

LAYBACK ARCH BACKSTOP

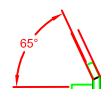
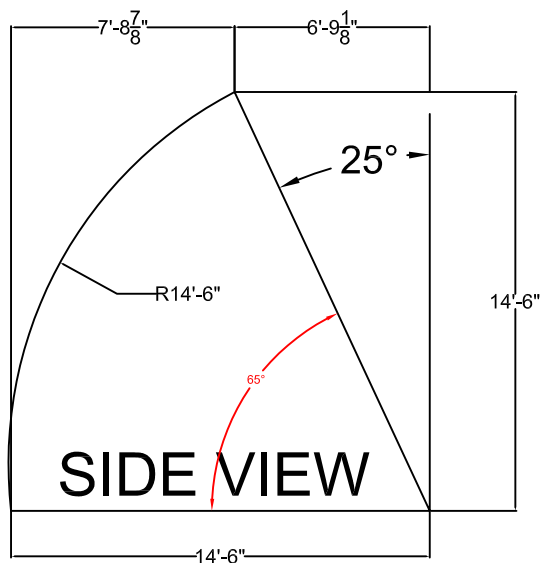
☐ **LA-AB-50L** 20' H x 14' 6" H x 50' W x 14' 6" D Layback Arch (1,750 lbs)

FRAMES AVAILABLE
STANDARD AS:

☐ GALVANIZED ☐ POWDER COATED



The arched backstop in the layback design is manufactured of 2-7/8" O.D. galvanized steel ribs and 1-1/6" O.D. horizontal stiffeners. The frame is ordered galvanized or powder coated, and the mesh can be ordered galvanized vinyl coated.



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BASEBALL LAYBACK ARCH

DWG. NO.

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Specifications (Model 1217)

Overhead and Base Arches: 2-7/8" O.D. galvanized steel, wall thickness .203".

Vertical Ribs: 2-3/8" O.D. galvanized steel, wall thickness .154". Ribs shall be formed to a smooth continuous radius throughout the entire length of each rib.

Flattened Sleeves: 1 7/8" O.D. galvanized pipe factory flattened and punched.

Horizontal Stiffeners: 1-1/16" O.D. galvanized pipe, secured between vertical ribs with 1/8" thick x 1" wide, 2-way galvanized split clamps, 5/16" x 1-1/4" carriage bolts and hex nuts. Where stiffeners connect to outside ribs, 12-gauge x 3/4" wide galvanized steel brace bands shall be used along with 5/16" x 1" carriage bolts and hex nuts. Any exposed threads to be destroyed by installer.

Main Footing Anchors: 2-7/8" O.D. galvanized pipe, internally welded sleeves that fit into BASE and OVERHEAD arch ends (2 3/8" O.D. galvanized pipe). Footing anchors shall extend 3 feet into footings and shall be welded at the bottom with one piece of 6" long angle (2" X 2" X 3/16") to form an anchor in the concrete footing.

Anchor Bolts: 5/8" x 16" foundation bolts, extending throughout base arch and shall be evenly spaced between vertical ribs. Any exposed threads to be destroyed by installer.

Tension Bars: 3/16" x 3/4" galvanized and shall be secured with 14-gauge x 3/4" zinc-plated tension bands spaced 18 inches on center and bolted with 5/16" x 1" zinc-plated carriage bolts and hex nuts. Any exposed threads to be destroyed by installer. Tension bars shall be installed along BASE arch and OVERHEAD arch to secure chain link fabric.

Chain Link Fabric: 2" x 2" squares, galvanized after weaving. Fabric shall be 9-gauge on first and second course. Fabric covering overhead extension shall be 9-gauge. It shall be installed horizontally in single lengths to outside of backstop using 12-gauge galvanized tie wire every 12 inches along vertical ribs. Edges shall be lapped approximately 1" and tied together with 9-gauge, #3 galvanized hog rings every 6 inches along seams. Fabric shall be pulled tight around curvature of backstop and shall be cut and trimmed in a neat and professional manner. Where wire is cut, exposed barbs shall be bent double to leave a knuckled edge.

Heavy Duty Adjustable Clamps: 1/4" x 1-1/4" flat bar formed and punched to accept bolts. Hot dipped galvanized after fabrication.

Concrete Footing: Footings for OVERHEAD arch shall be 4' deep X 3' in diameter. Footings for BASE arch anchor bolts shall be 18" deep X 18" diameter. Concrete not included.

Finish: All welds are ground smooth and treated with cold galvanized compound complying with MIL-P-4601. All pipe and hardware is galvanized. All fasteners are zinc-plated except anchor bolts.



