

LAYOUT & MECHANIZATION SCHEMATIC

This plan was developed and prepared by:

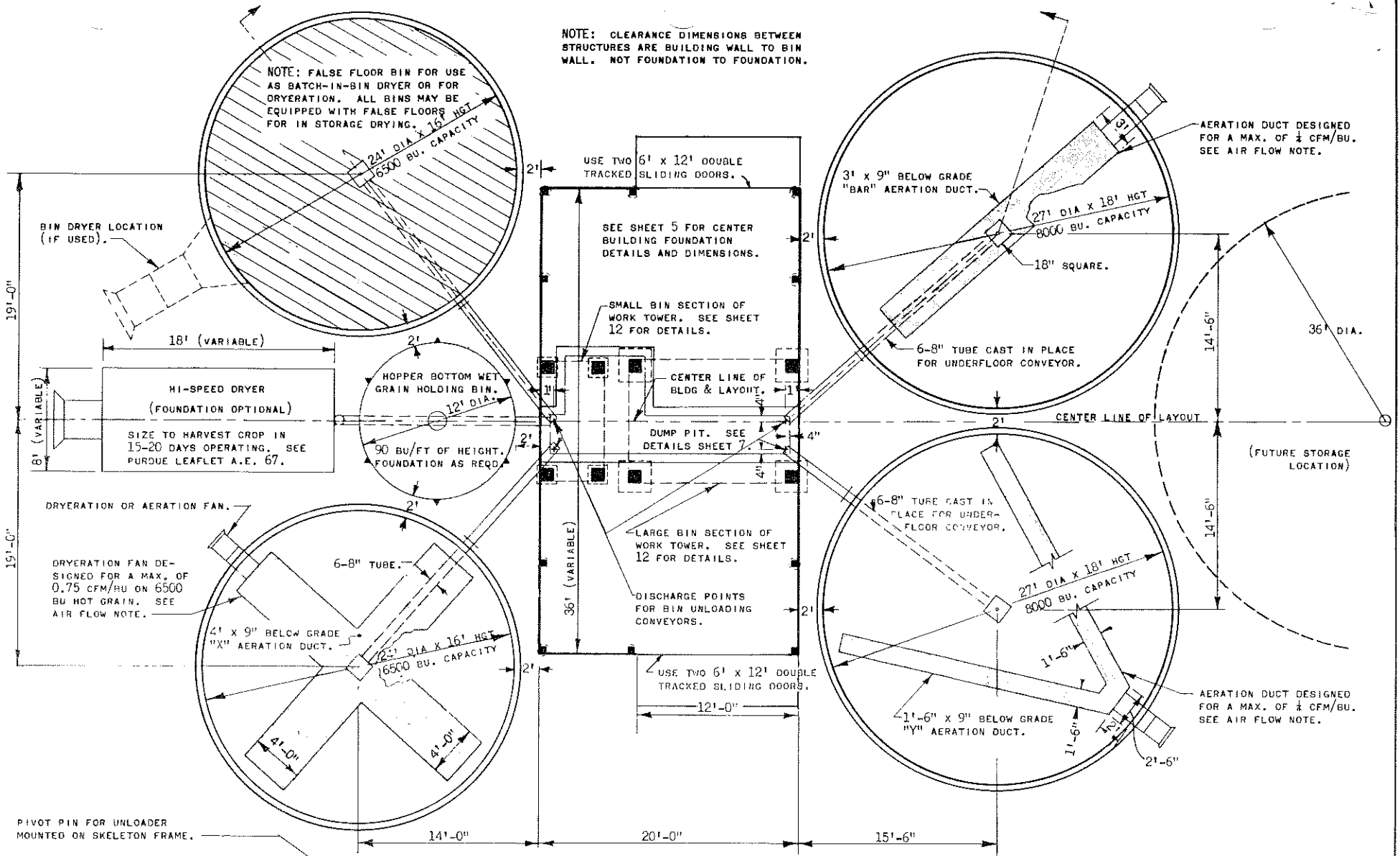
BRUCE A. MCKENZIE and JOHN E. MEMZER,  
 Extension Agricultural Engineers, and  
 W. H. FRIDAY, Assistant Professor,  
 Agricultural Engineering Department,  
 Purdue University, Lafayette, Indiana.

It was originally published by Purdue  
 University as Plan No. F73292 and is  
 reprinted with approval.

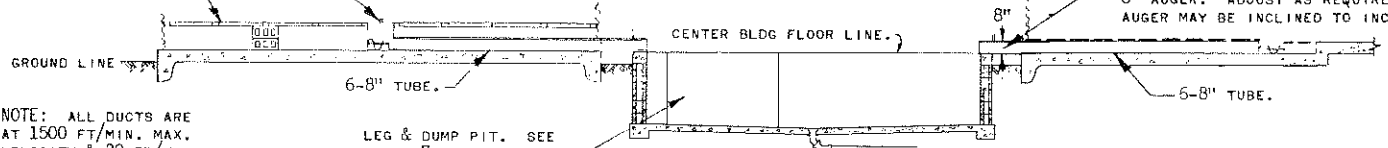
M/PS 73292

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS		
STATE OF FLORIDA		
UNIVERSITY OF FLORIDA		
AND UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING		
<b>GRAIN-FEED HANDLING CENTER</b>		
IND.	'69 EX. 6068	SHEET 1 OF 14
EXT. AGR. ENGINEER — GAINESVILLE, FLORIDA		

NOTE: CLEARANCE DIMENSIONS BETWEEN STRUCTURES ARE BUILDING WALL TO BIN WALL. NOT FOUNDATION TO FOUNDATION.



PLAN VIEW 30,000 BU. FACILITY



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 1/4 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.

