REGIONAL DISTRICT OF NANAIMO

REQUEST FOR TENDER No. 21-025

Sludge Storage Cell 3 Replacement

Addendum 2
(22 pages)
Issued: April 1, 2021

Delete:

Closing Date & Time: on or before 3:00 PM Pacific Time on April 16, 2021

Replace with:

Closing Date & Time: on or before 3:00 PM Pacific Time on April 23, 2021

Please find enclosed Addendum No.2 from Project Engineer Scot Merriam, P.Eng. of SRM Projects.

End of Addendum 2

REGIONAL DISTRICT OF NANAIMO	*Request for Tenders No. 21-025* Sludge Storage Cell 3 Replacement **Addenda-2**	Date: March 31, 2021 Revision: 0

1. **Note** – The tender closing date is revised from Friday April 16, 2021 to **Friday April 23, 2021**.
2. **Note** – Please refer to the attached draft sludge storage cell 3 shop drawings from the FRP tank fabricator. These are provided for information only. Final approved shop drawings will be provided to the successful bidder upon award.
3. **Note** – All electrical and instrument work is by Others.
4. **Note** – Drawing C-1001 markup has been provided for information only, pertaining solely to the tank location on FCPCC site.
5. **Note** – The ladder from the existing tank is to be saved and moved to another laydown area on FCPCC site for later reuse by RDN.
6. **Question:** Does RDN intend to trim the branches of the trees adjacent to the existing sludge storage cell 3 before replacement?

   Answer: *No. The Contractor will be responsible for any branch trimming required for any part of the Work.*
7. **Question:** What are the weights of the existing and new tanks?

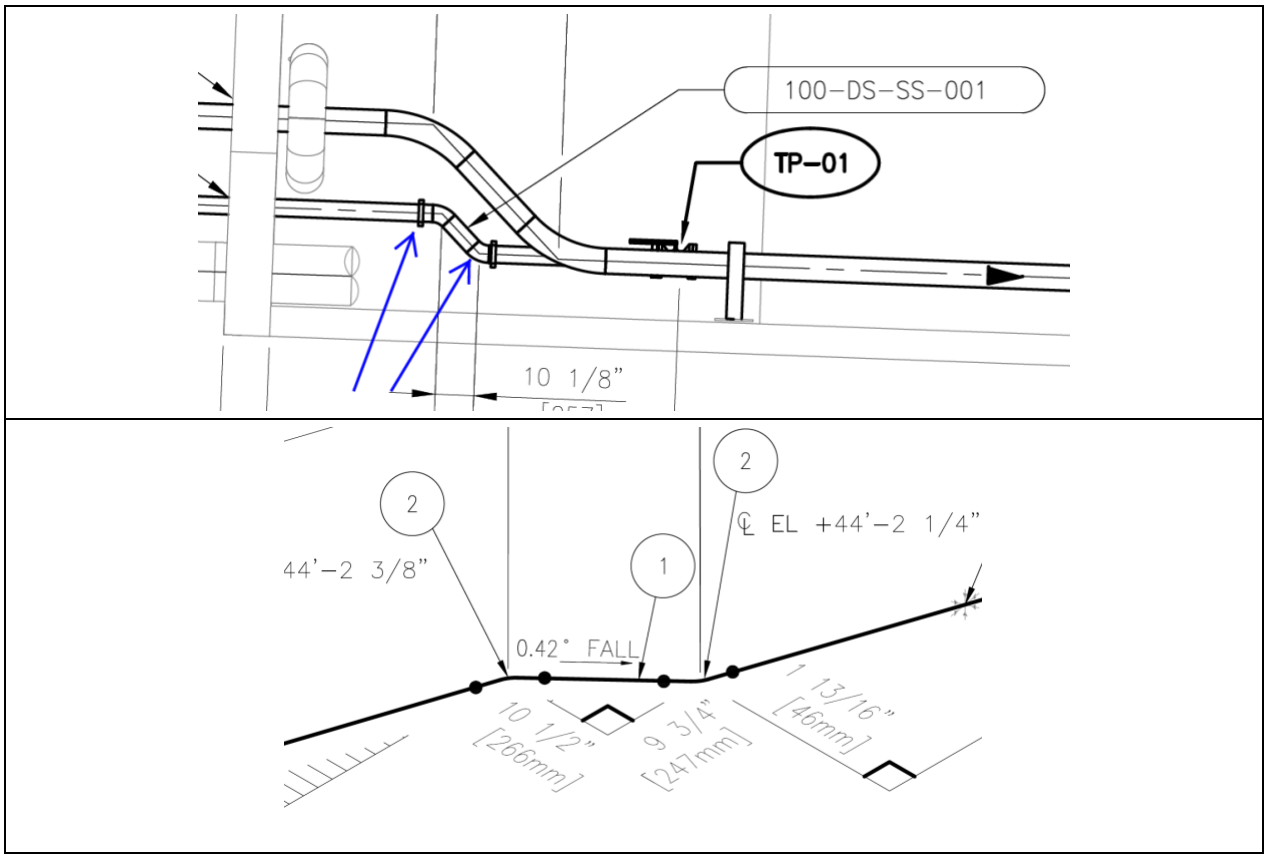
   Answer: *The weight of the existing 1974 vintage 304 SS tank is unknown (Contractor to estimate and apply safety factor). The weight of the bare new tank is in the order of 2,500 kg (5,500 lb).*
8. **Question:** Will the existing sludge tank be cleaned out before the contract Work begins?

   Answer: *Yes. The tank will be hosed out with water and left in a sufficiently clean state to enter if necessary, demolish and transport off site.*
9. **Question:** Who is responsible for unloading the new tank?

   Answer: *The Contractor is responsible for unloading the new tank, directly from the tank fabricator's transport truck. Please refer to attached photos of the tank fabricator's transport trailer. It is anticipated that the transport truck will back into the FCPCC rear entrance off Lee Road.*
10. **Question:** Will the tank be delivered on a crane truck?

    Answer: *No.*
11. **Question:** Is (confined space) entry of the new tank required?

    Answer: *Entry of the new tank is not part of the current Contract Scope of Work; however, if after cleanout of the existing tank the RDN discovers there is a compressed air distribution header inside the existing tank, RDN may request that the Contractor enter the tank and field install a similar air distribution header. Internal tank brackets are being allowed in case this is required.*
12. **Question:** Drawing FC-M-311 shows 2 flanges next to the 45 bend on the 100-DS-SS-001 line but they are missing in the isometric shown on drawing 300-100-DS-SS-001. Which drawing is correct? (refer to screenshots next page)



Answer: *The isometric is correct. The "flanges" indicated by the blue arrows in the above screenshot are actually intended to portray existing pipe supports that are to be reused.*

13. **Question:** Can you please confirm we are to repave with 4'' asphalt? It appears that the existing is 2'' or 3''

    Answer: *It is expected that the existing asphalt will not be of uniform thickness. The new asphalt may be less than 4" thick but should not be less than the maximum thickness of the existing asphalt (i.e., if the existing asphalt is 2" thick at some locations but 3" thick at other locations the minimum thickness of the new asphalt should be 3").*

14. **Question:** Drawing 15D-20.12 sheet 7 references the steel I beam to be sized as per 12D-20.11 sheet 1 table K1. Can you please provide this table?

    Answer: *The support member size is indicated on the isometric drawing in the bill of materials. Table K1 is only required if the support member size is not indicated on the Drawings.*

15. **Question:** Can you provide the source Microsoft Project file provided in the tender documents as a PDF?

    Answer: *Yes, bidders may request the source file from Scot Merriam at smerriam@srmprojects.ca to receive a copy by email. Note that the Contractor is entirely*

responsible for creating their own detailed project schedule based on the target tank installation date (with tolerance as stated in the tender instructions) and the net shutdown time allowed for construction.

16. **Question:** What size of concrete barrier and bull nose barrier would you like installed as shown on drawing FC-M-311?

    Answer: *The design has assumed 460 mm barriers as per attached MOT standard.*

17. **Question:** Is the handrail around the top of the tank shipped separately to be installed by the contractor or will the tank arrive pre-installed?

    Answer: *The handrail around the top of the tank will be shipped separately, in five sections c/w mounting hardware, for field installation by the Contractor. Note: All steel attachments on the tank will be pre-fitted by the tank fabricator before being shipped out for galvanizing.*

18. **Question:** Will the tank fabricator be supplying a bolting template/layout or will the tank be shipped to site and we will have to provide or own?

    Answer: *The tank fabricator will not be supplying an anchor bolt template. The clamp bracket anchoring design is conceived to allow for minor deviations in anchor bolt location. Please refer to the tank fabricator's draft shop drawings for additional information. The Contractor remains responsible for meeting the anchor bolt tolerances necessary for installation of the tank as per the Drawings.*

19. **Question:** Where are the new tank lifting lugs located?

    Answer: *Please refer to the tank fabricator's draft shop drawings for lifting trunnion locations. The lift must be completed using a spreader bar on the main crane line and a tail crane connected to the tank bottom with a long webbing choker sling.*

20. **Question:** Would it be possible to use a flexible line for the air line?

    Answer: *No.*

21. **Question:** Is the airline to be exposed and unsupported from the 18'' CSP riser to the connection point on the tank?

    Answer: *The air lines are to be field run and field supported, hard-piped in socket weld stainless steel. Please refer to the RDN piping specifications and the Scope of Work for more detail; in specific the photo in Appendix A Figure 5.*

22. **Question:** Are we to connect to the airline under the slab or core a hole for it and connect above ground?

    Answer: *The air line tie-in location is depicted in the Scope of Work in Appendix A Figure 3.*

23. **Question:** Is there any valving to be installed on the air piping?

    Answer: *Yes, new valves will be provided by RDN to essentially duplicate the existing arrangement at the tank. Please refer to the Scope of Work, Appendix A Figure 5.*

24. **Question:** Please clarify whether an expansion joint is required at the tie-in TP-02 as per marked tie-in drawing and isometric (on the following page).

Allnorth | REGIONAL DISTRICT OF NANAIMO

CLIENT:	REGIONAL DISTRICT OF NANAIMO	DATE:	6-Oct-20
PROJECT TITLE:	FCPCC - SLUDGE STORAGE CELL #3 REPLACEMENT	ISSUED FOR:	ESTIMATE
		ISSUED BY:	CDB
PROJECT No:	2002167	DOCUMENT No:	2002167-000-2015-003
CLIENT PROJECT No:	RAE13		

Rev# B

PIPING TIE-IN LIST

MILL AREA No	TIE POINT NUMBER	TIE POINT LINE NUMBER	TIE POINT SIZE	EXISTING LINE NUMBER AT TIE POINT LOCATION	TYPE OF CONNECTION (1)	WORK CLASSIFICATION (2)	TIE POINT P&ID DRAWING	PRESSURE TESTING		INSPECTION REQUIREMENTS	TIE POINT REQUIRED INSTALLATION DATE	DATE TIE POINT COMPLETED	COMMENTS	REV #
								TEST TYPE	TEST PRESSURE					
			(DN)						(kPag)					
300	TP-01	100-DS-SS-031	100	-	FF	III	-	SERVICE TEST	SERVICE TEST	VI - 100%				B
300	TP-02	150-DS-SS-006	150	SLUDGE STORAGE CELL #2	SJ	III	-	SERVICE TEST	SERVICE TEST	VI - 100%				B
300	TP-03	20-PA-SS-007	20		TC	III	-	SERVICE TEST	SERVICE TEST	VI - 100%				B

Please clarify whether an expansion joint is required for this slip joint, or just open pipe end hanging into the new underground concrete tank

NOTES:	PLANT AREAS:	CONNECTION TYPE:	WORK CLASSIFICATION:	PRESSURE TEST TYPE:
(1) - INDICATE TYPE OF CONNECTION REQUIRED TO PERFORM THE TIE-IN.	300 - SLUDGE DIGESTERS	CC - COLD CUT	I - IMMEDIATE WORK	HYDROSTATIC
(2) - INDICATE TYPE OF WORK CLASSIFICATION REQUIRED (SEE TABLE).		CW - COLD CUT & WELD	II - SCHEDULE W/O SHUTDOWN OF EQUIPMENT	ALTERNATE
		CT - COLD CUT, THREAD & COUPLE	III - SCHEDULE IN SEQUENCE W/ EQUIPMENT SHUTDOWN	HYDRO-PNEUMATIC
		DB - DRILLED BRANCH	IV - INSTALL WHEN LABOUR & MATERIAL AVAILABLE	PNEUMATIC
		FF - FLANGED	V - TIE-IN COMPLETED	SERVICE
		GF - GROOVED FITTING		
		HW - HOT CUT & WELD		
		HT - HOT TAP		
		MJ - THREADED & COUPLED		
		SJ - SLIP JOINT		

NOTES, PLANT AREAS AND ABBREVIATIONS ARE LOCATED ON LAST PAGE OF THE DOCUMENT.

