

DRAWING SYMBOLS

DRAWING NUMBER: XXXXX
DRAWING NAME: FOUNDATION PLAN

NEW COLUMN NUMBER: 1
EXISTING COLUMN NUMBER: A

SECTION OR DETAIL DESCRIPTION: SECTION NUMBER 24, SHEET NUMBER S400

CONCRETE: [Symbol]

FACE BRICK: [Symbol]

CONCRETE BLOCK: [Symbol]

WOOD BLOCKING: [Symbol]

EARTH/ COMPACT FILL: [Symbol]

STEEL: [Symbol]

WELDED WIRE FABRIC: [Symbol]

STEPPED FOOTING LOCATION: [Symbol]

JOIST BOT. CHORD EXTENSION: [Symbol]

JOIST BOLTED CONNECTION PER OSHA REQUIREMENTS: [Symbol]

BEAM SPlice LOCATION: [Symbol]

BEAM MOMENT CONNECTION: [Symbol]

ELEVATION OR WORK POINT: [Symbol]

REVISION AREA CLOUDED: [Symbol]

ABBREVIATIONS

A. A.B. ANCHOR BOLT	D. DBL. DOUBLE DIAMETER	I. INFO. INFORMATION	O. O.C. ON CENTER(S)	S. SOUTH
ADD'L. ADDITIONAL	DIAG. DIAGONAL	J. JOIST BEARING ELEVATION	O.H. OVERHEAD	SCHED. SCHEDULE
ALT. ALTERNATE	D.L. DEAD LOAD	JBE. JOIST BEARING ELEVATION	OPNG. OPENING	SIM. SIMILAR
ARCH. ARCHITECT(URAL)	D.O. DITTO	JST. JOIST	OPP. OPPOSITE	SJI STEEL JOIST INSTITUTE
B. BLDG. BUILDING	D.TL. DETAIL	JT. JOINT	P. PERIMETER	SPA. SPACE(S)
BLK. BLOCK	DWG. DRAWING	K. KIP	P.C. PRECAST CONCRETE	SO. SQUARE
BLKG. BLOCKING	E. EACH	K.O. KNOCK-OUT	PERM. PERMETER	STD. STANDARD
BM. BEAM	E.A. EACH ELEV.	K.S.I. KIPS PER SQ. INCH	PLF. POUNDS PER LINEAR FOOT	STL. STEEL
BOT. BOTTOM	E.MBED. EMBEDMENT	L. LIVE LOAD	PROJ. PROJECT PER SQ. FOOT	STRUC. STRUCTURAL
BRG. BEARING	E.Q. EQUAL	LLH. LONG LEG HORIZONTAL	PSF. POUNDS PER SQ. FOOT	T. TOP OF BEAM ELEVATION
BTWN. BETWEEN	EXIST. EXISTING	LLV. LONG LEG VERTICAL	PSI. POUNDS PER SQ. INCH	TDE. TOP OF DECK ELEVATION
C. C.I.P. CAST IN PLACE	EXP. EXPANSION	M. FAB. FABRICATE(OR)	EXT. EXTERIOR	TEMP. TEMPORARY
C.J. CONTROL JOINT	F. FAB. FABRICATE(OR)	FD. FLOOR DRAIN	C.L. CENTER LINE CLEARANCE)	TFE. TOP OF FOOTING ELEVATION
CL. CENTER LINE	FD. FLOOR DRAIN	FNDN. FOUNDATION	CMU CONCRETE MASONRY UNIT	TPE. TOP OF PIER ELEVATION
CLR. CLEARANCE)	FTC. FOOTING	MATL. MATERIAL	COL. COLUMN	TSE. TOP OF SLAB ELEVATION
COMP. COMPOSITE	G. GAGE, GAUGE	MAX. MAXIMUM	CONN. CONNECTION	TYP. TYPICAL
CONC. CONCRETE	GALV. GALVANIZED	MECH. MECHANICAL	CONSTR. CONSTRUCTION	R. RADIUS
CONT. CONTINUOUS	G.C. GENERAL CONTRACT(OR)	MEZZ. MEZZANINE	COORD. COORDINATE	R.D. ROOF DRAIN
CTRD. CENTERED	H. HOOK	MFG. MANUFACTURE(R)	CTRD. CENTERED	REIN. REINFORCE(D), (NG)
	H.K. HOOKED STUDS	MIN. MINIMUM		REINFORCING FABRIC
	H.S. HOLLOW STRUCT. STEEL	MISC. MISCELLANEOUS		REQ'D. REQUIRED
		M.O. MASONRY OPENING		REV. REVISION, REVISE(D)
		N. NORTH		VERT. VERTICAL
		N.I.C. NOT TO CONTRACT		W. WEST
		NTS. NOT TO SCALE		W/ WITH
				W.P. WORK POINT
				W.W.F. WELDED WIRE FABRIC

DRAWING INDEX

- S-0.1 STRUCTURAL GENERAL NOTES
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- S-2.1 FOUNDATION PLAN
- S-3.1 ROOF FRAMING PLAN
- S-4.1 FOUNDATION DETAILS
- S-5.1 ROOF FRAMING DETAILS

