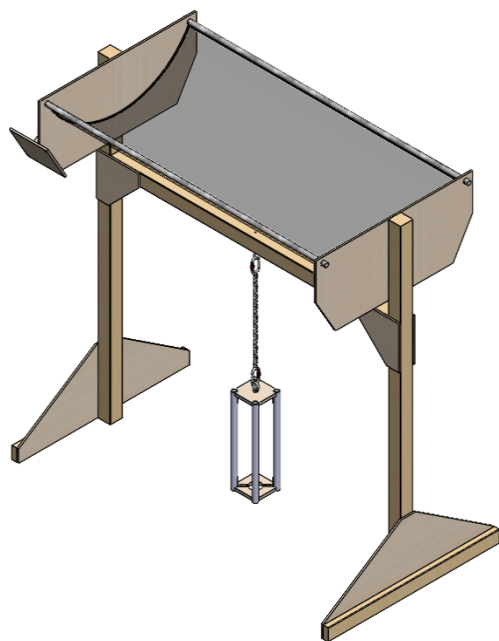


TE-25200 BARGE



Description: This is a Barge, designed so that teams can practice scoring Algae in the Net and hanging from a Cage. This design has a Cage and Net that can be made from parts at local hardware stores, but both real versions can be bought from AndyMark ([Cage Kit](#) and [Net](#)). You can also buy the parts to weld a Cage from [WestCoast Products](#). This Barge is designed for a paper or sticker April Tag to be added.

In this compressed folder, you will find all of the drawings, CAD Files and STEP Files for this design.

Drawings: For your convenience, all drawing files have been exported to PDF Format. Each major field assembly will have both assembly drawings and component drawings.

CAD Files: All SOLIDWORKS files required to build or modify the assembly.

STEP files: STEP files of the assembly are included for the convenience of non-SOLIDWORKS users.

Shopping List (if building multiple team element designs, plywood and lumber can be consolidated):

Plywood and Lumber and Pipes (Example Cut List is at end of Readme):

- 2" x 4" x 10' Lumber – 1 Piece
- 4" x 4" x 8' Lumber - 3 Pieces
- 4' x 8' x 1/2" Thick Plywood – 2 Sheets (only a 10.5" square is needed on the second sheet)
- 2' x 2' x 3/4" Thick Plywood – 1 Sheets (not necessary if purchasing a Cage from [AndyMark](#))
- 1" Schedule 40 Iron Pipe, 10 ft. long – 1 Piece
- 1" EMT Conduit, Galvanized Steel, 8 ft. long – 2 Pieces

Hardware/Other:

- Net – 1 Piece (see drawing package for detailed information, or purchase from [AndyMark](#))
- #8 Wood Screws x 1.5" long – Approximately 50 Pieces

- 2" Steel Angle Brackets – 8 Pieces (not necessary if purchasing a Cage from [AndyMark](#))
 - o 1.25" long bolts (diameter to match purchased brackets) – 16 Pieces
 - o 1.75" long bolts (diameter to match purchased brackets) – 16 Pieces
 - o Nylock Nuts (diameter to match purchased brackets) – 32 Pieces
 - o Flat Washer (diameter to match purchased brackets) – 16 Pieces
- Shoulder Eyebolt – ½-13, 1.5" shank (or similar) – 1 Piece (not necessary if purchasing a Cage Kit from [AndyMark](#))
- Eye Screw – 5/16" x 6" long (or similar) – 1 Piece
- ½-13 Nylock Nut – 1 Piece
- ½" Flat Washer – 2 Pieces
- 50lb Cable Ties – 8 Pieces
- Carabiner (McMaster 3216T41 or similar) – 2 Pieces (not necessary if purchasing a Cage Kit from [AndyMark](#))
- Chain (grade 43, ¼" trade size or similar) 22 links long – 1 Piece (not necessary if purchasing a Cage Kit from [AndyMark](#))
- 1-1/4" Spade Bit, Forstner Bit or Hole Saw
- 1-3/8" Spade Bit, Forstner Bit or Hole Saw

Notes about materials:

- Plywood and Hardboard Sheets – quality of plywood is up to the user. Plywood of lower qualities may contain voids and may warp more than high quality plywood. All dimensions listed are "nominal". For example, ½" plywood is typically 15/32".
- Lumber - quality of lumber is up to the user. Please keep in mind that lumber of lower qualities may warp more than high quality lumber. All dimensions below are the "mill cut" dimensions. For example, 2" x 4" lumber is really 1½" x 3½".

