MWPS-73294

Grain-Feed Handling Center

Work Tower Across Drive, offset Gable.

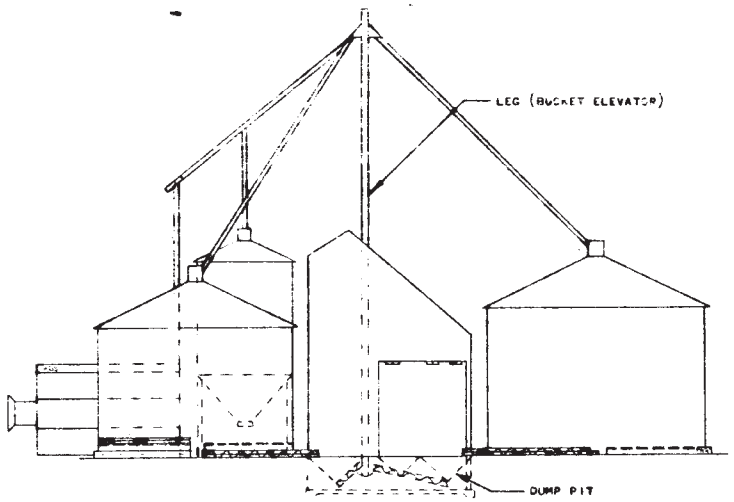
CAUTION!

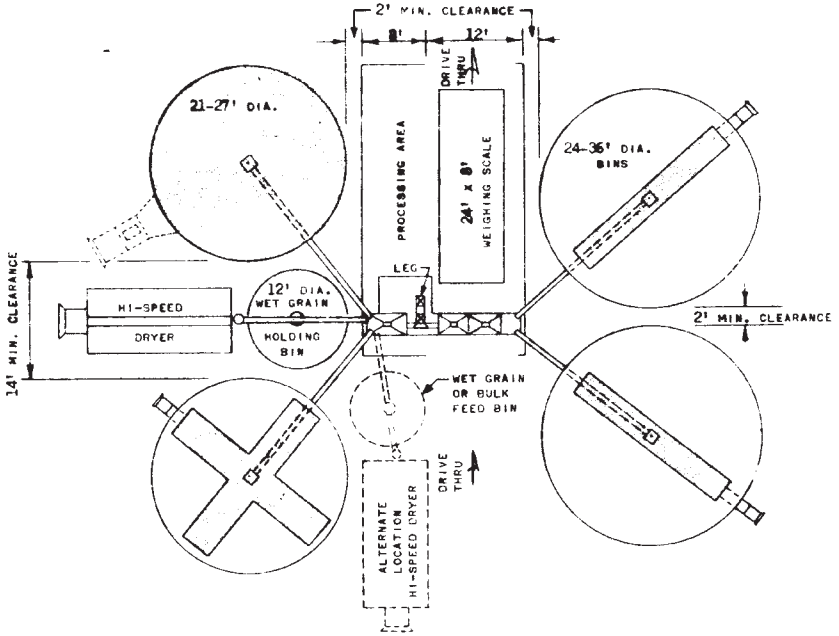
Additional professional services will be required to tailor this plan to your situation, including but not limited to: assurance of compliance with codes and regulations; review of specifications for materials and equipment; supervision of site selection, bid letting and construction; and provision for utilities, waste management, roads or other access. **Furthermore, any deviation from the given specifications may result in structural failure, property damage, and personal injury including loss of life.**

WARRANTY DISCLAIMER

This plan provides conceptual information only. **Neither midwest plan service nor any of the cooperating land-grant universities, or their respective agents or employees, have made, and do not hereby make, any representation, warranty or covenant with respect to the specifications in this plan.** Additional professional services will be required to tailor this plan to your situation, including but not limited to: assurance of compliance with codes and regulations; review of specifications for materials and equipment; supervision of site selection, bid letting and construction; and provision for utilities, waste management, roads or other access.

MIDWEST PLAN SERVICE
Cooperative Extension Work in Agriculture and Home Economics and Agricultural Experiment Stations of North Central Region - USDA Cooperating
Grain-Feed Handling Center Work Tower Across Drive, Offset Gable
Title Page
MIDWEST PLAN NO. 73294





LAYOUT & MECHANIZATION SCHEMATIC

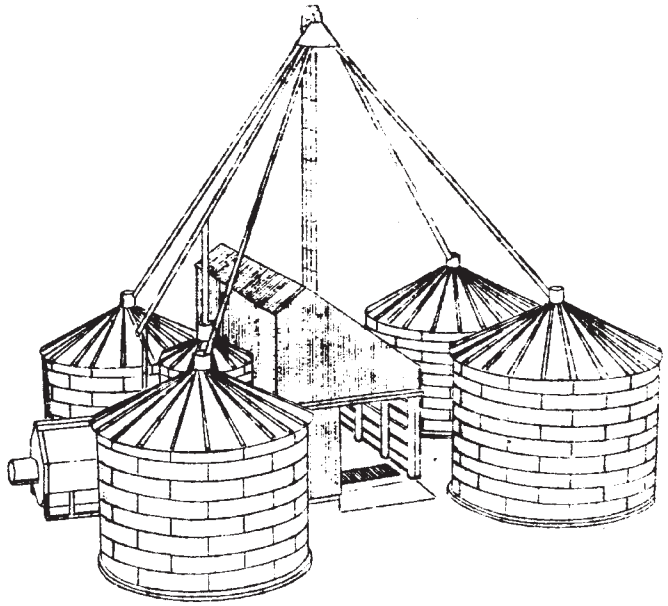


TABLE OF CONTENTS

This plan was developed and prepared by Bruce A. McKenzie and John E. Mentzer, Extension Agricultural Engineers, and W. H. Friday, Assistant Professor, Agricultural Engineering Department, Purdue University, Lafayette.

