

MAGNUM

20,000 HD

MODEL

INSTALLATION

INSTRUCTIONS

Boat Lifts Unlimited
Odenton, Maryland
410-674-3100

Prior to installation:

- a). To insure that the lift will operate properly, adequate electricity should be available. Electricity will also be needed to install the lift.
- b). Insure that the pilings are at least 24" high above the deck of the pier.
- c). The lift pilings should be driven in the ground to refusal. Otherwise the weight of the boat will sink the piles.
- d). If existing piles are to be used, insure they are not cracked or show any signs of decay.
- e). obtain any locally required permits.

DO NOT USE ANY POWER TOOLS WHILE STANDING IN THE WATER. IF ELECTRICITY MUST BE USED NEAR THE WATER, INSURE THAT THE CIRCUIT IS PROTECTED BY A GROUND FAULT INTERRUPTER.

- 1).The standard Magnum 4 pile lifts are shipped to be mounted in either the Inside/Inside or Outside/Outside configuration. The supplied bunks are 15 feet for the 20,000 lb. lift. When determining which configuration to use, you must consider the length of the bunks. For example a fore and aft pile spacing of 15 feet will be too long to go outside/outside on a 20,000 lb. lift. You must go Inside/Inside. Ideally the cradle should be 12 feet to 14 feet in length. (fig. 4a)
- 2).The cradle travels up and down next to the pilings. If the pilings are part of the dock cut out the deck boards as shown in figure 004b.
- 3).Mount the spacer blocks (fig. 003 #34) in accordance with fig. 004c. Before mounting the block, determine how high you want the cradle to come. We recommend that the middle bolt be 10 inches above the deck boards. This will allow the cradle to come up just above the deck when the lift is in the full up position. The spacer blocks should always be used. They give the cradle extra clearance between the pilings on the dock side. It may be necessary to shave or notch the pilings with a chainsaw or a hatchet to give the blocks a 3/8 of an inch lean in 2 feet away from the piling. Attach the blocks with 2 each 40p nails.
- 4) Mount the 4 pile mounts as shown in figure 003 using three 5/8 inch carriage bolts. The middle bolt hole should be 10" above the pier deck. Take care to mount all 4 pile mount at the same height off of the water. There is enough cable supplied to lower the cradle 9 feet from sheave S1 (fig. 005).
- 5).Mount the corresponding back covers onto the gear plates. There is one long cord motor and one short cord motor. The long cord should go to the bow and the short cord to the stern. Mount the motors, pulleys and belts onto the gear plate (figure 005) . Place the gear plates onto the cable drums. Install the spacer sleeves, motor anchors and the 1/2 inch washer/shim (39). The shim is important and must be placed between the motor anchors and the pile mounts.
- 6).On the dockside bring the long cord switch to the stern pile mount. There should be enough wire to run under the pier and back to the stern portion of the lift. Run the long cord switch into the slot of the short cord back plate so that both switches are in the same location. (figure 007). Attach the front covers to the back covers (fig.007). Mount the switches as per figure 007 on the most convenient side of the front cover (figure 007). Use the 2 tie wraps to secure any loose wires inside the cover.

On the outside, attach a 2 x 10 x 16 to the two pilings and staple the wire to the 2 x 10 x 16' (figure 002 item 34). Assemble the 1" PVC conduit as in figure 002 to span underwater from the dock to the outside. Feed the two 50' sections of 14/5 wire through the conduit. Remove the outside switches and splice the wire in the outside junction box. Reattach the switches to the wire on the pier side of the lift and mount the switches in the cover. All four switches should be mounted in the stern pier side cover. .

If one or both of the motors are running in the wrong direction you must change the wiring inside of the motor. This is easily done. Remove the access plate from the end of the motor and follow the directions on the motors data plate.

7). Measure the distance between the pier side sheave S1 and the outside sheave S1. Add 6" to this measurement and that will determine the length of the lift beam. If cutting of the lift beam is out of the question the beam adapters (9) may be repositioned. The outside to outside dimension of the beam adapters should be equal to the s1 plus 6" dimension. Position the lifting beams across the slip and suspend them this can be using chains or a scaffolding. Route the cables as shown in figure 11. Attach the cable clamps or the nico-press sleeves as in fig 008.

9). Heavy Duty bunks are designed to lift the boat directly under the flat lifting strakes. They are ideally suited for deep Vee bottom sport boats and cruisers. Install the guide poles and position the bunks onto the lifting beams in the manner outlined in figure 013. If the bunks are not prefabricated, assemble them as shown in figure 012 using a 7/16 inch diameter, 12 inch long drill bit. Install the U-bolts from the bottom of the lift beam up with the 7" x 7" U-bolt plate between the bunk I beam and the bunk timber. Please note that the boat must be closer to the GEAR side of the lift than to the outside of the lift to function properly. The bow and stern pads are optional. Fit the boat as in figure. Drill the holes for the catwalk supports and attach them to the lift beams. Mark and drill the angles and bolt the frame together as shown in figure 010. Attach the 2 x 10 walk board to the top of the frame.

IMPORTANT

A GOOD HEAVY GREASE MUST BE APPLIED TO THE GEAR UNITS PRIOR TO LIFTING A BOAT. THE GREASE THAT COMES ON THE GEARS FOR SHIPMENT, IS NOT ENOUGH TO INSURE PROPER LUBRICATION. IT IS BEST TO APPLY THE GREASE WHILE THE UNITS ARE RUNNING. UPON LIFTING THE BOAT, IF ANY GRINDING OR FINE POWDER IS OBSERVED COMING FROM THE WORM GEAR, REAPPLY THE GREASE. AFTER THE GEARS HAVE SEATED, ONLY ANNUAL LUBRICATION IS REQUIRED.

10). When fitting the boat (fig 014, 015), only about 2' -3' of hull extends beyond the stern lifting beam, the remainder is off the bow. The flat strakes on the hull should rest squarely on the bunks (fig 015). Carpet and install the bow and stern pads if the hull is coming in contact with the lifting beams.

**"HD" MODEL LIFTS: 20,000 LB
PARTS LIST**

NO.	ITEM DESCRIPTION	QTY
1	8" x 18-4# x 16' LIFT BEAMS	2
1a	6" x 9# x 15' BUNK BEAMS	2
2	GUIDE POLE STANTIONS	4
3	2" PVC PIPE 8' LENGTHS (GUIDE POLE)	4
4	PVC GUIDE POLE CAPS	4
5	GUIDE POLE PLATES (CLAMPS)	8
6	1/2" BORE SHEAVES	12
7	1/2" BORE SHEAVES WITH STAINLESS BUSHING (NOT USED)	0
8	OUTSIDE BEAM ADAPTERS (NOT USED)	0
9	20,000# BEAM ADAPTERS	4
10	OUTSIDE PILING SHEAVE HANGERS (NOT USED)	0
11	PILE MOUNTS WITH SHEAVES AND BEARINGS INSTALLED	4
12	MOTOR ANCHORS	4
13	GEAR PLATES (2 LEFT AND 2 RIGHT)	4
14	8" PULLIES	4
15	4L320 BELTS	4
16	SPACER SLEEVES	4
17	SPOOL SHIELDS	4
18	5/16" CABLES 45' LONG	4
19	3/4 HP MOTOR WITH LONG CORD	2
20	3/4 HP MOTOR WITH SHORT CORD	2
21	HINGED COVERS (2 LEFT AND 2 RIGHT)	4
22	U-BOLT PLATES	4
23	ROLLS CARPET 6" WIDE x 16' LONG (TIMBER CARPET)	2
24	CARPET PIECES 6" x 24" (BOW AND STERN PADS)	4
25	CATWALK SUPPORTS	2
26	CATWALK ANGLE 2 1/2" x 2 1/2" x 15'	1
27	CATWALK ANGLES 1 1/2" x 1 1/2" x 4'	2
HARDWARE BAGS (PART NUMBERS NOT SHOWN ON DRAWINGS)		
28	COVER HARDWARE PACK	2
29	GUIDE POLE PACK	1
30	"HD" BUNK PACK	1
31	PILE MOUNT ATTACHING PACKAGE-WITH CABLE CLAMPS	2
32	RAISED CATWALK PACK	1

"HD" MODEL LIFTS: 20,000 LB**OPTIONAL WOOD**

NO.	ITEM DESCRIPTION	QTY
33	4" x 6" x 16' CCA TIMBERS FOR BUNKS	2
34	2" x 10" x 16' CCA BOARD FOR WALKWAY AND OUTSIDE PILING TIE	2
35	2" x 4" x 22" FOR PADS	2
36	3" x 6" x 24" FOR SPACER BLOCKS	4

GALVANIZED

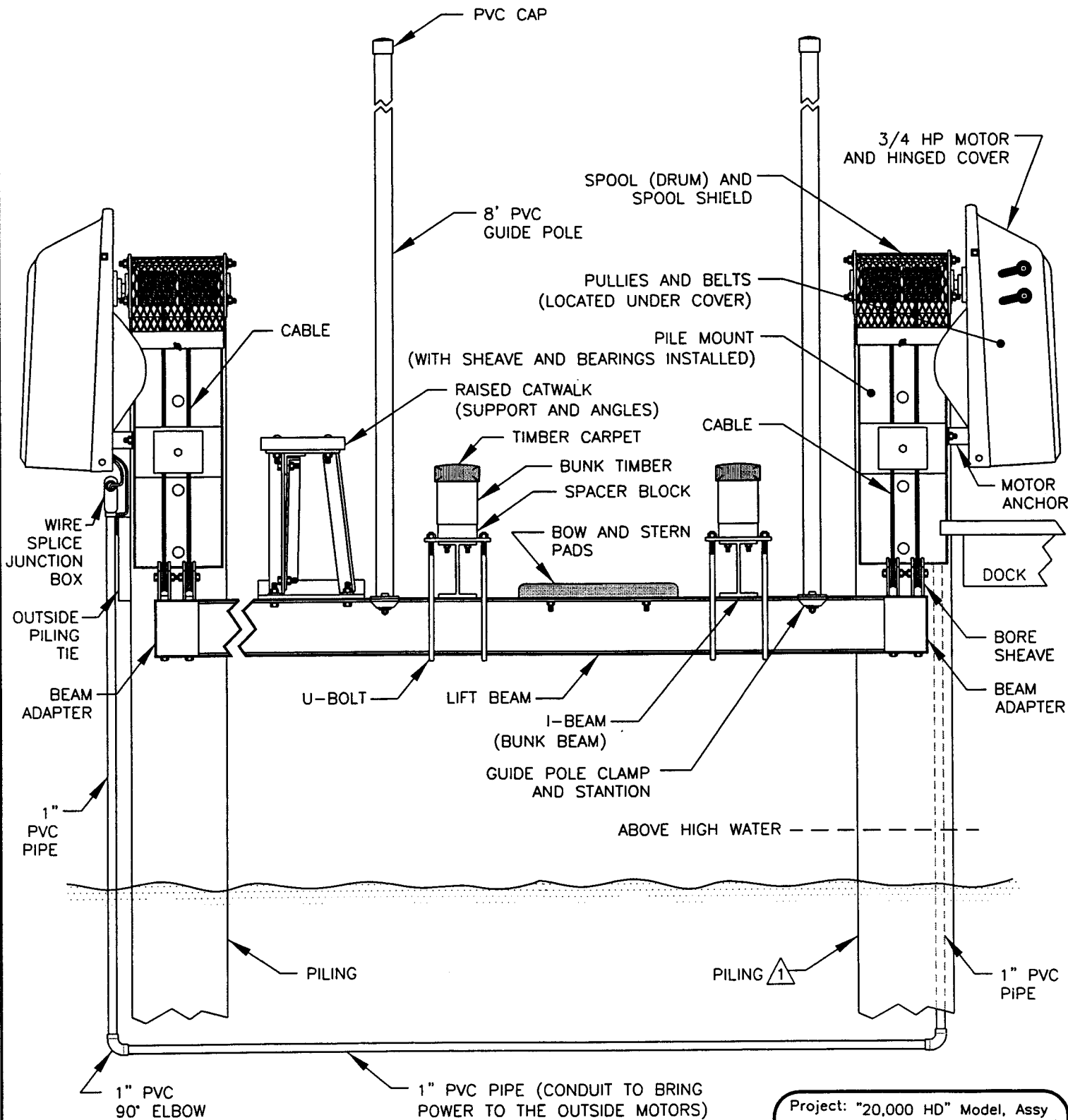
37	3/8" PLAIN NUT	26
38	1/2" PLAIN NUT	36
39	5/8" PLAIN NUT	28
40	3/4" PLAIN NUT (NOT USED)	0
41	1/2" WASHER	20
42	5/8" WASHER	12
43	3/4" WASHER (NOT USED)	0
44	3/8" x 1" HEX	10
45	1/2" x 1 1/2" HEX	36
46	1/2" x 5 1/2" HEX (NOT USED)	0
47	3/4" x 12" HEX (NOT USED)	0
48	3/8" x 3 1/2" CARRIAGE	4
49	3/8" x 7" CARRIAGE	8
50	3/8" x 9" CARRIAGE	4
51	5/8" x 14" BUTTON	12
52	5/8" x 13" x 15' U-BOLT	8

