

**NOTE:**

1. This plan set shows details for a four (4) Primary Bin unit. The plan set is to be adapted for \_\_\_\_\_ Primary Bins and \_\_\_\_\_ Storage Bins. See sheet 6 of 6 for estimated quantities.
2. Each Primary Bin shall have a gate. For clarity only one gate is shown in the perspective view.

Perspective View

The following Construction Specifications are incorporated by reference:

- AR-21 Excavation
- AR-23C Earthfill Class C
- AR-31 Concrete for Major Structures
- AR-32 Structure Concrete
- AR-34 Steel Reinforcement
- AR-81 Metal Fabrication
- AR-83 Timber Fabrication

\*The full text of the Construction Specifications can be found on the web at  
[http://www.ar.nrcs.usda.gov/technical/engineering\\_construction\\_specs.html](http://www.ar.nrcs.usda.gov/technical/engineering_construction_specs.html)

I certify that the composter was built according to this set of drawings:

\_\_\_\_\_  
 Contractor/Landowner

This composter meets NRCS Standards and Specifications

\_\_\_\_\_  
 NRCS Representative



**Know what's below.  
 Call before you dig.**

Date \_\_\_\_\_  
 Designed \_\_\_\_\_  
 Drawn \_\_\_\_\_  
 Checked \_\_\_\_\_  
 Approved \_\_\_\_\_

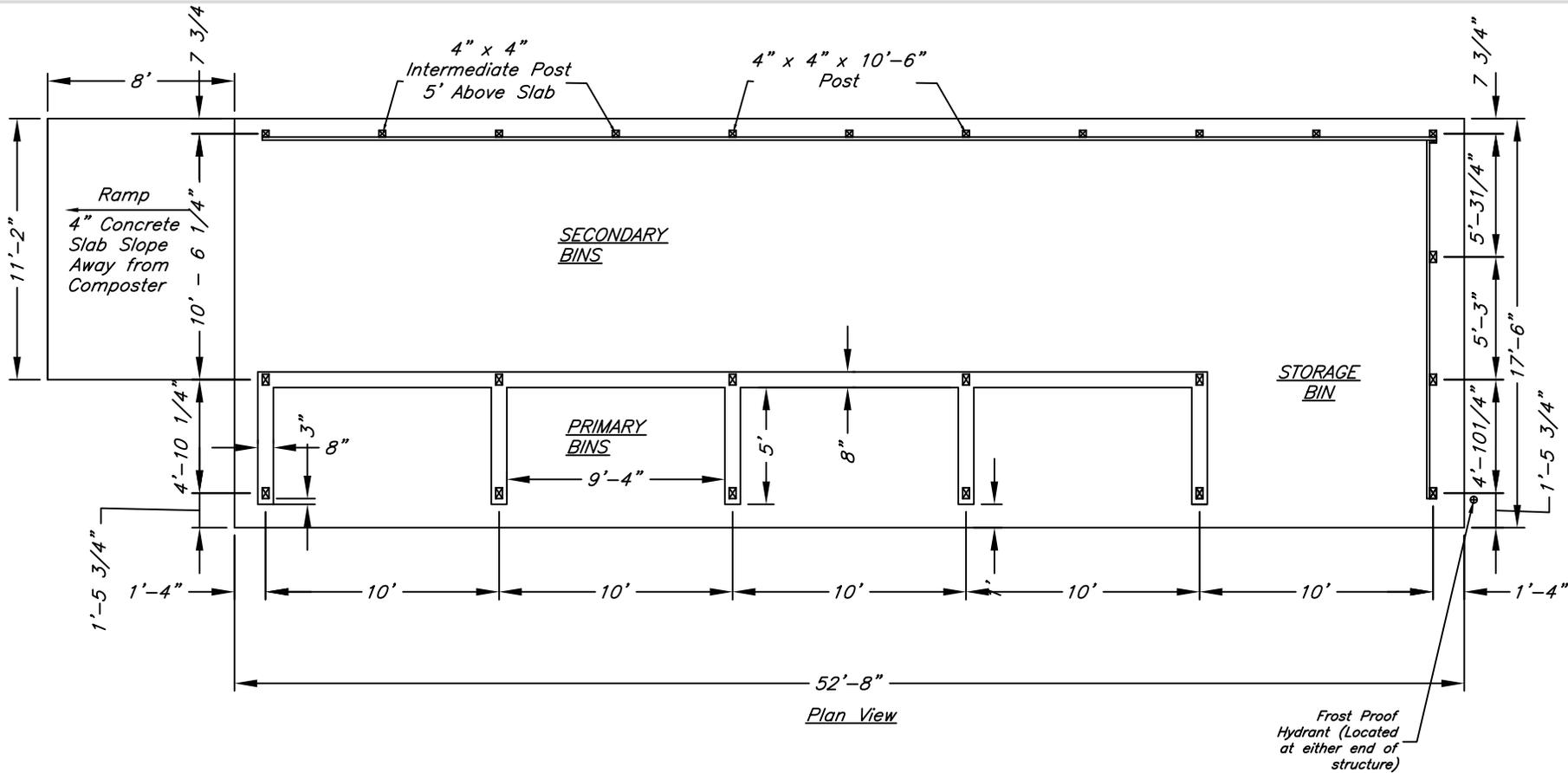
HYBRID COMPOST FACILITY  
 10' Wide Bins  
 Customer: \_\_\_\_\_