STRUCTURAL NOTES

- I. DESIGN DATA
- A. BUILDING CODE: INTERNATIONAL BUILDING CODE 2012 EDITION
- B. DESIGN LOADS/DESIGN CRITERIA
1. WIND LOAD: BASIC WIND SPEED (3-SECOND GUST) $V_{ult} = 115$ MPH, RISK CATEGORY II
 WIND IMPORTANCE FACTOR $I = 1.0$
 EXPOSURE CATEGORY: B, $V_{std} = 90$ MPH
 WIND UPLIFT FOR JOIST DESIGN: WITHIN 8 FT. OF BLDG PERIMETER, RIDGE, AND HIP EDGES: 46 PSF (ULTIMATE) BALANCE OF ROOF OVERHANGS: 26.4 PSF (ULTIMATE)
 WIND UPLIFT VALUES WERE CALCULATED USING ASCE 7-10. JOIST SUPPLIER TO DESIGN JOISTS FOR LOAD COMBINATIONS IN ACCORDANCE WITH ASCE 7-10 SECTION 2-4.1 AND IBC SECTION 1605.3.1 BASIC ALLOWABLE STRESS DESIGN LOAD COMBINATIONS WHICH DO NOT ALLOW ALLOWABLE STRESS INCREASES.
 IN CONFORMANCE WITH THE SJI SPECIFICATION, THE JOIST SUPPLIER SHALL CONSIDER JOIST UPLIFT IN THE DESIGN OF THE JOISTS, JOIST GIRDERS, BRIDGING AND JOIST AND JOIST GIRDER CONNECTIONS TO THE STRUCTURE. AT A MINIMUM, A SINGLE LINE OF BRIDGING MUST BE PROVIDED NEAR THE FIRST BOTTOM CHORD PANEL POINT AT EACH END OF JOIST. IN ADDITION, JOIST SUPPLIER IS RESPONSIBLE FOR JOIST AND JOIST GIRDER WELDS TO SUPPORT STRUCTURE.
2. ROOF LOADS: LIVE LOAD (LL) 20 PSF*
 DEAD LOAD (DESIGN D.L.) 18 PSF
 WIND UPLIFT FOR JOIST DESIGN: WITHIN 8 FT. OF BLDG PERIMETER, RIDGE, AND HIP EDGES: 46 PSF (ULTIMATE) BALANCE OF ROOF OVERHANGS: 26.4 PSF (ULTIMATE)
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3. ROOF SNOW LOAD: GROUND SNOW LOAD, P_g 15 PSF
 FLAT-ROOF SNOW LOAD, P_f 15 PSF**
 SNOW EXPOSURE FACTOR, C_e 1.0
 SNOW LOAD IMPORTANCE FACTOR, I_s 1.0
 THERMAL FACTOR, C_t 1.1
4. MEZZANINE LOADS: LIVE LOADS (LL) 250 PSF
5. STAIRS, CORRIDORS & LOBBIES (LL) 100 PSF*
6. SEISMIC DESIGN DATA: SEISMIC IMPORTANCE FACTOR 1.00
 RISK CATEGORY II
 MAPPED SPECTRAL RESPONSE ACCELERATIONS
 $S_s = 0.183$ S1
 $S_1 = 0.093$
 SPECTRAL RESPONSE COEFFICIENTS
 $S_{s1} = 0.146$ S1
 $S_{s2} = 0.106$
 SITE CLASSIFICATION: B
 SEISMIC DESIGN CATEGORY: B
 BASIC SEISMIC FORCE-RESISTING SYSTEM (TYPICAL FOR BOTH STRUCTURES)
 LIGHT-FRAME (COLD-FORMED STEEL) BEARING WALL USING FLAT STRAP BRACING
 SEISMIC RESPONSE COEFFICIENT, $C_s = 0.04$
 RESPONSE MODIFICATION FACTOR, $R = 4$
 DESIGN BASE SHEAR, $V = 2.4$ K
 BASIC SEISMIC FORCE-RESISTING SYSTEM: ORDINARY STEEL MOMENT FRAME (AT WASH BAY ONLY)
 SEISMIC RESPONSE COEFFICIENT, $C_s = 0.073$
 RESPONSE MODIFICATION FACTOR, $R = 2$
 DESIGN BASE SHEAR - EQUIVALENT LATERAL FORCE = 2.6 K
- ANALYSIS PROCEDURE - EQUIVALENT LATERAL FORCE
- SEISMIC DESIGN AND ANCHORAGE OF NON-STRUCTURAL COMPONENTS SHALL BE THE RESPONSIBILITY OF THE SUPPLIER OF THE COMPONENTS. NON-STRUCTURAL COMPONENTS INCLUDES, BUT IS NOT LIMITED TO, ARCHITECTURAL, MECHANICAL, ELECTRICAL AND STORAGE SYSTEMS. IT SHALL BE THE RESPONSIBILITY OF THE SUPPLIER TO EXAMINE THE SYSTEMS AND COMPONENTS BEING PROVIDED RELATIVE TO THE PROVISIONS OF ASCE-7, CHAPTER 13 TO DETERMINE APPLICABILITY OF THE PROVISIONS TO THE SCOPE OF WORK. IN THE EVENT THAT PROVISIONS APPLY TO THE SCOPE OF WORK, AN ENGINEER REGISTERED IN THE STATE OF THE PROJECT SHALL DESIGN THE APPLICABLE SUPPORT SYSTEMS AND ANCHORAGE FOR THE COMPONENTS AND PRODUCE SIGNED AND SEALED DRAWINGS AND CALCULATIONS FOR SUBMITTAL AND REVIEW BY THE ENGINEER OF RECORD.
7. DEFLECTION CRITERIA: ALL MEMBERS SUPPORTING MASONRY ARE DESIGNED FOR A MAXIMUM DEAD LOAD PLUS LIVE LOAD DEFLECTION OF SPAN/600 OR 0.3 INCHES, WHICHEVER IS LESS. ALL PERIMETER MEMBERS ARE DESIGNED FOR A MAXIMUM LIVE LOAD DEFLECTION OF 0.5 INCHES UNLESS NOTED OTHERWISE ON PLANS.
- II. MASONRY MATERIAL PROPERTIES
- A. MASONRY MATERIAL PROPERTIES
- | | | |
|--------------------------|----------------|---------|
| UNIT MASONRY UNITS | STRENGTH (PSI) | ASTM |
| B. BRICK MASONRY (ASST) | 1500 | C216-SW |
| C. MORTAR | 1800 | C270 |
| E. GROUT | 2000 min | C476 |
| F. REINFORCING FABRIC | 60,000 | A615 |
| G. COLD DRAWN STEEL WIRE | 70,000 | A82 |
- B. GENERAL MASONRY
1. DESIGN IS BASED ON VALUES AS PUBLISHED IN THE "BUILDING CODE REQUIREMENTS FOR CONCRETE MASONRY STRUCTURES" (ACI-530 / ASCE-5 / TMS-402).
2. ALL HOLLOW UNIT BLOCK COMPRESSION TEST STRENGTHS REQUIRED TO ACHIEVE THE f_m STATED ABOVE SHALL BE ACCORDING TO "SPECIFICATIONS FOR MASONRY STRUCTURES" (ACI-530.1 / ASCE-6 / TMS-602, SECTION 1.4) BASED ON STRENGTHS BY THE UNIT STRENGTH METHOD.
3. DESIGN IS BASED ON ENGINEERED MASONRY / ALLOWABLE STRESS DESIGN.
4. SEE SHEET DRAWINGS AND SCHEDULES FOR ADDITIONAL MASONRY NOTES.
5. SHOP DRAWINGS SHALL BE SUBMITTED SHOWING CMU REINFORCEMENT SIZES, SPACINGS, LOCATIONS, QUANTITIES AND BENDING AND CUTTING SCHEDULES.
6. BASIS OF DESIGN FOR BRICK TIES IS A MIN. OF 3/16" DIA. ADJUSTABLE RECTANGULAR WALL TIES AS MANUFACTURED BY DUR-O-WALL OR APPROVED EQUAL. PROVIDE ONE TIE FOR EACH 2.00 SQUARE FEET OF WALL AREA. THE SPACING RECOMMENDATION IS 18" ON CENTER VERTICALLY & 18" ON CENTER HORIZONTALLY.
- C. BRICK VENEER WITH METAL STUD BACKUP
1. BASIS OF DESIGN FOR BRICK TIES IS DUR-O-WALL D/A 213 OR APPROVED EQUAL. PROVIDE ONE TIE FOR EACH 4.00 SQUARE FEET OF WALL AREA. THE SPACING RECOMMENDATION IS 24" ON CENTER EACH WAY. TIES SHALL HAVE A MINIMUM OF 2" EMBEDMENT INTO BED JOINT. MAXIMUM ECCENTRICITY IS 3/4".
2. SCREWS CONNECTING BRICK TIES TO STEEL STUD FRAMING SHALL BE #12 CORROSION RESISTANT SELF-DRILLING & SELF-TAPPING. PROVIDE MINIMUM OF TWO SCREWS PER TIE.
3. BRICK VENEER MORTAR SHALL BE OF A LIME BASED MIX AND A MINIMUM OF TYPE "N" OR PRE-APPROVED EQUAL.
4. TIES SHALL BE PLACED AT A MAXIMUM DISTANCE OF 8" FROM ANY FREE EDGE.
5. SEE "DEFERRED SUBMITTALS" SECTION FOR STUD BACKING SYSTEM.
- V. STEEL MATERIAL PROPERTIES
- A. STEEL MATERIAL PROPERTIES
- | | | |
|---|----------------------|-------|
| STEEL PROPERTIES: | F _y (PSI) | ASTM |
| 1. STRUCTURAL WIDE FLANGE SHAPES & PLATES, ETC. | 50,000 | A992 |
| 2. HIGH STRENGTH BOLTS, U.N.O. | 36,000 | A36 |
| 3. ANCHOR BOLTS | 74,000 | A325 |
| 4. WELDING ELECTRODES | 36,000 | E70XX |
| 5. DECK WELDING ELECTRODES | 70,000 | A233 |
| 6. STRUCTURAL TUBES | 46,000 | A500 |
| 7. EXPANSION BOLTS SHALL BE HILTI KWIK BOLT 3 OR PRE-APPROVED EQUAL UNLESS NOTED OTHERWISE. | | |
- B. STRUCTURAL STEEL
1. STRUCTURAL STEEL DESIGN & CONSTRUCTION SHALL CONFORM TO IBC CHAPTER 22, AISI "LOAD & RESISTANCE FACTOR DESIGN SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS" & AISI "CODE OF STANDARD PRACTICE," APPLY U.N.O.
