

MO-FLEX GROW-FINISH BUILDING PLAN

PREPARED FOR: MISSOURI PLAN SERVICE

PLAN NUMBER: MO1-726-94C1

DEVELOPED BY:

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AGRICULTURAL ENGINEERING DEPARTMENT
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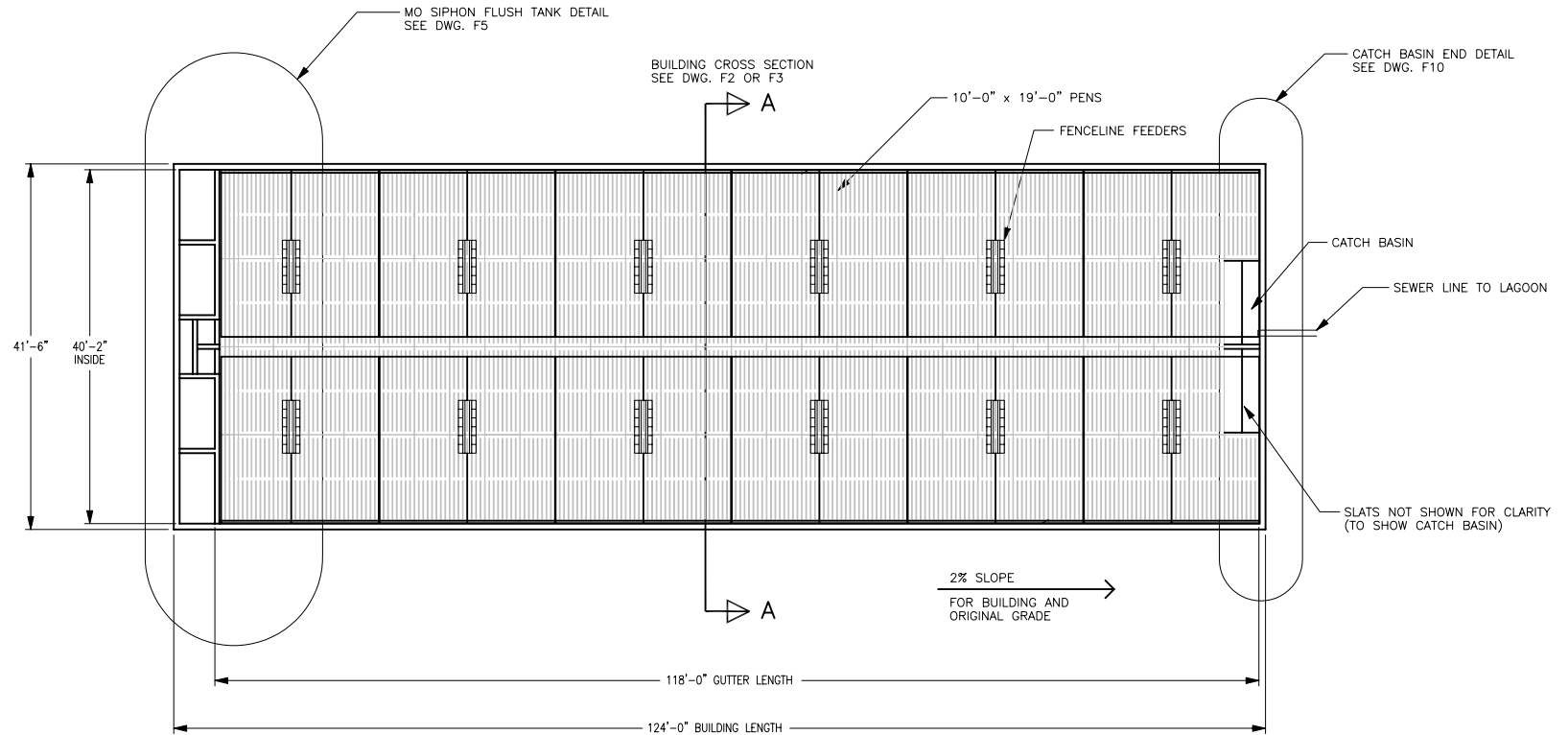
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ASSURANCE OF COMPLIANCE WITH LOCAL CODES AND REGULATIONS;
DEVELOPMENT AND/OR REVIEW OF SPECIFICATIONS FOR MATERIALS AND EQUIPMENT;
SELECTION OF PROPER SITE PROVIDING ADEQUATE NATURAL RESOURCE BASE;
SUPERVISION OF SITE PREPARATION, BID LETTING AND CONSTRUCTION;
DEVELOPMENT OF A MANURE STORAGE SYSTEM AND MANURE MANAGEMENT PLAN;
AND PROVISIONS FOR UTILITIES, ROADS AND/OR OTHER ACCESS.

MO-FLEX GROW-FINISH BUILDING WITH 24 PENS AND FLUSH UNDER TOTAL SLATS

REVIEW ACCOMPANYING MANUAL FOR DISCUSSION ON MODIFYING BUILDING SIZE AND HOW TO INCLUDE MULTIPLE ROOMS



FLUSH BUILDING FLOOR PLAN

SCALE: 1" = 10'-0"

SITE SELECTION AND PREPARATION INFORMATION

1. BUILDING LENGTH SHOULD RUN EAST AND WEST IN MISSOURI.
2. AREA 100' TO THE NORTH AND SOUTH OF BUILDING SHOULD BE CLEAR FOR NATURAL VENTILATION.
3. SOIL BUILDING PAD SHOULD BE ABOUT 10'-0" TO 20'-0" LONGER AND 10'-0" WIDER THAN BUILDING.
4. SOIL BUILDING PAD SHOULD SLOPE 2% FROM TANK END TO BASIN END FOR GOOD FLUSHING PERFORMANCE.
5. NO SLOPE ACROSS WIDTH OF SOIL BUILDING PAD SHOULD EXIST.
6. BUILDING PROXIMITY TO OTHER SWINE BUILDINGS IMPACTS PIG PERFORMANCE AND SHOULD BE CONSIDERED.

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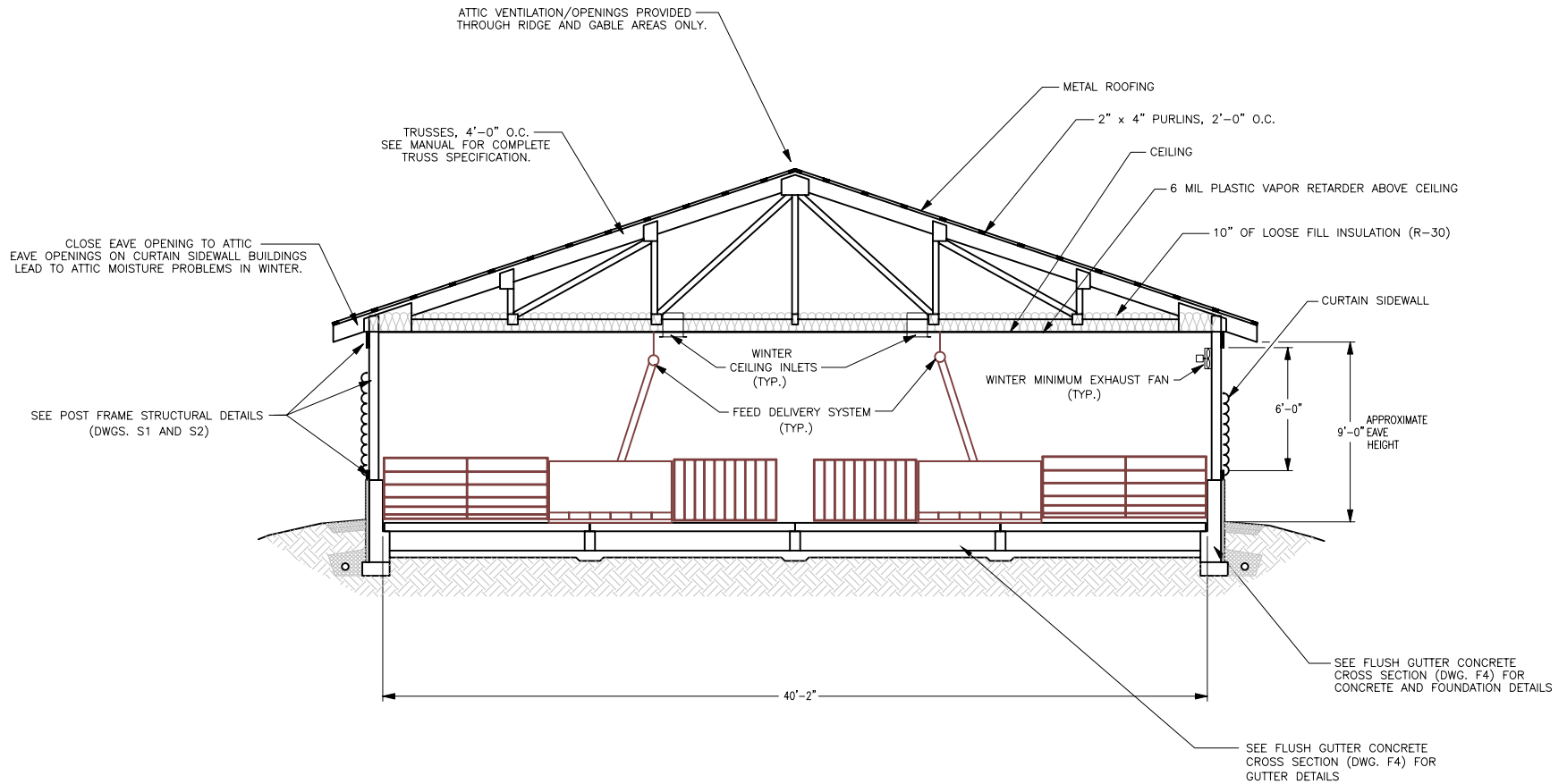
FLOOR PLAN USING FLUSH AND MO SIPHON TANKS

MO-FLEX GROW-FINISH BUILDING PLAN

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| SCALE: 1"=10'-0" | SHEET F1 : 2 OF 20 | |

FLUSH BUILDING WITH INSULATED CEILING



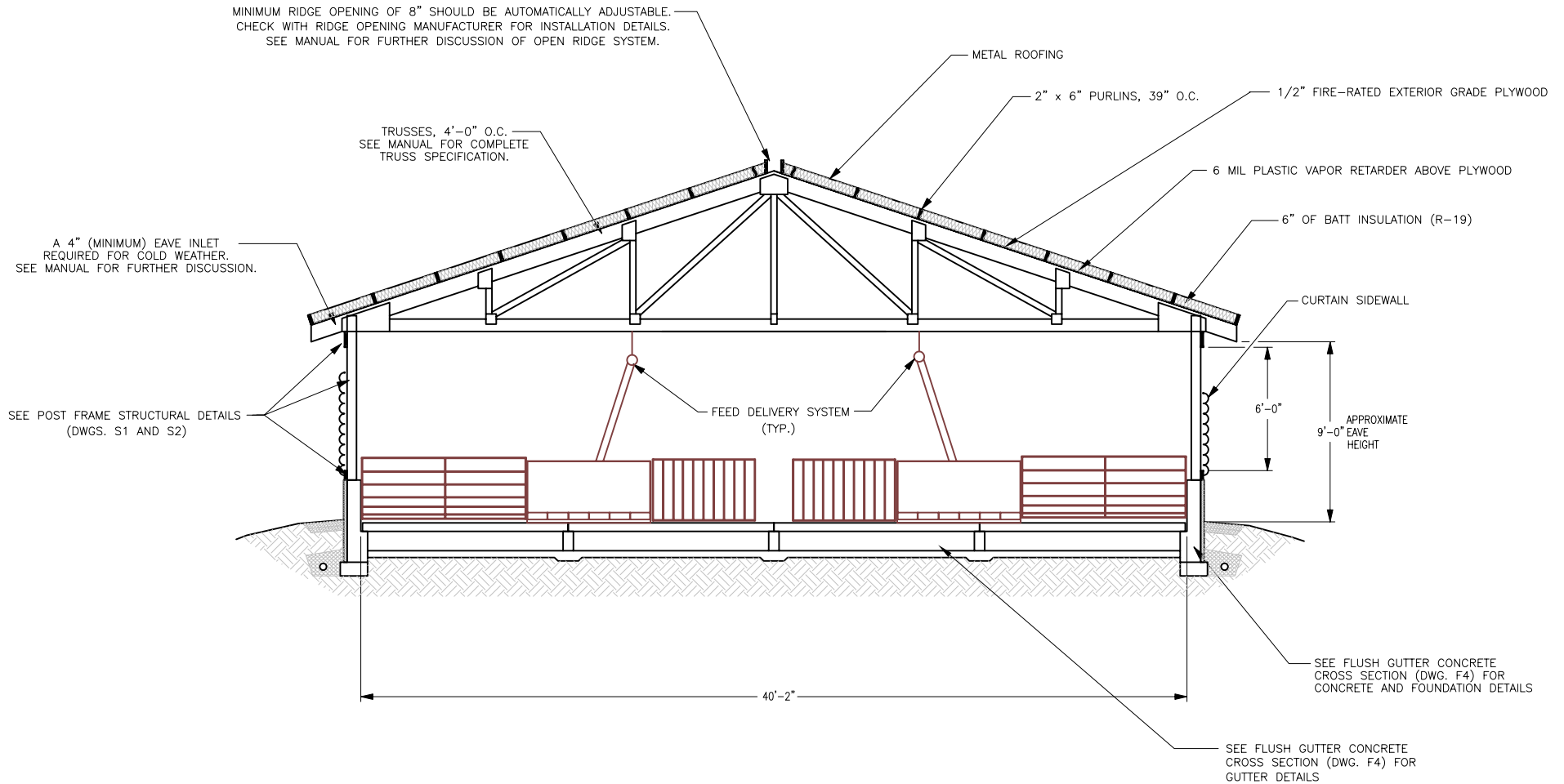
FLUSH BUILDING CROSS SECTION

SCALE: 1/4" = 1'-0"

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| FLUSH BUILDING CROSS SECTION USING INSULATED CEILING | | |
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FLUSH BUILDING WITH OPEN RIDGE SYSTEM



FLUSH BUILDING CROSS SECTION

SCALE: 1/4" = 1'-0"

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FLUSH BUILDING CROSS SECTION USING OPEN RIDGE SYSTEM

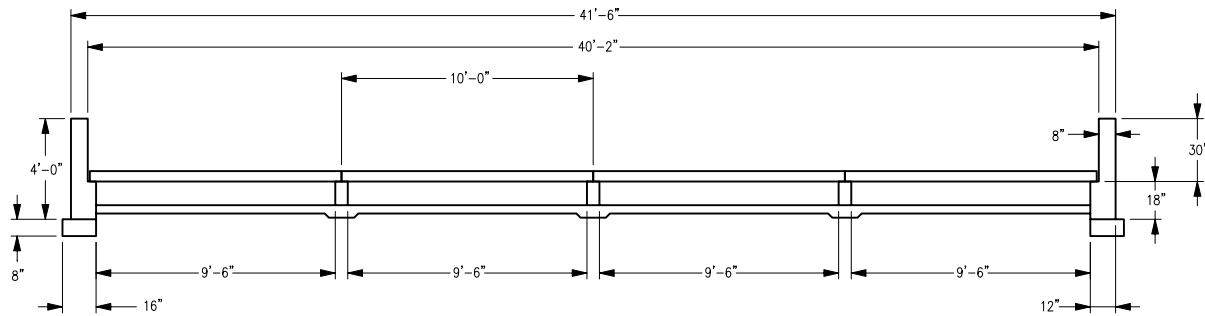
MO-FLEX GROW-FINISH BUILDING PLAN

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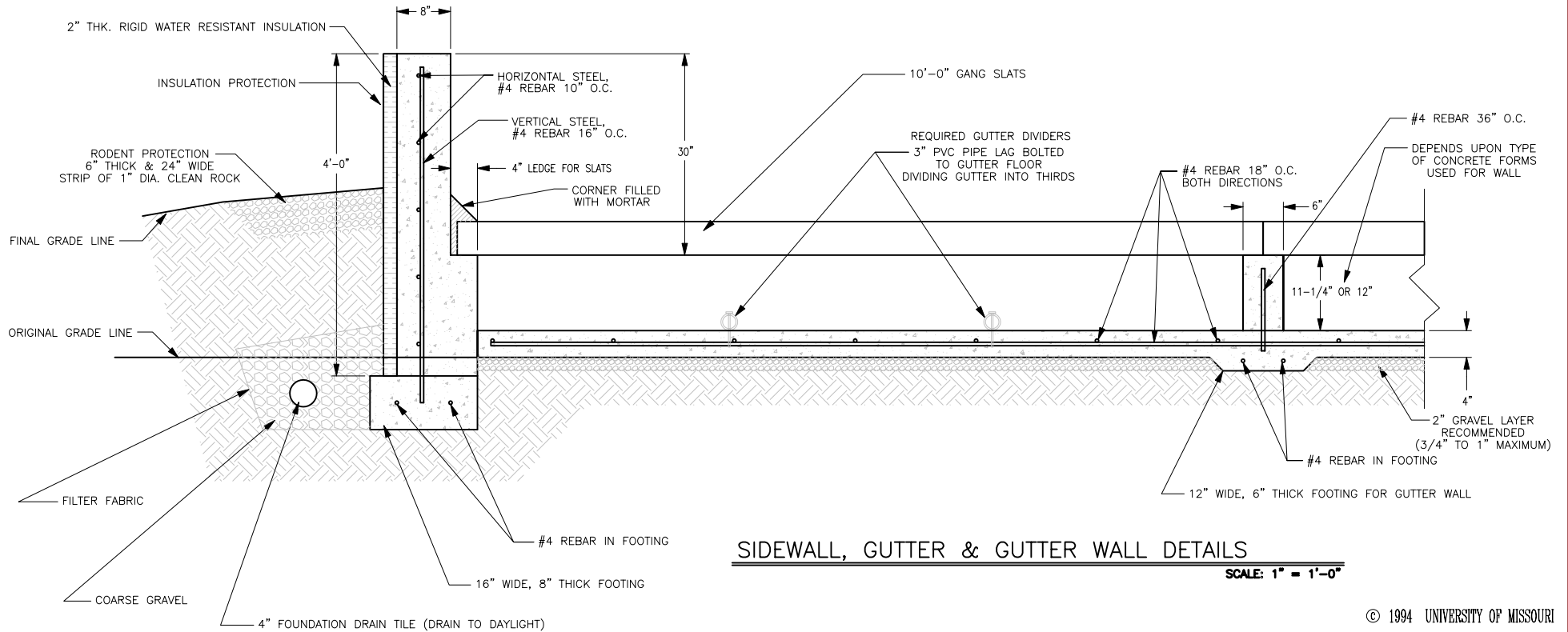
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SCALE: **1/4"=1'-0"** SHEET: **P3 : 4 OF 20**



FLUSH GUTTER CONCRETE CROSS SECTION

SCALE: 1/4" = 1'-0"

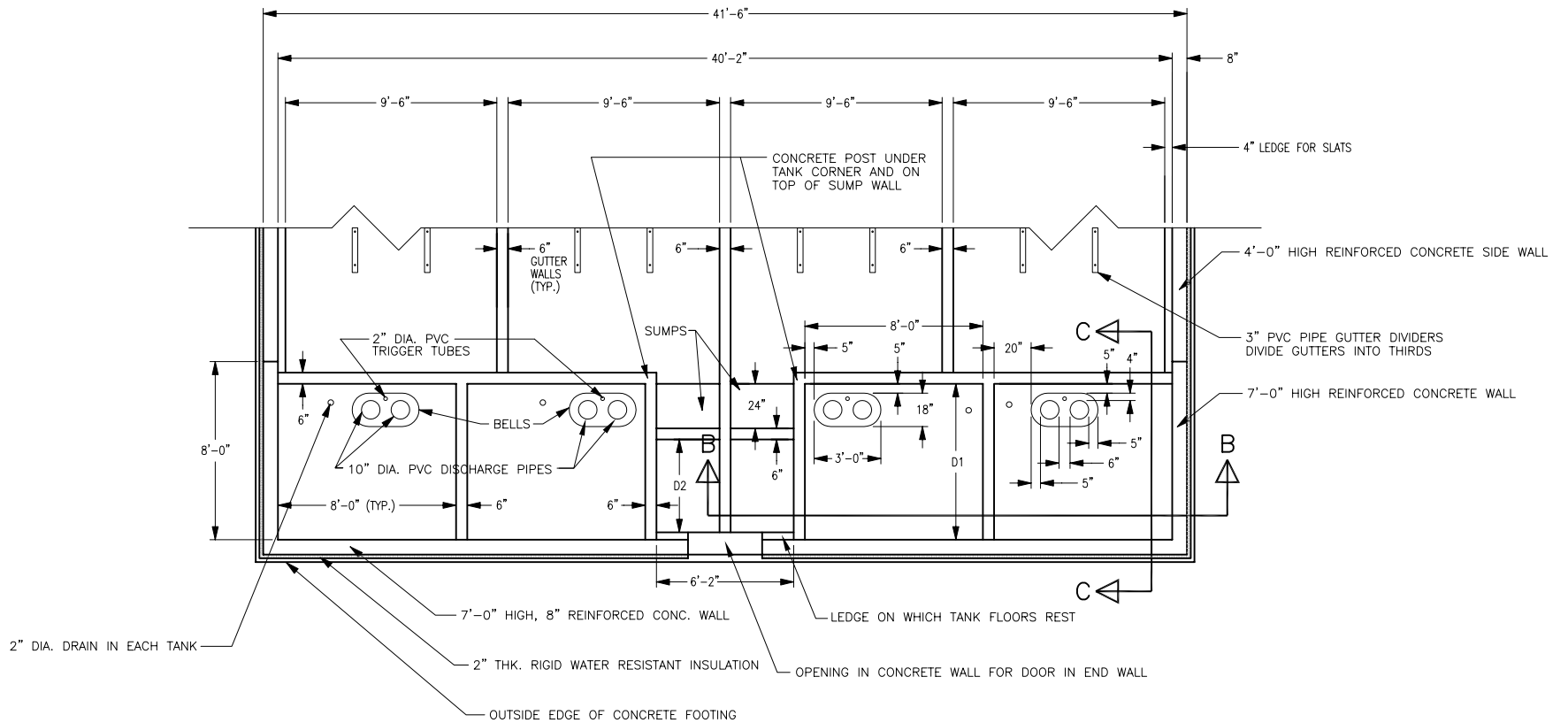


SIDEWALL, GUTTER & GUTTER WALL DETAILS

SCALE: 1" = 1'-0"

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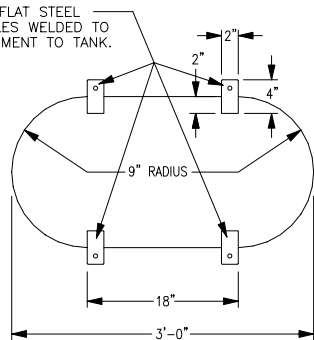
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| FLUSH GUTTER CONCRETE CROSS SECTION | | |
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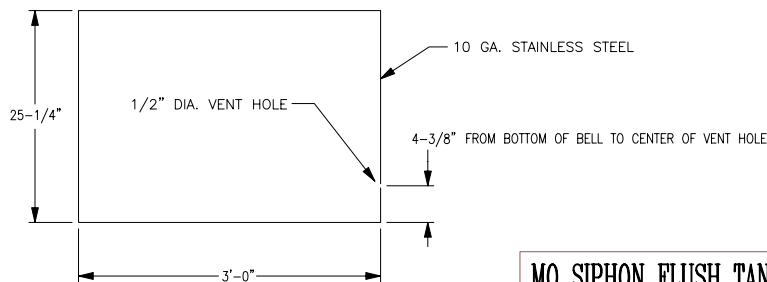
MO SIPHON FLUSH TANK DETAIL

SCALE: 1/4" = 1'-0"

2" x 4" x 1/4" FLAT STEEL WITH 11/16" HOLES WELDED TO BELL FOR ATTACHMENT TO TANK.



TOP VIEW



SIDE VIEW

| GUTTER LENGTH | TANK LENGTH D1 | DIST. FROM FOOTER TO SUMP D2 |
|---------------|----------------|------------------------------|
| UP TO 130' | 4'-0" | 14" |
| 140'-160' | 5'-0" | 26" |
| 170'-200' | 6'-0" | 38" |
| 210'-240' | 7'-0" | 50" |

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TANK BELL CONSTRUCTION DETAILS

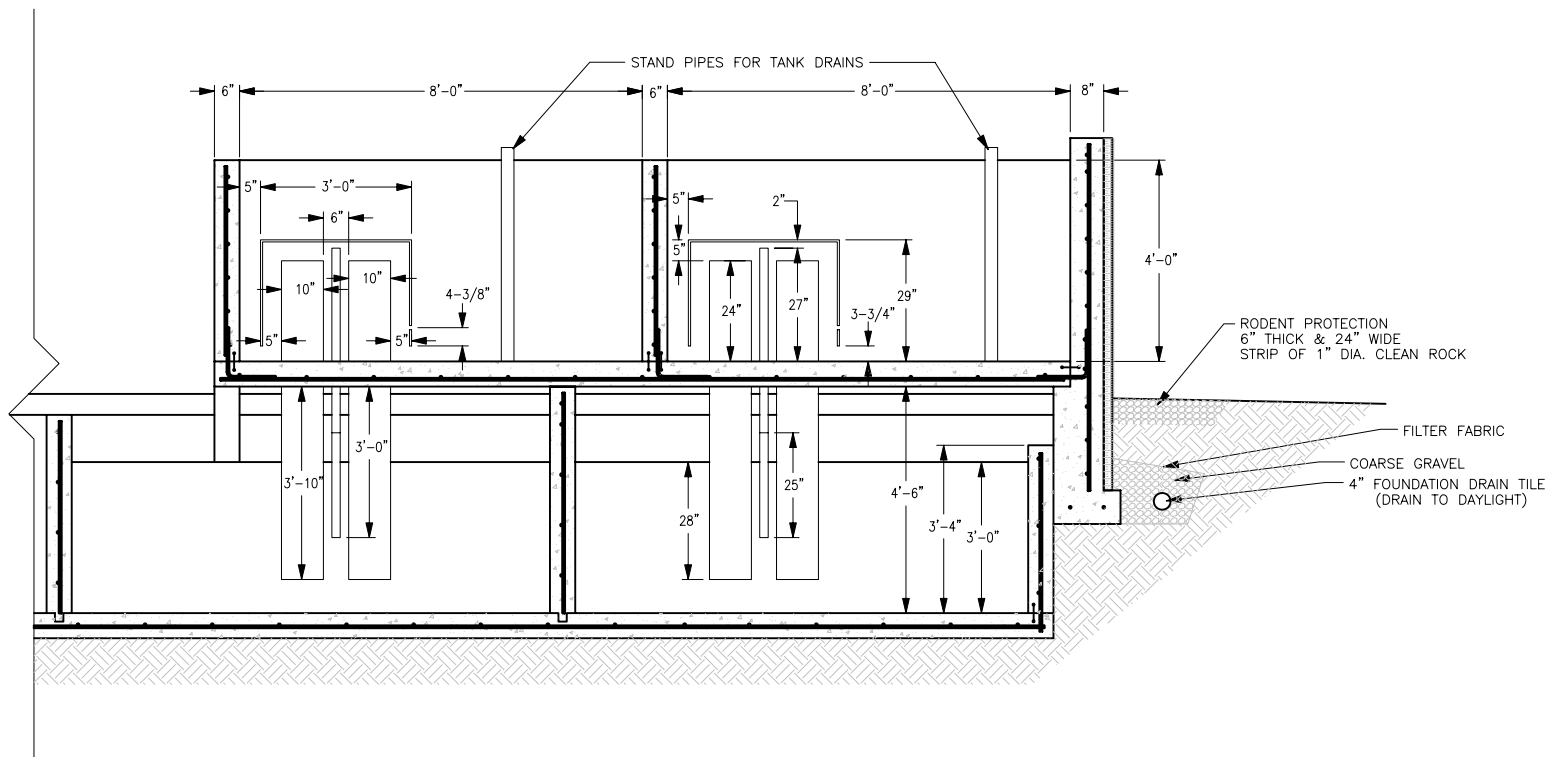
SCALE: 1" = 1'-0"

MO SIPHON FLUSH TANK DETAIL

MO-FLEX GROW-FINISH BUILDING PLAN

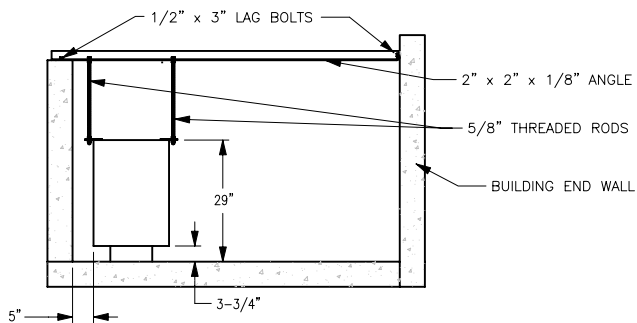
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| SCALE: AS SHOWN | SHEET: P5 : 6 OF 20 | |



B SIPHON FLUSH TANK SECTION
B (SIPHON DETAILS)

SCALE: 1/2" = 1'-0"



BELL SECURING DETAIL

SCALE: 1/2" = 1'-0"

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TANK AND SUMP LONGITUDINAL SECTION (PART 1)

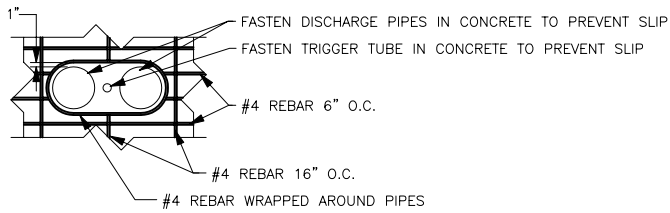
MO-FLEX GROW-FINISH BUILDING PLAN

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SCALE: **1/2"=1'-0"** SHEET **P6 : 7 OF 20**

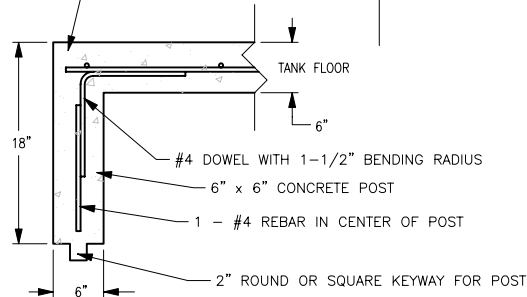
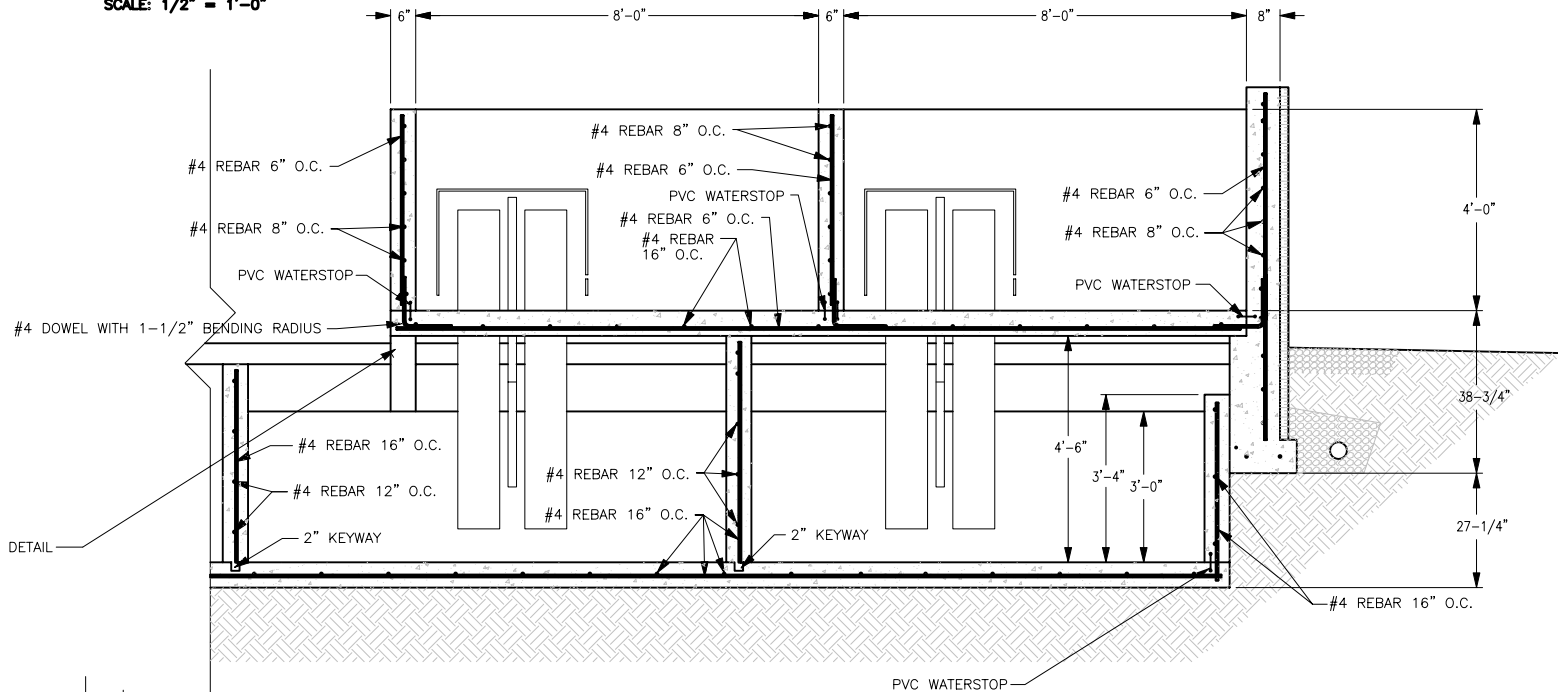


NOTE: ALL STEEL SHOULD BE TIED TOGETHER AT JOINTS.

**STEEL DETAILS
 AROUND PIPING**

SCALE: 1/2" = 1'-0"

NOTE: STAND PIPES FOR TANK DRAINS NEEDED BUT NOT SHOWN HERE.



POST DETAIL

SCALE: 1" = 1'-0"

**B MO SIPHON FLUSH TANK SECTION
 (CONCRETE DETAILS)**

SCALE: 1/2" = 1'-0"

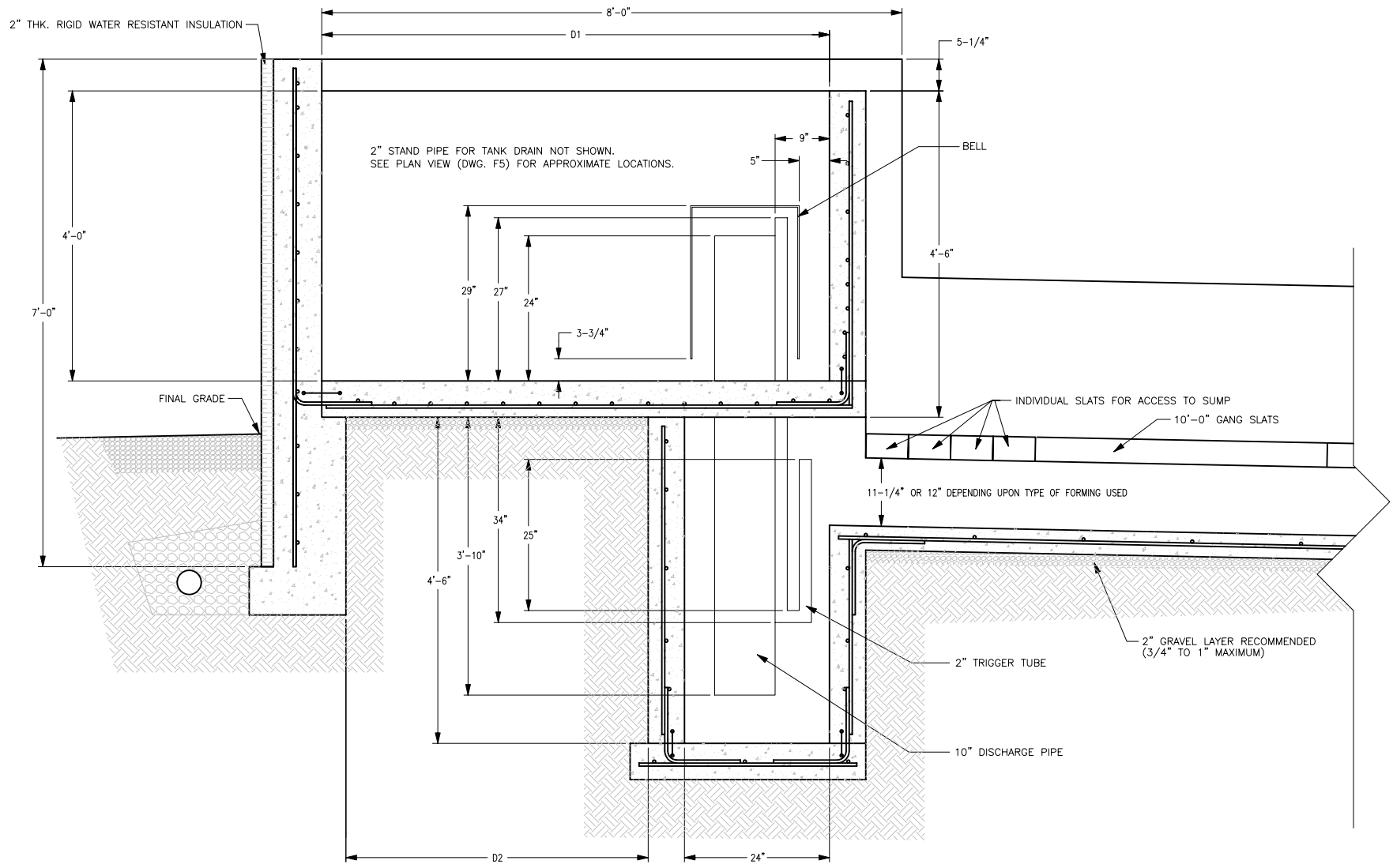
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TANK AND SUMP LONGITUDINAL SECTION (PART 2)

MO-FLEX GROW-FINISH BUILDING PLAN

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| SCALE: AS SHOWN | SHEET F7 : 8 OF 20 | |



(C) MO SIPHON FLUSH TANK SECTION
(SIPHON DETAILS)

SCALE: 1" = 1'-0"

| GUTTER LENGTH | TANK LENGTH D1 | DIST. FROM FOOTER TO SUMP D2 |
|---------------|----------------|------------------------------|
| UP TO 130' | 4'-0" | 14" |
| 140'-160' | 5'-0" | 26" |
| 170'-200' | 6'-0" | 38" |
| 210'-240' | 7'-0" | 50" |

NOTE:
 GUTTER LENGTH IS THE DISTANCE FROM THE FRONT OF THE TANK TO THE FAR END WALL.

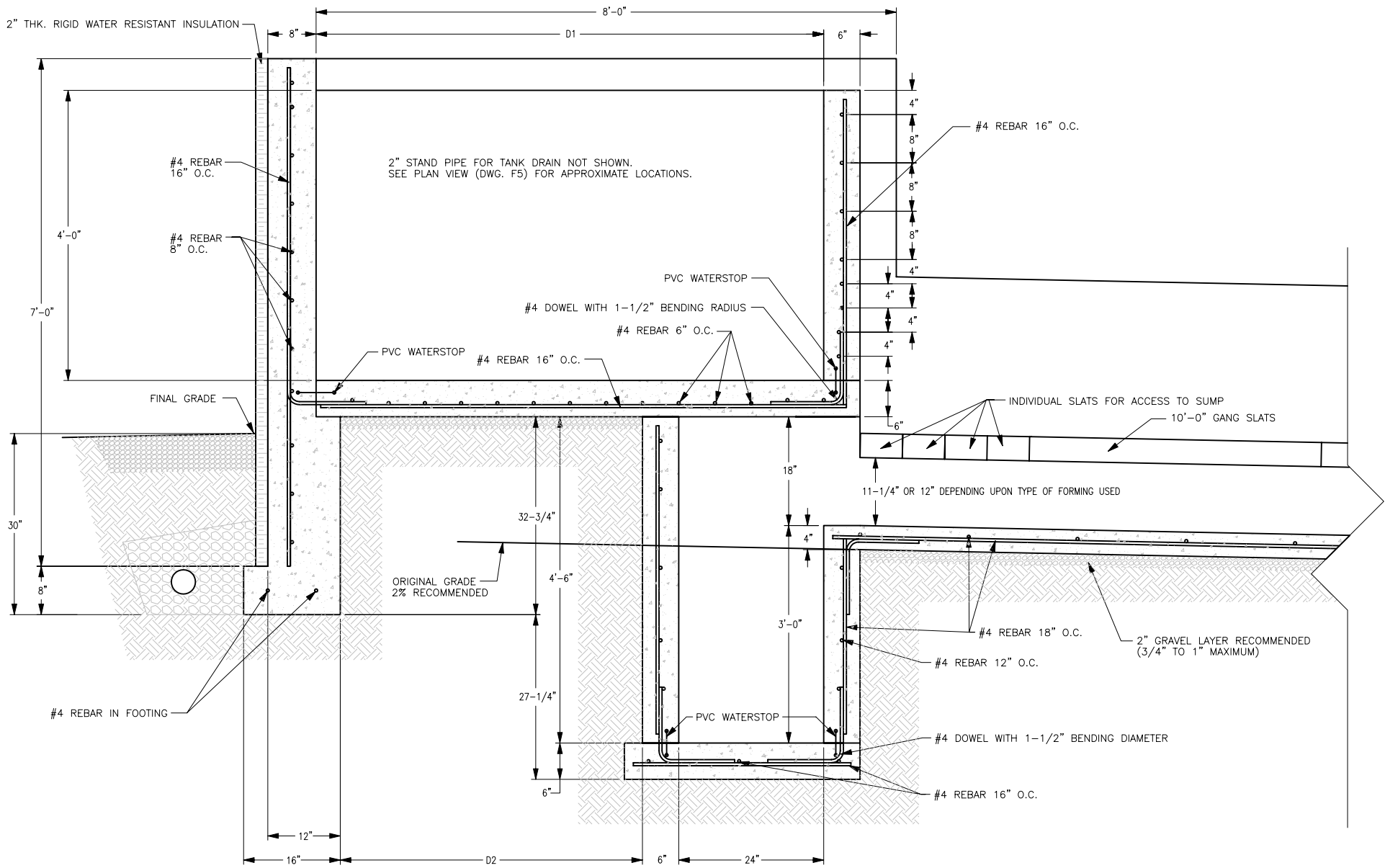
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TANK AND SUMP CROSS SECTION (PART 1)

MO-FLEX GROW-FINISH BUILDING PLAN

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| SCALE: 1"=1'-0" | SHEET PG : 9 OF 20 | |



MO SIPHON FLUSH TANK SECTION
(CONCRETE DETAILS)

SCALE: 1" = 1'-0"

| GUTTER LENGTH | TANK LENGTH D1 | DIST. FROM FOOTER TO SUMP D2 |
|---------------|----------------|------------------------------|
| UP TO 130' | 4'-0" | 14" |
| 140'-160' | 5'-0" | 26" |
| 170'-200' | 6'-0" | 38" |
| 210'-240' | 7'-0" | 50" |

NOTE:
 GUTTER LENGTH IS THE DISTANCE FROM THE FRONT OF THE TANK TO THE FAR END WALL.

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TANK AND SUMP CROSS SECTION (PART 2)

MO-FLEX GROW-FINISH BUILDING PLAN

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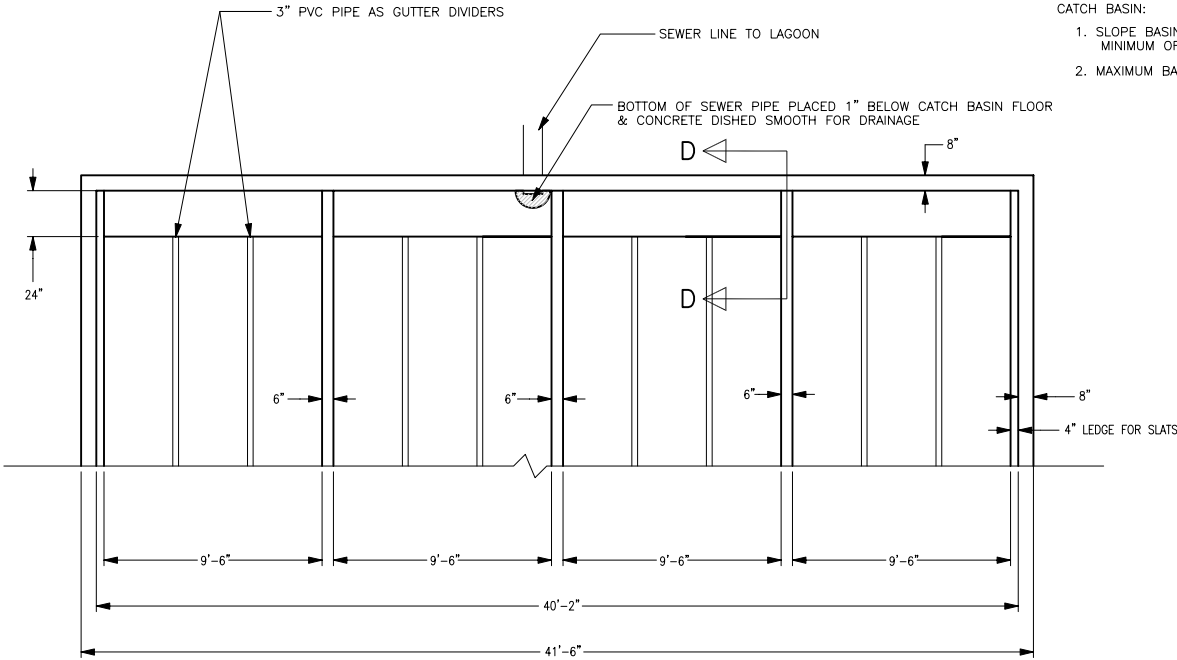
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| SCALE: 1"=1'-0" | SHEET | P9 : 10 OF 20 |

GENERAL NOTES

- SEWER INFORMATION:
1. SEWER LINE SLOPE - 2% .
 2. SEWER LINE CAN BE LOCATED ANYWHERE IN CATCH BASIN TO SIMPLIFY RETURN TO LAGOON.

| SEWER LINE | GUTTER LENGTH |
|------------|---------------|
| 6" | UP TO 100' |
| 8" | 100' TO 160' |
| 10" | 160' TO 200' |
| 12" | 200' TO 240' |

- CATCH BASIN:
1. SLOPE BASIN FLOOR TO SEWER LINE A MINIMUM OF 1/8"/FT.
 2. MAXIMUM BASIN DEPTH IS 24".



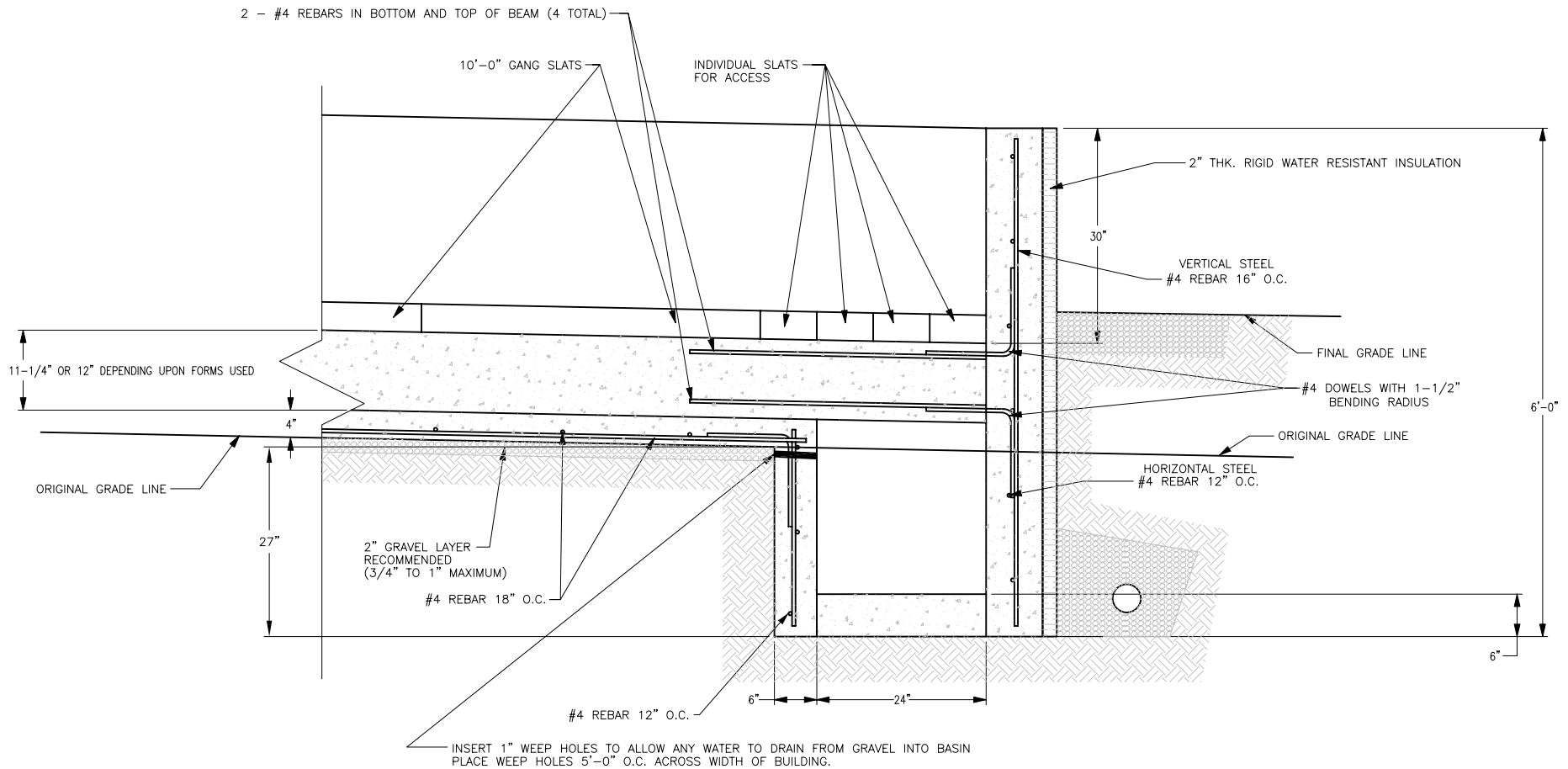
NOTE: SLATS AND EQUIPMENT NOT SHOWN TO ALLOW CONCRETE DETAILS TO BE SHOWN.

CATCH BASIN DETAIL

SCALE: 1/4" = 1'-0"

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| | | |
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| CATCH BASIN END DETAIL | | |
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D CATCH BASIN CROSS SECTION

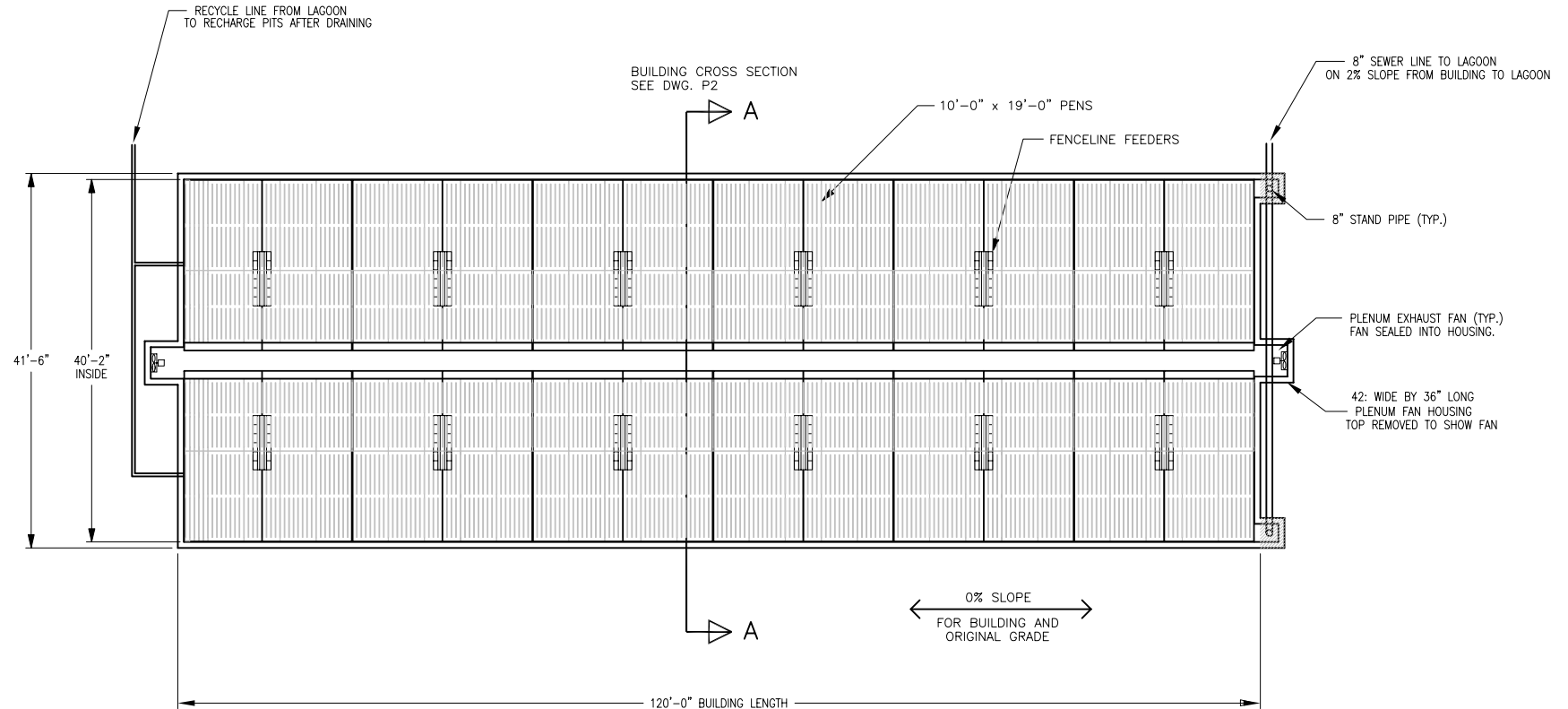
SCALE: 1" = 1'-0"

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| CATCH BASIN CROSS SECTION | | | |
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MO-FLEX GROW-FINISH BUILDING WITH 24 PENS AND PIT RECHARGE SYSTEM UNDER SLATS

REVIEW ACCOMPANYING MANUAL FOR DISCUSSION ON MODIFYING BUILDING SIZE AND HOW TO INCLUDE MULTIPLE ROOMS



PIT RECHARGE BUILDING FLOOR PLAN

SCALE: 1" = 10'-0"

SITE SELECTION AND PREPARATION INFORMATION

1. BUILDING LENGTH SHOULD RUN EAST AND WEST IN MISSOURI.
2. AREA 100' TO THE NORTH AND SOUTH OF BUILDING SHOULD BE CLEAR FOR NATURAL VENTILATION.
3. SOIL BUILDING PAD SHOULD BE ABOUT 10'-0" TO 20'-0" LONGER AND 10'-0" WIDER THAN BUILDING.
4. NO SLOPE ACROSS WIDTH OR LENGTH OF SOIL BUILDING PAD SHOULD EXIST.
5. BUILDING PROXIMITY TO OTHER SWINE BUILDINGS IMPACTS PIG PERFORMANCE AND SHOULD BE CONSIDERED.

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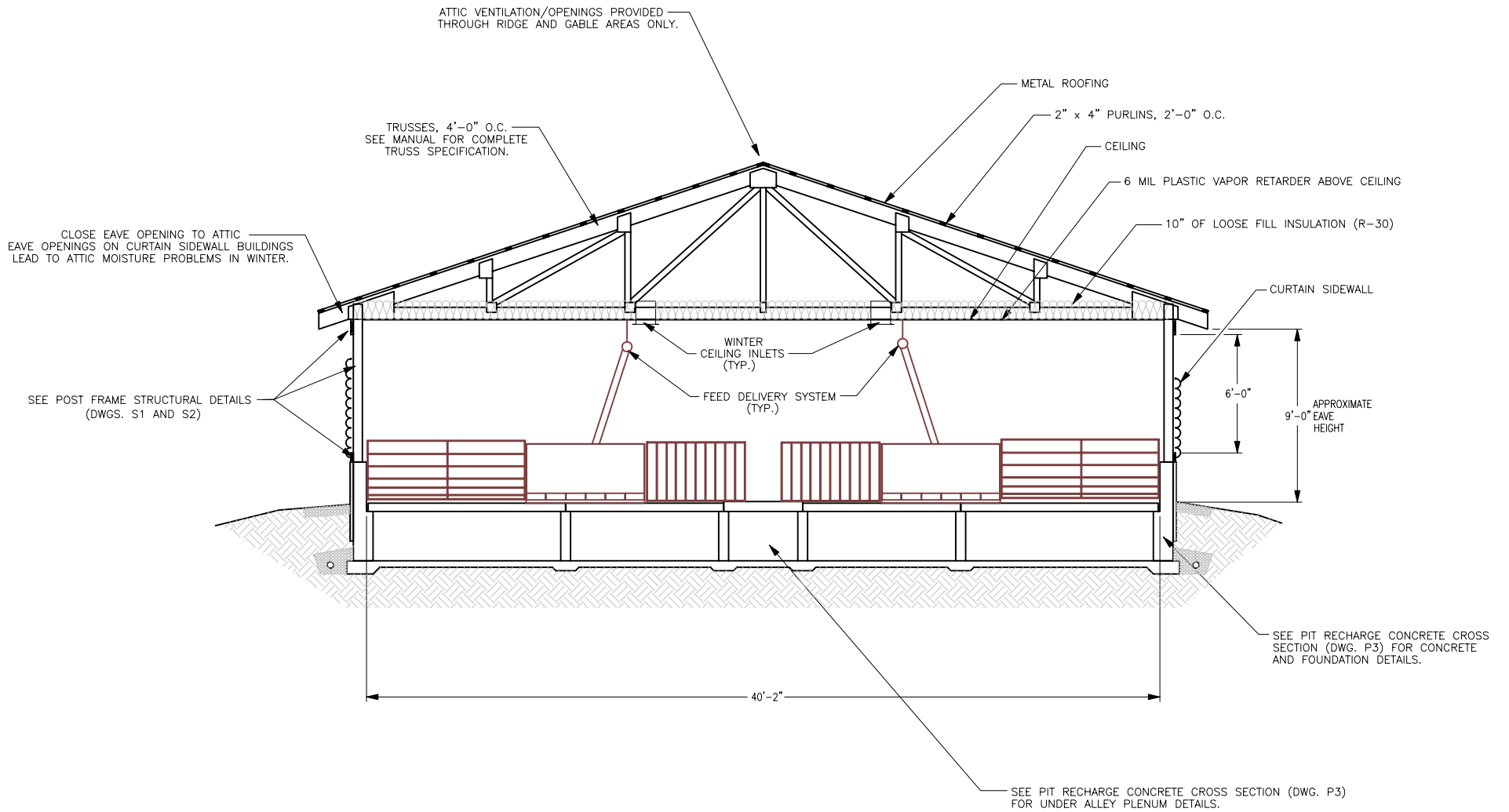
FLOOR PLAN USING PIT RECHARGE MANURE SYSTEM

MO-FLEX GROW-FINISH BUILDING PLAN

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| SCALE: 1"=10'-0" | SHEET | P1 : 13 OF 20 |

PIT RECHARGE BUILDING

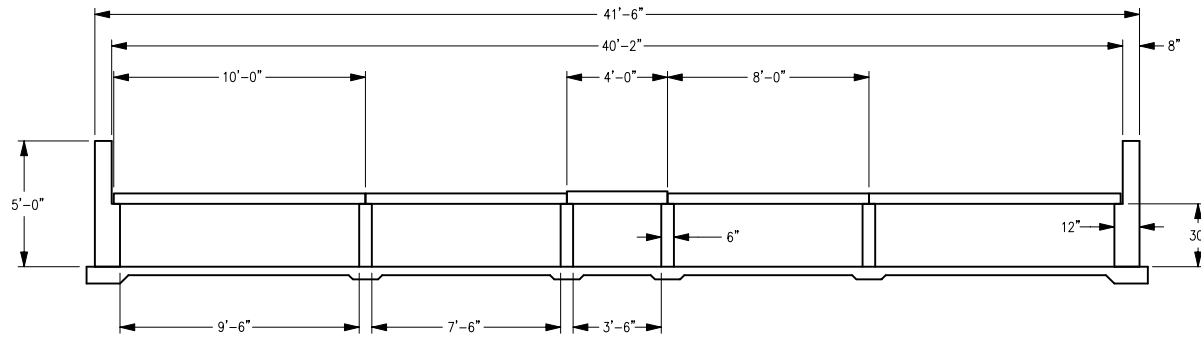


PIT RECHARGE BUILDING CROSS SECTION

SCALE: 1/4" = 1'-0"

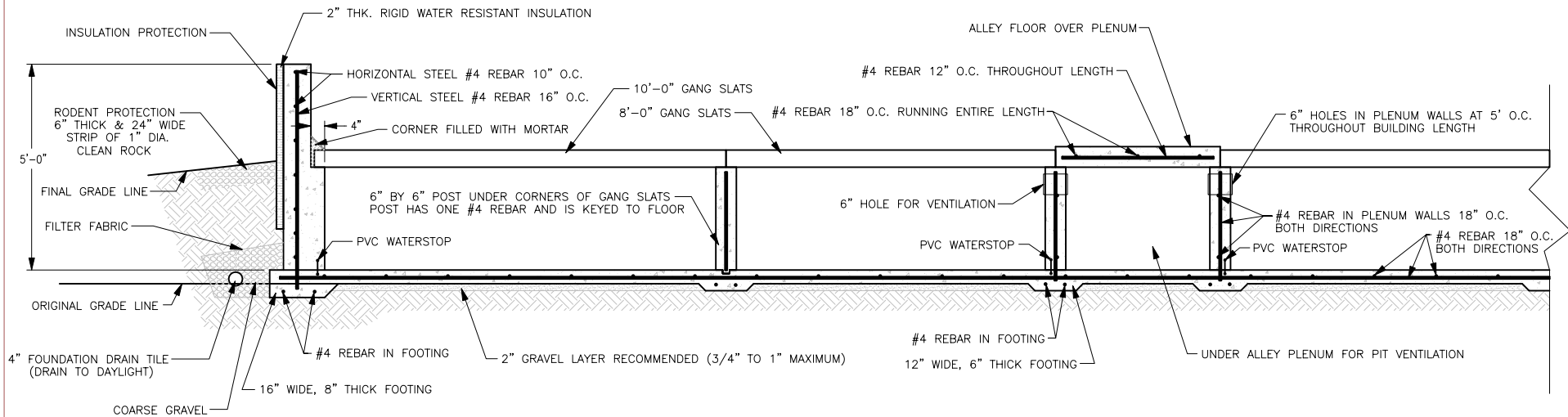
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| | | SCALE: 1/4"=1'-0" | SHEET P2 : 14 OF 20 |



PIT RECHARGE CONCRETE CROSS SECTION

SCALE: 1/4" = 1'-0"



SIDEWALL, RECHARGE PIT & UNDER ALLEY PLENUM DETAILS

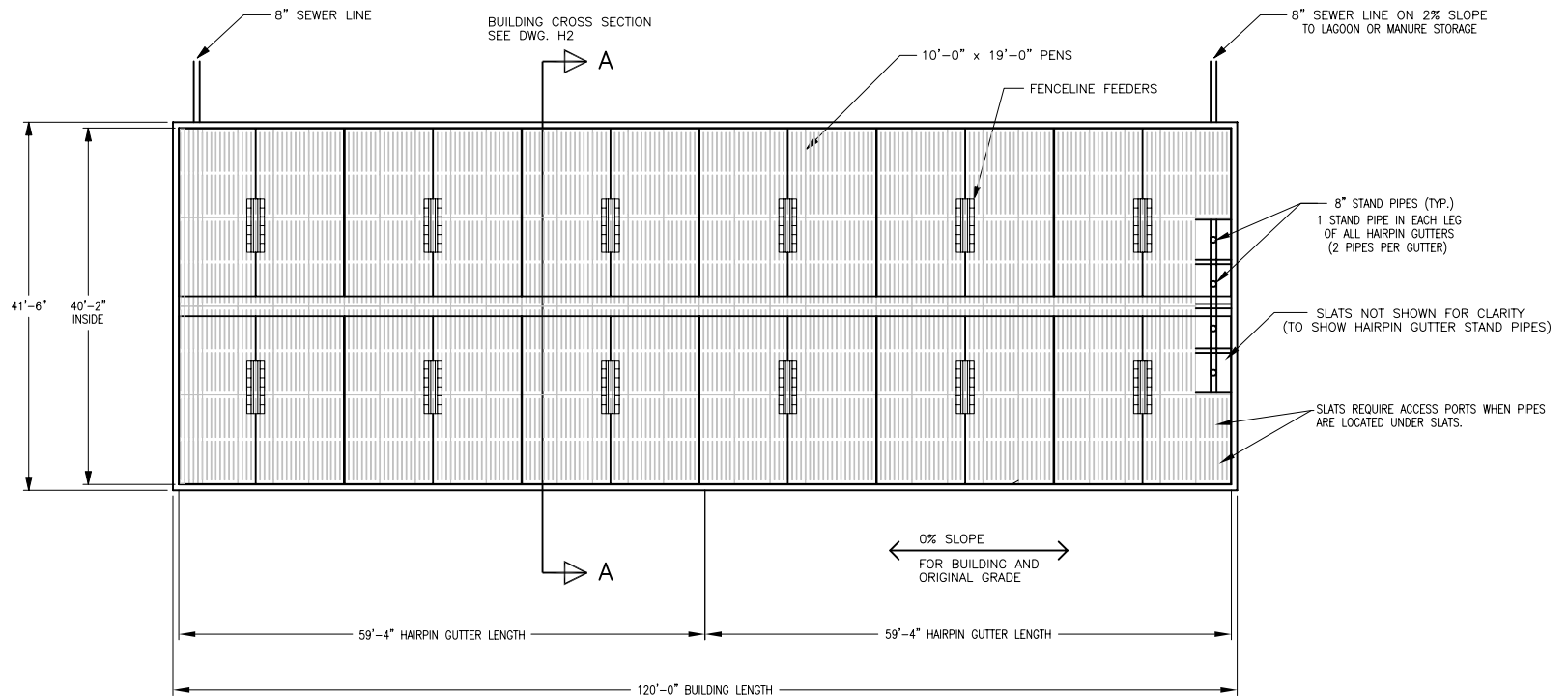
SCALE: 1/2" = 1'-0"

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| | | SCALE: AS SHOWN | SHEET P3 : 15 OF 20 |

MO-FLEX GROW-FINISH BUILDING WITH 24 PENS AND HAIRPIN GUTTER UNDER TOTAL SLATS

REVIEW ACCOMPANYING MANUAL FOR DISCUSSION ON MODIFYING BUILDING SIZE AND HOW TO INCLUDE MULTIPLE ROOMS



HAIRPIN GUTTER BUILDING FLOOR PLAN

SCALE: 1" = 10'-0"

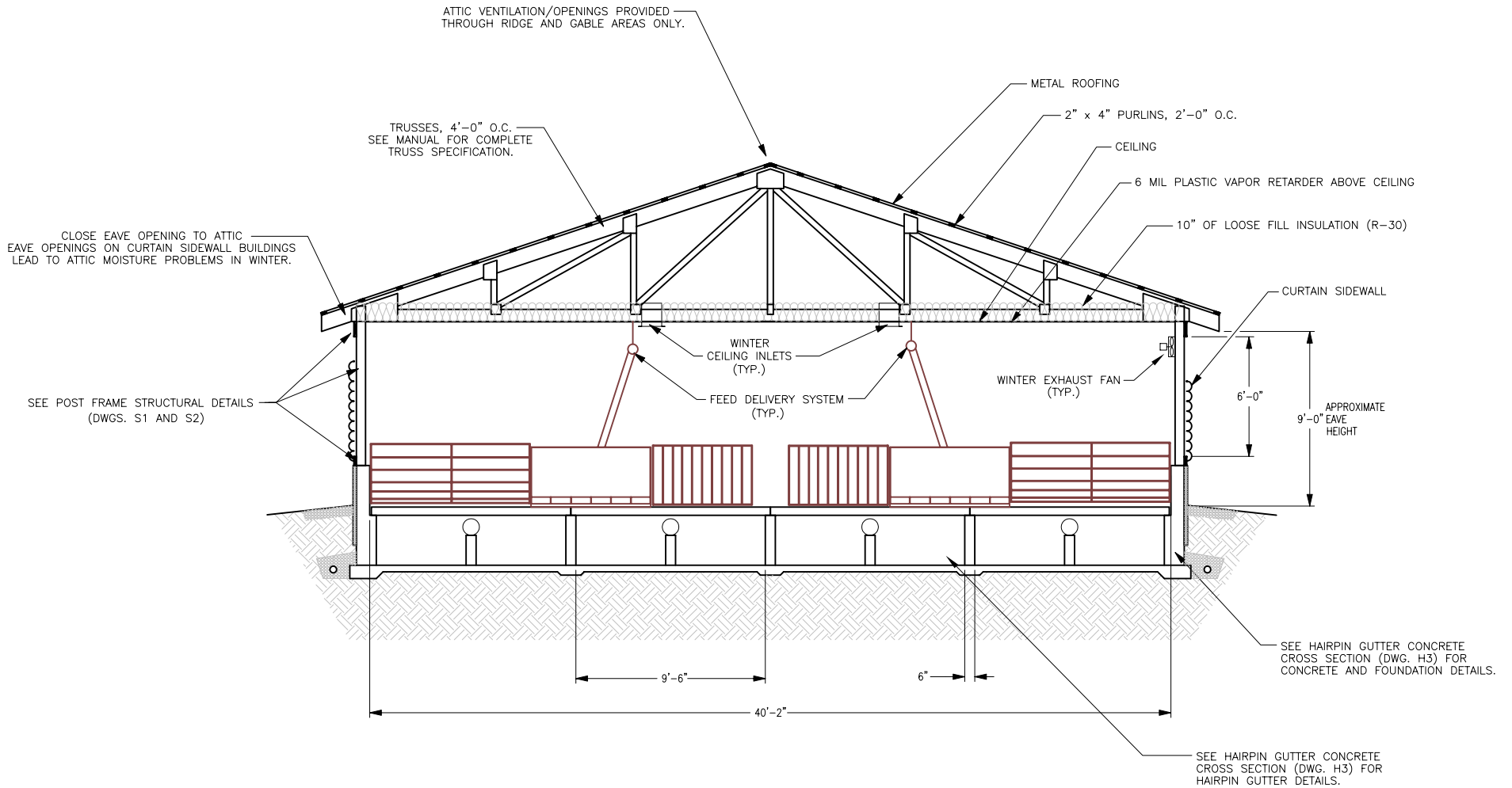
SITE SELECTION AND PREPARATION INFORMATION

1. BUILDING LENGTH SHOULD RUN EAST AND WEST IN MISSOURI.
2. AREA 100' TO THE NORTH AND SOUTH OF BUILDING SHOULD BE CLEAR FOR NATURAL VENTILATION.
3. SOIL BUILDING PAD SHOULD BE ABOUT 10'-0" TO 20'-0" LONGER AND 10'-0" WIDER THAN BUILDING.
4. NO SLOPE ACROSS WIDTH OR LENGTH OF SOIL BUILDING PAD SHOULD EXIST.
5. BUILDING PROXIMITY TO OTHER SWINE BUILDINGS IMPACTS PIG PERFORMANCE AND SHOULD BE CONSIDERED.

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| FLOOR PLAN USING HAIRPIN GUTTER LIQUID MANURE SYSTEM | | | |
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| MO-FLEX GROW-FINISH BUILDING PLAN | | DESIGNED BY: JMZ | DRAWN BY: JMZ CHECKED BY: JMZ |
| COOPERATIVE EXTENSION SERVICE AGRICULTURAL ENGINEERING DEPARTMENT-UNIVERSITY OF MISSOURI-COLUMBIA UNIVERSITY EXTENSION - COMMERCIAL AGRICULTURE PROGRAM UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING | | PLAN NO.: M01-726-94C1 | DATE: 8/94 |
| | | SCALE: 1"=10'-0" | SHEET HI : 16 OF 20 |

HAIRPIN GUTTER BUILDING

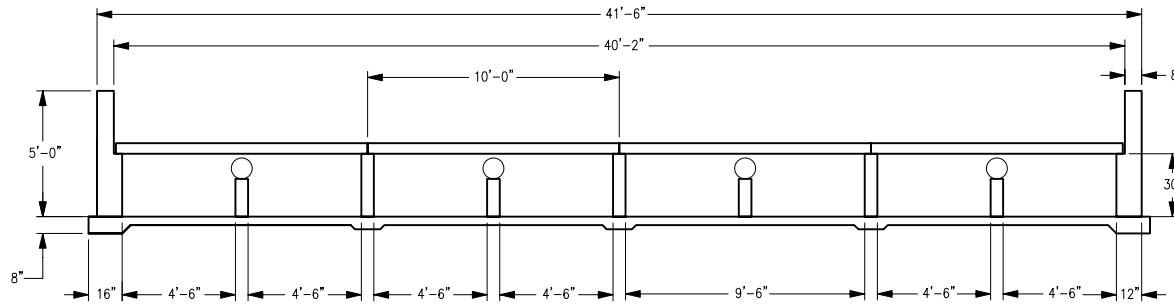


HAIRPIN GUTTER BUILDING CROSS SECTION

SCALE: 1/4" = 1'-0"

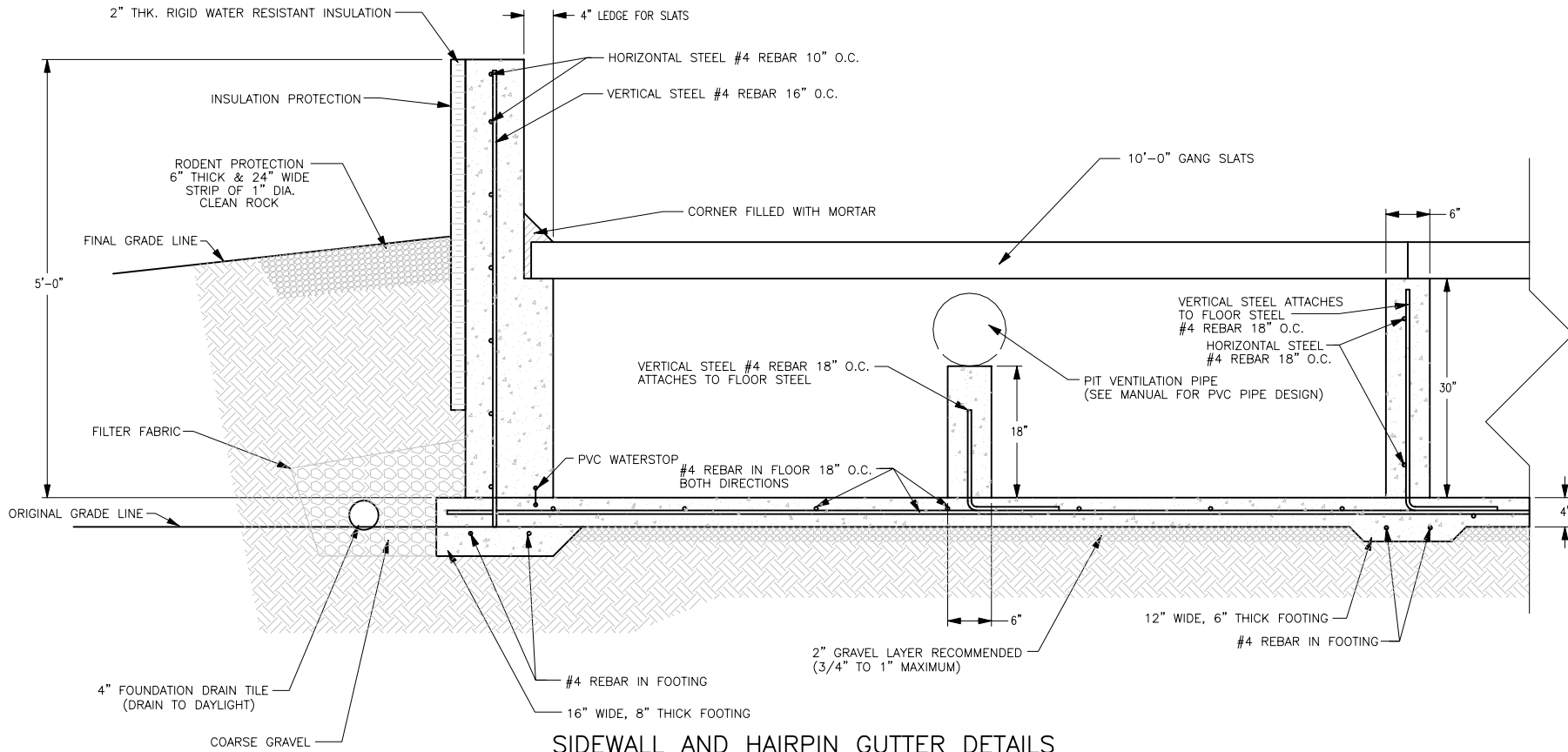
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| | | | |
|--|----------------------|-------------------------------|----------------------------|
| HAIRPIN GUTTER BUILDING CROSS SECTION | | | |
| MO-FLEX GROW-FINISH BUILDING PLAN | | | |
| DESIGNED BY: JMZ | DRAWN BY: JMZ | CHECKED BY: JMZ | |
| COOPERATIVE EXTENSION SERVICE AGRICULTURAL ENGINEERING DEPARTMENT-UNIVERSITY OF MISSOURI-COLUMBIA UNIVERSITY EXTENSION - COMMERCIAL AGRICULTURE PROGRAM UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING | | PLAN NO.: M01-726-94C1 | DATE: 8/94 |
| | | SCALE: 1/4"=1'-0" | SHEET H2 : 17 OF 20 |



HAIRPIN GUTTER CONCRETE CROSS SECTION

SCALE: 1/4" = 1'-0"