STAINLESS

53	5/16" PLAIN NUT	9
54	1/2" LOCKNUT	12
55	1/2" WASHER	24
56	1/2" x 2 1/2" LONG SHANK HEX BOLT	8
57	1/2" x 3" HEX	4
58	1/2" x 6" CNTR SINK (NOT USED)	0
59	1/2" x 4 1/2" HEX (NOT USED)	0
60	5/16" x 2 1/2" CARRIAGE	9
61	5/16" x 1" HEX BOLT	8
62	5/16" FLAT WASHER	8
63	5/16" LOCKNUT	8

GENERAL NOTES:

⚠ IMPORTANT—PILINGS SHOULD BE SECURELY ANCHORED TO A SEAWALL OR INTEGRATED INTO A DOCK.

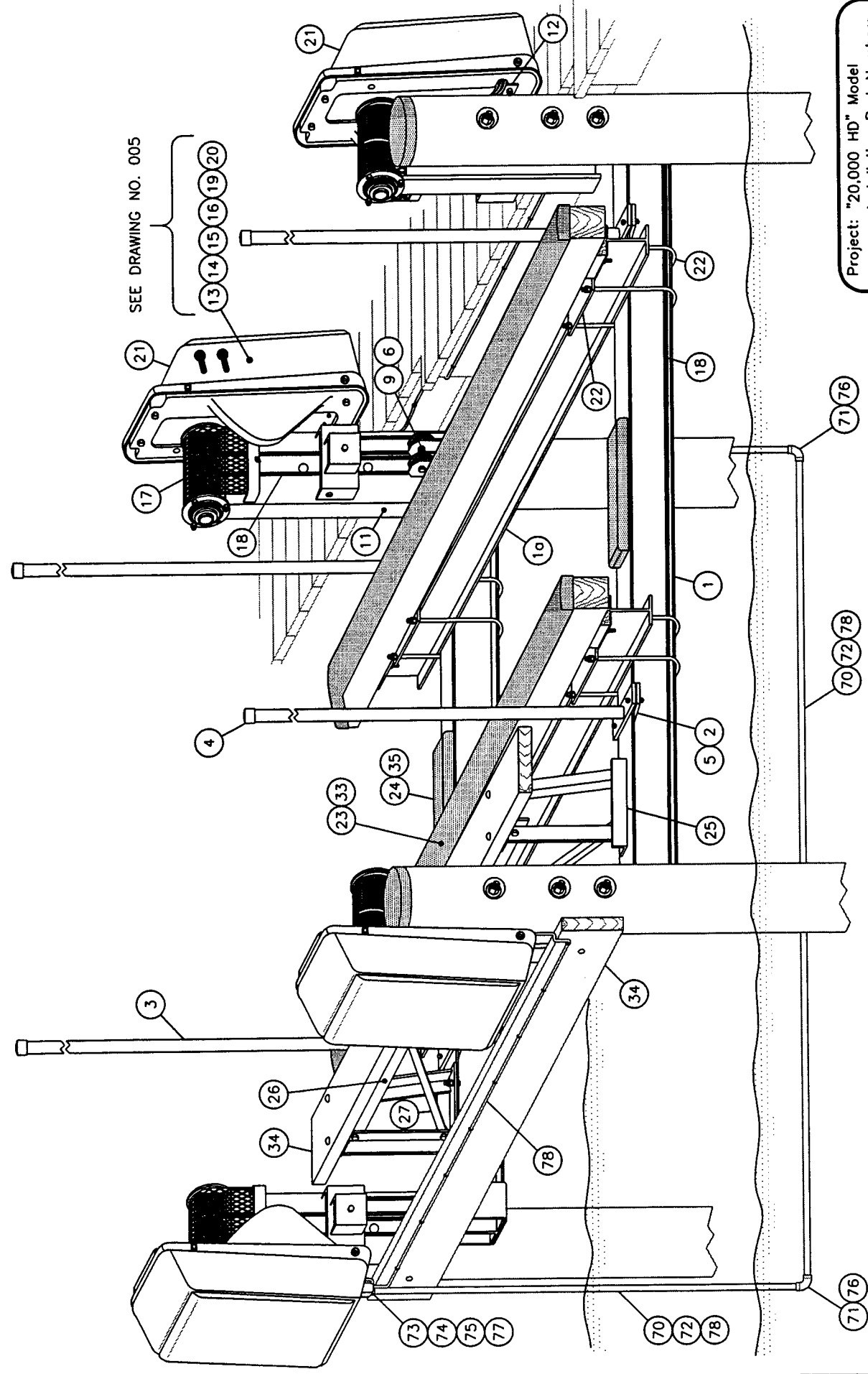


Project: "20,000 HD" Model, Assy		
Drawing Part Names (Piling Mount)		
No.: 001	Revision Date:	
Scale: None	Date: 03-20-01	Sheet: 1 of 1

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GENERAL NOTES:

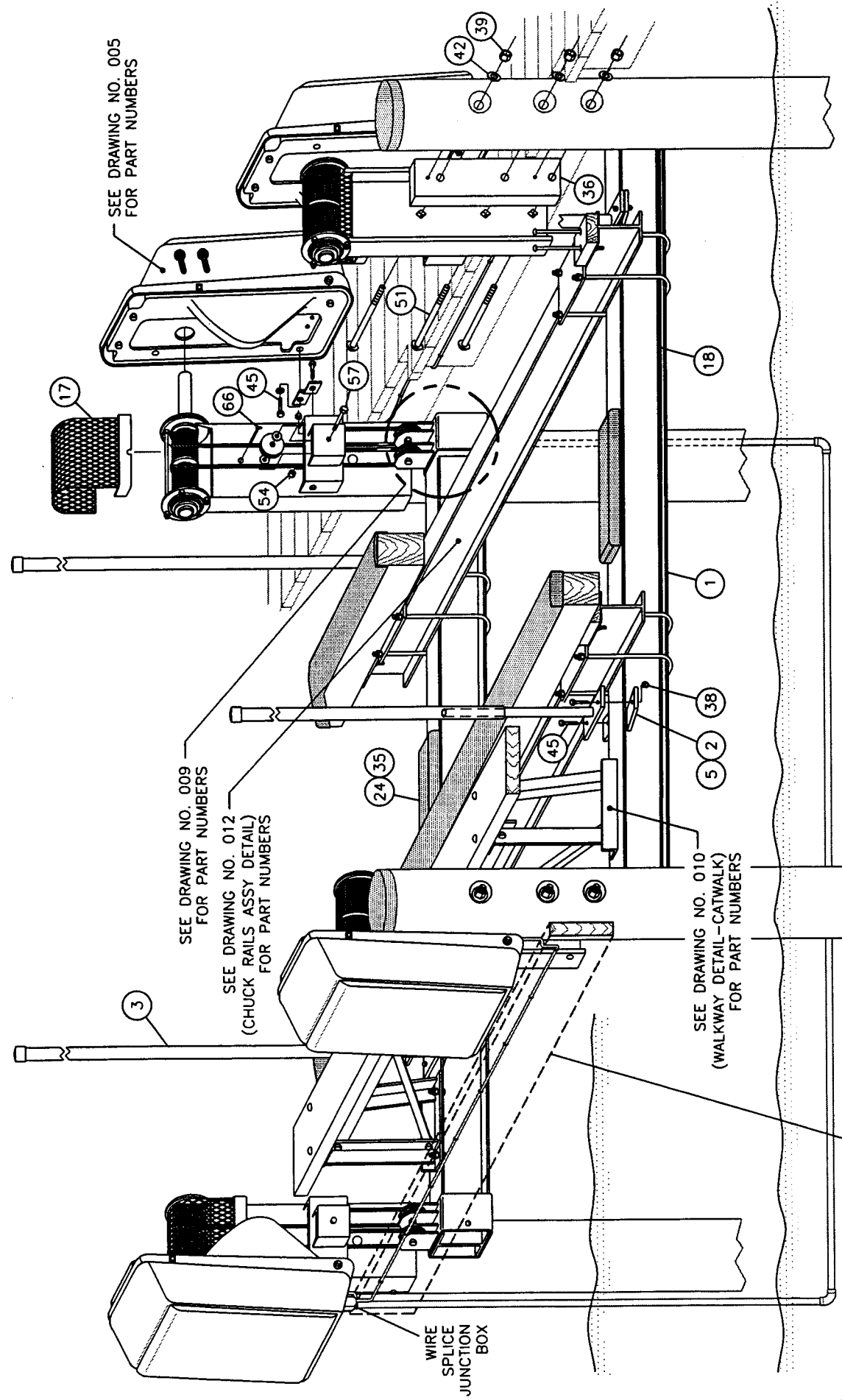
1. FOR LIST OF MATERIALS RELATED TO PART NUMBERS, SEE PARTS LIST.