2. STRUCTURAL STEEL SUPPLIER SHALL SUBMIT SHOP DRAWINGS FOR ALL MATERIAL SUPPLIED. IN ADDITION, THE STRUCTURAL STEEL SUPPLIER SHALL SUBMIT DRAWINGS AND CALCULATIONS
- VI. LIGHT GAGE METAL STUD FRAMING
- A. LIGHT GAGE FRAMING
1. LIGHT GAGE FRAMING SHALL BE DESIGNED & CONSTRUCTED IN ACCORDANCE WITH IBC CHAPTER 22, SECTION 2210 - COLD FORMED STEEL. THE FINAL DETAILED SHOP DRAWINGS AND RELATED DESIGN CALCULATIONS CERTIFIED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT.
2. STUD DESIGNATION & RELATED ACCESSORIES ON DRAWINGS ARE BASED ON AISI/SFIA/SSMA (STEEL STUD MANUFACTURERS ASSOCIATION) STANDARD SHAPES. OTHER MANUFACTURERS SHALL FURNISH ELEMENTS OF EQUAL OR GREATER SECTION PROPERTIES, MATERIAL STRENGTHS & STIFFNESS.
 $F_y = 33,000$ psi (STUDS = 18 GA & THINNER)
 $F_y = 50,000$ psi (STUDS = 16 GA & THICKER)
 $F_y = 33,000$ psi (TRACK).
3. STEEL THICKNESS
- | REFERENCE GAGE | MINIMUM (MILS) | MINIMUM DELIVERED THICKNESS (IN.) |
|----------------|----------------|-----------------------------------|
| 20 | 33 | 0.0329 |
| 18 | 43 | 0.0428 |
| 16 | 54 | 0.0538 |
| 14 | 68 | 0.0677 |
| 12 | 97 | 0.0966 |
4. LIGHT GAGE SUPPLIER SHALL REFERENCE DESIGN DRAWINGS FOR INFORMATION REGARDING APPLIED GRAVITY AND LATERAL LOADS WITHIN THE BUILDING THAT AFFECT THE LIGHT GAGE DESIGN.
5. THIS STRUCTURE IS A NON-SELF SUPPORTING FRAME REQUIRING INTERACTION WITH OTHER ELEMENTS TO PROVIDE THE REQUIRED STABILITY. THE LIGHT GAGE METAL ERECTOR SHALL PROVIDE TEMPORARY BRACING UNTIL FINAL STABILITY IS PROVIDED. AS A MINIMUM, TEMPORARY BRACING SHALL BE PROVIDED AT EACH GRID IN BOTH DIRECTIONS.
6. DECK FASTENING REQUIREMENTS SHOWN IN SECTION D FOR ROOF DECK ARE TO BE CONSIDERED A MINIMUM REQUIREMENT. LIGHT GAGE SUPPLIER SHALL VERIFY THE MINIMUM REQUIREMENTS IS ADEQUATE AND PROVIDE ANY ADDITIONAL FASTENING TO MEET THE DESIGN REQUIREMENTS FOR LATERAL AND UPLIFT LOADS.
7. STUD DESIGN SHALL ACCOUNT FOR LATERAL LOADS, PARTICULARLY AT OPENINGS AND PROVIDE APPROPRIATE BRACING OR INTEGRAL GIRTS/LINEELS SHALL BE PROVIDED. OUT OF PLANE DEFLECTION DUE TO WIND SHALL NOT EXCEED THE STUD SPAN/600.
8. STUD SUPPLIER SHALL DESIGN, PROVIDE AND INSTALL ALL CONNECTIONS, INCLUDING STUD TRACK AND CLIP-ANGLE CONNECTIONS TO OTHER STRUCTURAL ELEMENTS AND SLABS.
7. CERTIFIED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT FOR ALL STAIRS, LADDERS, RAILINGS, CAP PLATES, BRACING, BRIDGE PLATES, BRIDGE MEMBERS, SPLICES, CONNECTIONS AND ANY OTHER COMPONENTS DESIGNED BY THE SUPPLIER.
8. PROVIDE PROTECTIVE ASPHALTIC COATING OR EQUAL ROUGH STRUCTURAL STEEL BELOW GRADE.
9. CAMBERS SHOWN ON THE DRAWINGS REFLECT THE IN-PLACE ERECTED, BEAM DEAD LOAD CONDITIONS. CAMBERS SHALL BE INCREASED ACCORDINGLY BY STRUCTURAL STEEL SUPPLIER TO ACCOUNT FOR LOSS OF CAMBER DUE TO CAMBERING PROCESS, TRANSPORTATION AND HANDLING. BEAMS WITH CAMBER SHALL COMPLY WITH A CAMBER TOLERANCE OF -0.4 3/8". SINGLE POINT CAMBERING IS NOT ALLOWED.
10. THIS STRUCTURE IS A NON-SELF SUPPORTING STEEL FRAME REQUIRING INTERACTION WITH OTHER ELEMENTS TO PROVIDE THE REQUIRED STABILITY. THE STEEL ERECTOR SHALL PROVIDE TEMPORARY BRACING UNTIL FINAL STABILITY IS PROVIDED. AS A MINIMUM, TEMPORARY BRACING SHALL BE PROVIDED AT EACH GRID IN BOTH DIRECTIONS.
11. BOLTED CONNECTIONS SHALL BE 3/4" DIA. A325 BEARING-TYPE WITH THREADS INCLUDED IN THE SHEAR PLANE. INSTALL BOLTS IN PROPERLY ALIGNED HOLES AND TIGHTEN TO A SNUG-TIGHT CONDITION AS DEFINED BY THE AISI "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS" U.N.O.
12. STEEL JOISTS: ALL STEEL JOISTS SHALL BE DESIGNED & CONSTRUCTED IN ACCORDANCE W/IBC CHAPTER 22, SECTION 2207 - STEEL JOISTS U.N.O.
13. STEEL JOISTS SUPPLIER SHALL FURNISH ALL BRACING, WALL ANCHORS, HEADERS & BOTTOM CHORD EXTENSIONS, ETC. AS NECESSARY TO PROVIDE A COMPLETE INSTALLATION.
14. THE JOIST SUPPLIER SHALL COORDINATE BRIDGING LOCATIONS WITH THE SPRINKLER CONTRACTOR SUCH THAT THE BRIDGING DOES NOT LOCATE A MINIMUM OF 1" OF CLEAR HORIZ. FROM THE CENTER LINES OF THE SPRINKLER HEADS OR 2" OF CLEAR VERTICALLY BELOW THE SPRINKLER DEFLECTOR. BRIDGING LOCATIONS SHALL BE DIMENSIONED ON JOIST SHOP DRAWINGS.
15. PLACEMENT OF MECHANICAL UNITS & HANGERS SUPPORTED BY ROOF JOISTS IS SUBJECT TO THE PRIOR APPROVAL OF THE STRUCTURAL ENGINEER.
16. THE JOIST MANUFACTURER SHALL BE RESPONSIBLE FOR A SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL. A CERTIFIED LETTER STATING THAT ALL STANDARD JOISTS CONFORM TO THE SPECIFICATIONS SHALL BE SUBMITTED. CALCULATIONS FOR ALL JOIST GIRDERS & SPECIAL JOISTS CERTIFIED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT, SHALL BE SUBMITTED FOR REVIEW.
17. THE DESIGN OF ALL JOIST & GIRDER MEMBERS & ELEMENTS SHOWN ON THE DRAWINGS ARE FOR THE IN-PLACE COMPLETED BUILDING. ALL LOADING CRITERIA & VERIFICATION OF DESIGN FOR LOADING SUCH AS HANDLING, TRANSPORTATION & ERECTION ARE THE SOLE RESPONSIBILITY OF THE JOIST MANUFACTURER.
18. ALL JOISTS SHALL BE CAMBERED IN ACCORDANCE WITH SJI CRITERIA U.N.O.
19. STEEL DECK
1. ALL STEEL DECKS SHALL BE DESIGNED & CONSTRUCTED IN ACCORDANCE WITH IBC CHAPTER 22, SECTION 2210 - COLD FORMED STEEL AND THE STEEL DECK INSTITUTE SPECIFICATIONS AND RECOMMENDATIONS, U.N.O.
2. THE STEEL DECK SUPPLIER SHALL SUBMIT SHOP DRAWINGS FOR ALL ELEMENTS & MEMBERS FURNISHED BY THE DECK SUPPLIER. DECK SUPPLIER SHALL SUBMIT IFC REPORTS SHOWING ALLOWABLE DIAPHRAGM SHEAR VALUES.
3. ROOF DECK SHALL BE CONTINUOUS OVER THREE SPANS MINIMUM. YIELD STRENGTH SHALL BE 33,000 PSI MINIMUM. ERECT IN ACCORDANCE WITH THE REPORT TO MEET THE REQUIRED SHEAR SPECIFIED ON THE DRAWINGS. CONNECTION TO FRAMING MEMBERS SHALL NOT BE LESS THAN THAT SHOWN ON DRAWINGS.
4. MINIMUM REQUIREMENTS FOR ROOF AND MEZZANINE DECK FASTENING SHALL BE 5/8" PUDDLE WELDS USING THE WELD PATTERN SHOWN ON THE DRAWINGS AND #10 TEK SCREW SIDE LAP FASTENERS PER FASTENING DETAILS SHOWN ON THE DRAWINGS OR PRE-APPROVED EQUAL.
5. DECK FASTENING SHALL BE PER SJI & MANUFACTURER'S RECOMMENDATIONS BUT NOT LESS THAN THAT SHOWN ON THE DRAWINGS.
6. ALL METAL DECK TO BE SPRAY FIREPROOFED SHALL BE GALVANIZED, CLEANED & DEGREASED PRIOR TO SHIPPING. SEE ARCHITECTURAL DRAWINGS FOR EXTENT OF FIREPROOFING.