File No. \_\_\_\_\_

Drawing No.  
 AR-ENG-418

Standard Drawing  
 AR-ENG-418



**NOTES:**

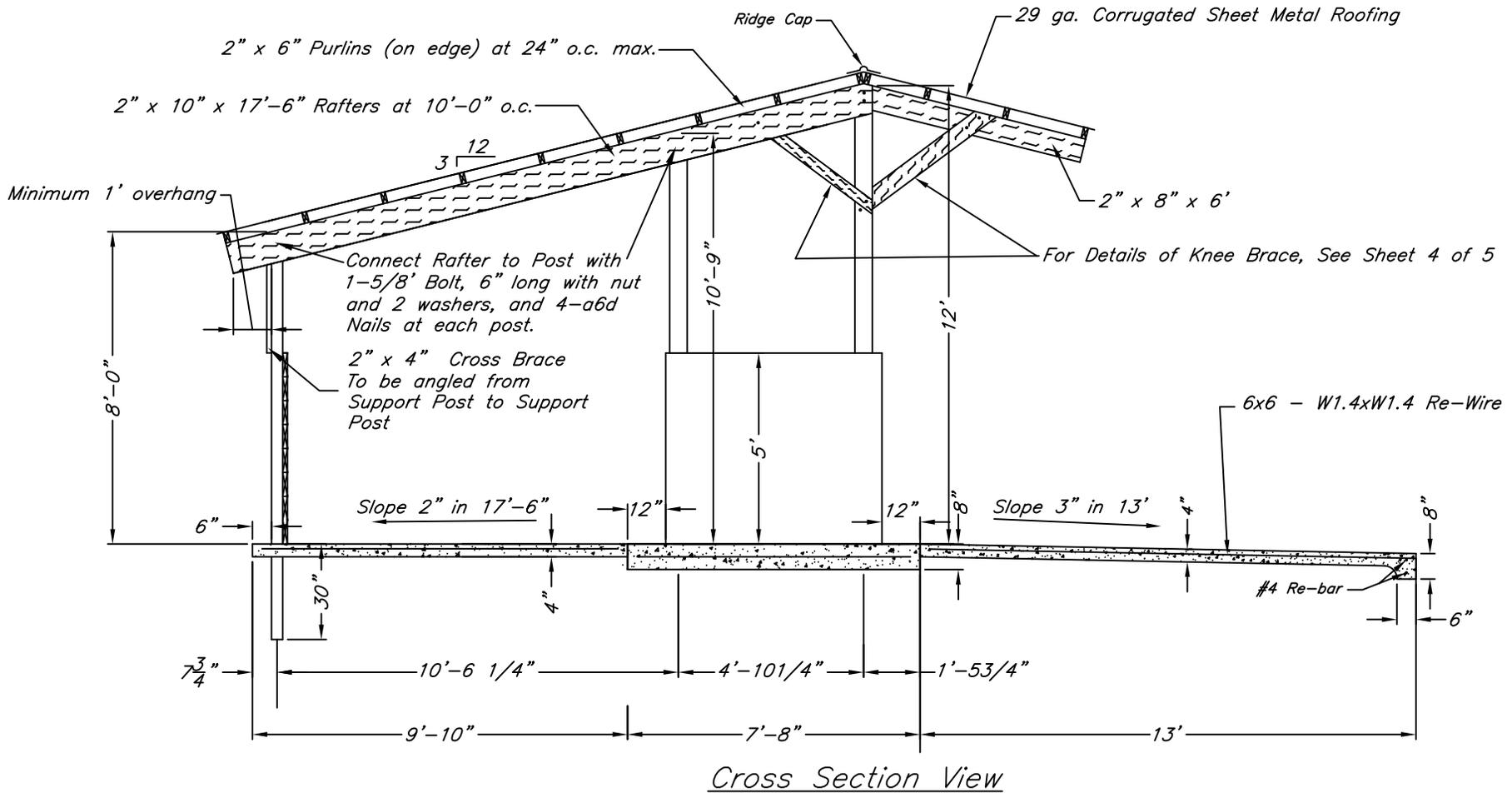
1. Posts are to be treated (0.4 lbs. per cu. ft.). All lumber is to be #2 Southern Yellow Pine.
2. Attach each purlin to each rafter with a manufactured framing anchor. Where purlin joints are needed, they are to overlap 18" above a rafter.
3. Roofing material is to be attached to each purlin using fasteners and fastener spacing recommended by the roofing manufacturer. The contractor shall provide a copy of the manufacturers fastening recommendations prior to final inspection.
4. Frost-proof hydrant is required UNLESS there is an alternative water source (such as a hydrant) available within 150'.
5. Concrete for walls and floor under primary bins is to be in accordance with Construction Specification AR-31 Concrete for Major Structures.
6. Concrete for apron and floor under secondary bins is to be in accordance with Construction Specification AR-32 Concrete for Minor Structures.
7. If Storage Bin is not needed, a wall will be required at one end of secondary bin.