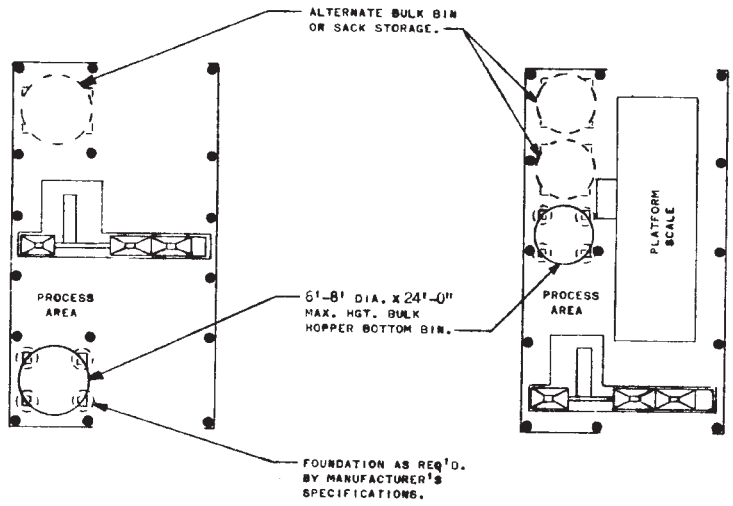
It was originally published by Purdue University as plan number P73294 and is reprinted with approval.

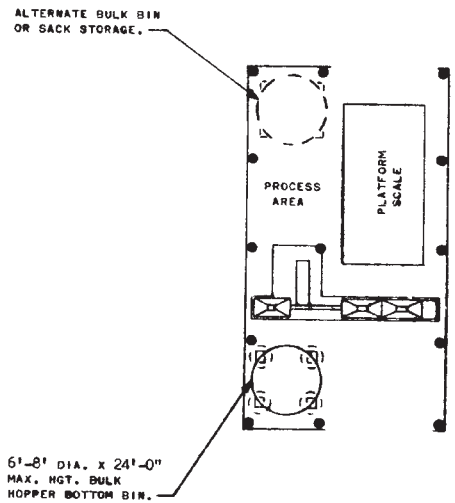
MIDWEST PLAN SERVICE
Cooperative Extension Work in Agriculture and Home Economics and Agricultural Experiment Stations of North Central Region - USDA Cooperating

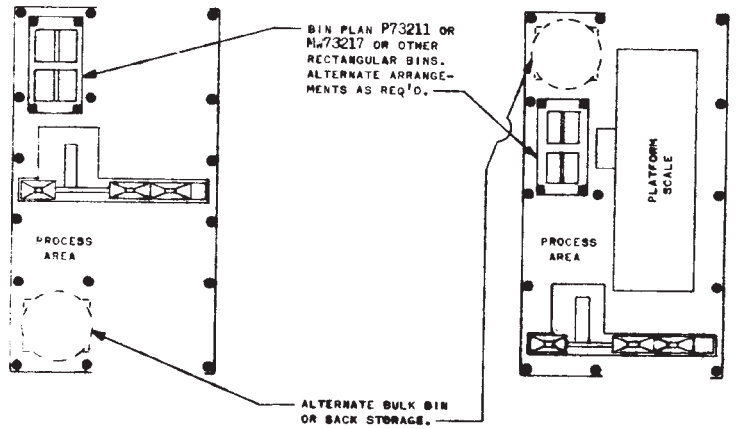
GRAIN-FEED HANDLING CENTER
W/ GRAVITY BESIDE DRIVE, OFFSET GABLE

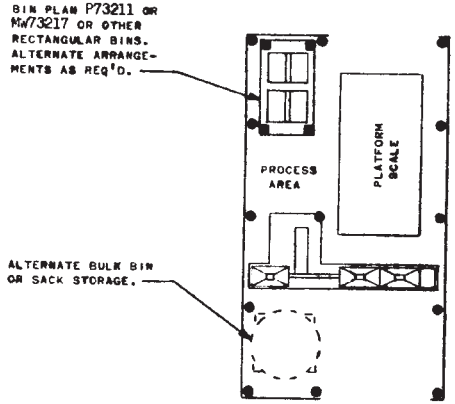
Sheet 1 of 8 Sheets
MIDWEST PLAN NO. 73294

