

LAYOUT & MECHANIZATION SCHEMATIC

This plan was developed and prepared by:

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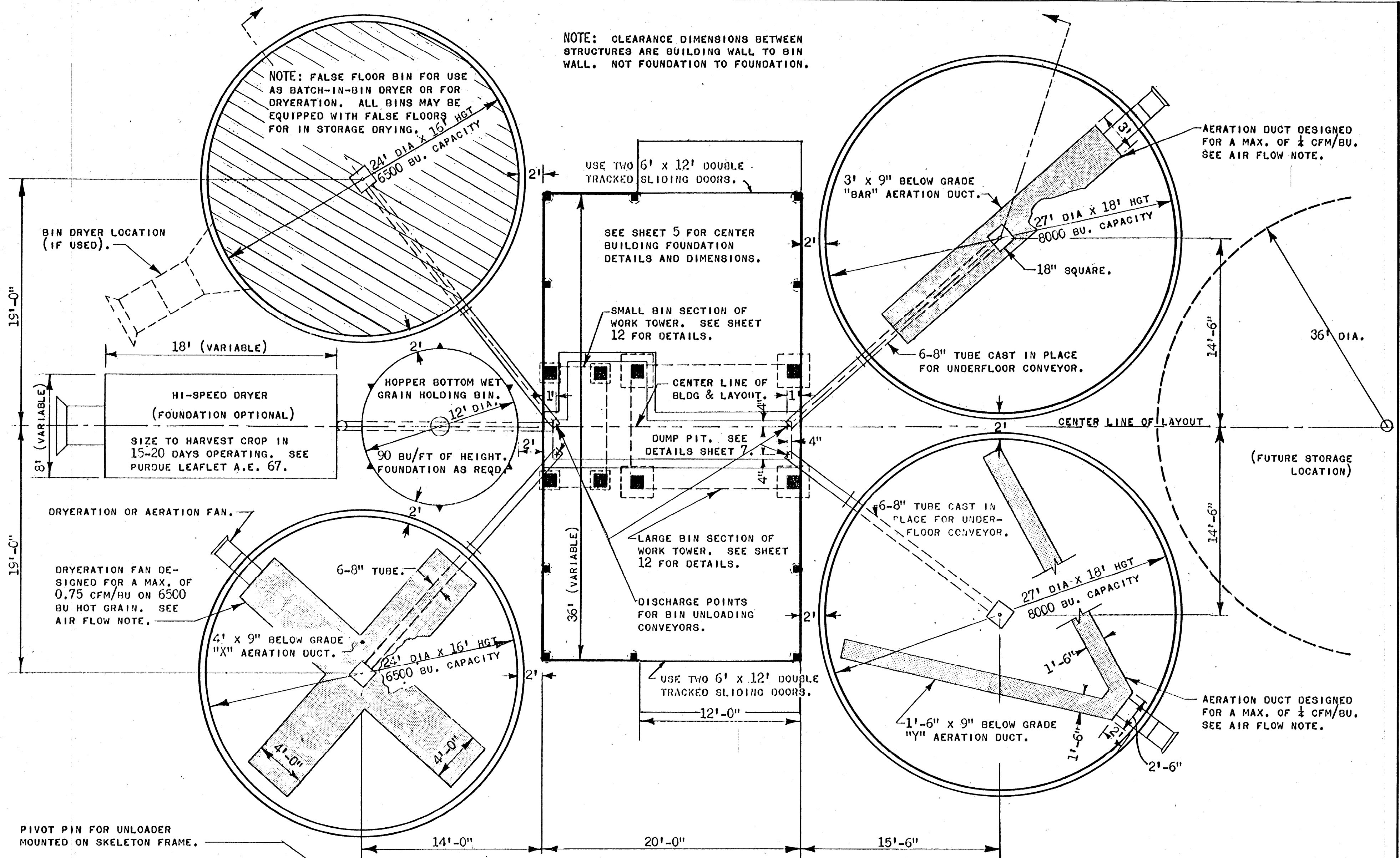
COOPERATIVE EXTENSION WORK IN  
AGRICULTURE AND HOME ECONOMICS  
STATE OF MISSISSIPPI  
MISSISSIPPI STATE UNIVERSITY  
AND  
UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING

GRAIN-FEED HANDLING CENTER

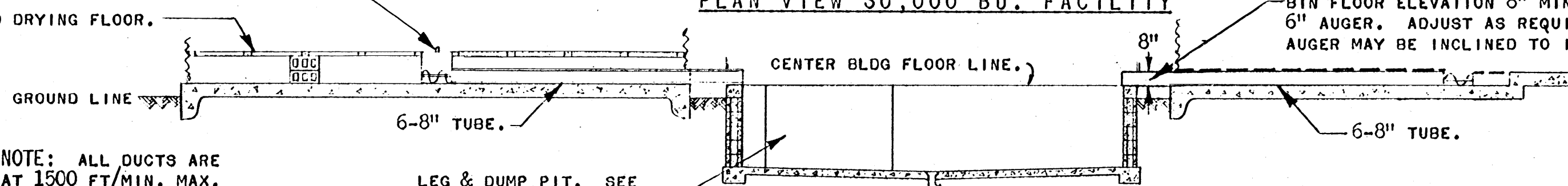
IND.	'69	EX. 6068	SHEET 1 OF 14
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NOTE: CLEARANCE DIMENSIONS BETWEEN STRUCTURES ARE BUILDING WALL TO BIN WALL. NOT FOUNDATION TO FOUNDATION.

NOTE: FALSE FLOOR BIN FOR USE AS BATCH-IN-BIN DRYER OR FOR DRYERATION. ALL BINS MAY BE EQUIPPED WITH FALSE FLOORS FOR IN STORAGE DRYING.



PLAN VIEW 30,000 BU. FACILITY



SECTION A-A

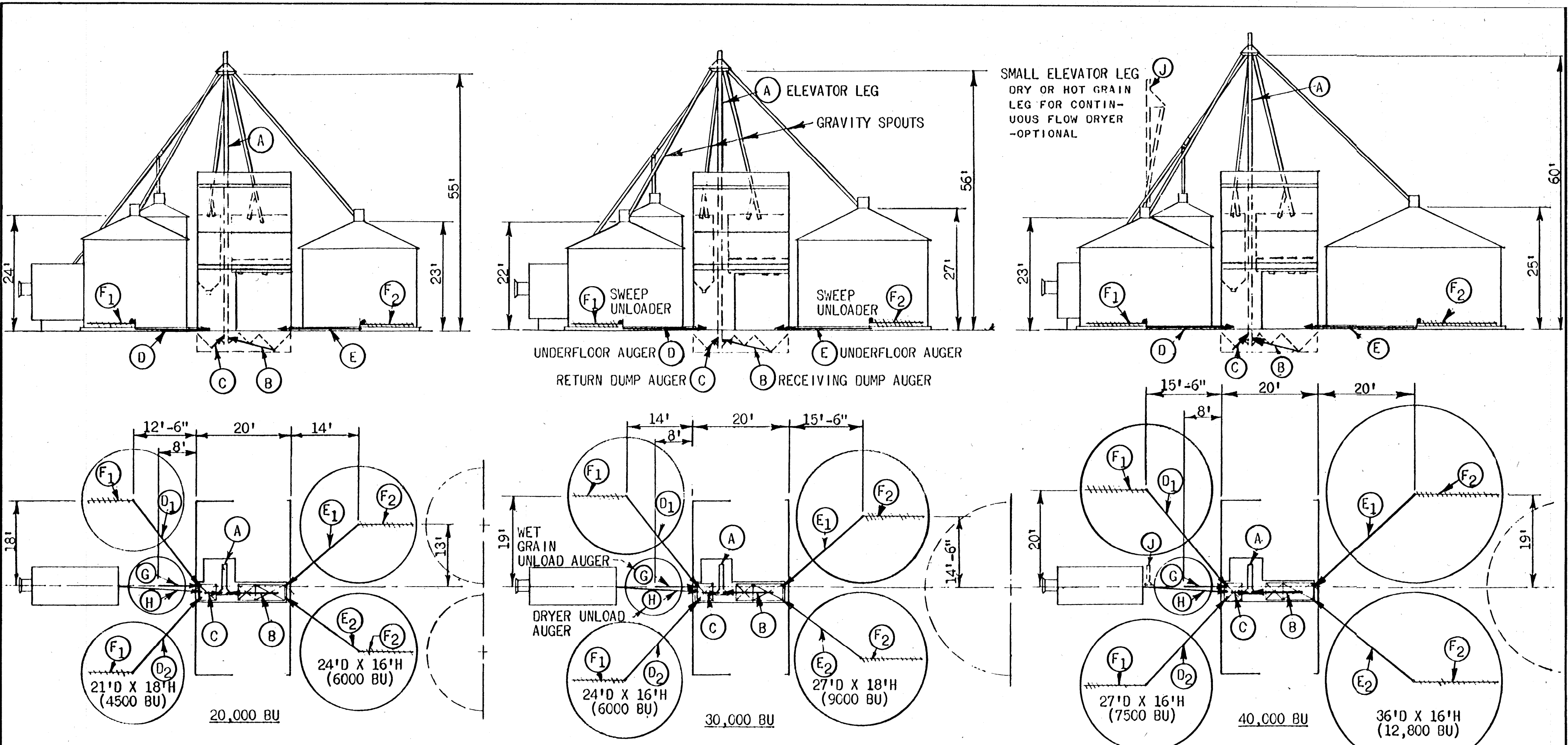
AIR FLOW NOTE: ALL DUCTS ARE DESIGNED AT 1500 FT/MIN. MAX. DUCT AIR VELOCITY & 30 FT/MIN. MAX. AIR VELOCITY THRU PERFORATED FLOOR. DRYERATION AIR FLOW IS RECOMMENDED AT 1/2-1 CFM/BU. AERATION AIR FLOW AT 0.1 CFM/BU. (SEE PURDUE LEAFLET A. E. 71 - AERATION.)

NOTE: ALL BIN FOUNDATIONS TO BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS. ALL GRADE ELEVATIONS OF BIN AND BLDG FLOORS TO BE AS SHOWN.

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GRAIN-FEED HANDLING CENTER

IND. '69 EX. 6068 SHEET 2 OF 14



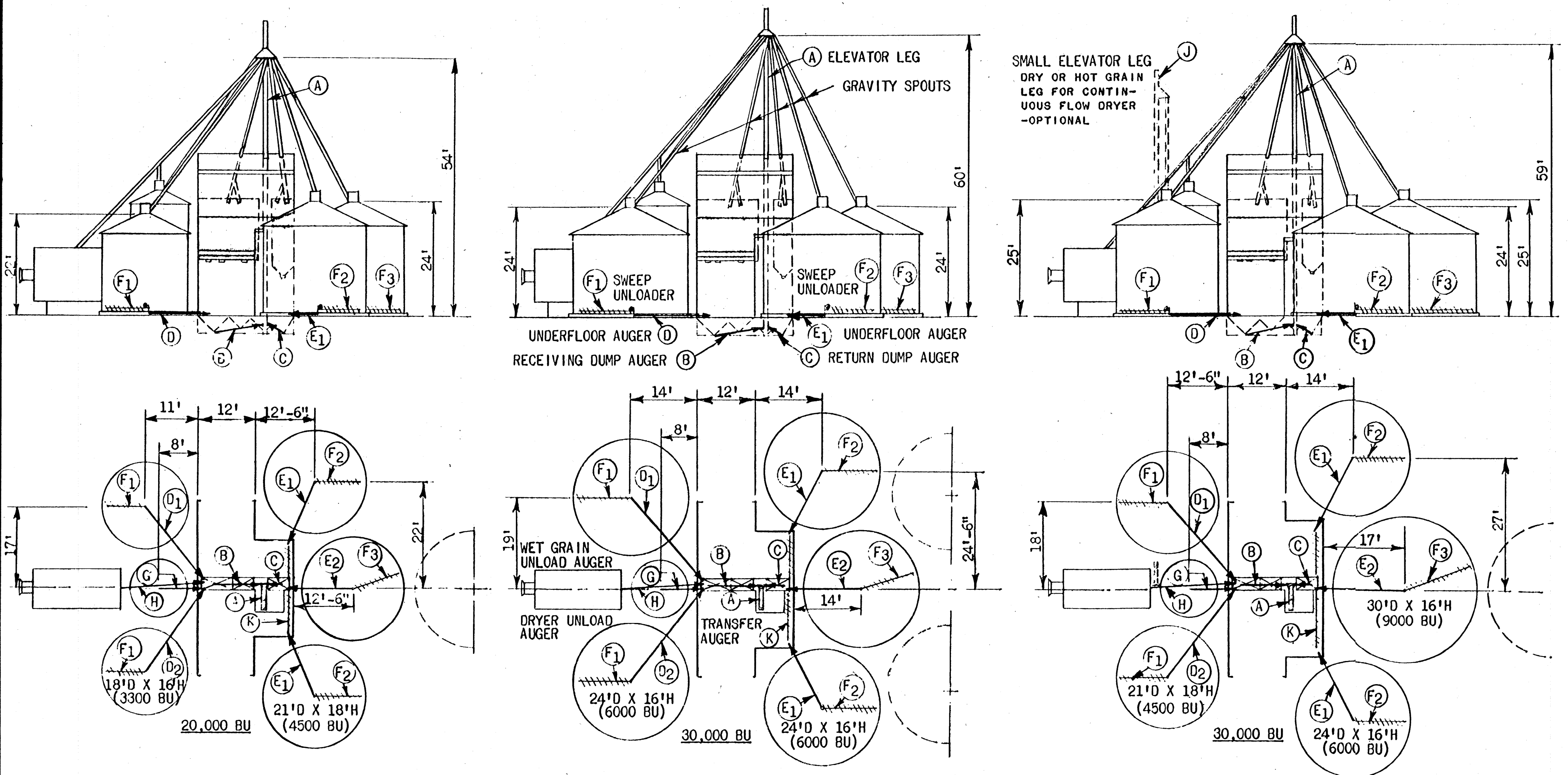
GRAIN HANDLING EQUIPMENT	20,000 BU 1000-1200 BU/HR FLOW RATE				30,000 BU 1500-2000 BU/HR FLOW RATE				40,000 BU 2500-3000 BU/HR FLOW RATE						
	CODE	LENGTH OR HEIGHT	SIZE	ESTIMATED CAPACITY BU/HR	H-P	CODE	LENGTH OR HEIGHT	SIZE	ESTIMATED CAPACITY BU/HR	H-P	CODE	LENGTH OR HEIGHT	SIZE	ESTIMATED CAPACITY BU/HR	H-P
ELEVATOR LEG	A	55'	7x5"	1000-1200	2-3	A	56'	8x5" OR 9x5"	1500-2000	3-5	A	60'	9x6"	2500-3000	7½
GRAVITY SPOUTS			6"					6"					8"		
RECEIVING DUMP AUGER	B	11'	8"	1200(WET)	2-3	B	11'	10"		3-5	B	11'	12" 14"		3-5
RETURN DUMP AUGER	C	4'	8"	1200(WET)	1	C	4'	10"		1	C	4'	12"		1½
UNDERFLOOR AUGER	D <sub>1</sub>	23'	6"	1000-1200	2	D <sub>1</sub>	24'	6"	1500	3	D <sub>1</sub>	26'	8"	2500	5
UNDERFLOOR AUGER	D <sub>2</sub>	21'	6"	1000-1200	2	D <sub>2</sub>	22'	6"	1500	3	D <sub>2</sub>	24'	8"	2500	5
UNDERFLOOR AUGER	E <sub>1</sub>	20'	6"	1000-1200	2	E <sub>1</sub>	22'	6"	1500	3	E <sub>1</sub>	30'	8"	2500	5
UNDERFLOOR AUGER	E <sub>2</sub>	18'	6"	1000-1200	2	E <sub>2</sub>	20'	6"	1500	3	E <sub>2</sub>	28'	8"	2500	5
SWEEP UNLOADERS	F <sub>1</sub>	10'	4or6"	1000	1	F <sub>1</sub>	11½'	6"	1000-1200	1	F <sub>1</sub>	13'	6"	1000-1200	1½
SWEEP UNLOADERS	F <sub>2</sub>	11½'	4or6"	1000	1	F <sub>2</sub>	13'	6"	1000-1200	1½	F <sub>2</sub>	17½'	6"	1000-1200	2
WET GRAIN UNLOAD AUGER	G	10'	8"	1000-1200	1½	G	10'	10"	1500-2000 (WET)	2-3	G	10'	12"		2
DRYER UNLOAD AUGER	H	18'	6"	1000-1200	1½-2	H	18'	6"	1500	2	H	18'	8"	2500	3
SMALL ELEVATOR LEG (FOR CONTINUOUS FLOW DRYER)	J	45'	(SEE RIGHT)			J	44'	(SEE RIGHT)	2000	3	J	48'	4x6"	500-700	1

