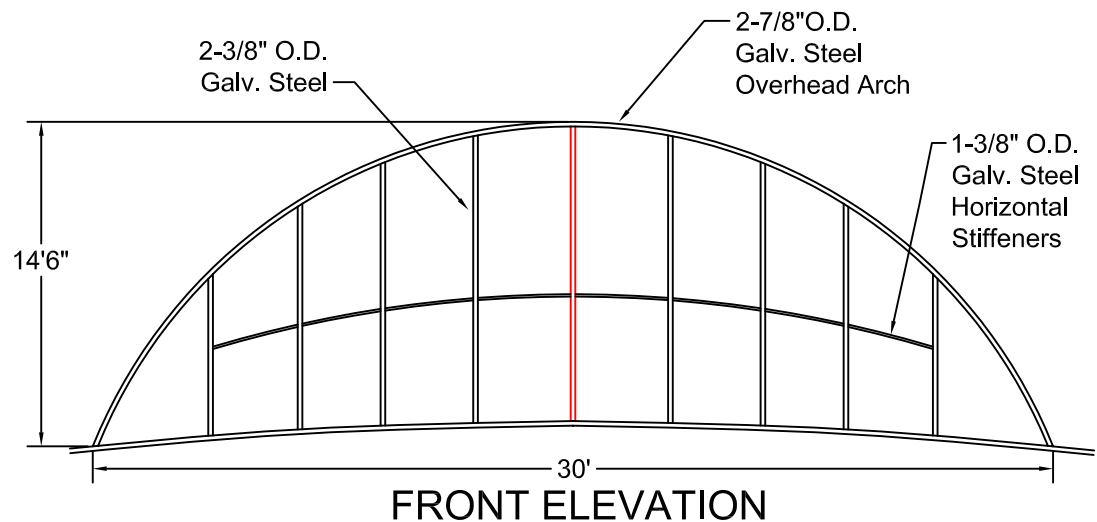
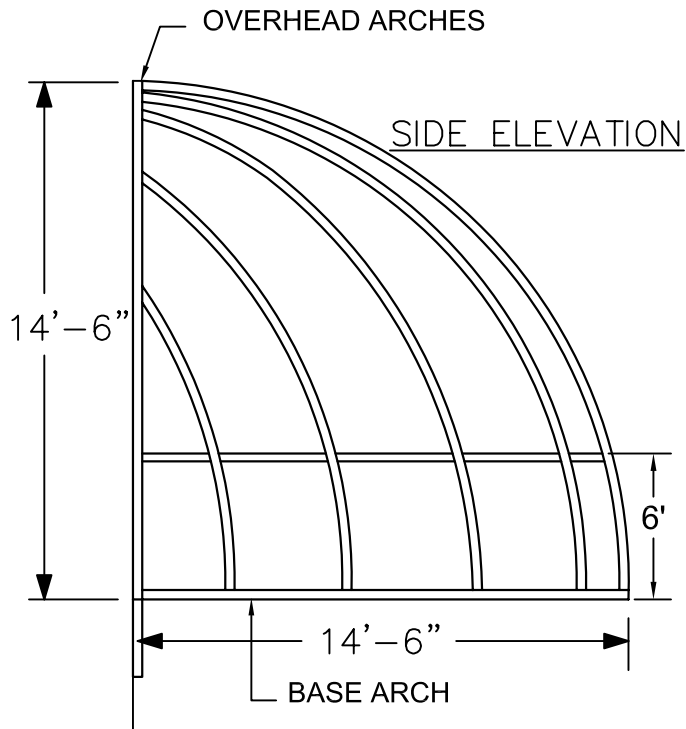


30' PERPENDICULAR ARCH BACKSTOP

● MODEL #LA-AB-30P 14'6"H, 30' W, 14'6" D (1750 LBS)



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30' PERPENDICULAR ARCH BACKSTOP

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Specifications:

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

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

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

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

Main Footing Anchors: 2-7/8" O.D. galvanized steel, welded sleeves that fit into base and overhead arch ends (2 3/8" O.D. galv. steel). Footing anchors shall extend 3 feet into footings and shall be welded at the bottom with 1 piece of 2" x 2" x 6" long angle to form an anchor in the concrete footing.

Note: Anchors MUST free-float in footing hole in order to properly align the backstop.

