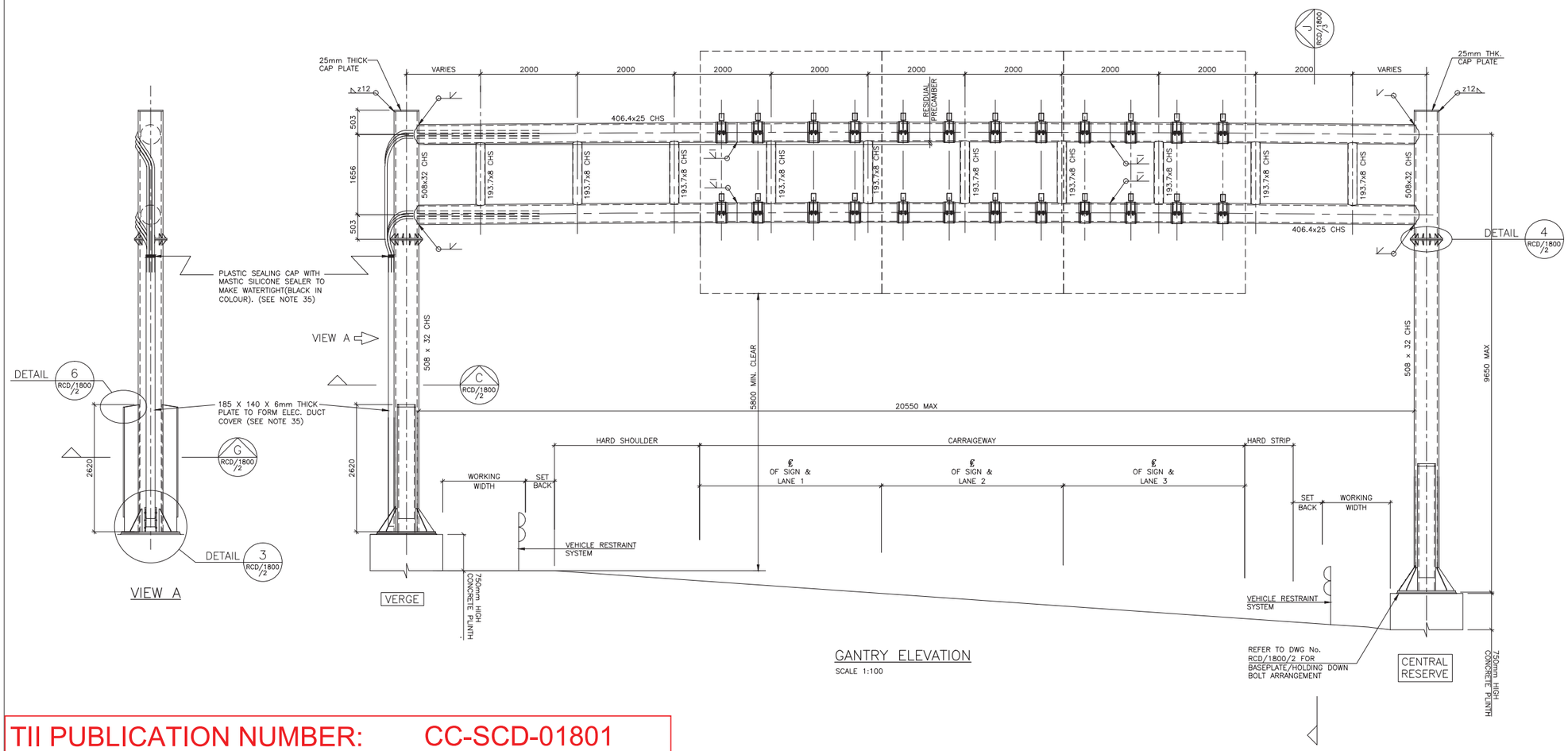
CC-SCD-01810	Gantry Group 4 - General Arrangement of Gantry Group 4 Sheet 1 of 2
CC-SCD-01811	Gantry Group 4 - Details of Gantry Group 4 Sheet 2 of 2
CC-SCD-01812	Gantry Group 5 - General Arrangement of Gantry Group 5 Sheet 1 of 2
CC-SCD-01813	Gantry Group 5 - Details of Gantry Group 5 Sheet 2 of 2
CC-SCD-01814	Gantry Group 6 - General Arrangement of Gantry Group 6 Sheet 1 of 4
CC-SCD-01815	Gantry Group 6 - General Arrangement of Gantry Group 6 Sheet 2 of 4
CC-SCD-01816	Gantry Group 6 - General Arrangement of Gantry Group 6 Sheet 3 of 4
CC-SCD-01817	Gantry Group 6 - General Arrangement of Gantry Group 6 Sheet 4 of 4
CC-SCD-01818	Gantry Group 7 - General Arrangement of Gantry Group 7 Sheet 1 of 4
CC-SCD-01819	Gantry Group 7 - General Arrangement of Gantry Group 7 Sheet 2 of 4
CC-SCD-01820	Gantry Group 7 - General Arrangement of Gantry Group 7 Sheet 3 of 4
CC-SCD-01821	Gantry Group 7 - General Arrangement of Gantry Group 7 Sheet 4 of 4
CC-SCD-01822	Gantry Group 8 General Arrangement of Gantry Group 8 Sheet 1 of 3

CC-SCD-01823	Gantry Group 8 General Arrangement of Gantry Group 8 Sheet 2 of 3
CC-SCD-01824	Gantry Group 8 General Arrangement of Gantry Group 8 Sheet 3 of 3
CC-SCD-01825	Gantry Group 9 - General Arrangement of Gantry Group 9 Sheet 1 of 3
CC-SCD-01826	Gantry Group 9 - General Arrangement of Gantry Group 9 Sheet 2 of 3
CC-SCD-01827	Gantry Group 9 - General Arrangement of Gantry Group 9 Sheet 3 of 3
CC-SCD-01828	Gantry Group 10 - General Arrangement of Gantry Group 10 Sheet 1 of 2
CC-SCD-01829	Gantry Group 10 - General Arrangement of Gantry Group 10 Sheet 2 of 2
CC-SCD-01830	Gantry Group 11 - General Arrangement of Gantry Group 11 Sheet 1 of 2
CC-SCD-01831	Gantry Group 11 - General Arrangement of Gantry Group 11 Sheet 2 of 2
CC-SCD-01850	Single Leaf Abutment Gallery Door
CC-SCD-01851	Double Leaf Abutment Gallery Door
CC-SCD-01852	Abutment Gallery Security Mesh



ELEVATION SIGN SUPPORT STEELWORK

SCALE 1:100



GANTRY ELEVATION

SCALE 1:100

NOTES

1. THE PURPOSE OF THIS DETAIL IS TO ENSURE A CONSISTENCY OF STRUCTURAL FORM FOR GROUP 1 GANTRIES ACROSS THE NATIONAL ROAD NETWORK. ALL SECTION SIZES AND DETAILS ARE MINIMUM INDICATIVE SIZE ONLY. THE NRA TAKE NO RESPONSIBILITY FOR THE STRUCTURAL OR GEOMETRICAL ADEQUACY OF THESE DETAILS. IT IS THE RESPONSIBILITY OF THE DESIGN ENGINEER TO ANALYSE, DESIGN AND DETAIL THE GROUP 1 GANTRY, CONNECTION DETAILS AND ITS ASSOCIATED REINFORCED CONCRETE FOUNDATION IN ACCORDANCE WITH THE EUROCODES, THEIR ASSOCIATED IRISH NATIONAL ANNEXES, NRA BD 51, NRA BD 60, NRA BD 2 AND ALL OTHER DESIGN DOCUMENTS AS APPROPRIATE TO THE ROAD BEING SPANNED.
2. ALL GANTRY SUPPORT LEGS LOCATED LESS THEN 4.5M FROM THE EDGE OF CARRIAGEWAY SHALL BE DESIGNED TO WITHSTAND THE VEHICLE COLLISION LOADS GIVEN IN TABLE 4.2 OF NRA BD 51 REGARDLESS OF THE PRESENCE OF A VEHICLE RESTRAINT SYSTEM.
3. ALL DIMENSIONS ARE IN MILLIMETRES.
4. THE DESIGNER OF SPECIFIC GANTRIES SHALL PRODUCE STRUCTURAL DRAWINGS FOR THE SPECIFIC GANTRY. ALL INFORMATION THAT IS SITE SPECIFIC MUST BE INCLUDED ON THESE DRAWINGS.
5. THE SECONDARY SIGN STEELWORK VERTICALS AND SIGN LAYOUT ARE INDICATIVE OF THE MAXIMUM SIGN AREA THE GANTRY CAN SUPPORT. THE DESIGNER OF SPECIFIC GANTRIES IS ALSO RESPONSIBLE FOR THE SIGN LAYOUT AND DESIGN OF ANY SECONDARY STEELWORK SUPPORTING THE SIGN INCLUDING SECTION SIZES AND SPACING OF VERTICAL MEMBERS. IT IS THE RESPONSIBILITY OF THE DESIGN ENGINEER TO ENSURE THAT THE CLAMPS SUPPORTING THE VERTICAL MEMBERS AND SIGN DO NOT CLASH WITH THE PROPOSED GANTRY SUPPORT MEMBERS.
6. STEEL SHALL BE S355J2G3 TO IS EN 10025-2 TO IS EN 10025-6 UNLESS NOTED OTHERWISE. HOLLOW SECTIONS TO BE GRADE S355J2H TO IS EN 10210 UNLESS NOTED OTHERWISE.
7. THE STEELWORK DIMENSIONS SHOWN ARE SPECIFIED FOR A MEAN TEMPERATURE OF 15 DEGREES CENTIGRADE.
8. STRUCTURAL STEELWORK TO BE IN ACCORDANCE WITH SERIES 1800 OF NRA MCDRW.
9. PROTECTION TO STEELWORK TO BE IN ACCORDANCE WITH SERIES 1900 OF NRA MCDRW. FINAL COLOUR TO BE APPROVED BY NRA. ALL SPLICES AND CONNECTORS TO BE FULLY TOP COATED AFTER ASSEMBLY. ALL GAPS SHOULD BE SEALED.
10. DIFFERENTIAL SETTLEMENT BETWEEN THE END SUPPORTS IS TAKEN AS 15mm. A SITE SPECIFIC ASSESSMENT OF DIFFERENTIAL SETTLEMENT SHALL BE CARRIED OUT, WITH 15MM DESIGNED FOR AS A MINIMUM.
11. LIFTING EYES TO BE DESIGNED BY STEELWORK FABRICATOR AND SUBMITTED TO THE DESIGNER OF SPECIFIC GANTRIES FOR APPROVAL AT LEAST 4 WEEKS PRIOR TO FABRICATION. TEMPORARY WELDED ATTACHMENTS REQUIRED FOR ERECTION SHALL BE REMOVED AND PROTECTIVE COATING SYSTEM APPLIED IN ACCORDANCE WITH SERIES 1900 OF NRA MCDRW.
12. METHOD OF ERECTION OF GANTRY TO BE APPROVED BY THE DESIGNER OF SPECIFIC GANTRIES.
13. ANY TEMPORARY ARRANGEMENT REQUIRED FOR LANDING MAIN BEAM PRIOR TO SITE CONNECTION SHALL BE AGREED WITH THE DESIGNER OF SPECIFIC GANTRIES 4 WEEKS PRIOR TO FABRICATION.
14. TEMPORARY WELDED ATTACHMENTS SHALL BE SUBJECT TO APPROVAL BY THE DESIGN ENGINEER.
15. WELD SYMBOLS ARE IN ACCORDANCE WITH IS EN 22553.
16. ALL FILLET WELDS SHALL BE MINIMUM 6mm LEG LENGTH AND CONTINUOUS UNLESS NOTED OTHERWISE. DESIGN ENGINEER TO VERIFY.
17. BOLTS SHALL BE AS DESCRIBED ON THE DRAWING. DESIGN ENGINEER TO VERIFY.
18. COPE HOLES AND RE-ENTRANT CORNERS SHALL HAVE A RADIUS OF AT LEAST 50mm OR 1.25 TIMES THE PLATE THICKNESS, WHICHEVER IS GREATER, UNLESS NOTED OTHERWISE.
19. HARD STAMPING SHALL NOT BE PERMITTED ON ANY PERMANENTLY EXPOSED SURFACES
20. ASSUMED MAX WEIGHT OF ADS 20kg/m².
21. MAXIMUM DEPTH OF SIGN TO BE 400mm.
22. STRUCTURAL STEELWORK SUPPORTING SIGNAGE OFF GANTRIES HAS A MAX. ASSUMED WEIGHT OF 27.9kg/m. THE STRUCTURAL ADEQUACY OF ALTERNATIVE ARRANGEMENTS PROPOSED BY THE DESIGNERS OF SPECIFIC GANTRIES TO ACCOMMODATE SPECIFIC SIGNS SHALL BE VERIFIED BY THE DESIGNERS OF SPECIFIC GANTRIES.
23. VERTICALS 1 AND 4 ARE DESIGNED TO SUPPORT VARIABLE MESSAGE SIGNAGE (VMS). VERTICALS 2 AND 3 ARE OMITTED TO ALLOW ACCESS TO BACK OF VMS. ALL VERTICALS ARE REQUIRED FOR ADVANCED DIRECTIONAL SIGNAGE. SIZE AND SPACING OF VERTICALS TO BE CONFIRMED BY THE DESIGN ENGINEER.
24. WIND LOADING SHALL BE IN ACCORDANCE WITH IS EN 1991-1-4 AND THE ASSOCIATED IRISH NATIONAL ANNEX.
25. ALL BOLTS AND NUTS TO BE VIBRATION RESISTANT.
26. ALL WELDS ARE IN TENSION UNDER TEMPORARY AND IN-SERVICE CONDITIONS.
27. MINIMUM CLASS OF CONCRETE IN FOUNDATION TO BE C32/40.
28. ALL ELEMENTS TO BE LIFTED FROM LIFTING EYES. SLINGS NOT TO BE USED TO PREVENT DAMAGE TO PROTECTIVE COATING.
29. GANTRIES ARE ASSUMED PERPENDICULAR TO THE MAINLINE.
30. SECONDARY SIGNWORK STRUCTURAL STEELWORK NOT TO BE USED FOR LIFTING.
31. THE RESIDUAL PRECAMBER AFTER PERMANENT AND SUPER-IMPOSED DEAD LOADS FOR SPECIFIC SCHEMES SHALL BE SPAN/400 AND BE ACHIEVED AT MID-SPAN WITH A SMOOTH CURVE BETWEEN MID-SPAN AND END SUPPORTS.
32. CARRIAGEWAY CROSS SECTION IS INDICATIVE ONLY.
33. SIGN SUPPORT DETAILS AND CABLE RUNS REQUIRED SHALL BE CONFIRMED BY THE DESIGNER OF THE SPECIFIC GANTRIES WITH ELECTRICAL SUPPLIER.
34. DUCTING TO BE BE PROVIDED BY SPECIALIST SUBCONTRACTORS.
35. PROVISION OF ELEMENTS SUPPORTING AND ACCOMMODATING ELECTRICAL EQUIPMENT AT SPECIFIC GANTRIES TO BE CONFIRMED WITH THE NRA.
36. THE DESIGNER OF SPECIFIC GANTRIES SHALL BE SUBJECT TO, AND SHALL COMPLY WITH THE TECHNICAL APPROVAL PROCEDURES FOR STRUCTURES CONTAINED WITHIN NRA BD2 OF THE NRA DMRB.

LEGEND

ADS – ADVANCED DIRECTIONAL SIGN

TII PUBLICATION NUMBER: CC-SCD-01801

NATIONAL ROADS AUTHORITY

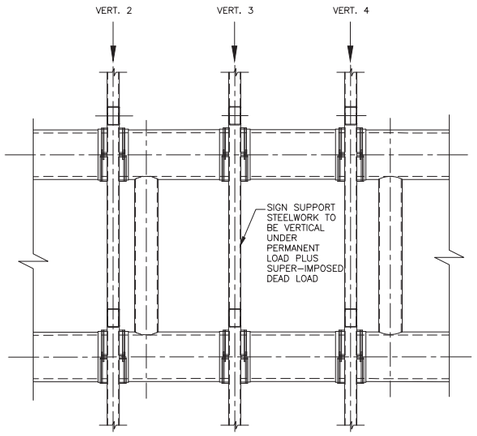
ROAD CONSTRUCTION DETAILS

GANTRY GROUP 1

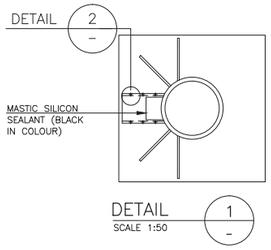
Issue	Date
P01	12/14

GENERAL ARRANGEMENT OF GANTRY GROUP 1 SHEET 1 OF 3

Drawing No. RCD/ 1800/1

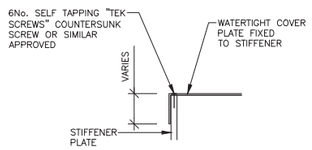


SIGN SUPPORT STEELWORK
SCALE 1:50

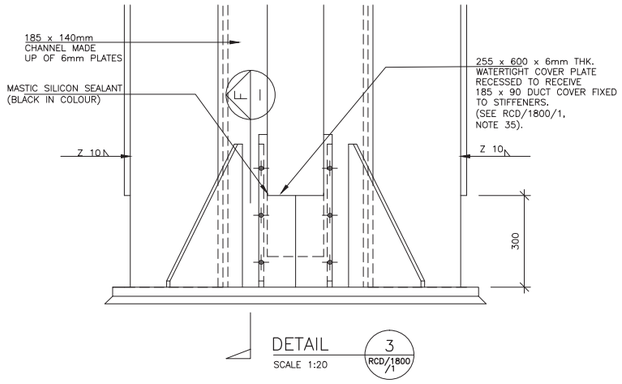


DETAIL 2 / –

DETAIL 1 / –
SCALE 1:50



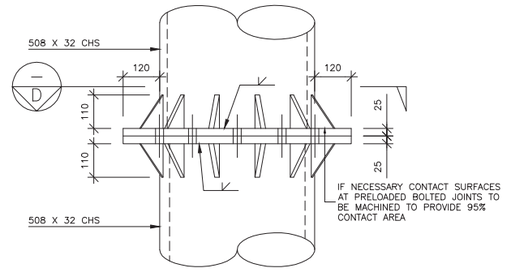
DETAIL 2 / –
SCALE 1:20



DETAIL 3 / RCD/1800/1
SCALE 1:20

NOTES

1. REFER TO DRAWING No RCD/1800/1 FOR GENERAL NOTES.



DETAIL 4 / RCD/1800/1
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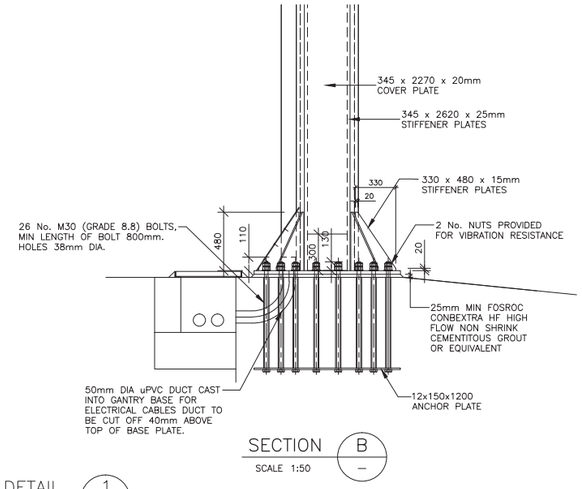
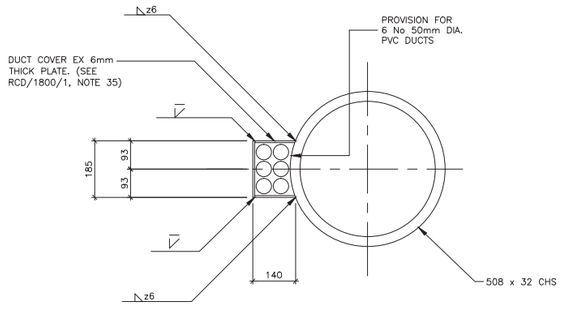
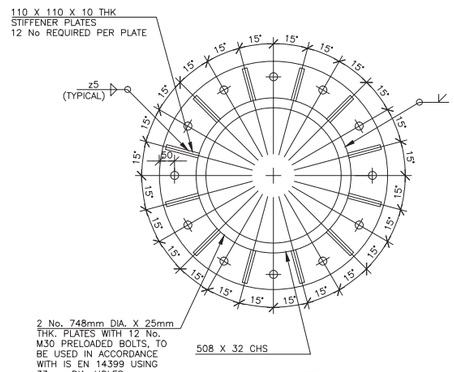


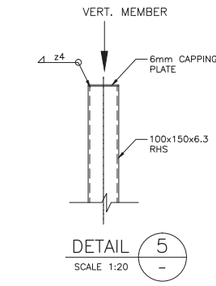
SECTION B / –
SCALE 1:50



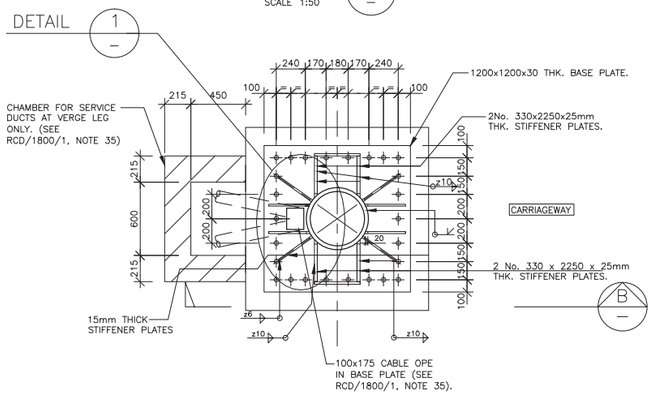
SECTION C / RCD/1800/1
SCALE 1:20



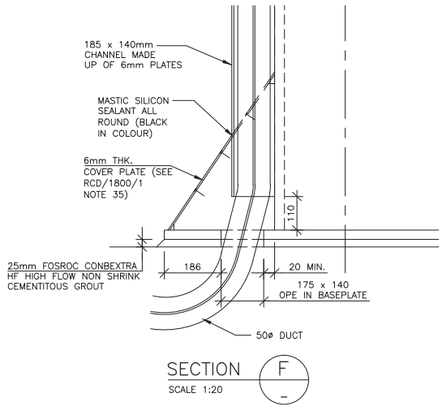
SECTION D / –
SCALE 1:20



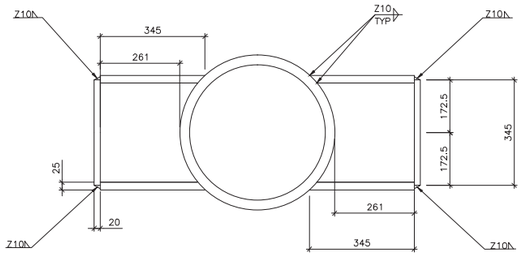
DETAIL 5 / –
SCALE 1:20



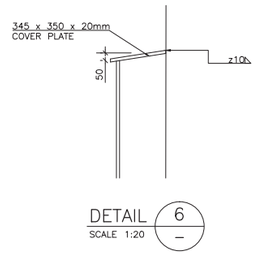
PLAN ON BASE PLATE
SCALE 1:50



SECTION F / –
SCALE 1:20



SECTION G / RCD/1800/1
SCALE 1:10



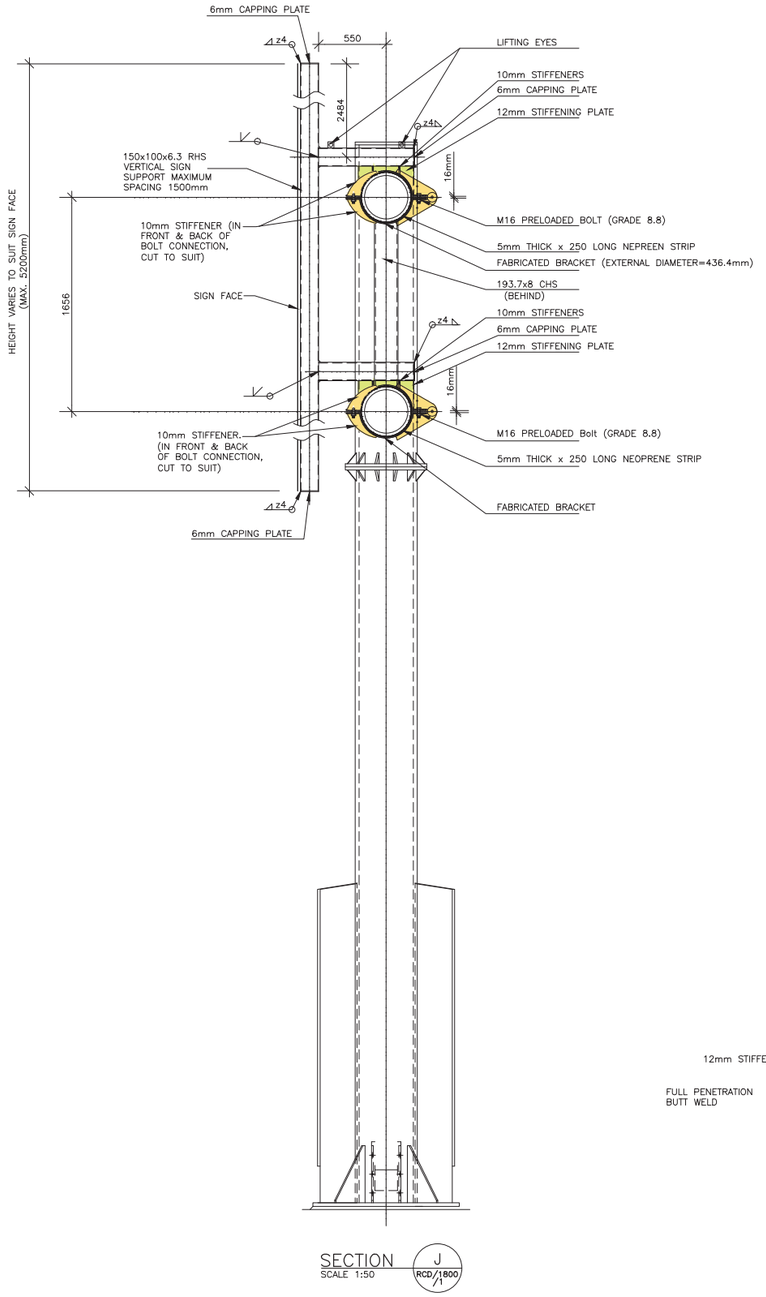
DETAIL 6 / –
SCALE 1:20

TII PUBLICATION NUMBER: CC-SCD-01802

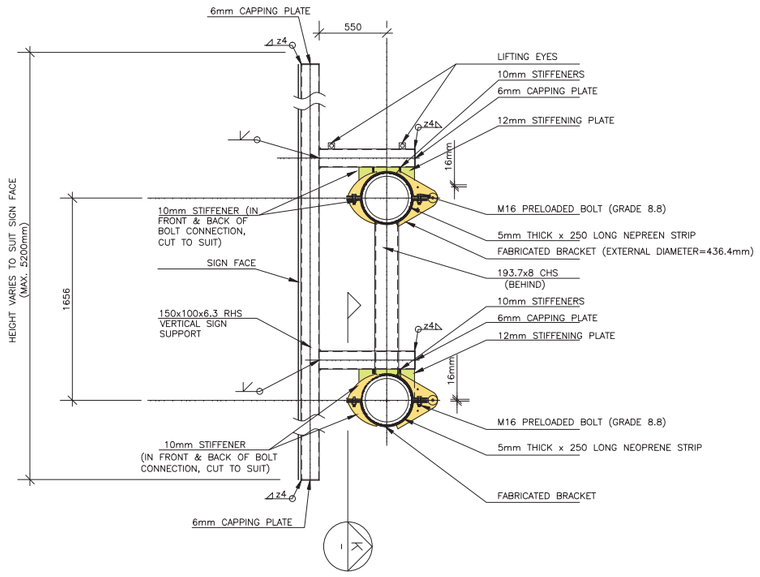
NRA NATIONAL ROADS AUTHORITY	ROAD CONSTRUCTION DETAILS	GANTRY GROUP 1	P01 Issue / 12/14 Date

DETAILS OF GANTRY GROUP 1 SHEET 2 OF 3

Drawing No. RCD/ 1800/2



SECTION J
SCALE 1:50 RCD/1800/1



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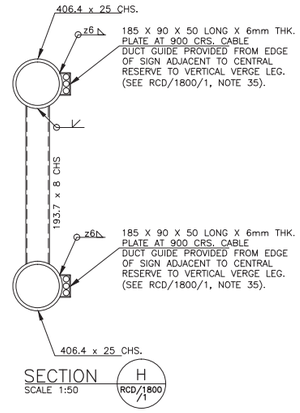
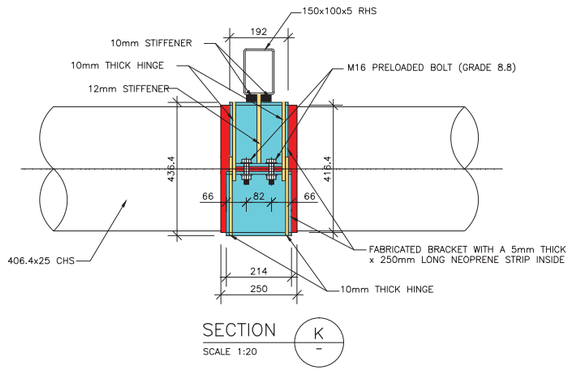
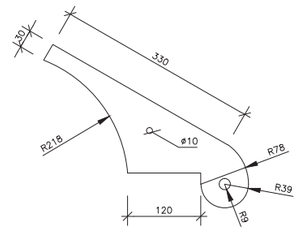
SCALE 1:50 RCD/1800/1

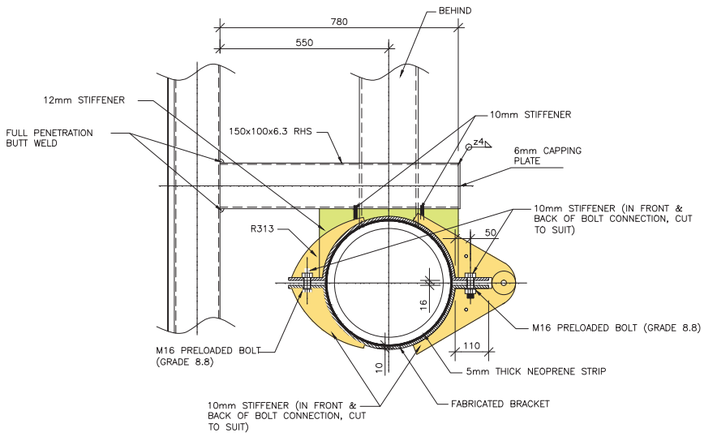


SECTION H
SCALE 1:50 RCD/1800/1

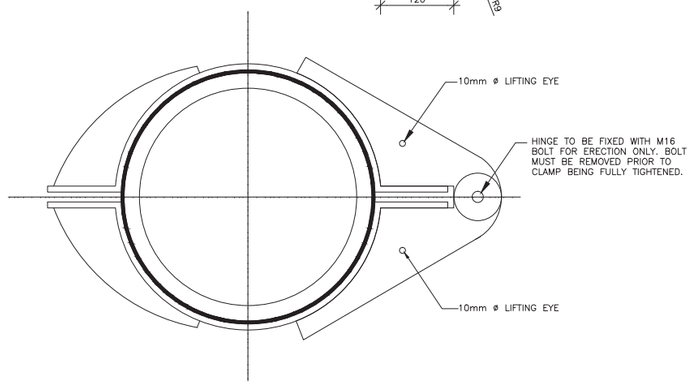


SECTION K
SCALE 1:20 -





BRACKET DETAIL
SCALE 1:20



HINGE BRACKET DETAIL
SCALE 1:10

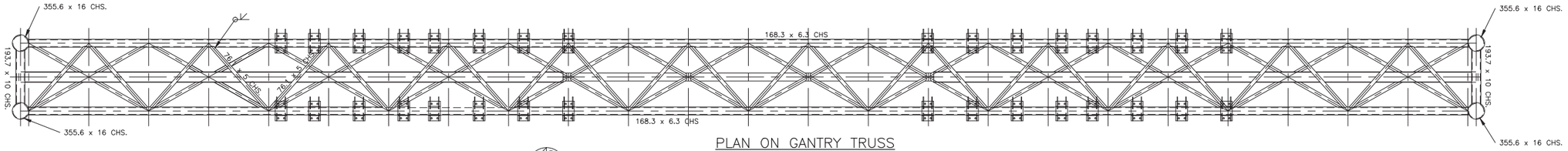
NOTES

1. REFER TO DRAWING No RCD/1800/1 FOR GENERAL NOTES.
2. FOR FABRICATION OF CLAMPS, ALL WELDS TO BE 8mm MINIMUM FILLET WELDS AND CONTINUOUS UNLESS NOTED OTHERWISE. DESIGN ENGINEER TO VERIFY.
3. THE NRA TAKE NO RESPONSIBILITY FOR THE STRUCTURAL ADEQUACY OF THESE CLAMPING DETAILS. IT IS THE RESPONSIBILITY OF THE DESIGN ENGINEER TO ANALYSE, DESIGN AND DETAIL ALL ASPECTS OF THE CLAMPING CONNECTION.
4. EACH VERTICAL MEMBER SUPPORTING SIGNS WILL REQUIRE A SET OF CLAMPS TO CONNECT TO THE GANTRY.

TII PUBLICATION NUMBER: CC-SCD-01803

NRA NATIONAL ROADS AUTHORITY	ROAD CONSTRUCTION DETAILS	GANTRY GROUP 1			Drawing No.
			P01	12/14	RCD/ 1800/3
			Issue	Date	

DETAILS OF GANTRY GROUP 1 SHEET 3 OF 3

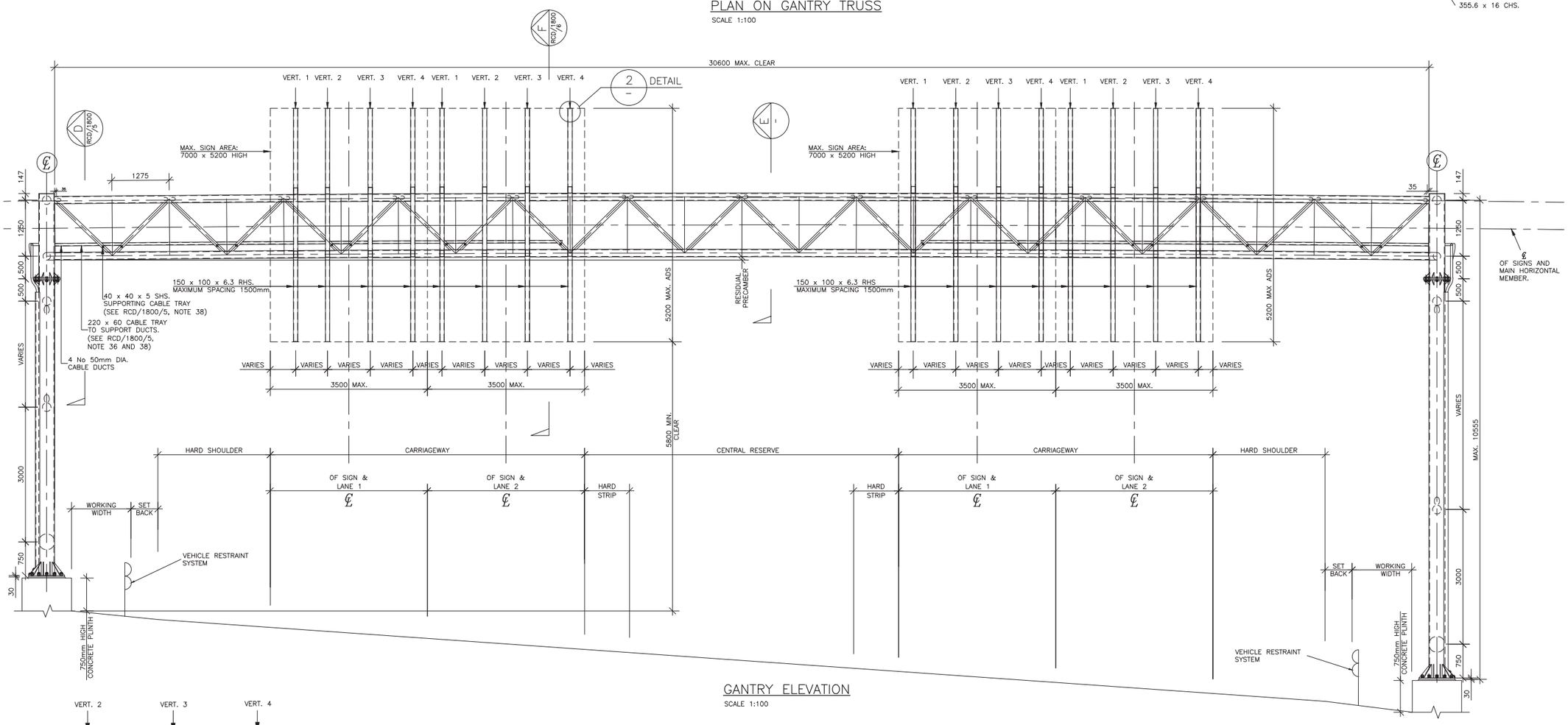


PLAN ON GANTRY TRUSS

SCALE 1:100

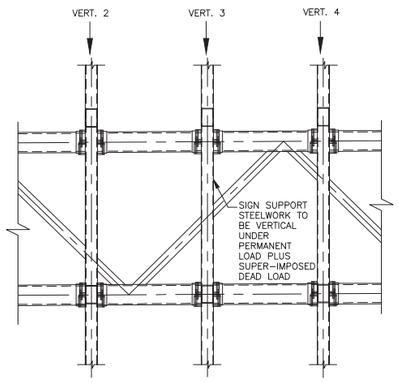
NOTES

1) REFER TO RCD/1800/5 FOR GENERAL NOTES.



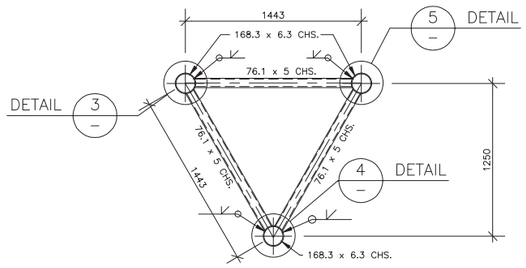
GANTRY ELEVATION

SCALE 1:100



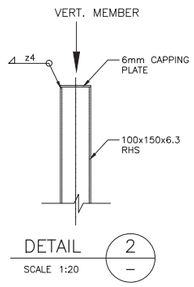
SIGN SUPPORT STEELWORK

SCALE 1:50



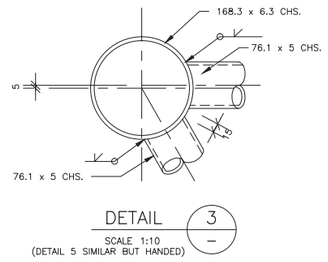
SECTION E

SCALE 1:50



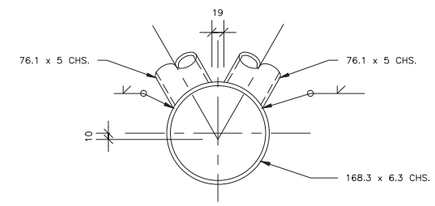
DETAIL 2

SCALE 1:20



DETAIL 3

SCALE 1:10
(DETAIL 5 SIMILAR BUT HANDED)

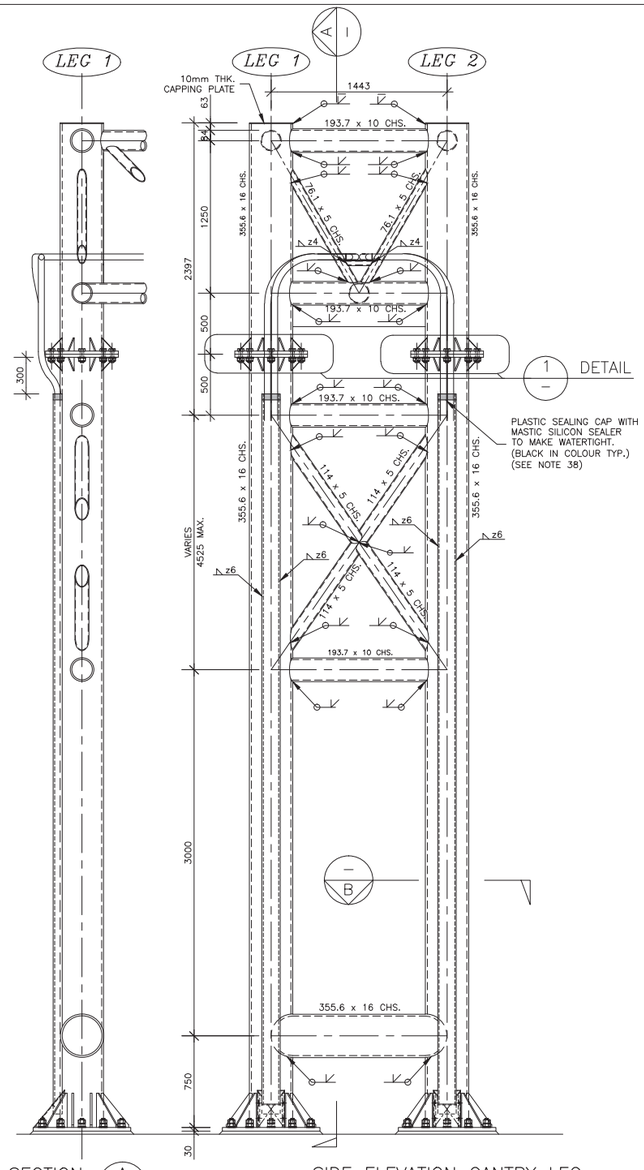


DETAIL 4

SCALE 1:10

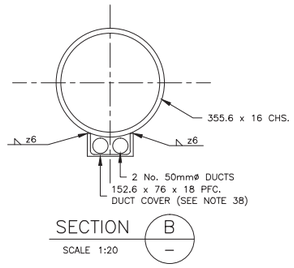
TII PUBLICATION NUMBER: CC-SCD-01804

NRA NATIONAL ROADS AUTHORITY	ROAD CONSTRUCTION DETAILS	GANTRY GROUP 2	P01 Issue / 12/14 Date
GENERAL ARRANGEMENT OF GANTRY GROUP 2 SHEET 1 OF 3			Drawing No. RCD/ 1800/4



SECTION A
SCALE 1:50

SIDE ELEVATION GANTRY LEG
SCALE 1:50



SECTION B
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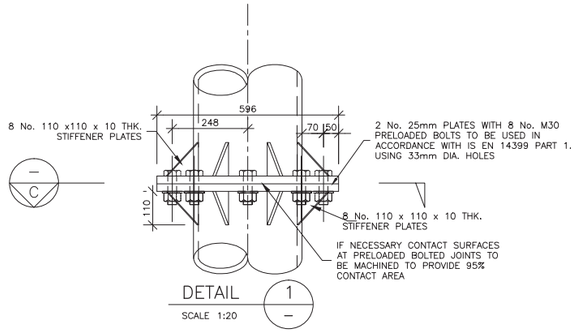
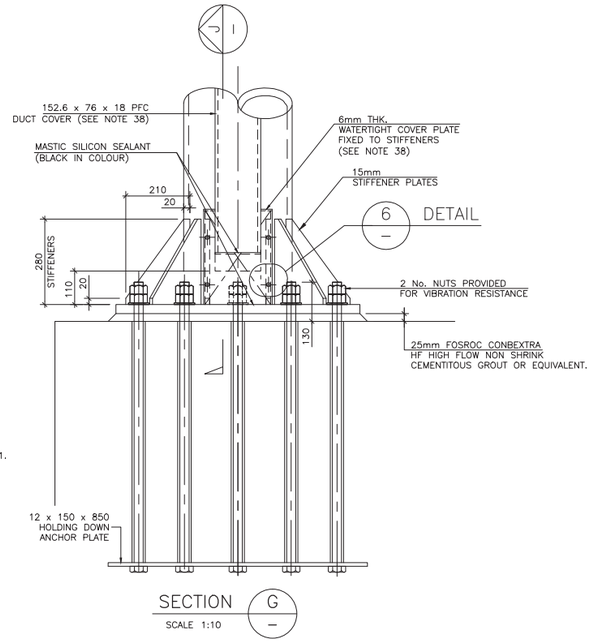
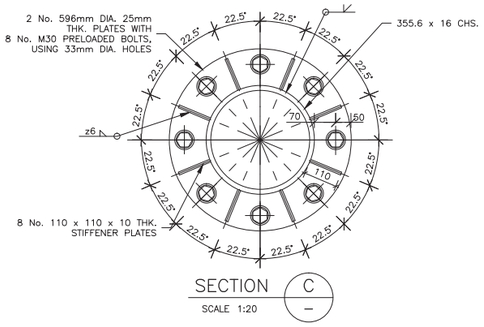


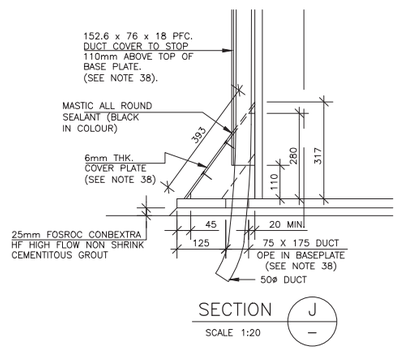
DETAIL 1
SCALE 1:20



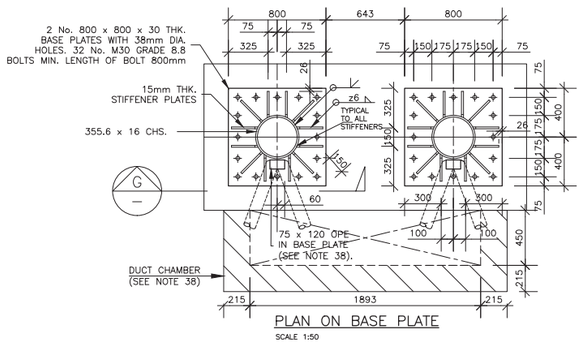
SECTION G
SCALE 1:10



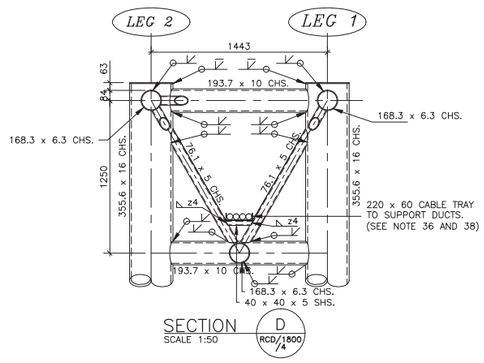
SECTION C
SCALE 1:20



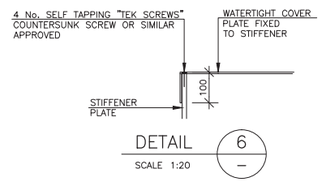
SECTION J
SCALE 1:20



PLAN ON BASE PLATE
SCALE 1:50



SECTION D
SCALE 1:50



SCALE 1:20

NOTES:

1. THE PURPOSE OF THIS DETAIL IS TO ENSURE A CONSISTENCY OF STRUCTURAL FORM FOR GROUP 2 GANTRIES ACROSS THE NATIONAL ROAD NETWORK. ALL SECTIONS SIZES AND DETAILS ARE MINIMUM INDICATIVE SIZE ONLY. THE NRA TAKE NO RESPONSIBILITY FOR THE STRUCTURAL OR GEOMETRICAL ADEQUACY OF THESE DETAILS. IT IS THE RESPONSIBILITY OF THE DESIGN ENGINEER TO ANALYSE, DESIGN AND DETAIL THE GROUP 2 GANTRY, CONNECTION DETAILS AND ITS ASSOCIATED REINFORCED CONCRETE FOUNDATION IN ACCORDANCE WITH THE EUROCODES, THEIR ASSOCIATED IRISH NATIONAL ANNEXES, NRA BD/51, NRA BD/60, NRA BD/2 AND ALL OTHER DESIGN DOCUMENTS AS APPROPRIATE TO THE ROADS BEING SPANNED.
2. ALL GANTRY SUPPORT LEGS LOCATED LESS THEN 4.5M FROM THE EDGE OF CARRIAGEWAY SHALL BE DESIGNED TO WITHSTAND THE VEHICLE COLLISION LOADS GIVEN IN TABLE 4.2 OF NRA BD/51 REGARDLESS OF PRESENCE OF A VEHICLE RESTRAINT SYSTEM.
3. ALL DIMENSIONS ARE IN MILLIMETRES.
4. THE DESIGNER OF SPECIFIC GANTRIES SHALL PRODUCE STRUCTURAL DRAWINGS FOR THE SPECIFIC GANTRY. ALL INFORMATION THAT IS SITE SPECIFIC MUST BE INCLUDED ON THESE DRAWINGS.
5. STEEL SHALL BE S355J2G3 TO IS EN 10025-2 TO IS EN 10025-6 UNLESS NOTED OTHERWISE. HOLLOW SECTIONS TO BE GRADE S355J2H TO IS EN 10210 UNLESS NOTED OTHERWISE.
6. THE STEELWORK DIMENSIONS SHOWN ARE SPECIFIED FOR A MEAN TEMPERATURE OF 15 DEGREES CENTIGRADE.
7. STRUCTURAL STEELWORK TO BE IN ACCORDANCE WITH SERIES 1800 OF NRA MCDRW.
8. PROTECTION TO STEELWORK TO BE IN ACCORDANCE WITH SERIES 1900 OF NRA MCDRW. FINAL COLOUR TO BE APPROVED BY NRA. ALL SPLICES AND CONNECTORS TO BE FULLY TOP COATED AFTER ASSEMBLY. ALL GAPS SHALL BE SEALED.
9. DIFFERENTIAL SETTLEMENT BETWEEN THE END SUPPORTS IS TAKEN AS 15mm. A SITE SPECIFIC ASSESSMENT OF DIFFERENTIAL SETTLEMENT SHALL BE CARRIED OUT, WITH 15mm DESIGNED FOR AS A MINIMUM.
10. LIFTING EYES TO BE DESIGNED BY STEELWORK FABRICATOR AND SUBMITTED TO THE DESIGNER OF SPECIFIC GANTRIES FOR APPROVAL AT LEAST 4 WEEKS PRIOR TO FABRICATION. TEMPORARY WELDED ATTACHMENTS REQUIRED FOR ERECTION SHALL BE REMOVED AND PROTECTIVE COATING SYSTEM APPLIED IN ACCORDANCE WITH SERIES 1900 OF NRA MCDRW.
11. METHOD OF ERECTION OF GANTRY TO BE APPROVED BY THE DESIGNER OF SPECIFIC GANTRIES.
12. ANY TEMPORARY ARRANGEMENT REQUIRED FOR LANDING MAIN BEAM PRIOR TO SITE CONNECTION SHALL BE AGREED WITH THE DESIGNER OF SPECIFIC GANTRIES 4 WEEKS PRIOR TO FABRICATION.
13. TEMPORARY WELDED ATTACHMENTS SHALL BE SUBJECT TO APPROVAL BY THE DESIGN ENGINEER.
14. WELD SYMBOLS ARE IN ACCORDANCE WITH IS EN 22553.
15. ALL FILLET WELDS SHALL BE MINIMUM 6mm LEG LENGTH, AND CONTINUOUS UNLESS NOTED OTHERWISE. DESIGN ENGINEER TO VERIFY.
16. BOLTS SHALL BE AS DESCRIBED ON THE DRAWING. DESIGN ENGINEER TO VERIFY.
17. COPE HOLES AND RE-ENTRANT CORNERS SHALL HAVE A RADIUS OF AT LEAST 50mm OR 1.25 TIMES THE PLATE THICKNESS, WHICHEVER IS GREATER, UNLESS NOTED OTHERWISE.
18. HARD STAMPING SHALL NOT BE PERMITTED ON ANY PERMANENTLY EXPOSED SURFACES
19. ASSUMED MAX WEIGHT OF ADS 20kg/m².
20. MAX. DEPTH OF SIGN 400mm.
21. STRUCTURAL STEELWORK SUPPORTING SIGNAGE OFF GANTRIES HAS A MAX. ASSUMED WEIGHT OF 27.9kg/m. THE STRUCTURAL ADEQUACY OF ALTERNATIVE ARRANGEMENTS PROPOSED BY THE DESIGNERS OF SPECIFIC GANTRIES TO ACCOMMODATE SPECIFIC SIGNS SHALL BE VERIFIED BY THE DESIGNERS OF SPECIFIC GANTRIES.
22. VERTICALS 1 AND 4 ARE DESIGNED TO SUPPORT VARIABLE MESSAGE SIGNAGE (VMS). VERTICALS 2 AND 3 ARE OMITTED TO ALLOW ACCESS TO BACK OF VMS. ALL VERTICALS ARE REQUIRED FOR ADVANCED DIRECTIONAL SIGNAGE. SIZE AND SPACING OF VERTICALS TO BE CONFIRMED BY THE DESIGN ENGINEER.
23. WIND LOADING SHALL BE IN ACCORDANCE WITH IS EN 1991-1-4 AND THE ASSOCIATED NATIONAL ANNEX.
24. ALL BOLTS AND NUTS TO BE VIBRATION RESISTANT.
25. ALL WELDS ARE IN TENSION UNDER TEMPORARY AND IN-SERVICE CONDITIONS.
26. MINIMUM CLASS OF CONCRETE IN FOUNDATION TO BE C32/40.
27. ALL ELEMENTS TO BE LIFTED FROM LIFTING EYES. SLINGS NOT TO BE USED TO PREVENT DAMAGE TO PROTECTIVE COATING.
28. GANTRIES ARE ASSUMED PERPENDICULAR TO THE MAINLINE.
29. SECONDARY SIGNWORK STRUCTURAL STEELWORK NOT TO BE USED FOR LIFTING.
30. THE SECONDARY SIGN STEELWORK VERTICALS AND SIGN LAYOUT ARE INDICATIVE OF THE MAXIMUM SIGN AREA THE GANTRY CAN SUPPORT. THE DESIGNER OF SPECIFIC GANTRIES IS ALSO RESPONSIBLE FOR THE SIGN LAYOUT AND DESIGN OF ANY SECONDARY STEELWORK SUPPORTING THE SIGN INCLUDING SECTION SIZES AND SPACING OF VERTICAL MEMBERS. IT IS THE RESPONSIBILITY OF THE DESIGN ENGINEER TO ENSURE THAT THE CLAMPS SUPPORTING THE VERTICAL MEMBERS AND SIGN DO NOT CLASH WITH THE PROPOSED GANTRY SUPPORT MEMBERS.
31. THE RESIDUAL PRECAMBER AFTER DEAD AND SUPERIMPOSED DEAD LOADS FOR SPECIFIC SCHEMES SHALL BE SPAN/400 AND BE ACHIEVED AT MID-SPAN WITH A SMOOTH CURVE BETWEEN MID-SPAN AND END SUPPORTS.
32. CARRIAGEWAY CROSS SECTIONAL DIMENSIONS ARE INDICATIVE ONLY.
33. SIGN SUPPORT DETAILS AND CABLE RUNS REQUIRED SHALL BE CONFIRMED BY THE DESIGNER OF THE SPECIFIC GANTRIES WITH ELECTRICAL SUPPLIER.
34. DUCTING TO BE BE PROVIDED BY SPECIALIST SUBCONTRACTORS.
35. PROVISION OF ELEMENTS SUPPORTING AND ACCOMMODATING ELECTRICAL EQUIPMENT AT SPECIFIC GANTRIES TO BE CONFIRMED WITH THE NRA.
36. CABLE TRAY TO BE HEAVY DUTY TYPE BRE 108 (220 X 60mm) MANUFACTURED BY ELLICKSON ENGINEERING OR SIMILAR APPROVED.
37. THE DESIGNER OF SPECIFIC GANTRIES SHALL BE SUBJECT TO, AND SHALL COMPLY WITH THE TECHNICAL APPROVAL PROCEDURES FOR STRUCTURES CONTAINED WITHIN NRA BD2 OF THE NRA DMRB.
38. PROVISION OF ELEMENTS SUPPORTING AND ACCOMMODATING ELECTRICAL EQUIPMENT AT SPECIFIC GANTRIES TO BE CONFIRMED WITH THE NRA.

LEGEND

ADS – ADVANCED DIRECTIONAL SIGN

TII PUBLICATION NUMBER: CC-SCD-01805

NATIONAL ROADS AUTHORITY

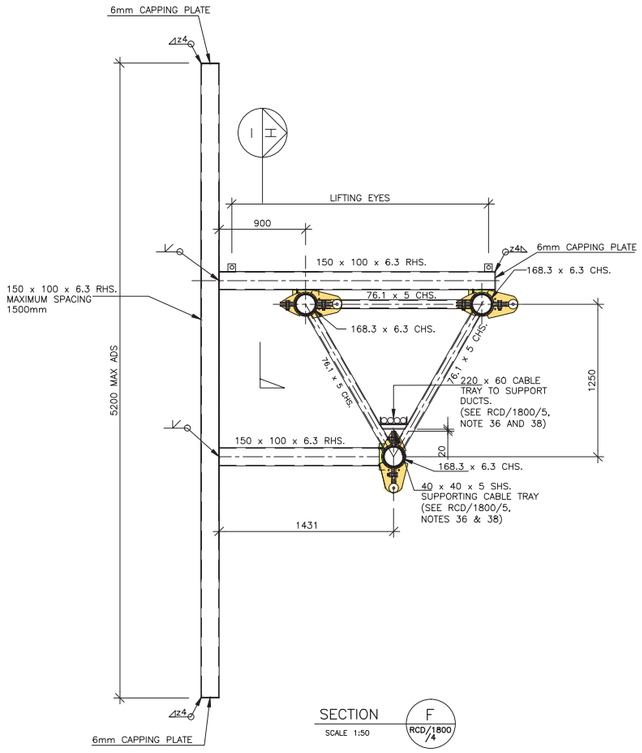
ROAD CONSTRUCTION DETAILS

GANTRY GROUP 2

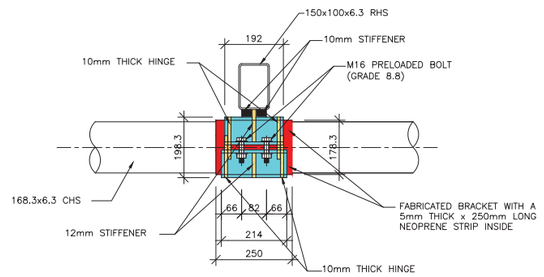
Issue	Date
P01	12/14

DETAILS OF GANTRY GROUP 2 SHEET 2 OF 3

Drawing No. RCD/1800/5



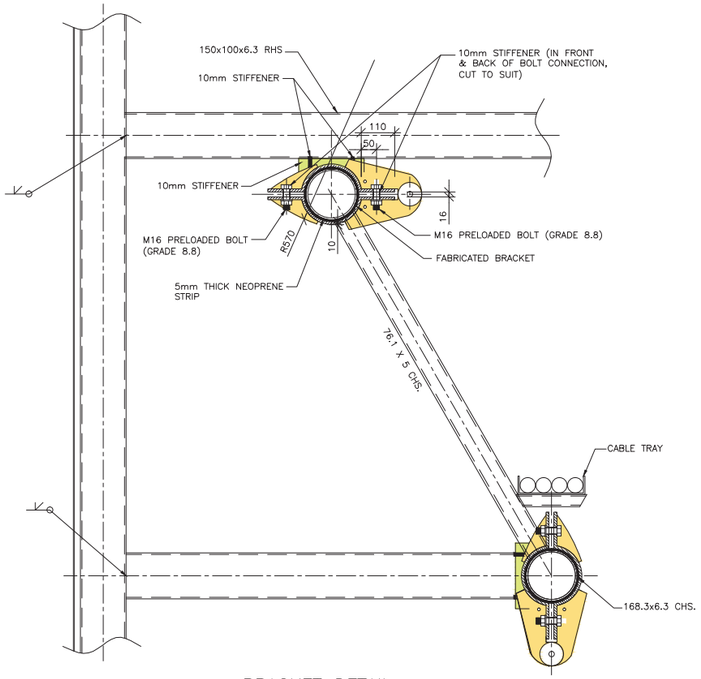
SECTION F
SCALE 1:50
RCD/1800/4



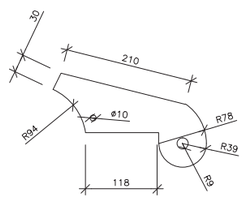
SECTION H
SCALE 1:20
—

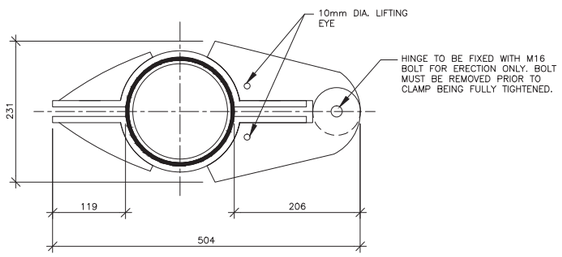
NOTES

1. FOR NOTES REFER TO RCD/1800/5.
2. FOR FABRICATION OF CLAMPS, ALL WELDS TO BE 8mm MINIMUM FILLET WELDS AND CONTINUOUS, UNLESS NOTED OTHERWISE. DESIGN ENGINEER TO VERIFY.
3. THE NRA TAKE NO RESPONSIBILITY FOR THE STRUCTURAL ADEQUACY OF THESE CLAMPING DETAILS. IT IS THE RESPONSIBILITY OF THE DESIGN ENGINEER TO ANALYSE, DESIGN AND DETAILS ALL ASPECTS OF THE CLAMPING CONNECTION.
4. EACH VERTICAL MEMBER SUPPORTING SIGNS WILL REQUIRE A SET OF CLAMPS TO CONNECT TO THE GANTRY.



BRACKET DETAIL
SCALE 1:20





HINGE BRACKET DETAIL
SCALE 1:10

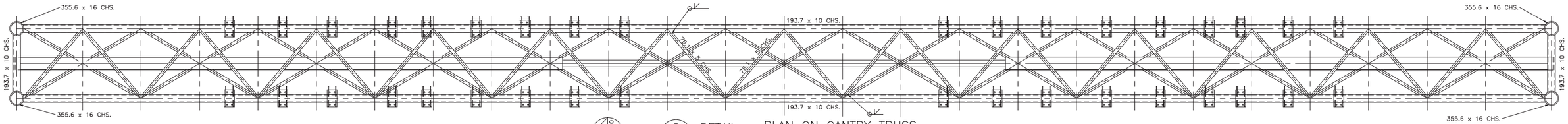
TII PUBLICATION NUMBER: CC-SCD-01806-01

NRA NATIONAL ROADS AUTHORITY	ROAD CONSTRUCTION DETAILS	GANTRY GROUP 2			DETAILS OF GANTRY GROUP 2 SHEET 3 OF 3
			P01	12/14	Drawing No. RCD/ 1800/6
			Issue	Date	

TII PUBLICATION NUMBER: CC-SCD-01807

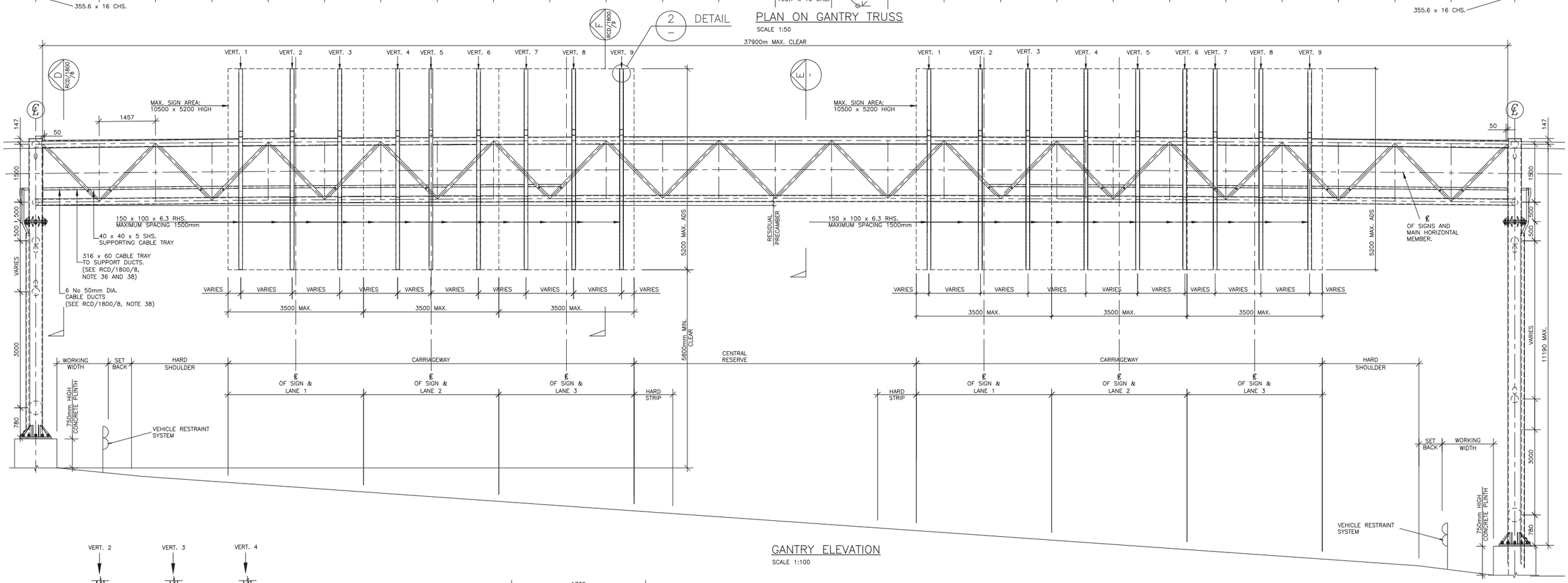
NOTES

1) REFER TO RCD/1800/8 FOR GENERAL NOTES.



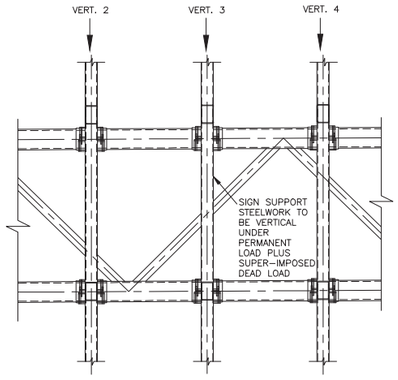
PLAN ON GANTRY TRUSS

SCALE 1:50



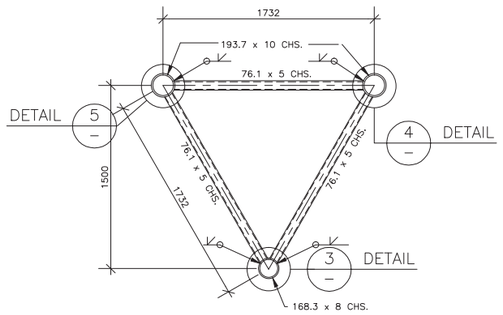
GANTRY ELEVATION

SCALE 1:100



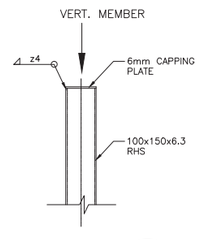
SIGN SUPPORT STEELWORK

SCALE 1:50



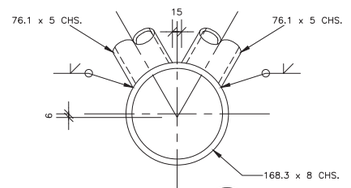
SECTION E

SCALE 1:50



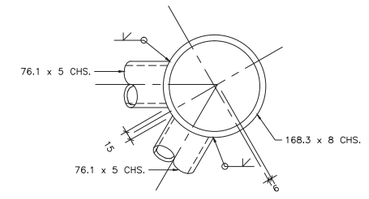
DETAIL 2

SCALE 1:20



DETAIL 3

SCALE 1:10

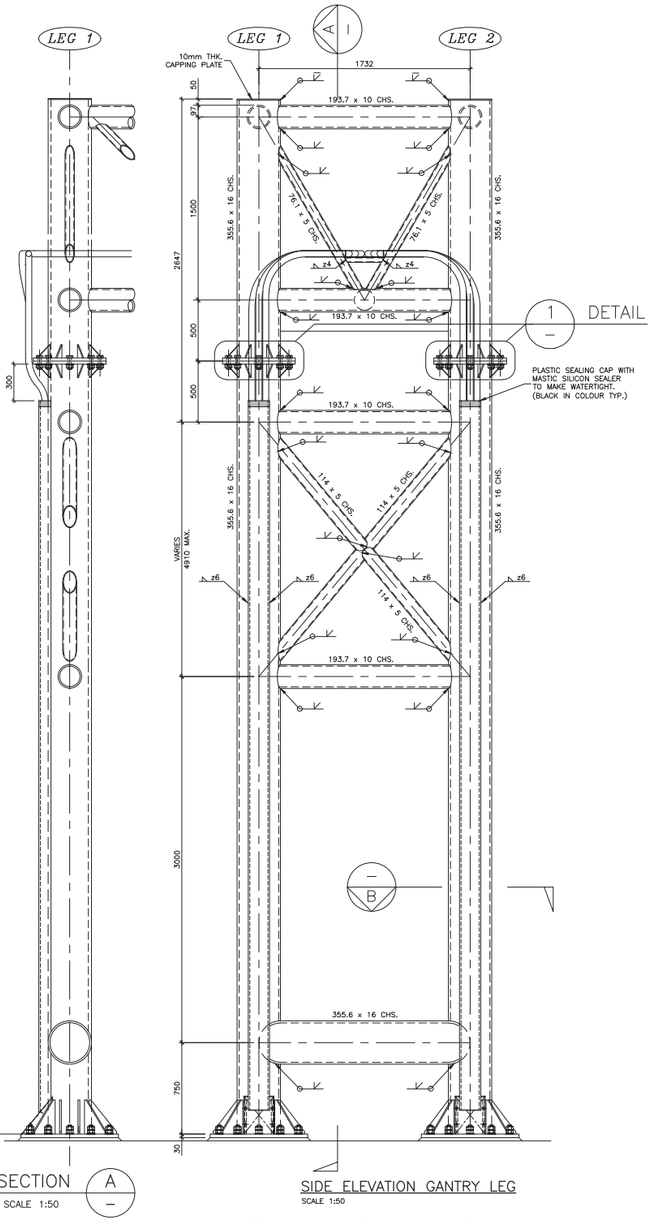


DETAIL 4

SCALE 1:10

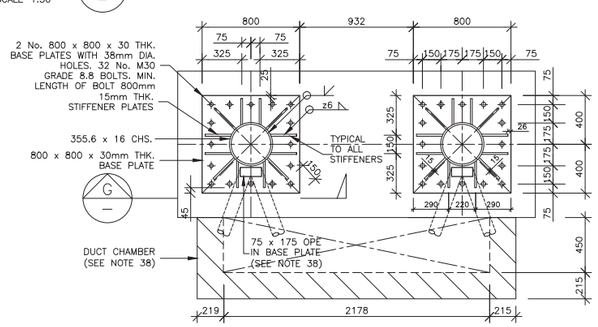
(DETAIL 5 SIMILAR BUT HANDED)

NATIONAL ROADS AUTHORITY	ROAD CONSTRUCTION DETAILS	GANTRY GROUP 3	P01 Issue / 12/14 Date	GENERAL ARRANGEMENT OF GANTRY GROUP 3 SHEET 1 OF 3	Drawing No. RCD/ 1800/7

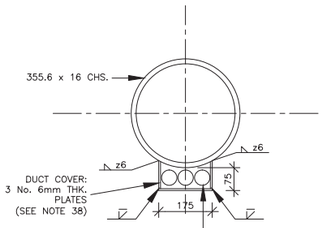


SECTION A
SCALE 1:50

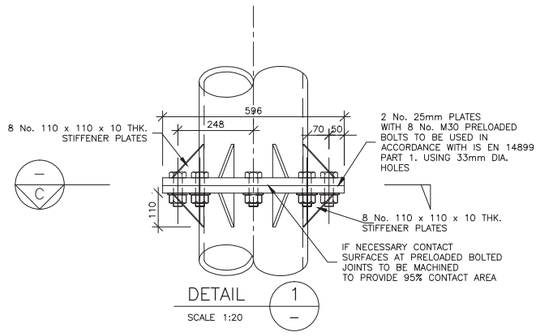
SIDE ELEVATION GANTRY LEG
SCALE 1:50



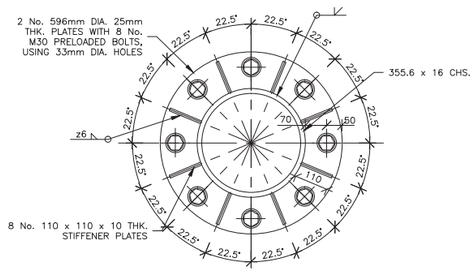
PLAN ON BASE PLATE
SCALE 1:50



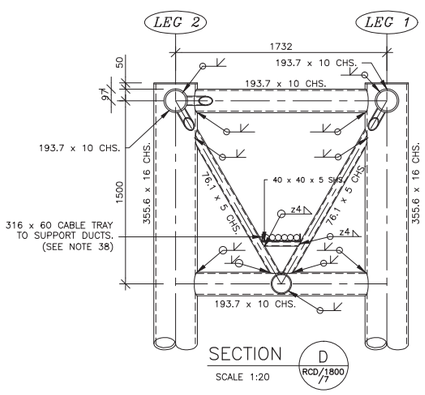
SECTION B
SCALE 1:20



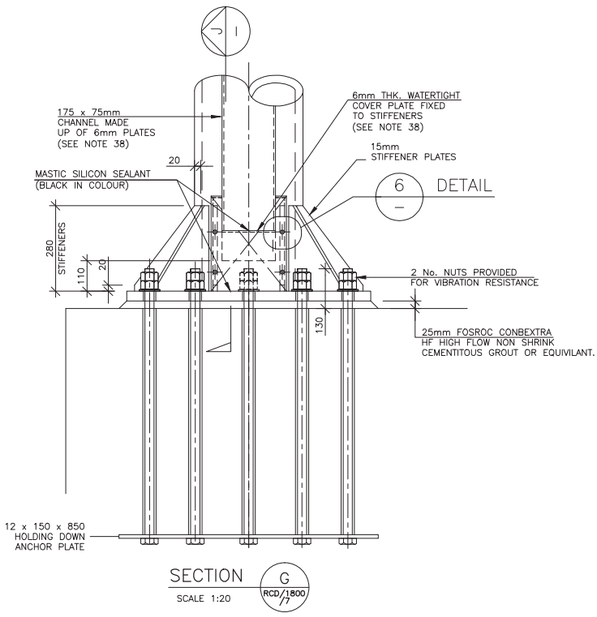
DETAIL 1
SCALE 1:20



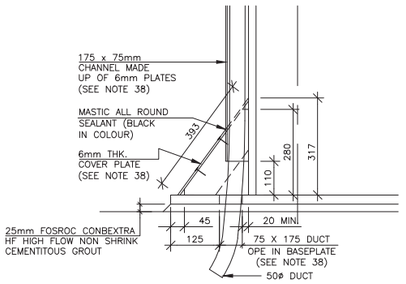
SECTION C
SCALE 1:20



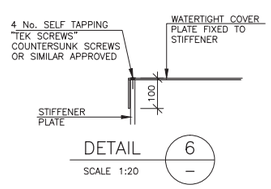
SECTION D
SCALE 1:20
RCD/1800 /7



SECTION G
SCALE 1:20
RCD/1800 /7



SECTION J
SCALE 1:20



DETAIL 6
SCALE 1:20

NOTES

1. THE PURPOSE OF THIS DETAIL IS TO ENSURE A CONSISTENCY OF STRUCTURAL FORM FOR GROUP 3 GANTRIES ACROSS THE NATIONAL ROAD NETWORK. ALL SECTIONS SIZES AND DETAILS ARE MINIMUM INDICATIVE SIZE ONLY. THE NRA TAKE NO RESPONSIBILITY FOR THE STRUCTURAL OR GEOMETRICAL ADEQUACY OF THESE DETAILS. IT IS THE RESPONSIBILITY OF THE DESIGN ENGINEER TO ANALYSE, DESIGN AND DETAIL THE GROUP 3 GANTRY, CONNECTION DETAILS AND ITS ASSOCIATED REINFORCED CONCRETE FOUNDATION IN ACCORDANCE WITH THE EUROCODES, THEIR ASSOCIATED IRISH NATIONAL ANNEXES, NRA BD 51, NRA BD 60, NRA BD 2 AND ALL OTHER DESIGN DOCUMENTS AS APPROPRIATE TO THE ROAD BEING SPANNED.
2. ALL GANTRY SUPPORT LEGS LOCATED LESS THEN 4.5M FROM THE EDGE OF CARRIAGEWAY SHALL BE DESIGNED TO WITHSTAND THE VEHICLE COLLISION LOADS GIVEN IN TABLE 4.2 OF NRA BD 51 REGARDLESS OF THE PRESENCE OF A VEHICLE RESTRAINT SYSTEM.
3. ALL DIMENSIONS ARE IN MILLIMETRES.
4. THE DESIGNER OF SPECIFIC GANTRIES SHALL PRODUCE STRUCTURAL DRAWINGS FOR THE SPECIFIC GANTRY. ALL INFORMATION THAT IS SITE SPECIFIC MUST BE INCLUDED ON THESE DRAWINGS.
5. THE SECONDARY SIGN STEELWORK VERTICALS AND SIGN LAYOUT ARE INDICATIVE OF THE MAXIMUM SIGN AREA THE GANTRY CAN SUPPORT. THE DESIGNER OF SPECIFIC GANTRIES IS ALSO RESPONSIBLE FOR THE SIGN LAYOUT AND DESIGN OF ANY SECONDARY STEELWORK SUPPORTING THE SIGN INCLUDING SECTION SIZES AND SPACING OF VERTICAL MEMBERS. IT IS THE RESPONSIBILITY OF THE DESIGN ENGINEER TO ENSURE THAT THE CLAMPS SUPPORTING THE VERTICAL MEMBERS AND SIGN DO NOT CLASH WITH THE PROPOSED GANTRY SUPPORT MEMBERS.
6. STEEL SHALL BE S355J2G3 TO IS EN 10025–2 TO IS EN 10025–6 UNLESS NOTED OTHERWISE. HOLLOW SECTIONS TO BE GRADE S355J2H TO IS EN 10210 UNLESS NOTED OTHERWISE.
7. THE STEELWORK DIMENSIONS SHOWN ARE SPECIFIED FOR A MEAN TEMPERATURE OF 15 DEGREES CENTIGRADE.
8. STRUCTURAL STEELWORK TO BE IN ACCORDANCE WITH NRA MCDRW SERIES 1800.
9. PROTECTION TO STEELWORK TO BE IN ACCORDANCE WITH NRA MCDRW SERIES 1900. FINAL COLOUR TO BE APPROVED BY NRA. ALL SPLICES AND CONNECTORS TO BE FULLY TOP COATED AFTER ASSEMBLY. ALL GAPS SHALL BE SEALED.
10. DIFFERENTIAL SETTLEMENT BETWEEN THE END SUPPORTS IS TAKEN AS 15mm. A SITE SPECIFIC ASSESSMENT OF DIFFERENTIAL SETTLEMENT SHALL BE CARRIED OUT, WITH 15mm DESIGNED FOR AS A MINIMUM.
11. LIFTING EYES TO BE DESIGNED BY STEELWORK FABRICATOR AND SUBMITTED TO THE DESIGNER OF SPECIFIC GANTRIES FOR APPROVAL AT LEAST 4 WEEKS PRIOR TO FABRICATION. TEMPORARY WELDED ATTACHMENTS REQUIRED FOR ERECTION SHALL BE REMOVED AND PROTECTIVE COATING SYSTEM APPLIED IN ACCORDANCE WITH NRA MCDRW SERIES 1900.
12. METHOD OF ERECTION OF GANTRY TO BE APPROVED BY THE DESIGNER OF SPECIFIC GANTRIES.
13. ANY TEMPORARY ARRANGEMENT REQUIRED FOR LANDING MAIN BEAM PRIOR TO SITE CONNECTION SHALL BE AGREED WITH THE DESIGNER OF SPECIFIC GANTRIES 4 WEEKS PRIOR TO FABRICATION.
14. TEMPORARY WELDED ATTACHMENTS SHALL BE SUBJECT TO APPROVAL BY THE DESIGN ENGINEER.
15. WELD SYMBOLS ARE IN ACCORDANCE WITH IS EN 22553.
16. ALL FILLET WELDS SHALL BE MINIMUM 6mm LEG LENGTH AND CONTINUOUS UNLESS NOTED OTHERWISE. DESIGN ENGINEER TO VERIFY.
17. BOLTS SHALL BE AS DESCRIBED ON THE DRAWING. DESIGN ENGINEER TO VERIFY.
18. COPE HOLES AND RE–ENTRANT CORNERS SHALL HAVE A RADIUS OF AT LEAST 50mm OR 1.25 TIMES THE PLATE THICKNESS, WHICHEVER IS GREATER, UNLESS NOTED OTHERWISE.
19. HARD STAMPING SHALL NOT BE PERMITTED ON ANY PERMANENTLY EXPOSED SURFACES
20. ASSUMED MAX WEIGHT OF ADS 20kg/m².
21. MAX. DEPTH OF SIGN 400mm.
22. STRUCTURAL STEELWORK SUPPORTING SIGNAGE OFF GANTRIES HAS A MAX. ASSUMED WEIGHT OF 27.9kg/m. THE STRUCTURAL ADEQUACY OF ALTERNATIVE ARRANGEMENTS PROPOSED BY THE DESIGNERS OF SPECIFIC GANTRIES TO ACCOMMODATE SPECIFIC SIGNS SHALL BE VERIFIED BY THE DESIGNERS OF SPECIFIC GANTRIES.
23. VERTICALS 1 AND 4 ARE DESIGNED TO SUPPORT VARIABLE MESSAGE SIGNAGE (VMS). VERTICALS 2 AND 3 ARE OMITTED TO ALLOW ACCESS TO BACK OF VMS. ALL VERTICALS ARE REQUIRED FOR ADVANCED DIRECTIONAL SIGNAGE. SIZE AND SPACING OF VERTICALS TO BE CONFIRMED BY THE DESIGN ENGINEER.
24. WIND LOADING SHALL BE IN ACCORDANCE WITH IS EN 1991–1–4 AND THE ASSOCIATED NATIONAL ANNEX.
25. ALL BOLTS AND NUTS TO BE VIBRATION RESISTANT.
26. ALL WELDS ARE IN TENSION UNDER TEMPORARY AND IN–SERVICE CONDITIONS.
27. MINIMUM CLASS OF CONCRETE IN FOUNDATION TO BE C32/40.
28. ALL ELEMENTS TO BE LIFTED FROM LIFTING EYES. SLINGS NOT TO BE USED TO PREVENT DAMAGE TO PROTECTIVE COATING.
29. GANTRIES ARE ASSUMED PERPENDICULAR TO THE MAINLINE.
30. SECONDARY SIGNWORK STRUCTURAL STEELWORK NOT TO BE USED FOR LIFTING.
31. THE RESIDUAL PRECAMBER AFTER PERMANENT AND SUPER–IMPOSED DEAD LOADS FOR SPECIFIC SCHEMES SHALL BE SPAN/400 AND BE ACHIEVED AT MID–SPAN WITH A SMOOTH CURVE BETWEEN MID–SPAN AND END SUPPORTS.
32. CARRIAGEWAY CROSS SECTION IS INDICATIVE ONLY.
33. SIGN SUPPORT DETAILS AND CABLE RUNS REQUIRED SHALL BE CONFIRMED BY THE DESIGNER OF THE SPECIFIC GANTRIES WITH ELECTRICAL SUPPLIER.
34. DUCTING TO BE BE PROVIDED BY SPECIALIST SUBCONTRACTORS.
35. PROVISION OF ELEMENTS SUPPORTING AND ACCOMMODATING ELECTRICAL EQUIPMENT AT SPECIFIC GANTRIES TO BE CONFIRMED WITH THE NRA.
36. CABLE TRAY TO BE HEAVY DUTY TYPE BRE 108 (220 X 60mm) MANUFACTURED BY ELLICKSON ENGINEERING OR SIMILAR APPROVED.
37. THE DESIGNER OF SPECIFIC GANTRIES SHALL BE SUBJECT TO, AND SHALL COMPLY WITH THE TECHNICAL APPROVAL PROCEDURES FOR STRUCTURES CONTAINED WITHIN NRA BD2 OF THE NRA DMRB.
38. PROVISION OF ELEMENTS SUPPORTING AND ACCOMMODATING ELECTRICAL EQUIPMENT AT SPECIFIC GANTRIES TO BE CONFIRMED WITH THE NRA.

LEGEND

ADS – ADVANCED DIRECTIONAL SIGN

TII PUBLICATION NUMBER: CC-SCD-01808

NATIONAL ROADS AUTHORITY

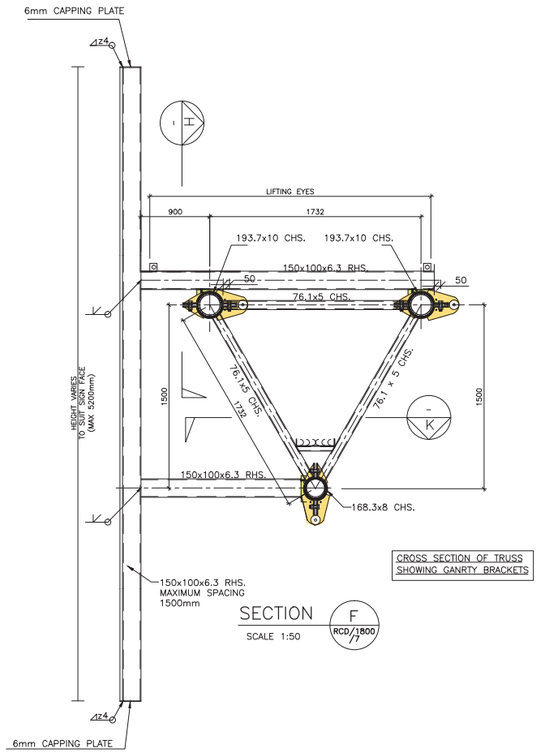
ROAD CONSTRUCTION DETAILS

GANTRY GROUP 3

Issue	Date
P01	12/14

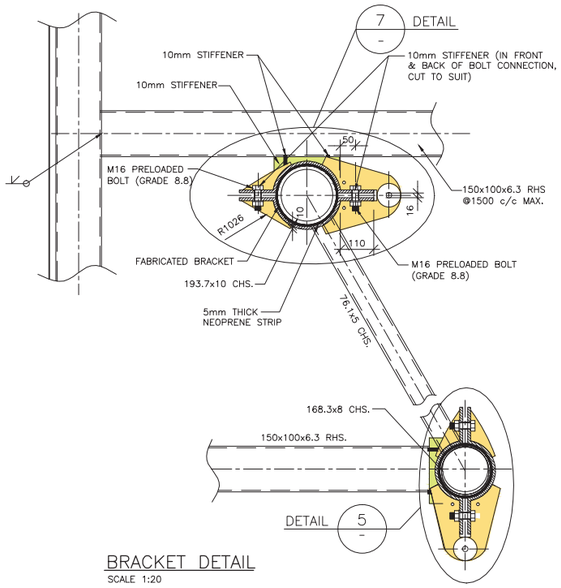
DETAILS OF GANTRY GROUP 3 SHEET 2 OF 3

Drawing No. RCD/ 1800/8



CROSS SECTION OF TRUSS SHOWING GANRTY BRACKETS

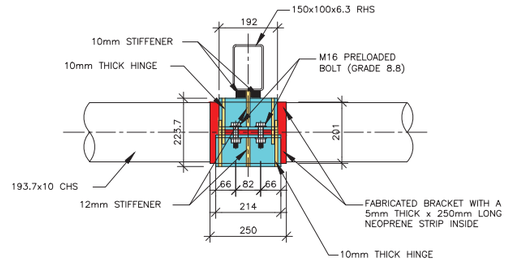
SECTION F
SCALE 1:50
RCD/1800/7



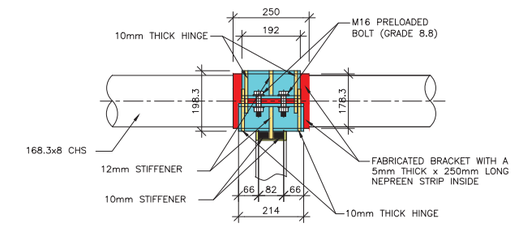
BRACKET DETAIL
SCALE 1:20

NOTES:

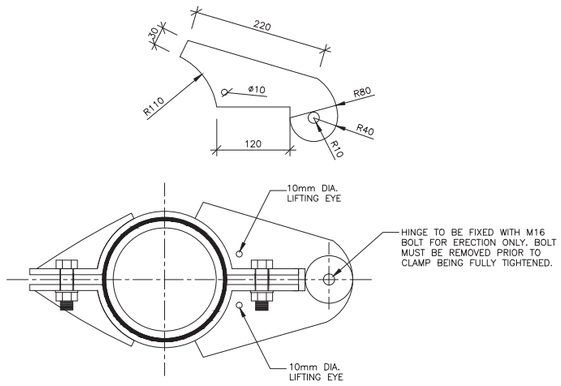
1. FOR GENERAL NOTES REFER TO RCD/1800/8.
2. FOR FABRICATION OF CLAMPS, ALL WELDS TO BE 8mm MINIMUM FILLET WELDS AND CONTINUOUS, UNLESS NOTED OTHERWISE. DESIGN ENGINEER TO VERIFY.
3. THE NRA TAKE NO RESPONSIBILITY FOR THE STRUCTURAL ADEQUACY OF THESE CLAMPING DETAILS. IT IS THE RESPONSIBILITY OF THE DESIGN ENGINEER TO ANALYSE, DESIGN AND DETAIL ALL ASPECTS OF THE CLAMPING CONNECTION.
4. EACH VERTICAL MEMBER SUPPORTING THE SIGNS WILL REQUIRE A SET OF CLAMPS TO CONNECT TO THE GANTRY.