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GENERAL NOTES:

- I. Check materials received with the parts list (Page 9) to make sure that all components are included and to assure that the unit is complete.
- II. The site must be level not more than + 1" variation from mean elevation over the entire length and depth of the base arch.
- III. A construction-type forklift with a 20-foot boom capacity and scaffold will be necessary to assemble frames and attach wire mesh.
- IV. The base and overhead arches are 2-7/8" O.D. and consist of three curved sections. The center sections of both the overhead and base arch have internal sleeves (2-3/8" O.D.) welded on each end and another external sleeve (1-7/8" O.D.) welded in the middle. They are marked as follows:

Left End Base Arch:	B-1	Left End Overhead Arch:	O-1
Center Base Arch:	B-2	Center Overhead Arch:	O-2
Right End Base Arch:	B-3	Right End Overhead Arch:	O-3

Extremely Important:

Before assembling the base, slide two (2) adjustable clamps on either side of the welded external sleeve (1-7/8 O.D.) on B-2 and three adjustable clamps on both B-1 & B-3.

Before assembling the overhead arch, slide two (2) adjustable clamps on either side of the welded external sleeve (1-7/8" O.D.) on O-2 and three adjustable clamps on both O-1 & O-3.

LA has noted the size of the main anchor footings as a guide line, and asks that you check with your local permit authorizing personnel, or your architect before proceeding, as your area of the country might require larger footings.

LA has also noted this particular size, so the main anchors may swivel on the base arch to properly align with the overhead arch. When installing, place the anchors in the base arch, and leave them FINGER TIGHT ONLY, at this time. Place the overhead arch onto the main anchors and finger tighten at this time. This allows the overhead arch to settle in the proper angle and sphere to insure trouble free alignment with the ribs. ONLY after assembling the entire arch, go back and tighten all set screws with proper sized allen wrenches at this time.

FRAME ASSEMBLY:

1. Locate the three sections of the base arch. (B-1, B-2 & B-3).
- 1.1 Assemble the Base Arch
- 1.2 Begin by connecting the three sections (B-1, B-2 & B-3) of the base arch together using the set screws provided. Make sure the end sleeves on B-2 are fully seated into B-1 and B-3. Set in proper field location. Measure 50' on center end to end and adjust as necessary to conform to the 50' dimension. Mark the location of the main footings at each end of the base arch. Mark the 10 anchor bolt locations at each pre-drilled hole on B-1, 2 and 3. If the backstop is to be used on a concrete mowing strip (slab under the base arch only) it still requires the anchor bolt footings. The slab must be tied into the footings as designed by the architect/owner.
- 1.3 Move base arch aside and dig footings. Main end footing dimensions are 36" diameter x 48" deep. Anchor bolt footings are 12" in diameter x 24" deep. (See Detail B) Note: Footing sizes are based on average soil conditions. Loose and / or sandy soil is not average and footing sizes must be increased accordingly to meet local soil conditions.
- 1.4 Relocate base arch to match footing locations. Measure center to center on base arch ends again and hold 50' dimension. Stake rear of base arch to prevent sliding when installing overhead arch.
2. Assemble Overhead Arch
- 2.1. Assemble three sections of overhead arch (O-1, O-2 & O-3) on the ground in front of the base arch. (Standing inside the arch B-1 and B-3 will be on your right and left respectively). Make sure end sleeves on B-2 are fully seated. Join the sections together using set screws provided. Tighten set screws before lifting overhead arch in the air.
- 2.2. Raise assembled overhead arch into position using a forklift. Insert main footing anchors into both ends of base arch. Lower the overhead arch onto main footing anchors until fully seated. Leave forklift in position to support the overhead arch until vertical ribs are installed. (See Detail B)
- 2.3. At connecting locations on the main footing anchors use set screws to hold in place. Do not pour concrete until entire frame is assembled.



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CRITICAL NOTE: AFTER OVERHEAD ARCH, BASE ARCH, AND RIB#1 IS UP, STOP TO VERIFY OVERALL MEASUREMENTS (WIDTH, HEIGHT, AND DEPTH) BEFORE PROCEEDING.

