

STRUCTURAL NOTES

GENERAL

- ALL CONSTRUCTION IS TO CONFORM TO THE BRITISH COLUMBIA BUILDING CODE (2012).
- ALL REFERENCES TO STANDARDS NOTED ON THESE DRAWINGS REFER TO THE LATEST REVISED ISSUE.
- THESE DRAWING PREPARED BY McELHANNEY CONSULTING SERVICES LTD. (McELHANNEY) ARE INTENDED FOR STRUCTURAL REQUIREMENTS OF THIS PROJECT ONLY. ALL OTHER ASPECTS ASSOCIATED WITH THIS PROJECT WHICH INCLUDE, BUT ARE NOT LIMITED TO, ARCHITECTURAL, HYDROLOGY, ENVIRONMENTAL, CIVIL, GEOTECHNICAL, MECHANICAL, ELECTRICAL, OCCUPANT SAFETY, ACCESSIBILITY AND BUILDING ENVELOPE ARE TO BE DESIGNED, SPECIFIED AND APPROVED BY OTHERS AND ARE CONSIDERED BEYOND McELHANNEY SCOPE OF WORK.
- STRUCTURAL ELEMENTS PRESENTED ON THESE DRAWINGS ARE FOR PERMANENT STRUCTURE AND FOUNDATIONS ONLY. THE CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY AND CONSTRUCTION BRACING AND SUPPORT INCLUDING GEOTECHNICAL REQUIREMENTS UNTIL THE PROJECT IS COMPLETED.
- REFER TO GENERAL ARRANGEMENT, ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR DIMENSIONS, GRADES, ELEVATIONS AND FOR DIMENSIONS AND LOCATIONS OF RECESSES, SLEEVES, EQUIPMENT, SHAFTS, INSERTS, CHAMFERS, ETC.. DIMENSIONS AND ELEVATIONS SHOWN ON STRUCTURAL DRAWINGS ARE FOR REFERENCE ONLY AND MUST BE CONFIRMED WITH GENERAL ARRANGEMENT DRAWINGS AND/OR SITE CONDITIONS PRIOR TO CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS TO BE CONFIRMED AND CORRELATED AT THE JOB SITE, FOR INFORMATION THAT PERTAINS SOLELY TO FABRICATION PROCESSES OR TO TECHNIQUES OF CONSTRUCTION AND INSTALLATION AND FOR COORDINATION OF THE WORK OF ALL SUB-TRADES.

REFERENCED DRAWINGS

- LAYOUT AND STRUCTURAL SIZING IS BASED ON DESIGN DRAWINGS PREPARED BY AMEC FOSTER WHEELER DATED APRIL 13, 2016.
- McELHANNEY HAS RELIED ON THE PROVIDED DRAWING SET AS ACCURATE AND TRUE. McELHANNEY IS NOT RESPONSIBLE FOR ANY ERROR/OMISSIONS ON THESE DRAWINGS AS A RESULT OF ERRORS OR SUBSEQUENT CHANGES TO THE PROVIDED DRAWING SET OR UNKNOWN SITE AND AS-BUILT CONDITIONS.
- IF CHANGES ARE MADE TO THE LAYOUT OF THE STRUCTURE, OR SITE CONDITIONS VARY FROM ASSUMED, OR THE ASSUMED LOAD PATHS ARE ALTERED (RELOCATED ELEMENTS, ETC), THE STRUCTURAL ENGINEER SHOULD BE NOTIFIED SUCH THAT CHANGES CAN BE MADE TO THE DESIGN IF REQUIRED.

FIELD REVIEWS BY McELHANNEY CONSULTING SERVICES LTD.

- McELHANNEY ASSUMES NO RESPONSIBILITY FOR FIELD REVIEWS OF THE CONSTRUCTION OR VERIFICATION OF THE CONSTRUCTION UNLESS EXPRESSLY RETAINED TO DO SO.
- McELHANNEY CONSULTING SERVICES LTD. (McELHANNEY) PROVIDE FIELD REVIEWS ONLY FOR THE WORK SHOWN ON THESE DRAWINGS. FIELD REVIEWS BY McELHANNEY ARE PERIODIC AND AT THE SOLE DISCRETION OF McELHANNEY IN ORDER TO ASCERTAIN THAT THE WORK IS IN GENERAL CONFORMANCE WITH THE DESIGN DRAWINGS AND SUPPORTING DOCUMENTS.
- FIELD REVIEWS BY McELHANNEY ARE NOT FOR THE CONTRACTORS BENEFIT NOR DOES IT MAKE McELHANNEY GUARANTORS OF THE CONTRACTORS WORK. IT REMAINS THE CONTRACTORS RESPONSIBILITY TO BUILD THE WORK IN CONFORMANCE WITH THE CONTRACT DOCUMENTS.
- McELHANNEY WILL NOT BE RESPONSIBLE FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUB-CONTRACTOR, OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK OR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- IF McELHANNEY IS RETAINED FOR FIELD REVIEWS THEN THE CONTRACTOR IS TO PROVIDE 24 HOUR NOTICE PRIOR TO CONCRETE POURS AND BEFORE ENCLOSING FRAMING ELEMENTS. FIELD REVIEWS ARE TO BE SCHEDULED AND TO BE CARRIED OUT DURING NORMAL BUSINESS HOURS UNLESS SPECIAL ARRANGEMENTS ARE MADE WITH McELHANNEY.

DESIGN STANDARDS:

1) DESIGN METHODOLOGY: LIMIT STATES DESIGN

2) CLIMATIC INFORMATION: ELKFORD, BC

LOADING DESIGN CRITERIA

LIVE: SNOW:  
LL = 4.8 KPa Ss = 3.7 KPa  
Sr = 0.3 KPa

CONCRETE

- PREPARATION, PLACING AND FINISHING OF CONCRETE IS TO CONFORM TO CSA A23.1.
- TESTING OF CONCRETE IS TO CONFORM TO CSA A23.2. THE FREQUENCY AND NUMBER OF TESTS IS NOT TO BE LESS THAN ONE STRENGTH, SLUMP AND AIR TEST FOR PANELS.
- IT IS THE CONTRACTORS RESPONSIBILITY TO COORDINATE THE TESTING SCHEDULE AND TIMING WITH THE TESTING AGENCY.
- CONCRETE PROPERTIES:

ITEM	AGG. SIZE (mm)	28 DAY STRENGTH	W/C	AIR (%)	CEMENT TYPE	EXPOSURE
PANELS	20	45 Mpa	.40	4 - 7	HS	F-2

REINFORCING

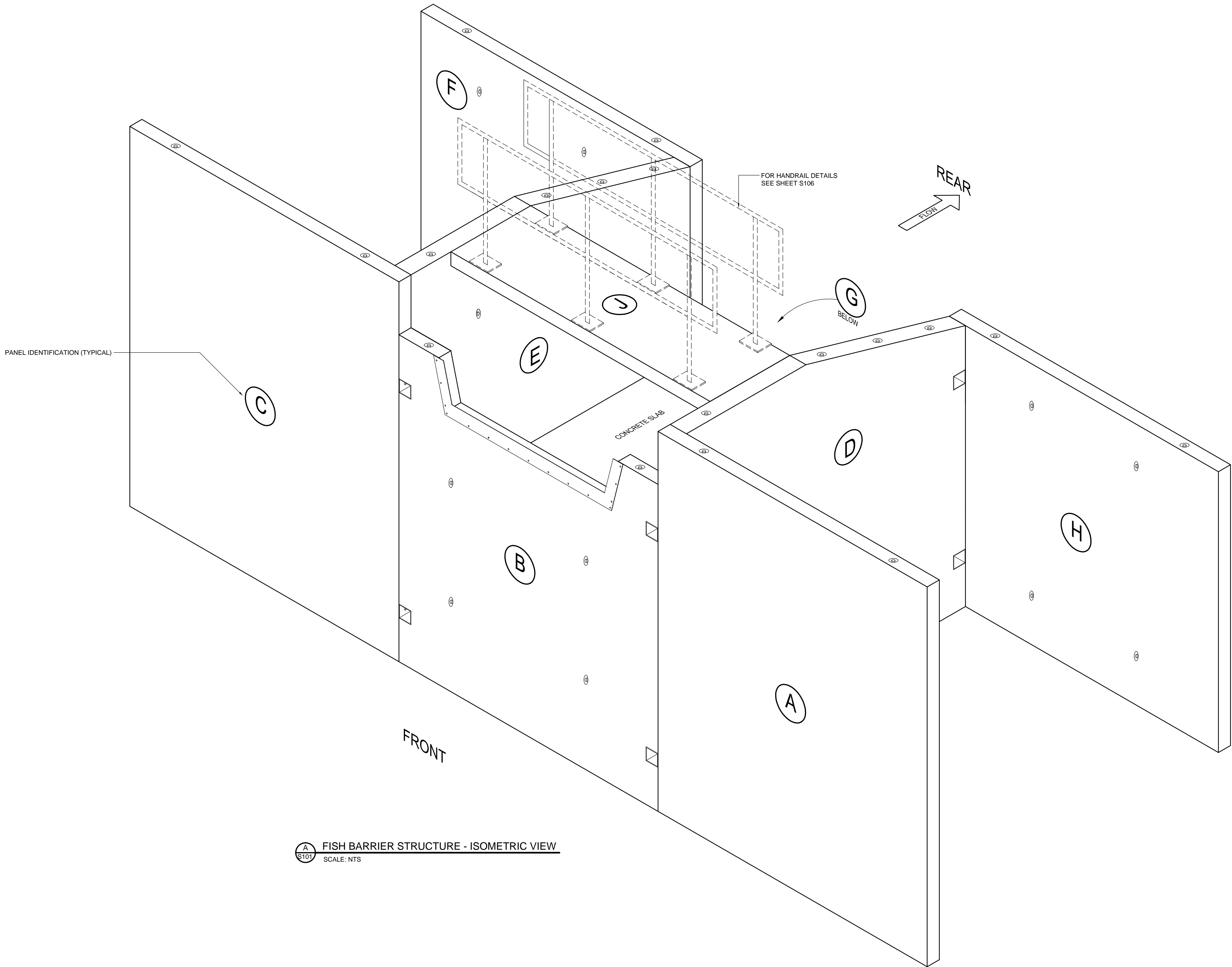
- REINFORCING STEEL IS TO CONFORM TO CSA G30.12M - GRADE 400 MPa.
- REINFORCING STEEL IS TO BE PLACED AS DETAILED TO 10mm TOLERANCE AND IS TO BE SUPPORTED BY METAL OR PLASTIC SUPPORTS AND/OR HANGERS IN ACCORDANCE WITH CAN/CSA A23.1
- LAP ALL REINFORCING BAR SPLICES 32 BAR DIAMETERS MINIMUM UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
- REINFORCING STEEL IS TO BE CLEAN, FREE OF CORROSION AND UNDAMAGED.
- DO NOT WELD BARS OR USE HEAT TO BEND REINFORCING STEEL.
- CONCRETE COVER OVER REINFORCEMENT IS TO SHOWN ON DRAWINGS

