NOTE: The wooden components that make up the Batter are held to the carpet with Hook fastener. The HDPE that makes up the top of the Batter is held to the wooden components using Hook and Loop.

NOTE: Secure Brattice with Cable Ties - 4 Places
NOTE: To secure the Standard Holders and the Crenellations to the Top Rail, first make sure that the brackets don't interfere with any electronics, then tighten the hardware.

NOTE: The Embrasure Covers are secured to the floor via Hook fastener, and it secured to the End Panel via Hook and Loop.

NOTE: Place the Ball Corrall up against the Scoring Panel, then use Cable ties to secure it to the End Panel Uprights.

NOTE: Use Cable Ties to secure the large Polycarbonate Scoring Panel to the End Panel and Uprights, multiple places.

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Sub-Assembly GE-16002-02 - Guardrail

Typical both sides of the Field
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.

TOLERANCES ARE:

X.X +/- 0.1
X.XX +/- 0.01
X.XXX +/- 0.001

ANG +/- 1

DO NOT SCALE

6.44
18.44
30.44
42.44
48.88

1.75
2.50
12.00
35.00
36.75
36.00

1.75
2.50
12.00
35.00
36.75
36.00

0.44
0.44
0.44
0.44

HP Station
NOTES:
1. Part: HP_EP_DP
2. Material: Aluminum Diamond Plate, .1875" Thick
3. Qty: 1
4. Scale: 3:16
5. Remove all sharp edges and burrs
NOTE
Part: HP_EP_TUBE1
Material: 6063 Aluminum Square Tubing, 1.75"
Qty: 2
Scale: 1:1

NOTE
Part: HP_DP_Channel
Material: Aluminum Channel, .75", .125" wall
Qty: 1
Scale: 1:1

NOTE
Part: HP_EP_TUBE2
Material: 6063 Aluminum Square Tubing, 1.75"
Qty: 2
Scale: 1:1
NOTE
Part: HP_EP_TUBE3
Material: 6063 Aluminum Square Tubing, 1.75"
Qty: 1
Scale: 1:1

NOTE
Part: HP_EP_TUBE4
Material: Aluminum Angle, 1.75"
Qty: 2
Scale: 1:1

NOTE
Part: HP_EP_TUBE6
Material: Aluminum Angle, 1.75"
Qty: 4
Scale: 1:1
Title: Tower Assembly

Item | Part Number | QTY | Description | Notes
--- | ----------- | ---- |-------------|-------
1   | GE-16004-01 | 3   | Vision tape assembly | 4 ft each
2   | GE-16004-04 | 3   | High Goal Tape
3   | GE-16004-05 | 2   | High Goal Tape 2
4   | GE-16005    | 1   | Tower base
5   | GE-16006    | 3   | Lower frame, tower
6   | GE-16007    | 1   | Lower cap, tower
7   | GE-16008    | 3   | Upper frame, tower
8   | GE-16009    | 1   | Upper cap, tower
9   | GE-16067    | 3   | High plastic, tower
10  | GE-16068    | 2   | Low goal plastic assembly
11  | GE-16071    | 1   | Low plastic assembly
12  | GE-16073    | 3   | Middle plastic, tower
13  | GE-16107    | 1   | Backboard assembly
14  | GE-16112    | 1   | Low goal ramp assembly
15  | GE-16117    | 2   | Side rail, low goal ramp
16  | GE-16215    | 1   | Flag flipper assembly
17  | GE-16235    | 1   | Roof assembly, tower
18  | GE-16236    | 1   | Upper Scoring Ramp Assembly
19  | HW-00091    | 24  | Pan head, #10-24 x 2"
20  | HW-00092    | 24  | Nut, nylock, #10-24

Scale: 1:12

Revision: A

Location: B-3

Description: Added Tape to High Goal Frames

Approved by: NJS

Date: 4/4/2016

Notes:
- UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES.
- TOLERANCES ARE: ±0.1, ±0.01, ±0.001, ±1°.

Do not scale
Step 1:
1. REPEAT 3 TIMES
ADD HOOK AND LOOP TO THESE EDGES TO SECURE. 30 INCHES OF EACH.

Add 2" Gaffers Tape as shown. Repeat for all High Goals.

SECURE UPPER FRAMES WITH COTTER PIN OR CABLE TIE
Step 5

HANG ITEM 16 FROM UPPER FRAMES (ITEM 5) USING NYLON WEBBING AND PAN HEAD SCREWS

Step 6

DRILL UPPER CAP WITH A .25 DRILL AT THESE LOCATIONS. SECURE ITEMS 11 AND 14 USING CABLE TIES.

SECURE ITEM 13 TO ITEM 3 USING CABLE TIES. 4 PLACES
ITEM 1: STEEL TUBE
MATERIAL: 5"x3"x.12" A500 STEEL TUBING
QTY: 1

ITEM 2: STEEL TUBE
MATERIAL: 5"x3"x.12" A500 STEEL TUBING
QTY: 1

ITEM 3: STEEL TUBE
MATERIAL: 5"x3"x.12" A500 STEEL TUBING
QTY: 1
ITEM 4: STEEL TUBE
MATERIAL: 5"x3"x.12" A500 STEEL TUBING
QTY: 1

ITEM 5: SOCKET PIPE
MATERIAL: 1-1/2" SCHEDULE 40 A500 STEEL PIPE
QTY: 6
ITEM 6: SHEETMETAL OUTRIGGER
MATERIAL: 11 GAUGE A569 SHEET STEEL
QTY: 2

ITEM 7: STEEL TUBE
MATERIAL: 5"x3"x.12" A500 STEEL TUBING
QTY: 1
NOTES:
1. MATERIAL: 1-1/2" DIA. A513 STEEL, DOM TUBING, .083 WALL THICKNESS
2. PAINT: POWDER COAT BLACK
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.
TOLERANCES ARE:
X.X +/- 0.1
X.XX +/- 0.01
X.XXX +/- 0.001
ANG +/- 1

ITEM NO. | PART NUMBER | QTY | DESCRIPTION | NOTES
---|---|---|---|---
1 | GE-16007-01 | 1 | Lower Cap | |
2 | GE-16007-02 | 1 | Brace, Welded Field | |
3 | HW-00086 | 4 | pan head, 1/4-20 x 1" | |
4 | HW-00087 | 4 | nut, nylock 1/4-20 | |
NOTES:
1. MATERIAL: 8 GAUGE 5052 ALUMINUM SHEET

SCALE 1:8
NOTES:
1. MATERIAL: 5052 ALUMINUM SHEET
NO WELD PERMISSIBLE THIS SURFACE

SEE DETAIL D

DETAIL D
SCALE 1:2

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.

TOLERANCES ARE:
X.X +/- 0.1
X.XX +/- 0.01
X.XXX +/- 0.001
ANG +/- 1

DO NOT SCALE

SCALE 1:2
Upper Frame, Tower

Model Name: GE-16008

Title: Upper Frame, Tower

Revision: B

Zone: B-3, C-2

Description: Added .190 Hole (QTY 8)

Initial: DAF

Date: 12/16/2015

Dimensions: 2X 26.75, 2X 3.75, 2X .63, 2X 19.00, 4X .190 THRU

Tolerances: X.X +/- 0.1, X.XX +/- 0.01, X.XXX +/- 0.001

Angle: +/- 1

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Scale 1:8

Sheets 3 of 3

Do not scale
<table>
<thead>
<tr>
<th>ITEM</th>
<th>PART NUMBER</th>
<th>QTY</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GE-16009-01</td>
<td>1</td>
<td>Frame</td>
</tr>
<tr>
<td>2</td>
<td>GE-16009-02</td>
<td>1</td>
<td>Horizontal brace</td>
</tr>
</tbody>
</table>

TOLERANCES ARE:
- X.X +/- 0.1
- X.XX +/- 0.01
- X.XXX +/- 0.001
- ANG +/- 1

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.

DO NOT SCALE

29.00

26
Item 1: Upper Cap  
Material: 8 gauge 5052 Aluminum  
Qty: 1

Item 2: Horizontal Brace  
Material: 8 gauge 5052 Aluminum  
Qty: 1
NOTE:
Material: .105" Cold Rolled, Sheet Steel
Please remove all sharp edges and burrs
NOTE

Material: 1/4" CLEAR POLYCARBONATE, Sanded One Side
Scale: 3:16

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.
SCALE: 3:16

NOTE

Material: 1/4" CLEAR POLYCARBONATE, Sanded One Side
Scale: 3:16
NOTE

Material: 6 Gauge Steel Sheet, .194 Thick
Scale: 1:2

Remove all burrs and sharp edges
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.
TOLERANCES ARE:
X.X +/- 0.1
X.XX +/- 0.01
X.XXX +/- 0.001
ANG +/- 1

NOTE: Sanded side down.

Adhere 2" Hook to bottom of Platform, Left and Right sides.

NOTE

Material: Steel Sheet, .125" Thick
Scale: 3:16
Qty: 1
Remove all burrs and sharp edges
NOTE

Material: .125" thick steel sheet
Scale: 1:1

Remove all sharp edges and burrs
Secure using 3/16" diameter Aluminum Rivets

NOTE: A number decal, between 1 and 4, black in color, will be added to the top corner, such that it is visible when viewed from the Low Bar side of the Outer Works.
NOTE

Material: Clear Polycarbonate, .375" Thick
Scale: 3:16
NOTE
Material: Steel Sheet, .125 Thick
Scale: 5:8

Remove all burrs and sharp edges
NOTE

Material: 1.25" Schedule 40 Pipe, 6061 Aluminum
Scale: 1:1
NOTE: A number "5" decal, black in color, will be added to the top corner, such that it is visible when viewed from the Low Bar side of the Outer Works.

Secure using 3/16" diameter Aluminum Rivets
Notes:
1. Material: 1-1/4" Schedule 40 Pipe, 6061 Aluminum
2. Remove all burrs and sharp edges.
Cheval De Frise Assembly

<table>
<thead>
<tr>
<th>ITEM</th>
<th>PART NUMBER</th>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GE-16027</td>
<td>1</td>
<td>pivot tube, cheval de frise</td>
<td>See Drawing</td>
</tr>
<tr>
<td>2</td>
<td>GE-16176</td>
<td>1</td>
<td>cheval de frise base assembly</td>
<td>See Drawing</td>
</tr>
<tr>
<td>3</td>
<td>GE-16178</td>
<td>4</td>
<td>platform assembly, cheval de fri</td>
<td>See Drawing</td>
</tr>
<tr>
<td>4</td>
<td>HW-0002</td>
<td>8</td>
<td>nut, lock 1/4-20</td>
<td>Hardware</td>
</tr>
<tr>
<td>5</td>
<td>HW-0005</td>
<td>4</td>
<td>1/4&quot;-20, 2&quot;ID, 3 1/4&quot; U-Bolt</td>
<td>Hardware</td>
</tr>
</tbody>
</table>

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.

TOLERANCES ARE:
- X.X +/- 0.1
- X.XX +/- 0.01
- X.XXX +/- 0.001

ANG +/- 1

DO NOT SCALE
NOTE: Set the Pivot Tube on top of the Base as shown, loosely secure with one U-Bolt and two nuts.