Anchor Bolts: 5/8" x 12" foundation bolts, extending through base arch and shall be spaced between vertical ribs. Exposed threads shall be destroyed.

Tension Bars: 3/4" galvanized and shall be secured with galvanized tension bands spaced 18 inches on center and bolted with 5/16" x 1" zinc-plated carriage bolts and hex nuts. Threads shall be destroyed by installer 10 feet up on overhead arch. Tension bars shall be installed along inside overhead arch.

Chain Link Fabric: Fabric shall be 9-gauge on all 1214 models. 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 Adapter Collars: Custom made 3-1/2" P.W. Heavy Duty Adapter Collars for Rib connections to the Overhead Arch.

Overhead Arch Adapter Sleeve for Rib #1 : Custom made 3-1/2" P.W. Overhead Adapter Sleeve.

Concrete Footing: Footings for OVERHEAD arch shall be 4' deep x 3' wide and 32' center to center. This is to allow the anchors to retain the proper angle going into the footing. This is an important step in insuring that your backstop will be easy to erect, and retain the proper rolled radii. Footings for BASE arch anchor bolts shall be 18" deep x 18" wide. Concrete not included. See footing details on page 9.

Concrete Footing: Footings for overhead arch shall be 4' deep x 3' wide. Footings for base arch anchor bolts shall be 18" deep x 18" wide. Concrete not included.

Finish: All tube 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. For maximum ball-capture, the overhead arch should be directly over home plate.
- V. The base and overhead arches are 2-7/8" O.D. and consist of two curved sections each. They are marked as follows:

The base and overhead arches are marked as follows:

Left Base Arch: B-1
Left Overhead Arch: O-1

Right Base Arch: B-2
Right Overhead Arch: O-2

Extremely Important:

Before assembling the overhead arch:

1. Slide four adapter collars on each arch section before assembly.
2. Slide the Overhead Arch Adapter Sleeve onto overhead arch.
3. Secure sections with 5/8" x 4" Hex Bolts, Washer, and Nylocks.

DO NOT POUR CONCRETE UNTIL ENTIRE FRAME IS ASSEMBLED.

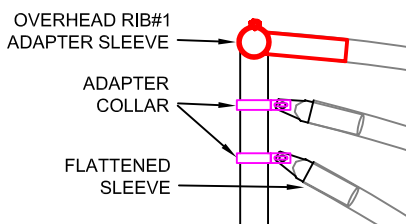
LA has noted the size of the main anchor footings as a guide line, and asks that you check with your local permit authorizing personnel, or your architect before proceeding, as your area of the country might require larger footings.

LA has also noted this particular size, so the main anchors may swivel on the base arch to properly align with the overhead arch, the anchor must freely hang in footing and not touch sides of footing. 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.

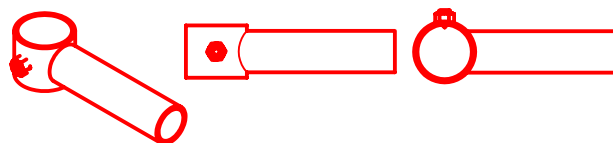
ONLY after assembling the entire arch, go back and tighten all set screws with proper sized allen wrenches at this time.

FRAME ASSEMBBLY

1. Assemble the Base Arch: (See Detail H page 9)
 - 1.1 Locate the two sections of the base arch. (B-1 & B-2) Connect the base arches together using the 5/8" set screws provided. Make sure the end sleeves on B-2 are fully seated. Set in proper field location. Measure 30' outside dimensions and adjust as necessary to conform to the 30' dimension. Mark the location of the main footings at each end of the base arch. Mark the 8 anchor bolt locations at each pre-drilled hole on B-1 and B-2.
 - 1.3 Move base arch aside and dig footings. Main anchor footing dimensions are 36" wide x 48" deep. Note: MAIN ANCHOR FOOTINGS SHOULD BE DUG TO ACCOMODATE THE ANGLE OF THE ANCHORS. Center the anchors in footing hole. (See Detail K page 8)
 - 1.4 Relocate base arch to match footing locations. Measure outside to outside on base arch ends again and hold 30' dimension. Stake rear of base arch to prevent sliding when installing overhead arch. 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.



