Priprema radioničke dokumentacije upotrebom programa AVEVA

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Izjavljujem da sam ovaj rad izradio samostalno koristeći znanja stečena tijekom studija i navedenu literaturu.

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DIPLOMSKI ZADATAK

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Naslov rada na hrvatskom jeziku: **PRIPREMA RADIONIČKE DOKUMENTACIJE UPOTREBOM PROGRAMA AVEVA**

Naslov rada na engleskom jeziku: **HULL CONSTRUCTON DOCUMENTATION PREPARATION USING AVEVA SOFTWARE**

Opis zadatka:

Suvremena računala i CAD/CAM sustavi omogućuju kvalitetnu pripremu tehnološke dokumentacije poput radioničkih nacrta, tehnoloških uputa te radioničke i narudžbene specifikacije koja ima nezaobilaznu ulogu tijekom faze detaljnog projektiranja i fizičke realizacije broda kako sa stanovišta planiranja proizvodnje tako i s aspekta tehnologičnosti gradnje.

Stoga je u diplomskom radu na primjeru sekcije boka tipičnog putničkog brod potrebno:

1. Izraditi model sekcije nadgrađa putničkog broda,
2. Provesti raskroj materijala i izraditi radioničku i narudžbenu specifikaciju materijala,
3. Provesti podjelu sekcije na sklopove,
4. Izraditi radioničku dokumentaciju za izradu i predmontažu sklopova i sekcije nadgrađa,
5. Izraditi tehnološku uputu za izradu i predmontažu sklopova sekcije i sekcije nadgrađa.

Tijekom rada koristiti i program AVEVA.

Zadatak zadan:	Datum predaje rada:	Predviđeni datumi obrane:
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Zadatak zadao:

Doc. dr. sc. Neven Hadžić

Predsjednica Povjerenstva:

Prof. dr. sc. Nastia Degiuli

SADRŽAJ

POPIS SLIKA

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POPIS TEHNIČKE DOKUMENTACIJE

BROJ CRTEŽA	Naziv iz sastavnice
D.394.0734.327.001	PREGRADE ISPOD 14. PALUBE
D.394.0734.327.001_2	PREGRADE ISPOD 14. PALUBE
D.394.0734.327.001_3	PREGRADE ISPOD 14. PALUBE
D.394.0734.327.001_4	PREGRADE ISPOD 14. PALUBE

POPIS OZNAKA

Oznaka	Jedinica	Opis
t	mm	debljina materijala
R_e	N/mm^2	granica razvlačenja
m	kg	masa
L	mm	duljina lima
H	mm	visina lima
shr	/	dodatak za materijal
h	mm	visina HP profila
Φ	mm	promjer kružnog profila
b	mm	širina ravnog profila
l	mm	duljina profila

SAŽETAK

Brodograđevna djelatnost je iznimno zahtjevan i dugotrajan proces. Od samog potpisivanja ugovora do isporuke plovila ključno je uskladiti mnoštvo čimbenika. Potrebno je osigurati novčana sredstva, ljudski potencijal, pripremiti dokumentaciju, rezervirati te naručiti materijal i brodsku opremu u skladu s zahtjevima naručitelja i tehnološkim mogućnostima brodogradilišta.

Od samog početka razvoja računala i računalnih programa, brodograđevna industrija nastoji što je više moguće uklopiti informatičke alate pri gradnji broda. U cilju bržeg i racionalnog postupka projektiranja modela i izrade tehnološke dokumentacije, računala i CAD/CAM sustavi imaju nezaobilaznu ulogu pri oblikovanju konačnog proizvoda.

U ovom Diplomskom radu izrađen je model sekcije nadgrađa broda za krstarenja, L394, GB730 te priprema radioničke i narudžbene dokumentacije. Radionička i narudžbena dokumentacija se sastoji od raskroja materijala, popisa elemenata konstrukcije i radioničkih nacrta i izvršena je upotrebom programa AVEVA Marine.

Ključne riječi: model broda, radionička dokumentacija, CAD/CAM sustavi, AVEVA Marine

SUMMARY

Ship production process is a complex and long-lasting manufacturing activity. From the first milestone till the ships delivery it is essential to harmonize many factors involved with the physical realization of the ship.

Constant ambition to ensure financial support, human potential, technical documentation, raw material and ship equipment in line with investors demands and technical capabilities of the shipyard.

From the beginning of CAM/CAD tools development, shipbuilding industry tends to implement sophisticated solutions as much as possible through all shipbuilding processes. The goal is to speed up the process of ships model creation, hull production documentation striving towards more efficient one with the main role of CAD/CAM tools. In this master thesis, hull production documentation and model for cruise ship L394, GB730 are provided using AVEVA Marine software.

Key words: ships model, hull construction documentation, CAD/CAM design, AVEVA Marine

1. UVOD

Brodograđevni proizvodni proces se sastoji od vremenskih i prostornih cjelina koje svojom interakcijom sudjeluju u razvojnim etapama koje će završiti fizičkom realizacijom broda. Nakon definiranja osnovnih karakteristika broda, pristupa se izradi koncepta kojim će se utvrditi cijena, rokovi, isplativost gradnje te kapaciteti brodogradilišta i ocijeniti tehnologičnost projekta te potom krenuti s izradom detaljnog projekta.

Cilj ovog rada je izrada i priprema tehnološke dokumentacije koja ima ključnu ulogu tijekom faze detaljnog projektiranja broda i spona je između projektnih ureda i brodograđevnih radionica. Osim definiranja materijala potrebnih za izradu broda treba definirati tehnološku uputu kako i na kojem građevnom mjestu izraditi elemente brodske strukture. Kako se brodograđevni proces sastoji od niza podprocesa od kojih se priprema proizvodnje provlači kroz sve ključne faze, presudno je dovršiti izradu tehničke dokumentacije prije početka podprocesa obrade metalurgije trupa, [1].

1.1. Uporaba AVEVA Marine programskog alata

U ovom diplomskom radu će se prikazati razlozi i mogućnosti korištenja AVEVA Marine računalnog programa i njenih modula te će se isporučiti radionička dokumentacija i narudžbena specifikacija materijala za izgradnju jedne sekcije nadgrađa broda za krstarenja.

AVEVA Marine programski alat je tijekom godina svog razvoja prepoznat kao pouzdan i koristan alat te je implementiran u proizvodne sustave velikog broja najvećih svjetskih brodogradilišta. Hrvatska brodogradilišta se također okreću uporabi programa AVEVA Marine za izradu modela broda i pripremu radioničke i narudžbene dokumentacije. AVEVA marine program se sastoji od velikog broja modula od kojih su neki korišteni pri izradi ovog rada. Osnovni modul u kojem je izrađen modela broda se zove AVEVA Hull Detail Design. i pomoću njega se kreiraju radioničke liste potrebne za isporuku sekcija. Modul Automated Plate Nesting daje optimizirani raskroj materijala dok će nam modul AVEVA Marine Drafting poslužiti pri izradi radioničkih nacrta, Slika 1. Na samom kraju dati će se tehnološka uputa za izradu i predmontažu sklopova i sekcije.

AVEVA Hull Structural Design
AVEVA Hull Structural Design™ is used for the preliminary definition and arrangement of the principal structure of a vessel. It enables production of classification drawings, early steel material estimates, weld lengths, and weight and centre of gravity reports.

AVEVA Hull Detailed Design
AVEVA Hull Detailed Design™ is used for the detailed design and creation of production information for the whole structure of a vessel. It handles the complete evolution and flow of information, from the use of customised parametric design standards, structural modelling and automatic parts generation, through to production information for parts manufacture. Output includes drawings, automatic sketches, parts lists, and numeric control information for production machines.

AVEVA Hull Finite Element Modeller
AVEVA Hull Finite Element Modeller™ allows Hull Structural Design users to perform a pre-mesh of the steel structure and to export this mesh in various formats to third-party Finite Element Analysis software for stress analysis. Model idealisation rules faithfully translate the hull structure into a high-quality, computationally efficient idealisation, while powerful configuration options ensure that even the most complex or unusual structure can be analysed with speed and accuracy.

AVEVA Outfitting
AVEVA Outfitting™ is a data-centric, multidisciplinary 3D design application for accurate and clash-free detailed design and the creation of production information for the outfitting data of ships and offshore vessels. Outfitting has modules for the design of equipment, piping, HVAC, miscellaneous steel structures and cable trays. Modelling is carried out in context, using a customer-defined catalogue and specification, in a full 3D environment, with the support of tools that ensure a clash-free design. A full range of outfitting drawings and production information can be produced automatically from the model.

AVEVA Marine Drafting
AVEVA Marine Drafting™ is a module for the automatic creation of symbolic-type marine drawings from the model database, as well as general 2D drafting functions.

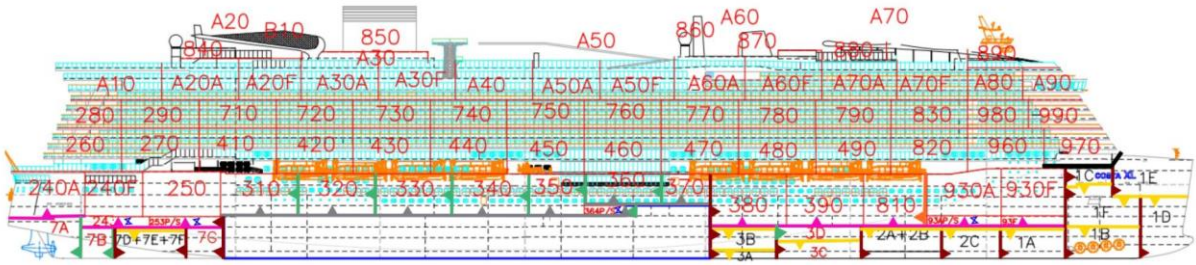
AVEVA Outfitting Supports
AVEVA Outfitting Supports™ enables easy and efficient design of support for pipes, HVAC ducts and cable trays. It also generates Material Take Off and automatic drawing of supports sketches. It is specifically designed for Marine projects, with the most common standards easily accessible.

Slika 1. Moduli za rad u AVEVA Marine, [2]

2. IZRADA MODELA SEKCIJE NADGRAĐA PUTNIČKOG BRODA

2.1. Koncept definiranja sekcije i njenih sklopova

Struktura AVEVA Marine baze podataka unutar Hull Detail Design modula za svaki pojedini brod se sastoji od volumenskih blokova koji se prilagođavaju s veličinom sklopa. Unutar tog volumenskog bloka je definiran radni prostor potreban za izradu sekcije koja ne bi trebala izlaziti van tih granica, Slika 2.

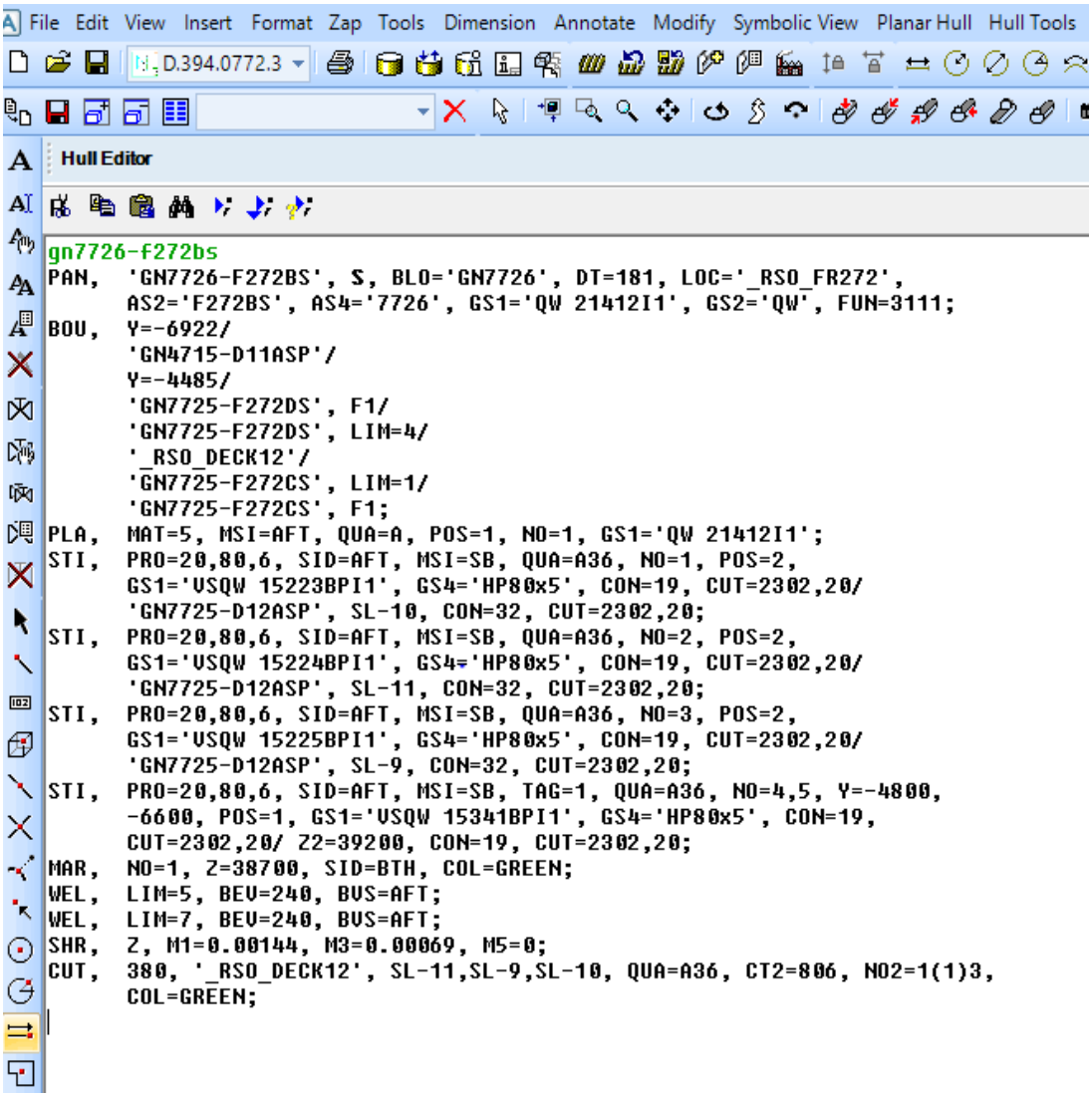


Slika 2. Podjela broda na blokove, [3]

Svaki grand blok je sastavljen od sekcija palube, pregrada ispod te palube i boka između dviju paluba, a daljnjom podjelom na sklopove i podsklopove (assembly) definiramo osnovnu građevnu jedinicu koji će predstavljati željenu, čeličnu konstrukciju. Prilikom definiranja sklopa potrebno je definirati granice svakog sklopa u ovisnosti o susjednim sklopovima. Oni tako postaju topološki ovisni jedni o drugima pa prilikom svake promjene granice pojedinog lima i preostala struktura se prilagođava zadanoj promjeni, [3]. Ovaj princip se ne odnosi samo na limove, već na sve elemente koji su sadržani u pojedinom sklopu (koljena, ukrepe, pločice).

2.2. Sučelje za definiranje modela sekcije i njenih sklopova

Prilikom modeliranja sklopa u programu AVEVA Marine, Slika 3, njegov jedinstveni naziv ne određuje samo geometrijski položaj panela, već i pripadnost tog panela svom bloku. U primjeru je prikazan kod jednog sklopa i sve informacije vezane za tu pregradu. Iz njega možemo isčitati, granice sklopa, debljinu i stranu na koju je okrenut materijal te samu kvalitetu materijala. Opisani su i ostali pripadni elementi sklopa. Ukrepe, koljena i pločice (njihov oblik, položaj, jedinstveni pozicijski broj i dimenzije).



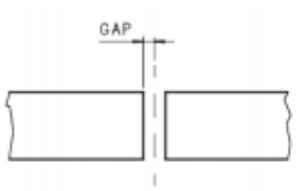
Slika 3. Sučelje za definiciju sklopa, [3]

Uvršten je dodatak za materijal *shr* (shrinkage), Tablica 1, čija vrijednost se mijenja u ovisnosti o debljini materijala, smjeru pružanja ukrepa na limu te načinu zavarivanja tih ukrepa (kontinuirani ili isprekidani zavar). Ako je pregrada vidljiva, zahtjev za površinskom obradom biti će uvršten.

Tablica 1. Dodatak za materijal, [4]

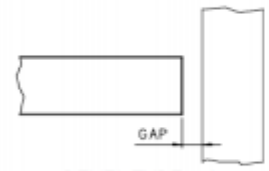
debljina lima *t* [mm]	dodatak za materijal,duljina pregrade , neprekinuti zavar , *shr*	dodatak za materijal,visina pregrade , neprekinuti zavar, *shr*	dodatak za materijal,duljina pregrade , isprekidani zavar, *shr*	dodatak za materijal, visina pregrade , isprekidani zavar *shr*
5,5-6,0	1,00155	1,00117	1,00144	1,00069
6,5-7,5	1,00146	1,00111	1,00134	1,00066
8,0-9,5	1,00133	1,00100	1,00119	1,00060
10,0-11,5	1,00117	1,00087	1,00102	1,00051
12,0-14,0	1,00099	1,00071	1,00089	1,00040
14,5-17,0	1,00079	1,00054	1,00074	1,00028
17,5-19,5	1,00054	1,00033	1,00055	1,00013
20,0-23,5	1,00037	1,00015	1,00039	1,00006
23,5-	1,00024	1,00008	1,00024	1,00003

Skošenja na rubovima lima i vrste šavova, Slika 4, su prilagođena osobinama (debljina lima i pripadnost istom ili različitom bloku ili sekciji) susjednih elemenata te mogućnostima panel linije na kojoj će se izvršiti okrupnjavanje sklopa. Oznaka GAP nam govori koliki je razmak između dva lima koje treba spojiti, a oznaka ALPHA predstavlja kut skošenja rubova lima. Simbol zastavice predstavlja vrstu šava koja se koristi samo na granicama između blokova.



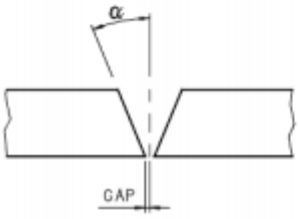
BEVEL TYPE = 10

100 /GAP=0
110 /GAP=0 (block limit symbol)
107 /GAP=0.5
108 /GAP=0.75
101 /GAP=1
109 /GAP=1.5
102 /GAP=2
103 /GAP=2.5
104 /GAP=3
105 /GAP=4
106 /GAP=5



BEVEL TYPE = 15

150 /GAP=0
151 /GAP=1
152 /GAP=2
153 /GAP=3

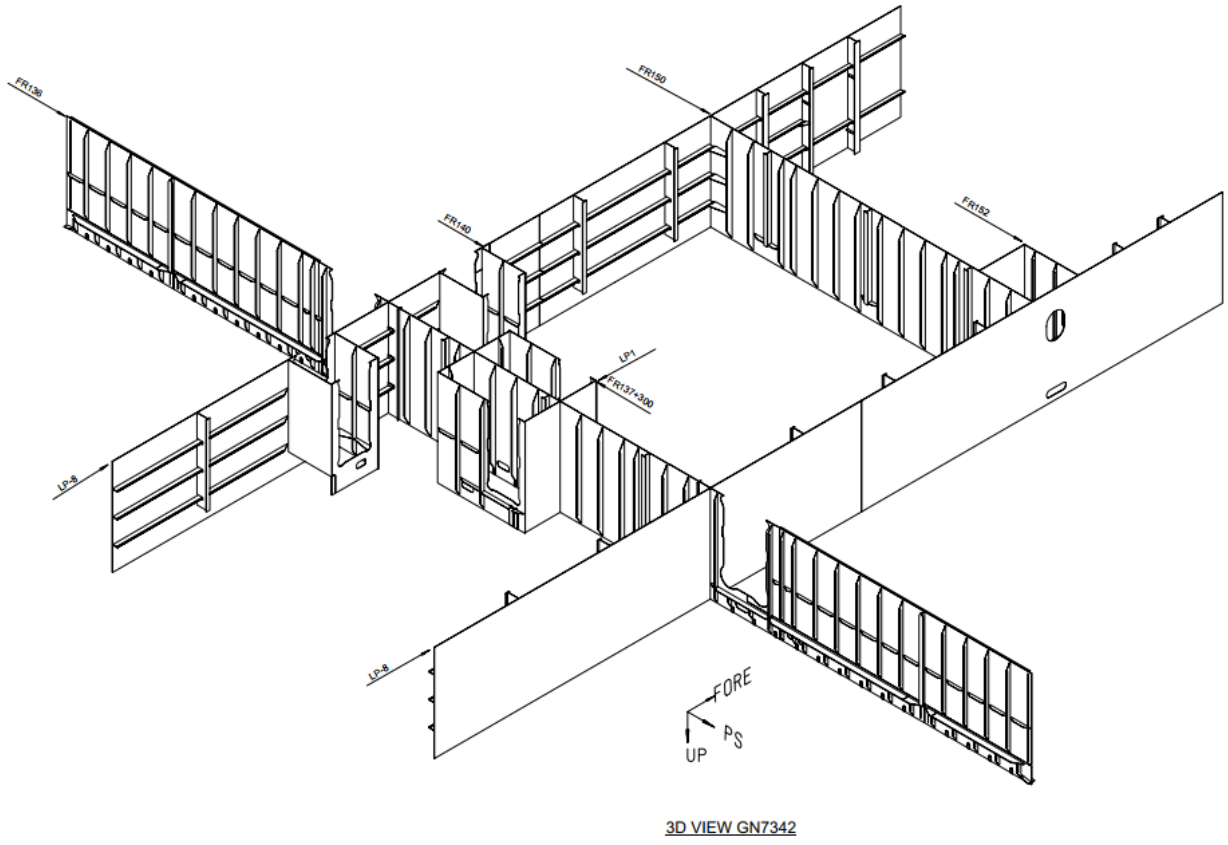


BEVEL TYPE = 20

201 /GAP=0 /ALPHA=1
236 /GAP=0 /ALPHA=5
210 /GAP=0 /ALPHA=10
211 /GAP=0 /ALPHA=15
233 /GAP=0 /ALPHA=20
214 /GAP=0 /ALPHA=23
215 /GAP=0 /ALPHA=25
208 /GAP=0 /ALPHA=28
216 /GAP=0 /ALPHA=30
228 /GAP=0 /ALPHA=35
234 /GAP=0 /ALPHA=40
231 /GAP=0 /ALPHA=45
235 /GAP=0 /ALPHA=50
237 /GAP=0 /ALPHA=10 (block limit symbol)
212 /GAP=0 /ALPHA=18 (block limit symbol)
213 /GAP=0 /ALPHA=20 (block limit symbol)
239 /GAP=0 /ALPHA=23 (block limit symbol)
248 /GAP=0 /ALPHA=25 (block limit symbol)
238 /GAP=0 /ALPHA=35 (block limit symbol)
209 /GAP=0 /ALPHA=45 (block limit symbol)
242 /GAP=0.5 /ALPHA=25
243 /GAP=0.5 /ALPHA=28
217 /GAP=1 /ALPHA=20
218 /GAP=1 /ALPHA=23
219 /GAP=1 /ALPHA=25
220 /GAP=1 /ALPHA=30
221 /GAP=1 /ALPHA=35
222 /GAP=1.5 /ALPHA=20
223 /GAP=1.5 /ALPHA=23
232 /GAP=2 /ALPHA=18
247 /GAP=2 /ALPHA=23
229 /GAP=2 /ALPHA=18 (subblock limit symbol)
230 /GAP=2 /ALPHA=20 (subblock limit symbol)
240 /GAP=2 /ALPHA=23 (subblock limit symbol)
244 /GAP=2 /ALPHA=25
245 /GAP=2 /ALPHA=28
224 /GAP=3 /ALPHA=18
225 /GAP=3 /ALPHA=20
241 /GAP=3 /ALPHA=23
246 /GAP=3 /ALPHA=28
226 /GAP=3 /ALPHA=35

Slika 4. Vrste zavara i popis šavova, [5]

Svaki element konstrukcije posjeduje funkcijski kod (uputu na kojoj proizvodnoj liniji će se izvršiti montaža). Na lim je stavljena markacija koja označava gornju stranu panela i pozicionirani su otvori kako bi se izvršila priprema za raskroj materijala. Svi sklopovi sa zajedničkim nazivom sekcije (assembly GPS4) čine jednu sekciju, Slika 5, i za nju se izrađuje potpuna radionička dokumentacija.



Slika 5. 3D model sekcije nadgrađa GN7342, [5]

3. RASKROJ MATERIJALA I IZRADA RADIONIČKE I NARUDŽBENE SPECIFIKACIJE MATERIJALA

3.1. Tradicionalna metoda razvijanja lima

Tradicionalne metode razvijanja i trasiranja lima su bile dugotrajne i imale su više nedostataka. Crtanje se izvodilo u crtaonici u mjerilu 1:1, Slika 6. Potom bi se dobivena zakrivljena forma ispitala u bazenu uz nove korake korekcije brodskih linija pri formiranju građevnih rebara. Nakon razvoja vanjske oplate pristupalo bi se izradi drvenih letvica i šablona. Zadnji korak je bio obilježavaje limova i profila.

Nedostaci tradicionalne metode su se očitovali u individualnom ocijenjivanju glatkoće linija od strane crtača. U procesu prijenosa podataka između projektnog ureda gdje se stvaraju linije preko tablice očitanja, teoretskih rebara, izrade građevinskih rebara u crtaonici mogle su se pojaviti pogreške. Sama pocedura je trajala dugo, što je značilo da je limove trebalo naručiti prije gotovih očitanja pa se trebao predvidjeti dodatak, povećati otpad i proizvodni troškovi. Podaci dobiveni iz crtaonice se nisu mogli direktno koristiti u numerički upravljanim strojevima što je bio najveći nedostatak, [6]. Ova procedura je zahtijevala velike radne prostore za crtanje i izradu šablona i obilježavanje limova.

Slika 6. Trasiranje lima, [7]

3.2. Raskroj materijala

Prilikom modeliranja bloka AVEVA Marine bloka, a prije operacije raskroja potrebno je još jednom usporediti dimenzije i kvalitetu limova i profila sa stvarnim mogućnostima narudžbe iz valjaonice limova. Ako ponuđeni izbor limova i profila ne zadovoljava zahtjeve konstrukcije, model će se morati prilagoditi odabirom limova i profila veće dimenzije i iste kvalitete ili jednake dimenzije, ali veće kvalitete materijala kako bi se zadovoljila čvrstoća konstrukcije. Popis limova i profila koji se nalaze na skladištu Meyer Turku, Tablica 2 i Tablica 3.

Tablica 2. Limovi na skladištu, [8]

Debljina t [mm]	kvaliteta	Visina *H* [mm]	Duljina *L* [mm]	R_e [mm]
5	A	2750	9000	235
5	A	2750	12000	235
5	A	2850	12000	235
5	A	3000	9000	235
5	A	3000	12000	235
5	A	3250	12000	235
6	A	2750	9000	235
6	A	2750	12000	235
6	A	3050	12000	235
7	A	2750	9000	235
7	A	2750	12000	235
7	A	2900	12050	235
7	A	3000	12000	235
7	A	3250	12000	235
8	A	2900	12000	235
8	A	3000	9000	235
8	A	3000	12000	235
9	A	3000	12000	235
10	A	2900	7000	235
10	A	2900	12000	235
10	A	3050	12000	235
12	A	3000	12000	235
12.5	A	3000	12000	235
13	A	3000	12000	235
13.5	A	3000	12000	235
14	A	3000	12000	235
15	A	3050	8000	235

15	A	3050	12000	235
15.5	A	3050	12000	235
16	A	3000	12000	235
16.5	A	3000	12000	235
17	A	3000	12000	235
18	A	3000	12000	235
20	A	3000	12000	235
22	A	3000	12000	235
25	A	3000	12000	235
30	A	3000	12000	235
40	A	3000	12000	235
6	A36	3000	12000	315
7	A36	2750	9000	315
7	A36	2750	12000	315
7	A36	3000	9000	315
7	A36	3000	12000	315
7	A36	3250	12000	315
8	A36	3000	9000	315
8	A36	3000	12000	315
10	A36	2750	9000	315
10	A36	2750	12000	315
10	A36	2850	9000	315
10	A36	2850	12000	315
10	A36	3000	9000	315
10	A36	3000	12000	315
10	A36	3250	12000	315
12	A36	2750	9000	315
12	A36	2750	12000	315
12	A36	2850	12000	315
12	A36	3000	12000	315
13	A36	1800	12000	315
13	A36	2850	9000	315
14	A36	2650	12000	315
14	A36	2750	9000	315
14	A36	2750	12000	315
14	A36	3000	9000	315
14	A36	3000	12000	315
14	A36	3250	12000	315
15	A36	3000	12000	315
16	A36	3000	12000	315
16	A36	3200	12000	315
18	A36	2850	12000	315
18	A36	3050	9000	315
18	A36	3050	12000	315

19	A36	3050	12000	315
20	A36TM	3000	12000	355
21	A36TM	3000	12000	355
25	A36TM	3000	12000	355
30	A36TM	3000	12000	355
40	A36TM	3000	12000	355
25	D36TM	3000	12000	355
30	D36TM	3000	12000	355
40	E40TM	2050	6000	390
50	E40TM	2050	6000	390

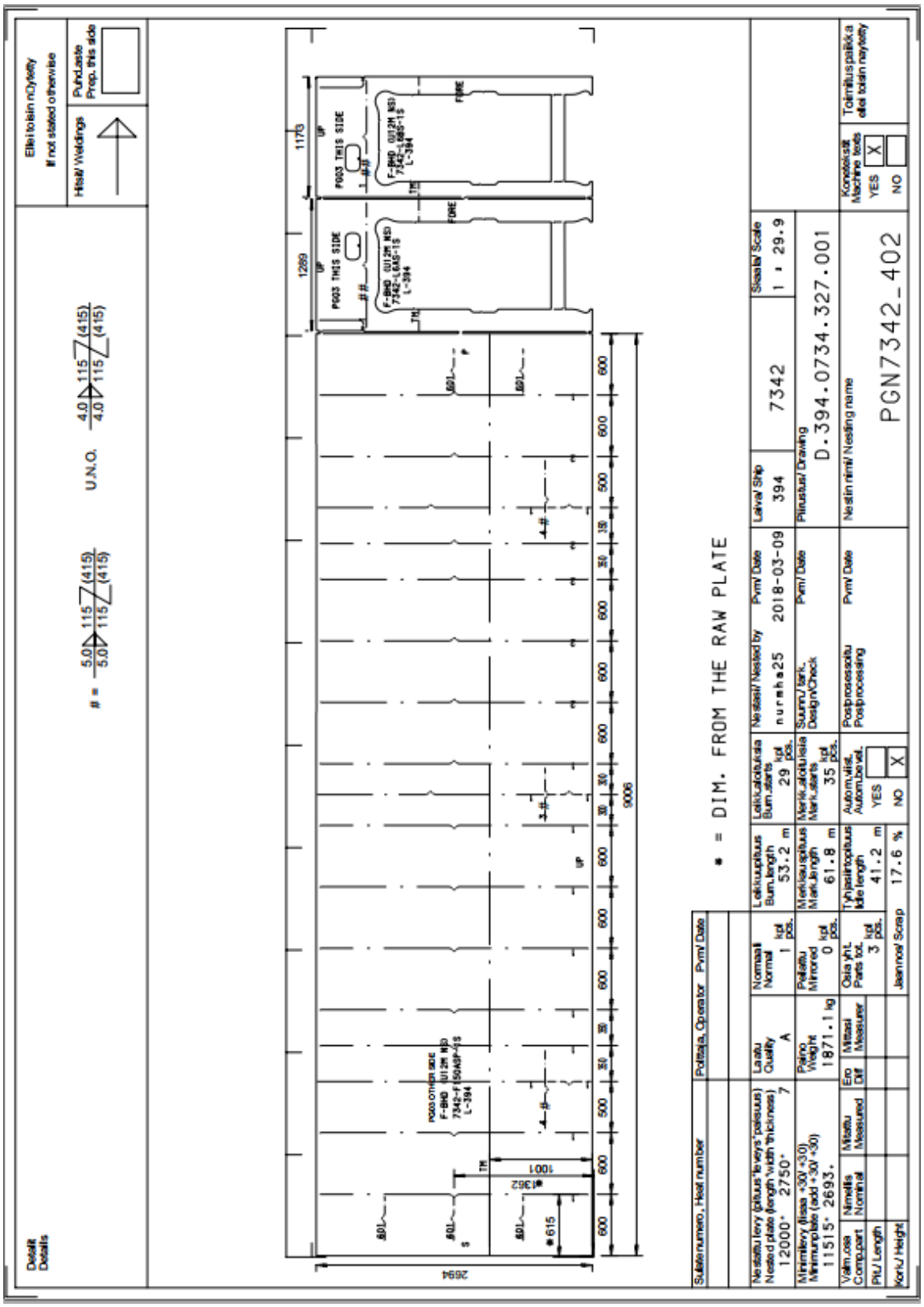
Tablica 3. Profili na skladištu, [8]

Ravni profili	Holland profili	Cijevni profili
B [mm], *t*[mm], *l*[mm]	*h*[mm], *t*[mm], *l*[mm]	*ϕ*[mm], *t*[mm], *l*[mm]
A LAT 70*15*6000	A BE 180*8*12000	S355J2H PUT 76,1*6,3*1000
A LAT 80*8*6000	A BE 180*10*12000	S355J2H PUT 139.7*8*1000
A LAT 80*15*6000	A BE 200*10*12000	S355J2H PUT 139.7*10*1000
A LAT 100*8*12000	A BE 200*9*12000	S355J2H PUT 168.3*10*1000
A LAT 100*10*12000	A BE 220*10*12000	S355J2H PUT 168.3*14.2*1000
A LAT 100*15*12000	A BE 240*10*12000	S355J2H PUT 168.3*20*1000
A LAT 120*8*12000	A BE 240*12*12000	S355J2H PUT 168.3*25*1000
A LAT 150*10*12000	A BE 260*12*12000	S355J2H PUT 168.3*35*1000
A LAT 150*15*12000	A BE 280*12*12000	S355J2H PUT 193.7*12.5*1000
A LAT 150*20*12000	A BE 300*12*12000	S355J2H PUT 193.7*14.2*1000
A LAT 200*10*12000	A BE 320*12*12000	S355J2H PUT 193.7*20*1000
A LAT 200*15*12000	A BE 340*12*12000	S355J2H PUT 193.7*25*1000
A LAT 200*20*12000	A BE 370*13*12000	S355J2H PUT 193.7*40*1000
A LAT 250*15*12000	A36 BE 80*5*12000	S355J2H PUT 219.1*14.2*1000
A LAT 250*20*12000	A36 BE 80*6*12000	S355J2H PUT 219.1*17.5*1000
A36 LAT 40*10*6000	A36 BE 100*5*12000	S355J2H PUT 219.1*20*1000
A36 LAT 50*10*6000	A36 BE 100*5*11000	S355J2H PUT 219.1*25*1000
A36 LAT 100*5*12000	A36 BE 120*6*12000	S355J2H PUT 219.1*40*1000
A36 LAT 100*8*12000	A36 BE 120*7*12000	S355J2H PUT 244.5*20*1000
A36 LAT 100*10*12000	A36 BE 120*8*12000	S355J2H PUT 244.5*25*1000
A36 LAT 120*10*12000	A36 BE 140*8*12000	S355J2H PUT 244.5*36*1000
A36 LAT 150*10*12000	A36 BE 160*8*12000	S355J2H PUT 273*20*1000
A36 LAT 150*15*12000	A36 BE 160*9*12000	S355J2H PUT 273*25*1000
A36 LAT 200*15*12000	A36 BE 180*8*12000	S355J2H PUT 323,9*25*1000
	A36 BE 180*10*12000	

Završetkom faze modeliranja i zadavanjem pozicijskih brojeva za svaki element konstrukcije potrebno je razraditi model do pojedinačnih elemenata. AVEVA Marine to čini programom koji se zove Plate Parts Generations Program. Ovaj program razdvaja sve limove i profile koji zajedno tvore jedan sklop (assembly) i stvara bazu podataka koja se sastoji od (GEN) file dokumenata (lista za rezanje limova koja se automatski generira razradom do pojedinačnih elemenata) , prilog I, a koji su zapravo uputa stroju kako raskrojiti materijal.

Na slijedećem primjeru je prikazan raskroj, Slika 7, pregrada ispod palube na naručenom limu. Prikazane su njihove dimenzije kao i dimenzija i karakteristike naručenog lima (debljina, širina, visina, masa i kvaliteta materijala). Na raskroju svakog sklopa postavljene su markacije za profile, markacija za gornju stranu lima, vrsta skošenja rubova, kvaliteta završne obrade te naravno jedinstveno ime tog sklopa. Sadržana je uputa za vrstu zavara (kontinuirani ili isprekidani zavar) profila na limove u odnosu na položaj koji pregrada zauzima u konstrukciji broda.

Na ovom raskroju udio neiskorištene površine naručenog lima iznosi 17.6%. Taj ostatak materijala će se iskoristiti za manje elemente konstrukcije (koljena, pločice, zakrpe) u izradi neke slijedeće sekcije. Prikazi raskroja za sekciju GN7342 se nalaze u prilogu II.