STRUCTURAL STEEL

- STRUCTURAL STEEL IS TO CONFORM TO CSA G40.21 WITH THE FOLLOWING GRADES:
  - HSS SECTIONS, CLASS C - 350W
  - BARS AND PLATES - 250W OR 300W
- SUPPLY MISCELLANEOUS ITEMS INCLUDING ALL ANCHOR BOLTS, EXPANSION BOLTS, AND OTHER MEANS OF ANCHORAGE NOT SPECIFICALLY CALLED FOR ELSEWHERE. SUPPLY ALL ANGLES, BRACKETS, CLEATS, PLATES, BEAMS, CHANNELS, NUTS, BOLTS AND OTHER ANCILLARY FASTENING NOT SPECIFIED ELSEWHERE.
- STRUCTURAL BOLTS ARE TO CONFORM TO ASTM A325. MINIMUM 20mm DIAMETER AND CADMIUM PLATED IF EXPOSED TO WEATHER.
- WELDING TO CONFORM TO CSA W-59 BY FABRICATORS CERTIFIED BY CANADIAN WELDING BUREAU (CWB) TO THE REQUIREMENTS OF CSA W47.1 DIVISION 1 OR 2.1.
- PREPARE STEEL SURFACES FOR PAINTING TO SSPC-SP3 FOR ALL STEEL AND APPLY MINIMUM (1) COAT OF SHOP PRIMER (COLOR TO BE RED OR AS SPECIFIED BY OWNER).

HANDRAIL SPECIFICATION

- USE ASTM A53 GRADE B PIPE WITH A MINIMUM YIELD OF 240 MPa.
- WELD ALL CONNECTIONS AND GRIND ROUGH EDGES SMOOTH AFTER FABRICATION.
- ALL STEEL COMPONENTS ARE TO BE PRIMED AND PAINTED TO THE APPROPRIATE TECK STANDARD BASED UPON ENVIRONMENT.
- HANDRAIL SHALL BE CAPABLE OF RESISTING A 0.90 KN HORIZONTAL LOAD APPLIED AT ANY POINT.
- WELDING TO CONFORM TO CSA W-59 BY FABRICATORS CERTIFIED BY THE CANADIAN WELDING BUREAU TO THE REQUIREMENTS OF CSA W47.1. DIVISION 1 OR 2.1.
- DO NOT USE HANDRAIL FOR FALL ARREST TIE OFF.



STRUCTURAL DRAWING LIST

S101	STRUCTURAL NOTES AND STRUCTURE ISOMETRIC VIEW
S102	PANEL LAYOUT AND ASSEMBLY DETAILS
S103	PANEL "A", "B", "C" AND "D" DETAILS
S104	PANEL "E", "F", "G" AND "H" DETAILS
S105	PANEL "J", CAST IN PLACE SLAB AND CONNECTOR DETAILS
S106	HANDRAIL AND CONNECTION DETAILS

Rev	Date	Description	Drawn	Design	App'd
2	JULY 29, 2016	GENERAL REVISION	BRN	BRN	BRN
1	JULY 7, 2016	ISSUED FOR "CONSTRUCTION"	BRB	BRB	BRN

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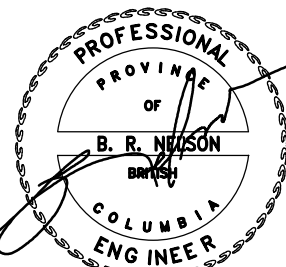
ORIGINAL DWG SIZE: ARCH D (24" x 36")



**McElhanney**

McElhanney Consulting Services Ltd.

42 - 8th Avenue S  
Suite 200  
Cranbrook BC  
Canada V1C 2K3  
Tel (250) 489-3013



July 29, 2016

Approved Sealed

TRIKON PRECAST

601 PATTERSON STREET WEST, CRANBROOK, BC, V1C 6T3

TECK - FORDING RIVER  
FISH BARRIER STRUCTURE  
STRUCTURAL NOTES AND ISOMETRIC VIEW

Drawing No.

**S101**

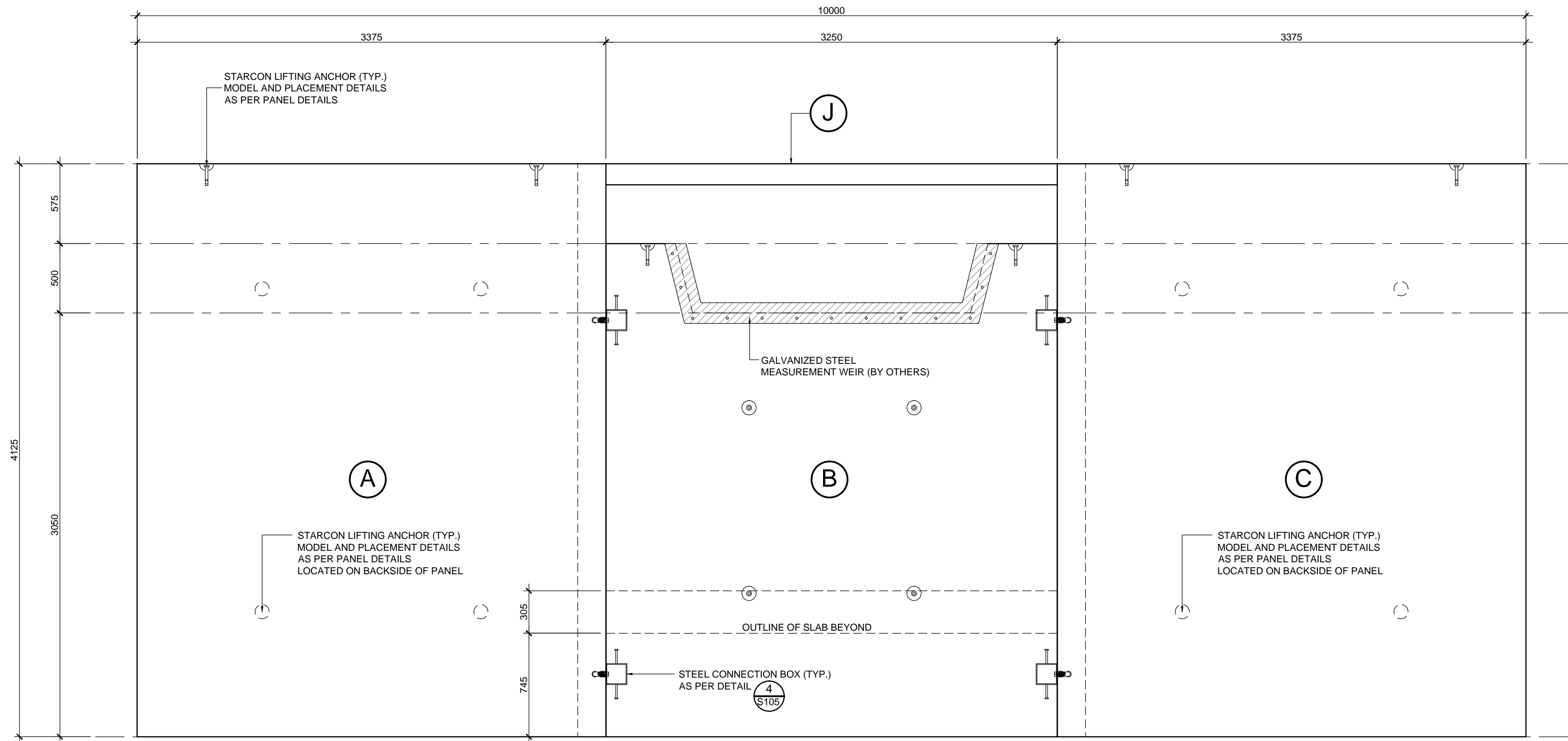
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2441-00428-00