Date	_____
Designed	_____
Drawn	_____
Checked	_____
Approved	_____

**HYBRID COMPOST FACILITY**  
10' Wide Bins

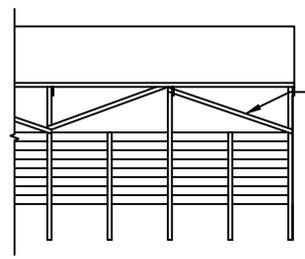
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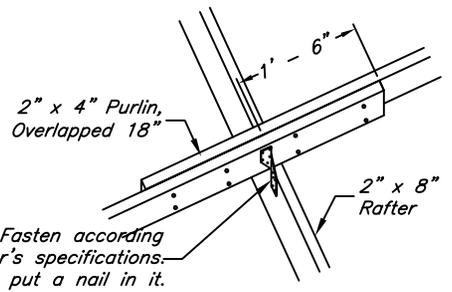
**NOTES:**

1. Fiber reinforced concrete can be used in lieu of conventional concrete and reinforcing wire for apron and floor under secondary bin.
2. Thickened concrete edge is to be placed on all edges of concrete slab that will be receiving oncoming vehicular traffic.
3. Construction and/or contraction joints for the apron and secondary floor are to have a maximum spacing of 13'.
4. Construction and/or contraction joints are not required in floor under primary bins.



**Back View**  
Not to Scale

2" x 4" Cross Brace  
To be angled from  
Support Post to Support  
Post



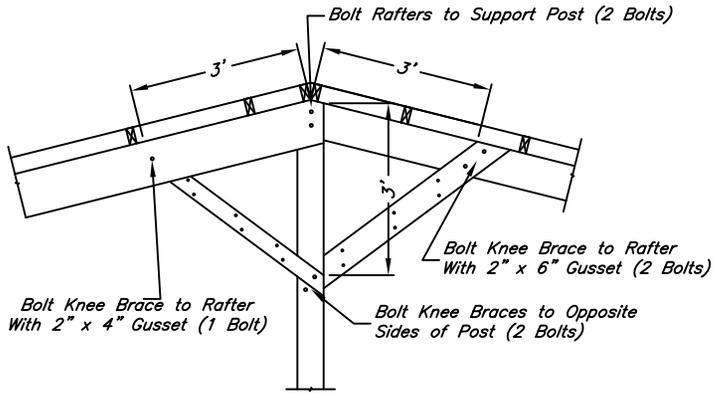
Hurricane Tie. Fasten according to manufacturer's specifications. If there is a hole, put a nail in it.

**Purlin to Rafter Detail**  
Not to Scale

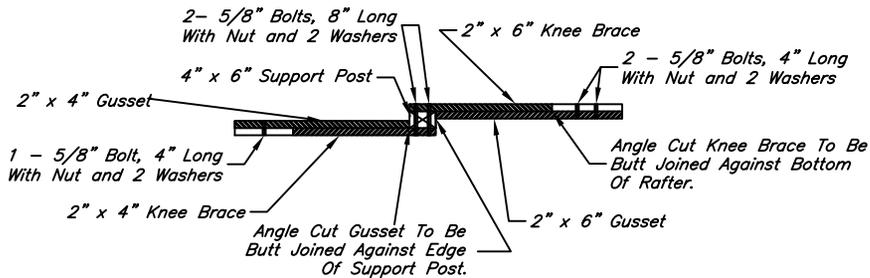
Date	
Designed	
Drawn	
Checked	
Approved	