NOTE: Slide four (4) platforms onto the Pivot Tube making sure to alternate which side the ballast is on (shown).

NOTE: Secure the rest of the Pivot Tube using the remainder of the U-Bolts and Nylock Nuts. Be sure the Platforms can teeter freely.
NOTES:
1. MATERIAL: 1-1/4" SCHEDULE 40 PIPE, 6061-T6 ALUMINUM
2. REMOVE ALL BURRS AND SHARP EDGES
Platform, Cheval de Frise

REV | ZONE | DESCRIPTION | INITIAL | DATE
--- | --- | --- | --- | ---
A | A-1, D-1 | 9.75 WAS 10.00, REMOVED 3 POCKETS, ADDED .21 HOLES (QTY3) | DAF | 12/16/15
B | A-1 | Changed C'sink to C'bore | DAF | 2/26/16
C | C-2, D-1 | ADDED MOUNTING HOLES, .21 (QTY 6) | NJS | 4/4/2016

NOTE
Material: Clear Polycarb, .5" Thick
Scale: 1:6
Finish: Print to look like wood

Print to be seen from this side
NOTE: Secure cable ties between each flap to help keep them in place.

NOTE: Cable tie through the holes on each side of the flap to help secure the flaps to the Low Bar - 10 Places

NOTE: Pin and Low Bar are removable for accessibility during ceremonies

SEE DETAIL A

SCALE 1:1
Low Bar Top

<table>
<thead>
<tr>
<th>ITEM NO</th>
<th>PART NUMBER</th>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GE-16030-01</td>
<td>2</td>
<td>VERTICAL</td>
<td>Aluminum</td>
</tr>
<tr>
<td>2</td>
<td>GE-16030-02</td>
<td>1</td>
<td>HORIZONTAL</td>
<td>Aluminum</td>
</tr>
</tbody>
</table>

SCALE 1:4

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.

TOLERANCES ARE:

X.X +/- 0.1
X.XX +/- 0.01
X.XXX +/- 0.001
ANG +/- 1

DO NOT SCALE
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.

TOLERANCES ARE:

X.X +/- 0.1
X.XX +/- 0.01
X.XXX +/- 0.001
ANG +/- 1

DO NOT SCALE
NOTE
Part: GE-16030-01
Material: Aluminum Schedule 40 Pipe, 1"
Qty: 2
Scale: 1:1

NOTE
Part: GE-16030-02
Material: Aluminum Schedule 40 Pipe, 1"
Qty: 1
Scale: 1:1

SCALE 1:1

D

C

B

A
LOW BAR BASE

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>PART NUMBER</th>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GE-16016</td>
<td>1</td>
<td>Defense Base</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>GE-16031-01</td>
<td>2</td>
<td>PIPE</td>
<td></td>
</tr>
</tbody>
</table>

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.
TOLERANCES ARE:
X.X +/- 0.1
X.XX +/- 0.01
X.XXX +/- 0.001
ANG +/- 1

DO NOT SCALE
LOW BAR BASE

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.

1.000
5.000

2X 3.00

5.000
48.000

DO NOT SCALE
NOTE

Part: GE-16031-01
Material: 1.25" Schedule 40 Steel Pipe
Qty: 2
Scale: 1:1
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.

TOLERANCES ARE:
- X.X +/- 0.1
- X.XX +/- 0.01
- X.XXX +/- 0.001
- ANG +/- 1

ITEM NO PART NUMBER QTY DESCRIPTION
1 GE-16034-01 1 VERTICAL
2 GE-16034-02 2 HINGE
3 GE-16034-03 2 HINGE SPACER
4 GE-16034-04 1 HORIZONTAL
5 GE-16034-05 2 MOUNTING BRACKET
6 GE-16034-06 1 BRACE
UNLESS OTHERWISE SPECIFIED ALL
DIMENSIONS ARE IN INCHES.
TOLERANCES ARE:
X.X +/- 0.1
X.XX +/- 0.01
X.XXX +/- 0.001
ANG +/- 1
DO NOT SCALE

A
B
C
D

1
2
3
4

1
2
3
4

Doo
Door

1
2
3
4

5
6

GE-16034

DO NOT SCALE
NOTE
Part: GE-16034-01
Material: 1.5" Aluminum Square Tubing
Qty: 1
Scale: 3:8

NOTE
Part: GE-16034-04
Material: 1.5" Aluminum Square Tubing
Qty: 1
Scale: 1:4

NOTE
Part: GE-16034-02
Material: 1.5" Aluminum Schedule 40 Pipe
Qty: 2
Scale: 1:2

NOTE
Part: GE-16034-03
Material: 5052 Aluminum, .125" Thick
Qty: 2
Scale: 1:2

NOTE
Part: GE-16034-05
Material: 1.5" Aluminum Channel, .125" Wall
Qty: 2
Scale: 1:2
NOTE

Part: GE-16034-06
Material: 1" Aluminum Channel, .125" Wall
Qty: 2
Scale: 1:2
### TITLE
GE-16035

### MODEL NAME
GE-16035

### SHEET OF
1 4

### SCALE
3:8

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### TITLE

### PROJECT

### APPROVED BY

### ISSUE

### DRAWN BY

### CHECKED BY

### DATE

### UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.

### TOLERANCES ARE:

- X.X +/- 0.1
- X.XX +/- 0.01
- X.XXX +/- 0.001
- ANG +/- 1

### DO NOT SCALE

### ITEM

<table>
<thead>
<tr>
<th>NO</th>
<th>PART NUMBER</th>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GE-16032</td>
<td>1</td>
<td>damper, sally port</td>
<td>Wright V920 / V1020</td>
</tr>
<tr>
<td>2</td>
<td>GE-16033</td>
<td>4</td>
<td>conveyor roller bearing</td>
<td>McMaster-Carr PN-60565K19</td>
</tr>
<tr>
<td>3</td>
<td>GE-16036</td>
<td>1</td>
<td>SALLY PORT FRAME 1</td>
<td>See Drawing</td>
</tr>
<tr>
<td>4</td>
<td>GE-16037</td>
<td>1</td>
<td>SALLY PORT FRAME 2</td>
<td>See Drawing</td>
</tr>
<tr>
<td>5</td>
<td>GE-16038</td>
<td>1</td>
<td>sally port door, assembly</td>
<td>See Drawing</td>
</tr>
<tr>
<td>6</td>
<td>GE-16040</td>
<td>1</td>
<td>sally port, base assembly</td>
<td>See Drawing</td>
</tr>
<tr>
<td>7</td>
<td>GE-16152</td>
<td>3</td>
<td>side plastic, sally port</td>
<td>See Drawing</td>
</tr>
<tr>
<td>8</td>
<td>GE-16153</td>
<td>1</td>
<td>side plastic, 2, sally port</td>
<td>See Drawing</td>
</tr>
<tr>
<td>9</td>
<td>GE-16154</td>
<td>1</td>
<td>hinge pin, sally port</td>
<td>1/2&quot; Steel Rod</td>
</tr>
<tr>
<td>10</td>
<td>HW-00086</td>
<td>6</td>
<td>pan head, 1/4-20 x 1&quot;</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>HW-00088</td>
<td>8</td>
<td>1/8&quot;-20 Washer</td>
<td></td>
</tr>
</tbody>
</table>

### ASME STANDARD, INCH
TITLE: Sally Port Assembly

MODEL NAME: GE-16035

SHEET OF 3 4 SCALE 3:8

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MODEL NAME: GE-16035

TITLE

PROJECT

APPROVED BY

ISSUE

DRAWN BY

CHECKED BY

DATE

DATE

DATE

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.

TOLERANCES ARE:

X.X +/- 0.1

X.XX +/- 0.01

X.XXX +/- 0.001

ANG +/- 1

DO NOT SCALE

1 2 3 4 5 6 7 8

1 2 3 4 5 6 7 8

B

C

D

E

B

C

D

E

Sally Port Assembly
NOTE: Secure GE-16036 and GE-16037 using 1/4”-20 machine screws and washers.
Secure GE-16032 the using 10-24 Hardware.

NOTE: Using Cable Ties, secure the protective / decorative polycarbonate sheets to the Sally Port Side Frames.

Place GE-16038 into place, and drive GE-16154 through the center of the Conveyor Bearings. Be sure that the door swing freely after assembly. Attach GE-16032 using 10-24 Hardware, similar to the step above.
ITEM   NO PART NUMBER  QTY  DESCRIPTION  NOTES
1 GE-13036-01  2  CHANNEL  1.5" Aluminum Channel, .125" Wall
2 GE-16036-02  2  VERTICAL  1.5" Aluminum Tubing, .125" Wall
3 GE-16036-03  4  STANDOFF  1.5" Aluminum Tubing, .125" Wall
4 GE-16036-04  2  TOP TUBE  1.5" Aluminum Tubing, .125" Wall
5 GE-16036-05  2  FOOT  1.5" Aluminum Tubing, .125" Wall
6 GE-16036-06  2  HINGE PIPE  1.5" Aluminum Schedule 40 Pipe
7 GE-16036-07  2  SPACER  5052 Aluminum, .125" Thick
NOTE

Weld all mated surfaces, full round.

ALL WELDS ON THIS SURFACE TO BE GROUND FLUSH
NOTE
Part: GE-16036-07
Material: 5052 Aluminum, .125" Thick
Qty: 2
Scale: 1:2

NOTE
Part: GE-16036-03
Material: 6061 Aluminum Square Tubing, 1.5"
Qty: 4
Scale: 1:2

NOTE
Part: GE-16036-04
Material: 6061 Aluminum Square Tubing, 1.5"
Qty: 2
Scale: 1:2

NOTE
Part: GE-16036-05
Material: 6061 Aluminum Square Tubing, 1.5"
Qty: 2
Scale: 1:2

NOTE
Part: GE-16036-06
Material: 6061 Aluminum Square Tubing, 1.5"
Qty: 2
Scale: 1:2

NOTE
Part: GE-16036-01
Material: 6061 Aluminum Channel, 1.5"
Qty: 2
Scale: 1:2

NOTE
Part: GE-16036-02
Material: 6061 Aluminum Square Tubing, 1.5"
Qty: 2
Scale: 1:2

NOTE
Part: GE-16036-01
Material: 6061 Aluminum Channel, 1.5"
Qty: 2
Scale: 1:2

NOTE
Part: GE-16036-02
Material: 6061 Aluminum Square Tubing, 1.5"
Qty: 2
Scale: 1:2

NOTE
Part: GE-16036-03
Material: 6061 Aluminum Square Tubing, 1.5"
Qty: 4
Scale: 1:2

NOTE
Part: GE-16036-04
Material: 6061 Aluminum Square Tubing, 1.5"
Qty: 2
Scale: 1:2

NOTE
Part: GE-16036-05
Material: 6061 Aluminum Square Tubing, 1.5"
Qty: 2
Scale: 1:2

NOTE
Part: GE-16036-06
Material: 6061 Aluminum Square Tubing, 1.5"
Qty: 2
Scale: 1:2

NOTE
Part: GE-16036-07
Material: 5052 Aluminum, .125" Thick
Qty: 2
Scale: 1:2
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.

