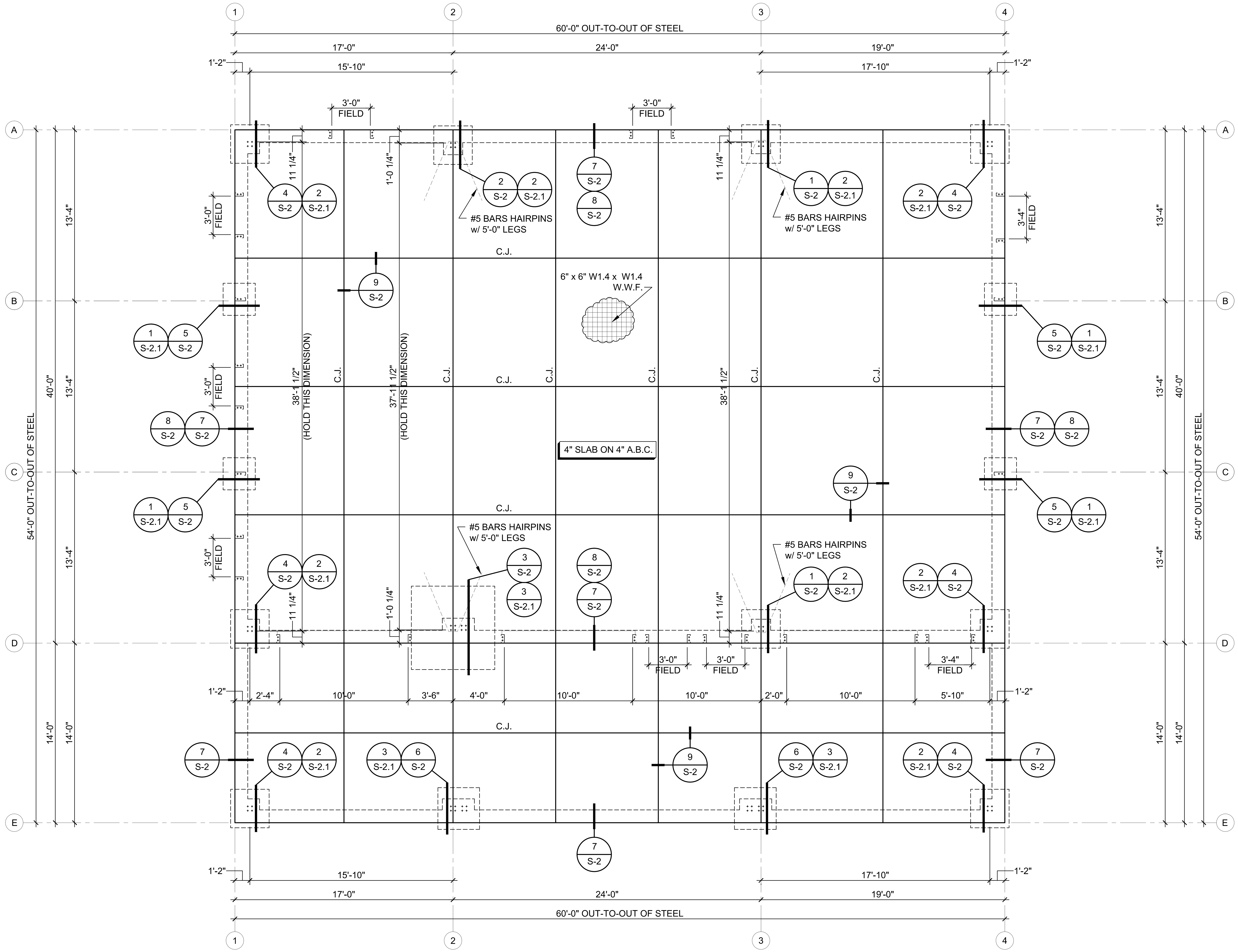


FOUNDATION PLAN

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

S. E. CONSULTANTS, Inc.
Structural Engineering Consultants
5800 East Thomas Road, Suite 104
Scottsdale, AZ 85251
Phone: (480) 946-2010
Fax: (480) 946-1909

