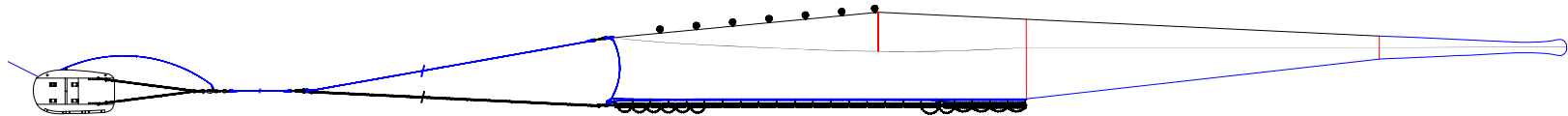




Ecosystems Surveys Branch
National Marine Fisheries Service
Northeast Fisheries Science Center
166 Water Street
Woods Hole, Massachusetts 02543 USA

Survey Trawl Reference Manual



Winter Flat Net



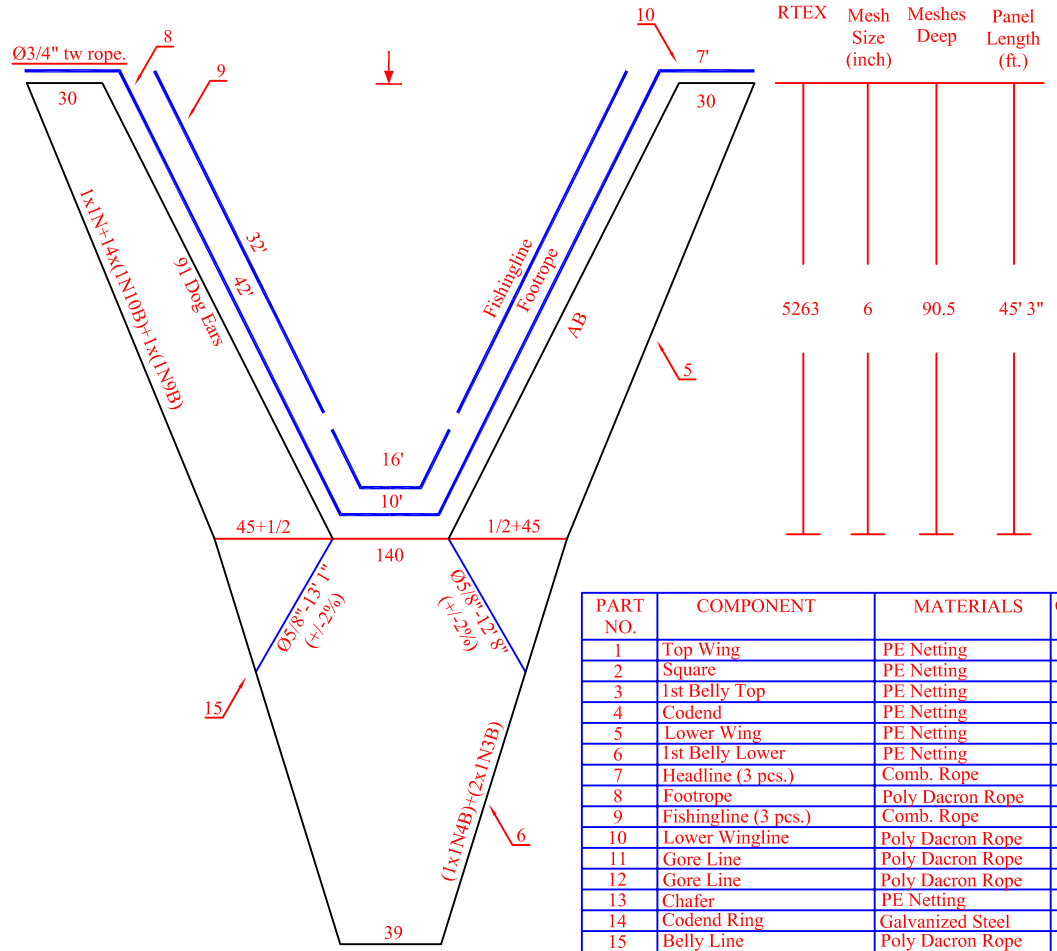
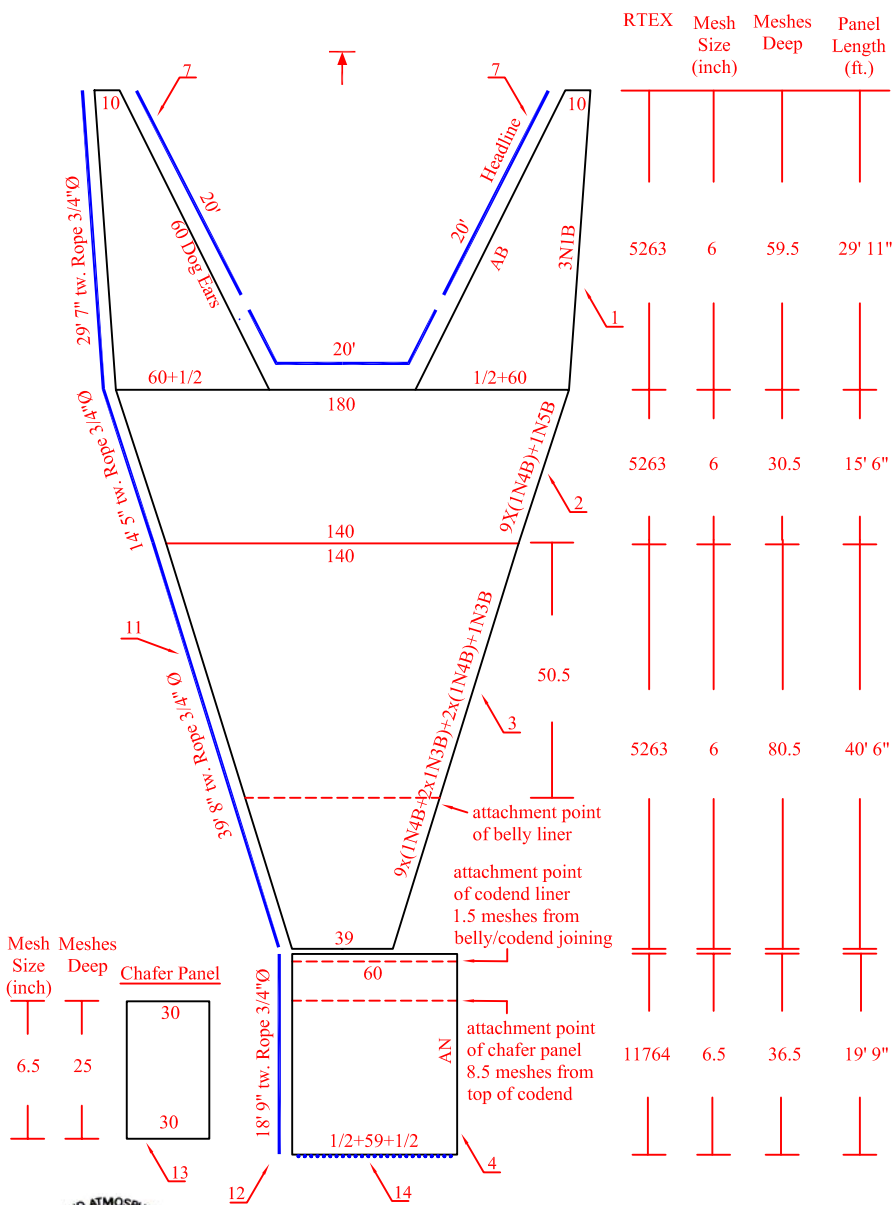
May 2006

SECTION 1 – NETTING

- ⇒ **FLAT – 1** - TRAWL PLAN
- ⇒ **FLAT – 2** - TOP WING DETAIL
- ⇒ **FLAT – 3** - TOP WING HANGING DETAIL
- ⇒ **FLAT – 4** - LOWER WING DETAIL
- ⇒ **FLAT – 5** - LOWER WING HANGING DETAIL
- ⇒ **FLAT – 6** - FOOTROPE TO SWEEP ATTACHMENT
- ⇒ **FLAT – 7** - BELLY AND CODEND LINERS
- ⇒ **FLAT – 8** - CHAFER ATTACHMENT TO CODEND

Headline: Combination Rope: Ø 7/8" x 60'

Fishingline: Combination Rope: Ø 7/8" x 80'
Footrope: Poly Dacron Rope (tw.): Ø 3/4" x 100'



PART NO.	COMPONENT	MATERIALS	QTY	PAGE NO.
1	Top Wing	PE Netting	2	1 - 3
2	Square	PE Netting	1	1 - 3
3	1st Belly Top	PE Netting	1	1
4	Codend	PE Netting	1	1
5	Lower Wing	PE Netting	2	4 - 5
6	1st Belly Lower	PE Netting	1	4 - 5
7	Headline (3 pcs.)	Comb. Rope	1	1,3
8	Footrope	Poly Dacron Rope	1	1,5,6
9	Fishingline (3 pcs.)	Comb. Rope	1	1,6
10	Lower Wingline	Poly Dacron Rope	2	1,5
11	Gore Line	Poly Dacron Rope	2	1
12	Gore Line	Poly Dacron Rope	2	1
13	Chafer	PE Netting	1	1,8
14	Codend Ring	Galvanized Steel	27	1,8,35
15	Belly Line	Poly Dacron Rope	2	1

DRAWING NOTES:

- Panel depth (meshes deep) do not include joining rounds.
- Panel length includes joining rounds.
- Panel widths include selvage meshes.
- Mesh sizes are knot center measurements.
- Five knots from each of the top and lower panels form the gore.
- Gore Line measurements are taken from center of joining rounds
- Gore lines are seized to lacing at 18" intervals.

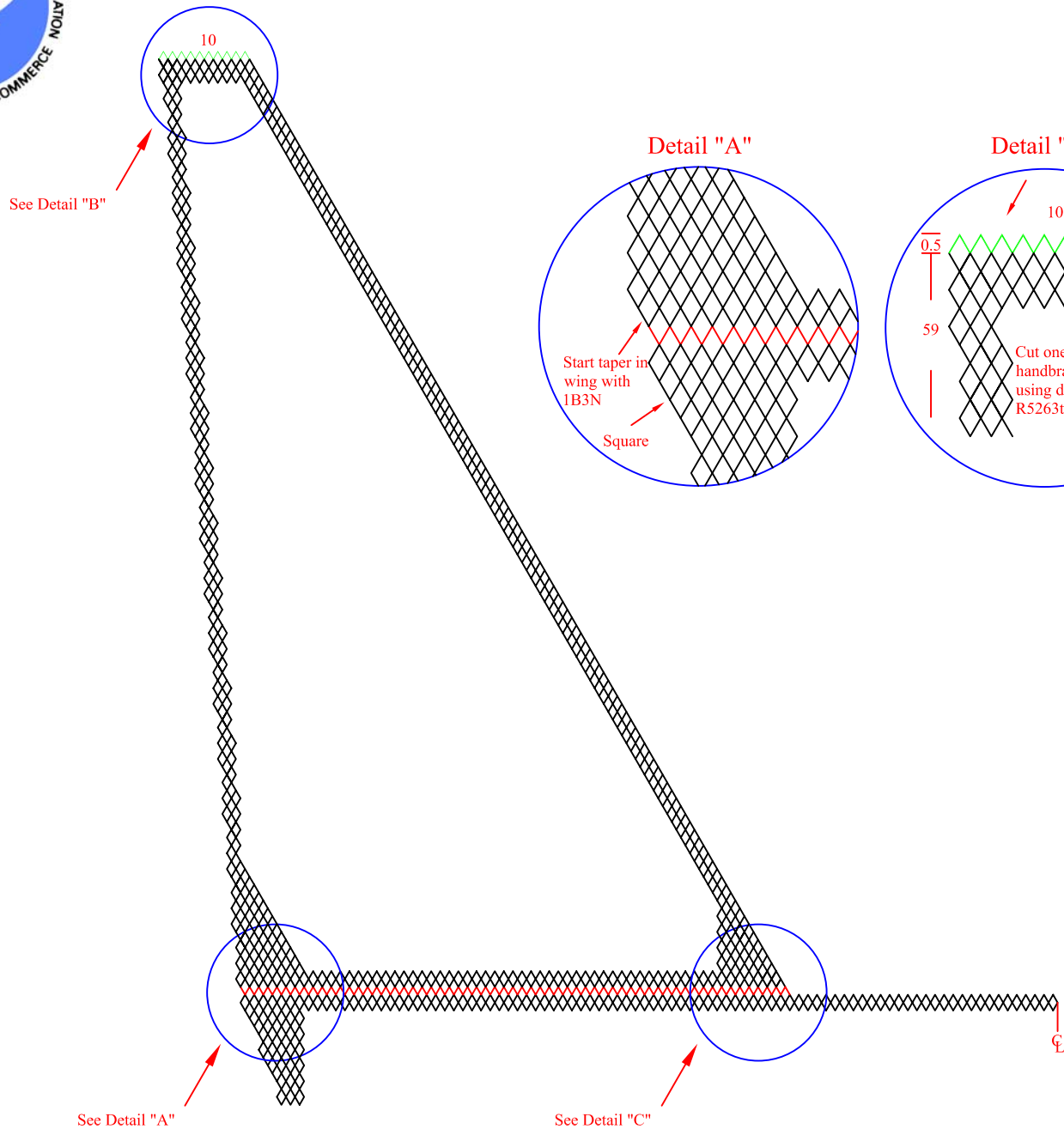


TRAWL PLAN
NEFSC WINTER FLAT NET

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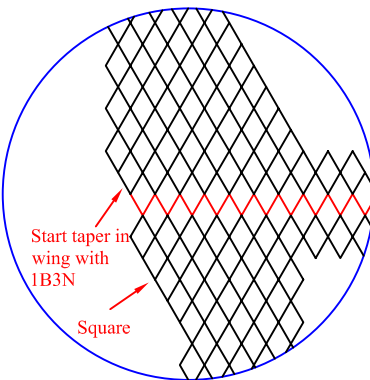


See Detail "B"

See Detail "A"

See Detail "C"

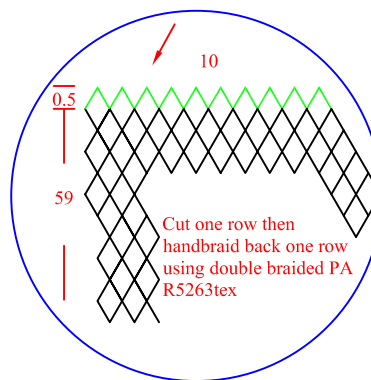
Detail "A"



Start taper in wing with 1B3N

Square

Detail "B"



10

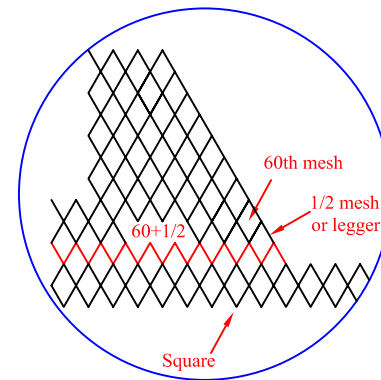
0.5

59

Cut one row then handbraid back one row using double braided PA R5263tex

Square

Detail "C"



10

60th mesh

1/2 mesh or legger

60+1/2

Square

DRAWING NOTES:

A 1/2 mesh (1 row) of doubled 3mm braided Euroflex is used to connect trawl sections together. This allows for easier section identification.



TOP WING DETAIL
NEFSC WINTER FLATNET

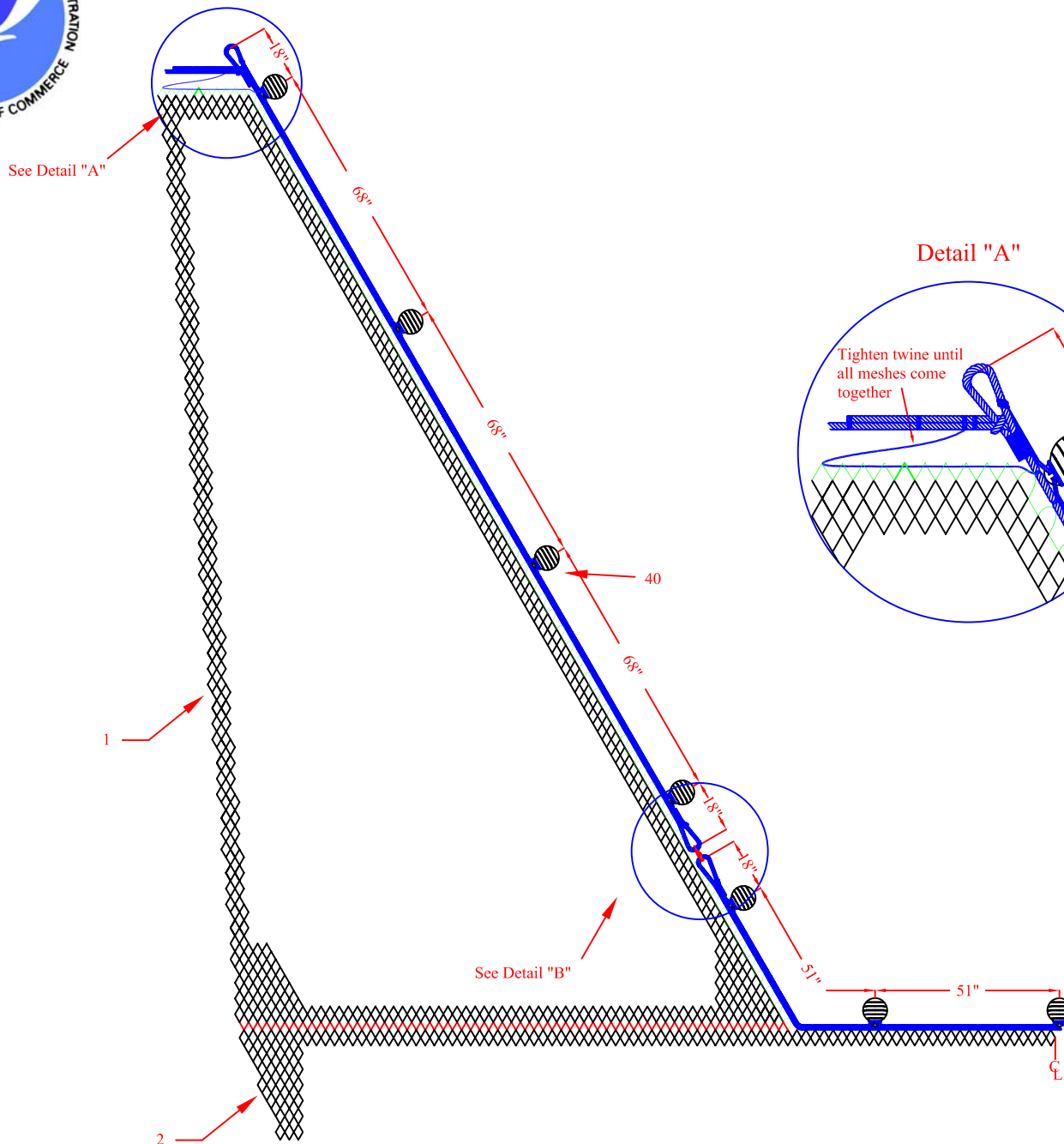
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February 2005	FLAT - 2	2 of 42		NTS

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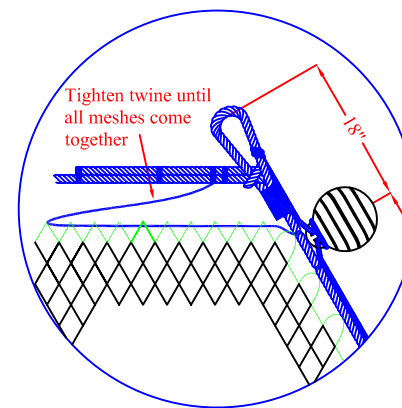




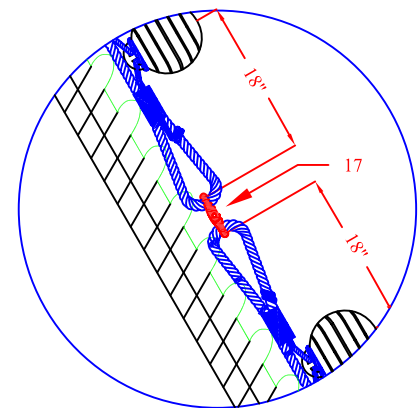
PART #	COMPONENT
1	Top Wing
2	Square
17	1/2" Hammerlock
40	8" Aluminum Becket Float



Detail "A"



Detail "B"



DRAWING NOTES:


A 1/2 mesh (1 row) of doubled 3mm braided Euroflex is used to connect trawl sections together. This allows for easier section identification.

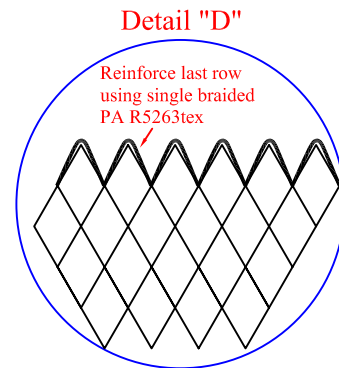
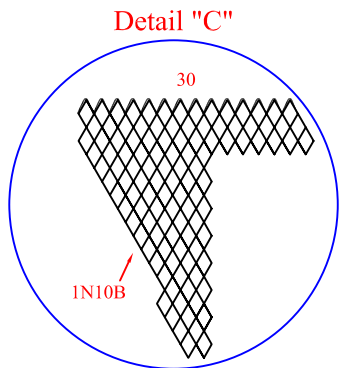
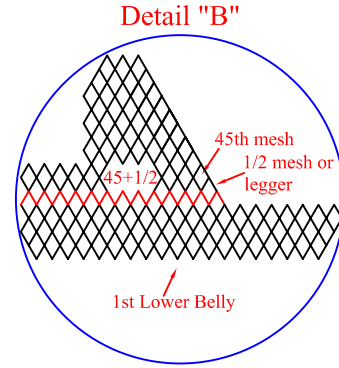
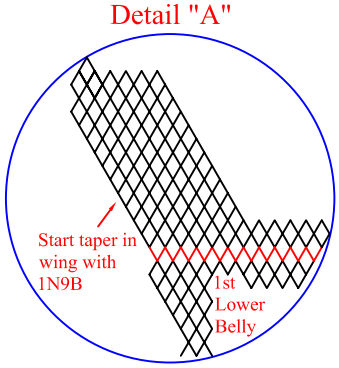
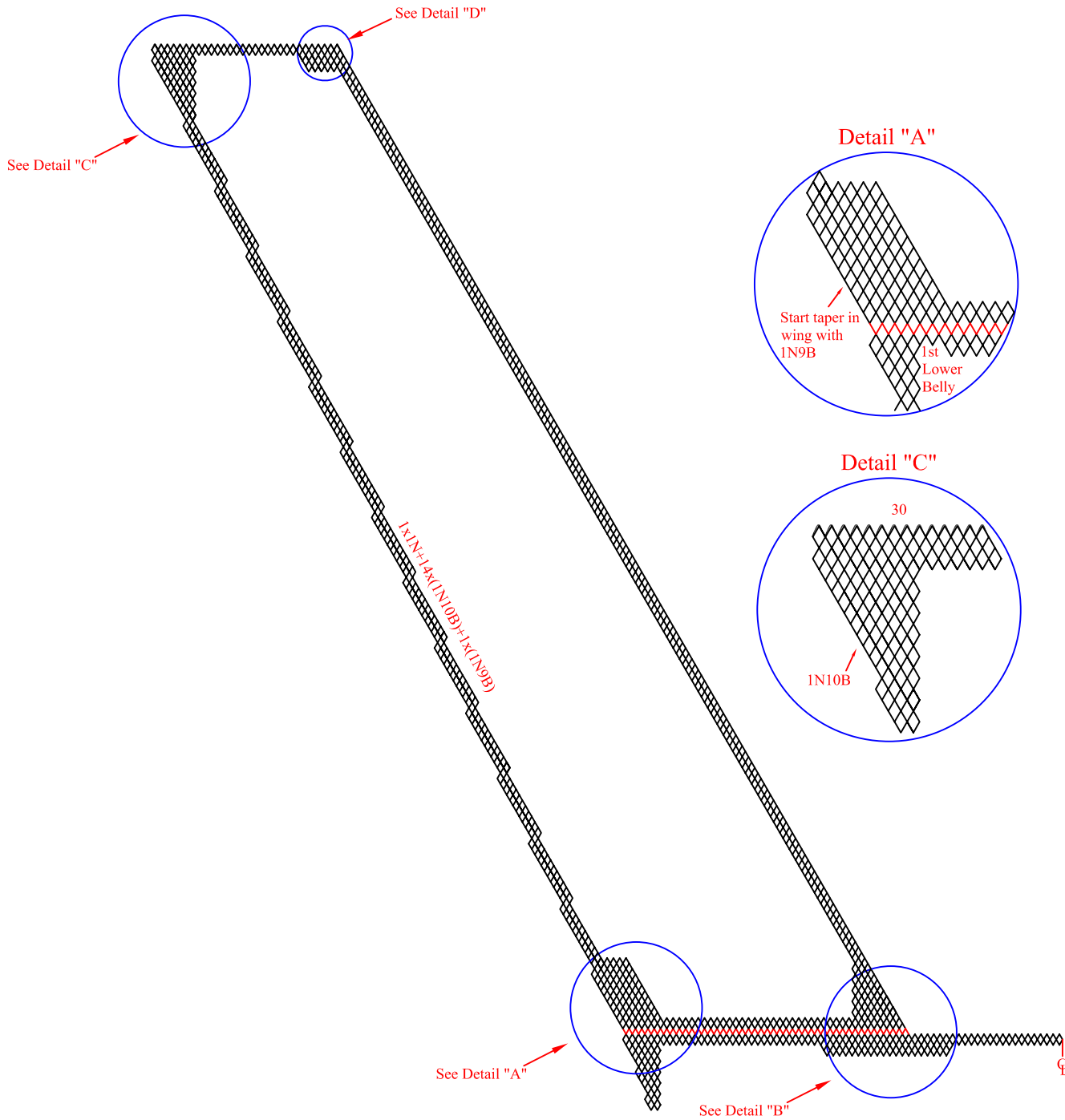


**TOP WING HANGING DETAIL
NEFSC WINTER FLAT NET**

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DRAWING NOTES:


A 1/2 mesh (1 row) of doubled 3mm braided Euroflex is used to connect trawl sections together. This allows for easier section identification.