- HANDLING FLOW RATES ILLUSTRATED ARE WORKABLE COMBINATIONS AND NOT LIMITED TO EACH SPECIFIC FACILITY.
- AUGER INTAKE EXPOSURE MATCHED TO CAPACITY--MINIMUM EXPOSURE = AUGER DIAM; MAXIMUM EXPOSURE 2'±. ADDITIONAL EXPOSURE INCREASES HORSEPOWER NOT CAPACITY.
- SWEEP UNLOADER CAPACITIES GIVEN FOR UNITS WITH GRAIN SHIELDS BEHIND AUGER.
- FLAT STORAGE STRUCTURES CAN BE SUBSTITUTED FOR BIN ON RIGHT SIDE OF LAYOUT. DOTTED BINS SHOWN FOR FUTURE EXPANSION ARE INTERCHANGABLE FOR ALL LAYOUTS.

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**GRAIN-FEED HANDLING CENTER**

IND.	'69	EX. 6068	SHEET 3 OF 14
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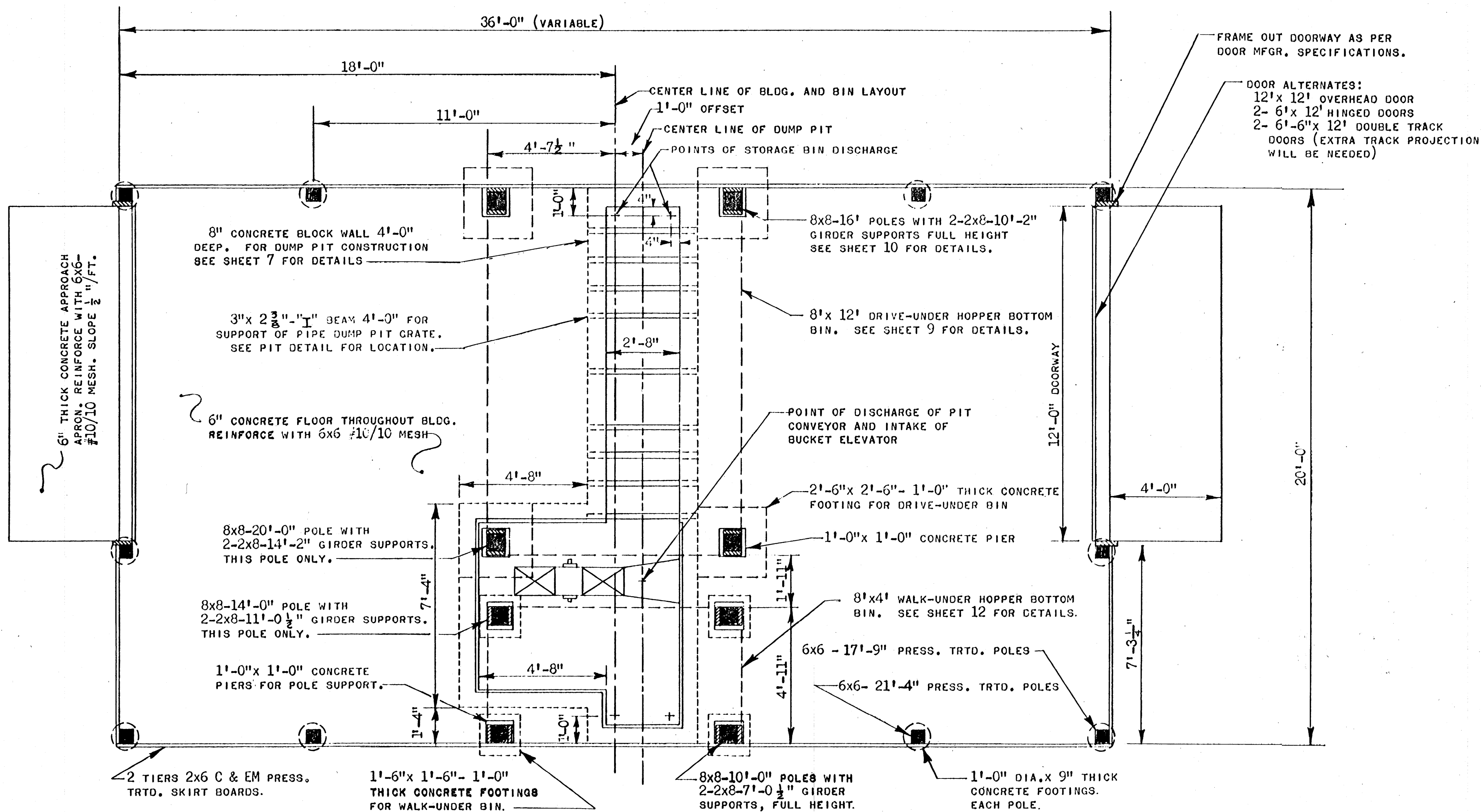
APPROXIMATE TOTAL CAPACITY -- ALTERNATIVE HANDLING RATES --	20,000 BU					30,000 BU					30,000 BU				
	1000-1200 BU/HR FLOW RATE					1500-2000 BU/HR FLOW RATE					2500-3000 BU/HR FLOW RATE				
GRAIN HANDLING EQUIPMENT	CODE	LENGTH OR HEIGHT	SIZE	ESTIMATED CAPACITY BU/HR	H-P	CODE	LENGTH OR HEIGHT	SIZE	ESTIMATED CAPACITY BU/HR	H-P	CODE	LENGTH OR HEIGHT	SIZE	ESTIMATED CAPACITY BU/HR	H-P
ELEVATOR LEG	A	54'	7x5"	1000-1200	2-3	A	60'	8x5 9x5 6"	1500-2000	3-5	A	59'	9x6"	2500-3000	7½
GRAVITY SPOUTS			6"										8"		
RECEIVING DUMP AUGER	B	11'	8"	1200(WET)	2-3	B	11'	10"		3-5	B	11'	12"		3-5
RETURN DUMP AUGER	C	4'	8"	1200(WET)	1	C	4'	10"		1	C	4'	14"		1½
UNDERFLOOR AUGERS	D <sub>1</sub>	20'	6"	1000-1200	2	D <sub>1</sub>	24'	6"	1500	3	D <sub>1</sub>	22'	8"	2500	3
UNDERFLOOR AUGERS	D <sub>2</sub>	22'	6"	1000-1200	2	D <sub>2</sub>	26'	6"	1500	3	D <sub>2</sub>	24'	8"	2500	3
UNDERFLOOR AUGERS	E <sub>1</sub>	14'	6"	1000-1200	1½	E <sub>1</sub>	16'	6"	1500	2	E <sub>1</sub>	16'	8"	2500	3
UNDERFLOOR AUGERS	E <sub>2</sub>	16'	6"	1000-1200	1½	E <sub>2</sub>	16'	6"	1500	2	E <sub>2</sub>	20'	8"	2500	3
SWEEP UNLOADERS	F <sub>1</sub>	8½'	4"		¾	F <sub>1</sub>	11½'	6"	1000-1200	1	F <sub>1</sub>	10'	6"	1000-1200	1
SWEEP UNLOADERS	F <sub>2</sub>	10'	6"	1000	1	F <sub>2</sub>	11½'	6"	1000-1200	1	F <sub>2</sub>	11½'	6"	1000-1200	1
SWEEP UNLOADERS	F <sub>3</sub>	10'	6"	1000	1	F <sub>3</sub>	11½'	6"	1000-1200	1	F <sub>3</sub>	14½'	6"	1000-1200	1½
WET GRAIN UNLOAD AUGER	G	10'	8"	1200(WET)	1½	G	10'	10"	1500-2000	2-3	G	10'	12"		
DRYER UNLOAD AUGER	H	18'	6"	1000-1200	1½-2	H	18'	6"	1500	2	H	18'	8"	2500	3
TRANSFER AUGER	K	10'	6"-10"		1	K	12'	8"	2000	3	K	14'	8"-10"	2500	2
SMALL ELEVATOR LEG (FOR CONTINUOUS FLOW DRYER)	J	42'	(SEE RIGHT)			J	46'	(SEE RIGHT)	1500	1½	J	45'	4x6"	500-700	1

- HANDLING FLOW RATES ILLUSTRATED ARE WORKABLE COMBINATIONS AND NOT LIMITED TO EACH SPECIFIC FACILITY.
- AUGER INTAKE EXPOSURE MATCHED TO CAPACITY--MINIMUM EXPOSURE = AUGER DIAM; MAXIMUM EXPOSURE 2'. ADDITIONAL EXPOSURE INCREASES HORSEPOWER, NOT CAPACITY.
- SWEEP UNLOADER CAPACITIES GIVEN FOR UNITS WITH GRAIN SHIELDS BEHIND AUGER.
- FLAT STORAGE STRUCTURES CAN BE SUBSTITUTED FOR BIN ON RIGHT SIDE OF LAYOUT. DOTTED BINS SHOWN FOR FUTURE EXPANSION ARE INTERCHANGABLE FOR ALL LAYOUTS.