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS

STATE OF FLORIDA

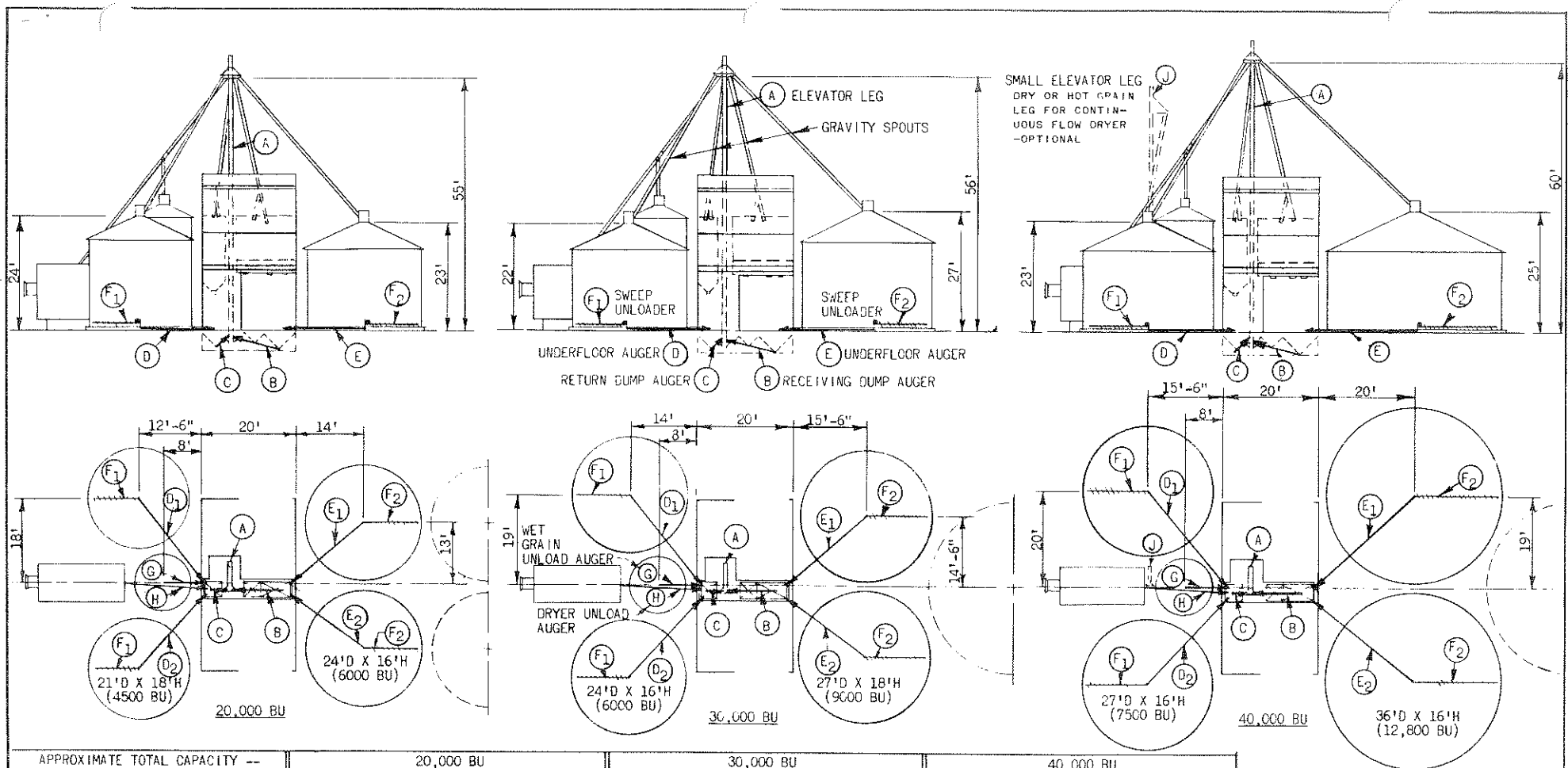
UNIVERSITY OF FLORIDA

AND UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING

**GRAIN-FEED HANDLING CENTER**

IND. '69	EX. 6068	SHEET 2 OF 14
----------	----------	---------------

EXT. AGR. ENGINEER - GAINESVILLE, FLORIDA



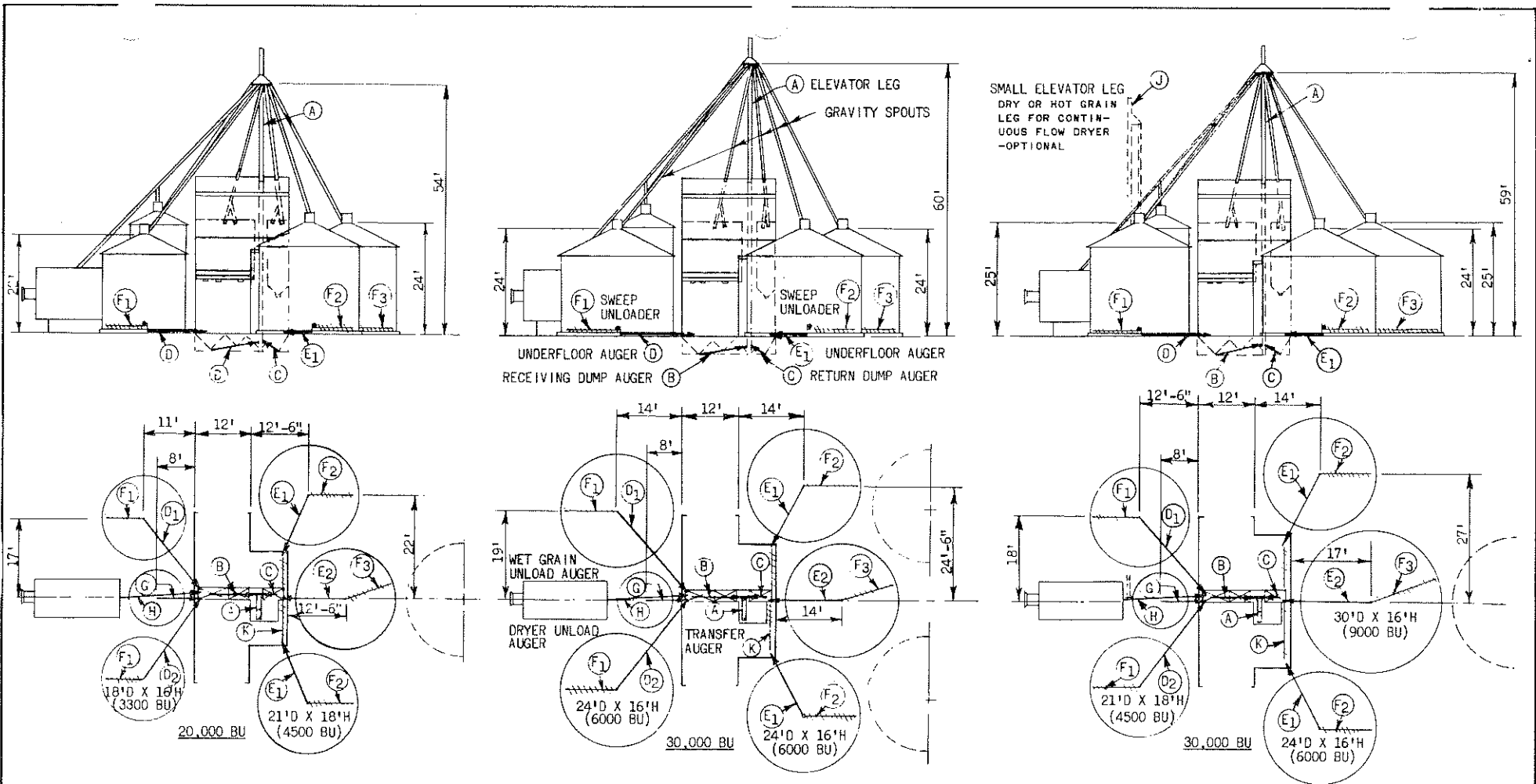
APPROXIMATE TOTAL CAPACITY -- ALTERNATIVE HANDLING RATES --	20,000 BU 1000-1200 BU/HR FLOW RATE						30,000 BU 1500-2000 BU/HR FLOW RATE						40,000 BU 2500-3000 BU/HR FLOW RATE					
	CODE	LENGTH OR HEIGHT	SIZE	ESTIMATED CAPACITY BU/HR	H-P	BU/HR	CODE	LENGTH OR HEIGHT	SIZE	ESTIMATED CAPACITY BU/HR	H-P	BU/HR	CODE	LENGTH OR HEIGHT	SIZE	ESTIMATED CAPACITY BU/HR	H-P	BU/HR
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"											8"			
RECEIVING DUMP AUGER	B	11'	8"	1200(WET)	2-3		B	11'	10"		3-5		B	11'	12" or 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	2-3		G	10'	12"		2	
DRYER UNLOAD AUGER	H	18'	6"	1000-1200	1½-2		H	18'	6" (WET) 8" 1500 2000		2 3		H	18'	8"	2500	3	
SMALL ELEVATOR LEG (FOR CONTINUOUS FLOW DRYER)	J	45'	(SEE RIGHT)				J	44'	(SEE RIGHT)				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 2½. 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.

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

**GRAIN-FEED HANDLING CENTER**

IND. '69	EX. 6068	SHEET 3 OF 14
EXT. AGR. ENGINEER—GAINESVILLE, FLORIDA		



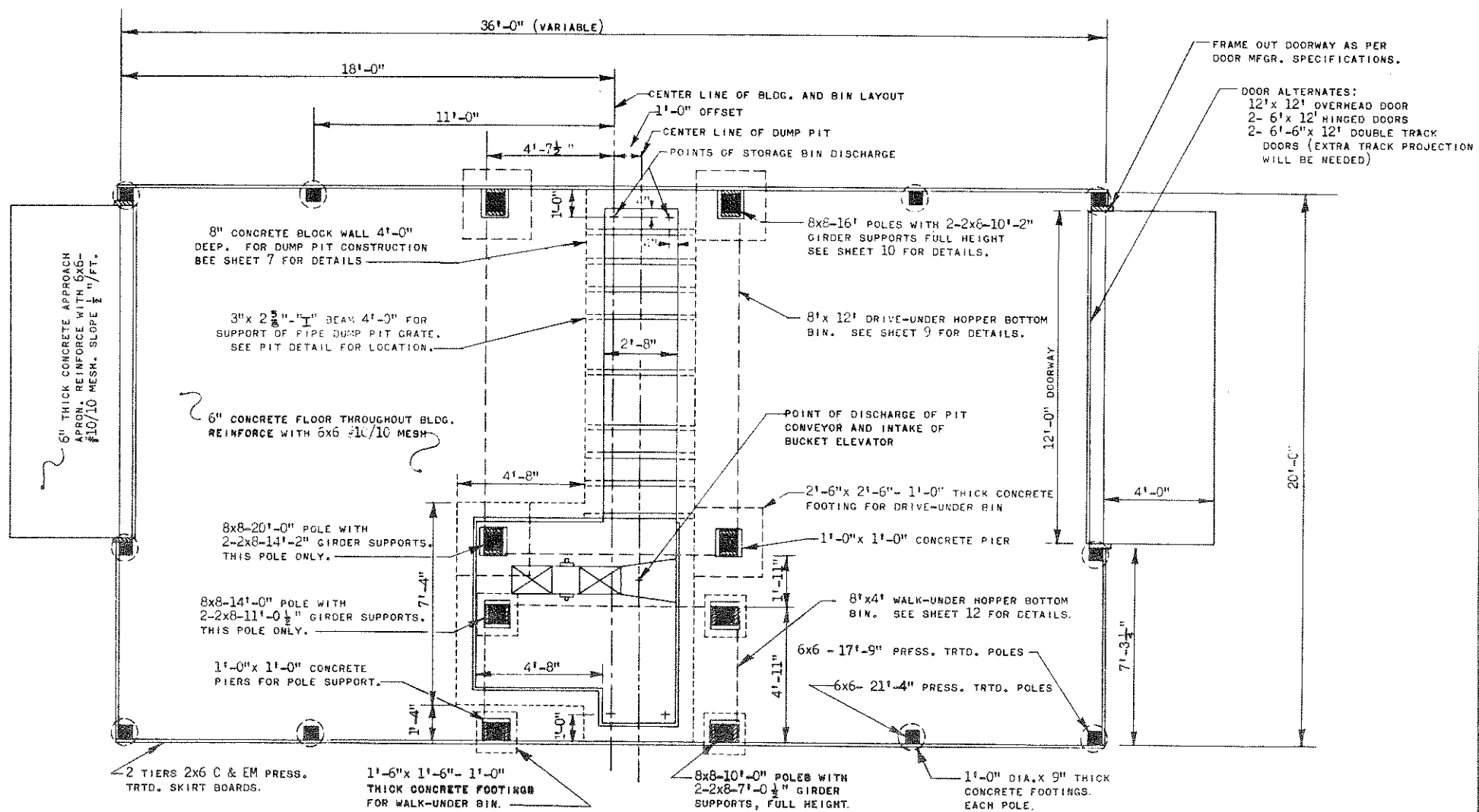
APPROXIMATE TOTAL CAPACITY -- ALTERNATIVE HANDLING RATES --	20,000 BU					30,000 BU					30,000 BU				
	1000-1200 BU/HR FLOW RATE					1500-2000 BU/HR FLOW RATE					2500-3000 BU/HR FLOW RATE				
GRAIN HANDLING EQUIPMENT	CODE	LENGTH OR HEIGHT	SIZE	ESTIMATED CAPACITY BU/HR	H-P	CODE	LENGTH OR HEIGHT	SIZE	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"	1500-2000	3-5	A	59'	9x6"	2500-3000	7½
GRAVITY SPOUTS			6"					9x5"					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'	6"-10"	1500	1½	J	45'	4x6"	500-700	1

1. HANDLING FLOW RATES ILLUSTRATED ARE WORKABLE COMBINATIONS AND NOT LIMITED TO EACH SPECIFIC FACILITY.
2. AUGER INTAKE EXPOSURE MATCHED TO CAPACITY--MINIMUM EXPOSURE = AUGER DIAM; MAXIMUM EXPOSURE 2½'. ADDITIONAL EXPOSURE INCREASES HORSEPOWER, NOT CAPACITY.
3. SWEEP UNLOADER CAPACITIES GIVEN FOR UNITS WITH GRAIN SHIELDS BEHIND AUGER.
4. FLAT STORAGE STRUCTURES CAN BE SUBSTITUTED FOR BIN ON RIGHT SIDE OF LAYOUT. DOTTED BINS SHOWN FOR FUTURE EXPANSION ARE INTERCHANGABLE FOR ALL LAYOUTS.

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

**GRAIN-FEED HANDLING CENTER**

IND.	'69	EX. 6068	SHEET 4 OF 14
EXT. AGR. ENGINEER — GAINESVILLE, FLORIDA			

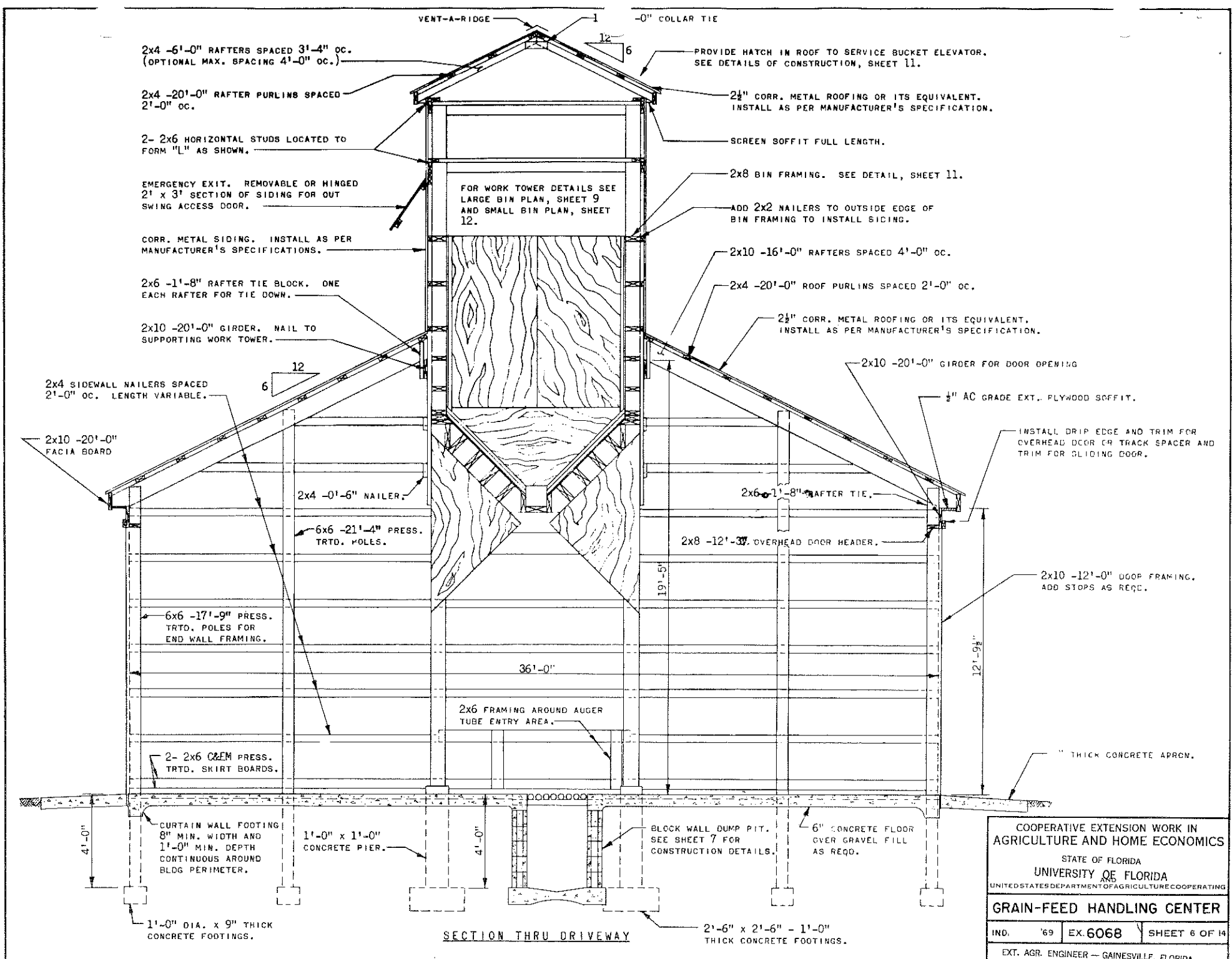


FRAME OUT DOORWAY AS PER DOOR MFR. SPECIFICATIONS.

DOOR ALTERNATES:  
 12' x 12' OVERHEAD DOOR  
 2- 6' x 12' HINGED DOORS  
 2- 6'-6" x 12' DOUBLE TRACK DOORS (EXTRA TRACK PROJECTION WILL BE NEEDED)

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

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS		
STATE OF FLORIDA		
UNIVERSITY OF FLORIDA		
AND UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING		
GRAIN-FEED HANDLING CENTER		
IND. '89	EX. 6068	SHEET 9 OF 14
EXT. AGR. ENGINEER - GAINESVILLE, FLORIDA		

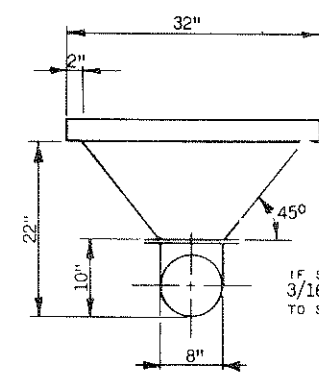
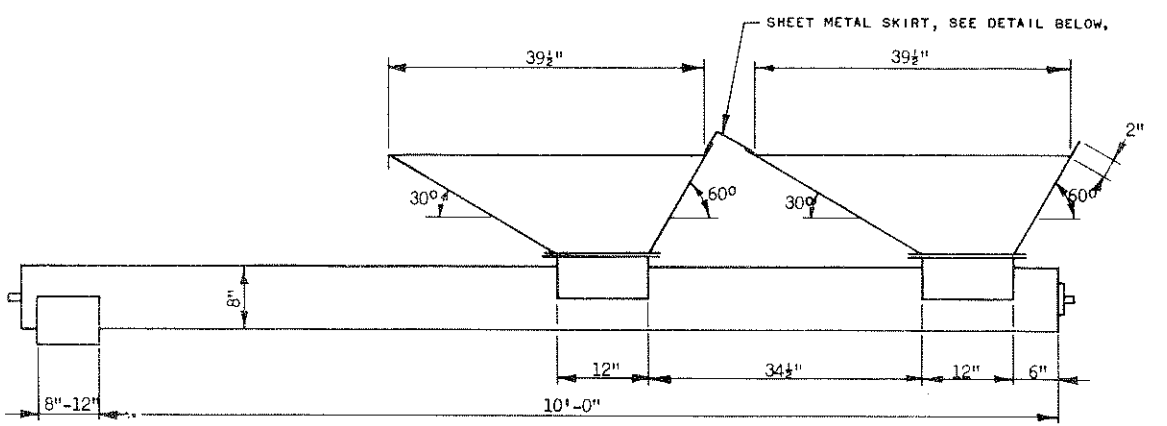
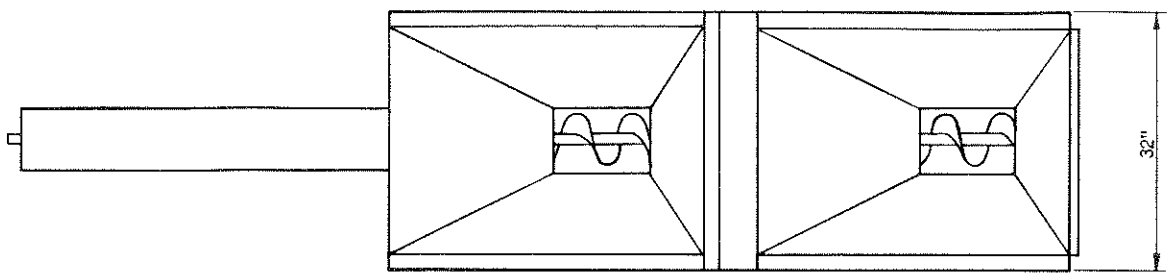


COOPERATIVE EXTENSION WORK IN  
 AGRICULTURE AND HOME ECONOMICS  
 STATE OF FLORIDA  
 UNIVERSITY OF FLORIDA  
 UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING

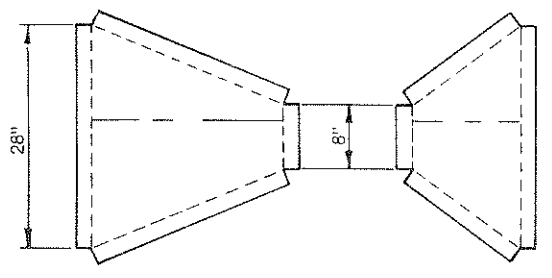
**GRAIN-FEED HANDLING CENTER**

IND. '69 EX-6068 SHEET 6 OF 14

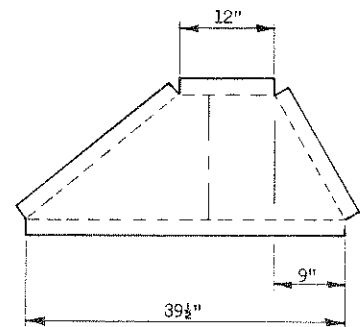
EXT. AGR. ENGINEER - GAINESVILLE, FLORIDA



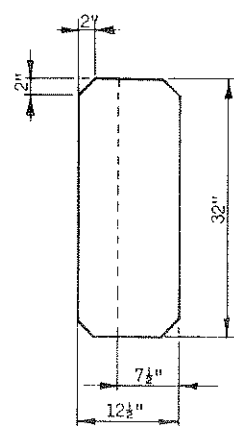
IF SLIDE IS DESIRED, USE 3/16" X 3/4" BAR STOCK TO SPACE EACH SIDE.



HOPPER END PANELS



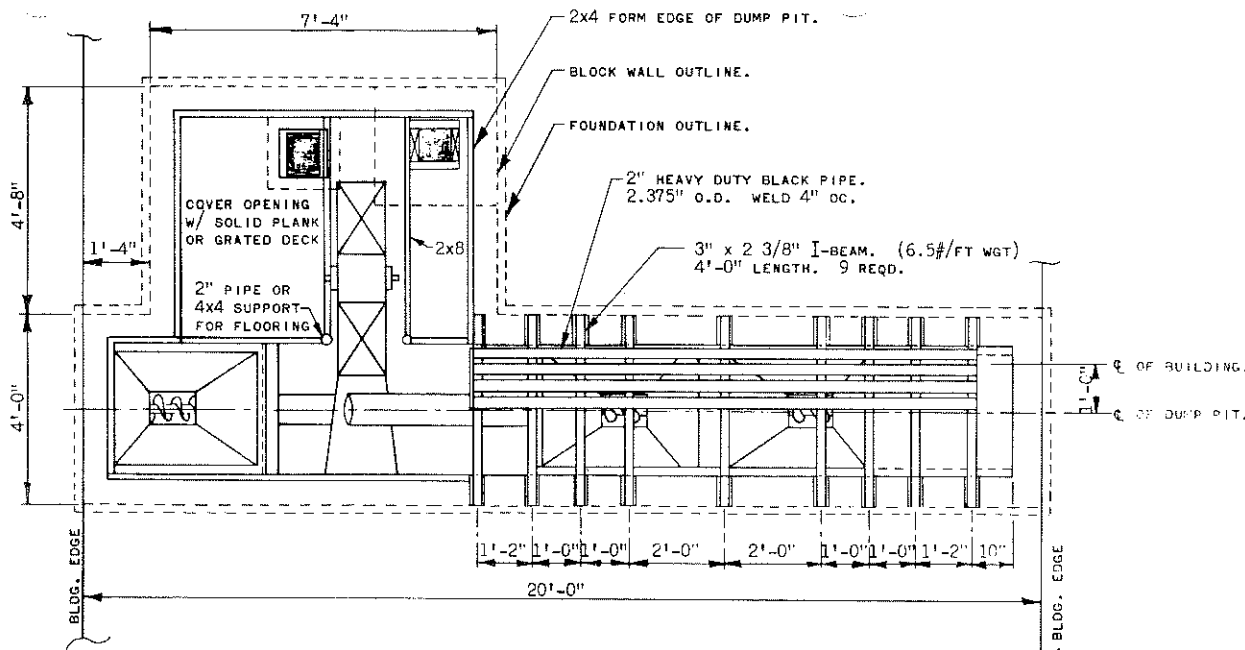
HOPPER SIDE PANELS



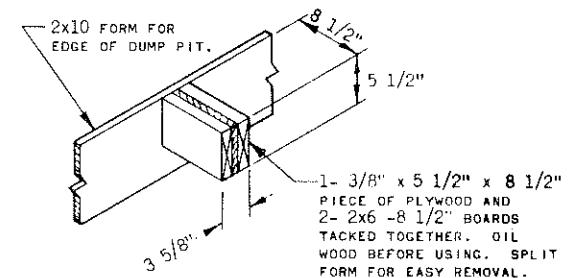
SKIRT BETWEEN HOPPERS

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

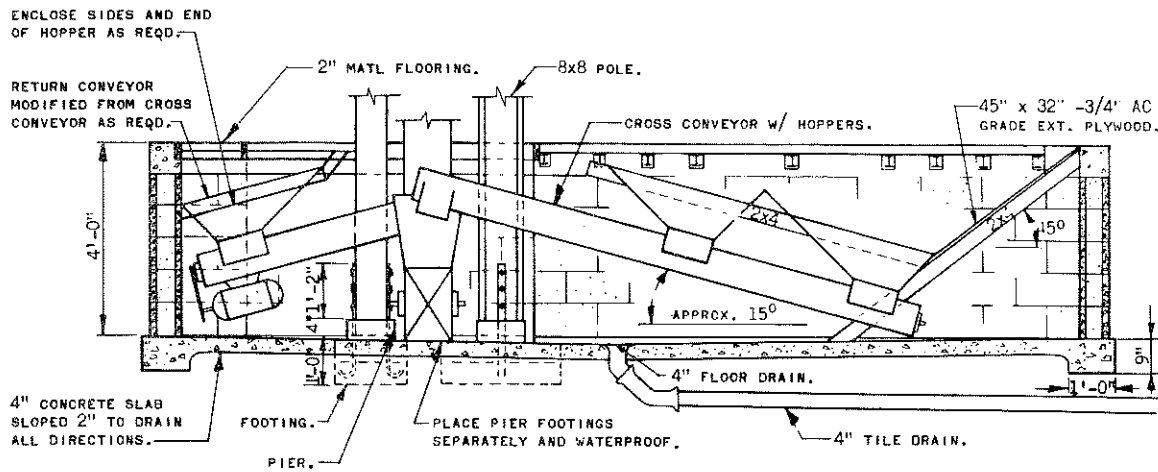
COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS		
STATE OF FLORIDA		
UNIVERSITY OF FLORIDA		
UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING		
<b>GRAIN-FEED HANDLING CENTER</b>		
IND. '69	EX. 6068	SHEET 8 OF 14
EXT. AGR. ENGINEER -- GAINESVILLE, FLORIDA		



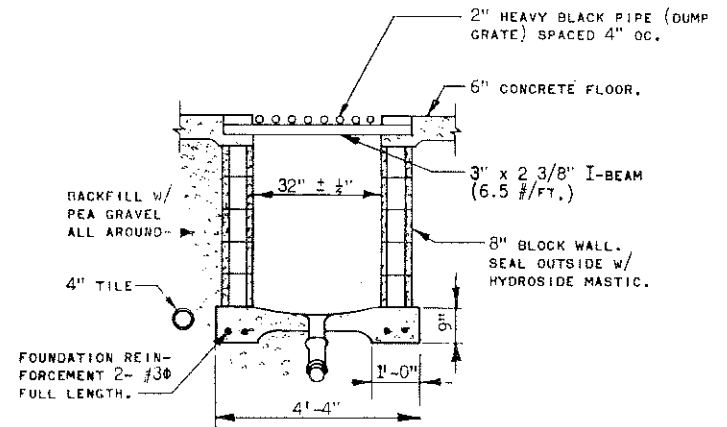
PLAN VIEW



I-BEAM NOTCH FORMING DETAIL



ELEVATION VIEW



END SECTION OF DUMP PIT

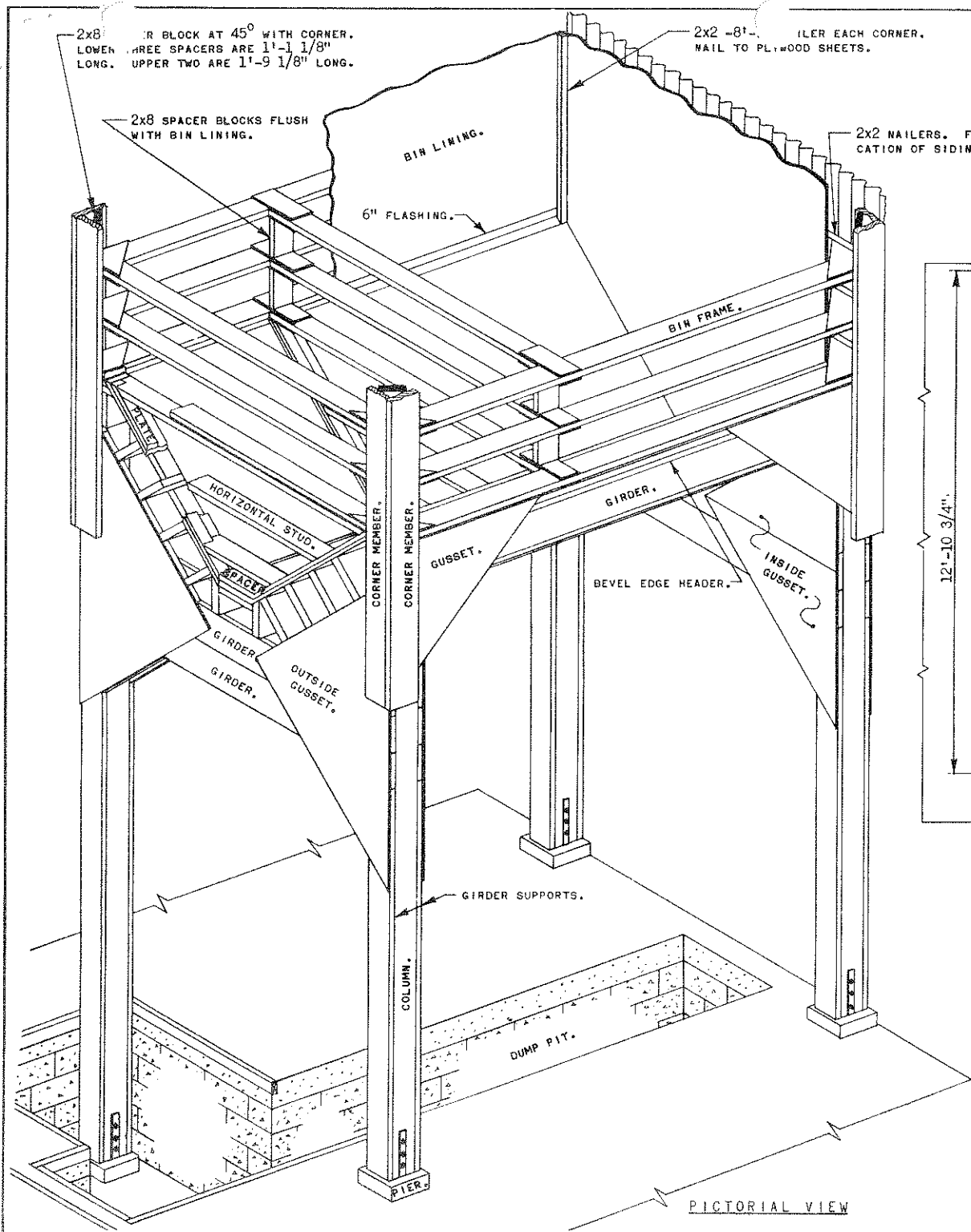
COOPERATIVE EXTENSION WORK IN  
 AGRICULTURE AND HOME ECONOMICS  
 STATE OF FLORIDA  
 UNIVERSITY OF FLORIDA  
 AND  
 UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING

GRAIN-FEED HANDLING CENTER

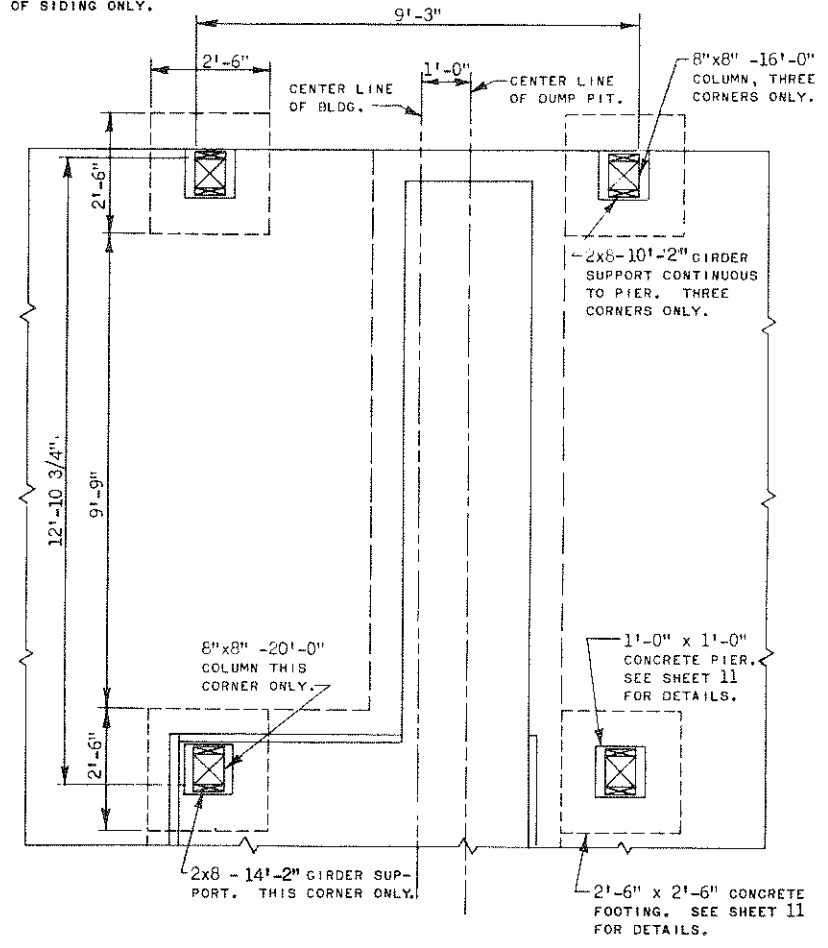
IND. '69 EX. 6068 SHEET 7 OF 14

EXT. AGR. ENGINEER — GAINESVILLE, FLORIDA





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



FLOOR PLAN

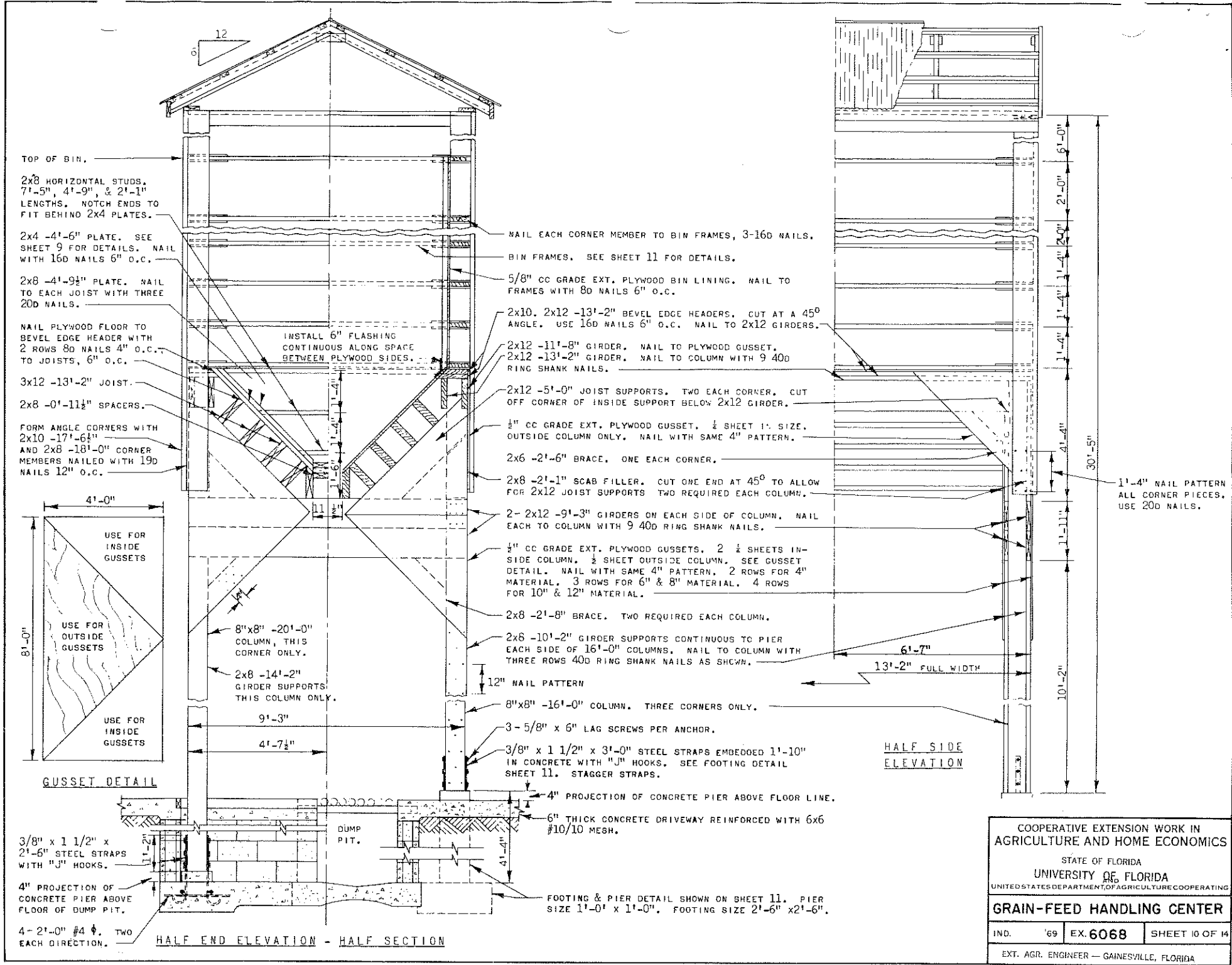
PICTORIAL VIEW

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

**GRAIN-FEED HANDLING CENTER**

IND.	'69	EX. 6068	SHEET 9 OF 14
------	-----	----------	---------------

EXT. AGR. ENGINEER — GAINESVILLE, FLORIDA

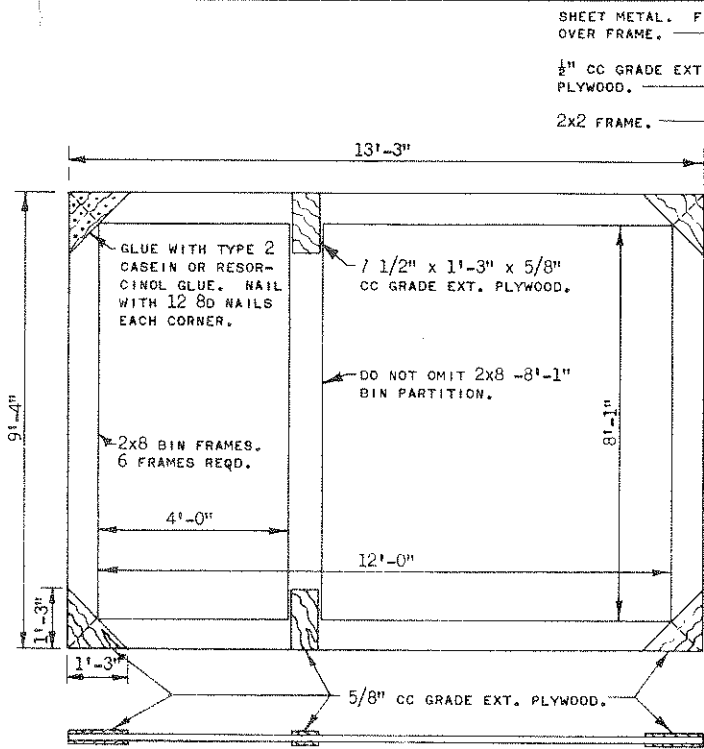


COOPERATIVE EXTENSION WORK IN  
 AGRICULTURE AND HOME ECONOMICS  
 STATE OF FLORIDA  
 UNIVERSITY OF FLORIDA  
 UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING

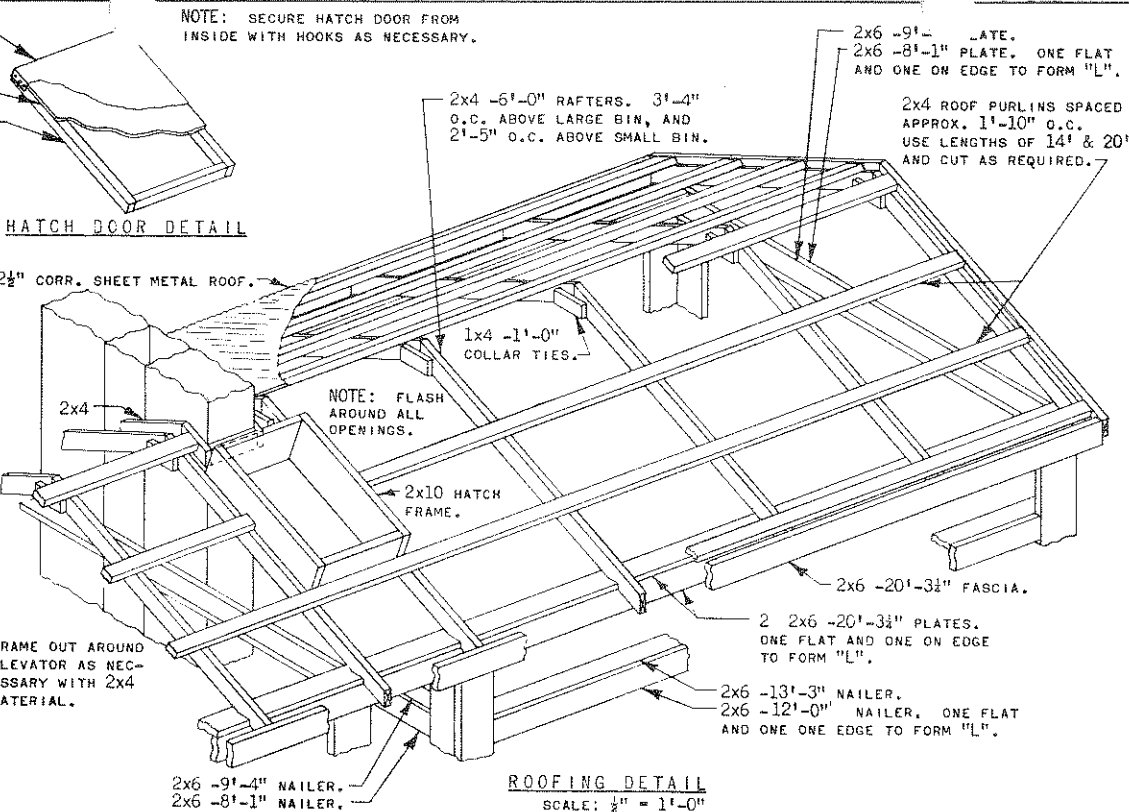
**GRAIN-FEED HANDLING CENTER**

IND. '69 EX. 6068 SHEET 10 OF 14

EXT. AGR. ENGINEER - GAINESVILLE, FLORIDA



**BIN FRAME DETAIL**  
SCALE:  $\frac{1}{2}$ " = 1'-0"

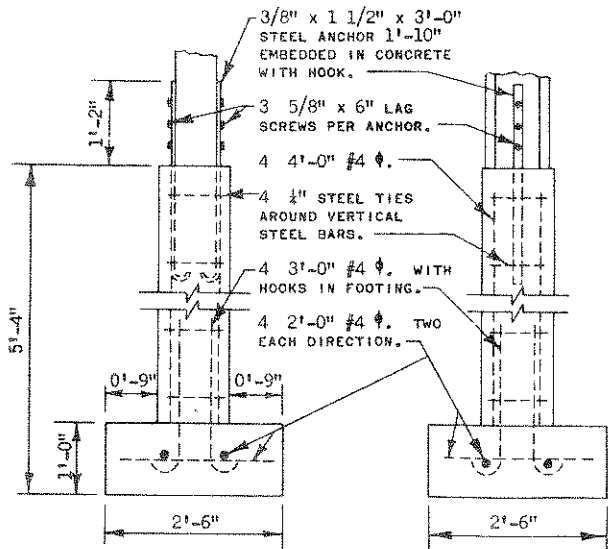


**ROOFING DETAIL**  
SCALE:  $\frac{1}{2}$ " = 1'-0"

**HATCH DOOR DETAIL**

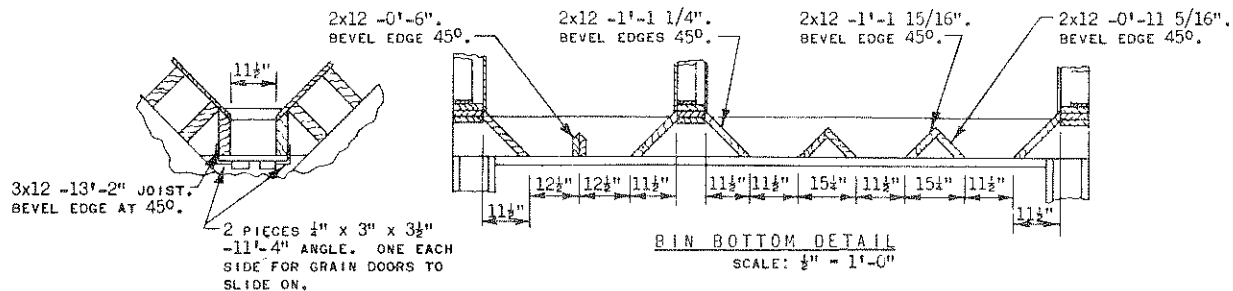
2 1/2" CORR. SHEET METAL ROOF.