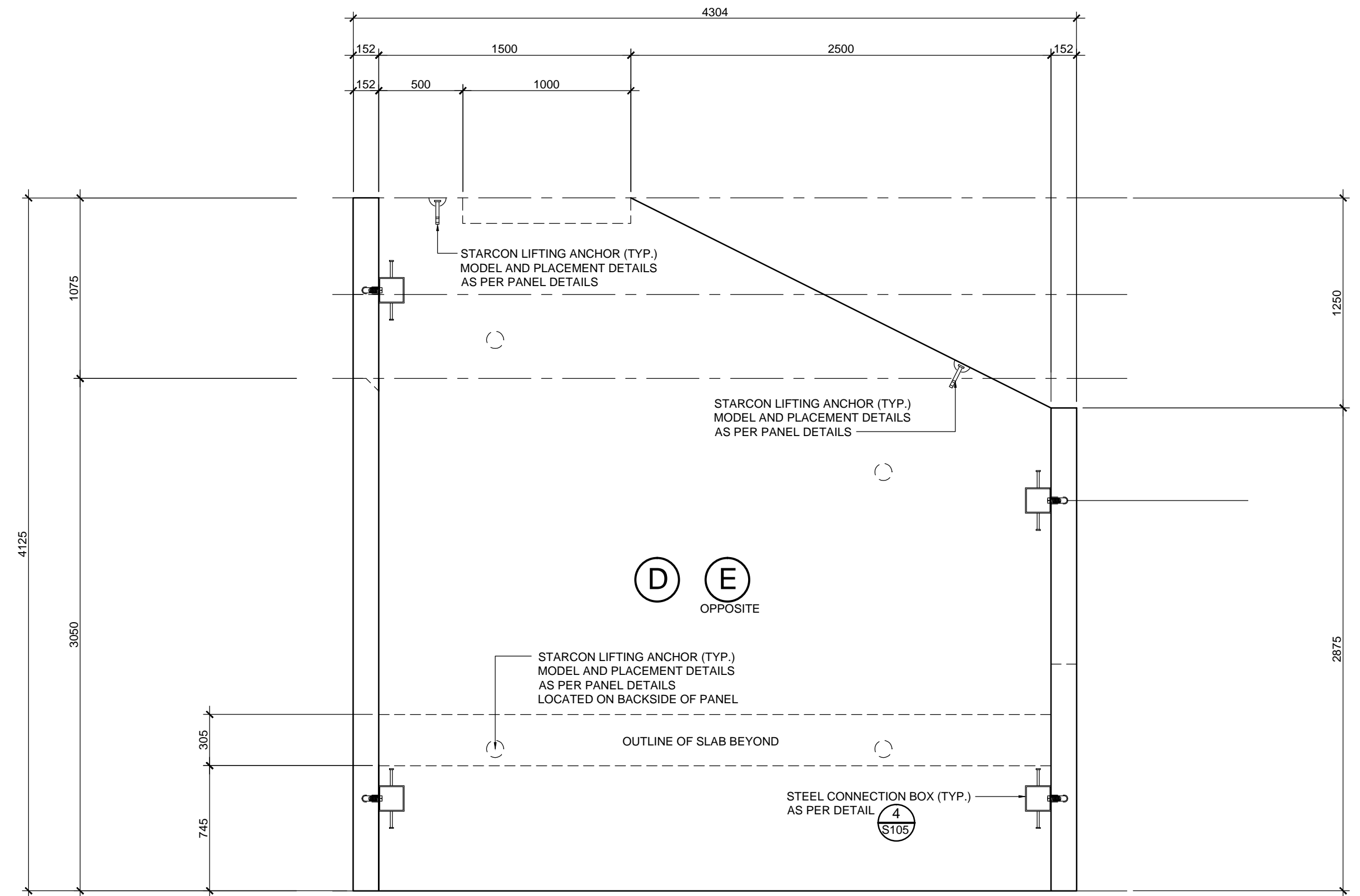
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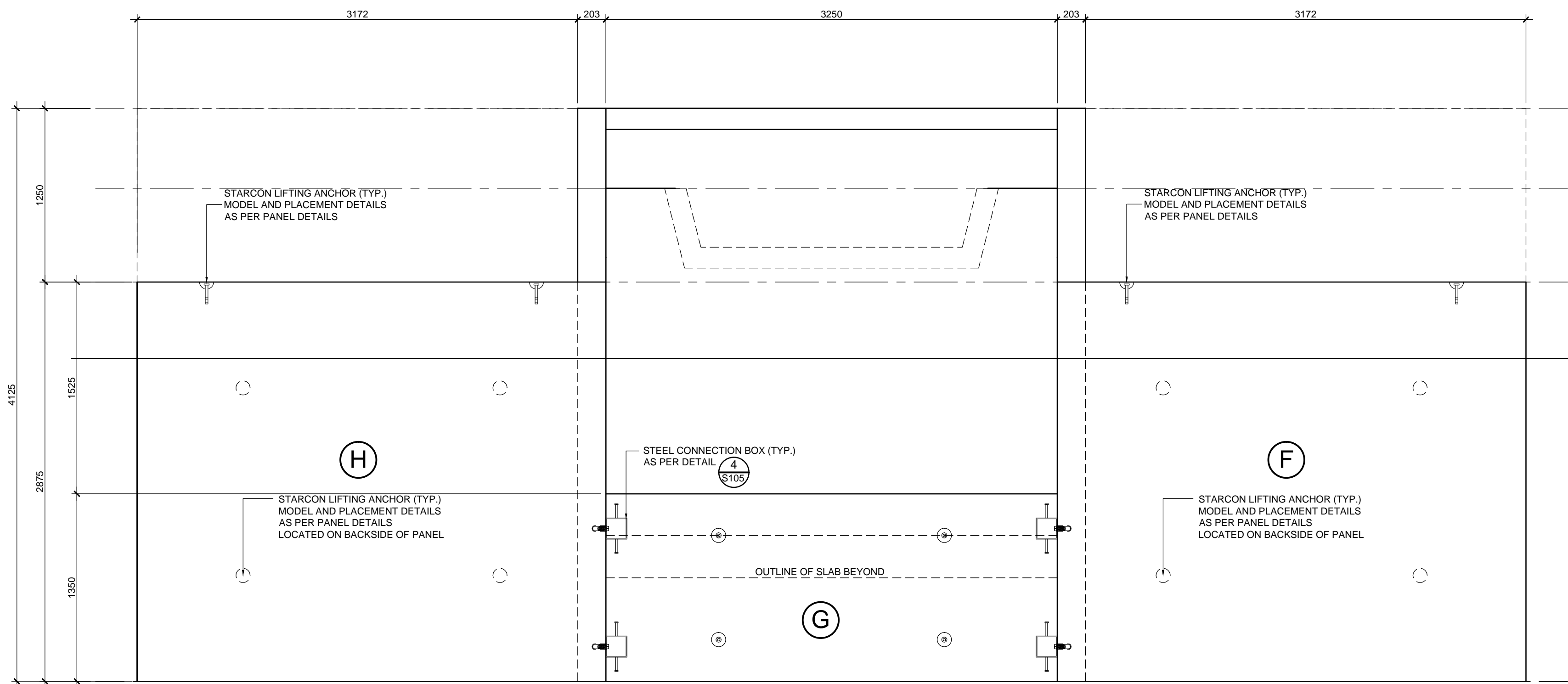
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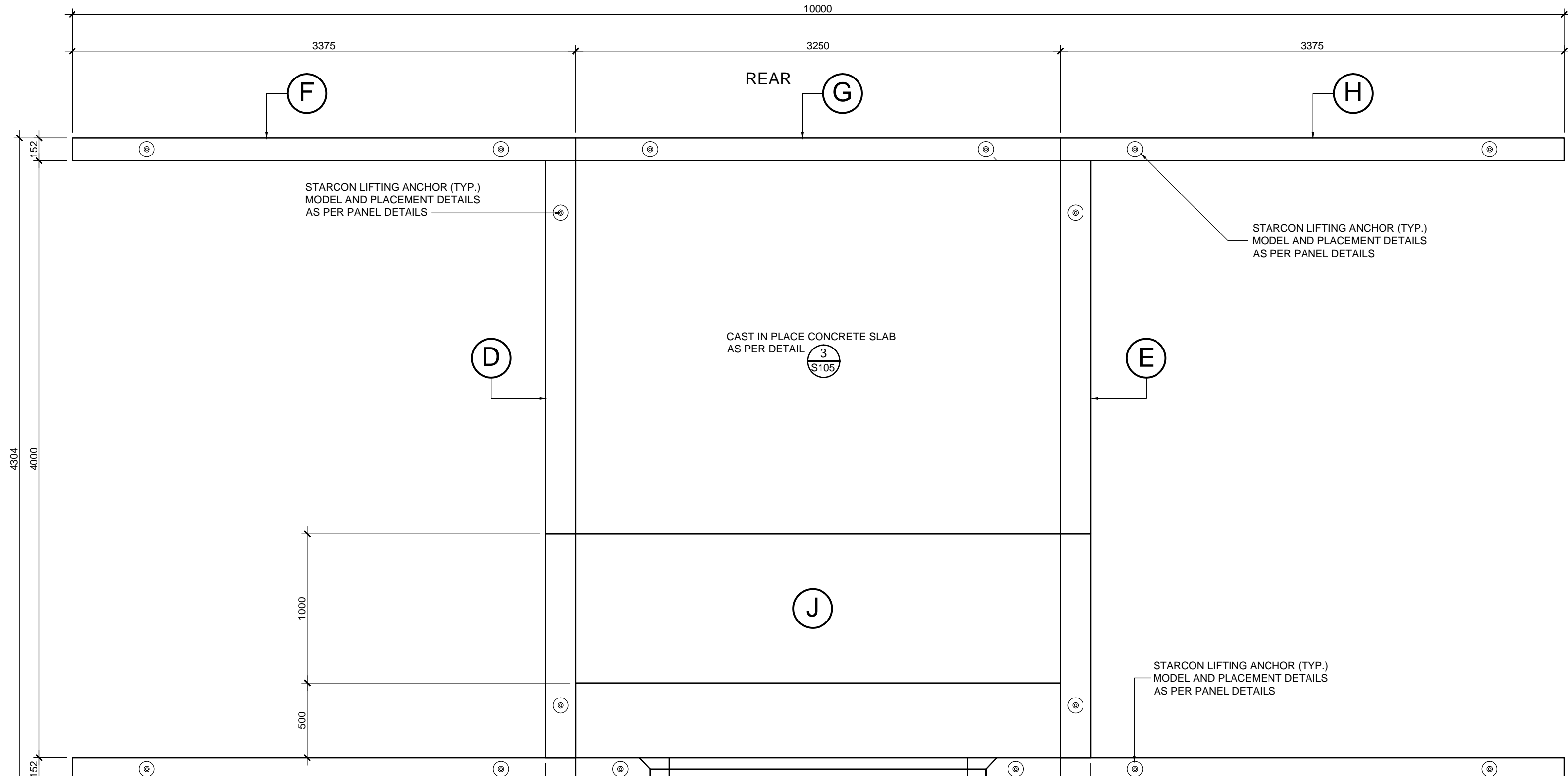
**A FRONT ELEVATION**  
SCALE: 1:25