**OVERHEAD ARCH ADAPTER SLEEVE
FOR RIB #1**



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SEE EXTREMELY IMPORTANT NOTE ON PAGE 3

2. Assemble the Overhead Arch):

2.1 Locate two sections of overhead arch (O-1 & O-2) and lay them on the ground in front of and directly opposite the base arch. Make sure O-2 is fully seated onto O-1.

2.2 Secure sections with 5/8" x 4" Hex Bolts, Washer, and Nylocks provided. Tighten before lifting overhead arch in the air.

2.3 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.

2.4 At connecting locations on the main footing anchors use set screws to hold in place.

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

3. Install Vertical Ribs:

3.1.1 All vertical ribs are marked with numbers and should be installed in this order. Rib #1 is the center fixed rib. Insert bottom of center rib onto welded stub on the base arch. Hold back overhead arch and insert the top of rib #1 onto adapter sleeve of overhead arch. Make sure rib and sleeve are fully seated on overhead & base arch. Tighten set screws to hold in place.

3.1.2 Horizontal stiffeners are used between the ribs. There are different lengths of horizontal stiffeners. See Clamp Spacing Detail on page 7 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 to each side of clamp. Slide stiffeners and clamps up the rib to approximately 6' above finish grade. Use another half clamp to attach stiffener to #2 and #3 ribs. Only tighten bolts enough to hold in place. (See Detail G page 7)

3.1.3 To install remaining ribs, locate the adapter collars that were slid onto the overhead arches done before step 1. Locate the flattened end sleeves. (See Detail A below) Insert flattened sleeve into top of rib #2 and assemble to adapter collars.

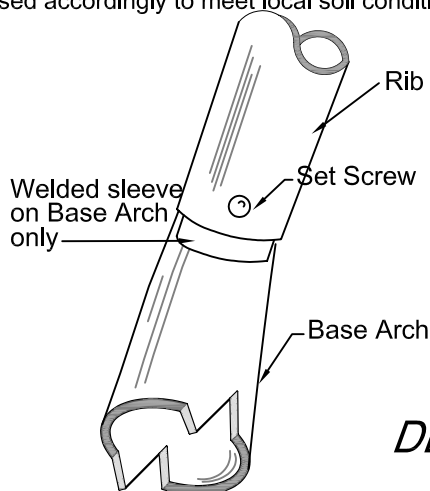
3.1.4 In an alternating sequence, install the remaining ribs, 2, 3, 4, 5 & 6, installing one rib to each side of previous rib. (See Detail G page 7) Do not tighten bolts fully tight until all stiffeners and clamps are in place.

3.1.5 Attach ribs #6 to top and bottom arches and use stiffeners (see details page 7) to hold them in place. Use 2-3/8" brace bands on end of stiffener. Adjust ribs and stiffeners as needed for horizontal and vertical continuous curved appearance.

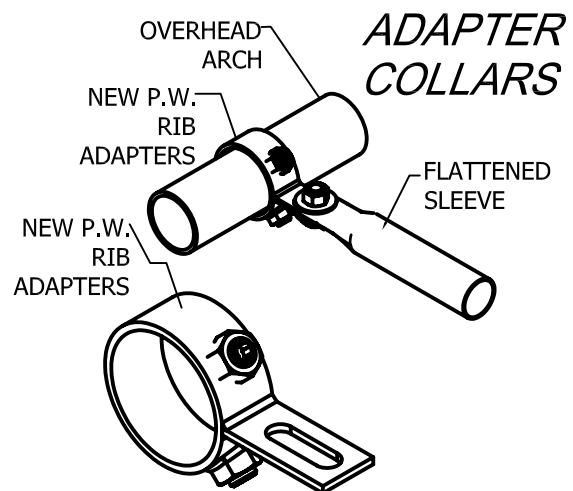
3.1.6 Make sure all sleeved joints are fully seated and proceed to tighten all bolts and set screws.

3.1.7 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 J page 8)

3.1.8 Check for overall frame alignment and adjust frame before pouring concrete. Pour concrete in the large main footing holes to within 2" of finished grade. (See Detail K page 8) Pour anchor bolt footings up to finished grade. Allow concrete to set for 3 days before completion of install. After footings have set cover main footings with dirt or turf. 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.