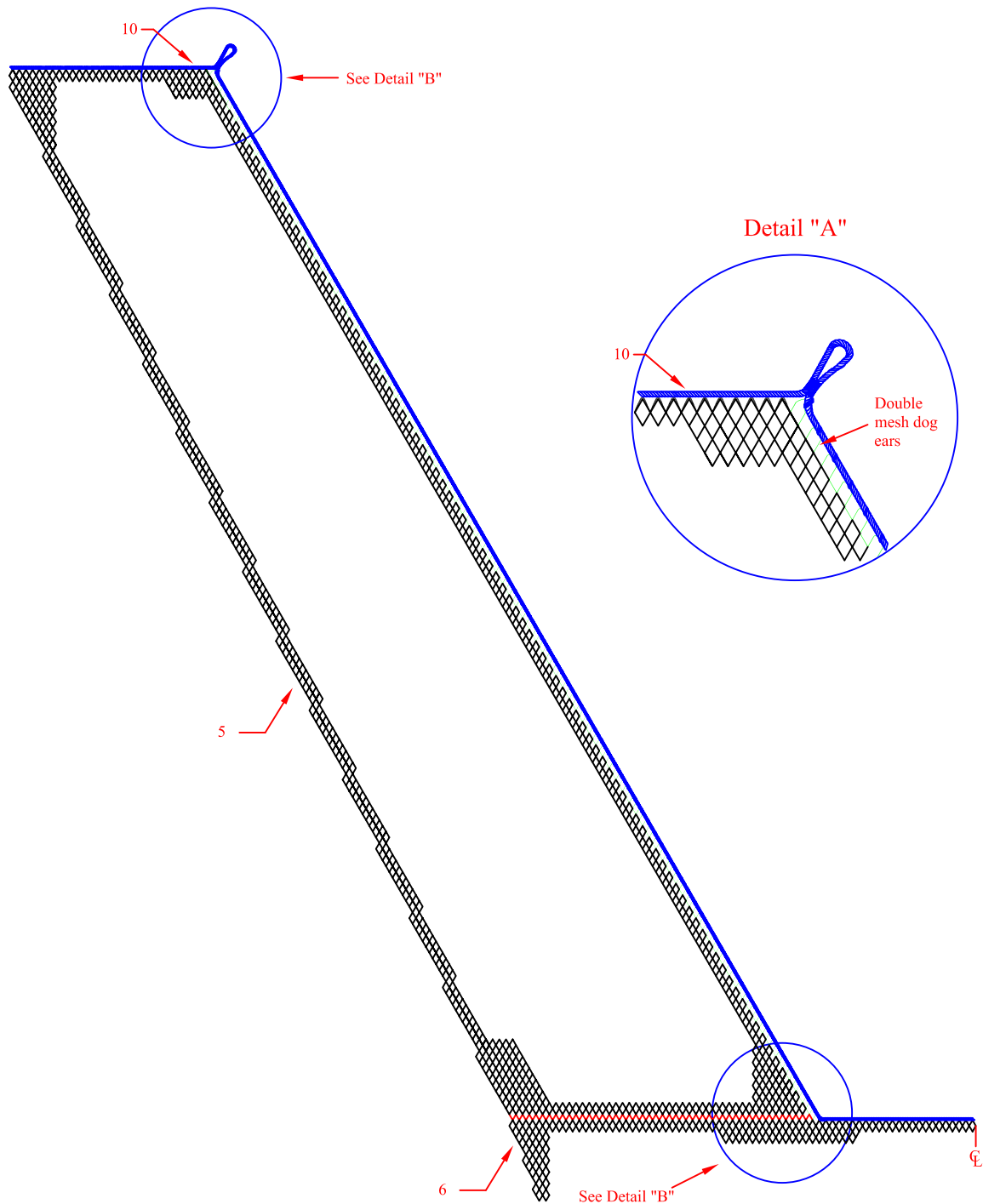


LOWER WING DETAIL
NEFSC WINTER FLAT NET

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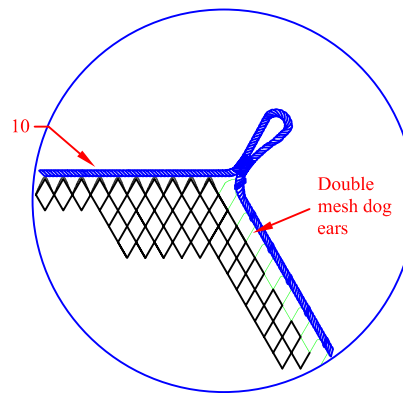




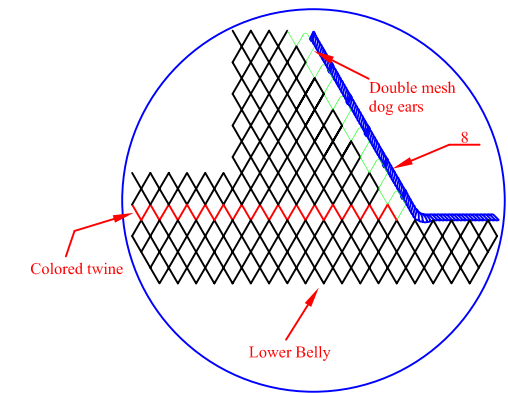
Drawing Notes:
See page 1 (Drawing # FLAT-1)
for more component information

PART #	COMPONENT
5	Lower Wing
6	Lower Belly
8	Footrope
10	Lower Wingline

Detail "A"



Detail "B"



DRAWING NOTES:

A 1/2 mesh (1 row) of doubled 3mm braided Euroflex is used to connect trawl sections together. This allows for easier section identification.



LOWER WING HANGING DETAIL
NEFSC WINTER FLAT NET

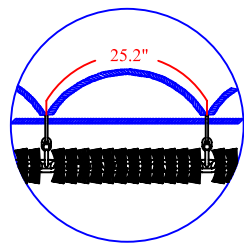
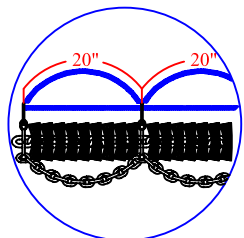
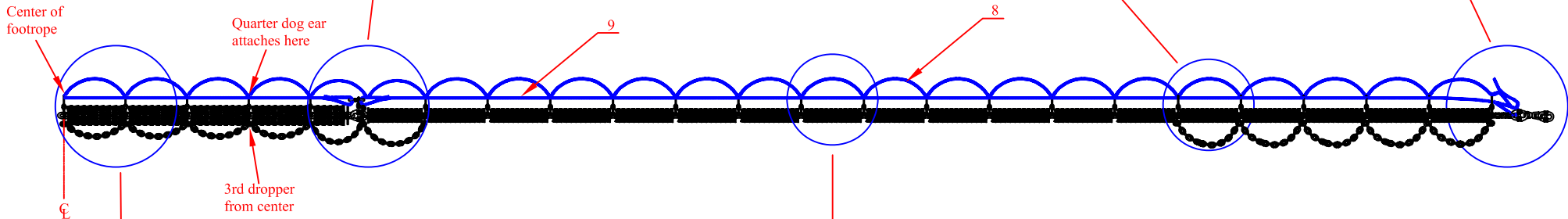
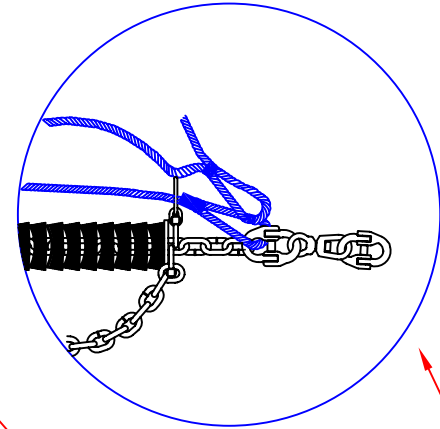
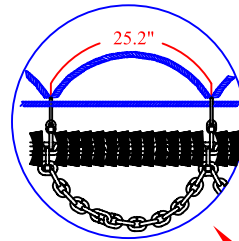
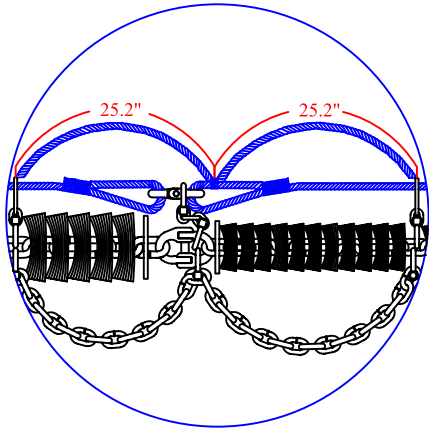
DATE DRAWN:	DWG.#:	PAGE #:	REV.	SCALE:
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PART #	COMPONENT
8	Footrope
9	Fishingline



SEE DRAWING NOTES

SEE DRAWING NOTES

DRAWING NOTES:
 A total of 6 bights in the center (bosum section) - 20" each
 A total of 20 bights/side in each quarter and wing - 25.2" each
 Refer to page 10 (DWG # FLAT-10) for sweep part identification numbers



FOOTROPE TO SWEEP ATTACHMENT
NEFSC WINTER FLAT NET

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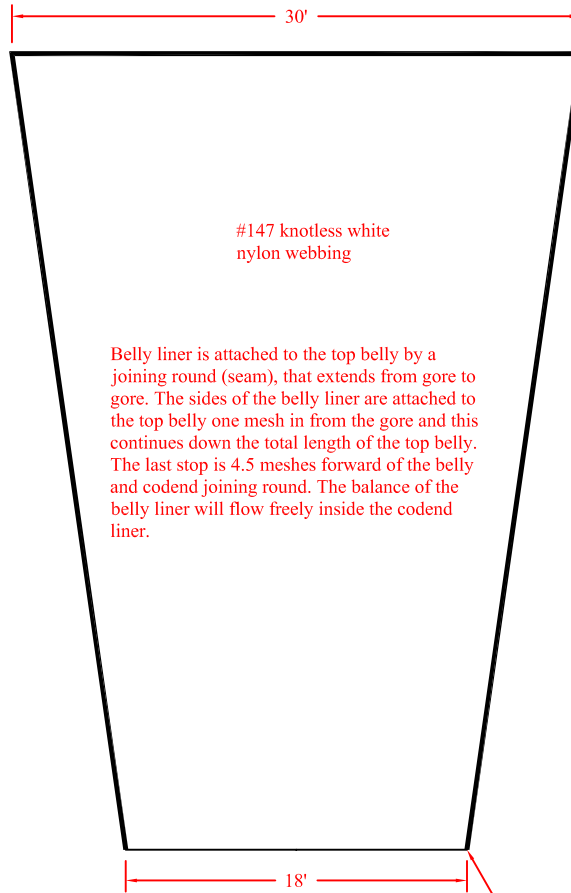
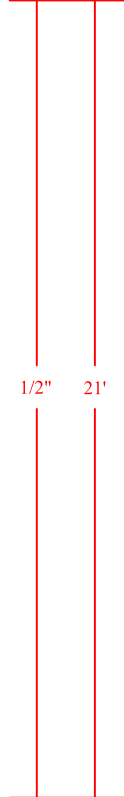


PART #	COMPONENT
59	Belly Liner (L1)
60	Codend Liner (L2)

BELLY LINER (L1)

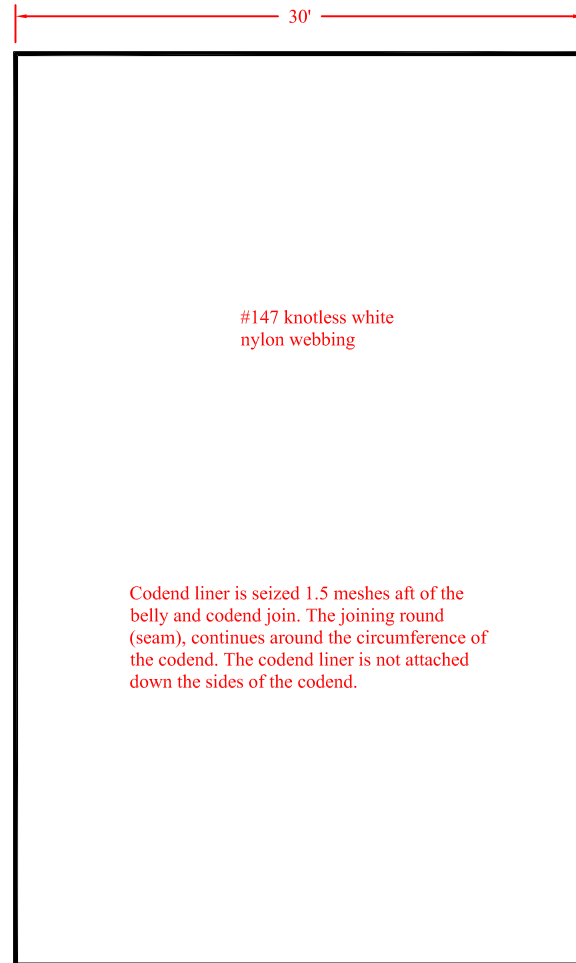
CODEND LINER (L2)

Mesh Size (inch) | Panel Length (ft.)



#147 knotless white nylon webbing

Belly liner is attached to the top belly by a joining round (seam), that extends from gore to gore. The sides of the belly liner are attached to the top belly one mesh in from the gore and this continues down the total length of the top belly. The last stop is 4.5 meshes forward of the belly and codend joining round. The balance of the belly liner will flow freely inside the codend liner.



#147 knotless white nylon webbing

Codend liner is seized 1.5 meshes aft of the belly and codend join. The joining round (seam), continues around the circumference of the codend. The codend liner is not attached down the sides of the codend.

Gather material to form a 1/2" diameter roll of liner material. The roll is formed around the perimeter of the liner except for the trailing edge. Overhand Knots are placed every 8" along the roll of netting.



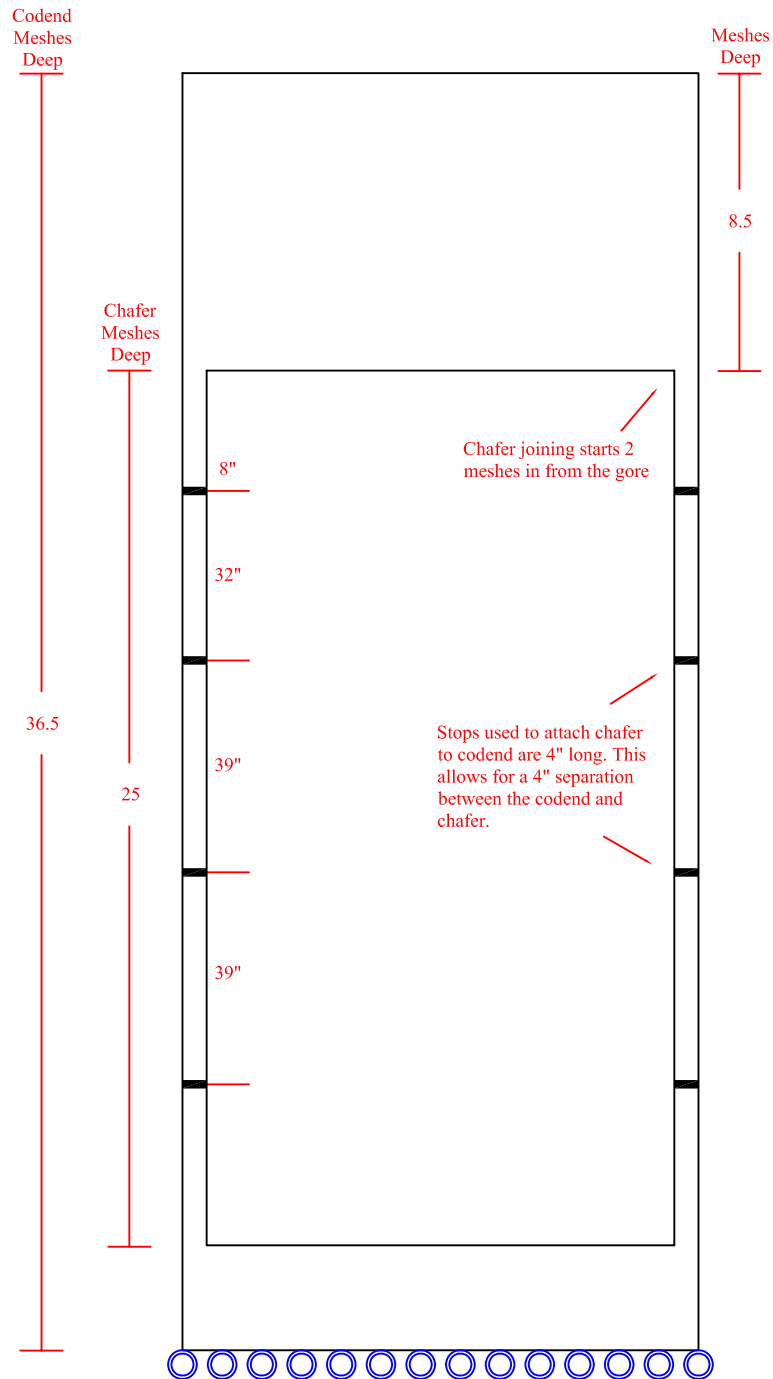
BELLY AND CODEND LINERS

NEFSC WINTER FLAT NET

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DRAWING NOTES:

Chafer must cover a minimum of 32 meshes from the bottom of the codend



**CHAFER ATTACHMENT TO CODEND
NEFSC WINTER FLAT NET**

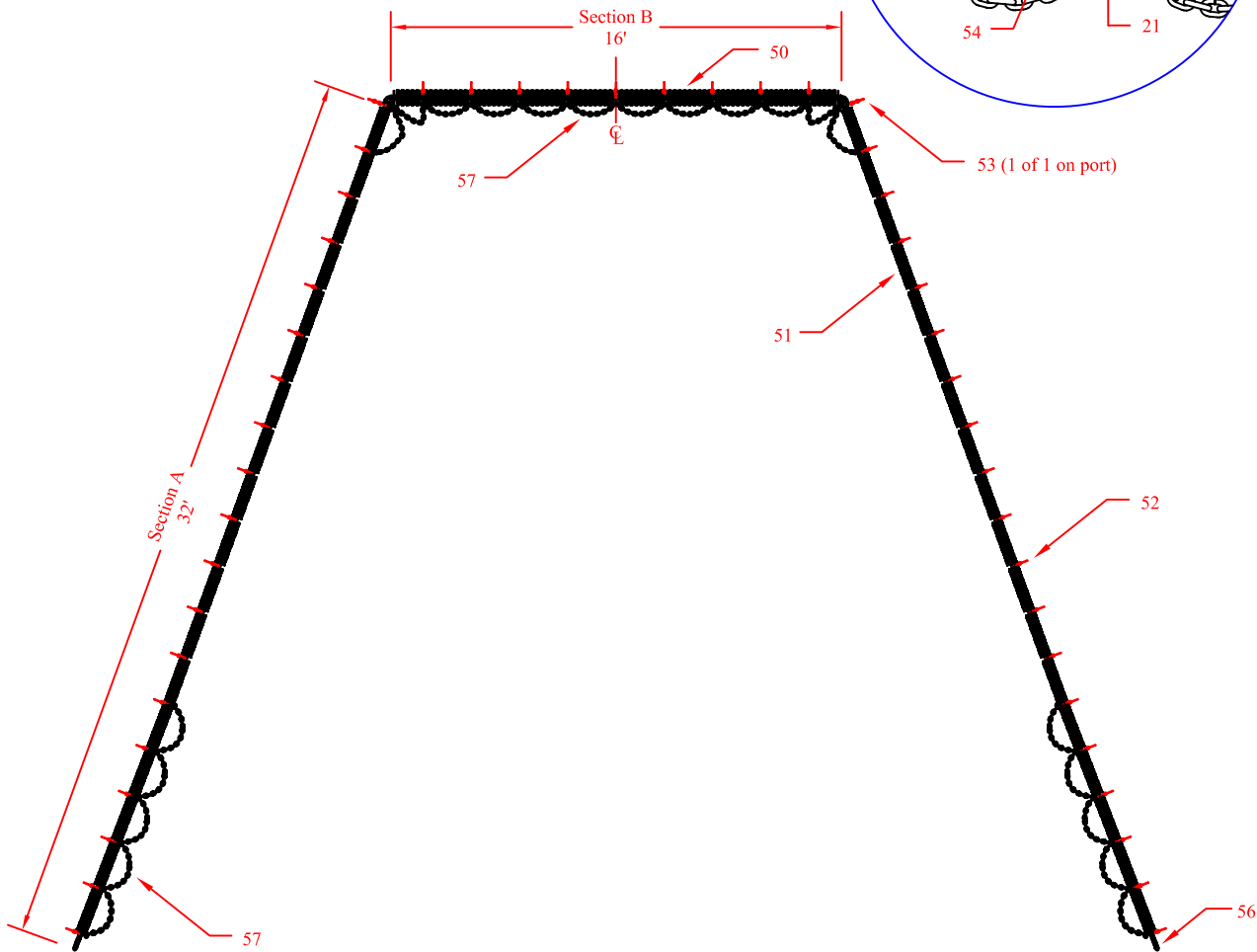
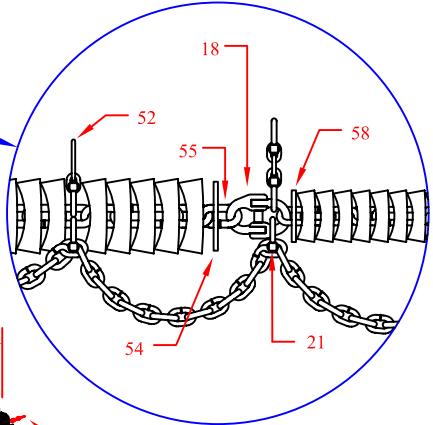
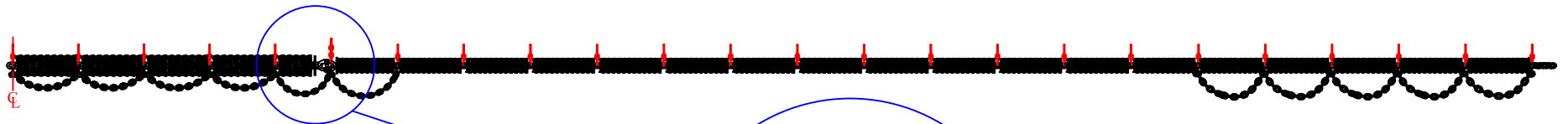
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SECTION 2 – SWEEPS

- ⇒ **FLAT – 9 – SWEEP GEAR – CONNECTION DETAIL**
- ⇒ **FLAT – 10 - SWEEP GEAR – SECTION DETAIL**
- ⇒ **FLAT – 11 – SWEEP GEAR – GROUND CHAIN DETAIL**



DRAWING NOTES:

Sweep gear is symmetrical about the centerline.
 Lengths for all sections are from inside link to inside link and do not include h/locks.
 See page 10 (Dwg. # FLAT - 10) for sectional construction details.
 See page 11 (Dwg. # FLAT - 11) for ground chain connection details.
 Middle ground chain is listed below as being a part of the middle (Section B) only.
 Number of cookies shown below is an estimate based on average thickness.



PART #	COMPONENT	WEIGHT (LBS) IN FRESHWATER		QUANTITY			PAGE #	
		UNIT	TOTAL	TOTAL	SECTION A	SECTION B		
18	5/8" Hammerlock	2.0	4.0	2	2 x 1	0	17	
21	1/2" Shackle	0.37	10.0	27	2 x 7	13	20	
50	6.5" Rubber Disk / Cookies	0.13	10.7	82	0	82	29	
51	4.5" Rubber Disk / Cookies	0.039	16.4	420	2 x 210	0	28	
52	Dropper Chain	0.68	30.6	45	2 x 18	9	26	
53	3 link dropper chain	0.97	1.9	2	2 x 1	0	27	
54	6" Steel Washer	2.39	4.8	2	0	2	33	
55	5/8" Mid-link chain	2.95/ft	47.2	16'	0	16'	37	
56	1/2" Mid-link chain	2.05/ft	131.2	64'	2 x 32'	0	38	
57	1/2" Ground chain	2.16/ft	95.9	44'5"	2 x 10'7"	23'3"	39	
58	5" Steel Washer	1.44	5.8	4	2 x 2	0	34	
TOTAL WEIGHT			358.5					



SWEEP GEAR - CONNECTION DETAIL
NEFSC WINTER FLAT NET

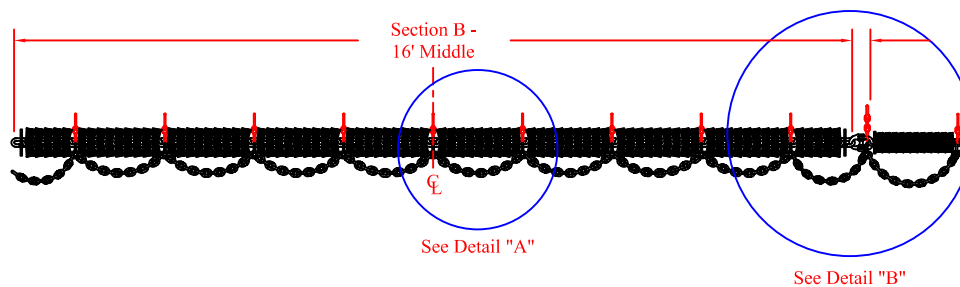
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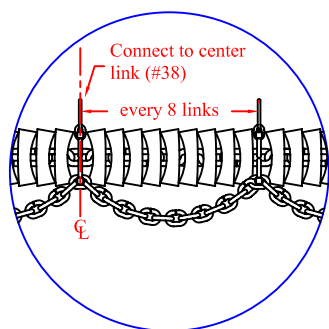
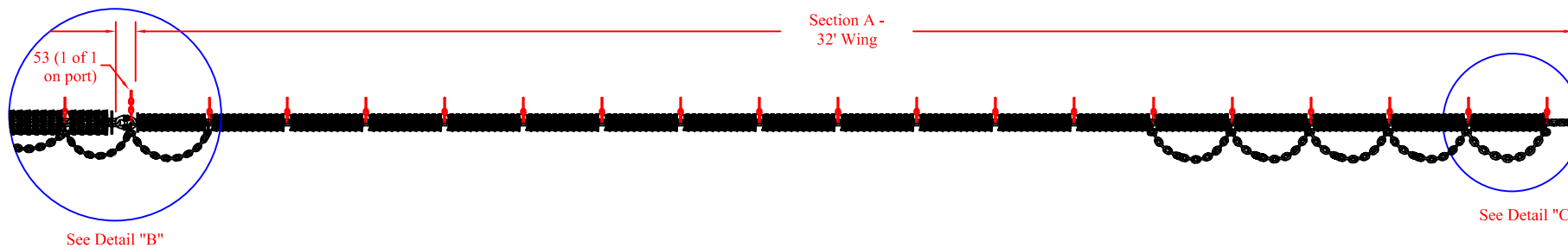




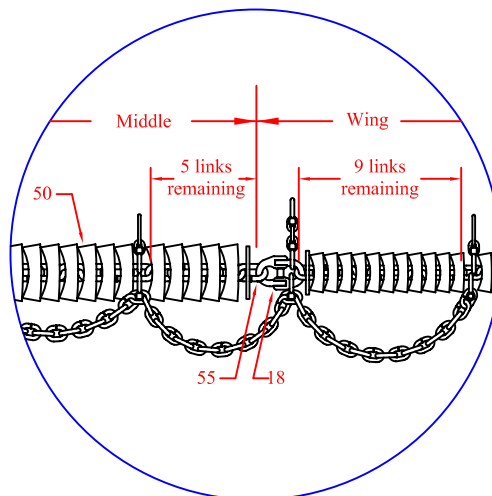
DRAWING NOTES:
 Sweep is symmetrical about the centerline.
 See page 9 (Dwg. # FLAT - 9) for more detailed component information.
 For ground chain detail see page 11 (Dwg. # FLAT - 11)



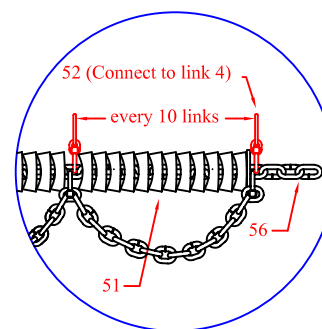
PART #	COMPONENT
18	5/8" Hammerlock
50	6.5" Rubber Disk / Cookie
51	4.5" Rubber Disk / Cookie
52	Dropper chain
53	3 link dropper chain
55	5/8" Mid-link chain
56	1/2" Mid-link chain



Detail "A" - Middle Section



Detail "B" - Middle to Wing Section



Detail "C" - Wing Section

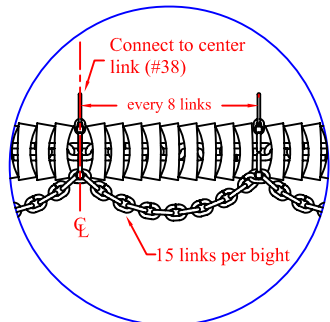
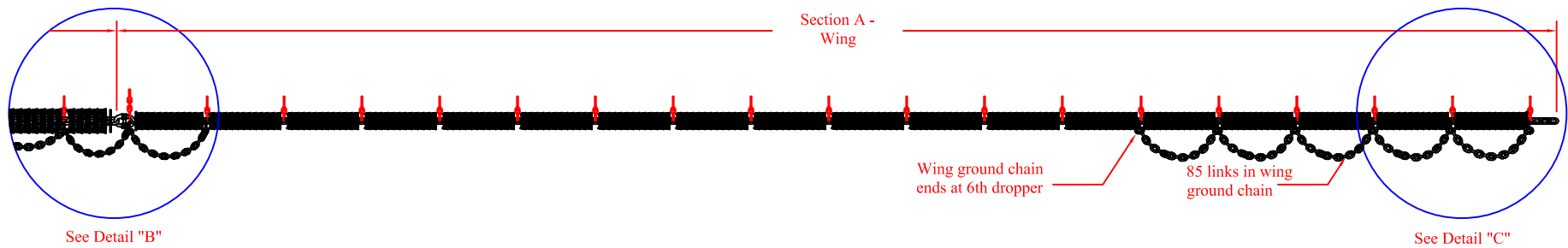
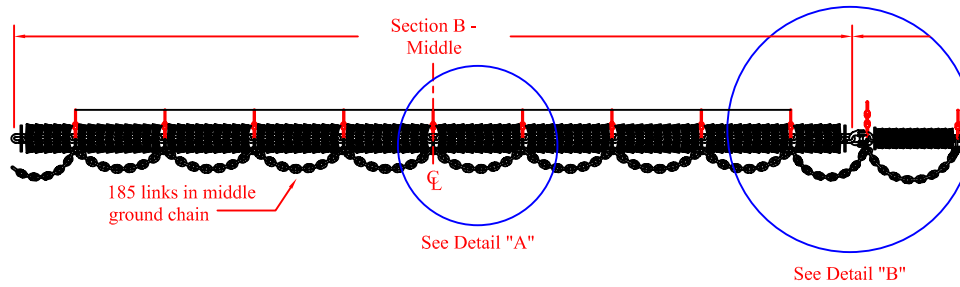


SWEEP GEAR - SECTION DETAIL
NEFSC WINTER FLAT NET

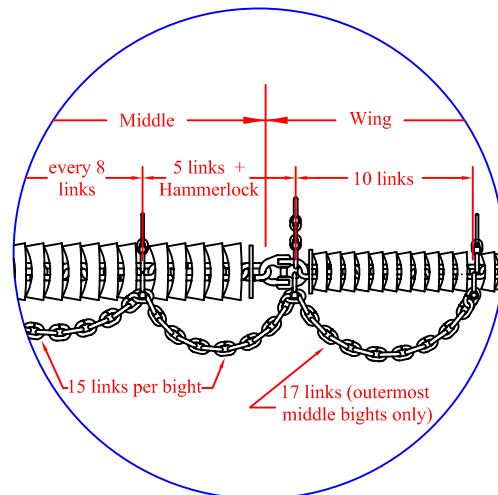
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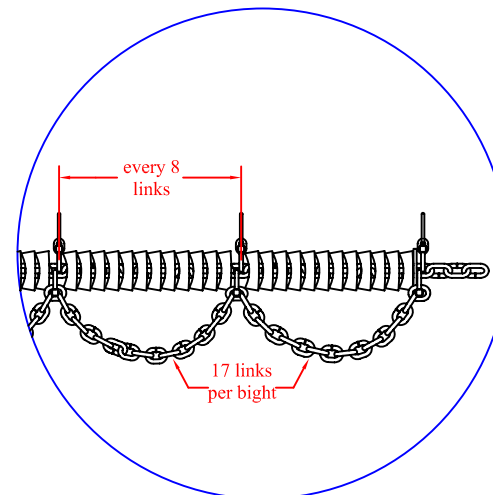




Detail "A" - Middle Ground Chain



Detail "B" - Middle Ground Chain Termination into Wings



Detail "C" - Wing Ground Chain

DRAWING NOTES:
 Sweep is symmetrical about the centerline.
 For sweep gear section detail see page 10 (Dwg. # FLAT - 10).
 Middle ground chain link counts referenced to centerline.