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**GRAIN-FEED HANDLING CENTER**

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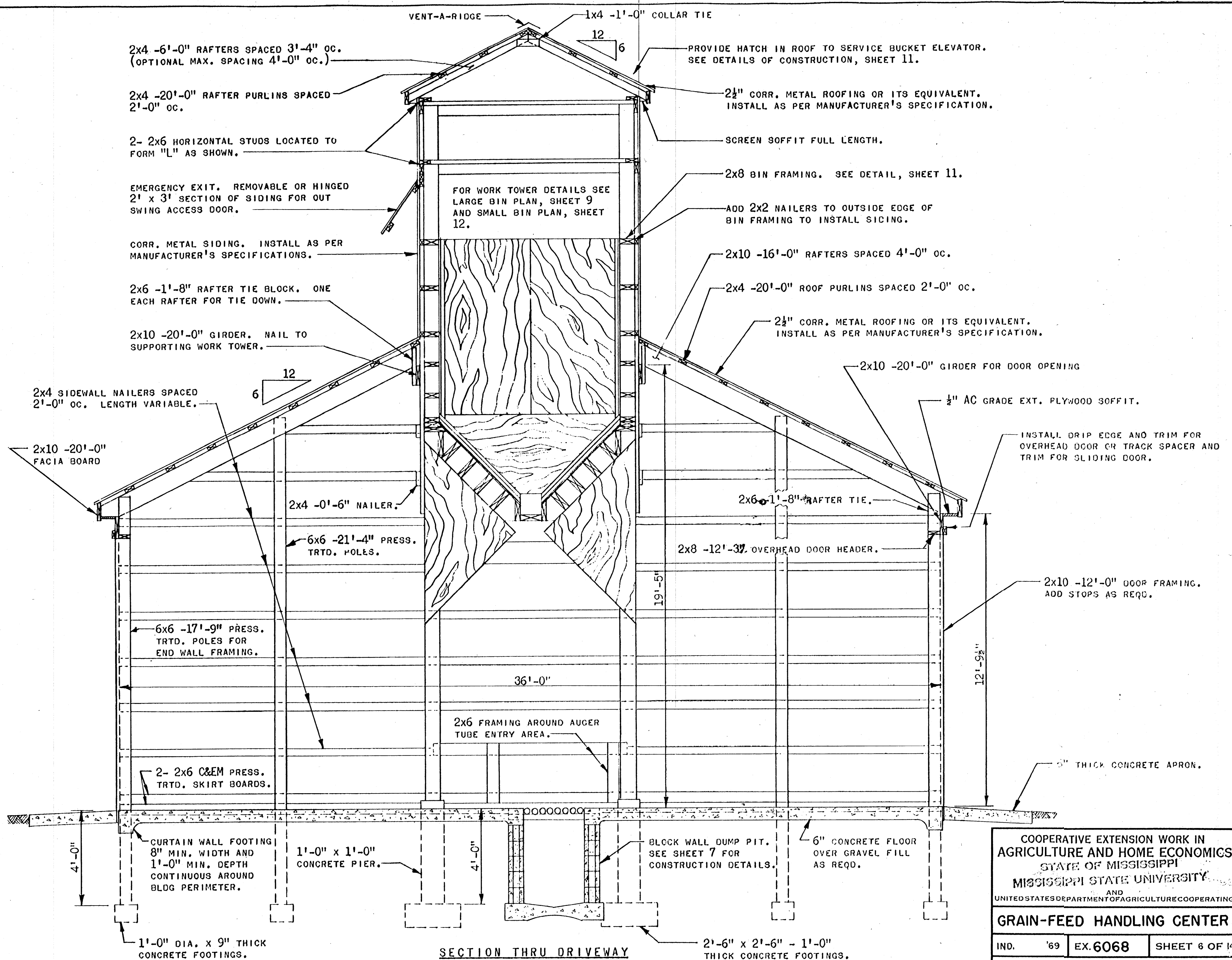


FLOOR & FOUNDATION PLAN  
SCALE 3/8" = 1'-0"

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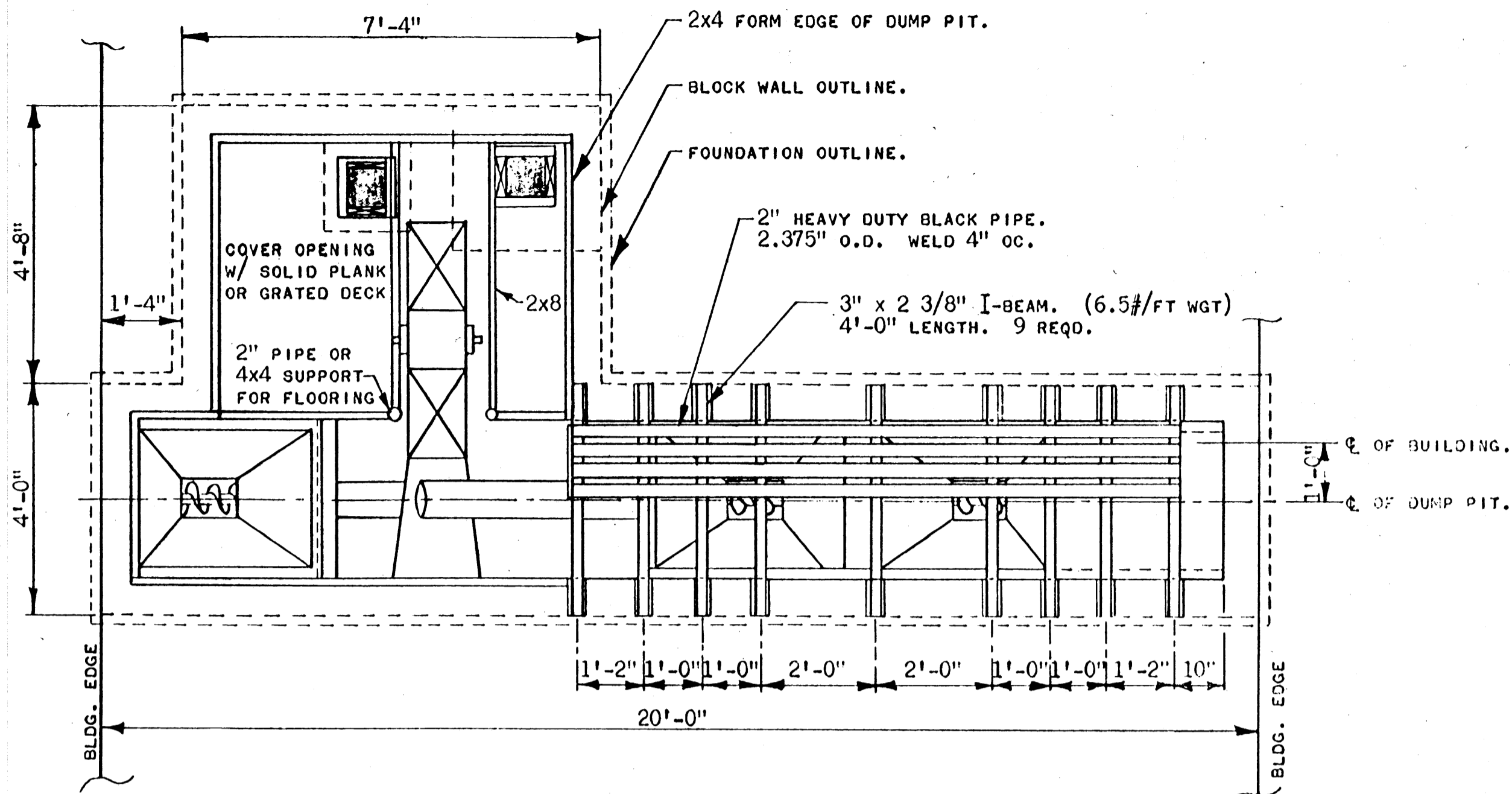
**GRAIN-FEED HANDLING CENTER**

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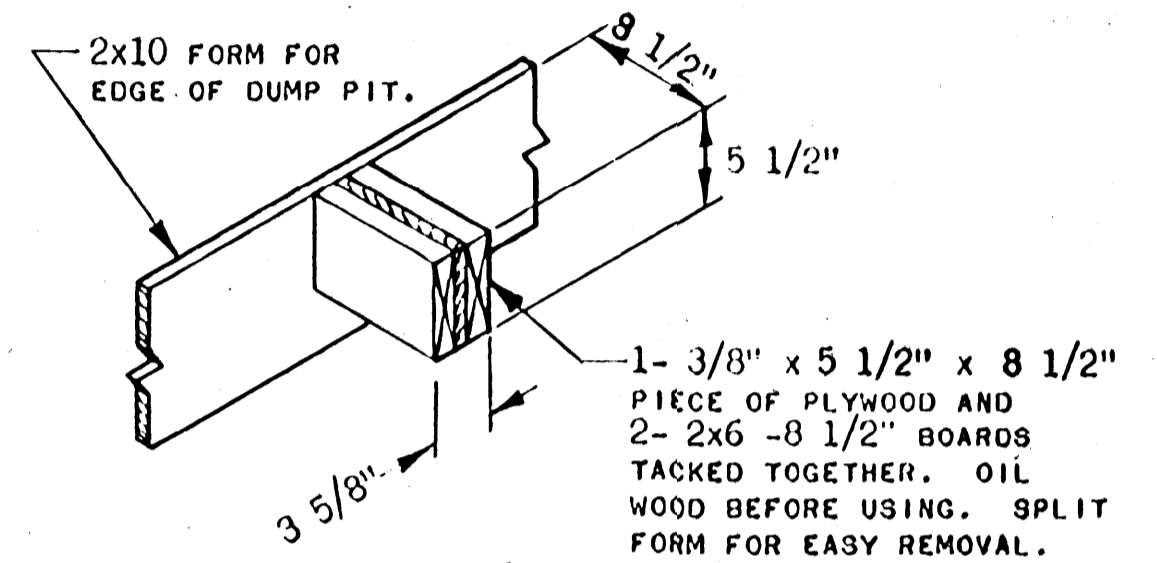


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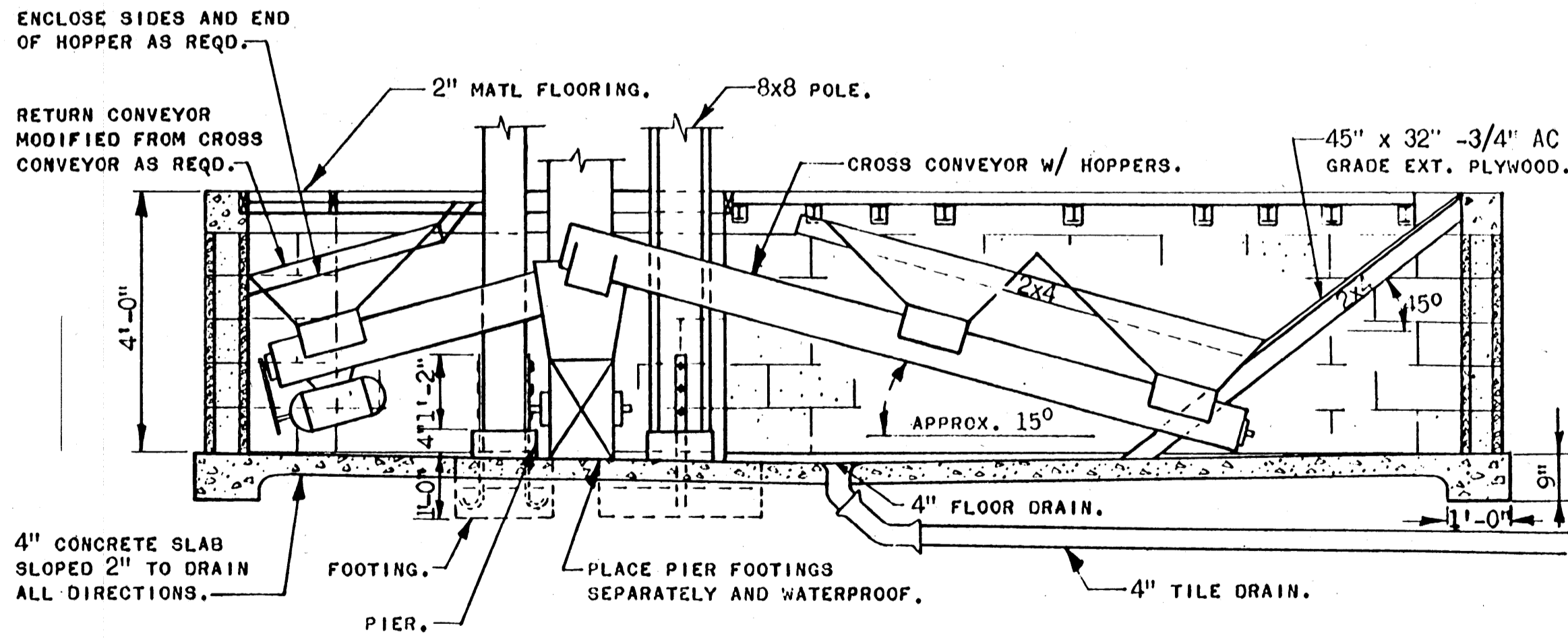
**GRAIN-FEED HANDLING CENTER**