**B SIDE ELEVATION**  
SCALE: 1:25



**C REAR ELEVATION**  
SCALE: 1:25



**D PLAN VIEW**  
SCALE: 1:25

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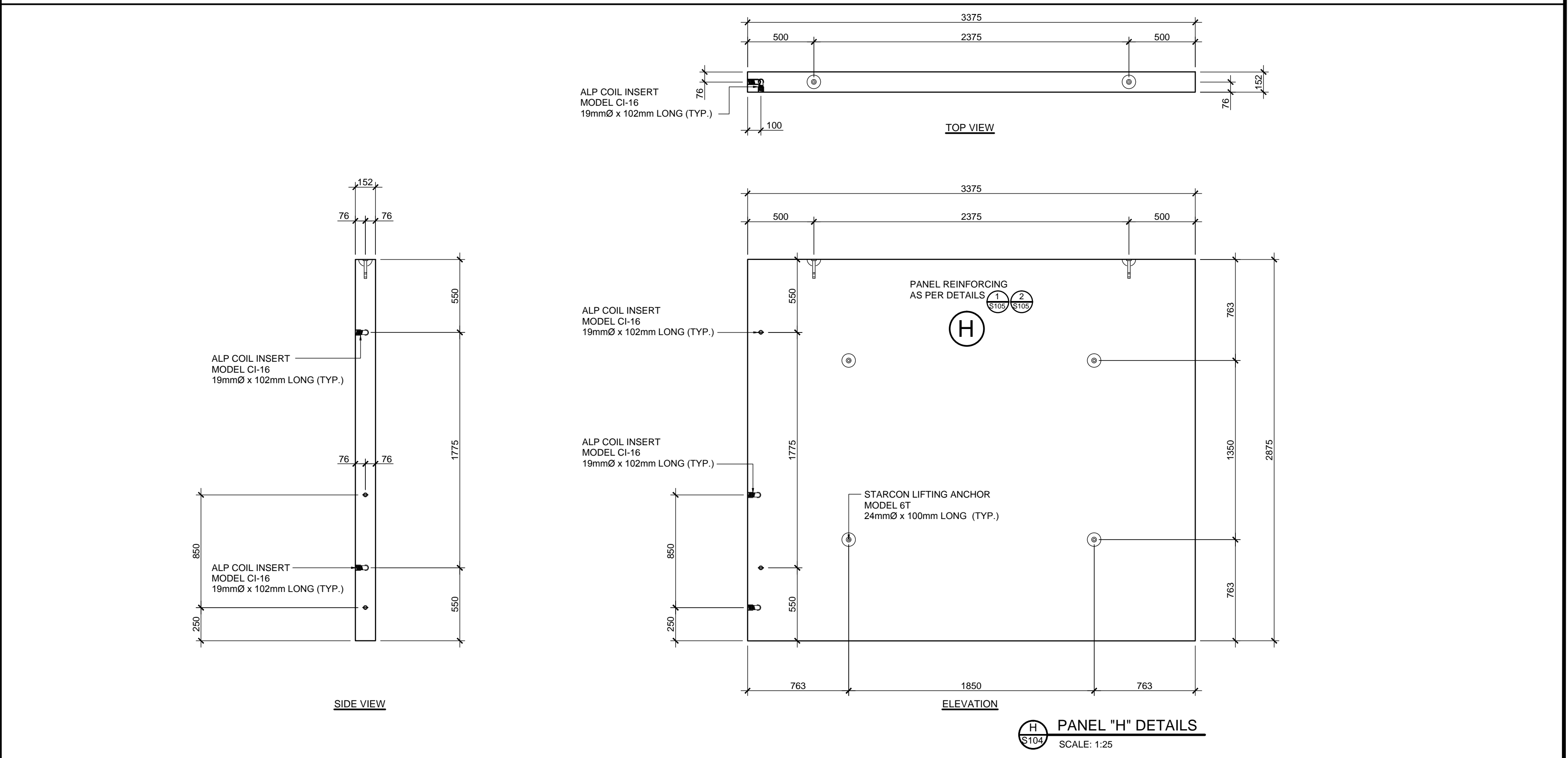
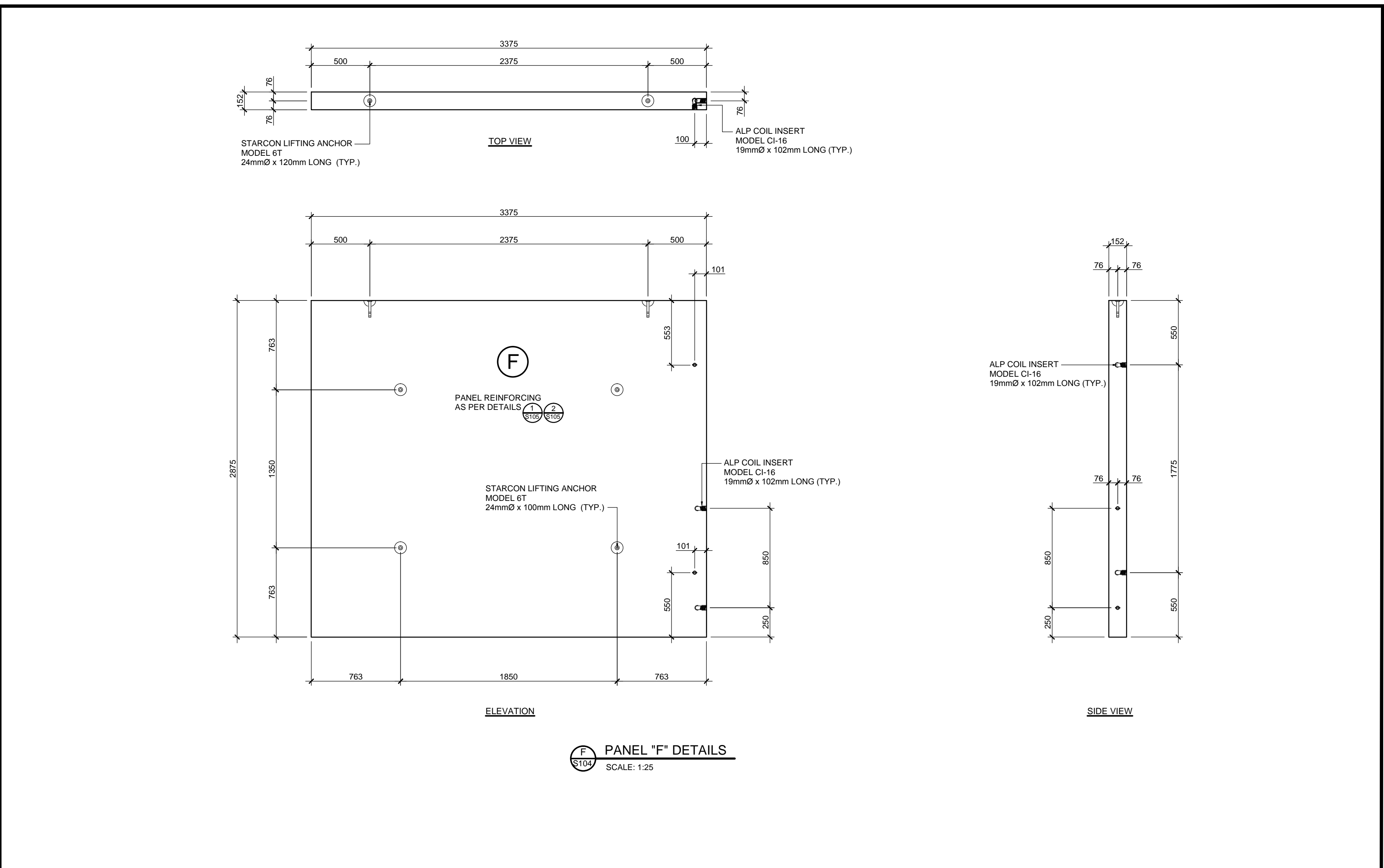