HYBRID COMPOST FACILITY  
 10' Wide Bins  
 Customer: \_\_\_\_\_

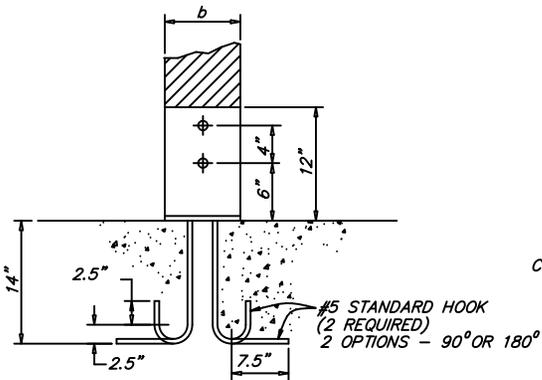
File No. \_\_\_\_\_  
 Drawing No. AR-ENG-418



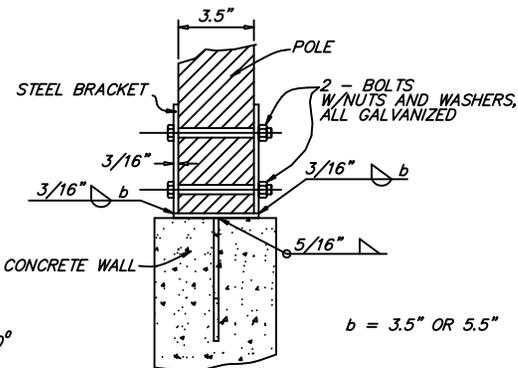
KNEE BRACE DETAIL



PLAN VIEW - KNEE BRACE



SIDE VIEW

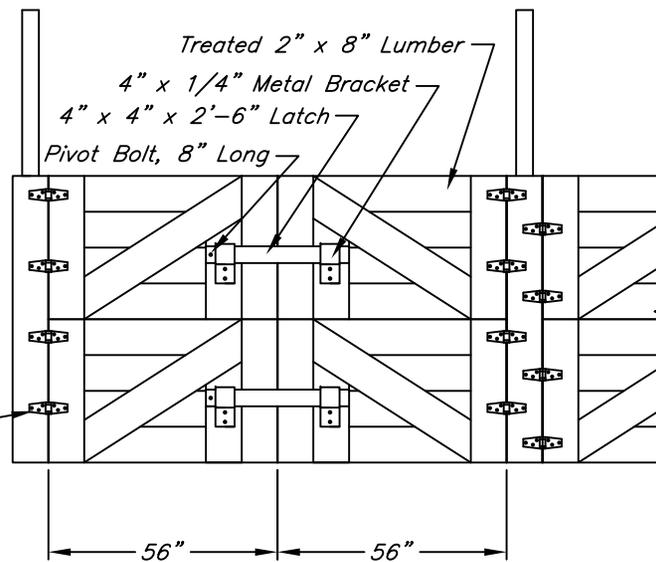


CROSS SECTION

NOT TO SCALE

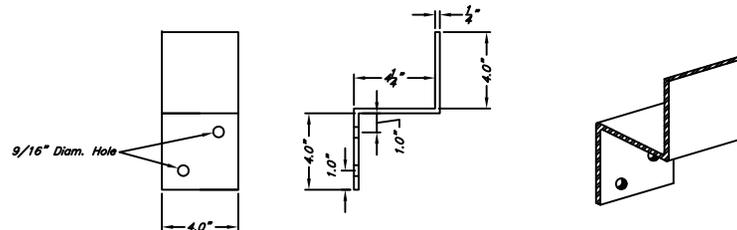
ANCHORAGE AT BASE OF POLES  
(A COMMERCIAL EMBEDMENT ANCHOR MAY BE USED WITH PRIOR APPROVAL FROM THE ENGINEER.)

- NOTES:
1. ALL BOLTS SHALL BE 5/8" DIAMETER WITH WASHERS AT BOTH ENDS.
  2. ALL 16d NAILS SHALL BE RING SHANKED.
  3. NAIL GUSSET AND KNEE BRACE TOGETHER.
  4. PAINT BRACKET WITH 2 COATS OF ZINC-RICH GALVANIZING PAINT.
  5. FABRICATE AND INSTALL BRACKET TO FIT TIGHTLY AGAINST POLE.
  6. NUTS MUST BE KEPT SNUG THROUGHOUT THE LIFE OF THE STRUCTURE OR SERIOUS DAMAGE COULD RESULT.