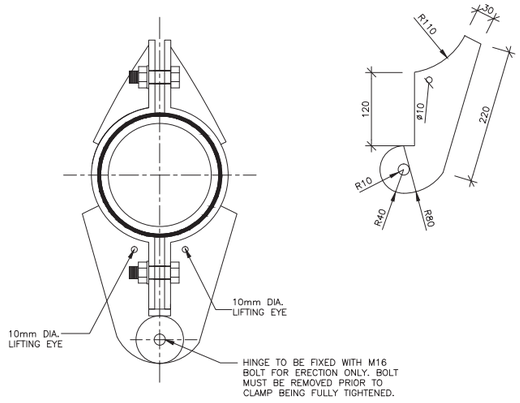
SECTION H
SCALE 1:20



SECTION K
SCALE 1:20



BRACKET DETAIL 7
SCALE 1:10

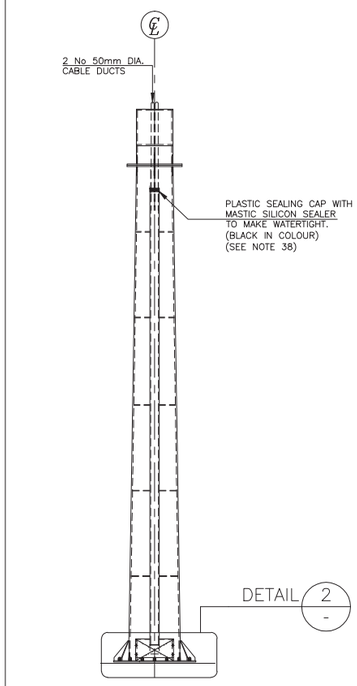


BRACKET DETAIL 8
SCALE 1:10

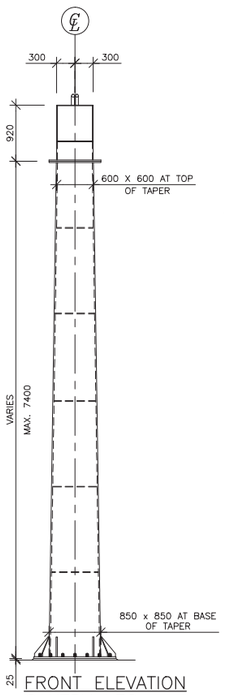
TII PUBLICATION NUMBER: CC-SCD-01809

NRA NATIONAL ROADS AUTHORITY	ROAD CONSTRUCTION DETAILS	GANTRY GROUP 3	P01	12/14	DETAILS OF GANTRY GROUP 3 SHEET 3 OF 3
			Issue	Date	Drawing No. RCD/ 1800/9

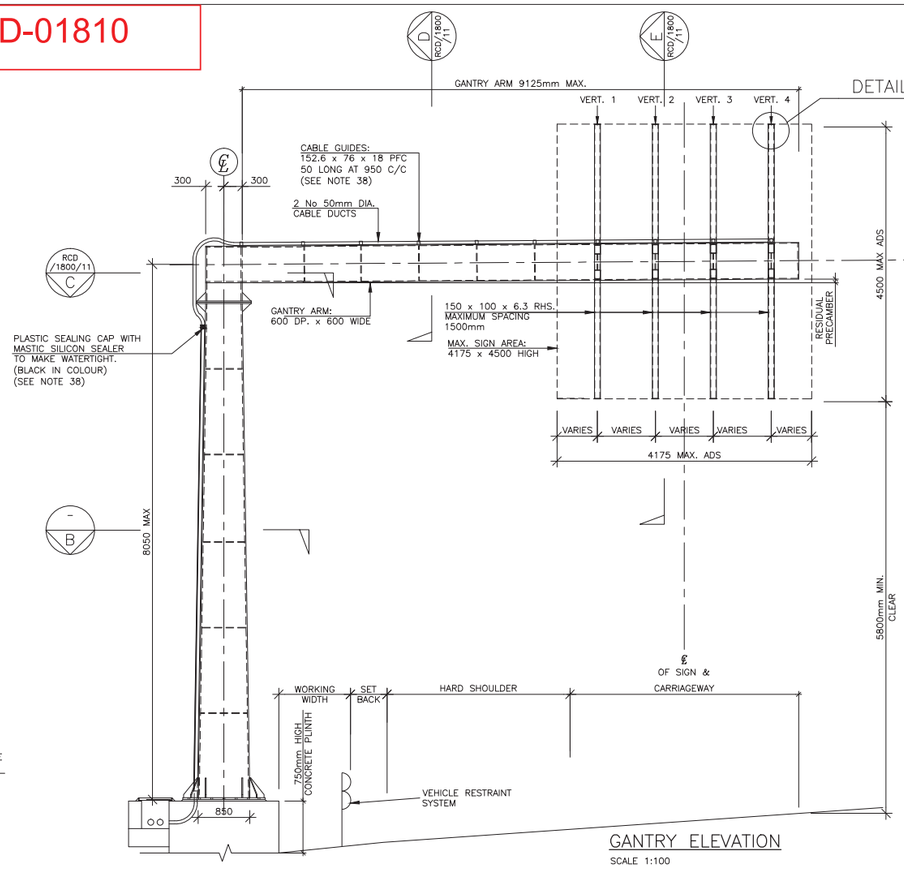
TII PUBLICATION NUMBER: CC-SCD-01810



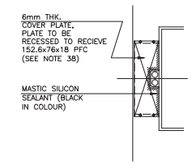
REAR ELEVATION GANTRY LEG
SCALE 1:100



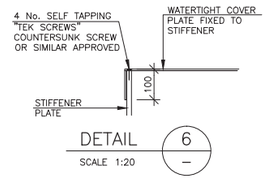
FRONT ELEVATION GANTRY LEG
SCALE 1:50



GANTRY ELEVATION
SCALE 1:100



DETAIL 1
SCALE 1:50



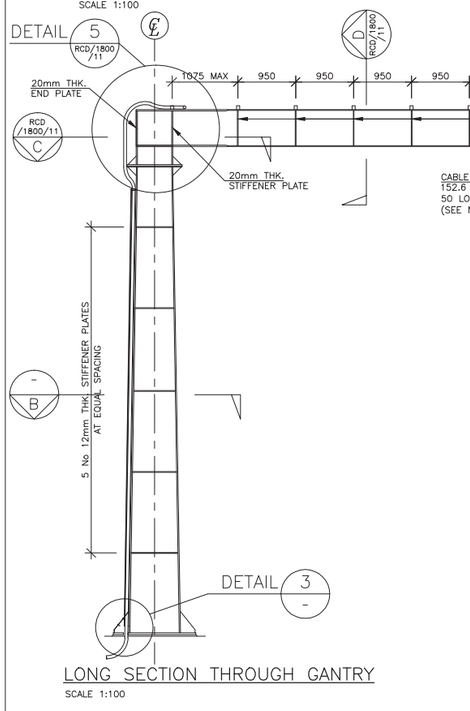
DETAIL 6
SCALE 1:20

NOTES

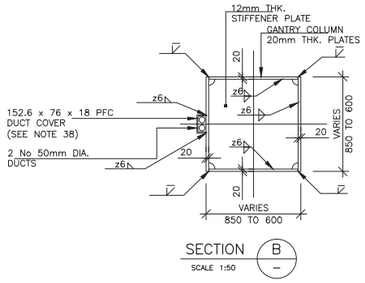
1. THE PURPOSE OF THIS DETAIL IS TO ENSURE A CONSISTENCY OF STRUCTURAL FORM FOR GROUP 4 GANTRIES ACROSS THE NATIONAL ROAD NETWORK. ALL SECTIONS SIZES AND DETAILS ARE MINIMUM INDICATIVE SIZE ONLY. THE NRA TAKE NO RESPONSIBILITY FOR THE STRUCTURAL OR GEOMETRICAL ADEQUACY OF THESE DETAILS. IT IS THE RESPONSIBILITY OF THE DESIGN ENGINEER TO ANALYSE, DESIGN AND DETAIL THE GROUP 4 GROUP GANTRY, CONNECTION DETAILS AND ITS ASSOCIATED REINFORCED CONCRETE FOUNDATION IN ACCORDANCE WITH THE EUROCODES, THEIR ASSOCIATED IRISH NATIONAL ANNEXES, NRA BD 51, NRA BD 60, NRA BD 2 AND ALL OTHER DESIGN DOCUMENTS AS APPROPRIATE TO THE ROAD BEING SPANNED.
2. ALL GANTRY SUPPORT LEGS LOCATED LESS THEN 4.5M FROM THE EDGE OF CARRIAGEWAY SHALL BE DESIGNED TO WITHSTAND THE VEHICLE COLLISION LOADS GIVEN IN TABLE 4.2 OF NRA BD 51 REGARDLESS OF THE PRESENCE OF A VEHICLE RESTRAINT SYSTEM.
3. ALL DIMENSIONS ARE IN MILLIMETRES.
4. THE DESIGNER OF SPECIFIC GANTRIES SHALL PROVIDE STRUCTURAL DRAWINGS FOR THE SPECIFIC GANTRY SCHEME. ALL INFORMATION THAT IS SITE SPECIFIC MUST BE INCLUDED ON THESE DRAWINGS
5. STEEL SHALL BE S355J2G3 TO IS EN 10025-2 TO IS EN 10025-6 UNLESS NOTED OTHERWISE. HOLLOW SECTIONS TO BE GRADE S355J2H TO IS EN 10210 UNLESS NOTED OTHERWISE.
6. THE STEELWORK DIMENSIONS SHOWN ARE SPECIFIED FOR A MEAN TEMPERATURE OF 15 DEGREES CENTIGRADE.
7. STRUCTURAL STEELWORK TO BE IN ACCORDANCE WITH SERIES 1800 OF NRA MCDRW.
8. PROTECTION TO STEELWORK TO BE IN ACCORDANCE WITH SEREIS 1900 OF NRA MCDRW. FINAL COLOUR TO BE APPROVED BY NRA. ALL SPLICES AND CONNECTORS TO BE FULLY TOP COATED AFTER ASSEMBLY. ALL GAPS SHALL BE SEALED.
9. LIFTING EYES TO BE DESIGNED BY STEELWORK FABRICATOR AND SUBMITTED TO THE DESIGNER OF SPECIFIC GANTRIES FOR APPROVAL AT LEAST 4 WEEKS PRIOR TO FABRICATION. TEMPORARY WELDED ATTACHMENTS REQUIRED FOR ERECTION SHALL BE REMOVED AND PROTECTIVE COATING SYSTEM APPLIED IN ACCORDANCE WITH SPECIFICATION.
10. METHOD OF ERECTION OF GANTRY TO BE APPROVED BY THE DESIGNER OF SPECIFIC GANTRIES.
11. ANY TEMPORARY ARRANGEMENT REQUIRED FOR LANDING MAIN BEAM PRIOR TO SITE CONNECTION SHALL BE AGREED WITH THE DESIGNER OF THE SPECIFIC GANTRIES 4 WEEKS PRIOR TO FABRICATION.
12. TEMPORARY WELDED ATTACHMENTS SHALL BE SUBJECT TO APPROVAL BY THE DESIGN ENGINEER.
13. WELD SYMBOLS ARE IN ACCORDANCE WITH IS EN 22553.
14. ALL FILLET WELDS SHALL BE MINIMUM 6mm LEG LENGTH AND CONTINUOUS UNLESS NOTED OTHERWISE. DESIGN ENGINEER TO VERIFY.
15. BOLTS SHALL BE AS DESCRIBED ON THE DRAWING. DESIGN ENGINEER TO VERIFY.
16. COPE HOLES AND RE-ENTRANT CORNERS SHALL HAVE A RADIUS OF AT LEAST 50mm OR 1.25 TIMES THE PLATE THICKNESS, WHICHEVER IS GREATER, UNLESS NOTED OTHERWISE.
17. HARD STAMPING SHALL NOT BE PERMITTED ON ANY PERMANENTLY EXPOSED SURFACES.
18. ASSUMED MAX. WEIGHT OF ADS 20kg/m².
19. MAX. DEPTH OF SIGN 400mm.
20. STRUCTURAL STEELWORK SUPPORTING SIGNAGE OFF GANTRIES HAS A MAX. ASSUMED WEIGHT OF 27.9kg/m. THE STRUCTURAL ADEQUACY OF ALTERNATIVE ARRANGEMENTS PROPOSED BY THE DESIGNER OF SPECIFIC GANTRIES TO ACCOMMODATE SPECIFIC SIGNS SHALL BE VERIFIED BY THE DESIGNER OF SPECIFIC GANTRIES.
21. VERTICALS 1 AND 4 ARE DESIGNED TO SUPPORT VARIABLE MESSAGE SIGNAGE (VMS). VERTICALS 2 AND 3 ARE OMITTED TO ALLOW ACCESS TO BACK OF VMS. ALL VERTICALS ARE REQUIRED FOR DIRECTIONAL SIGNAGE. SIZE AND SIGNAGE OF VERTICALS TO BE CONFIRMED BY THE DESIGN ENGINEER.
24. WIND LOADING SHALL BE IN ACCORDANCE WITH IS EN 1991-1-4 AND THE ASSOCIATED IRISH NATIONAL ANNEX.
25. ALL BOLTS AND NUTS TO BE VIBRATION RESISTANT.
26. ALL WELDS ARE IN TENSION UNDER IN-SERVICE CONDITIONS.
27. MINIMUM CLASS OF CONCRETE IN FOUNDATION TO BE C32/40.
28. ALL ELEMENTS TO BE LIFTED FROM LIFTING EYES. SLINGS NOT TO BE USED TO PREVENT DAMAGE TO PROTECTIVE COATING.
29. SECONDARY STEEL WORK MUST COINCIDE WITH INTERNAL STIFFENING PLATES ON CANTILEVER ARM.
30. GANTRIES ARE ASSUMED PERPENDICULAR TO THE MAINLINE.
31. SECONDARY SIGNWORK STRUCTURAL STEELWORK NOT TO BE USED FOR LIFTING UNLESS STRUCTURAL ADEQUACY IS VERIFIED.
31. THE SECONDARY SIGN STEELWORK VERTICALS AND SIGN LAYOUT ARE INDICATIVE OF THE MAXIMUM SIGN AREA THE GANTRY CAN SUPPORT. THE DESIGNER OF SPECIFIC GANTRIES IS ALSO RESPONSIBLE FOR THE SIGN LAYOUT AND DESIGN OF ANY SECONDARY STEELWORK SUPPORTING THE SIGN INCLUDING SECTION SIZES AND SPACING OF VERTICAL MEMBERS. IT IS THE RESPONSIBILITY OF THE DESIGN ENGINEER TO ENSURE THAT THE CLAMPS SUPPORTING THE VERTICAL MEMBERS AND SIGN DO NOT CLASH WITH THE PROPOSED GANTRY SUPPORT MEMBERS.
32. THE RESIDUAL DEFLECTION AFTER PERMANENT AND SUPERIMPOSED DEAD LOADS FOR SPECIFIC SCHEMES SHALL BE SPAN/150 AND BE ACHIEVED AT THE CANTILEVER TIP WITH A STRAIGHT CHORD.
33. CARRIAGEWAY CROSS SECTION IS INDICATIVE ONLY.
34. SIGN SUPPORT DETAILS AND CABLE RUNS REQUIRED SHALL BE CONFIRMED BY THE DESIGNER OF THE SPECIFIC GANTRIES WITH ELECTRICAL SUPPLIER.
35. DUCTING TO BE BE PROVIDED BY SPECIALIST SUBCONTRACTORS.
36. CLOSED FABRICATED BOXES (LEG AND ARM) ARE REQUIRED TO BE AIR TIGHT. LEAK TESTING IS REQUIRED IN ACCORDANCE WITH APPENDIX 1/5.
37. PROVISION OF ELEMENTS SUPPORTING AND ACCOMMODATING ELECTRICAL EQUIPMENT AT SPECIFIC GANTRIES TO BE CONFIRMED WITH THE NRA.
38. THE DESIGNER OF SPECIFIC GANTRIES SHALL COMPLY WITH THE TECHNICAL APPROVAL PROCEDURES FOR STRUCTURES CONTAINED WITHIN NRA BD2 OF THE NRA DMRB.

LEGEND

ADS - ADVANCED DIRECTIONAL SIGN



LONG SECTION THROUGH GANTRY
SCALE 1:100



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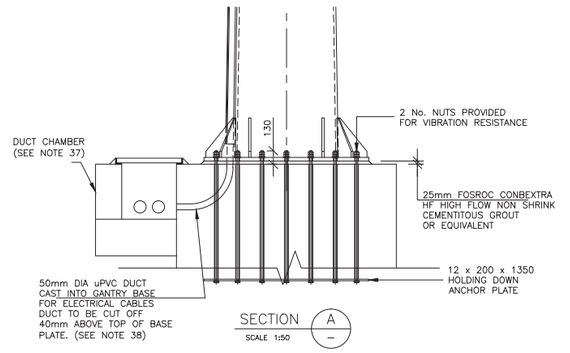
SCALE 1:50



SECTION A -
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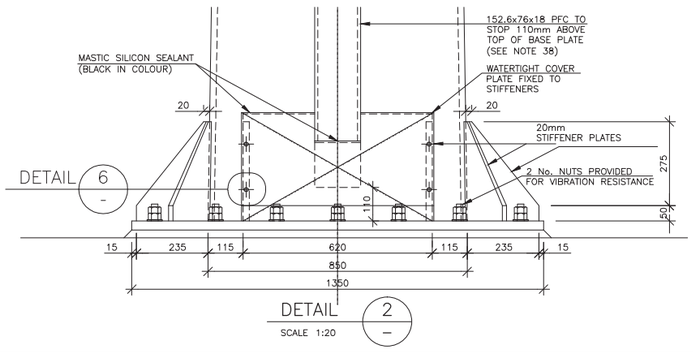
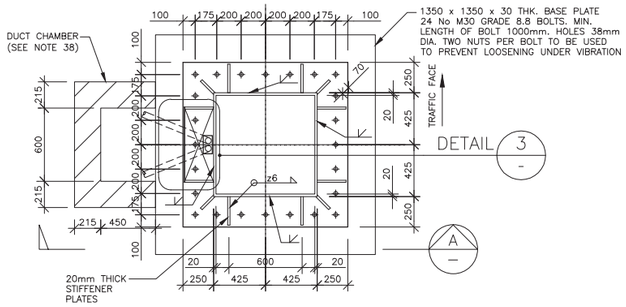
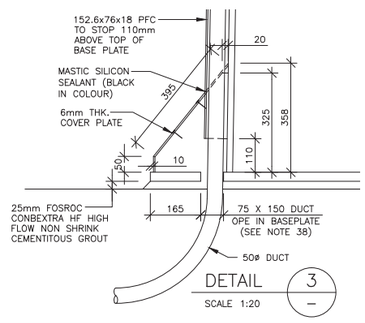


DETAIL 2 -
SCALE 1:20



PLAN ON BASE PLATE
SCALE 1:50



DETAIL 3 -
SCALE 1:20

NATIONAL ROADS AUTHORITY

ROAD CONSTRUCTION DETAILS

GANTRY GROUP 4

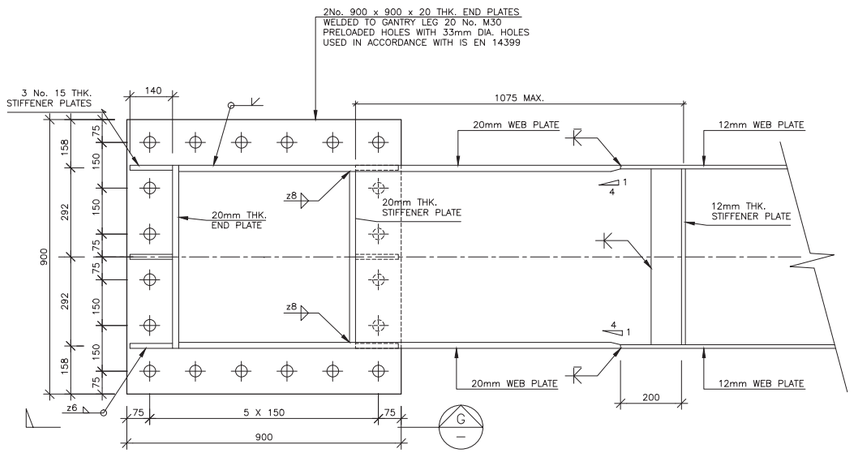
Issue	Date
P01	12/14

GENERAL ARRANGEMENT OF GANTRY GROUP 4 SHEET 1 OF 2

Drawing No. RCD/ 1800/10

NOTES:

1. FOR GENERAL NOTES REFER TO RCD/1800/10.
2. FOR FABRICATION OF CLAMPS, ALL WELDS TO BE 8mm MINIMUM FILLET WELDS AND CONTINUOUS, UNLESS NOTED OTHERWISE. DESIGN ENGINEER TO VERIFY.
3. THE NRA TAKE NO RESPONSIBILITY FOR THE STRUCTURAL ADEQUACY OF THESE CLAMPING DETAILS. IT IS THE RESPONSIBILITY OF THE DESIGN ENGINEER TO ANALYSE, DESIGN AND DETAIL ALL ASPECTS OF THE CLAMPING CONNECTION.
4. EACH VERTICAL MEMBER SUPPORTING THE SIGNS WILL REQUIRE A SET OF CLAMPS TO CONNECT TO THE GANTRY.



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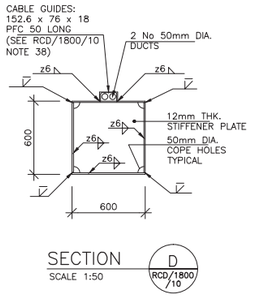
SCALE 1:20 RCD/1800/10



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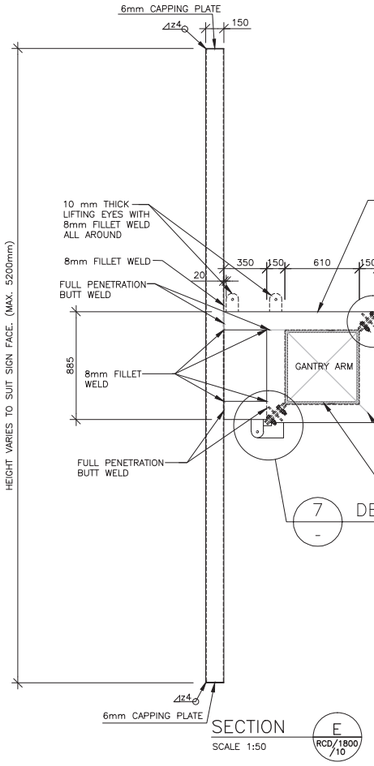

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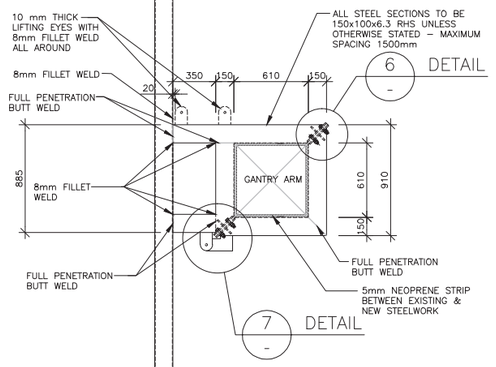
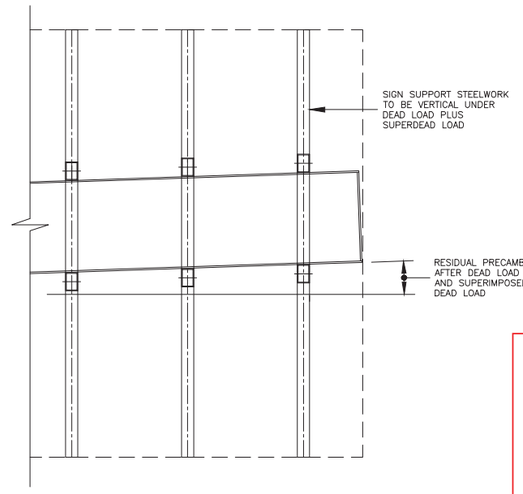
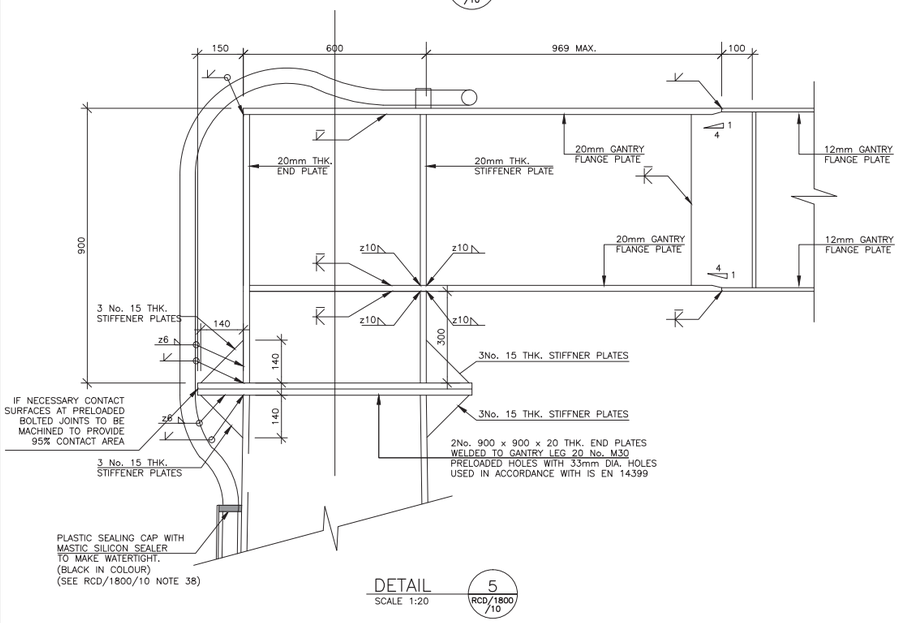


6 DETAIL –

7 DETAIL –



SIGN SUPPORT STEELWORK
SCALE 1:50



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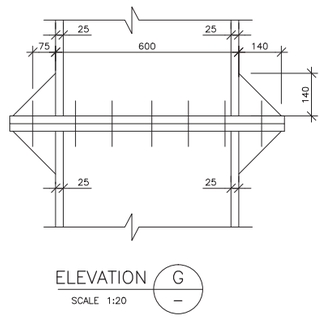
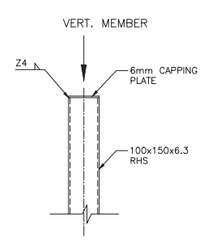


ELEVATION G
SCALE 1:20 –



DETAIL 4
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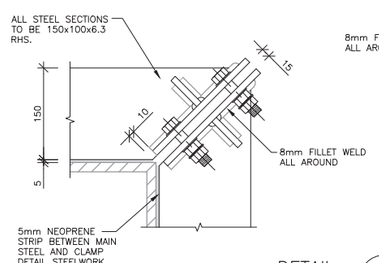
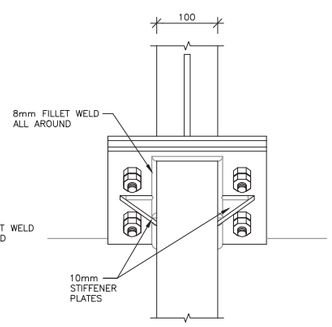
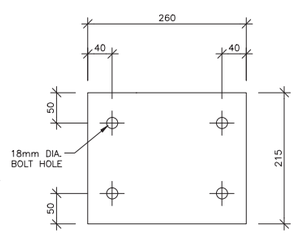


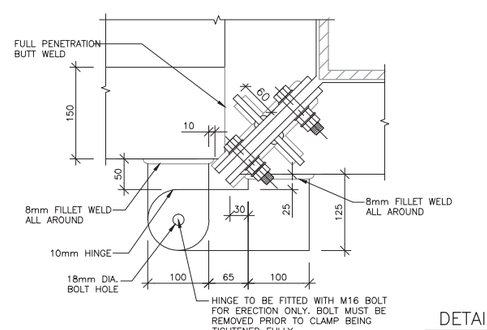


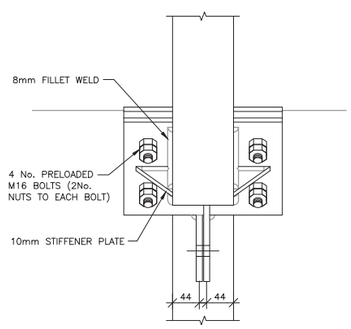
DETAIL 6
SCALE 1:10 –



NOTE:
PLATE THICKNESS TO BE CONFIRMED BY DESIGN ENGINEER.

FIXING PLATE
SCALE 1:10





DETAIL 7
SCALE 1:10 –

TII PUBLICATION NUMBER: CC-SCD-01811

NRA NATIONAL ROADS AUTHORITY

ROAD CONSTRUCTION DETAILS

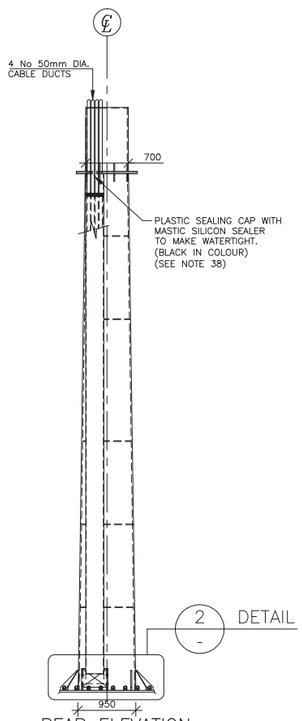
GANTRY GROUP 4

Issue	Date
P01	12/14

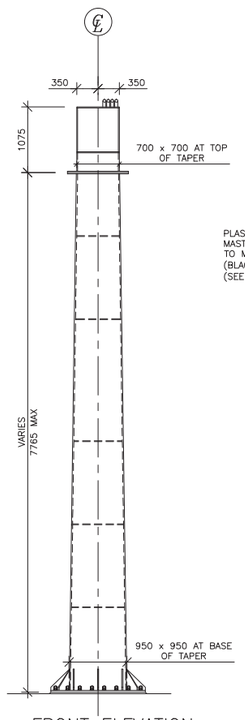
DETAILS OF GANTRY GROUP 4 SHEET 2 OF 2

Drawing No. RCD/1800/11

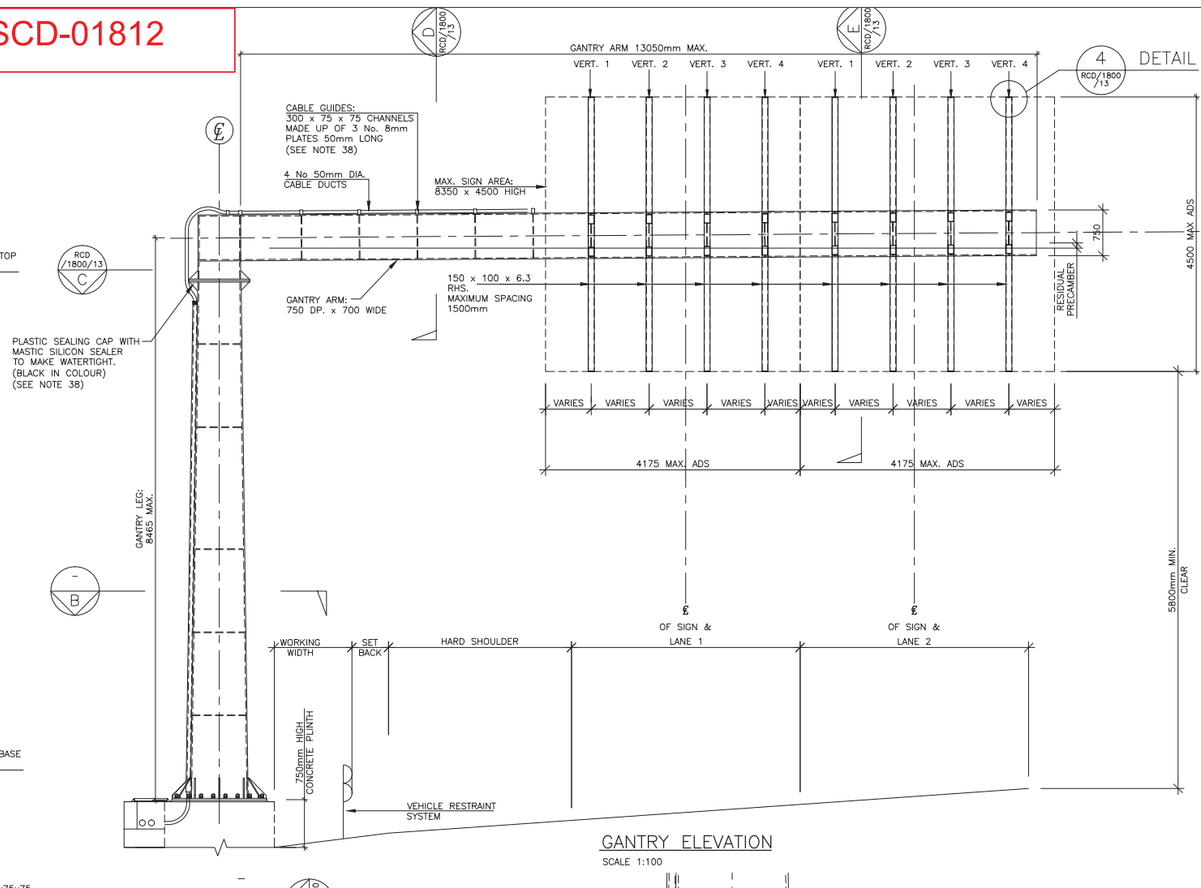
TII PUBLICATION NUMBER: CC-SCD-01812



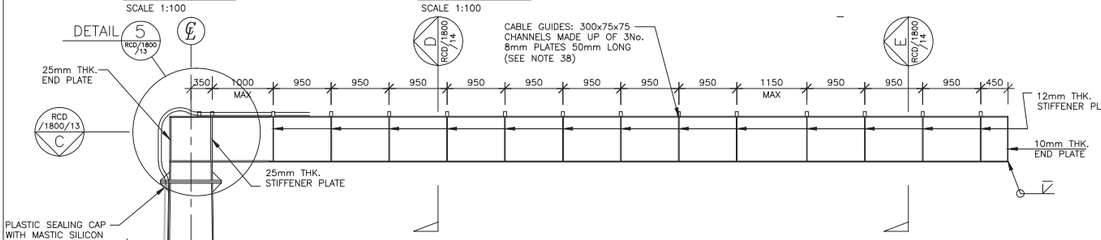
REAR ELEVATION
GANTRY LEG
SCALE 1:100



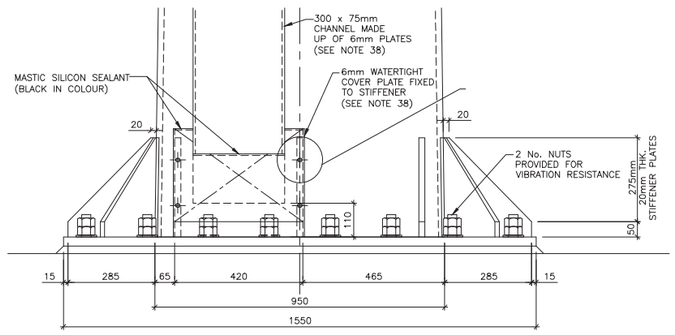
FRONT ELEVATION
GANTRY LEG
SCALE 1:100

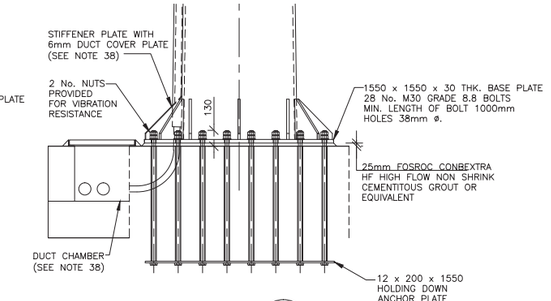


GANTRY ELEVATION
SCALE 1:100



LONG SECTION THROUGH GANTRY
SCALE 1:50





SECTION A
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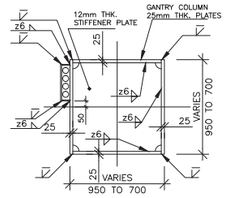
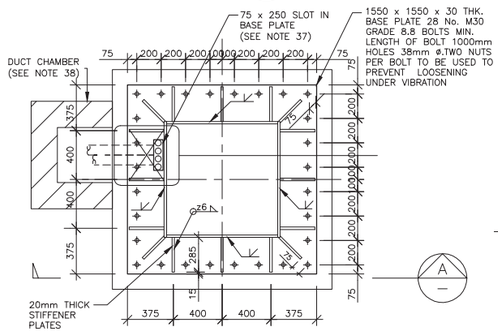
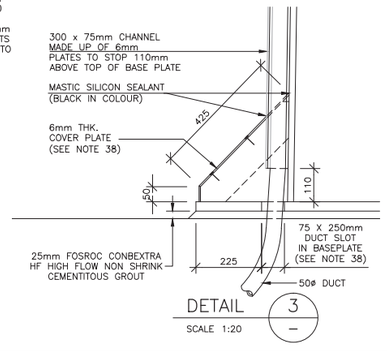


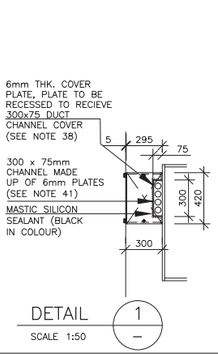
SECTION B
SCALE 1:50



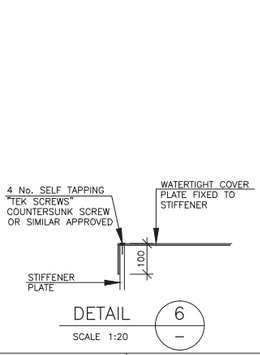
PLAN ON BASE PLATE
SCALE 1:50



DETAIL
SCALE 1:20



DETAIL
SCALE 1:50



DETAIL
SCALE 1:20

NOTES

1. THE PURPOSE OF THIS DETAIL IS TO ENSURE A CONSISTENCY OF STRUCTURAL FORM FOR GROUP 5 GANTRIES ACROSS THE NATIONAL ROAD NETWORK. ALL SECTIONS SIZES AND DETAILS ARE MINIMUM INDICATIVE SIZE ONLY. THE NRA TAKE NO RESPONSIBILITY FOR THE STRUCTURAL OR GEOMETRICAL ADEQUACY OF THESE DETAILS. IT IS THE RESPONSIBILITY OF THE DESIGN ENGINEER TO ANALYSE, DESIGN AND DETAIL THE GROUP 5 GANTRY, CONNECTION DETAILS AND ITS ASSOCIATED REINFORCED CONCRETE FOUNDATION IN ACCORDANCE WITH THE EUROCODES, THEIR ASSOCIATED IRISH NATIONAL ANNEXES, NRA BD 51, NRA BD 60, NRA BD 2 AND ALL OTHER DESIGN DOCUMENTS AS APPROPRIATE TO THE ROAD BEING SPANNED.
2. ALL GANTRY SUPPORT LEGS LOCATED LESS THEN 4.5M FROM THE EDGE OF CARRIAGEWAY SHALL BE DESIGNED TO WITHSTAND THE VEHICLE COLLISION LOADS GIVEN IN TABLE 4.2 OF NRA BD 51 REGARDLESS OF THE PRESENCE OF A VEHICLE RESTRAINT SYSTEM.
3. ALL DIMENSIONS ARE IN MILLIMETRES.
4. THE DESIGNER OF SPECIFIC GANTRIES SHALL PROVIDE STRUCTURAL DRAWINGS FOR THE SPECIFIC GANTRY SCHEME. ALL INFORMATION THAT IS SITE SPECIFIC MUST BE INCLUDED ON THESE DRAWINGS.
5. STEEL SHALL BE S355J2G3 TO IS EN 10025–2 TO IS EN 10025–6 UNLESS NOTED OTHERWISE. HOLLOW SECTIONS TO BE GRADE S355J2H TO IS EN 10210 UNLESS NOTED OTHERWISE.
6. THE STEELWORK DIMENSIONS SHOWN ARE SPECIFIED FOR A MEAN TEMPERATURE OF 15 DEGREES CENTIGRADE.
7. STRUCTURAL STEELWORK TO BE IN ACCORDANCE WITH SERIES 1800 OF NRA MCDRW,
8. PROTECTION TO STEELWORK TO BE IN ACCORDANCE WITH SERIES 1900 OF NRA MCDRW. FINAL COLOUR TO BE APPROVED BY NRA. ALL SPLICES AND CONNECTORS TO BE FULLY TOP COATED AFTER ASSEMBLY. ALL GAPS SHALL BE SEALED.
9. LIFTING EYES TO BE DESIGNED BY STEELWORK FABRICATOR AND SUBMITTED TO THE DESIGNER OF SPECIFIC GANTRIES FOR APPROVAL AT LEAST 4 WEEKS PRIOR TO FABRICATION. TEMPORARY WELDED ATTACHMENTS REQUIRED FOR ERECTION SHALL BE REMOVED AND PROTECTIVE COATING SYSTEM APPLIED IN ACCORDANCE WITH SPECIFICATION.
10. METHOD OF ERECTION OF GANTRY TO BE APPROVED BY THE DESIGNER OF SPECIFIC GANTRIES.
11. ANY TEMPORARY ARRANGEMENT REQUIRED FOR LANDING MAIN BEAM PRIOR TO SITE CONNECTION SHALL BE AGREED WITH THE DESIGNER OF SPECIFIC GANTRIES 4 WEEKS PRIOR TO FABRICATION.
12. TEMPORARY WELDED ATTACHMENTS SHALL BE SUBJECT TO APPROVAL BY THE DESIGN ENGINEER.
13. WELD SYMBOLS ARE IN ACCORDANCE WITH IS EN 22553.
14. ALL FILLET WELDS SHALL BE MINIMUM 6mm LEG LENGTH AND CONTINUOUS UNLESS NOTED OTHERWISE. DESIGN ENGINEER TO VERIFY.
15. BOLTS SHALL BE AS DESCRIBED ON THE DRAWING. DESIGN ENGINEER TO VERIFY.
16. COPE HOLES AND RE–ENTRANT CORNERS SHALL HAVE A RADIUS OF AT LEAST 50mm OR 1.25 TIMES THE PLATE THICKNESS, WHICHEVER IS GREATER, UNLESS NOTED OTHERWISE.
17. HARD STAMPING SHALL NOT BE PERMITTED ON ANY PERMANENTLY EXPOSED SURFACES
18. ASSUMED MAX. WEIGHT OF ADS 20kg/m².
19. MAX. DEPTH OF SIGN 400mm.
20. STRUCTURAL STEELWORK SUPPORTING SIGNAGE OFF GANTRIES HAS A MAX. ASSUMED WEIGHT OF 27.9kg/m. THE STRUCTURAL ADEQUACY OF ALTERNATIVE ARRANGEMENTS PROPOSED BY THE DESIGNER OF SPECIFIC GANTRIES TO ACCOMMODATE SPECIFIC SIGNS SHALL BE VERIFIED BY THE DESIGNER OF SPECIFIC GANTRIES.
21. VERTICALS 1 AND 4 ARE DESIGNED TO SUPPORT VARIABLE MESSAGE SIGNAGE (VMS). VERTICALS 2 AND 3 ARE OMITTED TO ALLOW ACCESS TO BACK OF VMS. ALL VERTICALS ARE REQUIRED FOR DIRECTIONAL SIGNAGE. SIZE AND SPACING OF VERTICALS TO BE CONFIRMED BY THE DESIGN ENGINEER.
24. WIND LOADING SHALL BE IN ACCORDANCE WITH IS EN 1991–1–4 AND THE ASSOCIATED NATIONAL ANNEX.
25. ALL BOLTS AND NUTS TO BE VIBRATION RESISTANT.
26. ALL WELDS ARE IN TENSION UNDER IN–SERVICE CONDITIONS.
27. MINIMUM CLASS OF CONCRETE IN FOUNDATION TO BE C32/40.
28. ALL ELEMENTS TO BE LIFTED FROM LIFTING EYES. SLINGS NOT TO BE USED TO PREVENT DAMAGE TO PROTECTIVE COATING.
29. SECONDARY STEEL WORK MUST COINCIDE WITH INTERNAL STIFFENING PLATES ON CANTILEVER ARM.
30. GANTRIES ARE ASSUMED PERPENDICULAR TO THE MAINLINE.
31. SECONDARY SIGNWORK STRUCTURAL STEELWORK NOT TO BE USED FOR LIFTING UNLESS STRUCTURAL ADEQUACY IS VERIFIED.
32. THE SECONDARY SIGN STEELWORK VERTICALS AND SIGN LAYOUT ARE INDICATIVE OF THE MAXIMUM SIGN AREA THE GANTRY CAN SUPPORT. THE DESIGNER OF SPECIFIC GANTRIES IS ALSO RESPONSIBLE FOR THE SIGN LAYOUT AND DESIGN OF ANY SECONDARY STEELWORK SUPPORTING THE SIGN INCLUDING SECTION SIZES AND SPACING OF VERTICAL MEMBERS. IT IS THE RESPONSIBILITY OF THE DESIGN ENGINEER TO ENSURE THAT THE CLAMPS SUPPORTING THE VERTICAL MEMBERS AND SIGN DO NOT CLASH WITH THE PROPOSED GANTRY SUPPORT MEMBERS.
33. THE RESIDUAL DEFLECTION AFTER DEAD AND SUPERDEAD LOADS FOR SPECIFIC SCHEMES SHALL BE SPAN/150 AND BE ACHIEVED AT THE CANTILEVER TIP WITH A STRAIGHT CHORD.
34. CARRIAGEWAY CROSS SECTION IS INDICATIVE ONLY.
35. SIGN SUPPORT DETAILS AND CABLE RUNS REQUIRED SHALL BE CONFIRMED BY THE DESIGNER OF THE SPECIFIC GANTRIES WITH ELECTRICAL SUPPLIER.
36. DUCTING TO BE BE PROVIDED BY SPECIALIST SUBCONTRACTORS.
37. CLOSED FABRICATED BOXES (LEG AND ARM) ARE REQUIRED TO BE AIR TIGHT. LEAK TESTING IS REQUIRED IN ACCORDANCE WITH APPENDIX 1/5.
38. PROVISION OF ELEMENTS SUPPORTING AND ACCOMMODATING ELECTRICAL EQUIPMENT AT SPECIFIC GANTRIES TO BE CONFIRMED WITH THE NRA.
39. THE DESIGNER OF SPECIFIC GANTRIES SHALL COMPLY WITH THE TECHNICAL APPROVAL PROCEDURES FOR STRUCTURES CONTAINED WITHIN NRA BD2 OF THE NRA DMRB.

LEGEND

ADS – ADVANCED DIRECTIONAL SIGN

NRA NATIONAL ROADS AUTHORITY

ROAD CONSTRUCTION DETAILS

GANTRY GROUP 5

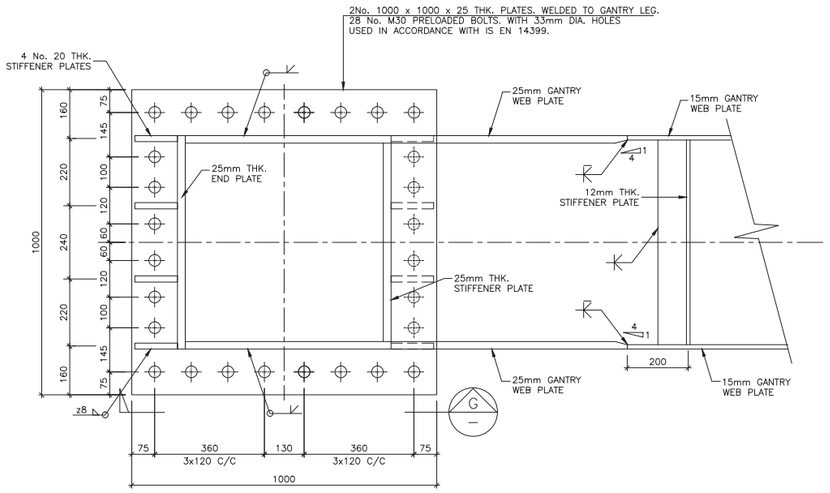
Issue	Date
P01	12/14

GENERAL ARRANGEMENT OF GANTRY GROUP 5 SHEET 1 OF 2

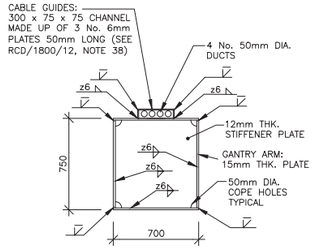
Drawing No. RCD/ 1800/12

NOTES:

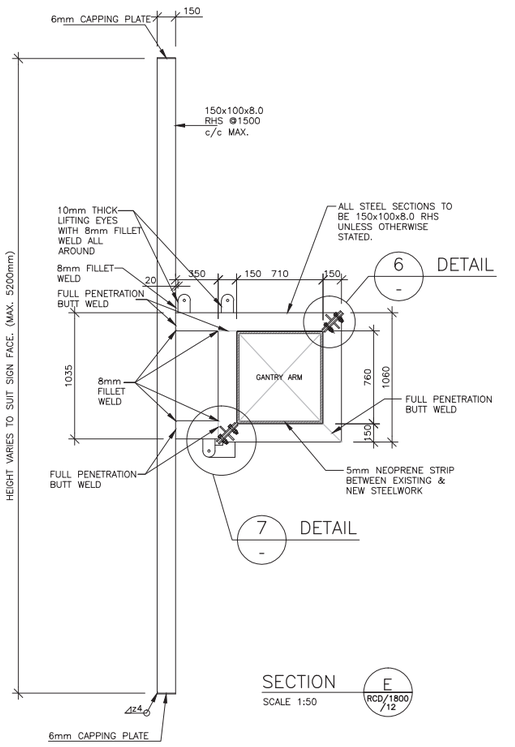
1. FOR NOTES REFER TO RCD/1800/12 FOR GENERAL NOTES.
2. FOR FABRICATION OF CLAMPS, ALL WELDS TO BE 8mm MINIMUM FILLET WELDS AND CONTINUOUS, UNLESS NOTED OTHERWISE. DESIGN ENGINEER TO VERIFY.
3. THE NRA TAKE NO RESPONSIBILITY FOR THE STRUCTURAL ADEQUACY OF THESE CLAMPING DETAILS. IT IS THE RESPONSIBILITY OF THE DESIGN ENGINEER TO ANALYSE, DESIGN AND DETAIL ALL ASPECTS OF THE CLAMPING CONNECTION.
4. EACH VERTICAL MEMBER SUPPORTING THE SIGNS WILL REQUIRE A SET OF CLAMPS TO CONNECT TO THE GANTRY.