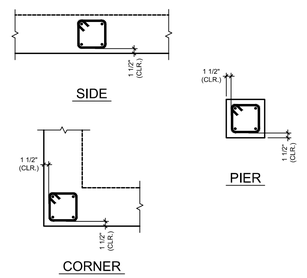
OLYMPIA STEEL BUILDINGS
FOUNDATION DESIGN - 54' x 60'
JOE CREECH
BENSON, NC 27504

SEAL 029129 ENGINEER STEVEN W. SCHAUB JUN 08 2023

FOUNDATION PLAN

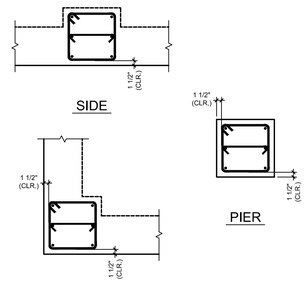
design GCS
drawn JHL
check SWS
date 06/08/2023

sheet **S-1** of 4
job 0958-23



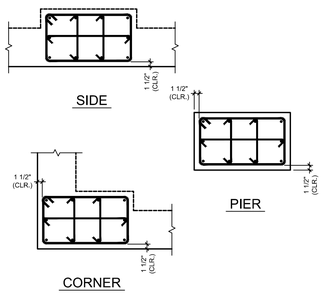
1 12" x 12" PIER

N.T.S.



2 18" x 18" PIER

N.T.S.



3 18" x 30" PIER

N.T.S.

FOUNDATION DETAIL NOTES

1. CONC. SLAB TO BE MIN. OF 4" ABOVE FINISHED GRADE AND A MAX. OF 8" ABOVE FINISHED GRADE, UNLESS OTHERWISE NOTED.
2. 6" x 6" - W1.4 x W1.4 W.W.F. OR FIBERMESH INSTALLED PER SECIFICATION SHEET PROVIDED BY FIBERMESH MANUFACTURE.
3. ANCHOR BOLTS ARE PLACED ON DRAWINGS AS A COURTESY, PLEASE REVIEW WITH METAL BUILDING DRAWINGS.
4. PERIMETER IS TO BE A MIN. OF DEPTH AS INDICATED ABOVE, UNLESS FROST DEPTH IS GREATER THAN VALUE INDICATED IN THAT CASE THE PERIMETER TURNDOWN SHALL BE SET AT THE FROST DEPTH ELEVATION.
5. PIERS ARE TO BE CENTERED ON ANCHOR BOLT PATTERNS UNLESS OTHERWISE NOTED.

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OLYMPIA STEEL BUILDINGS
FOUNDATION DESIGN - 54' x 60'
JOE CREECH
BENSON, NC 27504

REGISTERED PROFESSIONAL ENGINEER
STEVEN W. SCHLAIS
SEAL
029129
JUN 08 2023

DETAILS

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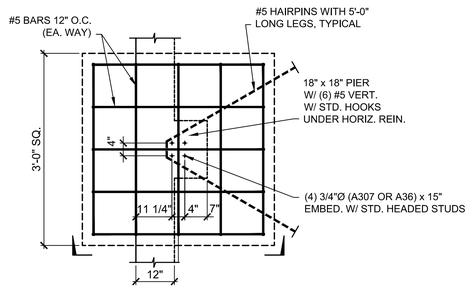
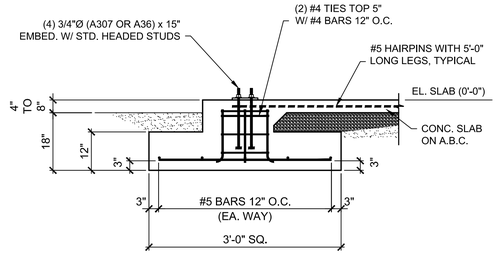
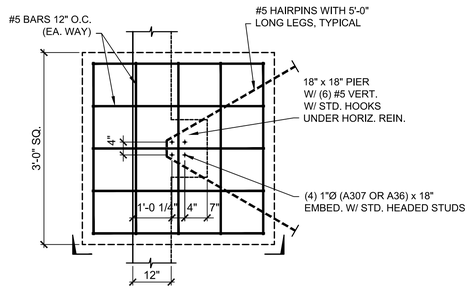
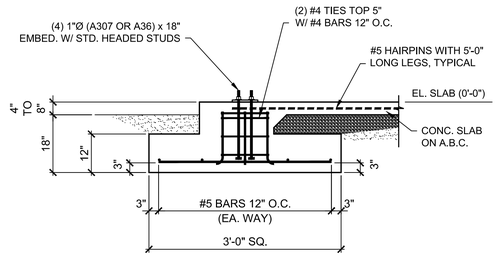
sheet S-2.1
of 4
job 0958-23