GATE DETAIL

Heavy Duty Strap Hinge. Space hinges as far apart as practicable for each door.



NOTE: Attach Metal Bracket with 2 - 1/2" x 4" Bolts with nut and flat washers.

METAL BRACKET DETAIL

Date	_____
Designed	_____
Drawn	_____
Checked	_____
Approved	_____

HYBRID COMPOST FACILITY

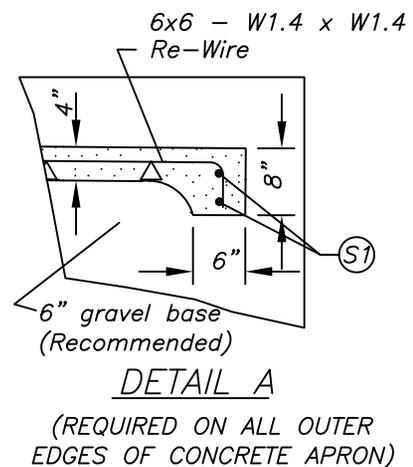
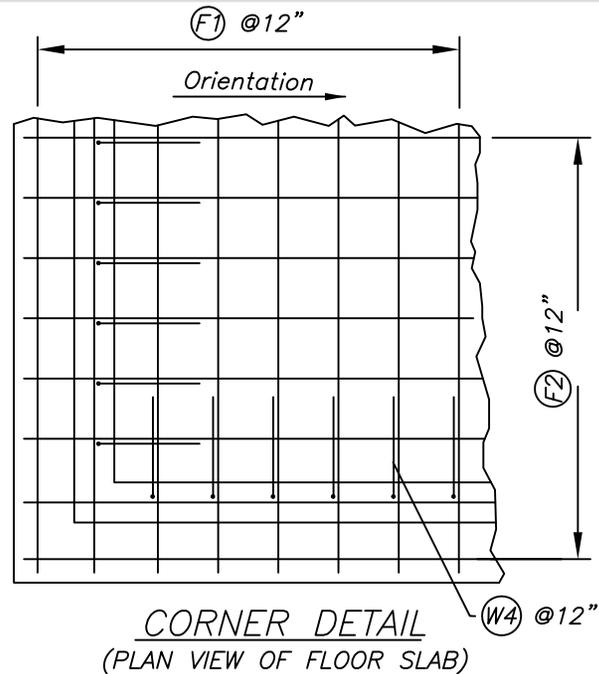
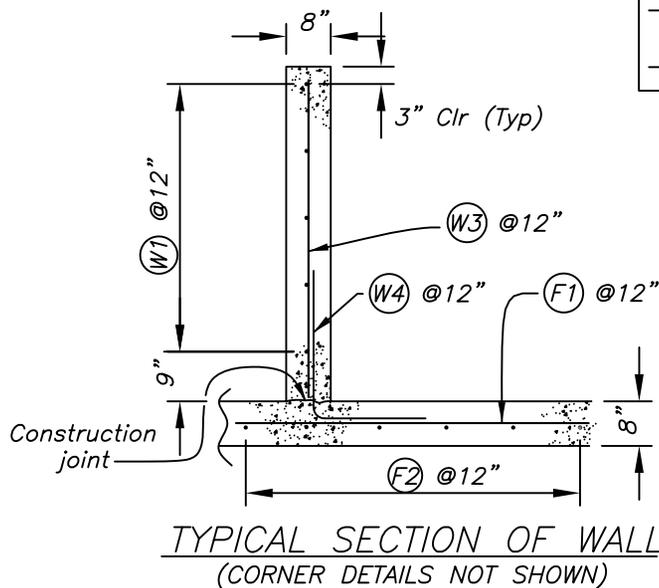
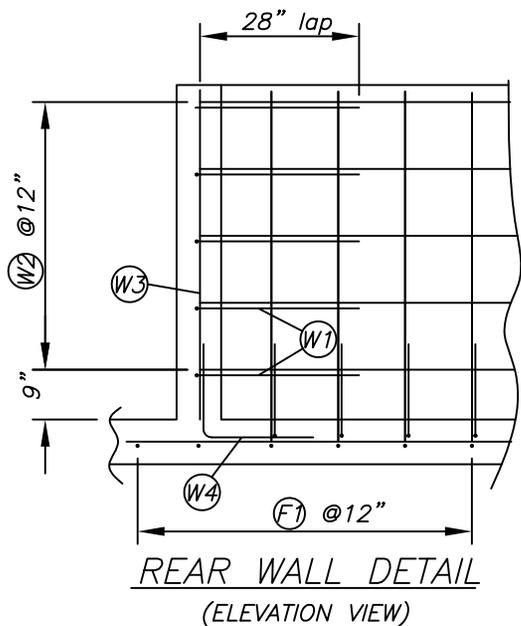
10' Wide Bins