3. Assemble the Vertical Ribs & Horizontal Stiffeners
 - 3.1. All vertical ribs are marked with numbers and should be installed in this order. Rib #1 is the center fixed rib. Insert (1-7/8" O.D.) internal sleeve on base into bottom of rib. Hold back overhead arch and insert the internal sleeve into the center rib. Make sure rib and sleeve are fully seated at both locations.
 - 3.2. Horizontal stiffeners are used between the ribs. There are four lengths of horizontal stiffeners. See Clamp Spacing Detail for correct location of each stiffener. Assemble one split half clamp on rib #1 using 5/16" x 1-1/4" carriage bolts and attach stiffener (53") to each side of clamp. Slide stiffeners and clamps up the rib to approximately 6ft above finish grade. Use another half clamp to attach stiffener to #2 and #3 ribs. Only tighten bolts tight enough to hold in place.
 - 3.3. To install remaining ribs, locate the adjustable clamps that were slid onto the base and overhead arches before Step Locate the flattened end sleeves (See Detail C). Insert flattened sleeve into bottom of rib #2 and assemble to adjustable clamp on base arch using 3/8" x 1-1/2" hex head bolts. (See PW HD Adjustable Clamp Detail) Insert flattened sleeve into top of rib #2 and attach to adjustable clamp on overhead arch. Tighten bolt enough to hold in place. Using another half clamp and horizontal stiffener, secure rib #3 in place as in step #3.2.
 - 3.4. In an alternating sequence, install the remaining ribs, 4 and 5, and 7, 8 and 9, 10 and 11 installing one rib to each side of previous rib. Do not tighten bolts fully tight until all stiffeners and clamps are in place.
 - 3.5. Attach ribs #10 and #11 to top and bottom arches and use short stiffeners to hold them in place. Use 2-3/8" brace bands on end of short stiffener. Adjust ribs and stiffeners as needed for horizontal and vertical continuous curved appearance.
 - 3.6. Make sure all sleeved joints are fully seated and proceed to tighten all bolts and set screws.
4. Installation of Concrete
 - 4.1. Install anchor bolts and nuts in the holes on base arch. Thread nuts on anchor bolts until two threads are protruding out of nut. Make sure the anchors are centered in footing holes. (See Detail D.)
 - 4.2. Check for overall frame alignment and adjust frame before pouring concrete.
 - 4.3. Pour concrete in the large main footing holes to within 2" of finished grade.
 - 4.4. Pour anchor bolt footings up to finished grade. (See Detail D.)
 - 4.5. Allow concrete to set for 3 days before completion of install.
 - 4.6. After footings have set cover main footings with dirt or turf.
 - 4.7. Important Note: Footing sizes are based on average soil conditions. Loose and / or sandy soil is not average and footing sizes must be increased accordingly to meet local soil conditions.
5. WIRE MESH INSTALLATION:
Mesh is installed in 2 courses:
 - 5.1. FIRST COURSE: - 1st or Bottom Course: 2"-9ga x 10' width, 60' long
 - 5.2. Cut 10' off one roll and splice the two lengths of 10' -9ga mesh into one 60' length.
 - 5.3. Stand the wire up on edge and position on the outside of the frame so the bottom edge is flush with the bottom of the base arch and so it is centered. Secure the mesh to the center rib only with tie-wire on 12" centers. Pull the mesh tight to each end. Trim the excess on the bias about 2" short of the overhead arch at both ends to allow room for tension bars and bands.
 - 5.4. Install one 10' tension bar in the mesh at each end (parallel to overhead arch) so the top of the bars are flush with the top of the mesh. Where the bars do not fit through the mesh properly the cut ends of the wire must be twisted around the bars to prevent unraveling of the mesh. Make sure there are no exposed sharp wires. (See Mesh Detail.)
 - 5.5. Pull mesh tight as possible as it will save having extra work later. Install tension bands on 18" centers on the overhead arch up to the top of the mesh. Secure bands with 5/16" x 1" carriage heads facing outside. Tighten hardware securely.
 - 5.6. If the top few feet of the mesh are still loose or sag between ribs, then proceed with this step.
 - Starting at the center rib at the top of the mesh cut the mesh along the rib downward to about 12" above where the mesh is tight.
 - NOTE: Never cut the mesh more than 12" below the stringers (1-1/16" O.D. pipe between the ribs).
 - Pull the mesh tight starting at the bottom of the cut working upward using hog rings to secure approximately every other diamond.
 - Cut away the excess (the usual amount of excess at the top is 4" to 6") allowing enough wire left to twist the cut ends together.



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Use more hog rings and/or tie wire as necessary to completely secure the seam. (See Mesh Detail.)

If the top of the mesh is still loose or sags, repeat step #5 for each rib until it is tight. NOTE: This does not necessarily mean this needs to be done at every rib only until tight.

Work from center rib outward alternating right and left. At some of the outer ribs cutting may not be necessary but it may be necessary to gather one or two strands of mesh and secure with hog rings.

5.7 Secure the mesh to all of the ribs with tie wire on 18" centers.

5.8 Install the bottom 10' tension bars in the second diamond up from the bottom of the mesh. Feed the bars through the mesh starting at one end working to the opposite end. Overlap the ends of the tension bars a few inches at the ends. The last tension bar must be cut to size so it fits flush with the inside edge of the overhead arch. NOTE: The bars must be installed after the mesh is tight (if not, the mesh will not conform to the shape of the backstop).