Example Cut List (All units are Inches):

2x4 Lumber:

| Layout ID A | Processed 0/1 <input checked="" type="checkbox"/> | Repetition 1x | Stock length 120" | <table><tr><th>Part length / Label</th><th>Qty</th></tr><tr><td>48" / TE-25204</td><td>2</td></tr><tr><td>10 1/2" / TE-25216</td><td>1</td></tr></table> | Part length / Label | Qty | 48" / TE-25204 | 2 | 10 1/2" / TE-25216 | 1 | <table><tr><th colspan="2">Cuts in layout</th></tr><tr><td>The number of cuts</td><td>3</td></tr><tr><th colspan="2">Waste</th></tr><tr><td>Material remnant</td><td>13 1/8"</td></tr><tr><td>Cut</td><td>3/8"</td></tr></table> | Cuts in layout | | The number of cuts | 3 | Waste | | Material remnant | 13 1/8" | Cut | 3/8" |
|--|--|---------------------|----------------------|--|---------------------|-----------------|-----------------|---------------------|--------------------|---|--|----------------|--|--------------------|---|-------|--|------------------|---------|-----|------|
| Part length / Label | Qty | | | | | | | | | | | | | | | | | | | | |
| 48" / TE-25204 | 2 | | | | | | | | | | | | | | | | | | | | |
| 10 1/2" / TE-25216 | 1 | | | | | | | | | | | | | | | | | | | | |
| Cuts in layout | | | | | | | | | | | | | | | | | | | | | |
| The number of cuts | 3 | | | | | | | | | | | | | | | | | | | | |
| Waste | | | | | | | | | | | | | | | | | | | | | |
| Material remnant | 13 1/8" | | | | | | | | | | | | | | | | | | | | |
| Cut | 3/8" | | | | | | | | | | | | | | | | | | | | |
| <table><tr><td>48" TE-25204</td><td>48" TE-25204</td><td>10 1/2" TE-25216</td><td></td></tr></table> | | | | | | 48" TE-25204 | 48" TE-25204 | 10 1/2" TE-25216 | | | | | | | | | | | | | |
| 48" TE-25204 | 48" TE-25204 | 10 1/2" TE-25216 | | | | | | | | | | | | | | | | | | | |

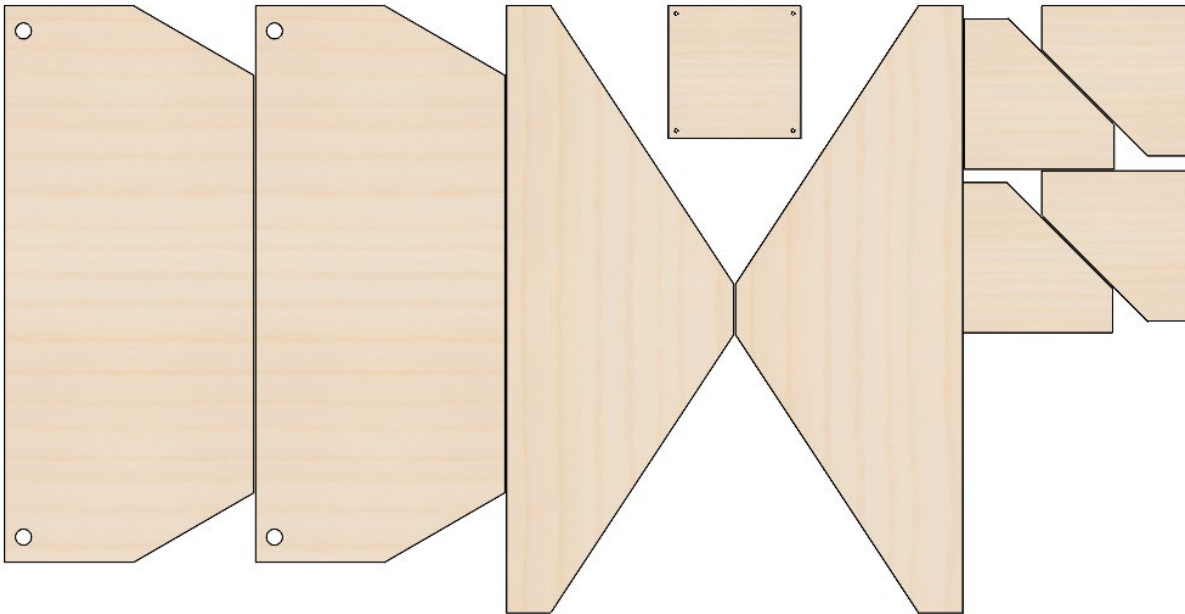
4x4 Lumber (Note that Layout A must be cut twice):