**SWEEP GEAR - GROUND CHAIN DETAIL
 NEFSC WINTER FLAT NET**

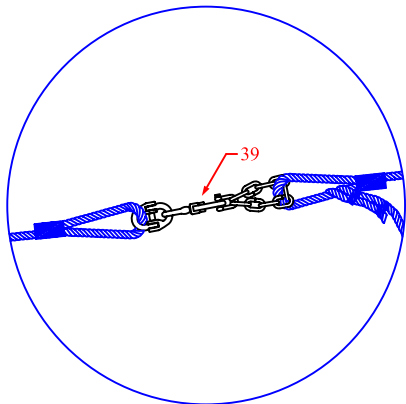
DATE DRAWN:	DWG. #:	PAGE #:	REV.	SCALE:
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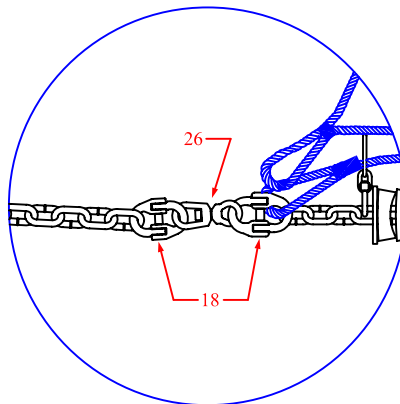


SECTION 3 – RIGGING

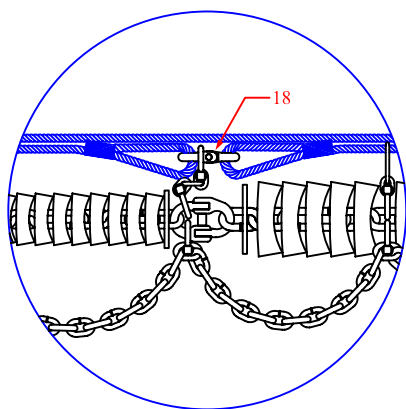
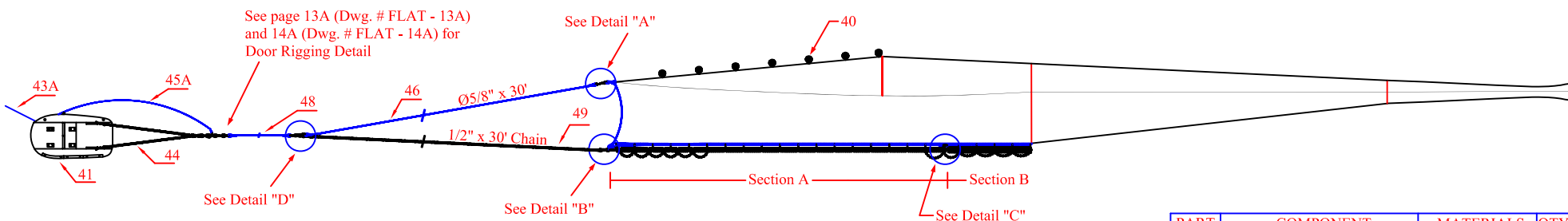
- ⇒ **FLAT – 12A** - RIGGING PROFILE – ALBATROSS IV
- ⇒ **FLAT – 12B** - RIGGING PROFILE – DELAWARE II
- ⇒ **FLAT – 13A** - DOOR RIGGING DETAIL – ALBATROSS IV
- ⇒ **FLAT – 13B** - DOOR RIGGING DETAIL – DELAWARE II
- ⇒ **FLAT – 14A** - DOOR RIGGING DETAIL – ALBATROSS IV
- ⇒ **FLAT – 14B** - DOOR RIGGING DETAIL – DELAWARE II



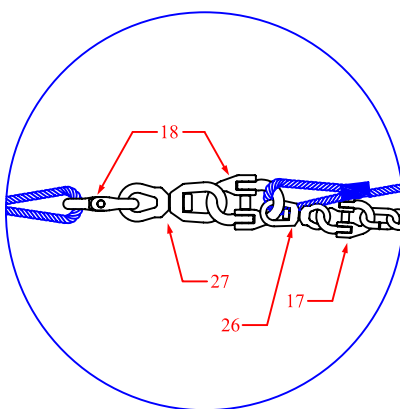
Detail "A" - Upper Leg Connection



Detail "B" - Lower Leg Connection



Detail "C" - Wing to Middle Connection



Detail "D" - Ground Cable to Leg Connection

DRAWING NOTES:

Hammerlock quantities indicated on this drawing include those for fishingline and rigging connection only.
Sweep components are not included in the component list of this drawing, see page 9 (Dwg. # FLAT - 9) for sweep component listing.

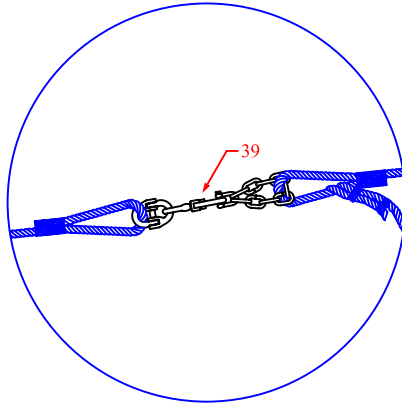
PART #	COMPONENT	MATERIALS	QTY	PAGE #
17	1/2" Hammerlock	Steel	2	16
18	5/8" Hammerlock	Steel	10	17
26	5/8" Swivel	Steel	4	24
27	3/4" Swivel	Steel	2	25
39	Weak Link	Steel	2	40
40	8" Float with beckets	Aluminum	13	41
41	2.84 sqm. Trawl Door	990 lb Polyvalent	2	42
43A	Ø 7/8" Warp	6 x 26 Wire	2	NA
44	Chain backstrap	1/2" Chain	4	13A/14A
45A	Ø 9/16" x 17' Idler	6 x 37 Wire	2	13A/14A
46	Ø 5/8 x 30' Upper Legs	6 x 19 Wire	2	NA
48	Ø 7/8" x 180' Ground cable	6 x 19 Wire	2	NA
49	30' Lower leg	1/2" Chain	2	NA
	Sweep Section A	Various	2	9-11
	Sweep Section B	Various	1	9-11



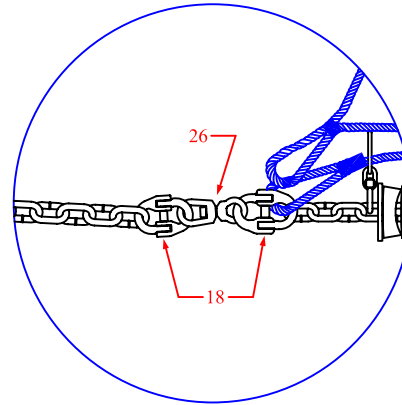
RIGGING PROFILE - ALBATROSS IV
NEFSC WINTER FLAT NET

DATE DRAWN:	DWG.#:	PAGE #:	REV.	SCALE:
May 2004	FLAT - 12A	12A of 42		NTS

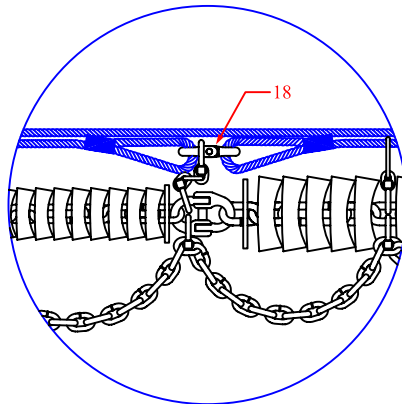
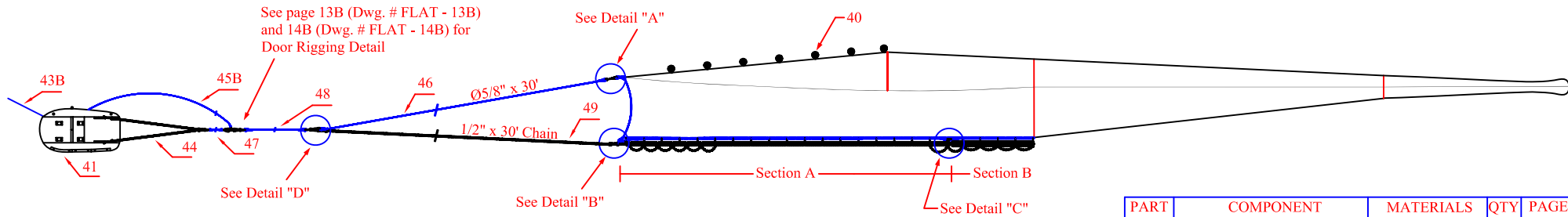
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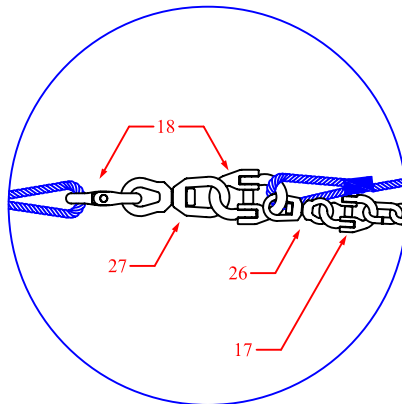
Detail "A" - Upper Leg Connection



Detail "B" - Lower Leg Connection



Detail "C" - Wing to Middle Connection



Detail "D" - Ground Cable to Leg Connection

DRAWING NOTES:

Hammerlock quantities indicated on this drawing include those for fishing line and rigging connection only.
Sweep components are not included in the component list of this drawing, see page 9 (Dwg. # FLAT - 9) for sweep component listing.

PART #	COMPONENT	MATERIALS	QTY	PAGE #
17	1/2" Hammerlock	Steel	2	16
18	5/8" Hammerlock	Steel	10	17
26	5/8" Swivel	Steel	4	24
27	3/4" Swivel	Steel	2	25
39	Weak Link	Steel	2	40
40	8" Float with beckets	Aluminum	13	41
41	2.84 sqm. Trawl Door	990 lb Polyvalent	2	42
43B	Ø 1" Warp	6 x 25 Wire	2	NA
44	Chain backstrap	1/2" Chain	4	13B/14B
45B	Ø 9/16" x 33' Idler	6 x 37 Wire	2	13B/14B
46	Ø 5/8 x 30' Upper Legs	6 x 19 Wire	2	NA
47	Ø 5/8" X 11' Extension	6 x 19 Wire	2	NA
48	Ø 7/8" x 180' Ground cable	6 x 19 Wire	2	NA
49	30' Lower leg	1/2" Chain	2	NA
	Sweep Section A	Various	2	9 - 11
	Sweep Section B	Various	1	9 - 11

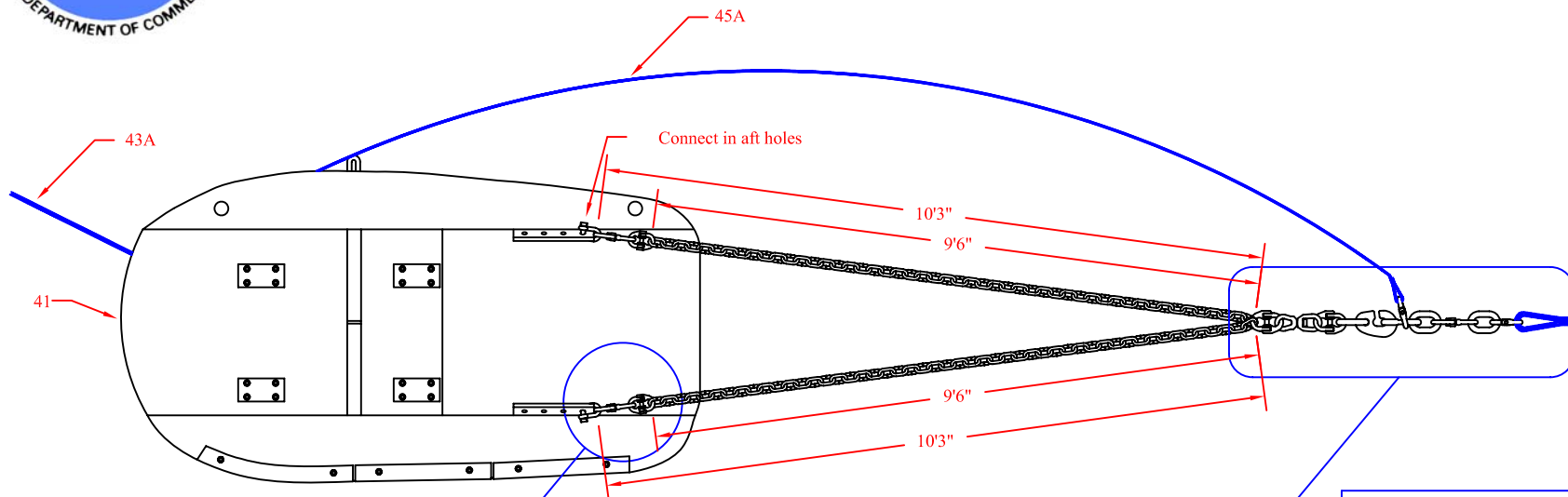


RIGGING PROFILE - DELAWARE II
NEFSC WINTER FLAT NET

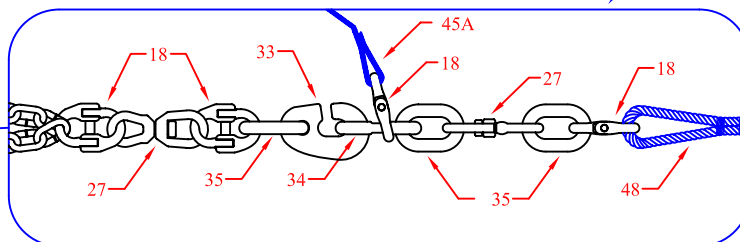
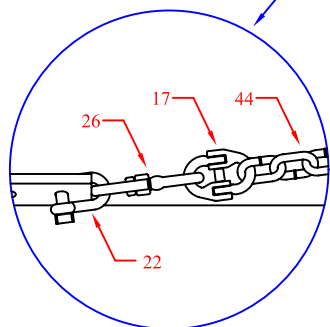
DATE DRAWN:	DWG.#:	PAGE #:	REV.	SCALE:
May 2004	FLAT - 12B	12B of 42		NTS

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BACKSIDE VIEW OF DOOR



DRAWING NOTES:

See page 14A (Dwg. # FLAT - 14A) for a detailed front view of the trawl door.


PART #	COMPONENT	MATERIALS	QTY	PAGE #
17	1/2" Hammerlock	Steel	2	16
18	5/8" Hammerlock	Steel	8	17
22	5/8" Trawl Shackle	Steel	4	21
26	5/8" Swivel	Steel	4	24
27	3/4" Swivel	Steel	4	25
33	G-hook	Steel	2	30
34	Flat link	Steel	2	31
35	Link	Steel	6	32
41	2.84 sqm. Trawl Door	990 lb Polyvalent	2	42
43A	Ø 7/8" Warp	6 x 26 Wire	2	NA
44	Chain backstrap	1/2" Chain	4	NA
45A	Ø 9/16" x 17" Idler	6 x 37 Wire	2	NA
48	Ø 7/8" x 180' Ground cable	6 x 19 Wire	2	NA

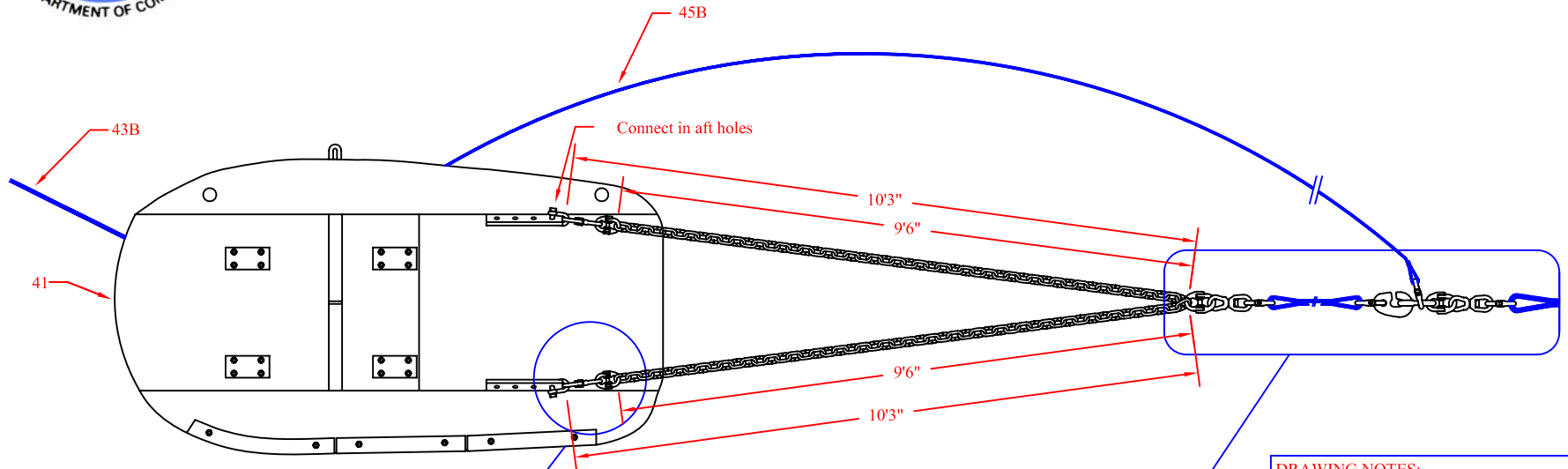


**DOOR RIGGING DETAIL - ALBATROSS IV
NEFSC WINTER FLAT NET**

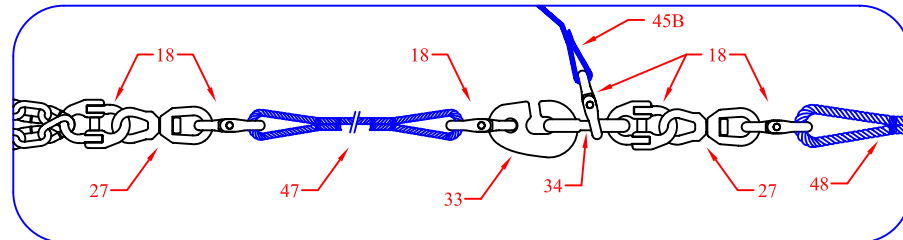
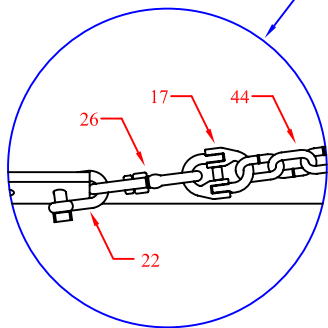
DATE DRAWN:	DWG. #:	PAGE #:	REV.	SCALE:
May 2004	FLAT - 13A	13A of 42		NTS

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BACKSIDE VIEW OF DOOR



DRAWING NOTES:

See page 14B (Dwg. # FLAT - 14B) for a detailed front view of the trawl door.

PART #	COMPONENT	MATERIALS	QTY	PAGE #
17	1/2" Hammerlock	Steel	2	16
18	5/8" Hammerlock	Steel	12	17
22	5/8" Trawl Shackle	Steel	4	21
26	5/8" Swivel	Steel	4	24
27	3/4" Swivel	Steel	4	25
33	G-hook	Steel	2	30
34	Flat link	Steel	2	31
41	2.84 sqm. Trawl Door	990 lb Polyvalent	2	42
43B	Ø 1" Warp	6 x 25 Wire	2	NA
44	Chain backstrap	1/2" Chain	4	NA
45B	Ø 9/16" X 33' Idler	6 x 37 Wire	2	NA
47	Ø 5/8" X 11' Extension	6 x 19 Wire	2	NA
48	Ø 7/8" x 180' Ground cable	6 x 19 Wire	2	NA

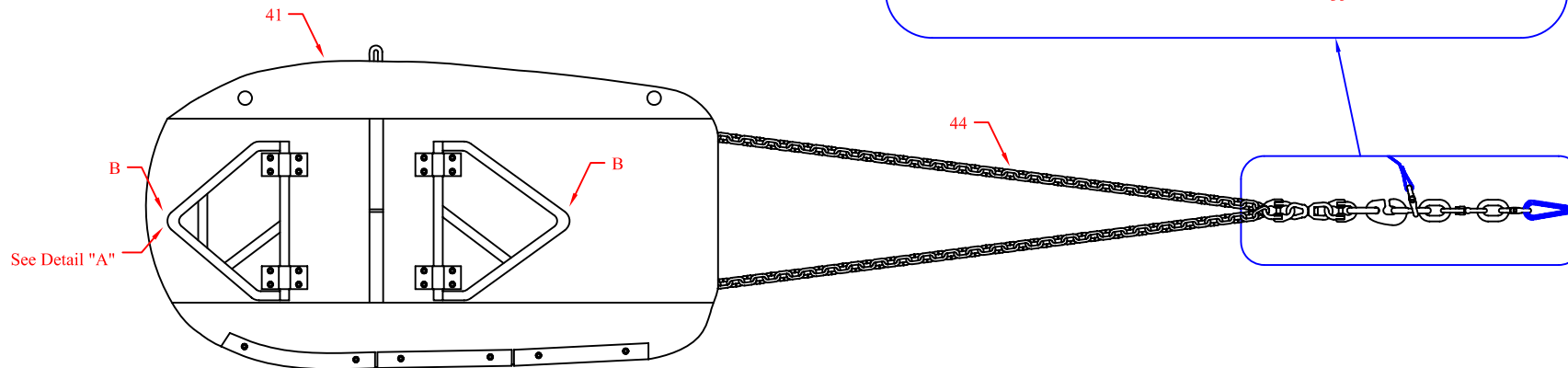


**DOOR RIGGING DETAIL - DELAWARE II
NEFSC WINTER FLAT NET**

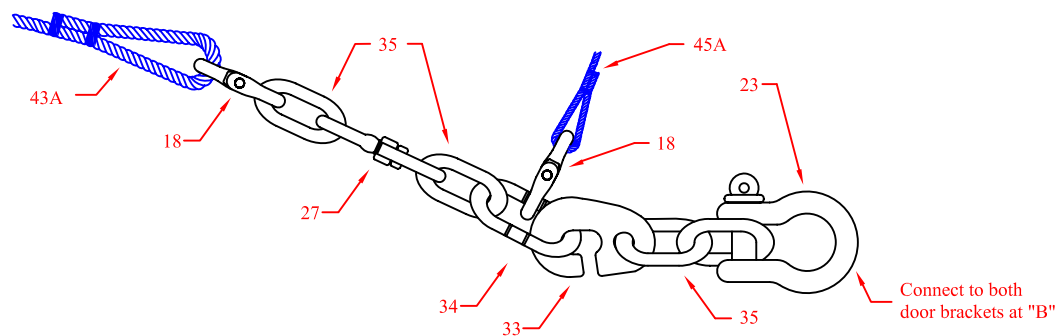
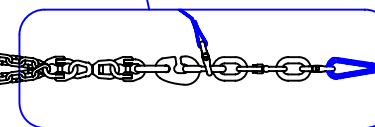
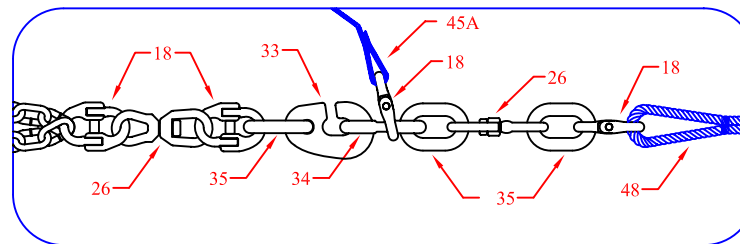
DATE DRAWN:	DWG. #:	PAGE #:	REV.	SCALE:
May 2004	FLAT - 13B	13B of 42		NTS

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FRONTSIDE VIEW OF DOOR



Detail "A" - Warp/Idler Connection Detail

DRAWING NOTES:

See page 13A (Dwg. # FLAT - 13A) for a detailed rear view of the trawl door.