100% CONSTRUCTION DOCUMENTS

<p>CONSULTANTS:</p> <p>AEI AMERICAN ENGINEERS, INC. 65 ABERDEEN DR. GLASGOW, KY 42411 (270) 651-7220 TEL. (270) 651-3246 FAX WWW.AEI.CC</p> <p>AT ADVANCED STRUCTURAL TECHNOLOGIES 7212 METRO BLVD EDINA, MN 55439 (952) 854-9322 TEL. (952) 854-9690 FAX WWW.ASTMN.COM</p> <p>KJWW ENGINEERING CONSULTANTS Experience you can build on™ STRUCTURAL, MECHANICAL, ELECTRICAL TECHNOLOGY, MEDICAL EQUIPMENT SOLUTIONS (309) 788-0673 TEL. (309) 788-5976 FAX QUAD CITIES, IL. WWW.KJWW.COM</p>	<p>I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.</p> <p>PRINT NAME: John M. Levar</p> <p>SIGNATURE: <i>[Signature]</i></p> <p>DATE: 5-20-15 LICENSE # 43095</p>	<p>ARCHITECT/ENGINEERS:</p> <p>ANDERSON ENGINEERING ENGINEERING • ARCHITECTURE • LAND SURVEYING ENVIRONMENTAL SERVICES • LANDSCAPE ARCHITECTURE</p> <p>Anderson Engineering of Minnesota, LLC 13605 1st Avenue North Suite 100 Plymouth, MN 55441 763-412-4000 (o) 763-412-4090 (f) www.ae-mn.com</p>	<p>Drawing Title: STRUCTURAL GENERAL NOTES</p> <p>Approved: Project Director</p>	<p>Project Title: WASH BAY / STORAGE BUILDING</p> <p>Location: CAMP NELSON NATIONAL CEMETERY NICHOLASVILLE, KENTUCKY</p> <p>Date: May 20, 2015</p> <p>Checked: AO Drawn: RL</p>	<p>Project Number: 833-CM3-026</p> <p>Building Number: 3003</p> <p>Drawing Number: S-0.1</p> <p>Dwg. 32 of 53</p>	<p>National Cemetery Administration</p> <p>Department of Veterans Affairs</p>
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1 FOUNDATION PLAN
1/4" = 1'-0"