Slika 7. Raskroj materijala, [5]

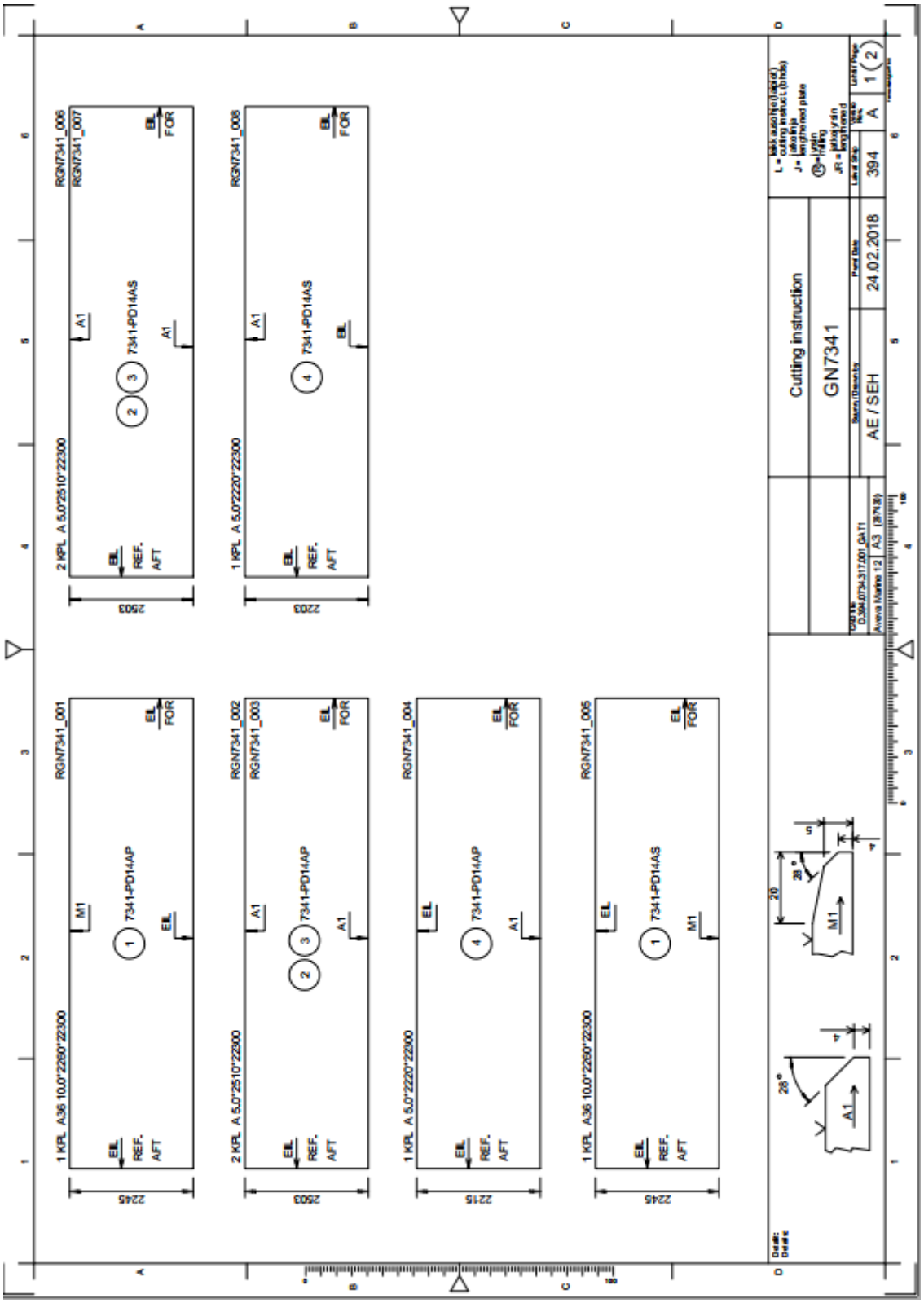
3.3. Okrupnjavanje limova palube

Kako bi se izvršilo spajanje u jedan jumbo panel palube (plate gathering), a čija se duljina i širina podudara s veličinom bloka potrebno je izraditi upute za rezanje i pripremiti rubove svakog lima. Dimenzije naručenih limova palube se trebaju prilagoditi zahtjevanim dimenzijama limova koje se mogu očitati iz pripremljenog modela.

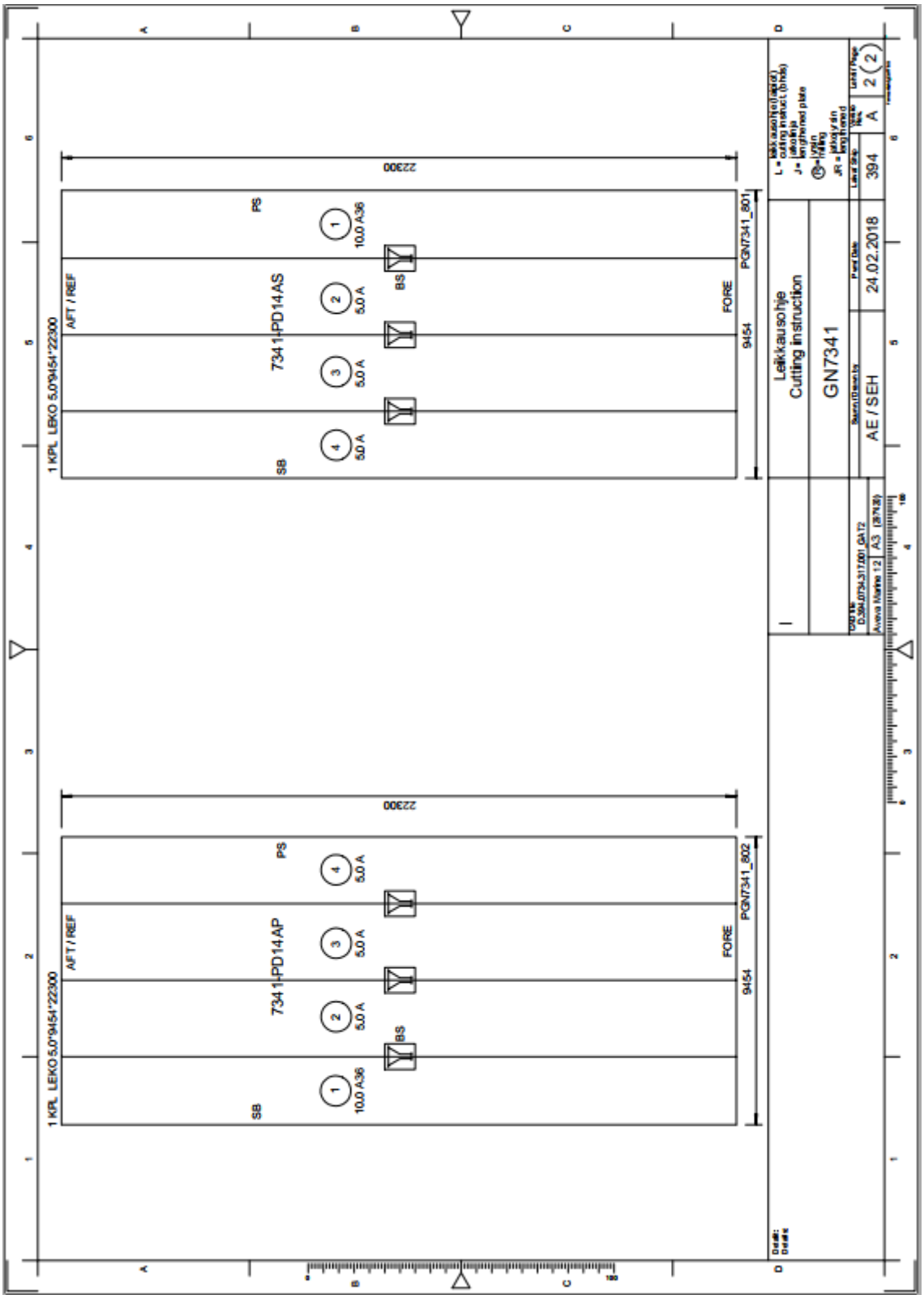
Na nacrtu upute za rezanje limova, Slika 8, svaki lim ima svoj naziv, pozicijski broj i oznaku kojem bloku i jumbo panelu pripada. Naznačena je kvaliteta, debljina materijala i dimenzija naručenog lima. Postavljene su oznake za skošenje rubova panela i skica detalja kako se priprema ruba treba izvršiti. Definirana je orijentacija panela i proizvodna dimenzija, ona na koju će se lim izrezati.

Odabir pozicije šavova definirati će minimalna udaljenost od 50 mm od bilo koje ukrepe zavarene na limove palube i izbjegavanje prelaženja šavova na radijusima otvora koje je potrebno iskrojiti. Minimalni razmak šavova između limova palube je definiran tehnološkim mogućnostima pa minimalna širina lima koji se može naručiti iznosi 1750 mm, a maksimalna širina iskrojenog lima palube mora biti 50 mm manja od širine naručenog lima, [9].

U ovisnosti o položaju lima u odnosu na okrupljeni panel, razlikovati će se i razlike rezerve materijala potrebne kako bi se limovi sveli na željenu mjeru. Vanjski limovi, Slika 9, koji su označeni pozicijskim brojevima 1 i 4 imati će višak od 15 mm zbog potrebe pripreme vanjskih rubova i uklapanja sekcije sa sekcijom oplate broda, dok će se unutarnji limovi (pozicijski brojevi 2 i 3) podudarati s dimenzijom limova koja je definirana s dodatkom za materijal, Tablica 1, u AVEVA Marine modelu. Nacrti raskroja limova palube i nacrt spajanja u jedan jumbo panel zvati će se GAT nacrti, prilog III, i biti će dio isporuke radioničke dokumentacije za sekciju GN7341.



Slika 8. Raskroj limova palube, [5]



Slika 9. Spajanje limova palube, [5]

3.4. Izrada radioničke specifikacije materijala

Radionička i narudžbena specifikacija materijala se izrađuje za svaku sekciju posebno. Kako se svaki blok sastoji od sekcije palube, sekcije pregrada ispod te palube i oplate broda tako će svaka sekcija imati potpunu, vlastitu dokumentaciju.

GEN datoteka je uputa stroja kako će se izvršiti raskroj svakog naručenog lima.

Wcog-lista, prilog IV, se sastoji od svih elemenata koji se nalaze u pojedinoj sekciji. Popis limova, prilog V, je popis standardnih dijelova i elemenata koji će otići na raskroj materijala. Popis profila, prilog VI, je lista upotrijebljenih profila sa uputama za vrste skošenja krajeva profila.

U primjeru, prilog IV, wcog liste za sekciju GN7342 svaki element je pojedinačno definiran sa svojim geometrijskim i tehnološkim značajkama.

Jedna od prednosti korištenja suvremenih alata je i poznat točan položaj težišta svakog bloka kao i njegova masa (bez opreme) što se može očitati iz wcog-liste jer u AVEVA Marine modelu broda svaki element mora imati definiran položaj u prostoru, dimenzije i vrstu materijala od koje je izrađen. Na taj način se može usporediti masa sekcije u modelu s pretpostavljenom masom sekcije koja služi i kao okvir pri izračunu sati potrebnih za izradu modela sekcije. Poznavajući masu sekcije možemo planirati transportne aktivnosti i način na koji ćemo okretati sekcije prilikom montaže na grand blok.

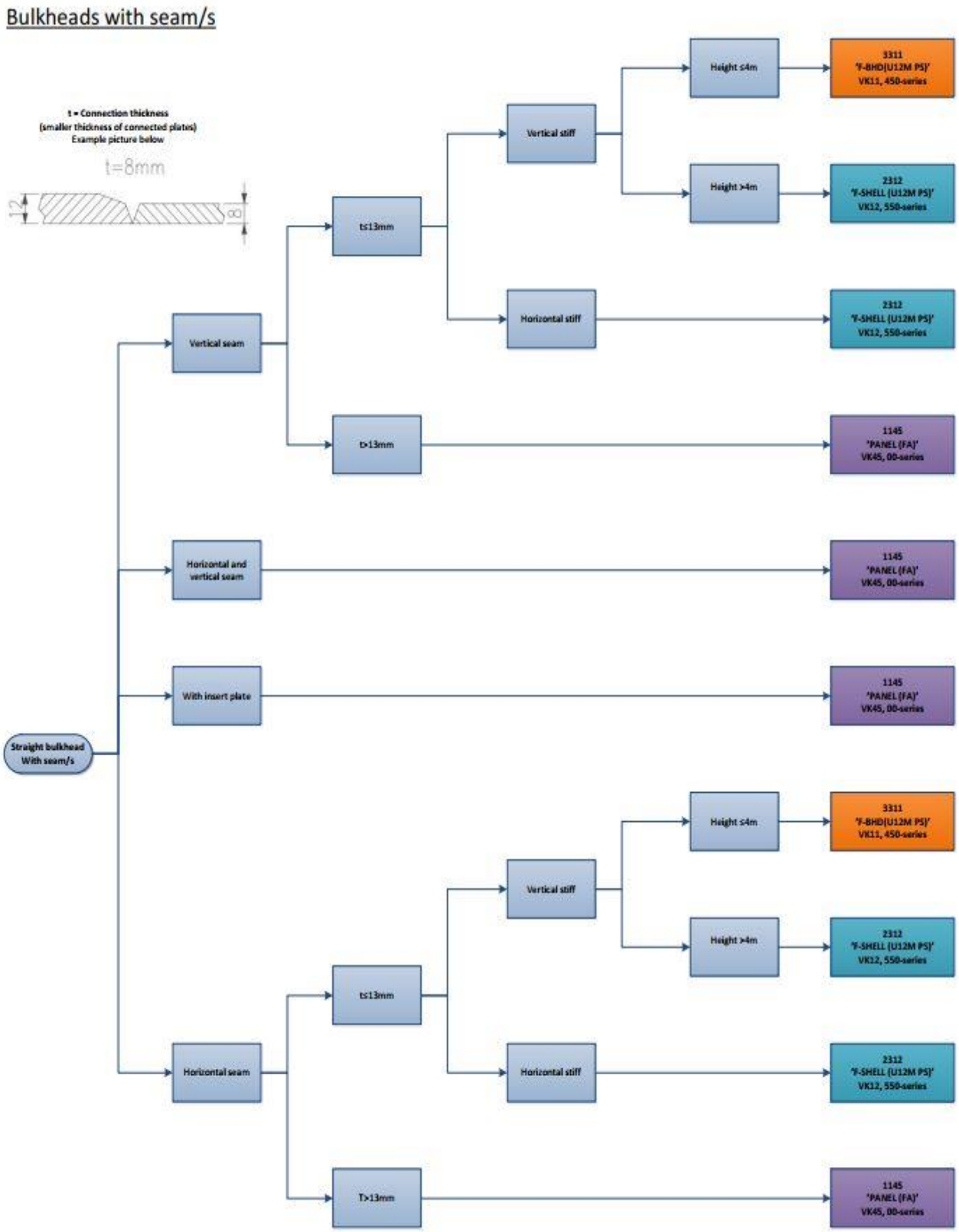
U fazi pripreme izrade dijelova sekcije, korištenjem detaljnih listi radioničkih specifikacija materijala potrebno je još jednom provjeriti da li su svi elementi sadržani na popisu (pripadaju li ispravnom bloku) te da li imaju nedvosmisleni i ispravan naziv te hoće li završiti na željenoj proizvodnoj liniji.

Uporabom funkcijskog koda u modeliranju svakog sklopa, izrađujemo uputu na kojoj proizvodnoj liniji predmontaže će se izvršiti montaža sklopa u ovisnosti o vrsti sklopa.

Odabir funkcijskog koda za limove sa šavovima, Slika 10, je definiran:

- debljinom lima
- duljinom lima
- postojanjem šava
- postojanjem ukrepljenja
- orijentacijom ukrepa
- visinom lima

Svi elementi konstrukcije koji su povezani u jedan sklop uz zajednički naziv sklopa moraju posljedično imati i zajednički funkcijski kod.



Slika 10. Odabir funkcijskog koda, [9]

Ako panelu odaberemo funkcijski kod 3311, Slika 10, znači kako karakteristike tog sklopa moraju zadovoljavati ograničenja i mogućnosti koja posjeduje proizvodna linija u hali 11, Meyer Turku, u kojoj će se izvršiti montaža. Linija predmontaže sklopova, Slika 11, u hali 11. može sastavljati limove s vertikalnim šavovima, visinom do 4 m, duljinom do 12 m i debljinom do 13 mm [3]. Ukrepe se zavaruju kontinuiranim zavarom EPP postupkom.

Završnom usporedbom liste limova i radioničkih nacrta raskroja limova provjeriti će se jesu li svi elementi konstrukcije koji se nalaze na listi limova zaista i prisutni u nacrtima raskroja materijala i završiti u proizvodnji.

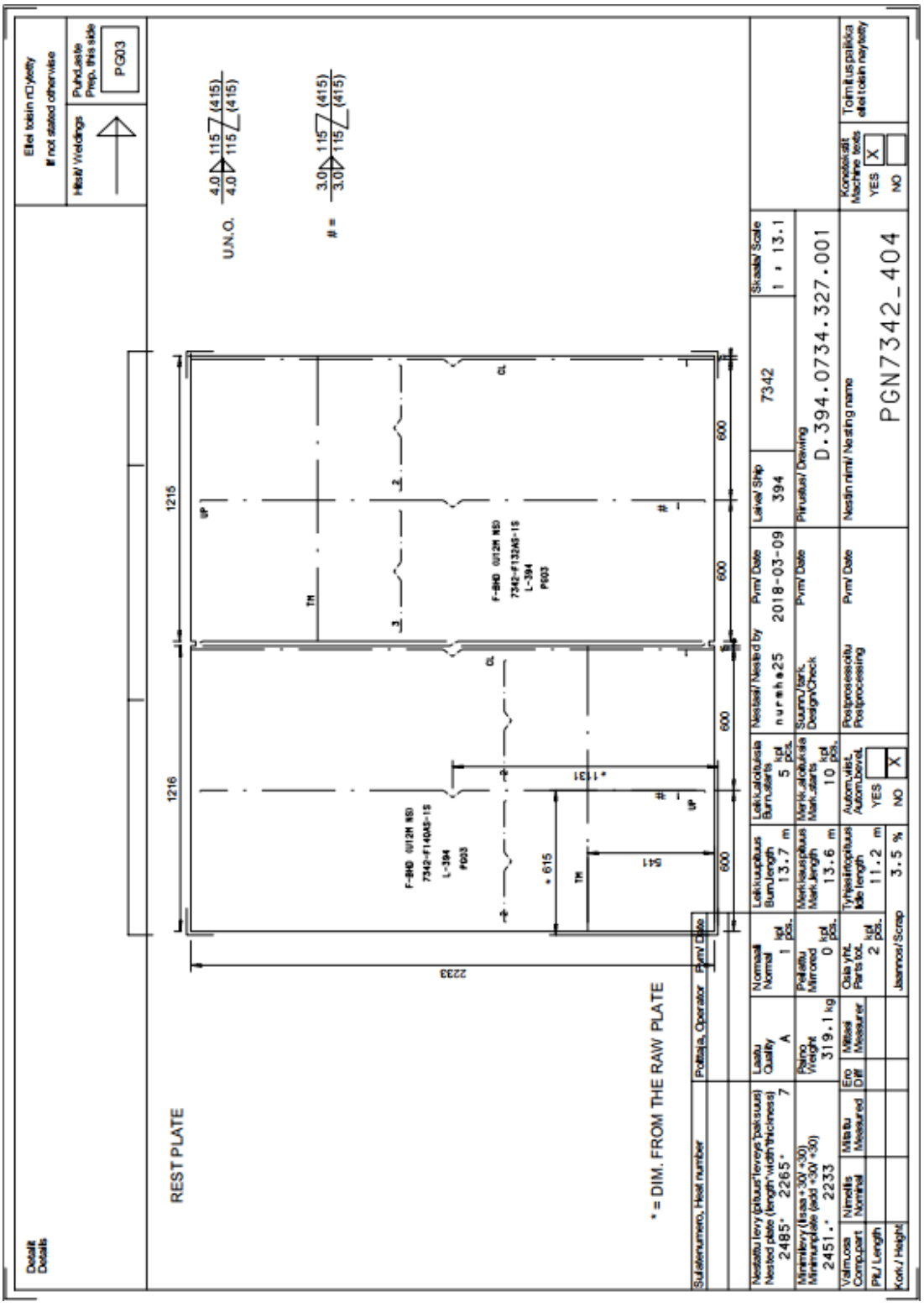
Slika 11. Linija za predmontažu sklopova Meyer Turku, [9]

3.5. Izrada narudžbene specifikacije materijala

Narudžbena specifikacija materijala će se sastojati od popisa konačnog broja limova i profila koji će se iskoristiti prilikom gradnje sekcije.

Popis limova sadrži ključne informacije vezane za narudžbu. Zahtjevane dimenzije svakog pojedinog lima, njegovu kvalitetu, masu, količinu naručenih limova te informaciju za koji raskroj će se svaki lim iskoristiti.

Brodogradilište će u svakoj prilici nastojati iskoristiti limove koji su već djelomično utrošeni za neku prijašnji blok ili novogradnju. Raskroj PGN7342_404, Slika 12, je primjer raskroja koji će se napraviti s ostatkom već naručenog lima (napomena za korištenje 'rest plate' prisutna u nacrtu raskroja materijala) kako bi se optimizirala količina novo naručenih limova, Tablica 4. Posao rezerviranja novih limova obavit će koordinator u brodogradilištu po primitku zahtjeva od strane konstruktora trupa broda.



Slika 12. Optimiziranje naručenih limova, [5]

Tablica 4. Narudžbeni popis limova za sekciju GN7342

Popis materijala - Limovi				
Brod	1394			
Blok	GN7342			
Potpis:	matisa11			
Ime raskroja	Kol.	Dimenzije *L*[mm], *H*[mm], *t*[mm]	Kvaliteta	Masa [kg]
PGN7342_451	1	9000*2750*6.0	A	1203
PGN7342_452	1	9000*2750*6.0	A	1203
KGN7342_001	1	515*140*7.0	A	4
PGN7342_404	1	2485*2265*7.0	A	319
PGN7342_401	1	12000*2750*7.0	A	1871
PGN7342_402	1	12000*2750*7.0	A	1871
PGN7342_403	1	12000*2750*7.0	A	1871
PGN7342_301	1	9000*3000*8.0	A	1750
PGN7342_001	1	275*215*8.0	A36	4
KGN7342_002	1	480*315*8.0	A36	7
PGN7342_453	1	9000*2750*10.0	A36	2005
PGN7342_501	1	12000*2750*10.0	A36	2673
PGN7342_502	1	12000*2750*10.0	A36	2673
PGN7342_503	1	12000*2750*10.0	A36	2673
PGN7342_504	1	12000*2750*10.0	A36	2673
PGN7342_002	1	430*545*20.0	A36TM	38

Korištenjem AVEVA Marine modula 'Plane Parts Generation Program' izraditi će se lista svih profila koji se potom kombiniraju s maksimalnom duljinom profila koji se mogu naručiti kako bi se što bolje iskoristio materijal.

Iz liste raskroja profila za sekciju GN7342 izdvojeni su HP 100x5 A36 profili koji osim jedinstvenog naziva i pozicijskog broja svakog profila pružaju informacije o duljini pojedinog profila kao i podatak o akumuliranoj duljini te neiskorištenom ostatku od ukupne duljine jednog profila duljine 12000 mm.

Za potrebe sekcije GN7342 iskoristiti će se tako devet profila HP 100x5 A36 duljine 12000 mm, Tablica 5. Udio neiskorištenog ostatka od ukupne duljine svih devet profila HP 100x5 A36 iznositi će 8.2%.

Nested Profile List 2018-05-09

GN7342_20 MANUAL Material: BE-100X5_A36(Length: 12000)

1 GN7342-F136BS/S30S (7342-F136BS13S) Len.: 2614 Acc. Len.: 2624

2 GN7342-F136BP/S30P (7342-F136BP9P) Len.: 2614 Acc. Len.: 5248

3 GN7342-X138AS/S1S (7342-X138AS3S) Len.: 2613 Acc. Len.: 7871

4 GN7342-X137ASP/S3S (7342-X137ASP3S) Len.: 2613 Acc. Len.: 10495

5 GN7342-F136BS/S3S (7342-F136BS23S) Len.: 419 Acc. Len.: 10923

6 GN7342-F136BP/S54P (7342-F136BP20P) Len.: 419 Acc. Len.: 11352

7 GN7342-F136BS/S49S (7342-F136BS24S) Len.: 355 Acc. Len.: 11716

8 GN7342-F136BS/S53S (7342-F136BS22S) Len.: 269 Acc. Len.: 11996

Used Length: 11996 Rest Length: 4 (0.0%)

Nested Profile List 2018-05-09

GN7342_21 MANUAL Material: BE-100X5_A36(Length: 12000)

1 GN7342-X137ASP/S2S (7342-X137ASP3S) Len.: 2613 Acc. Len.: 2623

2 GN7342-X135ASP/S3S (7342-X135ASP3S) Len.: 2613 Acc. Len.: 5247

3 GN7342-X135ASP/S2S (7342-X135ASP3S) Len.: 2613 Acc. Len.: 7870

4 GN7342-X133AS/S1S (7342-X133AS3S) Len.: 2613 Acc. Len.: 10494

5 GN7342-F136BS/S48S (7342-F136BS24S) Len.: 355 Acc. Len.: 10858

6 GN7342-F136BS/S47S (7342-F136BS24S) Len.: 355 Acc. Len.: 11223

7 GN7342-F136BS/S46S (7342-F136BS24S) Len.: 355 Acc. Len.: 11588

8 GN7342-F136BS/S45S (7342-F136BS24S) Len.: 355 Acc. Len.: 11952

Used Length: 11957 Rest Length: 43 (0.4%)

Nested Profile List 2018-05-09

GN7342_22 MANUAL Material: BE-100X5_A36(Length: 12000)

1 GN7342-L4BS/S1S (7342-L4BS3S) Len.: 2613 Acc. Len.: 2623

2 GN7342-L4AS/S2S (7342-L4AS3S) Len.: 2613 Acc. Len.: 5247

3 GN7342-L1BP/S1P (7342-L1BP3P) Len.: 2613 Acc. Len.: 7870

4 GN7342-L1AP/S1P (7342-L1AP3P) Len.: 2613 Acc. Len.: 10494

5 GN7342-F136BS/S44S (7342-F136BS24S) Len.: 355 Acc. Len.: 10858

6 GN7342-F136BS/S43S (7342-F136BS24S) Len.: 355 Acc. Len.: 11223

7 GN7342-F136BS/S25S (7342-F136BS24S) Len.: 355 Acc. Len.: 11588

8 GN7342-F136BP/S53P (7342-F136BP21P) Len.: 355 Acc. Len.: 11952

Used Length: 11957 Rest Length: 43 (0.4%)

Nested Profile List 2018-05-09

GN7342_23 MANUAL Material: BE-100X5_A36(Length: 12000)

1 GN7342-F136BS/S50S (7342-F136BS5S) Len.: 2195 Acc. Len.: 2205

2 GN7342-F136BP/S1P (7342-F136BP4P) Len.: 2195 Acc. Len.: 4410

3 GN7342-F136BS/S19S (7342-F136BS4S) Len.: 2178 Acc. Len.: 6598

4 GN7342-F136BS/S10S (7342-F136BS4S) Len.: 2178 Acc. Len.: 8787

5 GN7342-F136BS/S9S (7342-F136BS2S) Len.: 2163 Acc. Len.: 10960

6 GN7342-F136BP/S50P (7342-F136BP21P) Len.: 355 Acc. Len.: 11324

7 GN7342-F136BP/S49P (7342-F136BP21P) Len.: 355 Acc. Len.: 11689

8 GN7342-F136BS/S52S (7342-F136BS22S) Len.: 269 Acc. Len.: 11968

Used Length: 11973 Rest Length: 27 (0.2%)

Nested Profile List 2018-05-09

GN7342_24 MANUAL Material: BE-100X5_A36(Length: 12000)

1 GN7342-F136BS/S8S (7342-F136BS2S) Len.: 2163 Acc. Len.: 2173

2 GN7342-F136BS/S7S (7342-F136BS2S) Len.: 2163 Acc. Len.: 4346

3 GN7342-F136BS/S6S (7342-F136BS2S) Len.: 2163 Acc. Len.: 6519

4 GN7342-F136BS/S5S (7342-F136BS2S) Len.: 2163 Acc. Len.: 8692

5 GN7342-F136BS/S4S (7342-F136BS2S) Len.: 2163 Acc. Len.: 10866

6 GN7342-F136BP/S48P (7342-F136BP21P) Len.: 355 Acc. Len.: 11230

7 GN7342-F136BP/S47P (7342-F136BP21P) Len.: 355 Acc. Len.: 11595

8 GN7342-F136BP/S46P (7342-F136BP21P) Len.: 355 Acc. Len.: 11959

Used Length: 11964 Rest Length: 36 (0.3%)

Nested Profile List 2018-05-09

GN7342_25 MANUAL Material: BE-100X5_A36(Length: 12000)

1 GN7342-F136BS/S29S (7342-F136BS2S) Len.: 2163 Acc. Len.: 2173

2 GN7342-F136BS/S28S (7342-F136BS2S) Len.: 2163 Acc. Len.: 4346

3 GN7342-F136BS/S27S (7342-F136BS2S) Len.: 2163 Acc. Len.: 6519

4 GN7342-F136BP/S9P (7342-F136BP2P) Len.: 2163 Acc. Len.: 8692

5 GN7342-F136BP/S8P (7342-F136BP2P) Len.: 2163 Acc. Len.: 10866

6 GN7342-F136BP/S44P (7342-F136BP21P) Len.: 355 Acc. Len.: 11230

7 GN7342-F136BP/S43P (7342-F136BP21P) Len.: 355 Acc. Len.: 11595

8 GN7342-F136BP/S42P (7342-F136BP21P) Len.: 355 Acc. Len.: 11959

Used Length: 11964 Rest Length: 36 (0.3%)

Nested Profile List 2018-05-09

GN7342_26 MANUAL Material: BE-100X5_A36(Length: 12000)

1 GN7342-F136BP/S7P (7342-F136BP2P) Len.: 2163 Acc. Len.: 2173

2 GN7342-F136BP/S3P (7342-F136BP2P) Len.: 2163 Acc. Len.: 4346

3 GN7342-F136BP/S2P (7342-F136BP2P) Len.: 2163 Acc. Len.: 6519

4 GN7342-F136BP/S29P (7342-F136BP2P) Len.: 2163 Acc. Len.: 8692

5 GN7342-F136BP/S14P (7342-F136BP2P) Len.: 2163 Acc. Len.: 10866

6 GN7342-F136BP/S41P (7342-F136BP21P) Len.: 355 Acc. Len.: 11230

7 GN7342-F136BP/S40P (7342-F136BP21P) Len.: 355 Acc. Len.: 11595

8 GN7342-F136BP/S39P (7342-F136BP21P) Len.: 355 Acc. Len.: 11959

Used Length: 11964 Rest Length: 36 (0.3%)

Nested Profile List 2018-0-09

GN7342_27 MANUAL Material: BE-100X5_A36(Length: 12000)

1 GN7342-F136BP/S13P (7342-F136BP2P) Len.: 2163 Acc. Len.: 2173

2 GN7342-F136BP/S12P (7342-F136BP2P) Len.: 2163 Acc. Len.: 4346

3 GN7342-F136BP/S11P (7342-F136BP2P) Len.: 2163 Acc. Len.: 6519

4 GN7342-F136BP/S10P (7342-F136BP2P) Len.: 2163 Acc. Len.: 8692

5 GN7342-F140AS/S1S (7342-F140AS1S) Len.: 2153 Acc. Len.: 10855

6 GN7342-F136BS/S39S (7342-F136BS24S) Len.: 355 Acc. Len.: 11220

7 GN7342-F136BS/S38S (7342-F136BS24S) Len.: 355 Acc. Len.: 11584

8 GN7342-F136BS/S37S (7342-F136BS24S) Len.: 355 Acc. Len.: 11949

Used Length: 11954 Rest Length: 46 (0.4%)

Nested Profile List 2018-05-09

GN7342_28 MANUAL Material: BE-100X5_A36(Length: 12000)

1 GN7342-F132AS/S1S (7342-F132AS1S) Len.: 2153 Acc. Len.: 2163

2 GN7342-F136BS/S26S (7342-F136BS24S) Len.: 355 Acc. Len.: 2527

3 GN7342-F136BP/S36P (7342-F136BP18P) Len.: 269 Acc. Len.: 2807

4 GN7342-F136BP/S37P (7342-F136BP18P) Len.: 269 Acc. Len.: 3086

5 GN7342-F136BP/S38P (7342-F136BP19P) Len.: 264 Acc. Len.: 3361

Used Length: 3366 Rest Length: 8634 (72.0%)

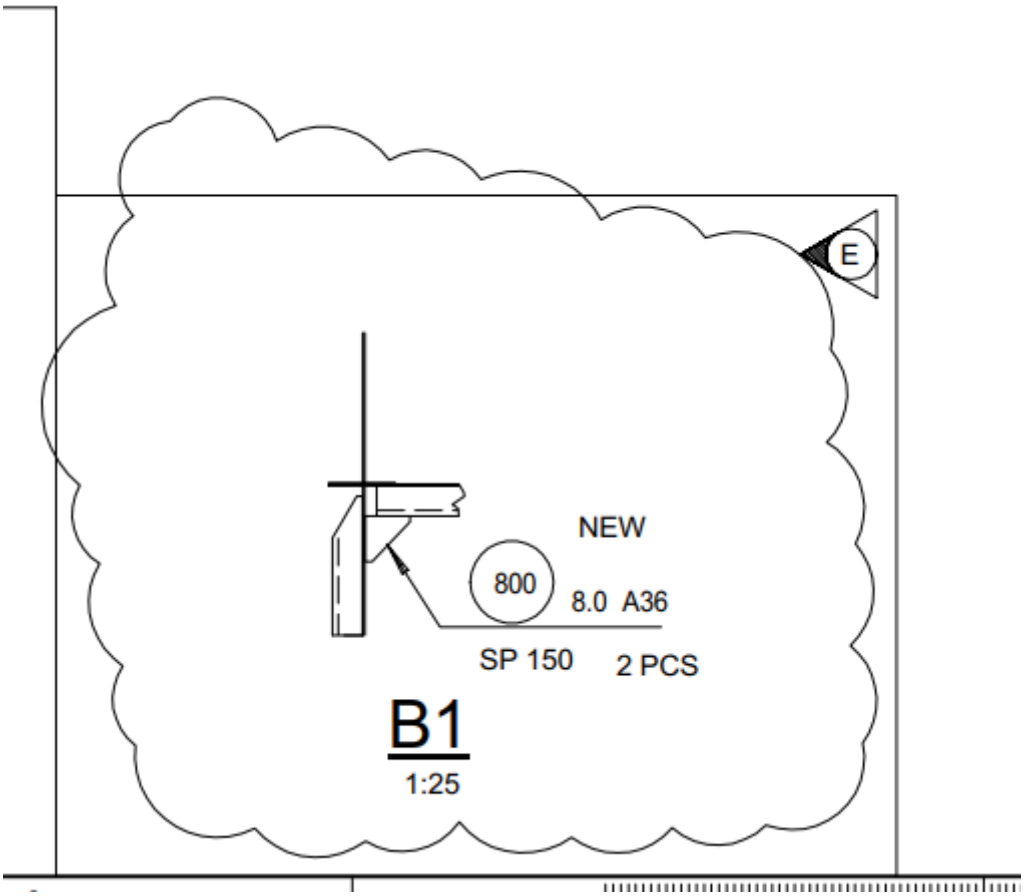
Summary of Material Used 2018-05-09

Tablica 5. Narudžbena lista profila za sekciju GN7342

Kol.	Vrsta profila	Ukupna duljina /[mm]	Iskorištena duljina /[mm]	Ostatak
9	BE-100X5_A36	Ukupno: 108000	Iskorišteno: 99094	Neiskorišteno: 8.2 %
5	LAT-100X10_A	Ukupno: 60000	Iskorišteno: 48615	Neiskorišteno: 19 %
1	LAT-120X10_A	Ukupno: 12000	Iskorišteno: 3060	Neiskorišteno: 74.5 %
1	LAT-150X10_A	Ukupno: 12000	Iskorišteno: 8106	Neiskorišteno: 32 %
2	LAT-150X15_A	Ukupno: 24000	Iskorišteno: 16383	Neiskorišteno: 31.7 %
1	LAT-50X10_A36	Ukupno: 6000	Iskorišteno: 1757	Neiskorišteno: 70,7 %
4	LAT-50X6_A	Ukupno: 24000	Iskorišteno: 18577	Neiskorišteno: 22.6 %
5	LAT-80X8_A	Ukupno: 30000	Iskorišteno: 25255	Neiskorišteno: 15.8 %

3.6. Revizija radioničke dokumentacije

Kako je pripremu radioničke i narudžbene dokumentacije potrebno izvršiti nekoliko mjeseci prije same fizičke realizacije sekcije i bloka treba očekivati pojavu potrebe za revizijom dijela dokumentacije. Neki elementi konstrukcije će se mijenjati, dodavati će se novi elementi, dok će neki biti izbrisani s liste limova i profila. Dodavanjem dva nova koljena s pozicijom 800, Slika 13, neće trebati raditi novi raskroj (standardni dijelovi na skladištu), ali će nova revizija nacrta, nova wcog lista kao i nova lista limova biti potrebna.