5.9 To install tension bands, it may be necessary to loosen nuts on anchor bolts and raise the base arch slightly so they will fit underneath. Install bands on 18" centers all along the base arch. Secure with 5/16" x 1" carriage bolts with heads facing outside of the tension bars along the base arch. Use hog rings to secure overlap of tension bars.

5.10 Tighten anchor bolt nuts securely so the base arch is in contact with the anchor bolt footings. Peen any excess threads to prevent removal.

6. SECOND TOP COURSE: - 2nd or Top Course: 2"-9ga x 10' width, 40' long

6.1 The remaining wire, 2"-9ga x 10' wide x 40' long, is the second course. Center the mesh on the frame so the top edge of the second course is flush with and parallel to overhead arch. The excess mesh at the bottom of the second course will overlap the top of the first course (Do NOT trim at this time).

6.2 Install a 10' tension bar in the mesh at the center where the center rib (rib #1) sleeves to the overhead arch. Working from the center out, install tension bands on 18" centers while stretching mesh tight in an outward direction.

6.3 Stretch the mesh downward and secure to the center rib with tie wire on 12" centers.

6.4 Add remaining bars and bands as before alternating from left to right center. While pulling the mesh tight in an outward direction along the overhead arch. Allow 2" of overlap at the ends of the tension bars. Cut the tension bars to size where they meet the first course at the overhead arch, again allowing a few inches of overlap. Where tension bars overlap, use hog rings to secure. (See Mesh Detail.)

6.5 Pull the wire mesh tight in a downward direction and secure to every rib with tie wire on 18" centers.

6.6 If the mesh on the second course is loose or sags, then proceed with this step. The top few feet and the bottom few feet of the mesh (on the second course) may be loose. Gather one or two strands at the center rib and use hog rings to secure at every diamond. If still loose, repeat this step alternating from right to left of center. This does not necessarily mean this has to be done at every rib; only do so until tight.

6.7 Trim the bottom edge of the second course even with the top of the first course, allowing a one-diamond overlap.

6.8 Secure the two courses of mesh together with hog rings every other diamond. Twist cut wire ends around the first course making sure no sharp wires are exposed. (See Mesh Detail.)

6.9 Inspect complete backstop for loose hardware, fittings, and sharp wires. Repair as necessary. Place turf over main anchor footings.