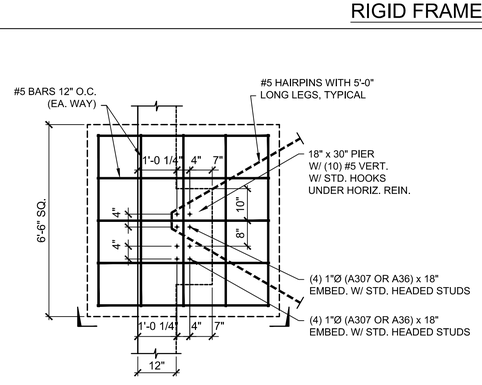


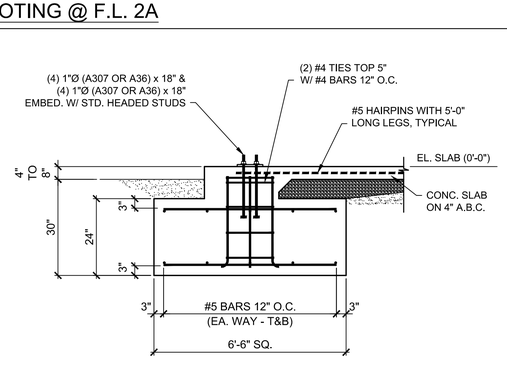
1 RIGID FRAME FOOTING @ F.L. 3A, 3D N.T.S.



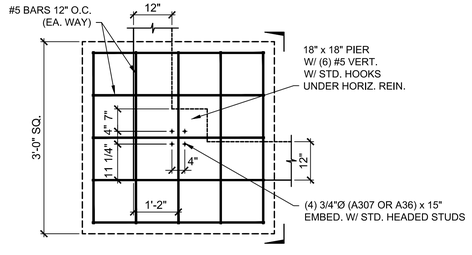


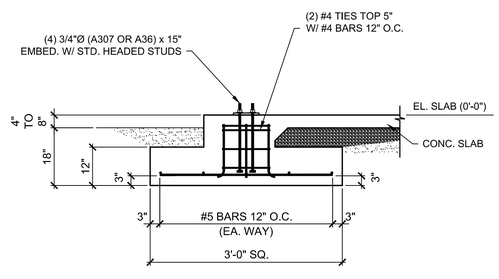
2 RIGID FRAME FOOTING @ F.L. 2A N.T.S.



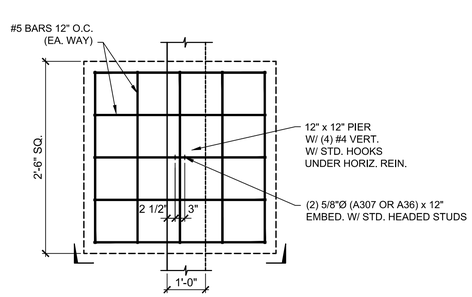


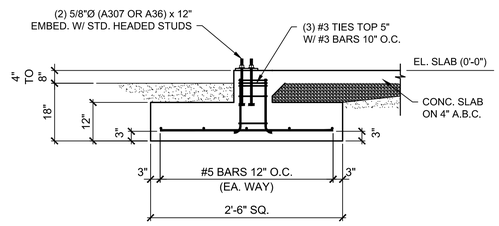
3 RIGID FRAME FOOTING @ F.L. 2D N.T.S.



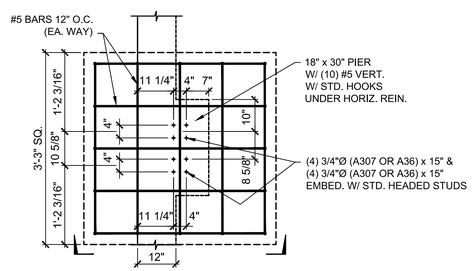


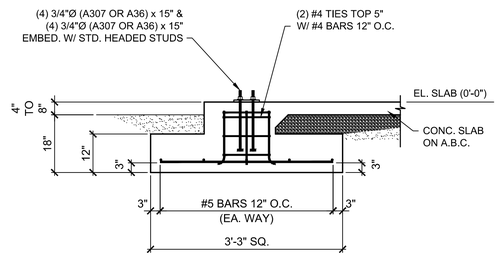
4 RIGID FRAME FOOTING @ F.L. 1A, 1D, 1E, 4A, 4D, 4E N.T.S.