FOUNDATION PLAN NOTES:

- TOP OF SLAB ELEVATION (TSE.) = 100'-0" U.N.O. ON PLAN REFERENCED FROM DATUM ELEVATION 944.5 FT. VERIFY w/ CIVIL AND ARCH.
- INTERIOR SLAB ON GRADE SHALL BE 4" THICK NORMAL WEIGHT CONCRETE REINFORCED WITH 6x6-W1.4xW1.4 WWF (U.N.O. ON PLAN).
- TOP OF PIER ELEVATION (TPE.) = 97'-4" U.N.O. ON PLAN.
- CONTINUOUS PERIMETER AND INTERIOR LOAD BEARING C.I.P. WALL FOOTING SHALL BE 2'-0" WIDE x 1'-0" DEEP REINF. WITH (2)-#5 CONT. BOTTOM U.N.O.
- FOOTINGS SHALL BE CENTERED ON COLUMNS & WALLS U.N.O. ON PLAN.
- THE GEOTECHNICAL ENGINEER SHALL VERIFY THAT THE FOOTING ELEVATIONS SHOWN LOCATE THE BOTTOM OF THE FOOTING AT AN ELEVATION WHICH PROVIDES BEARING IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT. THE STRUCTURAL ENGINEER SHALL BE NOTIFIED OF LOCATIONS THAT DO NOT SATISFY THOSE REQUIREMENTS. IN THOSE CASES, THE GRADE MAY BE ELEVATED WITH COMPACTED MATERIAL APPROVED BY THE GEOTECHNICAL ENGINEER OR THE FOOTING DEPTH MAY BE INCREASED WITH THE WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD.
- "F1" ON PLAN INDICATES FOOTING TYPE - SEE SCHEDULE ON THIS SHEET FOR FOOTING SIZE AND REINFORCING.
- "C1" ON PLAN INDICATES STEEL COLUMN TYPE - SEE SCHEDULE ON THIS SHEET FOR COLUMN SIZE.
- "P1" ON PLAN INDICATES CONCRETE PIER TYPE - SEE SCHEDULE ON THIS SHEET FOR SIZE AND REINF.
- SEE DETAIL 1/S-4.1 FOR TYPICAL SLAB CONTROL / CONSTRUCTION JOINT.
- SEE DETAIL 2/S-4.1 FOR TYPICAL CONCRETE COVER OVER UTILITY PIPE.
- SEE DETAIL 3/S-4.1 FOR TYPICAL COLUMN ISOLATION JOINT.
- SEE DETAIL 4/S-4.1 FOR TYPICAL WALL CONTROL JOINT.
- S-----S ON PLAN INDICATES FOOTING STEP. SEE DETAIL 5/S-4.1 FOR ADDITIONAL INFORMATION.

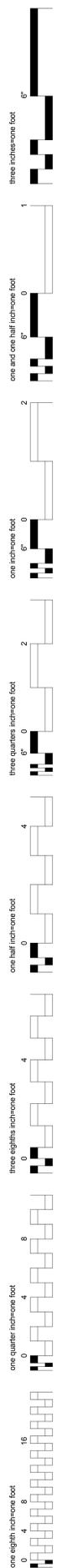
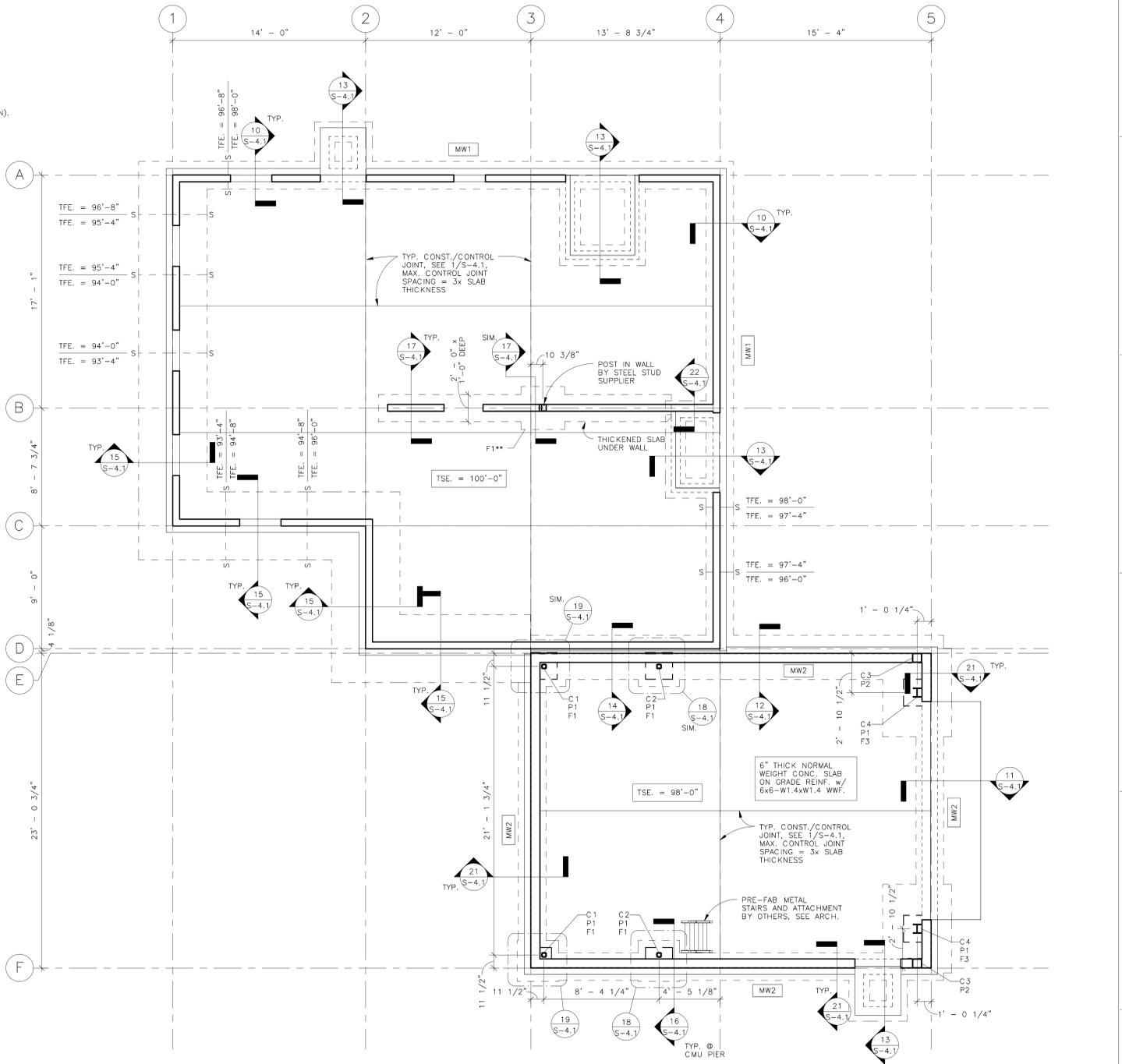
CMU WALL SCHEDULE						
MARK	NOMINAL THICKNESS	VERT. REINF.	VERT. BAR LOCATION	HORIZ. JOINT REINF. SPACING	VERT. BAR SPICE / LAP LENGTH	NOTES
MW1	12"	#5 @ 48" o.c.	CENTER	9 GA. LADDER @ 16" o.c.	3'-9"	
MW2	14"	#5 @ 48" o.c.	CENTER	9 GA. LADDER @ 16" o.c.	3'-9"	