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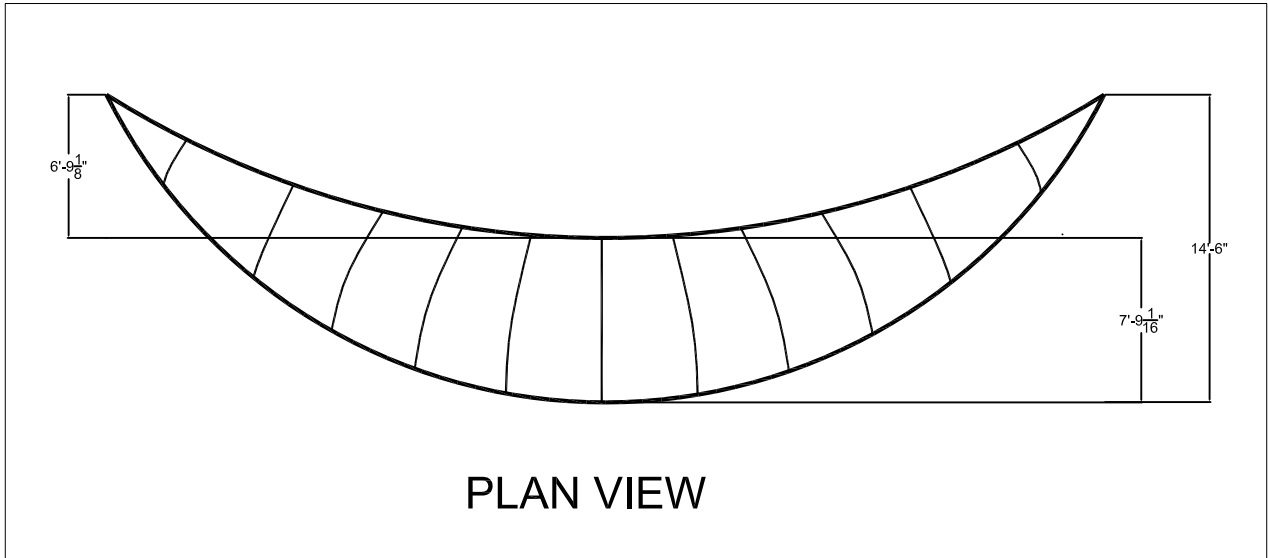
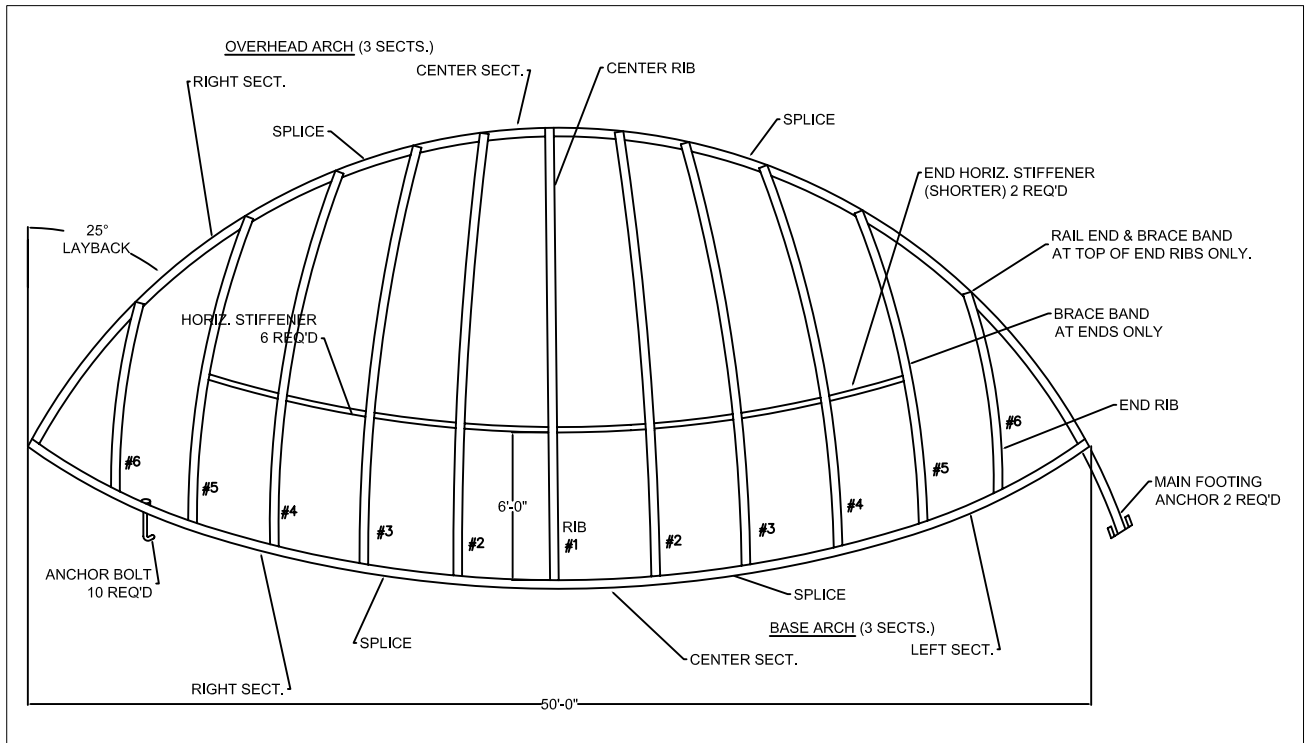
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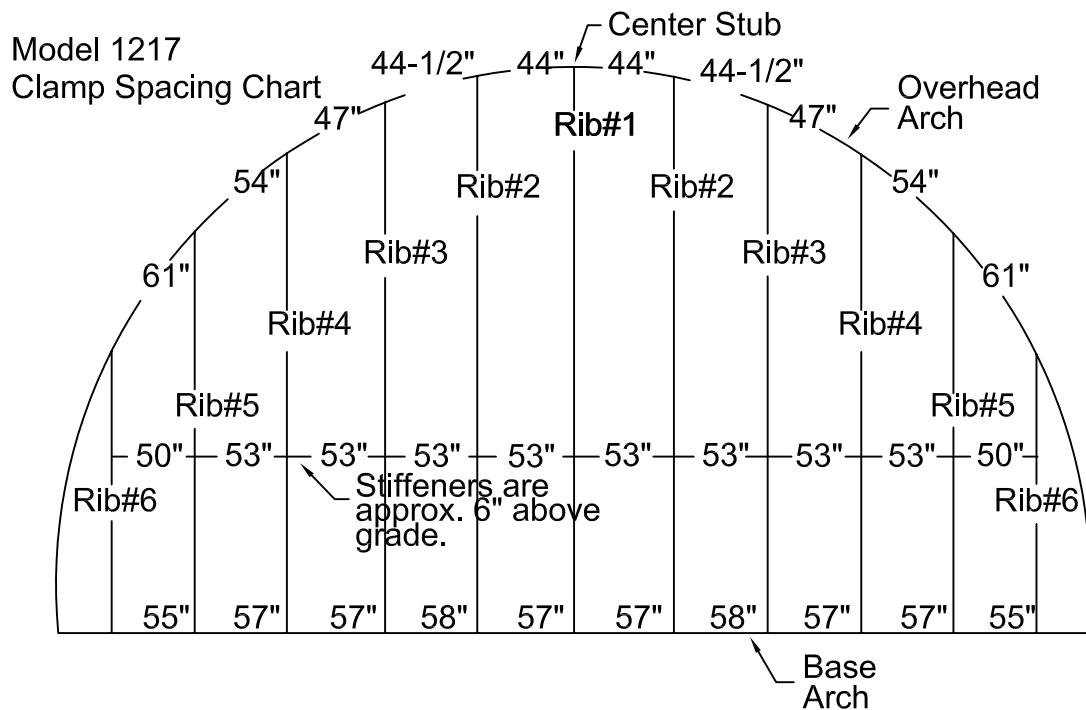