Customer: \_\_\_\_\_



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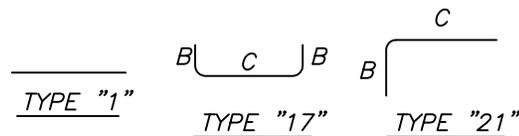
Drawing No.  
AR-ENG-418



**NOTES:**

1. All exposed concrete edges and corners shall be rounded or chamfered 1".
2. Bar spacing is measured from center to center.
3. Unless otherwise marked, all steel shall be in center of concrete.
4. Unless otherwise marked, splices shall be as follows:
  - Horiz. bars in wall: 28"
  - All other bars:
    - #4 - 22"
    - #5 - 27"

**STEEL TYPES**



NOT TO SCALE

Date: \_\_\_\_\_

Designed: \_\_\_\_\_

Drawn: \_\_\_\_\_

Checked: \_\_\_\_\_

Approved: \_\_\_\_\_

**HYBRID COMPOST FACILITY**  
10' Wide Bins

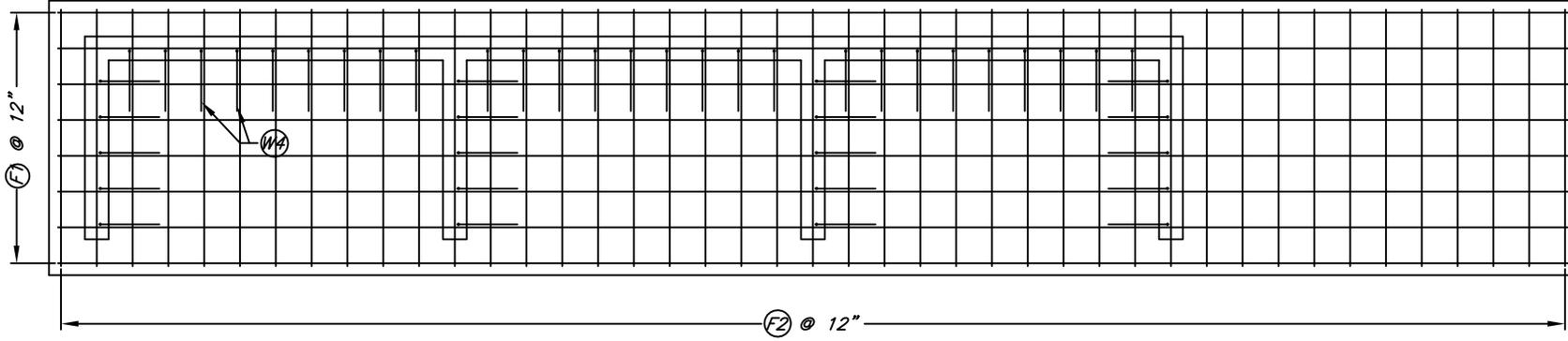
Customer: \_\_\_\_\_

**USDA NRCS**  
United States Department of Agriculture  
Natural Resources Conservation Service

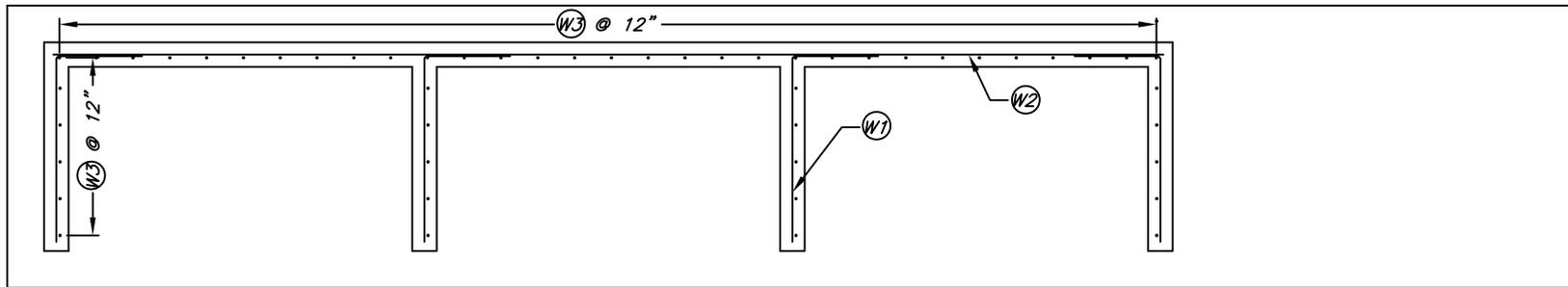
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Drawing No. AR-ENG-418