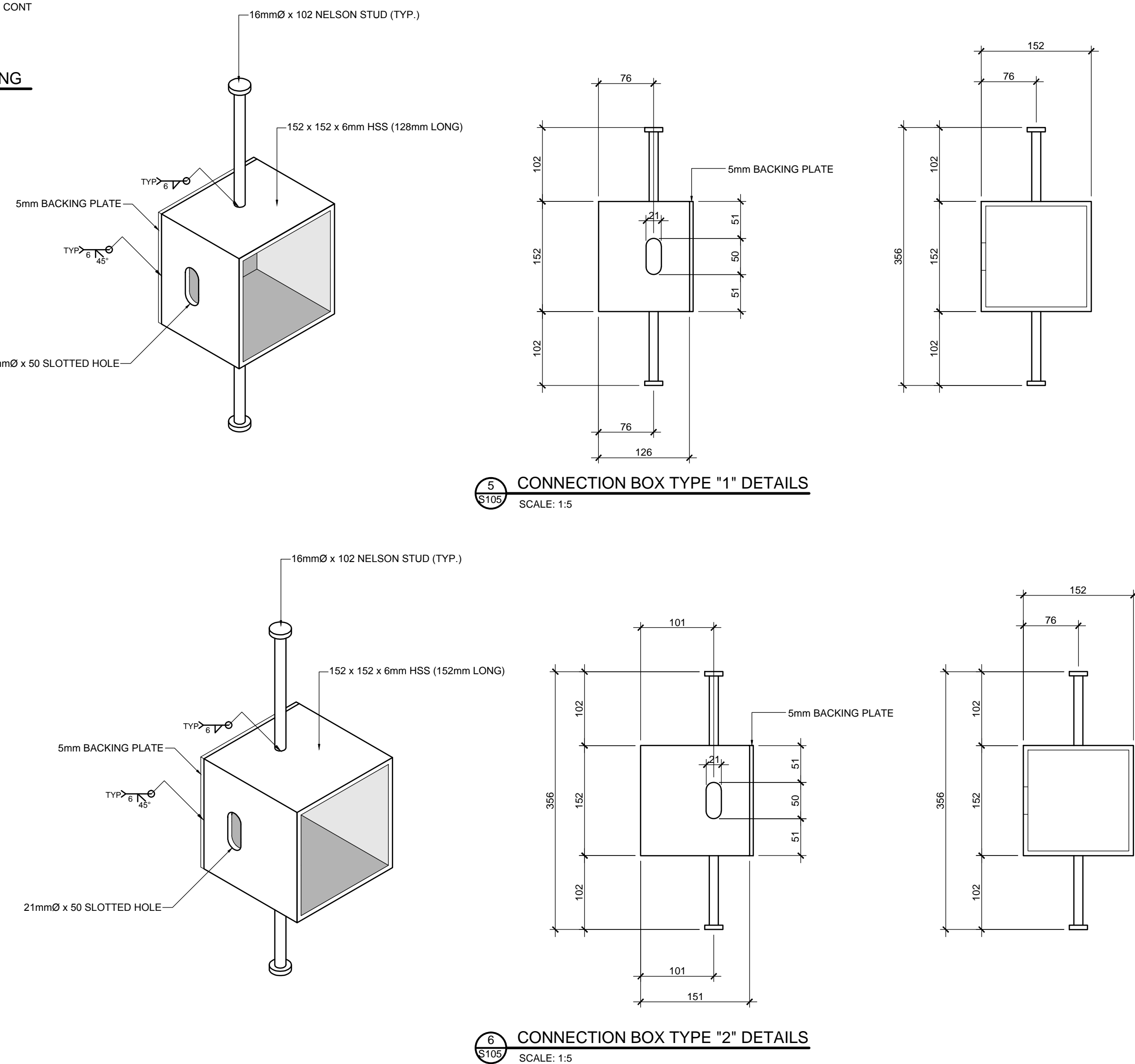
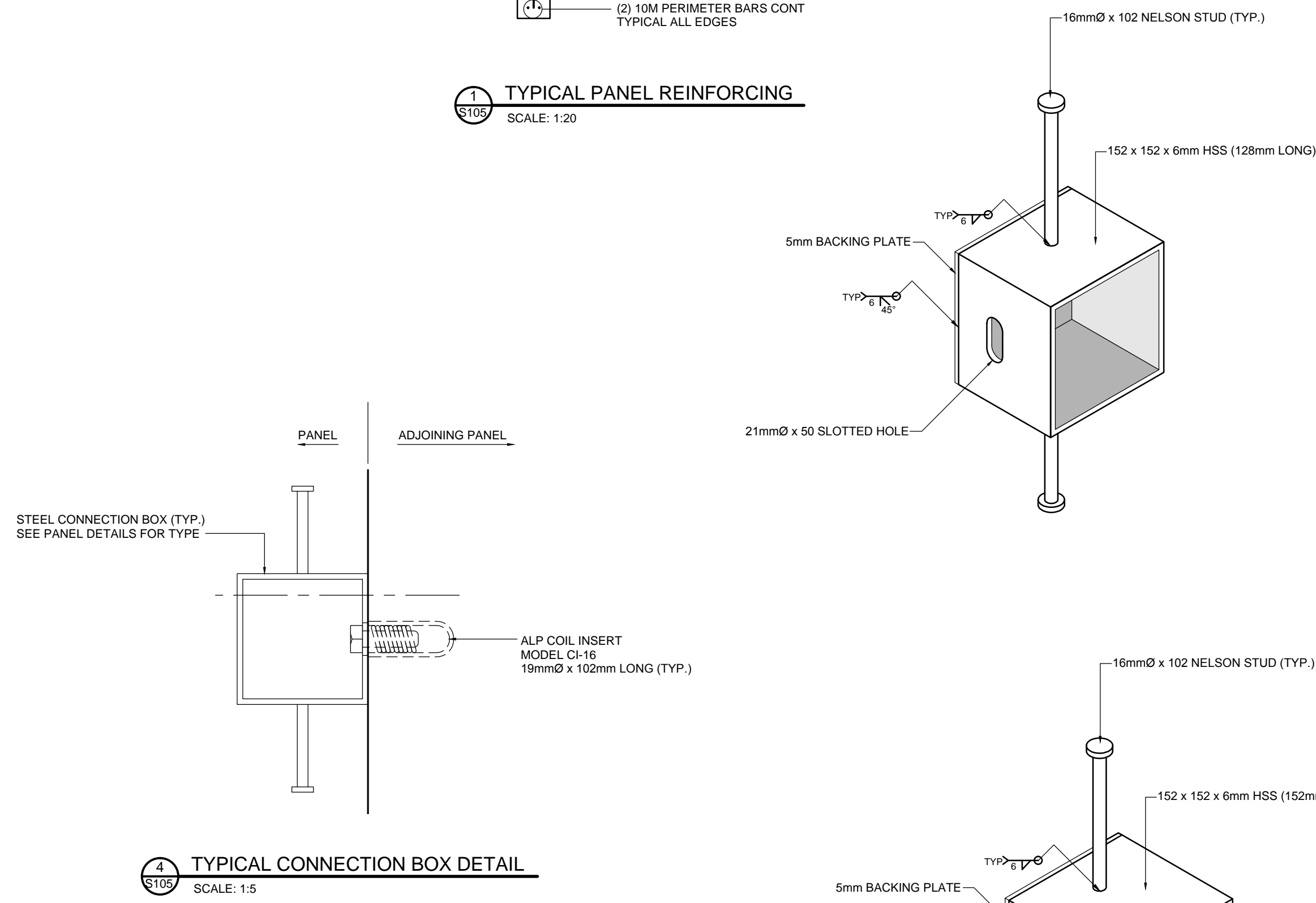
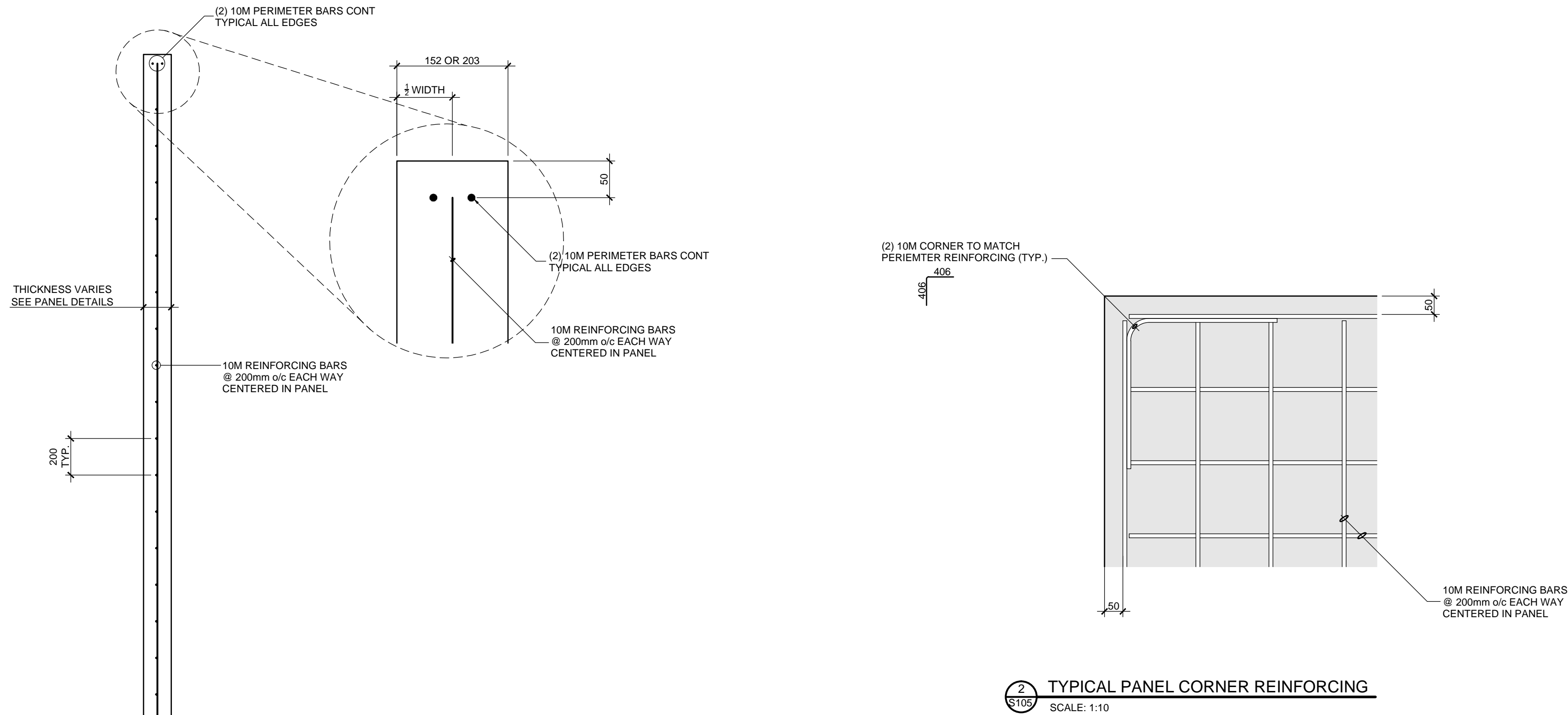
ORIGINAL DWG SIZE: ARCH D (24" x 36")



TECK - FORDING RIVER  
FISH BARRIER STRUCTURE  
PANEL "A", "B", "C" AND "D" DETAILS





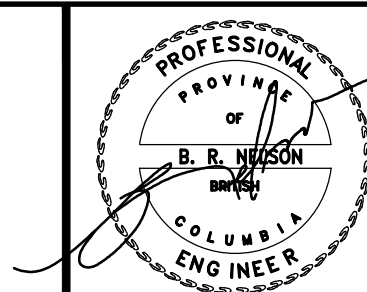
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**McElhanney**  
McElhanney Consulting Services Ltd.

42 - 8th Avenue S  
Suite 200  
Cranbrook BC  
Canada V1C 2K3  
Tel (250) 489-3013



Approved Sealer

**TRIKON PRECAST**  
601 PATTERSON STREET WEST, CRANBROOK, BC, V1C 6T3

TECK - FORDING RIVER  
FISH BARRIER STRUCTURE  
PANEL "J", CAST IN PLACE SLAB AND CONNECTOR DETAILS

Drawing No.

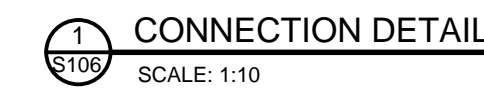
S105

Project Number	2441-00428-00
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Rev.  
2

1. STRUCTURAL STEEL IS TO CONFORM TO CSA G40.21 WITH THE FOLLOWING GRADES:
  - HSS SECTIONS, CLASS C
  - BARS AND PLATES
  - 350W
  - 250W OR 300W
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**McElhanney**  
McElhanney Consulting Services Ltd


  
 July 29, 2016
   
 Approved Sealed

Drawing No.	
S106	
Project Number	Rev.
2441-00428-00	2

DESTROY ALL PRINTS BEARING PREVIOUS REVISION



GENERAL NOTES:

1. ABUTMENTS SHALL BE PRECAST CONCRETE UNLESS OTHERWISE APPROVED BY THE MINISTRY REPRESENTATIVE. IF CAST-IN-PLACE CONCRETE ABUTMENTS ARE APPROVED BY THE MINISTRY REPRESENTATIVE, THEN ABUTMENTS SHALL BE CAST FULL LENGTH WITH CONTINUOUS REINFORCING STEEL ACROSS THE ABUTMENT CENTRELINE.
2. NOTES 13, 14 AND 15 APPLY TO THE PRECAST CONCRETE OPTION ONLY.
3. DESIGN LIVE LOAD FOR THE UNGULATE GUARD IS CL-625 TRUCK AS PER CAN/CSA-S6-00.
4. DETAILS OF WILDLIFE FENCE SHALL BE AS PER CONTRACT DRAWINGS AND SPECIAL PROVISIONS OR AS DIRECTED BY THE MINISTRY REPRESENTATIVE.
5. WARNING SIGNS SHALL BE INSTALLED ON THE APPROACHES TO THE UNGULATE GUARDS TO WARN CYCLISTS TO STOP AND DISMOUNT.

CONCRETE:

6. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 35 MPa AT 28 DAYS.
7. REINFORCING STEEL SHALL CONFORM TO CSA G30.18M, GRADE 400R.
8. ALL REINFORCING STEEL SHALL HAVE 50 mm MINIMUM COVER UNLESS NOTED OTHERWISE.
9. ALL EXPOSED EDGES OF CONCRETE SHALL HAVE 20 mm CHAMFER UNLESS NOTED OTHERWISE.
10. ANCHOR BOLTS SHALL CONFORM TO ASTM A307 AND SHALL BE HOT DIP GALVANIZED TO CAN/CSA G164M.
11. GROUT SHALL BE PRE-MIXED, NON-SHRINK, NON-METALLIC, NON-STAINING CEMENTITIOUS GROUT SUITABLE FOR WITHSTANDING VIBRATIONS AND IMPACT LOADINGS IN EXTERIOR SERVICE CONDITIONS, AND SHALL BE SUBJECT TO APPROVAL BY THE MINISTRY REPRESENTATIVE. GROUT SHALL ACHIEVE A MINIMUM COMPRESSIVE STRENGTH OF 40 MPa AT 28 DAYS AND HAVE AIR CONTENT BETWEEN 5% AND 7% BY VOLUME.
12. REINFORCING STEEL SPLICES SHALL NOT BE PERMITTED FOR PRECAST CONCRETE ABUTMENTS. FOR CAST-IN-PLACE ABUTMENTS, MINIMUM LAP SPLICE LENGTHS FOR HORIZONTAL REINFORCING BARS SHALL BE AS FOLLOWS:  
15M BARS - 525 mm      20M BARS - 700 mm
13. LIFTING DEVICES SATISFACTORY TO THE ENGINEER SHALL BE PROVIDED. ONLY VERTICAL LIFTS SHALL BE PERMITTED. CARE SHALL BE TAKEN TO PREVENT SUDDEN IMPACT LOADS.
14. THE CONTRACTOR SHALL ENSURE THAT ALL PRECAST CONCRETE IS CHECKED FOR STRIPPING AND HANDLING STRESSES.
15. PRECAST CONCRETE ELEMENTS SHALL CONFORM WITH M.O.T. STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, SECTION 415, MANUFACTURE AND ERECTION OF PRECAST AND PRESTRESSED CONCRETE MEMBERS.