SECTION C SCALE 1:20 — RCD/1800/12



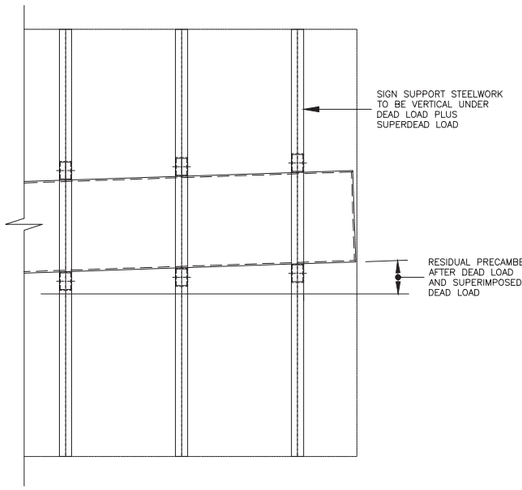
SECTION D SCALE 1:50 — RCD/1800/2



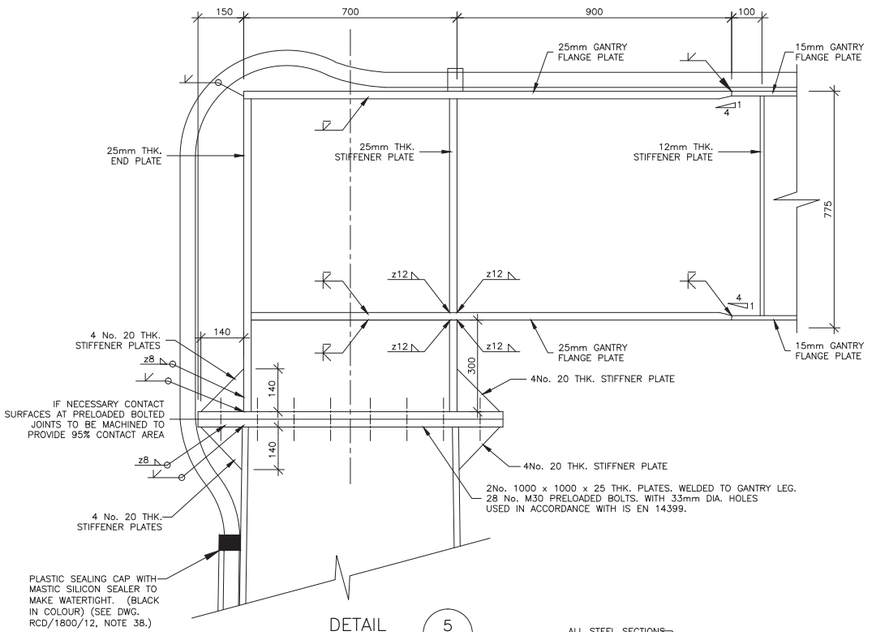
6 DETAIL —

7 DETAIL —

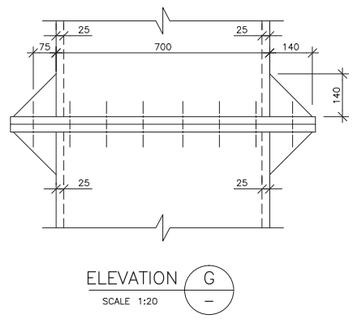
SECTION F SCALE 1:50 — RCD/1800/12



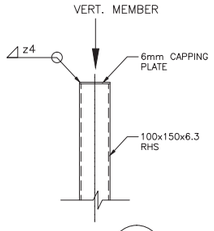
SIGN SUPPORT STEELWORK SCALE 1:50



DETAIL 5 SCALE 1:20 — RCD/1800/12



ELEVATION G SCALE 1:20 —



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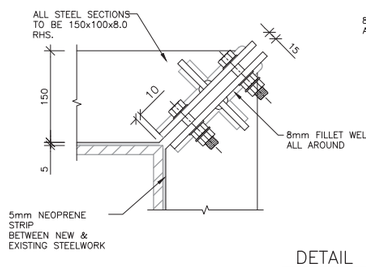
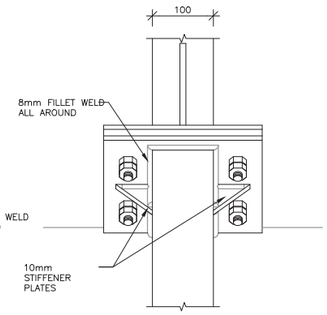
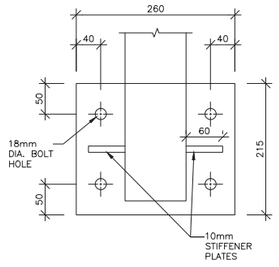
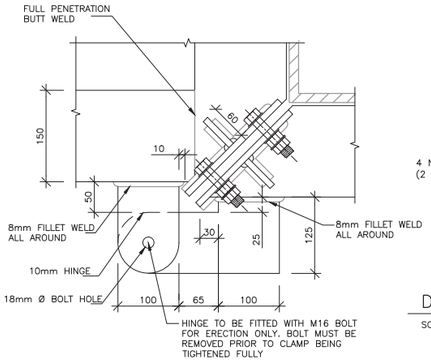


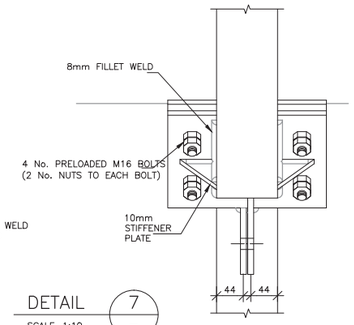
DETAIL 6 SCALE 1:10 —





FIXING PLATE SCALE 1:10

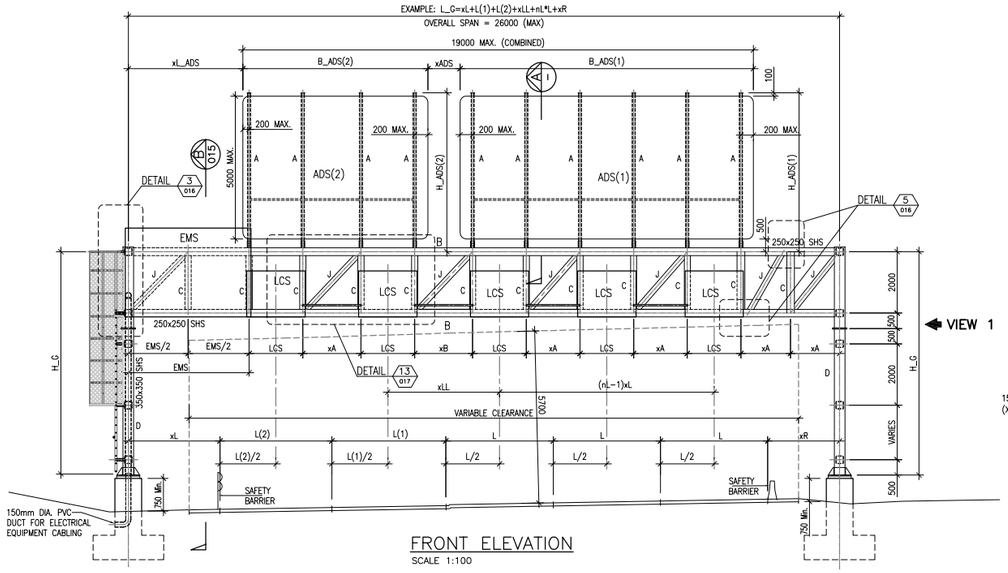




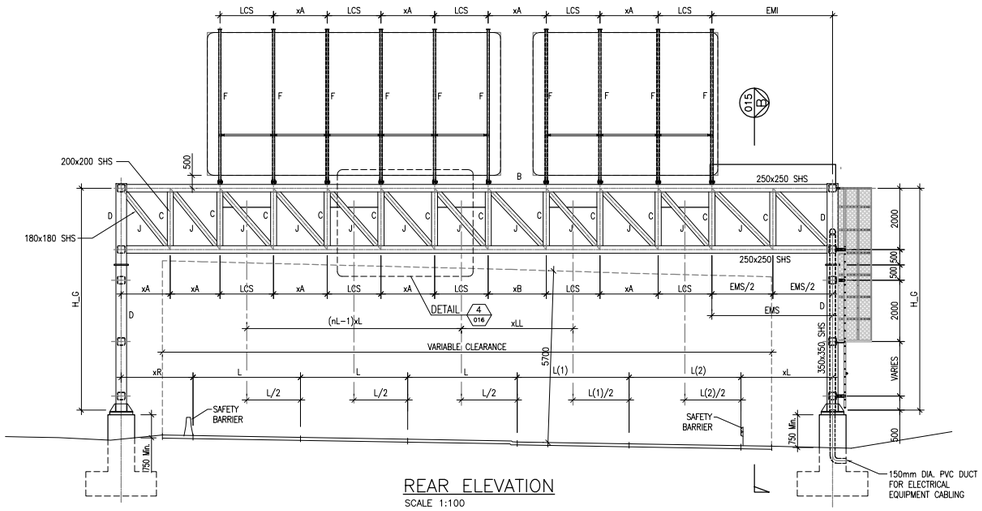
DETAIL 7 SCALE 1:10 —

TII PUBLICATION NUMBER: CC-SCD-01813

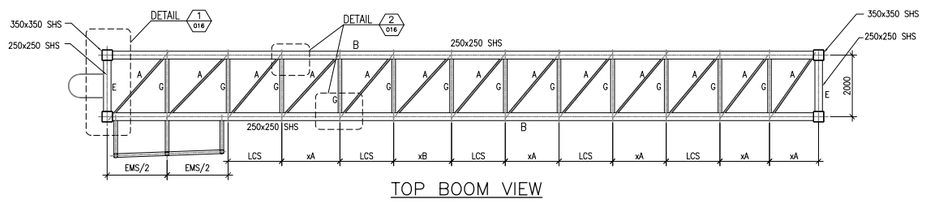
NRA NATIONAL ROADS AUTHORITY	ROAD CONSTRUCTION DETAILS	GANTRY GROUP 5	P01 Issue / 12/14 Date
DETAILS OF GANTRY GROUP 5 SHEET 2 OF 2			Drawing No. RCD/1800/13



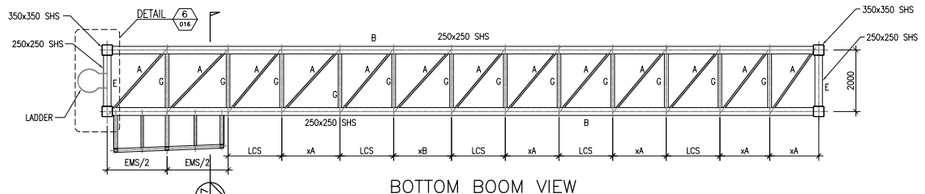
FRONT ELEVATION
SCALE 1:100



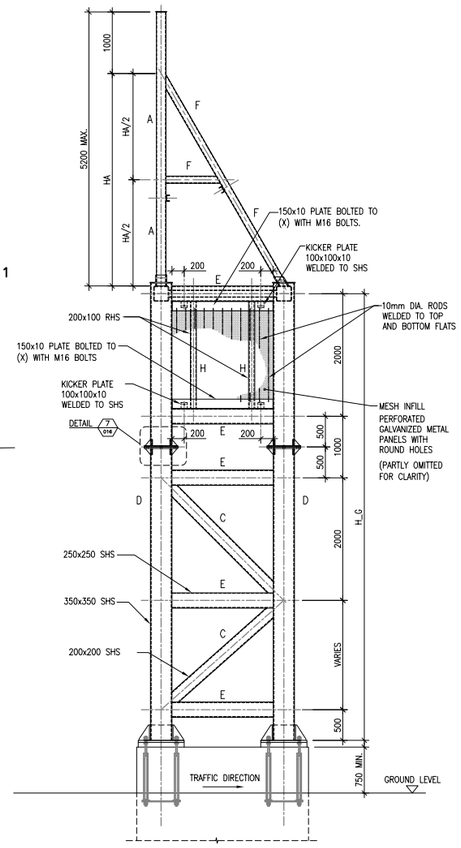
REAR ELEVATION
SCALE 1:100



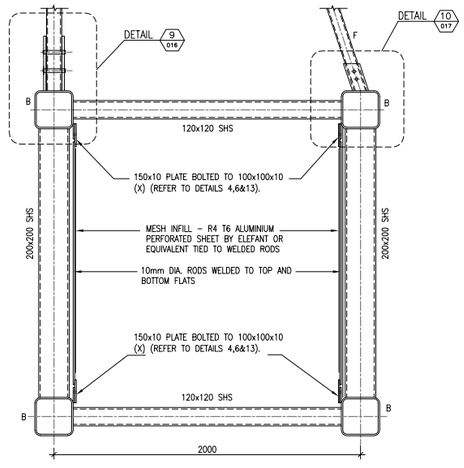
TOP BOOM VIEW
SCALE 1:100



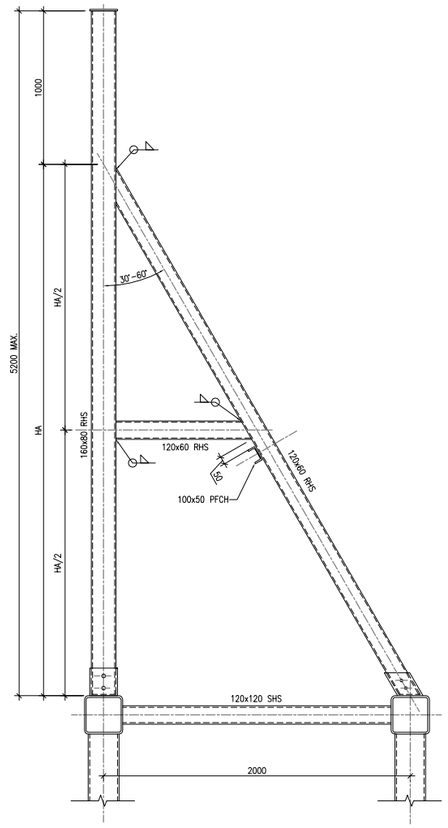
BOTTOM BOOM VIEW
SCALE 1:100



VIEW 1
SIDE ELEVATION
SCALE 1:50



TYPICAL CROSS SECTION THROUGH BOOM
SCALE 1:20



SECTION A
SCALE 1:20

VARIABLES	
H_G	TO BE ADJUSTED TO COMPLY WITH 'VARIES' LEG LENGHT
L_G	MAXIMUM DIMENSION DERIVED FROM FORMULA
LCS	CORRESPONDS WITH LCS SIZE (MAX. 2m)
nLCS	NUMBER OF LCS PANELS
EMS	CORRESPONDS WITH EMS SIZE (MAX. 2m)
H_ADS(1), H_ADS(2)	PANEL HEIGHT PLUS 500mm AT THE BOTTOM AND 100mm AT THE TOP.
B_ADS(1), B_ADS(2)	PANEL WIDTH
X_ADS(1)	DISTANCE BETWEEN ADS PANELS (IF APLICABLE)
xL	REFER TO FRONT/REAR VIEW
L(1)	DIVERGE LANE No1 (OPTIONAL)
L(2)	DIVERGE LANE No2 (OPTIONAL)
HA	DIMENSION RELATED TO ADS SIGN HEIGHT
nL	NUMBER OF LANES
L	CARRIAGEWAY LANE WIDTH
xR	REFER TO FRONT/REAR VIEW
xLL	DISTANCE BETWEEN STANDARD ROAD SECTION AND DIVERGE LANES
xA	DETERMINED AS *(L_G-EMS-nLCSxLCS-xB)/DIVISION_FACTOR* = MIN. 0.7H & MAX. 2m
xB	MINIMUM 0.7H; MAXIMUM 2.0m.
DIVISION_FACTOR	THE FACTOR SHOULD BE ITERATED TO ACCOMMODATE THE REQUIRED xA

TABLE 1	
SIZE OF STEEL MEMBER	
TYPE	SECTION
A	160 x 80 SHS
B	250 x 250 SHS
C	200 x 200 SHS
D	350 x 350 SHS
E	250 x 250 SHS
F	120 x 60 RHS
G	120 x 120 SHS
J	180 x 180 SHS
H	200 x 100 RHS
DESIGNER IS RESPONSIBLE FOR CALCULATIONS OF THE STEEL MEMBERS THICKNESS	

LEGEND:

EMS – ENHANCED MOTORWAY SIGN
ADS – ADVANCE DIRECTION SIGN
LCS – LANE CONTROL SIGNAL

NOTES:

1. THE PURPOSE OF THIS DETAIL IS TO ENSURE A CONSISTENCY OF STRUCTURAL FORM FOR GROUP 6 GANTRIES ACROSS THE NATIONAL ROAD NETWORK. ALL SECTIONS OUTSIDE DIMENSIONS AND DETAILS ARE MINIMUM INDICATIVE SIZES ONLY. THE NRA TAKE NO RESPONSIBILITY FOR THE STRUCTURAL AND/OR GEOMETRICAL ADEQUACY OF THESE DETAILS. IT IS THE RESPONSIBILITY OF THE DESIGN ENGINEER TO ANALYZE, DESIGN SECTIONS THICKNESS AND DETAIL THE GROUP 6 GROUP GANTRY AND ITS ASSOCIATED REINFORCED CONCRETE FOUNDATION IN ACCORDANCE WITH THE EUROCODES, THEIR ASSOCIATED IRISH NATIONAL ANNEXES, NRA BD51, NRA BD60, NRA BD2 AND ALL OTHER DESIGN DOCUMENTS AS APPROPRIATE TO THE ROAD BEING SPANNED.
2. THE GANTRY IS DESIGNED TO SPAN OVER A MIN TWO-LANE ARRANGEMENT AND UP TO MAX 26m. THE GENERAL LAYOUT MAY BE USED FOR A ONE LANE ARRANGEMENT BUT MAY REQUIRE REDESIGN AND VERIFICATION WORKABILITY OF THE SECTION TYPES.
3. ALL GANTRY SUPPORT LEGS LOCATED LESS THEN 4.5M FROM THE EDGE OF CARRIAGEWAY SHALL BE DESIGNED TO WITHSTAND THE VEHICLE COLLISION LOADS GIVEN IN NRA BD51 REGARDLESS OF SAFETY BARRIER IN FRONT OR NOT.
4. ALL DIMENSIONS ARE IN MILLIMETERS.
5. THE DESIGNER OF SPECIFIC GANTRIES SHALL PRODUCE GENERAL ARRANGEMENT DRAWINGS FOR THE SPECIFIC GANTRY. ALL INFORMATION THAT IS SITE SPECIFIC MUST BE INCLUDED ON THESE DRAWINGS.
6. STEEL SHALL BE S355J2G3 TO IS EN 10025-2 TO IS EN 10025-6 UNLESS OTHERWISE NOTED. HOLLOW SECTIONS TO BE GRADE S355J2H TO ISEN10210 UNLESS NOTED OTHERWISE.
7. THE STEELWORK DIMENSIONS SHOWN ARE SPECIFIED FOR A MEAN TEMPERATURE OF 15 DEGREES CENTIGRADE.
8. STRUCTURAL STEELWORK TO BE IN ACCORDANCE WITH SERIES 1800 OF NRA MCDRW.
9. PROTECTION TO STEELWORK TO BE IN ACCORDANCE WITH SERIES 1900 OF NRA MCDRW. FINAL COLOUR TO BE APPROVED BY NRA.
10. DIFFERENTIAL SETTLEMENT BETWEEN THE END SUPPORTS IS TAKEN AS 15mm.
11. LIFTING EYES TO BE DESIGNED BY STEELWORK FABRICATOR AND SUBMITTED TO THE DESIGNER OF SPECIFIC GANTRIES FOR APPROVAL AT LEAST 4 WEEKS PRIOR TO FABRICATION. TEMPORARY WELDED ATTACHMENTS REQUIRED FOR ERECTION SHALL BE REMOVED AND PROTECTIVE COATING SYSTEM APPLIED IN ACCORDANCE WITH SERIES 1900 OF NRA MCDRW.
12. METHOD OF ERECTION OF GANTRY TO BE APPROVED BY THE DESIGNER OF SPECIFIC GANTRIES.
13. ANY TEMPORARY ARRANGEMENT REQUIRED FOR LANDING MAIN BEAM PRIOR TO SITE CONNECTION SHALL BE AGREED WITH THE DESIGNER OF SPECIFIC GANTRIES 4 WEEKS PRIOR TO FABRICATION.
14. TEMPORARY WELDED ATTACHMENTS SHALL BE SUBJECT TO APPROVAL BY THE ENGINEER.
15. WELD SYMBOLS ARE IN ACCORDANCE WITH IS EN 22553.
16. ALL FILLET WELDS SHALL BE 6mm LEG LENGTH AND CONTINUOUS UNLESS NOTED OTHERWISE. ENGINEER TO VERIFY.
17. BOLTS SHALL BE AS DESCRIBED ON THE DRAWING.
18. COPE HOLES AND RE-ENTRANT CORNERS SHALL HAVE A RADIUS OF AT LEAST 50mm OR 1.25 TIMES THE PLATE THICKNESS, WHICHEVER IS GREATER, UNLESS NOTED OTHERWISE.
19. HARD STAMPING SHALL NOT BE PERMITTED ON ANY PERMANENTLY EXPOSED SURFACES.
20. ASSUMED MAXIMUM WEIGHT OF VMS: 90kg/m².
    ASSUMED MAXIMUM WEIGHT OF ADS: 20kg/m².
    ASSUMED MAXIMUM WEIGHT OF LCS: 95kg/m².
    ASSUMED MAXIMUM WEIGHT OF EMS: 70kg/m².
21. MAXIMUM DEPTH OF SIGN IS TO BE 400mm.
22. STRUCTURAL STEELWORK SUPPORTING SIGNAGE OFF GANTRIES HAS A MAX. ASSUMED WEIGHT OF 27.9kg/m. THE STRUCTURAL ADEQUACY OF ALTERNATIVE ARRANGEMENTS PROPOSED BY THE DESIGNERS OF SPECIFIC GANTRIES TO ACCOMMODATE SPECIFIC SIGNS SHALL BE VERIFIED BY THE DESIGNERS OF SPECIFIC GANTRIES.
23. WIND LOADING SHALL BE IN ACCORDANCE WITH IS EN 1991-1-4 AND THE ASSOCIATED NATIONAL ANNEX.
24. ALL BOLTS AND NUTS TO BE VIBRATION RESISTANT.
25. ALL WELDS ARE IN TENSION UNDER TEMPORARY AND IN-SERVICE CONDITIONS.
26. MINIMUM CLASS OF CONCRETE IN FOUNDATION TO BE C32/40.
27. ALL ELEMENTS TO BE LIFTED FROM LIFTING EYES. SLINGS NOT TO BE USED TO PREVENT DAMAGE TO PROTECTIVE COATING.
28. GANTRIES ARE ASSUMED PERPENDICULAR TO THE MAINLINE.
29. SECONDARY SIGNWORK STRUCTURAL STEELWORK NOT TO BE USED FOR LIFTING.
30. THE SECONDARY SIGN STEELWORK VERTICALS AND SIGN LAYOUT ARE INDICATIVE OF THE MAXIMUM SIGN AREA THE GANTRY CAN SUPPORT. THE SIGN LAYOUT AND THE NUMBER OF SECONDARY SIGN STEELWORK VERTICALS SHOULD BE PROVIDED TO SUIT GANTRY SPECIFIC REQUIREMENTS AND NOT EXCEED THOSE SHOWN ON THE DRAWING.
31. THE RESIDUAL PRECAMBER SHALL BE SPAN/800 AND BE ACHIEVED AT MID-SPAN WITH A SMOOTH CURVE BETWEEN MID-SPAN AND END SUPPORTS.
32. CARRIAGEWAY CROSS SECTION IS INDICATIVE ONLY.
33. SIGN SUPPORT DETAILS AND CABLE RUNS REQUIRED SHALL BE CONFIRMED BY THE DESIGNER OF THE SPECIFIC GANTRIES WITH ELECTRICAL SUPPLIER.
34. PROVISION OF ELEMENTS SUPPORTING AND ACCOMMODATING ELECTRICAL EQUIPMENT AT SPECIFIC GANTRIES TO BE CONFIRMED WITH THE NRA.
35. A MIN CLEARANCE OF 5.7m IS TO BE PROVIDED.
36. ALL SOLUTIONS USED TO ATTACH GANTRY EQUIPMENT SHOULD BE PROTECTED AGAINST CORROSION.

TII PUBLICATION NUMBER: CC-SCD-01814

NATIONAL ROADS AUTHORITY

ROAD CONSTRUCTION DETAILS

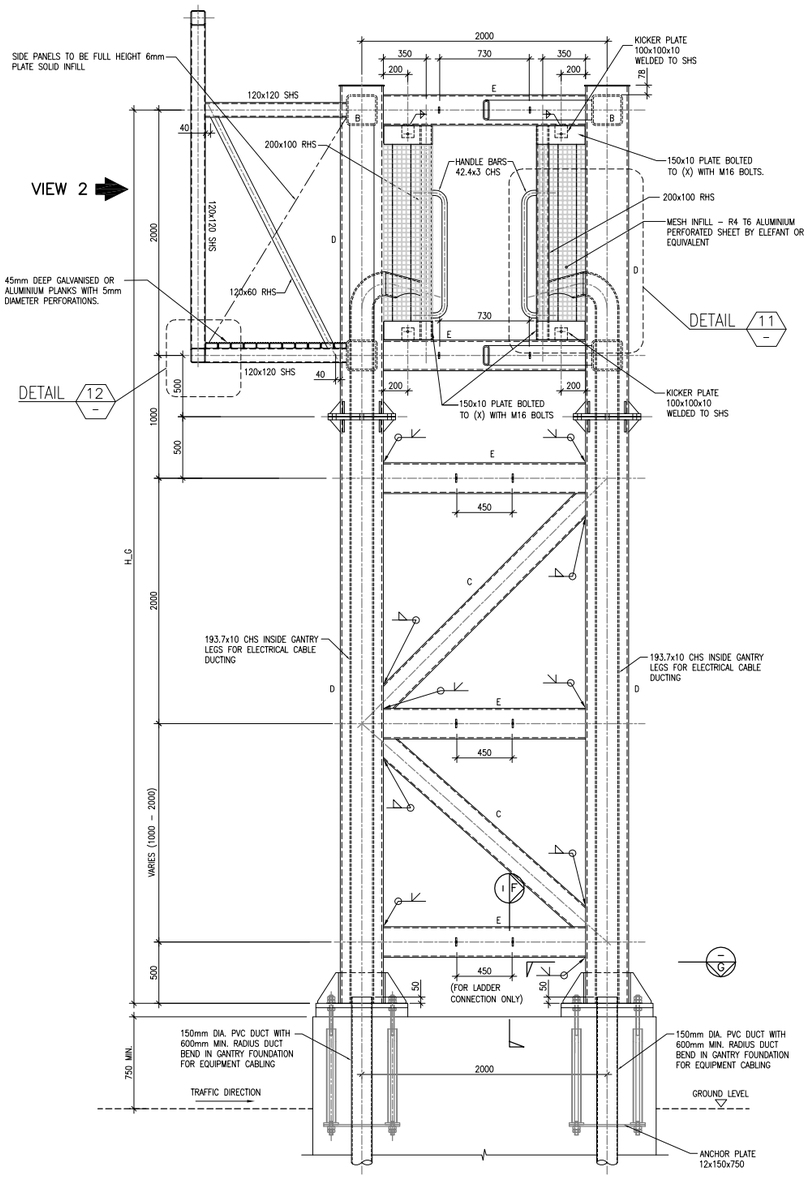
GANTRY GROUP 6

P1	06/15
Issue	Date

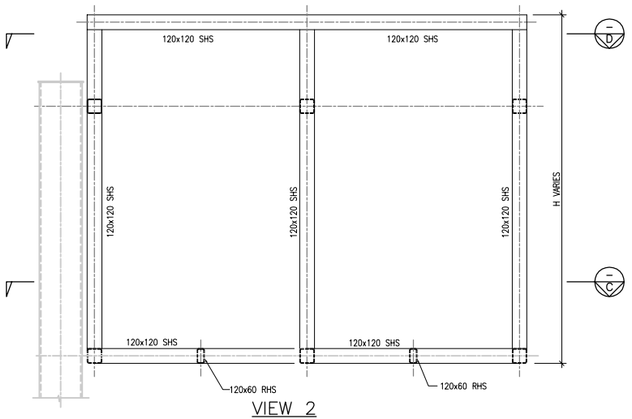
GENERAL ARRANGEMENT OF GANTRY GROUP 6 SHEET 1 OF 4

Drawing No.

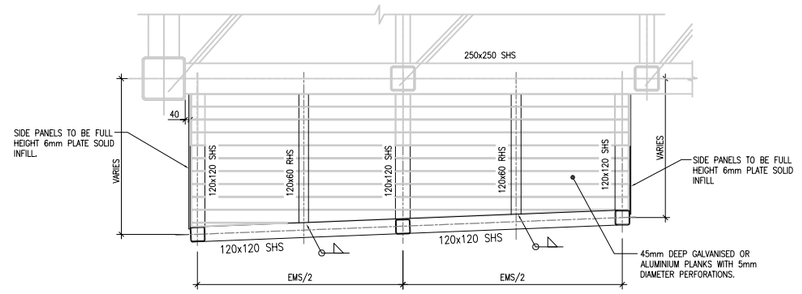
RCD/ 1800/14



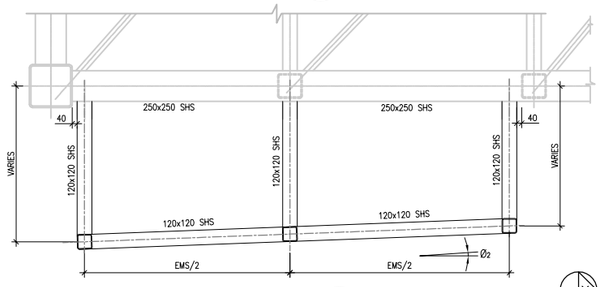
SECTION B
SCALE 1:25
014



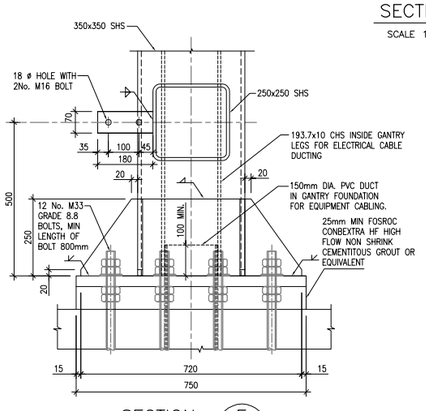
VIEW 2
FRONT ELEVATION
SCALE 1:25



SECTION C
SCALE 1:25



SECTION D
SCALE 1:25



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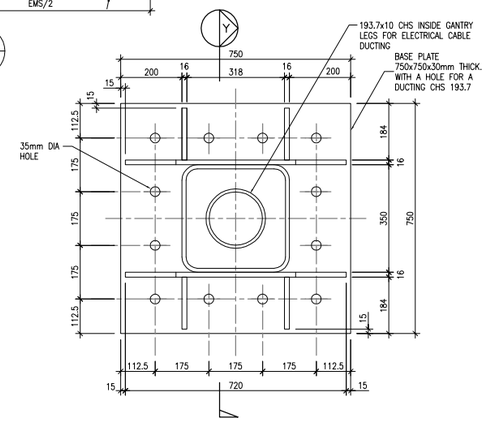

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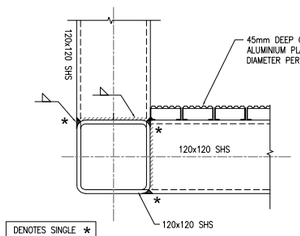
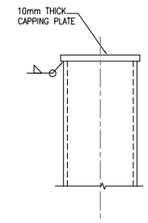
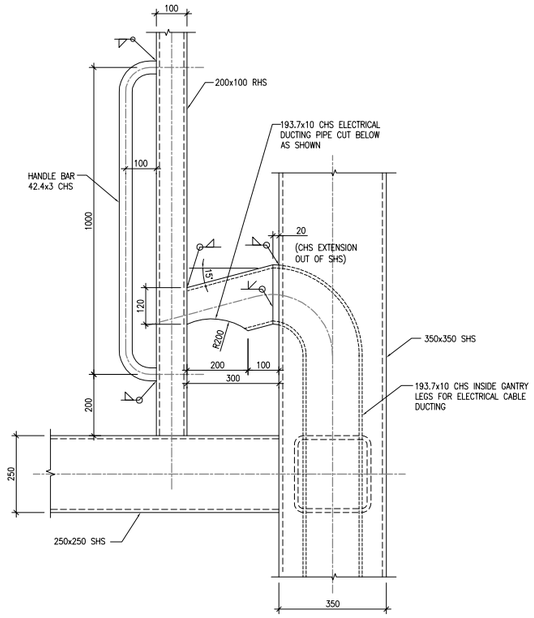
SCALE 1:10



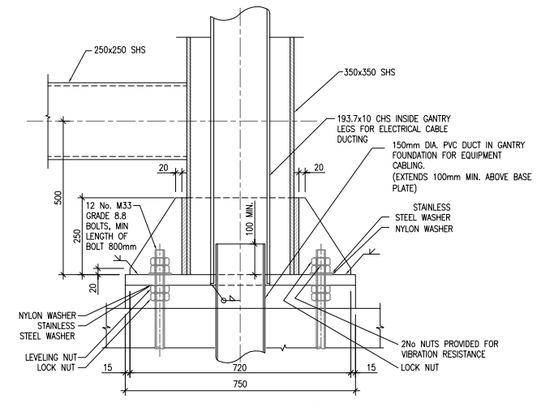
DETAIL 12
SCALE 1:10



CAPPING DETAIL
(TYPICAL FOR ALL EXPOSED SHS/RHS ENDS)
SCALE 1:10



DETAIL 11
SCALE 1:10



SECTION Y
SCALE 1:10

TII PUBLICATION NUMBER: CC-SCD-01815

NRA NATIONAL ROADS AUTHORITY

ROAD CONSTRUCTION DETAILS

GANTRY GROUP 6

Issue	Date
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GENERAL ARRANGEMENT OF GANTRY GROUP 6 SHEET 2 OF 4

Drawing No.

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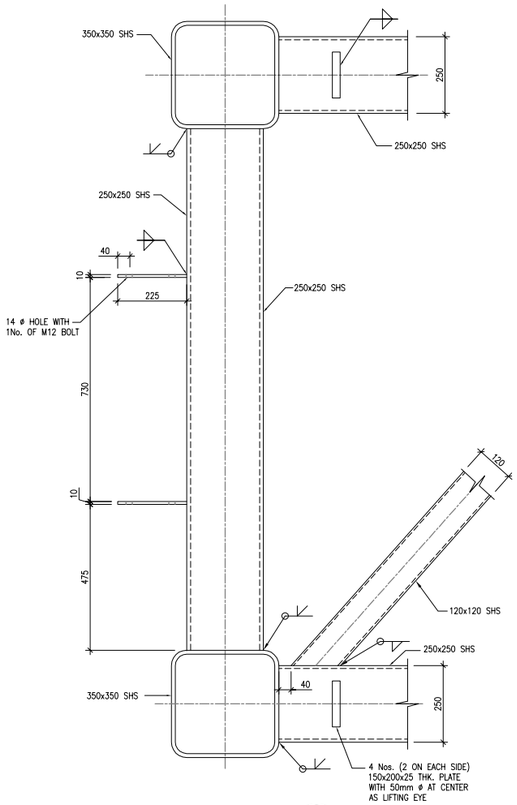
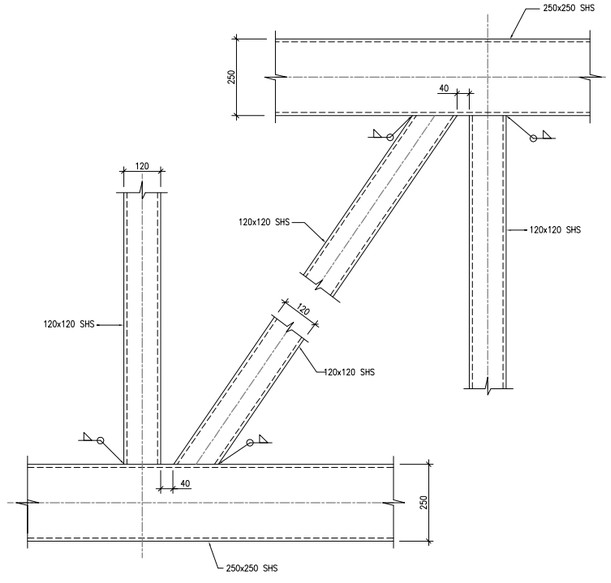


DETAIL 1 / 014
SCALE 1:10



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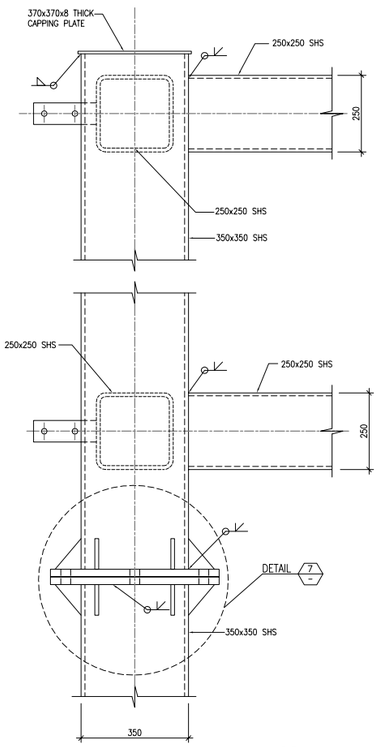

DETAIL 3 / 014
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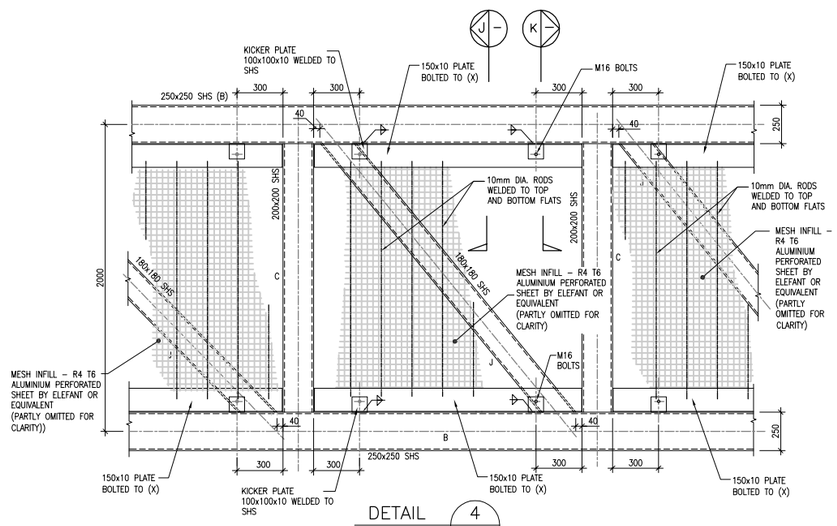
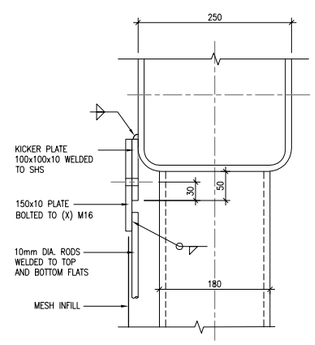
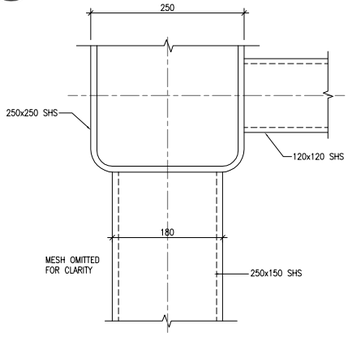


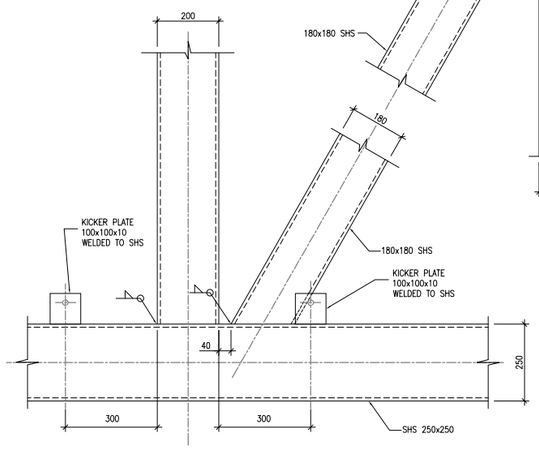
DETAIL 4 / 014
SCALE 1:20



SECTION J / –
SCALE 1:5
SHOWING MESH DETAILS



SECTION K / –
SCALE 1:5



DETAIL 5 / 014
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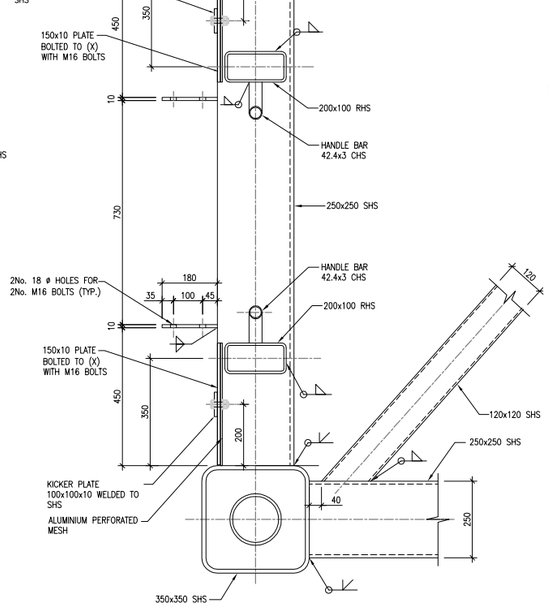
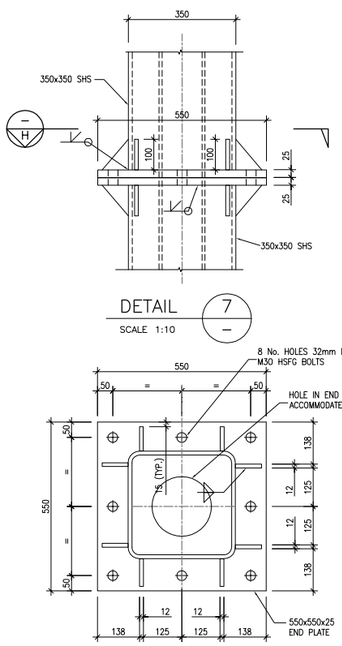
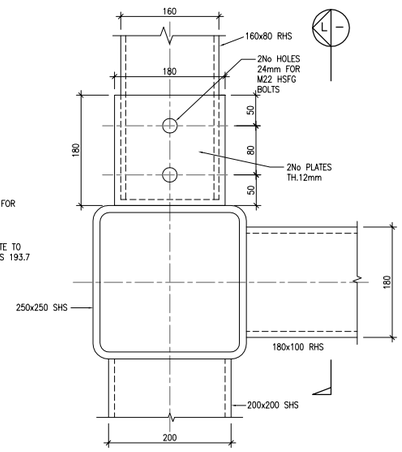


DETAIL 6 / 014
SCALE 1:10

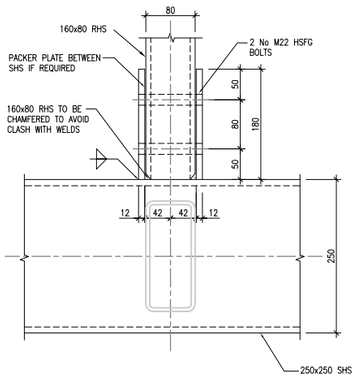


DETAIL 7 / –
SCALE 1:10

SECTION H / –
SCALE 1:10



DETAIL 9 / 014
SCALE 1:5



SECTION L / –
SCALE 1:5

TII PUBLICATION NUMBER: CC-SCD-01816

NATIONAL ROADS AUTHORITY

ROAD CONSTRUCTION DETAILS

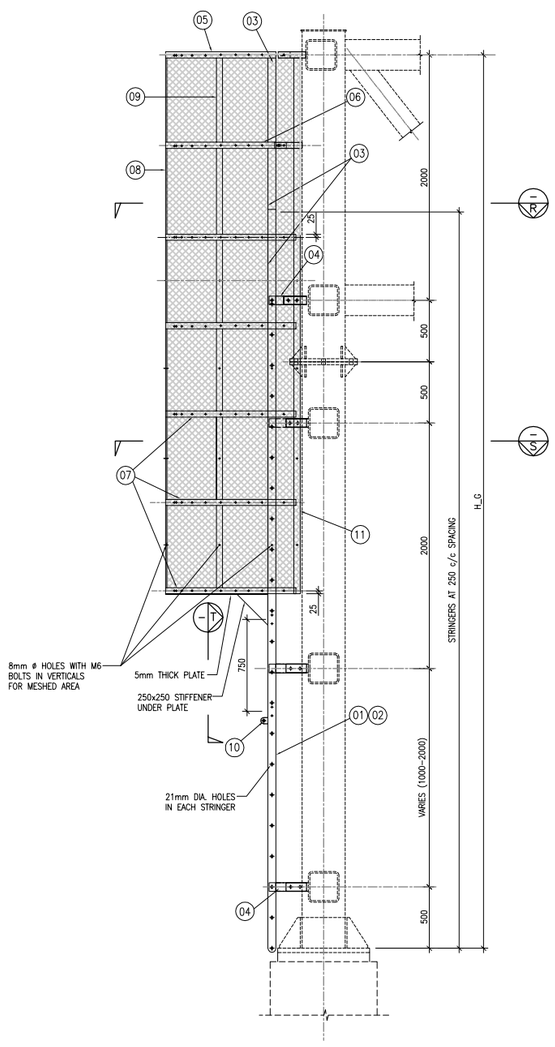
GANTRY GROUP 6

Issue	Date
P1	06/15

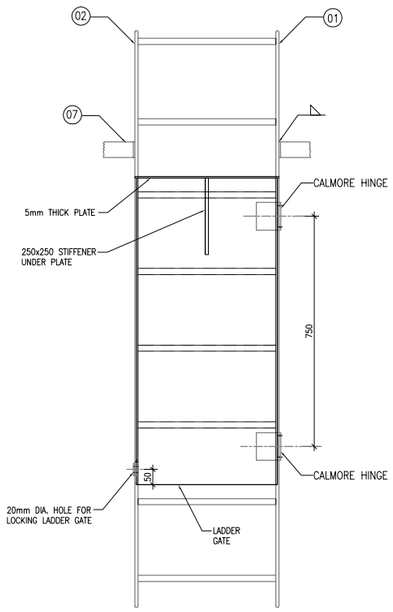
GENERAL ARRANGEMENT OF GANTRY GROUP 6 SHEET 3 OF 4

Drawing No. RCD/1800/16

TII PUBLICATION NUMBER: CC-SCD-01817

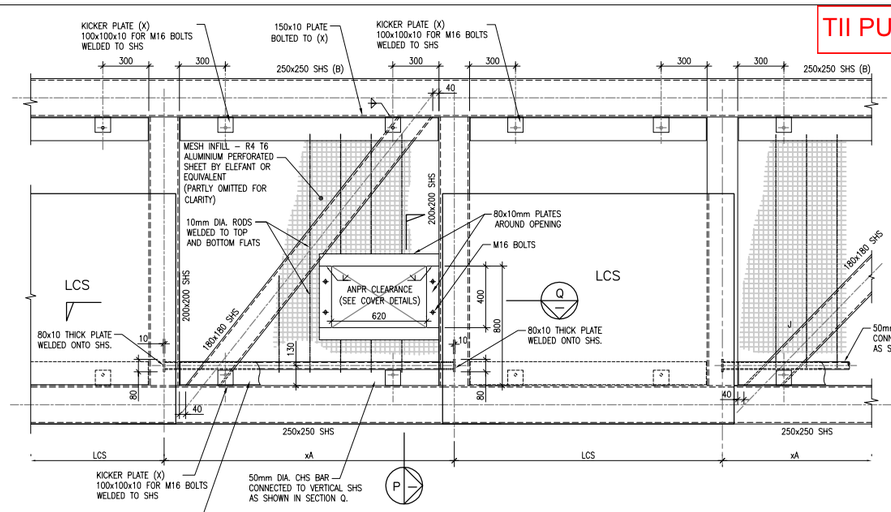


LADDER ELEVATION
SCALE 1:25

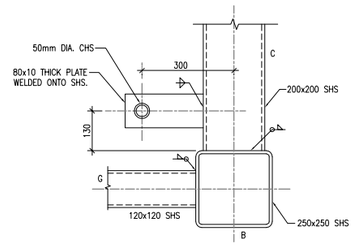


VIEW T
SCALE 1:10

SHOWING LADDER GATE DETAILS

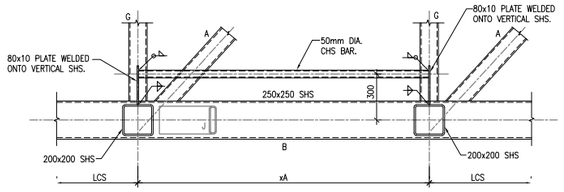


DETAIL 13/014
SCALE 1:20



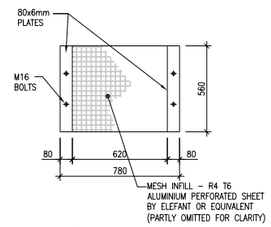
SECTION P
SCALE 1:10

MESH OMITTED FOR CLARITY



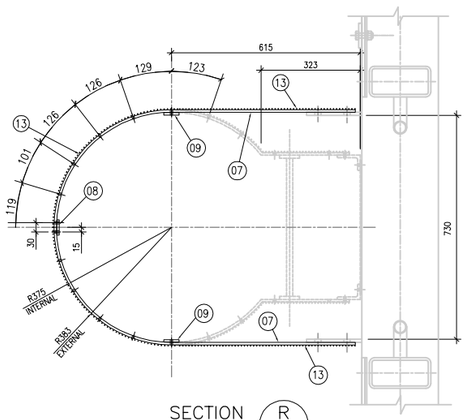
SECTION Q
SCALE 1:20

MESH OMITTED FOR CLARITY

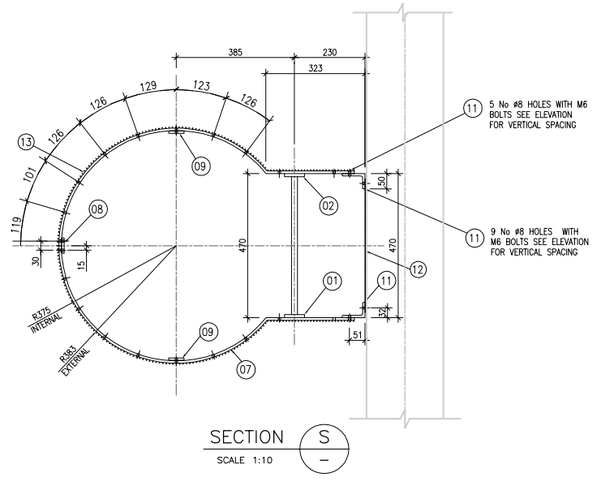


COVER DETAILS TO ANPR CLEARANCE
SCALE 1:20

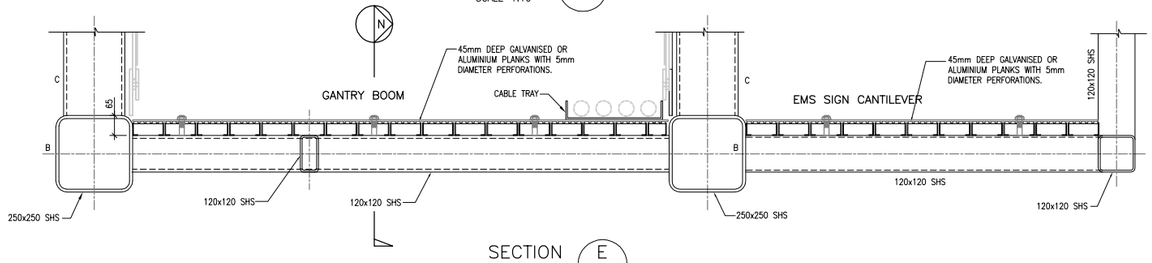
MATERIAL LIST	
ITEM	DESCRIPTION
1	65 x 10. FLAT
2	65 x 10. FLAT
3	65 x 10. FLAT
4	70 x 12. FLAT
5	50 x 8.0. FLAT
6	50 x 8.0. FLAT
7	50 x 8.0. FLAT
8	50 x 8.0. FLAT
9	50 x 8.0. FLAT
10	40 x 5.0 FLAT
11	75 x 50 x 6L
12	432 x 1440 MESH
13	1220 x 1440 MESH