PART #	COMPONENT	MATERIALS	QTY	PAGE #
18	5/8" Hammerlock	Steel	12	17
23	Door Shackle	Steel	2	22
26	5/8" Swivel	Steel	4	24
27	3/4" Swivel	Steel	2	25
33	G-hook	Steel	4	30
34	Flat link	Steel	4	31
35	Link	Steel	14	32
41	2.84 sqm. Trawl Door	990 lb Polyvalent	2	42
43A	Ø 7/8" Warp	6 x 26 Wire	2	NA
44	Chain backstrap	1/2" Chain	4	NA
45A	Ø 9/16" x 17' Idler	6 x 37 Wire	2	NA
48	Ø 7/8" x 180' Ground cable	6 x 19 Wire	2	NA

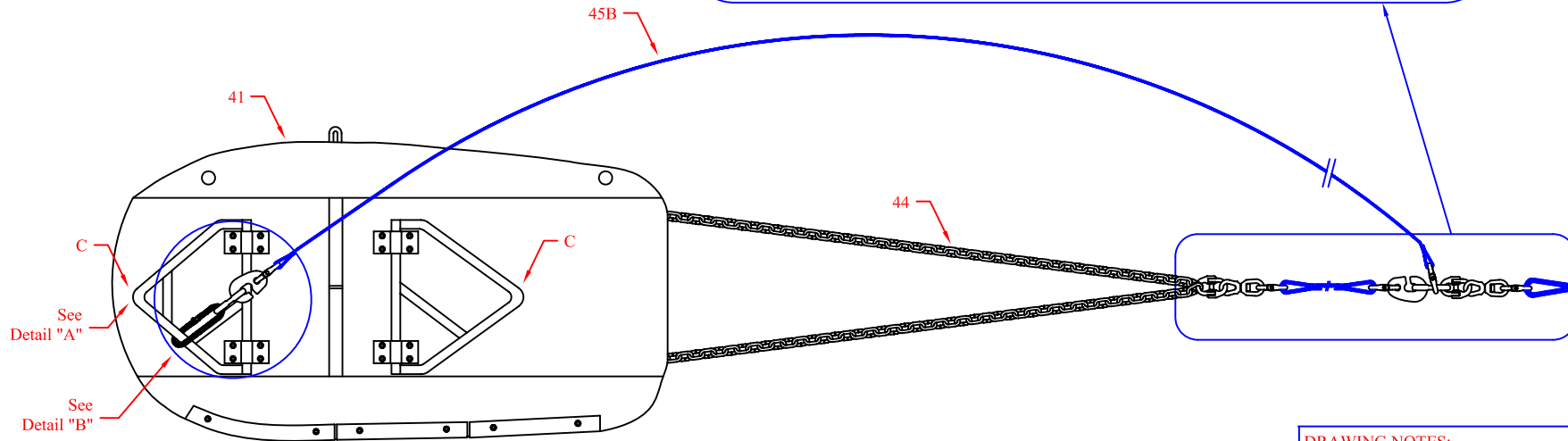
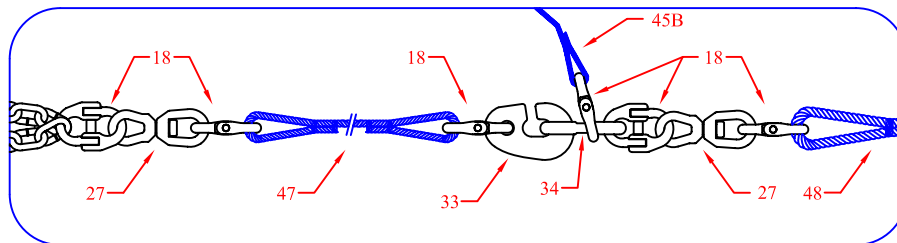


**DOOR RIGGING DETAIL - ALBATROSS IV
NEFSC WINTER FLAT NET**

DATE DRAWN:	DWG. #:	PAGE #:	REV.	SCALE:
May 2004	FLAT - 14A	14A of 42		NTS

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FRONTSIDE VIEW OF DOOR

DRAWING NOTES:

See page 13B (Dwg. # FLAT - 13B) for a detailed rear view of the trawl door.

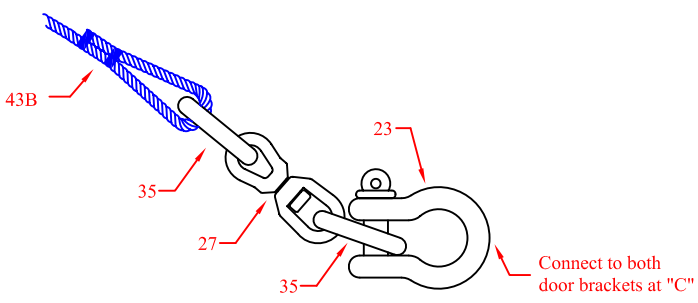
PART #	COMPONENT	MATERIALS	QTY	PAGE #
18	5/8" Hammerlock	Steel	14	17
23	Door Shackle	Steel	2	22
27	3/4" Swivel	Steel	6	25
33	G-hook	Steel	4	30
34	Flat link	Steel	4	31
35	Link	Steel	4	32
38	Idler Connection Chain	Steel	2	36
41	2.84 sqm. Trawl Door	990 lb Polyvalent	2	42
43B	Ø 1" Warp	6 x 25 Wire	2	NA
44	Chain backstrap	1/2" Chain	4	NA
45B	Ø 9/16" X 33' Idler	6 x 37 Wire	2	NA
47	Ø 5/8" X 11' Extension	6 x 19 Wire	2	NA
48	Ø 7/8" x 180' Ground cable	6 x 19 Wire	2	NA



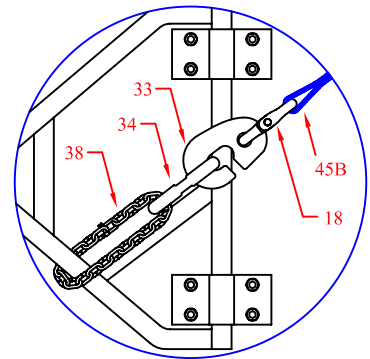
**DOOR RIGGING DETAIL - DELAWARE II
NEFSC WINTER FLAT NET**

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May 2004	FLAT - 14B	14B of 42		NTS

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Detail "A" - Warp Connection Detail



Detail "B" - Idler Connection Detail

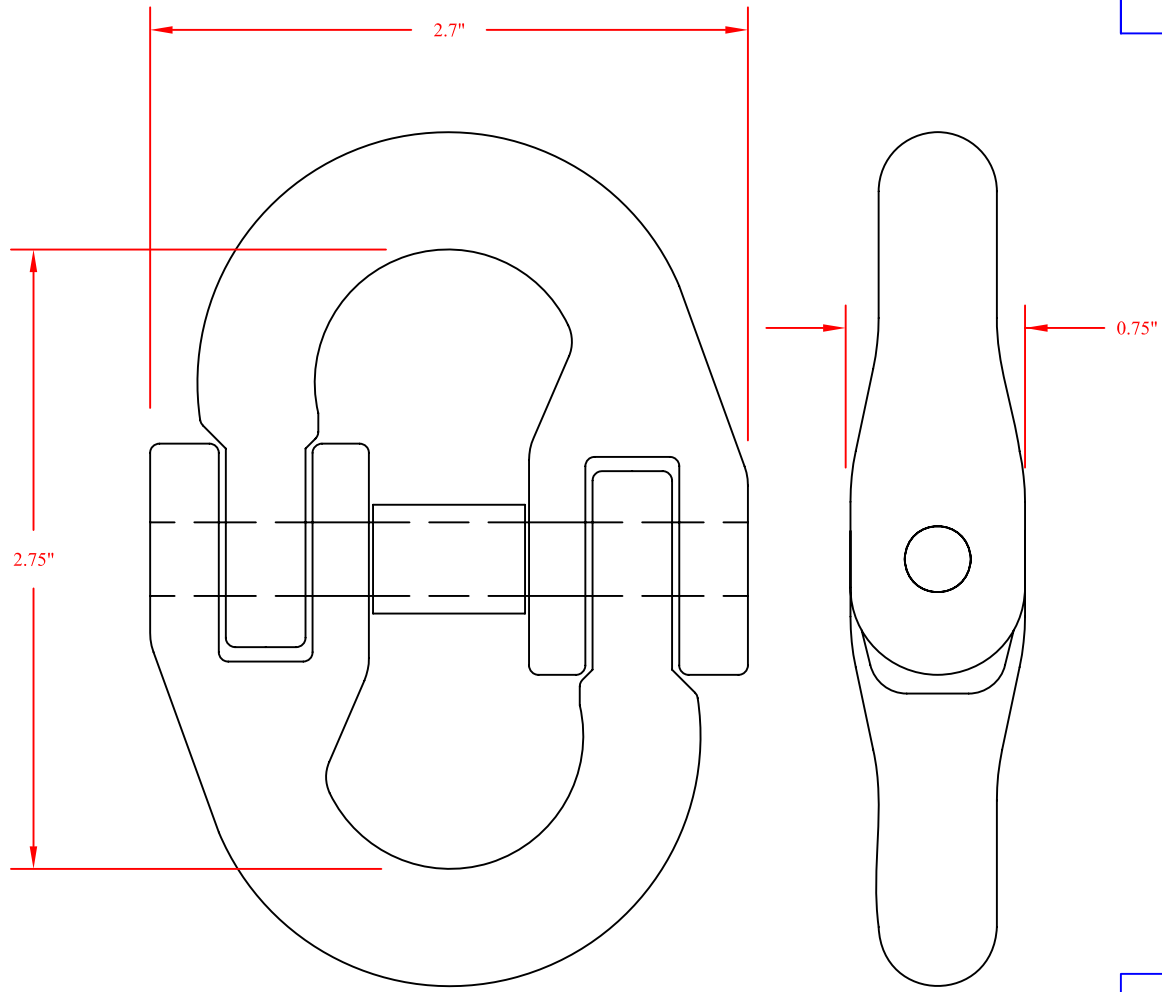
SECTION 4 – PARTS

- ⇒ **FLAT - 15 – 16 - 3/8” HAMMERLOCK**
- ⇒ **FLAT - 16 - 17 - 1/2” HAMMERLOCK**
- ⇒ **FLAT - 17 - 18 - 5/8” HAMMERLOCK**
- ⇒ **FLAT - 18 - 19 - 5/16” TRAWL SHACKLE**
- ⇒ **FLAT - 19 - 20 - 3/8” TRAWL SHACKLE**
- ⇒ **FLAT - 20 - 21 - 1/2” TRAWL SHACKLE**
- ⇒ **FLAT - 21 - 22 - 5/8” TRAWL SHACKLE**
- ⇒ **FLAT - 22 - 23 - DOOR SHACKLE**
- ⇒ **FLAT - 23 - 24 - 3/8” SWIVEL**
- ⇒ **FLAT - 24 - 26 - 5/8” SWIVEL**
- ⇒ **FLAT - 25 - 27 - 3/4” SWIVEL**
- ⇒ **FLAT - 26 - 52 - DROPPER CHAIN**
- ⇒ **FLAT - 27 - 52 - 3 LINK DROPPER CHAIN**
- ⇒ **FLAT - 28 - 51 - 4.5” RUBBER DISK/COOKIE**
- ⇒ **FLAT - 29 - 50 - 6.5” RUBBER DISK/COOKIE**
- ⇒ **FLAT - 30 - 33 - G-HOOK**
- ⇒ **FLAT - 31 - 34 - FLAT LINK**
- ⇒ **FLAT - 32 - 35 - CONNECTING LINK**
- ⇒ **FLAT - 33 - 54 - 6” STEEL WASHER**
- ⇒ **FLAT - 34 - 58 - 5” STEEL WASHER**
- ⇒ **FLAT - 35 - 14 - 2” CODEND RING**
- ⇒ **FLAT - 36 - 38 - IDLER CONNECTION CHAIN**
- ⇒ **FLAT - 37 - 55 - 5/8” MIDLINK CHAIN**
- ⇒ **FLAT - 38 - 56 - 1/2” MIDLINK CHAIN**
- ⇒ **FLAT - 39 - 57 - 1/2” GROUND CHAIN**
- ⇒ **FLAT - 40 - 39 - WEAK LINK**
- ⇒ **FLAT - 41 - 40 - 8” ALUMINUM LUG FLOAT**
- ⇒ **FLAT - 42 - 41 - TRAWL DOOR DETAILS**



SPECIFICATIONS

PART # :	WEIGHT IN AIR (lbs):	WEIGHT IN FRESHWATER (lbs):
16	0.77	0.69



**3/8" HAMMERLOCK
NEFSC WINTER FLAT NET**

DATE DRAWN:	DWG. # :	PAGE # :	REV.	SCALE:
May 2004	FLAT - 15 - 16	15 of 42		NTS

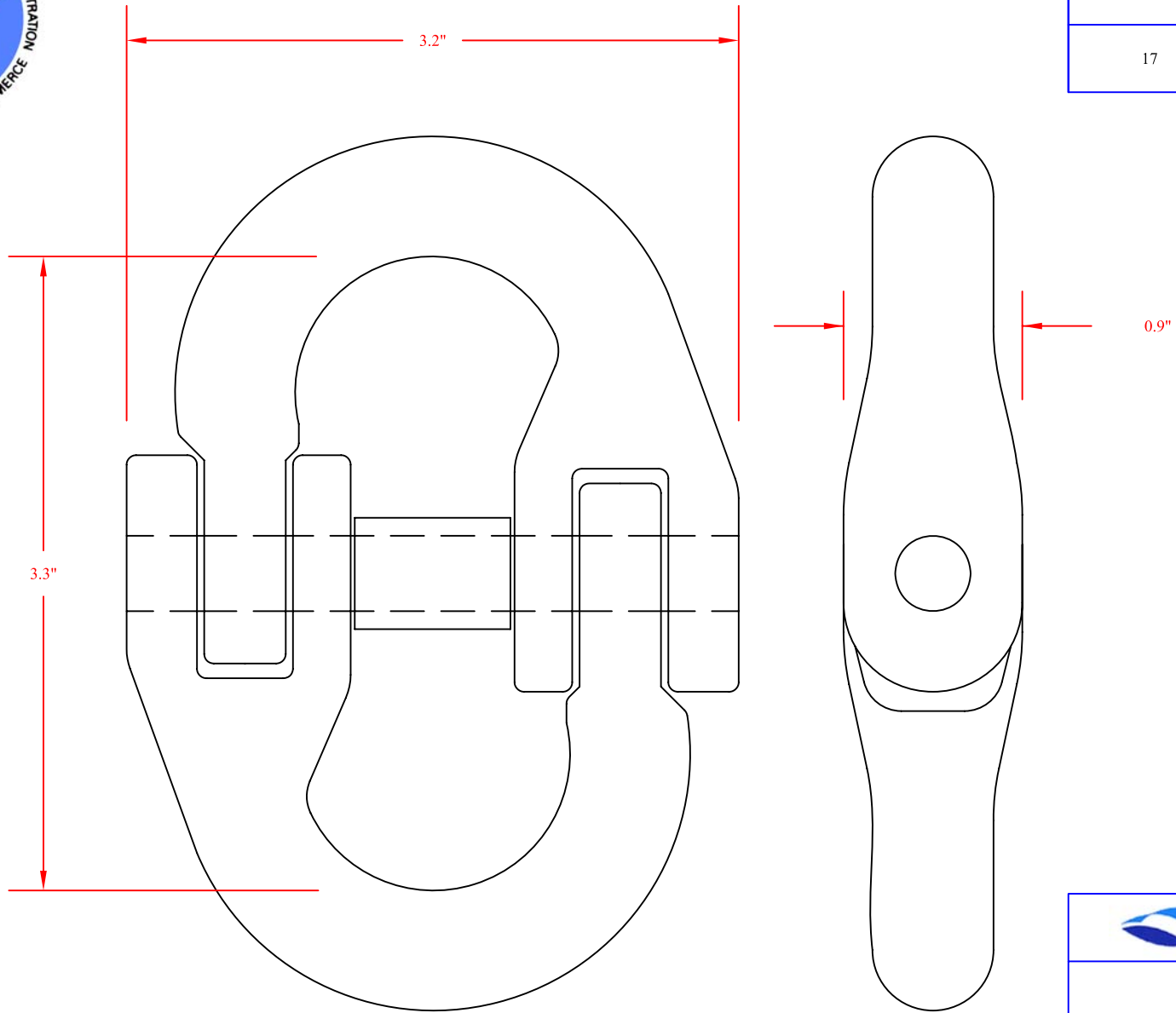
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SPECIFICATIONS

PART # :	WEIGHT IN AIR (lbs):	WEIGHT IN FRESHWATER (lbs):
17	1.35	1.17

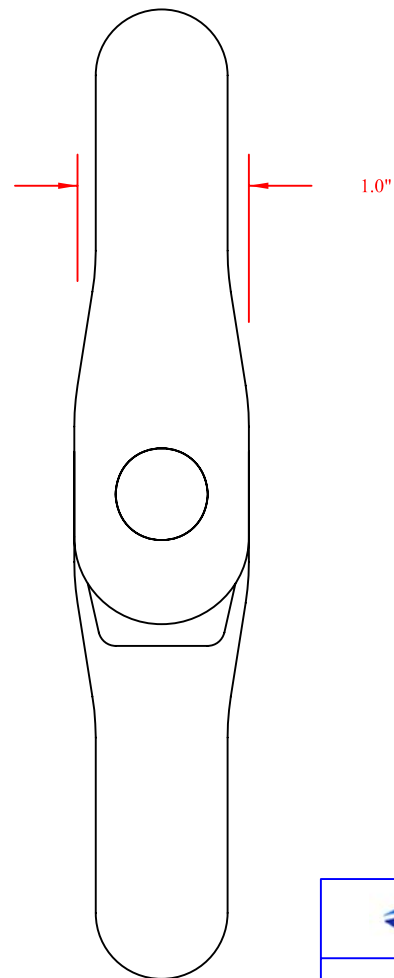
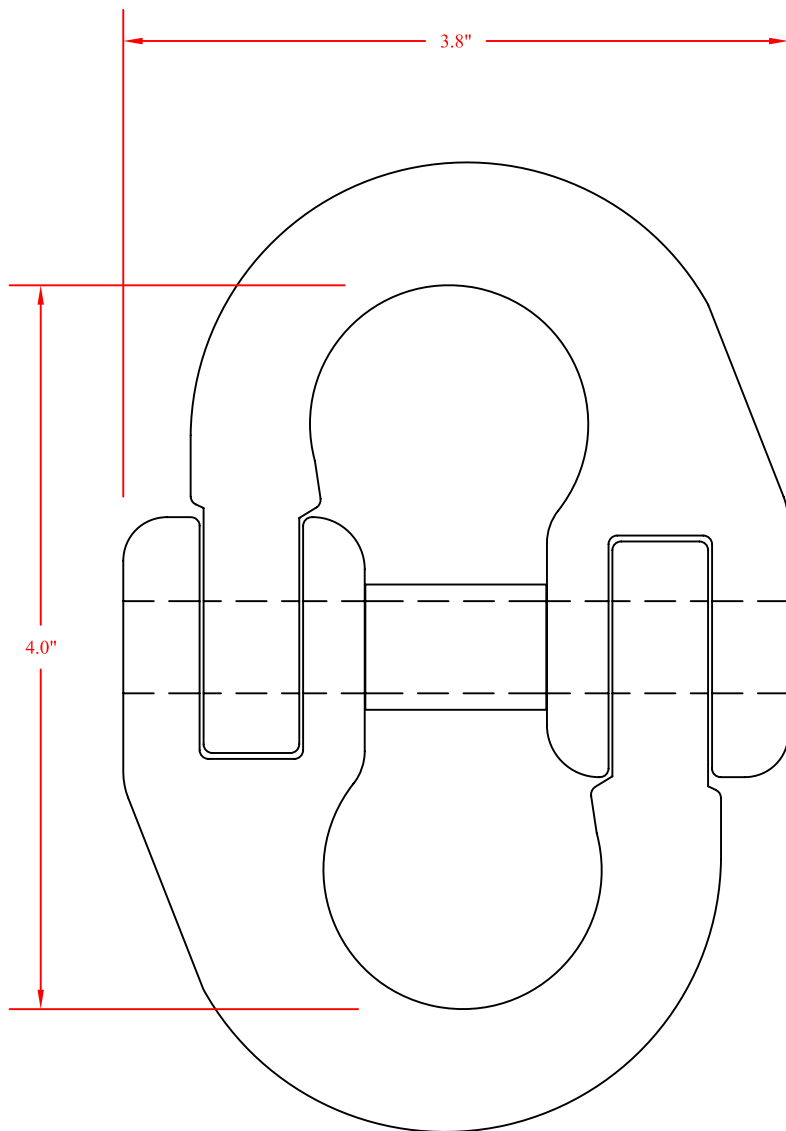


**1/2" HAMMERLOCK
NEFSC WINTER FLAT NET**

DATE DRAWN:	DWG. # :	PAGE # :	REV.	SCALE:
May 2004	FLAT - 16 - 17	16 of 42		NTS

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SPECIFICATIONS		
PART # :	WEIGHT IN AIR (lbs):	WEIGHT IN FRESHWATER (lbs):
18	2.30	2.00

NOAA Fisheries

5/8" HAMMERLOCK
NEFSC WINTER FLAT NET

DATE DRAWN: May 2004	DWG. #: FLAT - 17 - 18	PAGE #: 17 of 42	REV.	SCALE: NTS
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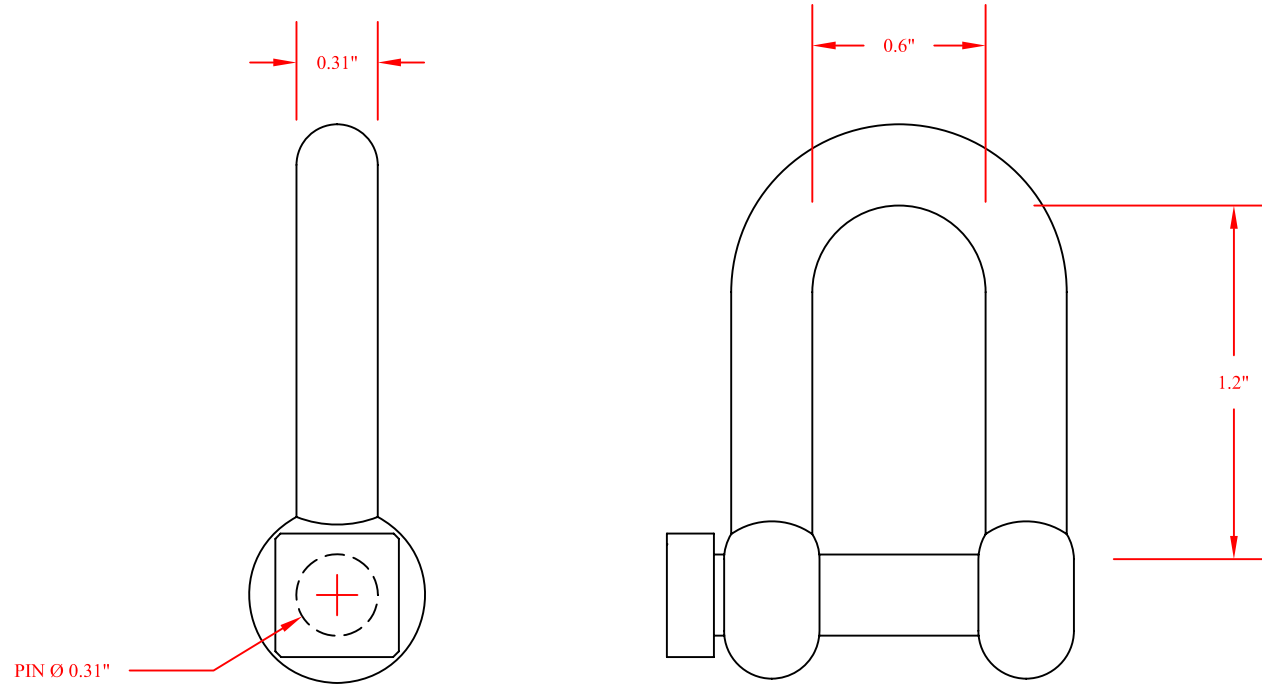
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SPECIFICATIONS


PART # :	WEIGHT IN AIR (lbs):	WEIGHT IN FRESHWATER (lbs):
19	0.13	0.12



**5/16" TRAWL SHACKLE
NEFSC WINTER FLAT NET**

DATE DRAWN:	DWG. # :	PAGE # :	REV.	SCALE:
May 2004	FLAT - 18 - 19	18 of 42		NTS

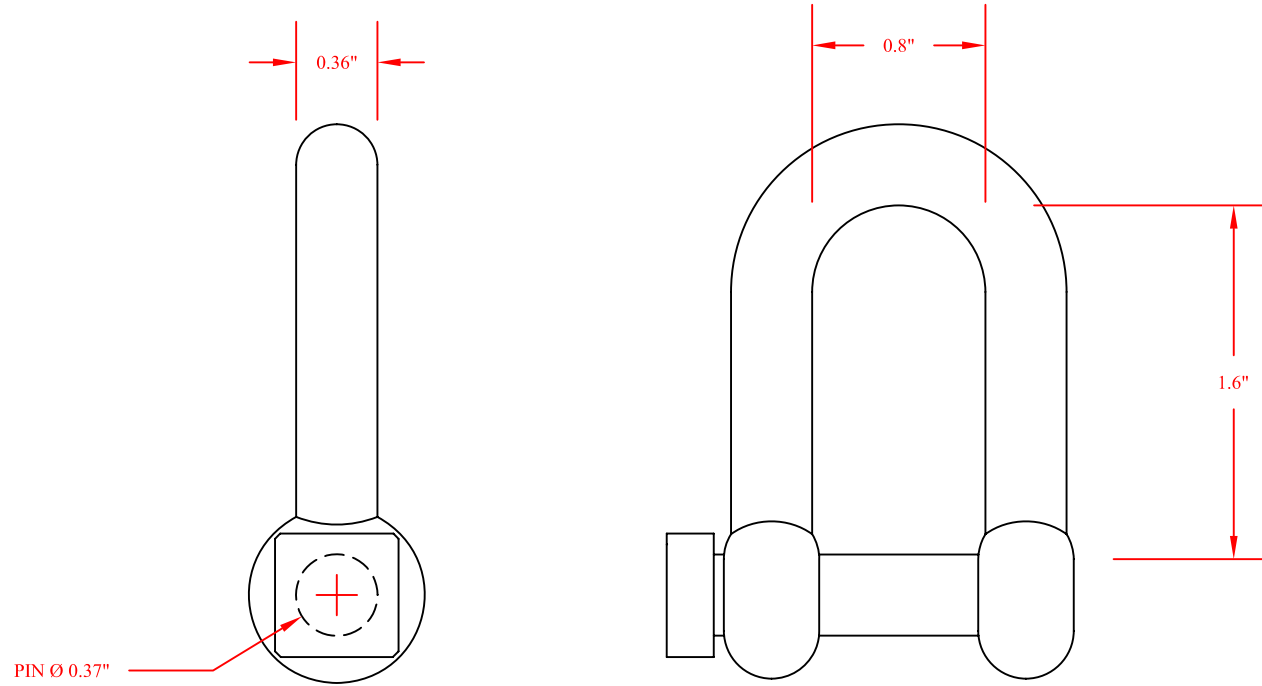
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SPECIFICATIONS