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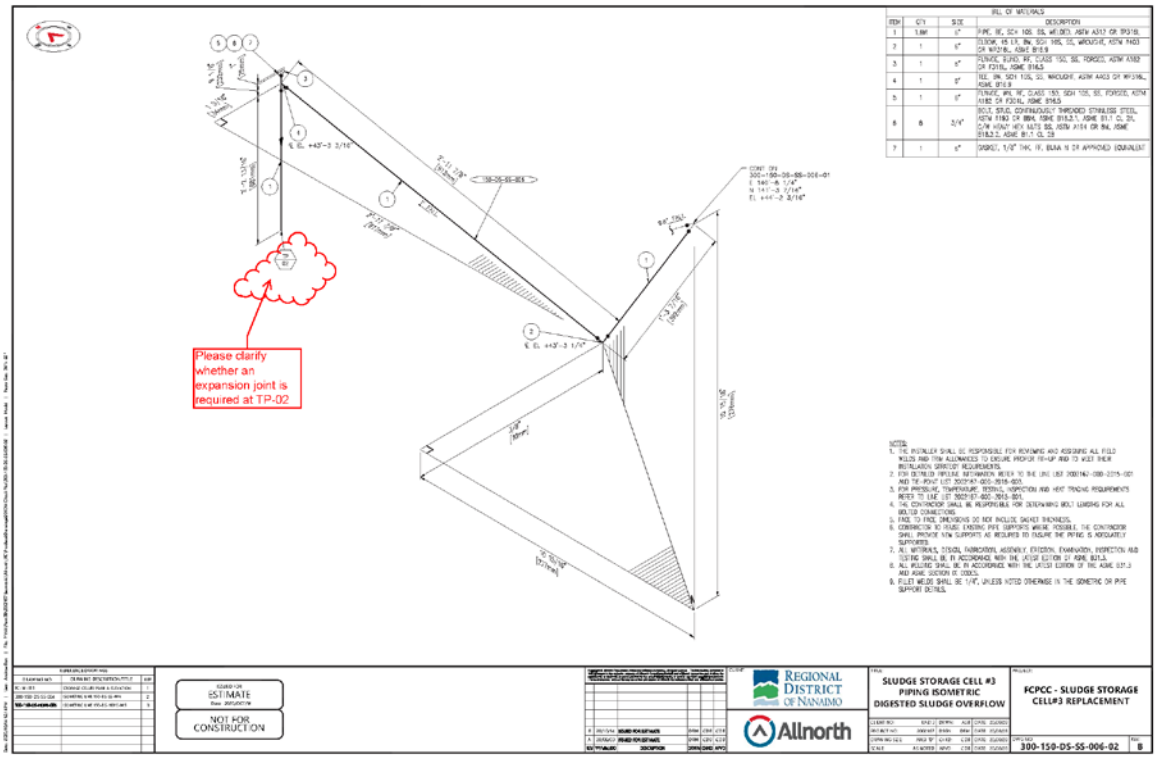
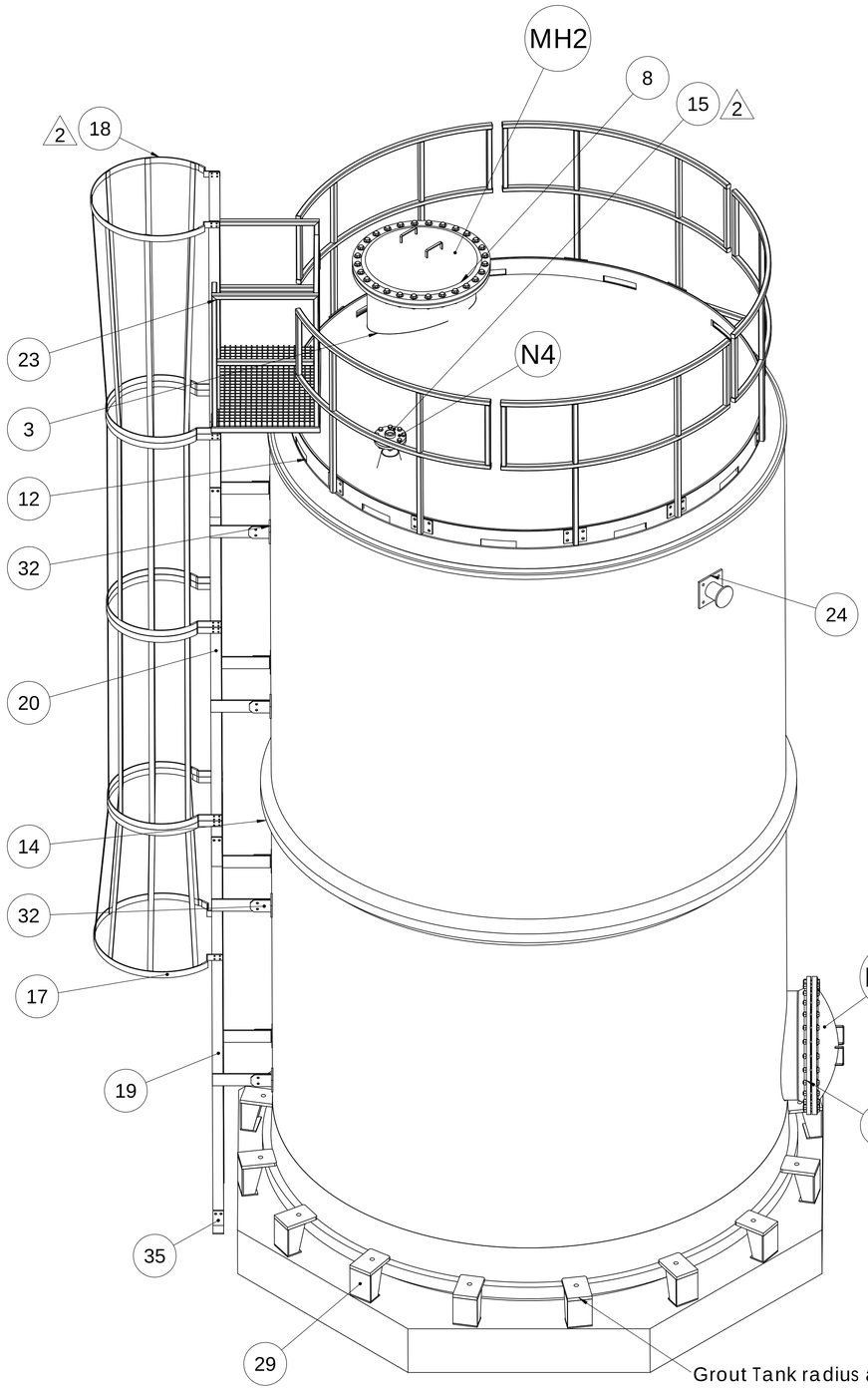
Page 1 of 1



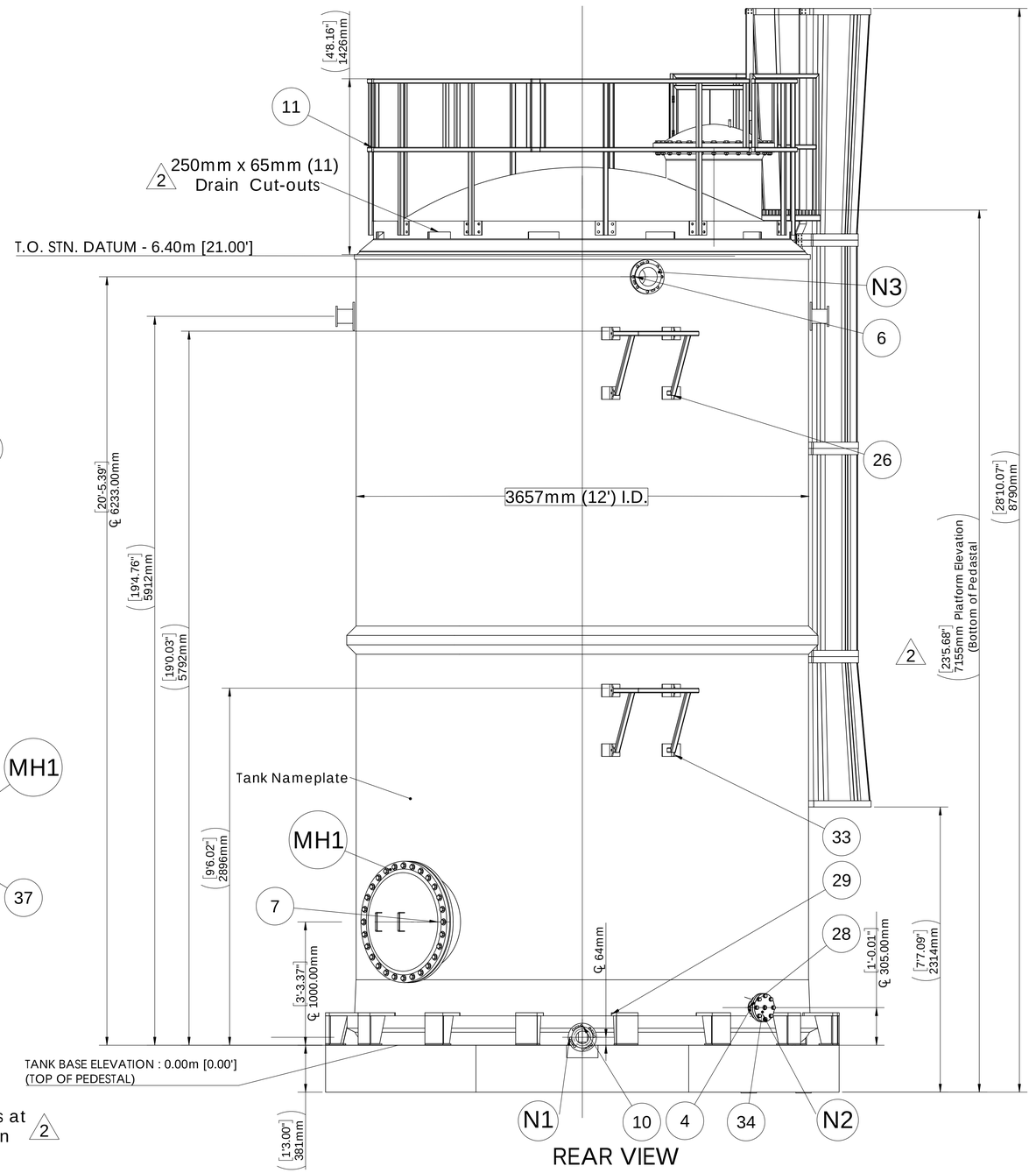
Answer: *No expansion joint is required. The pipe stubs through the metal hatch of the concrete tank and open ends in mid-air. Allnorth Consultants refer to this penetration as a slip-joint (SJ) connection. Please refer to the Scope of Work, Appendix A Figure 2.*