FRAME OUT AROUND ELEVATOR AS NECESSARY WITH 2x4 MATERIAL.



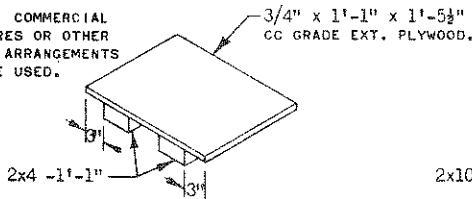
**FOOTING DETAIL**  
SCALE:  $\frac{3}{4}$ " = 1'-0"

SEE SHEET 10 FOR THE SHORT FOOTING DETAIL.



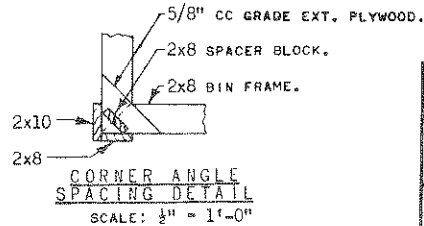
**BIN BOTTOM DETAIL**  
SCALE:  $\frac{1}{2}$ " = 1'-0"

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



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

5 REQ FOR LARGE BIN.

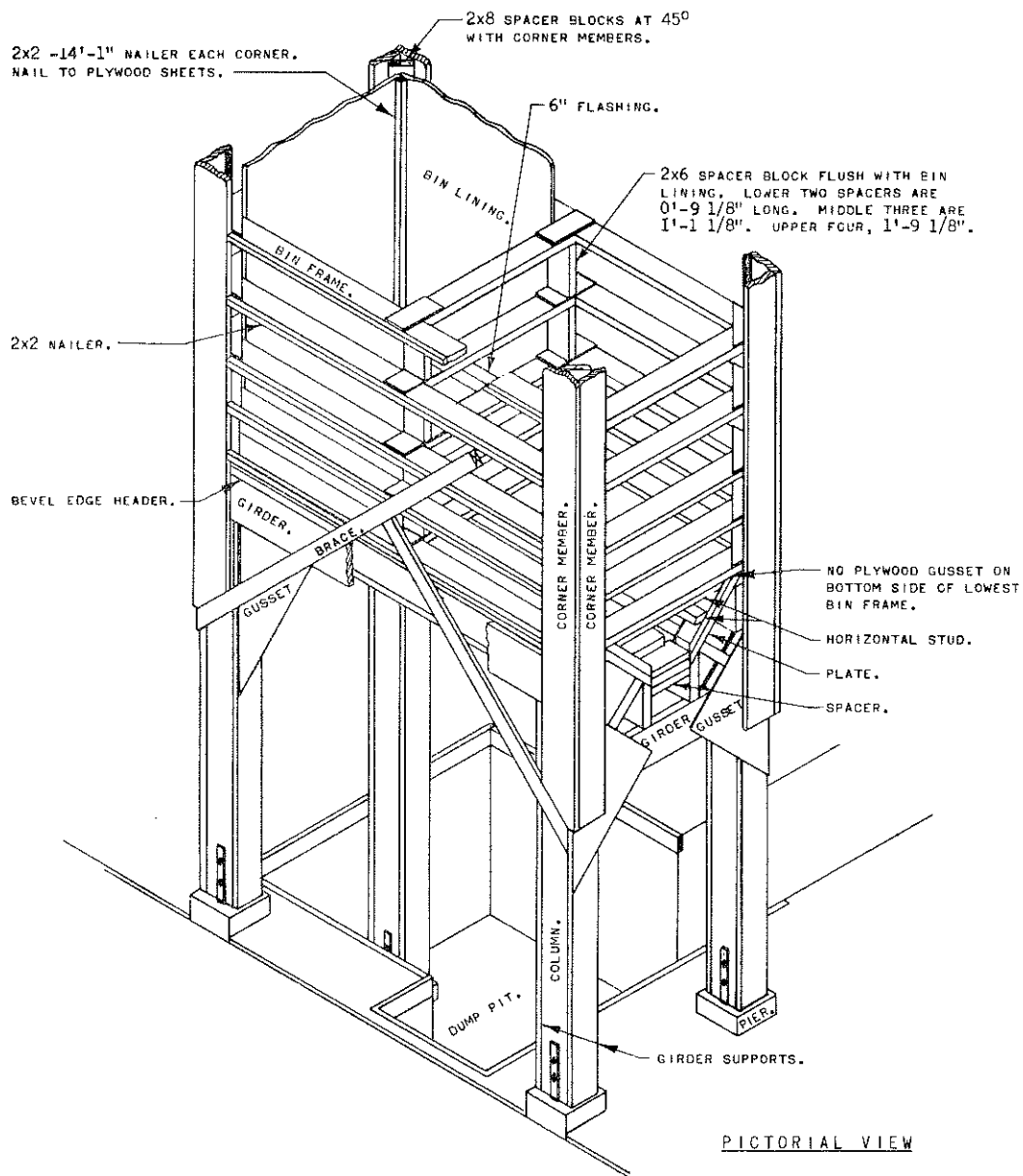


**CORNER ANGLE SPACING DETAIL**  
SCALE:  $\frac{1}{2}$ " = 1'-0"

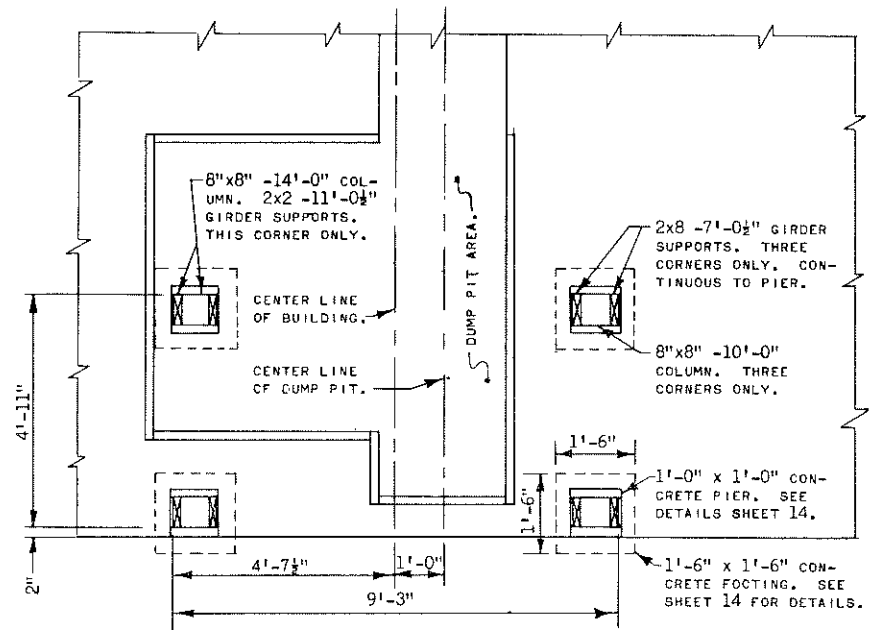
COOPERATIVE EXTENSION WORK IN  
AGRICULTURE AND HOME ECONOMICS  
STATE OF FLORIDA  
UNIVERSITY OF FLORIDA  
AND  
UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING

**GRAIN-FEED HANDLING CENTER**

IND. '69 EX. 6068 SHEET 11 OF 14  
EXT. AGR. ENGINEER - GAINESVILLE, FLORIDA



PICTORIAL VIEW



FLOOR PLAN

COOPERATIVE EXTENSION WORK IN  
AGRICULTURE AND HOME ECONOMICS

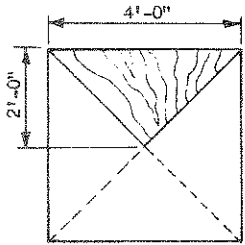
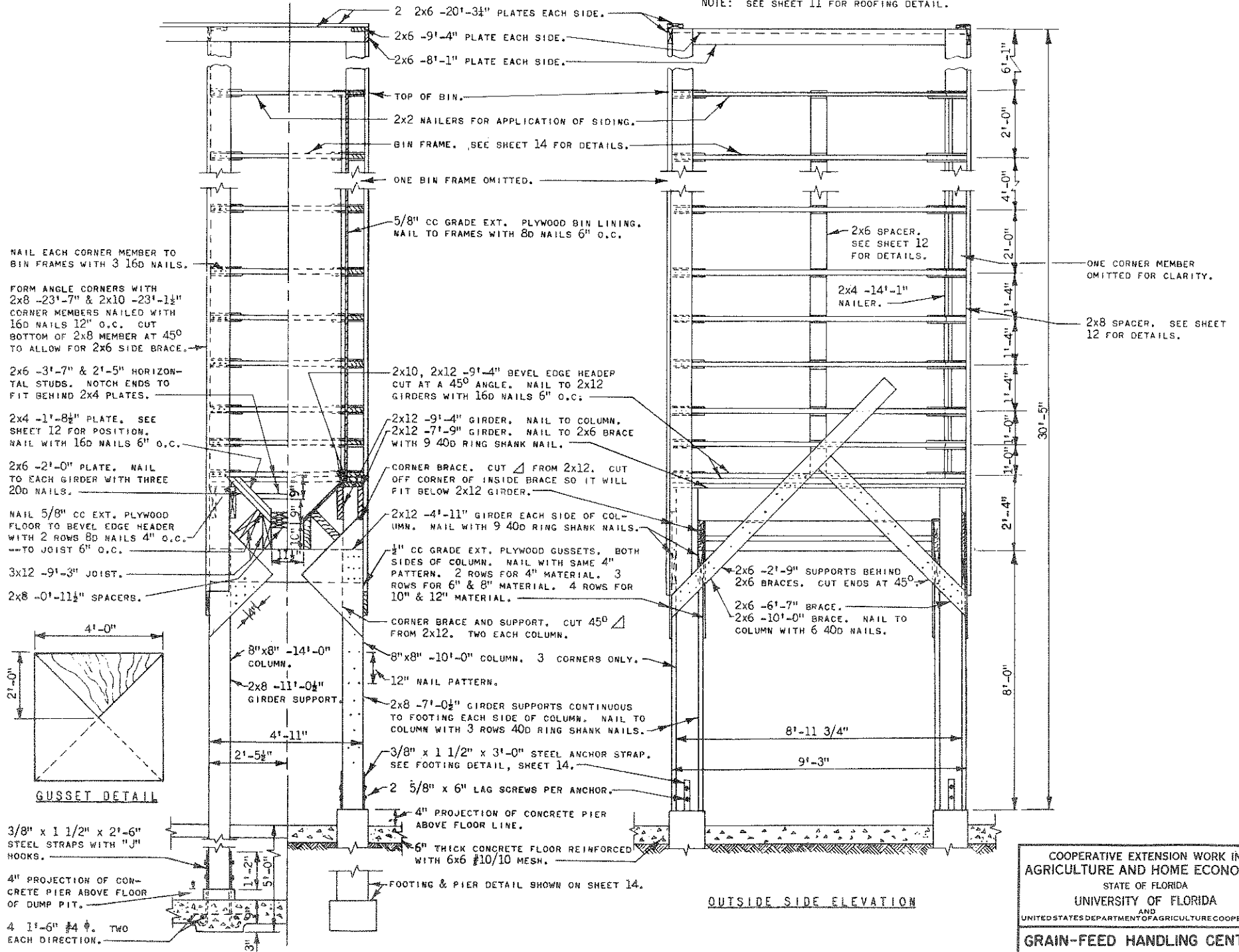
STATE OF FLORIDA  
UNIVERSITY OF FLORIDA  
UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING

GRAIN-FEED HANDLING CENTER

IND. '69 EX. 6068 SHEET 12 OF 14

EXT. AGR. ENGINEER — GAINESVILLE, FLORIDA

NOTE: SEE SHEET 11 FOR ROOFING DETAIL.

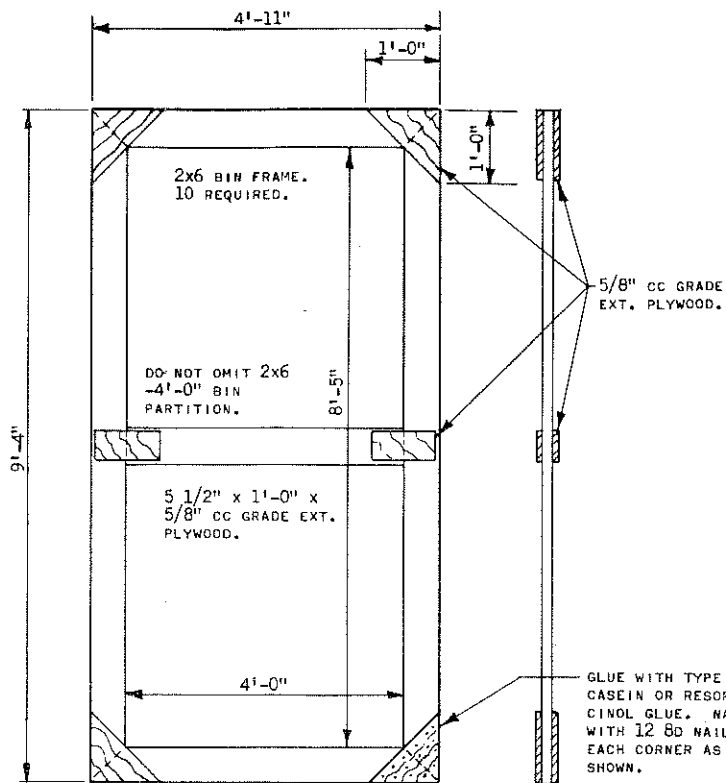


HALF END ELEVATION - HALF SECTION

OUTSIDE SIDE ELEVATION

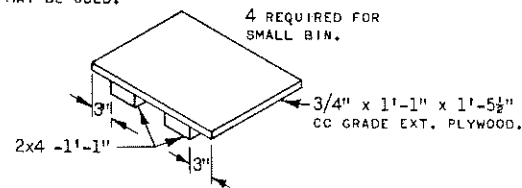
COOPERATIVE EXTENSION WORK IN  
 AGRICULTURE AND HOME ECONOMICS  
 STATE OF FLORIDA  
 UNIVERSITY OF FLORIDA  
 AND  
 UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING  
**GRAIN-FEED HANDLING CENTER**  
 IND. '69 EX. 6068 SHEET 13 OF 14  
 EXT. AGR. ENGINEER - GAINESVILLE, FLORIDA

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

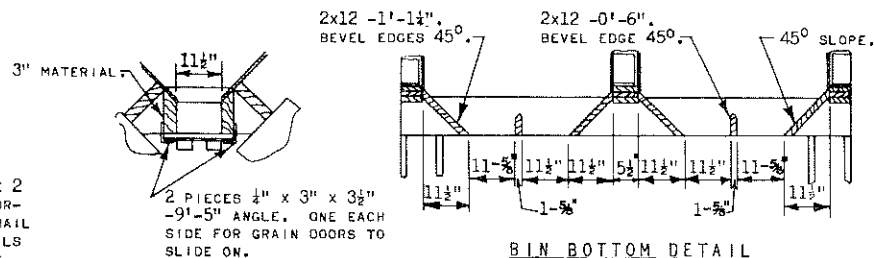


**BIN FRAME DETAIL**  
SCALE: 3/4" = 1'-0"

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



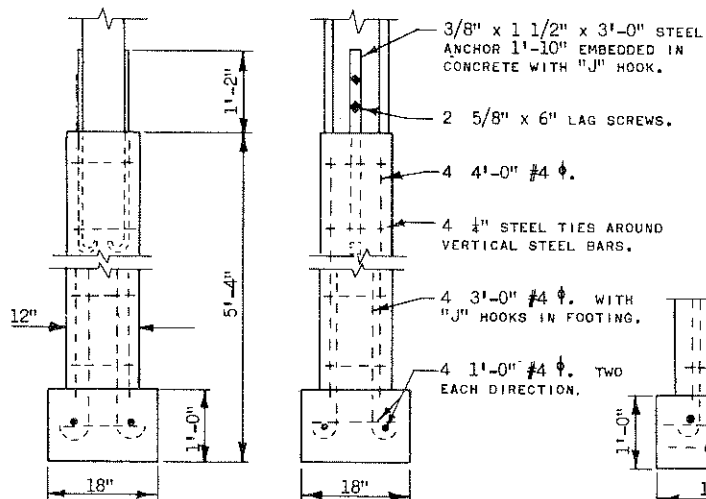
**GRAIN DOOR DETAIL**  
SCALE: 1" = 1'-0"



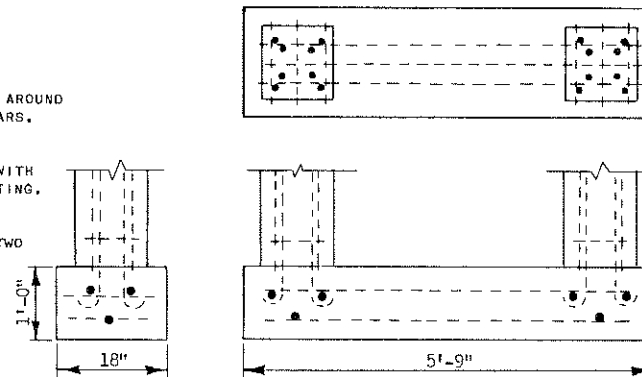
**BIN BOTTOM DETAIL**  
SCALE: 1/2" = 1'-0"

GLUE WITH TYPE 2  
CASEIN OR RESOR-  
CINOL GLUE. NAIL  
WITH 12 8D NAILS  
EACH CORNER AS  
SHOWN.

SEE SHEET 13 FOR  
DETAILS OF THE  
SHORT FOOTING.



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



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

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS		
STATE OF FLORIDA		
UNIVERSITY OF FLORIDA		
UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING		
<b>GRAIN-FEED HANDLING CENTER</b>		
IND.	'69 EX. 6068	SHEET 14 OF 14
EXT. AGR. ENGINEER — GAINESVILLE, FLORIDA		