- SCHEDULE NOTES:
- WALLS SHALL BE GROUTED AT REINFORCING LOCATIONS ONLY, U.N.O. ON PLAN.
 - PROVIDE 6" MINIMUM LAP SPICE FOR JOINT REINFORCING.
 - IN ADDITION TO THE REINF. SPECIFIED ABOVE, PROVIDE (1) BAR CONT. VERTICAL AT ALL CORNERS, EACH SIDE OF CONTROL JOINTS, MATCH BAR SIZE IN WALL AS REQUIRED. CELLS NEED NOT HAVE MORE THAN (1) BAR PRESENT UNLESS SPECIFICALLY NOTED ON PLAN.
 - PROVIDE A CONTINUOUS BOND BEAM AT THE TOP OF ALL CMU WALLS WITH (2) #5 BARS CONT. U.N.O.
 - REINFORCING IS CONTINUOUS FROM TOP OF FOOTING TO TOP OF WALL.
 - UNITS SHALL UTILIZE FACE SHELL MORTAR BEDDING U.N.O.
 - MASONRY WALLS SHALL HAVE CONTROL JOINTS @ A MAXIMUM OF 30'-0" U.N.O. SEE ARCH. DRAWINGS FOR CONTROL JOINT LOCATIONS IN CMU WALLS. SEE 4/S-4.1 FOR CONTROL JOINT DETAIL.
 - CONSOLIDATE GROUT POURS OVER 12" BY MECHANICAL VIBRATION. RECONSOLIDATE GROUT IN MASONRY CELLS BY MECHANICAL VIBRATION AFTER INITIAL WATER LOSS. IF NEXT GROUT POUR WILL BE MORE THAN (1) HOUR, TERMINATE GROUT POUR 1.5" BELOW TOP OF MASONRY.
 - FOR HIGH LIFT GROUTING (OVER 5'-0") CLEANOUTS ARE REQUIRED @ EVERY GROUTED CORE AT THE BASE OF EACH LIFT. IF NEXT GROUT POUR WILL BE MORE THAN (1) HOUR, TERMINATE GROUT POUR 1.5" BELOW TOP OF MASONRY.
 - HIGH LIFT GROUT SHALL NOT EXCEED 10'-6" IN HEIGHT FOR #5 VERT. BARS. 12'-6" IN HEIGHT FOR #6 VERT. BARS.
 - THE USE OF SELF-CONSOLIDATING GROUT (SCG) WILL REQUIRE FULL INSPECTION & ACCEPTANCE OF THE GROUT MIX DELIVERED TO THE SITE BY THE SUPPLIERS REPRESENTATIVE & THE INSPECTION/ TESTING AGENCY.
 - SCG ON-SITE INSPECTION SHALL VERIFY SLUMP FLOW AND VISUAL STABILITY INDEX (VSI) AS DETERMINED BY ASTM C 1611.
 - PROVIDE STANDARD 90 DEGREE HOOK DOWELS BETWEEN FOUNDATIONS & WALLS EQUAL TO THE SIZE & SPACING OF THE VERTICAL REINFORCING U.N.O.
 - PROVIDE 9 GA. LADDER TYPE HORIZONTAL JOINT REINFORCEMENT EVERY COURSE IN STACK BOND WALLS & EVERY OTHER COURSE IN RUNNING BOND WALLS.
 - ALL SPLICES WITHIN WALL SHALL MEET THE FOLLOWING LAP LENGTH REQUIREMENTS:
 - BAR LOCATED AT EDGE: 40"
 - BAR LOCATED AT CENTER: 26"
 SEE SECTIONS AND DETAILS FOR DOWELS AND SPLICES AT FOUNDATIONS.
 - REINFORCEMENT SHALL BE PLACED PRIOR TO GROUTING. REINFORCEMENT SHALL BE SECURED AGAINST DISPLACEMENT PRIOR TO GROUTING BY WIRE POSITIONERS OR OTHER SUITABLE DEVICES @ INTERVALS NOT TO EXCEED 200 BAR DIAMETERS.
 - TOLERANCES FOR THE PLACEMENT OF REINFORCEMENT IN WALLS AND FLEXURAL ELEMENTS SHALL BE PLUS OR MINUS 1/2" FOR d EQUAL TO 8" OR LESS, PLUS OR MINUS 1" FOR d EQUAL TO 24" OR LESS, BUT GREATER THAN 8", AND PLUS OR MINUS 1 1/4" INCHES FOR d GREATER THAN 24". NOTE: d = DISTANCE FROM CENTERLINE OF REINFORCING STEEL TO THE OPPOSITE FACE OF MASONRY
 - SEE SHEET S-0.1 FOR INFORMATION ON CMU MATERIAL REQUIREMENTS.
 - ALL MORTAR PROTRUSIONS INTO CELLS TO BE GROUTED ARE REQUIRED TO BE REMOVED BY MASON AND ALL DEBRIS MUST BE REMOVED FROM CORE.

COLUMN SCHEDULE			
MARK	SIZE	BASE PLATE	REMARKS
C1	HSS4x4x1/2	1/2"x8"x8"	SEE 19/S-4.1
C2	HSS4x4x1/2	1/2"x8"x10"	SEE 18/S-4.1
C3	HSS8x8x1/4	1/2"x12"x14"	OFFSET BASEPLATE AS REQ'D
C4	WBx24	1"x7' 1/2"x16"	

FOOTING SCHEDULE			
MARK	SIZE	REINF. E.W. BOTTOM	REMARKS
F1	3'-0"x3'-0"x1'-0"	(3) - #5	** THICKENED SLAB FOOTING, SEE DETAIL 17/S-4.1
F3	6'-6"x5'-0"x1'-0"	(4) - #5	PROVIDE TOP & BOT. REINF.