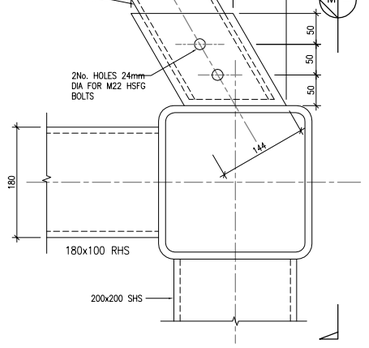
SECTION R
SCALE 1:10



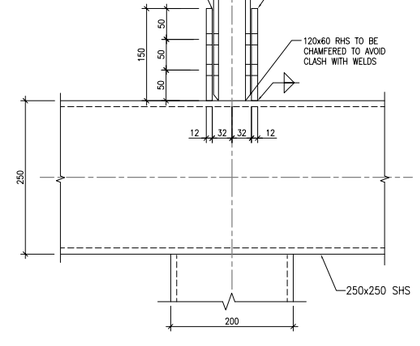
SECTION S
SCALE 1:10



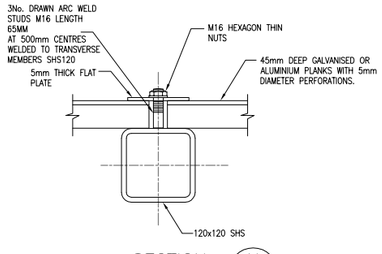
SECTION E
SCALE 1:10



DETAIL 10/014
SCALE 1:5



SECTION M
SCALE 1:5



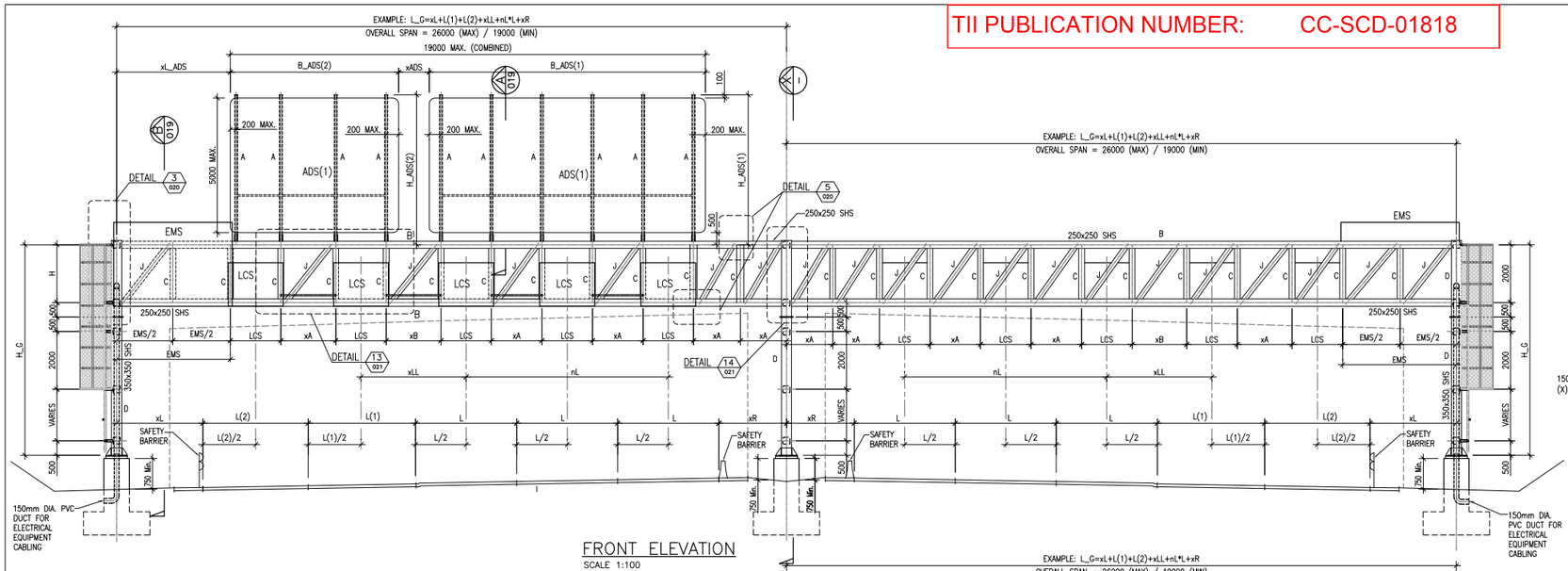
SECTION N
SCALE 1:5

NRA NATIONAL ROADS AUTHORITY	ROAD CONSTRUCTION DETAILS	GANTRY GROUP 6	P1 / Issue; 06/15 / Date

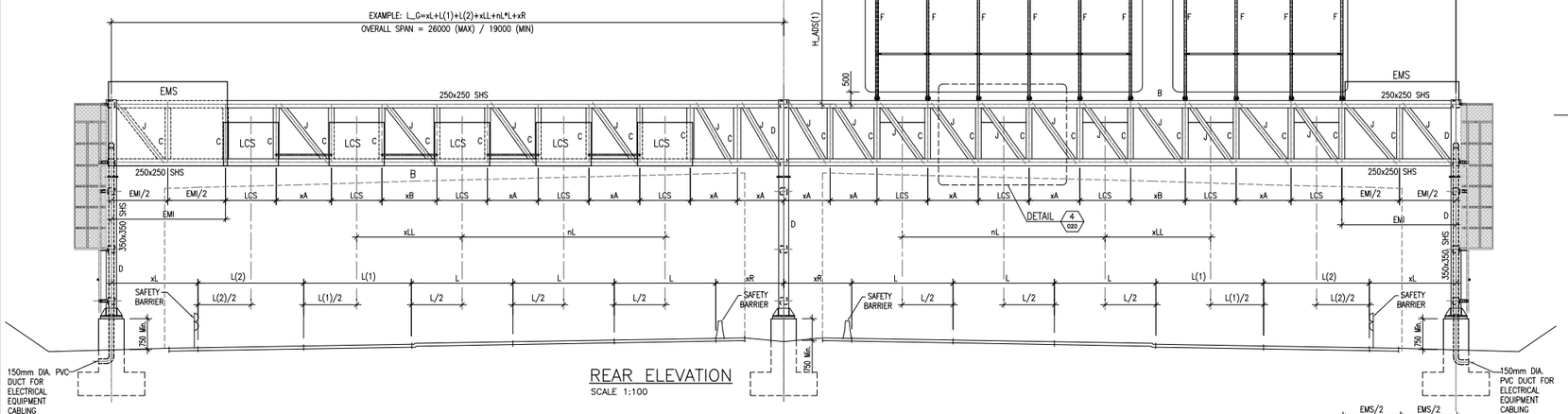
GENERAL ARRANGEMENT OF GANTRY GROUP 6 SHEET 4 OF 4

Drawing No. RCD/1800/17

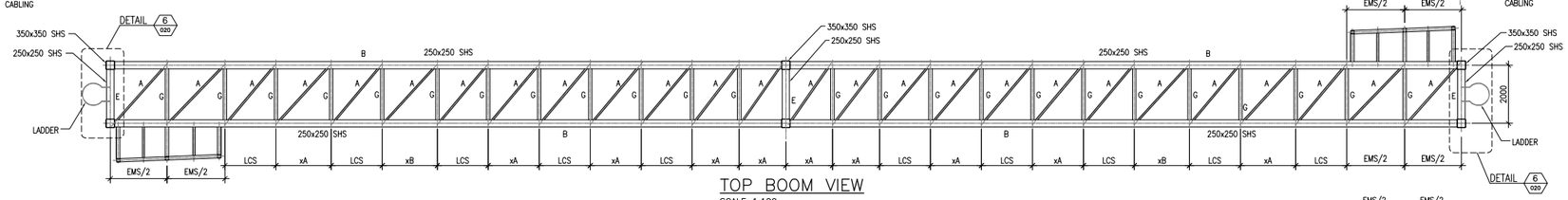
TII PUBLICATION NUMBER: CC-SCD-01818



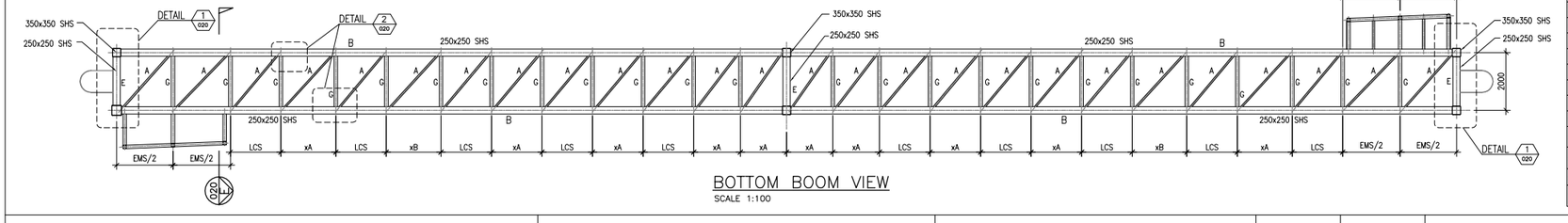
FRONT ELEVATION
SCALE 1:100



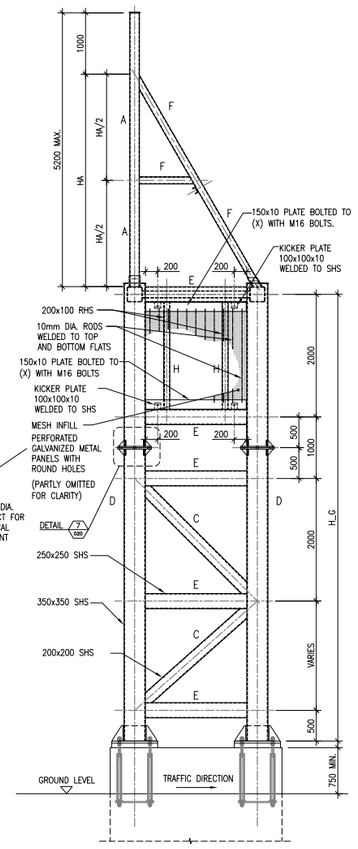
REAR ELEVATION
SCALE 1:100



TOP BOOM VIEW
SCALE 1:100



BOTTOM BOOM VIEW
SCALE 1:100



SECTION X
SCALE 1:50

LEGEND:

EMS – ENHANCED MOTORWAY SIGN
ADS – ADVANCE DIRECTION SIGN
LCS – LANE CONTROL SIGNAL

TABLE 1	
SIZE OF STEEL MEMBER	
TYPE	SECTION
A	160 x 80 SHS
B	250 x 250 SHS
C	200 x 200 SHS
D	350 x 350 SHS
E	250 x 250 SHS
F	120 x 60 RHS
G	120 x 120 SHS
J	180 x 180 SHS
H	200 x 100 RHS
DESIGNER IS RESPONSIBLE FOR CALCULATIONS OF THE STEEL MEMBERS THICKNESS	

VARIABLES	
H_G	TO BE ADJUSTED TO COMPLY WITH 'VARIES' LEG LENGHT
L_G	MAXIMUM DIMENSION DERIVED FROM FORMULA
LCS	CORRESPONDS WITH LCS SIZE (MAX. 2m)
nLCS	NUMBER OF LCS PANELS
EMS	CORRESPONDS WITH EMS SIZE (MAX. 2m)
H_ADS(1), H_ADS(2)	PANEL HEIGHT PLUS 500mm AT THE BOTTOM AND 100mm AT THE TOP.
B_ADS(1), B_ADS(2)	PANEL WIDTH
X_ADS(1)	DISTANCE BETWEEN ADS PANELS (IF APLICABLE)
xL	REFER TO FRONT/REAR VIEW
L(1)	DIVERGE LANE No1 (OPTIONAL)
L(2)	DIVERGE LANE No2 (OPTIONAL)
HA	DIMENSION RELATED TO ADS SIGN HEIGHT
nL	NUMBER OF LANES
L	CARRIAGEWAY LANE WIDTH
xR	REFER TO FRONT/REAR VIEW
xLL	DISTANCE BETWEEN STANDARD ROAD SECTION AND DIVERGE LANES
xA	DETERMINED AS *(L_G−EMS−nLCSxLCS−xB)/DIVISION_FACTOR* = MIN. 0.7H & MAX. 2m
xB	MINIMUM 0.7H; MAXIMUM 2.0m
DIVISION_FACTOR	THE FACTOR SHOULD BE ITERATED TO ACCOMMODATE THE REQUIRED xA

NOTES:

1. THE PURPOSE OF THIS DETAIL IS TO ENSURE A CONSISTENCY OF STRUCTURAL FORM FOR GROUP 6 GANTRIES ACROSS THE NATIONAL ROAD NETWORK. ALL SECTIONS OUTSIDE DIMENSIONS AND DETAILS ARE MINIMUM INDICATIVE SIZES ONLY. THE NRA TAKE NO RESPONSIBILITY FOR THE STRUCTURAL AND/OR GEOMETRICAL ADEQUACY OF THESE DETAILS. IT IS THE RESPONSIBILITY OF THE DESIGN ENGINEER TO ANALYZE, DESIGN SECTIONS THICKNESS AND DETAIL THE GROUP 6 GROUP GANTRY AND ITS ASSOCIATED REINFORCED CONCRETE FOUNDATION IN ACCORDANCE WITH THE EUROCODES, THEIR ASSOCIATED IRISH NATIONAL ANNEXES, NRA BD51, NRA BD60, NRA BD2 AND ALL OTHER DESIGN DOCUMENTS AS APPROPRIATE TO THE ROAD BEING SPANNED.
2. THE GANTRY IS DESIGNED TO SPAN OVER A MIN TWO−LANE ARRANGEMENT AND UP TO MAX 26m. THE GENERAL LAYOUT MAY BE USED FOR A ONE LANE ARRANGEMENT BUT MAY REQUIRE REDESIGN AND VERIFICATION WORKABILITY OF THE SECTION TYPES.
3. ALL GANTRY SUPPORT LEGS LOCATED LESS THEN 4.5M FROM THE EDGE OF CARRIAGEWAY SHALL BE DESIGNED TO WITHSTAND THE VEHICLE COLLISION LOADS GIVEN IN NRA BD51 REGARDLESS OF SAFETY BARRIER IN FRONT OR NOT.
4. ALL DIMENSIONS ARE IN MILLIMETERS.
5. THE DESIGNER OF SPECIFIC GANTRIES SHALL PRODUCE GENERAL ARRANGEMENT DRAWINGS FOR THE SPECIFIC GANTRY. ALL INFORMATION THAT IS SITE SPECIFIC MUST BE INCLUDED ON THESE DRAWINGS.
6. STEEL SHALL BE S355J2G3 TO IS EN 10025−2 TO IS EN 10025−6 UNLESS OTHERWISE NOTED. HOLLOW SECTIONS TO BE GRADE S355J2H TO ISEN10210 UNLESS NOTED OTHERWISE.
7. THE STEELWORK DIMENSIONS SHOWN ARE SPECIFIED FOR A MEAN TEMPERATURE OF 15 DEGREES CENTIGRADE.
8. STRUCTURAL STEELWORK TO BE IN ACCORDANCE WITH SERIES 1800 OF NRA MCDRW.
9. PROTECTION TO STEELWORK TO BE IN ACCORDANCE WITH SERIES 1900 OF NRA MCDRW. FINAL COLOUR TO BE APPROVED BY NRA.
10. DIFFERENTIAL SETTLEMENT BETWEEN THE END SUPPORTS IS TAKEN AS 15mm.
11. LIFTING EYES TO BE DESIGNED BY STEELWORK FABRICATOR AND SUBMITTED TO THE DESIGNER OF SPECIFIC GANTRIES FOR APPROVAL AT LEAST 4 WEEKS PRIOR TO FABRICATION. TEMPORARY WELDED ATTACHMENTS REQUIRED FOR ERECTION SHALL BE REMOVED AND PROTECTIVE COATING SYSTEM APPLIED IN ACCORDANCE WITH SERIES 1900 OF NRA MCDRW.
12. METHOD OF ERECTION OF GANTRY TO BE APPROVED BY THE DESIGNER OF SPECIFIC GANTRIES.
13. ANY TEMPORARY ARRANGEMENT REQUIRED FOR LANDING MAIN BEAM PRIOR TO SITE CONNECTION SHALL BE AGREED WITH THE DESIGNER OF SPECIFIC GANTRIES 4 WEEKS PRIOR TO FABRICATION.
14. TEMPORARY WELDED ATTACHMENTS SHALL BE SUBJECT TO APPROVAL BY THE ENGINEER.
15. WELD SYMBOLS ARE IN ACCORDANCE WITH IS EN 22553.
16. ALL FILLET WELDS SHALL BE 6mm LEG LENGTH AND CONTINUOUS UNLESS NOTED OTHERWISE. ENGINEER TO VERIFY.
17. BOLTS SHALL BE AS DESCRIBED ON THE DRAWING.
18. COPE HOLES AND RE−ENTRANT CORNERS SHALL HAVE A RADIUS OF AT LEAST 50mm OR 1.25 TIMES THE PLATE THICKNESS, WHICHEVER IS GREATER, UNLESS NOTED OTHERWISE.
19. HARD STAMPING SHALL NOT BE PERMITTED ON ANY PERMANENTLY EXPOSED SURFACES.
20. ASSUMED MAXIMUM WEIGHT OF VMS: 90kg/m².
    ASSUMED MAXIMUM WEIGHT OF ADS: 20kg/m².
    ASSUMED MAXIMUM WEIGHT OF LCS: 95kg/m².
    ASSUMED MAXIMUM WEIGHT OF EMS: 70kg/m².
21. MAXIMUM DEPTH OF SIGN IS TO BE 400mm.
22. STRUCTURAL STEELWORK SUPPORTING SIGNAGE OFF GANTRIES HAS A MAX. ASSUMED WEIGHT OF 27.9kg/m. THE STRUCTURAL ADEQUACY OF ALTERNATIVE ARRANGEMENTS PROPOSED BY THE DESIGNERS OF SPECIFIC GANTRIES TO ACCOMMODATE SPECIFIC SIGNS SHALL BE VERIFIED BY THE DESIGNERS OF SPECIFIC GANTRIES.
23. WIND LOADING SHALL BE IN ACCORDANCE WITH IS EN 1991−1−4 AND THE ASSOCIATED NATIONAL ANNEX.
24. ALL BOLTS AND NUTS TO BE VIBRATION RESISTANT.
25. ALL WELDS ARE IN TENSION UNDER TEMPORARY AND IN−SERVICE CONDITIONS.
26. MINIMUM CLASS OF CONCRETE IN FOUNDATION TO BE C32/40.
27. ALL ELEMENTS TO BE LIFTED FROM LIFTING EYES. SLINGS NOT TO BE USED TO PREVENT DAMAGE TO PROTECTIVE COATING.
28. GANTRIES ARE ASSUMED PERPENDICULAR TO THE MAINLINE.
29. SECONDARY SIGNWORK STRUCTURAL STEELWORK NOT TO BE USED FOR LIFTING.
30. THE SECONDARY SIGN STEELWORK VERTICALS AND SIGN LAYOUT ARE INDICATIVE OF THE MAXIMUM SIGN AREA THE GANTRY CAN SUPPORT. THE SIGN LAYOUT AND THE NUMBER OF SECONDARY SIGN STEELWORK VERTICALS SHOULD BE PROVIDED TO SUIT GANTRY SPECIFIC REQUIREMENTS AND NOT EXCEED THOSE SHOWN ON THE DRAWING.
31. THE RESIDUAL PRECAMBER SHALL BE SPAN/800 AND BE ACHIEVED AT MID−SPAN WITH A SMOOTH CURVE BETWEEN MID−SPAN AND END SUPPORTS.
32. CARRIAGEWAY CROSS SECTION IS INDICATIVE ONLY.
33. SIGN SUPPORT DETAILS AND CABLE RUNS REQUIRED SHALL BE CONFIRMED BY THE DESIGNER OF THE SPECIFIC GANTRIES WITH ELECTRICAL SUPPLIER.
34. PROVISION OF ELEMENTS SUPPORTING AND ACCOMMODATING ELECTRICAL EQUIPMENT AT SPECIFIC GANTRIES TO BE CONFIRMED WITH THE NRA.
35. A MIN CLEARANCE OF 5.7m IS TO BE PROVIDED.
36. ALL SOLUTIONS USED TO ATTACH GANTRY EQUIPMENT SHOULD BE PROTECTED AGAINST CORROSION.

NATIONAL ROADS AUTHORITY

ROAD CONSTRUCTION DETAILS

GANTRY GROUP 7

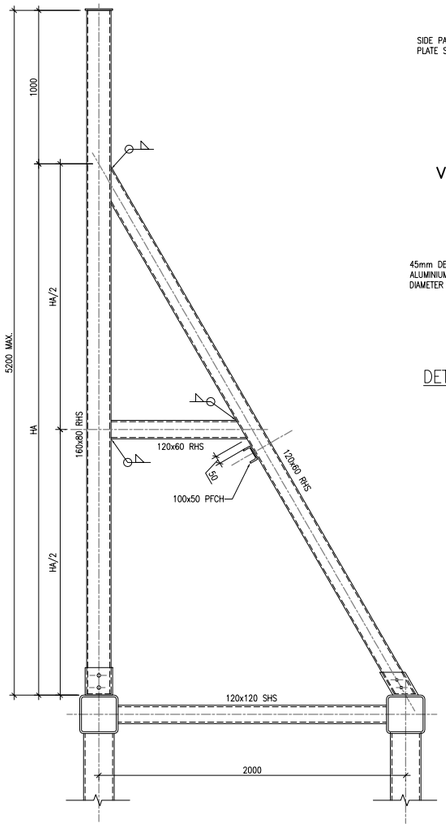
Issue	Date
P1	06/15

GENERAL ARRANGEMENT OF GANTRY GROUP 7 SHEET 1 OF 4

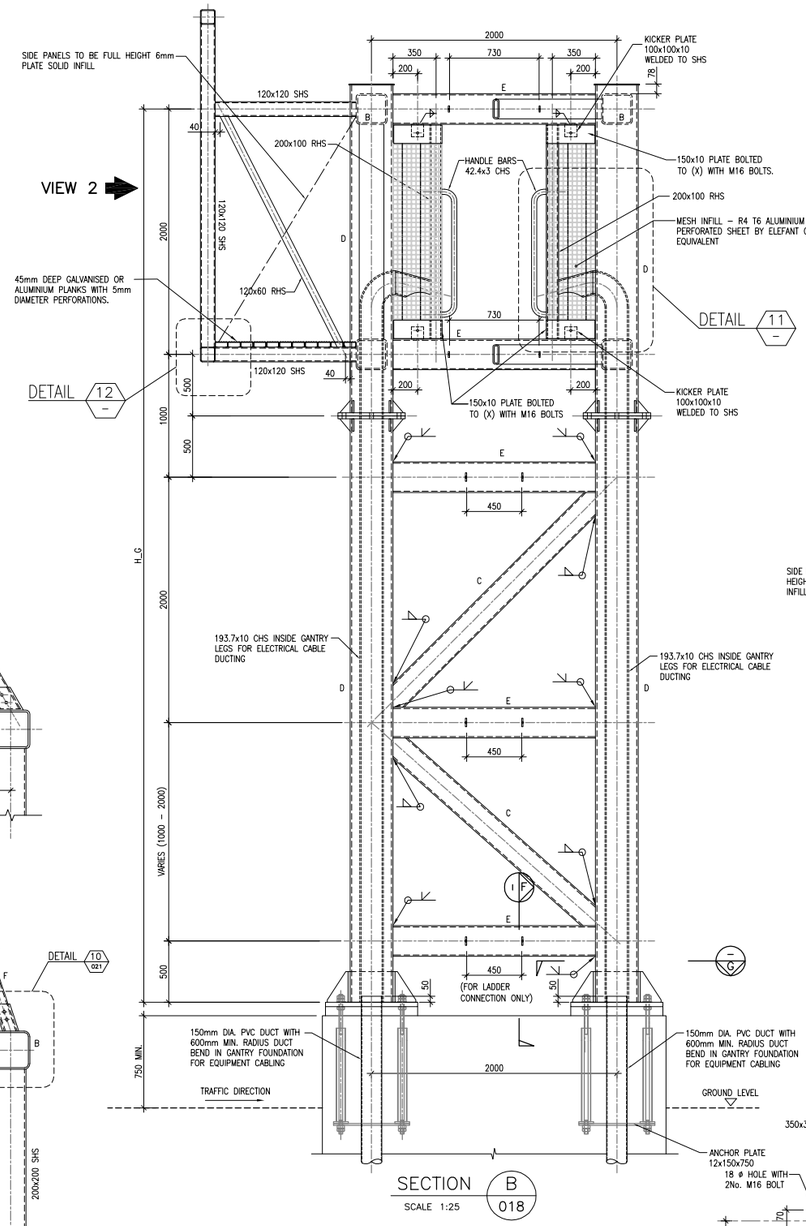
Drawing No.

RCD/ 1800/18

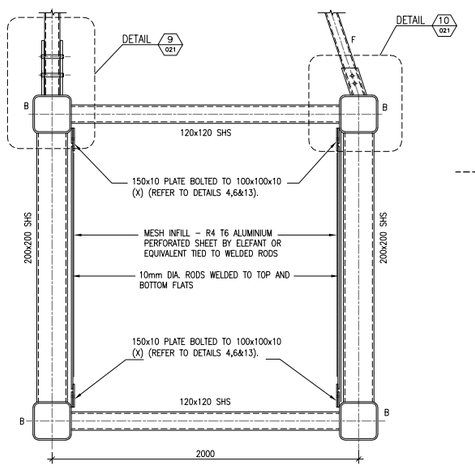
TII PUBLICATION NUMBER: CC-SCD-01819



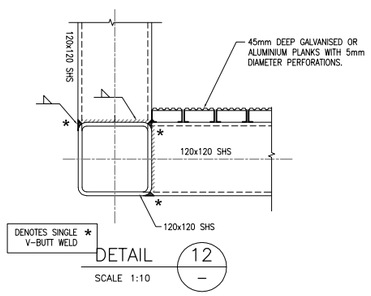
SECTION A
SCALE 1:20 018



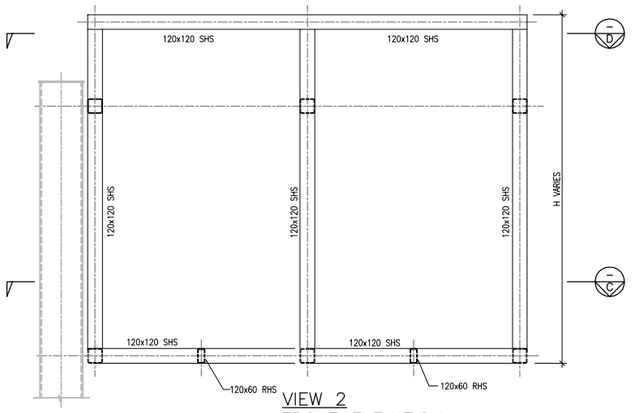
SECTION B
SCALE 1:25 018



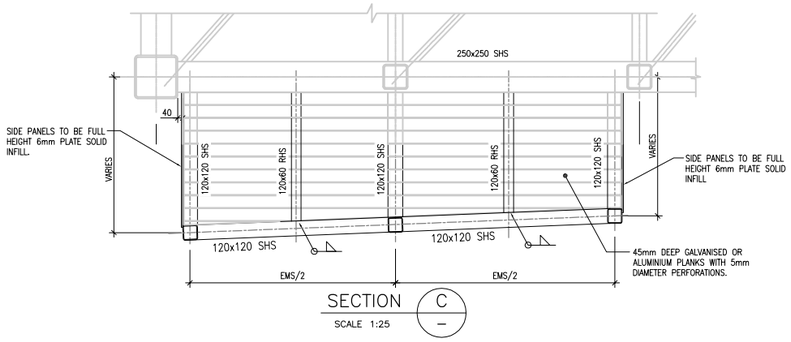
TYPICAL CROSS SECTION THROUGH BOOM
SCALE 1:20



DETAIL 12
SCALE 1:10 –



VIEW 2
FRONT ELEVATION
SCALE 1:25



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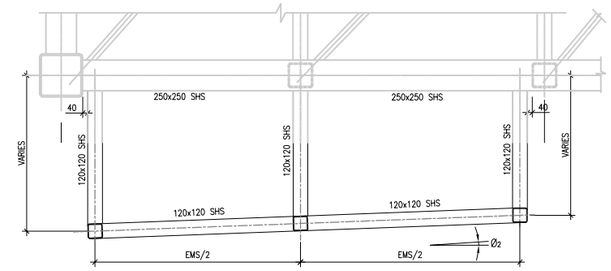
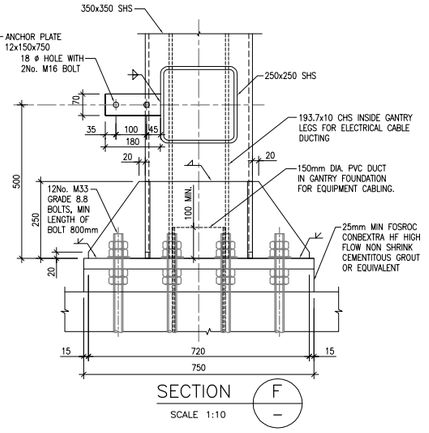
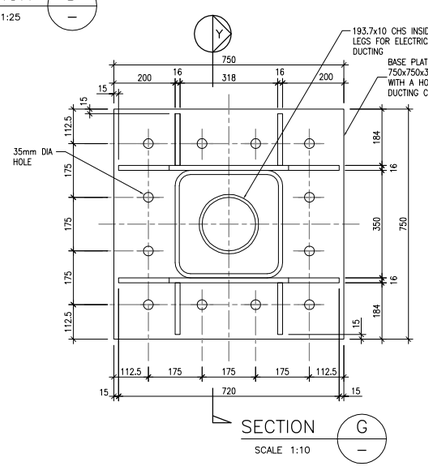
SCALE 1:25 –



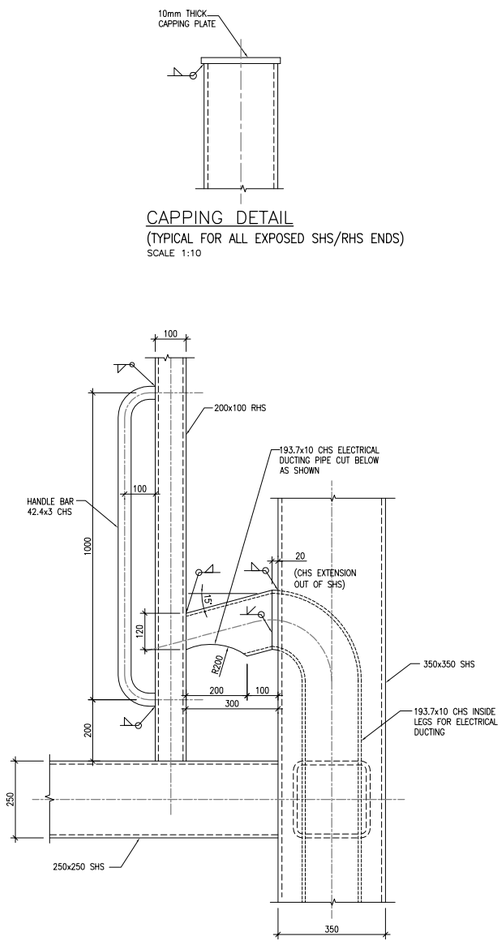
SECTION D
SCALE 1:25 –



SECTION F
SCALE 1:10 –

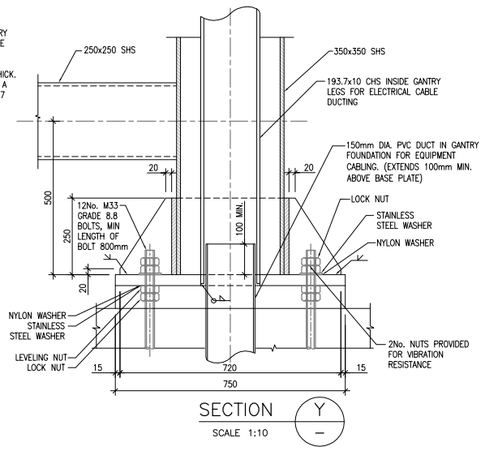


SECTION G
SCALE 1:10 –



CAPPING DETAIL
(TYPICAL FOR ALL EXPOSED SHS/RHS ENDS)
SCALE 1:10

DETAIL 11
SCALE 1:10 –
(MESH OMITTED FOR CLARITY)



SECTION Y
SCALE 1:10 –

NATIONAL ROADS AUTHORITY

ROAD CONSTRUCTION DETAILS

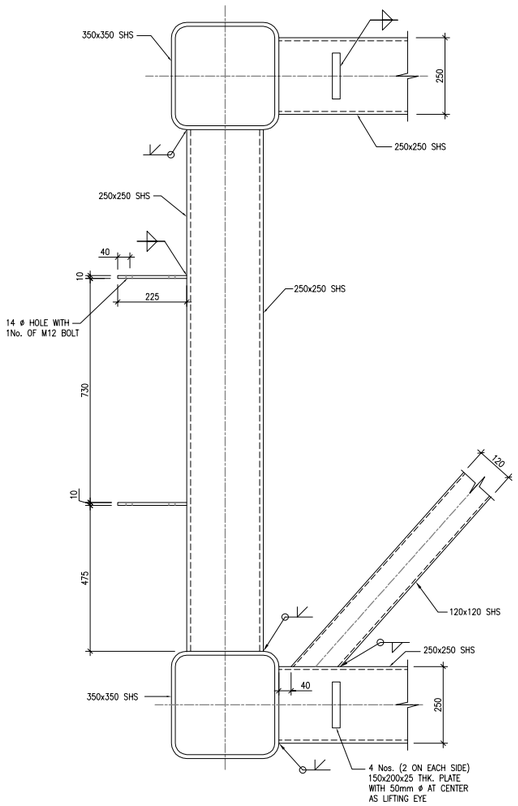
GANTRY GROUP 7

Issue	Date
P1	06/15

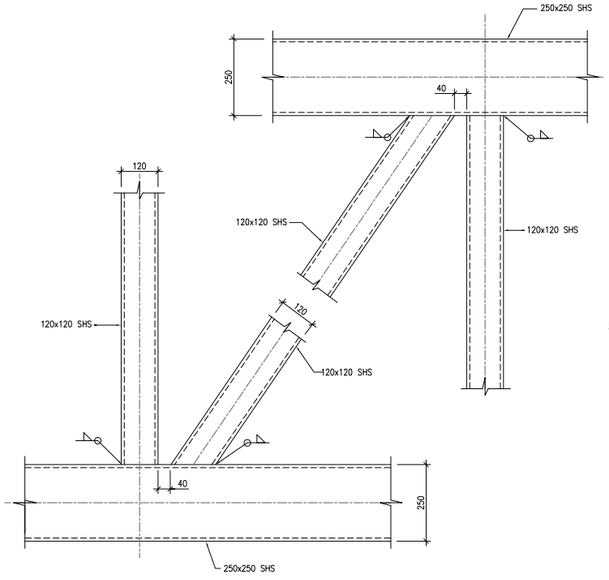
GENERAL ARRANGEMENT OF GANTRY GROUP 7 SHEET 2 OF 4

Drawing No.

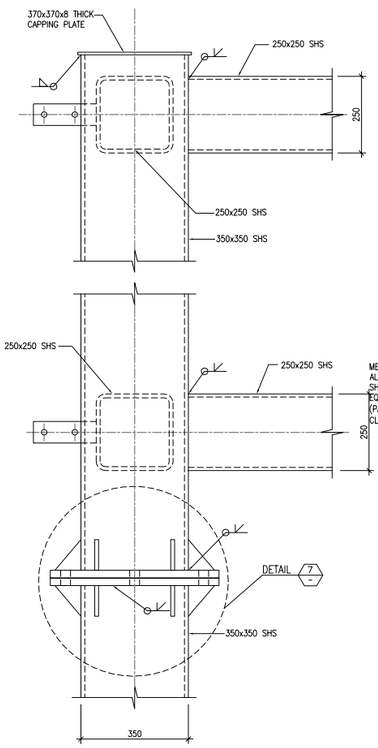
RCD/ 1800/19



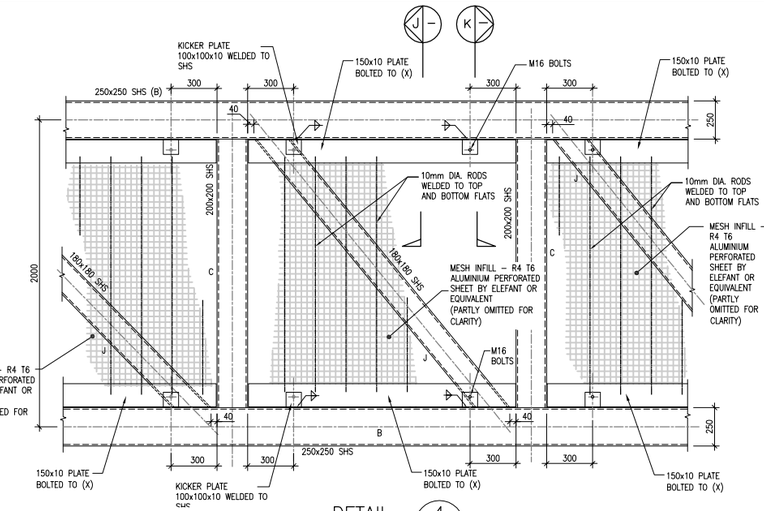
DETAIL 1 — SCALE 1:10 — 018



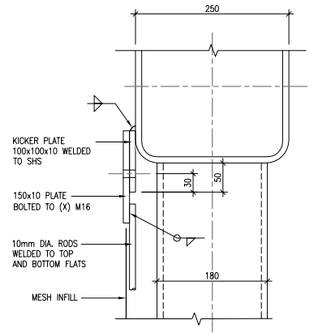
DETAIL 2 — SCALE 1:10 — 018



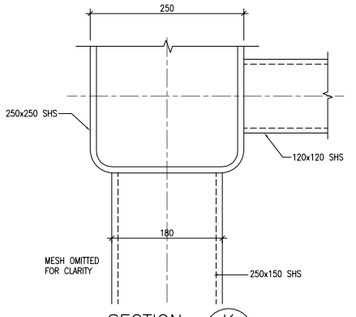
DETAIL 3 — SCALE 1:10 — 018



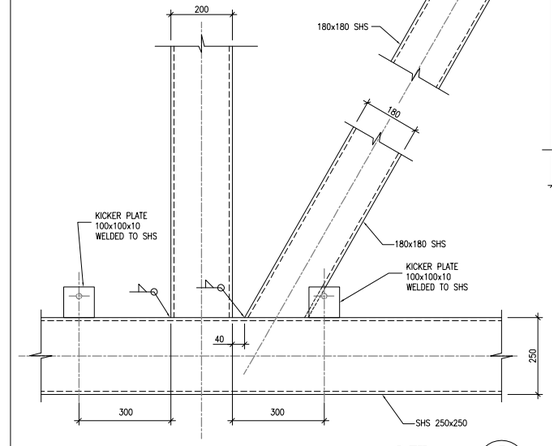
DETAIL 4 — SCALE 1:20 — 018



SECTION J — SCALE 1:5 — SHOWING MESH DETAILS

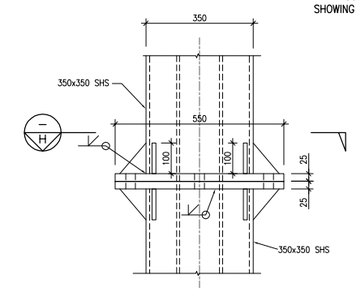


SECTION K — SCALE 1:5 — SHOWING MESH DETAILS

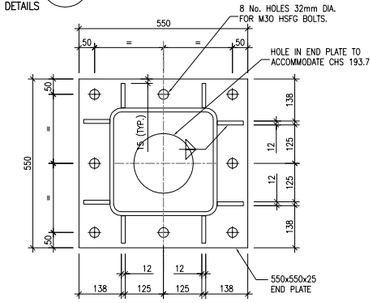


DETAIL 5 — SCALE 1:10 — 018

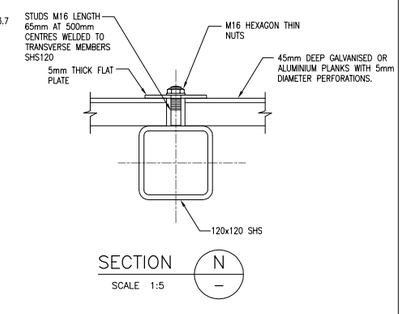
DETAIL 6 — SCALE 1:10 — 018



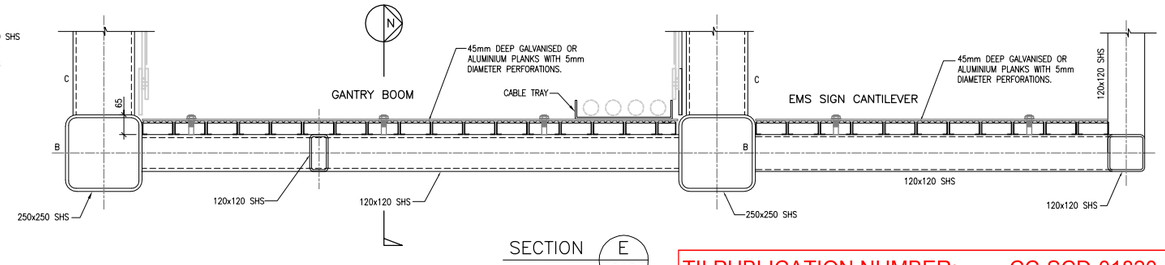
DETAIL 7 — SCALE 1:10 — —



SECTION H — SCALE 1:10 — —



SECTION N — SCALE 1:5 — —



SECTION E — SCALE 1:10 — 018

TII PUBLICATION NUMBER: CC-SCD-01820

NATIONAL ROADS AUTHORITY

ROAD CONSTRUCTION DETAILS

GANTRY GROUP 7

Issue	Date
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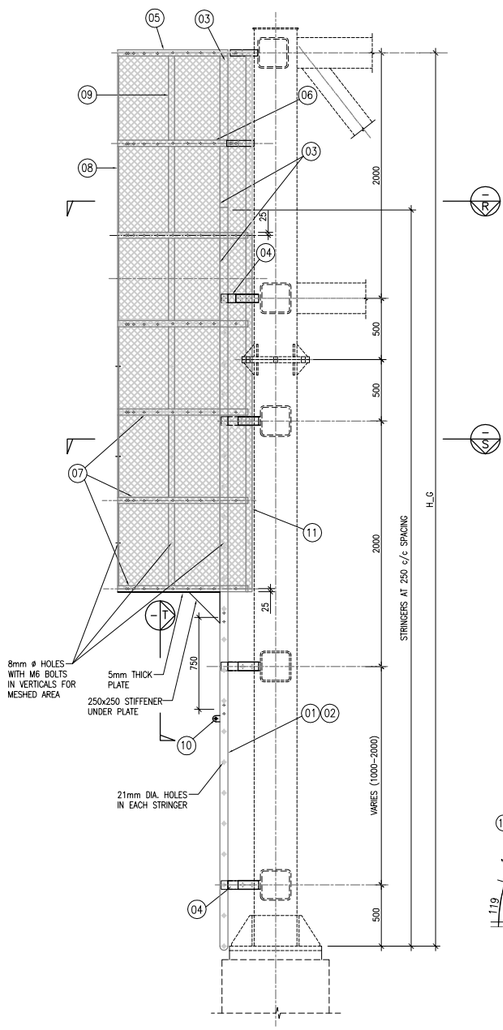
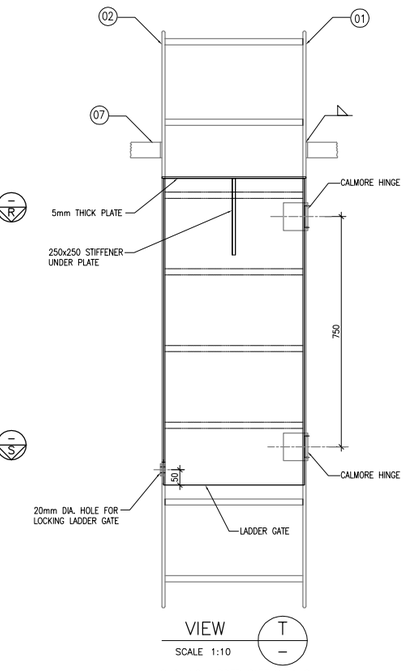
Drawing No. RCD/1800/20

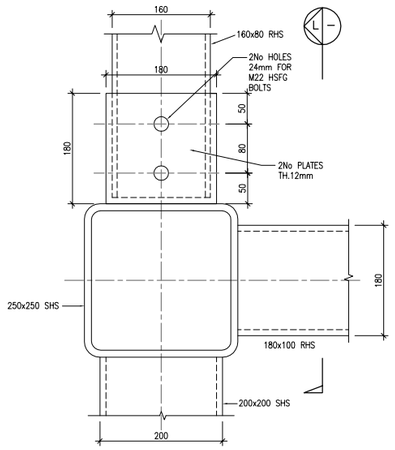
TII PUBLICATION NUMBER: CC-SCD-01821



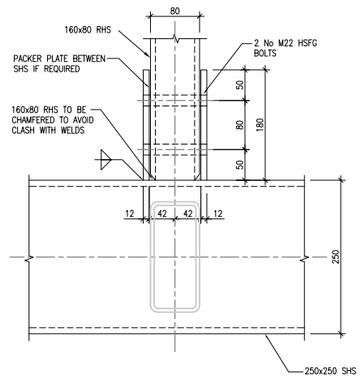
LADDER ELEVATION
SCALE 1:25



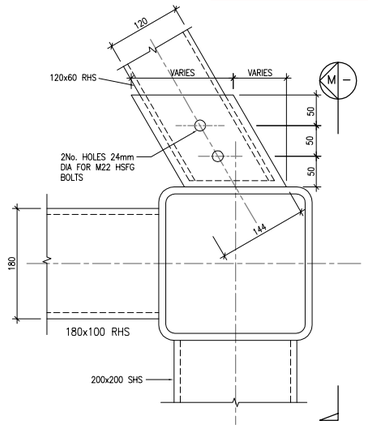
VIEW T
SCALE 1:10
SHOWING LADDER GATE DETAILS