Project: "20,000 HD" Model	
Installation Part Numbers	
No.: 002	Revision Date:
Scale: None	Date: 03-23-01
Sheet: 1 of 1	

GENERAL NOTES:

1. FOR LIST OF MATERIALS RELATED TO PART NUMBERS, SEE PARTS LIST.

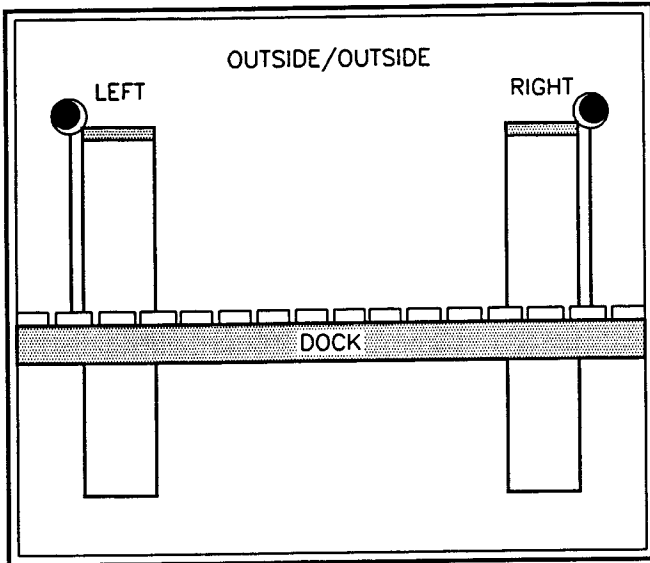


THIS BOARD IS TO TIE THE OUTSIDE PILES TOGETHER AND RUN THE BOW CONTROL WIRE TO THE STERN. WITH BOTH OUTSIDE CONTROL WIRES AT THE STERN, ASSEMBLE THE PVC CONDUIT TO CROSS THE SLIP UNDERWATER TO THE DOCKSIDE AND MOUNT THE SWITCHES IN THE COVER.

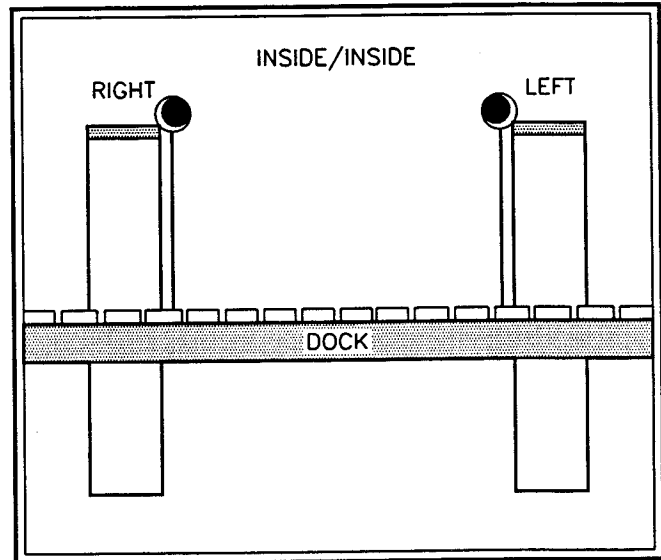
Project: "20,000 HD" Model		Sheet: 1 of 1	
Exploded View		Date: 03-23-01	
No.: 003	Revision Date:		
Scale: None			

GENERAL NOTES:

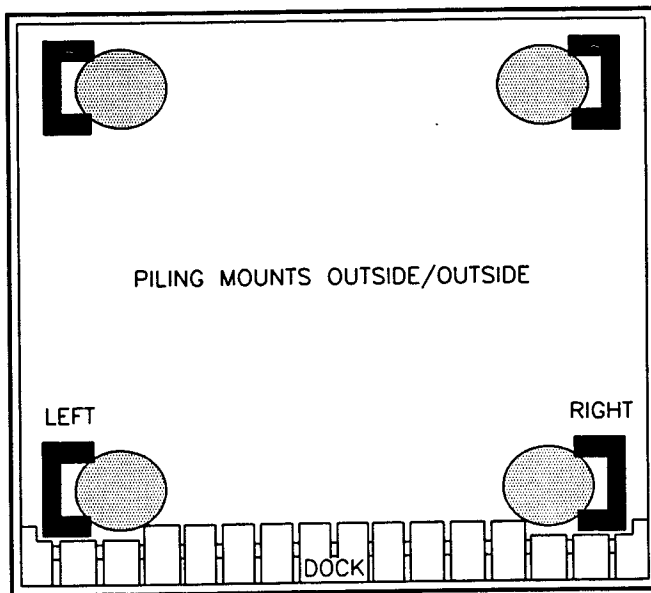
1. DETERMINE WHICH SIDES OF THE PIER PILINGS WILL GIVE THE LIFT A FORE AND AFT SPAN OF 12' TO 14'. THE LIFT CAN BE MOUNTED WITH BOTH PILE MOUNTS FACING ONE ANOTHER OR IN OPPOSITE DIRECTIONS. A SPAN GREATER THAN 14' IS TOO LONG TO ALLOW THE BUNKS TO BE ATTACHED TO THE MAIN BEAMS. IF A LONGER SPAN IS UNAVOIDABLE, LONGER BUNKS ARE AVAILABLE UPON REQUEST.



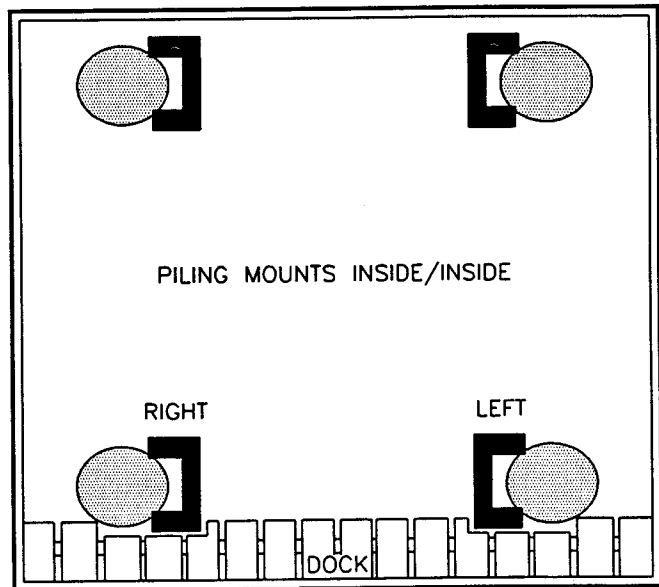
SIDE VIEW



SIDE VIEW



TOP VIEW



TOP VIEW

DIAGRAM 1

Project: Pile Mount Positioning		
No.: 004A	Revision Date:	
Scale: None	Date: 03-20-01	Sheet: 1 of 3

GENERAL NOTES:

1. IF THE PILING IS RECESSED INTO THE DECK OF THE PIER, AN OPENING MUST BE MADE TO ALLOW A FREE, UNOBSTRUCTED PATH FOR THE LIFT. THE OPENING SHOULD RUN PARALLEL TO THE PIER STRINGERS FOR A DISTANCE OF 10", THEN TURN 90° TOWARD THE MOORING PILES AND CONTINUING ON TO THE END OF THE DECK BOARDS.

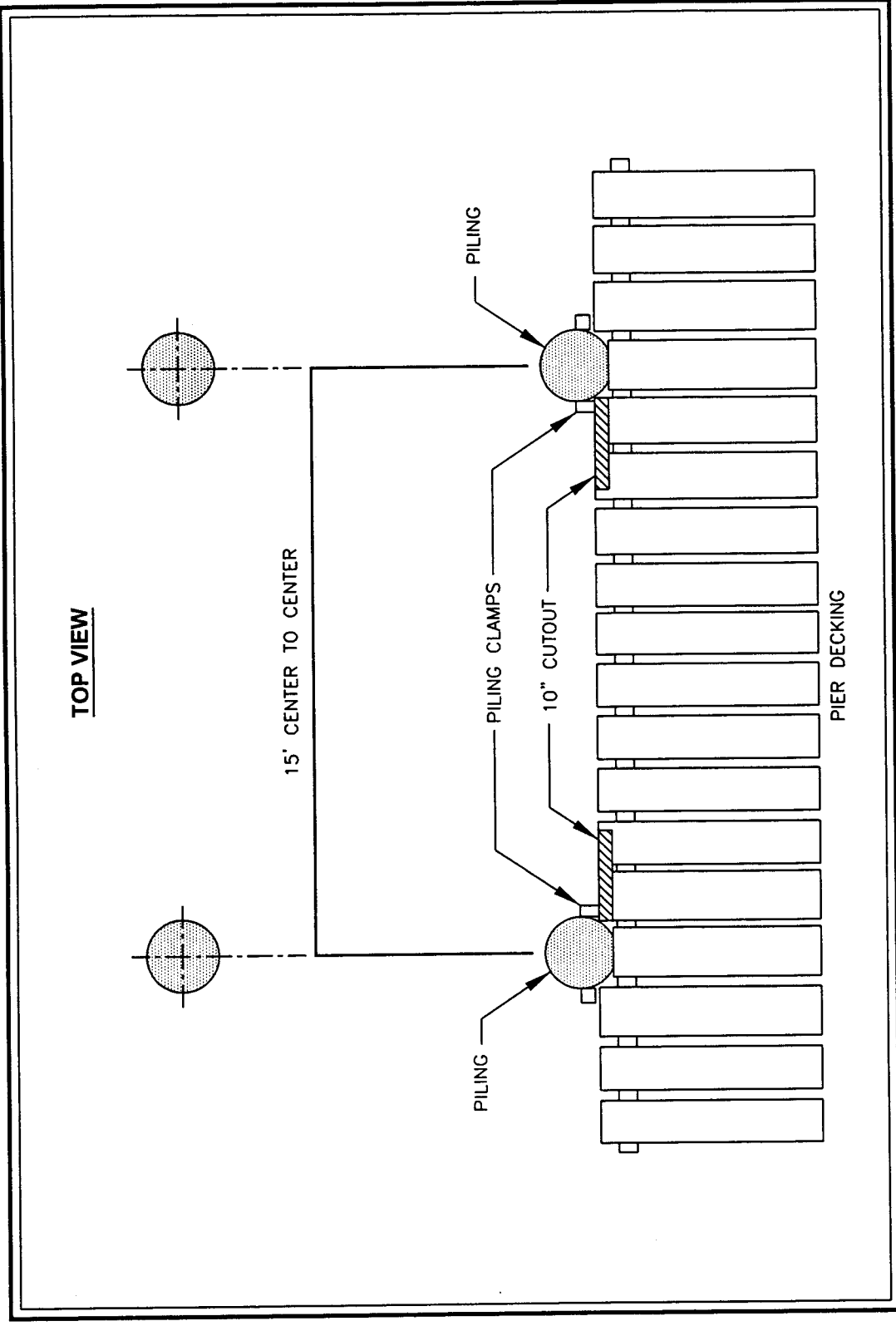


DIAGRAM 2

Project: Pile Mount Dimensions	
No: 004B	Revision Date:
Scale: None	Date: 03-20-01
	Sheet: 2 of 3

GENERAL NOTES:

1. TOO MUCH OR TOO LITTLE 'LEAN' WILL ADVERSLY AFFECT THE OPERATION OF THE LIFT.
THERE SHOULD BE 3/8" LEAN IN TWO FEET OVERALL LENGTH.
2. SPACER BLOCK IS ATTACHED TO PILING WITH TWO 60p NAILS.
3. FOR LIST OF MATERIALS RELATED TO PART NUMBERS, SEE PARTS LIST.