Slika 13. Revizija radioničke dokumentacije, [5]

4. PODJELA SEKCIJA NA SKLOPOVE

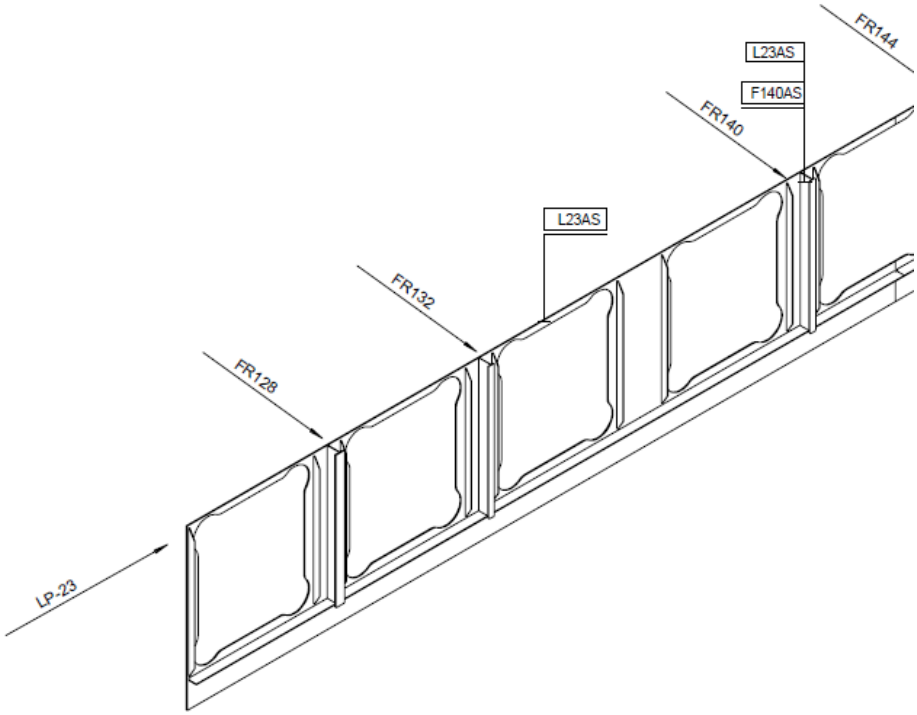
4.1. Definiranje naziva sklopa

Svaki građevni blok je podijeljen na više sekcija koje su sastavljene od sklopova. Blok 730 koji opisujemo ima temeljnu podjelu u odnosu na položaj koje sekcije imaju između dviju paluba koje su unutar pripadajućeg bloka. Svrha takve podjele je tehnologičnost gradnje jer nakon što se spoje limovi palube i napravi roštilj palube, gotove sekcije pregrada ispod pregrade i sekcija oplate boka se spajaju u jednu cjelinu.

Kako opisujemo 14. palubu od rebra 124. do rebra 156, njen GPS4 (ime sekcije) će biti 7341. Broj 1 označava pripadnost sekciji palube, a broj 4 u nazivu se odnosi na četrnaestu palubu. Svi elementi koji pripadaju sekciji palube imati će GPS4 pod nazivom 7341. Sekcija pregrada ispod 14. palube kao i svi njeni elementi imati će GPS4 pod nazivom 7342. Zadnji broj 2 u nazivu sekcije označava pripadnost elemenata konstrukcije sekciji pregrada ispod četrnaeste palube. Sekcija oplate broda i njeni sklopovi imati će GPS4 naziv 7343 gdje broj 3 označava sekciju oplate.

Svaki sklop posjeduje i svoj vlastiti GPS2 (ime sklopa) koji je direktno vezan uz prostorni smještaj sklopa. Ako za primjer uzmemo panel 7343-L23AS-1S, iz njegovog imena može se iščitati kojem bloku i kojoj sekciji pripada. AS označava da se panel nalazi desno od centralne linije i ima pozicijski broj 1 na desnoj (starboard) strani. L23 nam govori da je to uzdužni element, smješten 13500 mm od centralne linije.

Panel 7343-L23AS-F140AS-1S, Slika 14, je podsklop od panela 7343-L23AS-1S i nalazi se na rebru FR140. Panel 7343-L23AS-F140AS-1S je zapravo T profil koji je zavaren na lim oplate broda 7343-L23AS-1S. Svi podsklopovi koji su vezani za neki sklop imati će njegov GPS1 u svom nazivu, u ovom slučaju GPS1=L23AS. Sve GPS oznake su prisutne u listi profila i listi limova, prilog V i VI.

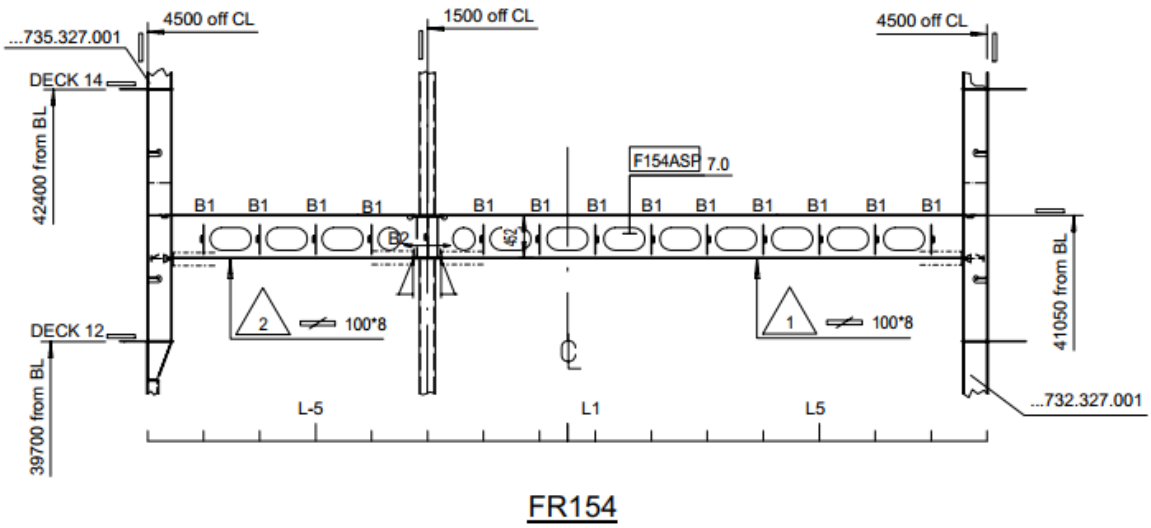


Slika 14. Sklop i podsklop, [5]

Ako blok ima podjelu sekcija na lijevu i desnu stranu onda se i njihova GPS4 imena moraju jasno razlikovati. Sekcije na lijevoj (portside) strani bi zadržale trenutne nazive sekcije 7341,7342 i 7343. Sekcije koje bi se nalazile na desnoj (starboard) strani imale bi nazive GPS4 7345 za sekciju palube, 7346 za sekciju pregrada ispod 14 palube i 7347 za sekciju oplate broda.

Kako pojedini elementi konstrukcije svojim položajem prelaze preko centralne linije, ime njihovog sklopa GPS2 imati će oznaku ASP u nazivu, Slika 15. Udaljavanjem od centralne linije, svaki sklop na pojedinom rebru dobio bi naziv GPS2 F154BP, F154CP, F154DP na lijevoj (portside) strani te nazive sklopova F154BS; F154CS, F154DS, na desnoj (starboard) strani.

Uzdužni element konstrukcije koji graniči sa susjednim blokom sa strane krme, Slika 14, se zove sklop 7343-L23AS-1S, dok bi prvi naredni imao naziv 7343-L23BS-1S i tako redom do granice bloka s pramčane strane.



Slika 15. Određivanje naziva sklopa, [5]

4.2. Određivanje pozicijskih brojeva podsklopova

Brodogradilište pri gradnji broda nastoji ugraditi što je više standardnih dijelova. Svi elementi koji počinju od pozicijskog broja 800 ili 8000, Slika 16, su standardni dijelovi koji ne odlaze u raskroj materijala, već se nalaze na skladištu materijala.

Ti dijelovi nemaju GPS2 oznaku pripadnosti tom sklopu jer standardni element se može ugraditi u nekom drugom sklopu iste sekcije u skladu sa zahtjevima konstrukcije. Standardni dijelovi imaju identični funkcijski kod i pozicijski broj.

8820	'STD-DOOR REINFORCEMENT E300x30'	Standardi oviaukon vahvistus. E300x30	Standard local reinforcement for door and passage way E300x30	VKX	Pos-no = 8820	Not nested
8821	'STD-DOOR REINFORCEMENT E390x30'	Standardi oviaukon vahvistus. E390x30	Standard local reinforcement for door and passage way E390x30	VKX	Pos-no = 8821	Not nested
8822	'STD-DOOR REINFORCEMENT D409x40'	Standardi oviaukon vahvistus. D409x40	Standard local reinforcement for door and passage way EV409x40	VKX	Pos-no = 8822	Not nested
8823	'STD-DOOR REINFORCEMENT D409x50'	Standardi oviaukon vahvistus. D409x50	Standard local reinforcement for door and passage way D409x50	VKX	Pos-no = 8823	Not nested
8824	'STD-DOOR REINFORCEMENT D365x40'	Standardi oviaukon vahvistus. D365x40	Standard local reinforcement for door and passage way D365x40	VKX	Pos-no = 8824	Not nested
8825	'STD-DOOR REINFORCEMENT D365x50'	Standardi oviaukon vahvistus. D365x50	Standard local reinforcement for door and passage way D365x50	VKX	Pos-no = 8825	Not nested
8826	'STD-DOOR REINFORCEMENT D2370x25'	Standardi oviaukon vahvistus. D2370x25	Standard local reinforcement for door and passage way D2370x25	VKX	Pos-no = 8826	Not nested
8827	'STD-DOOR REINFORCEMENT D2370x30'	Standardi oviaukon vahvistus. D2370x30	Standard local reinforcement for door and passage way D2370x30	VKX	Pos-no = 8827	Not nested
8828	'STD-TRIPPING BRACKET'	Standardi nurjahduslatta. HP-100 ja T-460 risteyksessä. T-palkin laippa 8-10mm.	Standard tripping brackets. Intersection of HP-100 and T-460. T-bar flange 8-10mm.	VKX	Pos-no = 8828	Not nested
8829	'STD-CONSOLE BRACKET'	Standardi konsolin jatkolatta FB-70x10	Standard contiunity flatbar FB-70x10	VKX	Pos-no = 8829	Not nested
8830	'STD-SHELL WEB BRACKET'	Standardi laitawebin pysty jatkolatta FB-40x10	Standard vertical contiunity flatbar of shell web FB-40x10	VKX	Pos-no = 8830	Not nested
8831	'STD-BHD CORNER 5000'	Standardi laipioristeyksen nurkkapyöristys. Korkeus 5000 mm	Standard bulkhead corner. High 5000 mm	VKX	Pos-no = 8831	Not nested
8832	'STD-BHD CORNER 4000'	Standardi laipioristeyksen nurkkapyöristys. Korkeus 4000 mm	Standard bulkhead corner. High 4000 mm	VKX	Pos-no = 8832	Not nested
8833	'STD-BHD CORNER 3500'	Standardi laipioristeyksen nurkkapyöristys. Korkeus 3500 mm	Standard bulkhead corner. High 3500 mm	VKX	Pos-no = 8833	Not nested
8834	'STD-BHD CORNER 3000'	Standardi laipioristeyksen nurkkapyöristys. Korkeus 3000 mm	Standard bulkhead corner. High 3000 mm	VKX	Pos-no = 8834	Not nested
8835	'STD-BHD CORNER 2500'	Standardi laipioristeyksen nurkkapyöristys. Korkeus 2500 mm	Standard bulkhead corner. High 2500 mm	VKX	Pos-no = 8835	Not nested
8901	'DOUBLING PLATE';	Tuplinki	Value = 'Doubling Plate'	VKX		00-series
8902	'INSERT PLATE';	Insertti	Value = 'Insert Plate'	VK45		00-series
8903	'PLATE PART';	Irrallinen levyosa	Independent plate part	VKX		00-series
8904	'DIAMOND PLATE';	Timattilevy	Value = 'Diamond plate'	VKX		00-series
8998	'LIFT SUPPORT PLATE';	nostotuenta	Value = 'Lift support plate'	VKX		00-series
8999	'LIFT SUPPORT PROFILE';	nostotuenta	Value = 'Lift support profile'	VKX		00-series

Slika 16. Popis standardnih dijelova, [9]

Kako bi se pregledom lista limova i profila odmah uočilo kakvu strukturnu funkciju i ostali manji elementi konstrukcije koji odlaze na raskroj materijala imaju, njihovi pozicijski brojevi imaju dogovorno određenu prvu znamenku u svom nazivu.

Svi elementi konstrukcije čiji pozicijski broj kreće od broja 100 su nestandardni dijelovi. Ti dijelovi idu na raskroj materijala i nemaju ni jedan element vezan uz sebe pa tako ni GPS2 u svom nazivu. Tipičan primjer za takav element je ojačanje na otvoru za vrata na nekoj pregradi.

Elementi konstrukcije čiji pozicijski broj kreće od broja 600 su nestandardna koljena. Elementi konstrukcije čiji pozicijski broj kreće od broja 500 su upore. One se uvijek modeliraju u sekciji palube ispod koje se nalaze, zajedno sa svojim pločom na koju su postavljene. Ploča i upora imaju identični pozicijski broj.

Elementi konstrukcije čiji pozicijski broj kreće od broja 300 su profili koji će se montirati tek nakon što su sve sekcije bloka dovršene i montirane te ugrađena sva oprema. To je preduvjet kako bi se ti dijelovi mogli nesmetano pozicionirati. Pozicijski broj nestandardnih zakrpa će kretati od broja 750. Svim nabrojanim nestandardnim dijelovima zajednička odlika je što u imenu svog naziva nemaju definiran GPS2. Svi elementi konstrukcije su prikazani u GN7342 wcog listi, prilog IV.

5. RADIONIČKA DOKUMENTACIJA ZA IZRADU SEKCIJE NADGRAĐA

5.1. Izrada radioničkih nacrta

Radionička dokumentacija za izradu sekcije će se sastojati od nacrta svake pojedinog sklopa i njegovim detaljima te tehnološkim uputama za montažu sklopa.

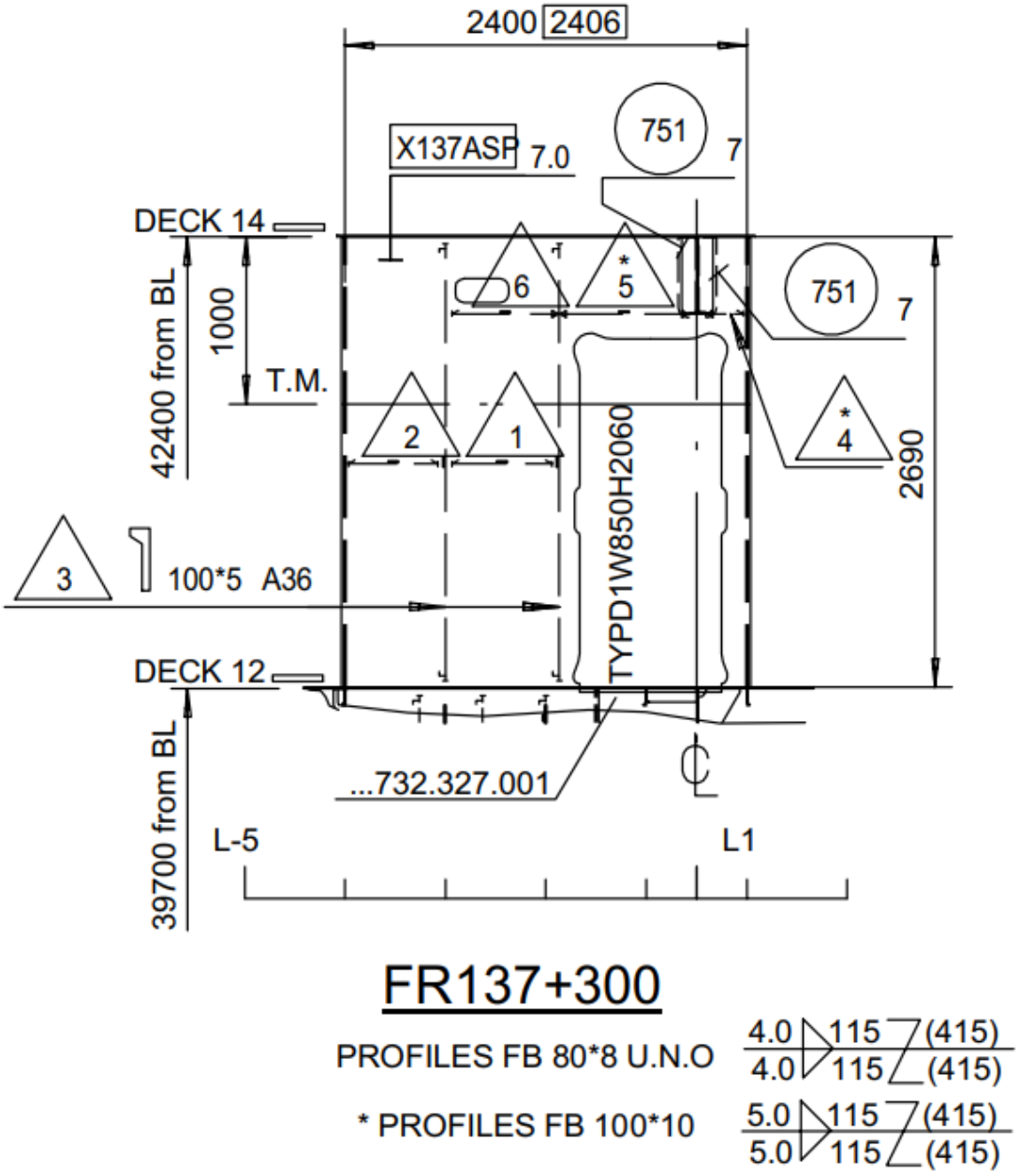
Na prvom nacrtu svake sekcije naznačeni su standardni razmaci uzdužnjaka i rebara te masa. Prikazan je položaj težišta sekcije uz oznaku kvalitetu završne obrade materijala i standardna debljina zavara. Definiran je smjer gledanja promjene debljine materijala na šavovima između limova. Na skici profila broda je šrafiran smještaj bloka unutar kojeg se nalazi sekcija koju opisujemo.

Svaki sklop na nacrtu, Slika 17. ima označene svoje dimenzije i markaciju za gornju stranu panela. Samo elementi koji pripadaju ovom sklopu (zajednički GPS2) će se označiti na tom presjeku zbog bolje preglednosti nacrta prilikom kontrole pozicijskih brojeva .

Svaki element pojedine sekcije mora biti prikazan na nacrtu sa svojim pozicijskim brojem i kvalitetom i debljinom materijala. Svi profili na nacrtu imaju svoj pozicijski broj unutar trokuta, dok limovi, koljena i pločice imaju pozicijski broj unutar kruga. Ako se profili moraju raskrojiti i oni će imati pozicijski broj označen krugom. Ako su otvori standardiziranih veličina kao što su vrata, Slika 17, oznaka za tipičan otvor se mora uvrstiti.

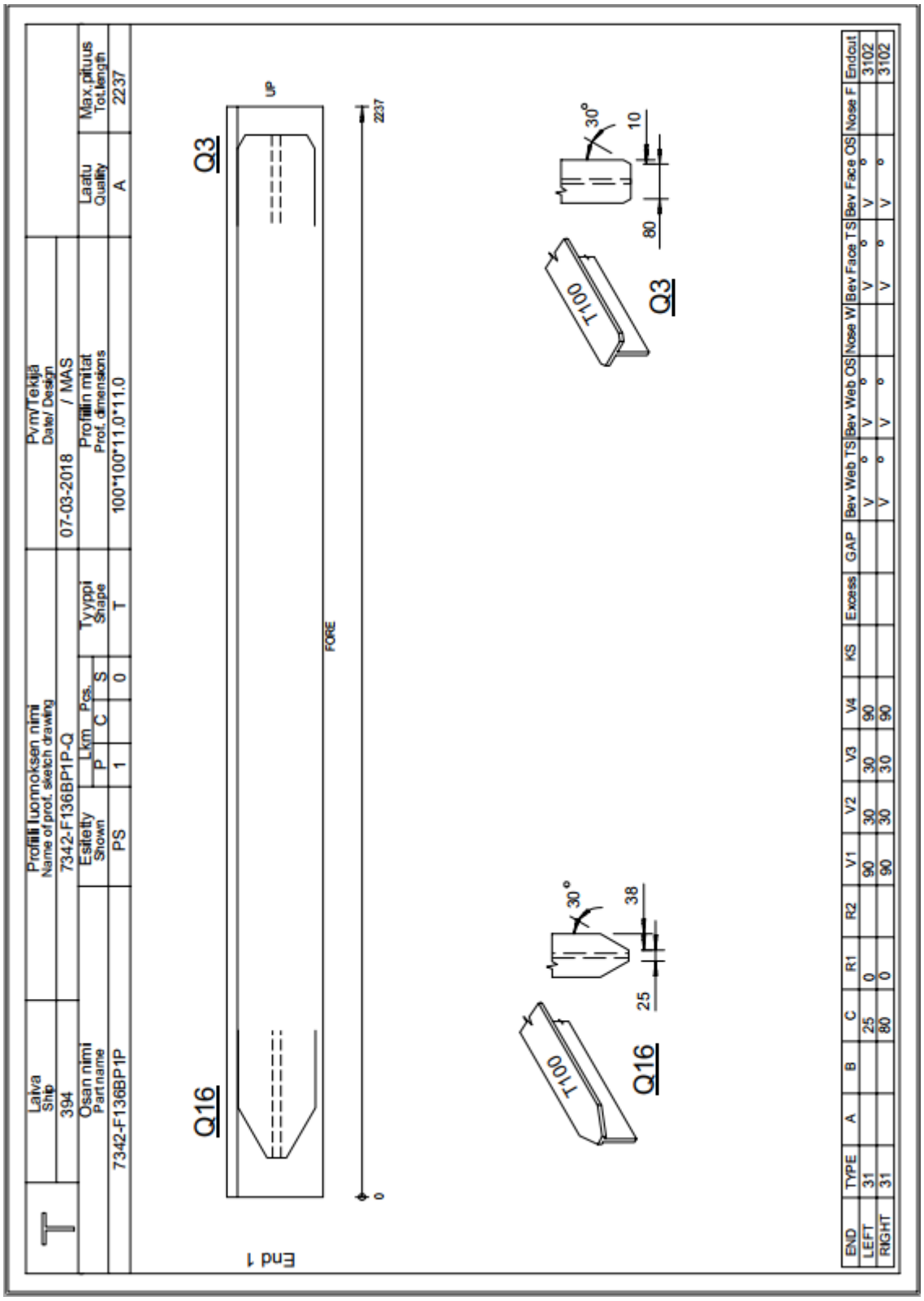
Uz svaki panel stoji oznaka za vrstu zavara kojom će se profili spojiti s limom. Na mjestu gdje sklop graniči s drugom sekcijom postaviti će se oznaka za skošenje rubova lima kao i sama oznaka za granicu sekcije ili bloka. Ako je sklop sastavljen od više limova svaki lim će imati markaciju šava i svoj pozicijski broj uz oznaku o promjeni debljine materijala.

Svi detalji označeni na pojedinom sklopu moraju biti prikazani baš na tom listu nacrta. Ako postoji više jednakih detalja oni se prikazuju samo jednom uz oznaku o njihovoj količini. Nacrti sekcije pregrada ispod 14. palube dani su u prilogu VIII.



Slika 17. Radionički nacrt sklopa, [5]

Uz nacrte sklopova prilažu se i nacrti skica profila, Slika 18, kojima treba ručno skositi rubove ili treba izvršiti savijanje profila. Postavljanjem komentara u model profila, automatski se generira skica profila koja daje uputu monterima kako oblikovati i zavariti element konstrukcije, prilog VII.



Slika 18. Priprema krajeva profila, [5]

6. TEHNOLOŠKA UPUTA ZA IZRADU I PREDMONTAŽU SKLOPOVA SEKCIJE I SEKCIJE NADGRAĐA

6.1. Smještaj bloka GB730

Blok GB730 se sastoji od 15. palube na visini 45100 mm od osnovice i strukture ispod 15. palube, 14 palube na visini 42400 mm od osnovice i strukture ispod 14 palube i 12 palube na visini 39700 mm od osnovice i strukture ispod 12 palube te se sastavlja u svojoj punoj širini bez podjele na lijevu i desnu stranu [4].

Blok GB730 se proteže između rebra FR124 + 200 mm do rebra FR158 + 200 mm. Blok GB730 će se postaviti iznad bloka GB430 i na stranu krme bloka GB740, Slika 1.

6.2. Izrada i predmontaža sekcije palube GN7341

Sekcija GN7341 okrupljenih limova palube u punoj veličini bloka GB730 će se sastaviti na liniji za izradu sklopova sastavljenih od ravnih panela.

Limovi će se sa skladišta materijala konvejerom dopremiti do linije za proizvodnju sklopova. Mosnom magnetnom dizalicom limovi će se dopremiti i posložiti na stol za zavarivanje.

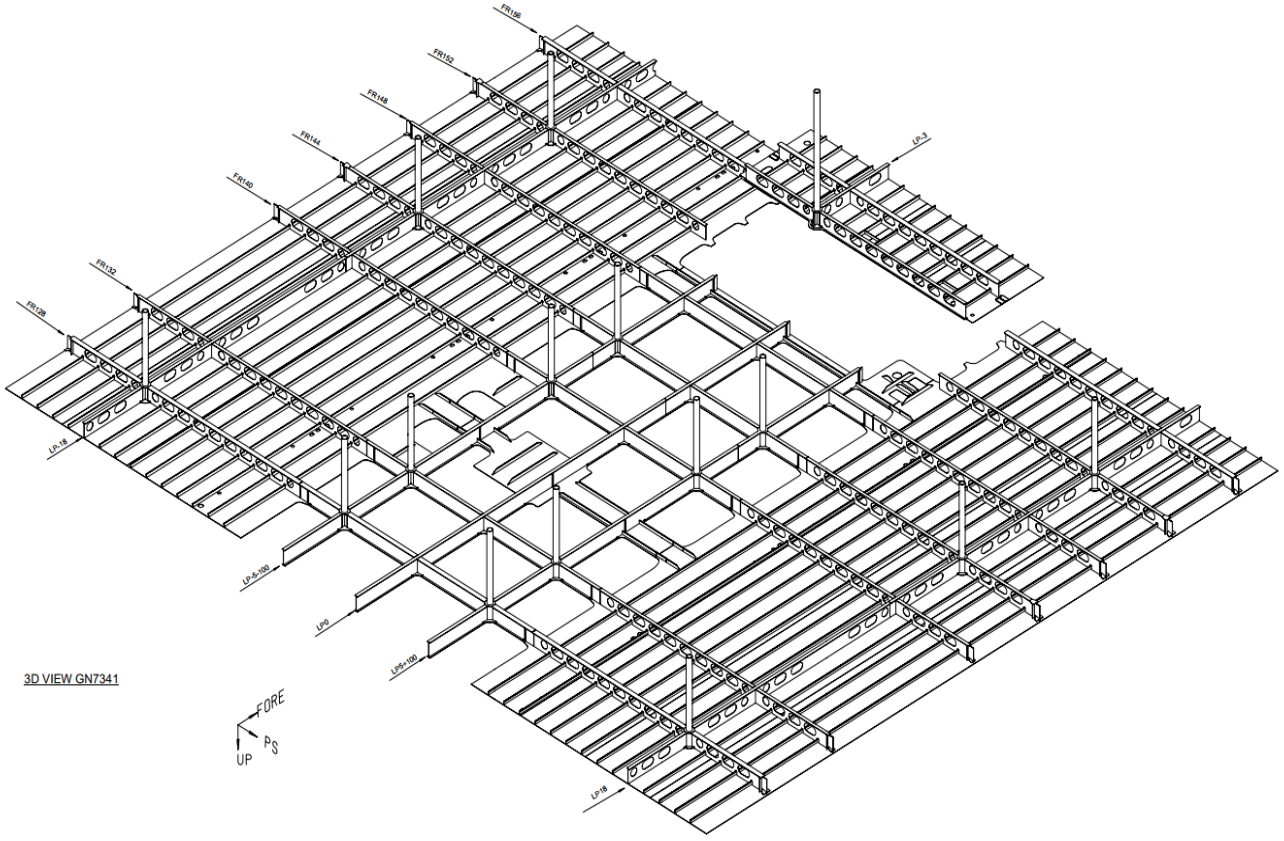
Prvi korak zavarivanja, Slika 19, obaviti će se jednostranim zavarivanjem limova palube. Osiguravanje šava od prokapavanja taline vršit će se bakrenom šinjom koja brzo odvodi toplinu i omogućuje brzo ukrućivanje taline u korijenu zavara. Zavarivanje se vrši elektrolučno pod praškom uz pridržavanje hidrauličkim uređajem [6].

Svi izrezi na jumbo panelu palube će se napraviti prije postavljanja roštilja palube.

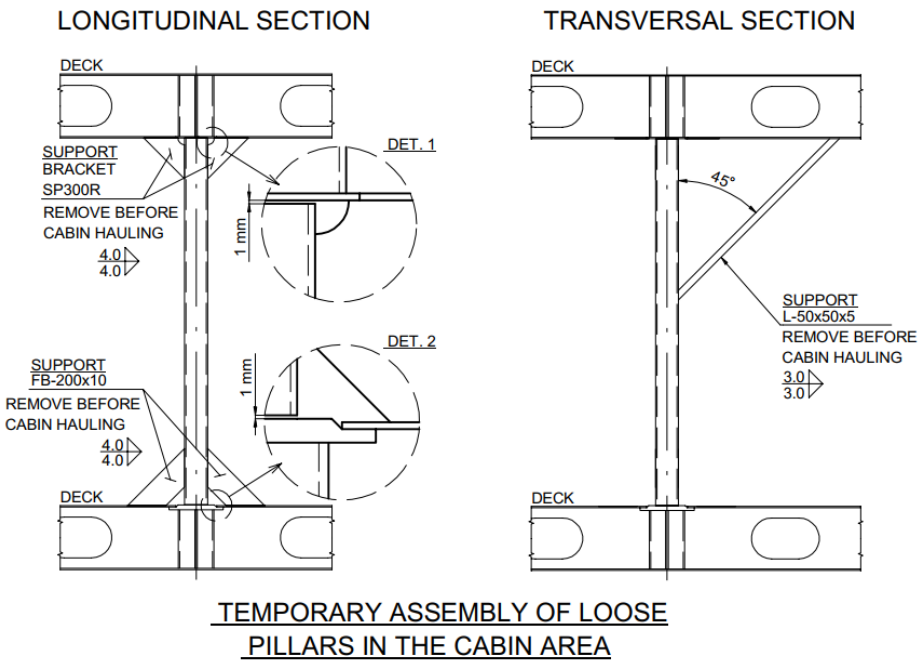
Slika 19. Zavarivanje limova palube, [10]

Izrada roštilja palube GN7341, Slika 20, kreće od profila 1. reda, uzdužnjaka koji su neprekinuti u punoj duljini. Potom se slažu interkostalne rebrenice u poprečnom smjeru. Profili roštilja, se postave na markacije na limu hidrauličnim pritiskivačem i zavaruju kutnim zavarom obostrano EPP metodom.

Kako blok GB730 ima funkciju kabinskog prostora za putnike, kabine za putnike dolaze kao oprema i ugrađuju se nakon sklapanja cijelog bloka GB730. Upore, Slika 21, na 10500 mm lijevo i desno od centralne linije će se privariti uz pomoć privremenih koljena i L profila te nakon postavljanja putničkih kabina trajno zavariti, [9] .



Slika 20. Roštilj palube sekcije GN7341, [5]

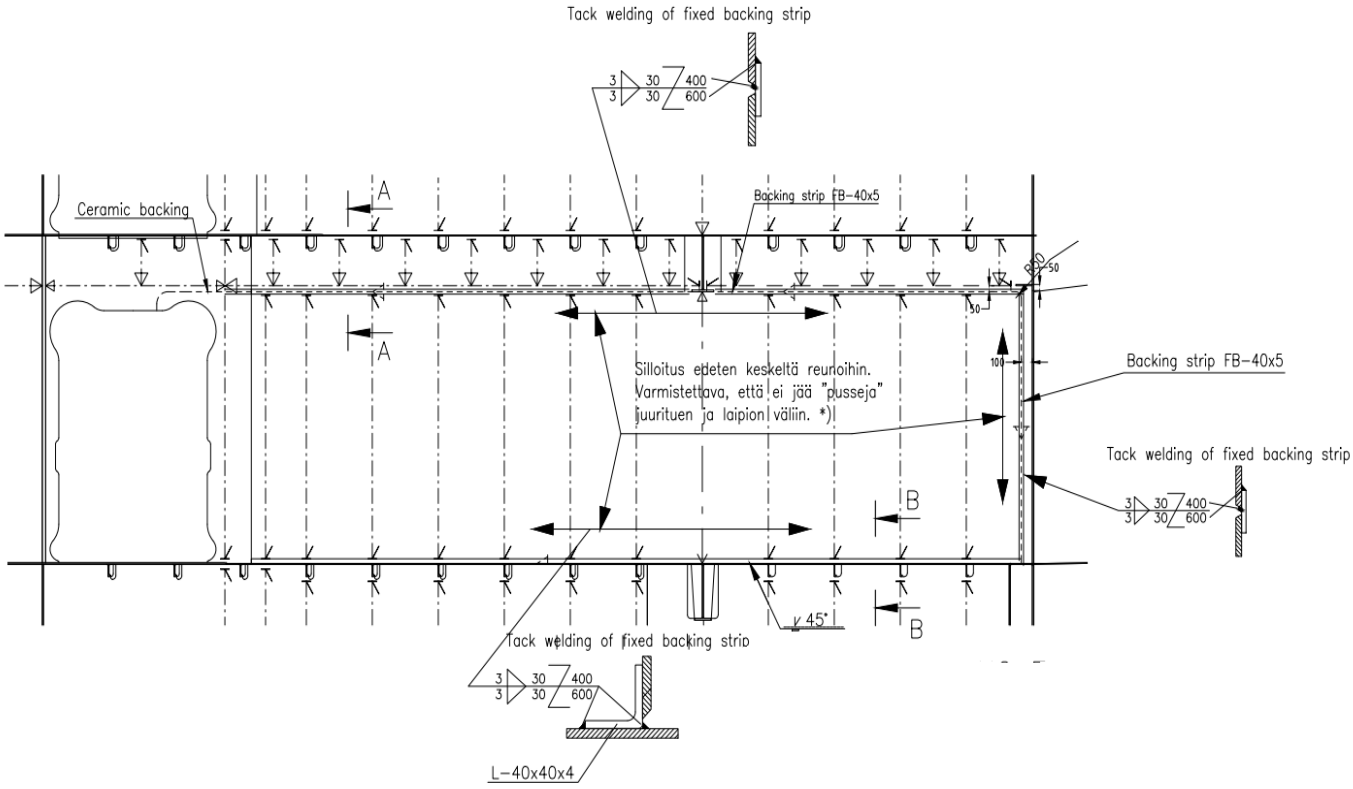


Slika 21. Privremeno ukrepljenje upora, [11]

6.3. Izrada i predmontaža sekcije palube GN7342 i sekcije oplate boka GN7343

Sekcija pregrada ispod palube 14. GN7342 i sekcije oplate boka GN7343 biti će sastavljeni na istoj proizvodnoj liniji. Gotovi sklopovi bloka GN7342 biti će dopremljeni i postavljeni na roštilj palube.

Na rebru FR136, Slika 22, izrezati će se privremeni otvori na lijevoj i desnoj strani od centralne linije, a oni će omogućiti montažu putničkih kabina na zadane pozicije. Sve trake i L profili koji će zatvoriti privremene otvore biti će točkasto zavareni i imati će pozicijski broj koji kreću od broja 300. (loose parts) jer se montiraju na rebro FR136 tek kad bude izvršena montaža cijele sekcije ispod 14. palube.



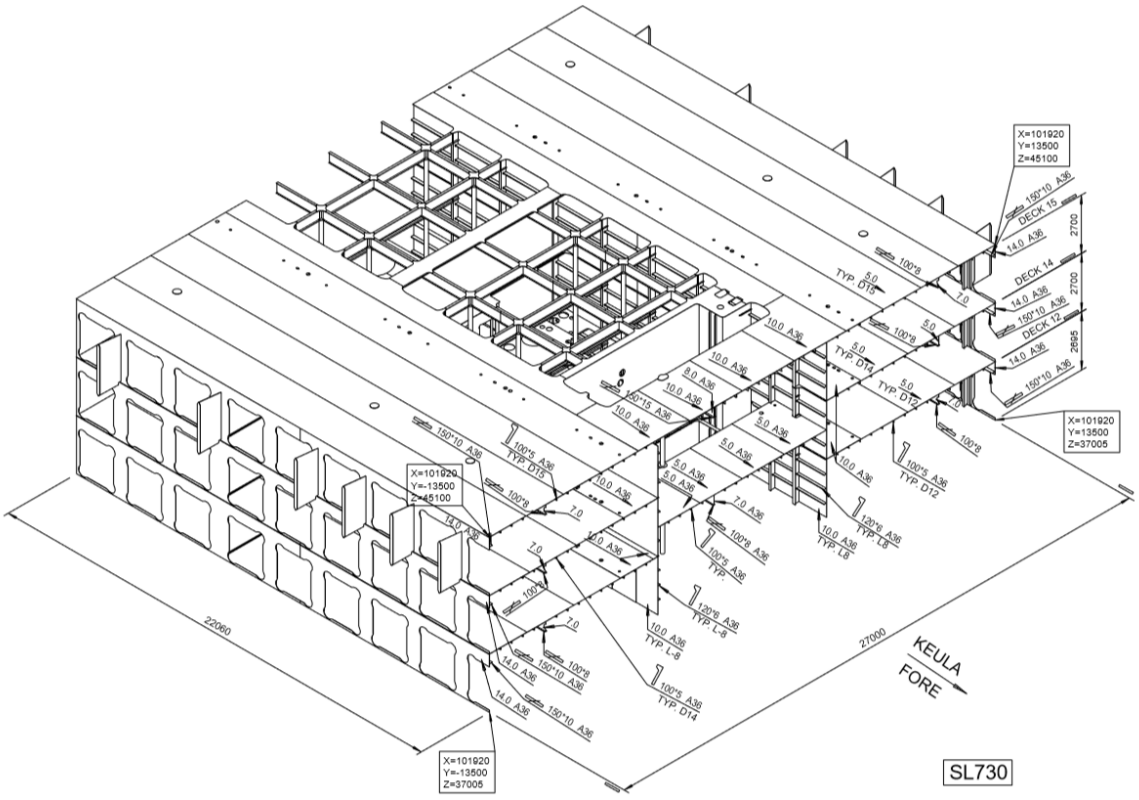
Slika 22. Privremeni otvori za transport, [12]

Nakon montiranja sekcije pregrada ispod palube montirati će se sekcija oplate boka broda. Za razliku od sekcije pregrada, sekcija oplate boka GN7343 se zavaruje obostranim kontinuiranim kutnim zavarom debljine 5 mm i dolazi s najboljom kvalitetom obrade površine lima jer se radi o vanjskoj vidljivoj pregradi. Konzole koje nose balkone su standardni sklop te se ne modeliraju, već postavljaju na završenu sekciju GN7343, Slika 23.