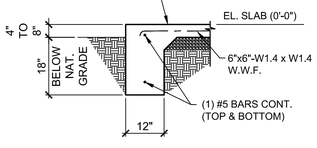


5 ENDWALL FOOTINGS @ F.L. 1B, 1C, 4B, 4C N.T.S.





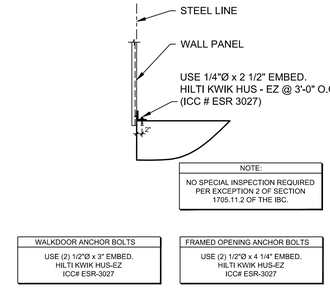
6 LEAN-TO FOOTING @ F.L. 2E, 3E N.T.S.



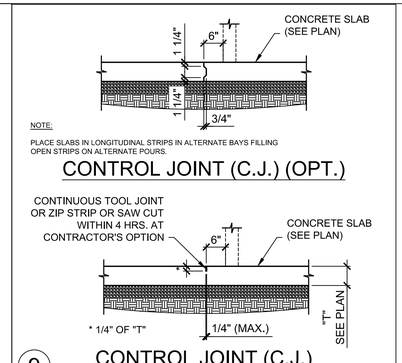
NOTE:

1. PERIMETER IS TO BE MIN. OF DEPTH AS INDICATED ABOVE, UNLESS FROST DEPTH IS GREATER THAN VALUE INDICATED. IN THAT CASE THE PERIMETER TURNDOWN SHALL BE SET AT THE FROST DEPTH ELEVATION.
2. R.F. AND FOOTINGS NOT SHOWN FOR CLARITY. G.B. REINFORCING SHALL RUN THROUGH FOOTING.

7 PERIMETER TURNDOWN N.T.S.



8 BASE ANGLE ATTACHMENT N.T.S.



NOTE:

PLACE SLABS IN LONGITUDINAL STRIPS IN ALTERNATE BAYS FILLING OPEN STRIPS ON ALTERNATE POURS.

CONTROL JOINT (C.J.) (OPT.)

CONTROL JOINT (C.J.)

9 N.T.S.

FOUNDATION DETAIL NOTES

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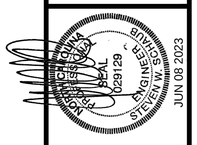

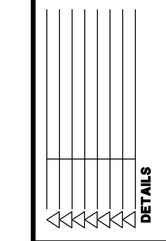

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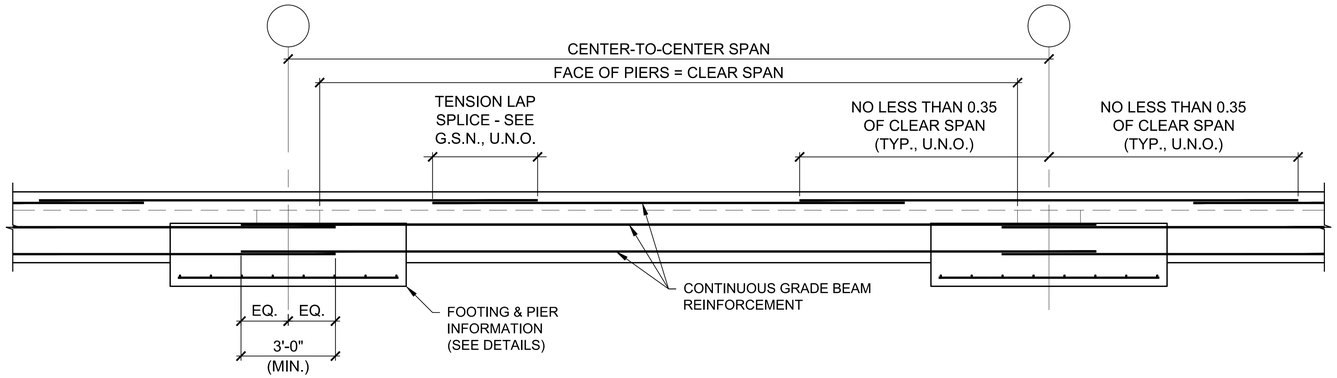
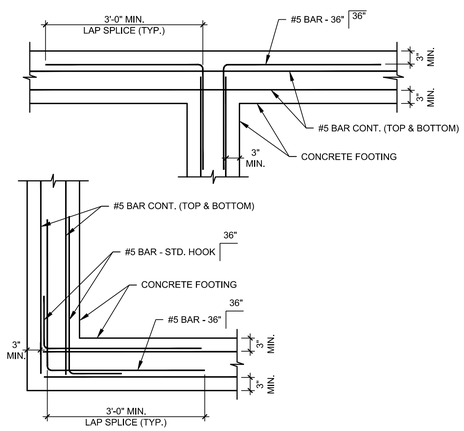