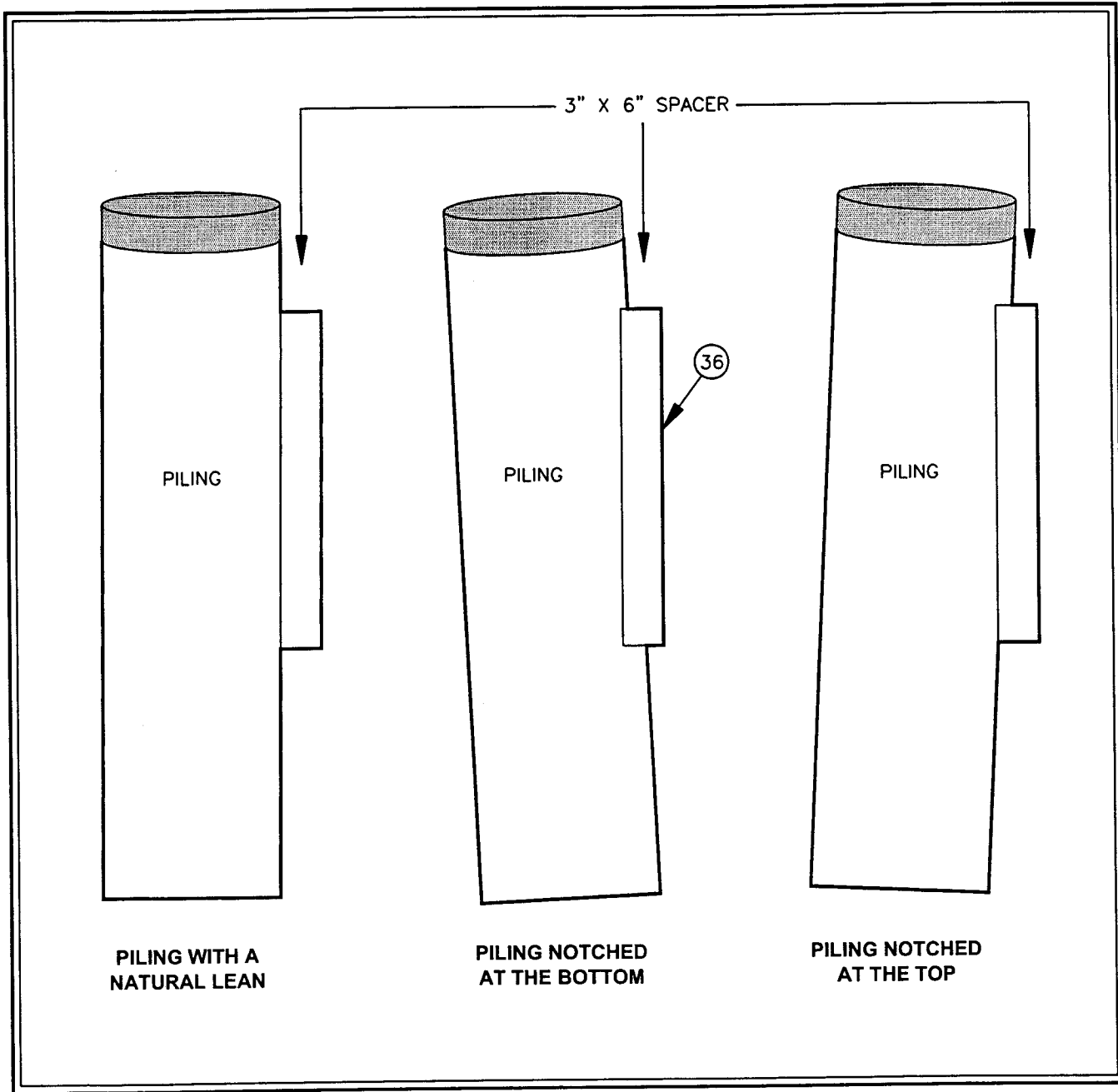


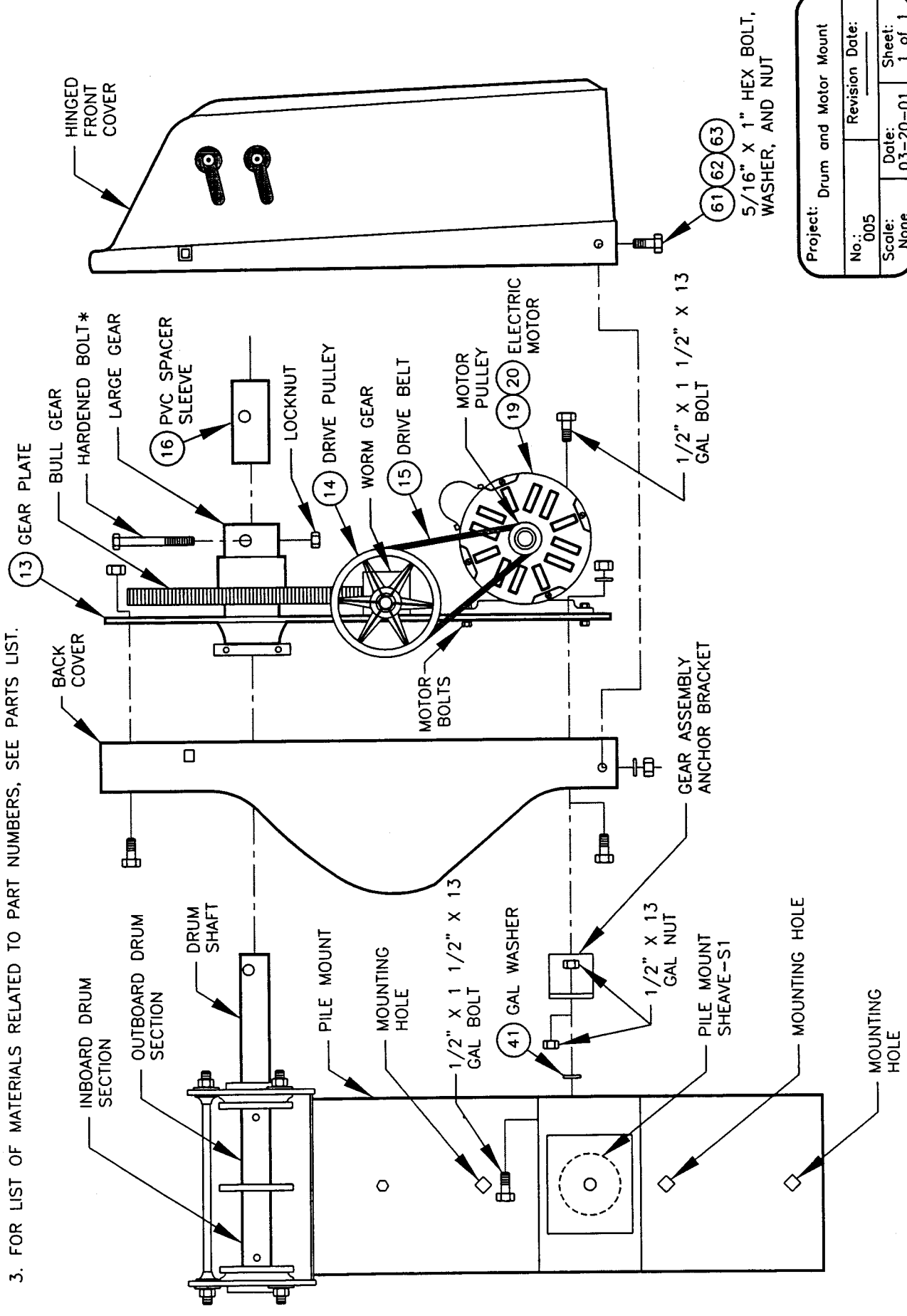
DIAGRAM 3

Project: Piling Lean And Spacer Block Attachment		
No.: 004C	Revision Date:	
Scale: None	Date: 03-20-01	Sheet: 3 of 3

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GENERAL NOTES:

1. *CAUTION: INSTALL ONLY THE HARDENED BOLT SUPPLIED WITH THE GEAR ASSEMBLY. DO NOT USE ANY OTHER BOLT IN THIS LOCATION.
2. ALL THREE MOUNTING HOLES ARE USED FOR THE 20,000# LIFT.
3. FOR LIST OF MATERIALS RELATED TO PART NUMBERS, SEE PARTS LIST.