Slika 23. Sekcija oplate iz iste serije brodova

6.4. Kompletiranje grand bloka GB730

Nakon što su sve tri sekcije 14. palube kompletirane, okreću se s portalnom dizalicom i postavljaju na gornji dio sekcija 12. palube grand bloka GB730. Sekcije su spremne za daljnje opremanje i bojanje vanjske oplate bloka. Slika 24 prikazuje kompletiran grand blok GB730 s kontrolnim točkama za spajanje na susjedne blokove.



Slika 24. Grand blok GB730, [5]

Cijeli grand blok ima masu od preko 250 t pa će trebati tandem rad dviju portalnih dizalica kako bi se blok postavio na novogradnju u suhom doku, Slika 25.

Slika 25. Brod iz iste serije u suhom doku, [13]

7. ZAKLJUČAK

Razvojem računalne tehnologije i računalnih programa koji se mogu koristiti u brodograđevnom procesu skoro u potpunosti se promijenio način izrade radioničke dokumentacije i pripreme fizičke realizacije broda.

Proces razvoja i usavršavanja AVEVA Marine računalnog programa kontinuirano traje duže od 30 godina i prati sve nove zahtjeve brodograđevne proizvodnje. Najvažnije prednosti korištenja AVEVA Marine računalnog programa su ušteda na vremenu i standardizacija isporuke za pojedini blok koja se ostvari pripremom i izradom radioničke dokumentacije

Izrada modela broda je najzahtjevniji i najdugotrajniji dio posla koji konstruktor trupa treba obaviti kako bi se uopće izvršila priprema radioničke dokumentacije, ali dodana vrijednost gotovog modela se ogleda u mogućnosti njegovog korištenja za narednu novogradnju koja pripada istoj seriji brodova. Jednom kad je model pripremljen i usklađen s pravilima za gradnju može se pristupiti izradi radioničke dokumentacije.

Pokretanjem modula Plane Part Generation model broda se rastavi na pojedinačne elemente kako bi se izvršilo davanje imena i pozicijskih brojeva svakom elementu konstrukcije što je uvjet da se elementi konstrukcije pošalju na raskroj materijala.

Isporuka dokumentacije za svaku sekciju se sastoji od narudžbene i radioničke dokumentacije. Narudžbena dokumentacija sadrži popis limova i profila koje je potrebno naručiti iz valjaonice limova kako bi se pristupilo raskroju materijala i pripremi fizičke realizacije sekcije broda.

Radionička dokumentacija svake sekcije se sastoji od popisa raskrojenih limova i profila koji sadrže sve ključne informacije za svaki element konstrukcije. Uz priložene liste dolaze i radionički nacrti sekcije koji su uputa monterima u radionicama kako sastaviti sklopove i spojiti ih u sekciju.

Isporuka tehničke dokumentacije se obavlja nekoliko mjeseci prije početka gradnje sekcije broda i biti će provjerena od strane odjela proizvodnje trupa.

Kako je proces gradnje broda kompleksan proces i sklon promjenama i revizijama, tehnička dokumentacija za svaku sekciju će se mijenjati i nadopunjavati i u fazi izrade izrade same sekcije. Posljednja revizija tehničke dokumentacije i stanje modela poslužiti će kao početna točka pri gradnji broda iz iste serije.

LITERATURA

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PRILOZI

I. GEN_KGN7342_001

II. Raskroj materijala GN7342

III. GAT nacrti_GN7341

IV. GN7342Wcog -lista

V. Lista limova_GN7342

VI. Lista profila _GN7342

VII. Profile sketch_ GN7342

VIII. Radionički nacrti_GN7342

I. GEN_KGN7342_001

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ORIGIN_V=0.00000
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V=0.50000
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END_OF_BURNING_DATA
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START_END_IN_GAP=1
BEVEL_DEFINED=
DIRECTION=-1
NUMBER_OF_HEADS=1
GEOMETRY_VALID_FOR=1
DISTANCE_Y1_Y2=0.00
START_OF_CONTOUR
BEVEL_DATA
BEVEL=NONE

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BEVEL_TYPE=0
BEVEL_VARIANT=0
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ANGLE_OS=0.00
ANGLE2_OS=0.00
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ANGLE2_WOS=0.00
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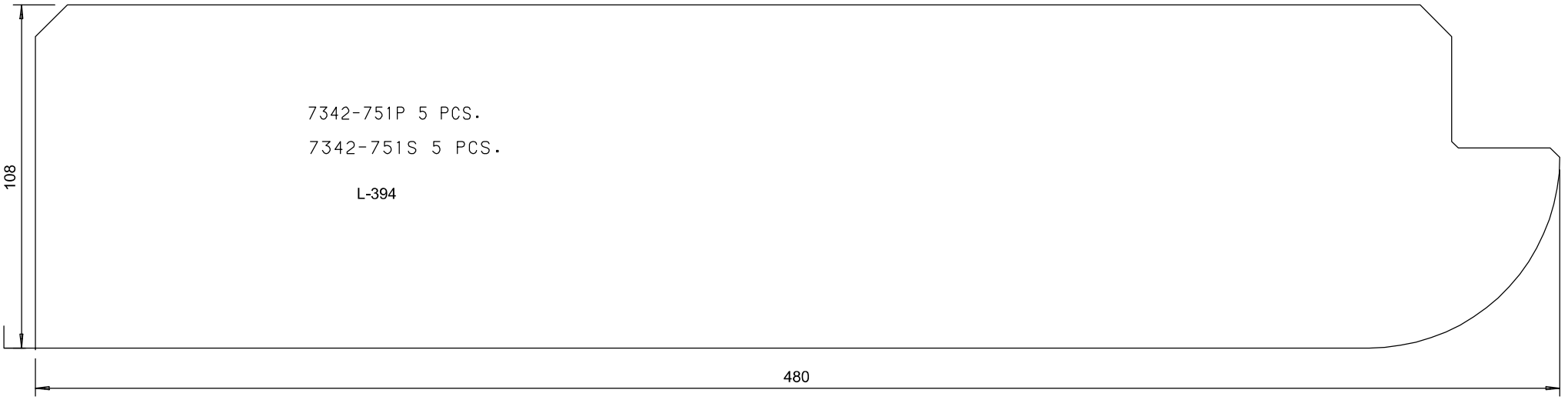
II. Raskroj materijala GN7342

Detalit
Details

Ellei toisin n□ytetty
If not stated otherwise

Hitsit/ Weldings

Puhd.aste
Prep. this side



Sulatenumero, Heat number	Polttaja, Operator Pvm/ Date

Nestattu levy (pituus*leveys*paksuus) Nested plate (length*width*thickness) 515* 140* 7	Laatu Quality A	Normaali Normal 1 kpl pcs.	Leikkuupituus Burn.length 1.1 m	Leikk.aloituksia Burn.starts 1 kpl pcs.	Nestasi/ Nested by Pvm/ Date nurmha25 2018-03-06	Laiva/ Ship 394	7342	Skaala/ Scale 1 : 1.3
Minimilevy (lisaa +30/ +30) Minimunplate (add +30/ +30) 989.4* 580.5	Paino Weight 4.1 kg	Peilattu Mirrored 0 kpl pcs.	Merkkauspituus Mark.length 0.0 m	Merkk.aloituksia Mark.starts 0 kpl pcs.	Suunn./ tark. Pvm/ Date Design/Check	Piirustus/ Drawing D.394.0734.327.001		

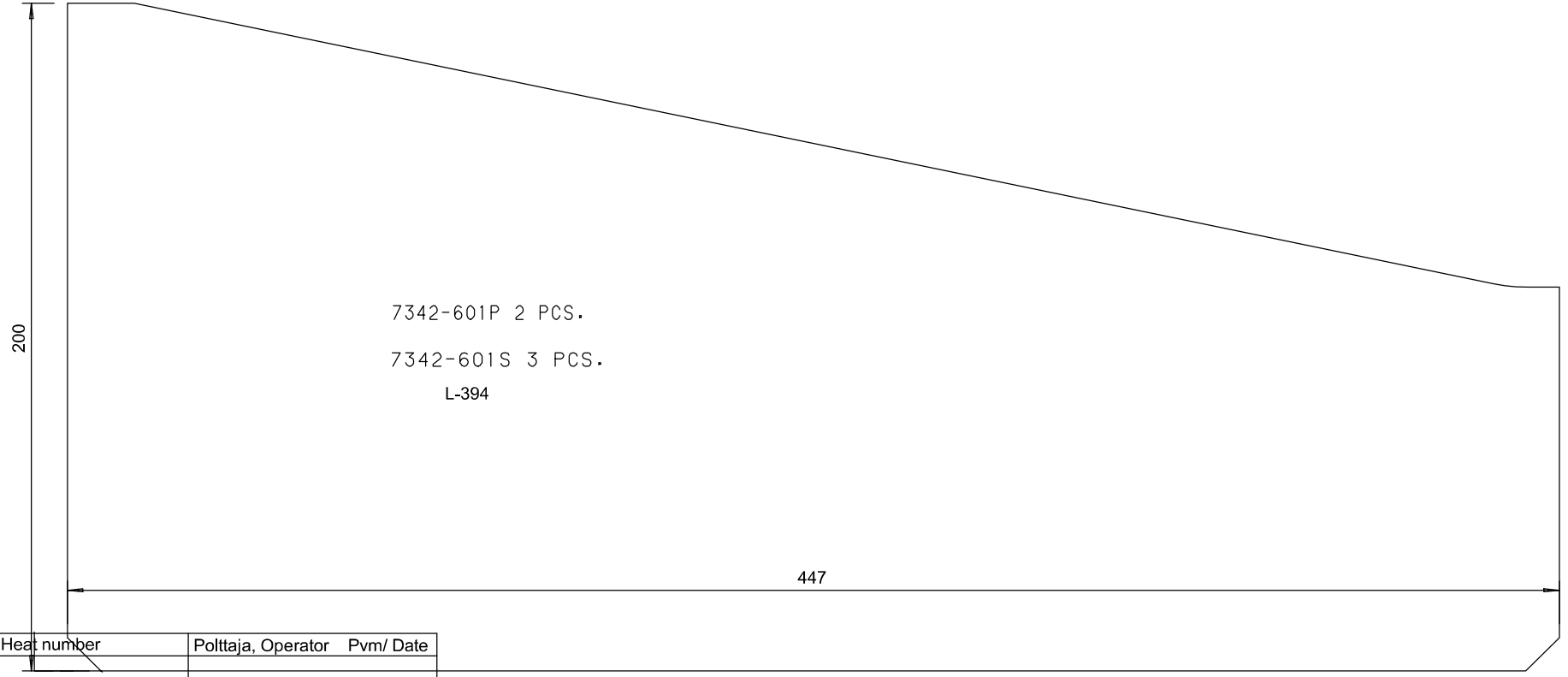
Valm.osa Comp.part	Nimellis Nominal	Mitattu Measured	Ero Diff	Mittasi Measurer	Osia yht. Parts tot. 10 kpl pcs.	Tyhjasiirtopituus Idle length 0.0 m	Autom.viist. Autom.bevel.	Postprosessoitu Pvm/ Date Postprocessing	Nestin nimi/ Nesting name	Konetekstit Machine texts	Toimituspaikka ellei toisin naytetty
Pit./ Length							YES			YES	
Kork./ Height					Jaannos/ Scrap -585. %		NO X		KGN7342_001	NO X	

Detalit
Details

Ellei toisin n□ytetty
If not stated otherwise

Hitsit/ Weldings

Puhd.aste
Prep. this side



Sulatenumero, Heat number	Polttaja, Operator Pvm/ Date

Nestattu levy (pituus*leveys*paksuus) Nested plate (length*width*thickness) 480* 235* 8	Laatu Quality A36	Normaali Normal 1 kpl pcs.	Leikkuupituus Burn.length 1.2 m	Leikk.aloituksia Burn.starts 1 kpl pcs.	Nestasi/ Nested by Pvm/ Date nurmha25 2018-03-06	Laiva/ Ship 394	7342	Skaala/ Scale 1 : 1.4	
Minimilevy (lisaa +30/ +30) Minimunplate (add +30/ +30) 1013.* 486	Paino Weight 7.3 kg	Peilattu Mirrored 0 kpl pcs.	Merkkauspituus Mark.length 0.0 m	Merkk.aloituksia Mark.starts 0 kpl pcs.	Suunn./ tark. Pvm/ Date Design/Check	Piirustus/ Drawing D.394.0734.327.001			

Valm.osa Comp.part	Nimellis Nominal	Mitattu Measured	Ero Diff	Mittasi Measurer	Osia yht. Parts tot. 5 kpl pcs.	Tyhjasiirtopituus Idle length 0.0 m	Autom.viist. Autom.bevel.	Postprosessoitu Pvm/ Date Postprocessing	Nestin nimi/ Nesting name KGN7342_002	Konetekstit Machine texts	Toimituspaikka ellei toisin naytetty
Pit./ Length							YES			YES	
Kork./ Height					Jaannos/ Scrap -212. %		NO X			NO X	

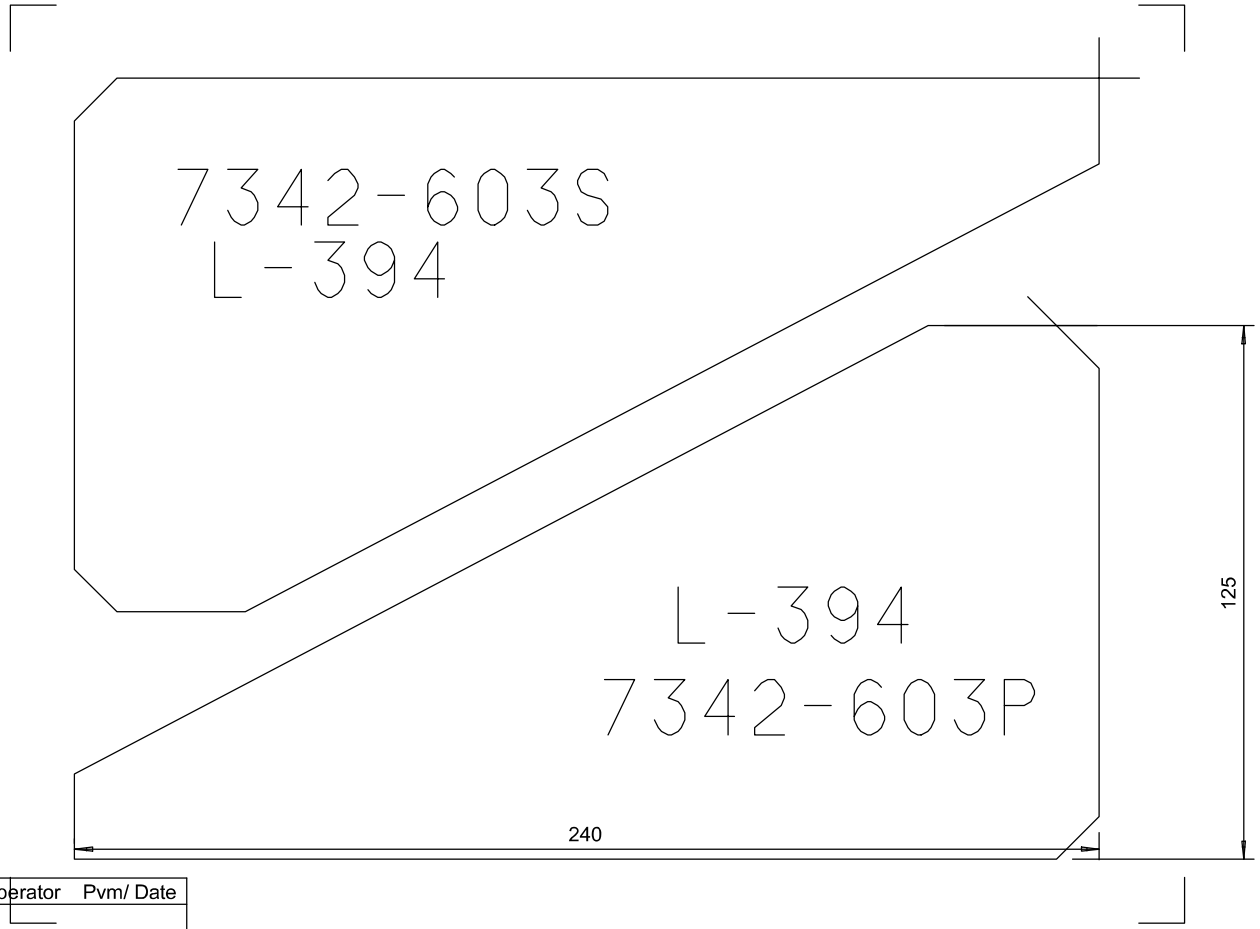
Detalit
Details

Ellei toisin n□ytetty
If not stated otherwise

Hitsit/ Weldings

Puhd.aste
Prep. this side

REST PLATE

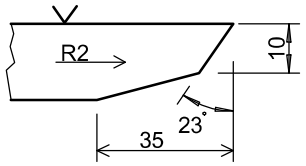


Sulatenumero, Heat number	Polttaja, Operator	Pvm/ Date

Nestattu levy (pituus*leveys*paksuus) Nested plate (length*width*thickness) 275* 215* 8	Laatu Quality A36	Normaali Normal 1 kpl pcs.	Leikkuupituus Burn.length 1.3 m	Leikk.aloituksia Burn.starts 2 kpl pcs.	Nestasi/ Nested by nurmha25	Pvm/ Date 2018-03-06	Laiva/ Ship 394	7342	Skaala/ Scale 1 : 1.2
Minimilevy (lisaa +30/ +30) Minimunplate (add +30/ +30) 240* 182.9	Paino Weight 3.8 kg	Peilattu Mirrored 0 kpl pcs.	Merkkauspituus Mark.length 0.0 m	Merkk.aloituksia Mark.starts 0 kpl pcs.	Suunn./ tark. Design/Check	Pvm/ Date	Piirustus/ Drawing D.394.0734.327.001		

Valm.osa Comp.part	Nimellis Nominal	Mitattu Measured	Ero Diff	Mittasi Measurer	Osia yht. Parts tot. 2 kpl pcs.	Tyhjasiirtopituus Idle length 0.1 m	Autom.viist. Autom.bevel.	Postprosessoitu Postprocessing	Pvm/ Date	Nestin nimi/ Nesting name	Konetekstit Machine texts	Toimituspaikka ellei toisin naytetty
Pit./ Length							YES				YES X	
Kork./ Height					Jaannos/ Scrap	34.4 %	NO X			PGN7342_001	NO	

Detalit
Details



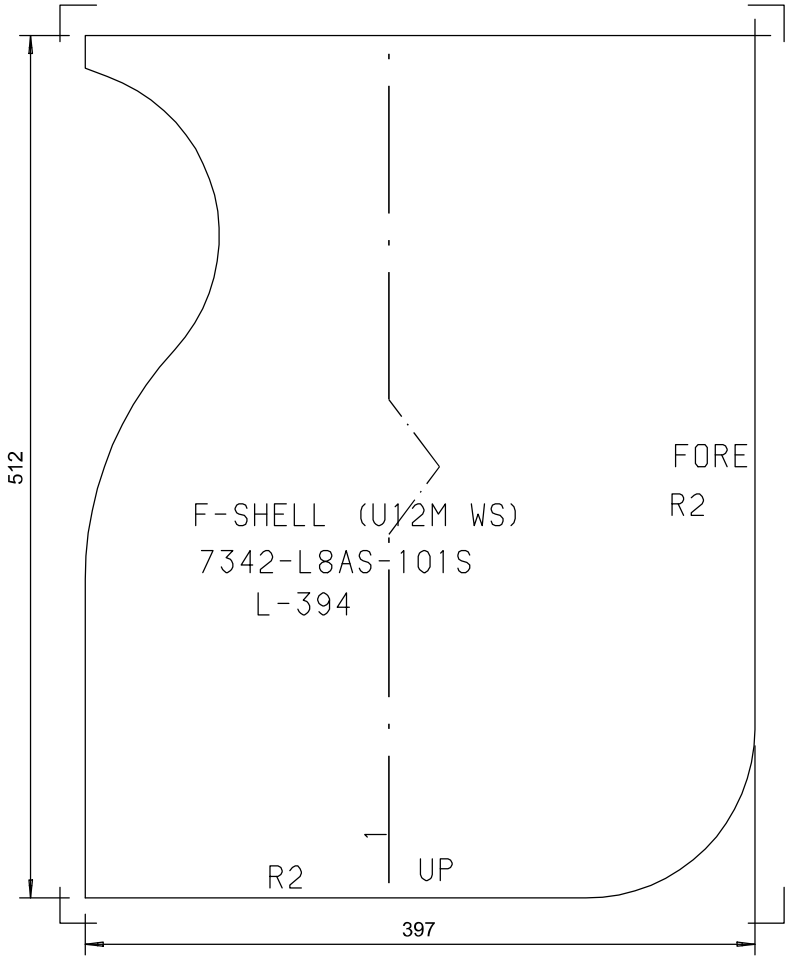
AP TAS 10.0 35mm,VA23
MANUAL BEVELLING

Ellei toisin n□ytetty
If not stated otherwise

Hitsit/ Weldings

Puhd.aste
Prep. this side

REST PLATE



Sulatenumero, Heat number	Polttaja, Operator Pvm/ Date

Nestattu levy (pituus*leveys*paksuus) Nested plate (length*width*thickness) 430* 545* 20	Laatu Quality A36TM	Normaali Normal 1 kpl pcs.	Leikkuupituus Burn.length 1.9 m	Leikk.aloituksia Burn.starts 1 kpl pcs.	Nestasi/ Nested by Pvm/ Date nurmha25 2018-03-06	Laiva/ Ship 394	7342	Skaala/ Scale 1 : 3.1
Minimilevy (lisaa +30/ +30) Minimunplate (add +30/ +30) 397.4* 512.3	Paino Weight 38 kg	Peilattu Mirrored 0 kpl pcs.	Merkkauspituus Mark.length 0.5 m	Merkk.aloituksia Mark.starts 1 kpl pcs.	Suunn./ tark. Pvm/ Date Design/Check	Piirustus/ Drawing D.394.0734.327.001		

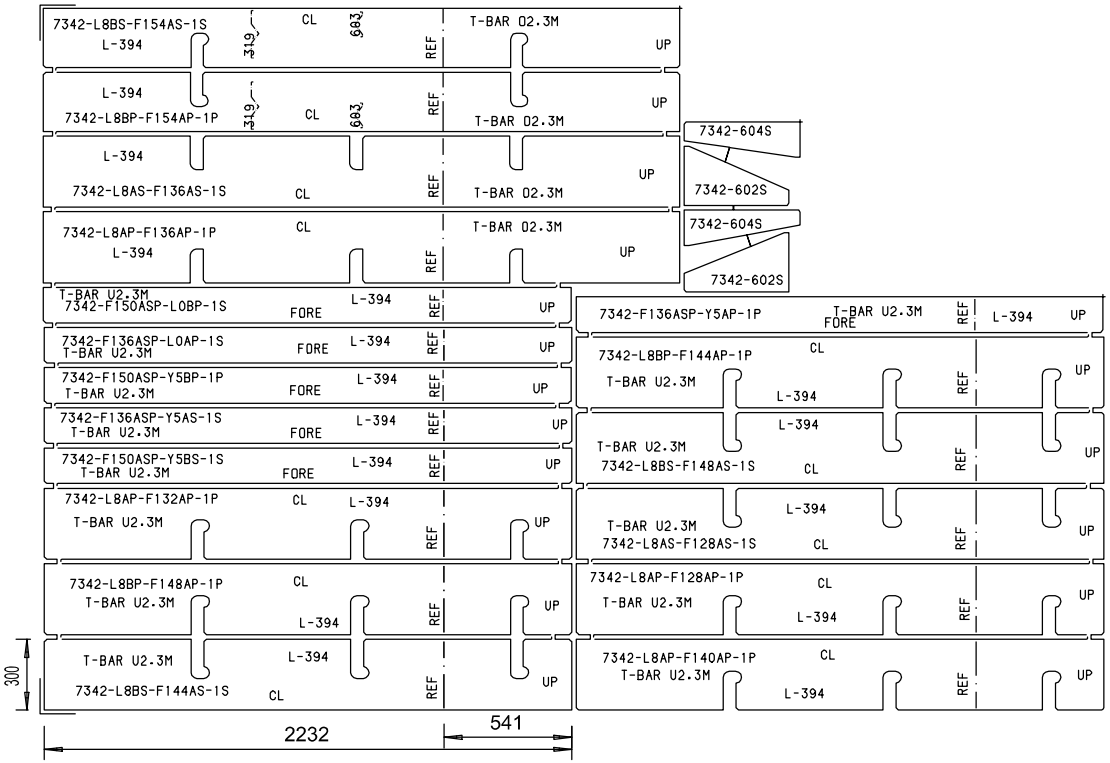
Valm.osa Comp.part	Nimellis Nominal	Mitattu Measured	Ero Diff	Mittasi Measurer	Osia yht. Parts tot. 1 kpl pcs.	Tyhjasiirtopituus Idle length 1.3 m	Autom.viist. Autom.bevel.	Postprosessoitu Pvm/ Date Postprocessing	Nestin nimi/ Nesting name	Konetekstit Machine texts	Toimituspaikka ellei toisin naytetty
Pit./ Length							YES			YES X	
Kork./ Height					Jaannos/ Scrap 19.6 %		NO X		PGN7342_002	NO	

Detalit
Details

Ellei toisin n□ytetty
If not stated otherwise

Hitsit/ Weldings

Puhd.aste
Prep. this side



REST PLATE 4400*3000

Sulatenumero, Heat number	Polttaja, Operator Pvm/ Date

Nestattu levy (pituus*leveys*paksuus) Nested plate (length*width*thickness) 9000* 3000* 8	Laatu Quality A	Normaali Normal 1 kpl pcs.	Leikkuupituus Burn.length 108.5 m	Leikk.aloituksia Burn.starts 35 kpl pcs.	Nestasi/ Nested by Pvm/ Date nurmha25 2018-03-06	Laiva/ Ship 394	7342	Skaala/ Scale 1 : 22.5
Minimilevy (lisaa +30/ +30) Minimunplate (add +30/ +30) 4488.* 2970	Paino Weight 1749.6 kg	Peilattu Mirrored 0 kpl pcs.	Merkkauspituus Mark.length 4.9 m	Merkk.aloituksia Mark.starts 22 kpl pcs.	Suunn./ tark. Pvm/ Date Design/Check	Piirustus/ Drawing D.394.0734.327.001		

Valm.osa Comp.part	Nimellis Nominal	Mitattu Measured	Ero Diff	Mittasi Measurer	Osia yht. Parts tot. 22 kpl pcs.	Tyhjasiirtopituus Idle length 21.6 m	Autom.viist. Autom.bevel. YES [ ]	Postprosessoitu Pvm/ Date Postprocessing	Nestin nimi/ Nesting name PGN7342_301	Konetekstit Machine texts YES [X]	Toimituspaikka ellei toisin naytetty
Pit./ Length											
Kork./ Height					Jaannos/ Scrap 62.0 %		NO [X]			NO [ ]	

Detalit
Details

Ellei toisin n□ytetty
If not stated otherwise

Hitsit/ Weldings | Puhd.aste Prep. this side

$ = 3.0 / 3.0 115 / 115 (415) / (415)

U.N.O. 3.5 / 3.5 115 / 115 (415) / (415)

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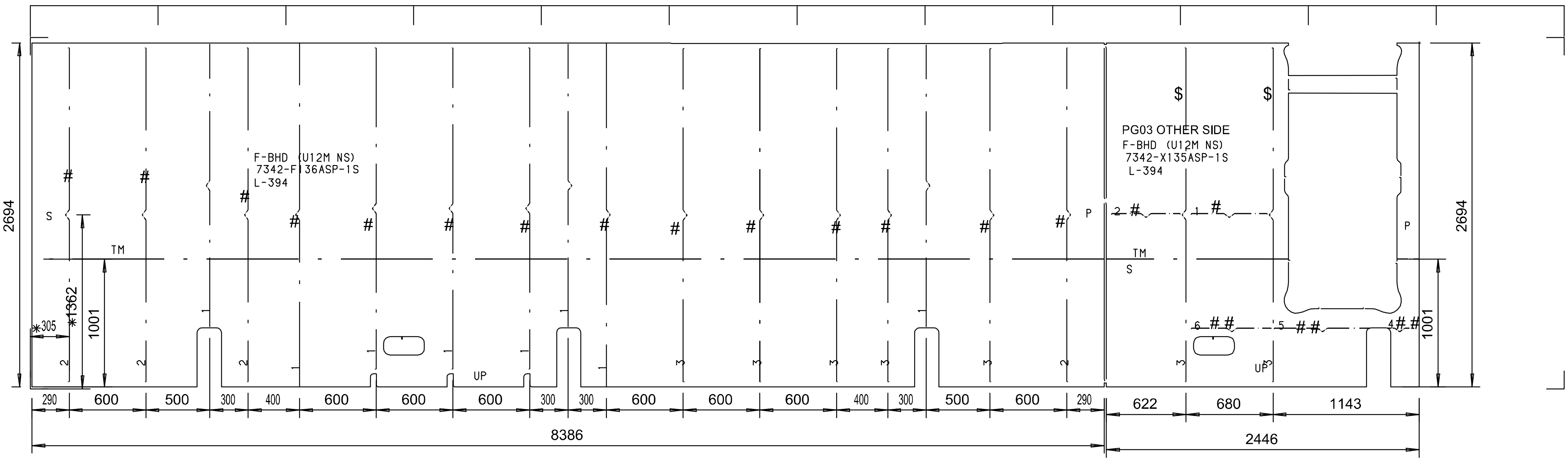

* = DIM. FROM THE RAW PLATE

Sulatenumero, Heat number	Polttaja, Operator	Pvm/ Date

Nestattu levy (pituus*leveys*paksuus) Nested plate (length*width*thickness) 12000* 2750* 7	Laatu Quality A	Normaali Normal 1 kpl pcs.	Leikkuupituus Burn.length 44.1 m	Leikk.aloituksia Burn.starts 15 kpl pcs.	Nestasi/ Nested by nurmha25 — Pvm/ Date 2018-03-06	Laiva/ Ship 394 — 7342	Skaala/ Scale 1 : 29.9
Minimilevy (lisaa +30/ +30) Minimunplate (add +30/ +30) 10851* 2693.	Paino Weight 1871.1 kg	Peilattu Mirrored 0 kpl pcs.	Merkkauspituus Mark.length 61.8 m	Merk.aloituksia Mark.starts 27 kpl pcs.	Suunn./ tark. Design/Check — Pvm/ Date	Piirustus/ Drawing D.394.0734.327.001	
Valm.osa Comp.part / Nimellis Nominal / Mitattu Measured / Ero Diff / Mittasi Measurer		Osia yht. Parts tot. 2 kpl pcs.	Tyhjasiirtopituus Idle length 39.1 m	Autom.viist. Autom.bevel. YES [ ] NO [X]	Postprosessoitu Postprocessing — Pvm/ Date	Nestin nimi/ Nesting name PGN7342_401	Konetekstit Machine texts YES [X] NO [ ] — Toimituspaikka ellei toisin naytetty
Pit./ Length		Jaannos/ Scrap 18.5 %					
Kork./ Height							

Detalit
Details

Ellei toisin n□ytetty
If not stated otherwise

Hitsit/ Welds

Puhd.aste
Prep. this side

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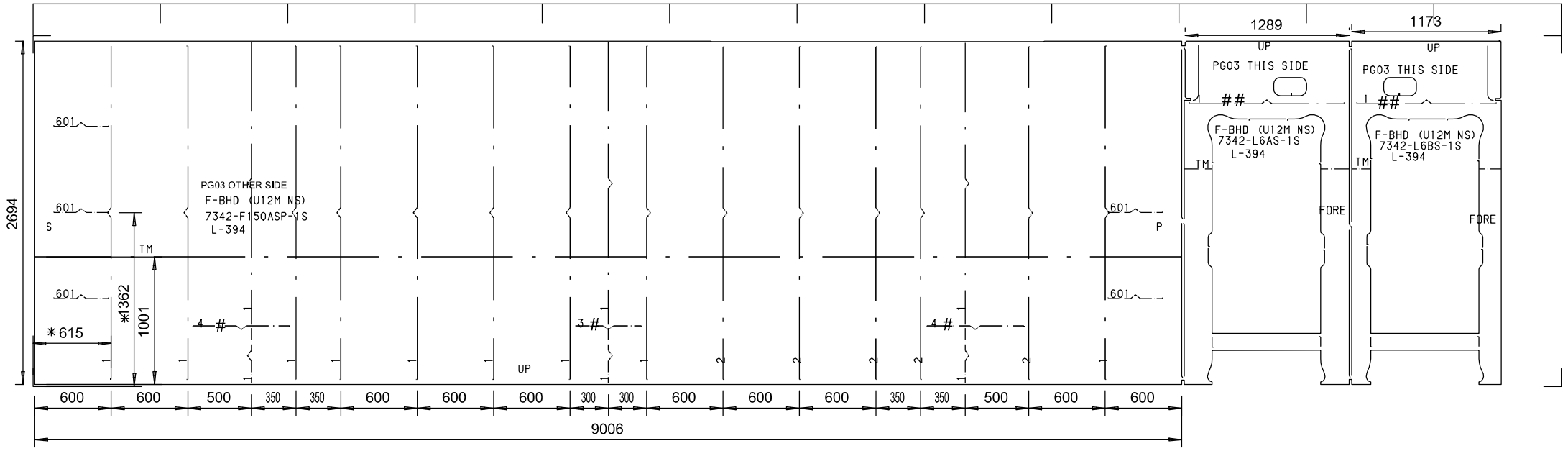

* = DIM. FROM THE RAW PLATE

Sulatenumero, Heat number	Polttaja, Operator Pvm/ Date

Nestattu levy (pituus*leveys*paksuus) Nested plate (length*width*thickness) 12000* 2750* 7	Laatu Quality A	Normaali Normal 1 kpl pcs.	Leikkuupituus Burn.length 53.2 m	Leikk.aloituksia Burn.starts 29 kpl pcs.	Nestasi/ Nested by Pvm/ Date nurmha25 2018-03-09	Laiva/ Ship 394	7342	Skaala/ Scale 1 : 29.9
Minimilevy (lisaa +30/ +30) Minimunplate (add +30/ +30) 11515* 2693.	Paino Weight 1871.1 kg	Peilattu Mirrored 0 kpl pcs.	Merkkauspituus Mark.length 61.8 m	Merkk.aloituksia Mark.starts 35 kpl pcs.	Suunn./ tark. Pvm/ Date Design/Check	Piirustus/ Drawing D.394.0734.327.001		

Valm.osa Comp.part	Nimellis Nominal	Mitattu Measured	Ero Diff	Mittasi Measurer	Osia yht. Parts tot.	Tyhjasiirtopituus Idle length	Autom.viist. Autom.bevel.	Postprosessoitu Pvm/ Date Postprocessing	Nestin nimi/ Nesting name	Konetekstit Machine texts	Toimituspaikka ellei toisin naytetty
Pit./ Length					3 kpl pcs.	41.2 m	YES		PGN7342_402	YES X	
Kork./ Height					Jaannos/ Scrap 17.6 %		NO X			NO	

Detalit
Details

Ellei toisin n□ytetty
If not stated otherwise

Hitsit/ Weldings

Puhd.aste
Prep. this side

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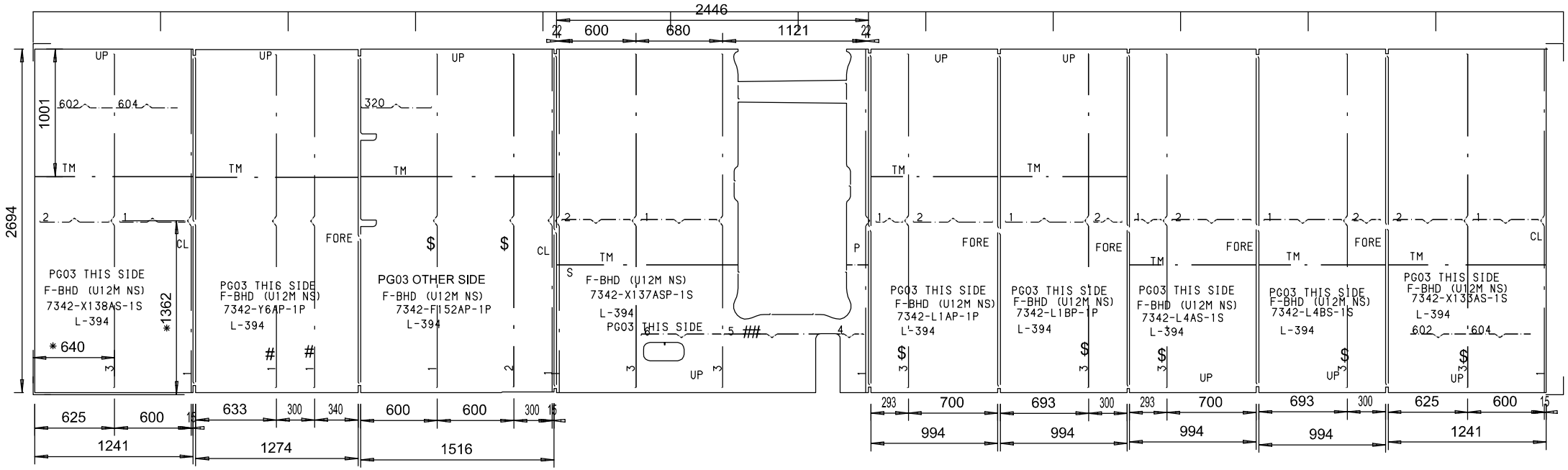