Sheet 5 of 8



PLAN VIEW OF FLOOR SLAB STEEL



PLAN VIEW OF WALL STEEL

Designed	_____	Date	_____
Drawn	_____		
Checked	_____		
Approved	_____		

HYBRID COMPOST FACILITY  
 10' Wide Bins  
 Customer: \_\_\_\_\_



STEEL SCHEDULE (WITH STORAGE BIN)							
MARK	SIZE	QUANTITY	LENGTH	TYPE	B	C	TOTAL LENGTH
F1	5	8	a	1	----	----	b
F2	5	c	7' - 2"	1	----	----	d
W1	4	e	7 - 5"	21	2'-4"	5'-1"	f
W2	4	5	g	1	----	----	i
W3	5	j	4' - 9"	1	----	----	k
W4	5	l	4' - 4"	21	1' - 9"	2' - 7"	m

No. of Primary Bins								
	2	3	4	5	6	7	8	PER ADDITIONAL BIN
a	32' - 2"	42' - 2"	52' - 2"	62' - 2"	72' - 2"	82' - 2"	92' - 2"	10'
b	257' - 4"	337' - 4"	417' - 4"	497' - 4"	577' - 4"	657' - 4"	737' - 4"	80
c	33	43	53	63	73	83	93	10
d	236' - 6"	308' - 2"	379' - 10"	451' - 6"	523' - 2"	594' - 10"	666' - 6"	71' - 8"
e	15	20	25	30	35	40	45	5
f	111' - 3"	148' - 4"	185' - 5"	222' - 6"	259' - 7"	296' - 8"	333' - 9"	37 - 1"
g	19' - 6"	29' - 6"	39' - 6"	49' - 6"	59' - 6"	69' - 6"	79' - 6"	10'
h	20'	30'	40'	50'	60'	70'	80'	10'
i	97' - 6"	147' - 6"	197' - 6"	247' - 6"	297' - 6"	347' - 6"	397' - 6"	50'
j	36	51	66	81	96	111	126	15
k	171' - 0"	242' - 3"	313' - 6"	384' - 9"	456' - 0"	527' - 3"	598' - 6"	69' - 3"
l	36	51	66	81	96	111	126	15
m	156'	221'	286'	351'	416'	481'	546'	65'

Date \_\_\_\_\_  
 Designed \_\_\_\_\_  
 Drawn \_\_\_\_\_  
 Checked \_\_\_\_\_  
 Approved \_\_\_\_\_

HYBRID COMPOST FACILITY  
 10' Wide Bins

Customer: \_\_\_\_\_



File No. \_\_\_\_\_

Drawing No.  
 AR-ENG-418

Number of Primary Bins (quantities w/o storage area)								
	2	3	4	5	6	7	8	Additional Bins
Length	22'-8"	32'-8"	42'-8"	52'-8"	62'-8"	72'-8"	82'-8"	10'
<b>CONCRETE</b>								
Bin Walls and Floor, cu.yd.	8.7	12.5	16.3	20.1	23.9	27.7	31.5	3.8
Apron, cu.yd.	7.5	10.4	13.3	16.2	19.1	22	24.9	2.9
<b>CONCRETE REINFORCEMENT</b>								
6X6-W1.4xW1.4 wire mesh, sq.ft.	517.6	745.9	974.2	1202.5	1430.8	1659.1	1887.4	228.3
Reinforcing Bars (see steel schedule)								
<b>TREATED LUMBER</b>								
<b>POSTS</b>								
4"x6"x 5'-10"	3	4	5	6	7	8	9	1
4"x6"x 7'-0"	3	4	5	6	7	8	9	1
4"x4"x 7'-6"	2	3	4	5	6	7	8	1
4"x4"x 10'-6"	3	4	5	6	7	8	9	1
PLANKS 2"x8" (lin. ft.)	244'	324'	404'	484'	564'	644'	724'	80'
<b>DOORS</b>								
2"x8"x 10'	24	36	48	60	72	84	96	12
2"x8"x 5'	4	6	8	10	12	14	16	2
4"x4"x 2'-6"	2	3	4	5	6	7	8	1
<b>NON-TREATED LUMBER</b>								
2"x10"x 17'-6"	3	4	5	6	7	8	9	1
2"x8"x 6'	3	4	5	6	7	8	9	1
2"x6"x 4'	6	8	10	12	14	16	18	2
2"x4"x 4'-4"	6	8	10	12	14	16	18	2
2"x4"x 10'-5 1/4"	2	3	4	5	6	7	8	1
<b>PURLINS</b>								
2"x6"x 12'	26	39	52	65	78	91	104	13
ROOFING MATERIAL - sq.ft	538	776	1014	1252	1490	1728	1966	238
<b>BOLTS - 5/8" Diam.</b>								
4" Length	9	12	15	18	21	24	27	3
6" Length	6	8	10	12	14	16	18	2
8" Length	12	16	20	24	28	32	36	4
Washers - 5/8" Diam.	54	72	90	108	126	144	162	18
Framing Anchors (Purlins)	39	52	65	78	91	104	117	13
Post Anchors	6	8	10	12	14	16	18	2
5/8" x 4" Galvanized Bolts w/washers	12	9	20	24	28	32	36	4
Concrete Anchor Bolts	18	24	30	36	42	48	54	6
4" Heavy Duty Strap Hinge	16	24	32	40	48	56	64	8
4"x 1/4" Metal Bracket	8	12	16	20	24	28	32	4
1/2" x 4" Bolts	16	24	32	40	48	56	64	8
1/2" x 8" Bolts	4	6	8	10	12	14	16	2