APPENDIX 1 – DRAFT FRP TANK SHOP DRAWINGS (3 SHEETS)

DRAFT FOR INFORMATION ONLY



ISOMETRIC VIEW



REAR VIEW

BOM Table

ITEM NO.	DESCRIPTION	Material	QTY.
1	21-030 12' Base	FRP	1
2	12' Tank shell	FRP	1
3	21-030 12' Dome c/w Course Non-skid Coating	FRP	1
4	100mm Full Face Radial Tank Nozzle (N2/N4)	FRP	2
5	100mm Vanstone radial tank nozzle (N1)	FRP	1
6	150mm Vanstone radial tank nozzle (N3)	FRP	1
7	MH1 750mm MANHOLE (Side mounted)	FRP	1
8	MH2 750mm MANHOLE (Top mounted)	FRP	1
9	150mm (6") Robar 9500 Frp Backup Ring	EPOXY COATED D.I.	1
10	100mm (4") Robar 9500 Frp Backup Ring	EPOXY COATED D.I.	1
11	Railings (Removable Sections	Galvanized Steel	5
12	Kickplate	FRP	1
13	Galvanized Grating sheet	Galvanized Steel	1
14	3" Structural Rib	FRP	1
15	150# RFB-100-316 FLANGE c/w 50mm NPT COUPLER	ASME B16.5 - F316	1
16	Ladder Cage	Galvanized Steel	2
17	Lower Ladder cage	Galvanized Steel	1
18	Upper ladder Cage	Galvanized Steel	1
19	Bottom Ladder Section	Galvanized Steel	1
20	Upper Ladder Section	Galvanized Steel	1
21	KNEE Hinged Safety gate	Galvanized Steel	1
22	Gate hinge		2
23	Landing Platform	Galvanized Steel	1
24	LIFTING TRUNNIONS	316SS	2
25	FRP THREADED COUPLING, 2.00 IN	FRP	1
26	N3 Pipe Supports	Galvanized Steel	2
27	150mm Circular Gusset	FRP	1
28	100mm Circular Gusset	FRP	3
29	Heavy Duty Steel Hold-down lugs	Galvanized Steel	16
30	Threaded Coupling, .75"	316SS	1
31	FRP Brace Airation	FRP	3
32	Ladder Support brackets	316SS	8
33	N3 Pipe support structural brackets	316SS	8
34	150# RFB-100-316 FLANGE, c/w 3/4" NPT COUPLER	ASME B16.5 - F316	1
35	Bottom Ladder Anchor	Galvanized Steel	2

FABRICATION DESIGN STANDARDS:

SP-0003 Fabrication Specification for FRP Tanks for Atmospheric Service (RDN)
ASTM D 3299 Standard Specification for Filament-Wound Glass-Fiber-Reinforced Thermoset Resin Corrosion-Resistant Tanks (Type II, Grade 2)
BC Building Code
National Building Code of Canada

GENERAL NOTES:
WINDING ANGLE - 70°
LINER- Derekane/INEOS 510N Vinylester Resin
STRUCTURAL: Aropol/INEOS K1951 Isopthalic Resin
INTERIOR FINISH-CLEAR
EXTERIOR- Leaf Green RAL 6002
DIMENSIONS ARE IN MILLIMETERS, U.N.O
APPROX. SHIPPING WEIGHT: 3,636KGS (8000LBS) TANK ONLY 2500KGS (5,500LBS)
All Nozzles/Manholes not requiering outside connection will be supplied w/gaskets and bolting hardware (including Blind flanges, MH Covers)

REV.	DESCRIPTION	DATE
	REVISIONS	
2	Added Exterior Color, Approx. Shipping Weight, Widened upper Platform staging area. Changed FRP blind flanges to SS, Changed Platfrom Grating material to Galvanized Steel	3/29/2021
1	Added Lifting Trunnions, Changed Hold-down Lug style, updated Platform sizing, added Nozzle gussets, added N3 pipe supports, updated ladder sections/Safety cage, BOM, Notes, Railing, Kickplate, N2 Flange/fittings, Fitting to N1, Fitting to N4	3/23/2021
0	ISSUED FOR APPROVAL	2/25/2021

TOLERANCES (U.N.O.)

LINEAR	ANGULAR
X ±1.5	X.X ±1/2°

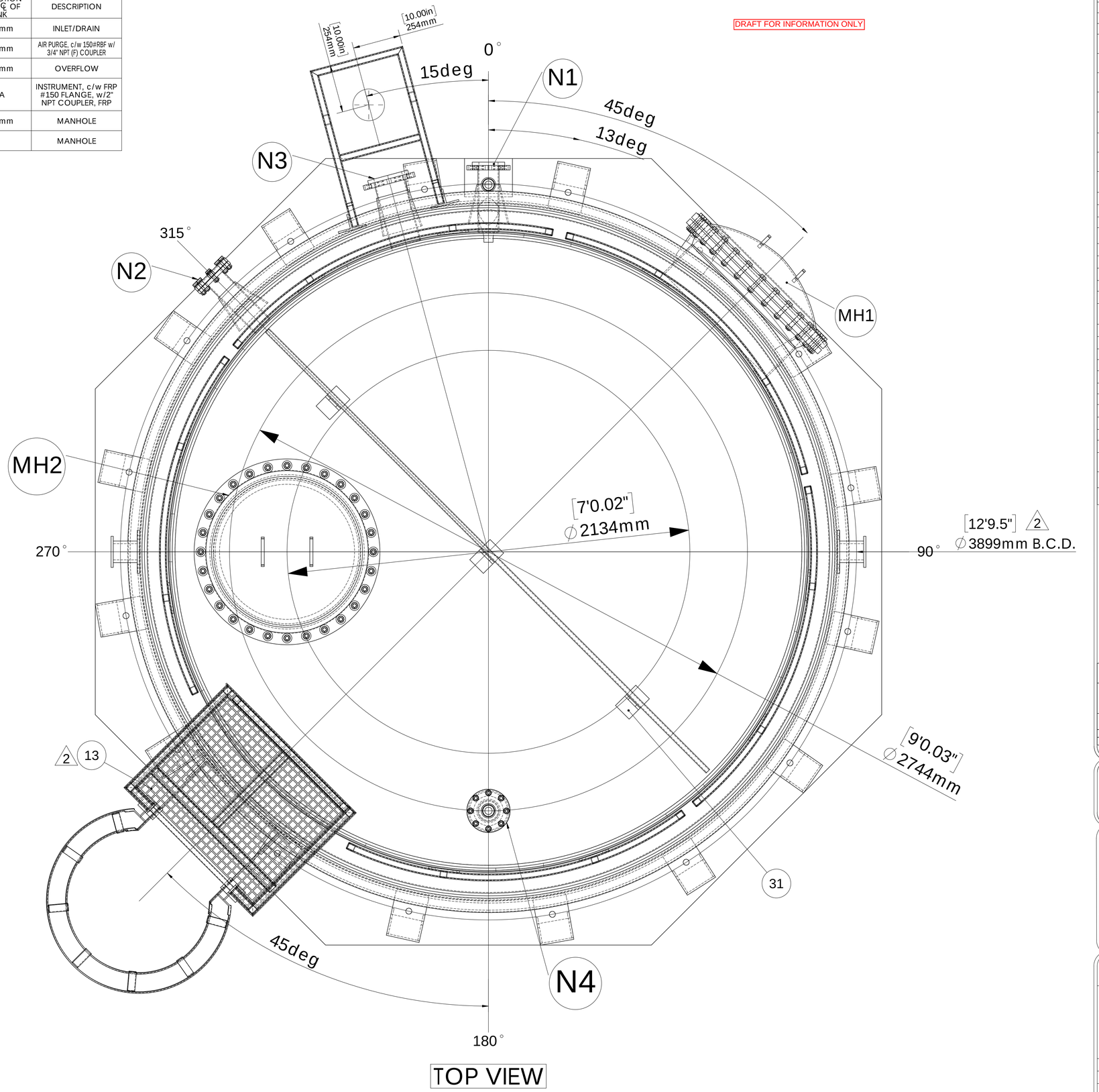
BARSKI INDUSTRIES (1985) LTD.
2378 WESTLAKE RD.
KELOWNA, B.C.
V1Z 2V2

CLIENT:
REGIONAL DISTRICT OF NANAIMO (FCPCC)

TITLE:
3657mm [12'] I.D.
Sludge Storage Cell #3

ENG BY: TB	DATE: 3/29/2021	SHEET 1 OF 3	PROJECT:
CAD BY: TB	DATE: 3/29/2021	SCALE: 1:20	
APP BY:	DATE:	DRAWING NUMBER 21-030	REV 2
ISSUED BY:	DATE:		

NOZZLE SCHEDULE					
Nozzle #	SIZE	QTY	CLASS	PROJECTION FROM ℄ OF TANK	DESCRIPTION
N1	100MM	1	150 FF VS	2065mm	INLET/DRAIN
N2	100MM	1	150	2065mm	AIR PURGE, c/w 150#RBF w/ 3/4" NPT (F) COUPLER
N3	150MM	1	150 FF VS	2065mm	OVERFLOW
N4	100MM	1	150	N/A	INSTRUMENT, c/w FRP #150 FLANGE, w/2" NPT COUPLER, FRP
MH1	750MM	1		2134mm	MANHOLE
MH2	750MM	1			MANHOLE



TOP VIEW

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APPROX. SHIPPING WEIGHT: 3,636KGS (8000LBS) TANK ONLY 2500KGS (5,500LBS)
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REVISIONS		
REV.	DESCRIPTION	DATE
0	ISSUED FOR APPROVAL	2/25/2021
1	Added Lifting Trunnions, Changed Hold-down Lug style, updated Platform sizing, added Nozzle gussets, added N3 pipe supports, updated ladder sections/Safety cage, BOM, Notes, Railing, Kickplate, N2 Flange/fittings, Fitting to N1, Fitting to N4	3/23/2021
2	Added Exterior Color, Approx. Shipping Weight, Widened upper Platform staging area. Changed FRP blind flanges to SS, Changed Platfrom Grating material to Galvanized Steel	3/29/2021

TOLERANCES (U.N.O.)