Sulatenumero, Heat number	Polttaja, Operator Pvm/ Date

* = DIM. FROM THE RAW PLATE

Nestattu levy (pituus*leveys*paksuus) Nested plate (length*width*thickness)	Laatu Quality	Normaali Normal	Leikkuupituus Burn.length	Leikk.aloituksia Burn.starts	Nestasi/ Nested by	Pvm/ Date	Laiva/ Ship		Skaala/ Scale
12000* 2750* 7	A	1 kpl pcs.	79.0 m	42 kpl pcs.	nurmha25	2018-03-09	394	7342	1 : 29.9
Minimilevy (lisaa +30/ +30) Minimunplate (add +30/ +30)	**Paino Weight**	**Peilattu Mirrored**	**Merkkauspituus Mark.length**	**Merkk.aloituksia Mark.starts**	**Suunn./ tark. Design/Check**	**Pvm/ Date**	**Piirustus/ Drawing**		
11851* 2693.	1871.1 kg	0 kpl pcs.	67.5 m	49 kpl pcs.			D.394.0734.327.001		

Valm.osa Comp.part	Nimellis Nominal	Mitattu Measured	Ero Diff	Mittasi Measurer	Osia yht. Parts tot.	Tyhjasiirtopituus Idle length	Autom.viist. Autom.bevel.	Postprosessoitu Postprocessing	Pvm/ Date	Nestin nimi/ Nesting name	Konetekstit Machine texts	Toimituspaikka ellei toisin naytetty
Pit./ Length					9 kpl pcs.	59.8 m	YES [ ]			PGN7342_403	YES [X]	
Kork./ Height					Jaannos/ Scrap	10.5 %	NO [X]				NO [ ]	

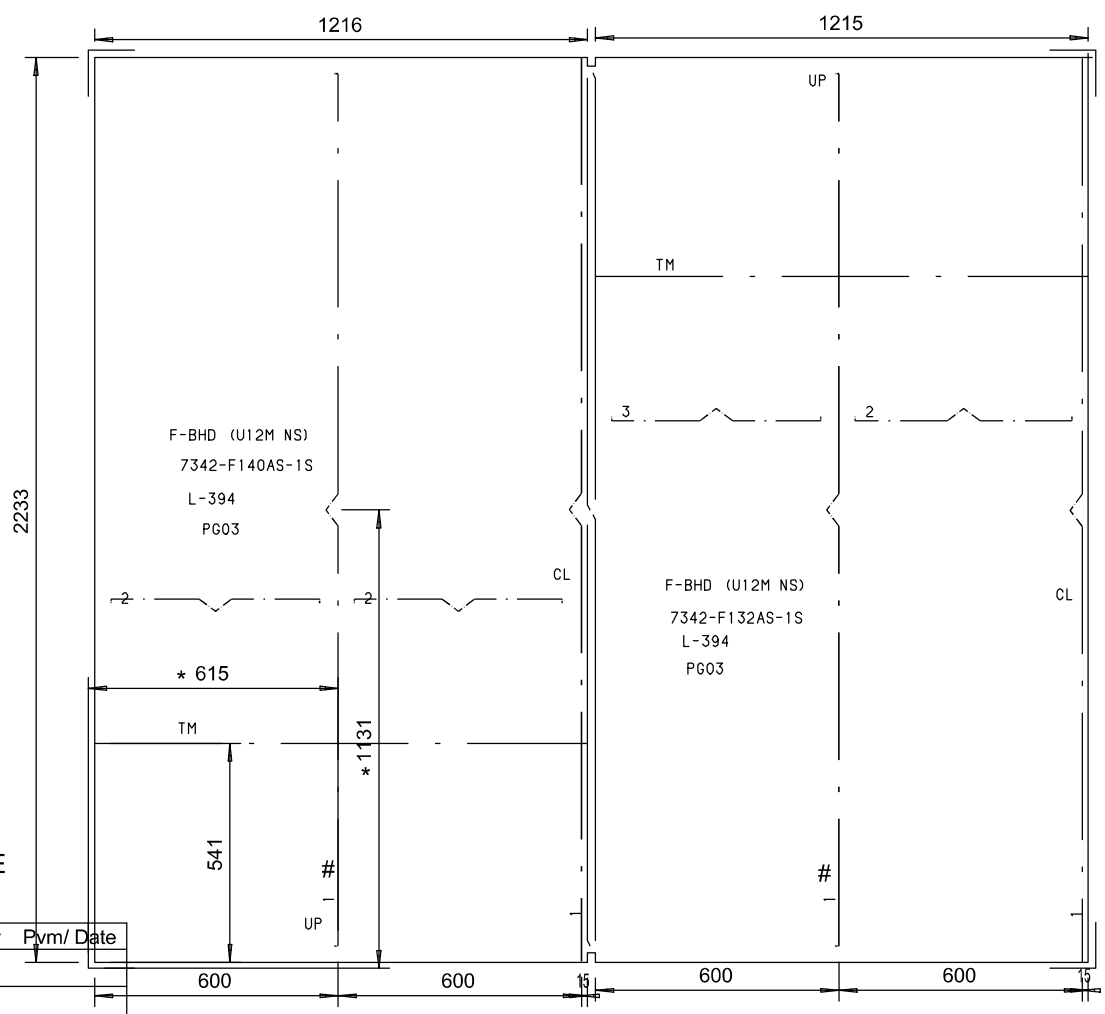
Detalit
Details

Ellei toisin n□ytetty
If not stated otherwise

Hitsit/ Weldings

Puhd.aste
Prep. this side
PG03

REST PLATE



U.N.O. 4.0 ▷ 115 ▽ (415) / 4.0 ▷ 115 ▽ (415)

= 3.0 ▷ 115 ▽ (415) / 3.0 ▷ 115 ▽ (415)

* = DIM. FROM THE RAW PLATE

Sulatenumero, Heat number	Polttaja, Operator	Pvm/ Date

Nestattu levy (pituus*leveys*paksuus) Nested plate (length*width*thickness) 2485* 2265* 7	Laatu Quality A	Normaali Normal 1 kpl pcs.	Leikkuupituus Burn.length 13.7 m	Leikk.aloituksia Burn.starts 5 kpl pcs.	Nestasi/ Nested by nurmha25	Pvm/ Date 2018-03-09	Laiva/ Ship 394	7342	Skaala/ Scale 1 : 13.1
Minimilevy (lisaa +30/ +30) Minimunplate (add +30/ +30) 2451.* 2233	Paino Weight 319.1 kg	Peilattu Mirrored 0 kpl pcs.	Merkkauspituus Mark.length 13.6 m	Merkk.aloituksia Mark.starts 10 kpl pcs.	Suunn./ tark. Design/Check	Pvm/ Date	Piirustus/ Drawing D.394.0734.327.001		

Valm.osa Comp.part	Nimellis Nominal	Mitattu Measured	Ero Diff	Mittasi Measurer	Osia yht. Parts tot.	Tyhjasiirtopituus Idle length	Autom.viist. Autom.bevel.	Postprosessoitu Postprocessing	Pvm/ Date	Nestin nimi/ Nesting name	Konetekstit Machine texts	Toimituspaikka ellei toisin naytetty
Pit./ Length					2 kpl pcs.	11.2 m	YES [ ]			PGN7342_404	YES [X]	
Kork./ Height					Jaannos/ Scrap	3.5 %	NO [X]				NO [ ]	

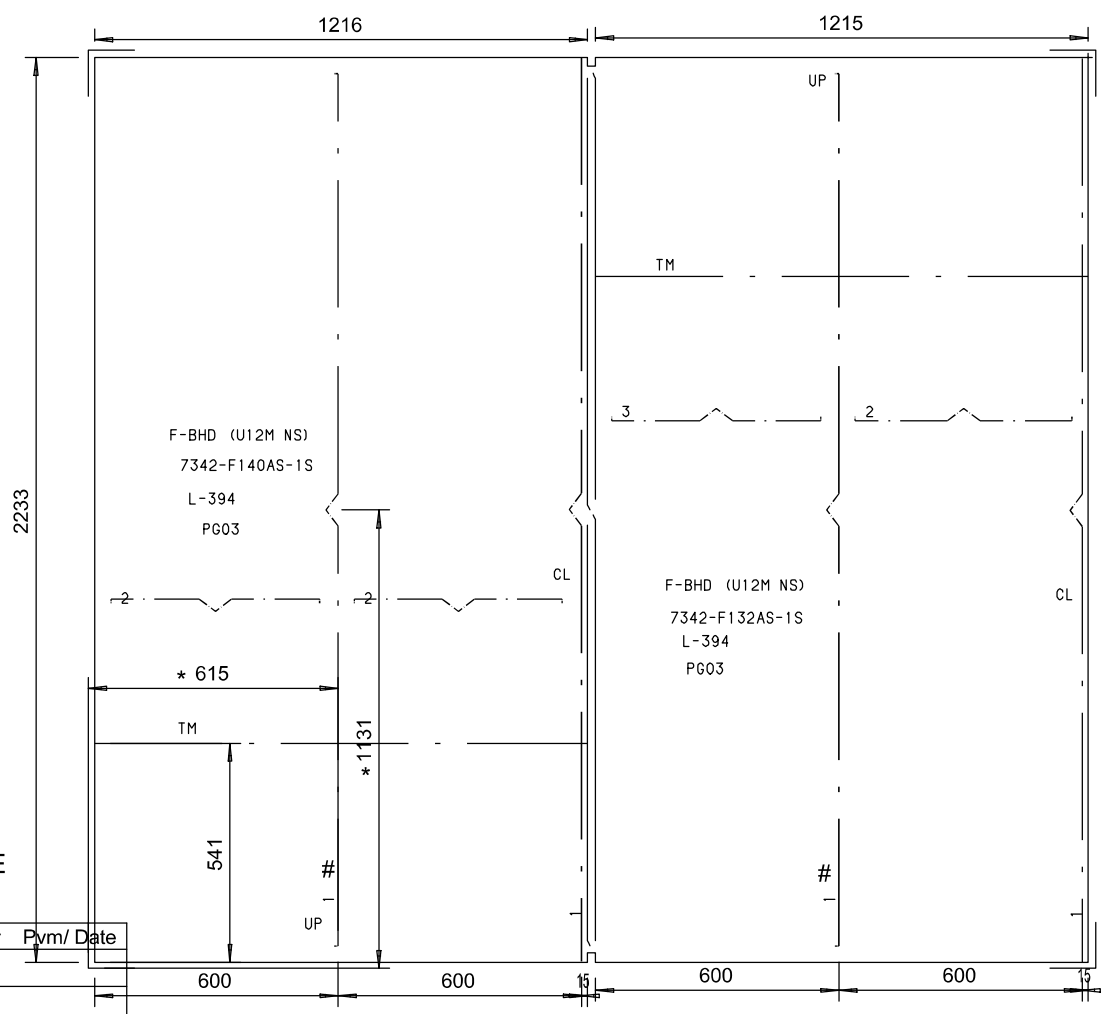
Detalit
Details

Ellei toisin n□ytetty
If not stated otherwise

Hitsit/ Weldings

Puhd.aste
Prep. this side
PG03

REST PLATE



U.N.O. 4.0 ▷ 115 ▽ (415) / 4.0 ▷ 115 ▽ (415)

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* = DIM. FROM THE RAW PLATE

Sulatenumero, Heat number	Polttaja, Operator	Pvm/ Date

Nestattu levy (pituus*leveys*paksuus) Nested plate (length*width*thickness) 2485* 2265* 7	Laatu Quality A	Normaali Normal 1 kpl pcs.	Leikkuupituus Burn.length 13.7 m	Leikk.aloituksia Burn.starts 5 kpl pcs.	Nestasi/ Nested by nurmha25	Pvm/ Date 2018-03-09	Laiva/ Ship 394	7342	Skaala/ Scale 1 : 13.1
Minimilevy (lisaa +30/ +30) Minimunplate (add +30/ +30) 2451.* 2233	Paino Weight 319.1 kg	Peilattu Mirrored 0 kpl pcs.	Merkkauspituus Mark.length 13.6 m	Merkk.aloituksia Mark.starts 10 kpl pcs.	Suunn./ tark. Design/Check	Pvm/ Date	Piirustus/ Drawing D.394.0734.327.001		

Valm.osa Comp.part	Nimellis Nominal	Mitattu Measured	Ero Diff	Mittasi Measurer	Osia yht. Parts tot.	Tyhjasiirtopituus Idle length	Autom.viist. Autom.bevel.	Postprosessoitu Postprocessing	Pvm/ Date	Nestin nimi/ Nesting name	Konetekstit Machine texts	Toimituspaikka ellei toisin naytetty
Pit./ Length					2 kpl pcs.	11.2 m	YES [ ]			PGN7342_404	YES [X]	
Kork./ Height					Jaannos/ Scrap	3.5 %	NO [X]				NO [ ]	

Detalit
Details

HAALAUSAUKKO VIISTETÄÄN VAIN ULKOREUNASTA, SISEMPI POLTTO ILMAN VIISTETTÄ.

TRANSPORTATION OPENING BEVEL ONLY OUTER SIDE, INNER WITHOUT BEVEL.

= 3.0 ▷ 115 ◸ (415) / 3.0 ▷ 115 ◸ (415)

U.N.O. 4.0 ▷ 115 ◸ (415) / 4.0 ▷ 115 ◸ (415)

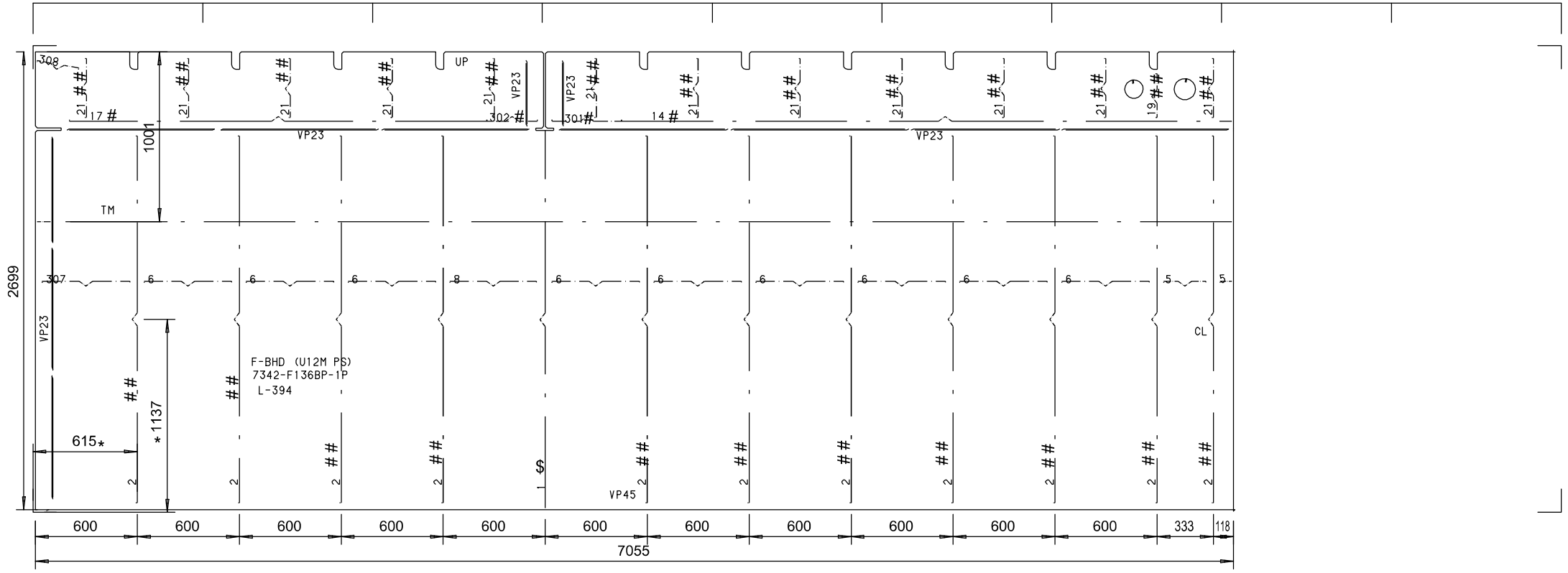
Ellei toisin n□ytetty
If not stated otherwise

Hitsit/ Welding

Puhd.aste
Prep. this side

$ = 3.5 ▷ / 3.5 ▷

= 8.0 ▷ 115 ◸ (415) / 8.0 ▷ 115 ◸ (415)



Sulatenumero, Heat number	Polttaja, Operator Pvm/ Date

* = DIM. FROM THE RAW PLATE

Nestattu levy (pituus*leveys*paksuus) Nested plate (length*width*thickness)	Laatu Quality	Normaali Normal	Leikkuupituus Burn.length	Leikk.aloituksia Burn.starts	Nestasi/ Nested by	Pvm/ Date	Laiva/ Ship		Skaala/ Scale
9000* 2750* 6	A	1 kpl pcs.	42.2 m	28 kpl pcs.	nurmha25	2018-03-07	394	7342	1 : 22.5
Minimilevy (lisaa +30/ +30) Minimunplate (add +30/ +30)	**Paino Weight**	**Peilattu Mirrored**	**Merkkauspituus Mark.length**	**Merkk.aloituksia Mark.starts**	**Suunn./ tark. Design/Check**	**Pvm/ Date**	**Piirustus/ Drawing**		
7054.* 2698.	1202.9 kg	0 kpl pcs.	52.1 m	45 kpl pcs.			D.394.0734.327.001		

Valm.osa Comp.part	Nimellis Nominal	Mitattu Measured	Ero Diff	Mittasi Measurer	Osia yht. Parts tot.	Tyhjasiirtopituus Idle length	Autom.viist. Autom.bevel.	Postprosessoitu Postprocessing	Pvm/ Date	Nestin nimi/ Nesting name	Konetekstit Machine texts	Toimituspaikka ellei toisin naytetty
Pit./ Length					1 kpl pcs.	34.7 m	YES X			PGN7342_451	YES X	
Kork./ Height					Jaannos/ Scrap	23.6 %	NO				NO	

Detalit
Details

HAALAUSAUKKO VIISTETÄÄN VAIN ULKOREUNASTA, SISEMPI POLTTO ILMAN VIISTETTÄ.

TRANSPORTATION OPENING BEVEL ONLY OUTER SIDE, INNER WITHOUT BEVEL.

= 8.0 115 (415) / 8.0 115 (415)

U.N.O. 4.0 115 (415) / 4.0 115 (415)

Ellei toisin n□ytetty

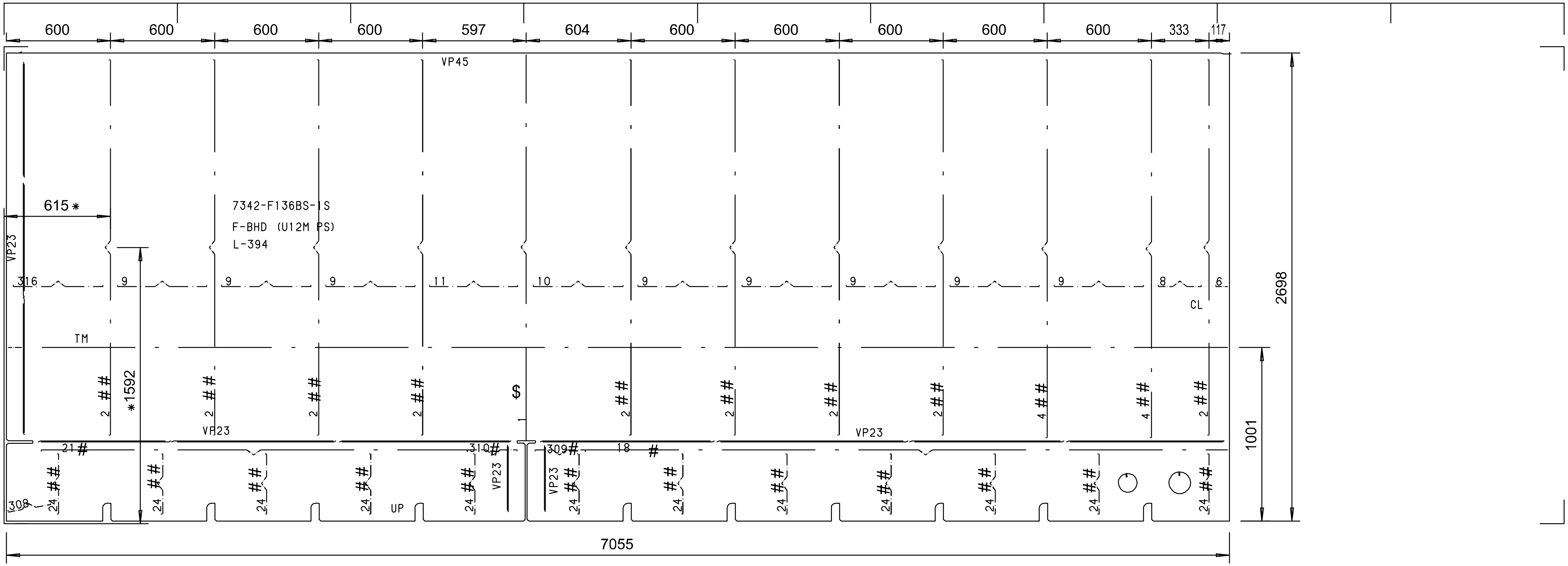
If not stated otherwise

Hitsit/ Weldings

Puhd.aste
Prep. this side

$ = 3.5 / 3.5

= 3.0 115 (415) / 3.0 115 (415)



Sulatenumero, Heat number	Polttaja, Operator Pvm/ Date

* = DIM. FROM THE RAW PLATE

Nestattu levy (pituus*leveys*paksuus) Nested plate (length*width*thickness) 9000* 2750* 6	Laatu Quality A	Normaali Normal 1 kpl pcs.	Leikkuupituus Burn.length 42.2 m	Leikk.aloituksia Burn.starts 28 kpl pcs.	Nestasi/ Nested by nurmha25	Pvm/ Date 2018-03-07	Laiva/ Ship 394	7342	Skaala/ Scale 1 : 22.5
Minimilevy (lisaa +30/ +30) Minimunplate (add +30/ +30) 7054.* 2698.	Paino Weight 1202.9 kg	Peilattu Mirrored 0 kpl pcs.	Merkkauspituus Mark.length 51.8 m	Merkk.aloituksia Mark.starts 44 kpl pcs.	Suunn./ tark. Design/Check	Pvm/ Date	Piirustus/ Drawing D.394.0734.327.001		

Valm.osa Comp.part	Nimellis Nominal	Mitattu Measured	Ero Diff	Mittasi Measurer	Osia yht. Parts tot. 1 kpl pcs.	Tyhjasiirtopituus Idle length 25.8 m	Autom.viist. Autom.bevel. YES X NO	Postprosessoitu Postprocessing	Pvm/ Date	Nestin nimi/ Nesting name PGN7342_452	Konetekstit Machine texts YES X NO	Toimituspaikka ellei toisin naytetty
Pit./ Length												
Kork./ Height					Jaannos/ Scrap	23.6 %						

Detalit
Details

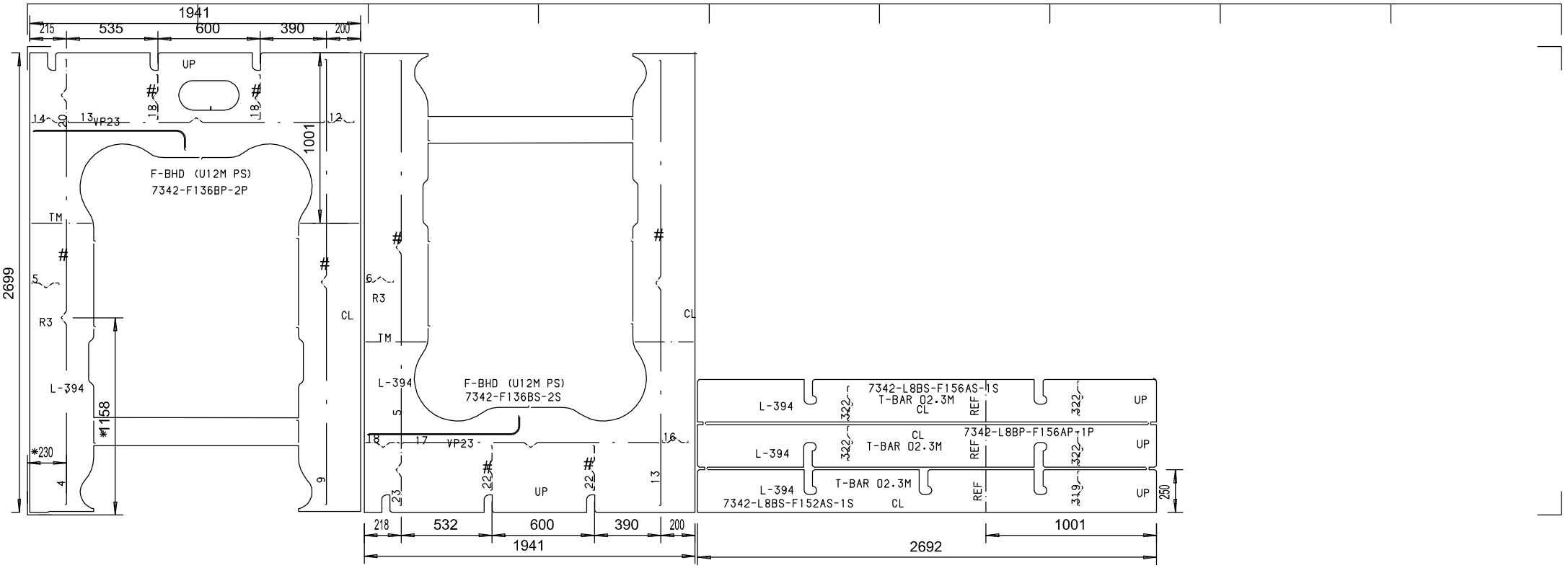
Ellei toisin n□ytetty
If not stated otherwise

Hitsit/ Welding

Puhd.aste
Prep. this side

= 3.0 115 (415) / 3.0 115 (415)

U.N.O. 4.0 115 (415) / 4.0 115 (415)



Sulatenumero, Heat number	Polttaja, Operator Pvm/ Date

* = DIM. FROM THE RAW PLATE

Nestattu levy (pituus*leveys*paksuus) Nested plate (length*width*thickness) 9000* 2750* 10	Laatu Quality A36	Normaali Normal 1 kpl pcs.	Leikkuupituus Burn.length 57.8 m	Leikk.aloituksia Burn.starts 26 kpl pcs.	Nestasi/ Nested by nurmha25	Pvm/ Date 2018-03-07	Laiva/ Ship 394	7342	Skaala/ Scale 1 : 22.5
Minimilevy (lisaa +30/ +30) Minimunplate (add +30/ +30) 6609.* 2698.	Paino Weight 2004.8 kg	Peilattu Mirrored 0 kpl pcs.	Merkkauspituus Mark.length 19.5 m	Merkk.aloituksia Mark.starts 30 kpl pcs.	Suunn./ tark. Design/Check	Pvm/ Date	Piirustus/ Drawing D.394.0734.327.001		

Valm.osa Comp.part	Nimellis Nominal	Mitattu Measured	Ero Diff	Mittasi Measurer	Osia yht. Parts tot. 5 kpl pcs.	Tyhjasiirtopituus Idle length 32.7 m	Autom.viist. Autom.bevel.	Postprosessoitu Postprocessing	Pvm/ Date	Nestin nimi/ Nesting name	Konetekstit Machine texts	Toimituspaikka ellei toisin naytetty
Pit./ Length							YES X			PGN7342_453	YES X	
Kork./ Height					Jaannos/ Scrap	71.4 %	NO				NO	

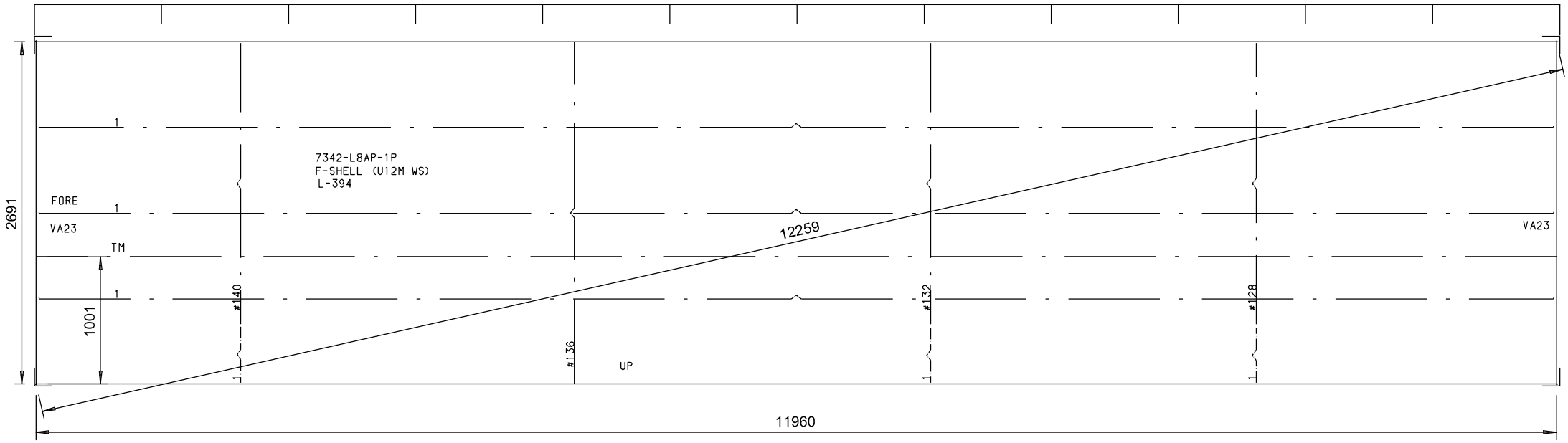
Detalit
Details

Ellei toisin n□ytetty
If not stated otherwise

Hitsit/ Weldings

Puhd.aste
Prep. this side

U.N.O. $\frac{4.0 \triangleright 115 \angle (415)}{4.0 \triangleright 115 \angle (415)}$



Sulatenumero, Heat number	Polttaja, Operator Pvm/ Date

Nestattu levy (pituus*leveys*paksuus) Nested plate (length*width*thickness) 12000* 2750* 10	Laatu Quality A36	Normaali Normal 1 kpl pcs.	Leikkuupituus Burn.length 29.4 m	Leikk.aloituksia Burn.starts 1 kpl pcs.	Nestasi/ Nested by Pvm/ Date nurmha25 2018-03-06	Laiva/ Ship 394	7342	Skaala/ Scale 1 : 29.9	
Minimilevy (lisaa +30/ +30) Minimunplate (add +30/ +30) 11960* 2691.	Paino Weight 2673 kg	Peilattu Mirrored 0 kpl pcs.	Merkkauspituus Mark.length 58.6 m	Merkk.aloituksia Mark.starts 11 kpl pcs.	Suunn./ tark. Pvm/ Date Design/Check	Piirustus/ Drawing D.394.0734.327.001			

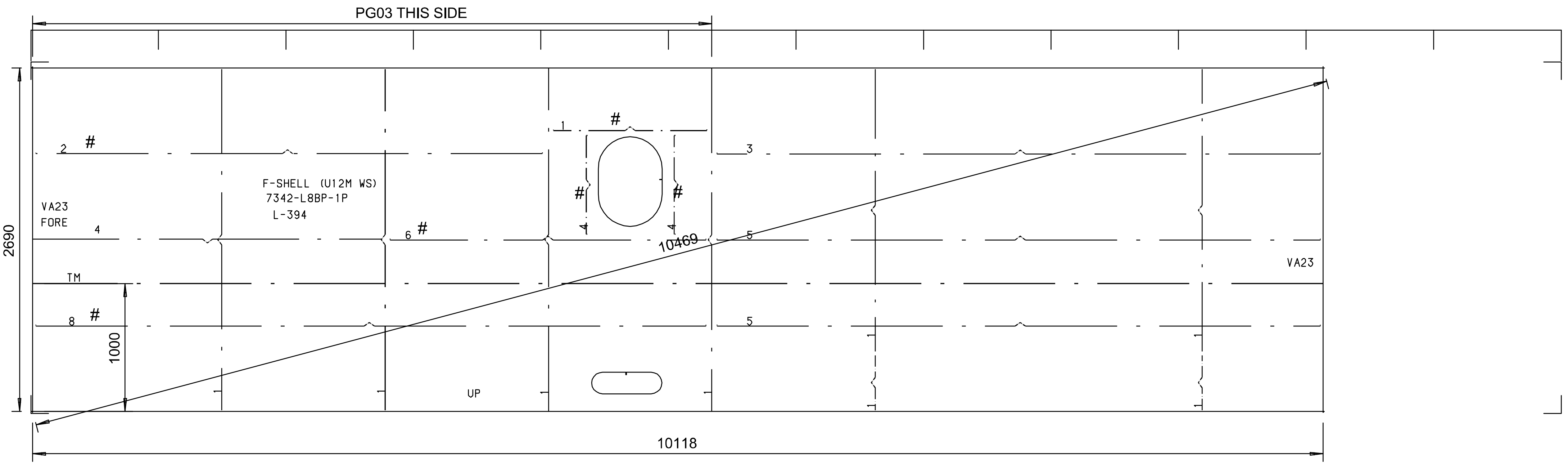
Valm.osa Comp.part	Nimellis Nominal	Mitattu Measured	Ero Diff	Mittasi Measurer	Osia yht. Parts tot. 1 kpl pcs.	Tyhjasiirtopituus Idle length 36.1 m	Autom.viist. Autom.bevel. YES X	Postprosessoitu Pvm/ Date Postprocessing	Nestin nimi/ Nesting name PGN7342_501	Konetekstit Machine texts YES X	Toimituspaikka ellei toisin naytetty
Pit./ Length											
Kork./ Height					Jaannos/ Scrap 2.5 %		NO			NO	

Detalit
Details

= 3.5/3.5 ▷ 115/115 (415)/(415)   U.N.O. 4.0/4.0 ▷ 115/115 (415)/(415)

Ellei toisin n□ytetty
If not stated otherwise

Hitsit/ Weldings	Puhd.aste Prep. this side

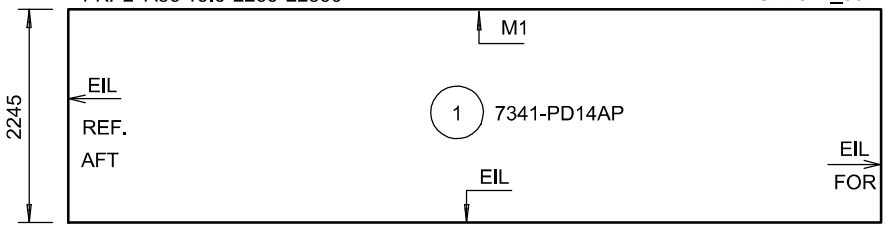


Sulatenumero, Heat number	Polttaja, Operator Pvm/ Date

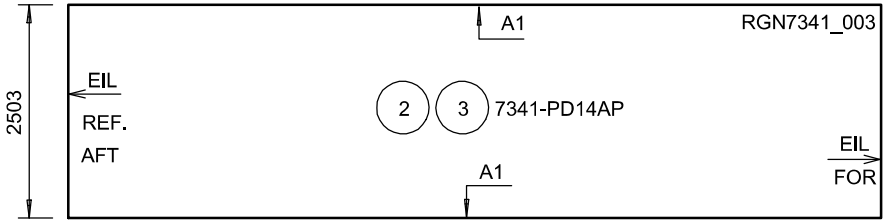
Nestattu levy (pituus*leveys*paksuus) Nested plate (length*width*thickness) 12000* 2750* 10	Laatu Quality A36	Normaali Normal 1 kpl pcs.	Leikkuupituus Burn.length 29.1 m	Leikk.aloituksia Burn.starts 3 kpl pcs.	Nestasi/ Nested by nurmha25 — Pvm/ Date 2018-03-09	Laiva/ Ship 394 — 7342	Skaala/ Scale 1 : 29.9
Minimilevy (lisaa +30/ +30) Minimunplate (add +30/ +30) 10118* 2690	Paino Weight 2673 kg	Peilattu Mirrored 0 kpl pcs.	Merkkauspituus Mark.length 58.0 m	Merkk.aloituksia Mark.starts 19 kpl pcs.	Suunn./ tark. Design/Check — Pvm/ Date	Piirustus/ Drawing D.394.0734.327.001	
Valm.osa Comp.part / Nimellis Nominal / Mitattu Measured / Ero Diff / Mittasi Measurer		Osia yht. Parts tot. 1 kpl pcs.	Tyhjasiirtopituus Idle length 28.3 m	Autom.viist. Autom.bevel. YES X / NO	Postprosessoitu Postprocessing — Pvm/ Date	Nestin nimi/ Nesting name PGN7342_502	Konetekstit Machine texts YES X / NO — Toimituspaikka ellei toisin naytetty
Pit./ Length		Jaannos/ Scrap 18.7 %					
Kork./ Height							