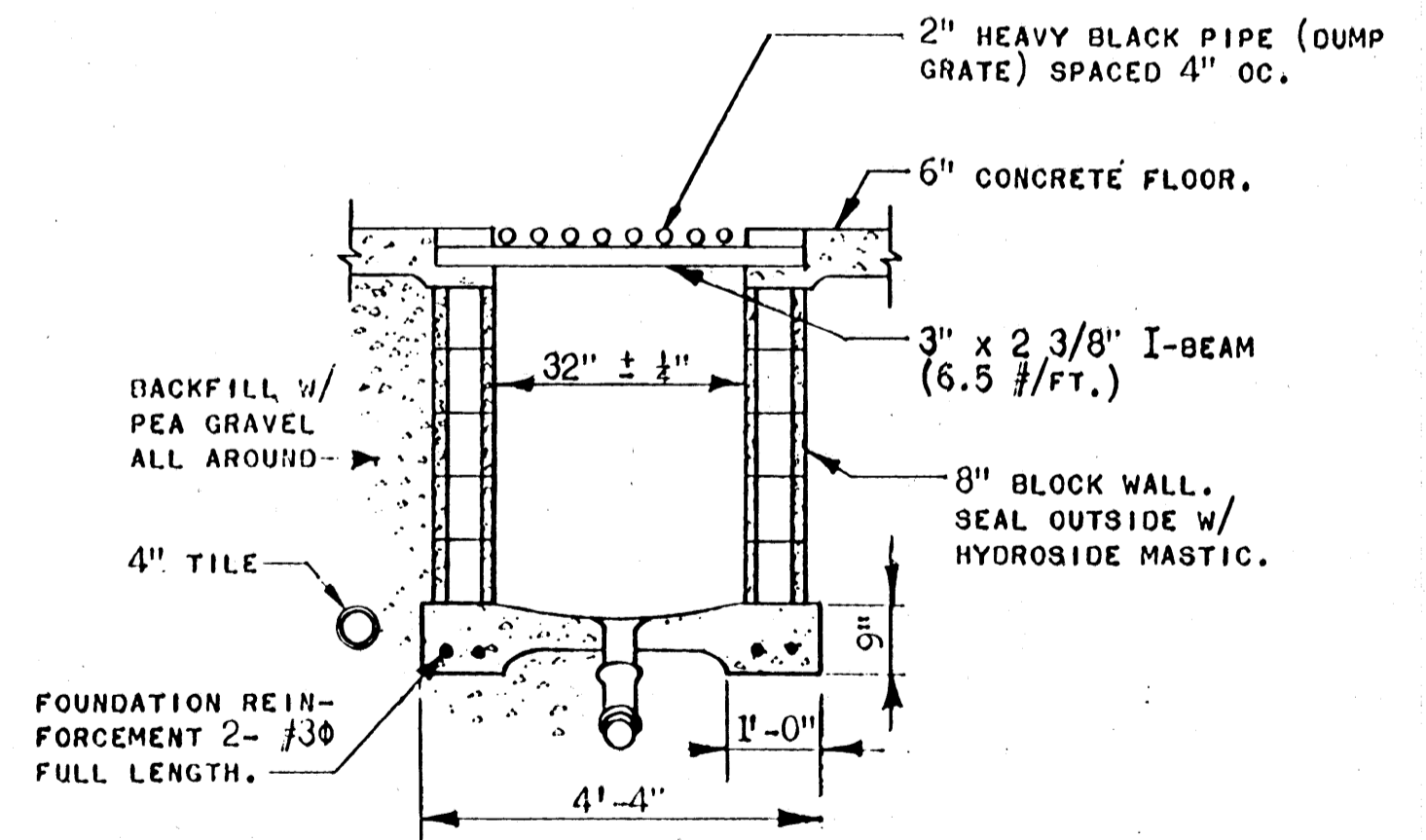
PLAN VIEW



I-BEAM NOTCH FORMING DETAIL



ELEVATION VIEW

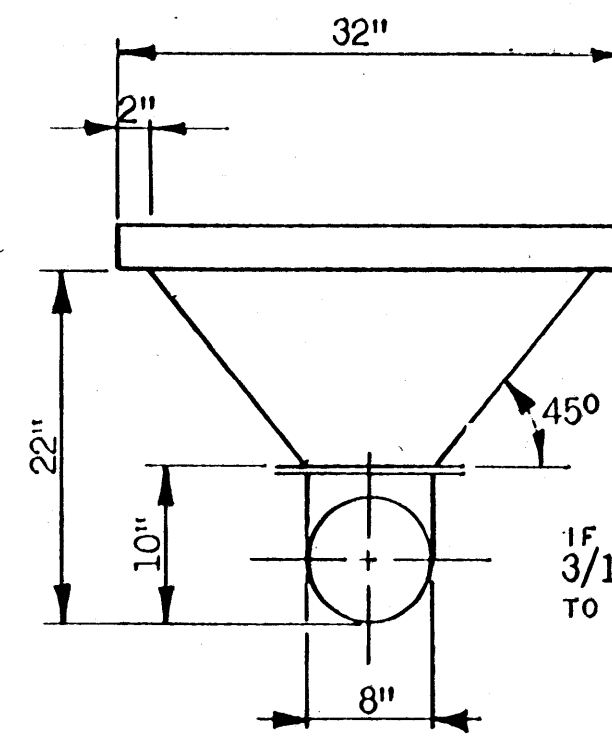
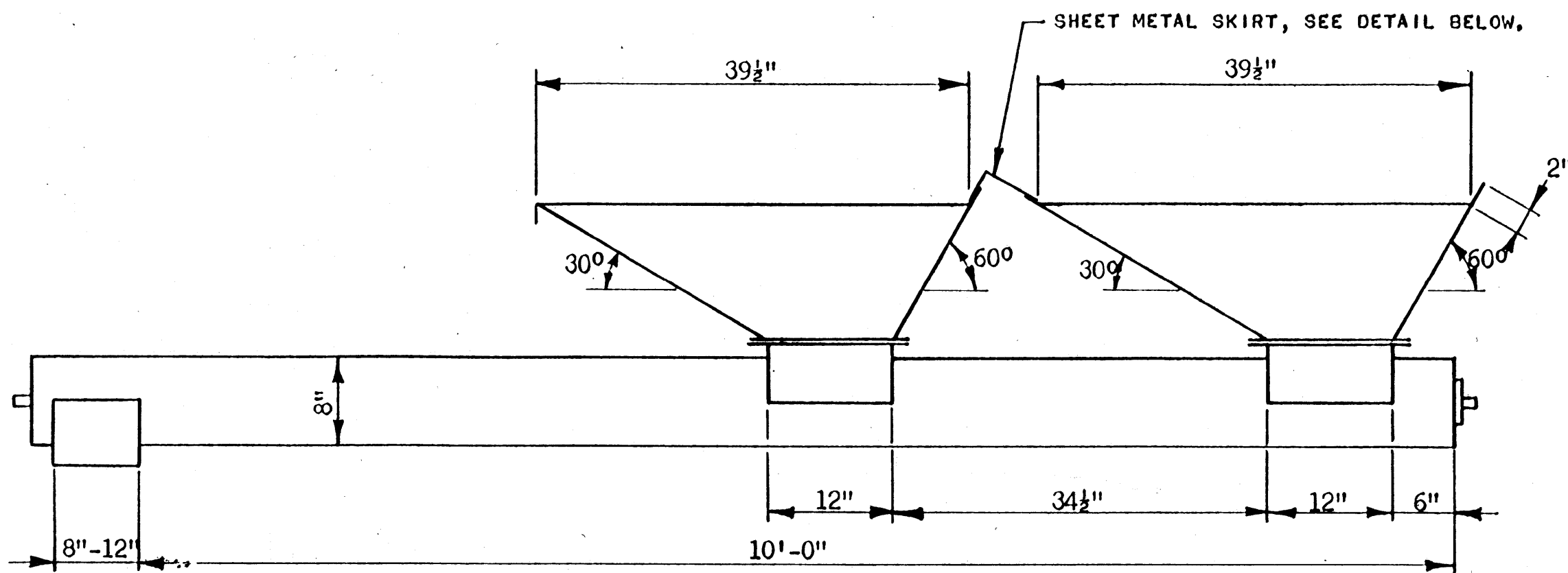
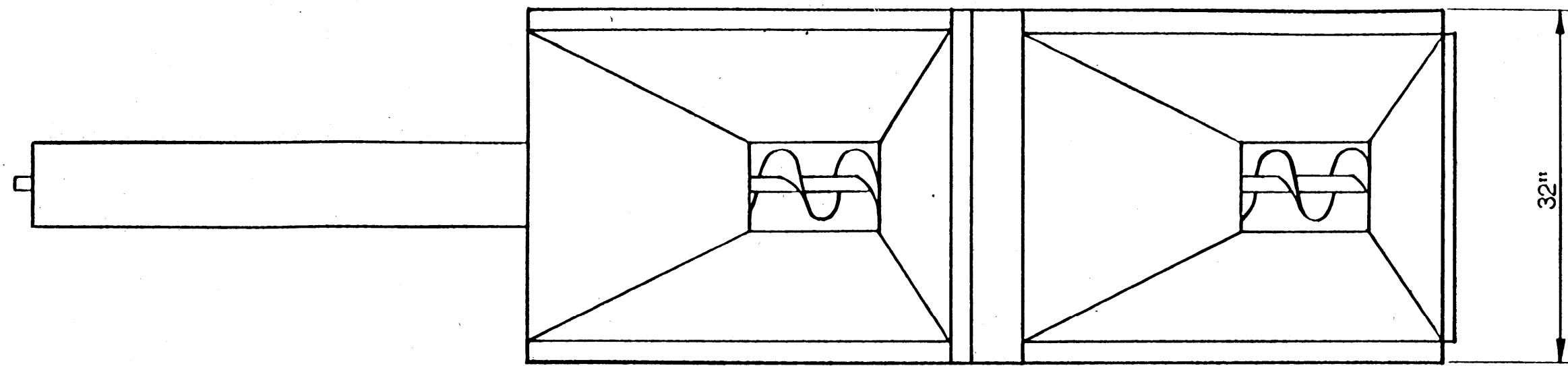


END SECTION OF DUMP PIT

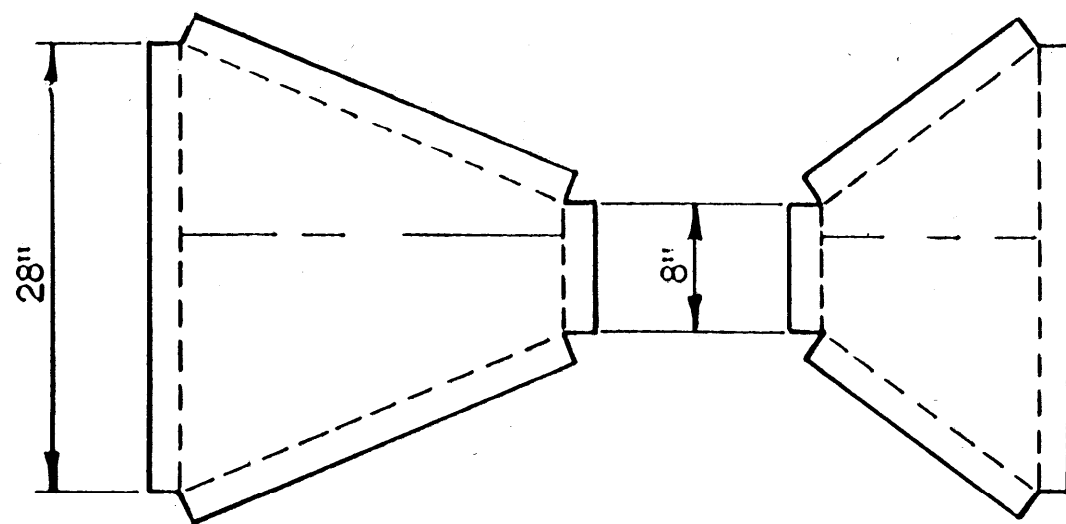
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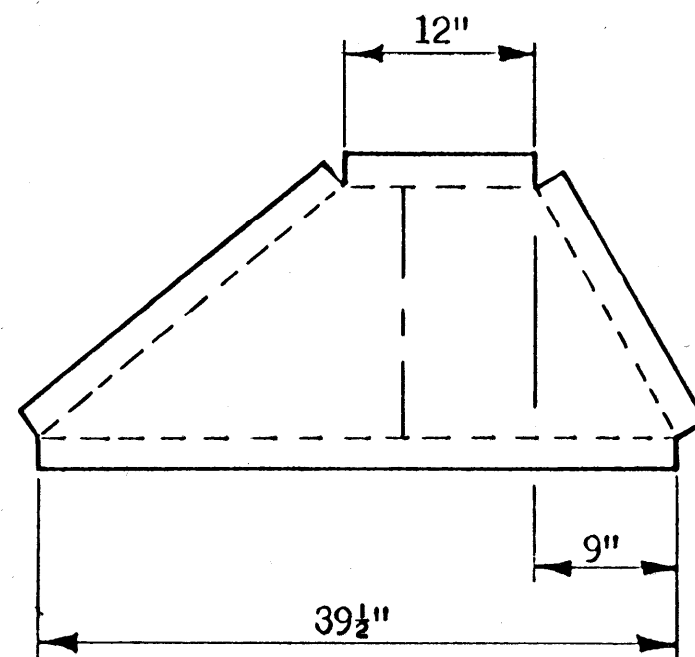
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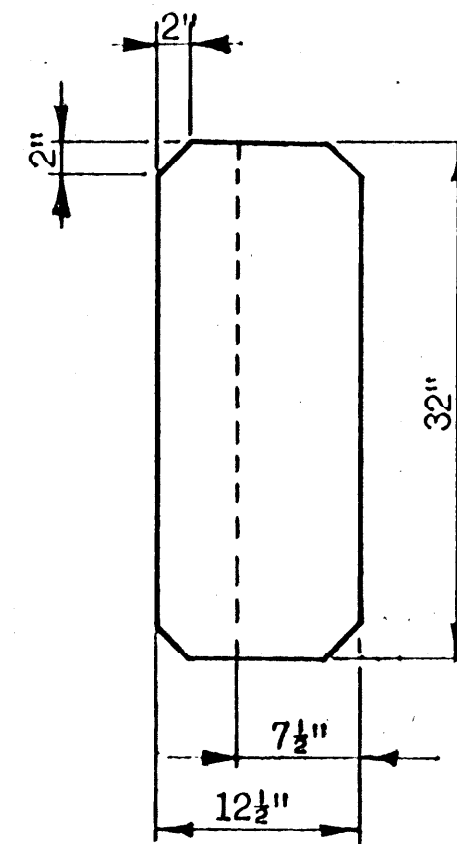
IF SLIDE IS DESIRED, USE  
3/16" X 3/4" BAR STOCK  
TO SPACE EACH SIDE.



HOPPER END PANELS



HOPPER SIDE PANELS



SKIRT BETWEEN HOPPERS

NOTE: ALL FLANGES ARE DRAWN 2", BUT  
MAY BE MODIFIED TO EASE FABRICATION.  
16 GAGE STEEL IS SUGGESTED. MODIFI-  
CATIONS MAY BE NECESSARY TO ADAPT TO  
A PARTICULAR SCREW CONVEYOR.