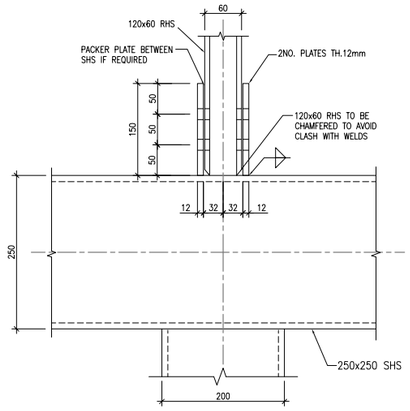
DETAIL 9
SCALE 1:5



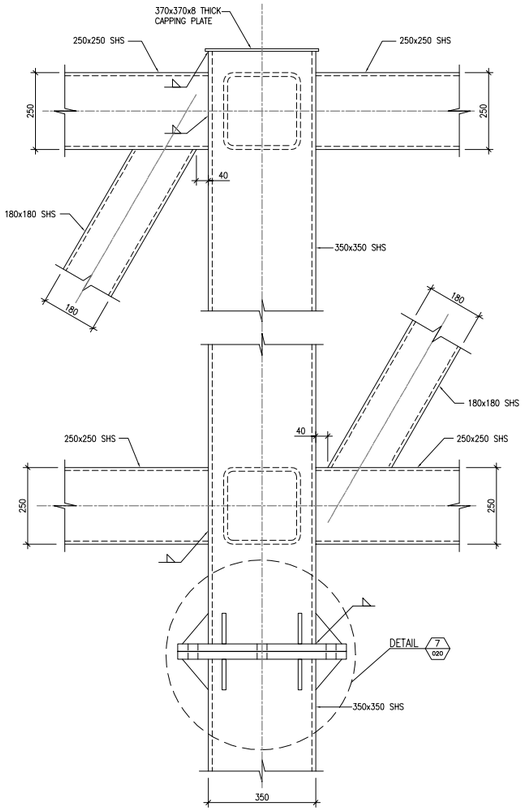
SECTION L
SCALE 1:5



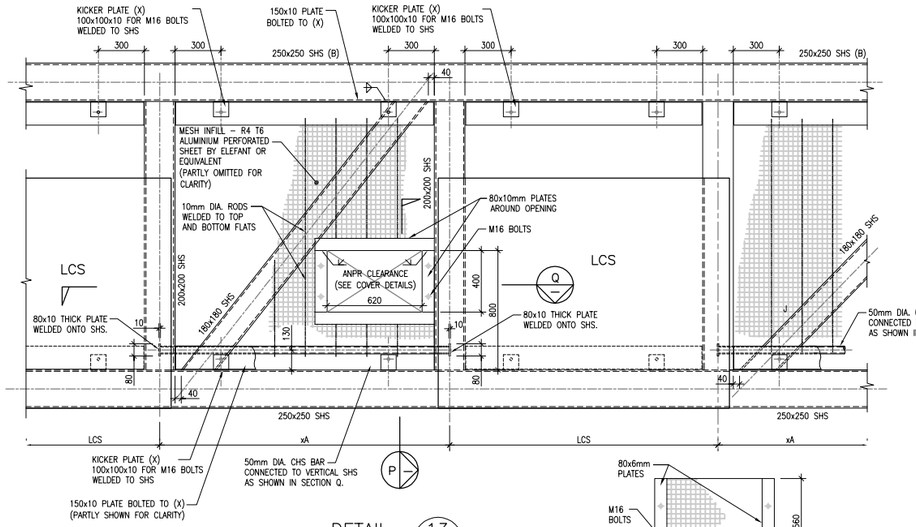
DETAIL 10
SCALE 1:5



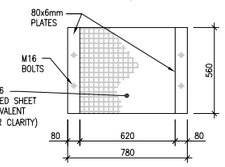
SECTION M
SCALE 1:5



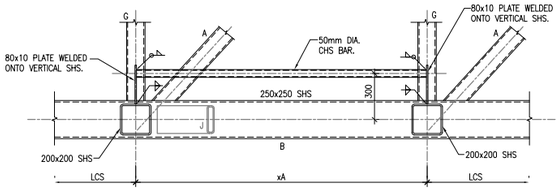
DETAIL 14
SCALE 1:10



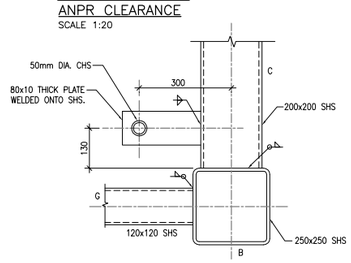
DETAIL 13
SCALE 1:20



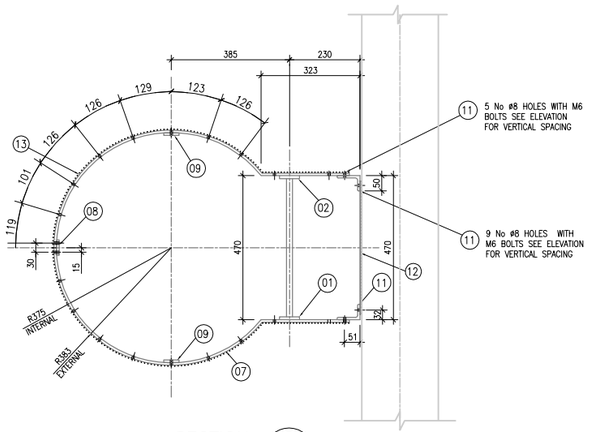
COVER DETAILS TO ANPR CLEARANCE
SCALE 1:20



SECTION Q
SCALE 1:20
MESH OMITTED FOR CLARITY



SECTION P
SCALE 1:10
MESH OMITTED FOR CLARITY



SECTION S
SCALE 1:10

MATERIAL LIST	
ITEM	DESCRIPTION
1	65 x 10. FLAT
2	65 x 10. FLAT
3	65 x 10. FLAT
4	70 x 12. FLAT
5	50 x 8.0. FLAT
6	50 x 8.0. FLAT
7	50 x 8.0. FLAT
8	50 x 8.0. FLAT
9	50 x 8.0. FLAT
10	40 x 5.0 FLAT
11	75 x 50 x 6L
12	432 x 1440 MESH
13	1220 x 1440 MESH

NATIONAL ROADS AUTHORITY

ROAD CONSTRUCTION DETAILS

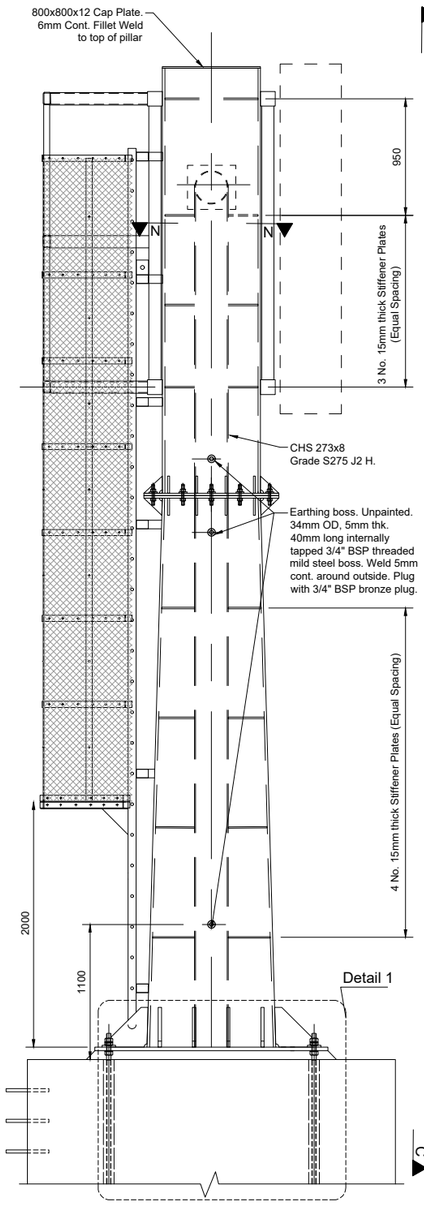
GANTRY GROUP 7

Issue	Date
P1	06/15

GENERAL ARRANGEMENT OF GANTRY GROUP 7 SHEET 4 OF 4

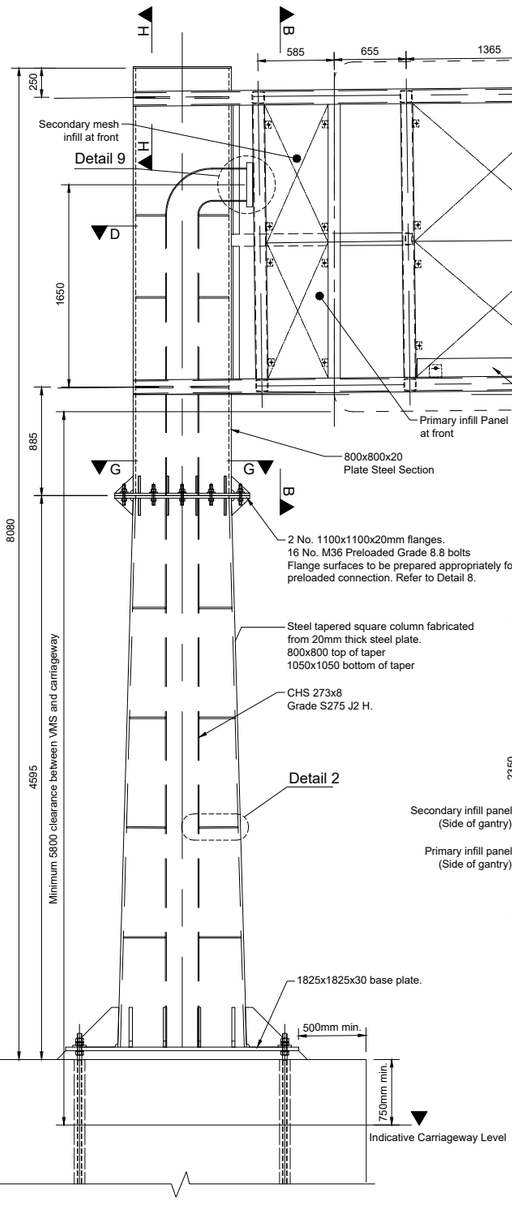
Drawing No.

RCD/ 1800/21



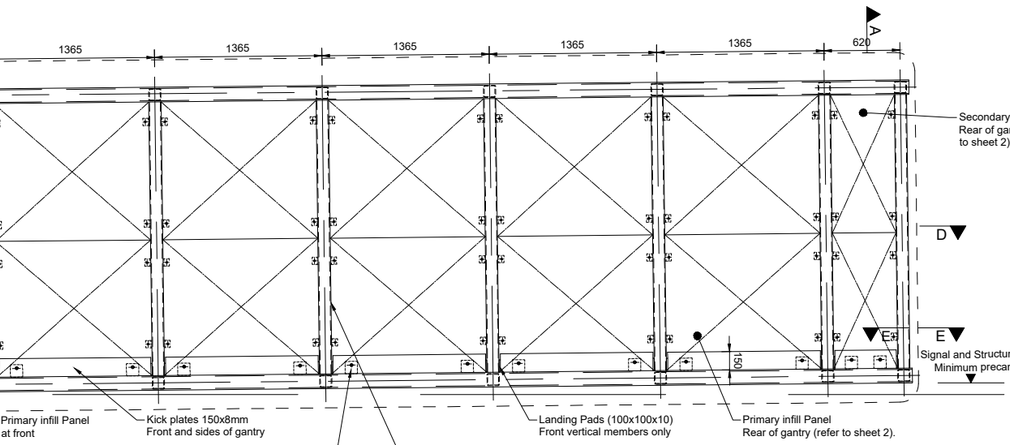
View C-C

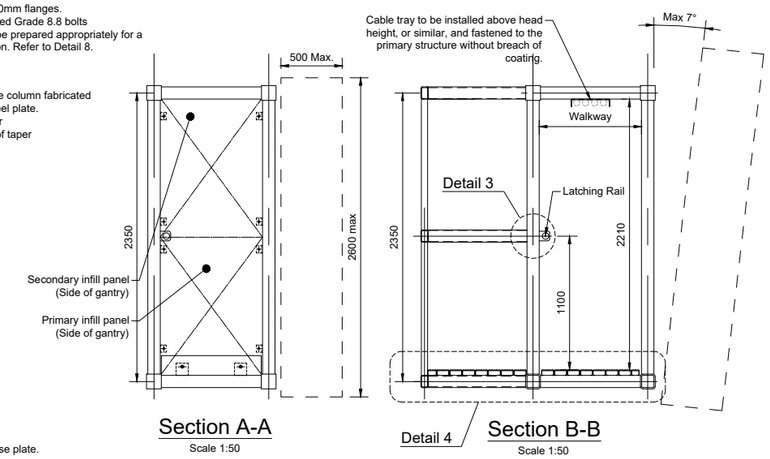
Scale 1:50



Elevation

Scale 1:50



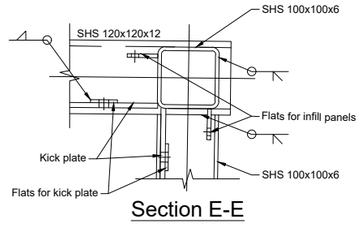


Section A-A

Scale 1:50

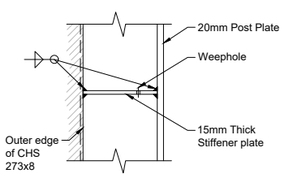
Section B-B

Scale 1:50



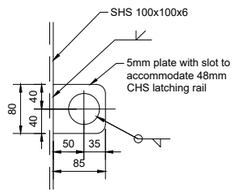
Section E-E

Scale 1:10



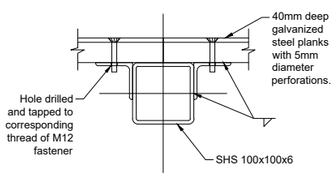
Detail 2

Scale 1:20



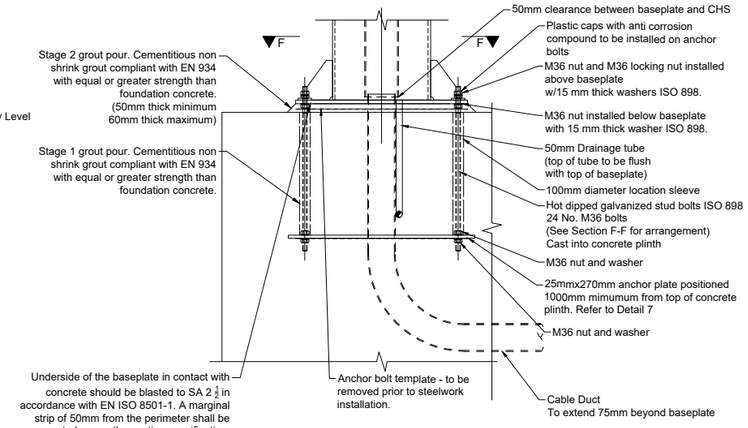
Detail 3

Scale 1:10



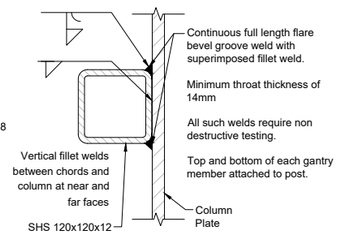
Section K-K

Scale 1:10



Detail 1

(Section thru' Base) Scale 1:50



Section H-H

Scale 1:10

NOTES:

1. The purpose of this detail is to ensure a consistency of structural form for MS3 gantries across the National Road network. All section sizes and details are minimum indicative size only. TII take no responsibility for the structural or geometrical adequacy of these details. It is the responsibility of the Designer to analyse, design and detail the MS3 gantry, connection details and its associated reinforced concrete foundation in accordance with the Eurocodes, their associated Irish national annexes, TII publications and all other design documents as appropriate.
2. All gantry support posts shall be designed to withstand the vehicle collision loads given in Table 4.2 of DN-STR-03010 regardless of the presence of a vehicle restraint system.
3. The Designer for specific gantries shall provide structural drawings for the specific gantry. All information that is site specific must be included in these drawings.
4. All dimensions are in millimetres.
5. Steel shall be S355 J2+N to IS EN 10025-2 unless otherwise noted. The main plates in the steel column (20mm thick) shall have improved through thickness properties, class Z15 to IE EN 10164. Hollow sections to be Grade S355J2H to ISEN10210 unless noted otherwise.
6. The steelwork dimensions shown are specified for a mean temperature of 15 degrees centigrade.
7. Structural steelwork to be in accordance with TII Standard CC-SPW-01800.
8. Protection to steelwork to be in accordance with TII Standard CC-SPW-01900. Colour of exposed top coat to be BS4800 Grey 18B21
9. A suitably qualified inspector in accordance with CC-SPW-01800 and CC-SPW-01900 should be supplied by the Contractor for inspection purposes outlined in the specifications and drawings.
10. Temporary welded attachments shall be subject to approval by the Employer.
11. Lifting eyes to be designed by steelwork fabricator and submitted to the Designer of specific gantries for approval at least 4 weeks prior to fabrication.
12. Any temporary arrangement required for installation of elements of the gantry prior to site connection shall be agreed with the Designer of specific gantries 4 weeks prior to fabrication.
13. Method of erection of the gantry to be approved by the Designer of the specific gantry.
14. Hard stamping not permitted on any permanently exposed surfaces.
15. The SCD is based on a maximum VMS weight of 1600kg.
16. Maximum height of sign to be 3400mm and maximum width to be 8800mm.
17. Alignment of the gantry relative to the road should be such as not to cause reflection of headlights from the signage directly back at drivers.
18. The maximum allowable deflection of the gantry shall be in accordance with Table 3.1 of DN-STR-03010. Designer shall verify gantry is within allowable limits of Table 3.1.
19. VMS attachment details, cable runs, and non-structural elements shall be confirmed by the Designer of the specific gantries with the supplier.
20. It is the responsibility of the Designer to ensure that proposed VMS sign will attach to the gantry without modification to the proposed structure outlined in this drawing.
21. The VMS fixing points to the steelwork shall be distributed equally across the steelwork members with a minimum of 6 x 2 attachments (horizontal x vertical) to ensure equal weight distribution of the VMS on the gantry.
22. The SCD is based on a maximum structural steelwork mass of 3225kg support by the post (excluding weight of VMS, and excluding weight of column). The structural adequacy of the project specific gantry shall be verified by the Designer of the specific gantry.
23. Wind loading shall be in accordance with IS EN 1991-1-4 and the associated Irish national annex.
24. Weld symbols are in accordance with IS EN ISO 2553 System A. Crossing welds should be avoided when possible.
25. All fillet welds shall be a minimum 6mm leg length and continuous unless noted otherwise. The Designer is to verify the adequacy of all welds.
26. Where required, supplementary reinforcement to resist tension and shear forces at the holding down anchors shall be provided in accordance with IS EN 1992-4.
27. Minimum class of concrete in foundation to be C32/40 to IS EN 1992-1-1.
28. All bolts shall be as described on the drawing and coated in accordance with IS EN ISO 10684. Painting on site of all bolted connection areas will be required. Contact areas of preloaded connections to receive surface treatment class B to IS EN 1090-2. The torque method (IS EN 1090) shall not be used for the tightening of preloaded bolts.
29. All bolt assemblies shall be inspected after preloading and tensioning for any signs of coating damage due to installation. Where damage has occurred, a repair of the damaged coating shall be completed in accordance with ISO 1461. This repair shall be inspected and approved by a competent coating inspector.
30. Cope holes and re-entrant corners shall have a radius of at least 25mm or 1.25 times the plate thickness, whichever is greater, unless noted otherwise.
31. All bolts and nuts to be vibration resistant. All holding down bolts shall have plastic caps with anti corrosion compound installed on anchor bolts.
32. All fixtures/fittings required to attach gantry equipment to the gantry should be protected against corrosion in accordance with TII Standard CC-SPW-01900.
33. No drilling of structural steel is permitted.
34. A pre-camber is to be included for in the design to accommodate the structural deflection at the tip of the cantilever to avoid visible downward deformation under permanent actions. Stated pre-camber on SCD based on weights given in Note 15 and Note 22, and based on a near-rigid foundation.
35. The ducting, chamber and cabinet arrangement for the distribution of power supplies, feeder pillars and communication cabling shall be in accordance with CC-SCD-01508.
36. Electric earthing shall be provided in accordance with CC-SCD-01568.
37. Galvanic corrosion shall be reduced by using non-conductive spacers and sleeves between contacting dissimilar metals.
38. The Designer of specific gantries shall be subject to, and shall comply with the technical approval procedures for structures contained within DN-STR-03001 of the TII Publications.
39. Provision shall be made to cover any voids or gaps between the gantry and the equipment to protect from objects falling onto the carriageway below. The detailing of these provisions shall be undertaken on a structure specific basis and shall not conflict with the requirements of the primary steelwork.

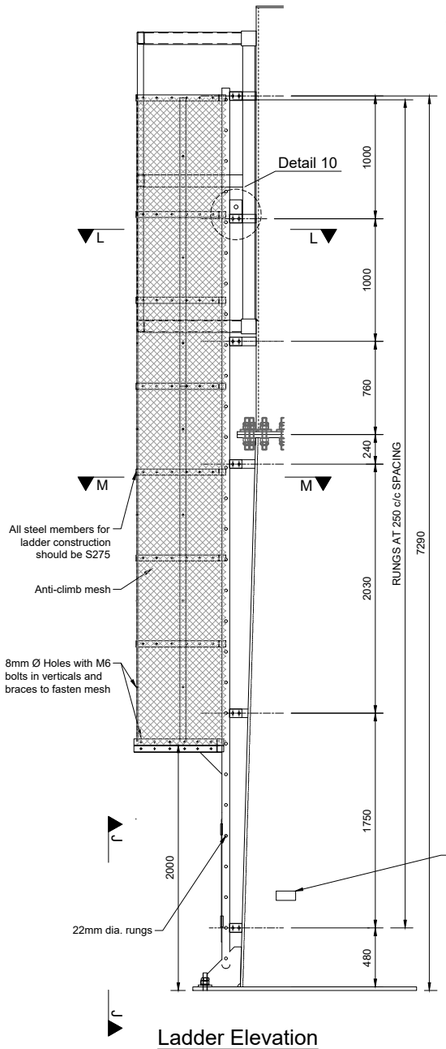
Bonneagar Iompair Éireann
Transport Infrastructure Ireland

ACTIVITY: CC Construction & Commissioning

PUBLICATION TITLE: GANTRY GROUP 8
GENERAL ARRANGEMENT OF GANTRY GROUP 8 SHEET 1 OF 3

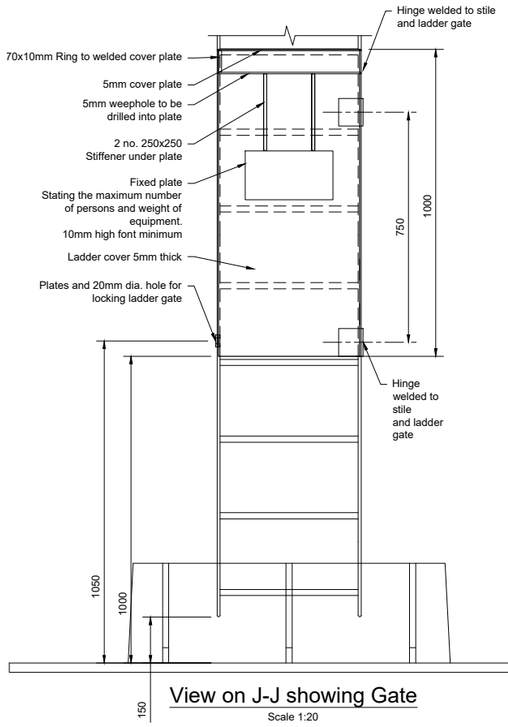
STREAM	SHEET
STANDARD CONSTRUCTION DETAIL (SCD)	A3

HISTORICAL REFERENCE	DOCUMENTATION SET	PUBLICATION DATE	PUBLICATION NUMBER		
			ACTIVITY	STREAM	DRAWING NUMBER
	STANDARD	SEPTEMBER 2024	CC	SCD	01822



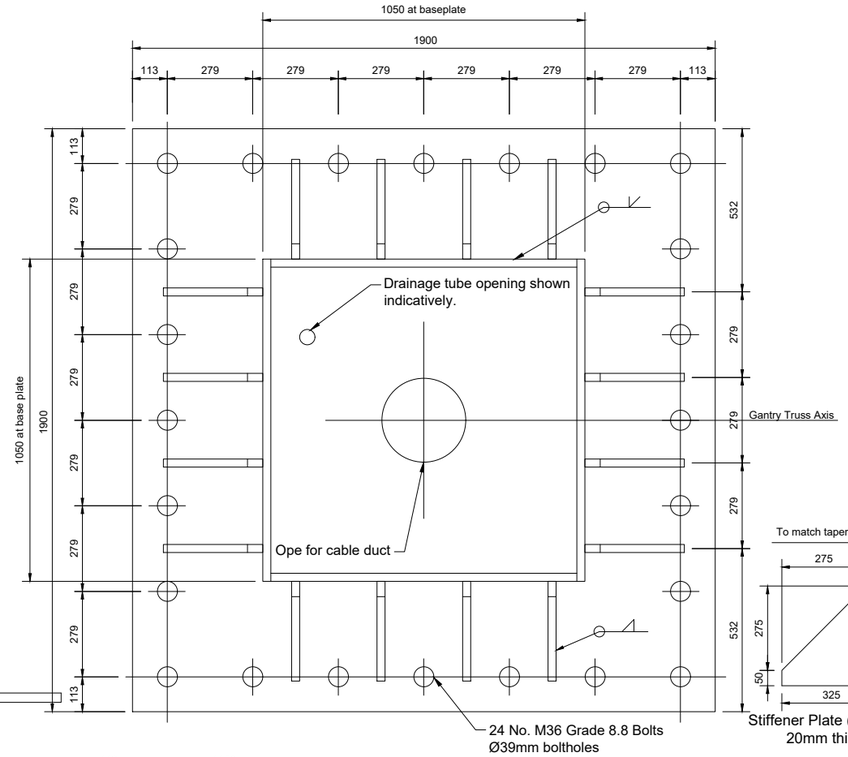
Ladder Elevation

Scale 1:50



View on J-J showing Gate

Scale 1:20



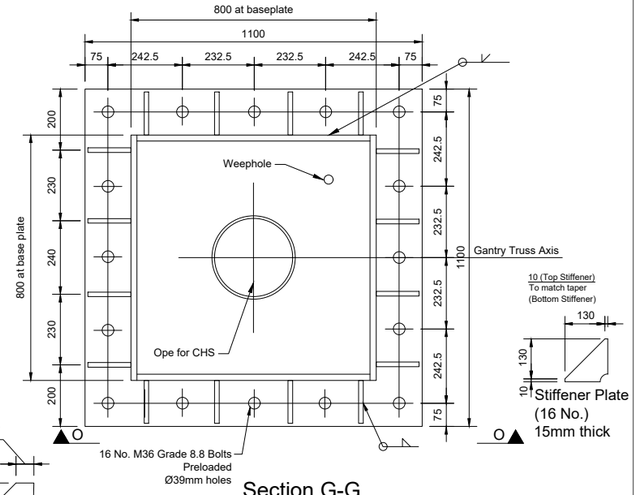
Section F-F

Scale 1:20

Stiffener Plate (16 No.) 20mm thick

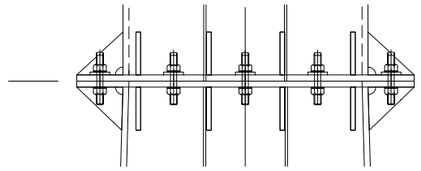
NOTES:

1. For general notes refer to sheet 1.
2. All dimensions are in millimetres.



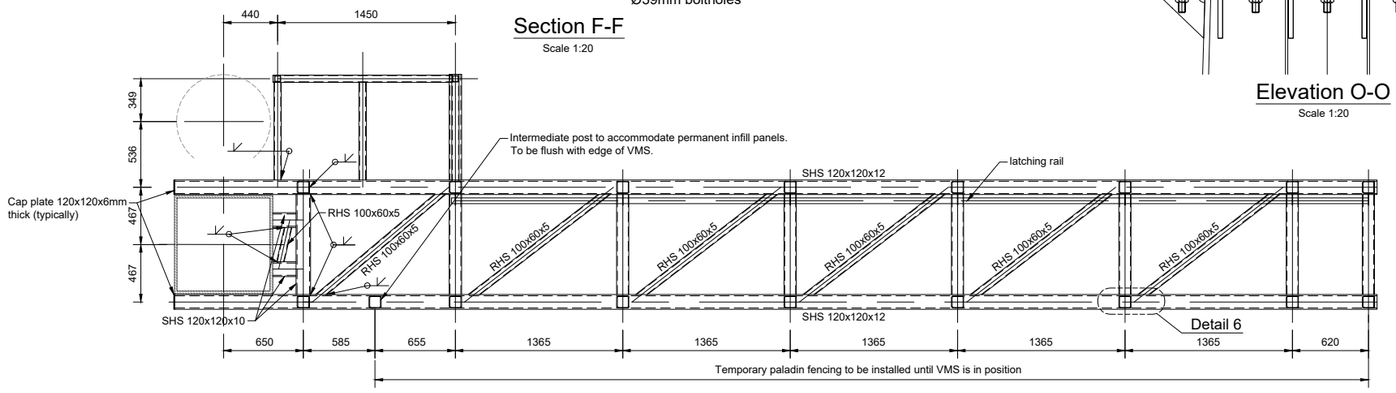
Section G-G

Scale 1:20



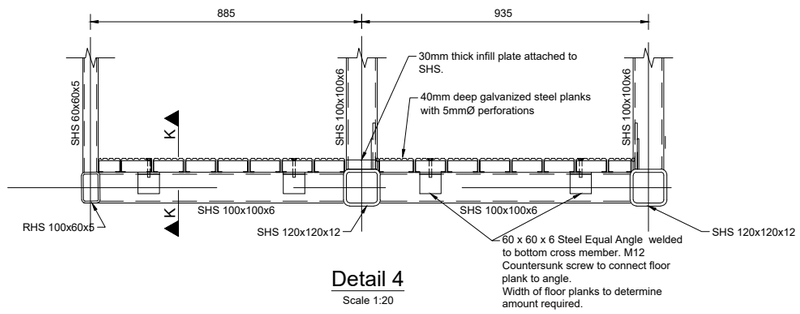
Elevation O-O

Scale 1:20



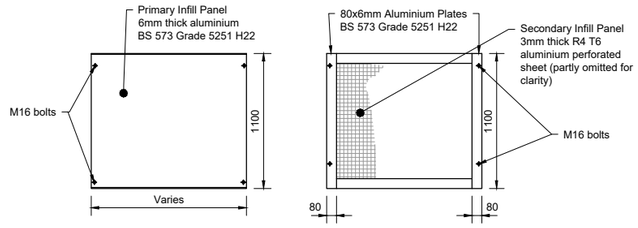
Section D-D

Scale 1:50



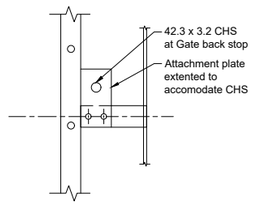
Detail 4

Scale 1:20



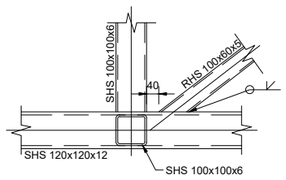
Infill Panel Details

Scale 1:50



Detail 10

Scale 1:20



Detail 6

Scale 1:20

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ACTIVITY: Construction & Commissioning

PUBLICATION TITLE

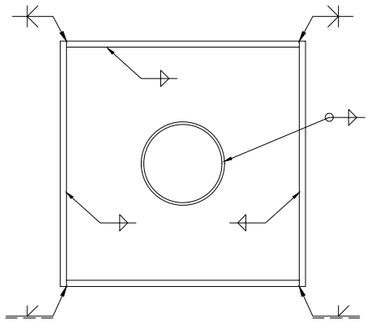
GANTRY GROUP 8
GENERAL ARRANGEMENT OF GANTRY GROUP 8 SHEET 2 OF 3

STREAM	SHEET
STANDARD CONSTRUCTION DETAIL (SCD)	A3

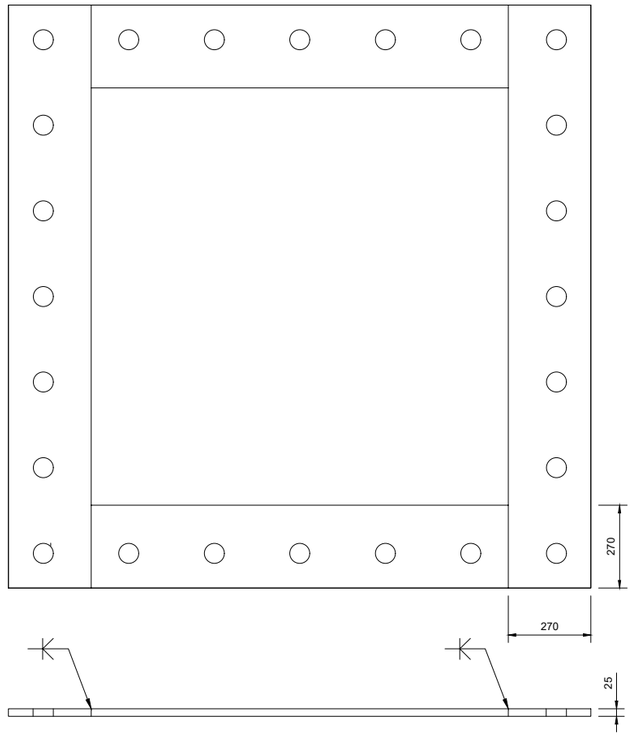
HISTORICAL REFERENCE	DOCUMENTATION SET	PUBLICATION DATE	PUBLICATION NUMBER		
			ACTIVITY	STREAM	DRAWING NUMBER
	STANDARD	SEPTEMBER 2024	CC	SCD	01823

NOTES:

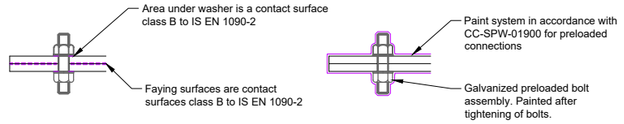
1. For general notes refer to sheet 1.
2. All dimensions are in millimetres.



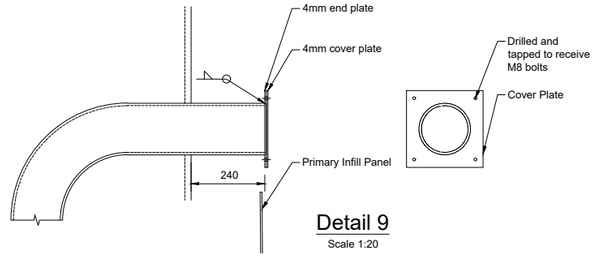
Section N-N Column Fabrication
Scale 1:20



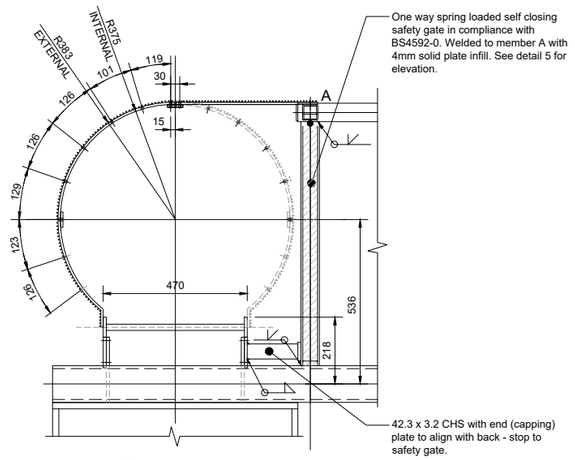
Detail 7 - Anchor Plate
Scale 1:20



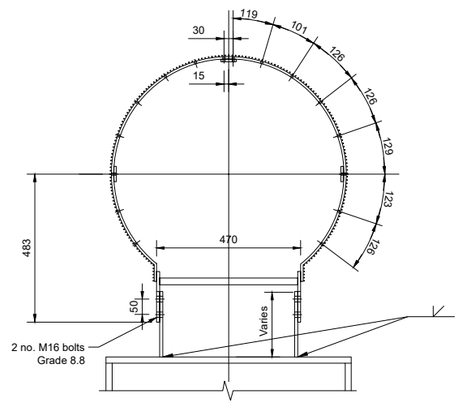
Detail 8 Surface treatment at Preloaded Connection
Scale 1:20



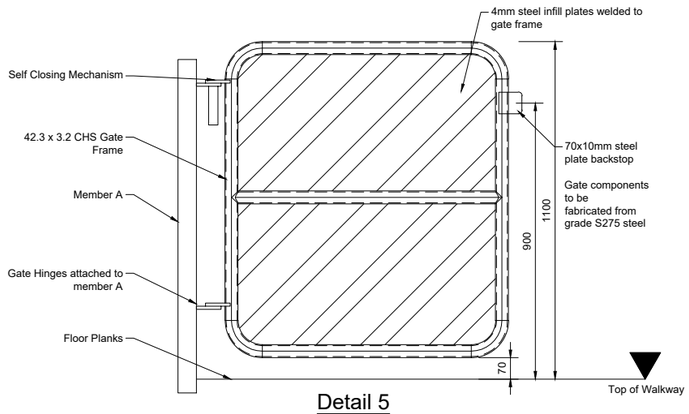
Detail 9
Scale 1:20



Section L-L
Scale 1:20



Section M-M
Scale 1:20



Detail 5
Scale 1:20

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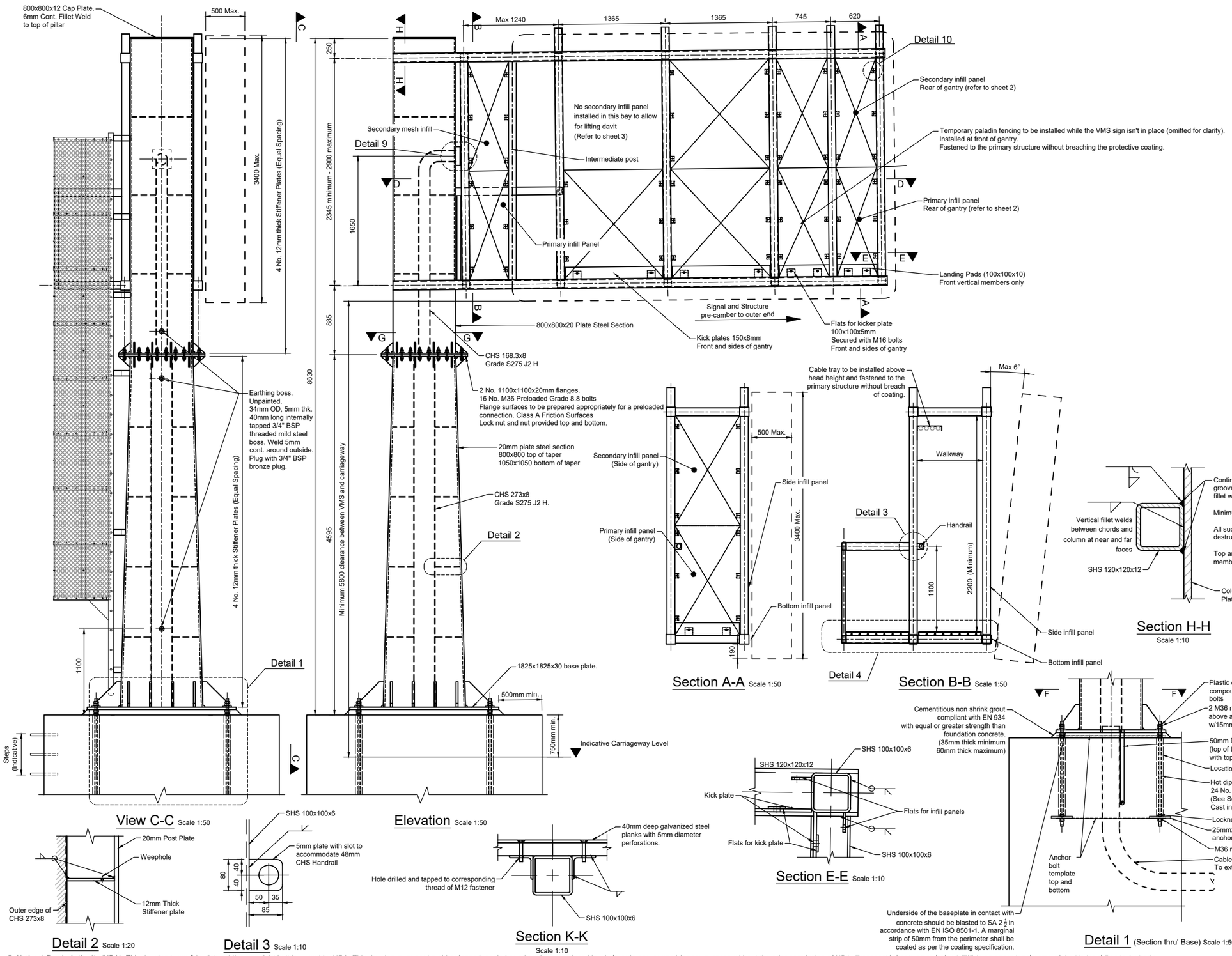
ACTIVITY: CC Construction & Commissioning

PUBLICATION TITLE
GANTRY GROUP 8
GENERAL ARRANGEMENT OF GANTRY GROUP 8 SHEET 3 OF 3

STREAM	SHEET
STANDARD CONSTRUCTION DETAIL (SCD)	A3

HISTORICAL REFERENCE	DOCUMENTATION SET	PUBLICATION DATE	PUBLICATION NUMBER		
			ACTIVITY	STREAM	DRAWING NUMBER
	STANDARD	SEPTEMBER 2024	CC	SCD	01824



View C-C Scale 1:50

Elevation Scale 1:50

Section A-A Scale 1:50

Detail 4

Section B-B Scale 1:50

Section H-H
Scale 1:10

Section E-E Scale 1:10

Detail 1 (Section thru' Base) Scale 1:50

Detail 2 Scale 1:20

Detail 3 Scale 1:10

Section K-K
Scale 1:10

NOTES:

1. The purpose of this detail is to ensure a consistency of structural form for MS4 gantries across the national road network. All section sizes and details are minimum indicative size only. TII take no responsibility for the structural or geometrical adequacy of these details. It is the responsibility of the Designer to analyse, design and detail the MS4 gantry, connection details and its associated reinforced concrete foundation in accordance with the Eurocodes, their associated Irish national annexes, TII publications (DN-STR 03001, DN-STR-03010, DN-STR-03013, DN-STR-03012) and all other design documents as appropriate to the road being spanned.
2. All gantry support posts shall be designed to withstand the vehicle collision loads given in Table 4.2 of DN-STR-03010 regardless ofps the presence of a vehicle restraint system.
3. The Designer for specific gantries shall provide structural drawings for the specific gantry. All information that is site specific must be included in these drawings.
4. All dimensions are in millimetres.
5. Steel shall be S355 J2 to IS EN 10025-2 to IS EN 10025-6 unless otherwise noted. Hollow sections to be Grade S355J2H to ISEN10210 unless noted otherwise.
6. The steelwork dimensions shown are specified for a mean temperature of 15 degrees centigrade.
7. Structural steelwork to be in accordance with TII Standard CC-SPW-1800.
8. Protection to steelwork to be in accordance with TII Standard CC-SPW-01900. Final colour to be approved by TII.
9. A suitably qualified inspector in accordance with CC-SPW-1800 and CC-SPW-1900 should be supplied by the Contractor for inspection purposes outlined in the specifications and drawings.
10. Temporary welded attachments shall be subject to approval by the Employer.
11. Lifting eyes to be designed by steelwork fabricator and submitted to the Designer of specific gantries for approval at least 4 weeks prior to fabrication.
12. Any temporary arrangement required for installation of elements of the gantry prior to site connection shall be agreed with the Designer of specific gantries 4 weeks prior to fabrication.
13. Method of erection of the gantry to be approved by the Designer of the specific gantry.
14. Hard stamping not permitted on any permanently exposed surfaces.
15. Assumed max weight of VMS is 900kg.
16. Maximum height of sign to be 3400mm and maximum width to be 5000mm.
17. Alignment of the gantry relative to the road should be such as not to cause reflection of headlights from the signage directly back at drivers.
18. The maximum allowable deflection of the gantry shall be in accordance with Table 3.1 of DN-STR-03010. Designer shall verify gantry is within allowable limits of Table 3.1.
19. VMS support details and cable runs required shall be confirmed by the designer of the specific gantries with the supplier.
20. It is the responsibility of the Designer to ensure that proposed VMS sign will attach to the gantry without modification to the proposed structure outlined in this drawing.
21. The maximum mass of structural steel supported by the post is assumed to be 1990kg (excluding the mass of the VMS). The structural adequacy of this arrangement shall be verified by the Designer of the specific gantry.
22. Wind loading shall be in accordance with IS EN 1991-1-4 and the associated Irish national annex.
23. Weld symbols are in accordance with IS EN 2553 System A. Crossing welds should be avoided when possible.
24. All fillet welds shall be a minimum 6mm leg length and continuous unless noted otherwise. The Designer is to verify the adequacy of all welds.
25. Supplementary reinforcement shall be installed in the concrete plinth to resist shear and tensile forces in accordance with IS EN 1992-4.
26. Minimum class of concrete in foundation to be C32/40.
27. All bolts shall be as described on the drawing and coated in accordance with BS EN ISO 10684. Painting on site of all bolted connection areas will be required. Contact areas of preloaded connections should receive only a primer coat.
28. All bolt assemblies shall be inspected after preloading and tensioning for any signs of coating damage due to installation. Where damage has occurred, a repair of the damaged coating shall be completed in accordance with ISO 1461. This repair shall be inspected and approved by a competent coating inspector.
29. Closed fabricated boxes are required to be air tight. Leak testing is required in accordance with appendix 1/5 of the contract documents.
30. Cope holes and re-entrant corners shall have a radius of at least 25mm or 1.25 times the plate thickness, whichever is greater, unless noted otherwise.
31. All bolts and nuts to be vibration resistant. All holding down bolts shall have plastic caps.
32. All fixtures/fittings required to attach gantry equipment to the gantry should be protected against corrosion in accordance with TII Standard CC-SPW-01900.
33. No drilling of structural steel.
34. A pre-camber is to be included for in the design to accommodate the structural deflection at the tip of the cantilever to avoid visible downward deformation under permanent actions.
35. The ducting, chamber and cabinet arrangement for the distribution of power supplies, feeder pillars and communication cabling shall be in accordance with SCD/1500/008.
36. Electric earthing will be provided in accordance with SCD/1500/008.
37. Galvanic corrosion shall be reduced by using non-conductive spacers and sleeves between contacting dissimilar metals.
38. The designer of specific gantries shall be subject to, and shall comply with the technical approval procedures for structures contained within DN-STR-03001 of the TII publications.