III. GAT nacrti_GN7341

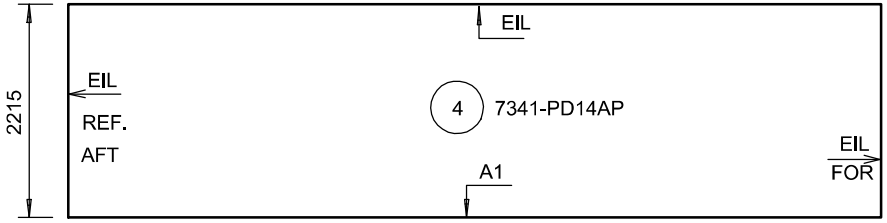
1 KPL A36 10.0*2260*22300 RGN7341_001



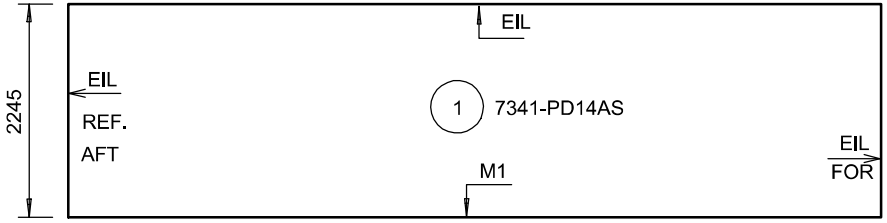
2 KPL A 5.0*2510*22300 RGN7341_002 RGN7341_003



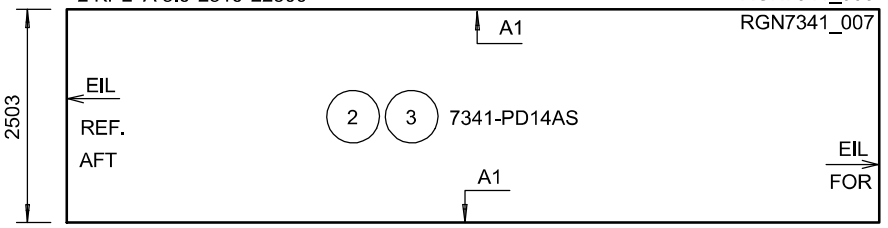
1 KPL A 5.0*2220*22300 RGN7341_004



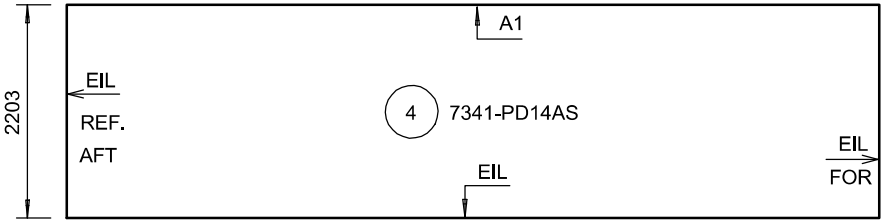
1 KPL A36 10.0*2260*22300 RGN7341_005



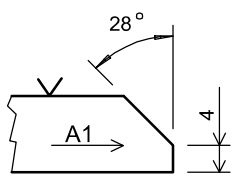
2 KPL A 5.0*2510*22300 RGN7341_006 RGN7341_007

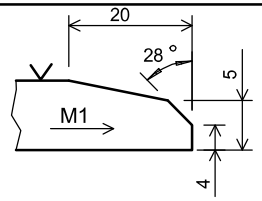


1 KPL A 5.0*2220*22300 RGN7341_008



Detalit:
Details:





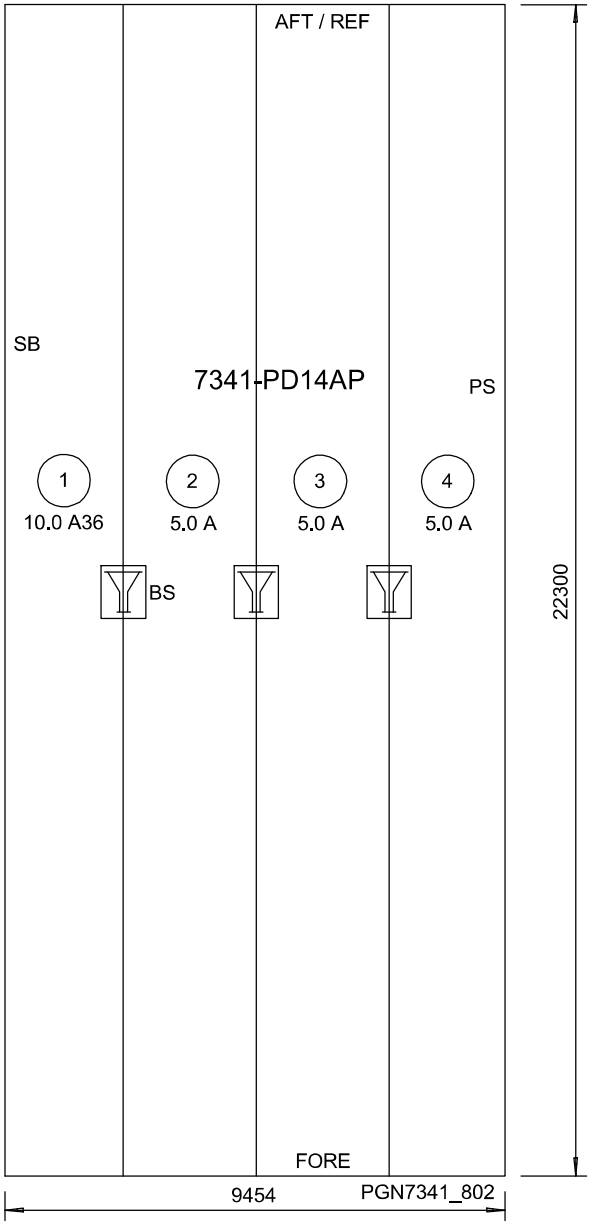
Cutting instruction

GN7341

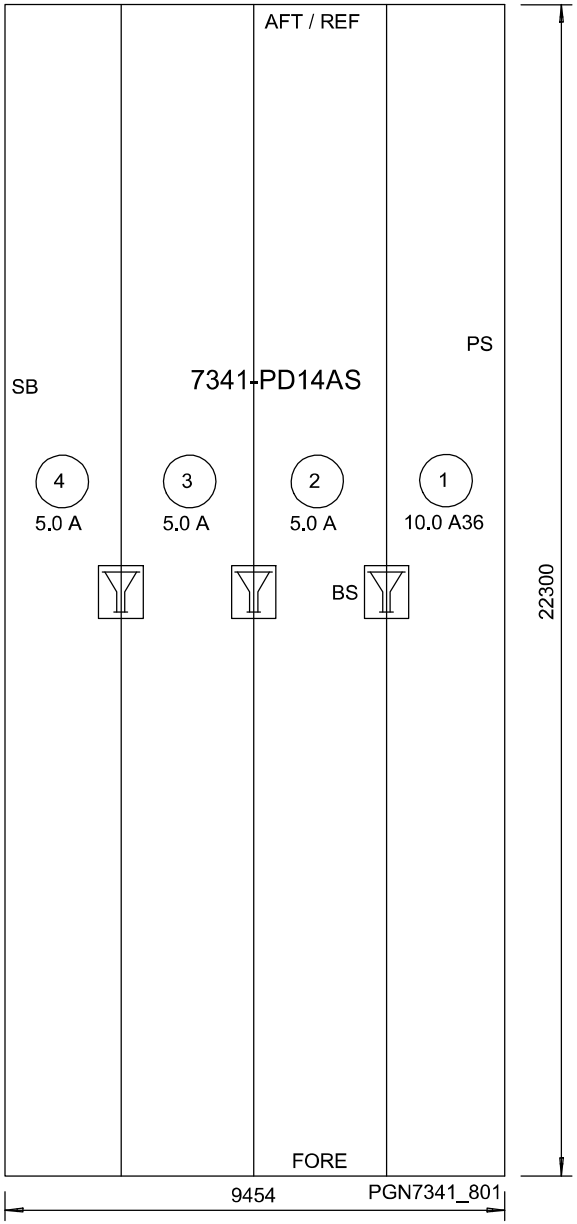
L = leikkausohje (laipiot) cutting instruct. (bhds)
J = jatkolinja lengthened plate
Ⓡ = jyrsin milling
JR = jatkojyrsin lengthened

CAD file	Suunn./ Drawn by	Pvm/ Date	Laiva/ Ship	Versio Rev.	Lehti / Page
D.394.0734.317.001_GAT1	AE / SEH	24.02.2018	394	A	1 (2)
Aveva Marine 12 A3 (297*420)					Formaatti: A3_CUTTING

1 KPL LEKO 5.0*9454*22300



1 KPL LEKO 5.0*9454*22300



Detalit:
Details:

	Leikkausohje Cutting instruction			L = leikkausohje (laipiot) cutting instruct. (bhds) J = jatkolinja lengthened plate Ⓡ = jyrsin milling JR = jatkojyrsin lengthened	
	GN7341				
CAD file D.394.0734.317.001_GAT2	Suunn./ Drawn by	Pvm/ Date	Laiva/ Ship	Versio Rev.	Lehti / Page
Aveva Marine 12 A3 (297*420)	AE / SEH	24.02.2018	394	A	2 (2)

Formaatti: A3_CUTTING

IV. GN7342Wcog -lista

Part name	Weight	X	Y	Z	Type	Side	Quality	Nested on	Circ. Lengtl	Circ. Width	Thickness	Shape	Dimension	Total Length	
7342-601S	4.6	96518.7	-4158.1	41724	PLANAR PLATE BRACKET	SB	A36	KGN7342_002	447	200	800.000				
7342-601P	4.6	96518.7	4158.1	41049	PLANAR PLATE BRACKET	PS	A36	KGN7342_002	447	200	800.000				
7342-601P	4.6	96518.7	4158.1	41724	PLANAR PLATE BRACKET	PS	A36	KGN7342_002	447	200	800.000				
7342-601S	4.6	96518.7	-4158.1	40374	PLANAR PLATE BRACKET	SB	A36	KGN7342_002	447	200	800.000				
7342-601S	4.6	96518.7	-4158.1	41049	PLANAR PLATE BRACKET	SB	A36	KGN7342_002	447	200	800.000				
7342-801S	1.6	96680.9	-4306.1	40375	PLANAR PLATE BRACKET	SB	A36		200	200	800.000				
7342-801P	1.6	96680.9	4306.1	41725	PLANAR PLATE BRACKET	PS	A36		200	200	800.000				
7342-801P	1.6	96680.9	4306.1	41050	PLANAR PLATE BRACKET	PS	A36		200	200	800.000				
7342-801S	1.6	96680.9	-4306.1	41725	PLANAR PLATE BRACKET	SB	A36		200	200	800.000				
7342-801S	1.6	96680.9	-4306.1	41050	PLANAR PLATE BRACKET	SB	A36		200	200	800.000				
7342-603P	1.3	99068.3	4332.4	41054	PLANAR PLATE BRACKET	PS	A36	PGN7342_001	240	125	800.000				
7342-603S	1.3	99068.3	-4332.4	41054	PLANAR PLATE BRACKET	SB	A36	PGN7342_001	240	125	800.000				
7342-8814S	26.6	85052.4	-4512.5	41730.4	PLANAR PLATE BRACKET	SB	A36		740	482.4	2.500.000				
7342-882P	0.6	87584	4423.4	41689	PLANAR PLATE COLLAR	PS	A36		162	65	800.000				
7342-882P	0.6	87584	4423.4	40339	PLANAR PLATE COLLAR	PS	A36		162	65	800.000				
7342-882P	0.6	87584	4423.4	41014	PLANAR PLATE COLLAR	PS	A36		162	65	800.000				
7342-882S	0.6	87568	-4423.4	41689	PLANAR PLATE COLLAR	SB	A36		162	65	800.000				
7342-882S	0.6	87568	-4423.4	40339	PLANAR PLATE COLLAR	SB	A36		162	65	800.000				
7342-882S	0.6	87568	-4423.4	41014	PLANAR PLATE COLLAR	SB	A36		162	65	800.000				
7342-751S	2.8	87569.5	-2743.6	42168.4	PLANAR PLATE COLLAR	SB	A	KGN7342_001	480	108	700.000				
7342-751P	2.8	87583.5	2866.4	42168.4	PLANAR PLATE COLLAR	PS	A	KGN7342_001	480	108	700.000				
7342-751P	2.8	87583.5	2743.6	42168.4	PLANAR PLATE COLLAR	PS	A	KGN7342_001	480	108	700.000				
7342-751P	2.8	87583.5	66.4	42168.4	PLANAR PLATE COLLAR	PS	A	KGN7342_001	480	108	700.000				
7342-751S	2.8	87583.5	-56.4	42168.4	PLANAR PLATE COLLAR	SB	A	KGN7342_001	480	108	700.000				
7342-751S	2.8	87569.5	-2866.4	42168.4	PLANAR PLATE COLLAR	SB	A	KGN7342_001	480	108	700.000				
7342-880S	0.4	87568	-1539.3	42342.3	PLANAR PLATE COLLAR	SB	A36		122	61.5	800.000				
7342-880S	0.4	87568	-339.3	42342.3	PLANAR PLATE COLLAR	SB	A36		122	61.5	800.000				
7342-880S	0.4	87568	-939.3	42342.3	PLANAR PLATE COLLAR	SB	A36		122	61.5	800.000				
7342-880P	0.4	87586	5139.3	42342.3	PLANAR PLATE COLLAR	PS	A36		122	61.5	800.000				
7342-880P	0.4	87582	12939.3	42342.3	PLANAR PLATE COLLAR	PS	A36		122	61.5	800.000				
7342-880P	0.4	87582	12339.3	42342.3	PLANAR PLATE COLLAR	PS	A36		122	61.5	800.000				
7342-880P	0.4	87582	11739.3	42342.3	PLANAR PLATE COLLAR	PS	A36		122	61.5	800.000				
7342-880P	0.4	87582	11139.3	42342.3	PLANAR PLATE COLLAR	PS	A36		122	61.5	800.000				
7342-880P	0.4	87582	9939.3	42342.3	PLANAR PLATE COLLAR	PS	A36		122	61.5	800.000				
7342-880P	0.4	87582	9339.3	42342.3	PLANAR PLATE COLLAR	PS	A36		122	61.5	800.000				
7342-880P	0.4	87582	8739.3	42342.3	PLANAR PLATE COLLAR	PS	A36		122	61.5	800.000				
7342-880P	0.4	87582	8139.3	42342.3	PLANAR PLATE COLLAR	PS	A36		122	61.5	800.000				
7342-880P	0.4	87582	7539.3	42342.3	PLANAR PLATE COLLAR	PS	A36		122	61.5	800.000				
7342-880P	0.4	87582	6939.3	42342.3	PLANAR PLATE COLLAR	PS	A36		122	61.5	800.000				
7342-880P	0.4	87586	6339.3	42342.3	PLANAR PLATE COLLAR	PS	A36		122	61.5	800.000				

7342-880P	0.4	87586	5739.3	42342.3	PLANAR PLATE COLLAR	PS	A36		122	61.5	800.000				
7342-880S	0.4	87568	-5139.3	42342.3	PLANAR PLATE COLLAR	SB	A36		122	61.5	800.000				
7342-880S	0.4	87568	-12939.3	42342.3	PLANAR PLATE COLLAR	SB	A36		122	61.5	800.000				
7342-880S	0.4	87568	-12339.3	42342.3	PLANAR PLATE COLLAR	SB	A36		122	61.5	800.000				
7342-880S	0.4	87568	-11739.3	42342.3	PLANAR PLATE COLLAR	SB	A36		122	61.5	800.000				
7342-880S	0.4	87568	-11139.3	42342.3	PLANAR PLATE COLLAR	SB	A36		122	61.5	800.000				
7342-880S	0.4	87568	-9939.3	42342.3	PLANAR PLATE COLLAR	SB	A36		122	61.5	800.000				
7342-880S	0.4	87568	-9339.3	42342.3	PLANAR PLATE COLLAR	SB	A36		122	61.5	800.000				
7342-880S	0.4	87568	-8739.3	42342.3	PLANAR PLATE COLLAR	SB	A36		122	61.5	800.000				
7342-880S	0.4	87568	-8139.3	42342.3	PLANAR PLATE COLLAR	SB	A36		122	61.5	800.000				
7342-880S	0.4	87568	-7539.3	42342.3	PLANAR PLATE COLLAR	SB	A36		122	61.5	800.000				
7342-880S	0.4	87568	-6939.3	42342.3	PLANAR PLATE COLLAR	SB	A36		122	61.5	800.000				
7342-880S	0.4	87568	-6339.3	42342.3	PLANAR PLATE COLLAR	SB	A36		122	61.5	800.000				
7342-880S	0.4	87568	-5739.3	42342.3	PLANAR PLATE COLLAR	SB	A36		122	61.5	800.000				
7342-881P	0.5	97884	4432.8	41692	PLANAR PLATE COLLAR	PS	A36		142	63	800.000				
7342-881P	0.5	97884	4432.8	41017	PLANAR PLATE COLLAR	PS	A36		142	63	800.000				
7342-751S	2.8	86583.5	-56.4	42168.4	PLANAR PLATE COLLAR	SB	A	KGN7342_001	480	108	700.000				
7342-751P	2.8	86583.5	66.4	42168.4	PLANAR PLATE COLLAR	PS	A	KGN7342_001	480	108	700.000				
7342-751S	2.8	88583.5	-56.4	42168.4	PLANAR PLATE COLLAR	SB	A	KGN7342_001	480	108	700.000				
7342-751P	2.8	88583.5	66.4	42168.4	PLANAR PLATE COLLAR	PS	A	KGN7342_001	480	108	700.000				
7342-L8AP-F128A	41.5	82224	4347.1	40816.4	PLANAR PLATE PLANE	PS	A	PGN7342_301	2232.2	300	800.000				
7342-L8AS-F128A	41.5	82224	-4347.1	40816.4	PLANAR PLATE PLANE	SB	A	PGN7342_301	2232.2	300	800.000				
7342-L8AP-F132A	41.5	84784	4347.1	40816.4	PLANAR PLATE PLANE	PS	A	PGN7342_301	2232.2	300	800.000				
7342-F132AS-1S	153.9	84783.5	-3892.1	40826.5	PLANAR PLATE PLANE	SB	A	PGN7342_404	2233	1215.8	700.000				
7342-L8AP-F136A	50.9	87584	4347.7	41056.9	PLANAR PLATE PLANE	PS	A	PGN7342_301	2692.6	300	800.000				
7342-L8AS-F136A	50.9	87584	-4347.7	41056.9	PLANAR PLATE PLANE	SB	A	PGN7342_301	2692.6	300	800.000				
7342-F136ASP-1S	1262	87583.5	4.9	41041.4	PLANAR PLATE PLANE	CL	A	PGN7342_401	8385.5	2693.6	700.000				
7342-F136BP-1P	918.7	87583	9978.4	41043.5	PLANAR PLATE PLANE	PS	A	PGN7342_451	7054.9	2698.9	600.000				
7342-F136BP-2P	205.4	87585	5483.9	41320.2	PLANAR PLATE PLANE	PS	A36	PGN7342_453	2698.9	1941.3	1.000.000				
7342-F136BS-1S	918.7	87583	-9978.4	41047.4	PLANAR PLATE PLANE	SB	A	PGN7342_452	7054.9	2698.9	600.000				
7342-F136BS-2S	209.9	87585	-5482	41334.4	PLANAR PLATE PLANE	SB	A36	PGN7342_453	2693.9	1941.3	1.000.000				
7342-L8AP-F140A	41.5	90204	4347.1	40816.4	PLANAR PLATE PLANE	PS	A	PGN7342_301	2232.2	300	800.000				
7342-F140AS-1S	153.9	90203.5	-3892.9	40826.5	PLANAR PLATE PLANE	SB	A	PGN7342_404	2233	1215.8	700.000				
7342-L8BP-F144A	41.5	92764	4347.1	40816.4	PLANAR PLATE PLANE	PS	A	PGN7342_301	2232.2	300	800.000				
7342-L8BS-F144A	41.5	92764	-4347.1	40816.4	PLANAR PLATE PLANE	SB	A	PGN7342_301	2232.2	300	800.000				
7342-L8BP-F148A	41.5	95324	4347.1	40816.4	PLANAR PLATE PLANE	PS	A	PGN7342_301	2232.2	300	800.000				
7342-L8BS-F148A	41.5	95324	-4347.1	40816.4	PLANAR PLATE PLANE	SB	A	PGN7342_301	2232.2	300	800.000				
7342-F150ASP-1S	1374.9	96603.5	2.1	41057.4	PLANAR PLATE PLANE	CL	A	PGN7342_402	9005.9	2693.6	700.000				
7342-F152AP-1P	230.8	97883.5	3741.2	41056.4	PLANAR PLATE PLANE	PS	A	PGN7342_403	2693.6	1516	700.000				
7342-L8BS-F152A	52.6	97885	-4373.2	41056.7	PLANAR PLATE PLANE	SB	A	PGN7342_453	2692.2	250	1.000.000				
7342-L8BP-F154A	42.6	99164	4373.8	41056.7	PLANAR PLATE PLANE	PS	A	PGN7342_301	2692.6	250	800.000				

7342-L8BS-F154A	42.6	99164	-4373.8	41056.7	PLANAR PLATE PLANE	SB	A	PGN7342_301	2692.6	250	800.000				
7342-L8BP-F156A	53.2	100445	4373.8	41056.5	PLANAR PLATE PLANE	PS	A	PGN7342_453	2692.2	250	1.000.000				
7342-L8BS-F156A	53.2	100445	-4373.8	41056.5	PLANAR PLATE PLANE	SB	A	PGN7342_453	2692.2	250	1.000.000				
7342-F136ASP-L0	21.7	87505	4	40826.2	PLANAR PLATE PLANE	PS	A	PGN7342_301	2232.4	150	800.000				
7342-F150ASP-L0	21.7	96525	4	40826.2	PLANAR PLATE PLANE	PS	A	PGN7342_301	2232.4	150	800.000				
7342-L1AP-1P	151.8	87083.8	303.5	41056.8	PLANAR PLATE PLANE	PS	A	PGN7342_403	2693.6	993.7	700.000				
7342-L1BP-1P	151.8	88083.2	303.5	41056.8	PLANAR PLATE PLANE	PS	A	PGN7342_403	2693.6	993.7	700.000				
7342-L4AS-1S	151.8	87083.8	-2103.5	41056.8	PLANAR PLATE PLANE	SB	A	PGN7342_403	2693.6	993.7	700.000				
7342-L4BS-1S	151.8	88083.2	-2103.5	41056.8	PLANAR PLATE PLANE	SB	A	PGN7342_403	2693.6	993.7	700.000				
7342-L6AS-1S	92.8	85434.4	-3303.5	41362.8	PLANAR PLATE PLANE	SB	A	PGN7342_402	2691.8	1294.7	700.000				
7342-L6BS-1S	74.6	89637.2	-3303.5	41439.5	PLANAR PLATE PLANE	SB	A	PGN7342_402	2691.8	1174.6	700.000				
7342-L8AP-1P	2607.3	85827.9	4505	41054.3	PLANAR PLATE PLANE	PS	A36	PGN7342_501	11960.2	2691.4	1.000.000				
7342-L8AS-1S	2272.7	85575.7	-4505	41093.9	PLANAR PLATE PLANE	SB	A36	PGN7342_504	11960.2	2691.4	1.000.000				
7342-L8AS-101S	30.5	90227.8	-4510	39972.1	PLANAR PLATE PLANE	SB	A36	PGN7342_002	512.3	397.4	2.000.000				
7342-L8BP-1P	2173.6	96855.4	4505	41056.4	PLANAR PLATE PLANE	PS	A36	PGN7342_502	10118.3	2690	1.000.000				
7342-L8BS-1S	2205.8	96871.2	-4505	41055.7	PLANAR PLATE PLANE	SB	A36	PGN7342_503	10118.3	2691.4	1.000.000				
7342-X133AS-1S	189.5	86083.5	-3905.4	41056.8	PLANAR PLATE PLANE	SB	A	PGN7342_403	2693.6	1240.8	700.000				
7342-X135ASP-1	263.5	86583.5	-1157.6	41142.9	PLANAR PLATE PLANE	CL	A	PGN7342_401	2693.6	2445.6	700.000				
7342-X137ASP-1	263.5	88583.5	-1157.6	41142.9	PLANAR PLATE PLANE	CL	A	PGN7342_403	2693.6	2445.6	700.000				
7342-X138AS-1S	189.5	89023.5	-3905.4	41056.8	PLANAR PLATE PLANE	SB	A	PGN7342_403	2693.6	1240.8	700.000				
7342-F136ASP-Y	21.7	87505	2804	40828.2	PLANAR PLATE PLANE	PS	A	PGN7342_301	2228.4	150	800.000				
7342-F136ASP-Y	21.7	87505	-2804	40826.2	PLANAR PLATE PLANE	SB	A	PGN7342_301	2232.4	150	800.000				
7342-F150ASP-Y	21.7	96525	2804	40828.2	PLANAR PLATE PLANE	PS	A	PGN7342_301	2228.4	150	800.000				
7342-F150ASP-Y	21.7	96525	-2804	40826.2	PLANAR PLATE PLANE	SB	A	PGN7342_301	2232.4	150	800.000				
7342-Y6AP-1P	194.3	97243.9	3003.5	41058.8	PLANAR PLATE PLANE	PS	A	PGN7342_403	2689.6	1273.8	700.000				
7342-604S	3.7	89087.1	-3626.4	41944	PLANAR PLATE PLANE	SB	A	PGN7342_301	490	150	800.000				
7342-602S	4.8	89119.2	-4167.7	41944	PLANAR PLATE PLANE	SB	A	PGN7342_301	442	250	800.000				
7342-604S	3.5	86022.4	-3618.9	41944	PLANAR PLATE PLANE	SB	A	PGN7342_301	490	150	800.000				
7342-602S	4.6	85989.6	-4173	41944	PLANAR PLATE PLANE	SB	A	PGN7342_301	442	250	800.000				
7342-L8AP-F128A	18	82224	4200	40825	PROFILE PLANE	PS	A					LAT	100*10.0	2228	
7342-L8AS-F128A	18	82224	-4200	40825	PROFILE PLANE	SB	A					LAT	100*10.0	2228	
7342-L8AP-F132A	18	84784	4200	40824.1	PROFILE PLANE	PS	A					LAT	100*10.0	2228	
7342-F132AS1S	10.9	84846.6	-3904.7	40825	PROFILE PLANE	SB	A36					BE	100*5.0	2150	
7342-F132AS3S	2.2	84823	-4202.5	41049	PROFILE PLANE	SB	A					LAT	80*8.0	515	
7342-F132AS2S	2.1	84822.3	-3592.5	41049	PROFILE PLANE	SB	A					LAT	80*8.0	535	
7342-L8AP-F136A	21.8	87584	4200	41055	PROFILE PLANE	PS	A					LAT	100*10.0	2688	
7342-L8AS-F136A	21.8	87584	-4200	41055	PROFILE PLANE	SB	A					LAT	100*10.0	2688	
7342-F136ASP2S	26.6	87501	-2506.1	41055	PROFILE PLANE	SB	A36					BE	140*8.0	2610	
7342-F136ASP2S	26.6	87501	-3906.1	41055	PROFILE PLANE	SB	A36					BE	140*8.0	2610	
7342-F136ASP2S	26.6	87501	-3306.1	41055	PROFILE PLANE	SB	A36					BE	140*8.0	2610	
7342-F136ASP3P	26.5	87501	3306.1	41057	PROFILE PLANE	PS	A36					BE	140*8.0	2606	

7342-F136ASP2P	26.6	87501	3906.1	41055	PROFILE PLANE	PS	A36					BE	140*8.0	2610	
7342-F136ASP3P	26.5	87501	906.1	41057	PROFILE PLANE	PS	A36					BE	140*8.0	2606	
7342-F136ASP3P	26.5	87501	1506.1	41057	PROFILE PLANE	PS	A36					BE	140*8.0	2606	
7342-F136ASP3P	26.5	87501	2106.1	41057	PROFILE PLANE	PS	A36					BE	140*8.0	2606	
7342-F136ASP3P	26.5	87501	2506.1	41057	PROFILE PLANE	PS	A36					BE	140*8.0	2606	
7342-F136ASP1S	25.5	87501.1	-306.1	41005	PROFILE PLANE	SB	A36					BE	140*8.0	2510	
7342-F136ASP1S	25.5	87501.1	-906.1	41005	PROFILE PLANE	SB	A36					BE	140*8.0	2510	
7342-F136ASP1S	25.5	87501.1	-1506.1	41005	PROFILE PLANE	SB	A36					BE	140*8.0	2510	
7342-F136BP14P	68.8	87505.4	8161.2	41997.5	PROFILE PLANE	PS	A					LAT	150*15.0	3809	
7342-F136BP17P	43	87506.3	12024.3	41997.5	PROFILE PLANE	PS	A					LAT	150*15.0	2456	
7342-F136BP1P	37.4	87509.2	10505.5	40828.9	PROFILE PLANE	PS	A					T	100*100*1	2234	
7342-303P	17.2	87597.5	9936	39716.5	PROFILE PLANE	PS	A					L	40*40*4.0	6972	
7342-F136BP13P	14.4	87521	5479.2	41995	PROFILE PLANE	PS	A					LAT	120*10.0	1518	
7342-F136BP9P	13.4	87520	4714.7	41055	PROFILE PLANE	PS	A36					BE	100*5.0	2610	
7342-F136BP4P	11.6	87519.5	6239.8	40882.9	PROFILE PLANE	PS	A36					BE	100*5.0	2192	
7342-F136BP2P	11	87520.3	6904.7	40825	PROFILE PLANE	PS	A36					BE	100*5.0	2160	
7342-F136BP2P	11	87520.3	6572.2	40825	PROFILE PLANE	PS	A36					BE	100*5.0	2160	
7342-F136BP2P	11	87520.3	12904.7	40825	PROFILE PLANE	PS	A36					BE	100*5.0	2160	
7342-F136BP2P	11	87520.3	12304.7	40825	PROFILE PLANE	PS	A36					BE	100*5.0	2160	
7342-F136BP2P	11	87520.3	11704.7	40825	PROFILE PLANE	PS	A36					BE	100*5.0	2160	
7342-F136BP2P	11	87520.3	11104.7	40825	PROFILE PLANE	PS	A36					BE	100*5.0	2160	
7342-F136BP2P	11	87520.3	9904.7	40825	PROFILE PLANE	PS	A36					BE	100*5.0	2160	
7342-F136BP2P	11	87520.3	9304.7	40825	PROFILE PLANE	PS	A36					BE	100*5.0	2160	
7342-F136BP2P	11	87520.3	8704.7	40825	PROFILE PLANE	PS	A36					BE	100*5.0	2160	
7342-F136BP2P	11	87520.3	8104.7	40825	PROFILE PLANE	PS	A36					BE	100*5.0	2160	
7342-F136BP2P	11	87520.3	7504.7	40825	PROFILE PLANE	PS	A36					BE	100*5.0	2160	
7342-305P	10.3	87589	8353.5	41895	PROFILE PLANE	PS	A					LAT	50*6.0	4233	
7342-304P	6.9	87589	11993	41945	PROFILE PLANE	PS	A					LAT	50*6.0	2858	
7342-301P	5.7	87514.9	10214.4	41997.5	PROFILE PLANE	PS	A					LAT	150*15.0	410	
7342-306P	5.3	87589	13347	40828	PROFILE PLANE	PS	A					LAT	50*6.0	2164	
7342-302P	3.6	87520.5	10731.4	41997.5	PROFILE PLANE	PS	A					LAT	150*15.0	297	
7342-307P	2.3	87543.6	13202.5	41046	PROFILE PLANE	PS	A					LAT	80*8.0	515	
7342-F136BP20P	1.9	87523.4	6239.4	42117.3	PROFILE PLANE	PS	A36					BE	100*5.0	418	
7342-F136BP21P	1.5	87524.4	9604.3	42150.3	PROFILE PLANE	PS	A36					BE	100*5.0	354	
7342-F136BP21P	1.5	87524.4	13204.3	42150.3	PROFILE PLANE	PS	A36					BE	100*5.0	354	
7342-F136BP21P	1.5	87524.4	12604.3	42150.3	PROFILE PLANE	PS	A36					BE	100*5.0	354	
7342-F136BP21P	1.5	87524.4	12004.3	42150.3	PROFILE PLANE	PS	A36					BE	100*5.0	354	
7342-F136BP21P	1.5	87524.4	11404.3	42150.3	PROFILE PLANE	PS	A36					BE	100*5.0	354	
7342-F136BP21P	1.5	87524.4	10804.3	42150.3	PROFILE PLANE	PS	A36					BE	100*5.0	354	
7342-F136BP21P	1.5	87524.4	10204.3	42150.3	PROFILE PLANE	PS	A36					BE	100*5.0	354	
7342-F136BP21P	1.5	87524.4	9004.3	42150.3	PROFILE PLANE	PS	A36					BE	100*5.0	354	

7342-F136BP21P	1.5	87524.4	8404.3	42150.3	PROFILE PLANE	PS	A36					BE	100*5.0	354	
7342-F136BP21P	1.5	87524.4	7804.3	42150.3	PROFILE PLANE	PS	A36					BE	100*5.0	354	
7342-F136BP21P	1.5	87524.4	7204.3	42150.3	PROFILE PLANE	PS	A36					BE	100*5.0	354	
7342-F136BP21P	1.5	87524.4	6571.8	42150.3	PROFILE PLANE	PS	A36					BE	100*5.0	354	
7342-F136BP6P	2.3	87543.6	12602.5	41046	PROFILE PLANE	PS	A					LAT	80*8.0	515	
7342-F136BP6P	2.3	87543.6	11402.5	41046	PROFILE PLANE	PS	A					LAT	80*8.0	515	
7342-F136BP6P	2.3	87543.6	7202.5	41046	PROFILE PLANE	PS	A					LAT	80*8.0	515	
7342-F136BP6P	2.3	87543.6	7802.5	41046	PROFILE PLANE	PS	A					LAT	80*8.0	515	
7342-F136BP6P	2.3	87543.6	8402.5	41046	PROFILE PLANE	PS	A					LAT	80*8.0	515	
7342-F136BP6P	2.3	87543.6	9002.5	41046	PROFILE PLANE	PS	A					LAT	80*8.0	515	
7342-F136BP6P	2.3	87543.6	9602.5	41046	PROFILE PLANE	PS	A					LAT	80*8.0	515	
7342-F136BP6P	2.3	87543.6	10202.5	41046	PROFILE PLANE	PS	A					LAT	80*8.0	515	
7342-F136BP8P	2.2	87543.6	10805.5	41046	PROFILE PLANE	PS	A					LAT	80*8.0	509	
7342-F136BP6P	2.3	87543.6	12002.5	41046	PROFILE PLANE	PS	A					LAT	80*8.0	515	
7342-F136BP5P	0.9	87549.2	6403.7	41046	PROFILE PLANE	PS	A					LAT	80*8.0	247	
7342-308P	1.1	87543.5	13388.3	42326	PROFILE PLANE	PS	A					LAT	80*8.0	257	
7342-F136BP19P	0.9	87531.1	6903.5	42115.7	PROFILE PLANE	PS	A36					BE	100*5.0	264	
7342-F136BP18P	1	87530.7	5703.6	42113	PROFILE PLANE	PS	A36					BE	100*5.0	269	
7342-F136BP18P	1	87530.7	5103.6	42113	PROFILE PLANE	PS	A36					BE	100*5.0	269	
7342-F136BP12P	0.6	87547.4	4642.5	41994	PROFILE PLANE	PS	A					LAT	80*8.0	159	
7342-F136BP5P	0.9	87549.2	6736.2	41046	PROFILE PLANE	PS	A					LAT	80*8.0	248	
7342-308P	1.1	87622.5	13388.3	42326	PROFILE PLANE	PS	A					LAT	80*8.0	257	
7342-F136BS18S	71	87505.4	-8216.4	41997.5	PROFILE PLANE	SB	A					LAT	150*15.0	3925	
7342-F136BS21S	43.1	87506.3	-12027.9	41997.5	PROFILE PLANE	SB	A					LAT	150*15.0	2464	
7342-F136BS1S	37.4	87509.2	-10509	40828.9	PROFILE PLANE	SB	A					T	100*100*1	2234	
7342-311S	17.2	87597.5	-9936	39716.5	PROFILE PLANE	SB	A					L	40*40*4.0	6972	
7342-F136BS17S	14.4	87521	-5477.7	41995	PROFILE PLANE	SB	A					LAT	120*10.0	1515	
7342-F136BS13S	13.4	87520.1	-4714.7	41055	PROFILE PLANE	SB	A36					BE	100*5.0	2610	
7342-F136BS5S	11.6	87519.5	-6236.8	40882.9	PROFILE PLANE	SB	A36					BE	100*5.0	2192	
7342-F136BS2S	11	87520.3	-12904.7	40825	PROFILE PLANE	SB	A36					BE	100*5.0	2160	
7342-F136BS2S	11	87520.3	-6572.2	40825	PROFILE PLANE	SB	A36					BE	100*5.0	2160	
7342-F136BS2S	11	87520.3	-8104.7	40825	PROFILE PLANE	SB	A36					BE	100*5.0	2160	
7342-F136BS2S	11	87520.3	-8704.7	40825	PROFILE PLANE	SB	A36					BE	100*5.0	2160	
7342-F136BS4S	11.1	87520.3	-6904.7	40832.5	PROFILE PLANE	SB	A36					BE	100*5.0	2175	
7342-F136BS4S	11.1	87520.3	-7504.7	40832.5	PROFILE PLANE	SB	A36					BE	100*5.0	2175	
7342-F136BS2S	11	87520.3	-9304.7	40825	PROFILE PLANE	SB	A36					BE	100*5.0	2160	
7342-F136BS2S	11	87520.3	-9904.7	40825	PROFILE PLANE	SB	A36					BE	100*5.0	2160	
7342-F136BS2S	11	87520.3	-11104.7	40825	PROFILE PLANE	SB	A36					BE	100*5.0	2160	
7342-F136BS2S	11	87520.3	-11704.7	40825	PROFILE PLANE	SB	A36					BE	100*5.0	2160	
7342-F136BS2S	11	87520.3	-12304.7	40825	PROFILE PLANE	SB	A36					BE	100*5.0	2160	
7342-314S	10.2	87589	-8334	41945	PROFILE PLANE	SB	A					LAT	50*6.0	4196	