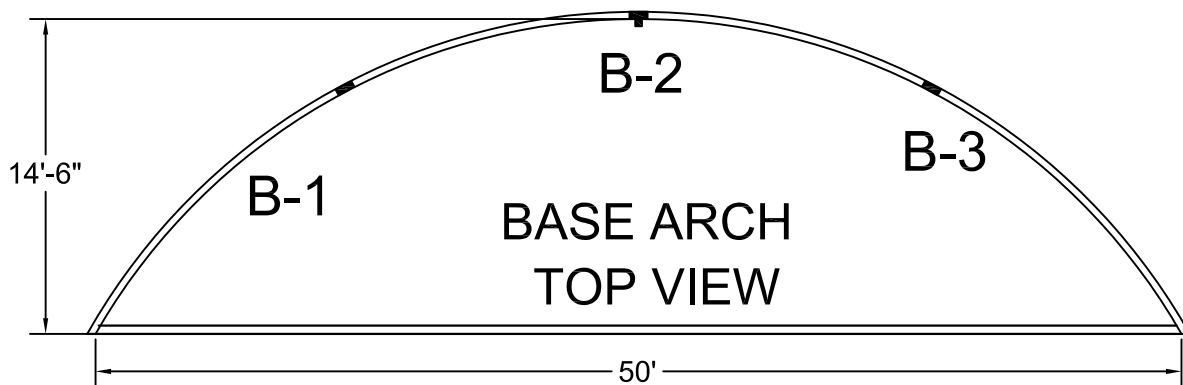
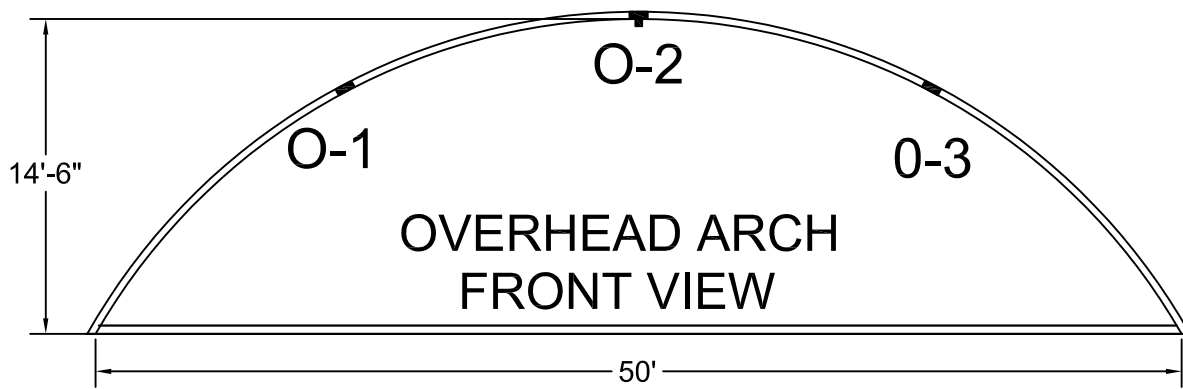
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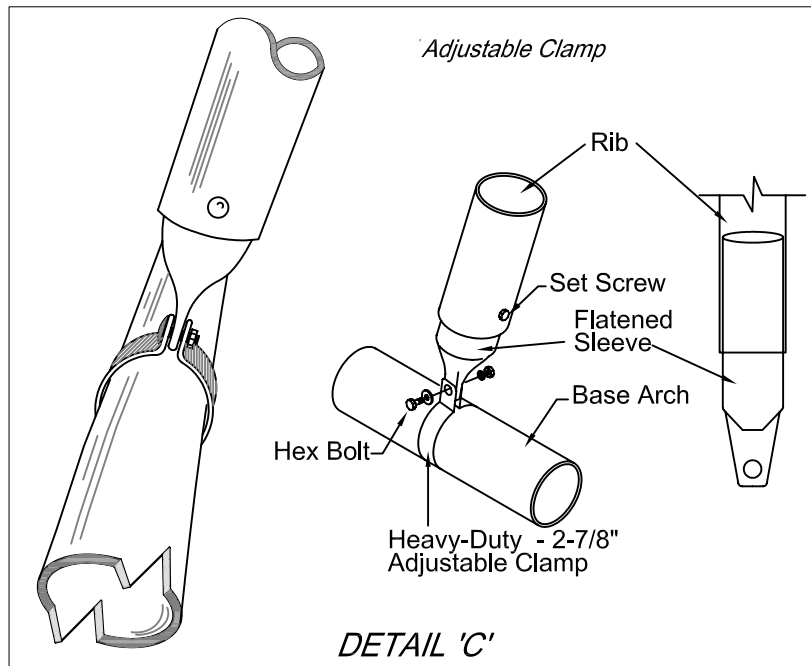