TOLERANCES ARE:
X.X +/- 0.1
X.XX +/- 0.01
X.XXX +/- 0.001
ANG +/- 1

ITEM NO PART NUMBER QTY DESCRIPTION NOTES
1 GE-16037-01 2 VERTICAL 1.5" Aluminum Square Tubing
2 GE-16037-02 1 TOP 1.5" Aluminum Square Tubing
3 GE-16037-03 1 BOTTOM 1.5" Aluminum Square Tubing
NOTE: WELDS ON THIS FACE MUST BE GROUND FLAT
Sally Port Door Assembly

ITEM | NO PART NUMBER | QTY | DESCRIPTION | NOTES
--- | --- | --- | --- | ---
1 | GE-16033 | 4 | conveyor roller bearing | McMaster-Carr PN-60565K19
2 | GE-16034 | 1 | SALLY PORT DOOR FRAME | See Drawing
3 | GE-16044 | 2 | sally port door plastic | See Drawing
4 | HW-00087 | 8 | nut, nylock 1/8-20 | Hardware
5 | HW-00088 | 16 | 1/4-20 Washer | Hardware
6 | HW-00090 | 4 | washer, #10 | Hardware
7 | HW-00091 | 2 | pan head, #10-24 x 2" | Hardware
8 | HW-00092 | 2 | nut, nylock, #10-24 | Hardware
9 | HW-00118 | 8 | 1/4"-20 Machine Screw, 2.25" Long | Hardware

REV | LOCATION | DESCRIPTION | APPROVED DATE
--- | --- | --- | ---
A | A-1 | Changed item #9 to 2.25" Long | NJS 2/29/2016
NOTE: Place two GE-16044 parts front to back, so that the printing is sandwiched between the clear portions of the polycarbonate, also making sure that the holes line up properly.

Secure those parts to the Door Frame with 1/4"-20 hardware called out in BOM.

NOTE: Add Acetal Conveyor Bearings to the hinge. They are a tight fit, so persuasion may be necessary. 4 Places
## Model Name
GE-16039

### Title
Base Weldment 1

### Scale
1:4

### Notes
- All dimensions are in inches.
- Tolerances are:
  - X.X +/- 0.1
  - X.XX +/- 0.01
  - X.XXX +/- 0.001
- Angle: +/- 1

### Item List

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Part Number</th>
<th>QTY</th>
<th>Description</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GE-16016</td>
<td>1</td>
<td>base</td>
<td>See Drawing for Base</td>
</tr>
<tr>
<td>2</td>
<td>GE-16039-01</td>
<td>6</td>
<td>standoff 0.625” Diameter Steel Rod</td>
<td>625” Diameter Steel Rod</td>
</tr>
</tbody>
</table>
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.

TOLERANCES ARE:

X.X +/- 0.1
X.XX +/- 0.01
X.XXX +/- 0.001

ANG +/- 1

DO NOT SCALE
NOTE

Part: STANDOFF
Material: .625" Steel Round Bar
Qty: 6
Scale: 2:1

1/4-20 UNC - 2B TAP T
1.000
#7 DRILL (0.201)
THRU - (1) HOLE

1.31
<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>NOTES</th>
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<tr>
<td>GE-16017</td>
<td>4</td>
<td>defense base knee</td>
<td>See Drawing</td>
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<tr>
<td>GE-16039</td>
<td>1</td>
<td>sally port base weldment</td>
<td>See Drawing</td>
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<tr>
<td>GE-16150</td>
<td>16</td>
<td>Spacer, 20&quot; x 6.25&quot; OD, 20&quot; Thick</td>
<td>Hardware</td>
</tr>
<tr>
<td>GE-16151</td>
<td>4</td>
<td>2.5&quot; Tall Swivel Caster</td>
<td>Hardware</td>
</tr>
<tr>
<td>HW-00086</td>
<td>16</td>
<td>pan head, 1/4-20 x 1&quot;</td>
<td>Hardware</td>
</tr>
<tr>
<td>HW-00087</td>
<td>16</td>
<td>nut, nylock 1/4-20</td>
<td>Hardware</td>
</tr>
</tbody>
</table>
NOTE:

Material: clear polycarbonate, .125" Thick
Scale: 1:8
QTY: 1

Print to look like wood
**Title:**

**Model Name:** GE-16045

**Scale:** 3:1

**NOTE:**
- UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.
- TOLERANCES ARE:
  - X.X +/- 0.1
  - X.XX +/- 0.01
  - X.XXX +/- 0.001
- ANG +/- 1

**Item No.**

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<thead>
<tr>
<th>No.</th>
<th>Part Number</th>
<th>Qty</th>
<th>Description</th>
<th>Notes</th>
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<tr>
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<td>GE-16046</td>
<td>1</td>
<td>side frame, drawbridge</td>
<td>See Drawing</td>
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<td>2</td>
<td>GE-16046_L</td>
<td>1</td>
<td>side frame, drawbridge, left</td>
<td>See Drawing</td>
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<td>3</td>
<td>GE-16047</td>
<td>2</td>
<td>top bar, drawbridge</td>
<td>See Drawing</td>
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<tr>
<td>4</td>
<td>GE-16048</td>
<td>1</td>
<td>door assembly, drawbridge</td>
<td>See Drawing</td>
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<tr>
<td>5</td>
<td>GE-16049</td>
<td>2</td>
<td>side plastic, drawbridge</td>
<td>See Drawing</td>
</tr>
<tr>
<td>6</td>
<td>GE-16050</td>
<td>2</td>
<td>transomals, drawbridge</td>
<td>See Drawing</td>
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<tr>
<td>7</td>
<td>GE-16052</td>
<td>1</td>
<td>drawbridge base assembly</td>
<td>See Drawing</td>
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<tr>
<td>8</td>
<td>GE-16173</td>
<td>2</td>
<td>Flanged Nylon Bearing, 3/4&quot; ID, 1&quot; OD</td>
<td>Hardware</td>
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<tr>
<td>9</td>
<td>GE-16174</td>
<td>4</td>
<td>Steel Flat Washer, .812&quot; ID, 1.469&quot; OD</td>
<td>Hardware</td>
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<tr>
<td>10</td>
<td>GE-16175</td>
<td>2</td>
<td>3/4&quot; Diameter, 3 3/4&quot; Long Clevis Pin</td>
<td>Hardware</td>
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<tr>
<td>11</td>
<td>HW-00087</td>
<td>2</td>
<td>nut, nylock 1/4-20</td>
<td>Hardware</td>
</tr>
<tr>
<td>12</td>
<td>HW-00088</td>
<td>4</td>
<td>1/4&quot;-20 Washer</td>
<td>Hardware</td>
</tr>
<tr>
<td>13</td>
<td>HW-00094</td>
<td>2</td>
<td>eye bolt, 1/4-20 x 2&quot;</td>
<td>Hardware</td>
</tr>
<tr>
<td>14</td>
<td>HW-00099</td>
<td>1</td>
<td>Extension Screen Door Spring, 16-18 1/2</td>
<td>2 Oval Threaded Connectors, 3/16&quot; Diam</td>
</tr>
<tr>
<td>15</td>
<td>HW-00100</td>
<td>1</td>
<td>Screen Door Spring, 16-3/8&quot; Long</td>
<td>2 Oval Threaded Connectors, 3/16&quot; Diam</td>
</tr>
<tr>
<td>16</td>
<td>HW-00101</td>
<td>2</td>
<td>Cotter Pin, Hairpin, 3/4&quot; Pin Diameter</td>
<td>Hardware</td>
</tr>
</tbody>
</table>
Drawbridge Assembly

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.

TOLERANCES ARE:

X.X +/- 0.1

X.XX +/- 0.01

X.XXX +/- 0.001

ANG +/- 1

DO NOT SCALE
NOTE: Be sure the ramp is properly installed and secured using 1/4"-20 hardware.

NOTE: Put the Drawbridge Top Bars into the Drawbridge Side Frames as shown. Slide the Side Frames onto the pegs of the Drawbridge Base, making sure that the hinges are oriented as shown.

NOTE: Line up the hinges on the door with the hinges on the Side Frame. Place the Clevis Pin and Bushings through the hinges, securing them with the hairpin. See detailed images on the next page for more clarification.
NOTE: The order in which the components are placed is shown in Detail A.

NOTE: Secure the decoratate Polycarbonate with cable ties as shown.
NOT: Using the Threaded Connectors (2 per side), connect the Drawbridge Side Frames to the Drawbridge Door. Be sure that the Door falls when pushed to the ground, but also be sure that it returns on its own when no other force is applied to the door.

1 - Screen Door Spring, 16-3/8" Long - McMaster-Carr 9629K7
1 - Extension Screen Door Spring, 15"-18 1/2" - McMaster-Carr 1474A11
4 - Oval Threaded Connector, 3/16" Diameter - McMaster-Carr 84725
NOTE: THESE PARTS JUSTIFIED OPPOSITE IN LEFT VERSION

<table>
<thead>
<tr>
<th>ITEM</th>
<th>NO.</th>
<th>PART NUMBER</th>
<th>QTY.</th>
<th>DESCRIPTION</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DB10</td>
<td>DB at 10</td>
<td>2</td>
<td>5052 Aluminum Sheet. .25&quot; Thick</td>
<td>ASME STANDARD, INCH</td>
</tr>
<tr>
<td>2</td>
<td>DB2_3</td>
<td>DB2 pt 3</td>
<td>2</td>
<td>1.25&quot; Aluminum Schedule 40 Pipe</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>DB2_4</td>
<td>DB2_prt</td>
<td>2</td>
<td>1.25&quot; Aluminum Schedule 40 Pipe</td>
<td></td>
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<tr>
<td>4</td>
<td>DB2_7</td>
<td>DB2 pt 7</td>
<td>1</td>
<td>1.25&quot; Aluminum Schedule 40 Pipe</td>
<td></td>
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<tr>
<td>5</td>
<td>DB2_7_ALT</td>
<td>DB2_7_ALT</td>
<td>1</td>
<td>1.25&quot; Aluminum Schedule 40 Pipe</td>
<td></td>
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<tr>
<td>6</td>
<td>DB2_8</td>
<td>DB2 pt 8</td>
<td>1</td>
<td>1.25&quot; Aluminum Square Tubing, .125&quot; Wall</td>
<td></td>
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<tr>
<td>7</td>
<td>DB2_9</td>
<td>DB2 pt 9</td>
<td>1</td>
<td>1.25&quot; Aluminum Schedule 40 Pipe</td>
<td></td>
</tr>
</tbody>
</table>
NOTE: THESE PARTS ARE JUSTIFIED OPPOSITE, DIMENSIONS REMAIN THE SAME.
NOTE
Part: DB2_3
Material: 1.25" Aluminum Schedule 40 Pipe
Qty: 2
Scale 1:1

NOTE
Part: DB2_9
Material: 1" Aluminum Schedule 40 Pipe
Qty: 2
Scale 1:1

NOTE
Part: DB2_4
Material: 1.25" Aluminum Schedule 40 Pipe
Qty: 2
Scale 1:1

NOTE
Part: DB2_7
Material: 1.25" Aluminum Schedule 40 Pipe
Qty: 1
Scale 1:1

NOTE
Part: DB2_10
Material: 5052 Aluminum Sheet, .25" Thick
Qty: 2
Scale 1:1
NOTE
Part: DB2_7_ALT
Material: 1.25" Aluminum Schedule 40 Pipe
Qty: 1
Scale: 1:1