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GRAIN-FEED HANDLING CENTER

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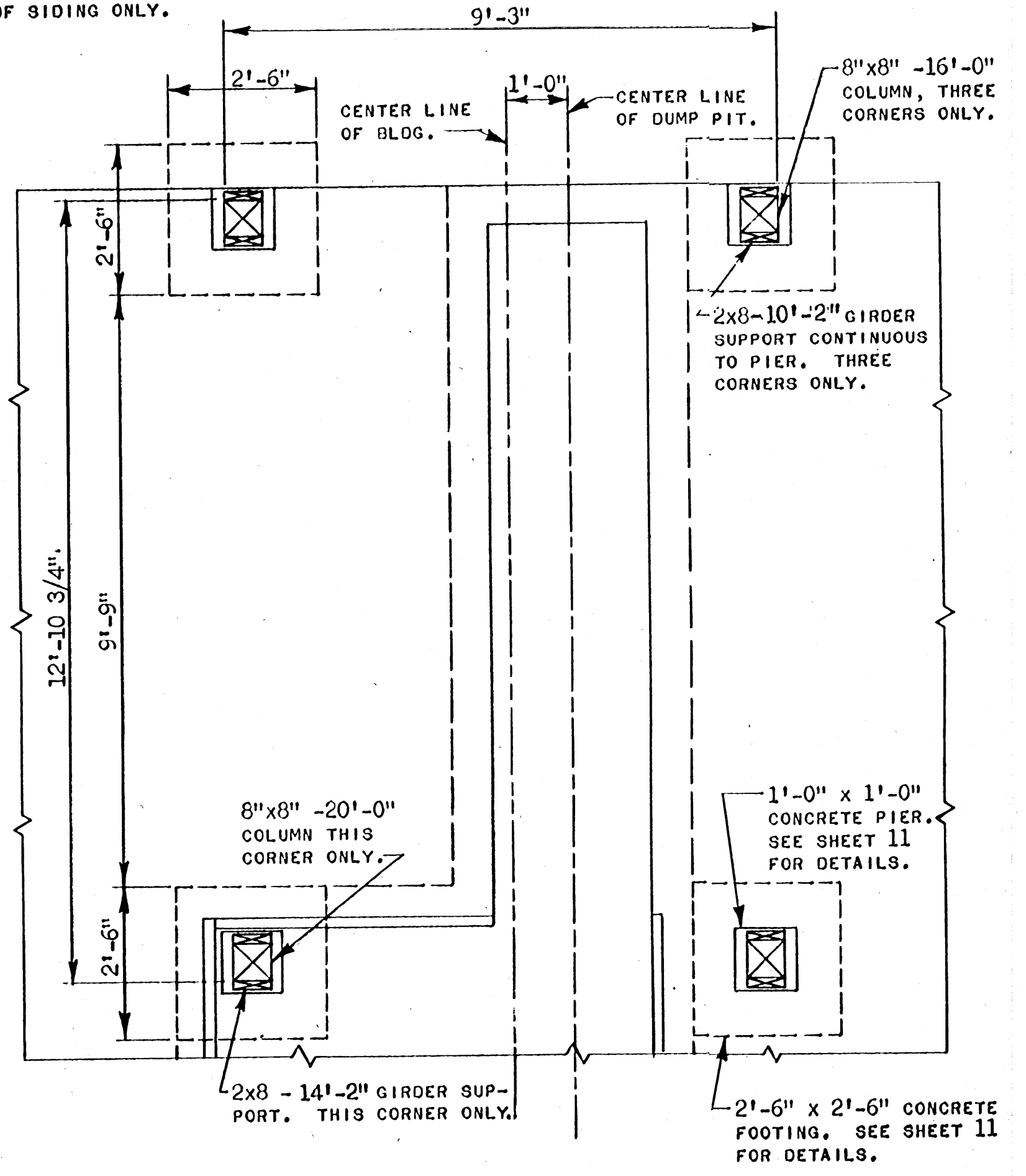
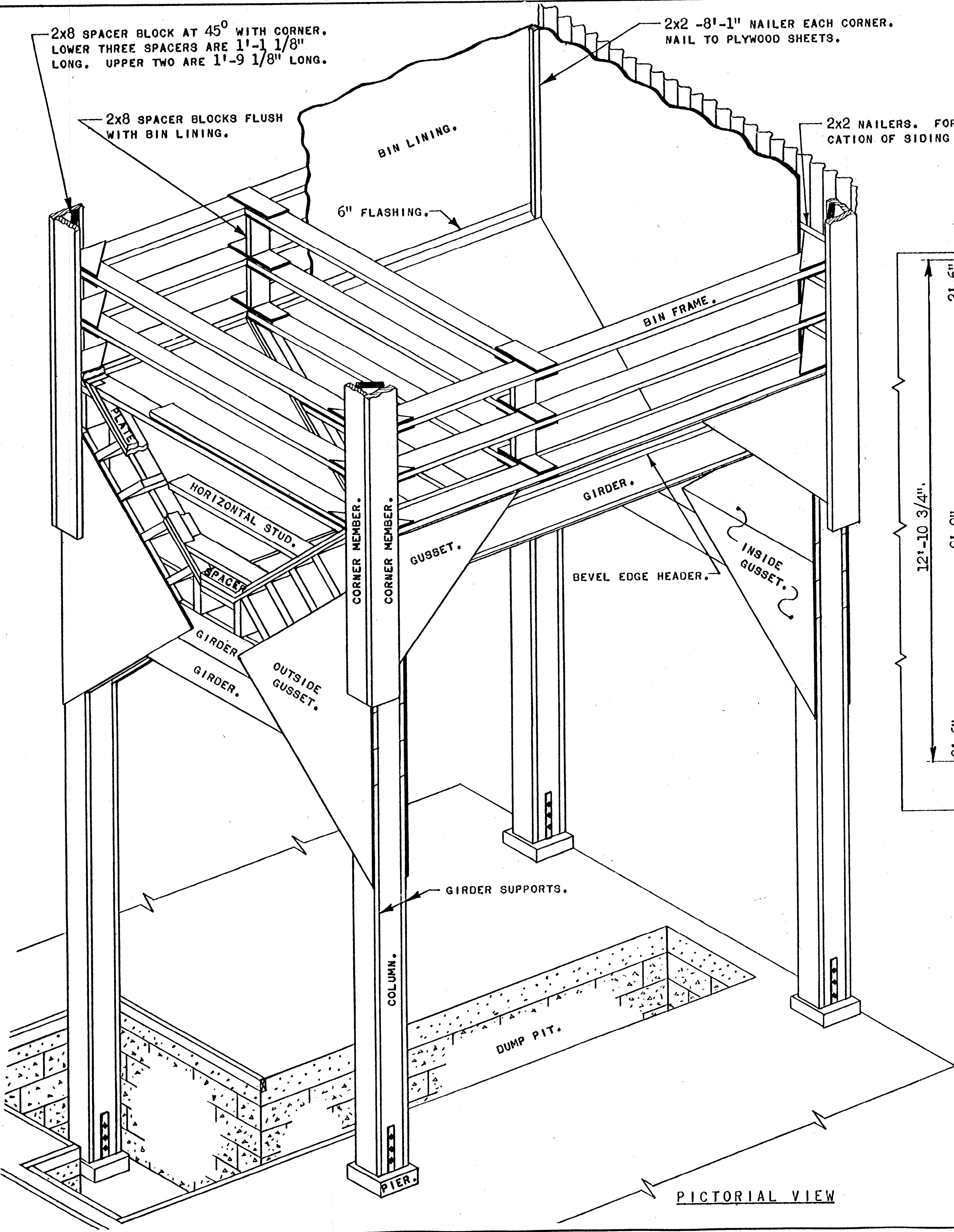
2x8 SPACER BLOCK AT 45° WITH CORNER. LOWER THREE SPACERS ARE 1'-1 1/8" LONG. UPPER TWO ARE 1'-9 1/8" LONG.

2x2 -8'-1" NAILER EACH CORNER. NAIL TO PLYWOOD SHEETS.

NOTE: ALL LUMBER S4S (NOMINAL DIMENSIONS) EXCEPT 8"x8" COLUMNS. DIMENSIONS SHOULD BE CORRECTED IF FULL DIMENSION LUMBER IS USED.

2x8 SPACER BLOCKS FLUSH WITH BIN LINING.

2x2 NAILERS. FOR APPLICATION OF SIDING ONLY.