LINEAR	ANGULAR
X ±1.5	X.X ±1/2°

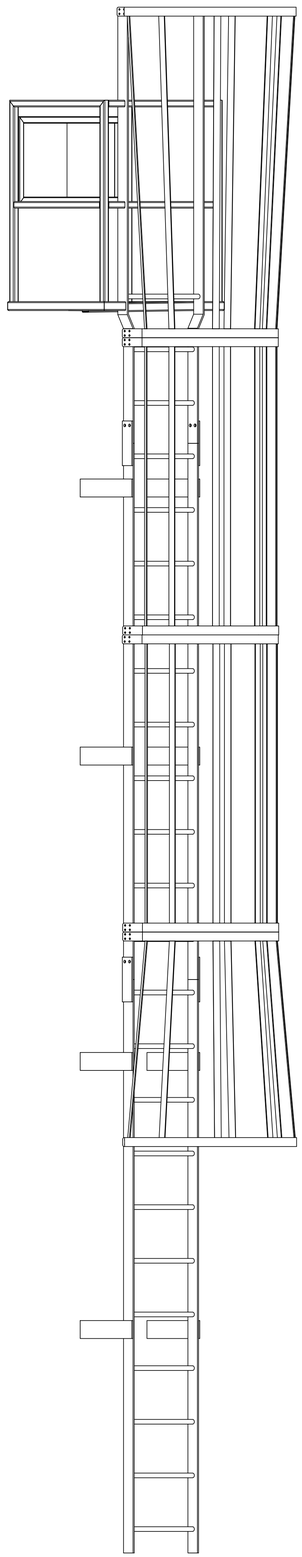
BARSKI INDUSTRIES (1985) LTD.
2378 WESTLAKE RD.
KELOWNA, B.C.
V1Z 2V2

CLIENT: REGIONAL DISTRICT OF NANAIMO (FCPCC)

TITLE: 3657mm [12'] I.D.
Sludge Storage Cell #3

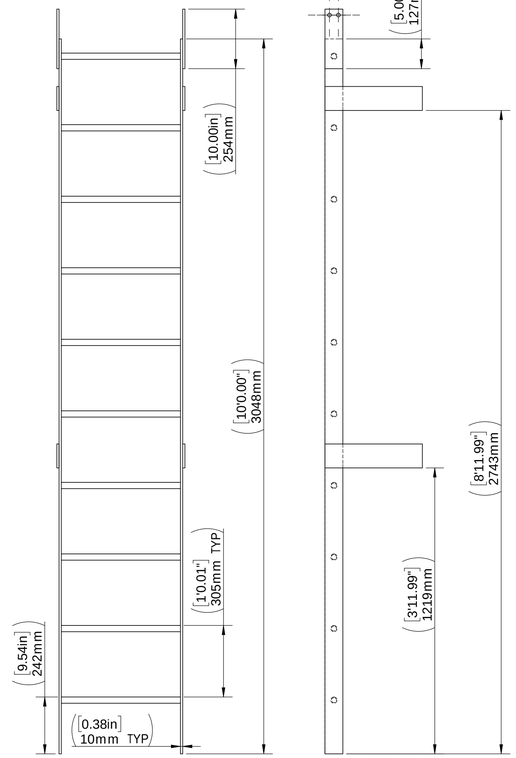
ENG BY: TB	DATE: 3/29/2021	SHEET 2 OF 3	PROJECT:
CAD BY: TB	DATE: 3/29/2021	SCALE: 1:20	
APP BY:	DATE:	DRAWING NUMBER 21-030	REV 2
ISSUED BY:	DATE:		

DRAFT FOR INFORMATION ONLY



PLATFORM/LADDER ASSEMBLY

TOP LADDER SECTION



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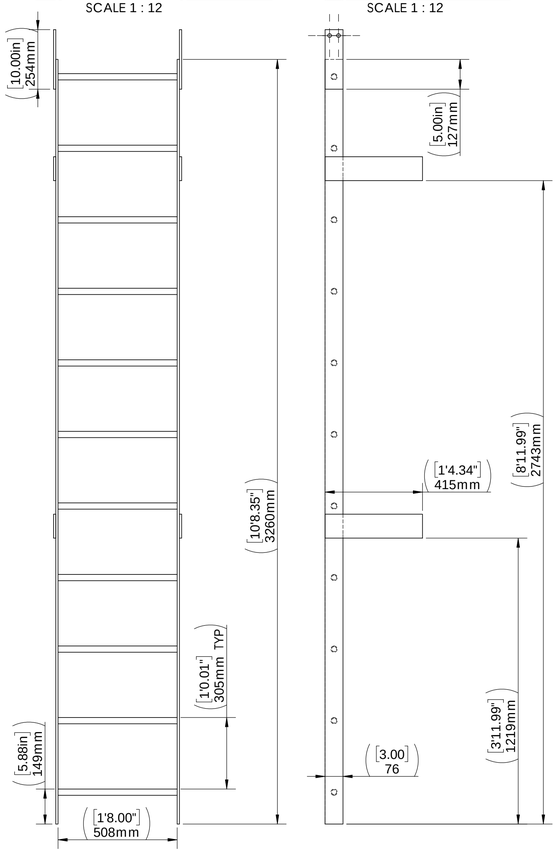
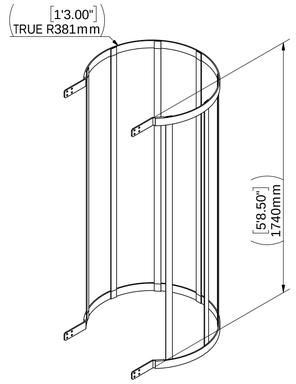


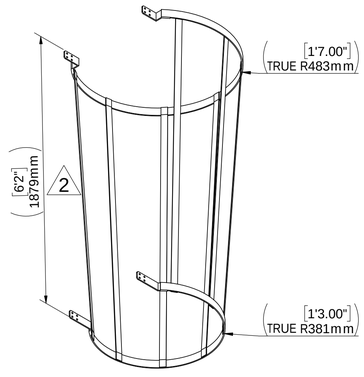
BOTTOM LADDER SECTION

SCALE 1 : 12



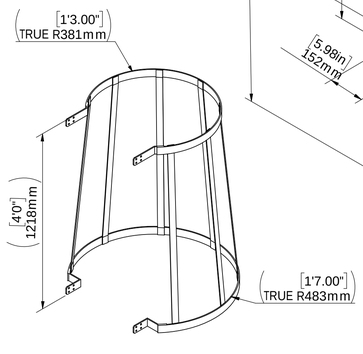
MIDDLE LADDER CAGE SECTION

SCALE 1 : 16



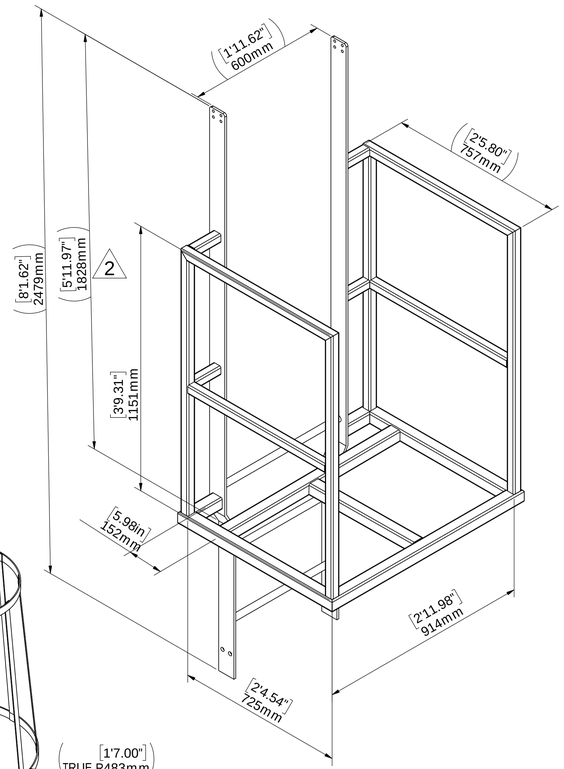
UPPER LADDER CAGE

SCALE 1 : 16



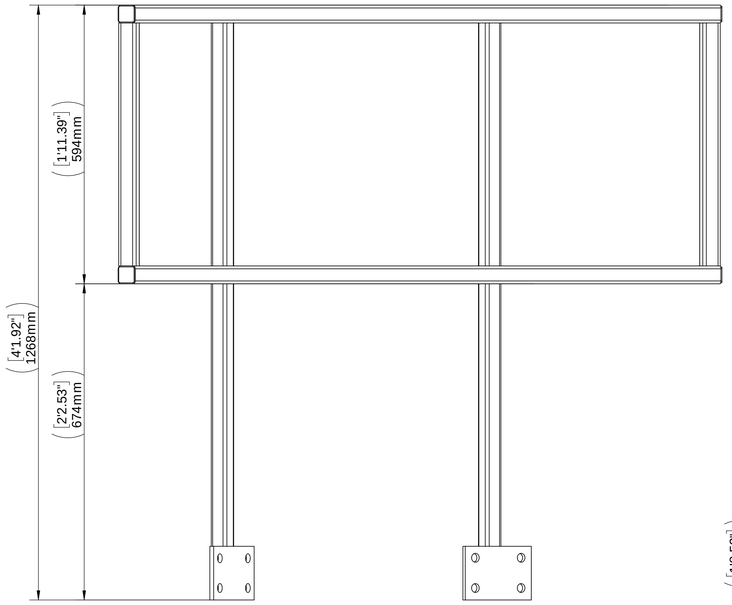
LOWER LADDER CAGE

SCALE 1 : 16



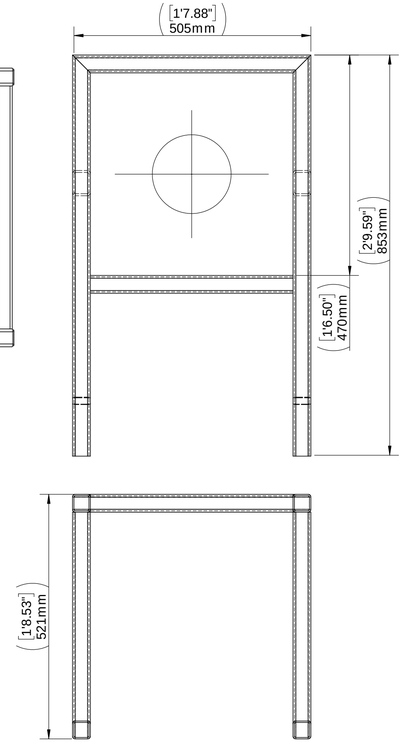
Platform Section

SCALE 1 : 10



SAFETY RAILING

SCALE 1 : 6



N3 PIPE SUPPORTS

SCALE 1 : 6

Design notes: △2

1. All Tube Steel is 1/8" (3.175mm) WALL
2. Steel Flatbar is 3/8" (9.525mm) x 3" (75mm)
3. Safety Railings, N3 Pipe Supports Tube Steel size: 1 1/2" x 1 1/2" x .125"
4. Platform floor Tube Steel size: 2" x 2" x .125"

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2	Added Exterior Color, Approx. Shipping Weight, Widened upper Platform staging area. Changed FRP blind flanges to SS, Changed Platfrom Grating material to Galvanized Steel	3/29/2021
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0	ISSUED FOR APPROVAL	2/25/2021

REVISIONS

TOLERANCES (U.N.O.)