| Layout ID A | Processed 0/2 <input checked="" type="checkbox"/> | Repetition 2x | Stock length 96" | <table><tr><th>Part length / Label</th><th>Qty</th></tr><tr><td>89' / TE-25202</td><td>1</td></tr></table> | Part length / Label | Qty | 89' / TE-25202 | 1 | <table><tr><th>Cuts in layout</th><td></td></tr><tr><td>The number of cuts</td><td>1</td></tr><tr><th>Waste</th><td></td></tr><tr><td>Material remnant</td><td>6 7/8"</td></tr><tr><td>Cut</td><td>1/8"</td></tr></table> | Cuts in layout | | The number of cuts | 1 | Waste | | Material remnant | 6 7/8" | Cut | 1/8" |
|---------------------|--|------------------|---------------------|--|---------------------|-----|----------------|---|---|----------------|--|--------------------|---|-------|--|------------------|--------|-----|------|
| Part length / Label | Qty | | | | | | | | | | | | | | | | | | |
| 89' / TE-25202 | 1 | | | | | | | | | | | | | | | | | | |
| Cuts in layout | | | | | | | | | | | | | | | | | | | |
| The number of cuts | 1 | | | | | | | | | | | | | | | | | | |
| Waste | | | | | | | | | | | | | | | | | | | |
| Material remnant | 6 7/8" | | | | | | | | | | | | | | | | | | |
| Cut | 1/8" | | | | | | | | | | | | | | | | | | |
| 89" TE-25202 | | | | | | | | | | | | | | | | | | | |

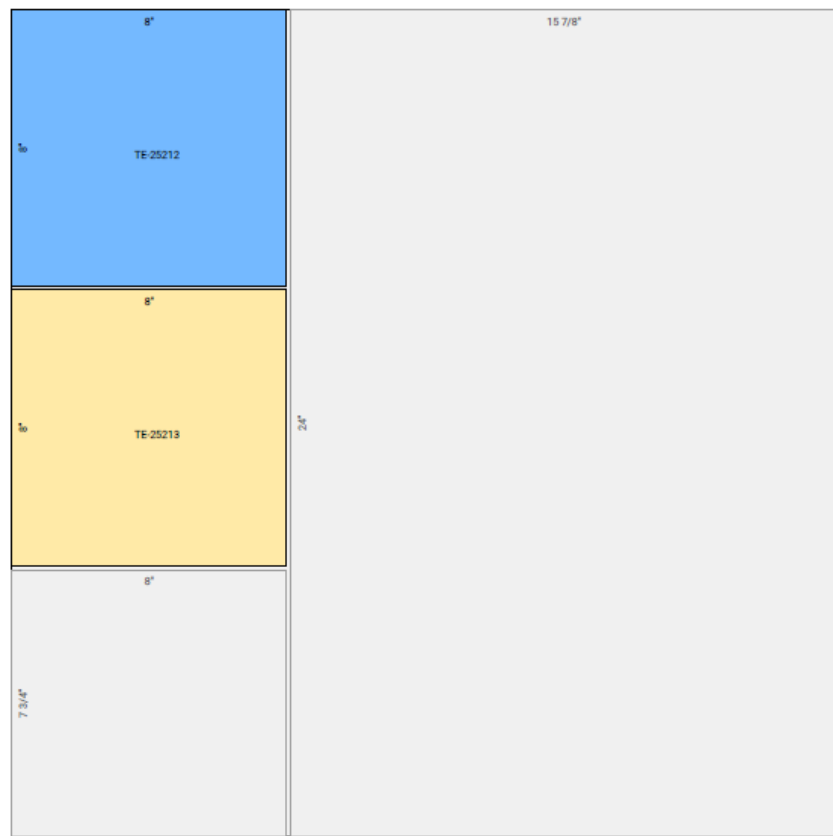
| Layout ID B | Processed 0/1 <input checked="" type="checkbox"/> | Repetition 1x | Stock length 96" | <table><tr><th>Part length / Label</th><th>Qty</th></tr><tr><td>78" / TE-25207</td><td>1</td></tr></table> | Part length / Label | Qty | 78" / TE-25207 | 1 | <table><tr><th colspan="2">Cuts in layout</th></tr><tr><td>The number of cuts</td><td>1</td></tr><tr><th colspan="2">Waste</th></tr><tr><td>Material remnant</td><td>17 7/8"</td></tr><tr><td>Cut</td><td>1/8"</td></tr></table> | Cuts in layout | | The number of cuts | 1 | Waste | | Material remnant | 17 7/8" | Cut | 1/8" |
|-----------------------------|--|------------------|---------------------|--|---------------------|-----|----------------|---|--|----------------|--|--------------------|---|-------|--|------------------|---------|-----|------|
| | Part length / Label | Qty | | | | | | | | | | | | | | | | | |
| | 78" / TE-25207 | 1 | | | | | | | | | | | | | | | | | |
| Cuts in layout | | | | | | | | | | | | | | | | | | | |
| The number of cuts | 1 | | | | | | | | | | | | | | | | | | |
| Waste | | | | | | | | | | | | | | | | | | | |
| Material remnant | 17 7/8" | | | | | | | | | | | | | | | | | | |
| Cut | 1/8" | | | | | | | | | | | | | | | | | | |
| <div>78" TE-25207</div> | | | | | | | | | | | | | | | | | | | |