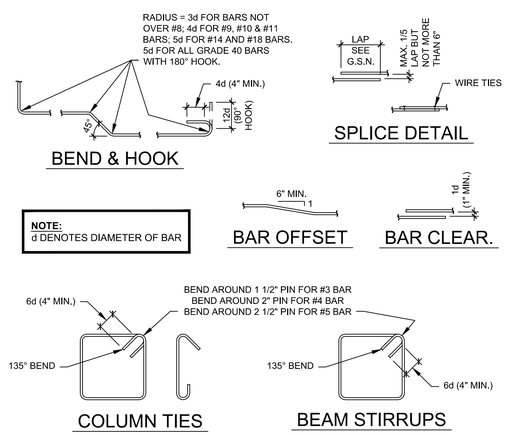
1 TYPICAL CONTINUOUS GRADE BEAM/TURNDOWN REINFORCEMENT SPLICING

N.T.S.



2 CORNER BARS AT CONC. FTG.

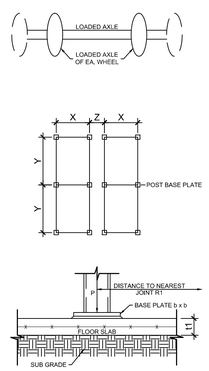
N.T.S.



4 TYP. CONC. REINF. BAR DET.

N.T.S.

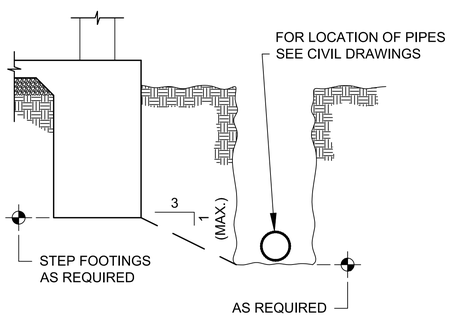
VEHICLE AXLE LOADS:	NONE
PAYLOAD CAPACITY:	LBS.
VEHICLE WEIGHT:	LBS.
AXLE (SINGULAR OR DUAL WHEEL):	-
WHEEL SPACING "WS":	IN.
DUAL WHEEL SPACING Sd:	IN.
WHEEL (SOLID OR PNEUMATIC):	-
WHEEL'S TIRE WIDTH:	IN.
WHEEL CONTACT AREA:	SQ. IN.
UNIFORM LOADS WITH AISLE:	**NONE**
UNIFORM LOAD WEIGHT:	P.S.F.
AISLE WIDTH:	FT.
LOCATION:	-
RACK & POST LOADS:	**NONE**
TOTAL LOAD ON A SECTION OF RACK:	LBS.
POST LOAD:	LBS.
BASE PLATE SIZE:	SQ. IN.
POST SPACING: X=	IN.
Y=	IN.
Z=	IN.
ADDITIONAL COLUMN LOADS:	**NONE**
TOTAL DESIGN LOAD @ COLUMN BASE:	LBS.
BASE PLATE SIZE:	SQ. IN.
LOCATION:	-
SPECIAL OR UNUSUAL LOADS:	**NONE**



IT IS ABSOLUTELY NECESSARY THAT FLOOR DESIGNER BE SUPPLIED WITH ACCURATE INFORMATION CONCERNING ANY APPLIED LOADS. NO DESIGN CONSIDERATIONS WILL BE PROVIDED FOR SLABS WITHOUT ONE OF THE LISTED ITEMS ABOVE. A MINIMUM SLAB THICKNESS WILL BE PROVIDED WITH AN AGGREGATE BASE COARSE MATERIAL. IT IS THE CONTRACTORS RESPONSIBILITY TO EMPLOY A SOILS ENGINEER IF SUBSTANDARD SOILS ARE ENCOUNTERED ON THE PROJECT.