LINEAR X ±1.5 | ANGULAR X.X ±1/2°

BARSKI INDUSTRIES (1985) LTD.
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CLIENT:
REGIONAL DISTRICT OF NANAIMO (FCPCC)

TITLE: 3657mm [12'] I.D.
Sludge Storage Cell #3
Ladder/Platform

ENG BY: TB	DATE: 3/29/2021	SHEET 3 OF 3	PROJECT:
CAD BY: TB	DATE: 3/29/2021	SCALE: 1:20	
APP BY:	DATE:	DRAWING NUMBER 21-030	REV 2
ISSUED BY:	DATE:		

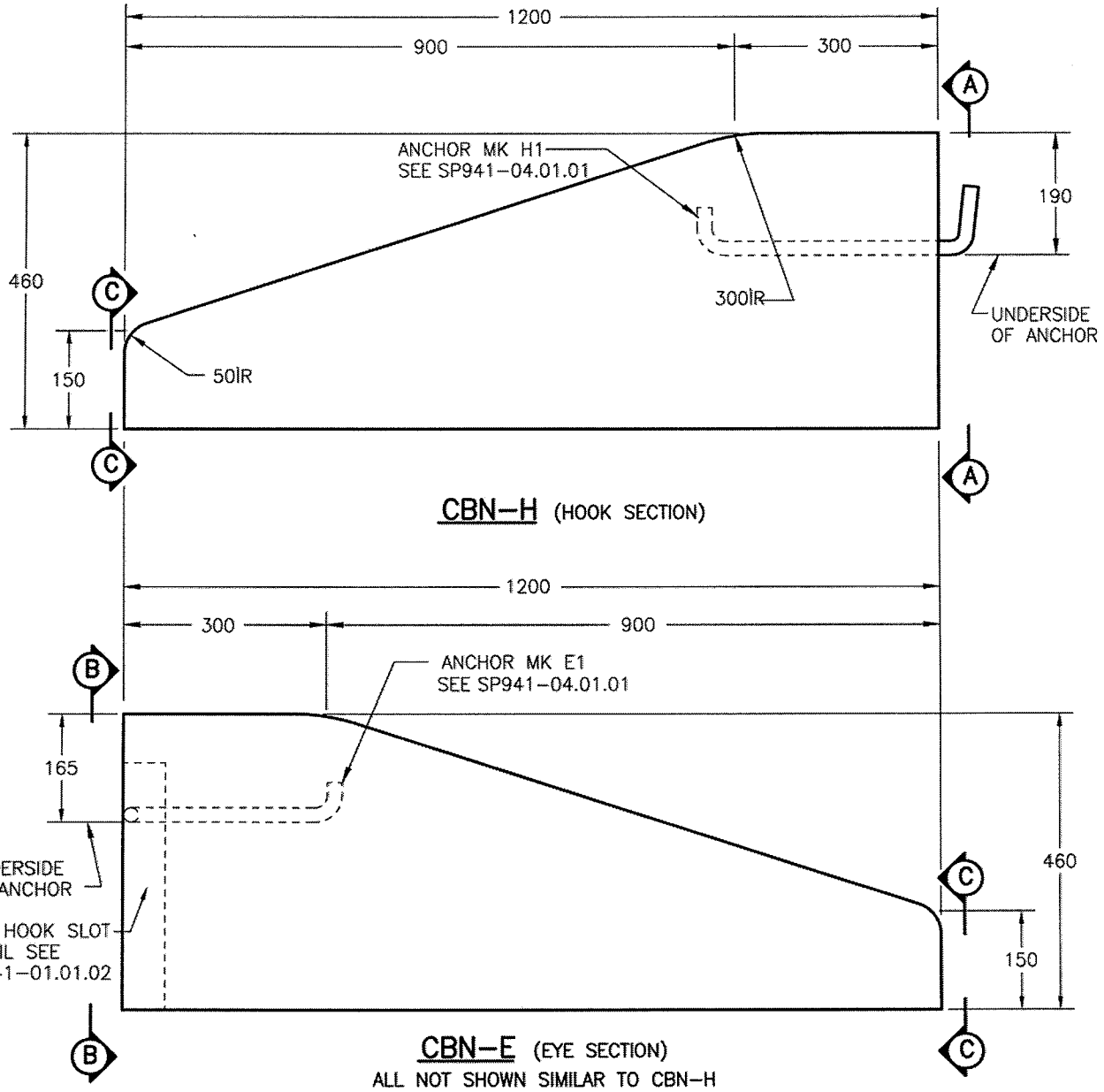
APPENDIX 2 – TANK FABRICATOR'S TRANSPORT TRAILER

(size of sewage lift station shown on trailer is 12 ft. dia. x 20 ft. tall – can load tank at trailer back end)

APPENDIX 3 – MOT CONCRETE BARRIER STANDARDS

PRECAST CONCRETE BULL–NOSE 460 mm – CBN–H & CBN–E

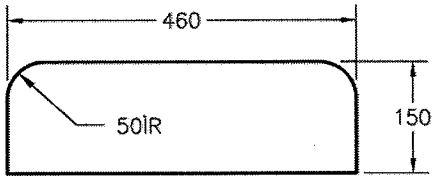
SP941–01.01.01



ELEVATION

GENERAL NOTES:

1. FOR VIEW (A) & (B) SEE SP941–01.01.02
2. FIBRILATED FIBRE STRAND REINFORCED CONCRETE TO BE USED FOR BULL–NOSE (CBN).
3. FIBRILATED FIBRE STRAND REINFORCED CONCRETE MAY BE SUBTITUTED FOR STEEL REINFORCED CONCRETE IN LOW BARRIER (CLB–H & E).
4. MATERIALS AND QUALITY OF WORK TO BE IN ACCORDANCE WITH SECTION 941.
5. STANDARD CBN–E MAY BE MANUFACTURED ONLY WITH PRIOR WRITTEN PERMISSION FROM THE HIGHWAY SAFETY BRANCH.

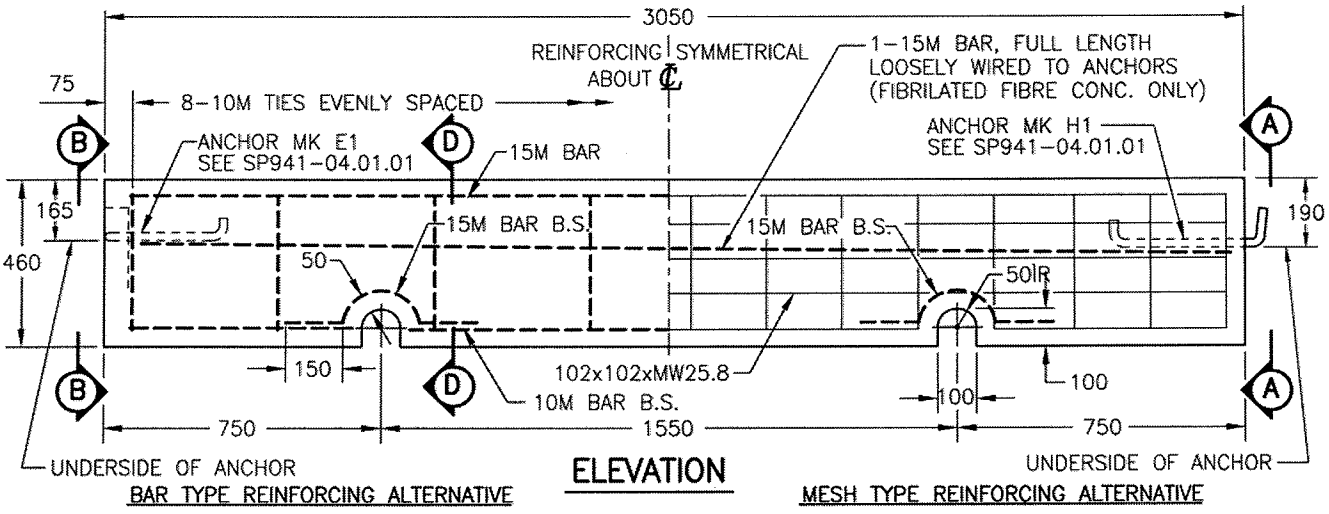


VIEW (C)