Number of Primary Bins (quantities with storage area)								
	2	3	4	5	6	7	8	Additional Bins
Length	32'-8"	42'-8"	52'-8"	62'-8"	72'-8"	82'-8"	92'-8"	10'
<b>CONCRETE</b>								
Bin Walls and Floor, cu.yd.	12.5	16.3	20.1	23.9	27.7	31.5	35.3	3.8
Apron, cu.yd.	10.4	13.3	16.2	19.1	22	24.9	27.8	2.9
<b>CONCRETE REINFORCEMENT</b>								
6X6-W1.4xW1.4 wire mesh, sq.ft.	745.9	974.2	1202.5	1430.8	1659.1	1887.4	2085.7	228.3
Reinforcing Bars (see steel schedule)								
<b>TREATED LUMBER</b>								
<b>POSTS</b>								
4"x6"x 5'-10"	3	4	5	6	7	8	9	1
4"x6"x 7'-0"	3	4	5	6	7	8	9	1
4"x4"x 7'-6"	4	5	6	7	8	9	10	1
4"x4"x 10'-6"	4	5	6	7	8	9	10	1
4"x6"x 13'-4"	1	1	1	1	1	1	1	---
4"x6"x 14'-6"	1	1	1	1	1	1	1	---
PLANKS 2"x8" (lin. ft.)	363'	443'	523'	603'	683'	763'	843'	80'
<b>DOORS</b>								
2"x8"x 10'	24	36	48	60	72	84	96	12
2"x8"x 5'	4	6	8	10	12	14	16	2
4"x4"x 2'-6"	2	3	4	5	6	7	8	1
<b>NON-TREATED LUMBER</b>								
2"x10"x 17'-6"	4	5	6	7	8	9	10	1
2"x8"x 6'	4	5	6	7	8	9	10	1
2"x6"x 4'	8	10	12	14	16	18	20	2
2"x4"x 4'-4"	8	10	12	14	16	18	20	2
2"x4"x 10'-5 1/4"	3	4	5	6	7	8	9	1
<b>PURLINS</b>								
2"x6"x 12'	39	52	65	78	91	104	117	13
ROOFING MATERIAL - sq.ft	776	1014	1252	1490	1728	1966	2204	238
<b>BOLTS - 5/8" Diam.</b>								
4" Length	12	15	18	21	24	27	30	3
6" Length	8	10	12	14	16	18	20	2
8" Length	16	20	24	28	32	36	40	4
Washers - 5/8" Diam.	72	90	108	126	144	162	180	18
Framing Anchors (Purlins)	52	65	78	91	104	117	130	13
Post Anchors	9	12	15	18	21	24	27	3
5/8" x 4" Galvanized Bolts w/washers	18	24	30	36	42	48	54	6
Concrete Anchor Bolts	12	18	24	30	36	42	48	6
4" Heavy Duty Strap Hinge	16	24	32	40	48	56	64	8
4"x 1/4" Metal Bracket	8	12	16	20	24	28	32	4
1/2" x 4" Bolts	16	24	32	40	48	56	64	8
1/2" x 8" Bolts	4	6	8	10	12	14	16	2

Date \_\_\_\_\_  
 Designed \_\_\_\_\_  
 Drawn \_\_\_\_\_  
 Checked \_\_\_\_\_  
 Approved \_\_\_\_\_

HYBRID COMPOST FACILITY  
 10' Wide Bins  
 Customer: \_\_\_\_\_


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 Natural Resources Conservation Service