DETAIL A



4. Mesh Installation: Mesh goes on in 2 courses:
 - 4.1 FIRST COURSE: - 1st or Bottom Course: 2"-9ga x 12' width, 50' long
 - 4.2 Cut 10' off one roll to make one 40' length.
 - 4.3 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.
 - 4.4 Install one 12' 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 Detail E page 6)
 - 4.5 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 bolts facing outside. Tighten hardware securely.
 - 4.6 If the top few feet of the mesh are still loose or sag between ribs, 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. Use more hog rings and/or tie wire as necessary to completely secure the seam. (See Detail E page 6)
 - 4.7 If the top of the mesh is still loose or sags, repeat step 4.6 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.
 - 4.8 Secure the mesh to all of the ribs with tie wire on 18" centers.
 - 4.9 Install the bottom 8' 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).
 - 4.10 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.
 - 4.11 Tighten anchor bolt nuts securely so the base arch is in contact with the anchor bolt footings. Peen any excess threads to prevent removal.
5. SECOND TOP COURSE: - 2nd or Top Course: 2"-9ga x 10' width, 30' long
 - 5.1 The remaining wire, 2" -9ga x 10' wide x 30' 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).
 - 5.2 Install an 8' tension bar in the mesh at the center where the center rib (rib #5) sleeves to the overhead arch. Working from the center out, install tension bands on 18" centers while stretching mesh tight in an outward direction.
 - 5.3 Stretch the mesh downward and secure to the center rib with tie wire on 12" centers.
 - 5.4 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 Detail E page 6)
 - 5.5 Pull the wire mesh tight in a downward direction and secure to every rib with tie wire on 18" centers.
 - 5.6 If the mesh on the second course is loose or sags, 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.
 - 5.7 Trim the bottom edge of the second course even with the top of the first course, allowing a one-diamond overlap.
 - 5.8 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 Detail E page 6)
 - 5.9 Inspect complete backstop for loose hardware, fittings, and sharp wires. Repair as necessary. Place turf over main anchor footings.