PART # :	WEIGHT IN AIR (lbs):	WEIGHT IN FRESHWATER (lbs):
20	0.22	0.19



**3/8" TRAWL SHACKLE
NEFSC WINTER FLAT NET**

DATE DRAWN:	DWG. # :	PAGE # :	REV.	SCALE:
May 2004	FLAT - 19 - 20	19 of 42		NTS

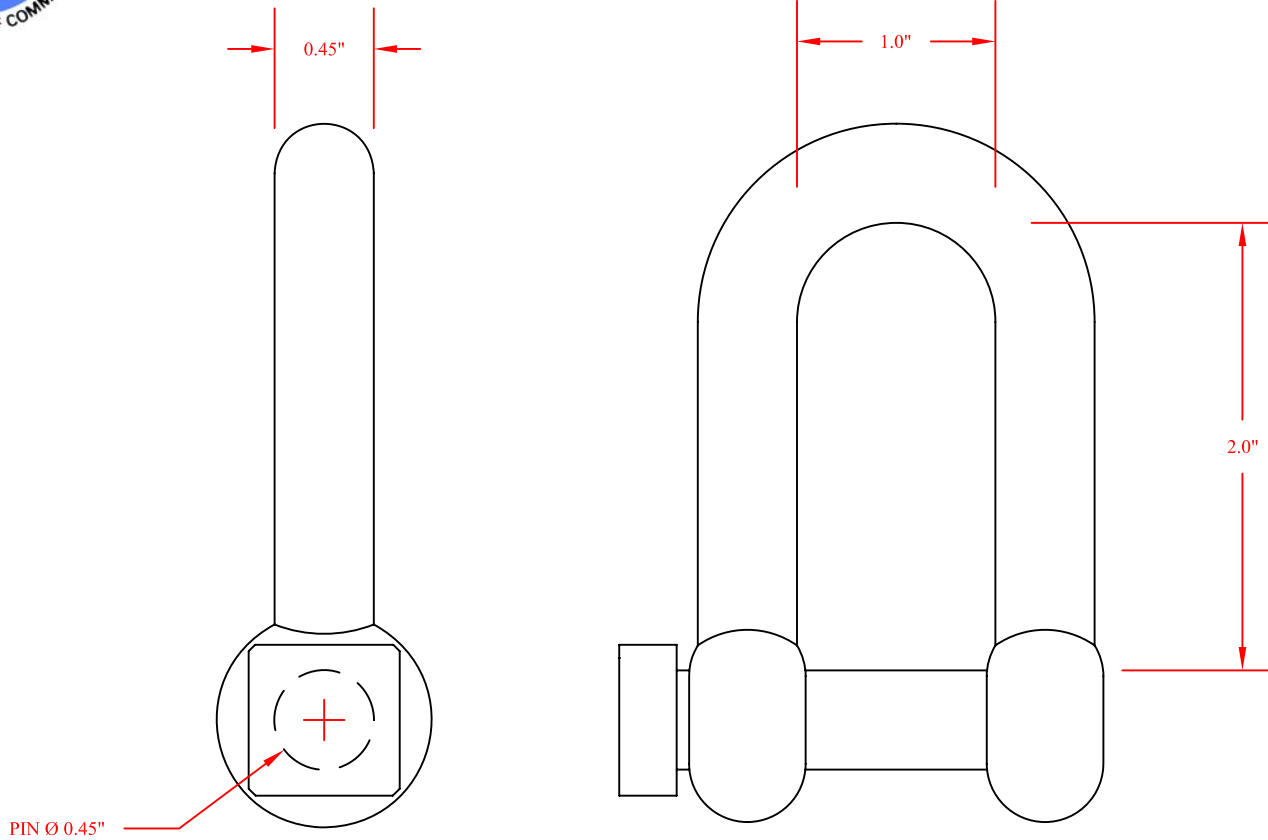
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SPECIFICATIONS

PART # :	WEIGHT IN AIR (lbs):	WEIGHT IN FRESHWATER (lbs):
21	0.42	0.37



1/2" TRAWL SHACKLE
NEFSC WINTER FLAT NET

DATE DRAWN:	DWG. # :	PAGE # :	REV.	SCALE:
May 2004	FLAT - 20 - 21	20 of 42		NTS

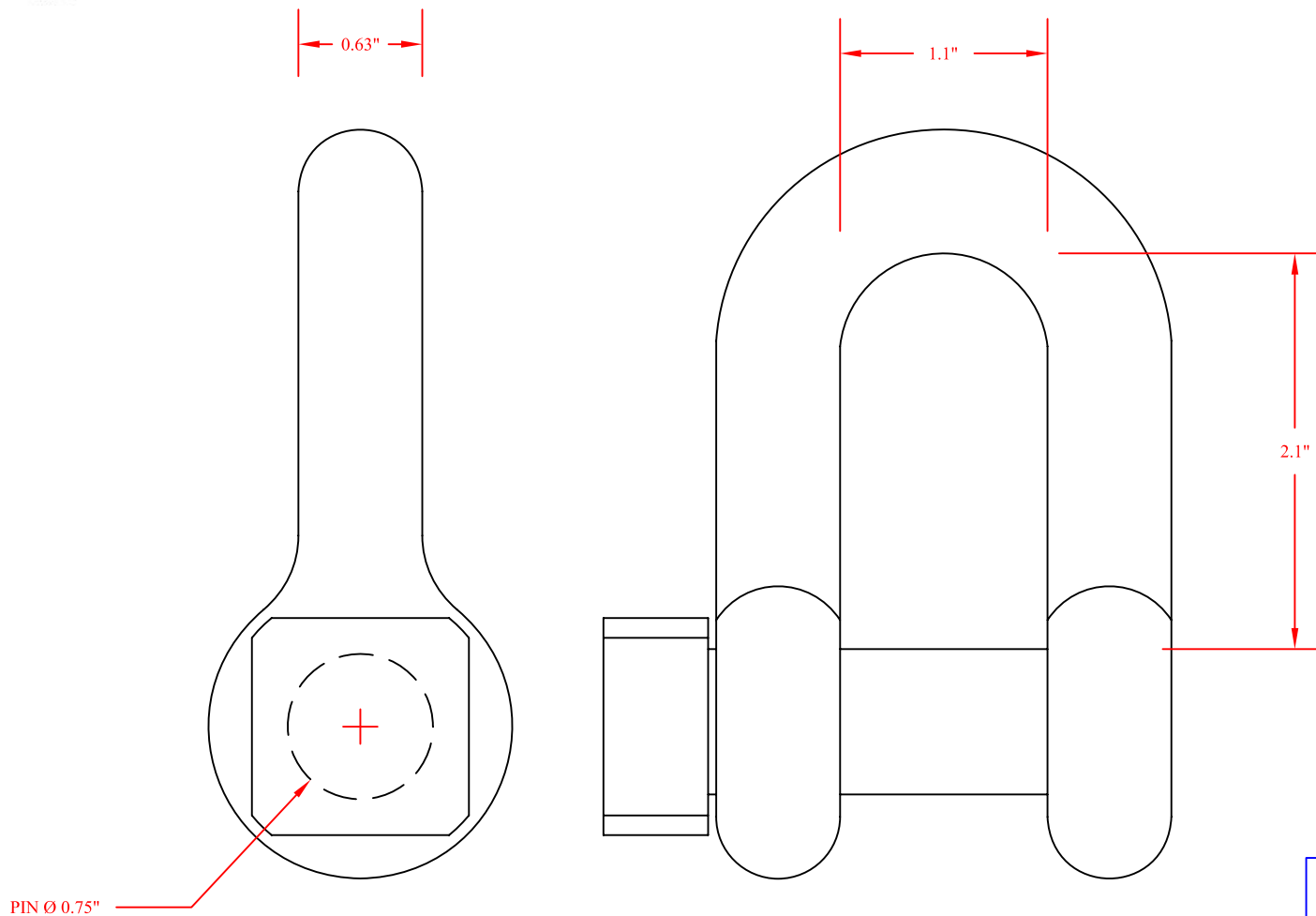
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SPECIFICATIONS

PART # :	WEIGHT IN AIR (lbs):	WEIGHT IN FRESHWATER (lbs):
22	1.31	1.17



5/8" TRAWL SHACKLE
NEFSC WINTER FLAT NET

DATE DRAWN:	DWG. # :	PAGE # :	REV.	SCALE:
May 2004	FLAT - 21 - 22	21 of 42		NTS

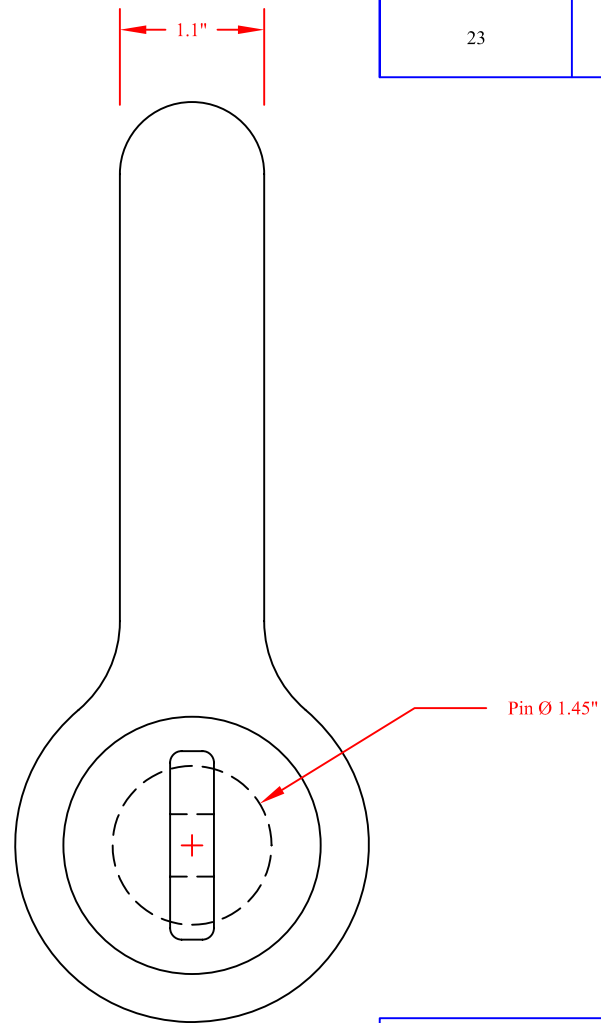
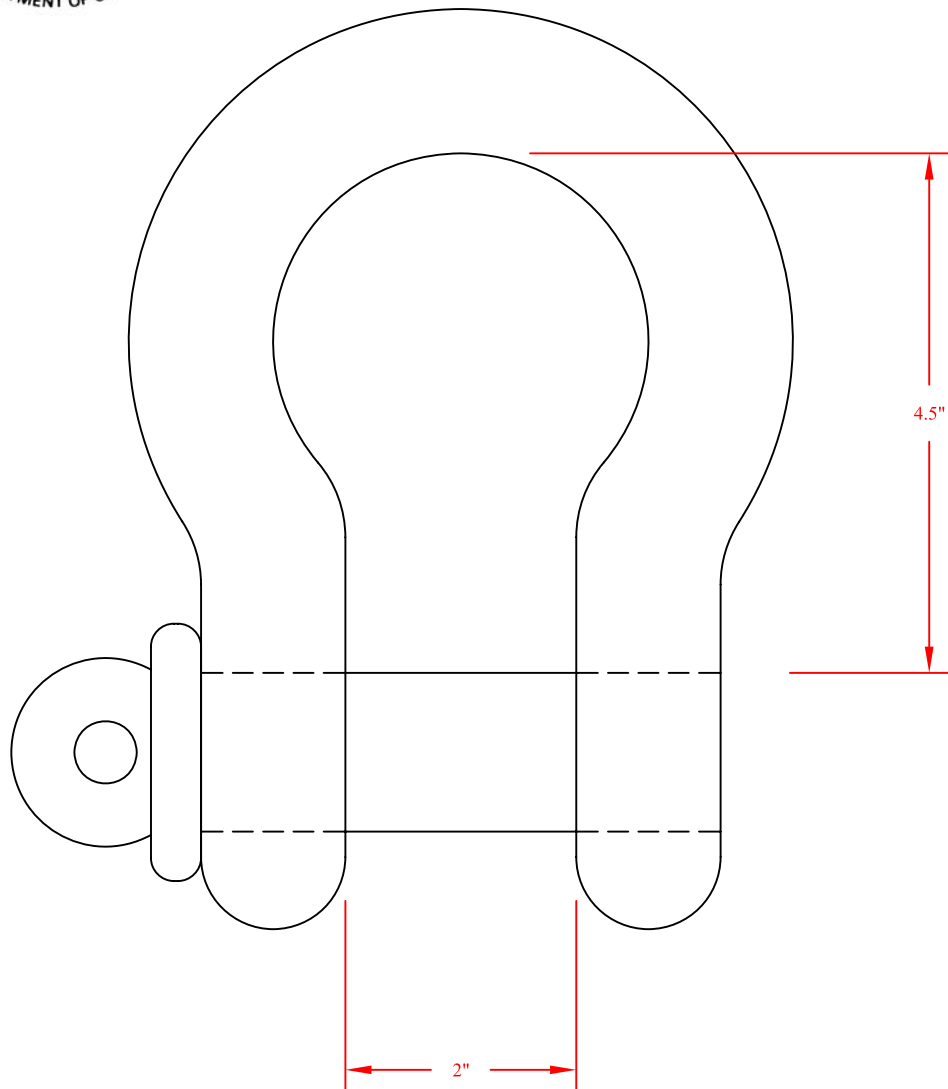
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SPECIFICATIONS

PART # :	WEIGHT IN AIR (lbs):	WEIGHT IN FRESHWATER (lbs):
23	14.3	12.7

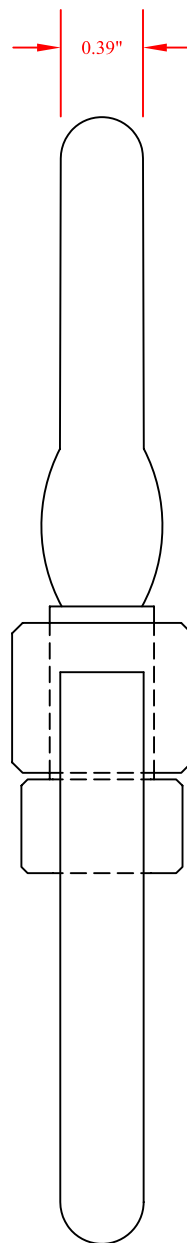
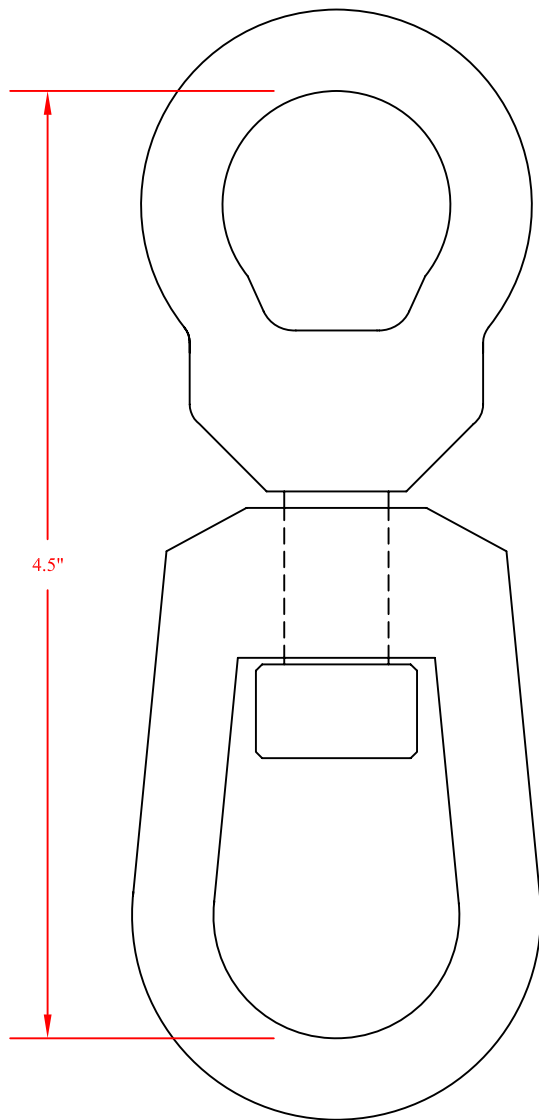


DOOR SHACKLE
NEFSC WINTER FLAT NET


DATE DRAWN:	DWG. # :	PAGE # :	REV.	SCALE:
May 2004	FLAT - 22 - 23	22 of 42		NTS

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SPECIFICATIONS		
PART # :	WEIGHT IN AIR (lbs):	WEIGHT IN FRESHWATER (lbs):
24	0.64	0.57

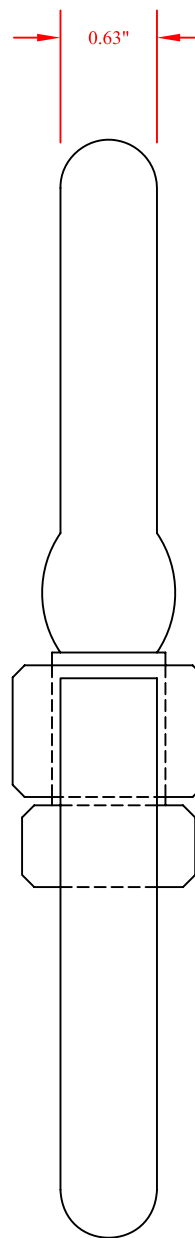
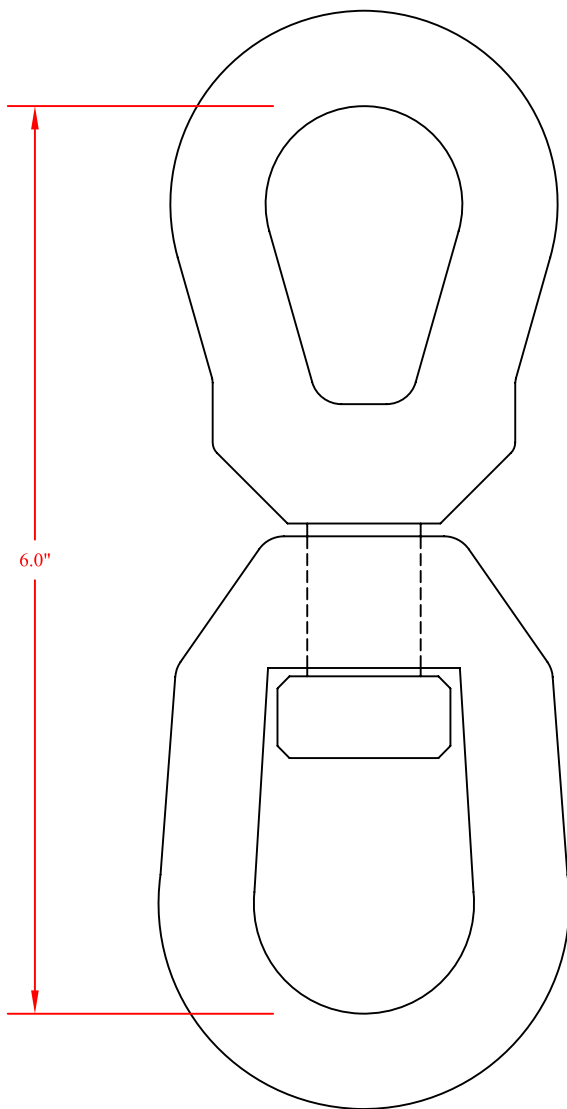
 **NOAA Fisheries**

3/8" SWIVEL
NEFSC WINTER FLAT NET

DATE DRAWN: May 2004	DWG. # : FLAT - 23 - 24	PAGE # : 23 of 42	REV.	SCALE: NTS
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SPECIFICATIONS

PART # :	WEIGHT IN AIR (lbs):	WEIGHT IN FRESHWATER (lbs):
26	1.90	1.65

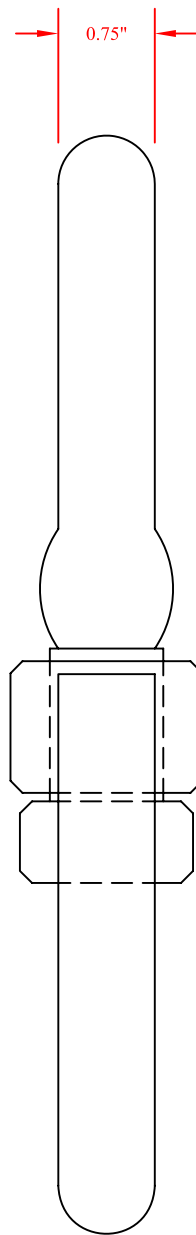
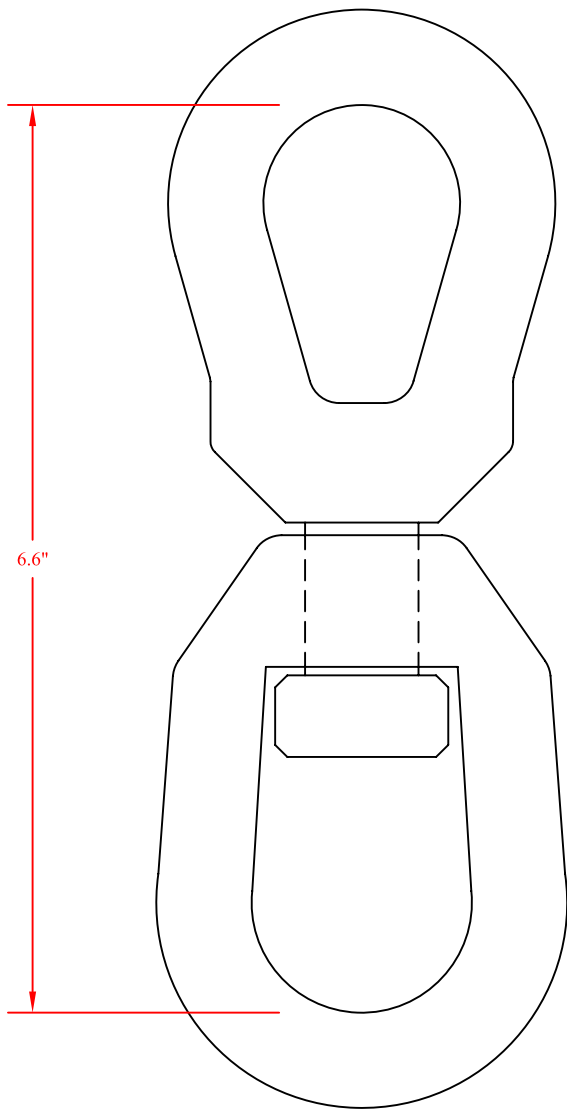


5/8" SWIVEL NEFSC WINTER FLAT NET

DATE DRAWN:	DWG. # :	PAGE # :	REV.	SCALE:
May 2004	FLAT - 24 - 26	24 of 42		NTS

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SPECIFICATIONS

PART # :	WEIGHT IN AIR (lbs):	WEIGHT IN FRESHWATER (lbs):
27	3.1	2.7



**3/4" SWIVEL
NEFSC WINTER FLAT NET**

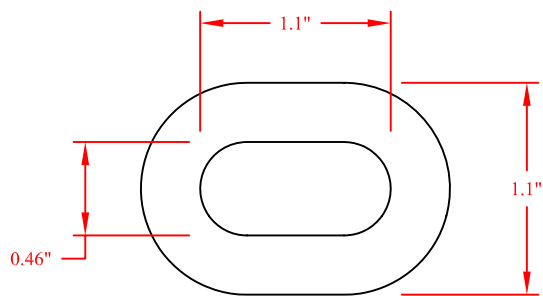
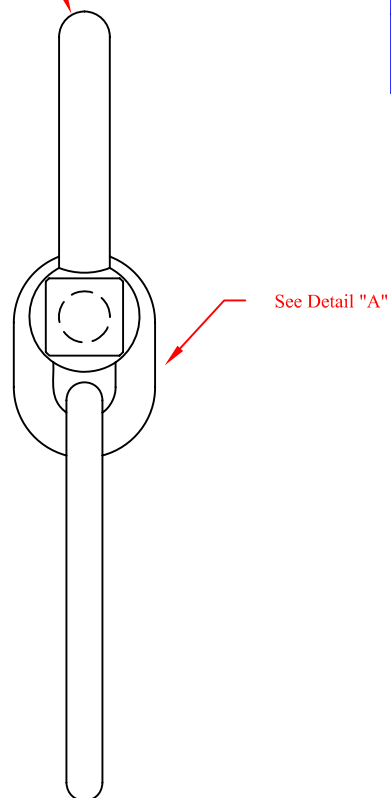
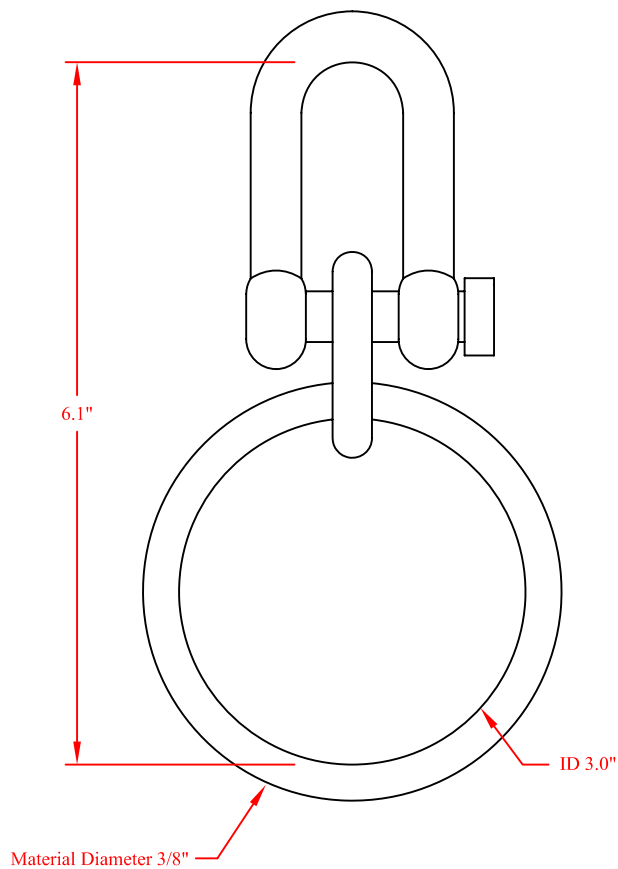
DATE DRAWN:	DWG. # :	PAGE # :	REV.	SCALE:
May 2004	FLAT - 25 - 27	25 of 42		NTS

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See page 20
(Dwg. # FLAT - 20 - 21)



CHAIN LINK DETAIL "A"

SPECIFICATIONS

PART # :	WEIGHT IN AIR (lbs):	WEIGHT IN FRESHWATER (lbs):
52	0.78	0.68



DROPPER CHAIN
NEFSC WINTER FLAT NET

DATE DRAWN:	DWG. # :	PAGE # :	REV.	SCALE:
May 2004	FLAT - 26 - 52	26 of 42		NTS

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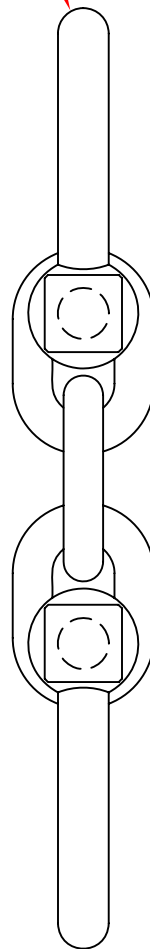
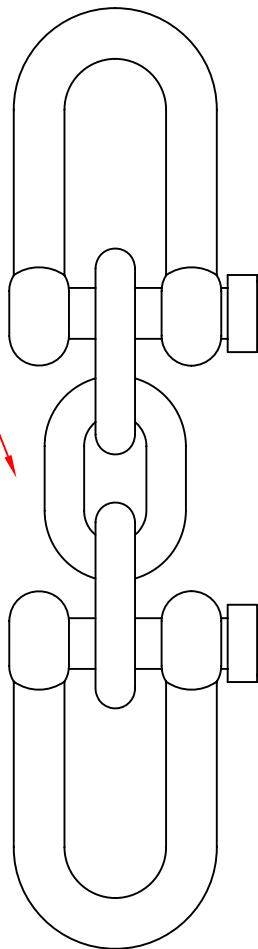


SPECIFICATIONS

PART # :	WEIGHT IN AIR (lbs):	WEIGHT IN FRESHWATER (lbs):
53	1.08	0.97

See page 20
(Dwg. # FLAT - 20 - 21)

5/16" ACCORDING TO TEXT



3 LINK DROPPER CHAIN
NEFSC WINTER FLAT NET

DATE DRAWN:	DWG. # :	PAGE # :	REV.	SCALE:
May 2004	FLAT - 27 - 53	27 of 42		NTS

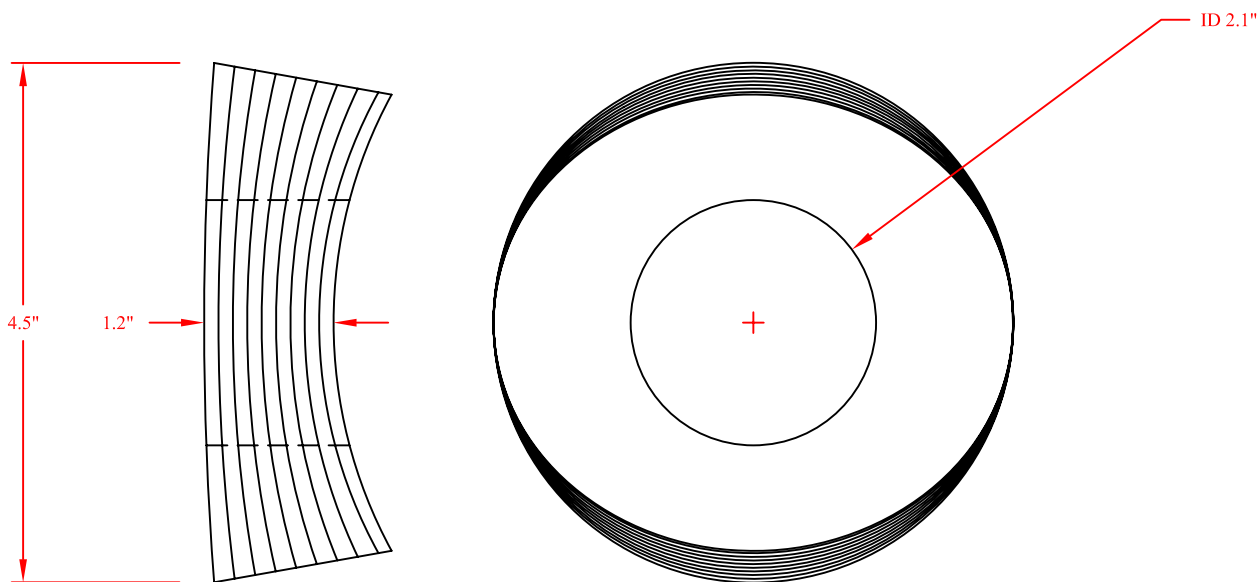
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SPECIFICATIONS

PART # :	WEIGHT IN AIR (lbs):	WEIGHT IN FRESHWATER (lbs):
51	0.34	0.039



DRAWING NOTES:


The thickness of this component is extremely variable due to manufacturing processes. Tolerances for thickness are presented in the parts list.