NOT TO SCALE ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED

PRECAST CONCRETE LOW BARRIER 460 mm – CLB–E+H

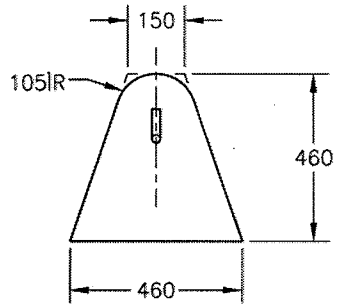
SP941–01.01.02



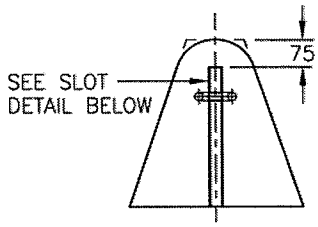
BAR TYPE REINFORCING ALTERNATIVE

ELEVATION

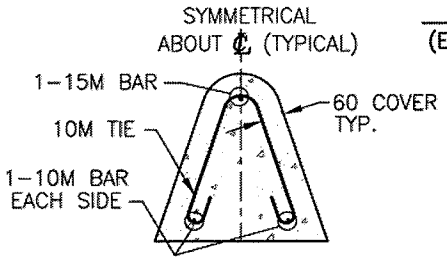
MESH TYPE REINFORCING ALTERNATIVE



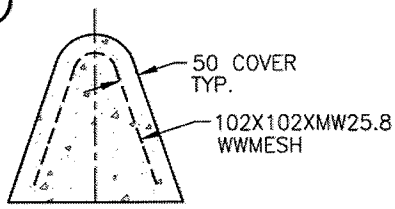
VIEW (HOOK END) A



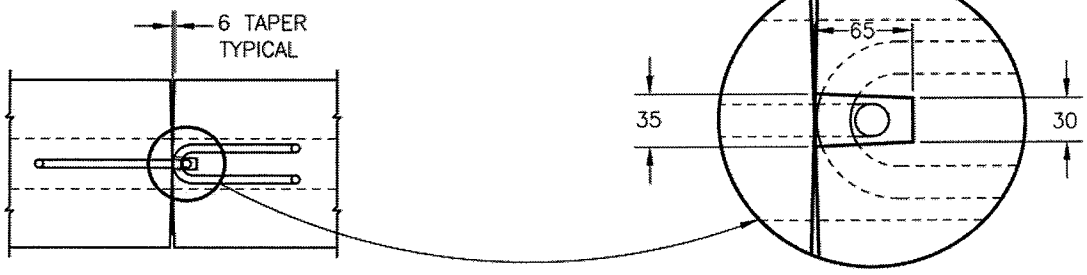
VIEW (EYE END) B



SECTION (BAR REINFORCING ALTERNATIVE) D



SECTION (MESH REINFORCING ALTERNATIVE) D



HOOK AND EYE DETAIL

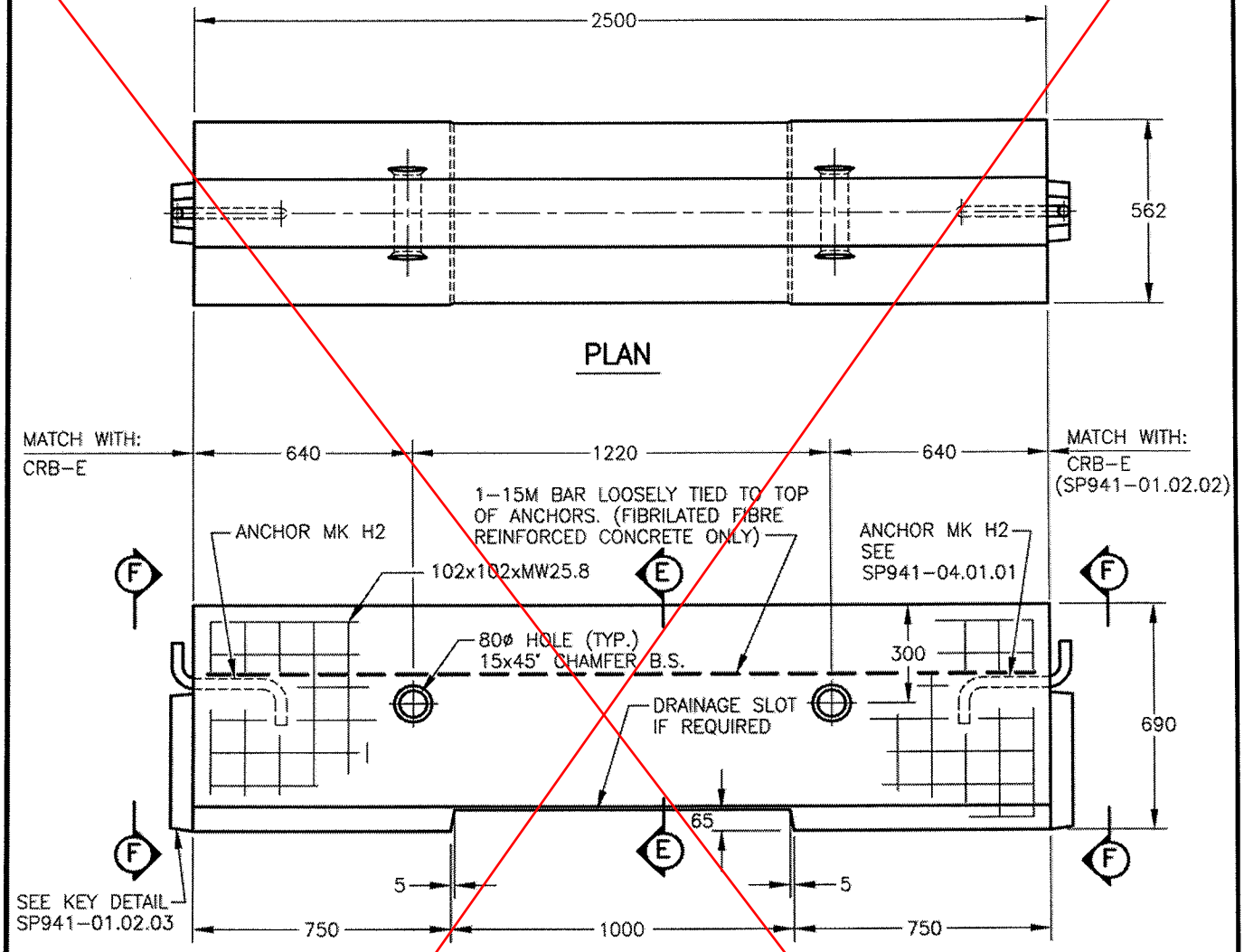
HOOK SLOT DETAIL

NOTE: FOR GENERAL NOTES SEE SP941–01.01.01

NOT TO SCALE ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED

PRECAST CONCRETE ROADSIDE BARRIER 690 mm – CRB–H

SP941–01.02.01



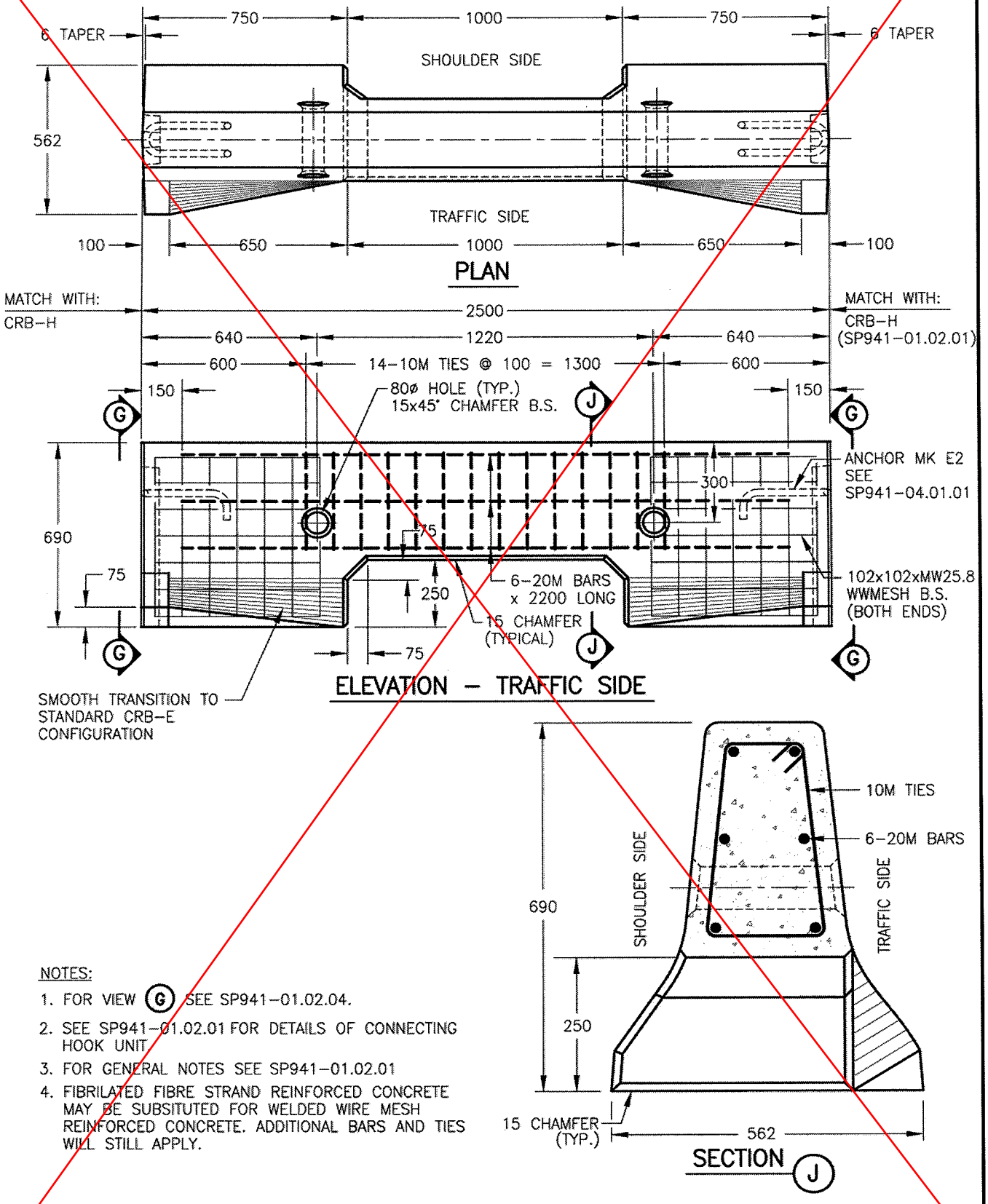
GENERAL NOTES:

1. FOR SECTION (E) SEE SP941–01.02.02. FOR VIEW (F) SEE SP941–01.02.03.
2. SEE DRAWING SP941–01.02.02 FOR DETAILS OF EYE UNIT.
3. ALL REINFORCING TO HAVE 50 MINIMUM COVER EXCEPT AS NOTED.
4. ALL TOLERANCES ±3 mm EXCEPT AS NOTED.
5. CHANGES TO PICK–UP HOLE DIAMETERS MAY BE MADE WITH THE WRITTEN PERMISSION OF THE HIGHWAY SAFETY ENGINEER.
6. HOOK AND EYE ANCHORS EACH END SHALL BE SECURED IN PLACE DURING CASTING TO PREVENT DISLODGEMENT.
7. MATERIALS AND QUALITY OF WORK TO BE IN ACCORDANCE WITH SECTION 941.
8. DRAINAGE SLOT IS REQUIRED WHEN NECESSARY TO DRAIN SURFACE WATER THROUGH THE BARRIER.
9. SHEAR KEY VOID WITH GROUTING HOLES BY REQUEST. SEE SP941–04.02.01.
10. FIBRILATED FIBRE STRAND REINFORCED CONCRETE MAY BE SUBSITUTED FOR WELDED WIRE MESH REINFORCED CONCRETE.

NOT TO SCALE ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED

PRECAST CONCRETE DRAINAGE BARRIER 690 mm – CDB–E DETAILS

SP941–01.02.05



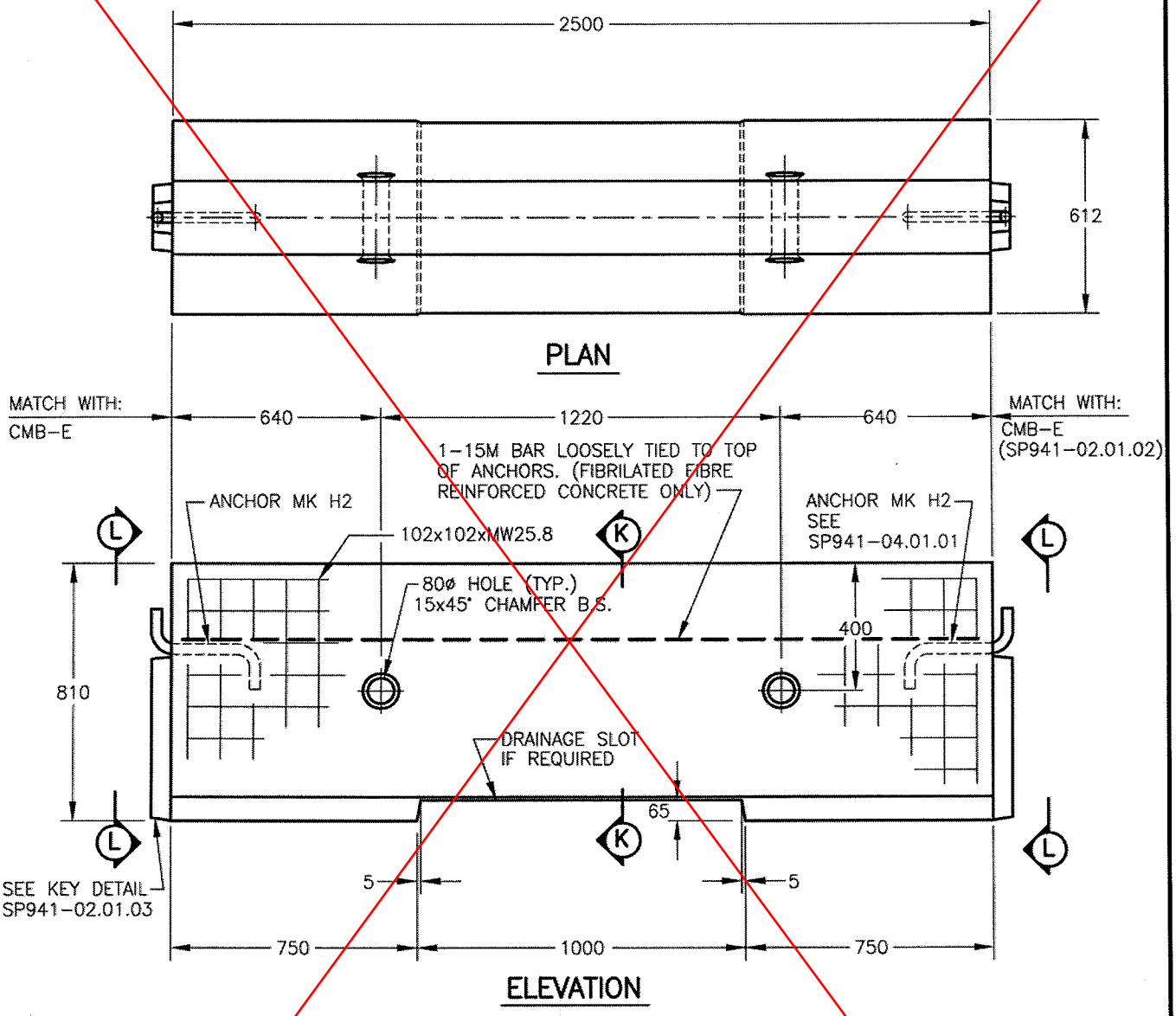
NOTES:

1. FOR VIEW (G) SEE SP941–01.02.04.
2. SEE SP941–01.02.01 FOR DETAILS OF CONNECTING HOOK UNIT
3. FOR GENERAL NOTES SEE SP941–01.02.01
4. FIBRILATED FIBRE STRAND REINFORCED CONCRETE MAY BE SUBSITUTED FOR WELDED WIRE MESH REINFORCED CONCRETE. ADDITIONAL BARS AND TIES WILL STILL APPLY.