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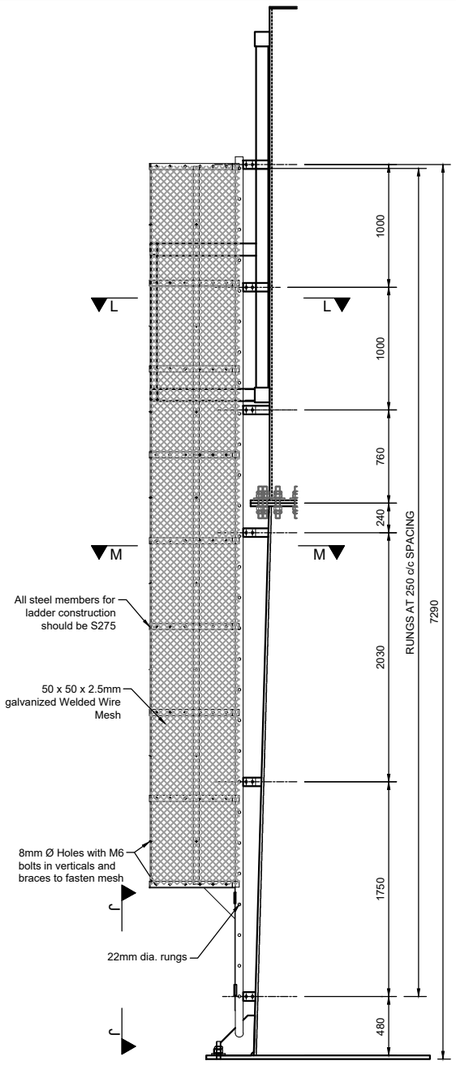
ACTIVITY: Construction & Commissioning

PUBLICATION TITLE
GANTRY GROUP 9
GENERAL ARRANGEMENT OF GANTRY GROUP 9 SHEET 1 OF 3

STREAM	SHEET	HISTORICAL REFERENCE	DOCUMENTATION SET	PUBLICATION DATE	PUBLICATION NUMBER
STANDARD CONSTRUCTION DETAIL (SCD)	A3		STANDARD	DECEMBER 2021	ACTIVITY: CC · STREAM: SCD · DRAWING NUMBER: 01825

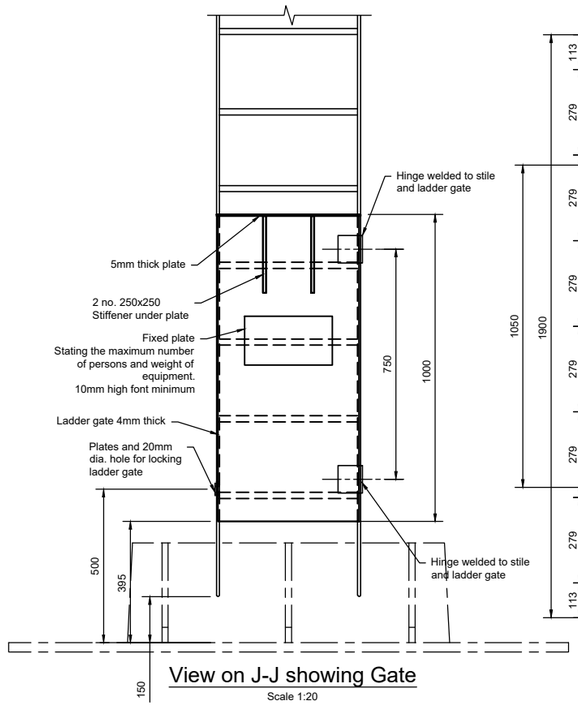
NOTES:

1. For general notes refer to sheet 1.
2. All dimensions are in millimetres.



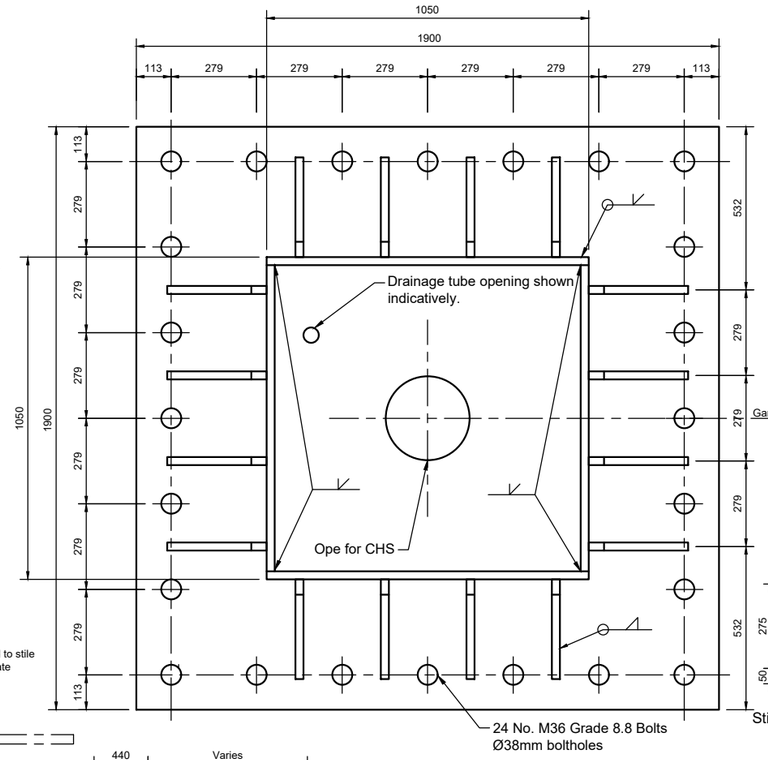
Ladder Elevation

Scale 1:50



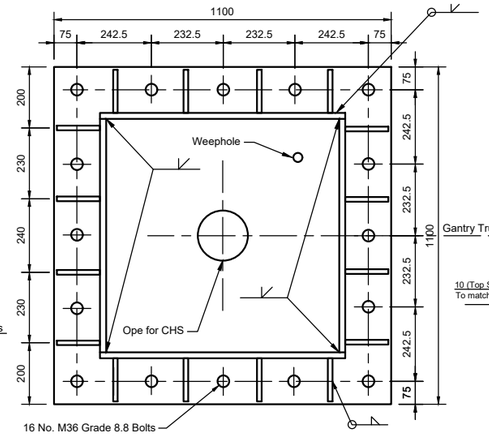
View on J-J showing Gate

Scale 1:20



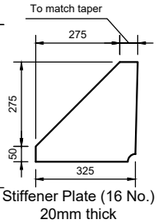
Section F-F

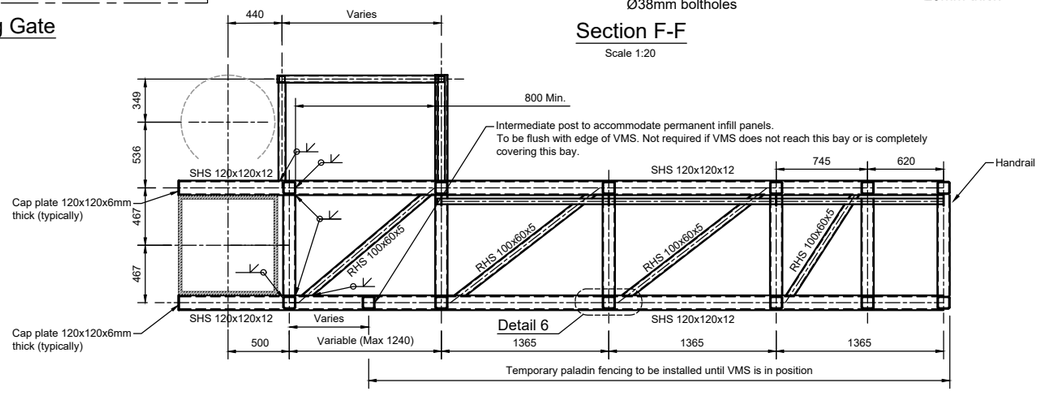
Scale 1:20



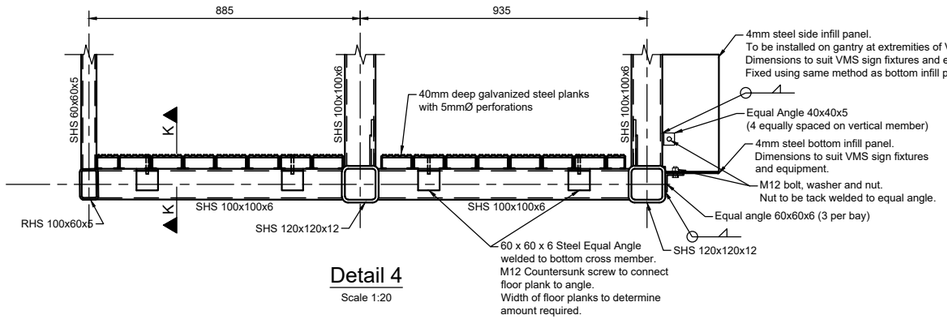
Section G-G

Scale 1:20



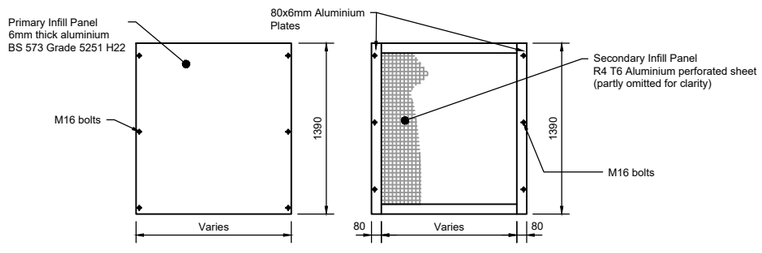


Section D-D Scale 1:50



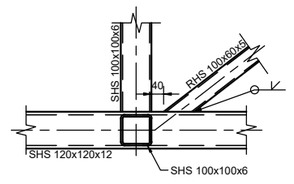
Detail 4

Scale 1:20



Infill Panel Details

Scale 1:50



Detail 6

Scale 1:20

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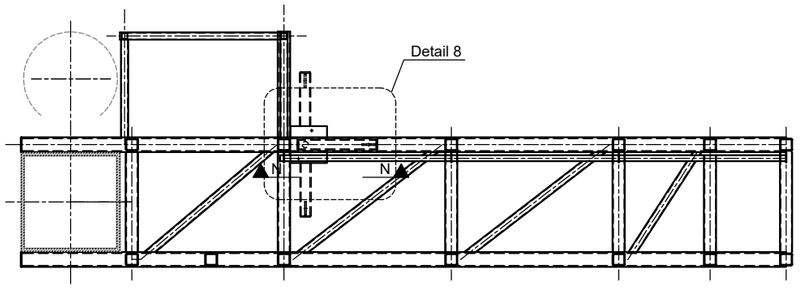
ACTIVITY: Construction & Commissioning

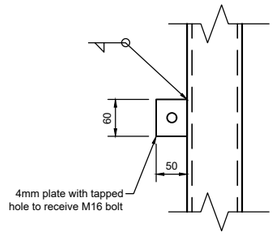
PUBLICATION TITLE: GANTRY GROUP 9
GENERAL ARRANGEMENT OF GANTRY GROUP 9 SHEET 2 OF 3

STREAM	SHEET	HISTORICAL REFERENCE	DOCUMENTATION SET	PUBLICATION DATE	PUBLICATION NUMBER ACTIVITY	STREAM	DRAWING NUMBER
STANDARD CONSTRUCTION DETAIL (SCD)	A3		STANDARD	DECEMBER 2021	CC	SCD	01826



Lifting Davit Location Plan

Scale 1:50

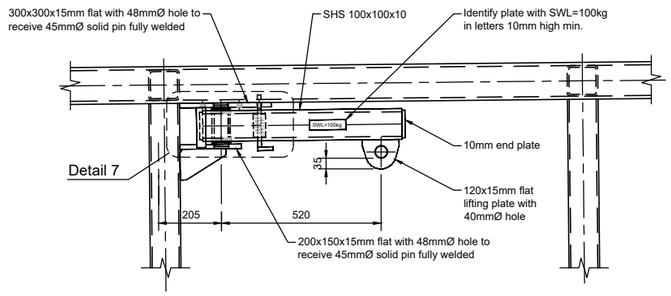


Detail 10

Scale 1:10

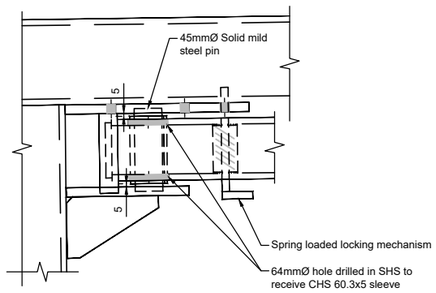
NOTES:

1. For general notes refer to sheet 1.
2. All dimensions are in millimetres.
3. A lifting davit, SWL 100kg, to be sited at back of walkway approximately 2700mm from centre of cantilever post to give 750mm clear 500mm outreach, capable of swinging at least 90 degree in either direction and locking in position.



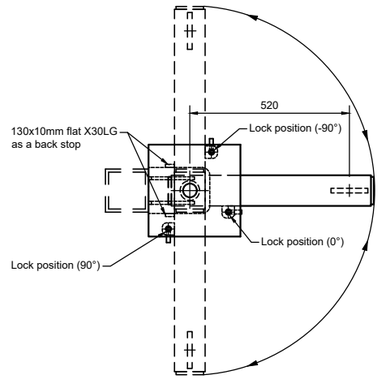
Section N-N

Scale 1:20



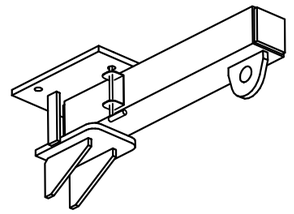
Detail 7

Scale 1:10



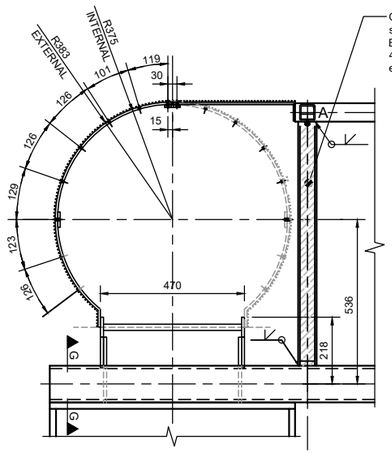
Detail 8

Scale 1:20



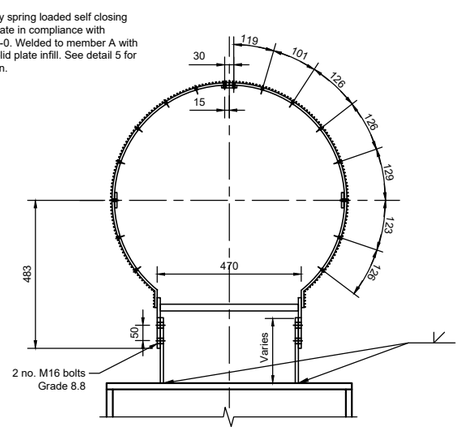
Isometric View of Lifting Davit

NTS



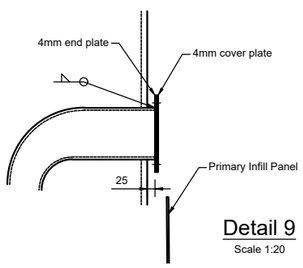
Section L-L

Scale 1:20



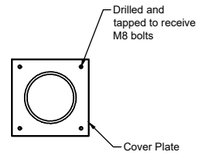
Section M-M

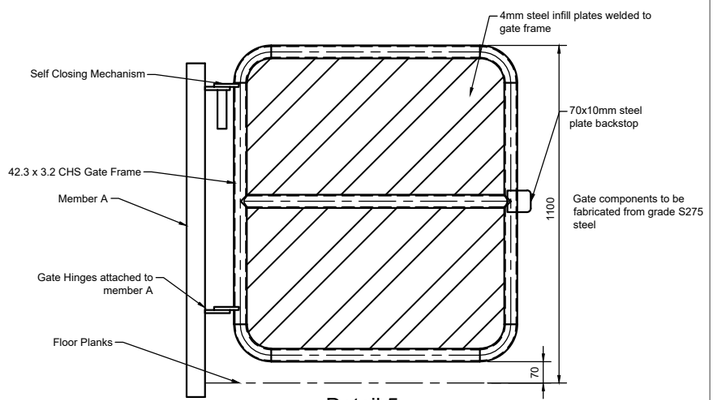
Scale 1:20



Detail 9

Scale 1:20





Detail 5

Scale 1:20

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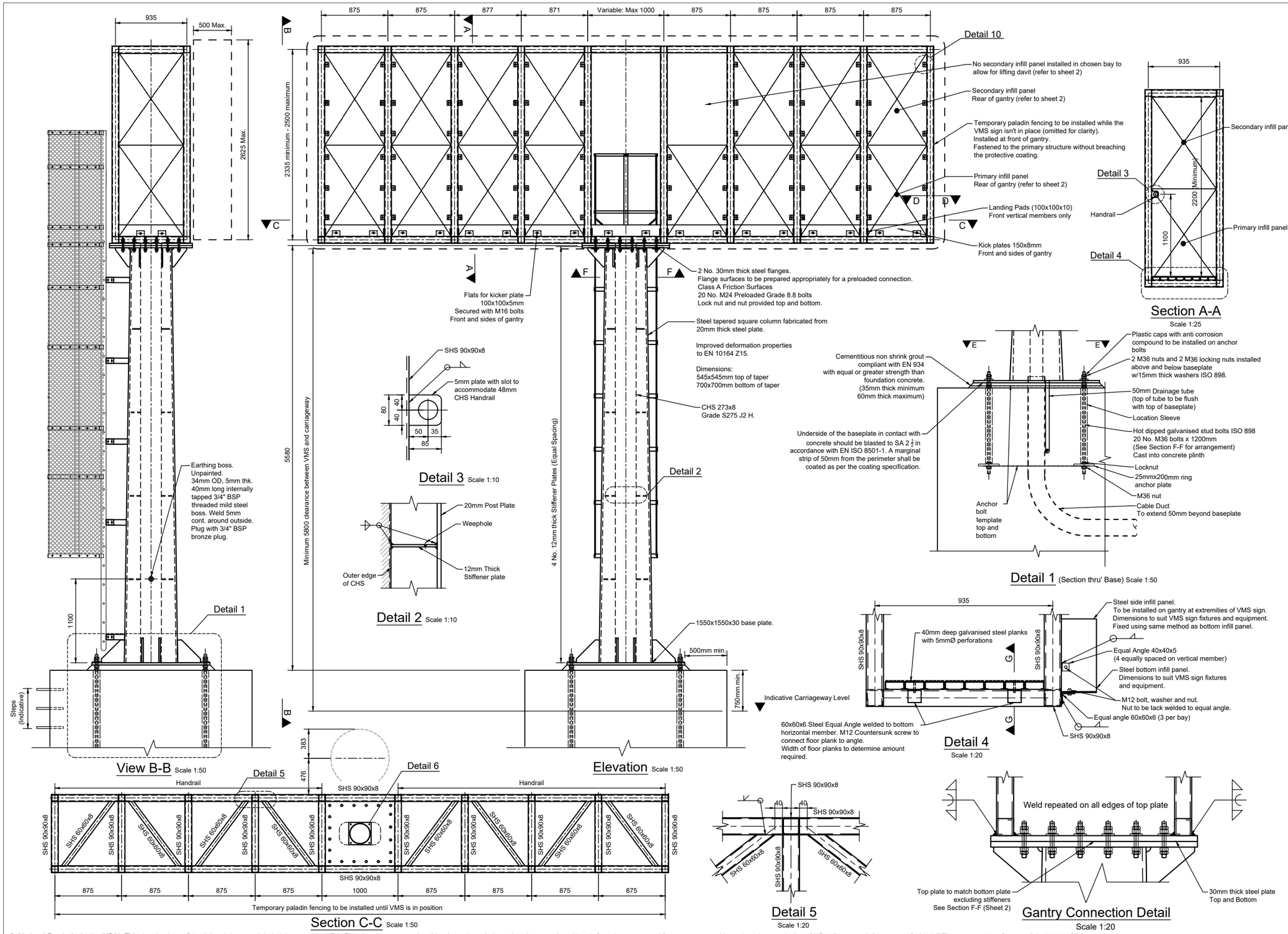
ACTIVITY: CC Construction & Commissioning

PUBLICATION TITLE: GANTRY GROUP 9
GENERAL ARRANGEMENT OF GANTRY GROUP 9 SHEET 3 OF 3

STREAM	SHEET	HISTORICAL REFERENCE	DOCUMENTATION SET	PUBLICATION DATE	PUBLICATION NUMBER (ACTIVITY / STREAM / DRAWING NUMBER)
STANDARD CONSTRUCTION DETAIL (SCD)	A3		STANDARD	DECEMBER 2021	CC / SCD / 01827



NOTES:

1. The purpose of this detail is to ensure a consistency of structural form for MS3 gantries across the national road network. All section sizes and details are minimum indicative size only. TII take no responsibility for the structural or geometrical adequacy of these details. It is the responsibility of the Designer to analyse, design and detail the MS3 gantry, connection details and its associated reinforced concrete foundation in accordance with the Eurocodes, their associated Irish national annexes, TII publications (DN-STR-03001, DN-STR-03010, DN-STR-03012, DN-STR-03013) and all other design documents as appropriate.
2. All gantry support posts shall be designed to withstand the vehicle collision loads given in Table 4.2 of DN-STR-03010 regardless of the presence of a vehicle restraint system.
3. The Designer for specific gantries shall provide structural drawings for the specific gantry. All information that is site specific must be included in these drawings.
4. All dimensions are in millimetres.
5. Steel shall be S355 J2 to IS EN 10025-2 to IS EN 10025-6 unless otherwise noted. Hollow sections to be Grade S355J2H to ISEN10210 unless noted otherwise.
6. The steelwork dimensions shown are specified for a mean temperature of 15 degrees centigrade.
7. Structural steelwork to be in accordance with TII Standard CC-SPW-1800.
8. Protection to steelwork to be in accordance with TII Standard CC-SPW-01900. Final colour to be approved by TII.
9. A suitably qualified inspector in accordance with CC-SPW-1800 and CC-SPW-1900 should be supplied by the Contractor for inspection purposes outlined in the specifications and drawings.
10. Temporary welded attachments shall be subject to approval by the Employer.
11. Lifting eyes to be designed by steelwork fabricator and submitted to the Designer of specific gantries for approval at least 4 weeks prior to fabrication.
12. Any temporary arrangement required for installation of elements of the gantry prior to site connection shall be agreed with the Designer of specific gantries 4 weeks prior to fabrication.
13. Method of erection of the gantry to be approved by the Designer of the specific gantry.
14. Hard stamping not permitted on any permanently exposed surfaces.
15. Assumed max weight of VMS is 1600kg.
16. Maximum height of sign to be 3000mm and maximum width to be 8800mm.
17. Alignment of the gantry relative to the road should be such as not to cause reflection of headlights from the signage directly back at drivers.
18. The maximum allowable deflection of the gantry shall be in accordance with Table 3.1 of DN-STR-03010. Designer shall verify gantry is within allowable limits of Table 3.1.
19. VMS support details and cable runs required shall be confirmed by the designer of the specific gantries with the supplier.
20. It is the responsibility of the Designer to ensure that proposed VMS sign will attach to the gantry without modification to the proposed structure outlined in this drawing.
21. The maximum mass of structural steel supported by the post is assumed to be 2400kg (excluding the mass of the VMS). The structural adequacy of this arrangement shall be verified by the Designer of the specific gantry.
22. Wind loading shall be in accordance with IS EN 1991-1-4 and the associated Irish national annex.
23. Weld symbols are in accordance with IS EN 2553 System A. Crossing welds should be avoided when possible.
24. All fillet welds shall be a minimum 6mm leg length and continuous unless noted otherwise. The Designer is to verify the adequacy of all welds.
25. Supplementary reinforcement shall be installed in the concrete plinth to resist shear and tensile forces in accordance with IS EN 1992-4.
26. Minimum class of concrete in foundation to be C32/40.
27. All bolts shall be as described on the drawing and coated in accordance with BS EN ISO 10684. Painting on site of all bolted connection areas will be required. Contact areas of preloaded connections should receive only a primer coat.
28. All bolt assemblies shall be inspected after preloading and tensioning for any signs of coating damage due to installation. Where damage has occurred, a repair of the damaged coating shall be completed in accordance with ISO 1461. This repair shall be inspected and approved by a competent coating inspector.
29. Closed fabricated boxes are required to be air tight. Leak testing is required in accordance with appendix 1/5 of the contract documents.
30. Cope holes and re-entrant corners shall have a radius of at least 25mm or 1.25 times the plate thickness, whichever is greater, unless noted otherwise.
31. All bolts and nuts to be vibration resistant. All holding down bolts shall have plastic caps.
32. All fixtures/fittings required to attach gantry equipment to the gantry should be protected against corrosion in accordance with TII Standard CC-SPW-01900.
33. No drilling of structural steel.
34. The ducting, chamber and cabinet arrangement for the distribution of power supplies, feeder pillars and communication cabling shall be in accordance with SCD/1500/008.
35. Electric earthing will be provided in accordance with SCD/1500/008.
36. Galvanic corrosion shall be reduced by using non-conductive spacers and sleeves between contacting dissimilar metals.
37. The designer of specific gantries shall be subject to, and shall comply with the technical approval procedures for structures contained within DN-STR-03001 of the TII publications.

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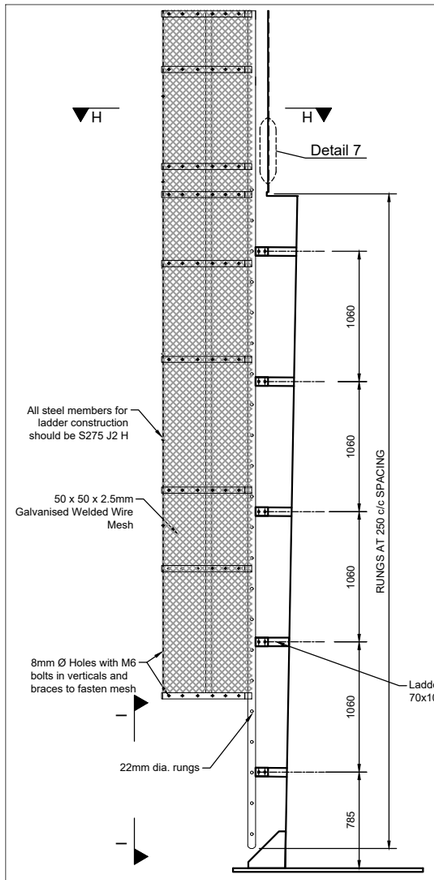
Transport Infrastructure Ireland

ACTIVITY: CC Construction & Commissioning

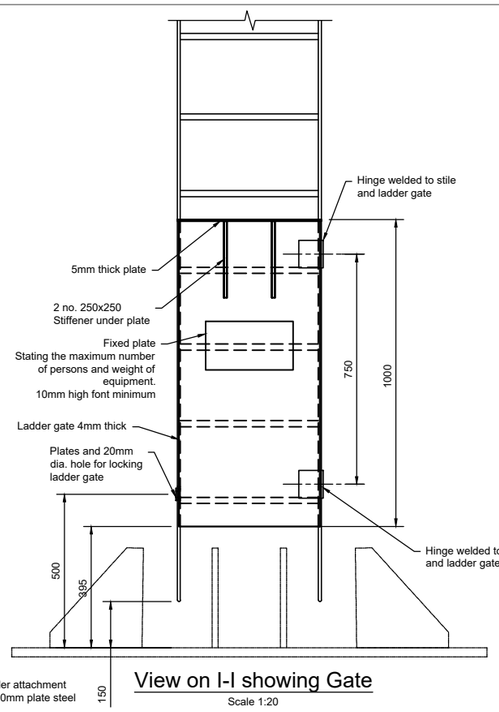
PUBLICATION TITLE: GANTRY GROUP 10
GENERAL ARRANGEMENT OF GANTRY GROUP 10 SHEET 1 OF 2

STREAM	SHEET	HISTORICAL REFERENCE	DOCUMENTATION SET	PUBLICATION DATE	PUBLICATION NUMBER ACTIVITY	STREAM	DRAWING NUMBER
STANDARD CONSTRUCTION DETAIL (SCD)	A3		STANDARD	DECEMBER 2021	CC	SCD	01828



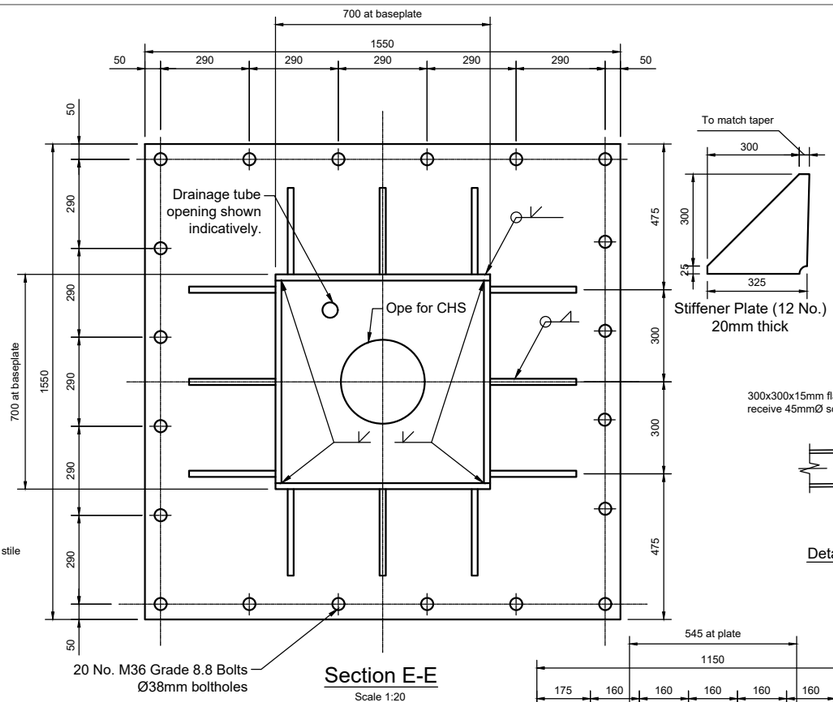
Ladder Elevation

Scale 1:50



View on I-I showing Gate

Scale 1:20



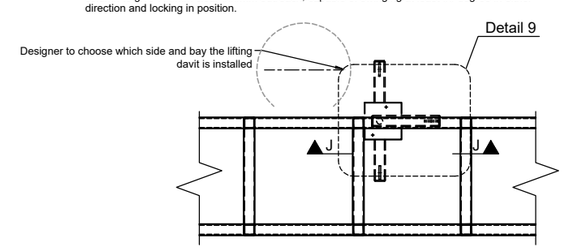
Section E-E

Scale 1:20

Stiffener Plate (12 No.) 20mm thick

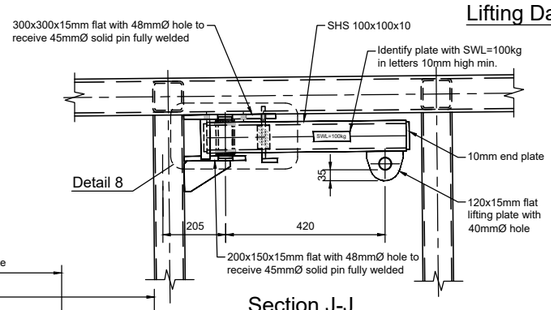
NOTES:

1. For general notes refer to sheet 1.
2. All dimensions are in millimetres.
3. A lifting davit, SWL 100kg, to be sited at back of walkway approximately 1 bay from centre of column to give 750mm clear 500mm outreach, capable of swinging at least 90 degree in either direction and locking in position.



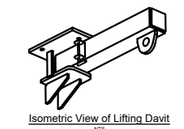
Lifting Davit Location Plan

Scale 1:50



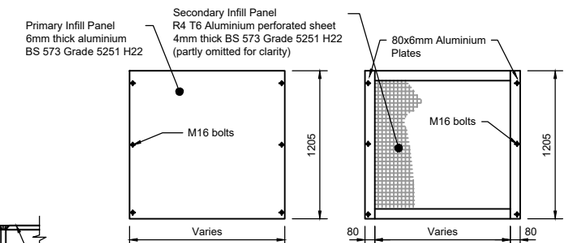
Section J-J

Scale 1:20



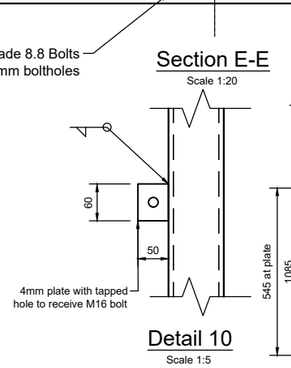
Isometric View of Lifting Davit

NTS



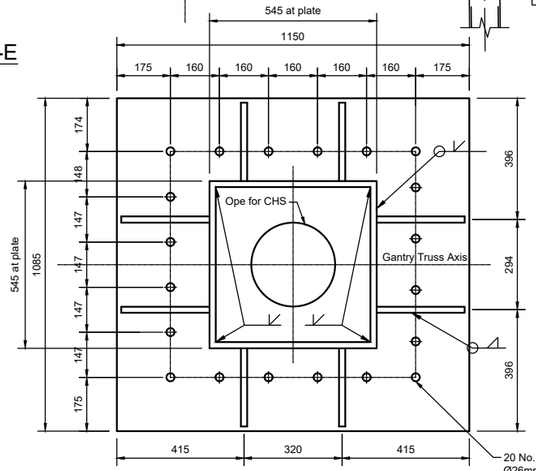
Infill Panel Details

Scale 1:25



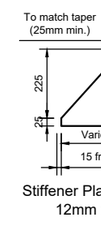
Detail 10

Scale 1:5

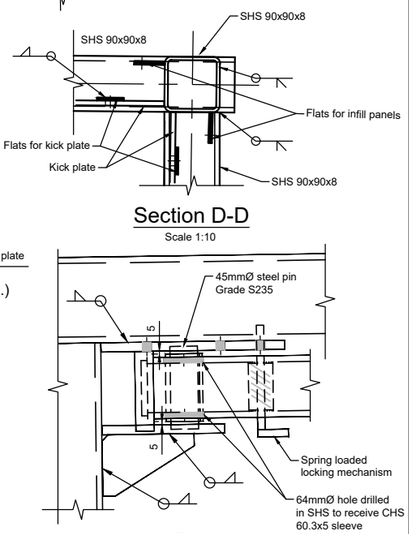


Section F-F

Scale 1:20



Stiffener Plate (8 No.) 12mm thick

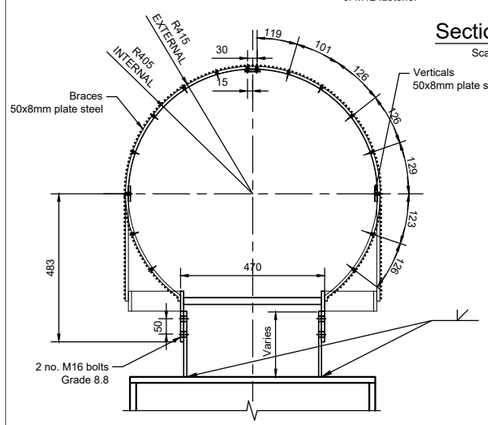


Section D-D

Scale 1:10

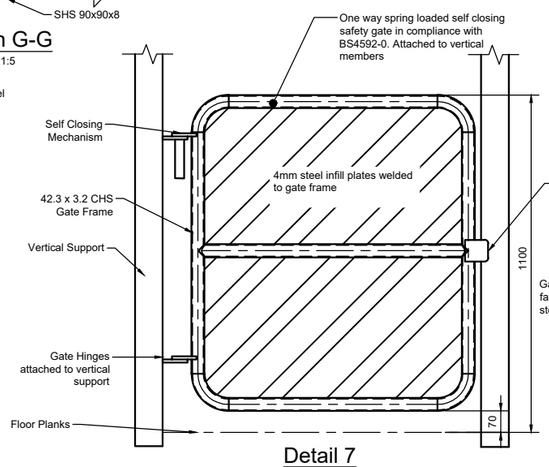
Detail 8

Scale 1:10



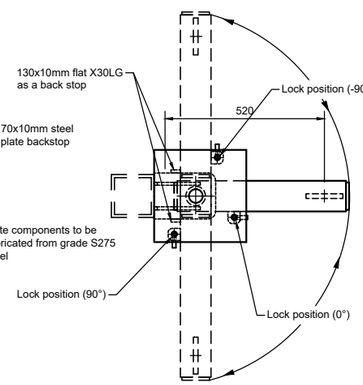
Section H-H

Scale 1:20



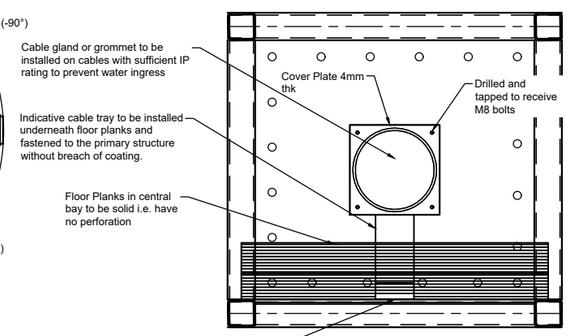
Detail 7

Scale 1:20



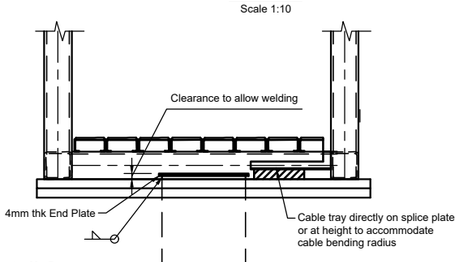
Detail 9

Scale 1:20



Detail 6

Scale 1:20



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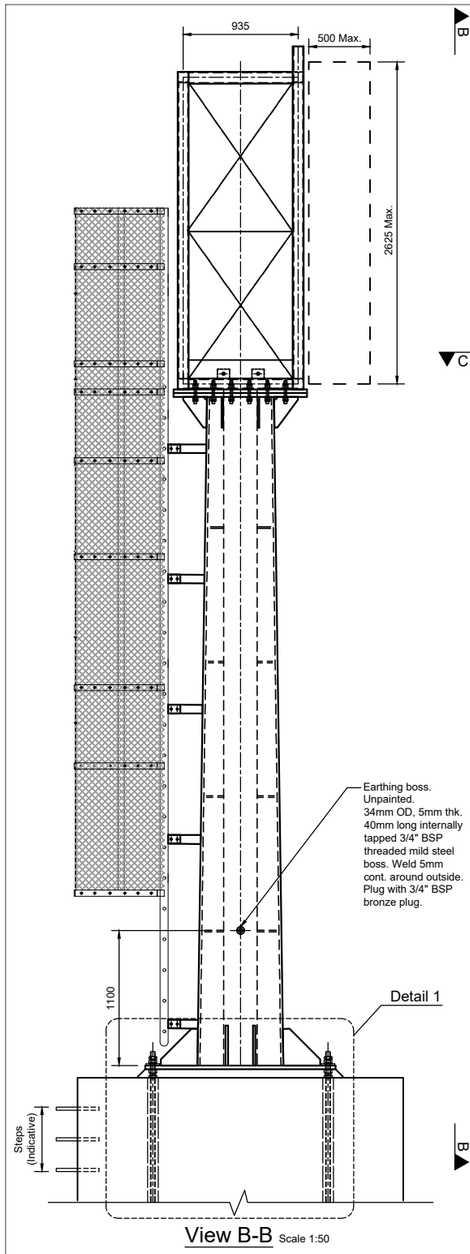
ACTIVITY: Construction & Commissioning

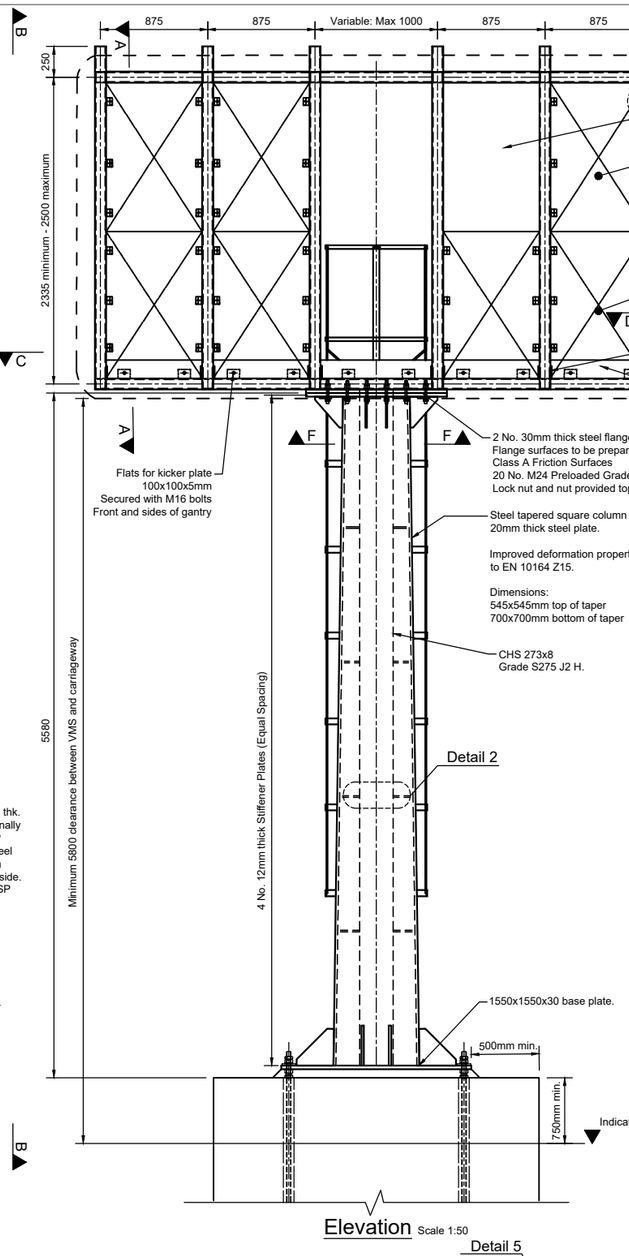
PUBLICATION TITLE

GANTRY GROUP 10
GENERAL ARRANGEMENT OF GANTRY GROUP 10 SHEET 2 OF 2

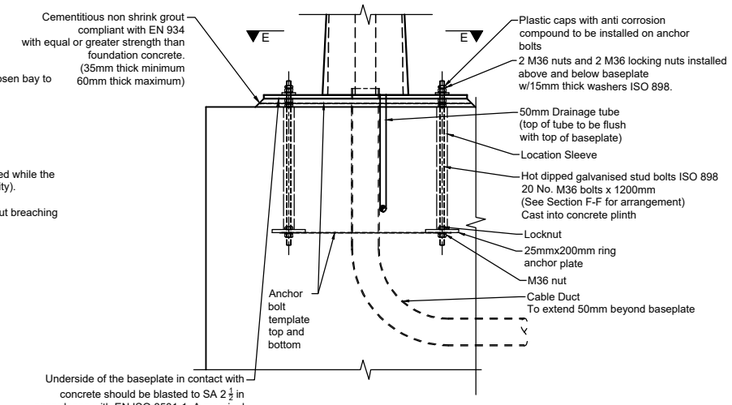
STREAM	SHEET	HISTORICAL REFERENCE	DOCUMENTATION SET	PUBLICATION DATE	PUBLICATION NUMBER (ACTIVITY / STREAM / DRAWING NUMBER)
STANDARD CONSTRUCTION DETAIL (SCD)	A3		STANDARD	DECEMBER 2021	CC / SCD / 01829



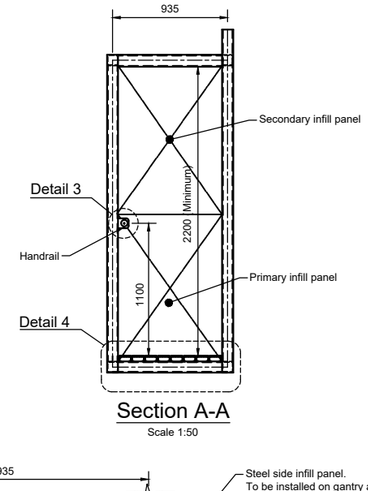
View B-B Scale 1:50



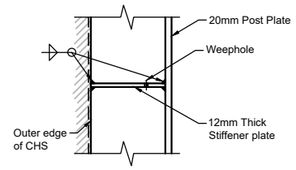
Elevation Scale 1:50



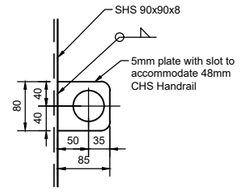
Detail 1 (Section thru' Base) Scale 1:50



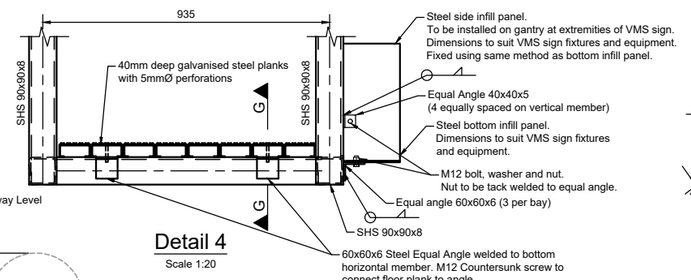
Section A-A
Scale 1:50



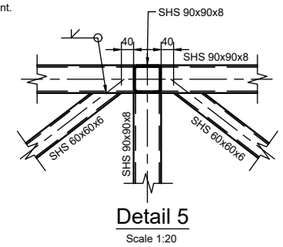
Detail 2 Scale 1:20



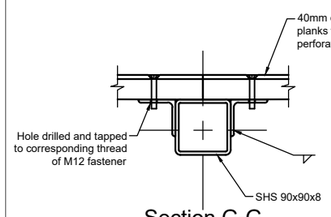
Detail 3 Scale 1:10



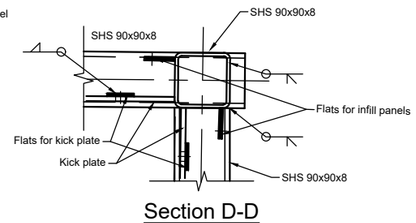
Detail 4
Scale 1:20



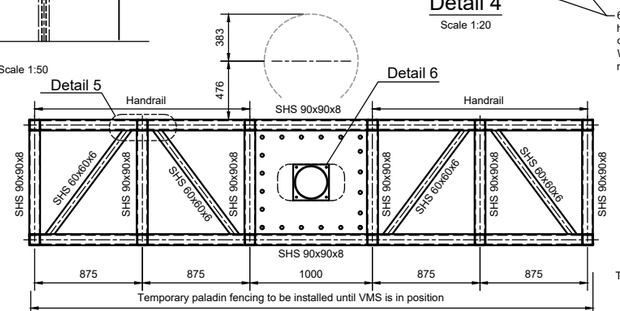
Detail 5
Scale 1:20



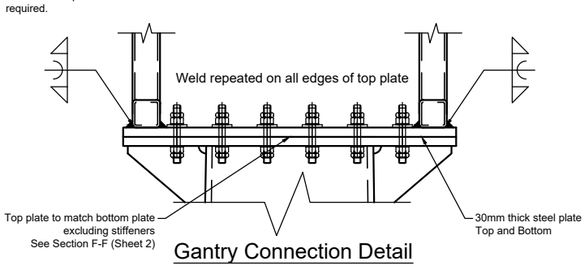
Section G-G
Scale 1:10



Section D-D
Scale 1:10



Section C-C Scale 1:50



Gantry Connection Detail
Scale 1:20

NOTES:

1. The purpose of this detail is to ensure a consistency of structural form for MS4 gantries across the national road network. All section sizes and details are minimum indicative size only. TII take no responsibility for the structural or geometrical adequacy of these details. It is the responsibility of the Designer to analyse, design and detail the MS4 gantry, connection details and its associated reinforced concrete foundation in accordance with the Eurocodes, their associated Irish national annexes, TII publications (DN-STR-03001, DN-STR-3010, DN-STR-03012, DN-STR-03013) and all other design documents as appropriate.
2. All gantry support posts shall be designed to withstand the vehicle collision loads given in Table 4.2 of DN-STR-03010 regardless of the presence of a vehicle restraint system.
3. The Designer for specific gantries shall provide structural drawings for the specific gantry. All information that is site specific must be included in these drawings.
4. All dimensions are in millimetres.
5. Steel shall be S355 J2 to IS EN 10025-2 to IS EN 10025-6 unless otherwise noted. Hollow sections to be Grade S355J2H to ISEN10210 unless noted otherwise.
6. The steelwork dimensions shown are specified for a mean temperature of 15 degrees centigrade.
7. Structural steelwork to be in accordance with TII Standard CC-SPW-1800.
8. Protection to steelwork to be in accordance with TII Standard CC-SPW-01900. Final colour to be approved by TII.
9. A suitably qualified inspector in accordance with CC-SPW-1800 and CC-SPW-1900 should be supplied by the Contractor for inspection purposes outlined in the specifications and drawings.
10. Temporary welded attachments shall be subject to approval by the Employer.
11. Lifting eyes to be designed by steelwork fabricator and submitted to the Designer of specific gantries for approval at least 4 weeks prior to fabrication.
12. Any temporary arrangement required for installation of elements of the gantry prior to site connection shall be agreed with the Designer of specific gantries 4 weeks prior to fabrication.
13. Method of erection of the gantry to be approved by the Designer of the specific gantry.
14. Hard stamping not permitted on any permanently exposed surfaces.
15. Assumed max weight of VMS is 1000kg.
16. Maximum height of sign to be 2625mm and maximum width to be 4800mm.
17. Alignment of the gantry relative to the road should be such as not to cause reflection of headlights from the signage directly back at drivers.
18. The maximum allowable deflection of the gantry shall be in accordance with Table 3.1 of DN-STR-03010. Designer shall verify gantry is within allowable limits of Table 3.1.
19. VMS support details and cable runs required shall be confirmed by the designer of the specific gantries with the supplier.
20. It is the responsibility of the Designer to ensure that proposed VMS sign will attach to the gantry without modification to the proposed structure outlined in this drawing.
21. The maximum mass of structural steel supported by the post is assumed to be 1340kg (excluding the mass of the VMS). The structural adequacy of this arrangement shall be verified by the Designer of the specific gantry.
22. Wind loading shall be in accordance with IS EN 1991-1-4 and the associated Irish national annex.
23. Weld symbols are in accordance with IS EN 2553 System A. Crossing welds should be avoided when possible.
24. All fillet welds shall be a minimum 6mm leg length and continuous unless noted otherwise. The Designer is to verify the adequacy of all welds.
25. Supplementary reinforcement shall be installed in the concrete plinth to resist shear and tensile forces in accordance with IS EN 1992-4.
26. Minimum class of concrete in foundation to be C32/40.
27. All bolts shall be as described on the drawing and coated in accordance with BS EN ISO 10684. Painting on site of all bolted connection areas will be required. Contact areas of preloaded connections should receive only a primer coat.
28. All bolt assemblies shall be inspected after preloading and tensioning for any signs of coating damage due to installation. Where damage has occurred, a repair of the damaged coating shall be completed in accordance with ISO 1461. This repair shall be inspected and approved by a competent coating inspector.
29. Closed fabricated boxes are required to be air tight. Leak testing is required in accordance with appendix 1/5 of the contract documents.
30. Cope holes and re-entrant corners shall have a radius of at least 25mm or 1.25 times the plate thickness, whichever is greater, unless noted otherwise.
31. All bolts and nuts to be vibration resistant. All holding down bolts shall have plastic caps.
32. All fixtures/fittings required to attach gantry equipment to the gantry should be protected against corrosion in accordance with TII Standard CC-SPW-01900.
33. No drilling of structural steel.
34. The ducting, chamber and cabinet arrangement for the distribution of power supplies, feeder pillars and communication cabling shall be in accordance with SCD/1500/008.
35. Electric earthing will be provided in accordance with SCD/1500/008.
36. Galvanic corrosion shall be reduced by using non-conductive spacers and sleeves between contacting dissimilar metals.
37. The designer of specific gantries shall be subject to, and shall comply with the technical approval procedures for structures contained within DN-STR-03001 of the TII publications.