4.5" RUBBER DISK / COOKIE
NEFSC WINTER FLAT NET

DATE DRAWN:	DWG. # :	PAGE # :	REV.	SCALE:
May 2004	FLAT - 28 - 51	28 of 42		NTS

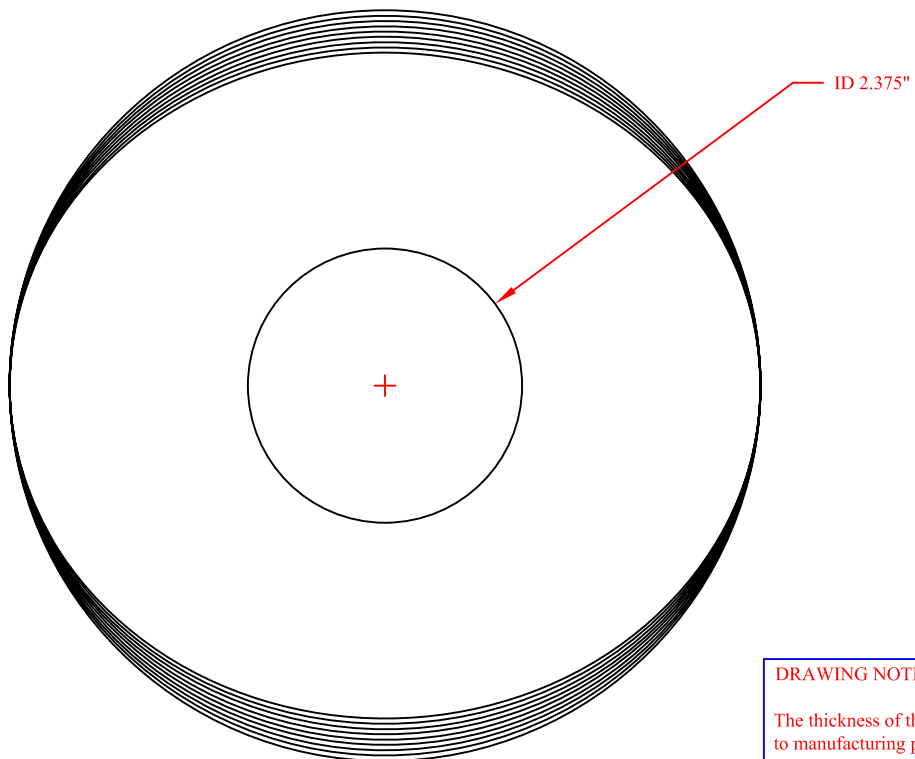
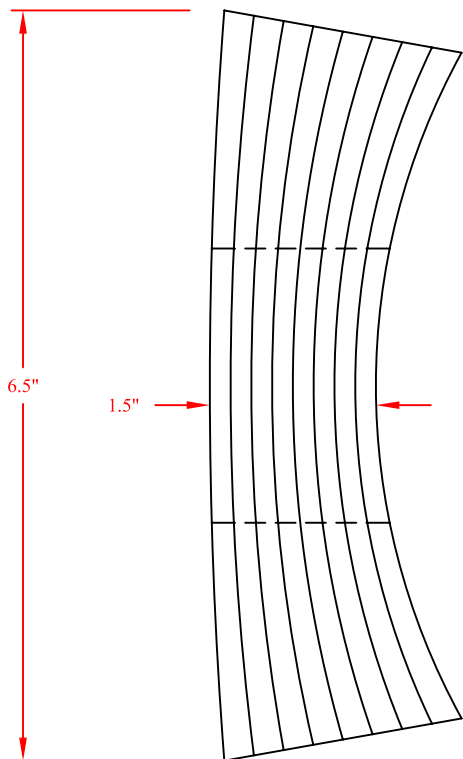
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SPECIFICATIONS

PART # :	WEIGHT IN AIR (lbs):	WEIGHT IN FRESHWATER (lbs):
50	1.29	0.13



DRAWING NOTES:

The thickness of this component is extremely variable due to manufacturing processes. Tolerances for thickness are presented in the parts list.



6.5" RUBBER DISK / COOKIE
NEFSC WINTER FLAT NET

DATE DRAWN:	DWG. # :	PAGE # :	REV.	SCALE:
May 2004	FLAT - 29 - 50	29 of 42		NTS

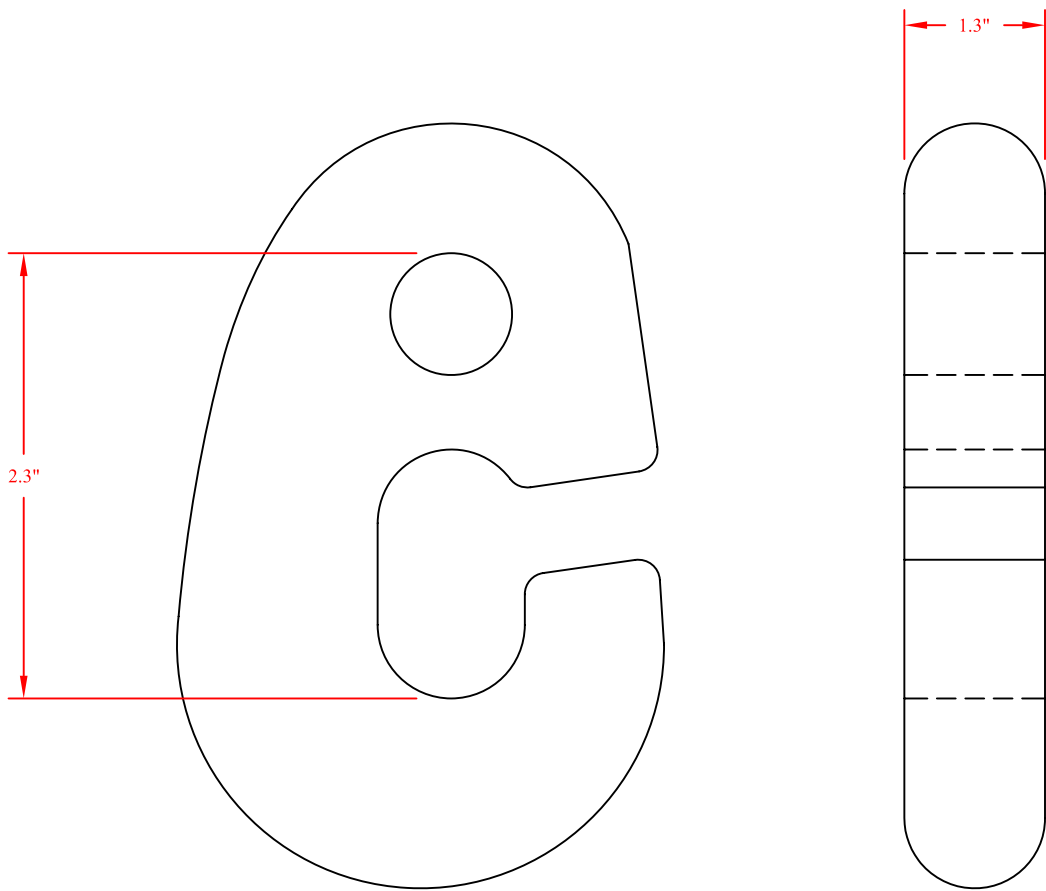
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SPECIFICATIONS


PART # :	WEIGHT IN AIR (lbs):	WEIGHT IN FRESHWATER (lbs):
33	5.06	4.43



G - HOOK
NEFSC WINTER FLAT NET

DATE DRAWN:	DWG. # :	PAGE # :	REV.	SCALE:
May 2004	FLAT - 30 - 33	30 of 42		NTS

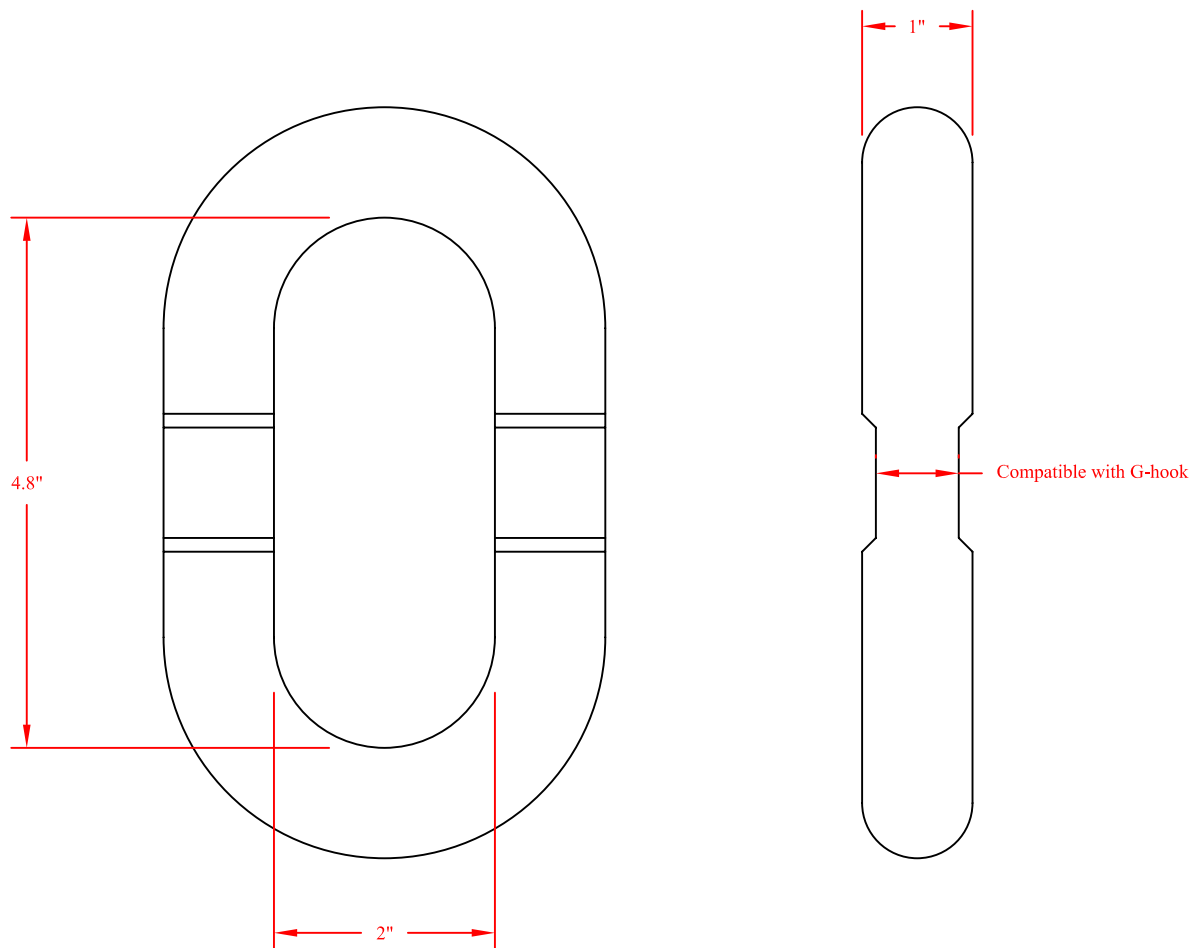
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SPECIFICATIONS

PART # :	WEIGHT IN AIR (lbs):	WEIGHT IN FRESHWATER (lbs):
34	3.5	3.1



FLAT LINK
NEFSC WINTER FLAT NET

DATE DRAWN:	DWG. # :	PAGE # :	REV.	SCALE:
May 2004	FLAT - 31 - 34	31 of 42		NTS

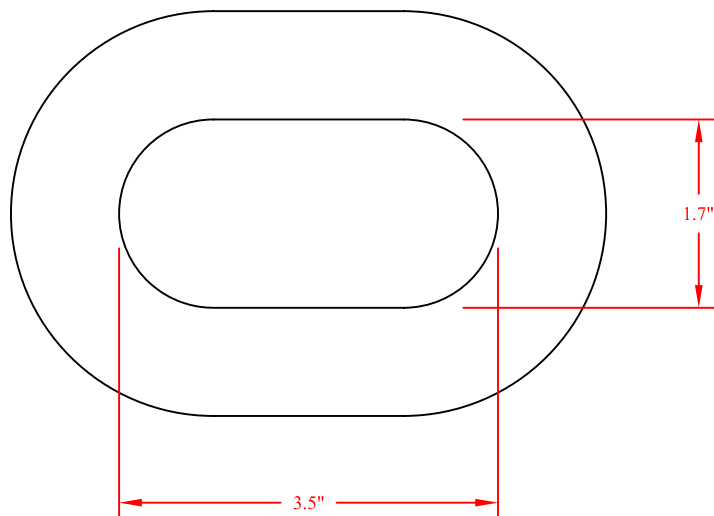
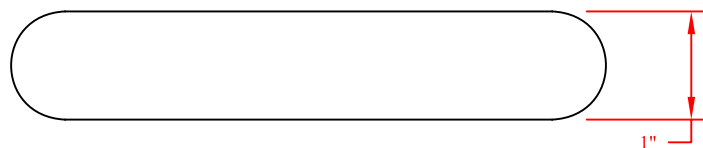
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SPECIFICATIONS

PART # :	WEIGHT IN AIR (lbs):	WEIGHT IN FRESHWATER (lbs):
35	3.36	3.003



CONNECTING LINK
NEFSC WINTER FLAT NET

DATE DRAWN:	DWG. # :	PAGE # :	REV.	SCALE:
May 2004	FLAT - 32 - 35	32 of 42		NTS

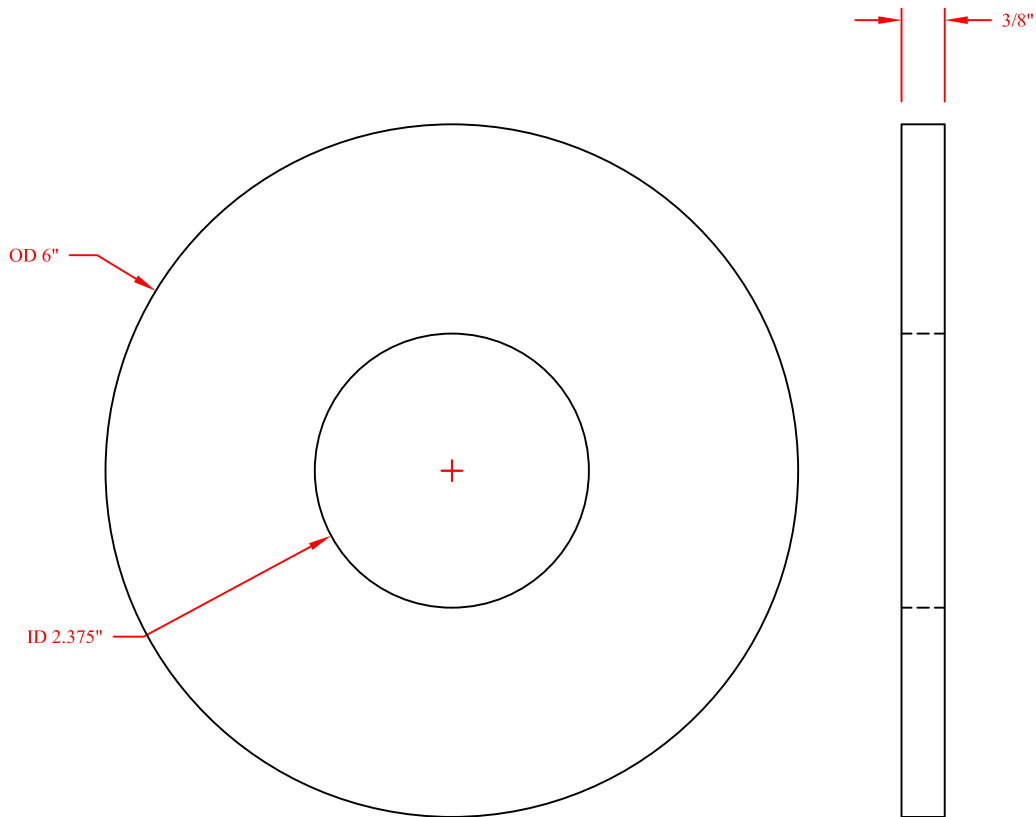
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SPECIFICATIONS

PART # :	WEIGHT IN AIR (lbs):	WEIGHT IN FRESHWATER (lbs):
54	2.69	2.39



6" STEEL WASHER
NEFSC WINTER FLAT NET

DATE DRAWN:	DWG. # :	PAGE # :	REV.	SCALE:
May 2004	FLAT - 33 - 54	33 of 42		NTS

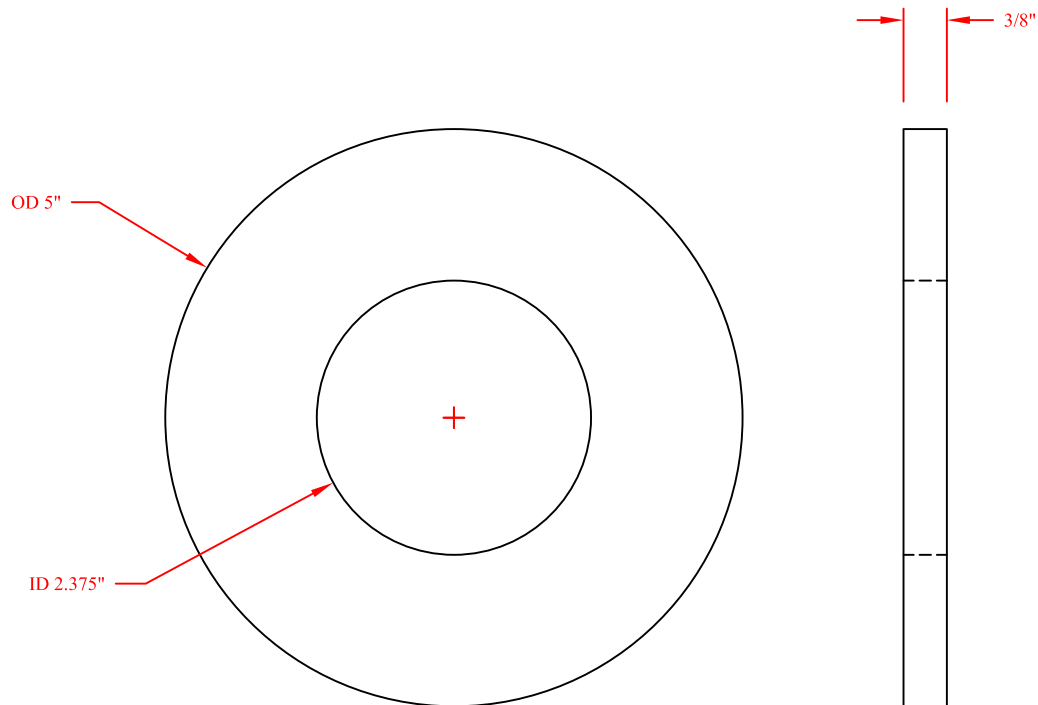
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SPECIFICATIONS

PART # :	WEIGHT IN AIR (lbs):	WEIGHT IN FRESHWATER (lbs):
58	1.61	1.44



5" STEEL WASHER
NEFSC WINTER FLAT NET

DATE DRAWN:	DWG. # :	PAGE # :	REV.	SCALE:
May 2004	FLAT - 34 - 58	34 of 42		NTS

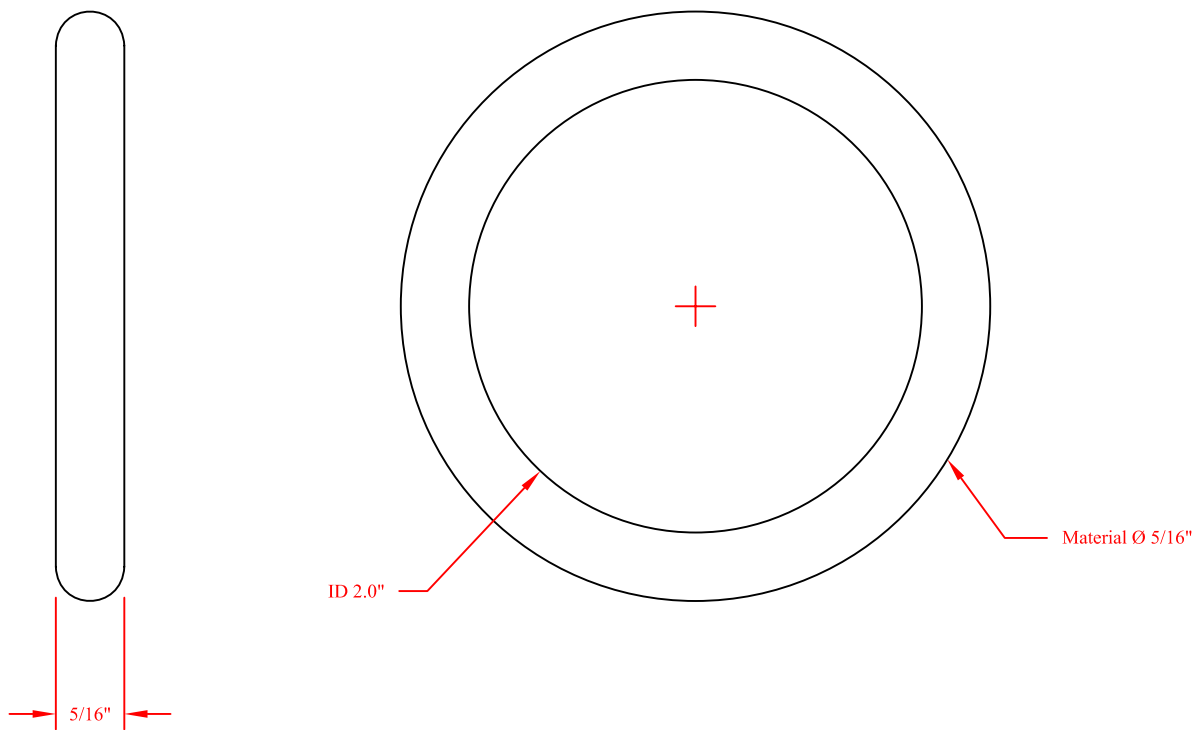
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SPECIFICATIONS

PART # :	WEIGHT IN AIR (lbs):	WEIGHT IN FRESHWATER (lbs):
14	0.16	0.14



2" CODEND RING NEFSC WINTER FLAT NET

DATE DRAWN:	DWG. # :	PAGE # :	REV.	SCALE:
May 2004	FLAT - 35 - 14	35 of 42		NTS

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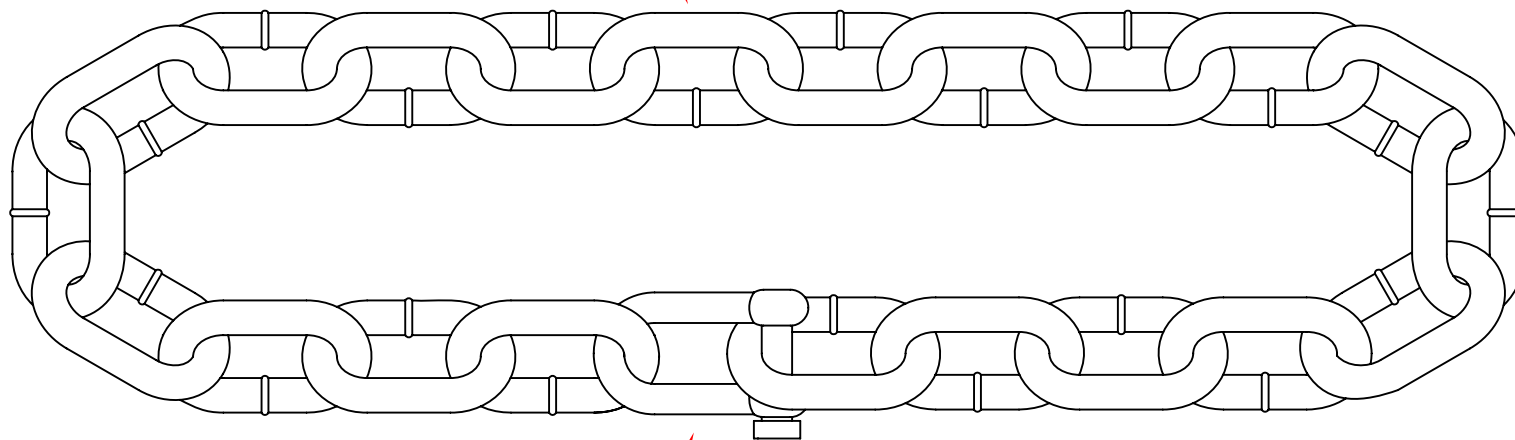




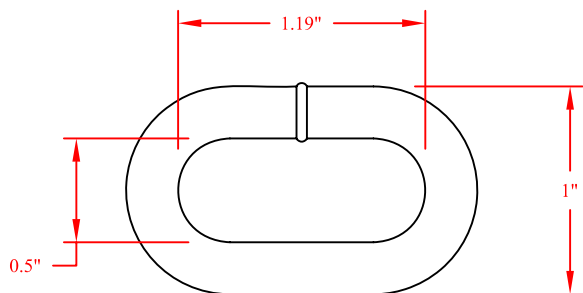
SPECIFICATIONS

PART # :	WEIGHT IN AIR (lbs):	WEIGHT IN FRESHWATER (lbs):
38	1.4	1.2

19 to 21 links (See detail "A")



See page 19
(Dwg. # FLAT - 19 - 20)



CHAIN LINK DETAIL "A"