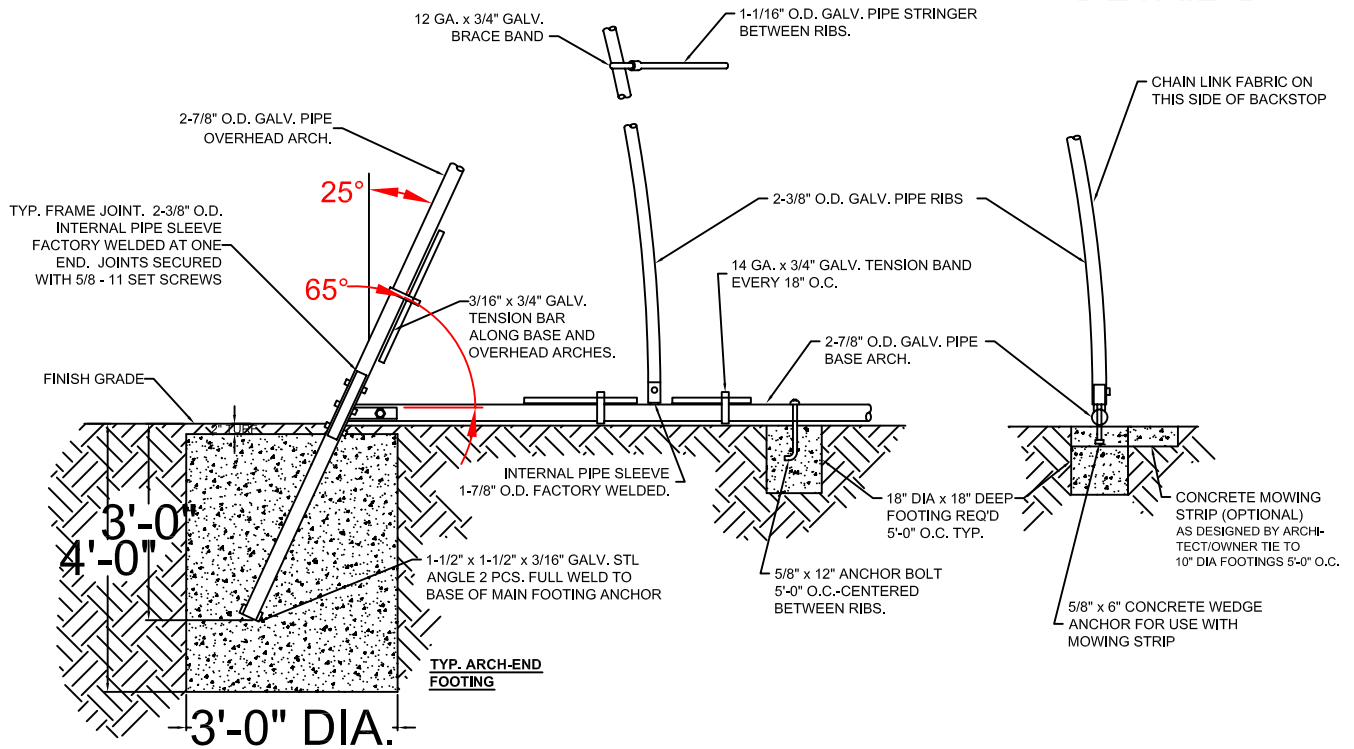
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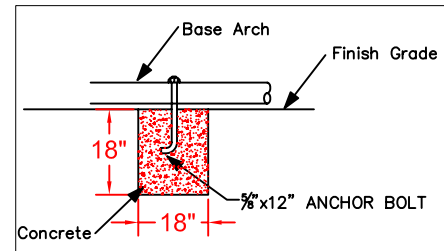
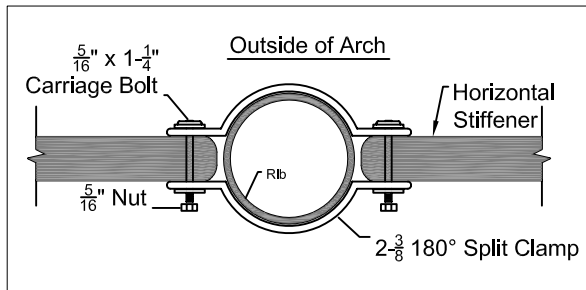
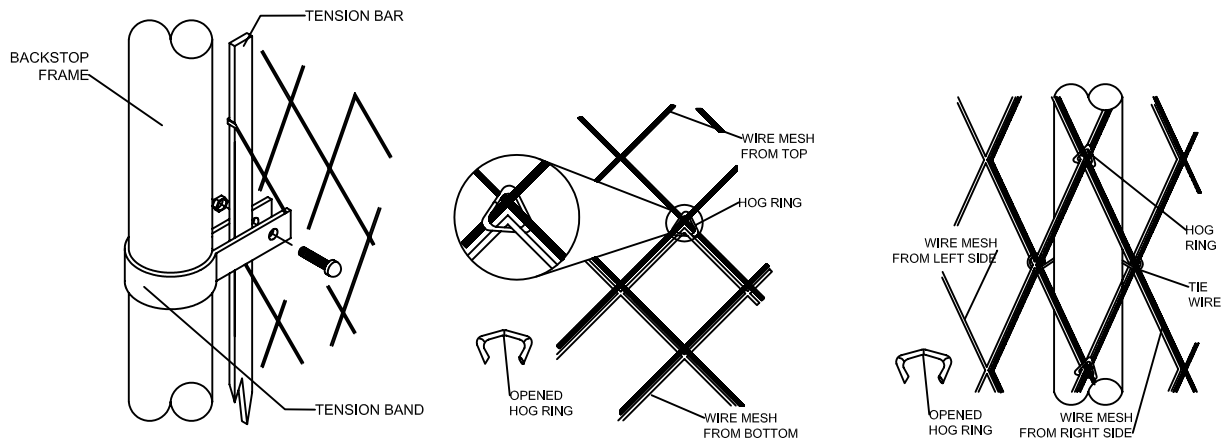