NOTE
Part: DB2_8
Material: 1.5" Aluminum Square Tubing, .125" Wall
Qty: 1
Scale: 1:1
NOTES:
1. MATERIAL: 1-1/4" SCHEDULE 40 PIPE, 6061 ALUMINUM
2. REMOVE ALL BURRS AND SHARP EDGES.
<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>NOTES</th>
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<tbody>
<tr>
<td>GE-16171</td>
<td>1</td>
<td>DOOR FRAME, DRAWBRIDGE</td>
<td>See Drawing</td>
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<tr>
<td>GE-16172</td>
<td>1</td>
<td>door plastic, drawbridge</td>
<td>See Drawing</td>
</tr>
<tr>
<td>GE-16173</td>
<td>2</td>
<td>Flanged Nylon Bearing, 3/4&quot; ID, 1&quot; OD</td>
<td>Hardware</td>
</tr>
<tr>
<td>HW-00087</td>
<td>7</td>
<td>nut, nylock 1/4-20</td>
<td>Hardware</td>
</tr>
<tr>
<td>HW-00088</td>
<td>14</td>
<td>1/4&quot;-20 Washer</td>
<td>Hardware</td>
</tr>
<tr>
<td>HW-00089</td>
<td>5</td>
<td>1/4&quot;-20 Machine Screw, 2.5&quot; Long</td>
<td>Hardware</td>
</tr>
<tr>
<td>HW-00094</td>
<td>2</td>
<td>eye bolt, 1/4-20 x 2&quot;</td>
<td>Hardware</td>
</tr>
</tbody>
</table>

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.
TOLERANCES ARE:
X.X +/- 0.1
X.XX +/- 0.01
X.XXX +/- 0.001
ANG +/- 1
NOTE: Start with the Drawbridge Door Welded Frame

NOTE: Place Polycarbonate Door so that the holes line up with the Welded Door Frame.

NOTE: Add 1/4"-20 Hardware to the assembly.

NOTE: The real FRC Field will have two pieces of .125" Polycarbonate positioned back-to-back for aesthetic purposes only. They will be secured such that the differences don’t alter game-play, or the function of the Drawbridge.
NOTE:

Material: Clear Polycarbonate, .25" Thick
Scale 3:16
Qty: 1

Print to look like stone.
NOTE:

Material: Clear Polycarbonate, .25" Thick
Scale: 3:32
Qty: 1

Print to look like stone
## Drawbridge Base Assembly

**Item | No | Part Number | Description | Notes**
--- | --- | --- | --- | ---
1 | 1 | GE-16017 | defense base keep | See Drawing
2 | 1 | GE-16053 | Drawbridge base weldment | See Drawing
3 | 16 | GE-16150 | Spacer, 26" ID, 625" OD, 25" Thick | Hardware
4 | 4 | GE-16151 | 2.5" Tall Swivel Caster | Hardware
5 | 1 | GE-16170 | Drawbridge ramp | See Drawing
6 | 22 | HW-00086 | pan head, 1/4-20 x 1" | Hardware
7 | 22 | HW-00087 | nut, nylock 1/4-20 | Hardware

**Notes:**
- Unless otherwise specified, all dimensions are in inches.
- Tolerances are: ±0.1, ±0.01, ±0.001.
- DO NOT SCALE.
Drawbridge Base Assembly

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.

TOLERANCES ARE:
X.X +/- 0.1
X.XX +/- 0.01
X.XXX +/- 0.001
ANG +/- 1

DO NOT SCALE
ITEM | NO | PART NUMBER | QTY | DESCRIPTION | NOTES
--- | --- | --- | --- | --- | ---
1 | GE-16016 | 1 | Defense Base | See Drawing for Defense Holder Base |
2 | GE-16053-01 | 3 | ge-16053-01.prt | 1.5" Steel Angle (.125" Thick) |
3 | GE-16053-02 | 4 | ge-16053-02.prt | 1" Steel Schedule 40 Pipe |

Scale 3:8

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.

TOLERANCES ARE:

X.X +/- 0.1
X.XX +/- 0.01
X.XXX +/- 0.001
ANG +/- 1

DO NOT SCALE
NOTE
Part: DB_BASE_PT1
Material: 1.5" Steel Angle, .125" Thick
Qty: 3
Scale: 1:1

NOTE
Part: DB_MOUNT
Material: 1" Schedule 40 Steel Pipe
Qty: 4
Scale: 1:1
Ramparts Assembly

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>QTY</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>GE-16017</td>
<td>4</td>
<td>defense base keep</td>
</tr>
<tr>
<td>GE-16055</td>
<td>1</td>
<td>ramparts, weldment</td>
</tr>
<tr>
<td>GE-16150</td>
<td>16</td>
<td>Spacer, 23/32&quot; ID, 3/4&quot; OD, 5/8&quot; Thick</td>
</tr>
<tr>
<td>GE-16151</td>
<td>4</td>
<td>2-5&quot; Tall Swivel Caster</td>
</tr>
<tr>
<td>HW-00086</td>
<td>16</td>
<td>pan head, 1/4-20 x 1&quot;</td>
</tr>
<tr>
<td>HW-00087</td>
<td>16</td>
<td>nut, nylock 1/4-20</td>
</tr>
</tbody>
</table>

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES. TOLERANCES ARE:
- X.X +/- 0.1
- X.XX +/- 0.01
- X.XXX +/- 0.001

DO NOT SCALE

ASME STANDARD, INCH
Ramp Base

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<tr>
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<th>QTY</th>
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<td>GE-16016</td>
<td>1</td>
<td>D Base</td>
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<tr>
<td>2</td>
<td>GE-16056</td>
<td>1</td>
<td>Rampa 1</td>
<td>See Drawing for RAMP</td>
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<td>3</td>
<td>GE-16057</td>
<td>1</td>
<td>Rampa 2</td>
<td>See Drawing for RAMP2</td>
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UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.

TOLERANCES ARE:

- X.X +/- 0.1
- X.XX +/- 0.01
- X.XXX +/- 0.001
- ANG +/- 1

DO NOT SCALE
NOTE

Material: Steel Sheet, .125" Thick
Scale: 1:8

Remove all burrs and sharp edges
NOTE

Material: Steel Sheet, .125" Thick
Scale: 1:8

Remove all burrs and sharp edges
FOR ADDITIONAL ASSEMBLY/WELD INFORMATION ON THESE THREE PARTS SEE XSEC0001 ON SHEET 2.

### Item
<table>
<thead>
<tr>
<th>No.</th>
<th>Part Number</th>
<th>Qty.</th>
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<td>GE-16016</td>
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<td>Defense Base</td>
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<td>2</td>
<td>GE-16060-01</td>
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<td>1&quot; RISER 1&quot; x 3&quot; Rectangular Steel Tubing</td>
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<tr>
<td>3</td>
<td>GE-16060-02</td>
<td>11</td>
<td>2&quot; RISER 2&quot; x 3&quot; Rectangular Steel Tubing</td>
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<tr>
<td>4</td>
<td>GE-16060-03</td>
<td>10</td>
<td>3&quot; RISER 3&quot; x 3&quot; Rectangular Steel Tubing</td>
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<tr>
<td>5</td>
<td>GE-16060-04</td>
<td>6</td>
<td>BRACE, 3&quot; RISER 1/25&quot; STEEL SHEET</td>
</tr>
</tbody>
</table>

Unless otherwise specified, all dimensions are in inches. Tolerances are:
- X.X +/- 0.1
- X.XX +/- 0.01
- X.XXX +/- 0.001

Angle: +/- 1°
ROUGH TERRAIN ASSEM

UNLESS OTHERWISE SPECIFIED ALL
DIMENSIONS ARE IN INCHES.
TOLERANCES ARE:
X.X +/- 0.1
X.XX +/- 0.01
X.XXX +/- 0.001
ANG +/- 1

ITEM 4
1.5

ITEM 5

ITEMS PER ASSEMBLY

XSEC0001 - TYPICAL 6 PLACES ON ASSEMBLY

NO WELD PERMITTED

FOR ALL PARTS

SCALE 1:1
NOTE
Part: GE-16060-01
Material: 1" x 3" Steel Tubing, .125" Thick
Qty: 10
Scale: 1:1

NOTE
Part GE-16060-02
Material: 2" x 3" Steel Tubing, .125" Thick
Qty: 11
Scale: 1:1

NOTE
Part GE-16060-03
Material: 3" x 3" Steel Tubing, .125" Thick
Qty: 10
Scale: 1:1
NOTE

Part: GE-16060-04
Material: .125" STEEL SHEET
Qty: 6
Scale: 1:1
<table>
<thead>
<tr>
<th>ITEM NO</th>
<th>PART NUMBER</th>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>NOTES</th>
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<tbody>
<tr>
<td>1</td>
<td>GE-16017</td>
<td>4</td>
<td>defense base keep</td>
<td>See Drawing</td>
</tr>
<tr>
<td>2</td>
<td>GE-16060</td>
<td>1</td>
<td>ROUGH TERRAIN, WELDMENT</td>
<td>See Drawing</td>
</tr>
<tr>
<td>3</td>
<td>GE-16150</td>
<td>16</td>
<td>Spacer, .26&quot; ID, .625&quot; OD, .25&quot; Thick</td>
<td>Hardware</td>
</tr>
<tr>
<td>4</td>
<td>GE-16151</td>
<td>4</td>
<td>2.5&quot; Tall Swivel Caster</td>
<td>Hardware</td>
</tr>
<tr>
<td>5</td>
<td>HW-00086</td>
<td>16</td>
<td>Pan head, 1/4-20 x 1&quot;</td>
<td>Hardware</td>
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<tr>
<td>6</td>
<td>HW-00087</td>
<td>16</td>
<td>nut, nylock 1/4-20</td>
<td>Hardware</td>
</tr>
</tbody>
</table>

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.