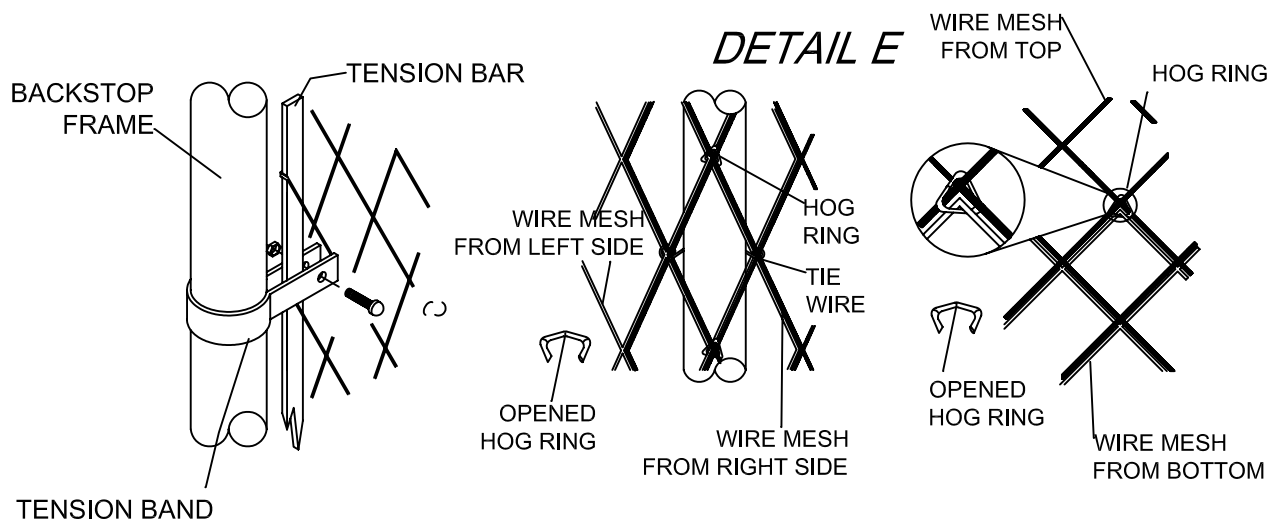
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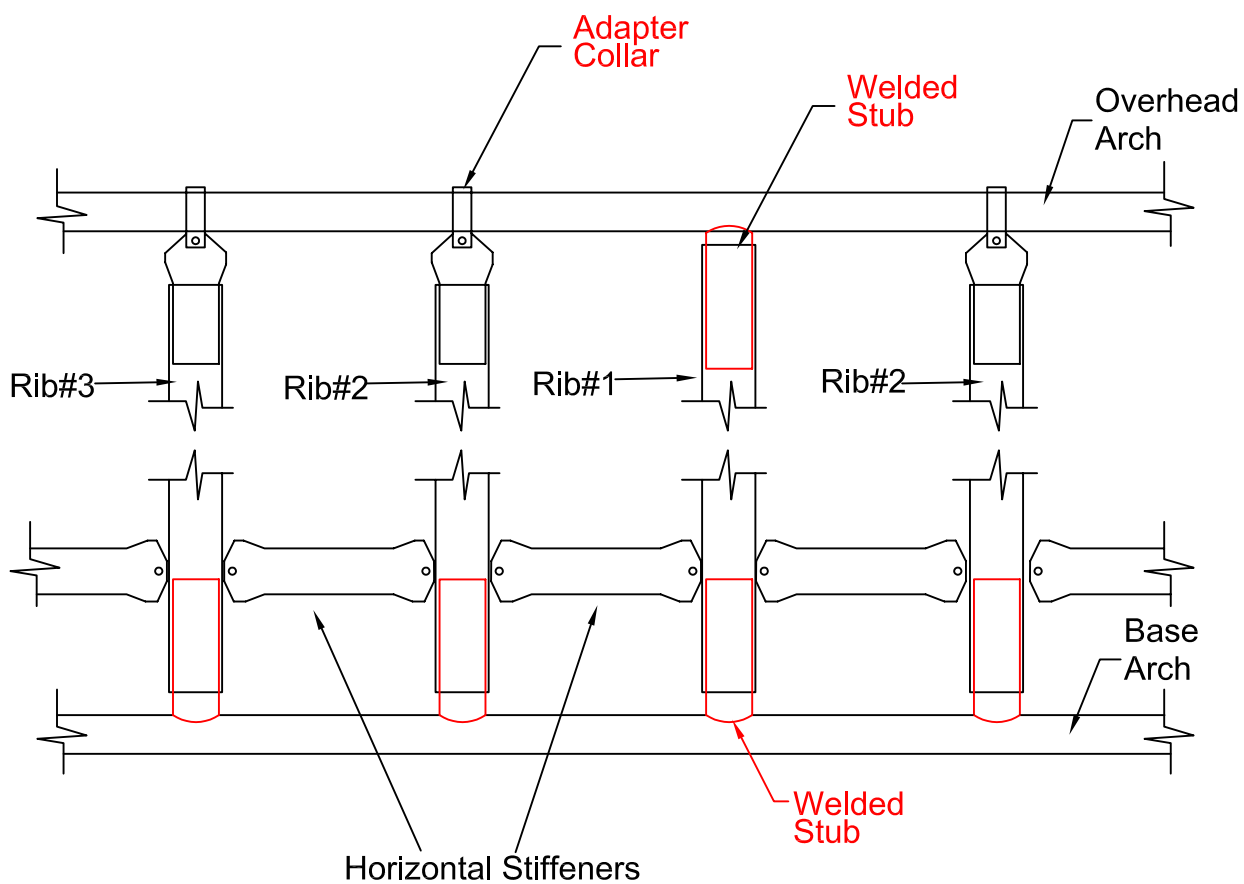
30' PERPENDICULAR ARCH BACKSTOP