STRUCTURAL STEEL:

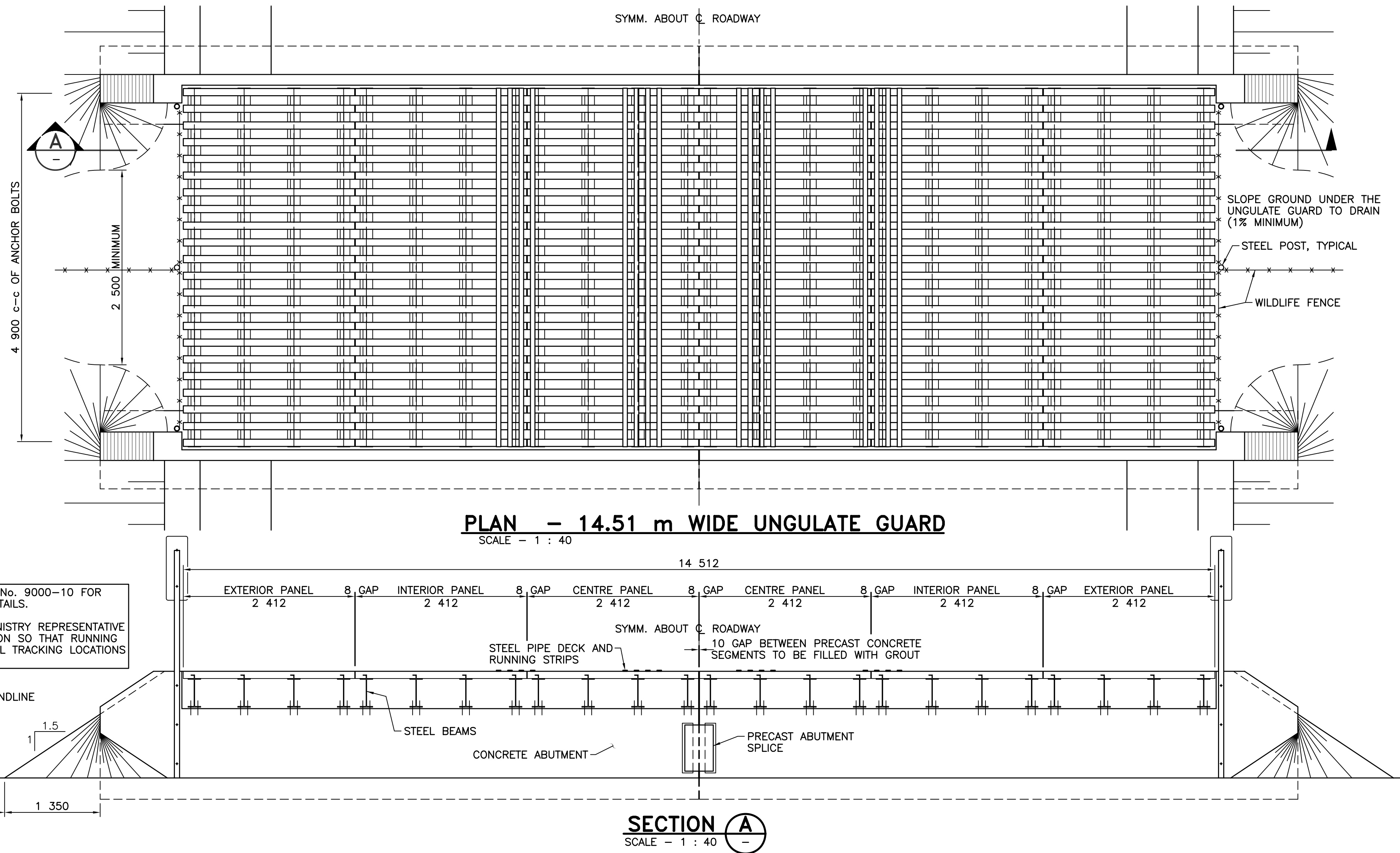
16. STEELWORK SHALL BE SUPPLIED, FABRICATED AND COATED IN ACCORDANCE WITH M.O.T. STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, SECTION 422, MISCELLANEOUS STEELWORK, WITH THE EXCEPTION THAT THE PAINT SYSTEM TO BE APPLIED SHALL BE AS NOTED BELOW UNDER 'PAINTING'.
17. STRUCTURAL STEEL BEAMS, ANGLES AND MISCELLANEOUS PLATES SHALL CONFORM TO CSA G40.21M, GRADE 300W. HSS MEMBERS SHALL CONFORM TO CSA G40.21M, GRADE 350W.
18. STEEL PIPES SHALL BE SEAMLESS PIPE CONFORMING TO ASTM A53 WITH MINIMUM YIELD STRENGTH OF 241 MPa.
19. WELDING SHALL ONLY BE UNDERTAKEN BY A COMPANY CERTIFIED BY THE CANADIAN WELDING BUREAU TO THE REQUIREMENTS OF CSA W47.1, DIVISION 3 OR BETTER, WITH ALL WORK PERFORMED TO THE REQUIREMENTS OF CSA W59.
20. ALL COMPONENTS OF THE PRECAST CONCRETE ABUTMENT SPLICE DETAIL (IF REQUIRED) SHALL BE GALVANIZED TO CAN/CSA G164M.

EXCAVATION AND BACKFILLING:

21. SUBGRADE AND COMPACTED FILL SHALL BE PREPARED IN ACCORDANCE WITH RECOMMENDATIONS OF A MINISTRY GEOTECHNICAL ENGINEER, WITH CONSIDERATION GIVEN TO PREVENTION OF FROST DAMAGE TO FOUNDATIONS. (i.e. - USE OF SELECT GRANULAR MATERIALS, ADEQUATE DRAINAGE, ETC.)
22. FOUNDATION EXCAVATION TO SUITABLE MINERAL SOIL WITH A SAFE ALLOWABLE BEARING PRESSURE OF 120 kPa IS ASSUMED. OVER-EXCAVATION UNDER THE FOOTING SHALL BE BACKFILLED WITH SELECT GRANULAR SUB-BASE MATERIAL.
23. FOOTING EXCAVATION SHALL NOT BE LARGER THAN IS REASONABLY NECESSARY TO CONSTRUCT THE FOUNDATION.
24. PIPE DECK PANELS SHALL BE INSTALLED AND SECURELY CONNECTED TO ABUTMENTS PRIOR TO BACKFILLING.
25. ABUTMENTS SHALL BE INSTALLED PLUMB AT SITES WHERE THE GUARD IS INSTALLED ON A LONGITUDINAL GRADE. FINAL LONGITUDINAL GRADE OF DECK PANELS SHALL NOT EXCEED 8% AND SHALL BE ACCOMMODATED BY VARYING THE GROUT PACK THICKNESS A MAXIMUM OF  $\pm 10$  mm AT BEAM SUPPORT LOCATIONS. TAPERED WASHERS SHALL BE PROVIDED UNDER ANCHOR BOLT NUTS FOR DECK PANELS INSTALLED ON A GRADE.
26. BACKFILLING OF THE ROAD SUBGRADE SHALL BE CARRIED OUT USING EXCAVATED MATERIAL, UNLESS OTHERWISE DETERMINED BY THE MINISTRY REPRESENTATIVE. BACKFILL ABOVE THE ROAD SUBGRADE ELEVATION SHALL MATCH THE PAVEMENT STRUCTURE EXCAVATED AND SHALL BE PLACED AND COMPACTED IN ACCORDANCE WITH M.O.T. STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, SECTION 202, GRANULAR SURFACING BASE AND SUB-BASES.
27. FINAL SOIL GRADE BENEATH THE GUARD SHALL BE SHAPED TO PROVIDE DRAINAGE OF SURFACE WATER TO ROADSIDE DITCHES AND PREVENT PONDING OF WATER BENEATH THE GUARD.
28. EXCAVATED MATERIAL NOT REQUIRED SHALL BE HAULED AWAY AND DISPOSED OF BY THE CONTRACTOR.
29. ROADWAY, INCLUDING ANY DISTURBED PAVEMENT, SHALL BE RESTORED TO ITS ORIGINAL CONDITION AS DIRECTED BY THE MINISTRY REPRESENTATIVE.

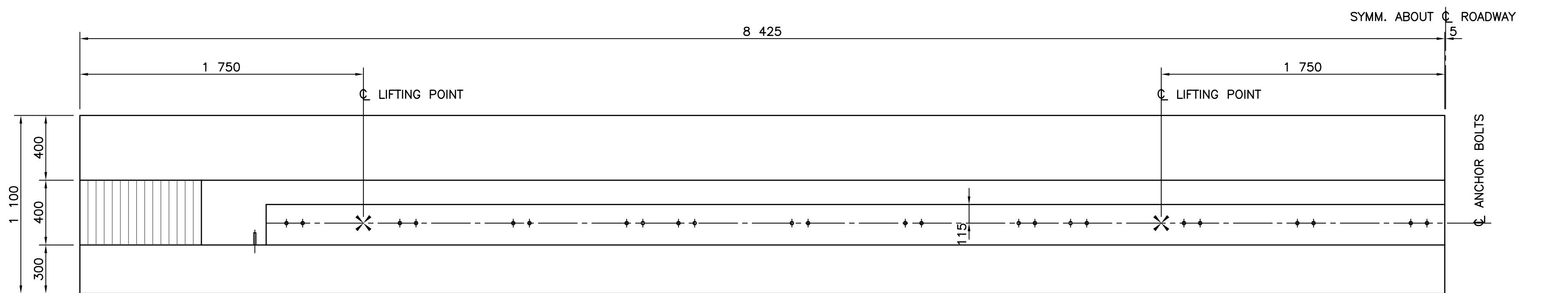
PAINTING:

30. UNLESS OTHERWISE NOTED, ALL STRUCTURAL STEEL SHALL BE BLAST CLEANED AND SHOP SOLVENT WASHED TO SSPC-SP6, AND SHALL RECEIVE ONE PRIME COAT OF DEVOE CATHA COAT 302H OR EQUIVALENT AS APPROVED BY THE MINISTRY REPRESENTATIVE WITH A MINIMUM THICKNESS OF 65  $\mu$ m, AND A MID COAT OF DEVOE BARRUST 235 OR EQUIVALENT AS APPROVED BY THE MINISTRY REPRESENTATIVE WITH A MINIMUM THICKNESS OF 100  $\mu$ m. TOP COAT IS NOT REQUIRED.
31. ANY DAMAGED AREA OF COATING SHALL BE TOUCHED UP IN ACCORDANCE WITH M.O.T. STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, SECTION 422, MISCELLANEOUS STEELWORK.
32. ALL FIELD WELDS AND OTHER DAMAGED GALVANIZED SURFACES SHALL BE THOROUGHLY CLEANED AND TOUCHED UP WITH TWO COATS OF A MINISTRY APPROVED ORGANIC ZINC RICH PAINT.