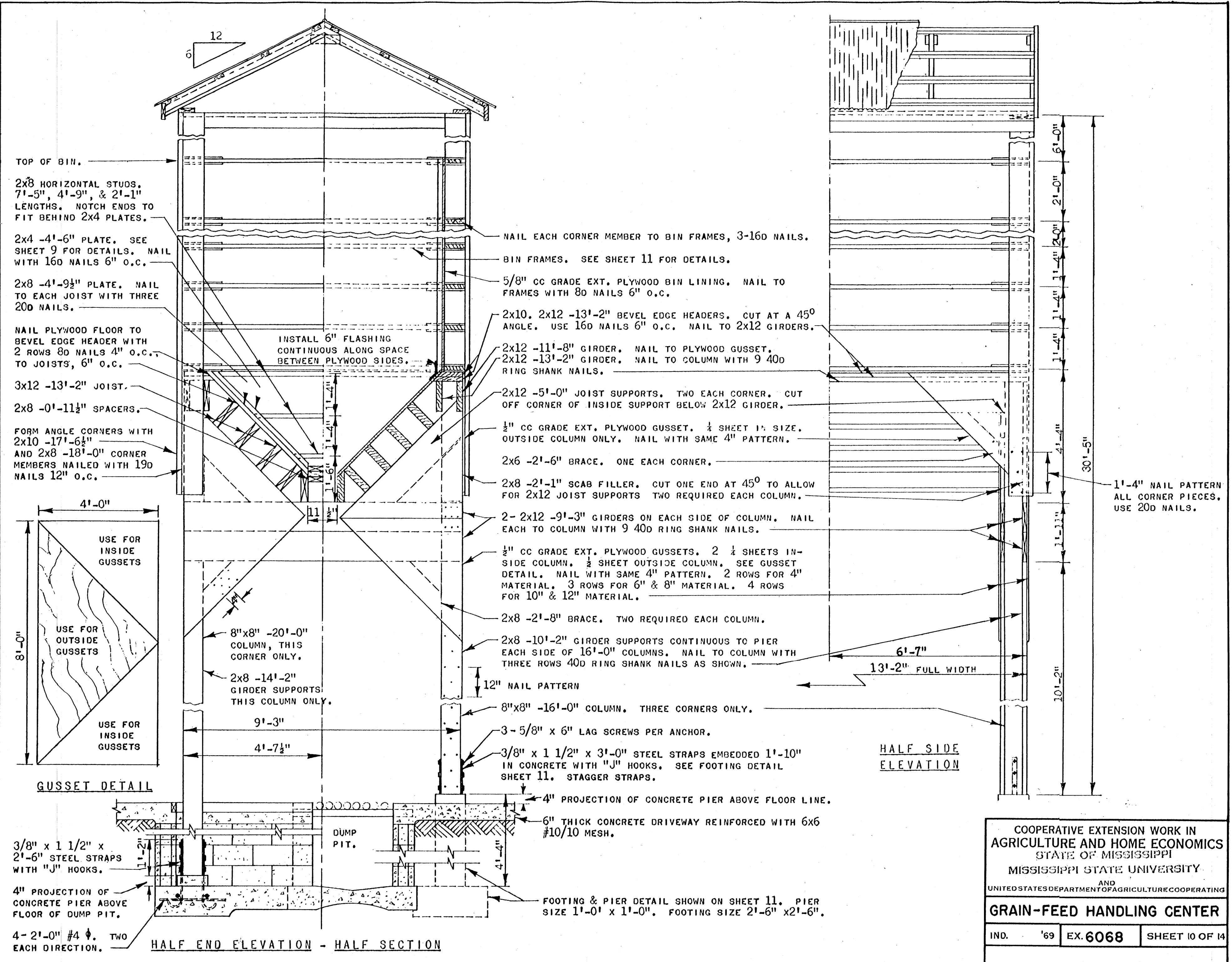
FLOOR PLAN

PICTORIAL VIEW

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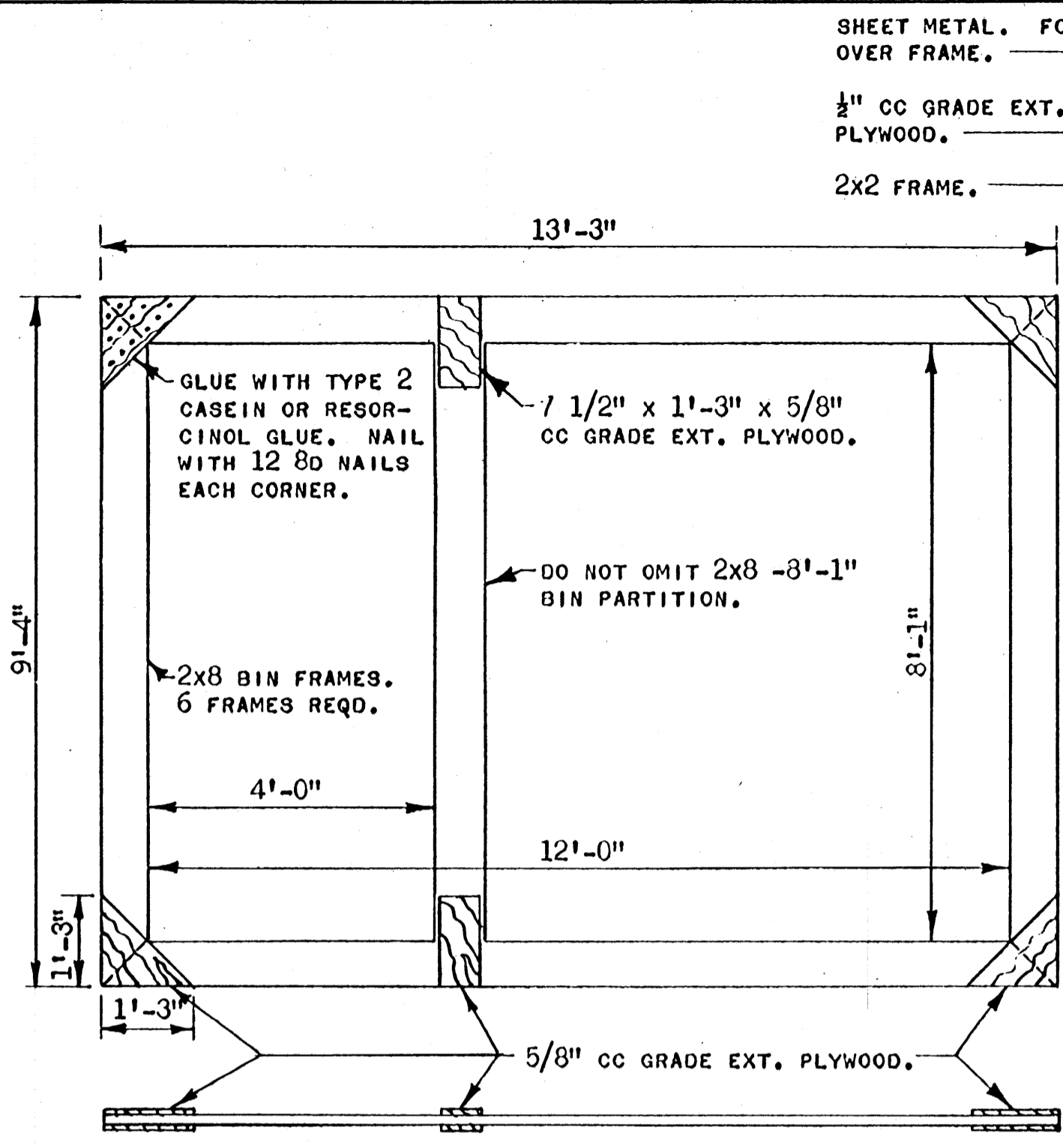
IND. '69	EX.6068	SHEET 9 OF 14
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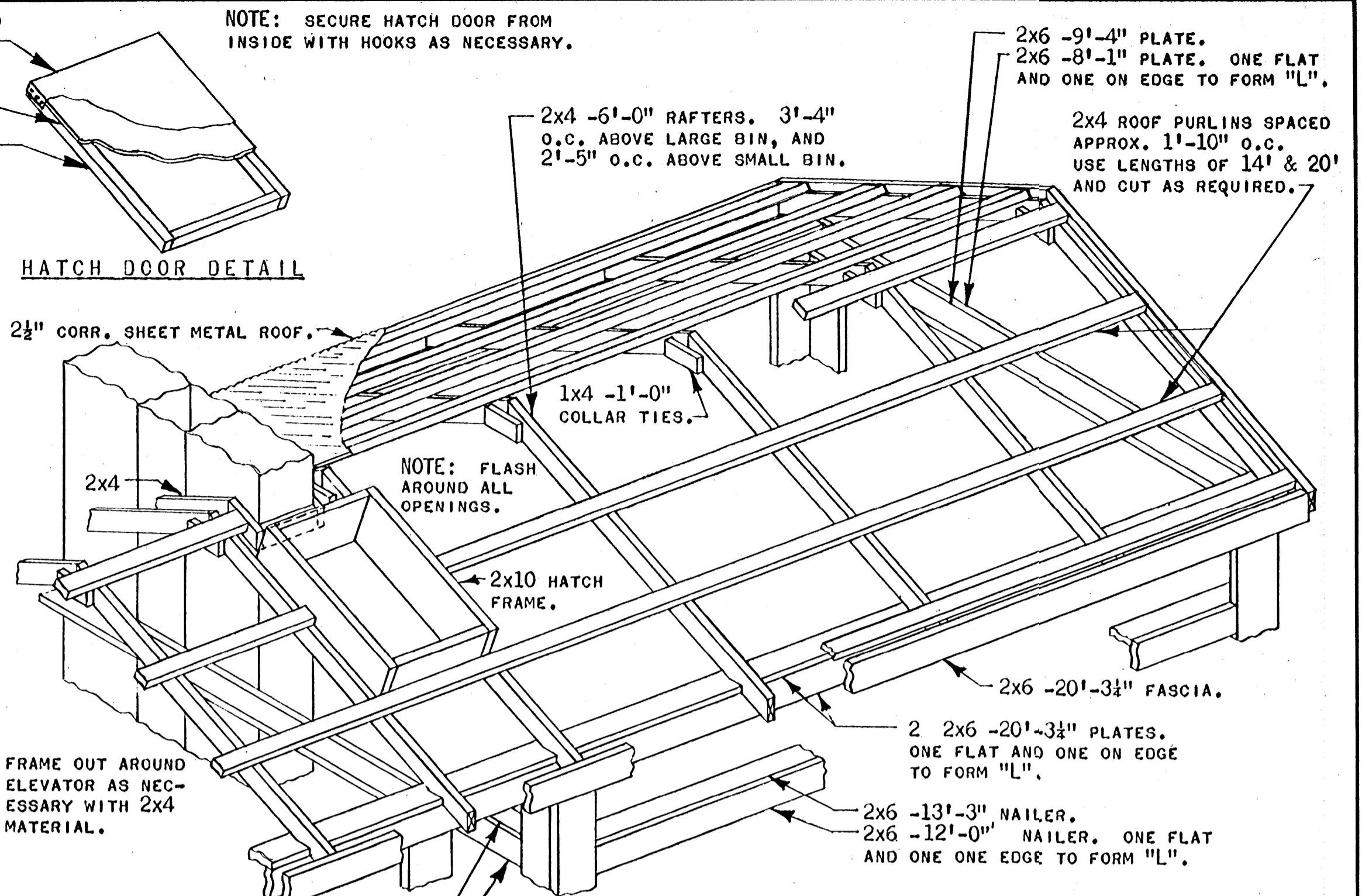
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**GRAIN-FEED HANDLING CENTER**

IND. '69 EX. 6068 SHEET 10 OF 14



**BIN FRAME DETAIL**  
SCALE: 1/2" = 1'-0"



**ROOFING DETAIL**  
SCALE: 1/2" = 1'-0"

**HATCH DOOR DETAIL**

2 1/2" CORR. SHEET METAL ROOF.

1x4 -1'-0" COLLAR TIES.

NOTE: FLASH AROUND ALL OPENINGS.

2x4

2x10 HATCH FRAME.

2x6 -20'-3 1/2" FASCIA.

2 2x6 -20'-3 1/2" PLATES. ONE FLAT AND ONE ON EDGE TO FORM "L".

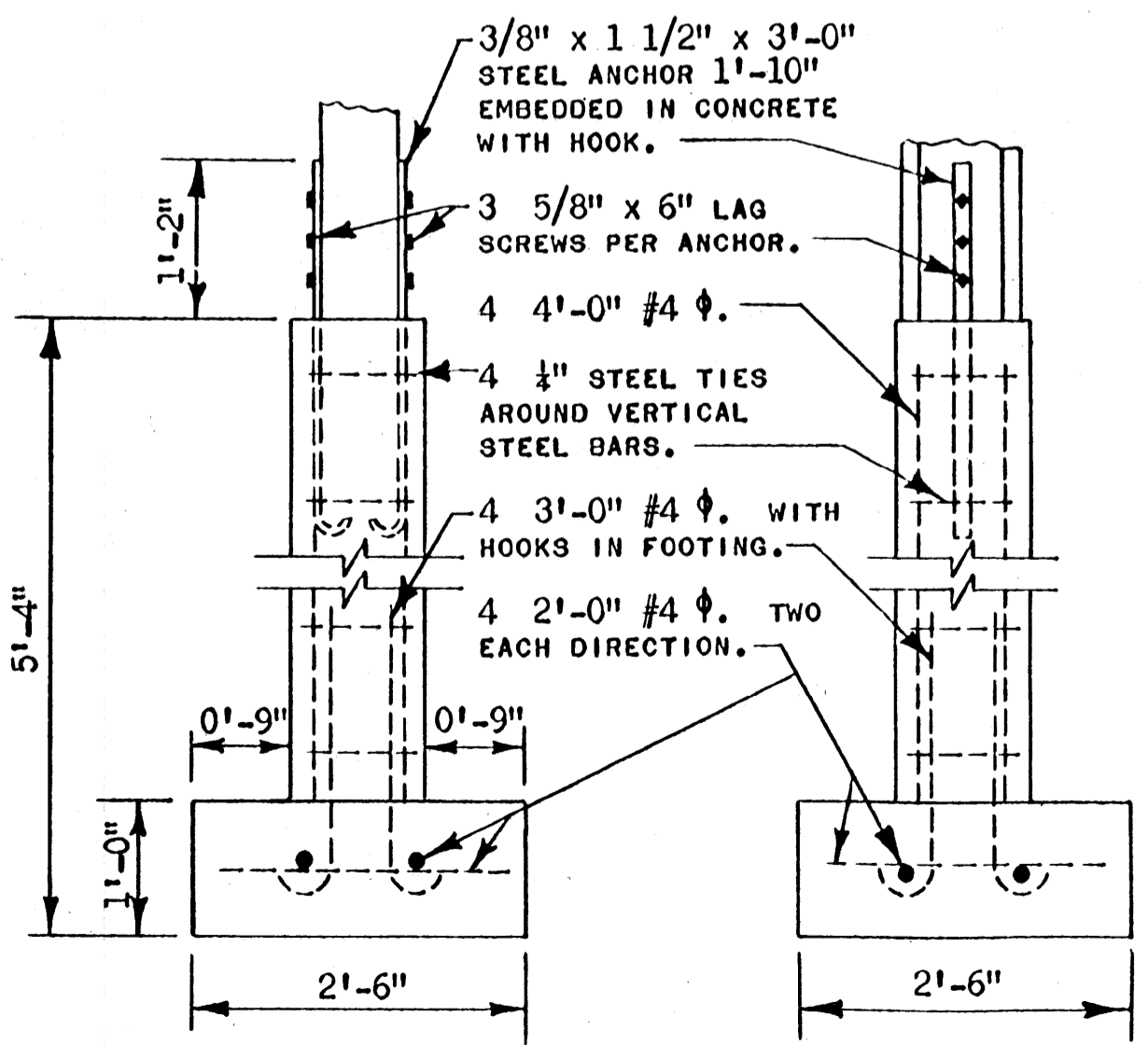
2x6 -13'-3" NAILER.

2x6 -12'-0" NAILER. ONE FLAT AND ONE ON EDGE TO FORM "L".

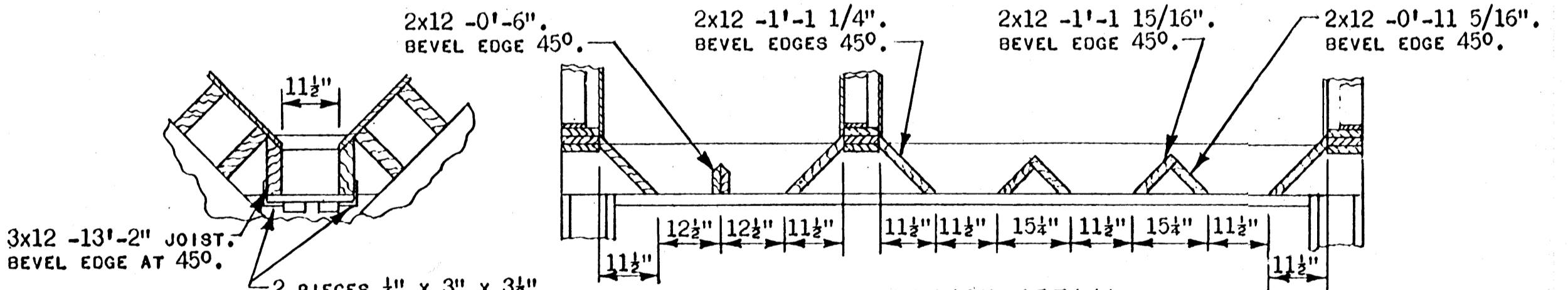
2x6 -9'-4" NAILER.

2x6 -8'-1" NAILER.

FRAME OUT AROUND ELEVATOR AS NECESSARY WITH 2x4 MATERIAL.

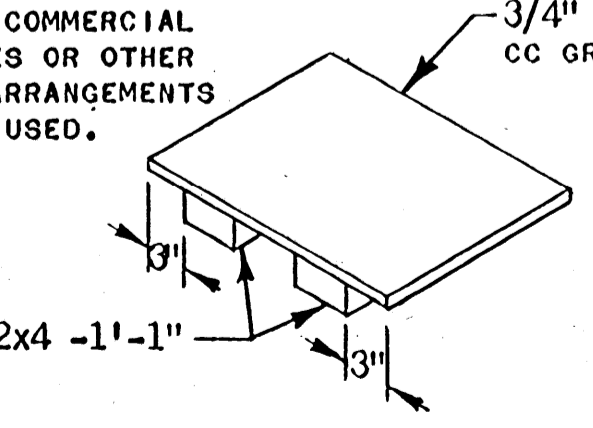


**FOOTING DETAIL**  
SCALE: 3/4" = 1'-0"



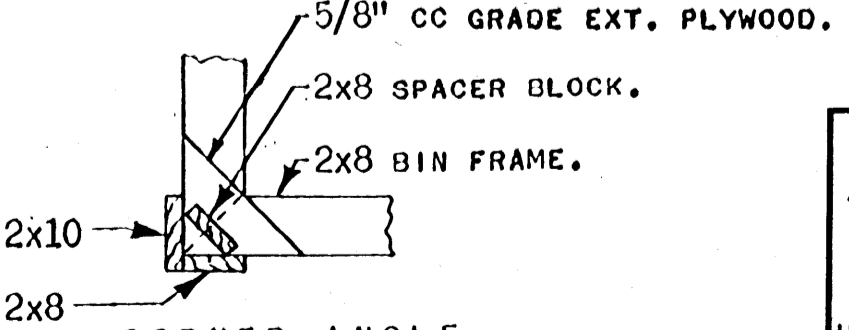
**BIN BOTTOM DETAIL**  
SCALE: 1/2" = 1'-0"

NOTE: COMMERCIAL CLOSURES OR OTHER SLIDE ARRANGEMENTS MAY BE USED.