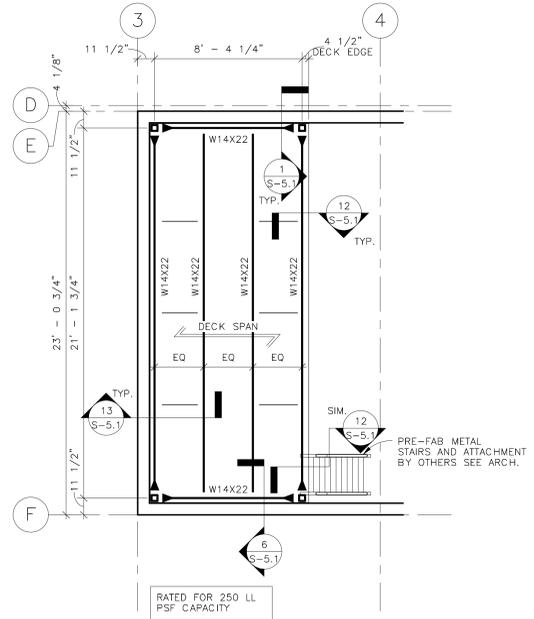
CMU PIER SCHEDULE			
MARK	SIZE	REINFORCING	REMARKS
P1	24"x24"	(4) - #6 VERT. #3 TIES @ 12" o.c. PLUS 3 TIES AT TOP	
P2	14"x16"	(2) - #5 VERT (1 PER CORE)	



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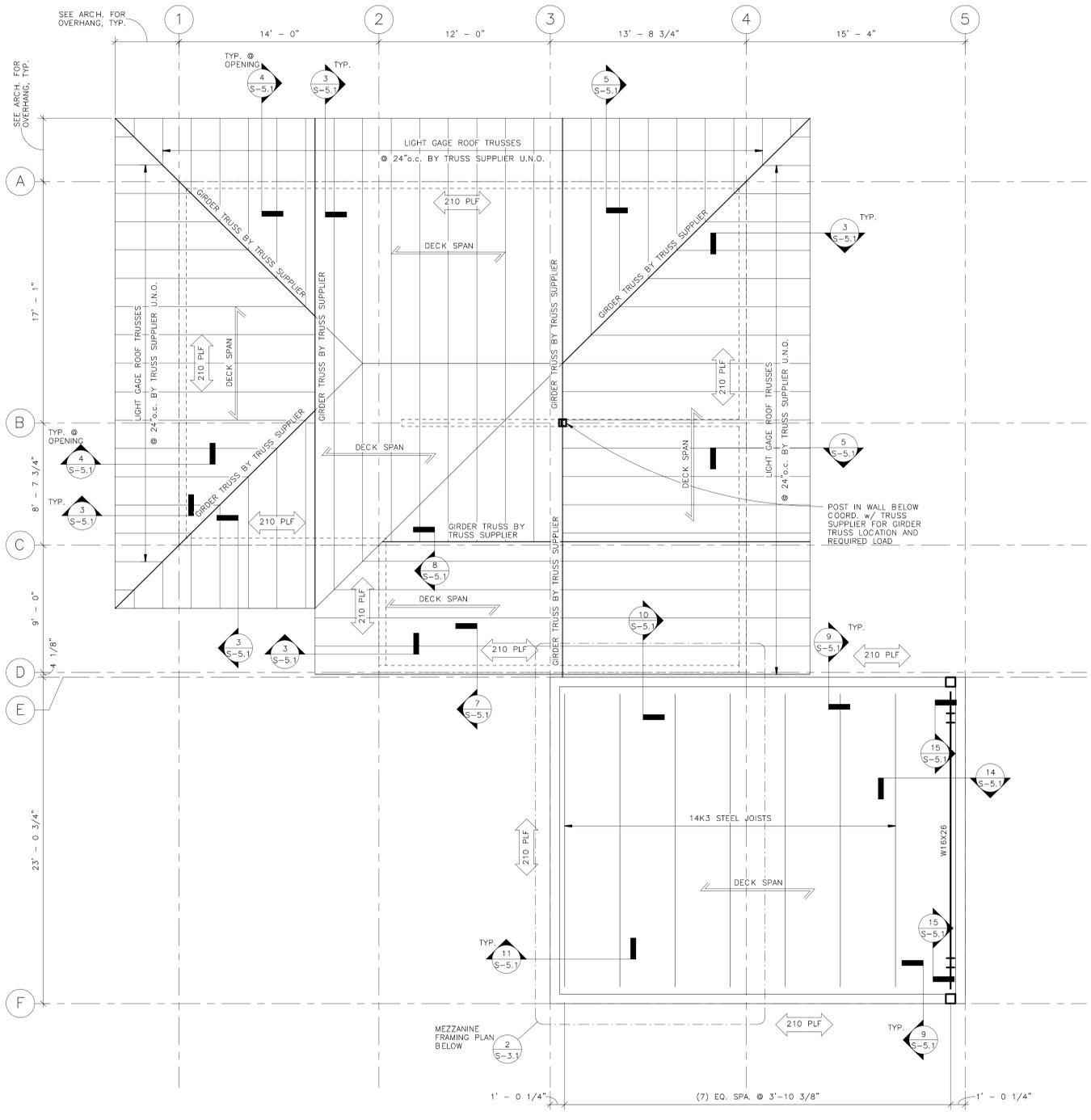
CONSULTANTS: 	ARCHITECT/ENGINEERS: 	Drawing Title	Project Title	Project Number	National Cemetery Administration
		FOUNDATION PLAN	WASH BAY / STORAGE BUILDING	833-CM3-026	
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINT NAME: John M. Levar SIGNATURE: DATE: 5-20-15 LICENSE # 43095	Anderson Engineering of Minnesota, LLC 13605 1st Avenue North Suite 100 Plymouth, MN 55441 763-412-4000 (o) 763-412-4090 (f) www.ae-mn.com	Approved: Project Director	Location: CAMP NELSON NATIONAL CEMETERY NICHOLASVILLE, KENTUCKY	Building Number 3003	
		Date: May 20, 2015	Checked: AO	Drawn: RL	Drawing Number S-2.1
					Dwg. 34 of 53

three inches-one foot
one and one half inches-one foot
one inch-one foot
two inches-one foot
three quarters inches-one foot
one half inches-one foot
three eighths inches-one foot
one quarter inches-one foot
one eighth inches-one foot