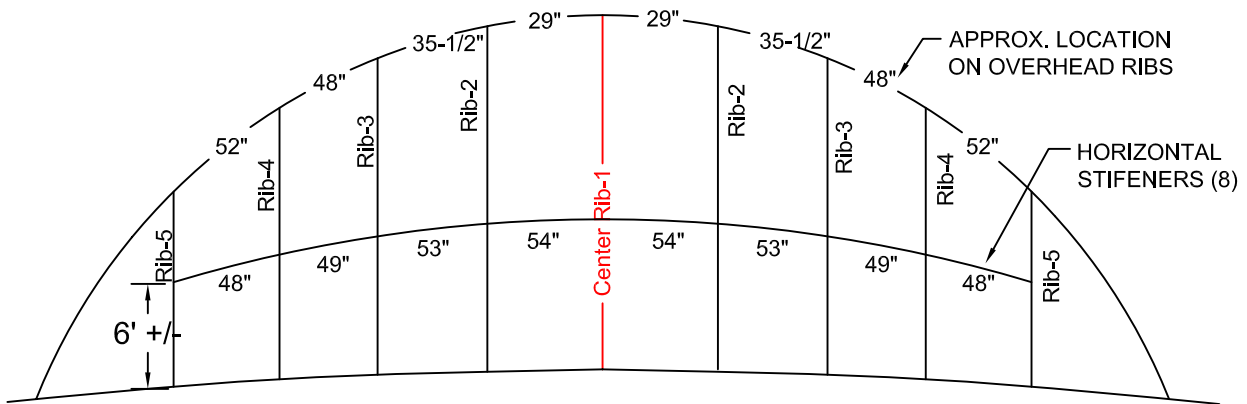
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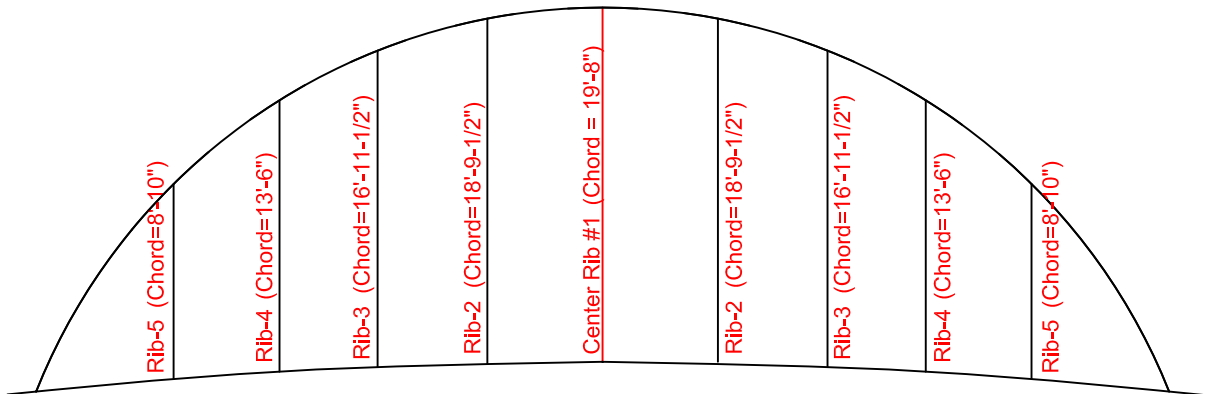


DETAIL C





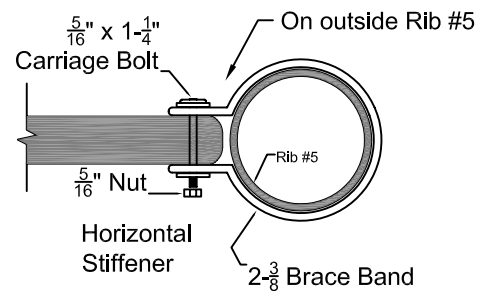
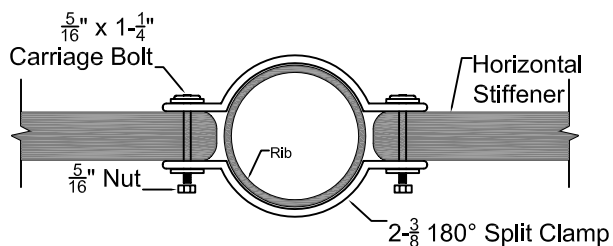
SPACING DETAIL