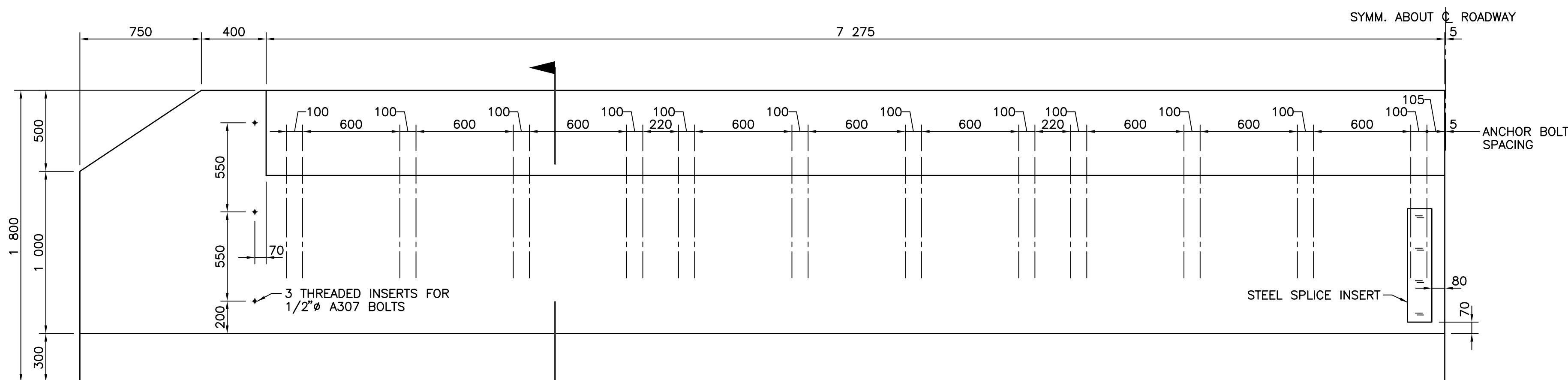


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Rev	Date	Description	Init
A	Mar 14/05	REVISED TO 8 mm GAP BETWEEN PIPE DECK PANELS	S.P.S.
REVISIONS			
<b>BRITISH COLUMBIA</b> Ministry of Transportation Bridge Engineering			
<b>14.51 m WIDE UNGULATE GUARD GENERAL ARRANGEMENT</b>			
PREPARED UNDER THE DIRECTION OF		DESIGNED <u>  A.A.S.  </u> DATE <u>Nov., 2003</u>	
ORIGINAL SIGNED BY: P. SARGENT, P.ENG.		CHECKED <u>  S.P.S.  </u> DATE <u>Nov., 2003</u>	
ENGINEER OF RECORD		DRAWN <u>  D.R.M.  </u> DATE <u>Mar., 2005</u>	
DATE <u>JUNE 12, 2007</u>		SCALE <b>AS NOTED</b>	
FILE No.	PROJECT No.	REG.	DRAWING No.
			<b>9000-9</b>
CANCEL PRINTS BEARING PREVIOUS LETTER			

H-3084(10-03)