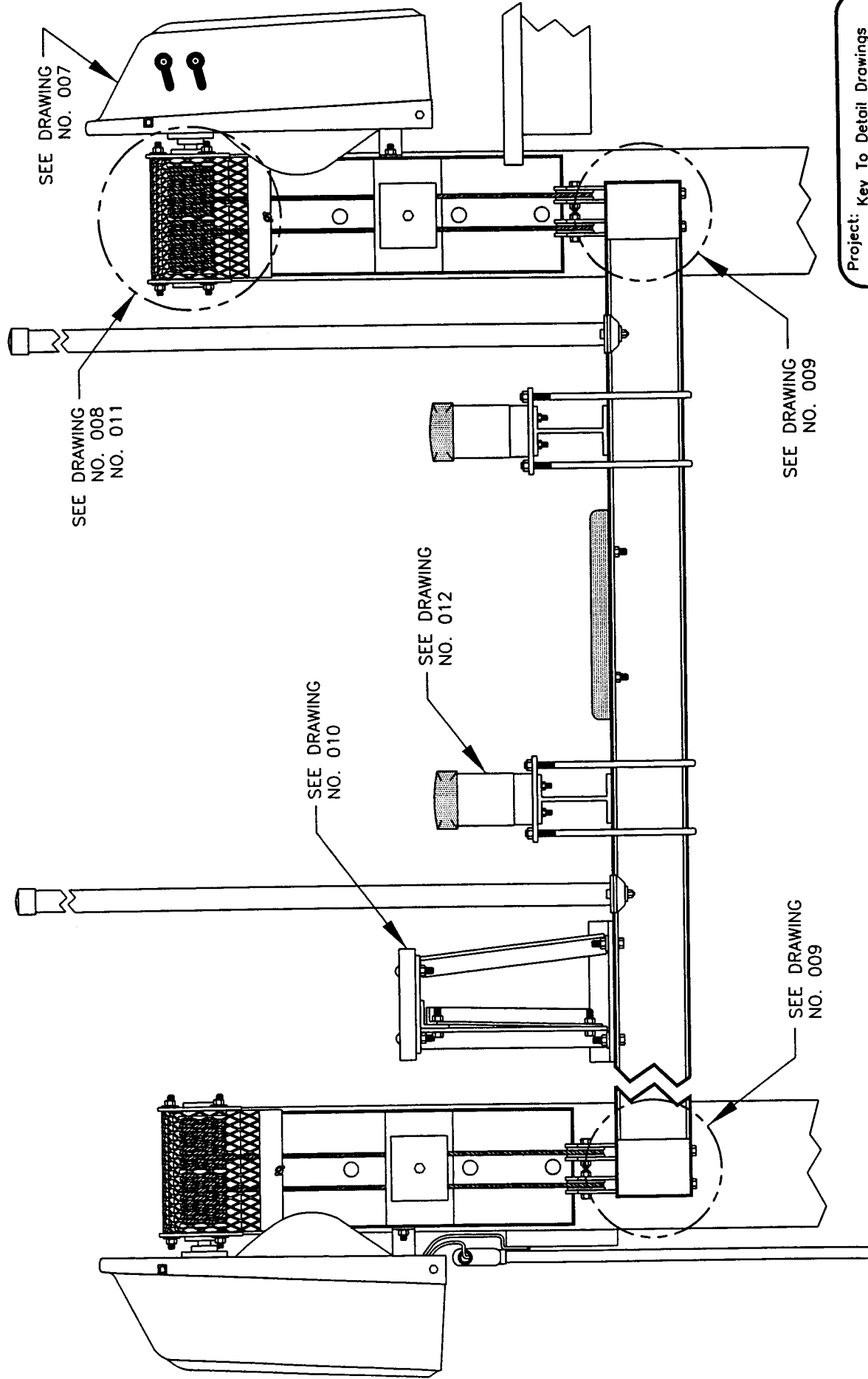


Project: Drum and Motor Mount	
No.: 005	Revision Date: _____
Scale: None	Date: 03-20-01
Sheet: 1 of 1	

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GENERAL NOTES:

- 1. FOR A DETAIL DRAWING OF VIEW CALLED OUT, GO TO SPECIFIED DRAWING.

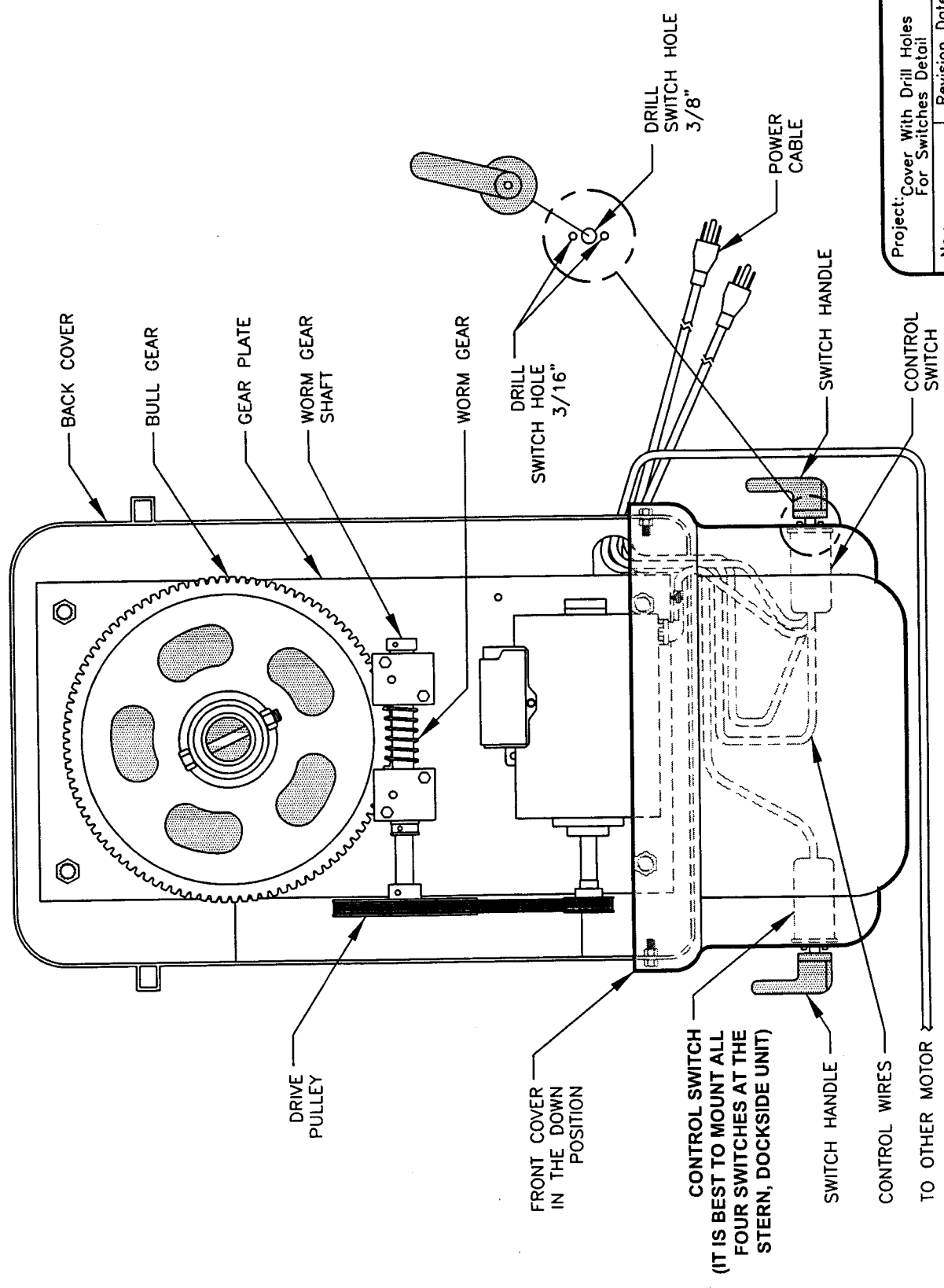


Project: Key To Detail Drawings			
No.:	006	Revision Date:	
Scale:	None	Date:	03-20-01
		Sheet:	1 of 1

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GENERAL NOTES:

1. THE CONTROL SWITCH SHOULD ALWAYS BE MOUNTED AT THE AFT END OF THE LIFT.
2. USE CABLE TIES (PART NUMBER 64) TO SECURE THE CONTROL WIRES INSIDE THE COVER.



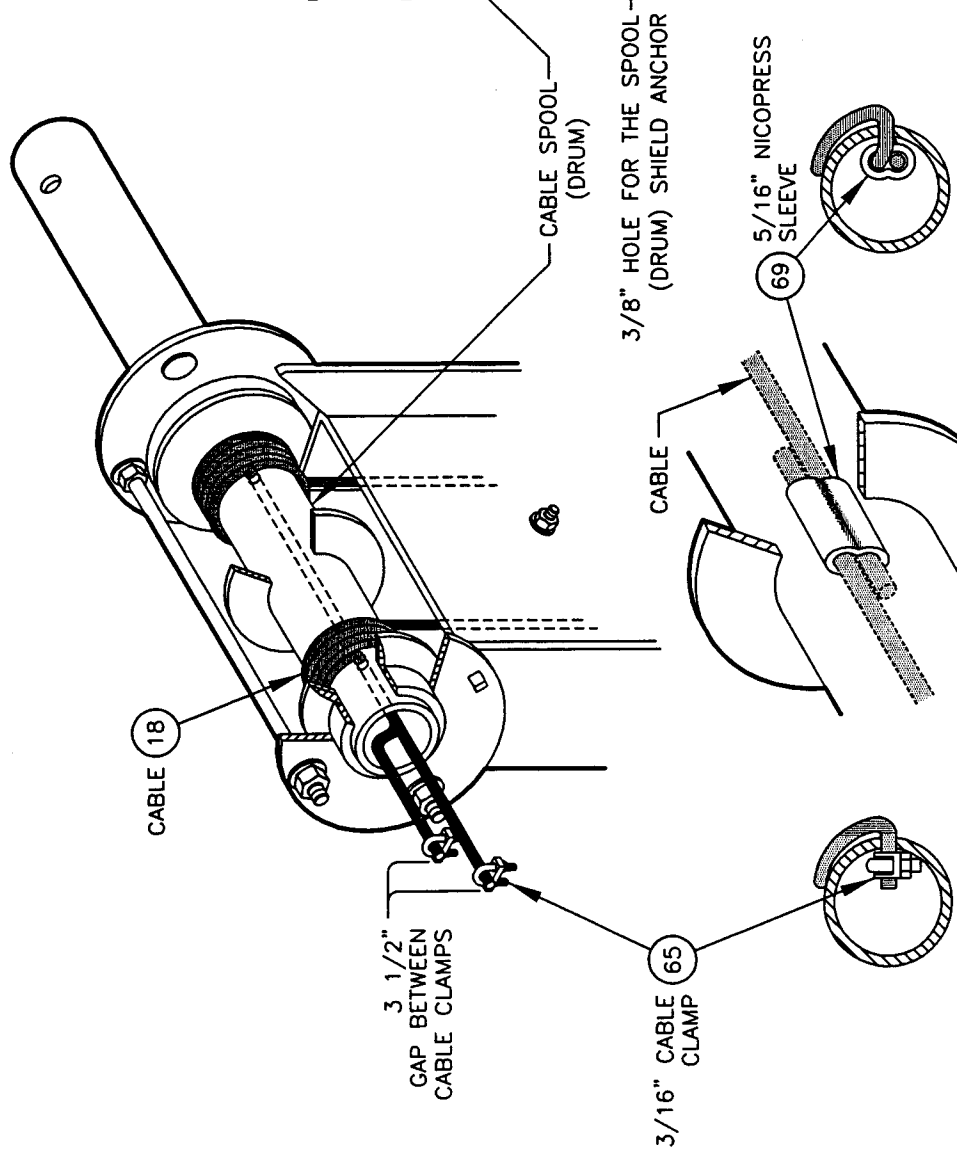
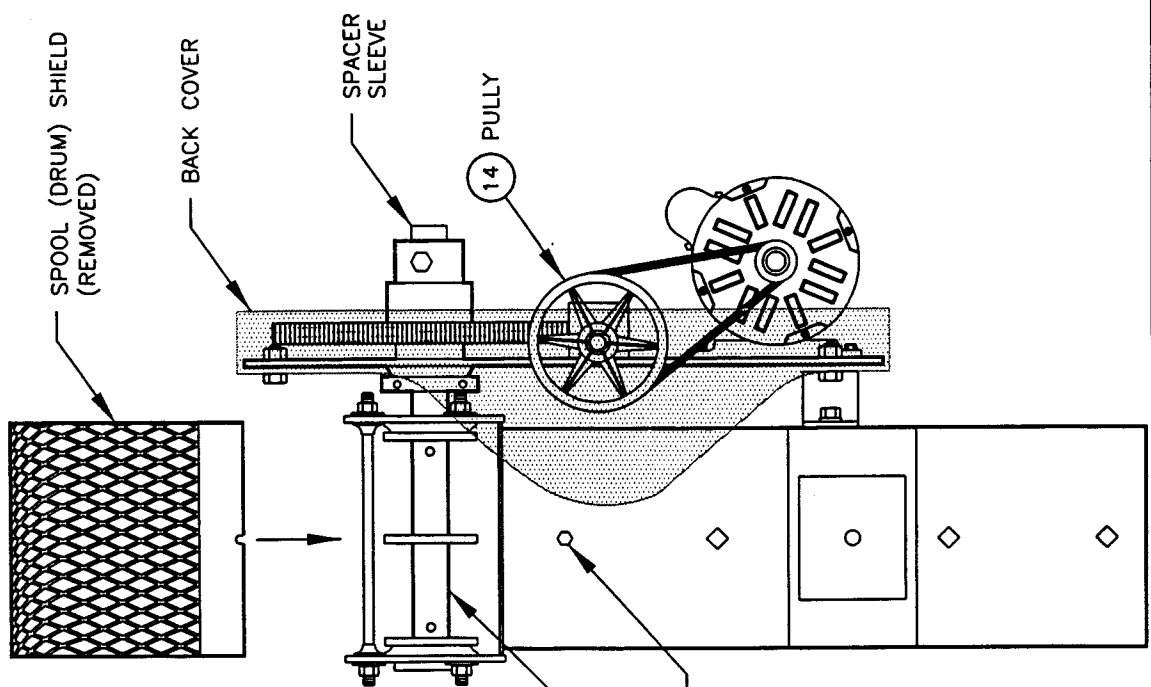
MOTOR HOUSING - FRONT VIEW
(COVER DOWN)