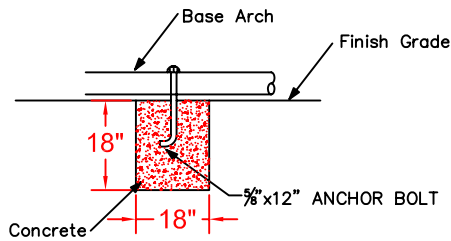


RIB CHORD LENGTH

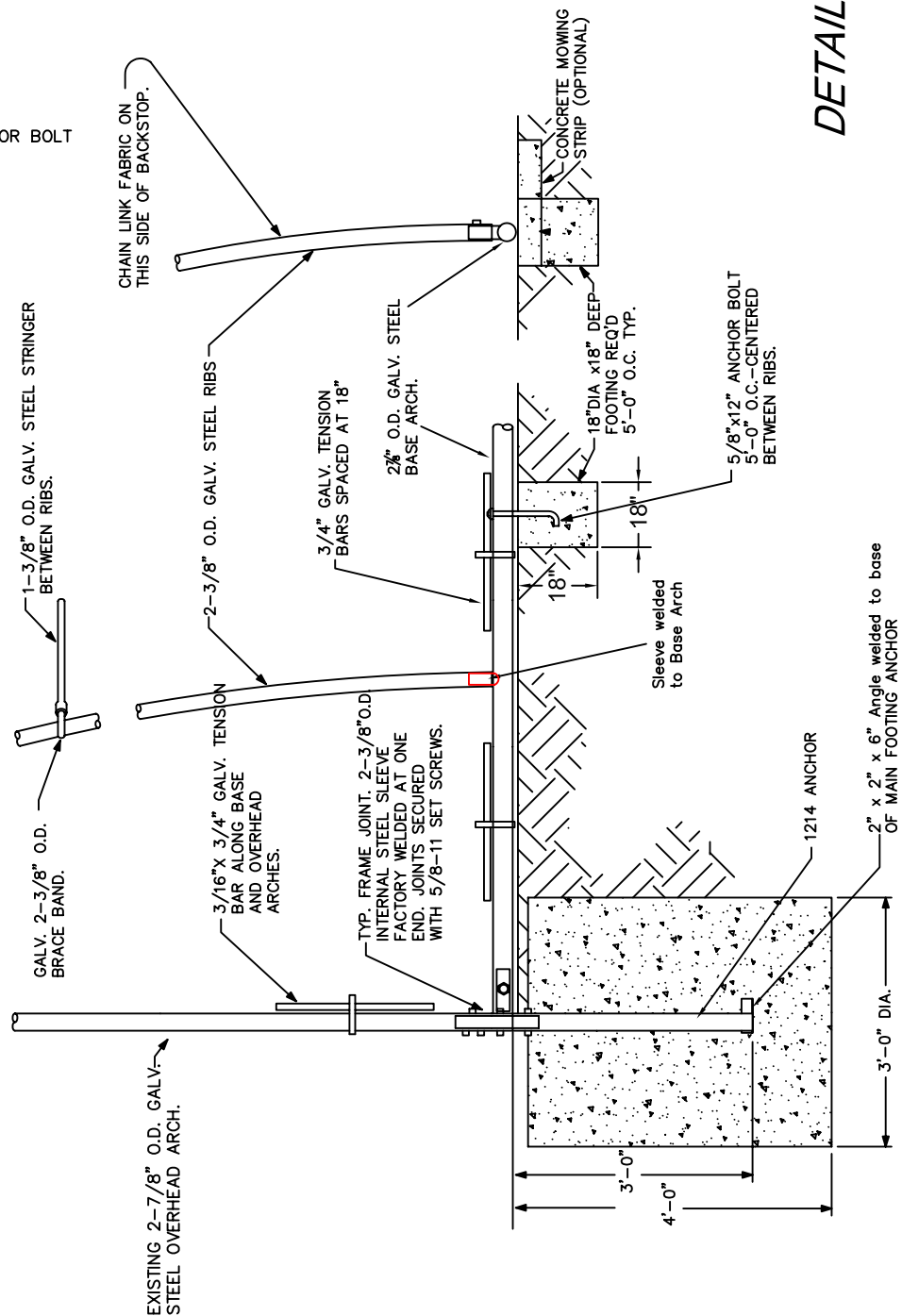
(CHORD LENGTH IS MEASURED IN A STRAIGHT LINE FROM EACH END OF TUBE)