TOLERANCES ARE:
X.X +/- 0.1
X.XX +/- 0.01
X.XXX +/- 0.001

ANG +/- 1

DO NOT SCALE
NOTES:
1. MATERIAL: 1/4" THICK POLYCARBONATE, CLEAR

RACK WALL PRINT ON ONE SIDE

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.
CUSTOMER ART
X:XX = X.XK
X:XX = X.XXX
ANG = X

DO NOT SCALE
<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>PART NUMBER</th>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GE-16069</td>
<td>1</td>
<td>low goal plastic</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>GE-16070</td>
<td>6</td>
<td>channel, low plastic</td>
<td></td>
</tr>
</tbody>
</table>

ATTACH ITEM 2 TO ITEM 1 WITH 2, 3/16" RIVETS. (6 TIMES)
NOTES:
1. MATERIAL: 1/4" THICK POLYCARBONATE, CLEAR
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.
TOLERANCES ARE:
X.X +/- 0.1
X.XX +/- 0.01
X.XXX +/- 0.001
ANG +/- 1

DO NOT SCALE
NOTES:
1. MATERIAL: 1/8" THICK 5052 ALUMINUM
ATTACH ITEM 1 TO ITEM 2 WITH TWO, 3/16" RIVETS. (6 TIMES)
NOTES:
1. MATERIAL: 1/4" THICK POLYCARBONATE, CLEAR
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.
TOLERANCES ARE:
X.X +/- 0.1
X.XX +/- 0.01
X.XXX +/- 0.001
ANG +/- 1

DO NOT SCALE
NOTES:
1. MATERIAL: 1/4" POLYCARBONATE

SCALE 1:8

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES. TOLERANCES ARE:
X.X +/- 0.1
X.XX +/- 0.01
X.XXX +/- 0.001
ANG +/- 1

ROCK WALL PRINT ON ONE SIDE
<table>
<thead>
<tr>
<th>ITEM NO</th>
<th>PART NUMBER</th>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GE-16017</td>
<td>4</td>
<td>defense base keep</td>
<td>See Drawing</td>
</tr>
<tr>
<td>2</td>
<td>GE-16076</td>
<td>1</td>
<td>moat weldment</td>
<td>See Drawing</td>
</tr>
<tr>
<td>3</td>
<td>GE-16150</td>
<td>16</td>
<td>Spacer, 26&quot; ID, 625&quot; OD, 25&quot; Thick</td>
<td>Hardware</td>
</tr>
<tr>
<td>4</td>
<td>GE-16151</td>
<td>4</td>
<td>2.5&quot; Tall Swivel Caster</td>
<td>Hardware</td>
</tr>
<tr>
<td>5</td>
<td>HW-00086</td>
<td>16</td>
<td>pan head, 1/4-20 x 1&quot;</td>
<td>Hardware</td>
</tr>
<tr>
<td>6</td>
<td>HW-00087</td>
<td>16</td>
<td>nut, nylock 1/4-20</td>
<td>Hardware</td>
</tr>
</tbody>
</table>

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.
TOLERANCES ARE:
- X.X +/- 0.1
- X.XX +/- 0.01
- X.XXX +/- 0.001
- ANG +/- 1

DO NOT SCALE
NOTES:
1. FINISH: GRAY POWDERCOAT UNLESS OTHERWISE SPECIFIED.
   REMOVE ALL BURRS AND SHARP EDGES.

BLUE POWDERCOAT ON THIS SURFACE BETWEEN CHANNELS
PART: GE-16076-01
QTY: 2
MATERIAL: 1.5" X 2.5" X .125" STEEL TUBING
<table>
<thead>
<tr>
<th>NO.</th>
<th>PART NUMBER</th>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GE-16017</td>
<td>4</td>
<td>defense base keep</td>
<td>See Drawing</td>
</tr>
<tr>
<td>2</td>
<td>GE-16081</td>
<td>1</td>
<td>rock wall weldment</td>
<td>See Drawing</td>
</tr>
<tr>
<td>3</td>
<td>GE-16150</td>
<td>16</td>
<td>Spacer, 26&quot; ID, 625&quot; OD, .25&quot; Thick</td>
<td>Hardware</td>
</tr>
<tr>
<td>4</td>
<td>GE-16151</td>
<td>4</td>
<td>2.5&quot; Tall Swivel Caster</td>
<td>Hardware</td>
</tr>
<tr>
<td>5</td>
<td>HW-00086</td>
<td>16</td>
<td>pan head, 1/4-20 x 1&quot;</td>
<td>Hardware</td>
</tr>
<tr>
<td>6</td>
<td>HW-00087</td>
<td>16</td>
<td>nut, nylon 1/4-20'</td>
<td>Hardware</td>
</tr>
</tbody>
</table>

TOLERANCES ARE:
- X.X +/- 0.1
- X.XX +/- 0.01
- X.XXX +/- 0.001

ANGLES +/- 1

DO NOT SCALE
Rock Wall Base

Hold distance from Front of Base to First Wall of Top Hat

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.
TOLERANCES ARE:
X.X +/- 0.1
X.XX +/- 0.01
X.XXX +/- 0.001
ANG +/- 1

DO NOT SCALE
NOTE

Material: Steel Sheet, .125" Thick
Scale: 1:2
Remove all burrs and sharp edges
NOTE: Each piece of the Berm will have Hook fastener on the bottom of it so that it adheres to the carpet.

NOTE: Each Berm section will be powder coated either Red or Blue. Those colors are not shown in this assembly drawing to help avoid confusion. Mechanically both Beries on the field are the same, but they are aesthetically different.
Material: 3" x 1" Rectangular Steel Tube, .12" Wall
Scale: 1:1
Finish: Red or Blue Powder Coat based on Qty Notes
NOTE

Material: 3" x 1" Rectangular Steel Tube, .12" Wall
Scale: 3:4
Finish: Red or Blue Powder Coat based on Qty Notes
NOTE

Material: 3" x 1" Rectangular Steel Tubing, .12" Wall
Scale: 3:4
Finish: Red or Blue Powder Coat based on Qty Notes
RADIUS APPROXIMATELY 7"

RADIUS APPROXIMATELY 0.92"

35.4

47.8

(46.2)

NOTES:
1. MATERIAL: 3/4" EMT CONDUIT
2. REMOVE ALL BURRS AND SHARP EDGES.
3. CONNECTORS MAY BE USED IF NECESSARY.
NOTES:
1. MATERIAL: 1/8" CLEAR POLYCARBONATE
2. REMOVE ALL BURRS AND SHARP EDGES.
NOTES:
1. MATERIAL: 1/8" CLEAR POLYCARBONATE
2. REMOVE ALL BURRS AND SHARP EDGES
ITEM | PART NUMBER | QTY | DESCRIPTION
--- | --- | --- | ---
1 | GE-16098 | 1 | back panel, tower
2 | GE-16099 | 2 | scoring box, low
3 | GE-16100 | 6 | churro, 11"
4 | GE-16101 | 1 | scoring plate
5 | GE-16102 | 1 | scoring box, high
6 | GE-16103 | 1 | ramp, back panel
7 | GE-16104 | 1 | side, back panel
8 | GE-16105 | 1 | side 2, back panel
9 | HW-00012 | 12 | CAP SCREW, HEX, 1/4-20 X .75"

ATTACH ITEMS 2 AND 5 WITH CABLE TIES. 4 PLACES EACH.
NOTES:
1. MATERIAL: 1/4" CLEAR POLYCARBONATE
2. REMOVE ALL BURRS AND SHARP EDGES.
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.
CUSTOMER'S ADR
X.X = 0.001
X.XX = 0.005
X.XXX = 0.01
ANG = 

27X .265 THRU
NOTES:
1. MATERIAL: 1/4" BLACK HDPE
2. REMOVE ALL BURRS AND SHARP EDGES.
NOTES:
1. MATERIAL: ANDYMARK CHURRO (AM-2974).

1/4-20 UNC-2B \( \overline{T} \) 1.25 BOTH ENDS

11.000
NOTES:
1. MATERIAL: 1/8" CLEAR POLYCARBONATE
2. REMOVE ALL BURRS AND SHARP EDGES.
NOTES:
1. MATERIAL: 1/4" BLACK, HDPE
2. REMOVE ALL BURRS AND SHARP EDGES.
NOTES:
1. MATERIAL: 1/8" CLEAR POLYCARBONATE
2. REMOVE ALL BURRS AND SHARP EDGES.
NOTES:
1. MATERIAL: 1/8" CLEAR POLYCARBONATE
2. REMOVE ALL BURRS AND SHARP EDGES.
NOTES:
1. MATERIAL: 1/8" CLEAR POLYCARBONATE
2. REMOVE ALL BURRS AND SHARP EDGES
NOTES:
1. MATERIAL: 1/4" CLEAR POLYCARBONATE
2. REMOVE ALL BURRS AND SHARP EDGES.
**Title:** BACKBOARD ASSEMBLY

**Model Name:** GE-16107

---

### PARTS LIST

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>PART NUMBER</th>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GE-16108</td>
<td>2</td>
<td>backboard</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>GE-16109</td>
<td>2</td>
<td>emt 1, backboard</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>GE-16111</td>
<td>1</td>
<td>insert tube, backboard</td>
<td></td>
</tr>
</tbody>
</table>

---

**SCALE:** 1:32

**UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.**

**SHEET:** 1 OF 1

---

**POSITION ITEM 3 SO THAT IT IS PROTRUDING FROM ITEM 2 BY 4". USING A 3/16 DRILL BIT, DRILL AND RIVET WITH A 3/16" RIVET.**

**ATTACH ITEM 1 TO ITEM 2 WITH A 3/16" RIVET. 6 PLACES.**
NOTES:
1. MATERIAL: 1/8" CLEAR POLYCARBONATE.
2. REMOVE ALL BURRS AND SHARP EDGES
NOTES:
1. MATERIAL: 3/4" EMT TUBING
2. REMOVE ALL BURRS AND SHARP EDGES.
NOTES:
1. MATERIAL: 3/4" DIAMETER X .063 WALL TUBING, 6063 ALUMINUM
2. REMOVE ALL BURRS AND SHARP EDGES
Note:
Material: Clear Polycarbonate, .25 Thick
Scale: 1:10
NOTES:
1. MATERIAL: 1/4" POLYCARBONATE
2. REMOVE ALL BURRS AND SHARP EDGES
PLASTIC GUARD, LOW GOAL

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.
TOLERANCES ARE:
X.X +/- 0.1
X.XX +/- 0.01
X.XXX +/- 0.001
ANG +/- 1

MODEL NAME
GE-16115

TITLE
PLASTIC GUARD, LOW GOAL

REV ZONE DESCRIPTION INITIAL DATE
A B-2 ADDED .25 HOLES (2) DAF 1/6/15

DO NOT SCALE
NOTES:
1. MATERIAL: 1" X .125" ANGLE, 6063 ALUMINUM
NOTES:
1. MATERIAL: 1.75" X 0.125" ANGLE, 6063 ALUMINUM
2. REMOVE ALL BURRS AND SHARP EDGES
NOTES

Material: Clear Polycarbonate, .25" Thick
Scale: 1:8
NOTE

1. Material: 5052 Aluminum Sheet, .125" Thick
2. Remove all burrs and sharp edges.
NOTE

Material: 5052 Aluminum Sheet, .125" Thick
Scale: 3:4

Remove all burrs and sharp edges
<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>PART NUMBER</th>
<th>QTY</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GE-16125-01</td>
<td>1</td>
<td>5052 aluminum sheet</td>
</tr>
<tr>
<td>2</td>
<td>GE-16125-02</td>
<td>1</td>
<td>1/2&quot; schedule 40 pipe, 6061 alum</td>
</tr>
</tbody>
</table>

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES. TOLERANCES ARE:
X.X +/- 0.1
X.XX +/- 0.01
X.XXX +/- 0.001
ANG +/- 1

DO NOT SCALE
NOTE

Material: Clear Polycarbonate, .25" Thick
Scale: 3:16
ITEM  NO. | PART NUMBER | QTY  | DESCRIPTION | NOTES |
--- | --- | --- | --- | --- |
1 | GE-16137-01 | 1 | ge-16137-01.prt | 1/2" Plywood |
2 | GE-16137-02 | 2 | ge-16137-02.prt | 1/2" Plywood |
3 | GE-16137-03 | 1 | ge-16137-03.prt | 1/2" Plywood |
4 | GE-16137-04 | 1 | ge-16137-04.prt | 1/2" Plywood |
NOTE
Part: Ge-16137-01
Material: 1/2" Plywood
Qty: 1