Project: Cover With Drill Holes For Switches Detail	
No.: 007	Revision Date: _____
Scale: None	Date: 03-20-01
	Sheet: 1 of 1

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GENERAL NOTES:

1. FOR LIST OF MATERIALS RELATED TO PART NUMBERS, SEE PARTS LIST.
2. CABLES CAN BE SECURED TO THE LIFT USING A 3/16" CABLE CLAMP OR A 5/16" NICOPRESS SLEEVE.



SECTION VIEW
 NICOPRESS SLEEVE MUST BE CRIMPED AROUND CABLE (CRIMPING TOOL REQUIRED)

OPTIONAL ATTACHMENT
 NICOPRESS IS PULLED TIGHT INTO DRIVE PIPE

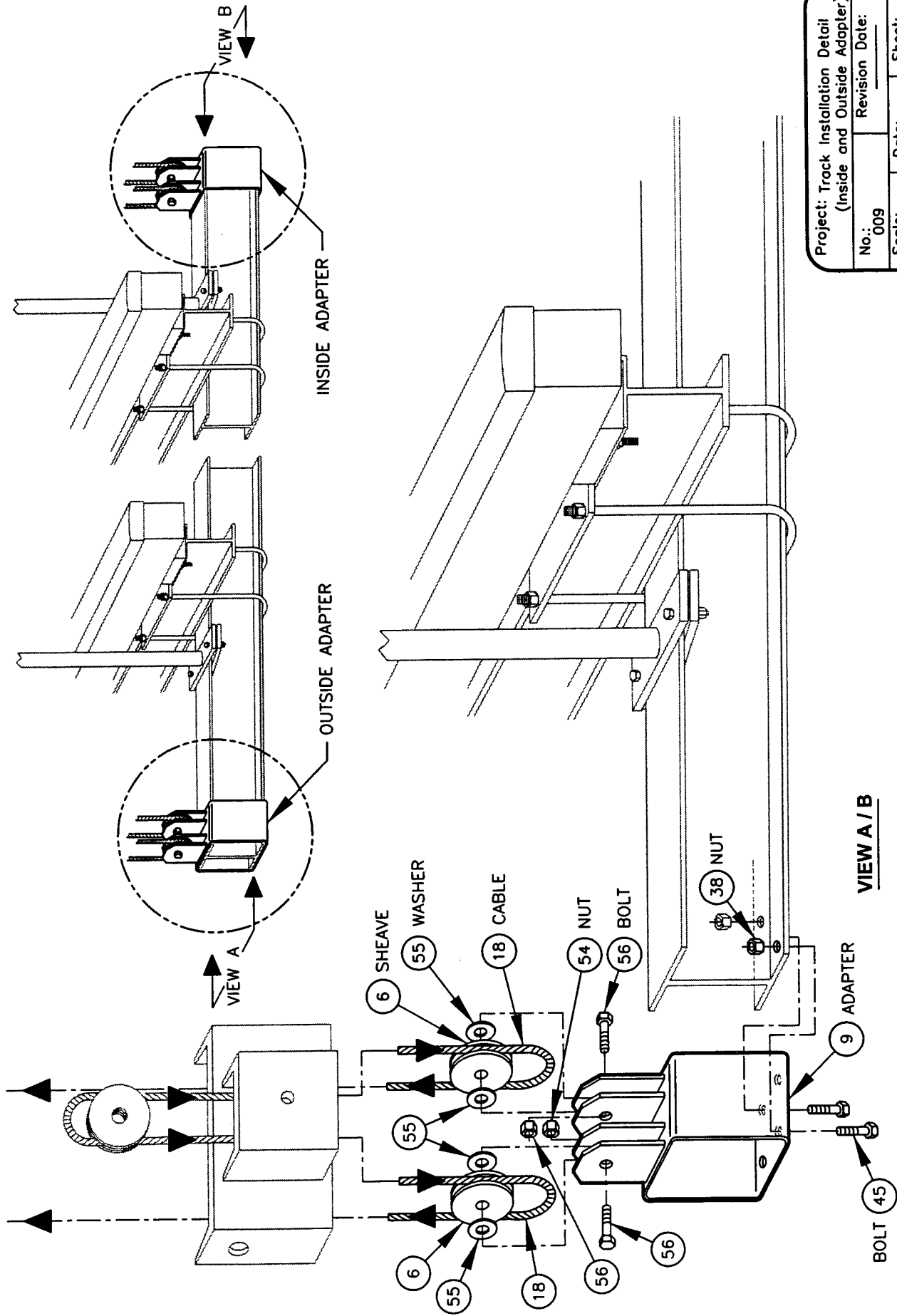
SECTION VIEW
 CABLE CLAMP IS PULLED TIGHT INTO DRIVE PIPE

CABLE ATTACHMENT

Project: Cable Connections Assembly Detail and Cable Attachment	
No.: 008	Revision Date:
Scale: None	Date: 03-20-01
	Sheet: 1 of 1

GENERAL NOTES:

1. FOR LIST OF MATERIALS RELATED TO PART NUMBERS, SEE PARTS LIST.

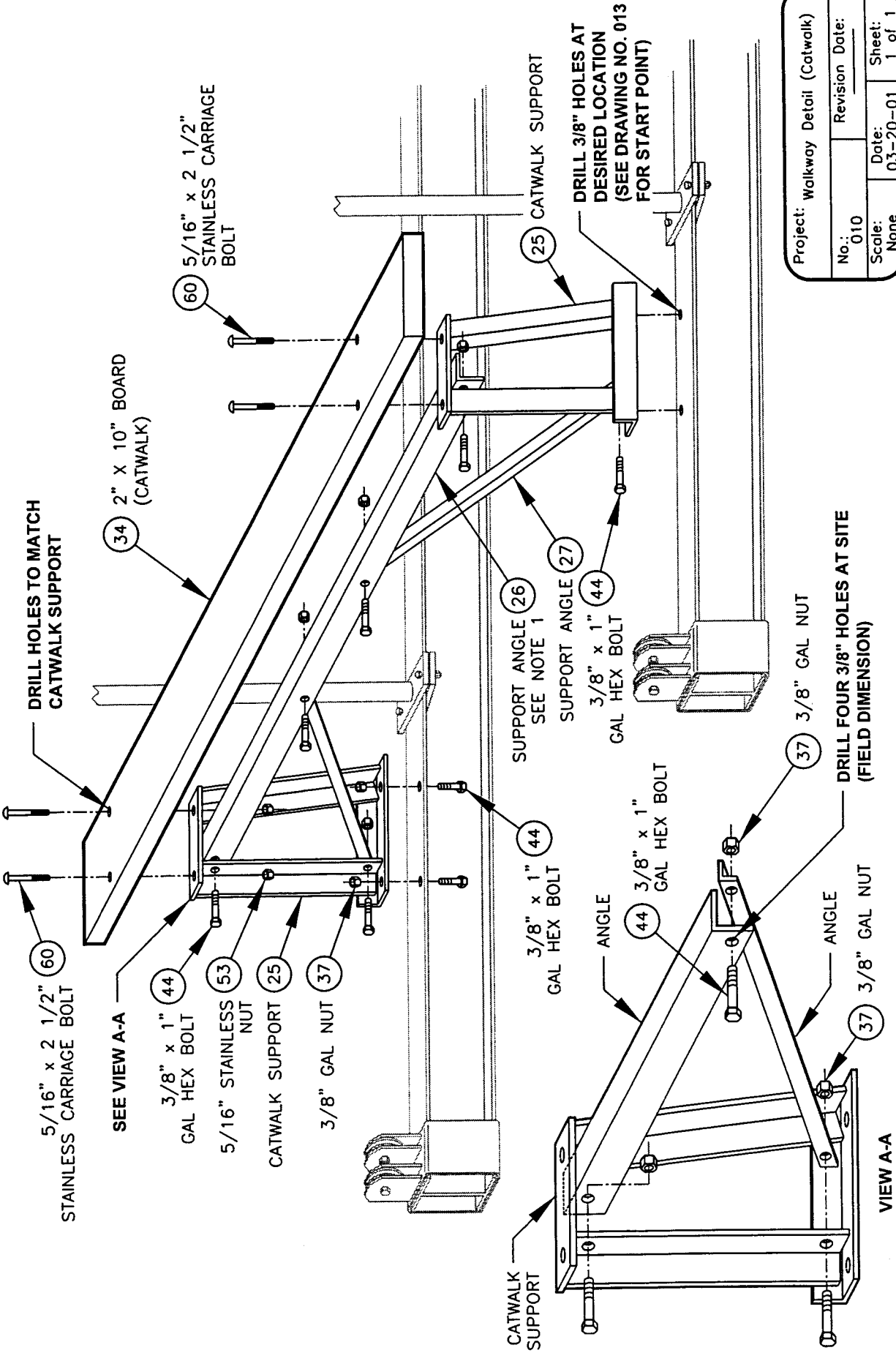


Project: Track Installation Detail (Inside and Outside Adapter)	
No.: 009	Revision Date:
Scale: None	Date: 03-22-01
Sheet: 1	of 1

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GENERAL NOTES:

1. A 2 1/2" X 2 1/2" SUPPORT ANGLE, CUT TO LENGTH IS SUPPLIED WITH THE THE "HD MODEL" TO SERVE AS A SUPPORT FOR THE CATWALK. THE BRACES (PART NUMBER 27) SHOULD BE DRILLED AND BOLTED TO BOTH THE BOW AND STERN CATWALK SUPPORT ANGLE.
2. FOR LIST OF MATERIALS RELATED TO PART NUMBERS, SEE PARTS LIST.