DETAIL G - Horizontal Stiffeners



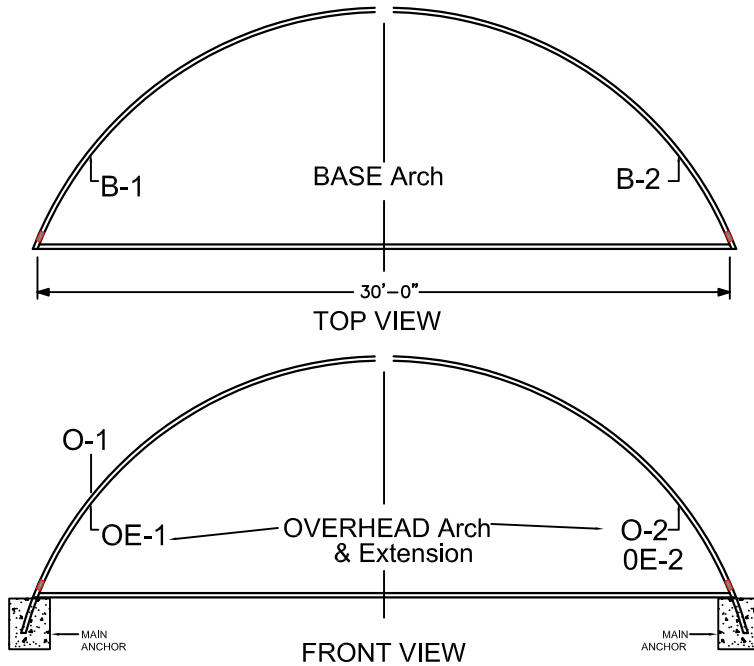


DETAIL J



DETAIL K

DETAIL H



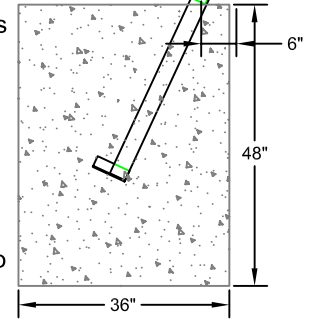
DETAIL I

VIEW FROM
PITCHING MOUND

FRONT OF
ARCH

ANCHOR WILL GO
IN GROUND AT AN
ANGLE

NOTE: Anchor Footings should be **52' center to center**. This is to allow the anchors to retain the proper angle going into the footing. This is an important step in insuring that your backstop will be easy to erect, and retain the proper rolled radii.



1214 MATERIAL LIST:

Description	Qty Per Unit
2-7/8" Left Base Arch Section - (B-1)	1
2-7/8" Right Base Arch Section - (B-2)	1
Overhead Adapter Sleeve	1
Stringer - Horiz. Stiffener - 48"	2
Stringer - Horiz. Stiffener - 49"	2
Stringer - Horiz. Stiffener - 53"	2
Stringer - Horiz. Stiffener - 54"	2
2-3/8" Rib Assembly - (1)	1
2-3/8" Rib Assembly - (2)	2
2-3/8" Rib Assembly - (3)	2
2-3/8" Rib Assembly - (4)	2
2-3/8" Rib Assembly - (5)	2
2-7/8" Left Overhead Arch Section (O-1)	1
2-7/8" Right Overhead Arch Section (O-2)	1
Backstop Anchor	2
8' Tension Bar	12
12' Tension Bar	4
2" X 9 Gauge X 10' Wire Mesh - (ft)	30
2" X 9 Gauge X 12' Wire Mesh - (ft)	50

Component Description	Qty
2-7/8" Tension Band	92
2-3/8" Brace Band	2
2-3/8" 180 Degree Split Clamp Band	14
Hog Ring #3 Galvanized - (lbs)	3 Lbs
5/16"-18 X 1" Carriage Bolt	92
5/16"-18 X 1-1/4" Carriage Bolt	16
5/16"-18 Hex Nut	108
5/16"-18 Flat Washer	108
5/16"-18 Lock Washer	108
5/8"-11 X 12" Anchor Bolt	8
5/8"-11 Hex Nut	8
11 Gauge Tie Wire (lbs)	7 Lbs
2-7/8" HD PW Adapter Collars	8
3/8"-16 X 1" Hex Bolt	8
3/8" Flat Washer	8
3/8"-16 Lock Nut (Nylock)	8
3/8" x 5/8" Set Screws	16
5/8" -11 X 7/8" Set Screws	30
Flattened Sleeves	8
5/8" x 4" Hex Bolt-Overhead Arch	2
5/8" Flat Washers	4
5/8" Nylock-Overhead Arch	2



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