7342-312S	7	87589	-12009	41945	PROFILE PLANE	SB	A					LAT	50*6.0	2866	
7342-315S	5.3	87589	-13397	40828	PROFILE PLANE	SB	A					LAT	50*6.0	2164	
7342-309S	3.6	87520.5	-10275.7	41997.5	PROFILE PLANE	SB	A					LAT	150*15.0	296	
7342-310S	3.6	87520.5	-10731.3	41997.5	PROFILE PLANE	SB	A					LAT	150*15.0	296	
7342-F136BS9S	2.2	87544	-11402.5	41046	PROFILE PLANE	SB	A					LAT	80*8.0	515	
7342-F136BS24S	1.5	87524.4	-10204.3	42150.3	PROFILE PLANE	SB	A36					BE	100*5.0	354	
7342-F136BS24S	1.5	87524.4	-6571.8	42150.3	PROFILE PLANE	SB	A36					BE	100*5.0	354	
7342-F136BS24S	1.5	87524.4	-7204.3	42150.3	PROFILE PLANE	SB	A36					BE	100*5.0	354	
7342-F136BS24S	1.5	87524.4	-7804.3	42150.3	PROFILE PLANE	SB	A36					BE	100*5.0	354	
7342-F136BS24S	1.5	87524.4	-8404.3	42150.3	PROFILE PLANE	SB	A36					BE	100*5.0	354	
7342-F136BS24S	1.5	87524.4	-9004.3	42150.3	PROFILE PLANE	SB	A36					BE	100*5.0	354	
7342-F136BS24S	1.5	87524.4	-9604.3	42150.3	PROFILE PLANE	SB	A36					BE	100*5.0	354	
7342-F136BS24S	1.5	87524.4	-13204.3	42150.3	PROFILE PLANE	SB	A36					BE	100*5.0	354	
7342-F136BS24S	1.5	87524.4	-12604.3	42150.3	PROFILE PLANE	SB	A36					BE	100*5.0	354	
7342-F136BS24S	1.5	87524.4	-12004.3	42150.3	PROFILE PLANE	SB	A36					BE	100*5.0	354	
7342-F136BS24S	1.5	87524.4	-11404.3	42150.3	PROFILE PLANE	SB	A36					BE	100*5.0	354	
7342-F136BS24S	1.5	87524.4	-10804.3	42150.3	PROFILE PLANE	SB	A36					BE	100*5.0	354	
7342-F136BS9S	2.2	87544	-7202.5	41046	PROFILE PLANE	SB	A					LAT	80*8.0	515	
7342-F136BS9S	2.2	87544	-12602.5	41046	PROFILE PLANE	SB	A					LAT	80*8.0	515	
7342-F136BS9S	2.2	87544	-7802.5	41046	PROFILE PLANE	SB	A					LAT	80*8.0	515	
7342-F136BS9S	2.2	87544	-8402.5	41046	PROFILE PLANE	SB	A					LAT	80*8.0	515	
7342-F136BS9S	2.2	87544	-9002.5	41046	PROFILE PLANE	SB	A					LAT	80*8.0	515	
7342-F136BS9S	2.2	87544	-9602.5	41046	PROFILE PLANE	SB	A					LAT	80*8.0	515	
7342-F136BS10S	2.2	87543.9	-10204.2	41046	PROFILE PLANE	SB	A					LAT	80*8.0	518	
7342-F136BS11S	2.1	87544.1	-10807.2	41046	PROFILE PLANE	SB	A					LAT	80*8.0	505	
7342-F136BS9S	2.2	87544	-12002.5	41046	PROFILE PLANE	SB	A					LAT	80*8.0	515	
7342-316S	2.3	87543.6	-13202.5	41046	PROFILE PLANE	SB	A					LAT	80*8.0	515	
7342-F136BS23S	1.9	87523.4	-6236.4	42117.3	PROFILE PLANE	SB	A36					BE	100*5.0	418	
7342-F136BS8S	0.8	87550.7	-6736.2	41046	PROFILE PLANE	SB	A					LAT	80*8.0	248	
7342-F136BS22S	1.1	87526.9	-5104.1	42104.9	PROFILE PLANE	SB	A36					BE	100*5.0	269	
7342-F136BS22S	1.1	87526.9	-5704.1	42104.9	PROFILE PLANE	SB	A36					BE	100*5.0	269	
7342-F136BS6S	0.8	87550.5	-6402.2	41046	PROFILE PLANE	SB	A					LAT	80*8.0	250	
7342-308S	1.1	87622.1	-13391.2	42326.5	PROFILE PLANE	SB	A					LAT	80*8.0	257	
7342-308S	1.1	87543.9	-13391.2	42326.5	PROFILE PLANE	SB	A					LAT	80*8.0	257	
7342-F136BS16S	0.6	87547.4	-4642.5	41986	PROFILE PLANE	SB	A					LAT	80*8.0	159	
7342-L8AP-F140A	18	90204	4200	40824.1	PROFILE PLANE	PS	A					LAT	100*10.0	2228	
7342-F140AS1S	10.9	90140.4	-3904.7	40825	PROFILE PLANE	SB	A36					BE	100*5.0	2150	
7342-F140AS2S	2.2	90164	-3603.5	41049	PROFILE PLANE	SB	A					LAT	80*8.0	513	
7342-F140AS2S	2.2	90164	-4202.5	41049	PROFILE PLANE	SB	A					LAT	80*8.0	515	
7342-L8BP-F144A	18	92764	4200	40824.1	PROFILE PLANE	PS	A					LAT	100*10.0	2228	
7342-L8BS-F144A	18	92764	-4200	40824.5	PROFILE PLANE	SB	A					LAT	100*10.0	2228	

7342-L8BP-F148A	18	95324	4200	40824.1	PROFILE PLANE	PS	A					LAT	100*10.0	2228	
7342-L8BS-F148A	18	95324	-4200	40824.1	PROFILE PLANE	SB	A					LAT	100*10.0	2228	
7342-F150ASP2P	26.5	96521	2456.1	41057	PROFILE PLANE	PS	A36					BE	140*8.0	2606	
7342-F150ASP1S	26.6	96521	-906.1	41055	PROFILE PLANE	SB	A36					BE	140*8.0	2610	
7342-F150ASP1S	26.6	96521	-1506.1	41055	PROFILE PLANE	SB	A36					BE	140*8.0	2610	
7342-F150ASP1S	26.6	96521	-2106.1	41055	PROFILE PLANE	SB	A36					BE	140*8.0	2610	
7342-F150ASP1S	26.6	96521	-3306.1	41055	PROFILE PLANE	SB	A36					BE	140*8.0	2610	
7342-F150ASP1S	26.6	96521	-3906.1	41055	PROFILE PLANE	SB	A36					BE	140*8.0	2610	
7342-F150ASP1S	26.6	96521	-306.1	41055	PROFILE PLANE	SB	A36					BE	140*8.0	2610	
7342-F150ASP1P	26.6	96521	306.1	41055	PROFILE PLANE	PS	A36					BE	140*8.0	2610	
7342-F150ASP2P	26.5	96521	906.1	41057	PROFILE PLANE	PS	A36					BE	140*8.0	2606	
7342-F150ASP2P	26.5	96521	1506.1	41057	PROFILE PLANE	PS	A36					BE	140*8.0	2606	
7342-F150ASP2P	26.5	96521	2106.1	41057	PROFILE PLANE	PS	A36					BE	140*8.0	2606	
7342-F150ASP2P	26.5	96521	3306.1	41057	PROFILE PLANE	PS	A36					BE	140*8.0	2606	
7342-F150ASP1P	26.6	96521	3906.1	41055	PROFILE PLANE	PS	A36					BE	140*8.0	2610	
7342-F150ASP1S	26.6	96521	-2456.1	41055	PROFILE PLANE	SB	A36					BE	140*8.0	2610	
7342-F150ASP4S	5.2	96554.3	-2879	41945	PROFILE PLANE	SB	A					LAT	100*10.0	762	
7342-F150ASP4P	5.2	96554.3	2879	41945	PROFILE PLANE	PS	A					LAT	100*10.0	762	
7342-F150ASP3S	3.2	96556.9	0	41945	PROFILE PLANE	PS	A					LAT	100*10.0	520	
7342-F152AP2P	10.9	97831.9	3304.6	41057	PROFILE PLANE	PS	A36					BE	80*5.0	2606	
7342-F152AP1P	10.9	97831.9	3904.6	41055	PROFILE PLANE	PS	A36					BE	80*5.0	2610	
7342-320P	1.8	97860.2	4225.8	41945	PROFILE PLANE	PS	A36					LAT	40*10.0	554	
7342-318P	2	97906.8	4183.3	41945	PROFILE PLANE	PS	A36					LAT	40*10.0	639	
7342-L8BS-F152A	32.7	97885	-4250	41055	PROFILE PLANE	SB	A					LAT	150*10.0	2688	
7342-319S	0.6	97860.5	-4398.1	41945	PROFILE PLANE	SB	A36					LAT	40*10.0	209	
7342-319S	0.6	97909.5	-4398.1	41945	PROFILE PLANE	SB	A36					LAT	40*10.0	209	
7342-L8BP-F154A	21.8	99164	4250	41055	PROFILE PLANE	PS	A					LAT	100*10.0	2688	
7342-319P	0.6	99140.5	4351.9	40595	PROFILE PLANE	PS	A36					LAT	40*10.0	209	
7342-319P	0.6	99187.5	4351.9	40595	PROFILE PLANE	PS	A36					LAT	40*10.0	209	
7342-L8BS-F154A	21.8	99164	-4250	41055	PROFILE PLANE	SB	A					LAT	100*10.0	2688	
7342-319S	0.6	99140.5	-4351.9	40595	PROFILE PLANE	SB	A36					LAT	40*10.0	209	
7342-319S	0.6	99187.5	-4351.9	40595	PROFILE PLANE	SB	A36					LAT	40*10.0	209	
7342-L8BP-F156A	32.7	100445	4250	41055	PROFILE PLANE	PS	A					LAT	150*10.0	2688	
7342-322P	0.8	100416.1	4401.2	41945	PROFILE PLANE	PS	A36					LAT	50*10.0	209	
7342-322P	0.8	100416.1	4348.8	40595	PROFILE PLANE	PS	A36					LAT	50*10.0	209	
7342-322P	0.8	100473.9	4348.8	40595	PROFILE PLANE	PS	A36					LAT	50*10.0	209	
7342-322P	0.8	100473.9	4401.2	41945	PROFILE PLANE	PS	A36					LAT	50*10.0	209	
7342-L8BS-F156A	32.7	100445	-4250	41055	PROFILE PLANE	SB	A					LAT	150*10.0	2688	
7342-322S	0.8	100416.1	-4401.2	41945	PROFILE PLANE	SB	A36					LAT	50*10.0	209	
7342-322S	0.8	100416.1	-4348.8	40595	PROFILE PLANE	SB	A36					LAT	50*10.0	209	
7342-322S	0.8	100473.9	-4348.8	40595	PROFILE PLANE	SB	A36					LAT	50*10.0	209	

7342-322S	0.8	100473.9	-4401.2	41945	PROFILE PLANE	SB	A36					LAT	50*10.0	209	
7342-F136ASP-L0	18	87430	4	40824.1	PROFILE PLANE	PS	A					LAT	100*10.0	2228	
7342-F150ASP-L0	18	96450	4	40824.1	PROFILE PLANE	PS	A					LAT	100*10.0	2228	
7342-L1AP3P	13.4	86875.3	240.1	41055	PROFILE PLANE	PS	A36					BE	100*5.0	2610	
7342-L1AP2P	2.7	87230	263.2	41049	PROFILE PLANE	PS	A					LAT	80*8.0	620	
7342-L1AP1P	0.6	86731	274.4	41049	PROFILE PLANE	PS	A					LAT	80*8.0	208	
7342-L1BP3P	13.4	88275.3	240.1	41055	PROFILE PLANE	PS	A36					BE	100*5.0	2610	
7342-L1BP1P	2.7	87931	263.2	41049	PROFILE PLANE	PS	A					LAT	80*8.0	608	
7342-L1BP2P	0.7	88430	273	41049	PROFILE PLANE	PS	A					LAT	80*8.0	220	
7342-L4AS3S	13.4	86875.3	-2040.1	41055	PROFILE PLANE	SB	A36					BE	100*5.0	2610	
7342-L4AS2S	2.7	87230	-2063.2	41049	PROFILE PLANE	SB	A					LAT	80*8.0	620	
7342-L4AS1S	0.6	86731	-2074.4	41049	PROFILE PLANE	SB	A					LAT	80*8.0	208	
7342-L4BS3S	13.4	88275.3	-2040.1	41055	PROFILE PLANE	SB	A36					BE	100*5.0	2610	
7342-L4BS1S	2.7	87931	-2063.2	41049	PROFILE PLANE	SB	A					LAT	80*8.0	608	
7342-L4BS2S	0.7	88430	-2073	41049	PROFILE PLANE	SB	A					LAT	80*8.0	220	
7342-L6AS1S	9.3	85463.8	-3355.8	41915	PROFILE PLANE	SB	A					LAT	100*10.0	1213	
7342-L6BS1S	8.3	89583.3	-3355.7	41915	PROFILE PLANE	SB	A					LAT	100*10.0	1093	
7342-L8AP1P	133.7	85834	4418.2	41726.7	PROFILE PLANE	PS	A36					BE	140*8.0	11948	
7342-L8AP1P	133.7	85834	4418.2	40376.7	PROFILE PLANE	PS	A36					BE	140*8.0	11948	
7342-L8AP1P	133.7	85834	4418.2	41051.7	PROFILE PLANE	PS	A36					BE	140*8.0	11948	
7342-L8AS1S	53.3	82243	-4418.9	41726.7	PROFILE PLANE	SB	A36					BE	140*8.0	4880	
7342-L8AS1S	53.3	82243	-4418.9	40376.7	PROFILE PLANE	SB	A36					BE	140*8.0	4880	
7342-L8AS1S	53.3	82243	-4418.9	41051.7	PROFILE PLANE	SB	A36					BE	140*8.0	4880	
7342-L8AS2S	29.3	87553.5	-4420.8	41726.9	PROFILE PLANE	SB	A36					BE	140*8.0	2853	
7342-L8AS2S	29.3	87553.5	-4420.8	40376.9	PROFILE PLANE	SB	A36					BE	140*8.0	2853	
7342-L8AS2S	29.3	87553.5	-4420.8	41051.9	PROFILE PLANE	SB	A36					BE	140*8.0	2853	
7342-L8AS5S	20.2	85483.7	-4427.8	41947.5	PROFILE PLANE	SB	A					LAT	150*15.0	1213	
7342-L8AS6S	18	89563.6	-4428.2	41947.5	PROFILE PLANE	SB	A					LAT	150*15.0	1093	
7342-L8AS3S	16.2	91079.7	-4420.4	41726.9	PROFILE PLANE	SB	A36					BE	140*8.0	1568	
7342-L8AS4S	16.1	91083.2	-4420.4	41051.9	PROFILE PLANE	SB	A36					BE	140*8.0	1561	
7342-L8AS3S	16.2	91079.7	-4420.4	40376.9	PROFILE PLANE	SB	A36					BE	140*8.0	1568	
7342-L8BP5P	53.1	94187.4	4418.2	41726.7	PROFILE PLANE	PS	A36					BE	140*8.0	4748	
7342-L8BP5P	53.1	94187.4	4418.2	41051.7	PROFILE PLANE	PS	A36					BE	140*8.0	4748	
7342-L8BP3P	51.8	94129	4418.9	40376.7	PROFILE PLANE	PS	A36					BE	140*8.0	4748	
7342-L8BP8P	39.8	99281.9	4428	41727.7	PROFILE PLANE	PS	A36					BE	120*6.0	5273	
7342-L8BP2P	29.4	99971.9	4428.6	40375.7	PROFILE PLANE	PS	A36					BE	120*6.0	3993	
7342-L8BP6P	18.7	97883.5	4428	41052.7	PROFILE PLANE	PS	A36					BE	120*6.0	2473	
7342-L8BP1P	7.5	97240	4432.8	40195	PROFILE PLANE	PS	A36					BE	120*6.0	1200	
7342-L8BP4P	4.3	96891.3	4436.5	40626	PROFILE PLANE	PS	A36					BE	120*6.0	772	
7342-L8BP4P	4.3	97579.3	4436.5	40626	PROFILE PLANE	PS	A36					BE	120*6.0	772	
7342-L8BS1S	53.1	94187.4	-4418.2	41726.7	PROFILE PLANE	SB	A36					BE	140*8.0	4748	

7342-L8BS3S	53.1	94187.4	-4418.2	41051.7	PROFILE PLANE	SB	A36					BE	140*8.0	4748	
7342-L8BS1S	53.1	94187.4	-4418.2	40376.7	PROFILE PLANE	SB	A36					BE	140*8.0	4748	
7342-L8BS2S	39.8	99281.9	-4428	41727.7	PROFILE PLANE	SB	A36					BE	120*6.0	5273	
7342-L8BS2S	39.8	99281.9	-4428	40377.7	PROFILE PLANE	SB	A36					BE	120*6.0	5273	
7342-L8BS4S	18.7	97883.5	-4428	41052.7	PROFILE PLANE	SB	A36					BE	120*6.0	2473	
7342-X133AS3S	13.4	86020.1	-3904.7	41055	PROFILE PLANE	SB	A36					BE	100*5.0	2610	
7342-X133AS1S	2.2	86044	-3603.5	41049	PROFILE PLANE	SB	A					LAT	80*8.0	513	
7342-X133AS2S	2.3	86043.7	-4215	41049	PROFILE PLANE	SB	A					LAT	80*8.0	540	
7342-X135ASP3S	13.4	86520.1	-824.7	41055	PROFILE PLANE	SB	A36					BE	100*5.0	2610	
7342-X135ASP3S	13.4	86520.1	-1504.7	41055	PROFILE PLANE	SB	A36					BE	100*5.0	2610	
7342-X135ASP5S	6.1	86530.5	-428.7	41945	PROFILE PLANE	SB	A					LAT	100*10.0	770	
7342-X135ASP6S	3	86541.4	-1121.5	41944	PROFILE PLANE	SB	A					LAT	80*8.0	634	
7342-X135ASP1S	2.6	86543.3	-1162.5	41049	PROFILE PLANE	SB	A					LAT	80*8.0	595	
7342-X135ASP2S	2.3	86543.8	-1813.5	41049	PROFILE PLANE	SB	A					LAT	80*8.0	537	
7342-X135ASP4P	1.3	86538.5	146.2	41945	PROFILE PLANE	PS	A					LAT	100*10.0	223	
7342-X137ASP3S	13.4	88520.1	-824.7	41055	PROFILE PLANE	SB	A36					BE	100*5.0	2610	
7342-X137ASP3S	13.4	88520.1	-1504.7	41055	PROFILE PLANE	SB	A36					BE	100*5.0	2610	
7342-X137ASP5S	6.1	88530.5	-428.7	41945	PROFILE PLANE	SB	A					LAT	100*10.0	770	
7342-X137ASP1S	2.6	88543.3	-1162.5	41049	PROFILE PLANE	SB	A					LAT	80*8.0	595	
7342-X137ASP6S	3	88541.4	-1121.5	41944	PROFILE PLANE	SB	A					LAT	80*8.0	634	
7342-X137ASP2S	2.3	88543.8	-1813.5	41049	PROFILE PLANE	SB	A					LAT	80*8.0	537	
7342-X137ASP4P	1.3	88538.5	146.2	41945	PROFILE PLANE	PS	A					LAT	100*10.0	223	
7342-X138AS3S	13.4	89086.9	-3904.7	41055	PROFILE PLANE	SB	A36					BE	100*5.0	2610	
7342-X138AS1S	2.2	89063	-3603.5	41049	PROFILE PLANE	SB	A					LAT	80*8.0	513	
7342-X138AS2S	2.3	89063.3	-4215	41049	PROFILE PLANE	SB	A					LAT	80*8.0	540	
7342-F136ASP-Y	18	87430	2804	40826.1	PROFILE PLANE	PS	A					LAT	100*10.0	2224	
7342-F136ASP-Y	18	87430	-2804	40824.1	PROFILE PLANE	SB	A					LAT	100*10.0	2228	
7342-F150ASP-Y	18	96450	2804	40826.1	PROFILE PLANE	PS	A					LAT	100*10.0	2224	
7342-F150ASP-Y	18	96450	-2804	40824.1	PROFILE PLANE	SB	A					LAT	100*10.0	2228	
7342-Y6AP1P	12.5	97535	2953.1	41057	PROFILE PLANE	PS	A36					BE	80*6.0	2606	
7342-Y6AP1P	12.5	97235	2953.1	41057	PROFILE PLANE	PS	A36					BE	80*6.0	2606	
GN7342	21032.6	90526.6	-82	41073.1											

V. Lista limova_GN7342

Part name	Quantity	Block	Side	Weight	GPS1	GPS2	GPS3	GPS4	Ship	Nested on	Type	Area	Length	Width	Thickness	Functional Desc	Sketches	FCode	Quality
7342-601P	2	GN7342	PS	4.6		F150ASP		7342	394	KGN7342_002	BRACKET	0.1	447	200	8	BKT	KGN7342_002P.pdf	3111	A36
7342-601S	3	GN7342	SB	4.6		F150ASP		7342	394	KGN7342_002	BRACKET	0.1	447	200	8	BKT	KGN7342_002P.pdf	3111	A36
7342-602S	2	GN7342	SB	4.6				7342	394	PGN7342_301	PLATE	0.1	442	250	8	BKT	PGN7342_301P.pdf	8600	A
7342-603P	1	GN7342	PS	1.3		F154AP		7342	394	PGN7342_001	BRACKET	0	240	125	8	BKT	PGN7342_001P.pdf	4321	A36
7342-603S	1	GN7342	SB	1.3		F154AS		7342	394	PGN7342_001	BRACKET	0	240	125	8	BKT	PGN7342_001P.pdf	4321	A36
7342-604S	2	GN7342	SB	3.5				7342	394	PGN7342_301	PLATE	0.1	490	150	8	BKT	PGN7342_301P.pdf	8600	A
7342-751P	5	GN7342	PS	2.8		X137ASP		7342	394	KGN7342_001	CLIP	0	480	108	7	BKT	KGN7342_001P.pdf	3111	A
7342-751S	5	GN7342	SB	2.8		X137ASP		7342	394	KGN7342_001	CLIP	0	480	108	7	BKT	KGN7342_001P.pdf	3111	A
7342-801P	2	GN7342	PS	1.6				7342	394	KSP200	BRACKET	0	200	200	8	SP200	KSP200.pdf	3111	A36
7342-801S	3	GN7342	SB	1.6				7342	394	KSP200	BRACKET	0	200	200	8	SP200	KSP200.pdf	3111	A36
7342-880P	13	GN7342	PS	0.4				7342	394	KPKC100	CLIP	0	122	61.5	8	PKC100	KPKC100.pdf	3311	A36
7342-880S	16	GN7342	SB	0.4				7342	394	KPKC100	CLIP	0	122	61.5	8	PKC100	KPKC100.pdf	3311	A36
7342-8814S	1	GN7342	SB	26.6		L8AS		7342	394	KSTD8814	BRACKET	0.1	740	482.4	25	STD-DOOR REINFORCEME	KSTD8814P.pdf	8814	A36
7342-881P	2	GN7342	PS	0.5				7342	394	KPKC120	CLIP	0	142	63	8	PKC120	KPKC120.pdf	3111	A36
7342-882P	3	GN7342	PS	0.6				7342	394	KPKC140	CLIP	0	162	65	8	PKC140	KPKC140.pdf	4321	A36
7342-882S	3	GN7342	SB	0.6				7342	394	KPKC140	CLIP	0	162	65	8	PKC140	KPKC140.pdf	4321	A36
7342-F132AS-1S	1	GN7342	SB	153.9		F132AS		7342	394	PGN7342_404	PLATE	2.7	2233	1215.8	7	F-BHD (U12M NS)	PGN7342_404P.pdf	3111	A
7342-F136ASP-1S	1	GN7342	CL	1262		F136ASP		7342	394	PGN7342_401	PLATE	22.3	8385.5	2693.6	7	F-BHD (U12M NS)	PGN7342_401P.pdf	3111	A
7342-F136ASP-L0AP-1S	1	GN7342	CL	21.7	F136ASP	L0AP		7342	394	PGN7342_301	PLATE	0.3	2232.4	150	8	T-BAR U2.3M	PGN7342_301P.pdf	4122	A
7342-F136ASP-Y5AP-1P	1	GN7342	PS	21.7	F136ASP	Y5AP		7342	394	PGN7342_301	PLATE	0.3	2228.4	150	8	T-BAR U2.3M	PGN7342_301P.pdf	4122	A
7342-F136ASP-Y5AS-1S	1	GN7342	SB	21.7	F136ASP	Y5AS		7342	394	PGN7342_301	PLATE	0.3	2232.4	150	8	T-BAR U2.3M	PGN7342_301P.pdf	4122	A
7342-F136BP-1P	1	GN7342	PS	918.7		F136BP		7342	394	PGN7342_451	PLATE	18.9	7054.9	2698.9	6	F-BHD (U12M PS)	PGN7342_451P.pdf	3311	A
7342-F136BP-2P	1	GN7342	PS	205.4		F136BP		7342	394	PGN7342_453	PLATE	2.5	2698.9	1941.3	10	F-BHD (U12M PS)	PGN7342_453P.pdf	3311	A36
7342-F136BS-1S	1	GN7342	SB	918.7		F136BS		7342	394	PGN7342_452	PLATE	18.9	7054.9	2698.9	6	F-BHD (U12M PS)	PGN7342_452P.pdf	3311	A
7342-F136BS-2S	1	GN7342	SB	209.9		F136BS		7342	394	PGN7342_453	PLATE	2.6	2693.9	1941.3	10	F-BHD (U12M PS)	PGN7342_453P.pdf	3311	A36
7342-F140AS-1S	1	GN7342	SB	153.9		F140AS		7342	394	PGN7342_404	PLATE	2.7	2233	1215.8	7	F-BHD (U12M NS)	PGN7342_404P.pdf	3111	A
7342-F150ASP-1S	1	GN7342	CL	1374.9		F150ASP		7342	394	PGN7342_402	PLATE	24.2	9005.9	2693.6	7	F-BHD (U12M NS)	PGN7342_402P.pdf	3111	A
7342-F150ASP-L0BP-1S	1	GN7342	CL	21.7	F150ASP	L0BP		7342	394	PGN7342_301	PLATE	0.3	2232.4	150	8	T-BAR U2.3M	PGN7342_301P.pdf	4122	A
7342-F150ASP-Y5BP-1P	1	GN7342	PS	21.7	F150ASP	Y5BP		7342	394	PGN7342_301	PLATE	0.3	2228.4	150	8	T-BAR U2.3M	PGN7342_301P.pdf	4122	A
7342-F150ASP-Y5BS-1S	1	GN7342	SB	21.7	F150ASP	Y5BS		7342	394	PGN7342_301	PLATE	0.3	2232.4	150	8	T-BAR U2.3M	PGN7342_301P.pdf	4122	A
7342-F152AP-1P	1	GN7342	PS	230.8		F152AP		7342	394	PGN7342_403	PLATE	4.1	2693.6	1516	7	F-BHD (U12M NS)	PGN7342_403P.pdf	3111	A
7342-L1AP-1P	1	GN7342	PS	151.8		L1AP		7342	394	PGN7342_403	PLATE	2.7	2693.6	993.7	7	F-BHD (U12M NS)	PGN7342_403P.pdf	3111	A
7342-L1BP-1P	1	GN7342	PS	151.8		L1BP		7342	394	PGN7342_403	PLATE	2.7	2693.6	993.7	7	F-BHD (U12M NS)	PGN7342_403P.pdf	3111	A
7342-L4AS-1S	1	GN7342	SB	151.8		L4AS		7342	394	PGN7342_403	PLATE	2.7	2693.6	993.7	7	F-BHD (U12M NS)	PGN7342_403P.pdf	3111	A
7342-L4BS-1S	1	GN7342	SB	151.8		L4BS		7342	394	PGN7342_403	PLATE	2.7	2693.6	993.7	7	F-BHD (U12M NS)	PGN7342_403P.pdf	3111	A
7342-L6AS-1S	1	GN7342	SB	92.8		L6AS		7342	394	PGN7342_402	PLATE	1.6	2691.8	1294.7	7	F-BHD (U12M NS)	PGN7342_402P.pdf	3111	A
7342-L6BS-1S	1	GN7342	SB	74.6		L6BS		7342	394	PGN7342_402	PLATE	1.3	2691.8	1174.6	7	F-BHD (U12M NS)	PGN7342_402P.pdf	3111	A
7342-L8AP-1P	1	GN7342	PS	2607.3		L8AP		7342	394	PGN7342_501	PLATE	32.2	11960.2	2691.4	10	F-SHELL (U12M WS)	PGN7342_501P.pdf	2212	A36
7342-L8AP-F128AP-1P	1	GN7342	PS	41.5	L8AP	F128AP		7342	394	PGN7342_301	PLATE	0.6	2232.2	300	8	T-BAR U2.3M	PGN7342_301P.pdf	4122	A
7342-L8AP-F132AP-1P	1	GN7342	PS	41.5	L8AP	F132AP		7342	394	PGN7342_301	PLATE	0.6	2232.2	300	8	T-BAR U2.3M	PGN7342_301P.pdf	4122	A
7342-L8AP-F136AP-1P	1	GN7342	PS	50.9	L8AP	F136AP		7342	394	PGN7342_301	PLATE	0.8	2692.6	300	8	T-BAR O2.3M	PGN7342_301P.pdf	4321	A
7342-L8AP-F140AP-1P	1	GN7342	PS	41.5	L8AP	F140AP		7342	394	PGN7342_301	PLATE	0.6	2232.2	300	8	T-BAR U2.3M	PGN7342_301P.pdf	4122	A
7342-L8AS-101S	1	GN7342	SB	30.5		L8AS		7342	394	PGN7342_002	PLATE	0.2	512.3	397.4	20	F-SHELL (U12M WS)	PGN7342_002P.pdf	2212	A36
7342-L8AS-1S	1	GN7342	SB	2272.7		L8AS		7342	394	PGN7342_504	PLATE	28.1	11960.2	2691.4	10	F-SHELL (U12M WS)	PGN7342_504P.pdf	2212	A36
7342-L8AS-F128AS-1S	1	GN7342	SB	41.5	L8AS	F128AS		7342	394	PGN7342_301	PLATE	0.6	2232.2	300	8	T-BAR U2.3M	PGN7342_301P.pdf	4122	A
7342-L8AS-F136AS-1S	1	GN7342	SB	50.9	L8AS	F136AS		7342	394	PGN7342_301	PLATE	0.8	2692.6	300	8	T-BAR O2.3M	PGN7342_301P.pdf	4321	A
7342-L8BP-1P	1	GN7342	PS	2173.6		L8BP		7342	394	PGN7342_502	PLATE	26.8	10118.3	2690	10	F-SHELL (U12M WS)	PGN7342_502P.pdf	2212	A36
7342-L8BP-F144AP-1P	1	GN7342	PS	41.5	L8BP	F144AP		7342	394	PGN7342_301	PLATE	0.6	2232.2	300	8	T-BAR U2.3M	PGN7342_301P.pdf	4122	A
7342-L8BP-F148AP-1P	1	GN7342	PS	41.5	L8BP	F148AP		7342	394	PGN7342_301	PLATE	0.6	2232.2	300	8	T-BAR U2.3M	PGN7342_301P.pdf	4122	A
7342-L8BP-F154AP-1P	1	GN7342	PS	42.6	L8BP	F154AP		7342	394	PGN7342_301	PLATE	0.7	2692.6	250	8	T-BAR O2.3M	PGN7342_301P.pdf	4321	A

7342-L8BP-F156AP-1P	1	GN7342	PS	53.2	L8BP	F156AP		7342	394	PGN7342_453	PLATE	0.7	2692.2	250	10	T-BAR O2.3M	PGN7342_453P.pdf	4321	A
7342-L8BS-1S	1	GN7342	SB	2205.8		L8BS		7342	394	PGN7342_503	PLATE	27.2	10118.3	2691.4	10	F-SHELL (U12M WS)	PGN7342_503P.pdf	2212	A36
7342-L8BS-F144AS-1S	1	GN7342	SB	41.5	L8BS	F144AS		7342	394	PGN7342_301	PLATE	0.6	2232.2	300	8	T-BAR U2.3M	PGN7342_301P.pdf	4122	A
7342-L8BS-F148AS-1S	1	GN7342	SB	41.5	L8BS	F148AS		7342	394	PGN7342_301	PLATE	0.6	2232.2	300	8	T-BAR U2.3M	PGN7342_301P.pdf	4122	A
7342-L8BS-F152AS-1S	1	GN7342	SB	52.6	L8BS	F152AS		7342	394	PGN7342_453	PLATE	0.6	2692.2	250	10	T-BAR O2.3M	PGN7342_453P.pdf	4321	A
7342-L8BS-F154AS-1S	1	GN7342	SB	42.6	L8BS	F154AS		7342	394	PGN7342_301	PLATE	0.7	2692.6	250	8	T-BAR O2.3M	PGN7342_301P.pdf	4321	A
7342-L8BS-F156AS-1S	1	GN7342	SB	53.2	L8BS	F156AS		7342	394	PGN7342_453	PLATE	0.7	2692.2	250	10	T-BAR O2.3M	PGN7342_453P.pdf	4321	A
7342-X133AS-1S	1	GN7342	SB	189.5		X133AS		7342	394	PGN7342_403	PLATE	3.3	2693.6	1240.8	7	F-BHD (U12M NS)	PGN7342_403P.pdf	3111	A
7342-X135ASP-1S	1	GN7342	SB	263.5		X135ASP		7342	394	PGN7342_401	PLATE	4.6	2693.6	2445.6	7	F-BHD (U12M NS)	PGN7342_401P.pdf	3111	A
7342-X137ASP-1S	1	GN7342	SB	263.5		X137ASP		7342	394	PGN7342_403	PLATE	4.6	2693.6	2445.6	7	F-BHD (U12M NS)	PGN7342_403P.pdf	3111	A
7342-X138AS-1S	1	GN7342	SB	189.5		X138AS		7342	394	PGN7342_403	PLATE	3.3	2693.6	1240.8	7	F-BHD (U12M NS)	PGN7342_403P.pdf	3111	A
7342-Y6AP-1P	1	GN7342	PS	194.3		Y6AP		7342	394	PGN7342_403	PLATE	3.4	2689.6	1273.8	7	F-BHD (U12M NS)	PGN7342_403P.pdf	3111	A