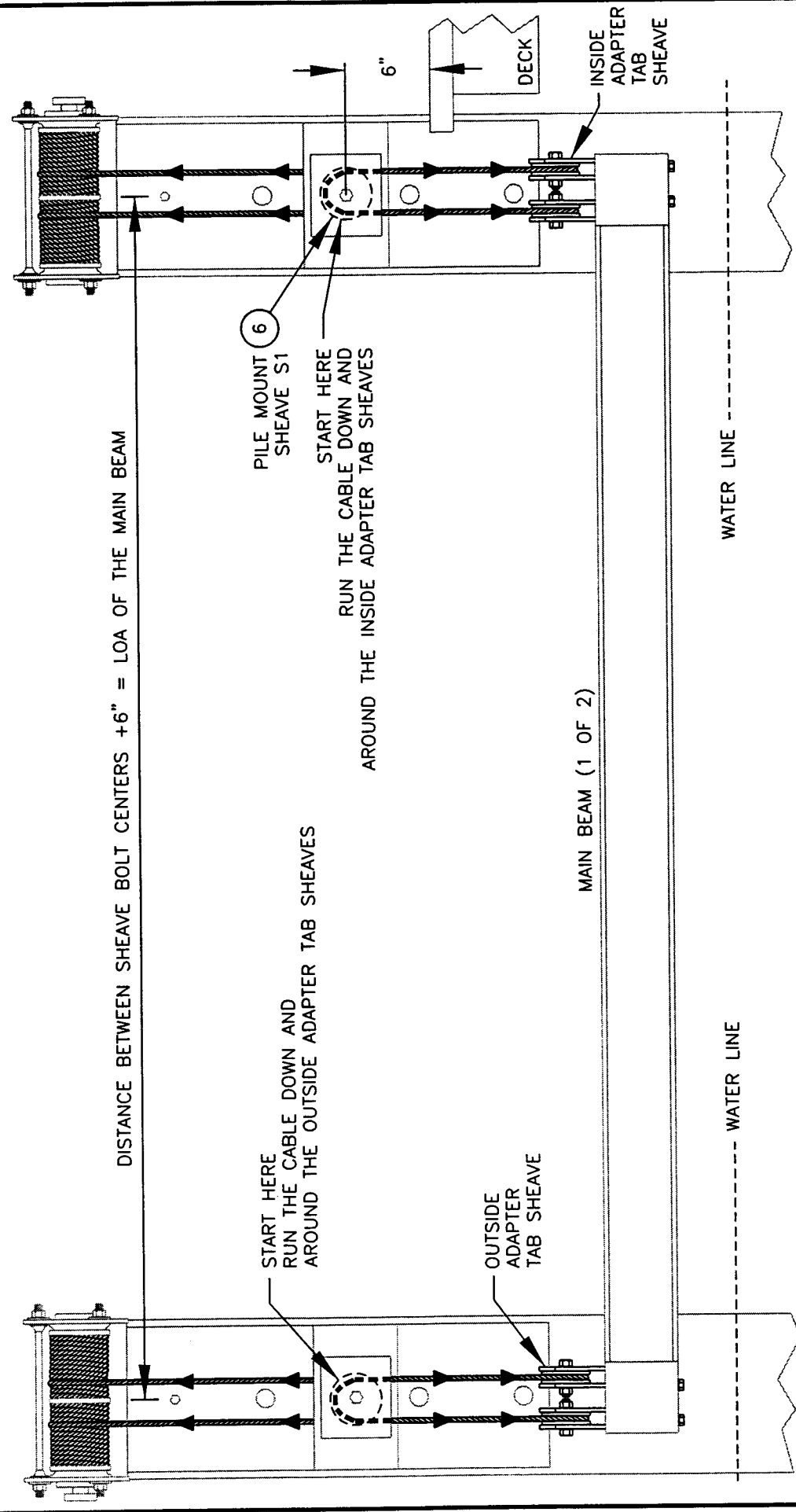


Project: Walkway Detail (Catwalk)	
No: 010	Revision Date:
Scale: None	Date: 03-20-01
Sheet: 1	of 1

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GENERAL NOTES:

1. ENOUGH CABLE IS SUPPLIED WITH THE LIFT TO LOWER THE LIFT 9' BELOW SHEAVE BOLT S1. IF A GREATER AMOUNT OF DROP IS REQUIRED, CALL YOUR LIFT SUPPLIER TO ACQUIRE LONGER CABLES.
2. FOR LIST OF MATERIALS RELATED TO PART NUMBERS, SEE PARTS LIST.



DISTANCE BETWEEN SHEAVE BOLT CENTERS +6" = LOA OF THE MAIN BEAM

MAIN BEAM (1 OF 2)

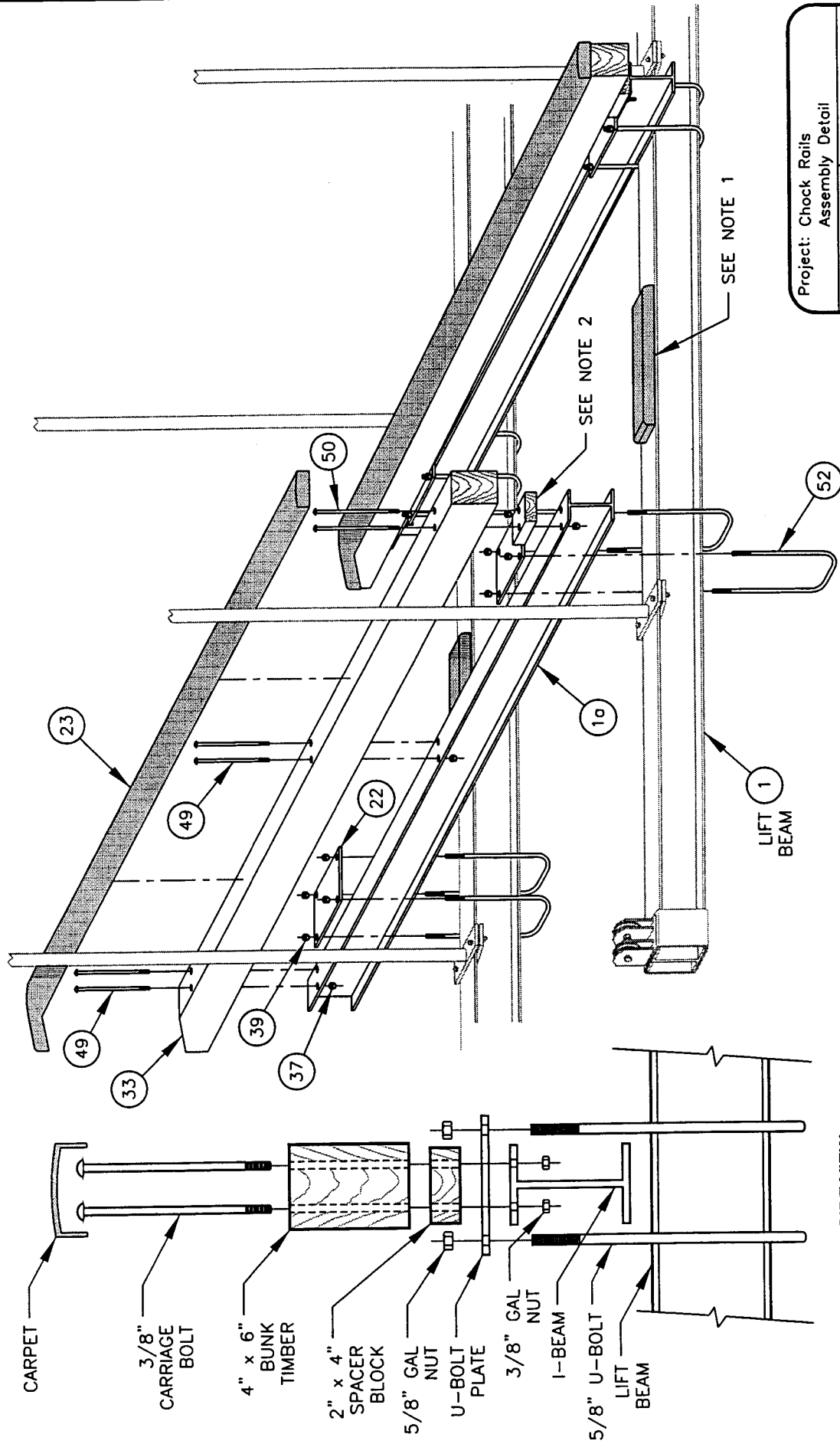
INBOARD AND OUTBOARD CABLE RUN

Project: "20,000 HD" Model	
Cable Detail	
No.: 011	Revision Date:
Scale: None	Date: 03-22-01
Sheet: 1 of 1	

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GENERAL NOTES:

1. TWO PADS MADE FROM TWO 6" x 24" CARPET PIECES ATTACHED TO TWO 2" x 4" x 22" (OR LARGER) WOOD PIECES (BOW AND STERN PADS), HELD DOWN WITH TWO 3/8" x 3 1/2" GALVANIZED CARRIAGE BOLTS PER PAD (OPTIONAL).
2. A SHORT 2" x 4" WOOD PIECE SHOULD BE USED TO SPACE UP THE FRONT OF THE BUNK IN ORDER TO CATCH THE STRAKE WHEN IT BEGINS TO FLARE UP AT THE BOW.
3. FOR LIST OF MATERIALS RELATED TO PART NUMBERS, SEE PARTS LIST.