DETAIL 'B'



MESH DETAIL



DETAIL 'D'

Materials List (Model 1217)

Material List:	Qty
LEFT BASE ARCH (B-1) (2-7/8" O.D.)	1
CENTER BASE ARCH (B-2) (2-7/8" O.D.)	1
RIGHT BASE ARCH (B-3) (2-7/8" O.D.)	1
Rib Assembly - (1) (2-3/8" O.D.)	1
Rib Assembly - (2) (2-3/8" O.D.)	2
Rib Assembly - (3) (2-3/8" O.D.)	2
Rib Assembly - (4) (2-3/8" O.D.)	2
Rib Assembly - (5) (2-3/8" O.D.)	2
Rib Assembly - (6) (2-3/8" O.D.)	2
Left Overhead Arch (O-1) (2-7/8" O.D.)	1
Center Overhead Arch (O-2) (2-7/8" O.D.)	1
Right Overhead Arch (O-3) (2-7/8" O.D.)	1
5/8"-11 x 16" Anchor Bolt	10
Horizontal Stiffener - (50")	2
Horizontal Stiffener - (53")	8
Backstop Anchor	2

Material List:	Qty
10' Tension Bar	13
2" x 9 Gauge x 10' Wire Mesh - (ft)	100
2-7/8" Tension Band	72
2-3/8" Brace Band	2
2-7/8" Brace Band PW HD Adj. Clamp	20
Flattened Sleeve	20
2-3/8" 180 Degree Split Clamp Band	18
Hog Ring #3 Galvanized - (lbs)	4
5/16" x 1" Carriage Bolt	74
5/16"-18 x 1-1/4" Carriage Bolt	20
5/16"-18 Hex Nut	96
11 Gauge Tie Wire (lbs)	8
5/8" - 11 Hex Nut	10
3/8" x 1-1/2" Hex Head Grade 5 Bolt	20
3/8" -16 Lock Nut (Nylock)	20
3/8" Flat Washers	40
5/8" Socket Head Set Screws	40



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