**IDLER CONNECTION CHAIN
NEFSC WINTER FLAT NET**

DATE DRAWN:	DWG. # :	PAGE # :	REV.	SCALE:
May 2004	FLAT - 36 - 38	36 of 42		NTS

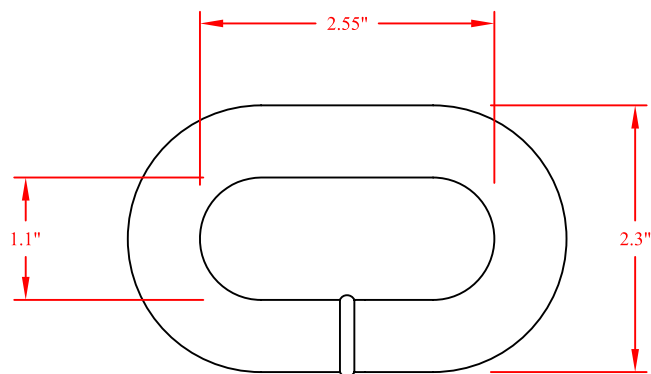
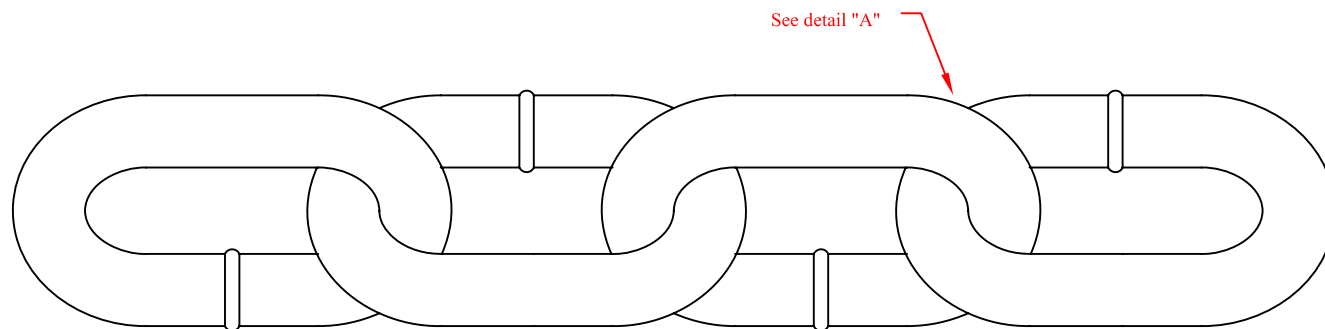
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SPECIFICATIONS

PART # :	WEIGHT IN AIR (lbs/ft):	WEIGHT IN FRESHWATER (lbs/ft):
55	3.39	2.95



CHAIN LINK DETAIL "A"



5/8" MIDLINK CHAIN NEFSC WINTER FLAT NET

DATE DRAWN:	DWG. # :	PAGE # :	REV.	SCALE:
May 2004	FLAT - 37 - 55	37 of 42		NTS

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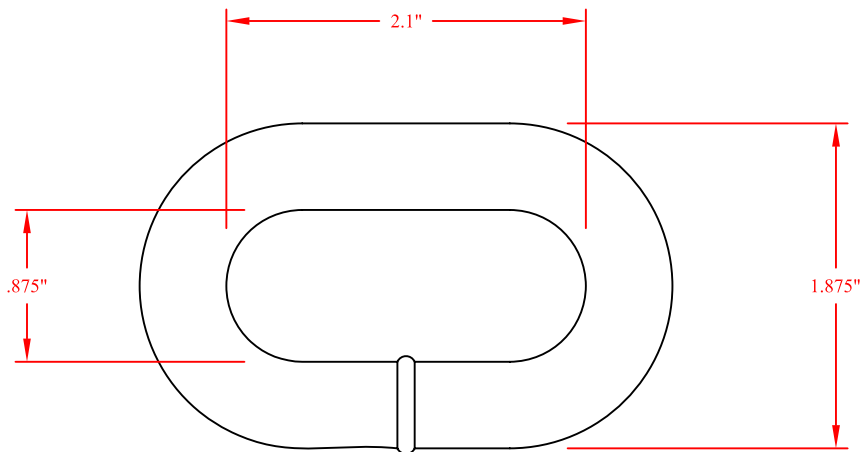
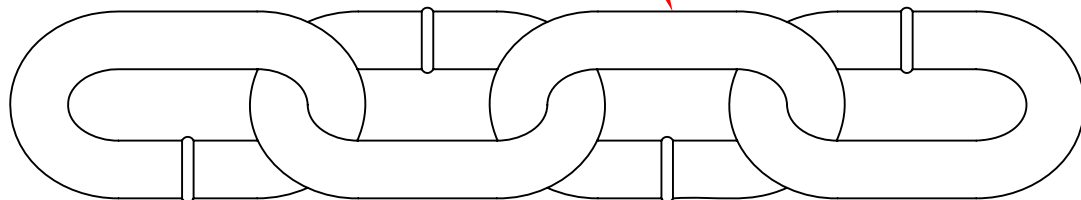




SPECIFICATIONS

PART # :	WEIGHT IN AIR (lbs/ft):	WEIGHT IN FRESHWATER (lbs/ft):
56	2.36	2.05

See detail "A"



CHAIN LINK DETAIL "A"



**1/2" MIDLINK CHAIN
NEFSC WINTER FLAT NET**

DATE DRAWN:	DWG. # :	PAGE # :	REV.	SCALE:
May 2004	FLAT - 38 - 56	38 of 42		NTS

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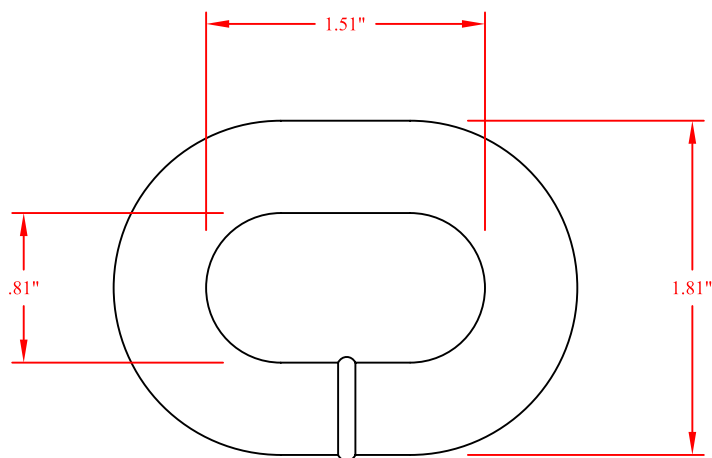
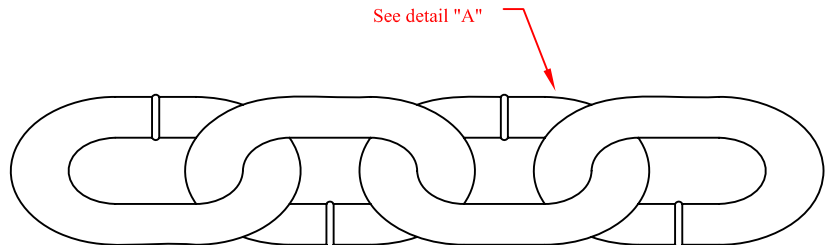




SPECIFICATIONS

PART # :	WEIGHT IN AIR (lbs/ft):	WEIGHT IN FRESHWATER (lbs/ft):
57	2.43	2.16

See detail "A"



CHAIN LINK DETAIL "A"



**1/2" GROUND CHAIN
NEFSC WINTER FLAT NET**

DATE DRAWN:	DWG. # :	PAGE # :	REV.	SCALE:
May 2004	FLAT - 39 - 57	39 of 42		NTS

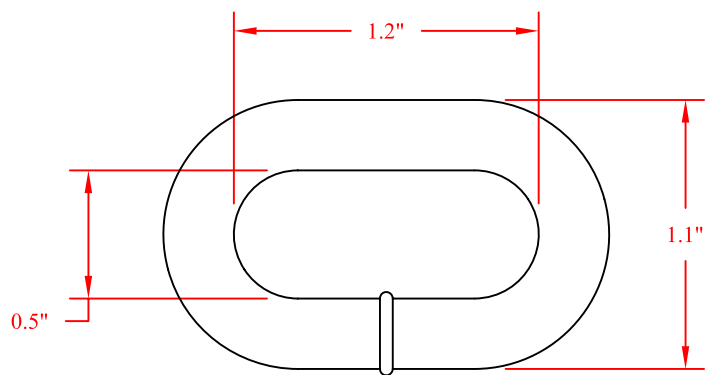
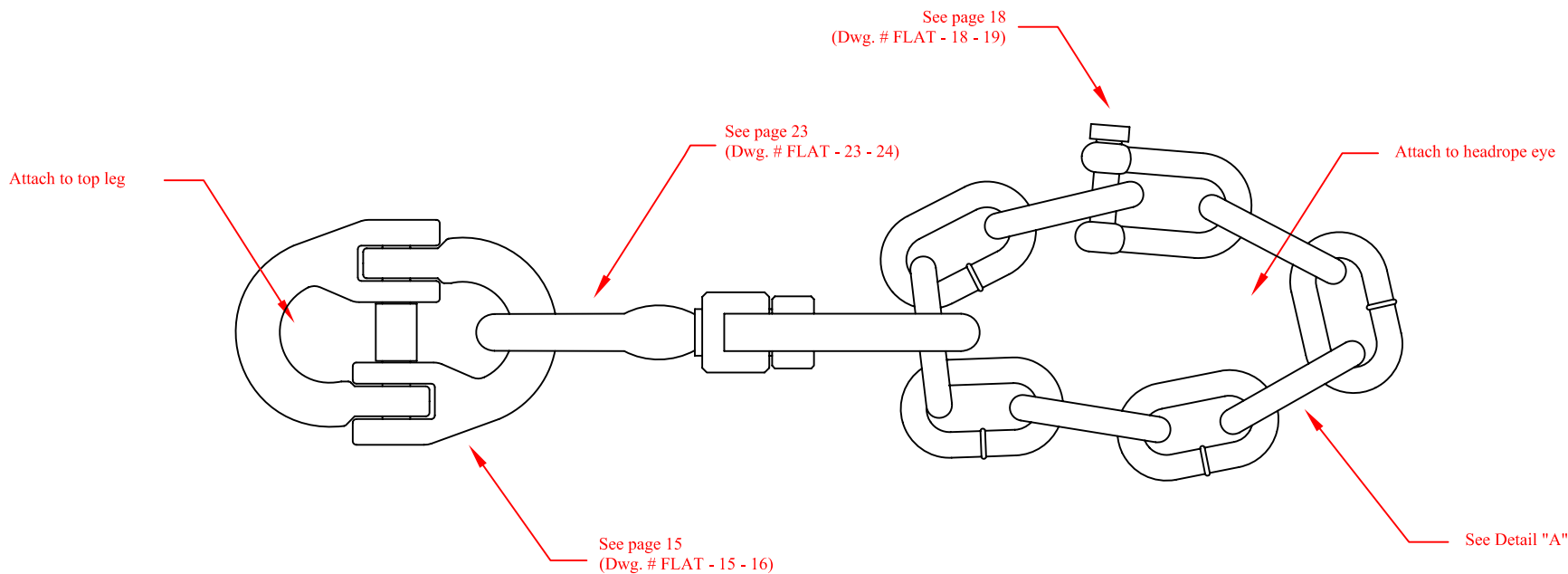
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SPECIFICATIONS

PART # :	WEIGHT IN AIR (lbs):	WEIGHT IN FRESHWATER (lbs):
39	2.2	1.94




CHAIN LINK DETAIL "A"



WEAK LINK NEFSC WINTER FLAT NET

DATE DRAWN:	DWG. # :	PAGE # :	REV.	SCALE:
May 2004	FLAT - 40 - 39	40 of 42		NTS

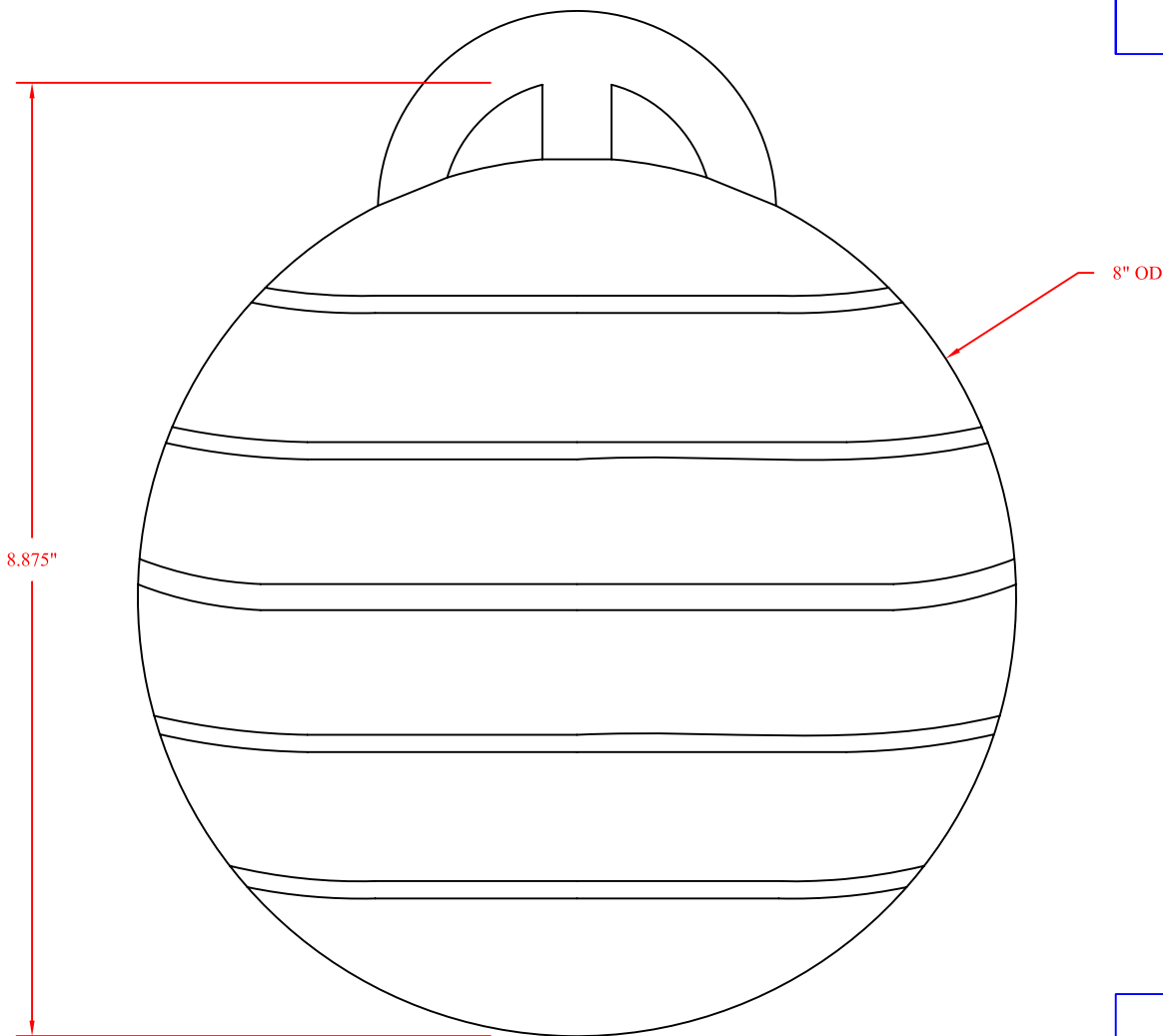
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SPECIFICATIONS

PART # :	WEIGHT IN AIR (lbs):	BUOYANCY IN FRESH WATER (lbs):
40	3.80	4.76

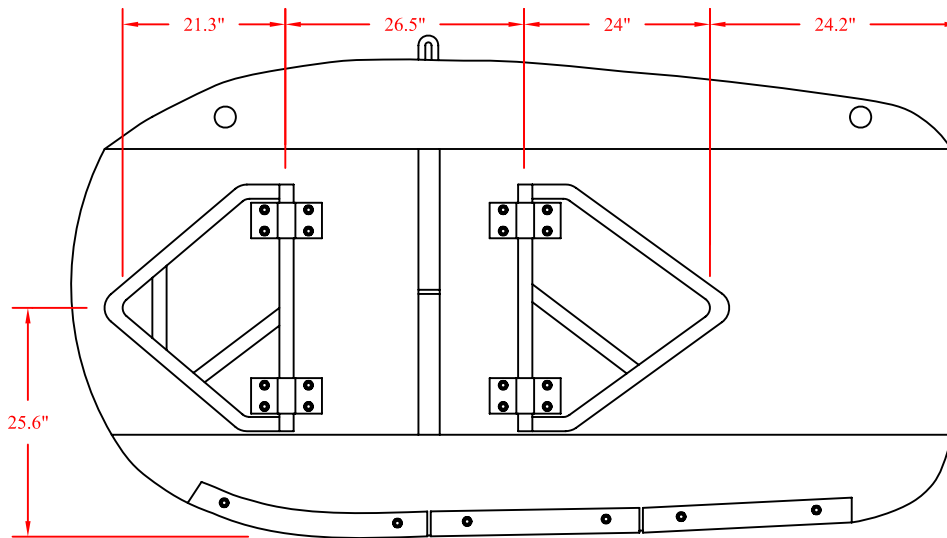


8" ALUMINUM LUG FLOAT NEFSC WINTER FLAT NET

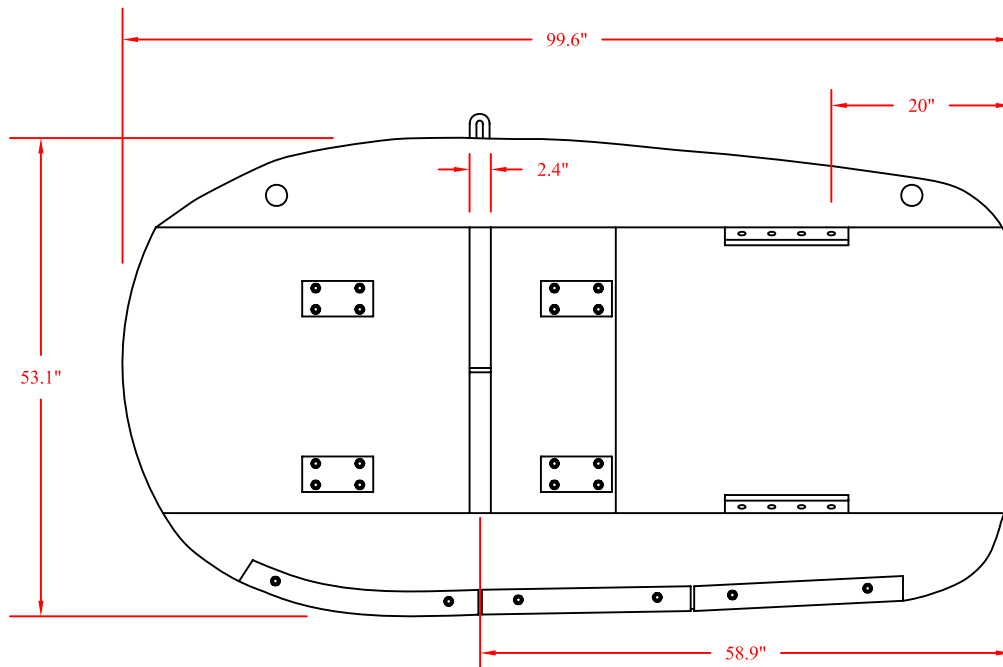
DATE DRAWN:	DWG. # :	PAGE # :	REV.	SCALE:
May 2004	FLAT - 41 - 40	41 of 42		NTS

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FRONTSIDE VIEW OF DOOR



BACKSIDE VIEW OF DOOR

SPECIFICATIONS

PART # :	WEIGHT IN AIR (lbs):	WEIGHT IN FRESHWATER (lbs):
41	990	N/A



TRAWL DOOR DETAILS
NEFSC WINTER FLAT NET

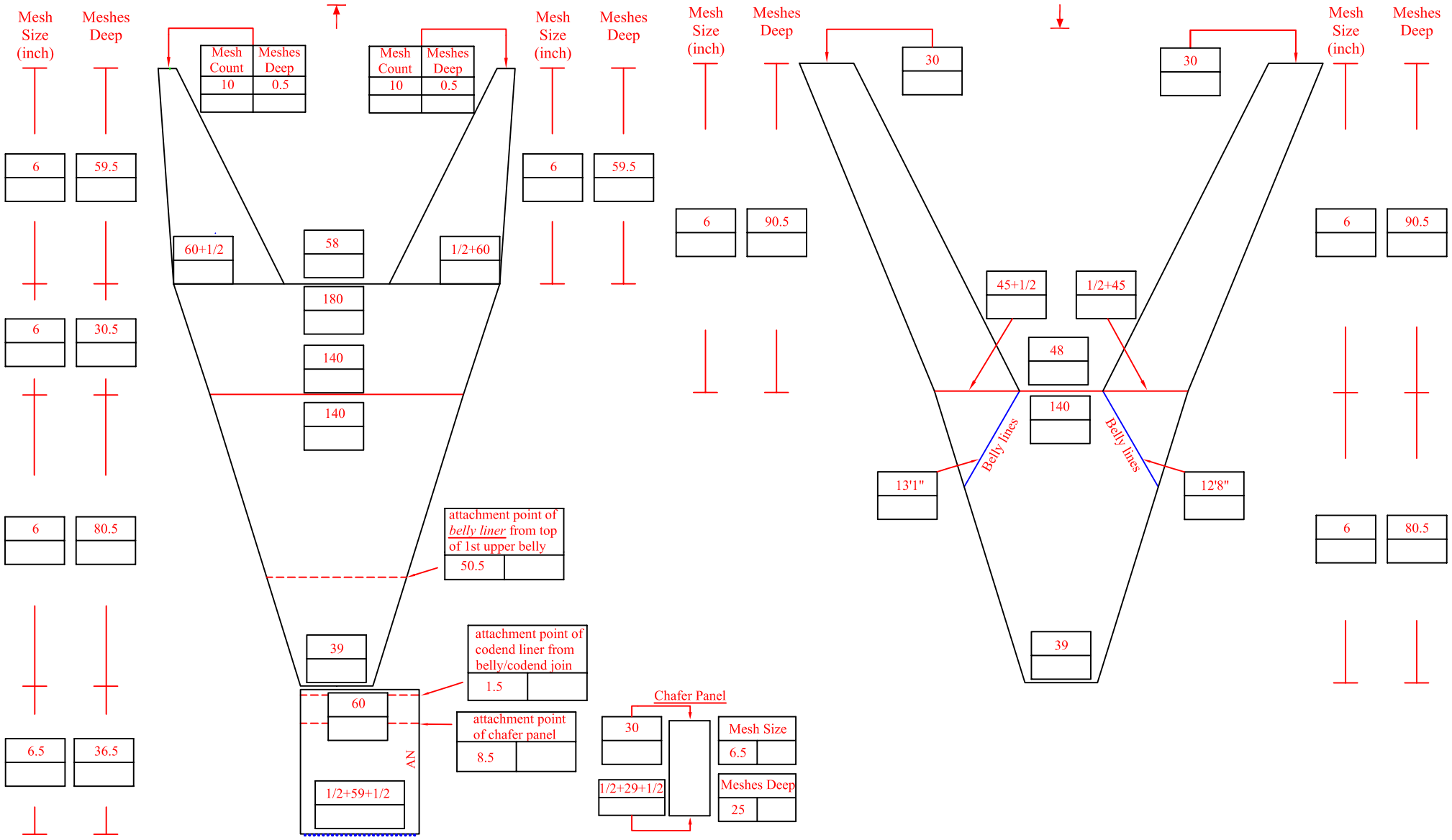
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May 2004	FLAT - 42 - 41	42 of 42		NTS

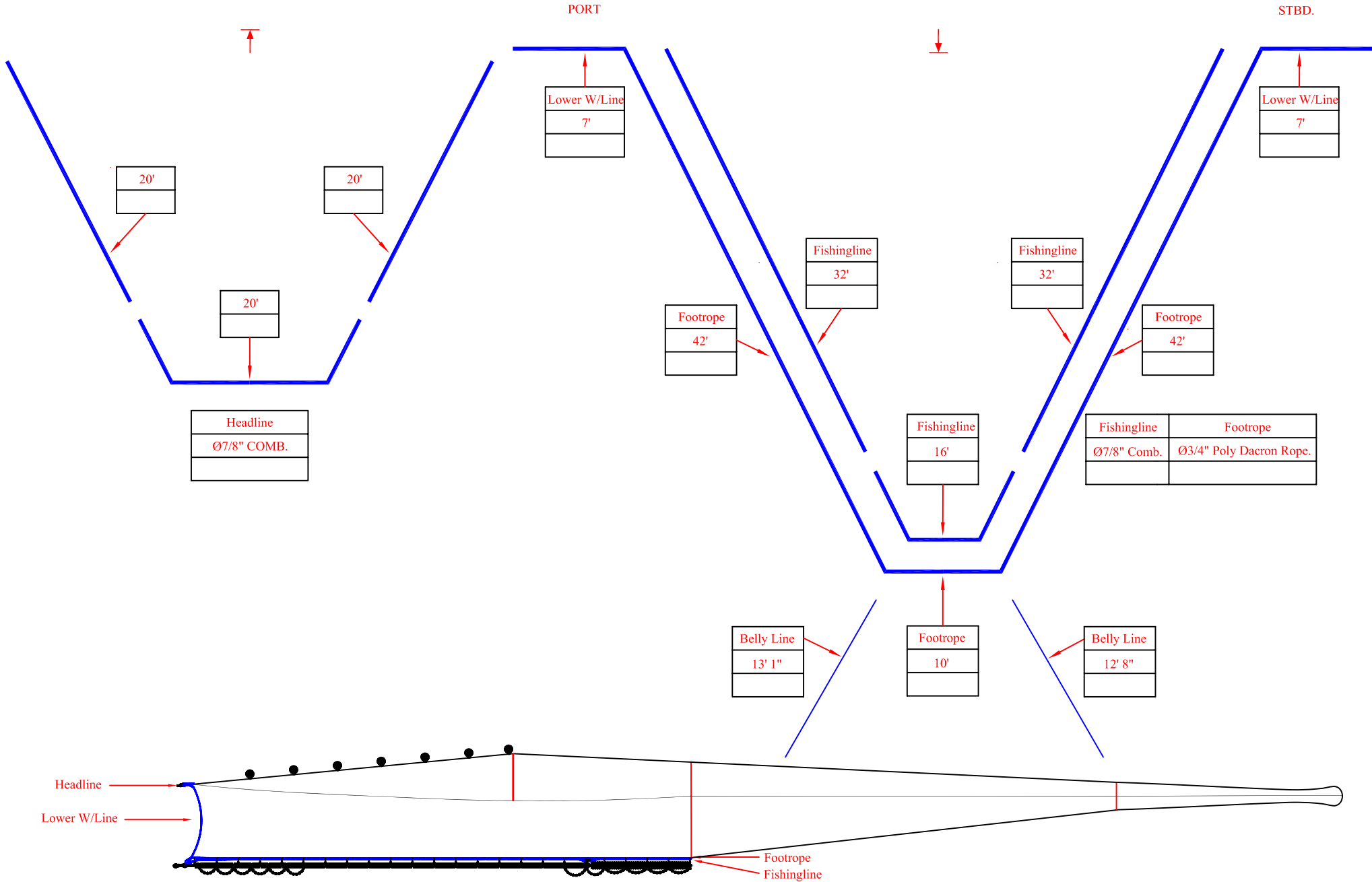
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SECTION 5 – CHECKLISTS

- ⇒ **PAGE 1 OF 4 - NET PLAN CHECKLIST**
- ⇒ **PAGE 2 OF 4 - FRAMEROPE CHECKLIST**
- ⇒ **PAGE 3 OF 4 - SWEEP GEAR CHECKLIST**
- ⇒ **PAGE 4A OF 4 - RIGGING CHECKLIST – ALBATROSS IV**
- ⇒ **PAGE 4B OF 4 - RIGGING CHECKLIST – DELAWARE II**



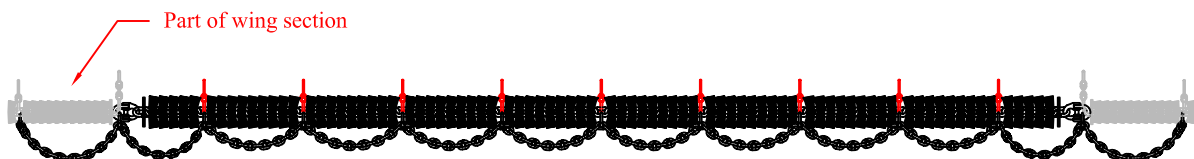




SECTION A -
PORT WING

4.5" Rubber cookies	Dropper chains	5/8" Hammerlock	1/2" Ground chain
Throughout	18	2	10'7" (84 links)
1/2" Shackles	4.5" Steel washer	3-link Dropper chain	1/2" Mid-link chain
7	2	1	31'9"