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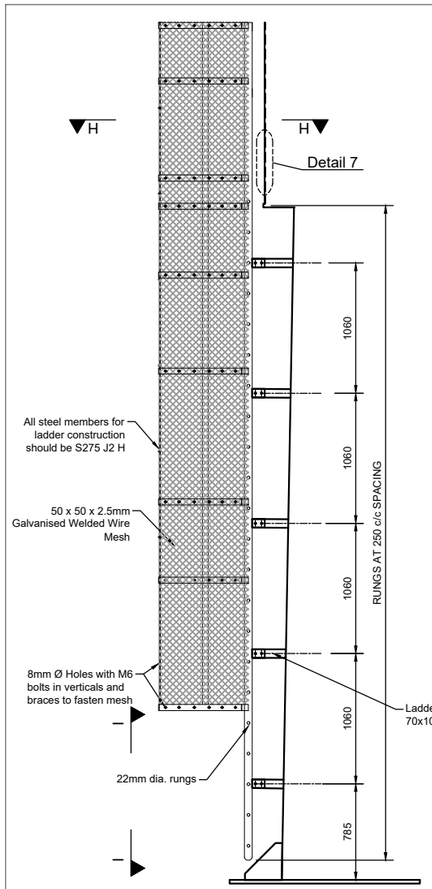
ACTIVITY: CC Construction & Commissioning

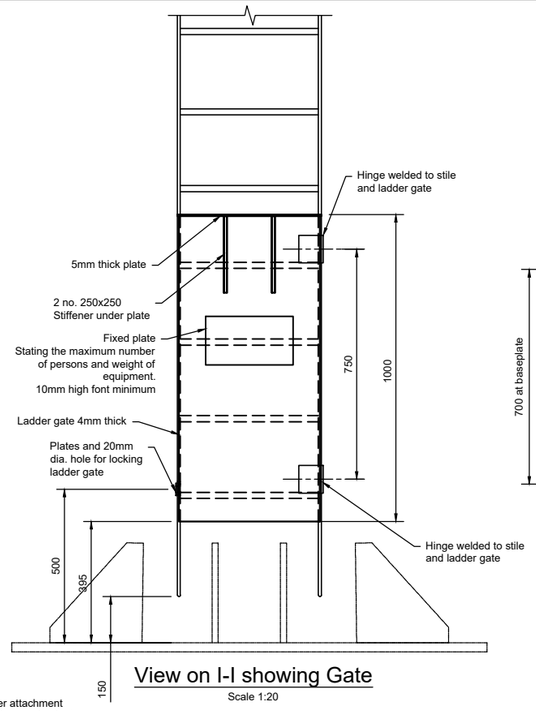
PUBLICATION TITLE
GANTRY GROUP 11
GENERAL ARRANGEMENT OF GANTRY GROUP 11 SHEET 1 OF 2

STREAM	SHEET	HISTORICAL REFERENCE	DOCUMENTATION SET	PUBLICATION DATE	PUBLICATION NUMBER (ACTIVITY / STREAM / DRAWING NUMBER)
STANDARD CONSTRUCTION DETAIL (SCD)	A3		STANDARD	DECEMBER 2021	CC / SCD / 01830



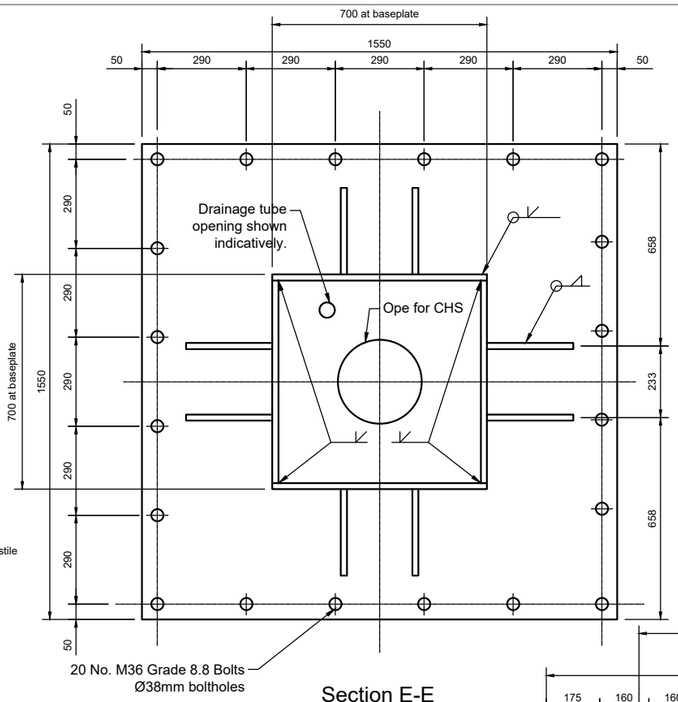
Ladder Elevation

Scale 1:50



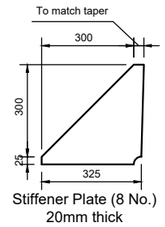
View on I-I showing Gate

Scale 1:20



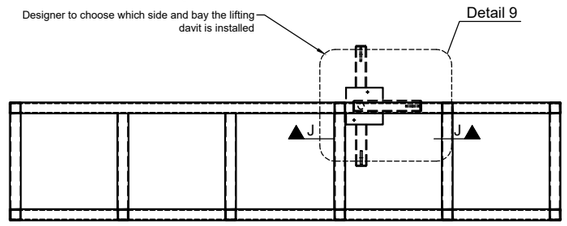
Section E-E

Scale 1:20



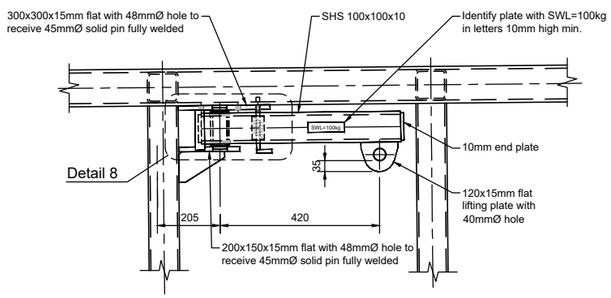
NOTES:

1. For general notes refer to sheet 1.
2. All dimensions are in millimetres.
3. A lifting davit, SWL 100kg, to be sited at back of walkway approximately 1 bay from centre of column to give 750mm clear 500mm outreach, capable of swinging at least 90 degree in either direction and locking in position.



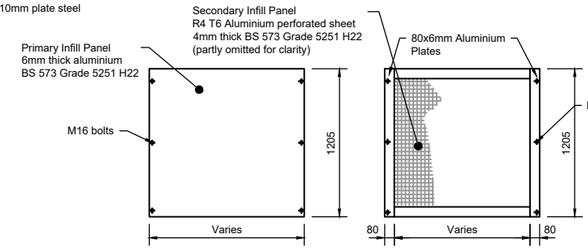
Lifting Davit Location Plan

Scale 1:25



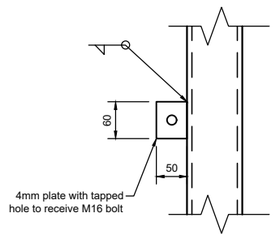
Section J-J

Scale 1:20



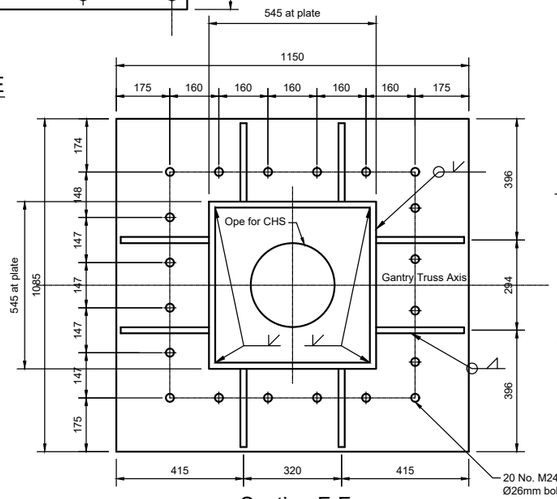
Infill Panel Details

Scale 1:50



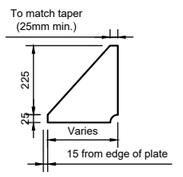
Detail 10

Scale 1:10

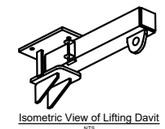


Section F-F

Scale 1:20

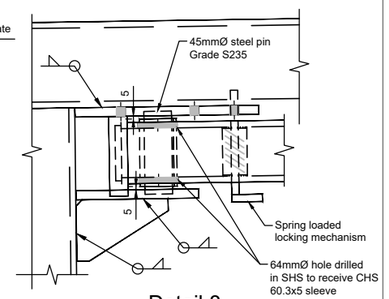


Stiffener Plate (8 No.) 12mm thick



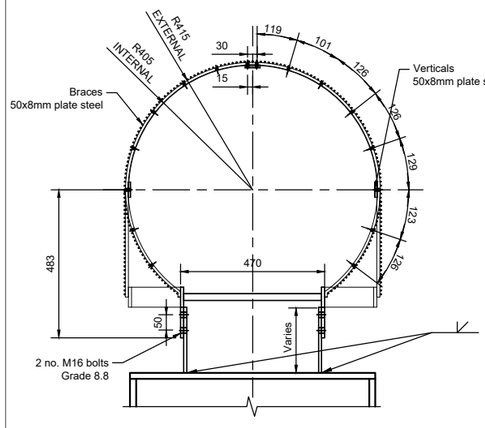
Isometric View of Lifting Davit

NTS



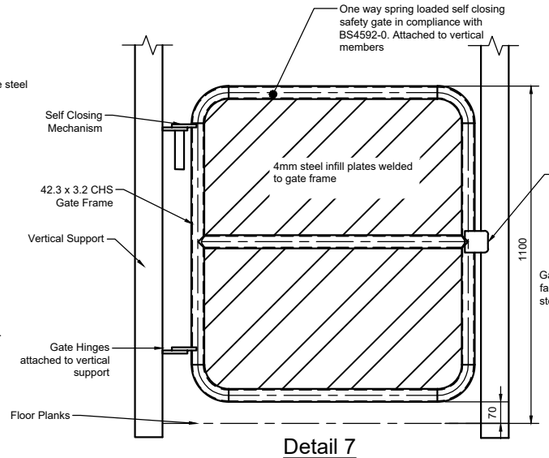
Detail 8

Scale 1:10



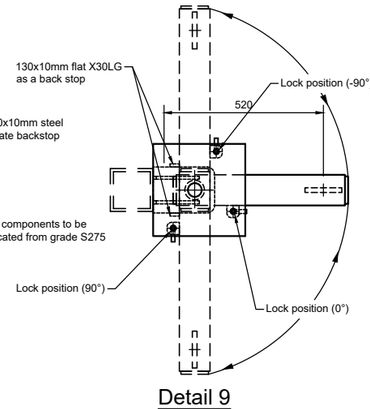
Section H-H

Scale 1:20



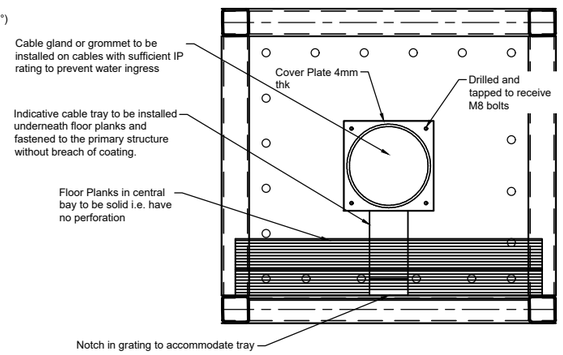
Detail 7

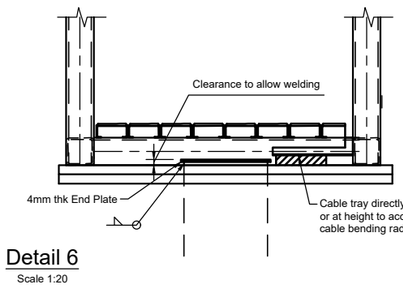
Scale 1:20



Detail 9

Scale 1:20





Detail 6

Scale 1:20

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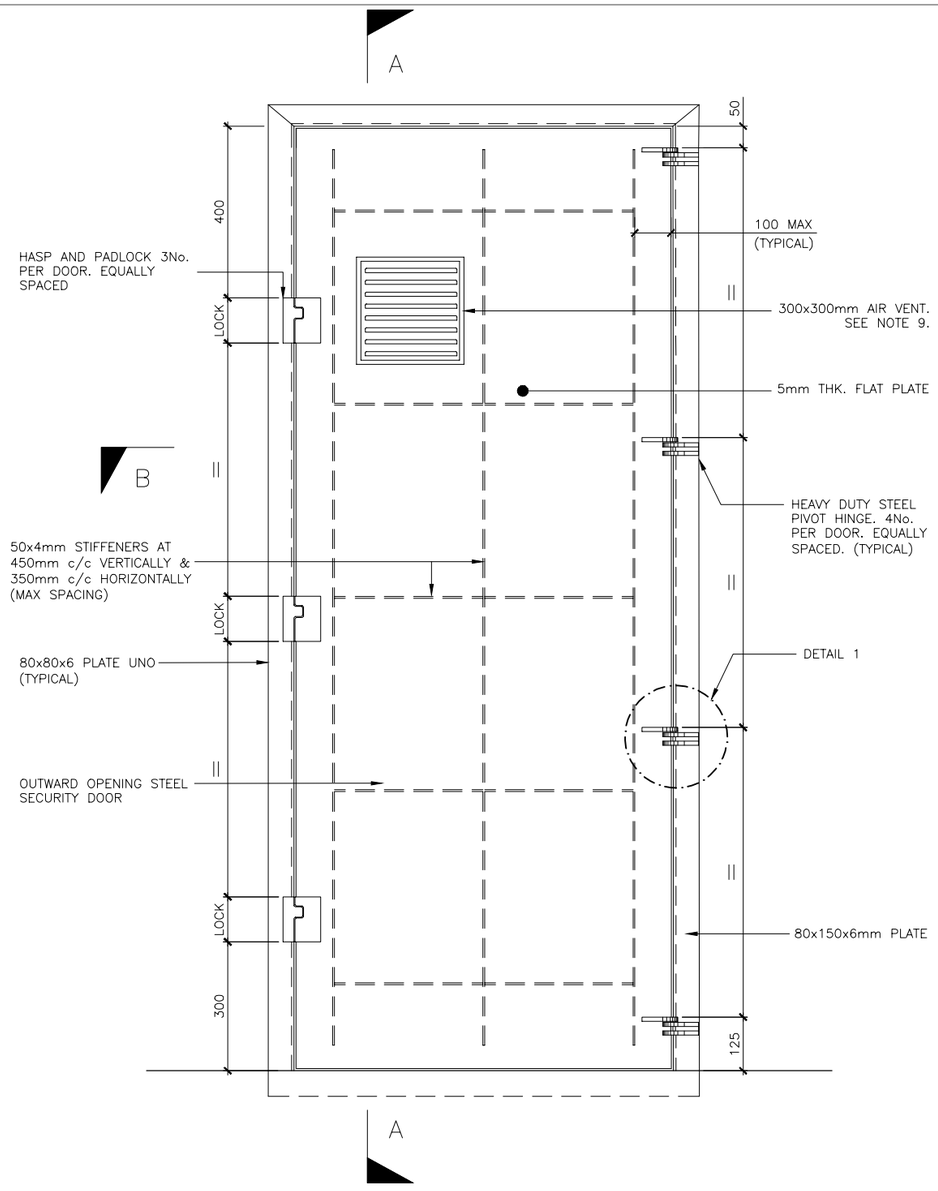
Bonneagar Iompair Éireann
Transport Infrastructure Ireland

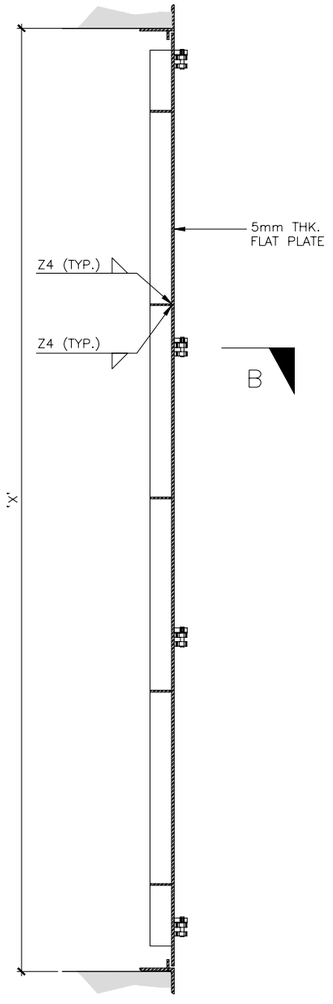
ACTIVITY: Construction & Commissioning

PUBLICATION TITLE: GANTRY GROUP 11
GENERAL ARRANGEMENT OF GANTRY GROUP 11 SHEET 2 OF 2

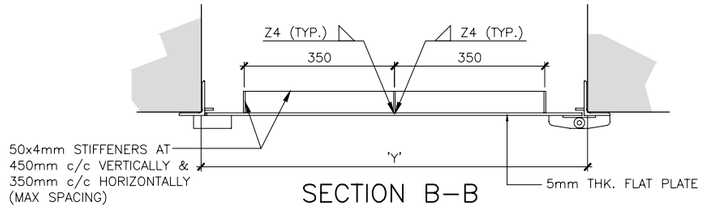
STREAM	SHEET	HISTORICAL REFERENCE	DOCUMENTATION SET	PUBLICATION DATE	PUBLICATION NUMBER (ACTIVITY / STREAM / DRAWING NUMBER)
STANDARD CONSTRUCTION DETAIL (SCD)	A3		STANDARD	DECEMBER 2021	CC / SCD / 01831



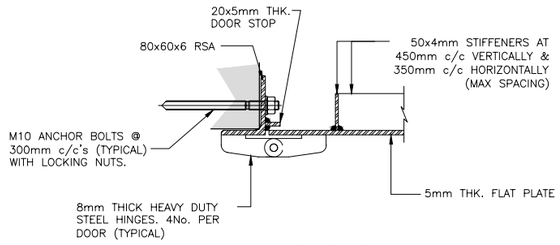
ELEVATION OF SINGE LEAF ABUTMENT GALLERY DOOR
HINGES ON THE RIGHT



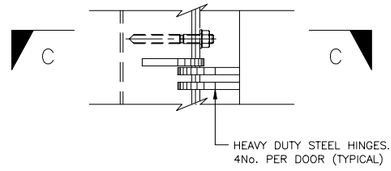
SECTION A–A



SECTION B–B



SECTION C–C



DETAIL 1
HEAVY DUTY HINGE

NOTES:-

1. ALL DIMENSIONS IN MILLIMETRES, UNLESS OTHERWISE NOTED.
2. ALL STEEL TO BE GRADE S275 J2 TO IS EN 10025 UNLESS NOTED OTHERWISE.
3. FRAMES TO BE COMPRISED OF 80x60x6mm ANGLES ON FOUR SIDES WITH 20mm WIDE STRIP ATTACHED TO ACT AS DOOR STOP
4. FRAMES TO BE FIXED WITH M10 GRADE 8.8 ANCHOR BOLTS INTO PREFORMED HOLES IN FRAME AT 300mm c/c's.
5. EACH DOOR TO BE FIXED TO THE FRAME WITH 4No. HEAVY DUTY HINGES.
6. 3No. HASP AND PADLOCK 'MUL-T-LOCK C-SERIES HASP AND SHACKLE PROTECTOR' OR EQUIVALENT.
7. CATCHES TO BE PROVIDED TO ALLOW THE DOORS TO BE HELD IN THE OPEN POSITION.
8. ALL SPLICES AND CONNECTORS TO BE FULLY TOP COATED AFTER ASSEMBLY. ALL GAPS SHALL BE SEALED.
9. ADD 300x300mm AIR VENT 'VENTILATION LOUVRE'. MIN 5mm STEEL PLATE TO FORM LOUVRES AND FRAME AROUND. 4mm FILLET WELD ALL ROUND MAX GAP 20mm.
10. STAINLESS STEEL CONNECTION TO BE ELECTRICALLY ISOLATED FROM GALVANISED STEEL MEMBERS USING NEOPRENE WASHERS.
11. ALL EDGES TO BE GROUND SMOOTH.
12. STEEL DIMENSIONS ARE SPECIFIED FOR A MEAN TEMPERATURE OF 12°C.
13. HARD STAMPING SHALL NOT BE PERMITTED ON PERMANENTLY EXPOSED SURFACES.
14. VISIBLE WELDS ON EXPOSED SURFACES SHALL BE GROUND FLUSH.
15. MINIMUM 4mm FILLET WELDS TO BE PROVIDED ON ALL SIDES.
16. "X" AND "Y" DIMENSIONS TO BE SELECTED FOLLOWING ASSESSMENT OF EQUIPMENT THAT MAY NEED TO BE CARRIED IN. THIS SCD DESIGN IS BASED ON MAXIMUM "X" AND "Y" DIMENSIONS OF 2100mm AND 1200mm RESPECTIVELY. LARGER DOORS SHOULD ONLY BE USED IN ASSOCIATION WITH A UNIQUE STRUCTURAL DESIGN IN ACCORDANCE WITH THE RELEVANT DESIGN CODES.
17. IN DETAILING, CARE MUST BE TAKEN THAT DOORS DO NOT FOUL ANY ADJACENT ANGLED SURFACES.
18. DOOR AND FRAME TO BE HOT DIP GALVANIZED IN ACCORDANCE WITH CC-SPW-01900. GALVANIZING COVERAGE RATE SHALL BE IN ACCORDANCE WITH EN-ISO-1461. STAINLESS STEEL SHALL BE USED FOR ANCHOR BOLTS, NUTS AND WASHERS.
19. PROTECTION AGAINST CORROSION PAINT SYSTEM AND FINAL COLOUR TO BE CONFIRMED WITH TII AND PROVIDED IN ACCORDANCE WITH CC-SPW-01900.
20. DOORS SHALL COMPLY WITH ANY FURTHER REQUIREMENTS STATED IN CC-SPW-01800.
21. DOOR SHALL OPEN OUTWARD FROM THE ABUTMENT GALLERY UNLESS SITE SPECIFIC CONSTRAINTS PREVENT THIS ARRANGEMENT.
22. EXECUTION CLASS EXC.2 AS PER IS EN 1090.
23. METHOD OF ERECTION TO BE AGREED WITH DESIGNER.
24. THE PURPOSE OF THIS DETAIL IS TO ENSURE CONSISTENCY OF ABUTMENT GALLERY DOORS FOR STRUCTURES ON THE NATIONAL ROAD NETWORK.
25. SURVEY TO BE CARRIED OUT TO CONFIRM REQUIRED DIMENSIONS PRIOR TO FABRICATION.
26. FABRICATION DRAWING TO BE PROVIDED TO DESIGNER IN ADVANCE OF FABRICATION.

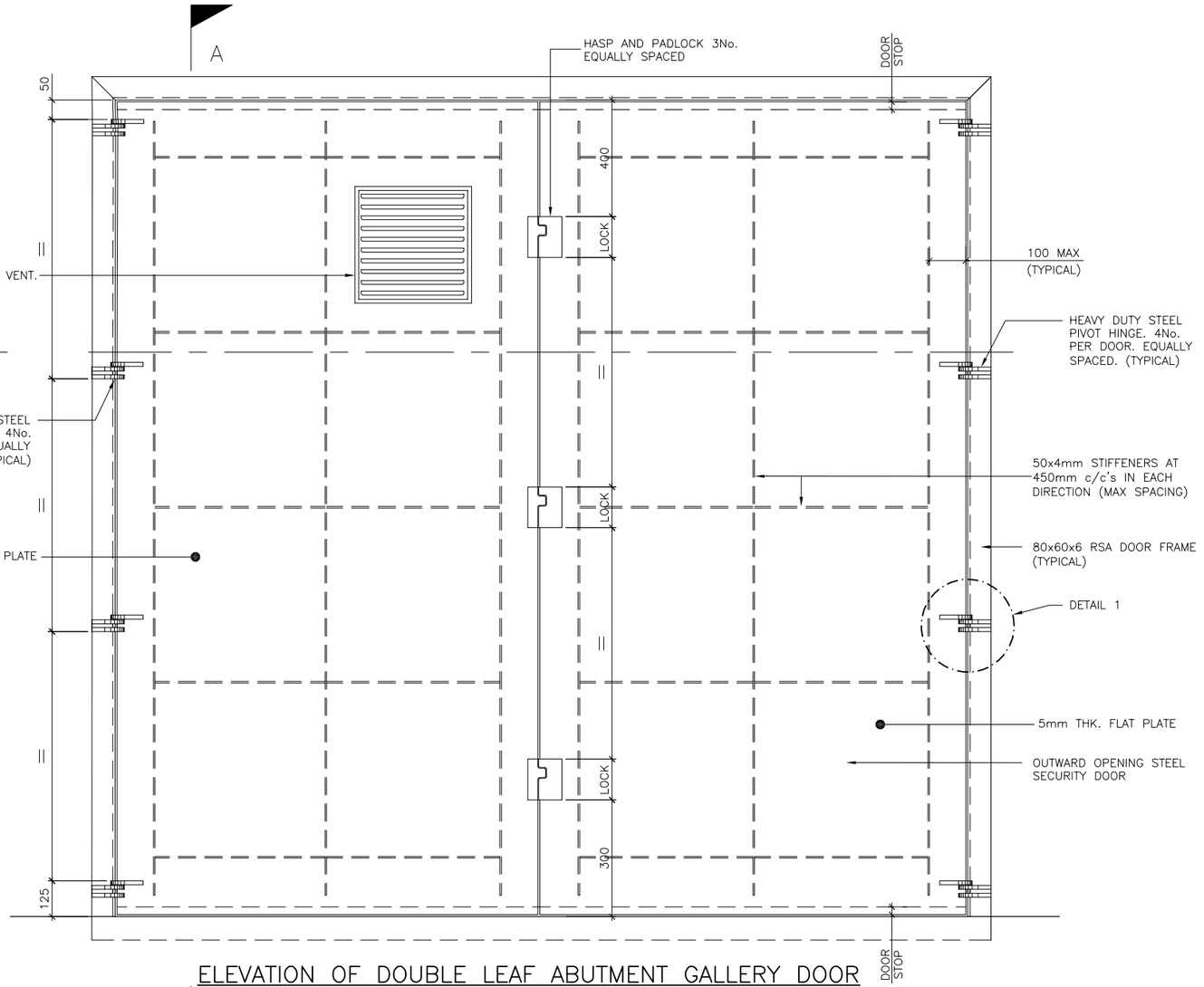
Bonneagar Iompair Éireann
Transport Infrastructure Ireland

ACTIVITY: CC Construction & Commissioning

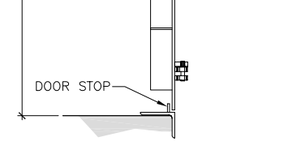
STREAM: STANDARD CONSTRUCTION DETAILS (SCD) | SHEET: A3

PUBLICATION TITLE: SINGLE LEAF ABUTMENT GALLERY DOOR

HISTORICAL REFERENCE	DOCUMENTATION SET	PUBLICATION DATE	PUBLICATION NUMBER		
			ACTIVITY	STREAM	DRAWING NUMBER
N/A	STANDARDS	FEBRUARY 2023	CC	SCD	01850



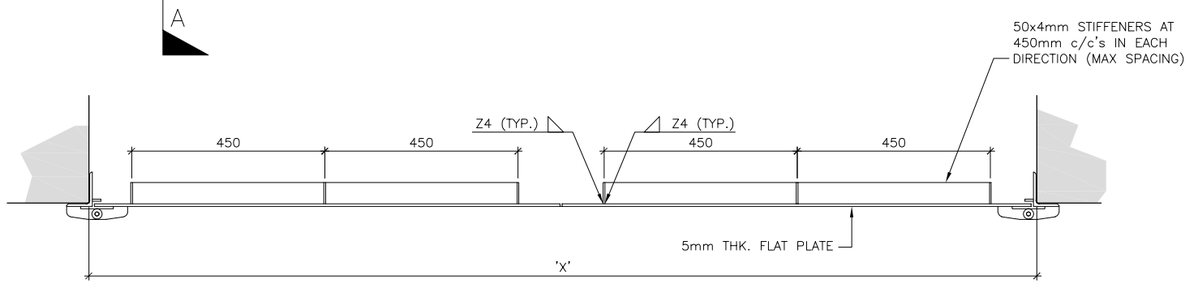
ELEVATION OF DOUBLE LEAF ABUTMENT GALLERY DOOR



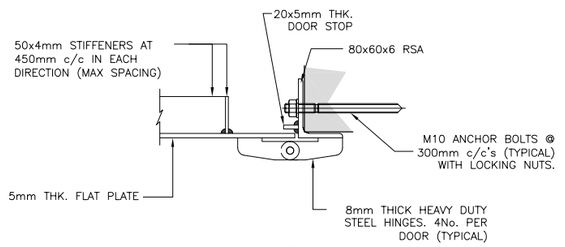
SECTION A–A

NOTES:-

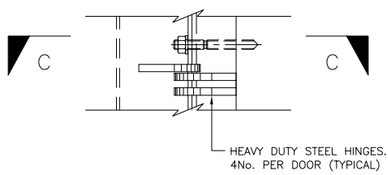
1. ALL DIMENSIONS IN MILLIMETRES, UNLESS OTHERWISE NOTED.
2. ALL STEEL TO BE GRADE S275 J2 TO IS EN 10025 UNLESS NOTED OTHERWISE.
3. FRAMES TO BE COMPRISED OF 80x60x6mm ANGLES ON FOUR SIDES WITH 20mm WIDE STRIP ATTACHED TO ACT AS DOOR STOP.
4. FRAMES TO BE FIXED WITH M10 GRADE 8.8 ANCHOR BOLTS INTO PREFORMED HOLES IN FRAME AT 300mm c/c's.
5. EACH DOOR TO BE FIXED TO THE FRAME WITH 4No. HEAVY DUTY HINGES.
6. 3No. HASP AND PADLOCK 'MUL-T-LOCK C-SERIES HASP AND SHACKLE PROTECTOR' OR EQUIVALENT.
7. CATCHES TO BE PROVIDED TO ALLOW THE DOORS TO BE HELD IN THE OPEN POSITION.
8. ALL SPLICES AND CONNECTORS TO BE FULLY TOP COATED AFTER ASSEMBLY. ALL GAPS SHALL BE SEALED.
9. ADD 300x300mm AIR VENT 'VENTILATION LOUVRE'. MIN 5mm STEEL PLATE TO FORM LOUVRES AND FRAME AROUND. 4mm FILLET WELD ALL ROUND MAX GAP 20mm.
10. STAINLESS STEEL CONNECTION TO BE ELECTRICALLY ISOLATED FROM GALVANISED STEEL MEMBERS USING NEOPRENE WASHERS.
11. ALL EDGES TO BE GROUND SMOOTH.
12. STEEL DIMENSIONS ARE SPECIFIED FOR A MEAN TEMPERATURE OF 12°C.
13. HARD STAMPING SHALL NOT BE PERMITTED ON PERMANENTLY EXPOSED SURFACES.
14. VISIBLE WELDS ON EXPOSED SURFACES SHALL BE GROUND FLUSH.
15. MINIMUM 4mm FILLET WELDS TO BE PROVIDED ON ALL SIDES.
16. "X" AND "Y" DIMENSIONS TO BE SELECTED FOLLOWING ASSESSMENT OF EQUIPMENT THAT MAY NEED TO BE CARRIED IN. THIS SCD DESIGN IS BASED ON MAXIMUM "X" AND "Y" DIMENSIONS OF 2100mm AND 2400mm RESPECTIVELY. LARGER DOORS SHOULD ONLY BE USED IN ASSOCIATION WITH A UNIQUE STRUCTURAL DESIGN IN ACCORDANCE WITH THE RELEVANT DESIGN CODES.
17. IN DETAILING, CARE MUST BE TAKEN THAT DOORS DO NOT FOUL ANY ADJACENT ANGLED SURFACES.
18. DOOR AND FRAME TO BE HOT DIP GALVANIZED IN ACCORDANCE WITH CC-SPW-01900. GALVANIZING COVERAGE RATE SHALL BE IN ACCORDANCE WITH EN-ISO-1461. STAINLESS STEEL SHALL BE USED FOR ANCHOR BOLTS, NUTS AND WASHERS.
19. PROTECTION AGAINST CORROSION PAINT SYSTEM AND FINAL COLOUR TO BE CONFIRMED WITH TII AND PROVIDED IN ACCORDANCE WITH CC-SPW-01900.
20. DOORS SHALL COMPLY WITH ANY FURTHER REQUIREMENTS STATED IN CC-SPW-01800.
21. DOOR SHALL OPEN OUTWARD FROM THE ABUTMENT GALLERY UNLESS SITE SPECIFIC CONSTRAINTS PREVENT THIS ARRANGEMENT.
22. EXECUTION CLASS EXC.2 AS PER IS EN 1090.
23. METHOD OF ERECTION TO BE AGREED WITH DESIGNER.
24. THE PURPOSE OF THIS DETAIL IS TO ENSURE CONSISTENCY OF ABUTMENT GALLERY DOORS FOR STRUCTURES ON THE NATIONAL ROAD NETWORK.
25. SURVEY TO BE CARRIED OUT TO CONFIRM REQUIRED DIMENSIONS PRIOR TO FABRICATION.
26. FABRICATION DRAWING TO BE PROVIDED TO DESIGNER IN ADVANCE OF FABRICATION.



SECTION B–B



SECTION C–C



DETAIL 1
HEAVY DUTY HINGE

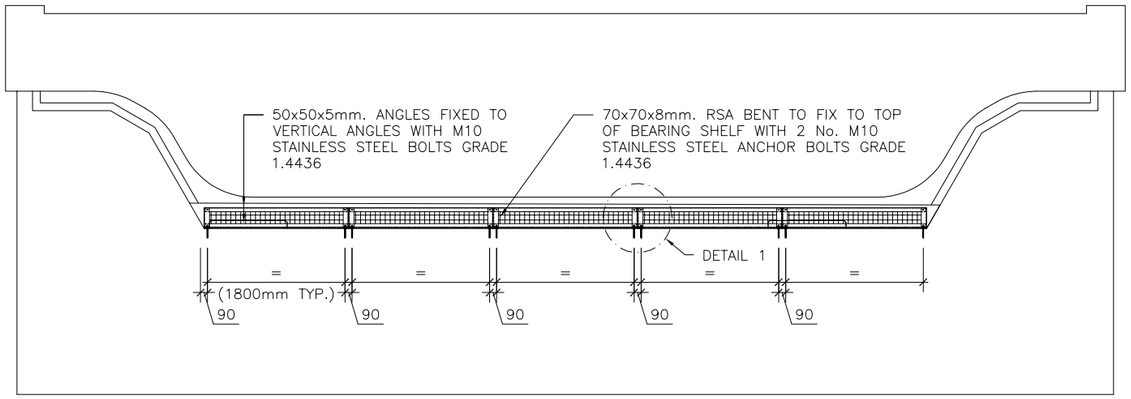
Bonneagar Iompair Éireann
Transport Infrastructure Ireland

ACTIVITY: Construction & Commissioning

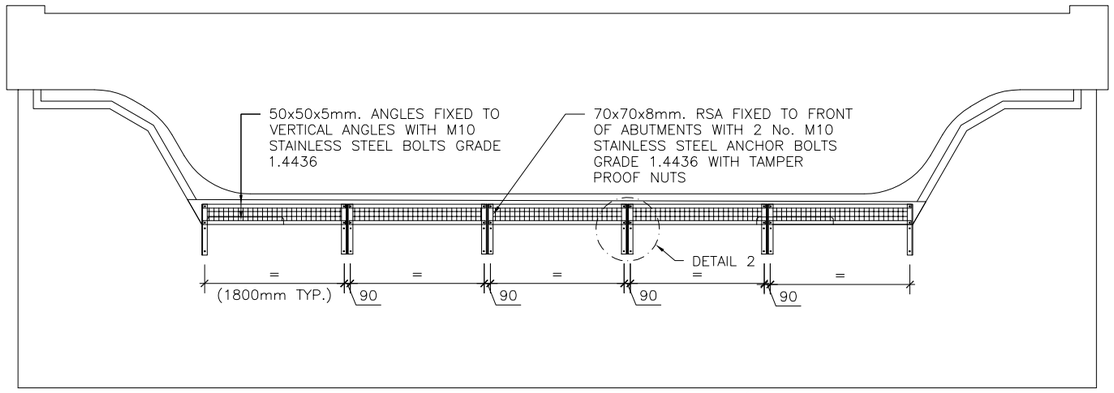
PUBLICATION TITLE: DOUBLE LEAF ABUTMENT GALLERY DOOR

STREAM	SHEET
STANDARD CONSTRUCTION DETAILS (SCD)	A3

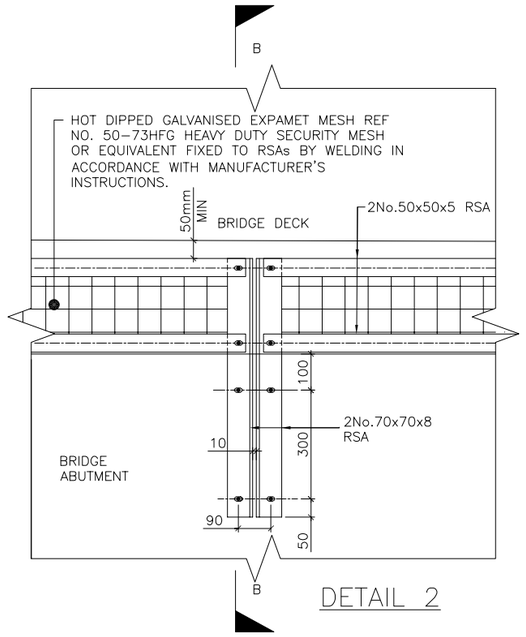
HISTORICAL REFERENCE	DOCUMENTATION SET	PUBLICATION DATE	PUBLICATION NUMBER		
			ACTIVITY	STREAM	DRAWING NUMBER
N/A	STANDARDS	FEBRUARY 2023	CC	SCD	01851



ELEVATION ON ABUTMENT SECURITY MESH



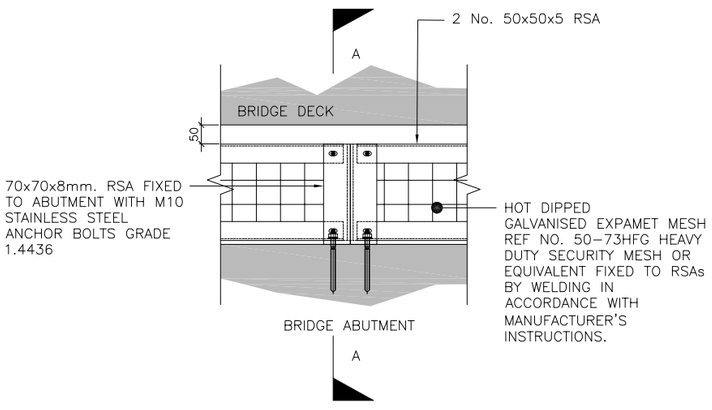
ELEVATION ON ABUTMENT SECURITY MESH (ALTERNATE DETAIL)



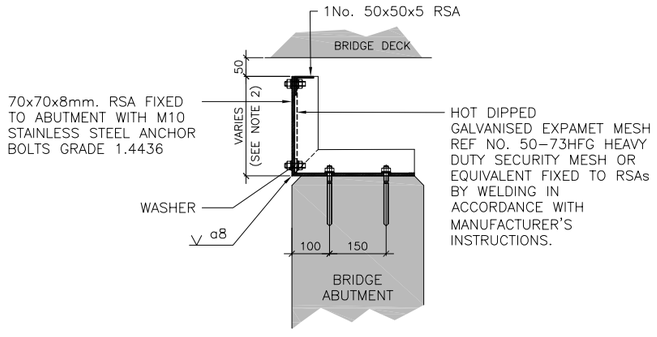
DETAIL 2

NOTES:

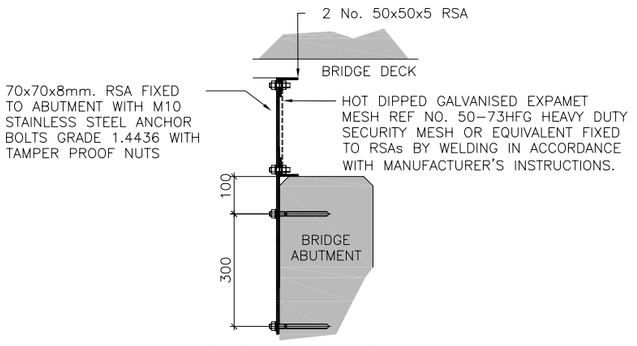
1. ALL DIMENSIONS IN MILLIMETRES, UNLESS OTHERWISE NOTED.
2. ALTERNATIVE DETAIL ONLY TO BE USED WHERE THE CLEARANCE BETWEEN BRIDGE ABUTMENT AND BRIDGE DECK DOESN'T ALLOW FOR INSTALLATION OF PREFERRED OPTION.
3. STRUCTURAL STEELWORK TO BE IN ACCORDANCE WITH SERIES 1800 OF TII SPECIFICATION FOR WORKS. ALL STEEL TO BE GRADE S275 J2 UNLESS NOTED OTHERWISE.
4. ALL SPLICES AND CONNECTORS TO BE FULLY TOP COATED AFTER ASSEMBLY. ALL GAPS SHALL BE SEALED.
5. STAINLESS STEEL CONNECTION TO BE ELECTRICALLY ISOLATED FROM GALVANISED STEEL MEMBERS USING NEOPRENE WASHERS.
6. ALL EDGES TO BE GROUND SMOOTH.
7. STEEL DIMENSIONS ARE SPECIFIED FOR A MEAN TEMPERATURE OF 12°C.
8. HARD STAMPING SHALL NOT BE PERMITTED ON PERMANENTLY EXPOSED SURFACES.
9. VISIBLE WELDS ON EXPOSED SURFACES SHALL BE GROUND FLUSH.
10. ALL NUTS TO BE LOCKING NUTS.
11. MINIMUM 4mm FILLET WELDS TO BE PROVIDED ON ALL SIDES.
12. MESH AND FRAME TO BE HOT DIP GALVANIZED IN ACCORDANCE WITH CC-SPW-01900. GALVANIZING COVERAGE RATE SHALL BE IN ACCORDANCE WITH EN-ISO-1461. STAINLESS STEEL SHALL BE USED FOR ANCHOR BOLTS, NUTS AND WASHERS.
13. MAXIMUM SIZE OF OPENINGS IN MESH SECURITY PANEL SHALL BE 50MM X 50MM
14. ALTERATION TO PROPOSED GALVANISED STRUCTURAL STEELWORK AFFECTED BY HOLES FOR BOLTS OR LOCAL CUTTING WILL BE PROVIDED WITH PROTECTIVE COATING IN ACCORDANCE WITH THE ORIGINAL COATING SYSTEM AND AGREED WITH THE DESIGNER. FOR PROPOSED STEELWORK SITE GALVANISING PAINT WITH EQUIVALENT PROTECTION TO THE PROTECTIVE COATING SYSTEM (CORROSITIVITY CATEGORY C5 AND `VERY HIGH' DURABILITY) SHALL BE PROVIDED.
15. METHOD OF ERECTION TO BE AGREED WITH DESIGNER.
16. THE PURPOSE OF THIS DETAIL IS TO ENSURE CONSISTENCY OF ABUTMENT MESH FOR STRUCTURES ON THE NATIONAL ROAD NETWORK.
17. FOR EXISTING STRUCTURES, SURVEY TO BE CARRIED OUT TO CONFIRM REQUIRED DIMENSIONS PRIOR TO FABRICATION.
18. FABRICATION DRAWING TO BE PROVIDED TO DESIGNER IN ADVANCE OF FABRICATION.
19. THIS DESIGN IS FOR TYPICAL GAPS OF UP TO 500MM BETWEEN THE SUPERSTRUCTURE AND ABUTMENT, LARGER GAPS WILL REQUIRE A BESPOKE DESIGN
20. FOR EXISTING STRUCTURES, REINFORCEMENT SURVEY TO BE CARRIED OUT PRIOR TO FABRICATION TO AVOID CLASHING BETWEEN REBAR AND FIXINGS.
21. THE MINIMUM DESIGN LOAD OF EACH FASTENER IS 2890N.



DETAIL 1



SECTION A–A



SECTION B–B

Bonneagar Iompair Éireann
Transport Infrastructure Ireland

ACTIVITY: CC Construction & Commissioning

PUBLICATION TITLE: ABUTMENT GALLERY SECURITY MESH

STREAM	SHEET	HISTORICAL REFERENCE	DOCUMENTATION SET	PUBLICATION DATE	PUBLICATION NUMBER (ACTIVITY / STREAM / DRAWING NUMBER)
STANDARD CONSTRUCTION DETAILS (SCD)	A3	N/A	STANDARDS	FEBRUARY 2023	CC / SCD / 01852

Bonneagar Iompair Éireann
Transport Infrastructure Ireland

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