VI. Lista profila _GN7342

Part name	Quantity	Ship	Block	Side	Weight	Quality	GPS1	GPS2	GPS3	GPS4	Type	Shape	Dim	Mlength	Tlength	Direction	Left Endcu	Snipe	Bevel Web	Right Endc	Bevel Web	Sketch	Functional	Assembly r	Pos no	Sketches	FCode
7342-301P	1	394	GN7342	PS	5.7	A				7342	PROFILE	LAT	150x15.0	410	410	CL	1302		0	1100	VP23	7342-301P	F-BHD (U12M PS)		301		3311
7342-302P	1	394	GN7342	PS	3.6	A				7342	PROFILE	LAT	150x15.0	297	297	CL	1100		VP23	1302	0	7342-302P	F-BHD (U12M PS)		302		3311
7342-303P	1	394	GN7342	PS	17.2	A				7342	PROFILE	L	40x40x4.0x4.0	6977	6977	CL	2100		0	2100	0	7342-303P	F-BHD (U12M PS)		303		3311
7342-304P	1	394	GN7342	PS	6.9	A				7342	PROFILE	LAT	50x6.0	2860	2860	CL	1100		0	1100	0	7342-304P	F-BHD (U12M PS)		304		3311
7342-305P	1	394	GN7342	PS	10.3	A				7342	PROFILE	LAT	50x6.0	4236	4236	OUT	1100		0	1100	0	7342-305P	F-BHD (U12M PS)		305		3311
7342-306P	1	394	GN7342	PS	5.3	A				7342	PROFILE	LAT	50x6.0	2167	2167	DOWN	1100		0	1100	0	7342-306P	F-BHD (U12M PS)		306		3311
7342-307P	1	394	GN7342	PS	2.3	A				7342	PROFILE	LAT	80x8.0	515	515	OUT	1302		0	1302	0	7342-307P	F-BHD (U12M PS)		307		3311
7342-308P	2	394	GN7342	PS	1.1	A				7342	PROFILE	LAT	80x8.0	257	257	OUT	1302		0	1190	0	7342-308P	F-BHD		308		3311
7342-308S	2	394	GN7342	SB	1.1	A				7342	PROFILE	LAT	80x8.0	257	257	OUT	1302		0	1190	0	7342-308S	F-BHD		308		3311
7342-309S	1	394	GN7342	SB	3.6	A				7342	PROFILE	LAT	150x15.0	297	297	OUT	1100		0	1392	0	7342-309S	F-BHD (U12M PS)		309		3311
7342-310S	1	394	GN7342	SB	3.6	A				7342	PROFILE	LAT	150x15.0	297	297	OUT	1392	8	0	1100	0	7342-310S	F-BHD (U12M PS)		310		3311
7342-311S	1	394	GN7342	SB	17.2	A				7342	PROFILE	L	40x40x4.0x4.0	6977	6977	OUT	2100		0	2100	0	7342-311S	F-BHD (U12M PS)		311		3311
7342-312S	1	394	GN7342	SB	7	A				7342	PROFILE	LAT	50x6.0	2868	2868	OUT	1100		0	1100	0	7342-312S	F-BHD (U12M PS)		312		3311
7342-314S	1	394	GN7342	SB	10.2	A				7342	PROFILE	LAT	50x6.0	4199	4199	OUT	1100		0	1100	0	7342-314S	F-BHD (U12M PS)		314		3311
7342-315S	1	394	GN7342	SB	5.3	A				7342	PROFILE	LAT	50x6.0	2167	2167	DOWN	1100		0	1100	0	7342-315S	F-BHD (U12M PS)		315		3311
7342-316S	1	394	GN7342	SB	2.3	A				7342	PROFILE	LAT	80x8.0	515	515	CL	1302		0	1302	0	7342-316S	F-BHD (U12M PS)		316		3311
7342-318P	1	394	GN7342	PS	2	A36				7342	PROFILE	LAT	40x10.0	639	639	OUT	1302		0	1190	0	7342-318P	F-BHD (U12M NS)		318		3111
7342-319P	2	394	GN7342	PS	0.6	A36				7342	PROFILE	LAT	40x10.0	209	209	OUT	1190	8	0	1302	0	7342-319P	T-BAR		319		4321
7342-319S	4	394	GN7342	SB	0.6	A36				7342	PROFILE	LAT	40x10.0	209	209	CL	1302		0	1190	0	7342-319S	T-BAR		319		4321
7342-320P	1	394	GN7342	PS	1.8	A36				7342	PROFILE	LAT	40x10.0	554	554	CL	1190	8	0	1302	0	7342-320P	F-BHD (U12M NS)		320		3111
7342-322P	4	394	GN7342	PS	0.8	A36				7342	PROFILE	LAT	50x10.0	209	209	CL	1302		0	1190	0	7342-322P	T-BAR		322		4321
7342-322S	4	394	GN7342	SB	0.8	A36				7342	PROFILE	LAT	50x10.0	209	209	OUT	1190	8	0	1302	0	7342-322S	T-BAR		322		4321
7342-F132AS1S	1	394	GN7342	SB	10.9	A36		F132AS		7342	PROFILE	BE	100x5.0	2153	2153	UP	2302		0	2302	0	7342-F132AS1S	F-BHD (U12M NS)		1		3111
7342-F132AS2S	1	394	GN7342	SB	2.1	A		F132AS		7342	PROFILE	LAT	80x8.0	535	535	CL	1100		0	1100	0	7342-F132AS2S	F-BHD (U12M NS)		2		3111
7342-F132AS3S	1	394	GN7342	SB	2.2	A		F132AS		7342	PROFILE	LAT	80x8.0	515	515	CL	1302		0	1302	0	7342-F132AS3S	F-BHD (U12M NS)		3		3111
7342-F136ASP-L0AP1S	1	394	GN7342	SB	18	A	F136ASP	L0AP		7342	PROFILE	LAT	100x10.0	2230	2230	UP	1100		0	1402	0	7342-F136ASP-L0AP1S	T-BAR U2.3M		1		4122
7342-F136ASP-Y5AP1P	1	394	GN7342	PS	18	A	F136ASP	Y5AP		7342	PROFILE	LAT	100x10.0	2226	2226	UP	1100		0	1402	0	7342-F136ASP-Y5AP1P	T-BAR U2.3M		1		4122
7342-F136ASP-Y5AS1S	1	394	GN7342	SB	18	A	F136ASP	Y5AS		7342	PROFILE	LAT	100x10.0	2230	2230	UP	1100		0	1402	0	7342-F136ASP-Y5AS1S	T-BAR U2.3M		1		4122
7342-F136ASP1S	3	394	GN7342	SB	25.5	A36		F136ASP		7342	PROFILE	BE	140x8.0	2513	2513	DOWN	2302		0	2302	0	7342-F136ASP1S	F-BHD		1		3111
7342-F136ASP2P	1	394	GN7342	PS	26.6	A36		F136ASP		7342	PROFILE	BE	140x8.0	2613	2614	UP	2302		0	2302	0	7342-F136ASP2P	F-BHD (U12M NS)		2		3111
7342-F136ASP2S	3	394	GN7342	SB	26.6	A36		F136ASP		7342	PROFILE	BE	140x8.0	2613	2614	DOWN	2302		0	2302	0	7342-F136ASP2S	F-BHD		2		3111
7342-F136ASP3P	5	394	GN7342	PS	26.5	A36		F136ASP		7342	PROFILE	BE	140x8.0	2609	2609	UP	2302		0	2302	0	7342-F136ASP3P	F-BHD		3		3111
7342-F136BP12P	1	394	GN7342	PS	0.6	A		F136BP		7342	PROFILE	LAT	80x8.0	159	159	CL	1392	8	0	1302	0	7342-F136BP12P	F-BHD (U12M PS)		12		3311
7342-F136BP13P	1	394	GN7342	PS	14.4	A		F136BP		7342	PROFILE	LAT	120x10.0	1519	1519	CL	1392	8	0	1392	0	7342-F136BP13P	F-BHD (U12M PS)		13		3311
7342-F136BP14P	1	394	GN7342	PS	68.8	A		F136BP		7342	PROFILE	LAT	150x15.0	3812	3812	CL	1100		VP23	1392	0	7342-F136BP14P	F-BHD (U12M PS)		14		3311
7342-F136BP17P	1	394	GN7342	PS	43	A		F136BP		7342	PROFILE	LAT	150x15.0	2458	2458	CL	1302		0	1100	VP23	7342-F136BP17P	F-BHD (U12M PS)		17		3311
7342-F136BP18P	2	394	GN7342	PS	1	A36		F136BP		7342	PROFILE	BE	100x5.0	269	269	UP	2392	8	0	2302	0	7342-F136BP18P	F-BHD		18		3311
7342-F136BP19P	1	394	GN7342	PS	0.9	A36		F136BP		7342	PROFILE	BE	100x5.0	264	264	UP	2392	8	0	2302	0	7342-F136BP19P	F-BHD (U12M PS)		19		3311
7342-F136BP1P	1	394	GN7342	PS	37.4	A		F136BP		7342	PROFILE	T	100x100x11.0x11.0	2237	2237	UP	3102		0	3102	0	7342-F136BP1P	F-BHD (U12M PS)		1	7342-F136BP1P-Q.pdf	3311
7342-F136BP20P	1	394	GN7342	PS	1.9	A36		F136BP		7342	PROFILE	BE	100x5.0	419	419	UP	2100		VP23	2302	0	7342-F136BP20P	F-BHD (U12M PS)		20		3311
7342-F136BP21P	12	394	GN7342	PS	1.5	A36		F136BP		7342	PROFILE	BE	100x5.0	355	355	UP	2190	8	0	2302	0	7342-F136BP21P	F-BHD		21		3311
7342-F136BP2P	11	394	GN7342	PS	11	A36		F136BP		7342	PROFILE	BE	100x5.0	2163	2163	UP	2302		0	2302	0	7342-F136BP2P	F-BHD		2		3311
7342-F136BP4P	1	394	GN7342	PS	11.6	A36		F136BP		7342	PROFILE	BE	100x5.0	2195	2195	UP	2302		0	2100	VP23	7342-F136BP4P	F-BHD (U12M PS)		4		3311
7342-F136BP5P	2	394	GN7342	PS	0.9	A		F136BP		7342	PROFILE	LAT	80x8.0	248	248	OUT	1302		0	1302	0	7342-F136BP5P	F-BHD		5		3311
7342-F136BP6P	9	394	GN7342	PS	2.3	A		F136BP		7342	PROFILE	LAT	80x8.0	515	515	OUT	1302		0	1302	0	7342-F136BP6P	F-BHD		6		3311
7342-F136BP8P	1	394	GN7342	PS	2.2	A		F136BP		7342	PROFILE	LAT	80x8.0	509	509	OUT	1302		0	1302	0	7342-F136BP8P	F-BHD (U12M PS)		8		3311
7342-F136BP9P	1	394	GN7342	PS	13.4	A36		F136BP		7342	PROFILE	BE	100x5.0	2614	2614	UP	2302		0	2302	0	7342-F136BP9P	F-BHD (U12M PS)		9		3311
7342-F136BS10S	1	394	GN7342	SB	2.2	A		F136BS		7342	PROFILE	LAT	80x8.0	519	519	CL	1302		0	1302	0	7342-F136BS10S	F-BHD (U12M PS)		10		3311
7342-F136BS11S	1	394	GN7342	SB	2.1	A		F136BS		7342	PROFILE	LAT	80x8.0	506	506	CL	1302		0	1302	0	7342-F136BS11S	F-BHD (U12M PS)		11		3311
7342-F136BS13S	1	394	GN7342	SB	13.4	A36		F136BS		7342	PROFILE	BE	100x5.0	2614	2614	DOWN	2302		0	2302	0	7342-F136BS13S	F-BHD (U12M PS)		13		3311
7342-F136BS16S	1	394	GN7342	SB	0.6	A		F136BS		7342	PROFILE	LAT	80x8.0	159	159	CL	1392	8	0	1302	0	7342-F136BS16S	F-BHD (U12M PS)		16		3311
7342-F136BS17S	1	394	GN7342	SB	14.4	A		F136BS		7342	PROFILE	LAT	120x10.0	1516	1516	OUT	1392	8	0	1392	0	7342-F136BS17S	F-BHD (U12M PS)		17		3311
7342-F136BS18S	1	394	GN7342	SB	71	A		F136BS		7342	PROFILE	LAT	150x15.0	3928	3928	OUT	1392	8	0	1100	0	7342-F136BS18S	F-BHD (U12M PS)		18		3311
7342-F136BS1S	1	394	GN7342	SB	37.4	A		F136BS		7342	PROFILE	T	100x100x11.0x11.0	2237	2237	DOWN	3102		0	3102	0	7342-F136BS1S	F-BHD (U12M PS)		1	7342-F136BS1S-Q.pdf	3311
7342-F136BS21S	1	394	GN7342	SB	43.1	A		F136BS		7342	PROFILE	LAT	150x15.0	2466	2466	OUT	1100		0	1392	0	7342-F136BS21S	F-BHD (U12M PS)		21		3311
7342-F136BS22S	2	394	GN7342	SB	1.1	A36		F136BS		7342	PROFILE	BE	100x5.0	269	269	DOWN	2302		0	2190	0	7342-F136BS22S	F-BHD		22		3311
7342-F136BS23S	1	394	GN7342	SB	1.9	A36		F136BS		7342	PROFILE	BE	100x5.0	419	419	DOWN	2302		0	2100	VP23	7342-F136BS23S	F-BHD (U12M PS)		23		3311
7342-F136BS24S	12	394	GN7342	SB	1.5	A36		F136BS		7342	PROFILE	BE	100x5.0	355	355	DOWN	2302		0	2190	0	7342-F136BS24S	F-BHD		24		3311
7342-F136BS2S	9	394	GN7342	SB	11	A36		F136BS		7342	PROFILE	BE	100x5.0	2163	2163	DOWN	2302		0	2302	0	7342-F136BS2S	F-BHD		2		3311
7342-F136BS4S	2	394	GN7342	SB	11.1	A36		F136BS		7342	PROFILE	BE	100x5.0	2178	2178	DOWN	2302		0	2302	0	7342-F136BS4S	F-BHD		4		3311
7342-F136BS5S	1	394	GN7342	SB	11.6	A36		F136BS		7342	PROFILE	BE	100x5.0	2195	2195	DOWN	2100		VP23	2302	0	7342-F136BS5S	F-BHD (U12M PS)		5		3311
7342-F136BS6S	1	394	GN7342	SB	0.8	A		F136BS		7342	PROFILE	LAT	80x8.0	251	251	CL	1302		0	1302	0	7342-F136BS6S	F-BHD (U12M PS)		6		3311
7342-F136BS8S	1	394	GN7342	SB	0.8	A		F136BS		7342	PROFILE	LAT	80x8.0	248	248	CL	1302		0	1302	0	7342-F136BS8S	F-BHD (U12M PS)		8		3311
7342-F136BS9S	8	394	GN7342	SB	2.2	A		F136BS		7342	PROFILE	LAT	80x8.0	515	515	CL	1302		0	1302	0	7342-F136BS9S	F-BHD		9		3311
7342-F140AS1S	1	394	GN7342	SB	10.9	A36		F140AS		7342	PROFILE	BE	100x5.0	2153	2153	DOWN	2302		0	2302	0	7342-F140AS1S	F-BHD (U12M NS)		1		3111
7342-F140AS2S	2	394	GN7342	SB	2.2	A		F140AS		7342	PROFILE	LAT	80x8.0	513	513	OUT	1302		0	1302	0	7342-F140AS2S	F-BHD		2		3111
7342-F150ASP-L0BP1S	1	394	GN7342	SB	18	A	F150ASP	L0BP		7342	PROFILE	LAT	100x10.0	2230	2230	UP	1100		0	1402	0	7342-F150ASP-L0BP1S	T-BAR U2.3M		1		4122
7342-F150ASP-Y5BP1P	1	394	GN7342	PS	18	A	F150ASP	Y5BP		7342	PROFILE	LAT	100x10.0	2226	2226	UP	1100		0	1402	0	7342-F150ASP-Y5BP1P	T-BAR U2.3M		1		4122
7342-F150ASP-Y5BS1S	1	394	GN7342	SB	18	A	F150ASP	Y5BS		7342	PROFILE	LAT	100x10.0	2230	2230	UP	1100		0	1402	0	7342-F150ASP-Y5BS1S	T-BAR U2.3M		1		4122
7342-F150ASP1P	2	394	GN7342	PS	26.6	A36		F150ASP		7342	PROFILE	BE	140x8.0	2613	2614	UP	2302		0	2302	0	7342-F150ASP1P	F-BHD		1		3111

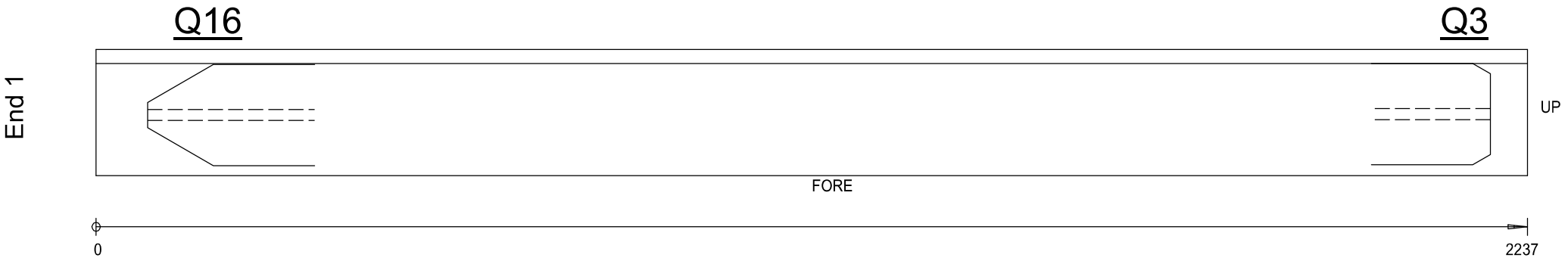
7342-F150ASP1S	7	394	GN7342	SB	26.6	A36		F150ASP		7342	PROFILE	BE	140x8.0	2613	2614	DOWN	2302		0	2302	0	7342-F150ASP1S	F-BHD		1		3111
7342-F150ASP2P	5	394	GN7342	PS	26.5	A36		F150ASP		7342	PROFILE	BE	140x8.0	2609	2609	UP	2302		0	2302	0	7342-F150ASP2P	F-BHD		2		3111
7342-F150ASP3S	1	394	GN7342	SB	3.2	A		F150ASP		7342	PROFILE	LAT	100x10.0	520	520	SB	1302		0	1302	0	7342-F150ASP3S	F-BHD (U12M NS)		3		3111
7342-F150ASP4P	1	394	GN7342	PS	5.2	A		F150ASP		7342	PROFILE	LAT	100x10.0	763	763	CL	1302		0	1302	0	7342-F150ASP4P	F-BHD (U12M NS)		4		3111
7342-F150ASP4S	1	394	GN7342	SB	5.2	A		F150ASP		7342	PROFILE	LAT	100x10.0	763	763	OUT	1302		0	1302	0	7342-F150ASP4S	F-BHD (U12M NS)		4		3111
7342-F152AP1P	1	394	GN7342	PS	10.9	A36		F152AP		7342	PROFILE	BE	80x5.0	2613	2614	UP	2302		0	2302	0	7342-F152AP1P	F-BHD (U12M NS)		1		3111
7342-F152AP2P	1	394	GN7342	PS	10.9	A36		F152AP		7342	PROFILE	BE	80x5.0	2609	2609	UP	2302		0	2302	0	7342-F152AP2P	F-BHD (U12M NS)		2		3111
7342-L1AP1P	1	394	GN7342	PS	0.6	A		L1AP		7342	PROFILE	LAT	80x8.0	208	208	FOR	1302		0	1302	0	7342-L1AP1P	F-BHD (U12M NS)		1		3111
7342-L1AP2P	1	394	GN7342	PS	2.7	A		L1AP		7342	PROFILE	LAT	80x8.0	620	620	FOR	1302		0	1302	0	7342-L1AP2P	F-BHD (U12M NS)		2		3111
7342-L1AP3P	1	394	GN7342	PS	13.4	A36		L1AP		7342	PROFILE	BE	100x5.0	2613	2614	UP	2302		0	2302	0	7342-L1AP3P	F-BHD (U12M NS)		3		3111
7342-L1BP1P	1	394	GN7342	PS	2.7	A		L1BP		7342	PROFILE	LAT	80x8.0	608	608	FOR	1302		0	1302	0	7342-L1BP1P	F-BHD (U12M NS)		1		3111
7342-L1BP2P	1	394	GN7342	PS	0.7	A		L1BP		7342	PROFILE	LAT	80x8.0	220	220	FOR	1302		0	1302	0	7342-L1BP2P	F-BHD (U12M NS)		2		3111
7342-L1BP3P	1	394	GN7342	PS	13.4	A36		L1BP		7342	PROFILE	BE	100x5.0	2613	2614	UP	2302		0	2302	0	7342-L1BP3P	F-BHD (U12M NS)		3		3111
7342-L4AS1S	1	394	GN7342	SB	0.6	A		L4AS		7342	PROFILE	LAT	80x8.0	208	208	AFT	1302		0	1302	0	7342-L4AS1S	F-BHD (U12M NS)		1		3111
7342-L4AS2S	1	394	GN7342	SB	2.7	A		L4AS		7342	PROFILE	LAT	80x8.0	620	620	AFT	1302		0	1302	0	7342-L4AS2S	F-BHD (U12M NS)		2		3111
7342-L4AS3S	1	394	GN7342	SB	13.4	A36		L4AS		7342	PROFILE	BE	100x5.0	2613	2614	DOWN	2302		0	2302	0	7342-L4AS3S	F-BHD (U12M NS)		3		3111
7342-L4BS1S	1	394	GN7342	SB	2.7	A		L4BS		7342	PROFILE	LAT	80x8.0	608	608	AFT	1302		0	1302	0	7342-L4BS1S	F-BHD (U12M NS)		1		3111
7342-L4BS2S	1	394	GN7342	SB	0.7	A		L4BS		7342	PROFILE	LAT	80x8.0	220	220	AFT	1302		0	1302	0	7342-L4BS2S	F-BHD (U12M NS)		2		3111
7342-L4BS3S	1	394	GN7342	SB	13.4	A36		L4BS		7342	PROFILE	BE	100x5.0	2613	2614	DOWN	2302		0	2302	0	7342-L4BS3S	F-BHD (U12M NS)		3		3111
7342-L6AS1S	1	394	GN7342	SB	9.3	A		L6AS		7342	PROFILE	LAT	100x10.0	1215	1215	FOR	1302		0	1100	0	7342-L6AS1S	F-BHD (U12M NS)		1		3111
7342-L6BS1S	1	394	GN7342	SB	8.3	A		L6BS		7342	PROFILE	LAT	100x10.0	1094	1094	FOR	1100		0	1302	0	7342-L6BS1S	F-BHD (U12M NS)		1		3111
7342-L8AP-F128AP1P	1	394	GN7342	PS	18	A	L8AP	F128AP		7342	PROFILE	LAT	100x10.0	2230	2230	UP	1402		0	1402	0	7342-L8AP-F128AP1P	T-BAR U2.3M		1		4122
7342-L8AP-F132AP1P	1	394	GN7342	PS	18	A	L8AP	F132AP		7342	PROFILE	LAT	100x10.0	2230	2230	UP	1100		0	1402	0	7342-L8AP-F132AP1P	T-BAR U2.3M		1		4122
7342-L8AP-F136AP1P	1	394	GN7342	PS	21.8	A	L8AP	F136AP		7342	PROFILE	LAT	100x10.0	2691	2691	UP	1100		0	1100	0	7342-L8AP-F136AP1P	T-BAR O2.3M		1		4321
7342-L8AP-F140AP1P	1	394	GN7342	PS	18	A	L8AP	F140AP		7342	PROFILE	LAT	100x10.0	2230	2230	UP	1100		0	1402	0	7342-L8AP-F140AP1P	T-BAR U2.3M		1		4122
7342-L8AP1P	3	394	GN7342	PS	133.7	A36		L8AP		7342	PROFILE	BE	140x8.0	11960	11960	AFT	2180		VA23	2180	VP23	7342-L8AP1P	F-SHELL		1		2212
7342-L8AS-F128AS1S	1	394	GN7342	SB	18	A	L8AS	F128AS		7342	PROFILE	LAT	100x10.0	2230	2230	DOWN	1100		0	1100	0	7342-L8AS-F128AS1S	T-BAR U2.3M		1		4122
7342-L8AS-F136AS1S	1	394	GN7342	SB	21.8	A	L8AS	F136AS		7342	PROFILE	LAT	100x10.0	2691	2691	DOWN	1100		0	1100	0	7342-L8AS-F136AS1S	T-BAR O2.3M		1		4321
7342-L8AS1S	3	394	GN7342	SB	53.3	A36		L8AS		7342	PROFILE	BE	140x8.0	4885	4885	FOR	2180		VP23	2302	0	7342-L8AS1S	F-SHELL		1		2212
7342-L8AS2S	3	394	GN7342	SB	29.3	A36		L8AS		7342	PROFILE	BE	140x8.0	2856	2856	FOR	2302		0	2302	0	7342-L8AS2S	F-SHELL		2		2212
7342-L8AS3S	2	394	GN7342	SB	16.2	A36		L8AS		7342	PROFILE	BE	140x8.0	1570	1570	FOR	2302		0	2180	VA23	7342-L8AS3S	F-SHELL		3		2212
7342-L8AS4S	1	394	GN7342	SB	16.1	A36		L8AS		7342	PROFILE	BE	140x8.0	1563	1563	FOR	2302		0	2180	VA23	7342-L8AS4S	F-SHELL (U12M WS)		4		2212
7342-L8AS5S	1	394	GN7342	SB	20.2	A		L8AS		7342	PROFILE	LAT	150x15.0	1214	1214	AFT	1100		0	1302	0	7342-L8AS5S	F-SHELL (U12M WS)		5		2212
7342-L8AS6S	1	394	GN7342	SB	18	A		L8AS		7342	PROFILE	LAT	150x15.0	1094	1094	AFT	1302		0	1100	0	7342-L8AS6S	F-SHELL (U12M WS)		6		2212
7342-L8BP-F144AP1P	1	394	GN7342	PS	18	A	L8BP	F144AP		7342	PROFILE	LAT	100x10.0	2230	2230	UP	1100		0	1402	0	7342-L8BP-F144AP1P	T-BAR U2.3M		1		4122
7342-L8BP-F148AP1P	1	394	GN7342	PS	18	A	L8BP	F148AP		7342	PROFILE	LAT	100x10.0	2230	2230	UP	1100		0	1402	0	7342-L8BP-F148AP1P	T-BAR U2.3M		1		4122
7342-L8BP-F154AP1P	1	394	GN7342	PS	21.8	A	L8BP	F154AP		7342	PROFILE	LAT	100x10.0	2691	2691	UP	1100		0	1100	0	7342-L8BP-F154AP1P	T-BAR O2.3M		1		4321
7342-L8BP-F156AP1P	1	394	GN7342	PS	32.7	A	L8BP	F156AP		7342	PROFILE	LAT	150x10.0	2690	2690	UP	1100		0	1100	0	7342-L8BP-F156AP1P	T-BAR O2.3M		1		4321
7342-L8BP1P	1	394	GN7342	PS	7.5	A36		L8BP		7342	PROFILE	BE	120x6.0	1201	1201	AFT	2302		0	2302	0	7342-L8BP1P	F-SHELL (U12M WS)		1		2212
7342-L8BP2P	1	394	GN7342	PS	29.4	A36		L8BP		7342	PROFILE	BE	120x6.0	3997	3997	AFT	2180		VP23	2302	0	7342-L8BP2P	F-SHELL (U12M WS)		2		2212
7342-L8BP3P	1	394	GN7342	PS	51.8	A36		L8BP		7342	PROFILE	BE	140x8.0	4753	4753	AFT	2302		0	2180	VA23	7342-L8BP3P	F-SHELL (U12M WS)		3		2212
7342-L8BP4P	2	394	GN7342	PS	4.3	A36		L8BP		7342	PROFILE	BE	120x6.0	772	772	UP	2302		0	2302	0	7342-L8BP4P	F-SHELL		4		2212
7342-L8BP5P	2	394	GN7342	PS	53.1	A36		L8BP		7342	PROFILE	BE	140x8.0	4753	4753	AFT	2100		0	2180	VA23	7342-L8BP5P	F-SHELL		5		2212
7342-L8BP6P	1	394	GN7342	PS	18.7	A36		L8BP		7342	PROFILE	BE	120x6.0	2476	2476	AFT	2100		0	2100	0	7342-L8BP6P	F-SHELL (U12M WS)		6		2212
7342-L8BP8P	1	394	GN7342	PS	39.8	A36		L8BP		7342	PROFILE	BE	120x6.0	5278	5278	AFT	2180		VP23	2100	0	7342-L8BP8P	F-SHELL (U12M WS)		8		2212
7342-L8BS-F144AS1S	1	394	GN7342	SB	18	A	L8BS	F144AS		7342	PROFILE	LAT	100x10.0	2230	2230	DOWN	1402		0	1100	0	7342-L8BS-F144AS1S	T-BAR U2.3M		1		4122
7342-L8BS-F148AS1S	1	394	GN7342	SB	18	A	L8BS	F148AS		7342	PROFILE	LAT	100x10.0	2230	2230	DOWN	1402		0	1100	0	7342-L8BS-F148AS1S	T-BAR U2.3M		1		4122
7342-L8BS-F152AS1S	1	394	GN7342	SB	32.7	A	L8BS	F152AS		7342	PROFILE	LAT	150x10.0	2690	2690	DOWN	1100		0	1100	0	7342-L8BS-F152AS1S	T-BAR O2.3M		1		4321
7342-L8BS-F154AS1S	1	394	GN7342	SB	21.8	A	L8BS	F154AS		7342	PROFILE	LAT	100x10.0	2691	2691	DOWN	1100		0	1100	0	7342-L8BS-F154AS1S	T-BAR O2.3M		1		4321
7342-L8BS-F156AS1S	1	394	GN7342	SB	32.7	A	L8BS	F156AS		7342	PROFILE	LAT	150x10.0	2690	2690	DOWN	1100		0	1100	0	7342-L8BS-F156AS1S	T-BAR O2.3M		1		4321
7342-L8BS1S	2	394	GN7342	SB	53.1	A36		L8BS		7342	PROFILE	BE	140x8.0	4753	4753	FOR	2180		VA23	2100	0	7342-L8BS1S	F-SHELL		1		2212
7342-L8BS2S	2	394	GN7342	SB	39.8	A36		L8BS		7342	PROFILE	BE	120x6.0	5278	5278	FOR	2100		0	2180	VP23	7342-L8BS2S	F-SHELL		2		2212
7342-L8BS3S	1	394	GN7342	SB	53.1	A36		L8BS		7342	PROFILE	BE	140x8.0	4753	4753	FOR	2180		0	2100	0	7342-L8BS3S	F-SHELL (U12M WS)		3		2212
7342-L8BS4S	1	394	GN7342	SB	18.7	A36		L8BS		7342	PROFILE	BE	120x6.0	2476	2476	FOR	2100		0	2100	0	7342-L8BS4S	F-SHELL (U12M WS)		4		2212
7342-X133AS1S	1	394	GN7342	SB	2.2	A		X133AS		7342	PROFILE	LAT	80x8.0	513	513	OUT	1302		0	1302	0	7342-X133AS1S	F-BHD (U12M NS)		1		3111
7342-X133AS2S	1	394	GN7342	SB	2.3	A		X133AS		7342	PROFILE	LAT	80x8.0	540	540	OUT	1302		0	1302	0	7342-X133AS2S	F-BHD (U12M NS)		2		3111
7342-X133AS3S	1	394	GN7342	SB	13.4	A36		X133AS		7342	PROFILE	BE	100x5.0	2613	2614	DOWN	2302		0	2302	0	7342-X133AS3S	F-BHD (U12M NS)		3		3111
7342-X135ASP1S	1	394	GN7342	SB	2.6	A		X135ASP		7342	PROFILE	LAT	80x8.0	595	595	OUT	1302		0	1302	0	7342-X135ASP1S	F-BHD (U12M NS)		1		3111
7342-X135ASP2S	1	394	GN7342	SB	2.3	A		X135ASP		7342	PROFILE	LAT	80x8.0	537	537	OUT	1302		0	1302	0	7342-X135ASP2S	F-BHD (U12M NS)		2		3111
7342-X135ASP3S	2	394	GN7342	SB	13.4	A36		X135ASP		7342	PROFILE	BE	100x5.0	2613	2614	DOWN	2302		0	2302	0	7342-X135ASP3S	F-BHD		3		3111
7342-X135ASP4P	1	394	GN7342	PS	1.3	A		X135ASP		7342	PROFILE	LAT	100x10.0	223	223	CL	1302		0	1100	VP22	7342-X135ASP4P	F-BHD (U12M NS)		4		3111
7342-X135ASP5S	1	394	GN7342	SB	6.1	A		X135ASP		7342	PROFILE	LAT	100x10.0	771	771	OUT	1100		VP22	1392	0	7342-X135ASP5S	F-BHD (U12M NS)		5		3111
7342-X135ASP6S	1	394	GN7342	SB	3	A		X135ASP		7342	PROFILE	LAT	80x8.0	634	634	OUT	1190	8	0	1302	0	7342-X135ASP6S	F-BHD (U12M NS)		6		3111
7342-X137ASP1S	1	394	GN7342	SB	2.6	A		X137ASP		7342	PROFILE	LAT	80x8.0	595	595	OUT	1302		0	1302	0	7342-X137ASP1S	F-BHD (U12M NS)		1		3111
7342-X137ASP2S	1	394	GN7342	SB	2.3	A		X137ASP		7342	PROFILE	LAT	80x8.0	537	537	OUT	1302		0	1302	0	7342-X137ASP2S	F-BHD (U12M NS)		2		3111
7342-X137ASP3S	2	394	GN7342	SB	13.4	A36		X137ASP		7342	PROFILE	BE	100x5.0	2613	2614	DOWN	2302		0	2302	0	7342-X137ASP3S	F-BHD		3		3111
7342-X137ASP4P	1	394	GN7342	PS	1.3	A		X137ASP		7342	PROFILE	LAT	100x10.0	223	223	CL	1302		0	1100	VP22	7342-X137ASP4P	F-BHD (U12M NS)		4		3111
7342-X137ASP5S	1	394	GN7342	SB	6.1	A		X137ASP		7342	PROFILE	LAT	100x10.0	771	771	OUT	1100		VP22	1392	0	7342-X137ASP5S	F-BHD (U12M NS)		5		3111
7342-X137ASP6S	1	394	GN7342	SB	3	A		X137ASP		7342	PROFILE	LAT	80x8.0	634	634	OUT	1190	8	0	1302	0	7342-X137ASP6S	F-BHD (U12M NS)		6		3111
7342-X138AS1S	1	394	GN7342	SB	2.2	A		X138AS		7342	PROFILE	LAT	80x8.0	513	513	CL	1302		0	1302	0	7342-X138AS1S	F-BHD (U12M NS)		1		3111
7342-X138AS2S	1	394	GN7342	SB	2.3	A		X138AS		7342	PROFILE	LAT	80x8.0	540	540	CL	1302		0	1302	0	7342-X138AS2S	F-BHD (U12M NS)		2		3111

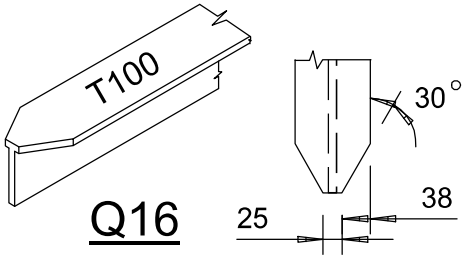
7342-X138AS3S	1	394	GN7342	SB	13.4	A36		X138AS		7342	PROFILE	BE	100x5.0	2613	2614	UP	2302		0	2302	0	7342-X138AS3S	F-BHD (U12M NS)		3		3111
7342-Y6AP1P	2	394	GN7342	PS	12.5	A36		Y6AP		7342	PROFILE	BE	80x6.0	2609	2609	UP	2302		0	2302	0	7342-Y6AP1P	F-BHD		1		3111

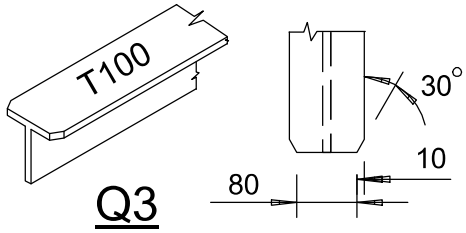
VII. Profile sketch_ GN7342

Laiva Ship	Profiili luonnoksen nimi Name of prof. sketch drawing	Pvm/Tekijä Date/ Design	
394	7342-F136BP1P-Q	07-03-2018 / MAS	

Osan nimi Part name	Esitetty Shown	Lkm Pcs. P	 C	 S	Tyyppi Shape	Profiilin mitat Prof. dimensions	Laatu Quality	Max.pituus Tot.length
7342-F136BP1P	PS	1		0	T	100*100*11.0*11.0	A	2237



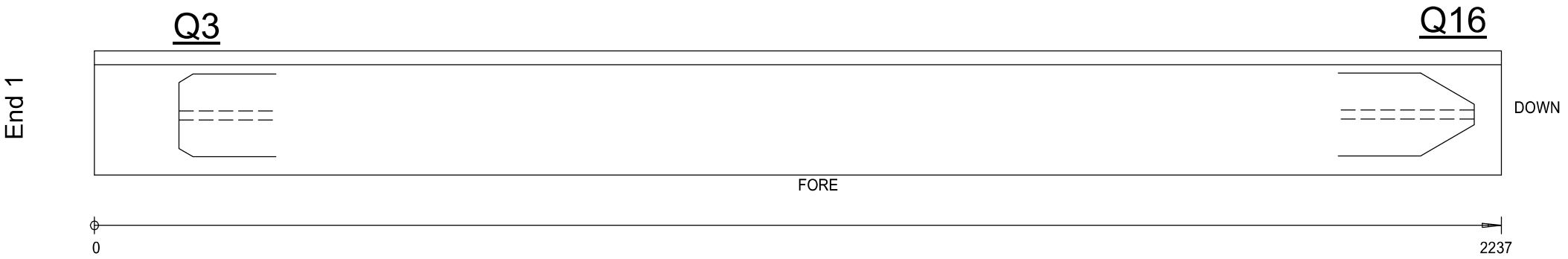


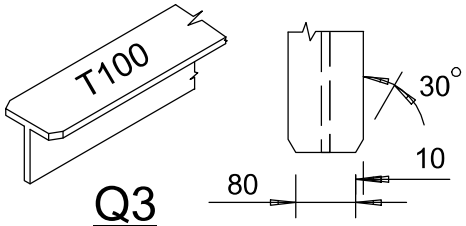


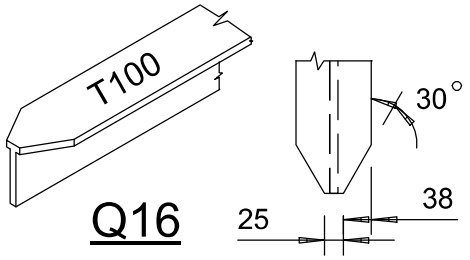
END	TYPE	A	B	C	R1	R2	V1	V2	V3	V4	KS	Excess	GAP	Bev Web TS	Bev Web OS	Nose W	Bev Face TS	Bev Face OS	Nose F	Endcut
LEFT	31			25	0		90	30	30	90				V °	V °		V °	V °		3102
RIGHT	31			80	0		90	30	30	90				V °	V °		V °	V °		3102

Laiva Ship	Profiili luonnoksen nimi Name of prof. sketch drawing	Pvm/Tekijä Date/ Design	
394	7342-F136BS1S-Q	07-03-2018 / MAS	

Osan nimi Part name	Esitetty Shown	Lkm Pcs. P	 C	 S	Tyyppi Shape	Profiilin mitat Prof. dimensions	Laatu Quality	Max.pituus Tot.length
7342-F136BS1S	SB	0		1	T	100*100*11.0*11.0	A	2237







END	TYPE	A	B	C	R1	R2	V1	V2	V3	V4	KS	Excess	GAP	Bev Web TS	Bev Web OS	Nose W	Bev Face TS	Bev Face OS	Nose F	Endcut
LEFT	31			80	0		90	30	30	90				V °	V °		V °	V °		3102
RIGHT	31			25	0		90	30	30	90				V °	V °		V °	V °		3102