1/2" Plywood (TE-25215 can fit into the scrap leftover from angled cuts, as shown below):

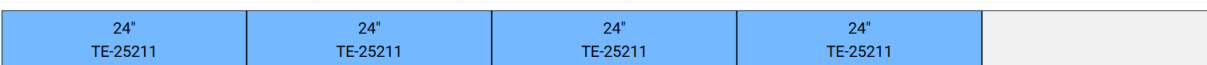
| Layout ID | Processed | Repetition | Stock dimensions | Panel | Qty |
|-----------|---|------------|------------------|------------------------------|----------|
| A | 0/1 <input checked="" type="checkbox"/> | 1x | 96" x 48" | 18" x 48" / TE-25205 | 2 |
| | | | | 19 3/4" x 44" / TE-25206 | 2 |
| | | | | 11 7/8" x 11 7/8" / TE-25203 | 4 |
| | | | | Cuts in layout | |
| | | | | The length of cuts | 323 1/8" |
| | | | | The number of cuts | 10 |



3/4" Plywood:

| Layout ID | Repetition | Stock dimensions | Panel | Qty |
|---|------------|------------------|--------------------|-----|
| A | 1x | 24" x 24" | 8" x 8" / TE-25212 | 1 |
|  | | | 8" x 8" / TE-25213 | 1 |
| | | | Cuts in layout | |
| | | | The length of cuts | 40" |
| | | | The number of cuts | 3 |

1" Schedule 40 Iron Pipe:

| Layout ID | Processed | Repetition | Stock length | Part length / Label | Qty | Cuts in layout |
|--|---|------------|--------------|---------------------|-----|----------------------|
| A | 0/1 <input checked="" type="checkbox"/> | 1x | 120" | 24" / TE-25211 | 4 | The number of cuts 4 |
|  | | | | | | Waste |
| | | | | | | Material remnant 23" |
| | | | | | | Cut 1" |

1" EMT Conduit, Galvanized Steel (Note that you must cut two of these):

| Layout ID A | Processed 0/2 <input checked="" type="checkbox"/> | Repetition 2x | Stock length 96" | <table><tr><th>Part length / Label</th><th>Qty</th></tr><tr><td>80" / TE-25208</td><td>1</td></tr></table> | Part length / Label | Qty | 80" / TE-25208 | 1 | <table><tr><th colspan="2">Cuts in layout</th></tr><tr><td>The number of cuts</td><td>1</td></tr><tr><th colspan="2">Waste</th></tr><tr><td>Material remnant</td><td>15 3/4"</td></tr><tr><td>Cut</td><td>1/4"</td></tr></table> | Cuts in layout | | The number of cuts | 1 | Waste | | Material remnant | 15 3/4" | Cut | 1/4" |
|-----------------------------|--|------------------|---------------------|--|---------------------|-----|----------------|---|--|----------------|--|--------------------|---|-------|--|------------------|---------|-----|------|
| Part length / Label | Qty | | | | | | | | | | | | | | | | | | |
| 80" / TE-25208 | 1 | | | | | | | | | | | | | | | | | | |
| Cuts in layout | | | | | | | | | | | | | | | | | | | |
| The number of cuts | 1 | | | | | | | | | | | | | | | | | | |
| Waste | | | | | | | | | | | | | | | | | | | |
| Material remnant | 15 3/4" | | | | | | | | | | | | | | | | | | |
| Cut | 1/4" | | | | | | | | | | | | | | | | | | |
| <div>80" TE-25208</div> | | | | | | | | | | | | | | | | | | | |