NOTE
Part: Ge-16137-02
Material: 1/2" Plywood
Qty: 2

NOTE
Part: Ge-16137-03
Material: 1/2" Plywood
Qty: 1

NOTE
Part: Ge-16137-04
Material: 1/2" Plywood
Qty: 1

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES. TOLERANCES ARE:
X.X +/- 0.1
X.XX +/- 0.01
X.XXX +/- 0.001
ANG +/- 1

DO NOT SCALE
Note:

Material: Clear Polycarbonate, .75 thick
Scale 1:8
Qty: 4

Material: Clear Polycarbonate, .75 thick
Scale 1:8
Qty: 4
ITEM  NO  PART NUMBER  QTY  DESCRIPTION  NOTES
1  GE-16145  1  divider brace 1  See Drawing
2  GE-16146  1  divider brace 2  See Drawing
3  GE-16147  1  divider, batter  See Drawing
4  GE-16189  1  BATTER RAMP, CORNER  See Drawing
5  HW-00086  3  pan head, 1/4-20 x 1"  Hardware
6  HW-00087  3  nut, nylock 1/4-20  Hardware
7  HW-00116  6  1/4"-20, 3/8" long, Tee Nut Insert  Hardware
8  HW-00117  6  1/4"-20, .75" Long, PH20 Machine Screw  Hardware

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.
TOLERANCES ARE:
X.X +/- 0.1
X.XX +/- 0.01
X.XXX +/- 0.001
ANG +/- 1

DO NOT SCALE

BATTER RAMP, CORNER, ASSEMBLY

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.
TOLERANCES ARE:
X.X +/- 0.1
X.XX +/- 0.01
X.XXX +/- 0.001
ANG +/- 1

DO NOT SCALE

BATTER RAMP, CORNER, ASSEMBLY
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.
CUSTOMER ORDERS ARE A
X.XX = 0.01
X.XXX = 0.001
ANG = 

ITEM | PART NUMBER | QTY | DESCRIPTION | NOTES  
--- | --- | --- | --- | --- 
1 | GE-16140-01 | 1 | ge-16140-01.prt | 1/2" Plywood 
2 | GE-16140-02 | 1 | ge-16140-02.prt | 1/2" Plywood 
3 | GE-16140-03 | 1 | ge-16140-03.prt | 1/2" Plywood 

DO NOT SCALE
NOTE
Part: GE-16140-01
Material: 1/2" Plywood
Qty: 1

NOTE
Part: GE-16140-03
Material: 1/2" Plywood
Qty: 1
Secure Items 2 and 3 to Item 1 using wood screws or staples, and wood glue.
NOTE
Part: GE-16141-01
Material: 1/2" Plywood
Qty: 1

NOTE
Part: GE-16141-02
Material: 1/2" Plywood
Qty: 1

NOTE
Part: GE-16141-03
Material: 1/2" Plywood
Qty: 1

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.
NOTES:
1. MATERIAL: 1/8” HDPE
2. COLOR: GRAY
3. FINISH: SMOOTH
4. REMOVE ALL BURRS AND SHARP EDGES.
Material: Gray HDPE, Smooth Finish, .125” Thick
Remove all burrs and sharp edges
Notes:
1. Material: 1/8" thick HDPE
2. Color: Gray
3. Texture: Smooth
NOTE

Material: 2" Aluminum Angle, .25" Wall

Remove all sharp edges and burrs
NOTES:
1. MATERIAL: 2" X .25" ANGLE, 6061 ALUMINUM
2. REMOVE ALL BURRS AND SHARP EDGES.
NOTE: Start with the parts shown here.

NOTE: Slide the ramps into the receiver slots on the sides of the Platform. Then slide the pegs of the Defense Divider into the receiver holes in the Defense Platform.

NOTE: Repeat the last step until the assembly looks like this.
NOTE: Finish the assembly by sliding the pegs of the Defense Divider End into the last Platform. The flat section of the pegs will rest on the Berm.
NOTE: Finish the assembly by sliding the pegs of the Defense Divider End into the last Platform. The flat section of the pegs will rest on the Berm.
Title: Model Name GE-16149
Sheet: 1 of 5
Scale: 7:64

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Model Name: GE-16149

Title: Project

Approved by:

Issue:

Drawn by:

Checked by:

Date:

Date:

Date:

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.

TOLERANCES ARE:

X.X +/- 0.1

X.XX +/- 0.01

X.XXX +/- 0.001

ANG +/- 1

DO NOT SCALE

1 2 3 4 5 6 7 8

1 2 3 4 5 6 7 8

B

C

D

E

Outer Works 2

1 2 3 4 5 6 7 8

1 2 3 4 5 6 7 8

B

C

D

E

ITEM
NO  PART NUMBER  QTY  DESCRIPTION  NOTES

1   GE-16013   5   defense platform assembly  See Drawing

2   GE-16019   4   defense divider, assembly  See Drawing

3   GE-16023   1   defense divider, end assembly  See Drawing

4   GE-16026   1   cheval de frise assembly  See Drawing

5   GE-16029   1   low bar assembly  See Drawing

6   GE-16035   1   drawbridge assembly  See Drawing

7   GE-16075   1   moat assembly  See Drawing

8   GE-16080   1   rock wall assembly  See Drawing

ASME STANDARD, INCH
NOTE: Defense shown are placed in the model to show relationships and are not necessarily placed according to gameplay criteria.
NOTE: Start with the parts shown above.

Slide the ramps into the receiver slots on the sides of the Platform. Then slide the pegs of the Defense Divider into the receiver holes in the Defense Platform.

NOTE: Repeat the last step until the assembly looks like this.
NOTE: Finish the assembly by sliding the pegs of the Defense Divider End into the last Platform. The flat sections of the pegs will rest on the Berm.
NOTE

Material: Clear Polycarbonate, .25" Thick
Scale: 1:4

Print one side, Block Pattern
Material: Clear Polycarbonate, .25 " Thick

Scale 1:8
Qty: 1
Print to look like stone
NOTES:
1. MATERIAL: .5” DIAMETER 1018 STEEL ROD
2. REMOVE ALL BURRS AND SHARP EDGES.
NOTE: When flat, this dimension should be 4.25".

NOTE: Hem each edge, 1/2".

NOTE: When flat, this dimension should be 2.50".

Material: 12 oz Cotton Duck Canvas, Black

NOTE:

Material: 12 oz Cotton Duck Canvas, Black
Material: 1" Schedule 40 Aluminum Pipe
Scale: 1:1

NOTE

Material: 1" Schedule 40 Aluminum Pipe
<table>
<thead>
<tr>
<th>No.</th>
<th>PART NUMBER</th>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GE-16158</td>
<td>1</td>
<td>portcullis base assembly</td>
<td>See Drawing</td>
</tr>
<tr>
<td>2</td>
<td>GE-16195</td>
<td>1</td>
<td>Portcullis, Upper Assembly</td>
<td>See Drawing</td>
</tr>
<tr>
<td>3</td>
<td>HW-00087</td>
<td>4</td>
<td>nut, nylock 1/4-20</td>
<td>Hardware</td>
</tr>
<tr>
<td>4</td>
<td>HW-00089</td>
<td>4</td>
<td>1/4&quot;-20 Machine Screw, 2.5&quot; Long</td>
<td>Hardware</td>
</tr>
</tbody>
</table>
NTOE: Use 1/4"-20 Hardware to secure the Portcullis Upper Assembly to the Portcullis Base - 4 Places.
<table>
<thead>
<tr>
<th>NO</th>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GE-16017</td>
<td>defense base keep</td>
<td>See Drawing</td>
</tr>
<tr>
<td>2</td>
<td>GE-16150</td>
<td>Spacer, 28° ID, .625&quot; OD, .25&quot; Thick</td>
<td>Hardware</td>
</tr>
<tr>
<td>3</td>
<td>GE-16151</td>
<td>2.5&quot; Tall Swivel Caster</td>
<td>Hardware</td>
</tr>
<tr>
<td>4</td>
<td>GE-16159</td>
<td>portcullis base weldment</td>
<td>See Drawing</td>
</tr>
<tr>
<td>5</td>
<td>HW-00086</td>
<td>pan head, 1/4-20 x 1&quot;</td>
<td>Hardware</td>
</tr>
<tr>
<td>6</td>
<td>HW-00087</td>
<td>nut, nylock 1/4-20</td>
<td>Hardware</td>
</tr>
</tbody>
</table>
NOTE
Part: PORTBRACKET
Material: 1.5" x 1.5" Steel Angle, .125" Thick
Scale: 1:1
Qty: 2

NOTE
Part: PORTBRACE
Material: 1" Steel Angle, .125" Wall
Qty: 1
Scale: 1:1
Notes:
1. Material: 1/8" Clear Polycarbonate
Notes:
1. Material: 1/4" clear, polycarbonate.
2. Print on one side to look like the stone of a castle.
NOTE

Material: Steel Sheet, .125"
Scale: 3:16

Remove all burrs and sharp edges
ITEM | PART NUMBER | QTY | DESCRIPTION | NOTES
--- | --- | --- | --- | ---
1 | GE-16171-01 | 1 | HORIZONTAL | 
2 | GE-16171-02 | 2 | VERTICAL | 
3 | GE-16171-03 | 2 | PIVOT | 

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES. TOLERANCES ARE:
X.XX \pm 0.01
X.XXX \pm 0.001

DO NOT SCALE
PART: GE-16171-01
MATERIAL: 1.5" X .125" SQUARE TUBING, 6063 ALUMINUM
QTY: 1

PART: GE-16171-02
MATERIAL: 1.5" X .125" SQUARE TUBING, 6063 ALUMINUM
QTY: 2

PART: GE-16171-03
MATERIAL: 1" SCHEDULE 40 PIPE, 6061 ALUMINUM
QTY: 2
DOOR PLASTIC, DRAWBRIDGE

Note:
Material: Clear Polycarbonate, .125 Thick
Scale 1:16
Qty: 1
Print to look like wood

Scale 1:16

Material: Clear Polycarbonate, .125 Thick

UNLESS OTHERWISE SPECIFIED ALL
DIMENSIONS ARE IN INCHES.
TOLERANCES ARE:
X.X +/- .01
X.XX +/- .005
X.XXX +/- .001
ANG +/- .13

DO NOT SCALE
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.