SECTION B -
BOSOM



6.5" Rubber cookies	Dropper chains	1/2" Shackles	6" Steel washer	5/8" Mid-link chain	1/2" Ground chain
Throughout	9	13	2	16'	23'3" (185 links)



SECTION A -
STBD. WING

4.5" Rubber cookies	Dropper chains	5/8" Hammerlock	1/2" Ground chain
Throughout	18	2	10'7" (84 links)
1/2" Shackles	4.5" Steel washer	3-link Dropper chain	1/2" Mid-link chain
7	2	1	31'9"

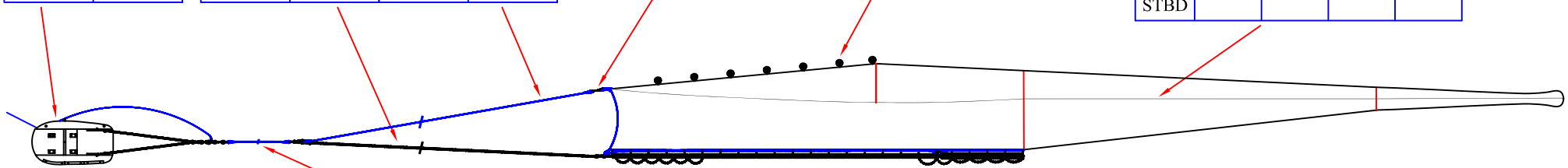
OTTERBOARD	
2.84 sq.m 450 kg	
PORT	STBD

BRIDLES			
(Ø 1/2" x 30') chain		(Ø 5/8" x 30') wire	
LOWER		UPPER	
PORT	STBD	PORT	STBD

WEAK LINK	
9 Links 1/4" Chain	
PORT	STBD

8" ALUM. FLOATS		
(2 x 4) + 5 = 13		
PORT	STBD	BOSUM

GORE LINES				
Ø 3/4" Poly Dacron: 83' 8" + 18' 9"				
	TOP WING	SQUARE	BELLY	CODEND
PORT				
STBD				



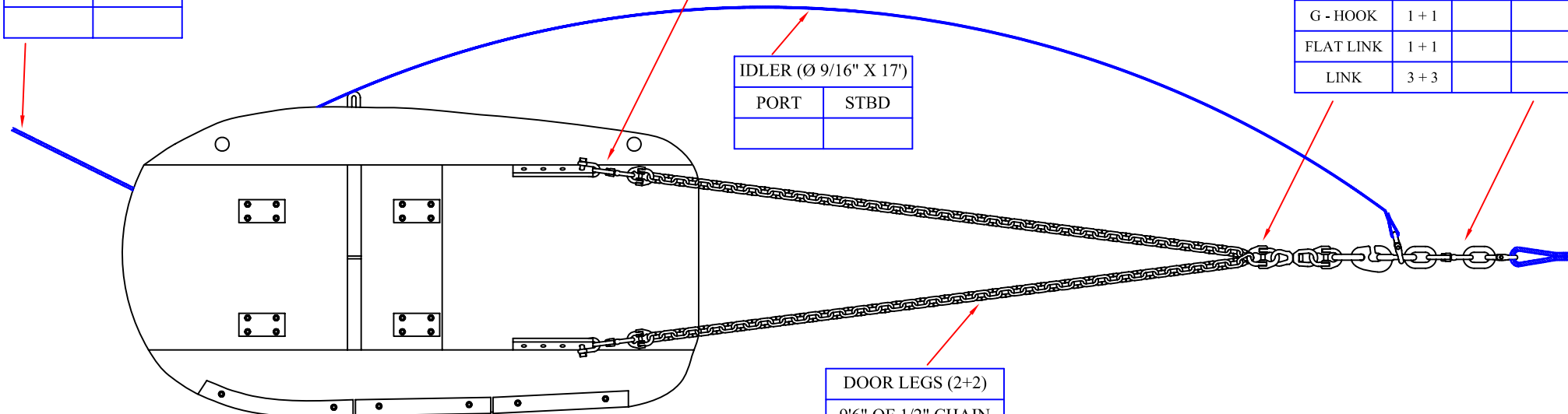
GROUND CABLES (Ø 7/8" x 180') WIRE	
PORT	STBD

DOOR TO LEG RIGGING			
COMPONENT	QTY.	PORT	STBD
5/8" SHACKLE	1 + 1		
5/8" SWIVEL	1 + 1		
1/2" H/LOCK	1 + 1		

7/8" WARP	
PORT	STBD

TRAWL TO DOOR RIGGING			
COMPONENT	QTY.	PORT	STBD
5/8" H/LOCK	4 + 4		
3/4" SWIVEL	2 + 2		
G - HOOK	1 + 1		
FLAT LINK	1 + 1		
LINK	3 + 3		

IDLER (Ø 9/16" X 17')	
PORT	STBD



DOOR LEGS (2+2)	
9'6" OF 1/2" CHAIN	
PORT	STBD

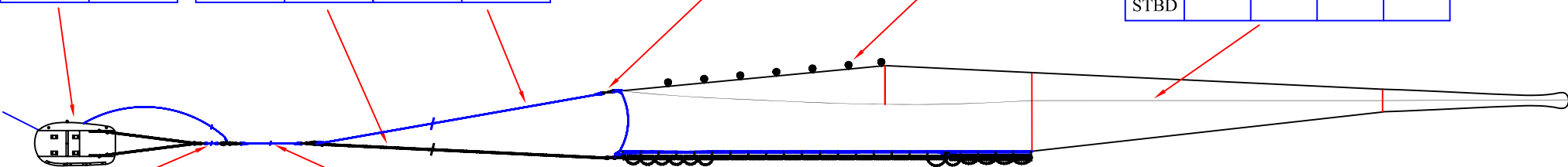
OTTERBOARD	
2.84 sq.m 450 kg	
PORT	STBD

BRIDLES			
(Ø 1/2" x 30') chain		(Ø 5/8" x 30') wire	
LOWER		UPPER	
PORT	STBD	PORT	STBD

WEAK LINK	
9 Links 1/4" Chain	
PORT	STBD

8" ALUM. FLOATS		
(2 x 4) + 5 = 13		
PORT	STBD	BOSUM

GORE LINES				
Ø 3/4" Poly Dacron: 83' 8" + 18' 9"				
	TOP WING	SQUARE	BELLY	CODEND
PORT				
STBD				



EXT. (5/8" x 11')	
PORT	STBD

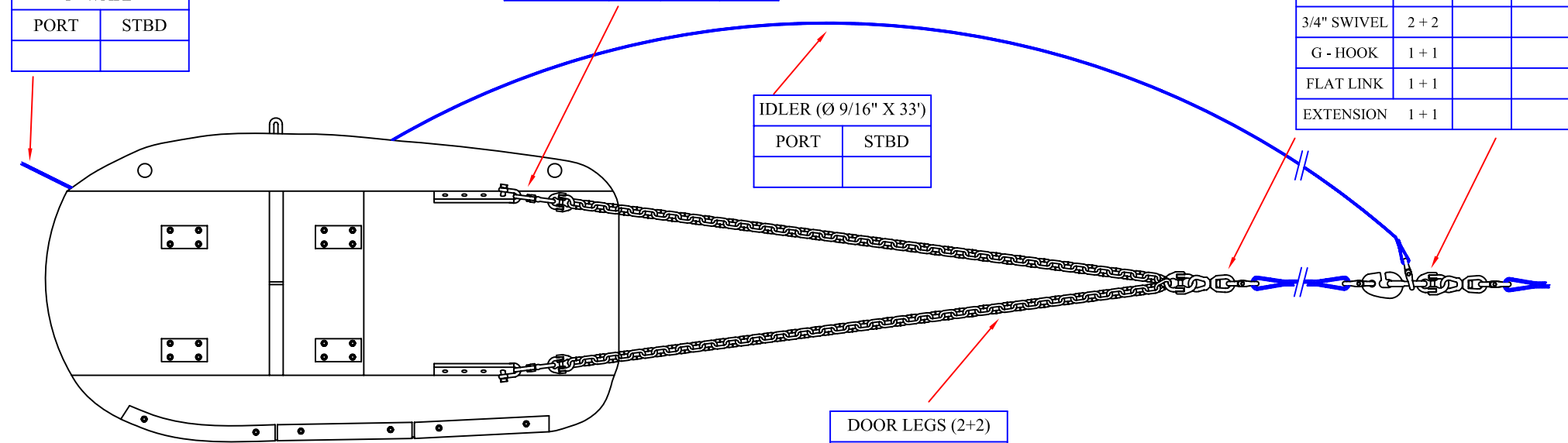
GROUND CABLES (Ø 7/8" x 180') WIRE	
PORT	STBD

DOOR TO LEG RIGGING			
COMPONENT	QTY.	PORT	STBD
5/8" SHACKLE	1 + 1		
5/8" SWIVEL	1 + 1		
1/2" H/LOCK	1 + 1		

1" WARP	
PORT	STBD

TRAWL TO DOOR RIGGING			
COMPONENT	QTY.	PORT	STBD
5/8" H/LOCK	6 + 6		
3/4" SWIVEL	2 + 2		
G - HOOK	1 + 1		
FLAT LINK	1 + 1		
EXTENSION	1 + 1		

IDLER (Ø 9/16" X 33')	
PORT	STBD



DOOR LEGS (2+2)	
9'6" OF 1/2" CHAIN	
PORT	STBD

SECTION 6 – PARTS LIST

⇒ **PAGE 1**

⇒ **PAGE 2**

⇒ **PAGE 3**

⇒ **PAGE 4**

PARTS LIST
WINTER FLAT NET

ITEM	PART	DESCRIPTION	QUANTITY	TOLERANCE	DRAWING	PAGE #	PART #
1	Top Wing	R5263tex Polyethylene netting 6" Mesh size (KC) Color Green 10 X 60.5 X 59.5 Meshes deep	2	<u>Rtex</u> 5263 +/- 10% <u>Mesh size (in.)</u> 6 +/- 3%	FLAT - 1 FLAT - 2 FLAT - 3	1,2,3	1
2	Square	R5263tex Polyethylene netting 6" Mesh size (KC) Color Green 180 X 140 X 30.5 Meshes deep	1	<u>Rtex</u> 5263 +/- 10% <u>Mesh size (in.)</u> 6 +/- 3%	FLAT - 1	1	2
3	1st Belly Top	R5263tex Polyethylene netting 6" Mesh size (KC) Color Green 140 X 39 X 80.5 Meshes deep	1	<u>Rtex</u> 5263 +/- 10% <u>Mesh size (in.)</u> 6 +/- 3%	FLAT - 1	1	3
4	Codend	R11764tex Polyethylene netting 6.5" Mesh size (KC) Color Green 60 X (0.5+59+0.5) X 36.5 Meshes deep	1	<u>Rtex</u> 11764 +/- 10% <u>Mesh size (in.)</u> 6.5 +/- 3%	FLAT - 1	1	4
5	Lower Wing	R5263tex Polyethylene netting 6" Mesh size (KC) Color Green 30 X 45.5 X 90.5 Meshes deep	2	<u>Rtex</u> 5263 +/- 10% <u>Mesh size (in.)</u> 6 +/- 3%	FLAT - 4 FLAT - 5	4,5	5
6	1st Belly Lower	R5263tex Polyethylene netting 6" Mesh size (KC) Color Green 140 X 39 X 80.5 Meshes deep	1	<u>Rtex</u> 5263 +/- 10% <u>Mesh size (in.)</u> 6 +/- 3%	FLAT - 1	1	6
7	Headline	Diameter 7/8" x 60' (3 x 20') Galvanized Comb. Rope (6 x 7 construction) Weight (air) = 0.568 lb/ft MBS = 12.4T (27337 lb)	1	<u>Weight (lb/ft)</u> 0.568 +/- 10% <u>Dimensions (ft.)</u> Length = 60 +/- 0.5%	FLAT - 1	1	7
8	Footrope	Diameter 3/4" x 100' Twisted Poly Dacron Rope Weight (air) = 11.4 lb (0.114 lb/ft)	1	<u>Weight (lb/ft)</u> 0.114 +/- 10% <u>Dimensions (ft.)</u> Length = 100 +/- 0.2%	FLAT - 1	1	8
9	Fishingline	Diameter 7/8" x 80' (2 x 32') + (1 x 16') Galvanized Comb. Rope (6 x 7 construction) Weight (air) = 0.568 lb/ft MBS = 12.4T (27337 lb)	1	<u>Weight (lb/ft)</u> 0.568 +/- 10% <u>Dimensions (ft.)</u> Length = 80 +/- 0.3%	FLAT - 1	1	9
10	Lower Wingline	Diameter 3/4" x 7' Twisted Poly Dacron Rope Weight (air) = 0.798 lb (0.114 lb/ft)	2	<u>Weight (lb/ft)</u> 0.114 +/- 10% <u>Dimensions (ft.)</u> Length = 7 +/- 3.5%	FLAT - 1 FLAT - 5	1,5	10
11	Gore Line	Diameter 3/4" x 83' 8" Twisted Poly Dacron Rope Weight (air) = 9.538 lb (0.114 lb/ft)	2	<u>Weight (lb/ft)</u> 0.114 +/- 10% <u>Dimensions (ft.)</u> Length = 83' 8" +/- 1%	FLAT - 1	1	11
12	Gore Line	Diameter 3/4" x 18' 9" Twisted Poly Dacron Rope Weight (air) = 2.138 lb (0.114 lb/ft)	2	<u>Weight (lb/ft)</u> 0.114 +/- 10% <u>Dimensions (ft.)</u> Length = 18' 9" +/- 2%	FLAT - 1	1	12
13	Chafer	R5263tex Polyethylene netting 6.5" Mesh size (KC) Color Green 30 X 30 X 25 Meshes deep	1	<u>Rtex</u> 5263 +/- 10% <u>Mesh size (in.)</u> 6.5 +/- 3%	FLAT - 1 FLAT - 8	1,8	13
14	Codend Ring	2" Codend Ring, Material Ø 5/16" Weight (air) = 0.16 lb Galvanized Steel Construction	27	<u>Weight (lb)</u> 0.16 +/- 10%	FLAT - 35 - 14	35	14
15	Belly Line	Diameter 5/8" x 13'11" 3 Strand Twisted Poly Dacron Rope Weight (air) = 0.095 lb/ft MBS = 4.1T (9000 lb)	2	<u>Weight (lb/ft)</u> 0.095 +/- 10% <u>Dimensions</u> Length = 13'11" +/- 2%	FLAT - 1	1	15
16	Hammerlock	3/8" Hammerlock, WLL = 7100 LB Effective length 2.75" Weight (air) = 0.77 lb Steel construction	2	<u>Dimensions (in.)</u> Length = 2.75 +/- 3%	FLAT - 15 - 16 FLAT - 40 - 39	15,40	16

PARTS LIST
WINTER FLAT NET

ITEM	PART	DESCRIPTION	QUANTITY	TOLERANCE	DRAWING	PAGE #	PART #
17	Hammerlock	1/2" Hammerlock, WLL = 12000 LB Effective length 3.3" Weight (air) = 1.35 lb Steel construction	4	<u>Dimensions (in.)</u> Length = 3.3 +/- 3%	FLAT - 16 - 17	16	17
18	Hammerlock	5/8" Hammerlock, WLL = 18100 LB Effective length 4" Weight (air) = 2.3 lb Steel construction	12	<u>Dimensions (in.)</u> Length = 4.0 +/- 3%	FLAT - 17 -18	17	18
19	Shackle	5/16" Trawl shackle WLL = 0.65 ton Effective length 1.2" Steel construction	2	<u>Dimensions (in.)</u> Length = 1.2 +/- 3%	FLAT - 18 - 19 FLAT - 40 - 39	18,40	19
20	Shackle	3/8" Trawl shackle WLL = 0.92 ton Effective length 1.6" Steel construction	2	<u>Dimensions (in.)</u> Length = 1.6 +/- 3%	FLAT - 19 - 20 FLAT - 36 - 38	19,36	20
21	Shackle	1/2" Trawl shackle WLL = 1.45 ton Effective length 2.0" Steel construction	76	<u>Dimensions (in.)</u> Length = 2.0 +/- 3%	FLAT - 20 - 21 FLAT - 26 - 52 FLAT - 27 - 53	20,26,27	21
22	Shackle	5/8" Trawl shackle WLL = 3.25 ton Effective length 2.1" Steel construction	2	<u>Dimensions (in.)</u> Length = 2.1 +/- 3%	FLAT - 21 - 22	21	22
23	Shackle	Door Shackle, WLL = 13.5 ton Effective length = 4.5" Weight (air) = 11.65 lb Steel Construction	2	<u>Dimensions (in.)</u> Length = 4.5 +/- 3%	FLAT - 22 - 23	22	23
24	Swivel	3/8" Swivel SWL = 1.1 ton BS = 11000 LB Effective length 4.5" Steel construction	2	<u>Dimensions (in.)</u> Length = 4.5 +/- 3%	FLAT - 23 - 24 FLAT - 40 - 39	23,40	24
25	Swivel	5/8" Swivel SWL = 2.6 ton BS = 26000 LB Effective length 6" Steel construction	4	<u>Dimensions (in.)</u> Length = 6 +/- 3%	FLAT - 24 - 26	24	26
26	Swivel	3/4" Swivel SWL = 3.8 T (7600 lb) Effective length 6.6" Steel construction	2	<u>Dimensions (in.)</u> Length = 6.6 +/- 3%	FLAT - 25 - 27	25	27
27	G-hook	Leoperis 6 ton or equivalent Weight (air) = 5.061 lb L = 7", W = 4.1", thickness = 1.25" Gap = 0.8125", Hole dia. = 1"	2	<u>Weight (lb)</u> 5.061 +/- 3% <u>Dimensions (in.)</u> Length = 7.0 +/- 3% Width = 4.1 +/- 3%	FLAT - 30 - 33	30	33
28	Flat Link	4.8" x 2" Flat Link, Ø 1" Weight (air) = 3.5 lb Steel Construction	4	<u>Weight (lb)</u> 3.5 +/- 3% <u>Dimensions (in.)</u> Length = 4.8 +/- 3% Width = 2.0 +/- 3%	FLAT - 31 - 34	31	34
29	Connecting Link	3.5" x 1.7" Connecting Link, Ø 1" Weight (air) = 3.36 lb Steel Construction	1	<u>Weight (lb)</u> 3.003 +/- 3% <u>Dimensions (in.)</u> Inside length = 3.5 +/- 3% Inside width = 1.7 +/- 3%	FLAT - 32 - 35	32	35
30	Idler Connection Chain	Weight (air) = 1.4 lb Steel Construction	2	<u>Weight (lb)</u> 1.4 +/- 10%	FLAT - 36 - 38	36	38
31	Weak link	Weight (air) = 2.2 lb Steel Construction	2	<u>Weight (lb)</u> 2.2 +/- 10%	FLAT - 40 - 39	40	39
32	Float with Beckets	Diameter 8" float Working depth = 3937 ft Buoyancy (freshwater) = 4.76 lb Weight (air) = 3.8 lb Aluminum construction	13	<u>Buoyancy (lb)</u> 4.76 +/- 3% <u>Depth (ft)</u> 3937	FLAT - 41 - 40	41	40

PARTS LIST
WINTER FLAT NET

ITEM	PART	DESCRIPTION	QUANTITY	TOLERANCE	DRAWING	PAGE #	PART #
33	Trawl Door	Portuguese polyvalent Otter boards, 2.84 sq.m, Weight (air) = 990 lb	2	<u>Weight (lb)</u> 990 +/- 5%	FLAT - 42 - 41	42	41
34	Warp	Albatross IV Diameter 7/8" wire Bridon (no substitutions) Galvanized wire (6 x 26 Dyform FC RRL IPS Dark petroleum heavy lubricated) Wire weight (air) = 1.53 lb/ft MBS = 43.8 T (87600 lb)	2	<u>Weight (lb/ft)</u> 1.53 +/- 10%	FLAT - 12A	12A	43A
		Delaware II Diameter 1" wire Galvanized wire (6 x 25 Flattened strand FC RRL IPS Bright finish) Wire weight (air) = 1.8 lb/ft MBS = 46 T (92000 lb)	2	<u>Weight (lb/ft)</u> 1.8 +/- 10%	FLAT - 12B	12B	43B
35	Chain Backstraps	Diameter 1/2" Trawlex, Length 9'6", 52 links Weight (air) = 22.42 lb (2.36 lb/ft) Breaking load = 29.2 ton	4	<u>Weight (lb/ft)</u> 2.36 +/- 10% <u>Dimensions (in.)</u> Length = 114 +/- 0.5%	FLAT - 13A FLAT - 13B FLAT - 14A FLAT - 14B	13A,13B, 14A,14B	44
36	Idler / pennant	Albatross IV Diameter 9/16" x 17" wire Trawlmaster or equivalent Galvanized wire (6 x 37 FC IPS RRL construction) Wire weight (air) = 0.53 lb/ft MBS = 12.2 T (24400 lb)	2	<u>Weight (lb/ft)</u> 0.53 +/- 10% <u>Dimensions (ft.)</u> Length = 17 +/- 0.5%	FLAT - 13A FLAT - 14A	13A,14A	45A
		Delaware II Diameter 9/16" x 33" wire Trawlmaster or equivalent Galvanized wire (6 x 37 FC IPS RRL construction) Wire weight (air) = 0.53 lb/ft MBS = 12.2 T (24400 lb)	2	<u>Weight (lb/ft)</u> 0.53 +/- 10% <u>Dimensions (ft.)</u> Length = 33 +/- 0.5%	FLAT - 13B FLAT - 14B	13B,14B	45B
37	Upper leg	Diameter 5/8" x 30' wire Trawlmaster or equivalent Galvanized wire (6 x19 FC RRL construction) Wire weight (air) = 0.66 lb/ft MBS = 15 T (30000 lb)	2	<u>Weight (lb/ft)</u> 0.66 +/- 10% <u>Dimensions (ft.)</u> Length = 30 +/- 0.5%	FLAT - 12A FLAT - 12B	12A,12B	46
38	Extension (Delaware Only)	Diameter 5/8" x 11' wire Trawlmaster or equivalent Galvanized wire (6 x19 FC RRL construction) Wire weight (air) = 0.66 lb/ft MBS = 15 T (30000 lb)	2	<u>Weight (lb/ft)</u> 0.66 +/- 10% <u>Dimensions (ft.)</u> Length = 11 +/- 0.5%	FLAT - 12B FLAT - 13B	12B,13B	47
39	Ground Cable	Diameter 7/8" x 180' wire Trawlmaster or equivalent Galvanized wire (6 x19 FC RRL construction) Wire weight (air) = 1.29 lb/ft MBS = 29 T (58000 lb)	2	<u>Weight (lb/ft)</u> 1.29 +/- 10% <u>Dimensions (ft.)</u> Length = 180 +/- 0.3%	FLAT - 12A FLAT - 12B	12A,12B	48
40	Lower Leg	Diameter 1/2" x 30' Trawl Chain Weissenfels or equivalent Weight (air) = 73.01 lb (2.43 lb/ft) Inside L = 2.1" , Inside W = 0.875" WLL = 11300 lb	2	<u>Weight (lb/ft)</u> 2.43 +/- 10% <u>Dimensions (in.)</u> Inside length = 2.1" +/- 0.5% Inside width = 0.875 +/- 0.5%	FLAT - 12A FLAT - 12B	12A,12B	49
41	Cookie (Section B)	Diameter 6.5", thickness 1.5", Centerhole diameter 2.375", Weight (air) = 1.29 lb Rubber construction ** for thickness listed	**82	<u>Weight (lb)</u> 1.29 +/- 10% <u>Dimensions (in.)</u> Dia. = 6.5 +/- 10% Thickness = 1.5 +/- 50% Centerhole = 2.375 +/- 20%	FLAT - 29 - 50	29	50
42	Cookie (Section A)	Diameter 4.5", thickness 1.2", Centerhole diameter 2.1", Weight (air) = 0.34 lb Rubber construction ** for thickness listed	**420	<u>Weight (lb)</u> 0.34 +/- 10% <u>Dimensions (in.)</u> Dia. = 4.5 +/- 10% Thickness = 1.2 +/- 50% Centerhole = 2.1 +/- 20%	FLAT - 28 - 51	28	51

PARTS LIST
WINTER FLAT NET

ITEM	PART	DESCRIPTION	QUANTITY	TOLERANCE	DRAWING	PAGE #	PART #
43	Dropper chain	Length 6.1" Weight (air) = 0.78 lb Steel construction	45	<u>Weight (lb)</u> 0.78 +/- 10% <u>Dimensions (in.)</u> Length = 6.1 +/- 0.5%	FLAT - 26 - 52	26	52
44	3 Link Dropper chain	Length 7 1/4" Weight (air) = 1.08 lb Steel construction	2	<u>Weight (lb)</u> 1.08 +/- 10% <u>Dimensions (in.)</u> Length = 7 1/4 +/- 0.5%	FLAT - 27 - 53	27	53
45	Steel Washer	Diameter 6", 3/8" thick Centerhole diameter 2.375" Weight (air) = 2.69 lb Steel construction	2	<u>Weight (lb)</u> 2.69 +/- 10% <u>Dimensions (in.)</u> Dia. = 6.0 +/- 3% Thickness = 0.375 +/- 3% Centerhole = 2.375 +/- 3%	FLAT - 33 - 54	33	54
46	Mid-link Chain	Diameter 5/8" x 16' (75 links) Trawl Chain Weissenfels or equivalent Weight (air) = 54.2 lb (3.39 lb/ft) Inside dimensions 2.55" x 1.1" WLL = 17200 lb	1	<u>Weight (lb/ft)</u> 3.39 +/- 5% <u>Dimensions (in.)</u> Inside length = 2.55 +/- 1% Inside width = 1.1" +/- 1%	FLAT - 37 - 55	37	55
47	Mid-link Chain	Diameter 1/2" x 16' (183 links) Trawl Chain Weissenfels or equivalent Weight (air) = 75.5 lb (2.36 lb/ft) Inside dimensions 2.1" x 0.875" WLL = 11300 lb	2	<u>Weight (lb/ft)</u> 2.36 +/- 5% <u>Dimensions (in.)</u> Inside length = 2.1 +/- 1% Inside width = 0.875" +/- 1%	FLAT - 38 - 56	38	56
48	Ground Chain (Section A)	Diameter 1/2" x 10' 7" (84 links) Chain Weissenfels Grade 30 or equivalent Weight (air) = 25.7 lb (2.43 lb/ft) Inside dimensions 1.51" x 0.81" WLL = 4500 lb	2	<u>Weight (lb/ft)</u> 2.43 +/- 5% <u>Dimensions (in.)</u> Inside length = 1.51 +/- 1% Inside width = 0.81" +/- 1%	FLAT - 39 - 57	39	57
49	Ground Chain (Section B)	Diameter 1/2" x 23' 3" (185 links) Chain Weissenfels Grade 30 or equivalent Weight (air) = 107.9 lb (2.43 lb/ft) Inside dimensions 1.51" x 0.81" WLL = 4500 lb	1	<u>Weight (lb/ft)</u> 2.43 +/- 5% <u>Dimensions (in.)</u> Inside length = 1.51 +/- 1% Inside width = 0.81" +/- 1%	FLAT - 39 - 57	39	57
50	Steel Washer	Diameter 5", 3/8" thick Centerhole diameter 2.375" Weight (air) = 1.61 lb Steel construction	4	<u>Weight (lb)</u> 1.61 +/- 10% <u>Dimensions (in.)</u> Dia. = 5.0 +/- 3% Thickness = 0.375 +/- 3% Centerhole = 2.375 +/- 3%	FLAT - 34 - 58	34	58
51	Belly Liner	#147 Knotless white nylon webbing 1/2" Mesh Size	1	<u>Rtex</u> 163 +/- 10% <u>Mesh size (in.)</u> 0.5 +/- 3%	FLAT - 7	7	59
52	Codend Liner	#147 Knotless white nylon webbing 1/2" Mesh Size	1	<u>Rtex</u> 163 +/- 10% <u>Mesh size (in.)</u> 0.5 +/- 3%	FLAT - 7	7	60