NOT TO SCALE ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED

PRECAST CONCRETE MEDIAN BARRIER 810 mm – CMB–H

SP941–02.01.01



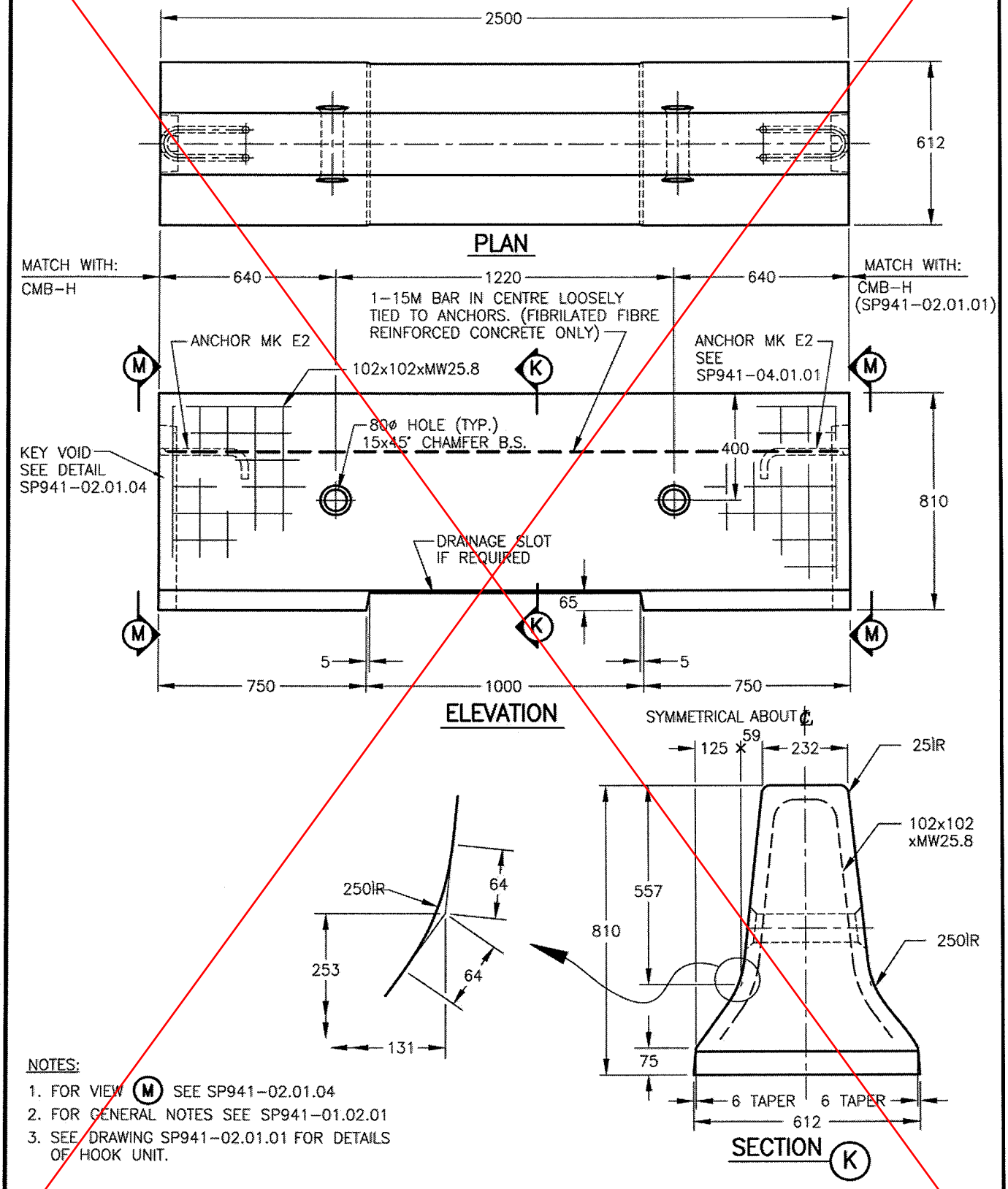
NOTES:

1. FOR SECTION (K) SEE SP941–02.01.02 FOR VIEW (L) SEE SP941–02.01.03.
2. FOR GENERAL NOTES SEE SP941–01.02.01
3. SEE DRAWING SP941–02.01.02 FOR DETAILS OF EYE UNIT.

NOT TO SCALE ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED

PRECAST CONCRETE MEDIAN BARRIER 810 mm – CMB–E

SP941–02.01.02



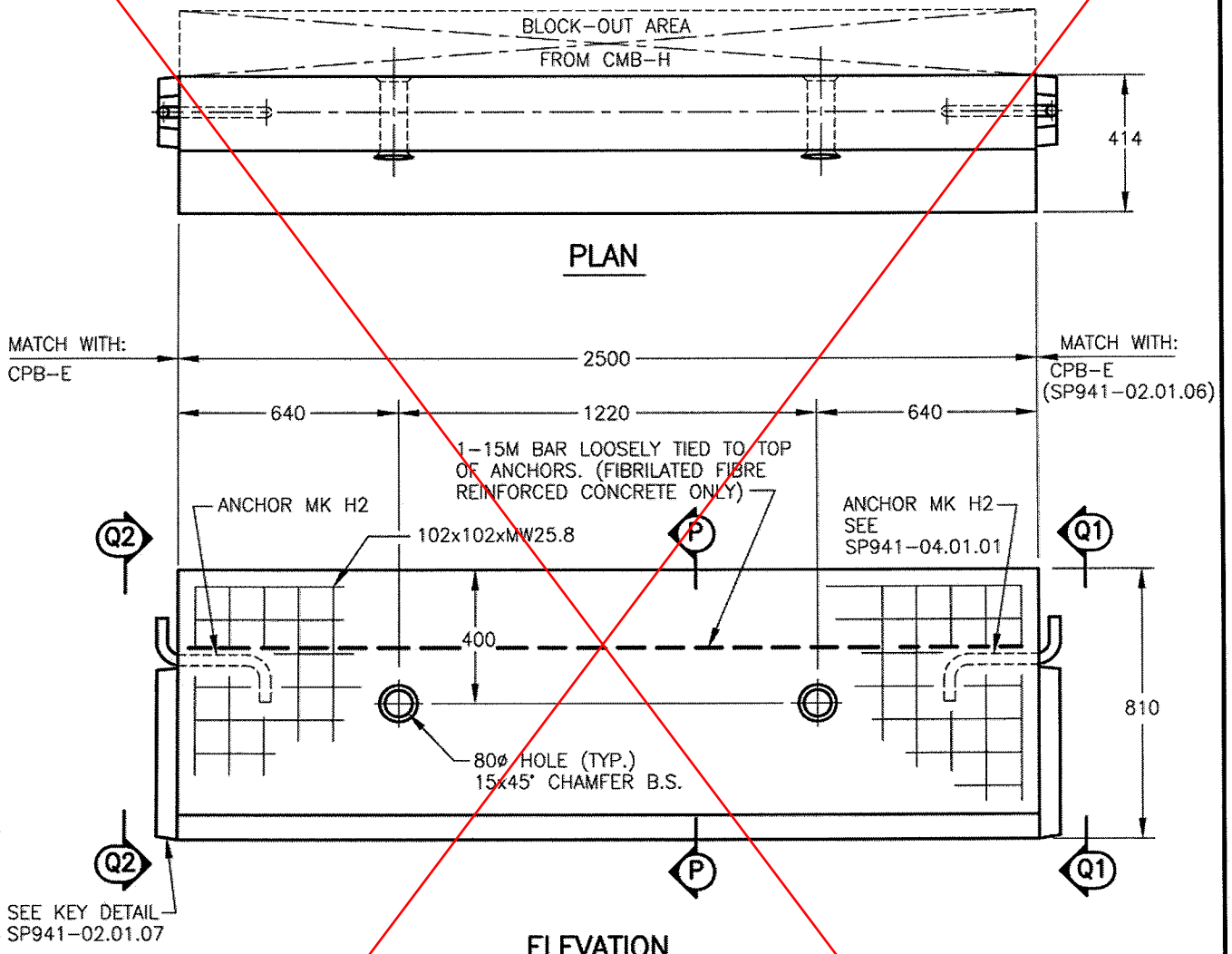
NOTES:

1. FOR VIEW (M) SEE SP941–02.01.04
2. FOR GENERAL NOTES SEE SP941–01.02.01
3. SEE DRAWING SP941–02.01.01 FOR DETAILS OF HOOK UNIT.

NOT TO SCALE ALL DIMEINSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED

PRECAST CONCRETE PIER BARRIER 810 mm – CPB–H

SP941–02.01.05



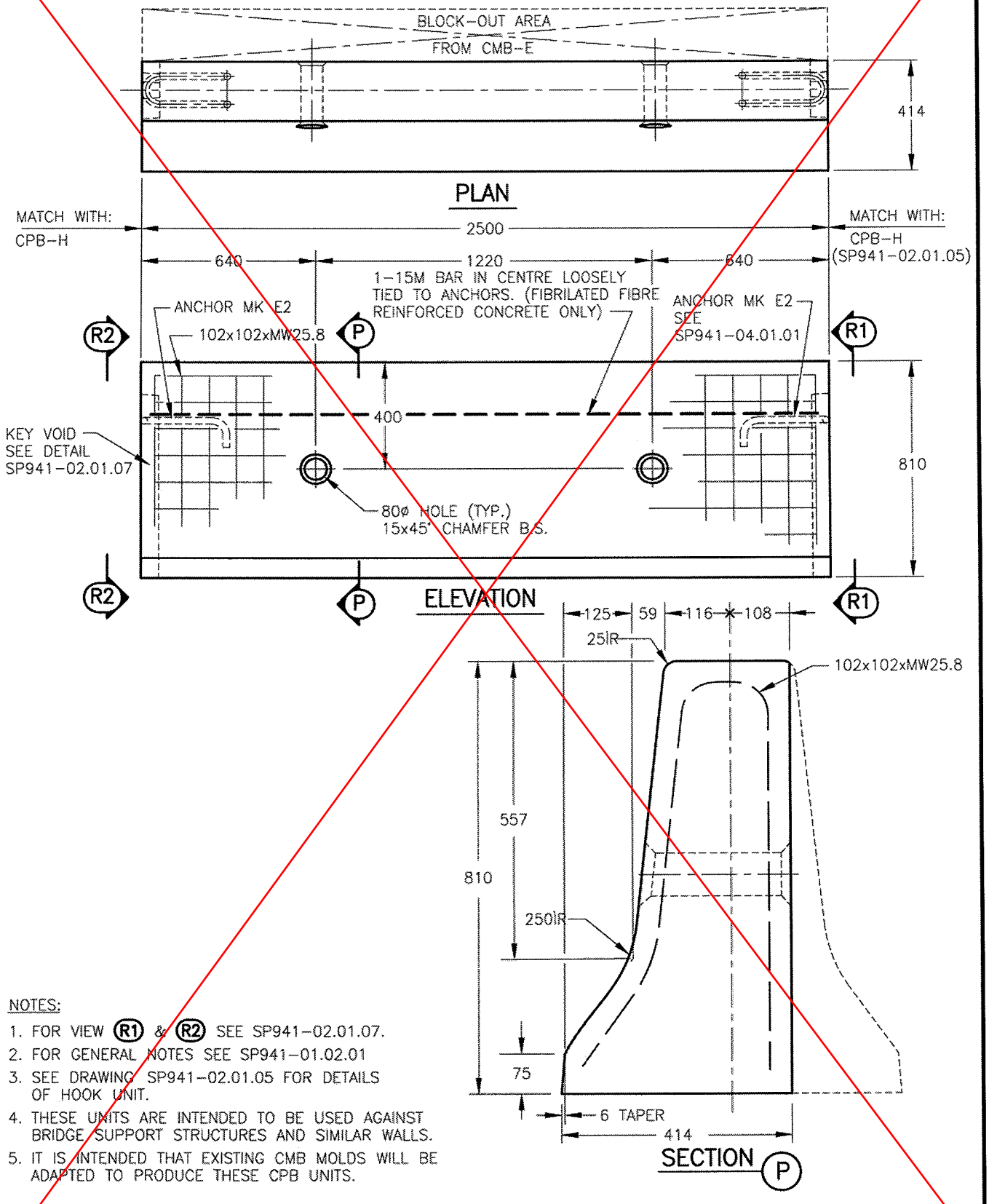
NOTES:

1. FOR SECTION (P) SEE SP941–02.01.06.
   FOR VIEW (Q1) & (Q2) SEE SP941–02.01.07.
2. FOR GENERAL NOTES SEE SP941–01.02.01
3. SEE DRAWING SP941–02.01.06 FOR DETAILS OF EYE UNIT.
4. THESE UNITS ARE INTENDED TO BE USED AGAINST BRIDGE SUPPORT STRUCTURES AND SIMILAR WALLS.
5. IT IS INTENDED THAT EXISTING CMB MOLDS WILL BE ADAPTED TO PRODUCE THESE CPB UNITS.

NOT TO SCALE ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED

PRECAST CONCRETE PIER BARRIER 810 mm – CPB–E

SP941–02.01.06



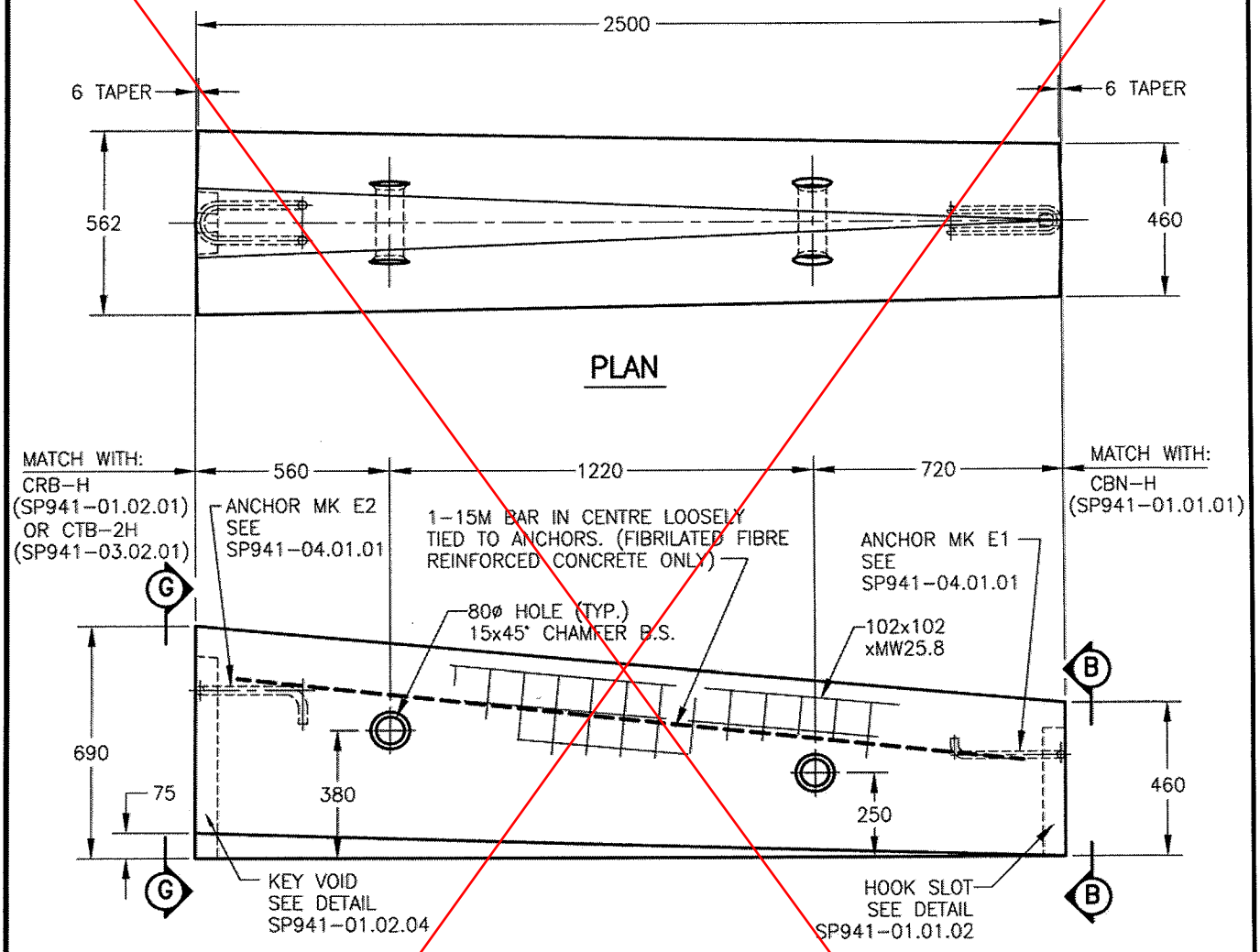
NOTES:

1. FOR VIEW (R1) & (R2) SEE SP941–02.01.07.
2. FOR GENERAL NOTES SEE SP941–01.02.01
3. SEE DRAWING SP941–02.01.05 FOR DETAILS OF HOOK UNIT.
4. THESE UNITS ARE INTENDED TO BE USED AGAINST BRIDGE SUPPORT STRUCTURES AND SIMILAR WALLS.
5. IT IS INTENDED THAT EXISTING CMB MOLDS WILL BE ADAPTED TO PRODUCE THESE CPB UNITS.

NOT TO SCALE ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED

PRECAST CONCRETE TRANSITION BARRIER 690 mm TO 460 mm – CTB–1E

SP941–03.01.01



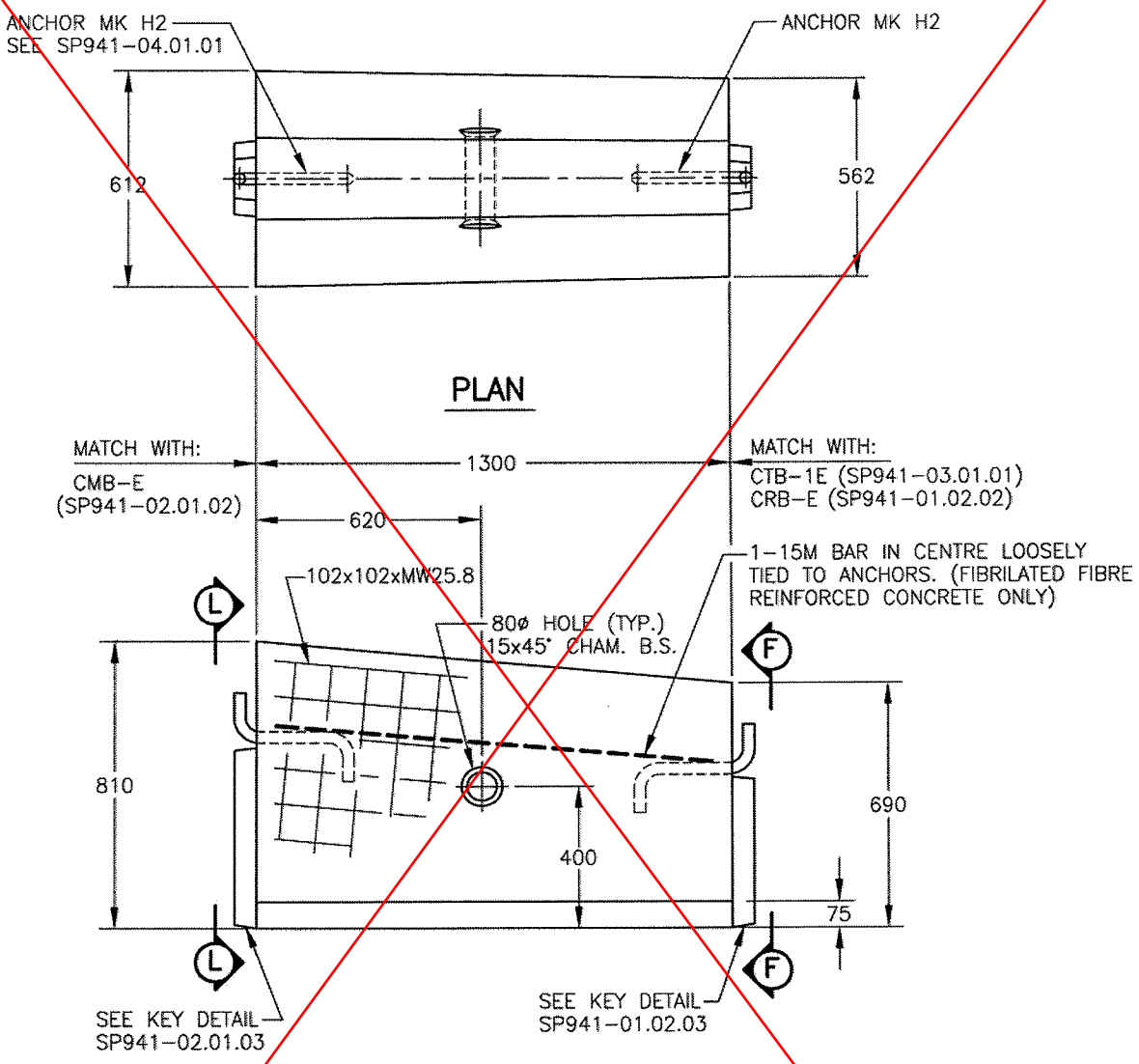
NOTES:

1. FOR VIEW (B) SEE SP941–01.01.02. FOR VIEW (G) SEE SP941–01.02.04.
2. FOR GENERAL NOTES SEE SP941–01.02.01.
3. SEE DRAWINGS SP941–01.01.01 AND SP941–01.01.02 FOR DETAILS OF 460 mm UNIT AND BULLNOSE.
   SEE DRAWING SP941–01.02.01 FOR DETAILS OF 690 mm HOOK UNIT
   OR SP941–03.02.01 FOR DETAILS OF 810 TO 690 TRANSITION UNIT.

NOT TO SCALE ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED

PRECAST CONCRETE TRANSITION BARRIER 810 mm TO 690 mm – CTB–2H

SP941–03.02.01



NOTES:

1. FOR VIEW (F) SEE SP941–01.02.03.
   FOR VIEW (L) SEE SP941–02.01.03.
2. FOR GENERAL NOTES SEE SP941–01.02.01.
3. SEE DRAWING SP941–02.01.02 FOR DETAILS OF 810 mm EYE UNIT.
   SEE DRAWING SP941–01.02.02 FOR DETAILS OF 690 mm EYE UNIT
   OR SP941–03.01.01 FOR DETAILS OF 690 TO 460 TRANSITION UNIT.

NOT TO SCALE ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED