



REGULAR / A-FRAME 24'-0" WIDE CARPORT STYLE BUILDINGS

DESIGN NOTES

- ALL CONSTRUCTION SHALL BE PROVIDED IN ACCORDANCE WITH IBC 2015, OSHA, AISC 360, AISI 100, ASCE 7-10, AWS D1.3 CODES AND ALL APPLICABLE LOCAL REQUIREMENTS.
- BASE CONNECTIONS SHALL BE PROVIDED AS SHOWN ON FOUNDATION DETAILS SHEET.
- ALL MATERIALS IDENTIFIED BY MANUFACTURER NAME MAY BE SUBSTITUTED WITH MATERIAL EQUAL OR EXCEEDING ORIGINAL.
- ALL SHOP CONNECTIONS SHALL BE WELDED CONNECTIONS.
- ALL FIELD CONNECTIONS SHALL BE #12 (1/4"x1") SDS (ESR-2196 OR EQ).
- STEEL SHEATHING SHALL BE 29GA. CORRUGATED GALV. OR PAINTED STEEL - MAIN RIB HT. 3/4" (FY=80KSI) OR EQ.
- ALL STRUCTURAL LIGHT GAUGE TUBING AND CHANNELS SHALL BE GRADE 50 STEEL.
- STRUCTURAL TUBE TS2 1/2"x2 1/2" - 14GA. IS EQUIVALENT TO TS2 1/4"x2 1/4" - 12GA AND EITHER ONE MAY BE USED IN LIEU OF THE OTHER.

DESIGN CRITERIA

- PREVAILING CODE: MBC 2015 (IBC 2015)
USE GROUP: U (CARPORTS, BARNs)
- DEAD LOAD (D) $D = 4$ PSF
 - ROOF LIVE/SNOW LOAD (Lr)
 $L_r = 20 - 61$ PSF
(AS PER SNOW LOAD SEE TABLE 4)
 - SNOW LOAD (S)
GROUND SNOW LOAD $P_g = 20 - 90$ PSF
IMPORTANCE FACTOR $I_s = 0.8$
THERMAL FACTOR $C_t = 1.2$
EXPOSURE FACTOR $C_e = 1.0$
ROOF SLOPE FACTOR $C_s = 1.0$
 - WIND LOAD (W)
BASIC WIND SPEED $V_{ULT} = 105 - 180$ MPH
EXPOSURE C
 - SEISMIC LOAD (E)
DESIGN CATEGORY D
IMPORTANCE FACTOR $I_e = 1.00$

LOAD COMBINATIONS:

- $D + (L_r \text{ OR } S)$
- $D + (0.6W \text{ OR } \pm 0.7E)$
- $D + 0.75 (0.6W \text{ OR } \pm 0.7E) + 0.75 (L_r \text{ OR } S)$
- $0.6D + (0.6W \text{ OR } \pm 0.7E)$

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DRAWING INFORMATION

PROJECT: 24'-0" WIDE BUILDINGS

LOCATION: STATE OF MICHIGAN

PROJECT NO.: 034-17-1682

SHEET TITLE:

COVER SHEET

SHEET NO.: 1 / 11

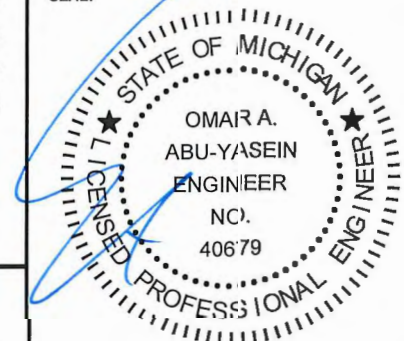
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LEGAL INFORMATION

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SEAL:



CUSTOMER INFORMATION

OWNER:
ADDRESS:

DESIGN LOADS

GROUND SNOW:

ROOF LIVE LOAD:

BASIC WIND SPEED:

BUILDING INFORMATION

WIDTH:

LENGTH:

HEIGHT:

FRAME TYPE: ☐ A-FRAME
☐ REGULAR

☐ FULL
☐ PARTIAL
ENCLOSURE TYPE: ☐ OPEN

CERTIFICATION VALIDITY NOTICE

DATE OF EXPIRATION: **OCT 19 2018**

CERTIFICATION ON THESE DRAWINGS IS VALID FOR ONE YEAR FROM DATE OF ISSUE

DATE EXPIRES: **10/31/2019**

DATE SIGNED: **OCT 18 2017**

TABLE 2.1: MEMBER PROPERTIES

NO.	LABEL	PROPERTY	DETAIL NO.
1	COLUMN POST	2.5" X 2.5" X 14GA TUBE	1
2	ROOF BEAM	2.5" X 2.5" X 14GA TUBE	1
3	BASE RAIL	2.5" X 2.5" X 14GA TUBE	1
4	PEAK BRACE	2.5" X 2.5" 14GA CHANNEL	4
5	KNEE BRACES	2.5" X 1.5" 14GA CHANNEL	4
6	CONNECTOR SLEEVE	2.25" X 2.25" X 12GA TUBE	2
7	BASE ANGLE	2.5" X 2.5" X 3" LG. 1/4" ANGLE	10
8	PURLIN	4.25" X 1.5" X 18GA / 14GA HAT CHANNEL	5
9	GIRT	4.25" X 1.5" X 18GA / 14GA HAT CHANNEL	5
9A	OPT. END WALL GIRT	2.5" X 1.5" 14GA CHANNEL	1
10	SHEATHING	29 GA CORRUGATED SHEET	8
11	END WALL POST	2.5" X 2.5" X 14GA TUBE	1
12	DOOR POST	2.5" X 2.5" X 14GA TUBE	1
13	SINGLE HEADER	2.5" X 2.5" X 14GA TUBE	1
14	DOUBLE HEADER	DBL. 2.5" X 2.5" X 14GA TUBE	1
15	SERVICE DOOR / WINDOW FRAMING	2.5" X 2.5" X 14GA TUBE	1
16	ANGLE BRACKET	2" X 2" X 2" LG. 14GA ANGLE	7
17	STRAIGHT BRACKET	2" X 2" X 4" LG. 14GA PLATE	6
18	PB SUPPORT	2.5" X 2.5" X 14GA TUBE	1
19	DIAGONAL BRACE	2" X 2" X 14 GA TUBE	3
20	GABLE BRACE	2" X 2" X 14 GA TUBE	3
21	DB BRACKET	2.5" X 2.5" X 6" LG. 14GA ANGLE	9
22	TRUSS SPACER	2.5" X 2.5" X 14GA TUBE	1
23	ALL FASTENERS	#12 X 3/4" SELF-DRILL SCREWS (ESR-2196 OR EQ) W/ NEOPRENE/STEEL WASHER	

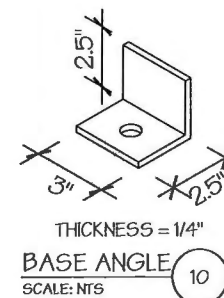
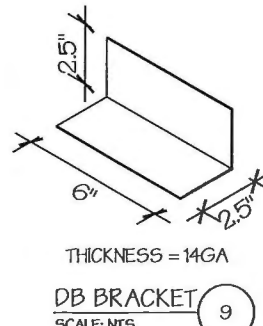
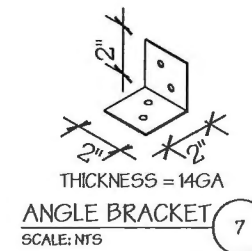
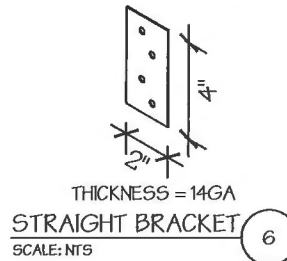
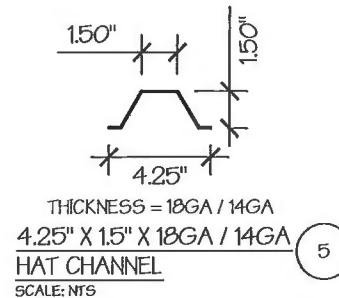
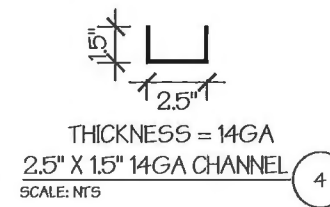
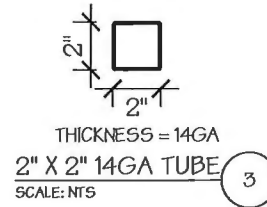
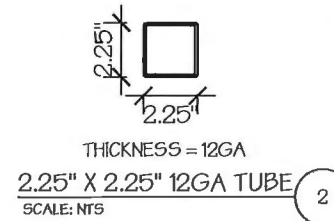
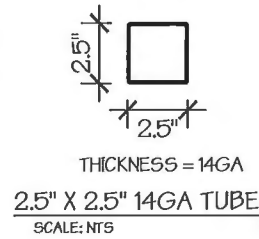
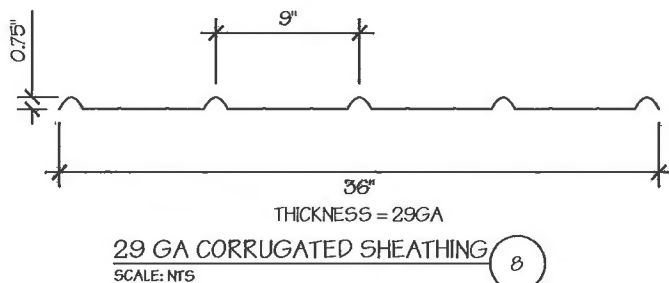
TABLE 2.2: SHEATHING FASTENER SCHEDULE

LOCATION	CORNER PANELS	SIDE LAPS	EDGE LAPS	ELSEWHERE
SPACING	6" C/C	MIN. 1	4" C/C	8" C/C

FASTENER TYPE: #12X1" SELF-DRILL SCREWS (ESR-2196 OR EQ) W/ NEOPRENE/STEEL WASHER

TABLE 2.3: GAUGE THICKNESS

GAUGE	29	18	14	12
THICKNESS (IN)	0.015	0.049	0.083	0.109



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DRAWING INFORMATION

PROJECT: 24'-0" WIDE BUILDINGS

LOCATION: STATE OF MICHIGAN

PROJECT NO.: 034-17-1682

SHEET TITLE:

SCHEDULES &
MEMBER SECTIONS

SHEET NO.: 2 / 11

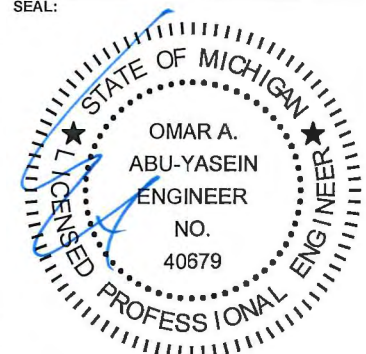
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SHEET TITLE:

FRAME SECTIONS & DETAILS

SHEET NO.: 3-A / 11

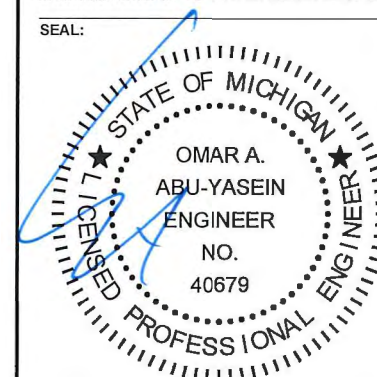
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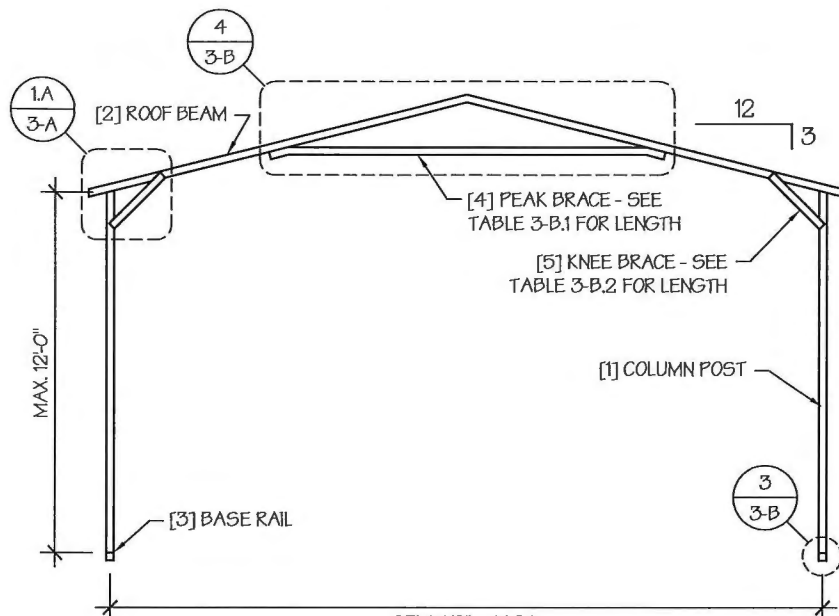
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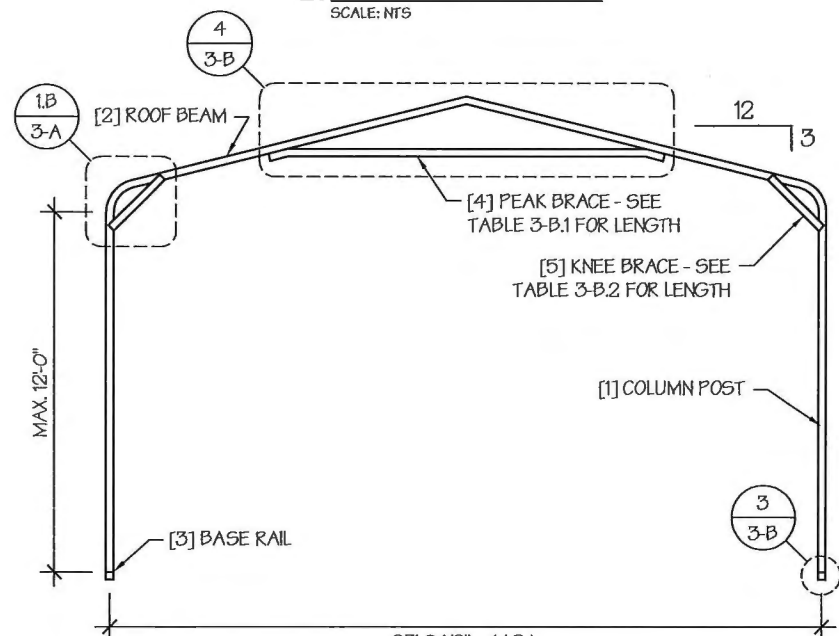
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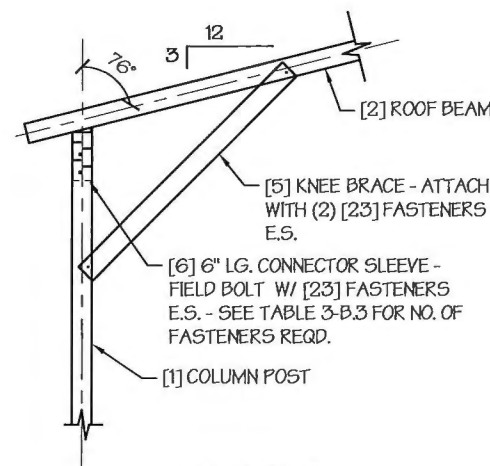
☐ TYP. A-FRAME SECTION

SCALE: NTS

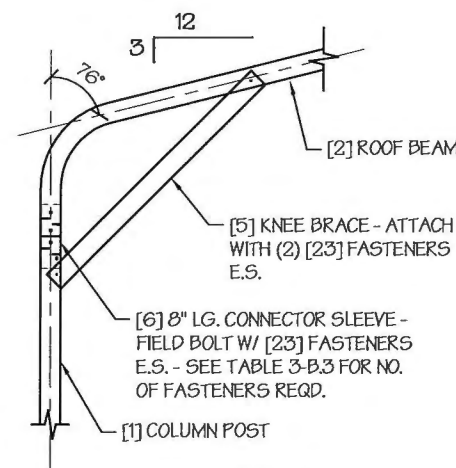


☐ TYP. REGULAR FRAME SECTION

SCALE: NTS



☐ A. 'A'-FRAME

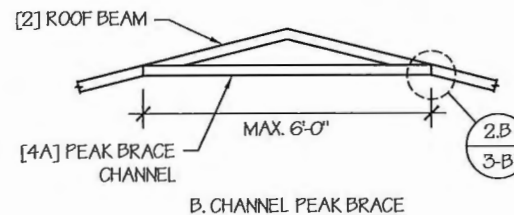
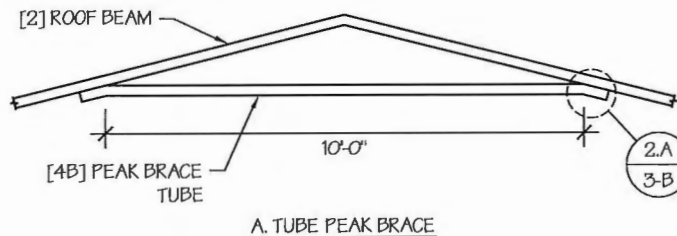
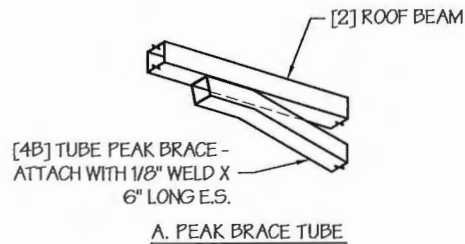


☐ B. REGULAR FRAME

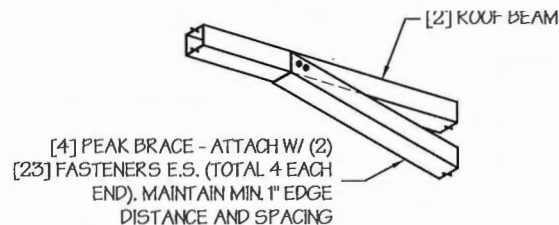
EAVE DETAIL

SCALE: NTS

1



PEAK BRACE DETAILS
SCALE: NTS



B. PEAK BRACE CHANNEL

PEAK BRACE CONNECTION DETAILS
SCALE: NTS

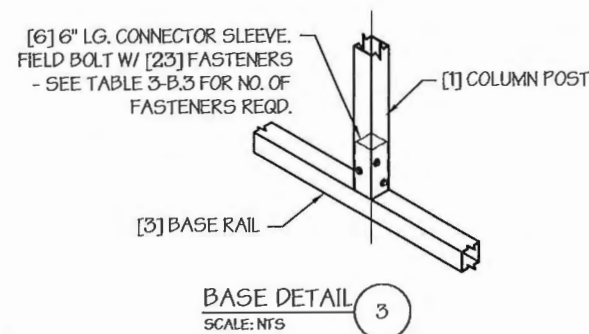


TABLE 3-B.1: PEAK BRACE SCHEDULE

GROUND SNOW / ROOF LIVE LOAD (PSF)	PEAK BRACE LENGTH
□ 30 / 20	6'
□ 35 / 25 TO 90 / 61	10'

TABLE 3-B.2: KNEE BRACE SCHEDULE

EAVE HEIGHT	KNEE BRACE LENGTH
□ UP TO 8'	24"
□ 9' TO 12'	36"

TABLE 3-B.3 FASTENER SCHEDULE

WIND SPEED (MPH)	NO. OF FASTENERS
□ 105 TO 125	4
□ 130 TO 155	6
□ 160 TO 180	8

NOTE: COLUMN POST MAY BE ADJUSTED $\pm 1"$ FOR LEVELING.
MANUFACTURER IS NOT RESPONSIBLE FOR LEVELING OF GROUND
AND/OR CONCRETE SURFACE PROVIDED BY OTHERS.

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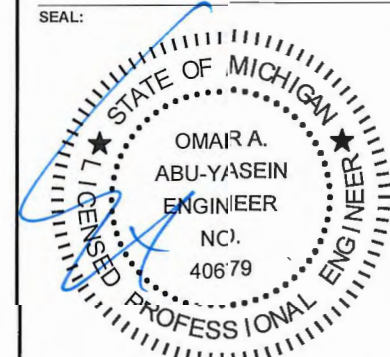
FRAME DETAILS

SHEET NO.: 3-B / 11
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TABLE 4: FRAME SPACING SCHEDULE

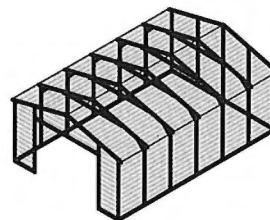
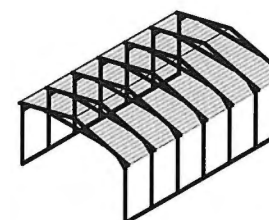
EAVE HEIGHT = 10'-0" TO 12'-0"	GROUND SNOW / ROOF LIVE LOAD (PSF)	■ ENCLOSED BUILDINGS							■ OPEN BUILDINGS						
		WIND SPEED (MPH)							WIND SPEED (MPH)						
		□105	□115	□130	□140	□155	□165	□180	□105	□115	□130	□140	□155	□165	□180
EAVE HEIGHT = 7'-0" TO 9'-0"	□30 / 20	60	60	54/60	54	42	42	36	48	48	48	42	36	30	24
	□40 / 27	48/60	48/60	42/60	42/54	42	42	36	42	42	42	42	36	30	24
	□50 / 34	40/48	40/48	40/48	40/48	40/42	40/42	36	30	30	30	30	30	30	24
	□60 / 41	36	36	36	36	36	36	36	30	30	30	30	30	30	24
	□70 / 47	30	30	30	30	30	30	30	24	24	24	24	24	24	24
	□80 / 54	24	24	24	24	24	24	24	24	24	18	18	18	18	18
	□90 / 61	---	---	---	---	---	---	---	---	---	---	---	---	---	---
EAVE HEIGHT = UP TO 6'-0"	□30 / 20	60	60	54/60	54	48	42/48	42	54	54	48/54	42/54	36/48	36	30
	□40 / 27	48/60	48/60	42/60	42/54	42/48	42/48	42	42	42	42	42	36/42	36	30
	□50 / 34	40/48	40/48	40/48	40/48	40/48	40/48	40/42	36	36	36	36	36	36	30
	□60 / 41	36	36	36	36	36	36	36	30	30	30	30	30	30	30
	□70 / 47	30	30	30	30	30	30	30	24	24	24	24	24	24	24
	□80 / 54	24	24	24	24	24	24	24	24	24	24	24	24	24	24
	□90 / 61	---	---	---	---	---	---	---	---	---	---	---	---	---	---

NOTES:

1. FRAME SPACINGS ARE IN UNITS OF INCHES (IN).
2. WHERE TWO VALUES ARE SHOWN, THE HIGHER VALUE CAN ONLY BE USED FOR VERTICAL SHEATHING.
3. SNOW LOADS AND ROOF LIVE LOADS ARE IN POUNDS PER SQUARE FOOT (PSF). WIND SPEED IS 3 SEC. GUST IN MILES PER HOUR (MPH).
4. FOR VALUES THAT LIE BETWEEN TWO CELLS, THE HIGHER (MORE STRINGENT) VALUE HAS TO BE USED. INTERPOLATION BETWEEN CELLS IS NOT ALLOWED.

GENERAL ENCLOSURE NOTES:

1. TYPICAL ENCLOSED AND OPEN BUILDINGS ARE AS SHOWN ON THE RIGHT.
2. THE MAX. BUILDING LENGTH FOR ENCLOSED BUILDINGS IS 50'-0". THIS CAN BE INCREASED BY ADDING A DOUBLE FRAME AT THE CENTER TO BREAK THE LENGTH OF THE BUILDING.
3. FOR ENCLOSED BUILDINGS, ONE END WALL CAN BE OPEN IF THE OTHER END WALL IS ENCLOSED. THE OPEN END WALL MUST HAVE EITHER GABLE FRAMING (SEE SHEET 8A) OR A DOUBLE END FRAME.
4. OPEN BUILDINGS CAN HAVE PARTIALLY ENCLOSED SIDE WALLS UP TO 3' ENCLOSED.
5. ENCLOSED BUILDING WITH PARTIALLY ENCLOSED END WALLS NEED TO HAVE SIDE WALL BRACING TO SUPPORT THE PARTIALLY ENCLOSED END WALL. SEE SHEET 9 FOR TYPICAL BRACING DETAILS.

TYP. ENCLOSED BUILDING
SCALE: NTSTYP. OPEN BUILDING
SCALE: NTS

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SHEET TITLE:

SPACING SCHEDULES
& ENCLOSURE NOTES

SHEET NO.: 4 / 11

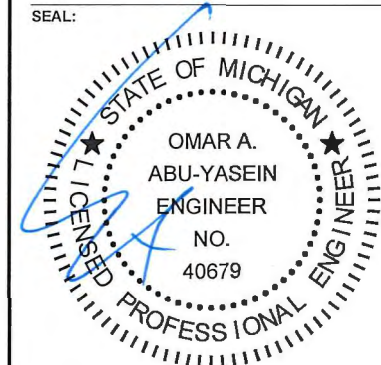
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TABLE 5.1: PURLIN SPACING SCHEDULE

GROUND SNOW / ROOF LIVE LOAD (PSF)	14GA. HAT CHANNEL PURLIN								18GA. HAT CHANNEL PURLIN							
	WIND SPEED (MPH)								WIND SPEED (MPH)							
	105	115	130	140	155	165	180		105	115	130	140	155	165	180	
30 / 20	54	48	42	36	30	24	24		36	30	24	18	18	12	12	
40 / 27	42	42	42	36	30	24	24		30	30	24	18	18	12	12	
50 / 34	40	40	40	36	30	24	24		24	24	24	18	18	12	12	
60 / 41	36	36	36	36	30	24	24		18	18	18	18	18	12	12	
70 / 47	32	32	32	32	30	24	24		18	18	18	18	18	12	12	
80 / 54	30	30	30	30	30	24	24		18	18	18	18	18	12	12	
90 / 61	24	24	24	24	24	24	24		12	12	12	12	12	12	12	
30 / 20	54	48	42	42	36	30	30		48	36	30	24	18	18	12	
40 / 27	42	42	42	42	36	30	30		42	36	30	24	18	18	12	
50 / 34	40	40	40	40	36	30	30		30	30	30	24	18	18	12	
60 / 41	36	36	36	36	36	30	30		30	30	30	24	18	18	12	
70 / 47	32	32	32	32	32	30	30		24	24	24	24	18	18	12	
80 / 54	32	32	32	32	32	30	30		18	18	18	18	18	18	12	
90 / 61	30	30	30	30	30	30	30		18	18	18	18	18	18	12	
30 / 20	54	48	42	42	36	36	30		54	48	36	30	24	24	18	
40 / 27	42	42	42	42	36	36	30		42	42	36	30	24	24	18	
50 / 34	40	40	40	40	36	36	30		40	40	36	30	24	24	18	
60 / 41	36	36	36	36	36	36	30		36	36	36	30	24	24	18	
70 / 47	32	32	32	32	32	32	30		30	30	30	30	24	24	18	
80 / 54	32	32	32	32	32	32	30		24	24	24	24	24	24	18	
90 / 61	30	30	30	30	30	30	30		24	24	24	24	24	24	18	
30 / 20	54	48	42	42	36	36	30		54	48	42	42	36	30	30	
40 / 27	42	42	42	42	36	36	30		42	42	42	42	36	30	30	
50 / 34	40	40	40	40	36	36	30		40	40	40	40	36	30	30	
60 / 41	36	36	36	36	36	36	30		36	36	36	36	36	30	30	
70 / 47	32	32	32	32	32	32	30		32	32	32	32	32	30	30	
80 / 54	32	32	32	32	32	32	30		32	32	32	32	32	30	30	
90 / 61	30	30	30	30	30	30	30		30	30	30	30	30	30	30	
30 / 20	54	48	42	42	36	36	30		54	48	42	42	36	36	30	
40 / 27	42	42	42	42	36	36	30		42	42	42	42	36	36	30	
50 / 34	40	40	40	40	36	36	30		40	40	40	40	36	36	30	
60 / 41	36	36	36	36	36	36	30		36	36	36	36	36	36	30	
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80 / 54	32	32	32	32	32	32	30		32	32	32	32	32	32	30	
90 / 61	30	30	30	30	30	30	30		30	30	30	30	30	30	30	

NOTES:

- PURLIN SPACING UNITS ARE IN INCHES.
- FRAME SPACING NEEDS TO BE DETERMINED FROM TABLE 4.

TABLE 5.2: GIRT SPACING SCHEDULE

FRAME SPACING	WIND SPEED (MPH)						
	105	115	130	140	155	165	180
5'-0"	60	48	36	30	24	24	18
4'-6"	60	60	48	42	36	30	24
4'-0"	60	60	54	54	42	36	30
3'-6"	60	60	54	54	48	42	42
2'-0" TO 3'-0"	60	60	54	54	48	42	42

NOTES:

- GIRT SPACING UNITS ARE IN INCHES.
- THIS SCHEDULE IS TO BE USED FOR BOTH 14GA AND 18 GA PURLINS.
- FRAME SPACING NEEDS TO BE DETERMINED FROM TABLE 4.

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DRAWING INFORMATION

PROJECT: 24'-0" WIDE BUILDINGS

LOCATION: STATE OF MICHIGAN

PROJECT NO.: 034-17-1682

SHEET TITLE:

PURLIN & GIRT
SPACING SCHEDULES

SHEET NO.: 5 / 11

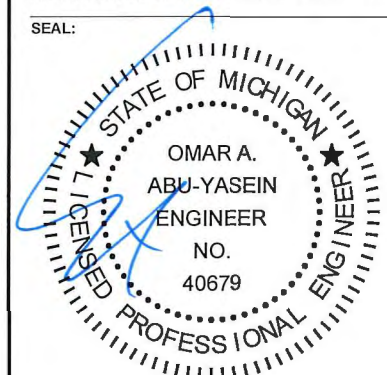
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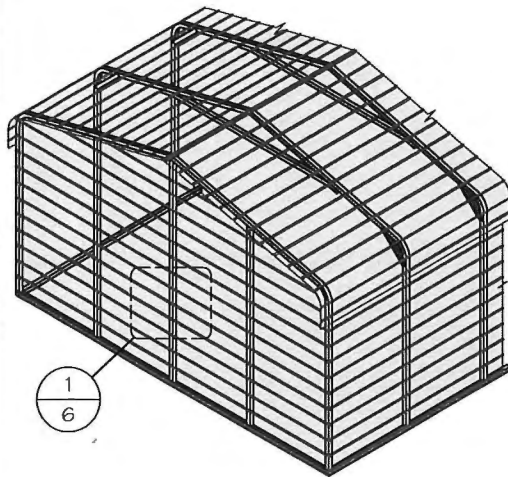
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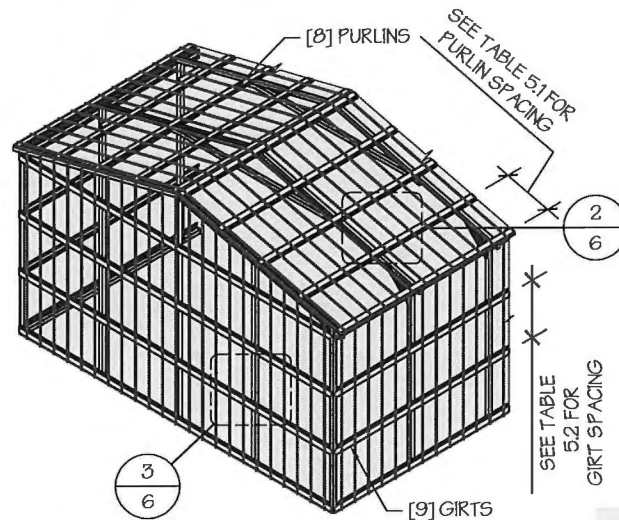


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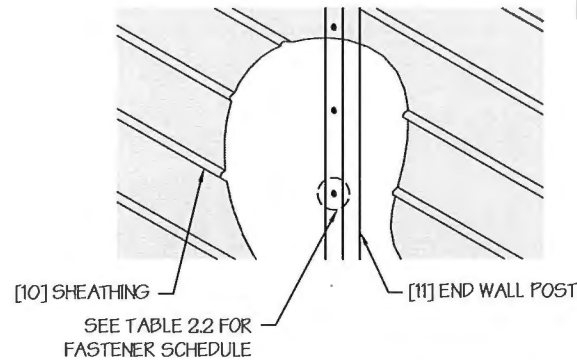
☐ TYP. HORIZONTAL SHEATHING
SCALE: NTS



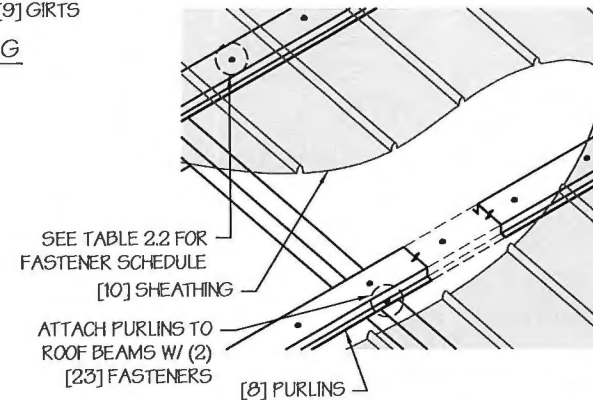
☐ TYP. VERTICAL SHEATHING
SCALE: NTS

GENERAL SHEATHING NOTES:

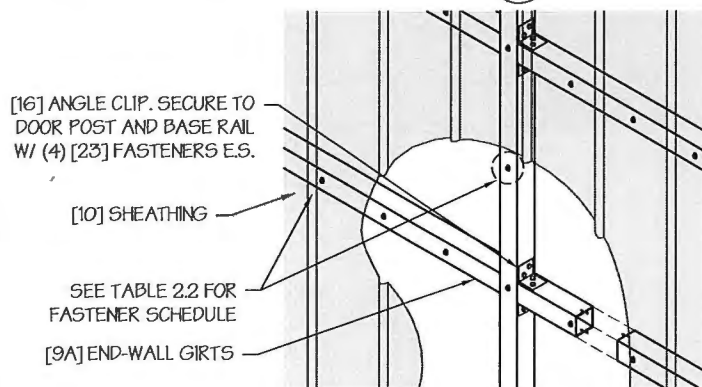
1. REGULAR STYLE BUILDINGS CAN ONLY HAVE HORIZONTAL SHEATHING ON ROOF AND WALLS.
2. A-FRAME STYLE BUILDINGS CAN HAVE ANY COMBINATION OF HORIZONTAL OR VERTICAL SHEATHING ON ROOFS AND WALLS.
3. BOTH HORIZONTAL AND VERTICALS ROOF SHEATHING CAN HAVE MAX. 6" OVERHANG.
4. USING VERTICAL SHEATHING MAY ALLOW FOR GREATER FRAME SPACING. SEE NOTE 2 UNDER TABLE 4.



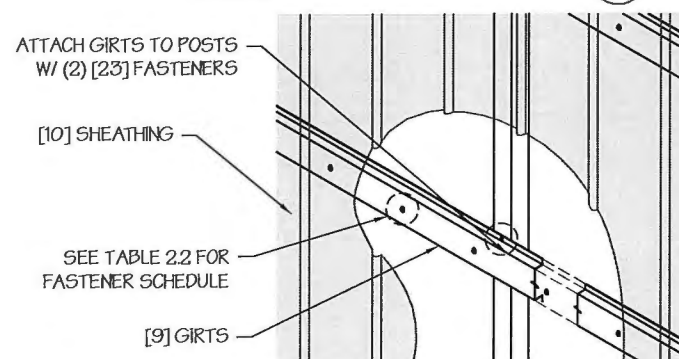
TYP. HORIZONTAL SHEATHING DETAIL
SCALE: NTS



ROOF VERTICAL SHEATHING DETAIL
SCALE: NTS



☐ WALL VERTICAL SHEATHING - TUBE DETAIL
SCALE: NTS



☐ WALL VERTICAL SHEATHING - HAT CHANNEL DETAIL
SCALE: NTS

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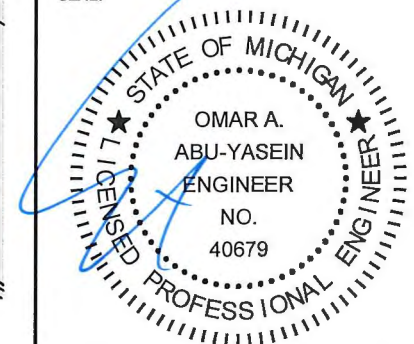
SHEATHING OPTIONS & DETAILS

SHEET NO.: 6 / 11
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CHECKED BY: OAA DATE: 10/17/17

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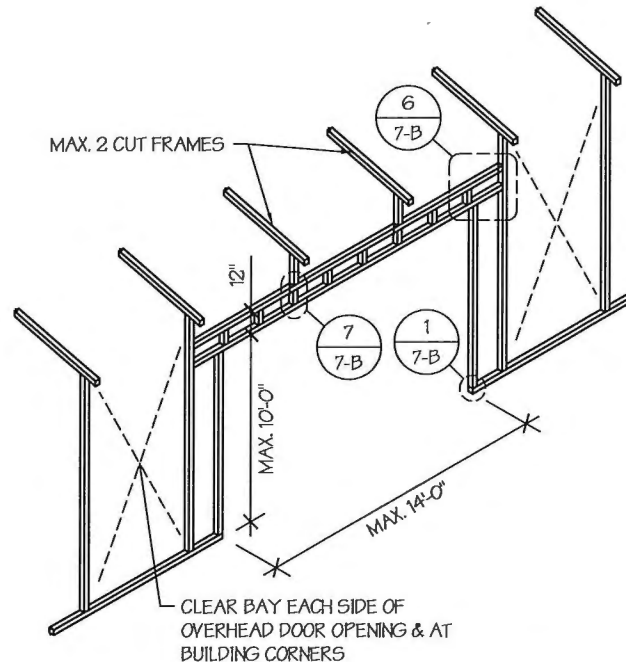
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☐ SIDE WALL OVER HEAD DOOR OPENINGS
SCALE: NTS



☐ SIDE WALL OVER HEAD DOOR OPENINGS
WITH TRUSS STYLE HEADER
SCALE: NTS

SIDE WALL FRAMING NOTES:

1. TRUSS-STYLE HEADERS ARE REQUIRED FOR WHERE THE GROUND SNOW LOAD IS 40 PSF OR GREATER.
2. DESIGNS AND DETAILS SHOWN HERE ARE APPLICABLE TO BOTH REGULAR AND A-FRAME STYLE BUILDINGS.
3. MAX. HEIGHT OF SIDE WALL DOOR OPENINGS DEPENDS ON POST LENGTH NEEDED TO ACCOMMODATE KNEE BRACES.
4. OVERHEAD DOOR OPENINGS CANNOT CUT THROUGH MORE THAN 2 FULL FRAMES.
5. MIN. 1 CLEAR BAY MUST BE MAINTAINED BETWEEN ANY 2 OVERHEAD DOOR OPENINGS. A CLEAR BAY IS A SPACE BETWEEN TWO FRAMES THAT HAS NO OVERHEAD DOOR OPENINGS.
6. MIN. 1 CLEAR BAY MUST ALSO BE MAINTAINED FROM THE BUILDING CORNERS.
7. SERVICE DOORS AND WINDOWS CAN BE PLACED IN CLEAR BAYS OR ANY WHERE ELSE AS NEEDED.

☐ SIDE WALL SERVICE DOOR / WINDOW OPENINGS
SCALE: NTS

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LOCATION: STATE OF MICHIGAN

PROJECT NO.: 034-17-1682

SHEET TITLE:

**SIDE WALL FRAMING
& OPENINGS**

SHEET NO.: 7-A / 11

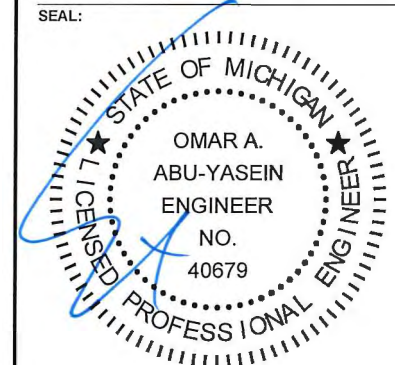
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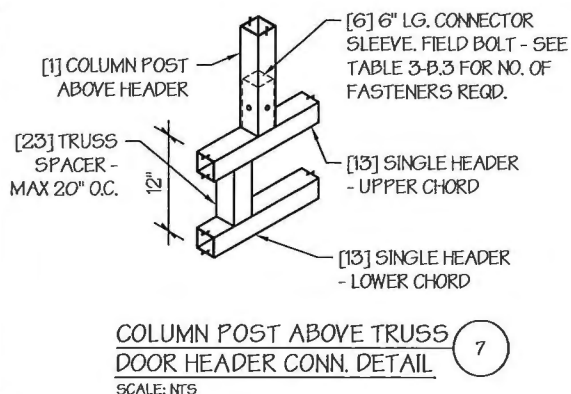
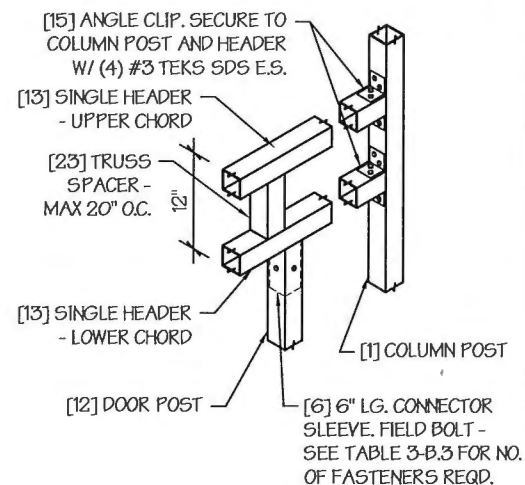
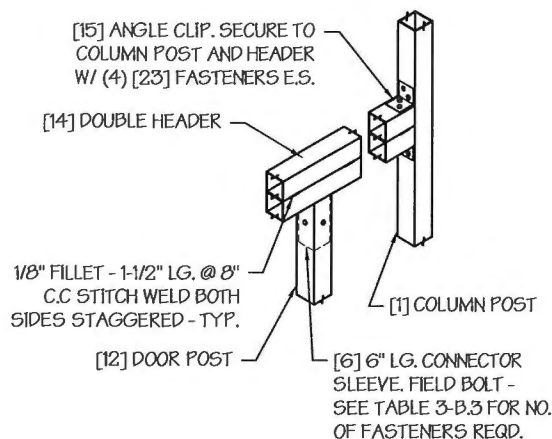
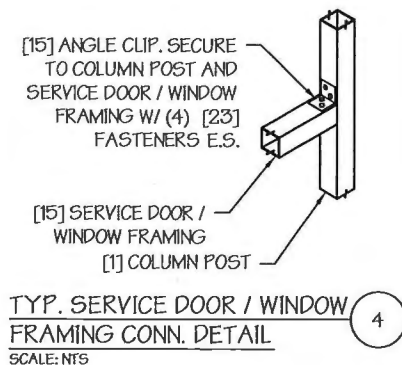
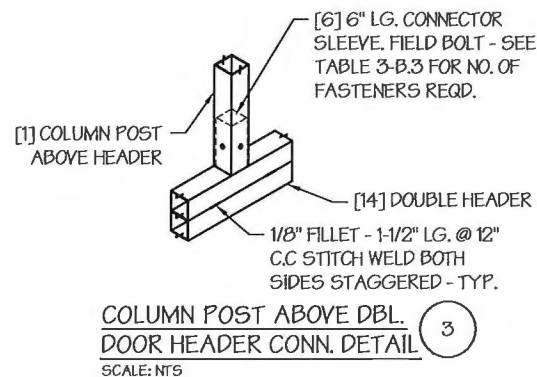
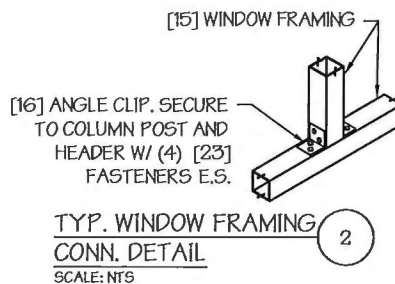
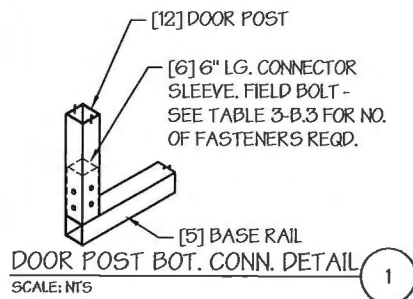
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DRAWING INFORMATION

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LOCATION: STATE OF MICHIGAN

PROJECT NO.: 034-17-1682

SHEET TITLE:

SIDE WALL FRAMING DETAILS

SHEET NO.: 7-B / 11

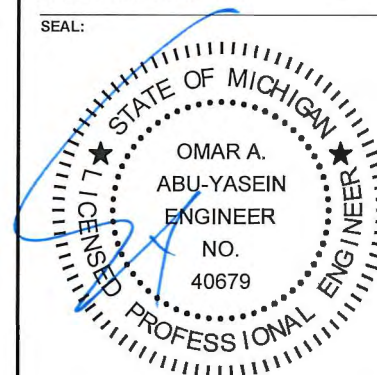
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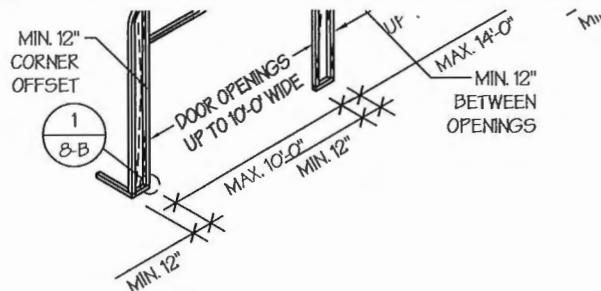
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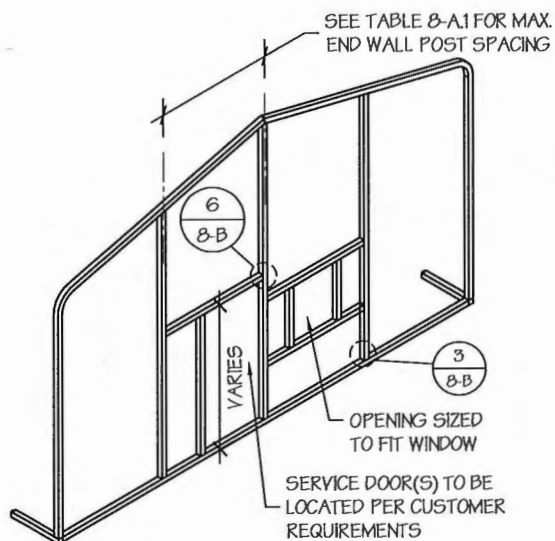


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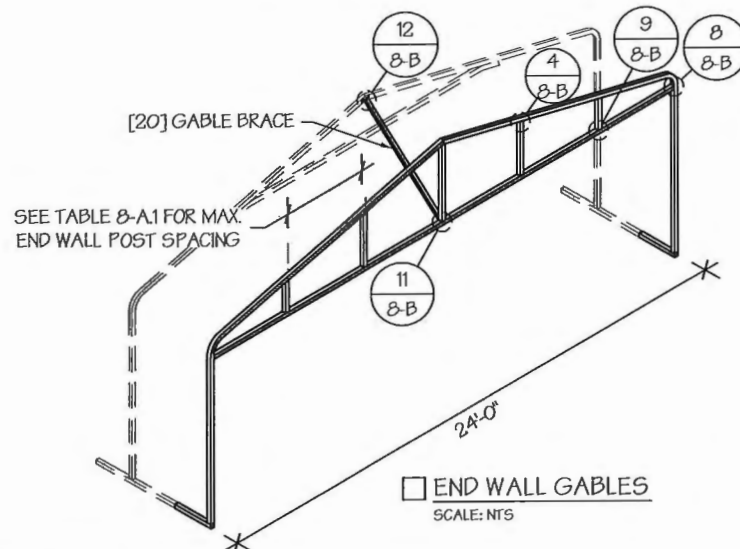
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SCALE: NTS



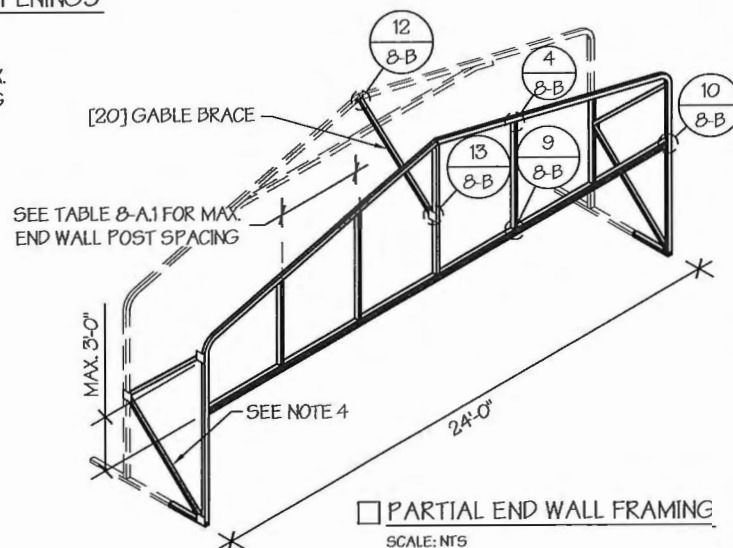
☐ END WALL SERVICE DOOR AND WINDOW OPENINGS
SCALE: NTS

END WALL FRAMING NOTES:

- DESIGNS AND DETAILS SHOWN HERE ARE APPLICABLE TO BOTH REGULAR AND A-FRAME STYLE BUILDINGS.
- MIN. 12" CLEARANCE MUST BE MAINTAINED BETWEEN ANY TWO OPENINGS (OVERHEAD DOOR OR SERVICE DOOR) AND FROM CORNERS.
- SERVICE DOORS AND WINDOWS CAN BE PLACED AS NEEDED.
- DIAGONAL BRACES NEED TO BE ADDED FOR PARTIAL END WALL ENCLOSURES. SEE SHEET 9 FOR DIAGONAL BRACE CONNECTION DETAILS.



☐ END WALL GABLES
SCALE: NTS



☐ PARTIAL END WALL FRAMING
SCALE: NTS

TABLE 8-A.1: END WALL POST SPACING SCHEDULE

WIND SPEED (MPH)	EAVE HEIGHT		
	■ UP TO 7'	■ 8' TO 9'	■ 10' TO 12'
□ 105	5'	5'	5'
□ 115	5'	5'	4.5'
□ 130	4.5'	4.5'	4'
□ 140	4.5'	4.5'	3'
□ 155	4'	4'	2.5'
□ 165 - 180	3.5'	3'	2'

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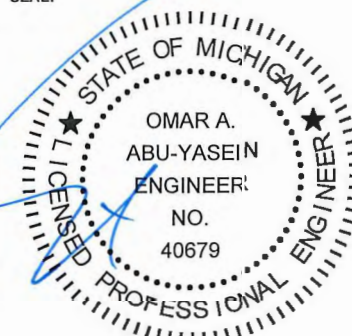
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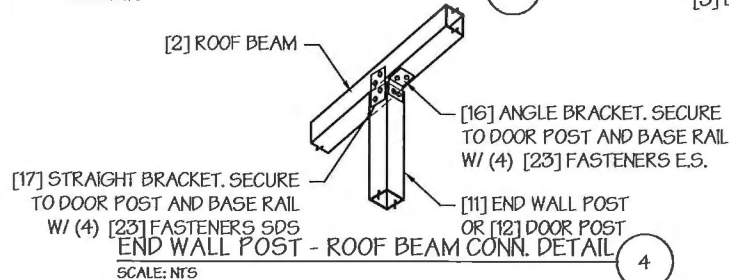
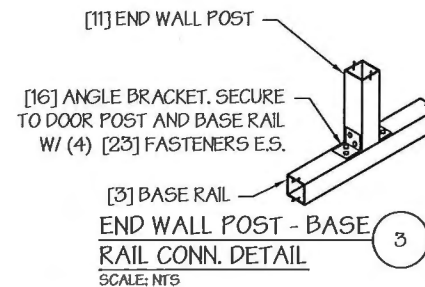
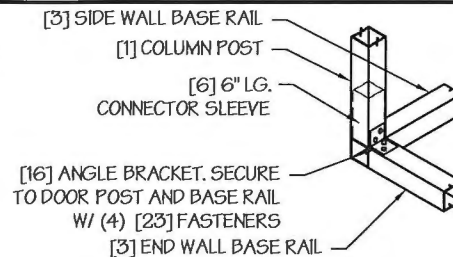
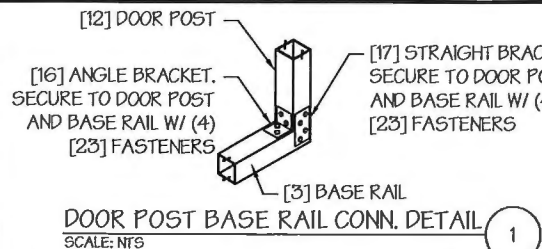
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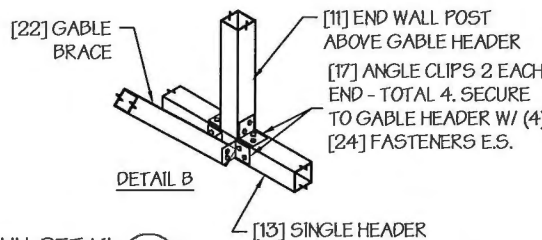
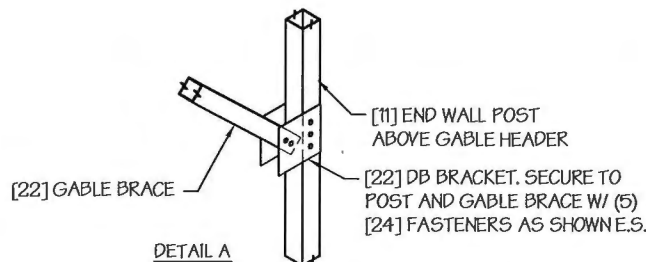
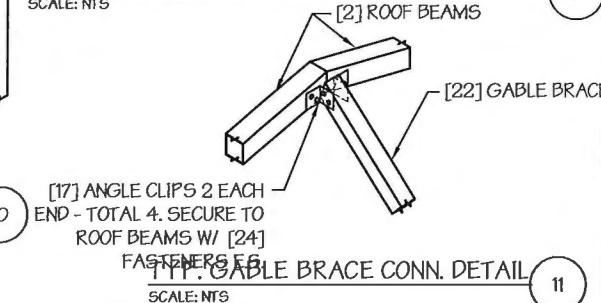
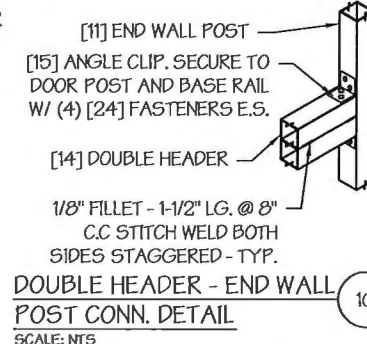
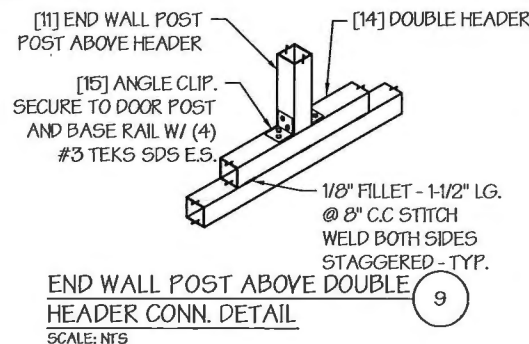
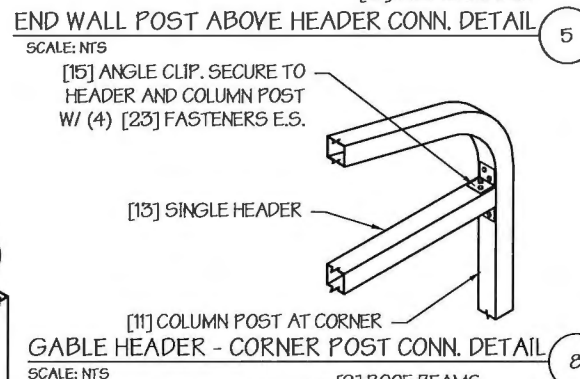
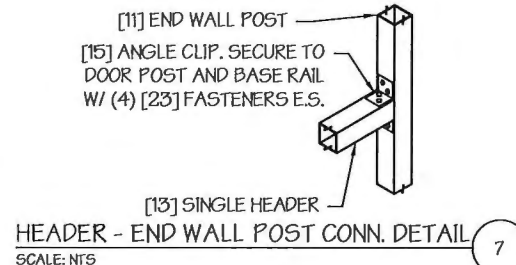
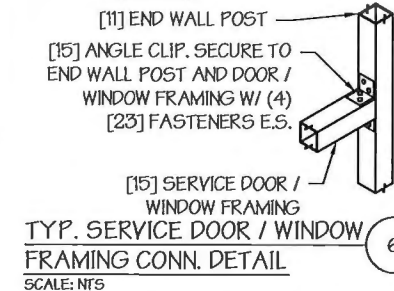
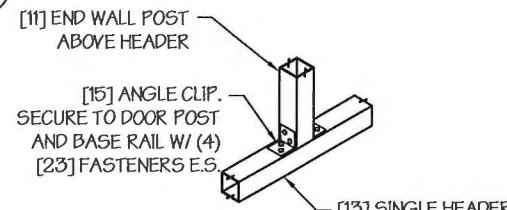
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CORNER DETAIL
SCALE: NTS



GABLE BRACE - END WALL CONN. DETAIL
SCALE: NTS

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DRAWING INFORMATION

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SHEET TITLE:

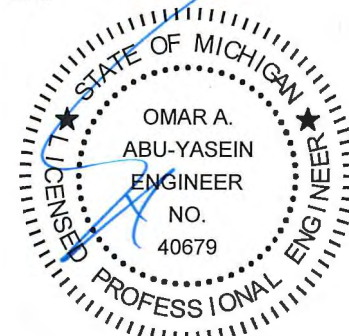
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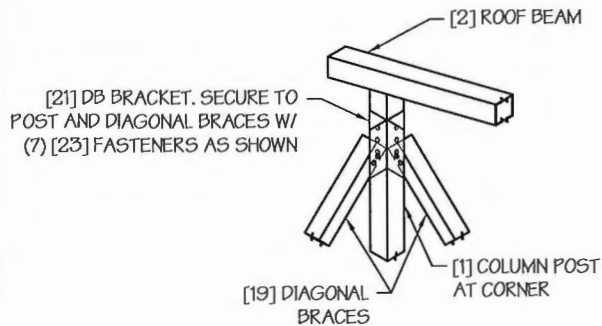
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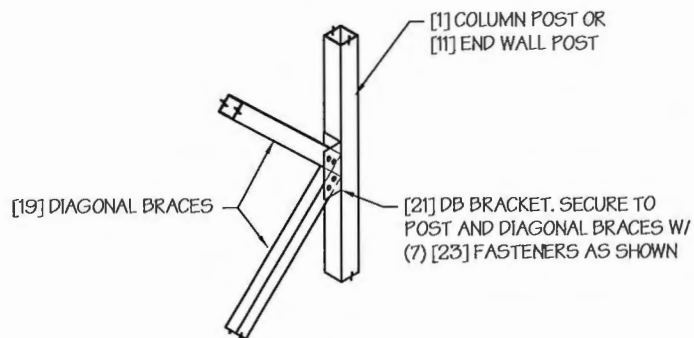
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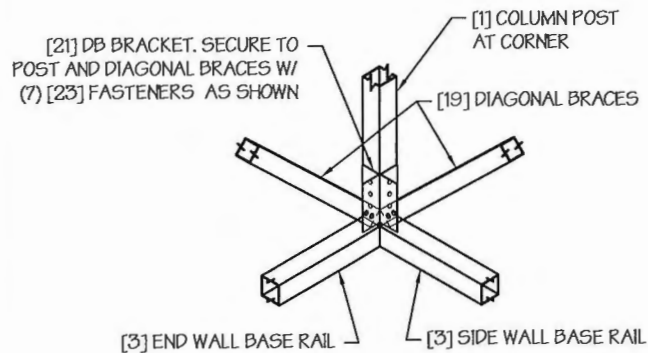
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DIAGONAL BRACE TOP CORNER CONN. DETAIL* 1
SCALE: NTS

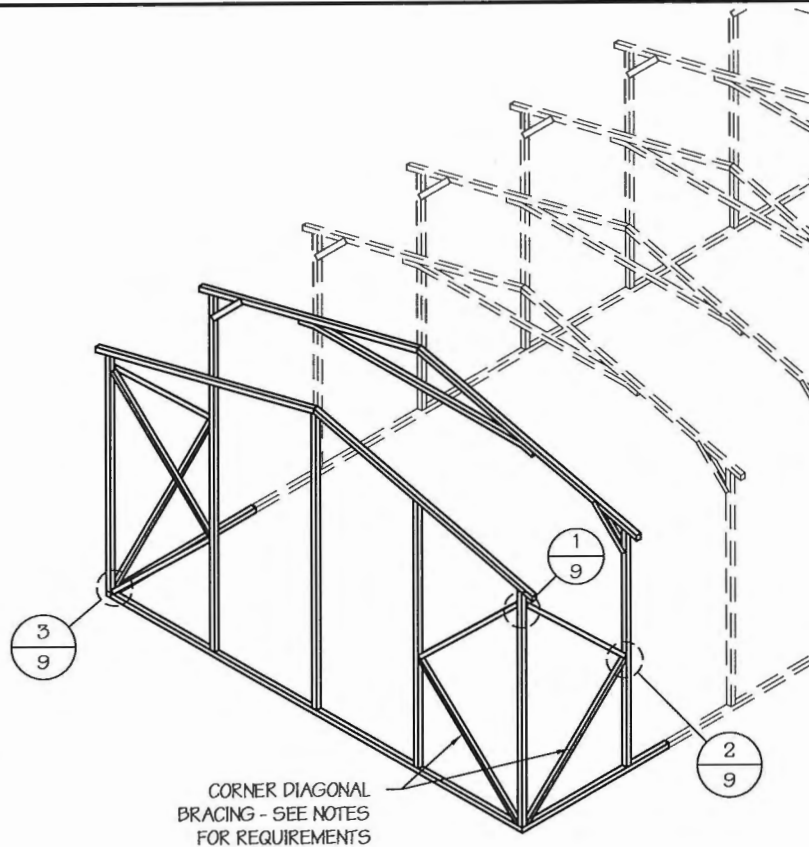


DIAGONAL BRACE - POST CONN. DETAIL* 2
SCALE: NTS



DIAGONAL BRACE BOT. CORNER CONN. DETAIL* 3
SCALE: NTS

* INSIDE VIEW SHOWN FOR CLARITY



DIAGONAL BRACING AT CORNERS
SCALE: NTS

CORNER BRACING NOTES:

1. DIAGONAL BRACING AT BUILDING CORNERS IS REQUIRED FOR ALL BUILDINGS IN LOCATIONS WHERE WIND SPEED IS 140 MPH OR GREATER.
2. IF CORNER BRACING IS REQUIRED BUT THE BUILDING IS MISSING ONE OR MORE END WALLS THEN THE BUILDING MUST BE DESIGNED AS AN OPEN BUILDING AND SIDE WALL DIAGONAL BRACING IS REQUIRED (USE SPACING FOR OPEN BUILDING IN TABLE 4.1).
3. DIAGONAL BRACING IS ALSO REQUIRED ON THE CORNERS ON THE SIDE WALLS WHEN THE ADJACENT END WALL IS PARTIALLY ENCLOSED.

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SHEET TITLE:

CORNER BRACING DETAILS

SHEET NO.: 9 / 11

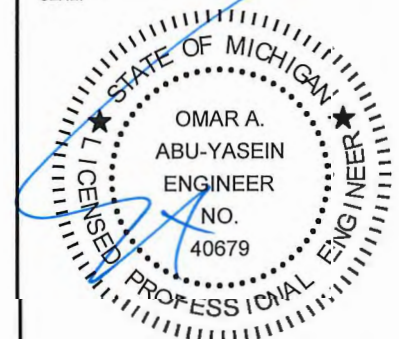
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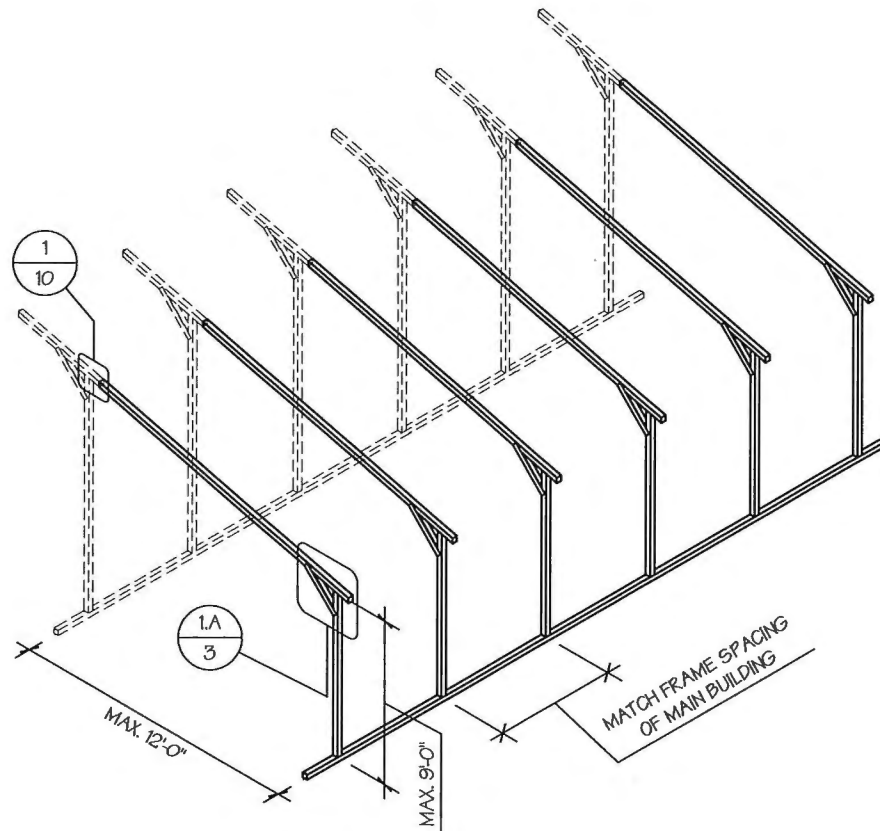
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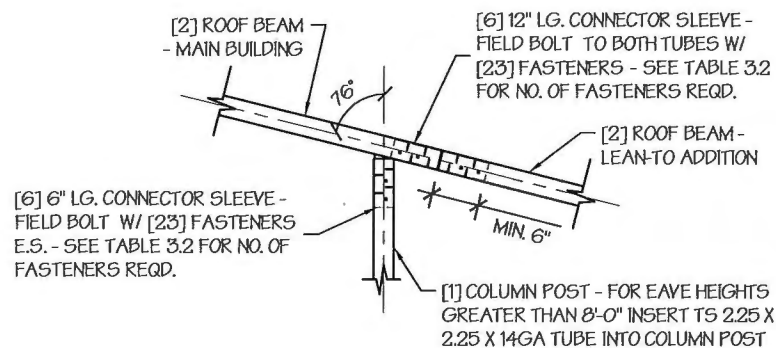
DATE EXPIRES: 10/31/2019

DATE SIGNED: OCT 18 2017



☐ OPTIONAL LEAN-TO ADDITION

SCALE: NTS



LEAN-TO ATTACHMENT DETAIL

SCALE: NTS

1

LEAN-TO ADDITION NOTES:

1. LEAN-TO ADDITIONS CAN BE ADDED ON EITHER OR BOTH SIDES OF THE BUILDING.
2. ROOF SLOPE AND PURLIN, GIRT AND FRAME SPACINGS OF THE ADDITION HAVE TO MATCH THAT OF THE MAIN STRUCTURE..
3. IF THE LEAN-TO ADDITION IS "OPEN "(BOTH END WALLS OR SIDE WALL IS NOT ENCLOSED), THE DESIGN OF THE MAIN BUILDING HAS TO USE THE FRAME SPACING OF AN OPEN BUILDING FROM TABLE 4.

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DRAWING INFORMATION

PROJECT: 24'-0" WIDE BUILDINGS

LOCATION: STATE OF MICHIGAN

PROJECT NO.: 034-17-1682

SHEET TITLE:

**OPTIONAL LEAN-TO
ADDITION**

SHEET NO.: 10 / 11

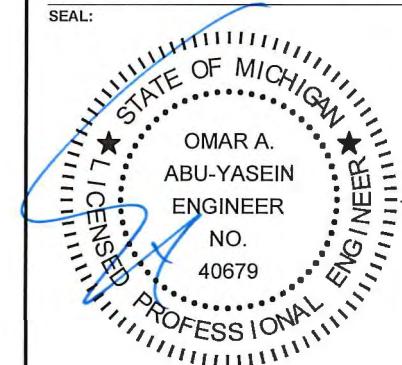
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1. DESIGNS SHOWN ON THIS SHEET ARE FOR CONCRETE SLAB FOUNDATION. ANY OF THE FOUNDATIONS SHOWN ON SHEETS 11-A THRU D CAN BE USED.
2. EITHER OPTION 1 'EDGE OFFSET' OR OPTION 2 'NOTCHED EDGE' DETAIL CAN BE USED.
3. FOR OPTION 1 THE MIN. SLAB SIZE SHALL BE EQUAL TO THE OUTSIDE DIMENSIONS OF THE BUILDING PLUS 5" EACH DIRECTION.
3. FOR OPTION 2 THE MIN. SLAB SIZE SHALL BE EQUAL TO THE SIDE DIMENSIONS OF THE BUILDING DIMENSIONS.
4. CONCRETE ANCHORS SHALL BE LOCATED NEXT TO EVERY POST AND ON EITHER SIDE OF OPENINGS. TWO ANCHORS SHALL BE INSTALLED AT CORNER OF ENCLOSED BUILDINGS WITH END WALLS - ONE ON EACH BASE RAIL.
5. CONCRETE ANCHORS CAN BE ANY ONE OF THE OPTIONS MENTIONED IN TABLE 11-A.1.
6. DEPTH OF SLAB TURN DOWN FOOTING SHALL BE GREATER THAN FROST DEPTH SPECIFIED PER LOCAL CODE.
7. CONTROL JOINTS SHALL BE PLACED SO AS TO LIMIT MAX. SLAB SPANS TO 20' IN EACH DIRECTION.
8. ASSUMED SOIL BEARING CAPACITY IS TO BE A MIN. OF 1500 PSF.
9. CONCRETE STRENGTH TO BE A MIN OF 2500 PSI @ 28 DAYS.

WIND SPEED (MPH)	ANCHOR SIZE
□ 105 TO 140	1/2" Ø X 7"
□ 155 TO 180	5/8" Ø X 7"

1. ANCHORS ARE BASED ON ESR-2526 REPORT. EXPANSION ANCHORS, WEDGE ANCHORS OR ADHESIVE ANCHORS MAY BE USED AS LONG AS THEY MEET OR EXCEED THIS REPORT.
2. MIN. EMBEDMENT DEPTH TO BE 4".
3. ANCHORS TO BE SPACED NO MORE THAN 6" FROM POSTS.
4. ALL ANCHORS TO BE A307 EQUIVALENT OR BETTER.



1



HORIZONTAL/OPEN		VERTICAL	
□ 14GA	□ 12GA	□ 14GA	□ 12GA
2 3/4"	2 7/8"	1 3/4"	1 7/8"

MIN. 4" EDGE DIST.

NOTCH - SEE TABLE 11-A2

GRADE

1'

ALT. NOTCHED EDGE DETAIL

AS PER LOCAL CODE, MIN 12" BELOW GRADE

AS PER LOCAL
CODE. MIN. 12"
BELOW GRADE



SECTION B-B

MIN. 4" EDGE DIST.

[7] BASE ANGLE

ANCHOR - SEE TABLE 11-A1

MIN. 4" THK. CONCRETE SLAB

B

W6X6 / 6 WELDED WIRE MESH

B

(3) #4 REBAR CONT.

1"

[1] COLUMN POST

[3] BASE RAIL

GRADE

AS PER LOCAL CODE, MIN. 12" BELOW GRADE

☐ OPTION 2: EDGE FLUSH DETAIL

①

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FOUNDATION OPTION 1:
CONCRETE SLAB

CHECKED BY: OAA DATE: 10/17/17

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DATE SIGNED: **OCT 18 2017**

TABLE 11-B.1: ANCHOR SCHEDULE

WIND SPEED (MPH)	ANCHOR SIZE
□ 105 TO 140	1/2"Ø X 7"
□ 145 TO 180	5/8"Ø X 7"

NOTES:

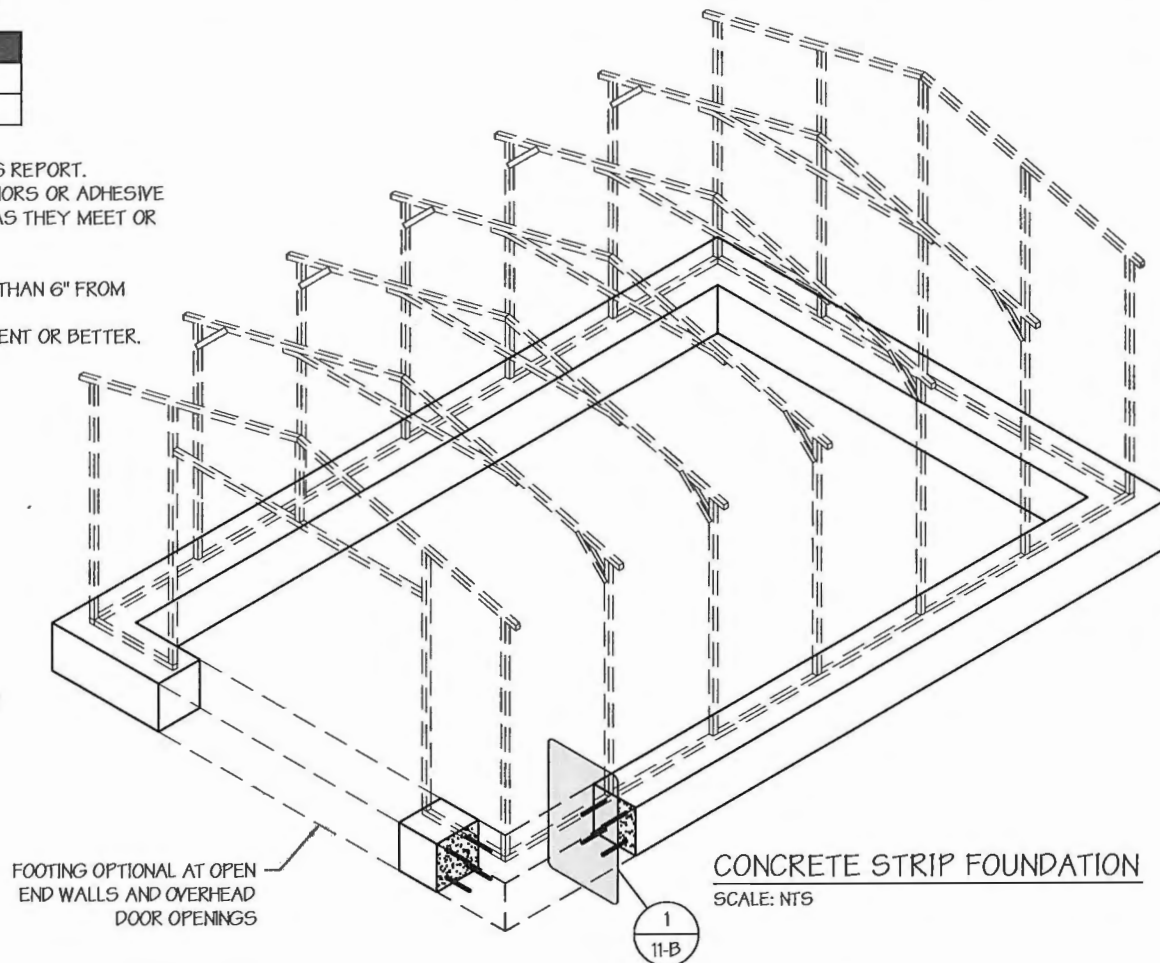
1. ANCHORS ARE BASED ON ESR-2526 REPORT. EXPANSION ANCHORS, WEDGE ANCHORS OR ADHESIVE ANCHORS MAY BE USED AS LONG AS THEY MEET OR EXCEED THIS REPORT.
2. MIN. EMBEDMENT DEPTH TO BE 4".
3. ANCHORS TO BE SPACED NO MORE THAN 6" FROM POSTS.
4. ALL ANCHORS TO BE A307 EQUIVALENT OR BETTER.

TABLE 11-B.2: CONC. STRIP SCHEDULE

WIND SPEED (MPH)	MIN. SIZE REQD.
□ 105 TO 130	14" X 12"
□ 140 TO 155	21" X 12"
□ 165 TO 180	30" X 12" 24 X 15" 20" X 18"

NOTES:

1. WIDTH AND DEPTH DIMENSIONS CAN BE INTERCHANGED.

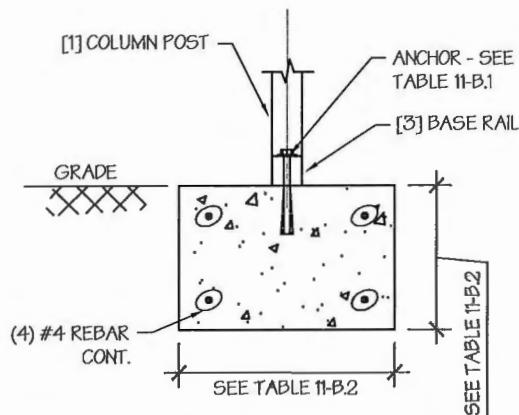


CONCRETE STRIP FOUNDATION

SCALE: NTS

CONCRETE STRIP FOUNDATION NOTES:

1. DESIGNS SHOWN ON THIS SHEET ARE FOR CONCRETE STRIP FOUNDATION. ANY OF THE FOUNDATIONS SHOWN ON SHEETS 11-A THRU D CAN BE USED.
2. CONCRETE ANCHORS SHALL BE LOCATED NEXT TO EVERY POST AND ON EITHER SIDE OF OPENINGS. TWO ANCHORS SHALL BE INSTALLED AT CORNER OF ENCLOSED BUILDINGS WITH END WALLS - ONE ON EACH BASE RAIL.
3. DEPTH OF CONCRETE STRIP FOOTING SHALL BE GREATER THAN FROST DEPTH SPECIFIED PER LOCAL CODE.
4. ASSUMED SOIL BEARING CAPACITY IS TO BE A MIN. OF 1500 PSF.
5. CONCRETE STRENGTH TO BE A MIN OF 2500 PSI @ 28 DAYS.



CONCRETE STRIP FOUNDATION DETAIL

SCALE: NTS

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DRAWING INFORMATION

PROJECT: 24'-0" WIDE BUILDINGS

LOCATION: STATE OF MICHIGAN

PROJECT NO.: 034-17-1682

SHEET TITLE:

FOUNDATION OPTION 2:
CONCRETE STRIP

SHEET NO.: 11-B / 11

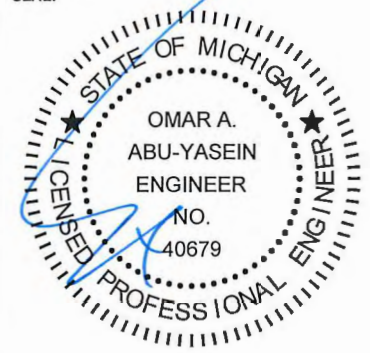
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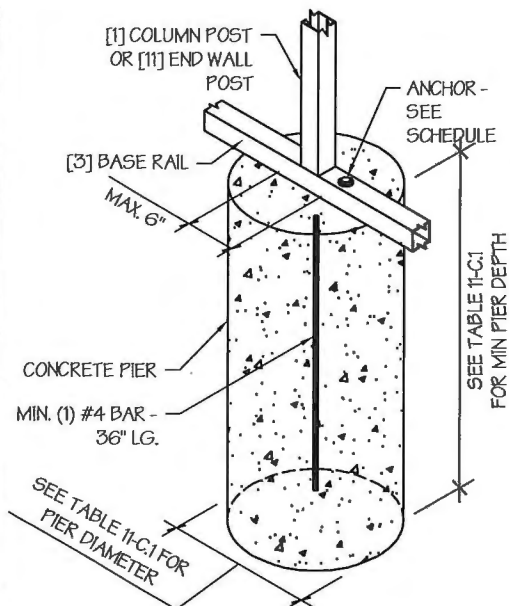
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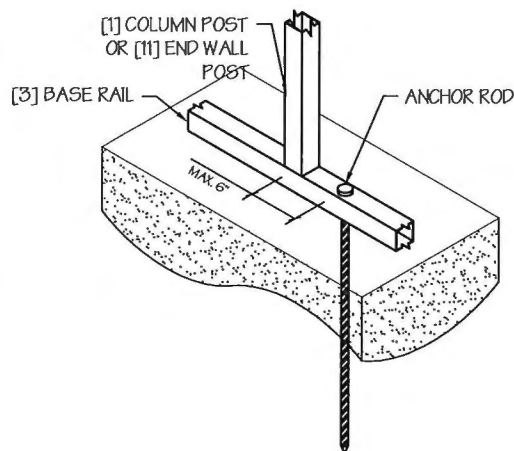
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CONCRETE PIER DETAIL

SCALE: NTS

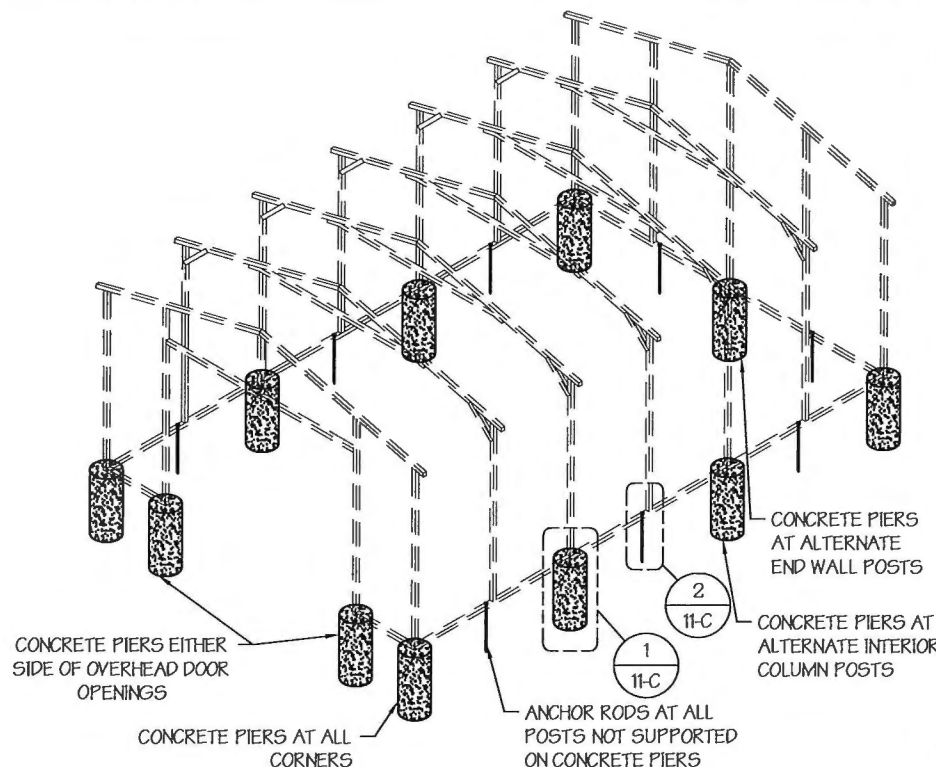
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ANCHOR ROD INTO SOIL DETAIL