**GRAIN DOOR DETAIL**  
SCALE: 1" = 1'-0"

5 REQD FOR LARGE BIN.



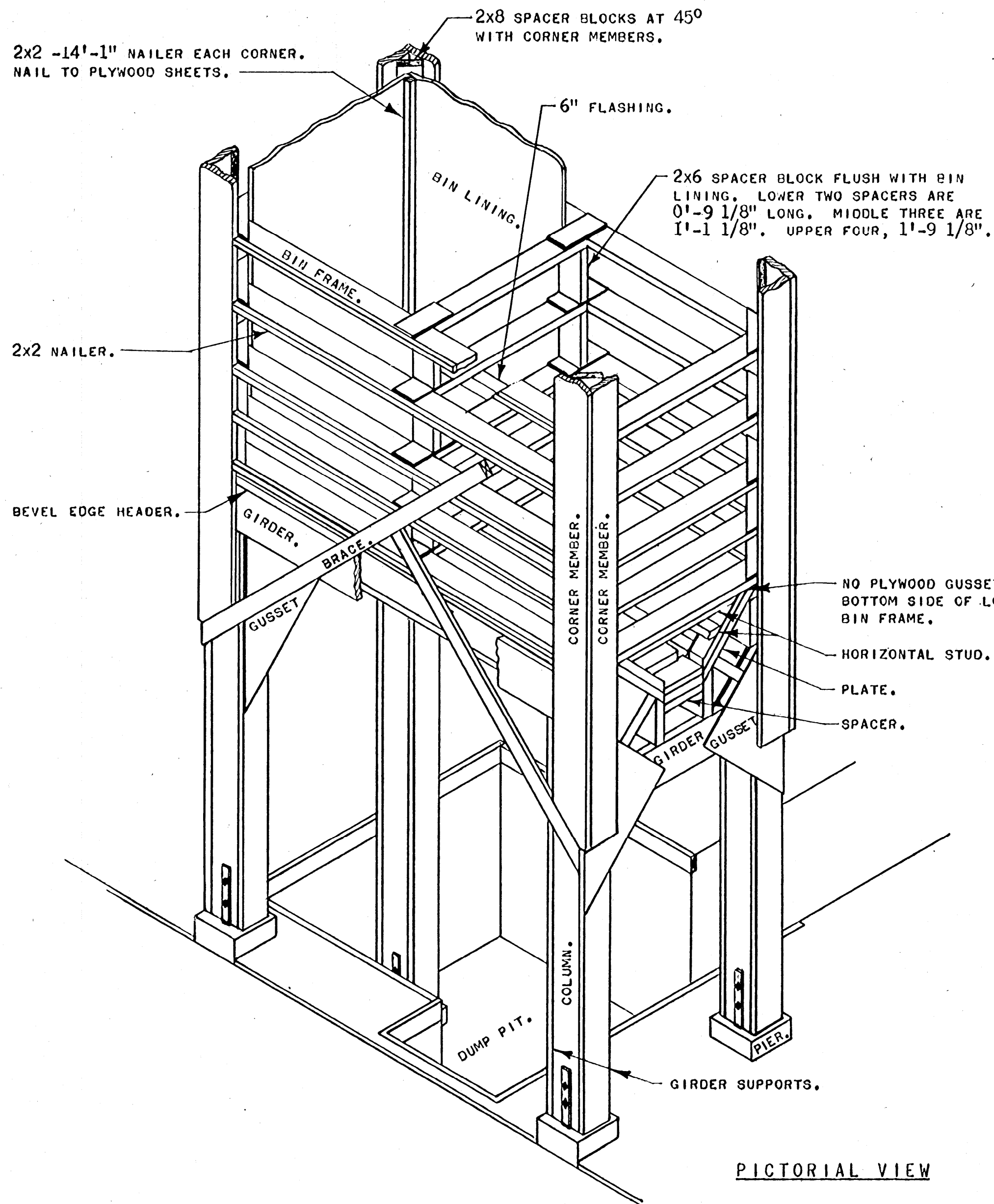
**CORNER ANGLE SPACING DETAIL**  
SCALE: 1/2" = 1'-0"

SEE SHEET 10 FOR THE SHORT FOOTING DETAIL.

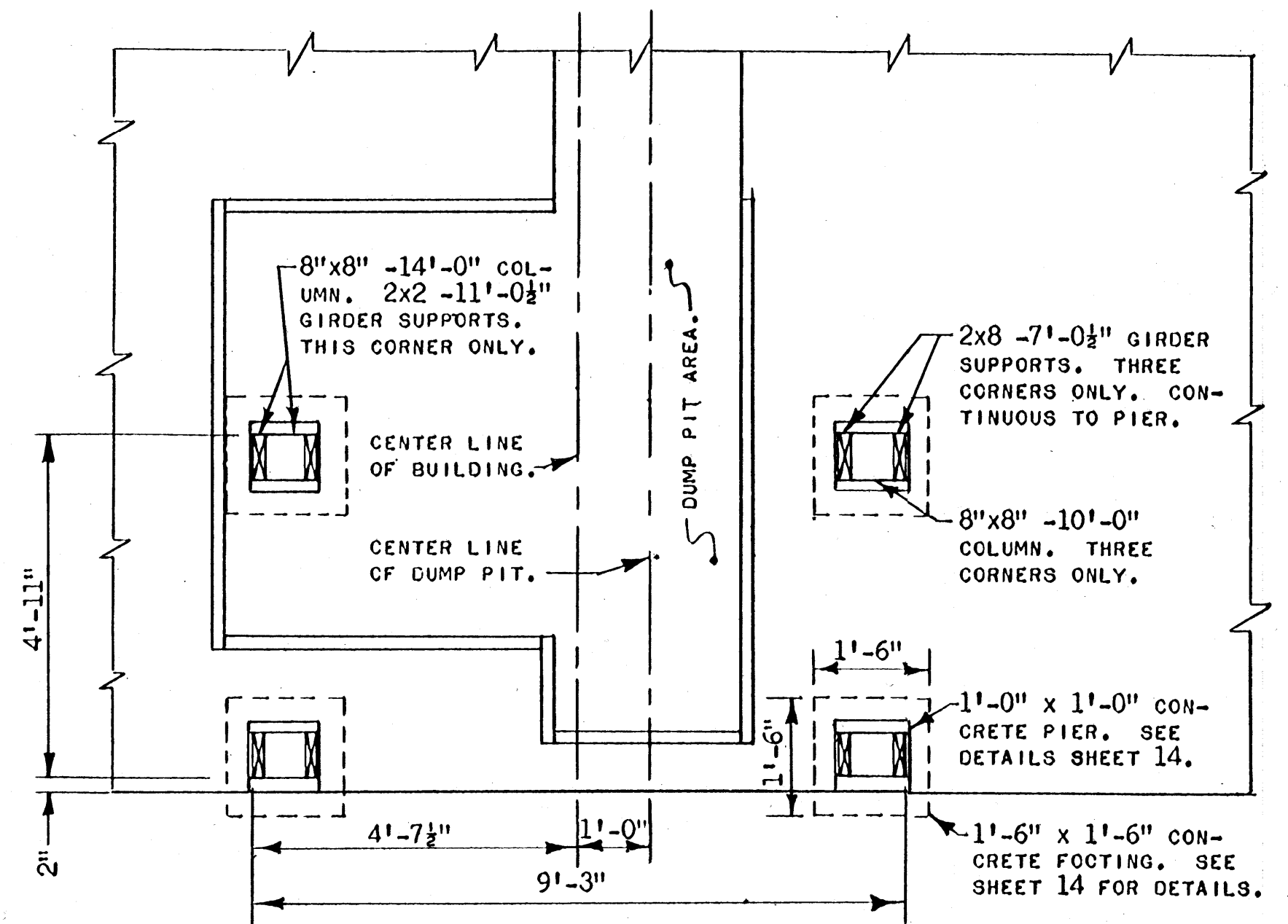
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**GRAIN-FEED HANDLING CENTER**

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PICTORIAL VIEW



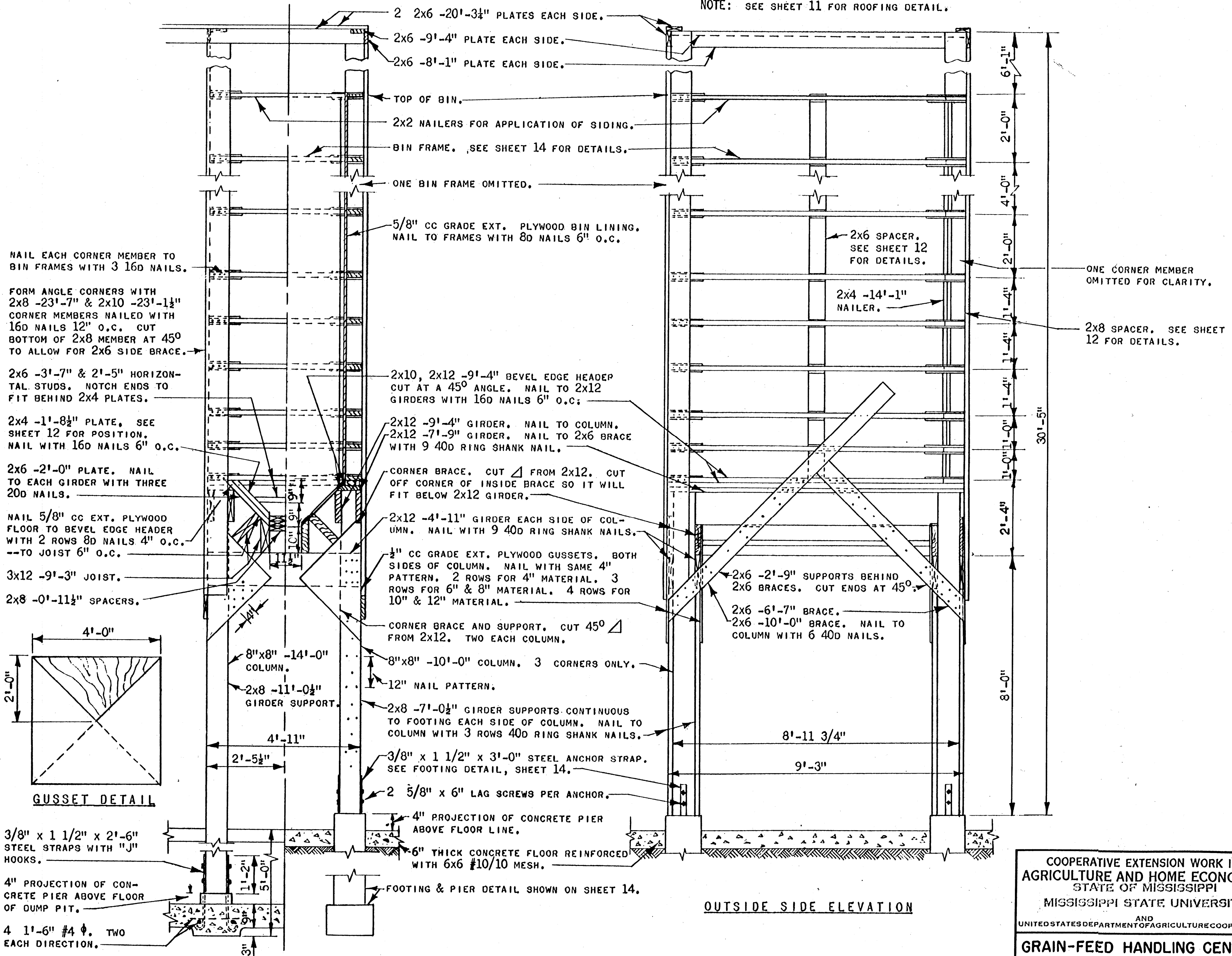
FLOOR PLAN

COOPERATIVE EXTENSION WORK IN  
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GRAIN-FEED HANDLING CENTER

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NOTE: SEE SHEET 11 FOR ROOFING DETAIL.