6 SLAB LOADING SCHEDULE

N.T.S.



3 ADJACENT TO FOOTING

N.T.S.

	CLASS 'B' TENSION SPLICE LENGTHS												COMP. BARS	
CONC. psi	f'c = 2,500/3,000 psi				f'c = 4,000 psi				f'c = 5,000 psi				f'c = ALL	
BAR LOCATION	REGULAR		TOP		REGULAR		TOP		REGULAR		TOP		STD LAP	ENCLOSED w/ SPIRAL TIES
SPACING / SIZE	>3db	≥6db	>3db	≥6db	>3db	≥6db	>3db	≥6db	>3db	≥6db	>3db	≥6db		
#3	16"	16"	21"	21"	16"	16"	18"	18"	16"	16"	16"	16"	12"	12"
#4	22"	22"	28"	28"	19"	19"	24"	24"	17"	17"	22"	22"	15"	12"
#5	27"	27"	35"	35"	23"	23"	30"	30"	21"	21"	27"	27"	19"	14"
#6	35"	32"	46"	42"	31"	28"	40"	36"	27"	25"	36"	33"	23"	17"
#7	48"	38"	63"	49"	42"	33"	54"	42"	37"	29"	48"	38"	26"	20"
#8	63"	43"	82"	56"	55"	37"	71"	48"	49"	33"	64"	43"	30"	23"
#9	80"	48"	104"	63"	69"	42"	90"	55"	62"	38"	81"	49"	34"	25"
#10	102"	58"	132"	76"	88"	50"	114"	65"	79"	45"	102"	59"	38"	29"
#11	125"	71"	162"	93"	108"	62"	140"	80"	97"	55"	126"	72"	42"	32"

NOTE:

1. TOP BARS AND ANY HORIZONTAL BARS ARE TO BE PLACED SO THAT MORE THAN 12" OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE REINFORCEMENT.
2. UNLESS NOTED OTHERWISE. LAP SPLICES IN CONCRETE BEAMS, SLABS, WALLS AND FOOTINGS SHALL BE CLASS 'B' TENSION LAP SPLICES & LAP SPLICES IN CONCRETE COLUMNS SHALL BE COMPRESSION LAP SPLICES.
3. CONTACT STRUCTURAL ENGINEER IF CENTER TO CENTER SPACING OF REINFORCEMENT IS LESS THAN OR EQUAL TO 5 BAR DIAMETERS (≤5db).

5 REINFORCE. LAP SPLICE

N.T.S.

GENERAL STRUCTURAL NOTES (FOUNDATION ONLY)

APPLY UNLESS NOTED OTHERWISE ON STRUCTURAL DRAWINGS

CODE: Comply with 2018 NORTH CAROLINA BUILDING CODE

SOIL REPORT BY: N/A

FOUNDATIONS:
Footings shall bear on firm undisturbed soil 18" below natural or finish grade, whichever is lower. Allowable soil bearing 1,500 p.s.f. Design soil pressure is per IBC Table 1804.2 for Class 5 soils. Excavations for foundations shall be inspected by a Soil Engineer to verify assumed allowable soil bearing and low settlement and swell potential, and to make any additional recommendations.

EARTHWORK:
Remove upper six inches or more containing roots, grass, and organic material and dispose off the site. Excavate and stockpile. Scarify the compact exposed subgrade for a depth of 12 inches. Bring up fill using stockpiled material and/or approved material with low Plasticity in 8 inch maximum thick layers, compacting each layer to 95 percent of ASTM D-698. Excavation and compaction of fill shall extend minimum of 10 feet beyond the building lines. The earthwork shall be done under supervision of a Soil Engineer retained by the Contractor, who shall verify above specifications for the support of slab on grade and for the control of soil swelling. The excavation shall remove all swellable soil as directed by the Soil Engineer.