TOLERANCES ARE:

X.X +/- 0.1
X.XX +/- 0.01
X.XXX +/- 0.001

ANG +/- 1

DO NOT SCALE
<table>
<thead>
<tr>
<th>ITEM</th>
<th>NO.</th>
<th>PART NUMBER</th>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GE-16016</td>
<td>1</td>
<td>Defense Base</td>
<td>See Drawing for DEFENSE HOLDER BASE</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>GE-16177-01</td>
<td>4</td>
<td>side plate</td>
<td>See Drawing for CDF SIDEPLATE</td>
<td></td>
</tr>
</tbody>
</table>
NOTE

Material: Steel Sheet, .1875"
Scale: 7:8

Remove all burrs and sharp edges
NOTES:
1. MATERIAL: 3/4" CLEAR POLYCARBONATE OR BLACK HDPE
2. REMOVE ALL BURRS AND SHARP EDGES
NOTES:
1. MATERIAL: 3/4" CLEAR POLYCARBONATE OR BLACK HDPE
2. REMOVE ALL BURRS AND SHARP EDGES.
NOTES:
1. MATERIAL: 3/4" CLEAR POLYCARBONATE OR BLACK HDPE
2. REMOVE ALL BURRS AND SHARP EDGES
Corner Batter Plastic Assembly

<table>
<thead>
<tr>
<th>ITEM NO</th>
<th>PART NUMBER</th>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GE-16143</td>
<td>1</td>
<td>batter plastic, corner</td>
<td>See Drawing</td>
</tr>
<tr>
<td>2</td>
<td>GE-16184</td>
<td>1</td>
<td>CLEAT, CORNER RAMP</td>
<td>See Drawing</td>
</tr>
<tr>
<td>3</td>
<td>HW-00058</td>
<td>5</td>
<td>1/4&quot;-20 Flat Head Machine Screw, 1.25&quot; Long</td>
<td>Hardware</td>
</tr>
<tr>
<td>4</td>
<td>HW-00087</td>
<td>5</td>
<td>nut, nylock 1/4-20</td>
<td>Hardware</td>
</tr>
</tbody>
</table>

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.
TOLERANCES ARE:
X.X +/- 0.1
X.XX +/- 0.01
X.XXX +/- 0.001
ANG +/- 1
DO NOT SCALE
NOTE: Hook fastener applied to this side to adhere to GE-16139
NOTE: Hook fastener applied to this side to adhere to GE-16137 and GE-16138.
ITEM | NO | PART NUMBER | QTY | DESCRIPTION | NOTES
--- | --- | --- | --- | --- | ---
1 | 1 | GE-16144 | 1 | batter plastic, half corner | See Drawing
2 | 1 | GE-16181 | 1 | CLEAT, HALF CORNER | See Drawing
3 | 3 | HW-00055 | 1/4"-20 Flat Head Machine Screw, 1.25" Long | Hardware
4 | 3 | HW-00087 | nut, nylock 1/4-20 | Hardware

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.
TOLERANCES ARE:
X.X +/- 0.1
X.XX +/- 0.01
X.XXX +/- 0.001
ANG +/- 1
DO NOT SCALE
NOTE: Hook fastener applied to this side to adhere to GE-16140
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.

TOLERANCES ARE:

X.X +/- 0.1
X.XX +/- 0.01
X.XXX +/- 0.001
ANG +/- 1

DO NOT SCALE

<table>
<thead>
<tr>
<th>ITEM NO</th>
<th>PART NUMBER</th>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GE-16144</td>
<td>1</td>
<td>batter plastic, half corner</td>
<td>See Drawing</td>
</tr>
<tr>
<td>2</td>
<td>GE-16181</td>
<td>1</td>
<td>CLEAT, HALF CORNER</td>
<td>See Drawing</td>
</tr>
<tr>
<td>3</td>
<td>HW-00055</td>
<td>3</td>
<td>1/4&quot;-20 Flat Head Machine Screw, 1.25&quot; Long</td>
<td>Hardware</td>
</tr>
<tr>
<td>4</td>
<td>HW-00087</td>
<td>3</td>
<td>nut, nylock 1/4-20</td>
<td>Hardware</td>
</tr>
</tbody>
</table>
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.

TOLERANCES ARE:

X.X +/- 0.1
X.XX +/- 0.01
X.XXX +/- 0.001

ANG +/- 1

DO NOT SCALE

ITEM

NO

PART NUMBER

QTY

DESCRIPTION

NOTES

1

GE-16144

1

batter plastic, half corner

2

GE-16181

1

CLEAT, HALF CORNER

3

HW-00055

3

1/4"-20 Flat Head Machine Screw, 1.25" Long

4

HW-00087

3

nut, nylock 1/4-20
NOTE: Hook fastener applied to this side to adhere to GE-16141.
Attach Item 2 and 3 to Item 1 using staples or screws, and wood glue.
NOTES:
1. ITEM: GE-16189-01
2. MATERIAL: 1/2" THICK PLYWOOD.
3. QTY: 1
NOTES:
1. ITEM: GE-16189-02
2. MATERIAL: 1/2" THICK PLYWOOD.
3. QTY: 1

NOTES:
1. ITEM: GE-16189-03
2. MATERIAL: 1/2" THICK PLYWOOD.
3. QTY: 1
NOTE

Material: 1018 Cold Rolled Steel Rectangle, .25" x 1.25"
Scale: 1:1

Remove all sharp edges and burrs
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.

TOLERANCES ARE:

X.X ± 0.1
X.XX ± 0.01
X.XXX ± 0.001

ANG ± 1

DO NOT SCALE

PORTCULLIS, UPPER ASSEMBLY

SEE DETAIL A

SCALE 5:8 TOP

SEE DETAIL B

SCALE 5:8 FRONT

SEE DETAIL C

SCALE 5:8 SIDE

SEE DETAIL D

SCALE 5:8 BOTTOM
Secure Polycarbonate to the Portcullis Frames with 1/4"-20 hardware as shown. Remember to place the Spring Carriage Angle before tightening down hardware.

NOTE: Using the 3/8"-16 hardware, connect the Upper Rollers, the plastic spool and the springs.

NOTE: Using #10-24 hardware, secure the spring to the side of the Portcullis Door. Make sure the door can move up and down freely. It should take between 5 and 6 pounds of force to lift the door.
NOTE: Connect the Portcullis Crenellations using Hook and Loop fastener.
**Frame, Portcullis**

**Model Name**: GE-16196

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>PART NUMBER</th>
<th>QTY</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GE-16196-01</td>
<td>2</td>
<td>vertical</td>
</tr>
<tr>
<td>2</td>
<td>GE-16196-02</td>
<td>1</td>
<td>horizontal</td>
</tr>
<tr>
<td>3</td>
<td>GE-16196-03</td>
<td>2</td>
<td>support</td>
</tr>
</tbody>
</table>

**Dimensions**
- 72.00 in.
- 48.00 in.

**Tolerances**
- X.X +/- 0.1
- X.XX +/- 0.01
- X.XXX +/- 0.001

**Angles**
- +/- 1°

**Instructions**
- Unless otherwise specified, all dimensions are in inches. Cuts, recesses, and other features are to be ASME Standard, Inch.
- 2 Places.
- 2 Places.
UNLESS OTHERWISE SPECIFIED ALL
DIMENSIONS ARE IN INCHES.

TOLERANCES ARE:
X.X +/- 0.1
X.XX +/- 0.01
X.XXX +/- 0.001

ANG +/- 1

DO NOT SCALE

Frame, Portcullis

2X \(\Phi\) .391 THRU BOTH ITEM 1

7X \(\Phi\) .265

6X .88

67.50  51.25  18.75

63.50  35.00  2.50

D
C
B
A

UNLESS OTHERWISE SPECIFIED ALL
DIMENSIONS ARE IN INCHES.

TOLERANCES ARE:
X.X +/- 0.1
X.XX +/- 0.01
X.XXX +/- 0.001

ANG +/- 1

DO NOT SCALE

Frame, Portcullis
ITEM 1: VERTICAL
MATERIAL: 1.75" X .125" SQUARE TUBING, 6063 ALUMINUM
QTY: 2

ITEM 2: HORIZONTAL
MATERIAL: 1.75" X .125" SQUARE TUBING, 6063 ALUMINUM
QTY: 1

ITEM 3: SUPPORT
MATERIAL: 1.75" X .125" SQUARE TUBING, 6063 ALUMINUM
QTY: 2
Notes:
1. Material: 1/4" clear polycarbonate
2. Print to look like rock wall.
3. Remove all burrs and sharp edges.
Portcullis, Door Assembly

<table>
<thead>
<tr>
<th>No.</th>
<th>PART NO/DESCRIPTION</th>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GE-16199</td>
<td>1</td>
<td>portcullis, door weldment</td>
<td>See Drawing</td>
</tr>
<tr>
<td>2</td>
<td>GE-16200</td>
<td>1</td>
<td>door plastic, portcullis</td>
<td>See Drawing</td>
</tr>
<tr>
<td>3</td>
<td>GE-16201</td>
<td>4</td>
<td>plate, nite</td>
<td>See Drawing</td>
</tr>
<tr>
<td>4</td>
<td>GE-16202</td>
<td>4</td>
<td>bearing, 1.125 od</td>
<td>See Drawing</td>
</tr>
<tr>
<td>5</td>
<td>GE-16203</td>
<td>2</td>
<td>plastic roller</td>
<td>See Drawing</td>
</tr>
<tr>
<td>6</td>
<td>GE-16204</td>
<td>2</td>
<td>875° Flanged Roller Bearing</td>
<td>See Drawing</td>
</tr>
<tr>
<td>7</td>
<td>HW-00057</td>
<td>4</td>
<td>nut, nylock 1/4-20</td>
<td>Hardware</td>
</tr>
<tr>
<td>8</td>
<td>HW-00050</td>
<td>24</td>
<td>washer, #10</td>
<td>Hardware</td>
</tr>
<tr>
<td>9</td>
<td>HW-00092</td>
<td>2</td>
<td>nut, nylock, #10-24</td>
<td>Hardware</td>
</tr>
<tr>
<td>10</td>
<td>HW-00097</td>
<td>2</td>
<td>Spacer, 3.82&quot; ID, .5&quot; OD, 125° Thick</td>
<td>Hardware</td>
</tr>
<tr>
<td>11</td>
<td>HW-00107</td>
<td>2</td>
<td>5/8-16 Machine Screw, 3&quot; Long</td>
<td>Hardware</td>
</tr>
<tr>
<td>12</td>
<td>HW-00108</td>
<td>2</td>
<td>3/8-16 Machine Screw, 1.5&quot; Long</td>
<td>Hardware</td>
</tr>
<tr>
<td>13</td>
<td>HW-00110</td>
<td>4</td>
<td>1/4-20 Machine Screw, 1.75&quot; Long</td>
<td>Hardware</td>
</tr>
<tr>
<td>14</td>
<td>HW-00111</td>
<td>12</td>
<td>5/16-24 Machine Screw, 1.5&quot; Long</td>
<td>Hardware</td>
</tr>
</tbody>
</table>
Portcullis, Door Assembly

SEE DETAIL B

SEE DETAIL C

SCALE 3:4

DETAIL B

DETAIL C

SCALE 3:4

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.

TOLERANCES ARE:

X.X +/- 0.1

X.XX +/- 0.01

X.XXX +/- 0.001

ANG +/- 1

DO NOT SCALE
Portcullis, Door Assembly

NOTE: Secure the bottom of the Portcullis Polycarbonate using #10-24 hardware.

NOTE: Connect Portcullis Polycarb using #10-24 hardware in the four (4) center holes along the top rail.

NOTE: Secure the rest of the Polycarbonate with 3/16" Aluminum rivets.