HALF END ELEVATION - HALF SECTION

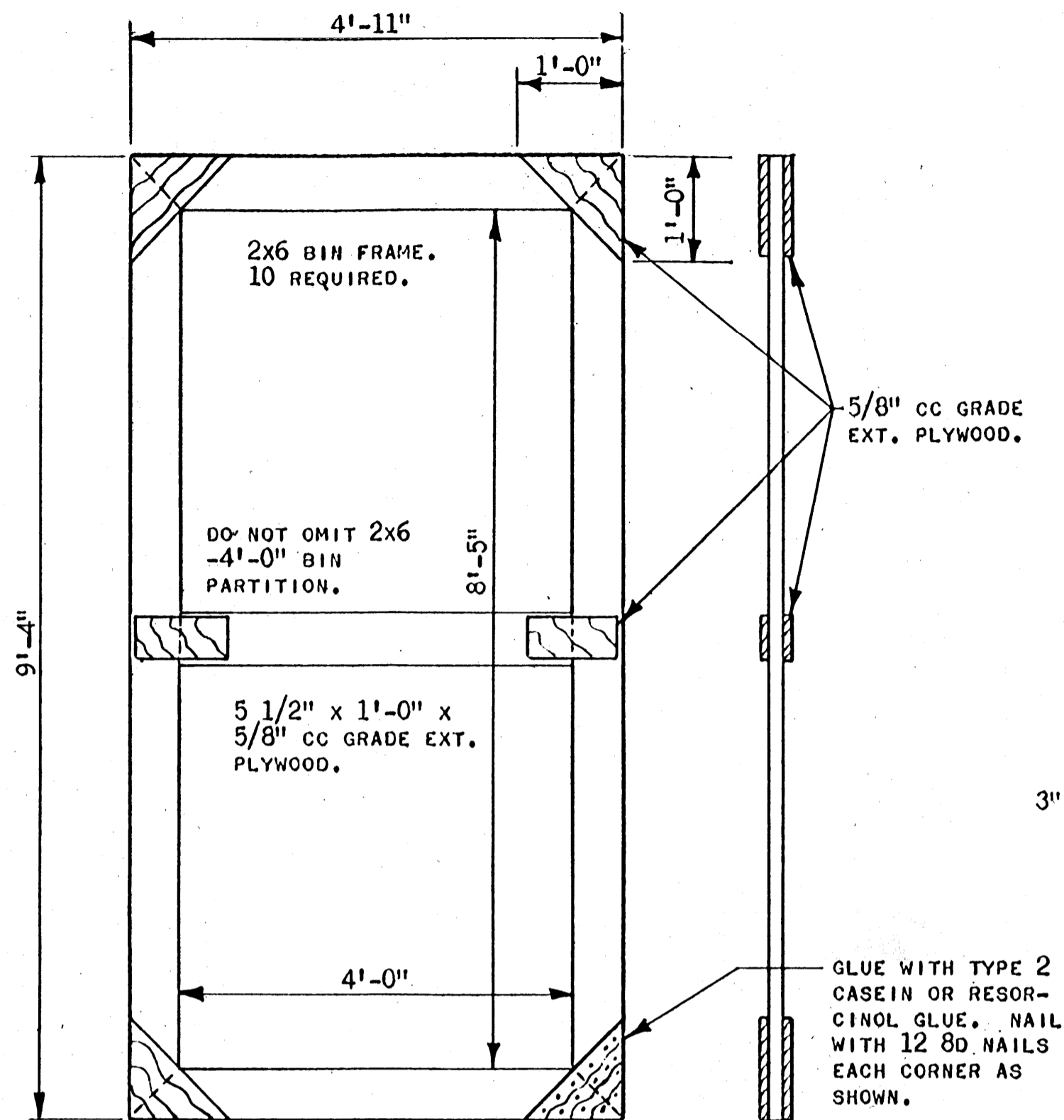
OUTSIDE SIDE ELEVATION

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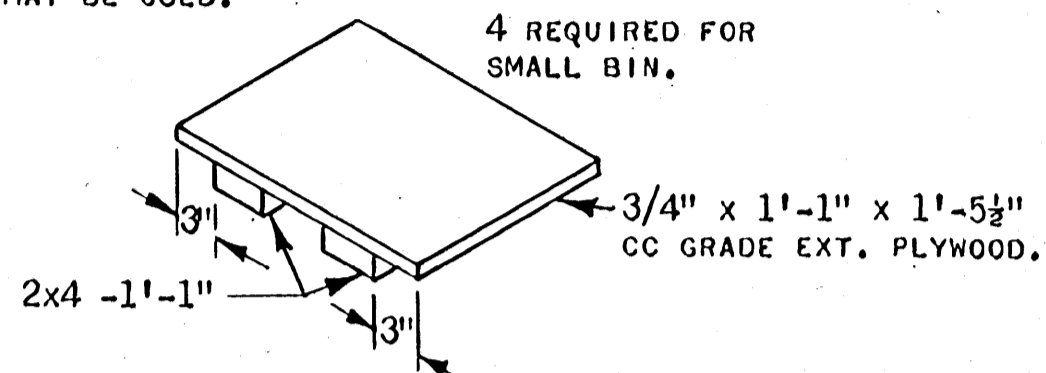
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NOTE: THE BOTTOM BIN FRAME IS  
CONSTRUCTED WITH PLYWOOD ONE SIDE ONLY.  
SEE SECTION DETAIL SHEET 13.

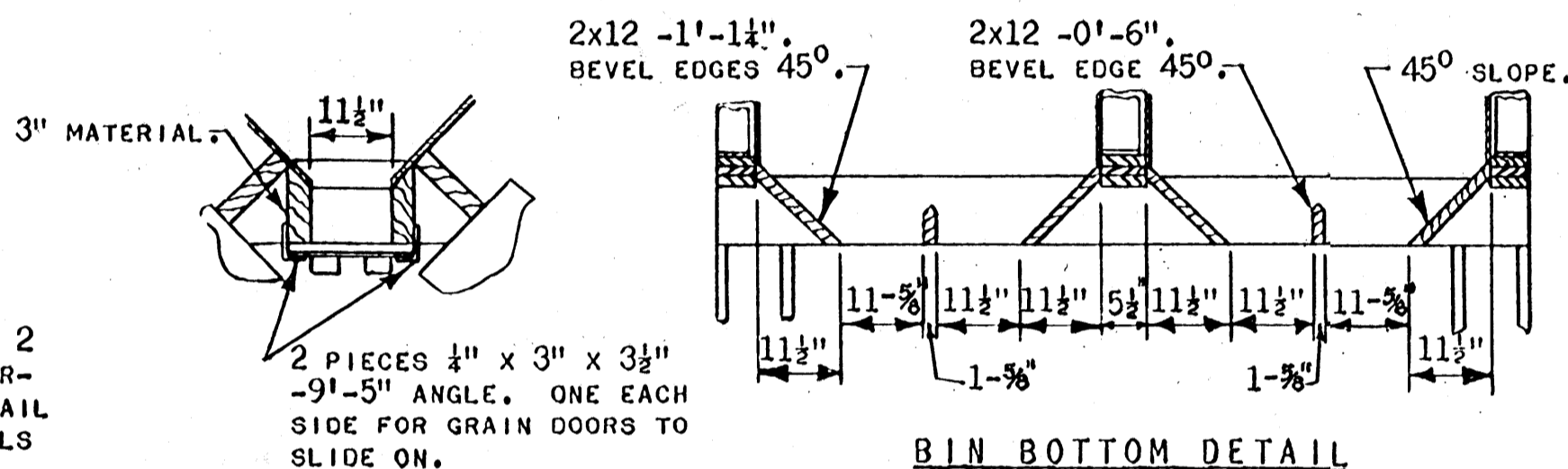


**BIN FRAME DETAIL**  
SCALE: 3/4" = 1'-0"

NOTE: COMMERCIAL  
CLOSURES OR OTHER  
SLIDE ARRANGEMENTS  
MAY BE USED.

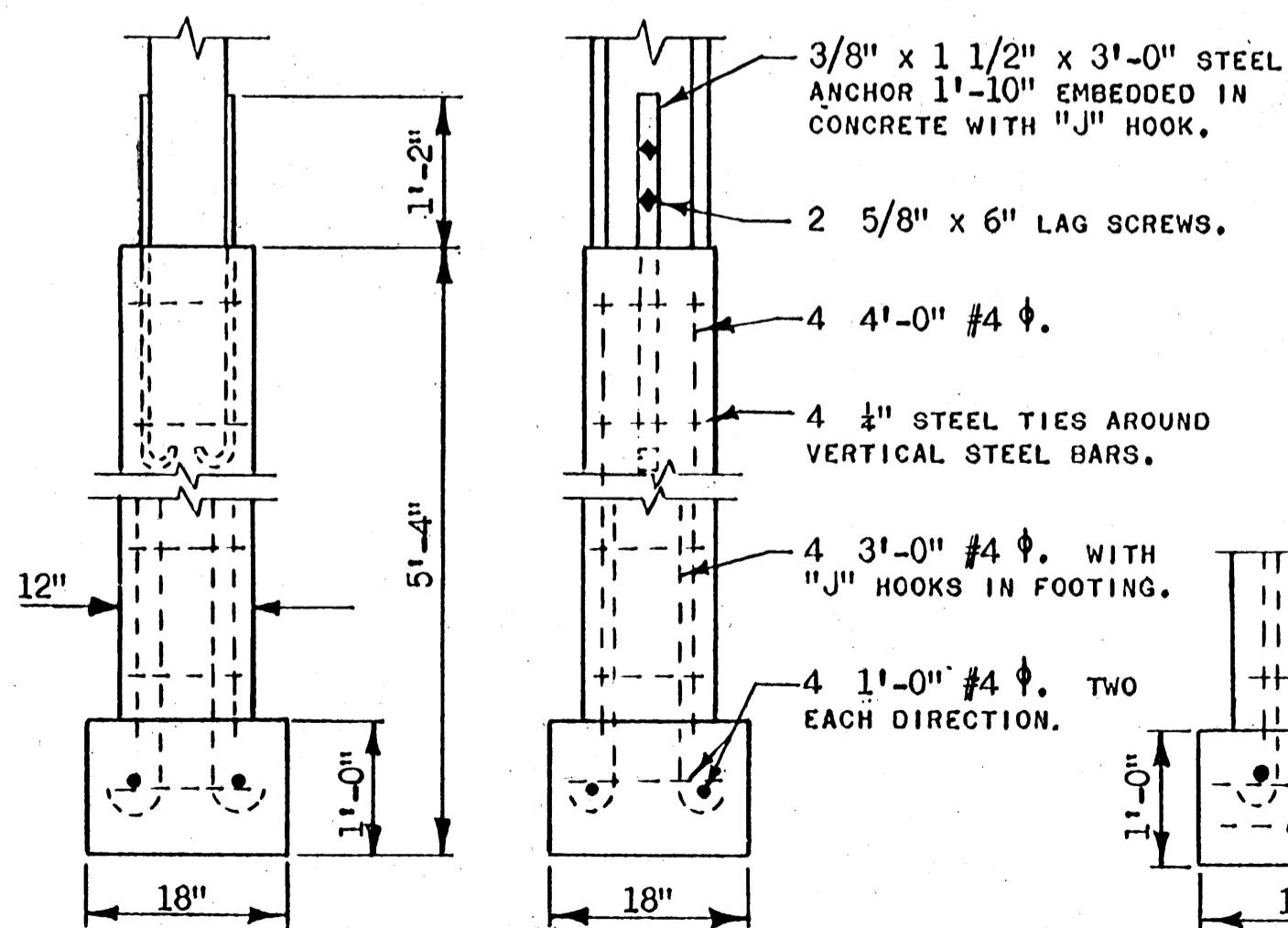


**GRAIN DOOR DETAIL**  
SCALE: 1' = 1'-0"

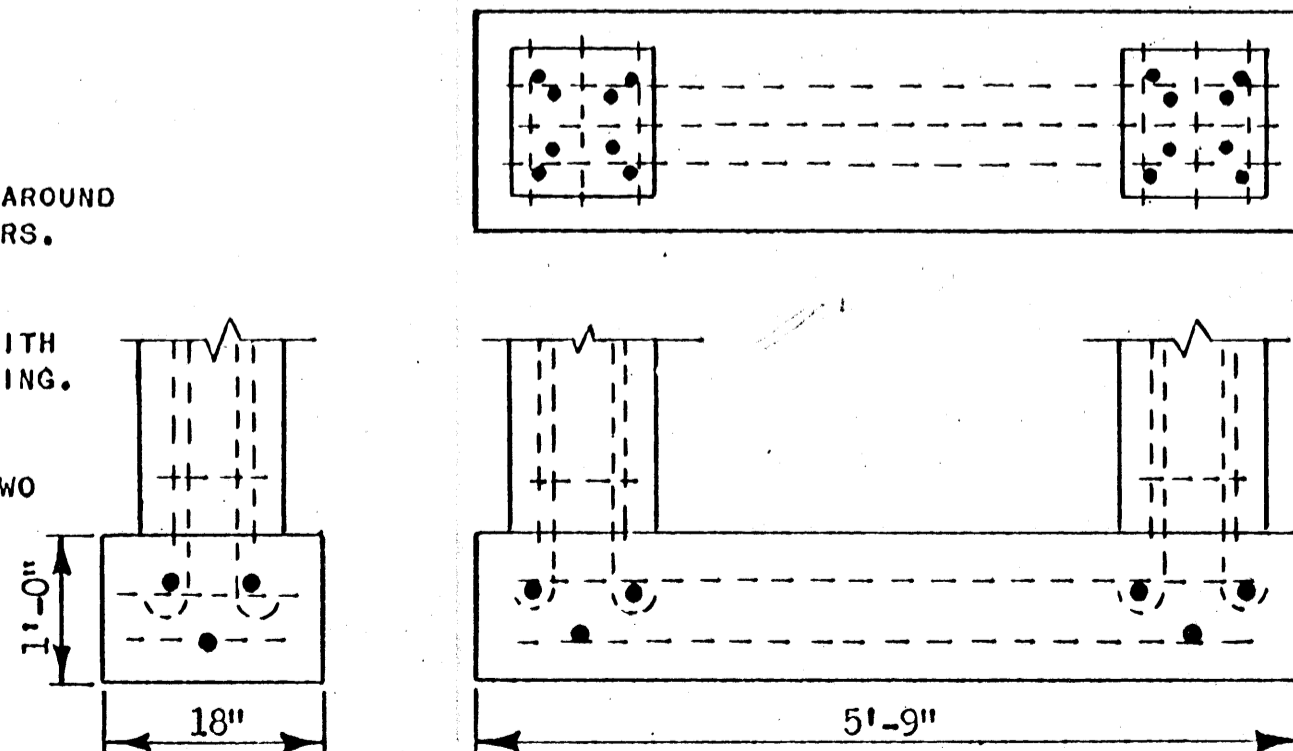


**BIN BOTTOM DETAIL**  
SCALE: 1/2" = 1'-0"

SEE SHEET 13 FOR  
DETAILS OF THE  
SHORT FOOTING.



**FOOTING DETAIL**  
SCALE: 3/4" = 1'-0"



**OPTIONAL FOOTING DETAIL**  
SCALE: 3/4" = 1'-0"

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