VAPOR BARRIER:
A Soil Engineer should be consulted to verify the requirements of a vapor barrier under the concrete slab.

INSULATION:
Rigid board insulations may be required to provide insulating properties for the slab on this foundation design. Please consult a thermal engineer for requirements of type, thickness and thermal insulation properties of the insulation barrier for this particular foundation location. Once this has been determined you can forward this information to our office for a structural review of the particular rigid board insulation to be used.

CONCRETE:
Shall meet all the requirements of ACI 301-15 with Type II cement. Minimum 28 day strength 2,500 p.s.i. used for design, use 3000 p.s.i. concrete for quality.

No admixtures without approval. Admixtures containing chlorides shall not be used. Concrete shall not be in contact with aluminum. Fly ash shall not be used. Mechanically vibrate all concrete when placed, except that slabs on grade need be vibrated only around embedded items. Slump 4 inches for slabs not on grade and 5 inches for other concrete. Do not tamp slabs. Use roller bug, vibrating screed or bull float to finish. Do not add water to concrete at site.

All reinforcing, including dowels and anchor bolts, shall be securely tied in location before placing concrete or grout. Dowels will not be allowed to be "stabbed" in. All concrete which during the life of the structure will be subjected to freezing temperatures while wet, shall have a water cement ratio not exceeding 0.53 by weight and shall contain entrained air as per ACI 301. Such concrete shall include exterior slabs, perimeter foundations, exterior curbs and gutters, etc.

REINFORCING:
ASTM A-615 Grade 60 except as follows:

#2 bars..... Grade 40
All weldable rebar..... A-706

All reinforcing bars deformed except #2 bars and wire mesh. Latest ACI Code and Detailing Manual apply. Clear concrete coverages to any reinforcing including ties are as follows:

Concrete placed against rough earth..... 3"
* Slabs and joists not exposed to weather..... 1"
*All other..... 1 ½"

LAP SPLICES IN CONCRETE:
Unless noted otherwise, provide the following lap splices:

#3, 16"; #4, 22"; #5, 27"; #6, 35"; #7, 48"; #8, 63"; #9, 80"; #10, 102"; #11, 125". Minimum clear cover for spliced reinforcing is greater than one bar diameter, and minimum clear spacing is greater than two bar diameters. Splice bottom bar over supports and top bar at midspan only. Where bars are shown spliced, they may run continuous at Contractor's option. Place rebar per CRSI Manual. Rebar spacings given are maximum on center whether stated as "o.c." or not, and all rebar is continuous whether stated as "cont." or not, Provide bent corner rebar to match and lap with horizontal rebars at corners and intersection of walls, beams, bond beams and footings per ACI Manual. Dowel all vertical rebar to foundations. Securely tie all rebar, including dowels, in location before placing concrete or grout. Where reinforcing is shown continuous thru construction joints, Lenton Form Savers dowel bar splice devices as manufactured by ERICO Products, Inc. (or equivalent) may be used. Sizes and types shall be selected to develop the full tension strength of the bar per ICC Research report.

STRUCTURAL STEEL:
Bolts and plain anchors ASTM A-307. All expansion bolts to have current ICC approval.

SUPPLEMENTARY NOTES:
Provide all temporary bracing, shoring, guying or other means to avoid excessive stresses and to hold structural elements in place during construction. Any members required to support equipment from the framing shown shall be designed and provided by the equipment Contractor. Options and approved substitutions are for Contractor's convenience. He shall be responsible for all changes and additional costs necessary and he shall coordinate all details. Any engineering design provided by others and submitted for review shall be by an insured Structural Engineer with continuous five years of experience in the type of design submitted. Unless noted otherwise, details on Structural Drawings are typical as indicated by cuts, references, or titles. In case of conflicts, more costly requirements govern for bidding. Submit clarification request prior to proceeding with work. Verify all dimensions with Architectural Drawings. Contractor shall establish and verify in field all existing conditions affecting new construction. Contact Architect immediately if existing conditions are not as depicted in drawings. All construction meeting or crossing expansion or shrinkage control joints in framed floors must have provisions to accommodate the movement or must be delayed until the joint is closed.

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GENERAL DETAILS & GENERAL STRUCTURAL NOTES

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sheet **S-3** of 4
job 0958-23