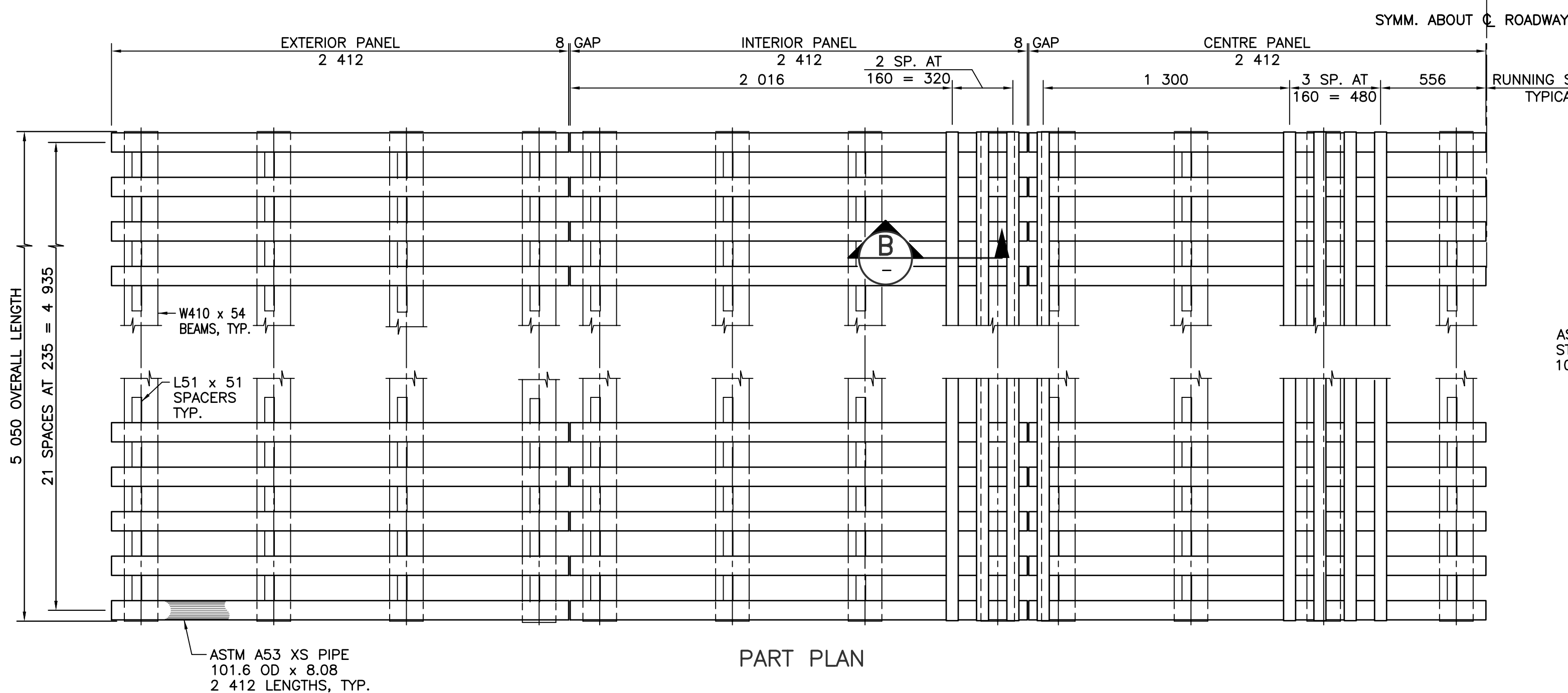
PLAN



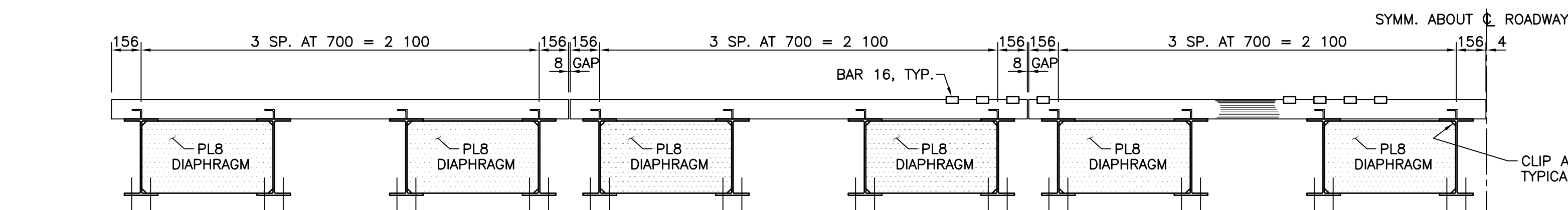
ELEVATION

### PRECAST FOUNDATION 14.51 m WIDE UNGULATE GUARD

SCALE - 1 : 20



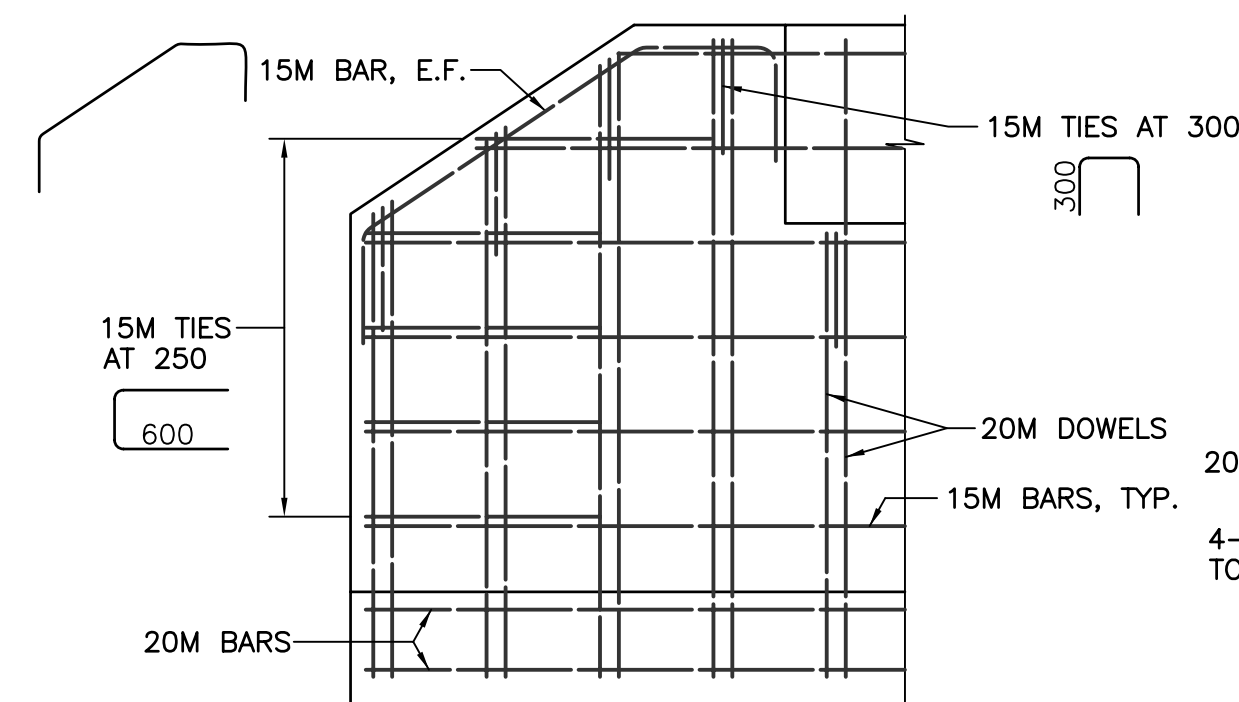
PART PLAN



END VIEW

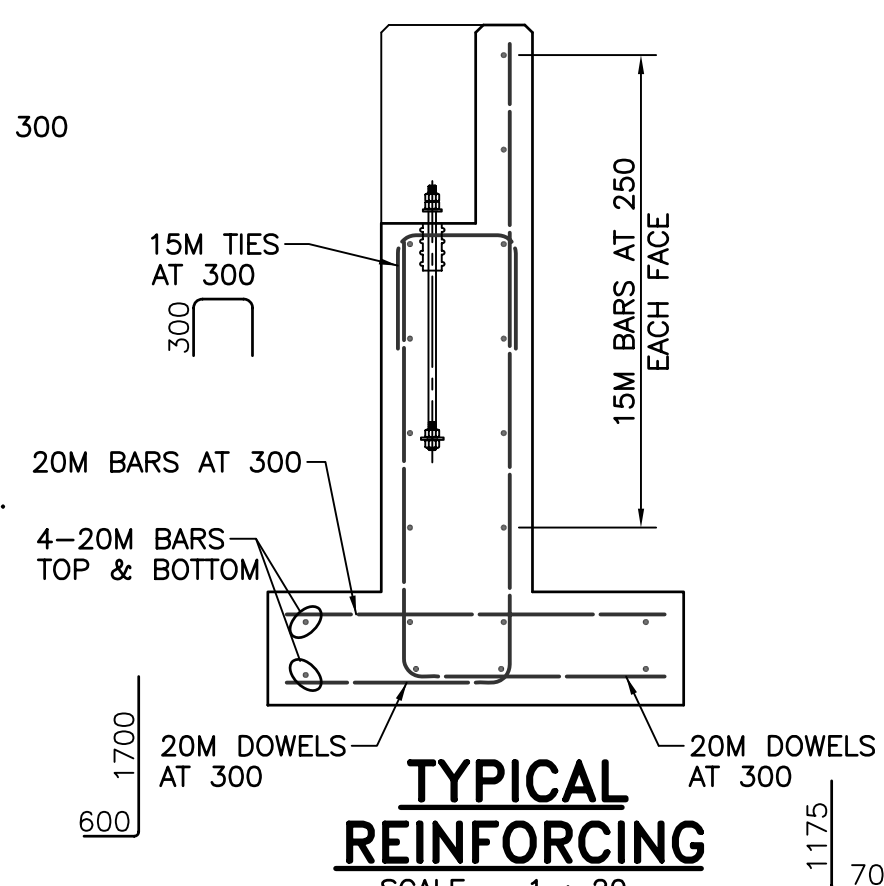
### PIPE DECK 14.51 m WIDE UNGULATE GUARD

SCALE - 1 : 20



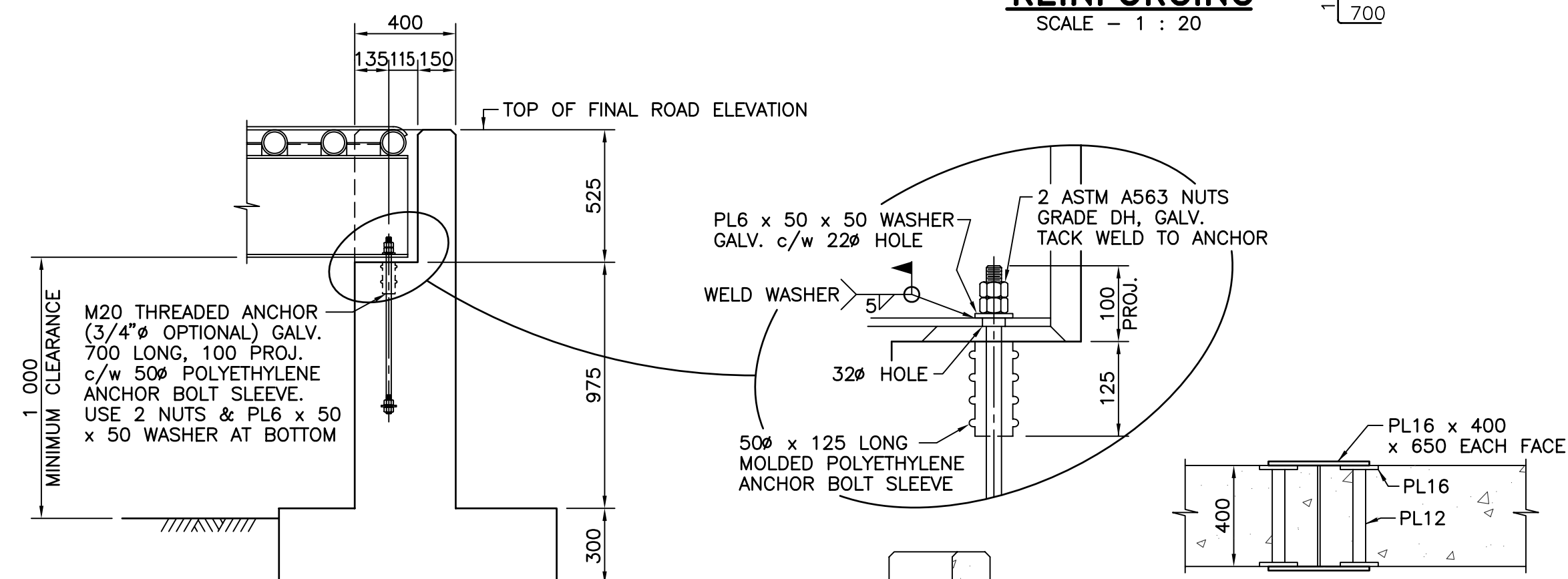
### TYPICAL END REINFORCING

SCALE - 1 : 20



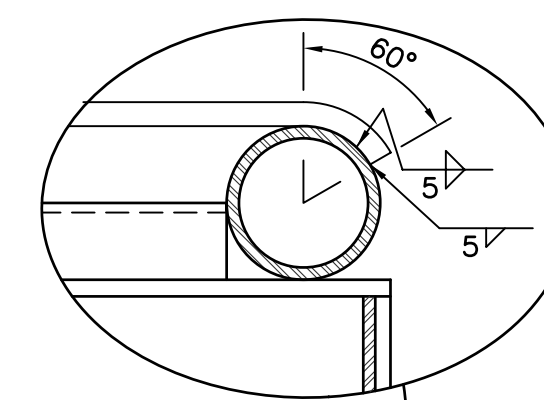
### TYPICAL REINFORCING

SCALE - 1 : 20



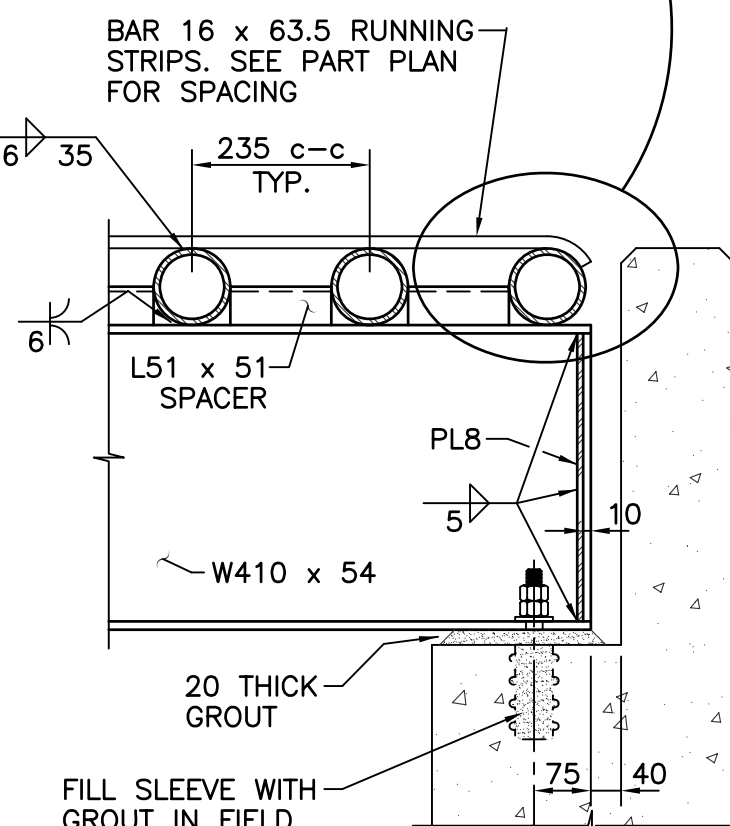
### SECTION A

SCALE - 1 : 20



### SECTION B

SCALE - 1 : 10





### SECTION C

SCALE - 1 : 10

### NOTES:

1. REFER TO DRAWING No. 9000-9 FOR GENERAL NOTES AND SPECIFICATIONS.

AUTHORIZED BY	
RECOMMENDED	ACCEPTED FOR CONSTRUCTION
ORIGINAL SIGNED BY: K. BASKIN, P.ENG.	ORIGINAL SIGNED BY: D. NYLAND, P.ENG.
CHIEF BRIDGE ENGINEER	CHIEF ENGINEER
DATE JUNE 14, 2007	DATE JUNE 15, 2007

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R E V I S I O N S			
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<div>--- --- ---</div> <div>14.51 m WIDE UNGULATE GUARD ABUTMENT AND DECK DETAILS</div>			
PREPARED UNDER THE DIRECTION OF		DESIGNED <u>A.A.S.</u> DATE <u>Nov., 2003</u>	
ORIGINAL SIGNED BY: P. SARGENT, P.ENG.		CHECKED <u>S.P.S.</u> DATE <u>Nov., 2003</u>	
ENGINEER OF RECORD		DRAWN <u>D.R.M.</u> DATE <u>Mar., 2005</u>	
DATE      JUNE 12, 2007		SCALE AS NOTED	
FILE No.		NEGATIVE No.	
PROJECT No.		REG.	
		9000-10   A	

CANCEL PRINTS BEARING PREVIOUS LETTER