- MEZZANINE FRAMING PLAN**
1/4" = 1'-0"
- MEZZANINE FRAMING PLAN NOTES:**
- MEZZANINE FLOOR DECK SHALL BE 1 1/2" - 22GA. TYPE 'B' WIDE RIB METAL DECK (3-SPAN) w/ 3/4" PLYWOOD FLOOR SHEATHING OVER STEEL DECK, SEE ARCH.
 - TOP OF DECK ELEVATION (TDE.) = 109'-0"
 - MEZZANINE FLOOR DECK FASTENING SHALL BE 5/8"Ø PUDDLE WELD IN A 36/4 WELD PATTERN AND (1) #10 TEK SIDELAP FASTENER, U.N.O. SEE PLAN AND DETAILS 19 & 20/S-5.1 FOR FASTENING REQUIREMENTS.
 - SEE ARCH. DRAWINGS FOR ALL OPENING SIZES AND LOCATIONS.
 - ALL EXPOSED STRUCTURAL STEEL JOISTS, DECK, BEAMS, COLUMNS, PLATES AND THREADED RODS TO BE HOT DIP GALVANIZED PER ASTM SPECIFICATIONS.
 - ALL STRUCTURAL STEEL BOLTS, NUTS, AND WASHERS TO BE MECHANICALLY GALVANIZED.
 - ON PLAN DENOTES MOMENT CONNECTION.

- ROOF FRAMING PLAN**
1/4" = 1'-0"
- ROOF FRAMING PLAN NOTES:**
- SEE ARCH. DRAWINGS FOR ROOF PITCH AND ELEVATIONS.
 - ROOF DECK SHALL BE 1 1/2" - 22GA. TYPE 'B' WIDE RIB METAL DECK (3-SPAN)
 - TOP OF DECK ELEVATION (TDE.) = 116'-3" AT WASH BAY ROOF. SEE ARCH. FOR TDE. AT PITCHED ROOF AT MAIN BUILDING.
 - ROOF DECK FASTENING SHALL BE #12 TEK SCREWS IN A 36/4 PATTERN AND (1) #10 TEK SIDELAP FASTENER, U.N.O. SEE PLAN AND DETAILS 19 & 20/S-5.1 FOR FASTENING REQUIREMENTS.
 - GENERAL CONTRACTOR TO VERIFY SIZE, WEIGHT AND LOCATION OF ALL ROOF TOP UNITS. VERIFY NUMBER, SIZE & LOCATION OF ALL OPENINGS IN DECK WITH ARCHITECTURAL, MECHANICAL & ELECTRICAL DRAWINGS. ALL OPENINGS & ROOF TOP UNIT LOCATIONS MUST BE SUBMITTED TO AND APPROVED IN WRITING BY S.E.O.R.
 - SEE STRUCTURAL NOTES FOR LOAD INFORMATION RELATED TO THE ROOF TRUSS DESIGN.
 - ON PLAN DENOTES SERVICE LEVEL WIND LOADS TRANSFERRED TO WALL PANELS FROM ROOF DIAPHRAGM. WIND LOADS ARE CALCULATED USING ASCE7-10 AND IBC SECTION 1605.3.2 BASIC LOAD COMBINATIONS WHICH DOES NOT ALLOW ALLOWABLE STRESS INCREASES.
 - SEE ARCH. DRAWINGS FOR ALL OPENING SIZES AND LOCATIONS.
 - ROOF TRUSS NOTES:
 - PROVIDE TEMPORARY AND PERMANENT BRACING PER TRUSS SUPPLIER DRAWINGS.
 - ROOF TRUSSES SHALL BE DESIGNED FOR A MAXIMUM LL DEFLECTION OF L/360 OR 1/2" @ MID SPAN.
 - LIGHT GAGE ROOF TRUSSES AND GIRDER TRUSSES TO BE DESIGNED BY TRUSS SUPPLIER.
 - IF TRUSS GIRDER BEARING IS CONFIRMED TO OCCUR OVER A WINDOW OR DOOR OPENING, NOTIFY STEEL STUD SUPPLIER FOR HEADER AND DESIGN MODIFICATION PRIOR TO FRAMING WALL.
 - SEE 18/S-5.1 FOR TYP. ROOF OPENING SUPPORT FRAME FOR MISC. OPENINGS SMALLER THAN 18". FOR ALL OTHER OPENINGS, SEE 17/S-5.1.
 - SEE DETAIL 16/S-5.1 FOR TYPICAL HANGER REQUIREMENTS FOR STEEL JOISTS.
 - PROVIDE 22ga. CLOSURE PLATE AT ALL RIDGE AND VALLEY LOCATIONS, AND ALL LOCATIONS WHERE DECK CHANGES ORIENTATION.
 - CAMBER STEEL ROOF BEAM TO MATCH STANDARD JOIST CAMBER.
 - PROVIDE OPENING FRAME WITHIN STEEL STUD WALL AT GRAVE SITE LOCATOR, SEE ARCH. FOR ADD'L INFORMATION.
 - STEEL STUD SUPPLIER TO COORDINATE LOADS TO WALLS w/ STEEL TRUSS SUPPLIER. DESIGN ALL BEARING WALLS IN THE MAIN BUILDING FOR THE FOLLOWING SERVICE LEVEL LOADS UNLESS NOTED OTHERWISE ON PLANS AND DETAILS:
 - W_u = 315 PLF
 - W = 350 PLF
 - STEEL STUD SUPPLIER TO DESIGN FOR POINT LOADS AS INDICATED ON PLAN. COORDINATE GIRDER TRUSS LOCATION WITH TRUSS SUPPLIER.
 - ALL EXPOSED STRUCTURAL STEEL JOISTS, DECK, BEAMS, COLUMNS, PLATES AND THREADED RODS TO BE HOT DIP GALVANIZED PER ASTM SPECIFICATIONS.
 - IN WASH BAY, ALL STRUCTURAL STEEL BOLTS, NUTS, AND WASHERS TO BE MECHANICALLY GALVANIZED.
 - IN WASH BAY, STEEL STUD SUPPLIER TO COORDINATE ALL DESIGN LOADS TO WALLS AND GIRDER LOCATIONS w/ STEEL TRUSS SUPPLIER.



100% CONSTRUCTION DOCUMENTS

Revisions:	Date

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I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: John M. Levar
SIGNATURE:
DATE: 5-20-15 LICENSE # 43095

ARCHITECT/ENGINEERS:

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Drawing Title	ROOF FRAMING PLAN
Approved: Project Director	

Project Title	WASH BAY / STORAGE BUILDING
Location	CAMP NELSON NATIONAL CEMETERY NICHOLASVILLE, KENTUCKY
Date	May 20, 2015
Checked	AO
Drawn	RL
Project Number	833-CM3-026
Building Number	3003
Drawing Number	S-3.1
Dwg. 35 of 53	

National Cemetery Administration

Department of Veterans Affairs