SCALE: NTS

2



CONCRETE PIER FOUNDATION

SCALE: NTS

CONCRETE PIER FOUNDATION NOTES:

- DESIGNS SHOWN ON THIS SHEET ARE FOR CONCRETE PIER FOUNDATION. ANY OF THE FOUNDATIONS SHOWN ON SHEETS 11-A THRU D CAN BE USED.
- CONCRETE PIERS SHALL BE LOCATED AT ALL 4 CORNERS, ON EACH SIDE OF OVERHEAD DOOR OPENINGS AND ON ALTERNATE INTERIOR COLUMN POSTS AND END WALLS POSTS.
- PIERS SHALL BE FORMED BY DIGGING A HOLE OF THE SAME SIZE AS THE PIER ON LEVEL GRADE AND FILLING WITH CONCRETE. THRD. ROD ANCHORS SHOULD BE DROPPED INTO THE PIERS PRIOR TO POURING THE CONCRETE.
- ALL POSTS NOT SUPPORTED ON CONCRETE PIERS SHALL BE ANCHORED TO THE GROUND WITH A 1/2" X 30" LG. THREADED ROD. RODS WILL HAVE A WELDED NUT AT THE TOP AND ONE COAT OF RUST PROOF PRIMER.
- ASSUMED SOIL BEARING CAPACITY IS TO BE A MIN. OF 1500 PSF.
- CONCRETE STRENGTH TO BE A MIN OF 2500 PSI @ 28 DAYS.

TABLE 11-C.1: CONC. PIER SCHEDULE

WIND SPEED (MPH)	MIN. SIZE REQD.
105 TO 130	24"Ø X 36"
140 TO 155	24"Ø X 42"
165 TO 180	24"Ø X 48"

TABLE 11-C.2: CONCRETE PIER ANCHOR SCHEDULE

WIND SPEED (MPH)	ANCHOR SIZE
105 TO 140	1/2"Ø X 7"
155 TO 180	5/8"Ø X 7"

NOTES:

- ANCHORS ARE BASED ON ESR-2526 REPORT. EXPANSION ANCHORS, WEDGE ANCHORS OR ADHESIVE ANCHORS MAY BE USED AS LONG AS THEY MEET OR EXCEED THIS REPORT.
- MIN. EMBEDMENT DEPTH TO BE 4".
- ANCHORS TO BE SPACED NO MORE THAN 6" FROM POSTS.
- ALL ANCHORS TO BE A307 EQUIVALENT OR BETTER.

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DRAWING INFORMATION

PROJECT: 24'-0" WIDE BUILDINGS

LOCATION: STATE OF MICHIGAN

PROJECT NO.: 034-17-1682

SHEET TITLE:

FOUNDATION OPTION 3:
CONCRETE PIERS

SHEET NO.: 11-C / 11

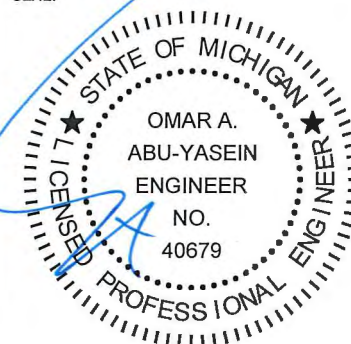
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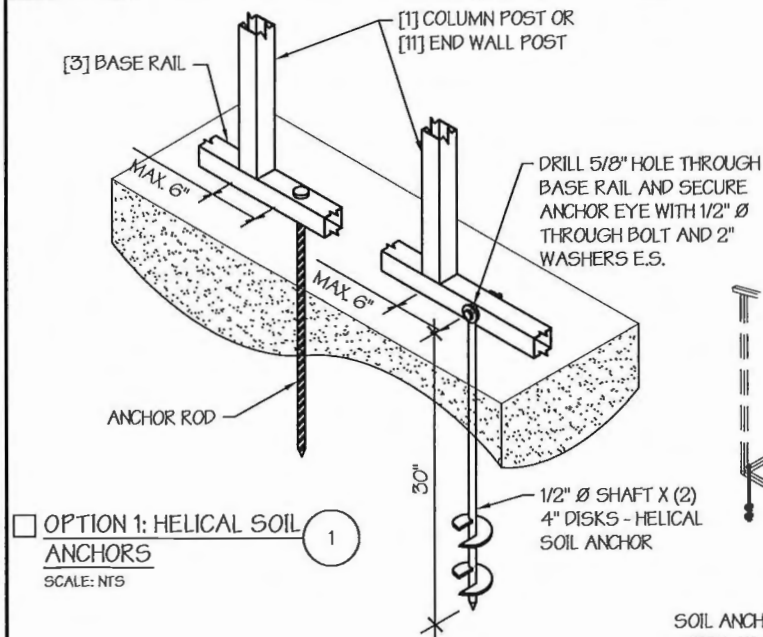
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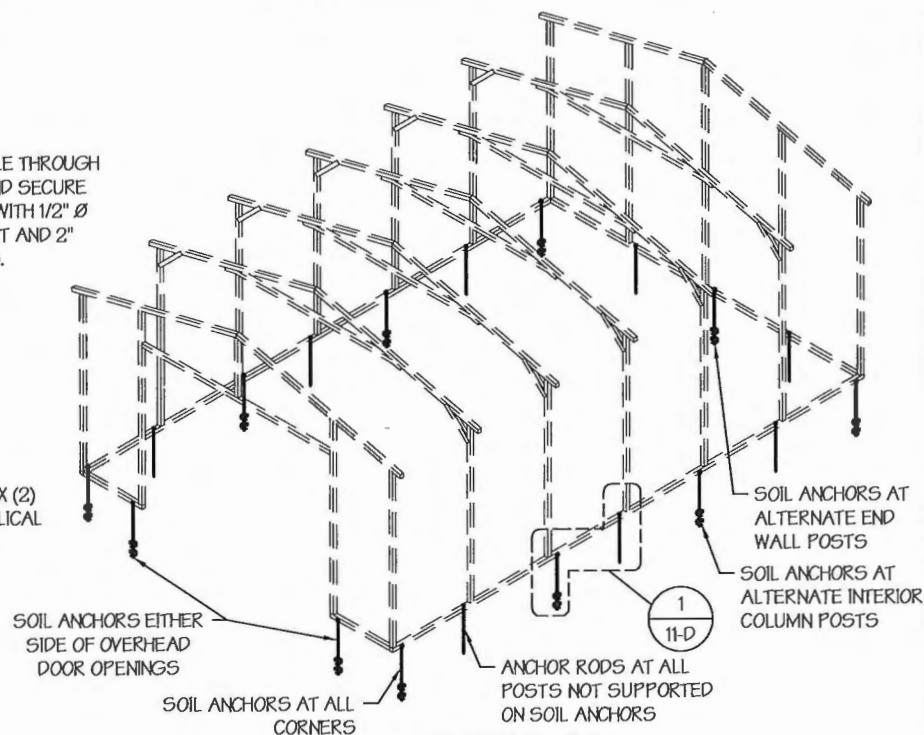


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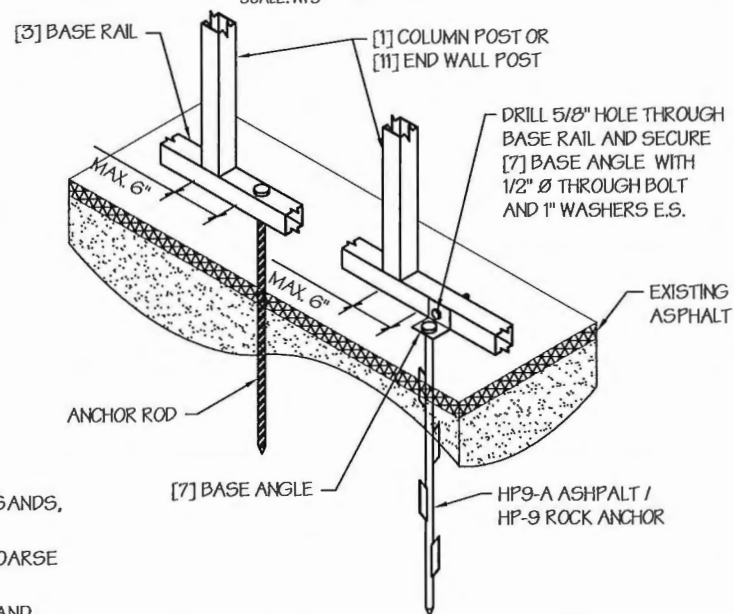
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☐ **OPTION 1: HELICAL SOIL ANCHORS**
SCALE: NTS



SOIL FOUNDATION
SCALE: NTS



☐ **OPTION 2: ROCK / ASPHALT ANCHORS**
SCALE: NTS

SOIL FOUNDATION NOTES:

1. DESIGNS SHOWN ON THIS SHEET ARE FOR SOIL ANCHOR FOUNDATION. ANY OF THE FOUNDATIONS SHOWN ON SHEETS 11-A THRU D CAN BE USED.
2. SOIL ANCHORS (HELICAL OR ROCK/ASPHALT) SHALL BE LOCATED AT ALL 4 CORNERS, ON EACH SIDE OF OVERHEAD DOOR OPENINGS AND ON ALTERNATE INTERIOR COLUMN POSTS AND END WALLS POSTS.
3. HELICAL ANCHORS ARE TO BE USED ONLY IF THE DRIVING TORQUE INTO THE GROUND IS 150 FT-LBS OR GREATER. MANUFACTURER IS NOT RESPONSIBLE FOR SOIL QUALITY AT SITE.
4. HELICAL ANCHORS CAN ONLY BE USED FOR CLASS 2, 3 & 4 SOILS (SEE SOIL CLASSIFICATIONS THIS PAGE).
5. ALL POSTS WITH NO ANCHORS ADJACENT SHALL BE ANCHORED TO THE GROUND WITH A 1/2" X 30" LG. ROD. RODS WILL HAVE A WELDED NUT AT THE TOP AND ONE COAT OF RUST PROOF PRIMER.
6. ASSUMED SOIL BEARING CAPACITY IS TO BE A MIN. OF 1500 PSF.

SOIL CLASSIFICATIONS:

SOIL CLASS	DESCRIPTION
2	SANDY GRAVEL AND GRAVEL, VERY THIN DENSE AND/OR CEMENTED SANDS, COARSE GRAVEL/COBBLES, PRELOADED SILTS, CLAYS AND CORAL.
3	SAND, SILTY SAND, CLAYEY SAND, SILTY GRAVEL, MEDIUM DENSE COARSE SANDS, SANDY GRAVEL, VERY STIFF SILT AND SANDY CLAYS.
4	LOOSE TO MEDIUM DENSE SANDS, FIRM TO STIFF CLAYS AND SILTS AND ALLUVIAL FILLS.

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DRAWING INFORMATION

PROJECT: 24'-0" WIDE BUILDINGS

LOCATION: STATE OF MICHIGAN

PROJECT NO.: 034-17-1682

SHEET TITLE:

**FOUNDATION OPTION 4:
SOIL ANCHORS**

SHEET NO.: 11-D / 11

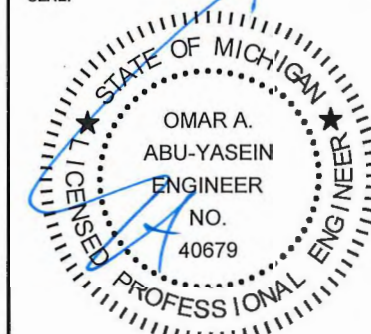
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