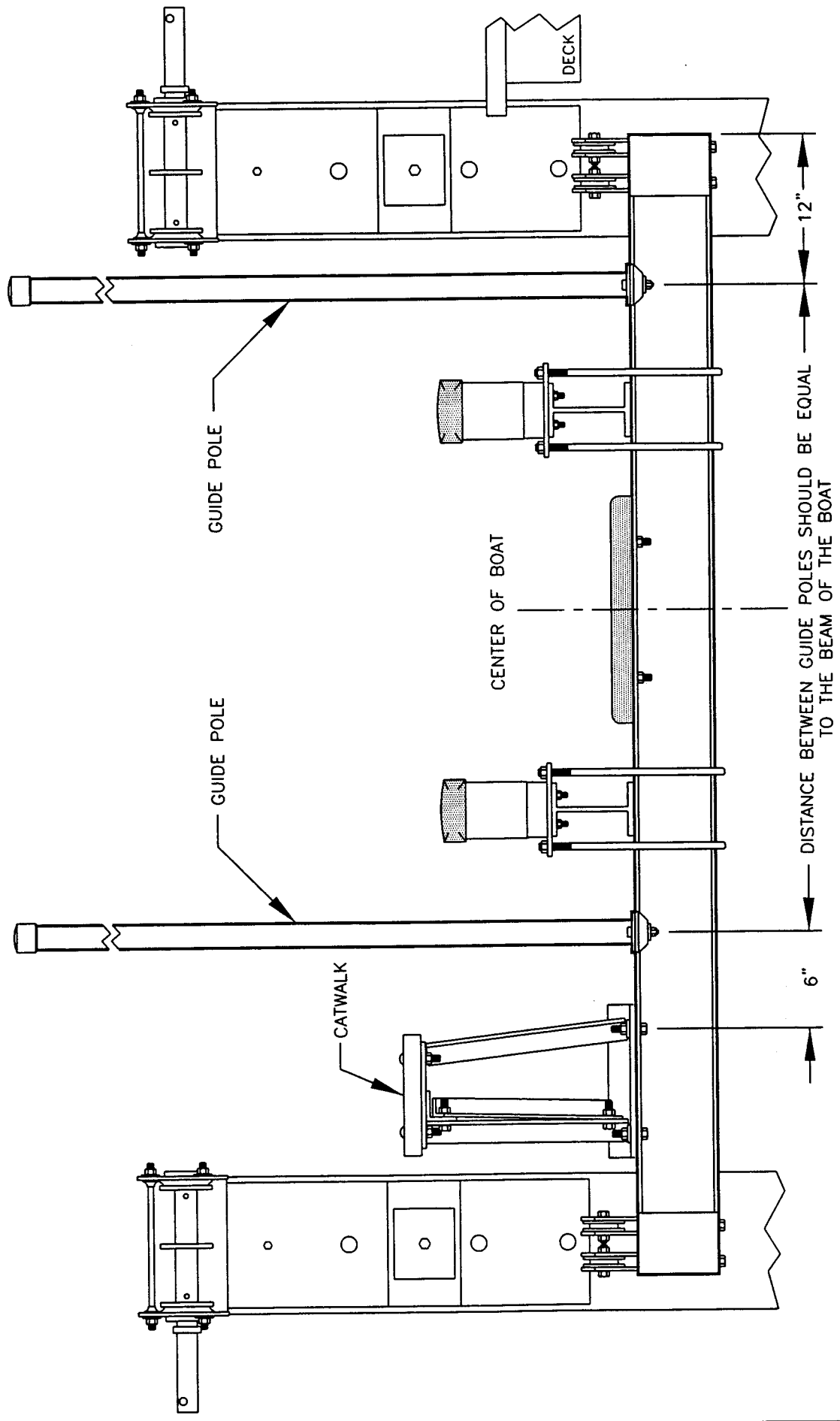
SIDE VIEW

Project: Chock Rails Assembly Detail	
No.: 012	Revision Date:
Scale: None	Date: 03-20-01
Sheet: 1	of 1

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GENERAL NOTES:

1. DISTANCE BETWEEN CENTER OF GUIDE POLES IS DETERMINED BY WIDTH OF BOAT.

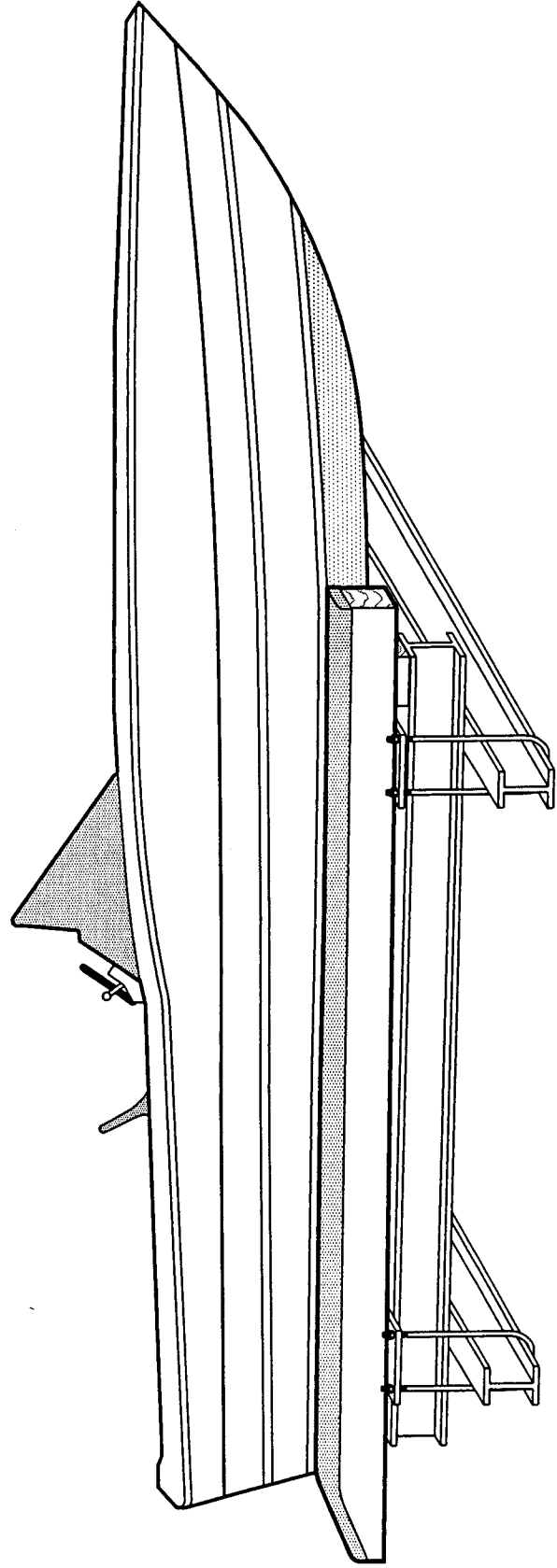


Project: Guide Pole And Catwalk Placement	
No.: 013	Revision Date:
Scale: None	Date: 02-14-01
	Sheet: 1 of 1

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GENERAL NOTES:

1. FOR OPTIMUM PERFORMANCE, EQUAL WEIGHT DISTRIBUTION IS REQUIRED OVER BOTH CRADLE ARMS.
2. TO OBTAIN EQUAL WEIGHT DISTRIBUTION:
 - A. USE BALANCE POINT OF BOAT.
 - B. DO NOT USE CENTER OF BOAT LENGTH.
3. POSITION THE BOAT IN THE LIFT AS CLOSE TO THE DOCK AS POSSIBLE.



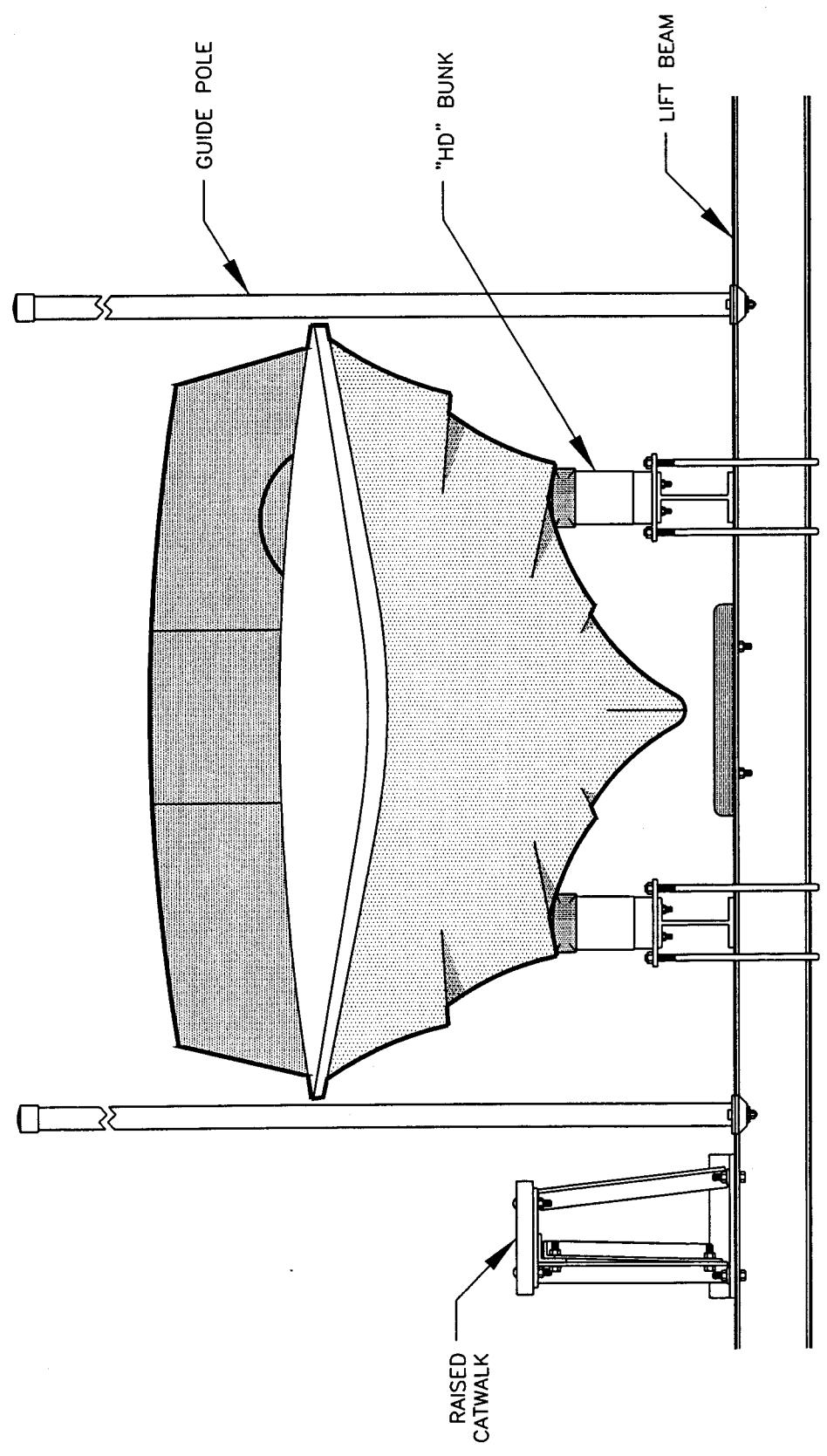
SIDE VIEW OF BOAT

Project: Instructions For	
Weight Distribution	
No.: 014	Revision Date:
Scale: None	Date: 03-20-01
	Sheet: 1 of 1

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GENERAL NOTES:

1. DISTANCE BETWEEN CENTER OF GUIDE POLES IS DETERMINED BY WIDTH OF BOAT.



FRONT VIEW OF BOAT

Project: Proper "20,000 HD" Model	
Bunk Fit	
No: 015	Revision Date:
Scale: None	Date: 03-20-01
Sheet: 1 of 1	