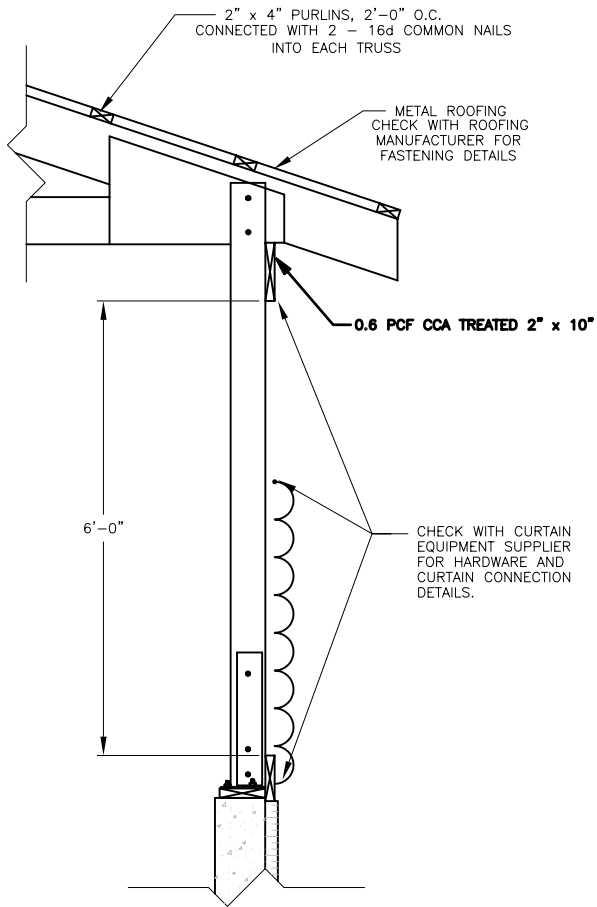


SIDEWALL AND HAIRPIN GUTTER DETAILS

SCALE: 1" = 1'-0"

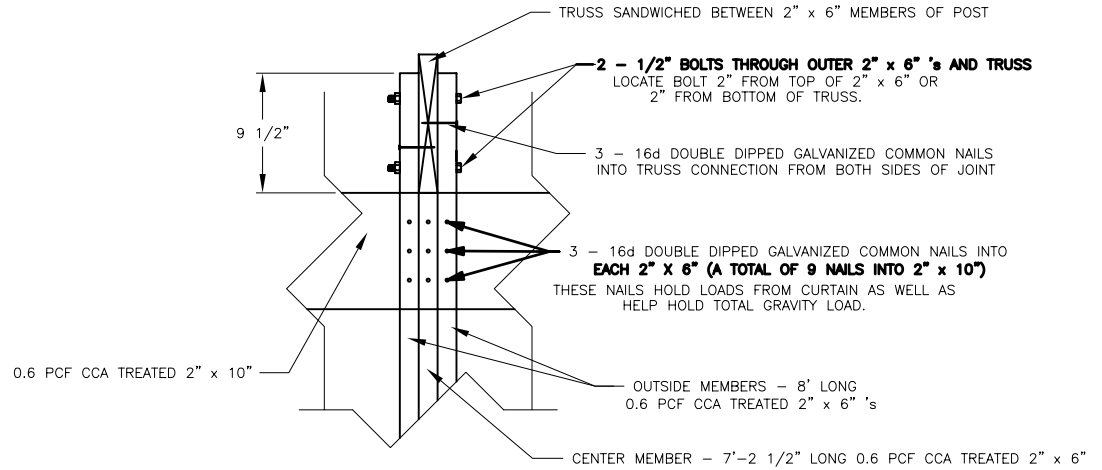
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| | | |
|--|----------------------------|--|
| HAIRPIN GUTTER CONCRETE CROSS SECTION | | |
| MO-FLEX GROW-FINISH BUILDING PLAN | | |
| DESIGNED BY: JMZ | DRAWN BY: JMZ/DDW | CHECKED BY: JMZ |
| COOPERATIVE EXTENSION SERVICE AGRICULTURAL ENGINEERING DEPARTMENT-UNIVERSITY OF MISSOURI-COLUMBIA UNIVERSITY EXTENSION - COMMERCIAL AGRICULTURE PROGRAM UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING | | PLAN NO.: M01-726-94C1 DATE: 8/94 |
| SCALE: AS SHOWN | SHEET H3 : 18 OF 20 | |



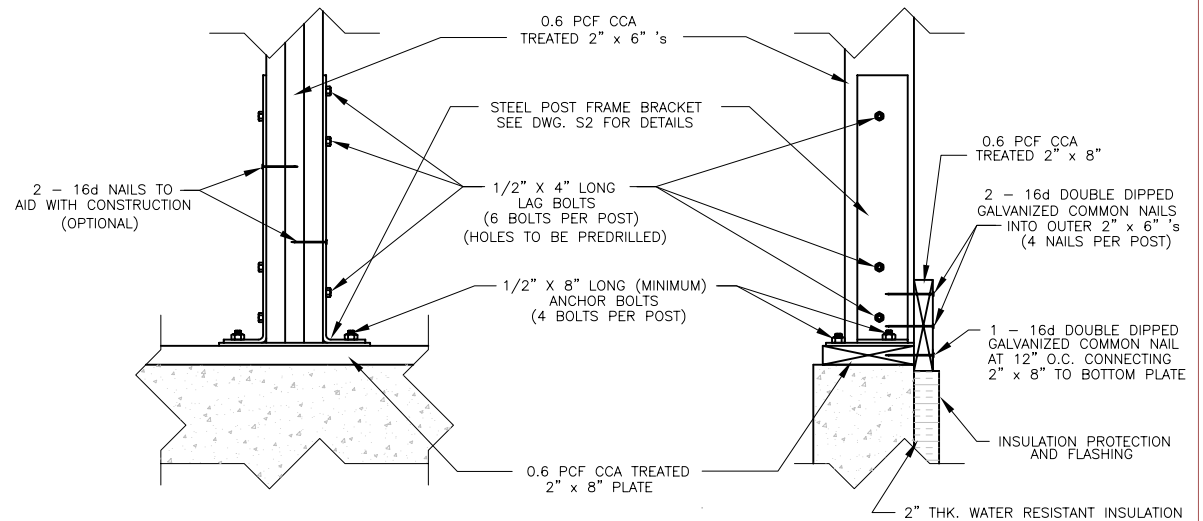
POST FRAME WALL SECTION

SCALE: 3/4" = 1'-0"



TRUSS CONNECTION DETAIL

SCALE: 1 1/2" = 1'-0"



POST BASE CONNECTION DETAILS

SCALE: 1 1/2" = 1'-0"

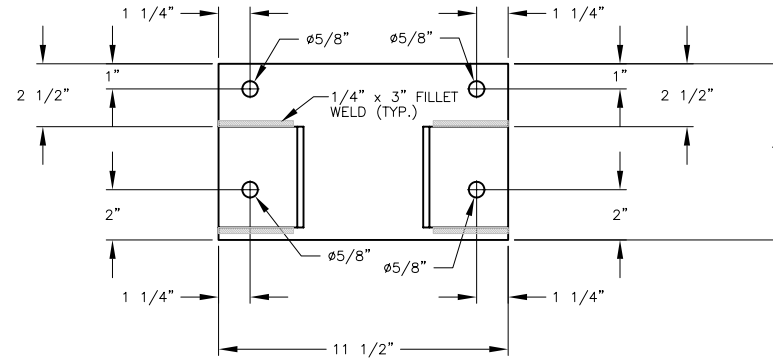
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POST FRAME STRUCTURAL DETAILS

MO-FLEX GROW-FINISH BUILDING PLAN

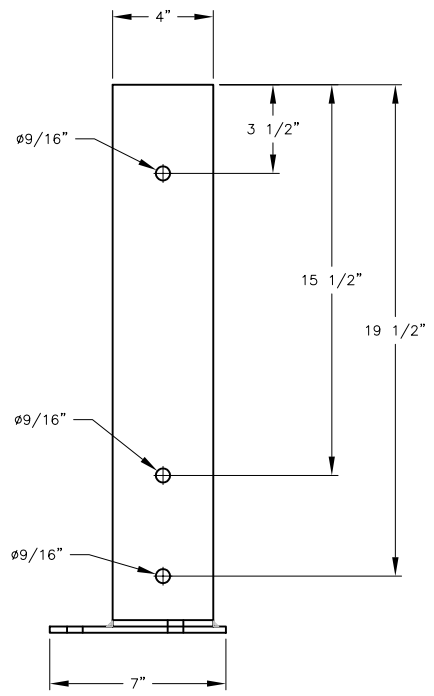
COOPERATIVE EXTENSION SERVICE
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UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING

| | | |
|----------------------------------|-------------------------------|---------------------------|
| DESIGNED BY: JMZ | DRAWN BY: DDW/JMZ | CHECKED BY: JMZ |
| PLAN NO.: M01-726-94C1 | DATE: 8/94 | |
| SCALE: AS SHOWN | SHEET S1 : 19 OF 20 | |



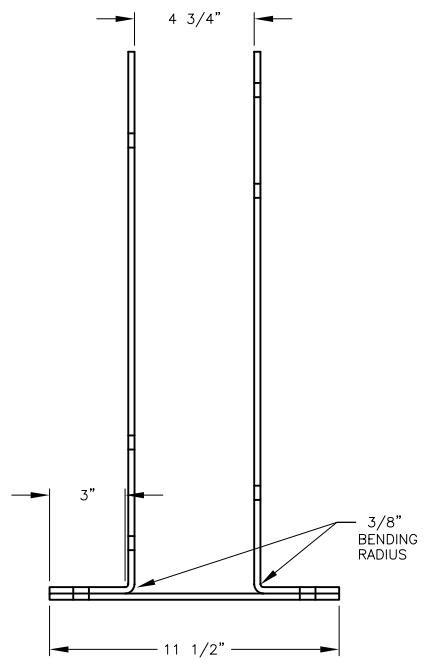
TOP VIEW

SCALE: 3" = 1'-0"



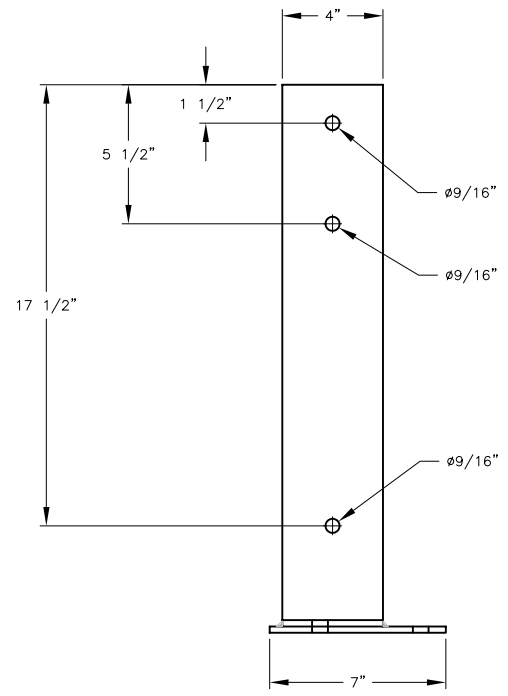
LEFT SIDE VIEW

SCALE: 3" = 1'-0"



FRONT VIEW

SCALE: 3" = 1'-0"



RIGHT SIDE VIEW

SCALE: 3" = 1'-0"

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GENERAL NOTES

1. BOTTOM STEEL PLATE - 1/4" x 7" FLAT PLATE A36 STEEL
2. VERTICAL STEEL PIECES - 1/4" x 4" FLAT PLATE A36 STEEL
3. 1/4" FILLET WELDS USING E 60 XX ELECTRODES

POST FRAME STEEL BRACKET

MO-FLEX GROW-FINISH BUILDING PLAN

COOPERATIVE EXTENSION SERVICE
 AGRICULTURAL ENGINEERING DEPARTMENT-UNIVERSITY OF MISSOURI-COLUMBIA
 UNIVERSITY EXTENSION - COMMERCIAL AGRICULTURE PROGRAM
 UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING

DESIGNED BY: **JMZ** DRAWN BY: **JMZ** CHECKED BY: **JMZ**

PLAN NO.: **M01-726-94C1** DATE: **8/94**

SCALE: **3"=1'-0"** SHEET **S2 : 20 OF 20**