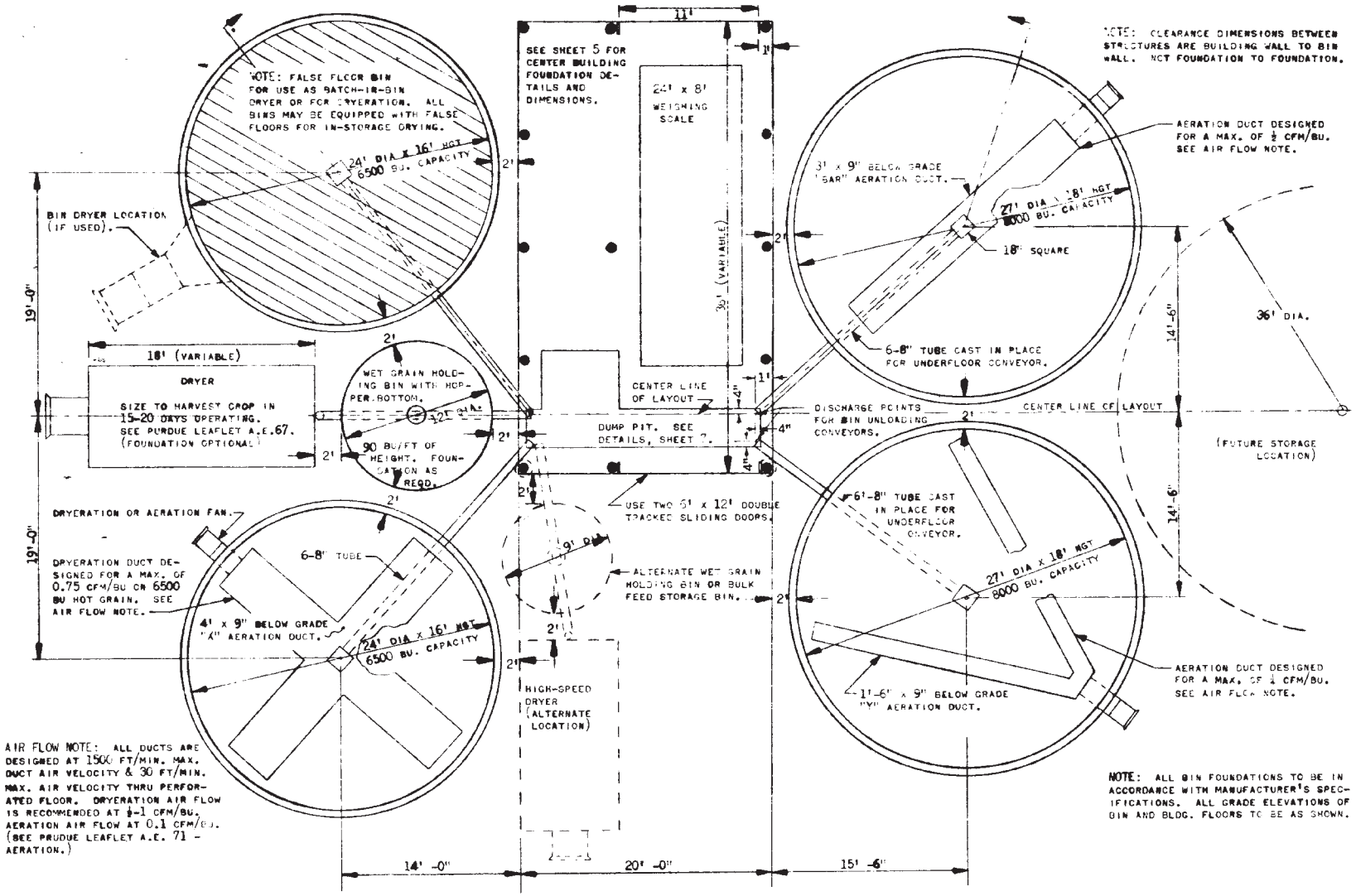
Sheet 8 similar to sheet 8 of 73293


ALTERNATE BULK BIN OR SACK STORAGE.
PROCESS AREA
6'-8' DIA. x 24'-0" MAX. HGT. BULK HOPPER BOTTOM BIN.
FOUNDATION AS REQ'D. BY MANUFACTURER'S SPECIFICATIONS.
PROCESS AREA
PLATFORM SCALE

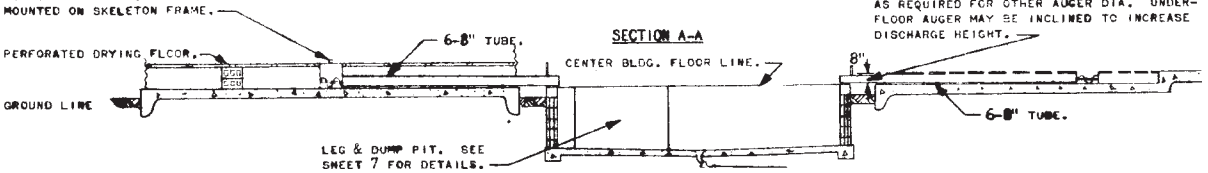

ALTERNATE BULK BIN OR SACK STORAGE.
PROCESS AREA
PLATFORM SCALE
6'-8' DIA. x 24'-0" MAX. HGT. BULK HOPPER BOTTOM BIN.


BIN PLAN P73211 OR M-73217 OR OTHER RECTANGULAR BINS. ALTERNATE ARRANGE-MENTS AS REQ'D.
PROCESS AREA
ALTERNATE BULK BIN OR SACK STORAGE.
PROCESS AREA
PLATFORM SCALE


BIN PLAN P73211 OR M-73217 OR OTHER RECTANGULAR BINS. ALTERNATE ARRANGE-MENTS AS REQ'D.
PROCESS AREA
PLATFORM SCALE
ALTERNATE BULK BIN OR SACK STORAGE.



PLAN VIEW 30,000 BU. FACILITY



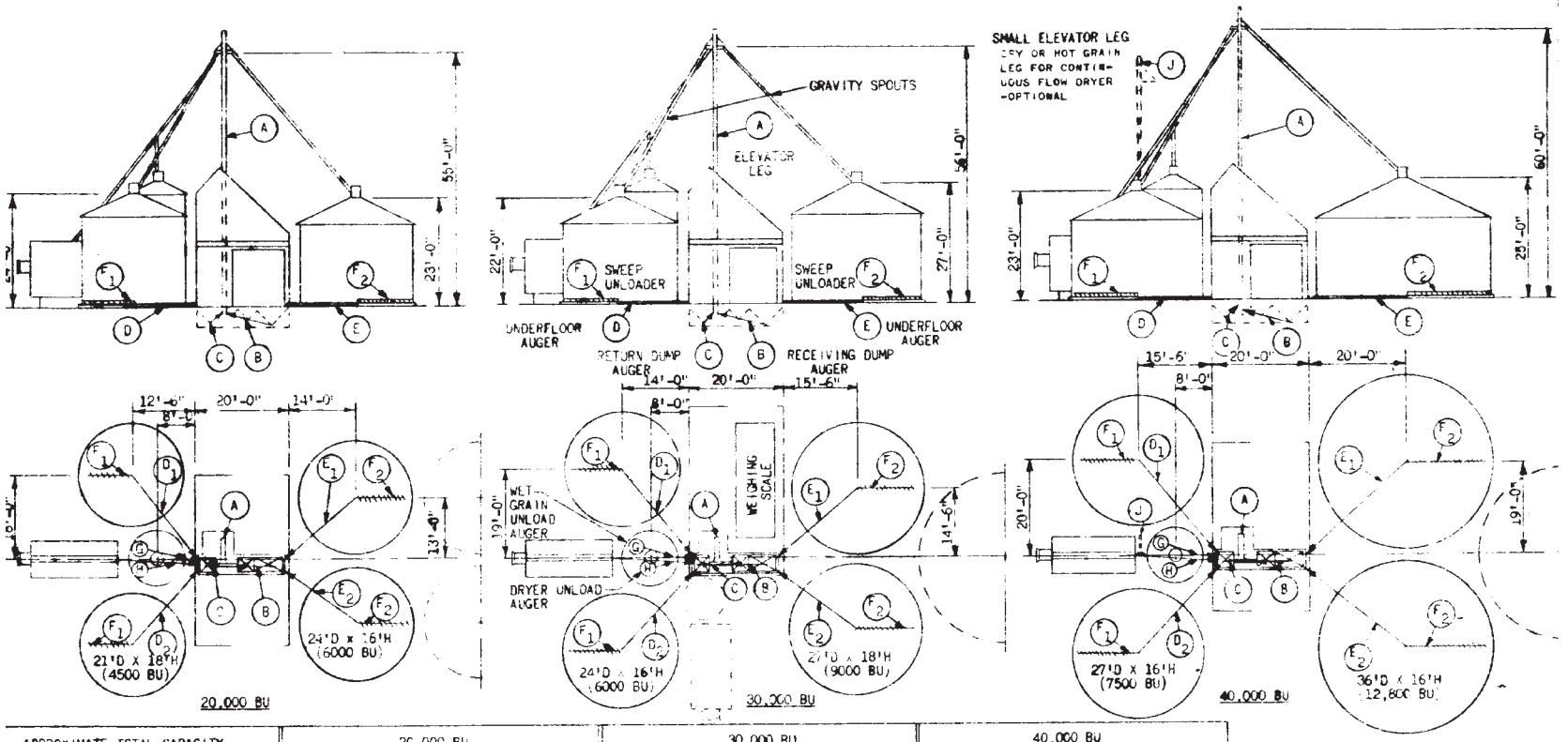
MIDWEST PLAN SERVICE

Cooperative Extension Work in Agriculture and Home Economics and Agricultural Experiment Stations of North Central Region - USDA Cooperating

GRAIN-FEED HANDLING CENTER
WORK TOWER ACROSS DRIVE, OFFSET GABLE

Sheet 2 of 8 Sheets

MIDWEST PLAN NO. 73294



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				
GRAIN HANDLING EQUIPMENT	CODE	LENGTH OR HEIGHT	SIZE	ESTIMATED CAPACITY BU/HR	HP	CODE	LENGTH OR HEIGHT	SIZE	ESTIMATED CAPACITY BU/HR	HP	CODE	LENGTH OR HEIGHT	SIZE	ESTIMATED CAPACITY BU/HR	HP
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" OR 14"		3-5
RETURN DUMP AUGER	C	4'	8"	1200(WET)	1	C	4'	10"		1	C	4'	12"		1½
UNDERFLOOR AUGER	D_1	23'	6"	1000-1200	2	D_1	24'	6"	1500	3	D_1	26'	8"	2500	5
UNDERFLOOR AUGER	D_2	21'	6"	1000-1200	2	D_2	22'	6"	1500	3	D_2	24'	8"	2500	5
UNDERFLOOR AUGER	E_1	20'	6"	1000-1200	2	E_1	22'	6"	1500	3	E_1	30'	8"	2500	5
UNDERFLOOR AUGER	E_2	18'	6"	1000-1200	2	E_2	20'	6"	1500	3	E_2	28'	8"	2500	5
SWEEP UNLOADERS	F_1	10'	4" OR 6"	1000	¾ 1	F_1	11½'	6"	1000-1200	1	F_1	13'	6"	1000-1200	1½
SWEEP UNLOADERS	F_2	11½'	4" OR 6"	1000	1 1½	F_2	13'	6"	1000-1200	1½	F_2	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" OR 8"	1500 2000	2 3	H	18'	8"	2500	3
SMALL ELEVATOR LEG (FOR CONT. FLOW DRYER)	J	45'	(SEE RIGHT)			J	44'	(SEE RIGHT)			J	48'	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 DIA.; 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 RIN OR RIGHT SIDE OF LAYOUT. DOTTED SIDE SHOWN FOR FUTURE EXPANSION ARE INTERCHANGABLE FOR ALL LAYOUTS.

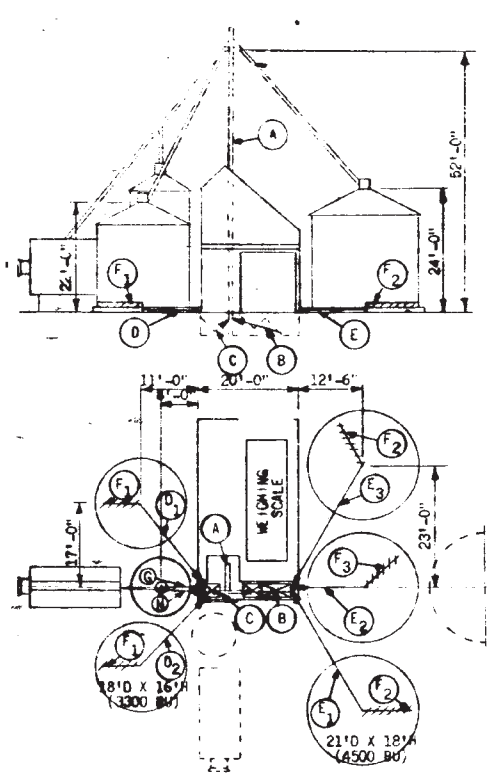
MIDWEST PLAN SERVICE

Cooperative Extension Work in Agriculture and Home Economics and Agricultural Experiment Stations of North Central Region - USDA Cooperating

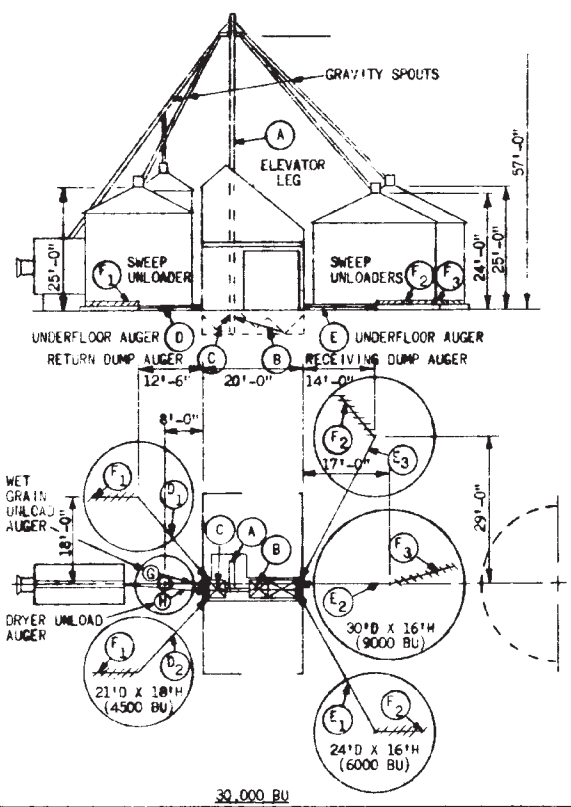
GRAIN-FEED HANDLING CENTER
WORK TOWER ACROSS DRIVE, OFFSET GABLE

Sheet 3 of 8 Sheets

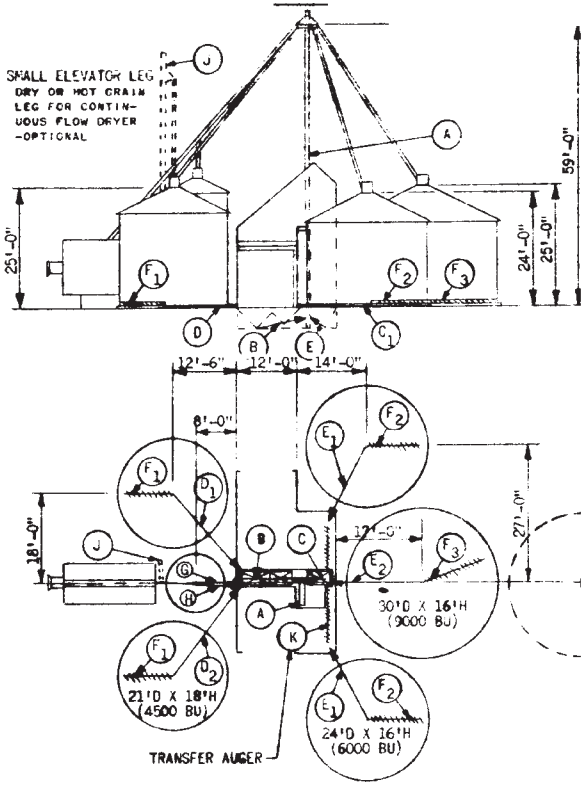
MIDWEST PLAN NO. 73294



20,000 BU



30,000 BU

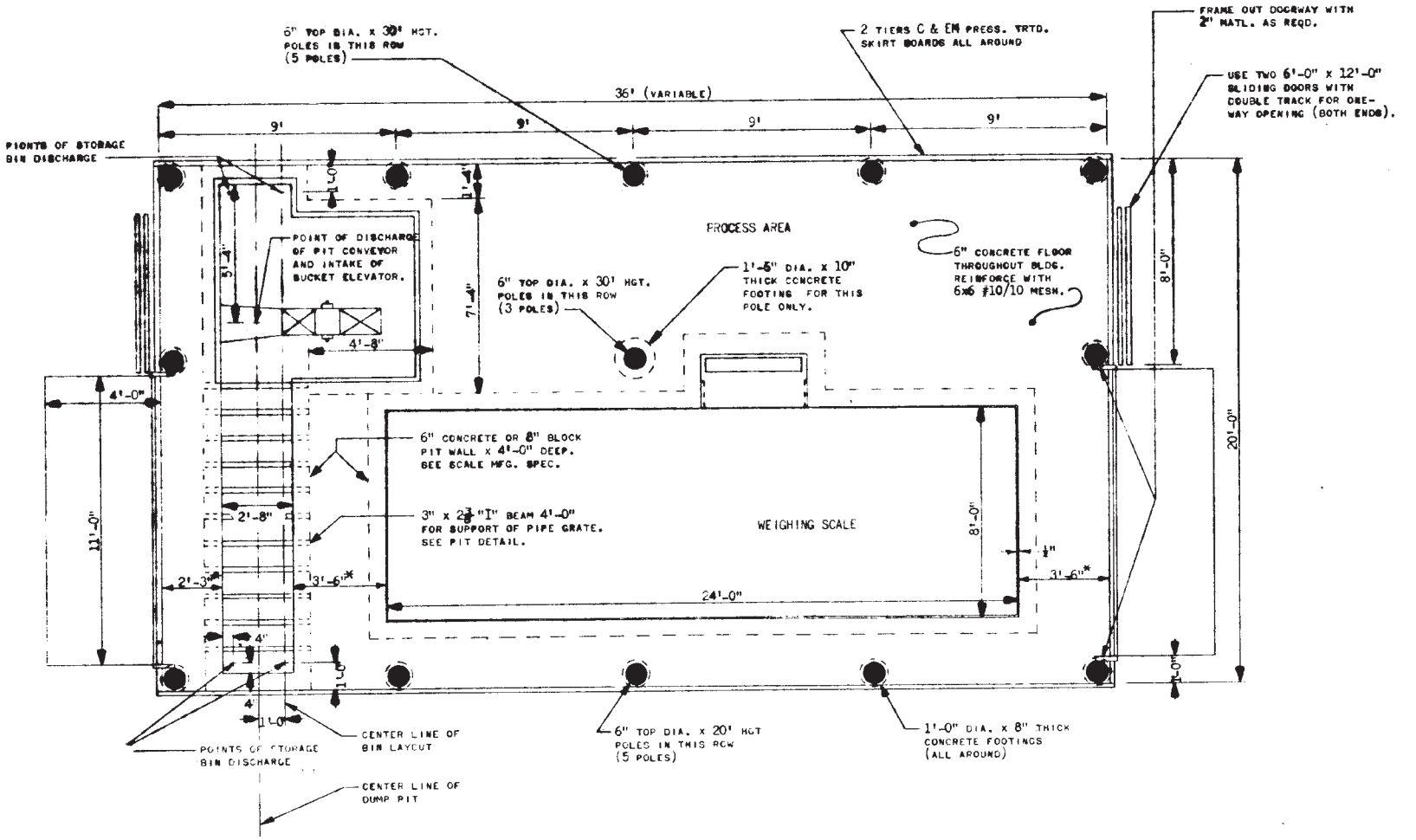


30,000 BU

APPROXIMATE TOTAL CAPACITY-- ALTERNATIVE HANDLING RATES--	20,000 BU 1000-1200 BU/HR FLOW RATE					30,000 BU 2500-3000 BU/HR FLOW RATE					30,000 BU 2500-3000 BU/HR FLOW RATE				
GRAIN HANDLING EQUIPMENT	CODE	LENGTH OR HEIGHT	SIZE	ESTIMATED CAPACITY BU/HR	HP	CODE	LENGTH OR HEIGHT	SIZE	ESTIMATED CAPACITY BU/HR	HP	CODE	LENGTH OR HEIGHT	SIZE	ESTIMATED CAPACITY BU/HR	HP
ELEVATOR LEG	A	52'	7x5"	1000-1200	2-3	A	57'	9x6"	2500-3000	7½	A	59'	9x6"	2500-3000	7½
GRAVITY SPOUTS			6"					8"					8"		
RECEIVING DUMP AUGER	B	11'	8"	1200(WET)	2-3	B	11'	12" OR 14"		3-5	B	11'	12" OR 14"		3-5
RETURN DUMP AUGER	C	4'	8"	1200(WET)	1	C	4'	12"		1½	C	4'	12"		1½
UNDERFLOOR AUGER	D_1	20'	6"	1000-1200	2	D_1	22'	8"	2500	3	D_1	22'	8"	2500	3
UNDERFLOOR AUGER	D_2	22'	6"	1000-1200	2	D_2	24'	8"	2500	3	D_2	24'	8"	2500	3
UNDERFLOOR AUGER	E_1	29'	6"	1000-1200	3	E_1	31'	8"	2500	5	E_1	16'	8"	2500	3
UNDERFLOOR AUGER	E_2	14'	6"	1000-1200	1½	E_2	19'	8"	2500	3	E_2	20'	8"	2500	3
UNDERFLOOR AUGER	E_3	27'	6"	1000-1200	3	E_3	29'	8"	2500	5	(K)	14'	8"-"U"	2500	2
SWEEP UNLOADERS	F_1	8½'	4"		3/4	F_1	10'	6"	1000-1200	1	F_1	10'	6"	1000-1200	1
SWEEP UNLOADERS	F_2	10'	6"	1000	1	F_2	11½'	6"	1000-1200	1	F_2	11½'	6"	1000-1200	1
SWEEP UNLOADERS	F_3	10'	6"	1000	1	F_3	14½'	6"	1000-1200	1½	F_3	14½'	6"	1000-1200	1½
WET GRAIN UNLOAD AUGER	G	8'	8"	1200(WET)	1½	G	8'	10"	1500-2000	2-3	G	10'	12"		
DRYER UNLOAD AUGER	H	14'	6"	1000-1200	1½	H	14'	8"	2500	3	H	18'	8"	2500	3
SMALL ELEVATOR LEG (FOR CONT. FLOW DRYER)	J	34'	(SEE RIGHT)			J	38'	(SEE RIGHT)			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 DIA; MAXIMUM EXPOSURE 2' ±. 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.

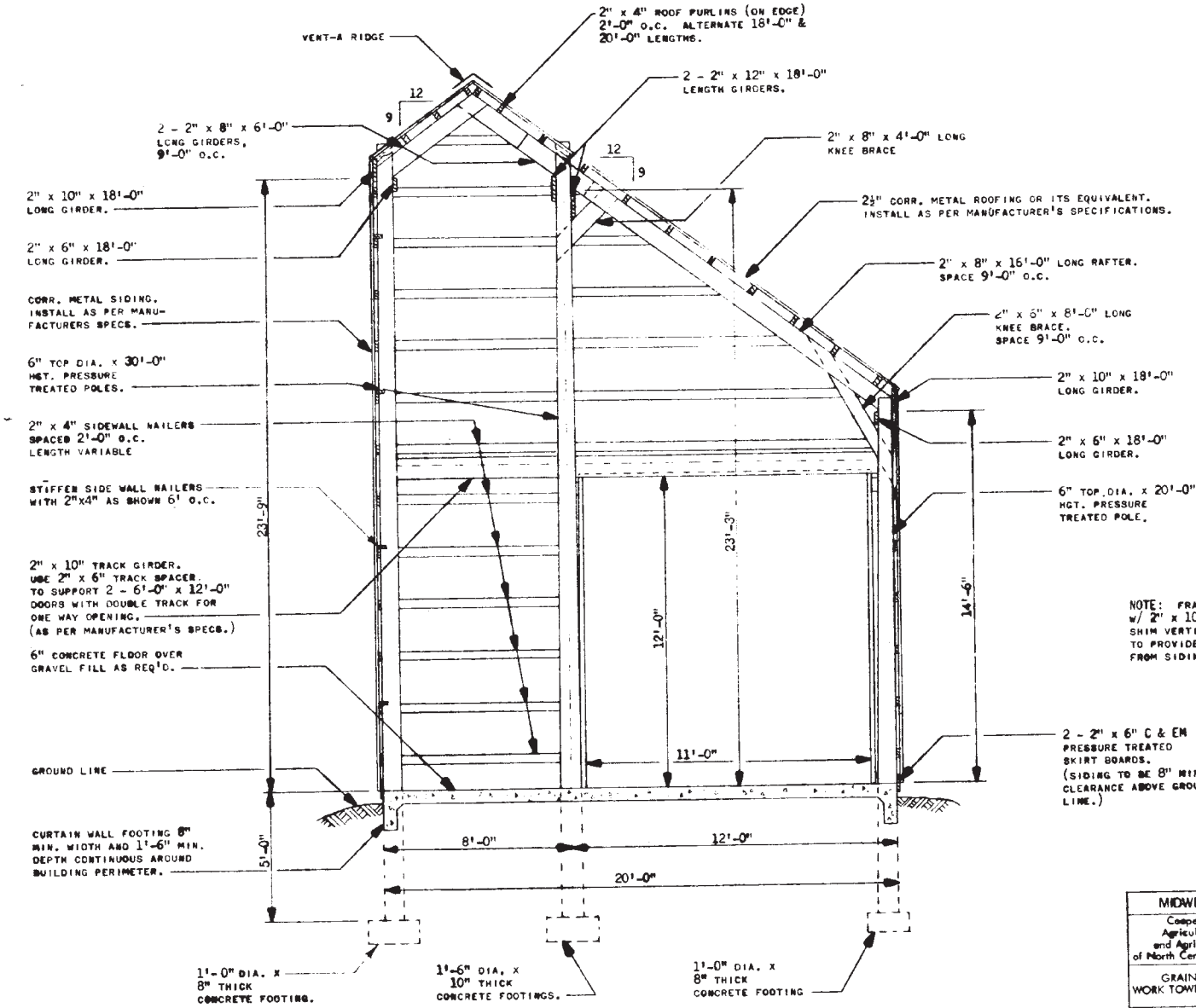
MIDWEST PLAN SERVICE
Cooperative Extension Work in Agriculture and Home Economics and Agricultural Experiment Stations of North Central Region - USDA Cooperating
GRAIN-FEED HANDLING CENTER
WORK TOWER BESIDE DRIVE, OFFSET GABLE
Sheet 4 of 8 Sheets
MIDWEST PLAN NO. 73294



FLOOR & FOUNDATION PLAN

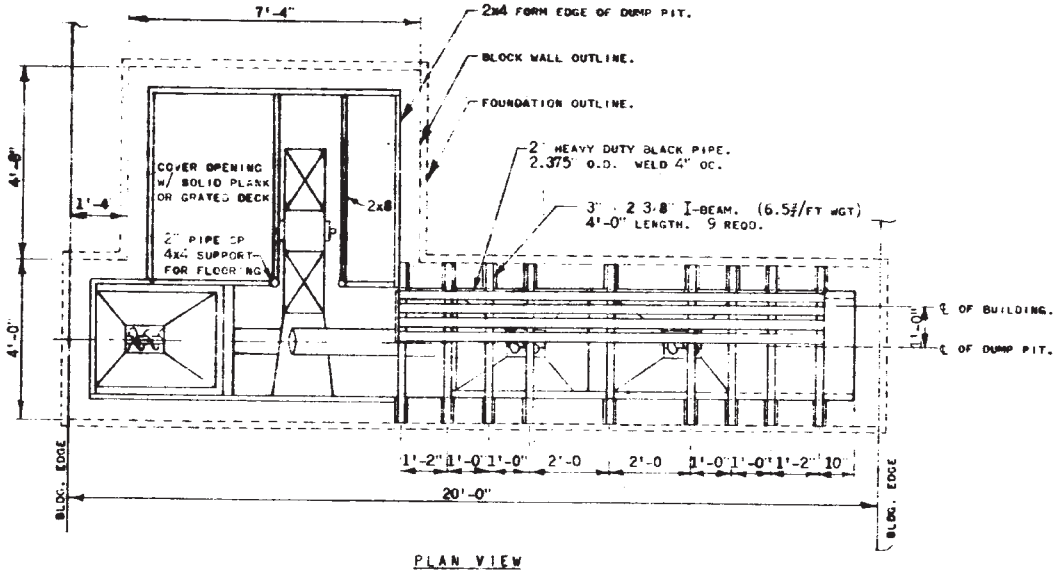
*NOTE: 4'-0" CLEARANCE IS MORE DESIRABLE TO REDUCE SNOW AND GRAIN FLOW PATTERNS. INCREASE BUILDING LENGTH TO ACCOMPLISH.

MIDWEST PLAN SERVICE
Cooperative Extension Work in Agriculture and Home Economics and Agricultural Experiment Stations of North Central Region - USDA Cooperating
GRAIN-FEED HANDLING CENTER WORK TOWER BESIDE DRIVE, OFFSET GABLE
Sheet 5 of 8 Sheets
MIDWEST PLAN NO. 73294

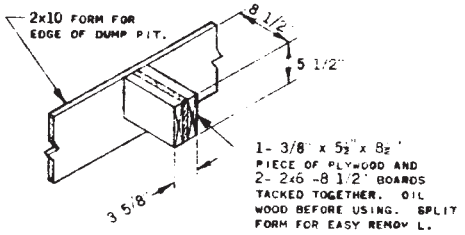


TYPICAL SECTION VIEW

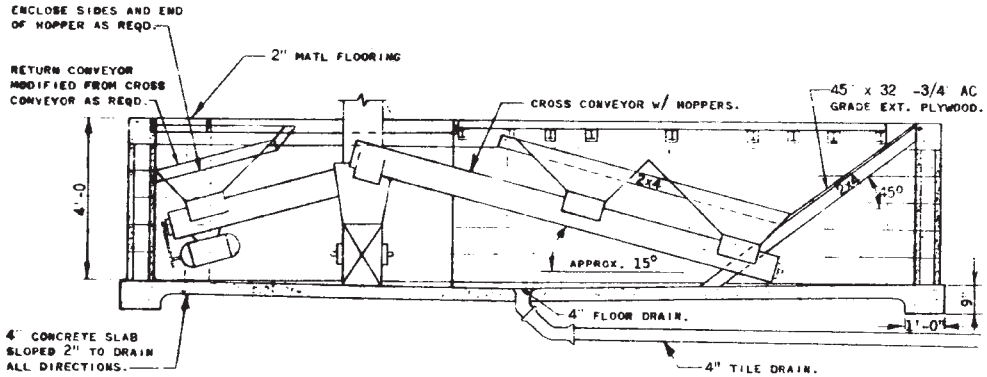
MIDWEST PLAN SERVICE
Cooperative Extension Work in Agriculture and Home Economics and Agricultural Experiment Stations of North Central Region - USDA Cooperating
GRAIN-FEED HANDLING CENTER WORK TOWER BESIDE TOWER, OFFSET GABLE
Sheet 6 of 8 Sheets
MIDWEST PLAN NO. 73294



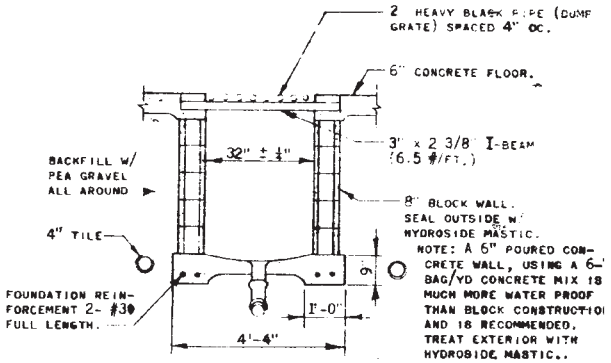
PLAN VIEW



I-BEAM NOTCH FORMING DETAIL



ELEVATION VIEW



END SECTION OF DUMP PIT

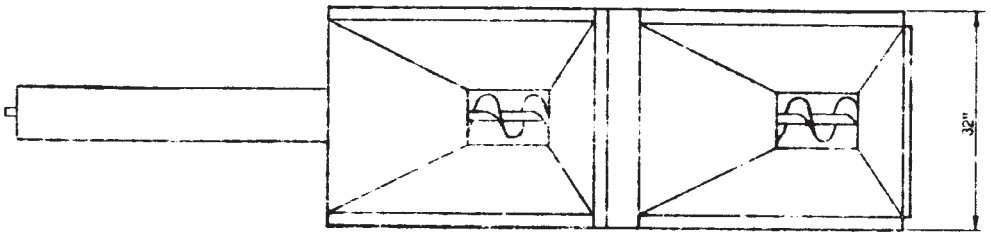
MIDWEST PLAN SERVICE

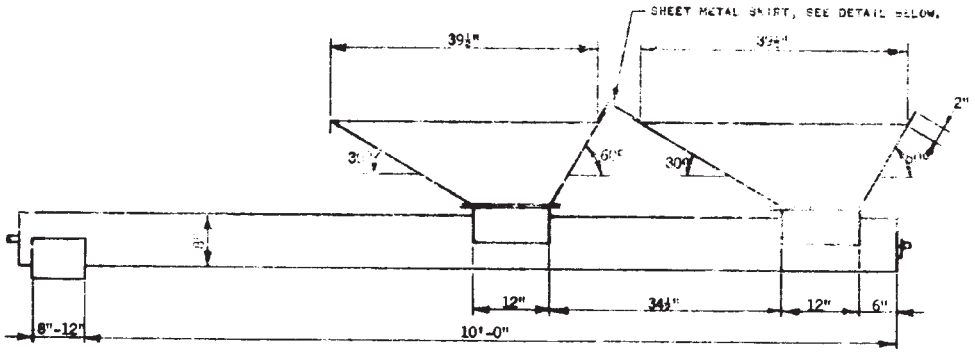
Cooperative Extension Work in Agriculture and Home Economics and Agricultural Experiment Stations of North Central Region - USDA Cooperating

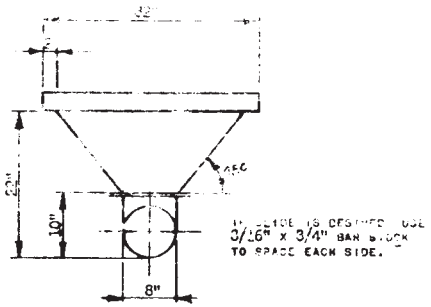
AUGER DUMP PIT DETAILS

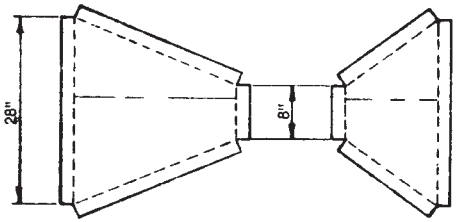
Sheet 7 of 8 Sheets

MIDWEST PLAN NO. 73294

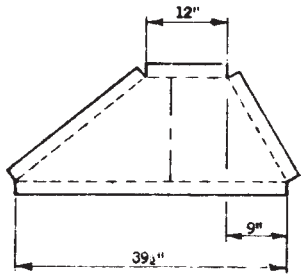




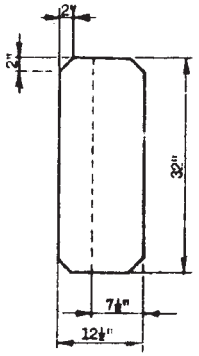




HOPPER END PANELS



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.

MIDWEST PLAN SERVICE

Cooperative Extension Work in Agriculture and Home Economics and Agricultural Experiment Stations of North Central Region - USDA Cooperating

AUGER DUMP PIT ACCESSORIES

Sheet 8 of 14 Sheets

MIDWEST PLAN NO. 73293