NOTE: Secure the bottom rollers using the 3/8"-16 and 1/4"-20 Hardware. Be sure that all bearings roll smoothly after mounting them.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.
TOLERANCES ARE:
X.X +/- 0.1
X.XX +/- 0.01
X.XXX +/- 0.001
ANG +/- 1

DO NOT SCALE
Item 1: Horizontal  
Material: 1" x .12" Square Tubing, A513 Steel  
Qty: 3

Item 2: Vertical  
Material: 1" x .12" Square Tubing, A513 Steel  
Qty: 2
Notes:
1. Material: 1/8" Clear Polycarbonate
2. Grid to be painted black on one side.
NOTES:
1. MATERIAL: 1/8" THICK ALUMINUM
2. REMOVE ALL BURRS AND SHARP EDGES.
NOTES:
- BALL BEARING
- 2 SHIELDS
- COMMON INDUSTRY NUMBER: 1614ZZ
NOTES:
1. MATERIAL: 1/4" NATURAL HDPE
2. REMOVE ALL BURRS AND SHARP EDGES
### Upper Roller Assembly

<table>
<thead>
<tr>
<th>ITEM</th>
<th>PART NUMBER</th>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GE-16202</td>
<td>2</td>
<td>bearing, 1.125 od</td>
<td>See Drawing</td>
</tr>
<tr>
<td>2</td>
<td>GE-16205</td>
<td>1</td>
<td>upper roller</td>
<td>See Drawing</td>
</tr>
</tbody>
</table>

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.

TOLERANCES ARE:

- X.X +/- 0.1
- X.XX +/- 0.01
- X.XXX +/- 0.001
- ANG +/- 1

DO NOT SCALE
NOTES:
1. MATERIAL: 1" SCHEDULE 40 PIPE, 6061 ALUMINUM
2. REMOVE ALL BURRS AND SHARP EDGES
NOTES:
1. MATERIAL: 1-1/2" X .125" ANGLE, 6063 ALUMINUM
2. REMOVE ALL BURRS AND SHARP EDGES
NOTES:
1. MATERIAL: WHITE OR NATURAL HDPE
2. REMOVE ALL BURRS AND SHARP EDGES
NOTES:
1. VULCAN SPRING PN: J25S65FR
2. FORCE: 23 LBS
3. LENGTH: 65"

REV | LOCATION | DESCRIPTION | APPROVED | DATE
--- | --- | --- | --- | ---
A | B1 | Updated Manufacturer PN | NJS | 2/4/2016
D2 | | Updated Hole size | |

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.
CUSTOMER AIR PLANE
X.XX = 0.0001
X.XXX = 0.0001

SCALE 1:2
SHEET 1 OF 1

A. SPRING, CONFORCE

DO NOT SCALE

1109x115 SHEET OF 1 SCALE 1:2
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MODEL NAME
GE-16209

TITLE
DC-16209

APPROVED BY
ISSUE
DRAWN BY
CHECKED BY
DATE
DATE
DATE

SPRING, CONFORCE

SPRING, CONFORCE
NOTE

Material: .875" Flange Bearing, Steel
Scale: 2:1
NOTES:

1. MATERIAL: 1/4" THICK, BLACK, HDPE or CLEAR POLYCARBONATE
USE CABLE TIES TO ATTACH ITEMS 3 AND 6 TO THE ASSEMBLY. (8 TIMES)

USE CABLE TIES TO ATTACH ITEM 15 TO ITEM 14 USING 3 CABLE TIES.

ATTACH ITEM 15 TO ITEM 14 USING 3 CABLE TIES.

USE EPOXY TO ATTACH ITEM 14 TO THE FLAG MOUNTS.

USE EPOXY TO ATTACH ITEM 14 TO THE FLAG MOUNTS.

<table>
<thead>
<tr>
<th>ITEM NO</th>
<th>PART NUMBER</th>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GE-16216</td>
<td>1</td>
<td>box, side 1</td>
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<tr>
<td>2</td>
<td>GE-19217</td>
<td>2</td>
<td>solenoid</td>
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<tr>
<td>3</td>
<td>GE-19218</td>
<td>2</td>
<td>box, side 2</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>GE-19219</td>
<td>4</td>
<td>churn, 2</td>
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<td>5</td>
<td>GE-19220</td>
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<td>box, side 3</td>
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<td>6</td>
<td>GE-19221</td>
<td>2</td>
<td>box, side 4</td>
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<tr>
<td>7</td>
<td>GE-19222</td>
<td>4</td>
<td>bearing, hex</td>
<td></td>
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<td>8</td>
<td>GE-19223</td>
<td>2</td>
<td>shaft, hex</td>
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<td>9</td>
<td>GE-19224</td>
<td>6</td>
<td>clamp collar, hex</td>
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<tr>
<td>10</td>
<td>GE-19225</td>
<td>2</td>
<td>spacer 1</td>
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<tr>
<td>11</td>
<td>GE-19226</td>
<td>2</td>
<td>flag catch</td>
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<td>12</td>
<td>GE-16227</td>
<td>1</td>
<td>flag mount 1</td>
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<td>GE-16228</td>
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<td>flag mount 2</td>
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<td>14</td>
<td>GE-16229</td>
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<td>flag pole</td>
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<td>GE-16230</td>
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<td>flag</td>
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<td>GE-16231</td>
<td>1</td>
<td>counterweight 1</td>
<td></td>
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<tr>
<td>17</td>
<td>GE-16232</td>
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<td>counterweight 2</td>
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<tr>
<td>18</td>
<td>GE-19233</td>
<td>2</td>
<td>spacer 1</td>
<td></td>
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<tr>
<td>19</td>
<td>PW-00012</td>
<td>8</td>
<td>CAP SCREW, HEX, 1/4-20 X .75&quot;</td>
<td></td>
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<tr>
<td>20</td>
<td>PW-00092</td>
<td>14</td>
<td>nut, nylock, #10-24</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>PW-00103</td>
<td>4</td>
<td>Flat Head Machine Screw, 10-24 x 1&quot;</td>
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</tr>
<tr>
<td>22</td>
<td>PW-00104</td>
<td>2</td>
<td>PAN HEAD, #10-24 X 1.25&quot;</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>PW-00105</td>
<td>8</td>
<td>PAN HEAD, #10-24 X 1.25&quot;</td>
<td></td>
</tr>
</tbody>
</table>

ITEMS 3 AND 6 ATTACHED TO THE ASSEMBLY USING CABLE TIES (8 TIMES).

ATTACH ITEM 15 TO ITEM 14 USING 3 CABLE TIES.

USE CABLE TIES TO ATTACH ITEMS 3 AND 6 TO THE ASSEMBLY.

USE EPOXY TO ATTACH ITEM 14 TO THE FLAG MOUNTS.

USE EPOXY TO ATTACH ITEM 14 TO THE FLAG MOUNTS.
NOTE

Material: Clear Polycarbonate, .25" Thick
Scale: 1:2
NOTES:
1. MANUFACTURED BY: DORMEYER PRODUCTS
2. PART NUMBER: 2005-M-1
NOTE

Material: Clear Polycarbonate, .125" Thick
Scale: 1:2
NOTES:
1. MAKE FROM ANDYMARK PAR NUMBER: AM-2974
2. REMOVE ALL BURRS AND SHARP EDGES.
NOTE

Material: Clear Polycarbonate, .25" Thick
Scale: 1:2
NOTE

Material: Clear Polycarbonate, .125" Thick
Scale: 3:4
UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.

TOLERANCES ARE:

X.X +/- 0.1
X.XX +/- 0.01
X.XXX +/- 0.001
ANG +/-

DO NOT SCALE

MODEL NAME
GE-16222

TITLE
BEARING, HEX

MODEL NAME
GE-16222

TITLE
BEARING, HEX

DO NOT SCALE

MODEL NAME
GE-16222

TITLE
BEARING, HEX

DO NOT SCALE
NOTES:
1. MATERIAL: 6061 ALUMINUM
2. REMOVE BURRS AND SHARP EDGES
CLAMP COLLAR, HEX

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES. TOLERANCES ARE:
X.X +/- 0.1
X.XX +/- 0.01
X.XXX +/- 0.001
ANG +/- 1

DO NOT SCALE

MODEL NAME
GE-16224

TITLE
CLAMP COLLAR, HEX

MODEL NAME
GE-16224

PROJECT

TITLE
CLAMP COLLAR, HEX

MODEL NAME
GE-16224

ISSUE

SCALE: 1:1

SHEET 1 OF 1
NOTES:
1. MATERIAL: ACETAL, BLACK
2. VEX PART NUMBER: 217-3265
NOTES:
1. MATERIAL: 3/8" ALUMINUM, 5052
   REMOVE BURRS AND SHARP EDGES

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.
CUSTOMER ART
X.XX = 0-20
X.XXX = 0-001
NGS = 

Title: FLAG CATCH
Model Name: GE-16226

REV | LOCATION | DESCRIPTION | APPROVED | DATE
--- | --- | --- | --- | ---
A | A1 | Changed Material | NJS | 1/13/2016

Scale: 1:1

DO NOT SCALE

**ASME STANDARD, INCH**
NOTES:
1. MATERIAL: 1/2" ALUMINUM, 5052
2. REMOVE ALL BURRS AND SHARP EDGES
NOTES:
1. MATERIAL: 1/2" ALUMINUM, 5052
2. REMOVE ALL BURRS AND SHARP EDGES
NOTES:
1. MATERIAL: WHITE FIBERGLASS ROD
1. MATERIAL: 4mm COROPLAST, RED OR BLUE
NOTES:
1. MATERIAL: 1/2" X 2" 1018 STEEL BAR
2. REMOVE ALL BURRS AND SHARP EDGES
NOTES:
1. MATERIAL: 1/2" X 2" 1018 STEEL BAR
2. REMOVE ALL BURRS AND SHARP EDGES.
NOTES:
1. MATERIAL: ACETAL, BLACK
2. VEX PART NUMBER: 217-3259
### TOWER ROOF ASSEMBLY

<table>
<thead>
<tr>
<th>ITEM NO</th>
<th>PART NUMBER</th>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GE-16213</td>
<td>1</td>
<td>ROOF, TOWER</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>GE-16235-01</td>
<td>1</td>
<td>CHAIN ASSEMBLY</td>
<td>26 ft. of #2/0 Straight Link Chain</td>
</tr>
<tr>
<td>3</td>
<td>HW-00115</td>
<td>5</td>
<td>EYELET, #10-24</td>
<td></td>
</tr>
</tbody>
</table>

Use cable ties or carabineers to attach chain together and to eyelets. 18 places.

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**TOLERANCES**

- X.X +/- 0.1
- X.XX +/- 0.01
- X.XXX +/- 0.001
- ANG +/- 1

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**UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES.**
ITEM NO. | PART NUMBER | QTY | DESCRIPTION | NOTES
---|---|---|---|---
1 | GE-16106 | 1 | ramp, high goal | 
2 | GE-16236-01 | 2 | 1" Nylon Webbing | 12" Lengths
3 | HW-00089 | 2 | 1/4"-20 Machine Screw, 2.5" Long | 

PUNCH/CUT 1/4" HOLE AND INSERT ITEM 3. 2 PLACES

DRILL .19" HOLE AND SECURE ITEM 2 TO ITEM 1 WITH A 3/16" RIVET. 2 PLACES
Notes:
1. Material: Pine or other type of wood
Material: 14 Ga. Galvanized Steel
Scale: 1:6
Notes:
1. Material: .080" thick x 8" wide nylon, opaque black
2. McMaster PN: 1894A214