

URER/MODEL/DESCRIPTION	<u>QTY</u>
04-PRS w/ MPR Nozzles .0" Pop-Up Sprinkler with Co-Molded Wiper Seal. 1/2" Threaded Inlet. Pressure Regulating.	19
VAN14 1804-SAM-PRS 45-270 degrees and 360 degrees. Hand Adjustable Rotary w/1800 turf spray body on 4" pop-up, with and 45 psi in-stem pressure regulator. 1/2" NPT eaded Inlet.	7
VAN18 1804-SAM-PRS 45-270 degrees and 360 degrees. Hand Adjustable Rotary w/1800 turf spray body on 4" pop-up, with and 45 psi in-stem pressure regulator. 1/2" NPT eaded Inlet.	25
VAN24 1804-SAM-PRS 45-270 degrees and 360 degrees. Hand Adjustable Rotary w/1800 turf spray body on 4" pop-up, with and 45 psi in-stem pressure regulator. 1/2" NPT eaded Inlet.	12
URER/MODEL/DESCRIPTION	<u>QTY</u>
Z-100-PRB-COM Drip Control Kit for Commercial Applications. 1" Ball " PESB Valve and 1" Pressure Regulating 40psi & Basket Filter. 0.3 GPM-20 GPM	6
eive Dripline S-06-12 rface Pressure Compensating Dripline w/Copper nology. 0.6 GPH emitters at 12" O.C. Laterals spaced with emitters offset for triangular pattern. UV pecify XF insert fittings.	1,743
URER/MODEL/DESCRIPTION	<u>QTY</u>
B-PRS-D dustrial Valves. With Pressure Regulator Module.	8
-RC ck-Coupling Valve, with Corrosion-Resistant Stainless , Thermoplastic Rubber Cover, and 2-Piece Body.	4
Valve (Line Sized)	2
) Air/Vaccum Relief Valve (1")	2
troller	1
nection 3"	1
eral Line: PVC Class 200 SDR 21	918.9

	Drawing Title	Phase	Project Title	
of ction lities	IRRIGATION PLAN	BID DOCUMENTS	CONSTR	RUCT I
nent	Approved: Project Director SIOUX FALLS VA		Location SIOUX FAI	LLS, SOU
partment ans Affairs	HEALTH CARE SYSTEM		Issue Date 02/14/2025	Check
	7	8	9	





13605 1st Ave. N. #100 Plymouth, MN 55441

P 763.412.4000 | **F** 763.412.4090 | **ae-mn**.com Anderson Engineering of Minnesota, LLC | Proj # 16584

5



4

SCALE: NONE

SIDE THRUST ON CURVES

THE COUPLING ITSELF.

PIPE SIZE

INCHES

1.5"

2"

2.5"

3.5"

- 4"

AN OUTWARD PRESSURE EXISTS ON ALL DEFLECTIONS

FROM A STRAIGHT LINE. GOOD SOIL, PROPERLY TAMPED, IS SUFFICIENT TO HOLD SIDE THRUST -

UNLESS SOIL CONDITIONS ARE UNSTABLE. IN THAT

CASE, TO ANCHOR AGAINST THIS SIDE THRUST, THE

BLOCKING SHOULD BE PLACED AGAINST THE PIPE ON EACH SIDE OF THE COUPLING. DO NOT THRUST BLOCK

SIDE THRUST

POUNDS PER DEGREE

5.1

7.9

11.6

17.1

22.4

28.3

43.1

60.8

BASED ON SIDE THRUST PER 100 LBS/SQUARE INCH

NOTE: MULTIPLY SIDE THRUST POUNDS BY DEGREES

OF DEFLECTION TIMES POUNDS OF PRESSURE DIVIDED

BY 100 TO OBTAIN TOTAL SIDE THRUST IN POUNDS.

PRESSURE PER DEGREE OF DEFLECTION



10,000

3,000

2,000 1,000

0

FURNISH FITTINGS AND PIPING NOMINALLY SIZED IDENTICAL TO NOMINAL QUICK COUPLING VALVE INLET SIZE.

VALVE BOX LID TO BE CUSTOM BRONZE COLOR – TYPICAL
INSTALLED HEIGHT TO CLEAR KEY HANDLE FINISH GRADE
QUICK-COUPLING VALVE: INSTALL AT HEIGHT TO ALLOW KEY HANDLE TO CLEAR BOX
FL-08 VALVE BOX WITH COVER
3-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
CONTINUOUS BRICK
LEEMCO STABILIZER
MANUFACTURED SWING JOINT (AS SPECIFIED)
MAINLINE PIPE



4

5

6



8

9

(5)

SCALE: NONE



7

		Drawing Title		Phase		Project Title	
Co an	Office of Instruction d Facilities	IRRIGATION DET	AILS	BID DOCU	IMENTS	CONSTR	NUCT I
Ma	anagement	Approved: Project Director SIOUX FALLS	VA			Location SIOUX FAL	LS, SOU
VA	U.S. Department of Veterans Affairs	HEALTH CARE SY	′STEM			Issue Date 02/14/2025	Check
5		7		8		9	



– MPR PLUS NOZZLES (SIZE PER PLAN)

- NIPPLE OR SWING PIPE

APPROVED BACKFILL

----- LATERAL TEE

----- LATERAL PIPE







1. AIR/VACUUM RELIEF VALVE CANNOT BE CONNECTED

_	Drawing Title	Pr	nase	Project Title	
of ction lities	IRRIGATION DE	TAILS	BID DOCUMENTS	CONSTR	
nent	Approved: Project Director SIOUX FALLS	VA		Location SIOUX FAL	LS, SOUTH
partment ans Affairs	HEALTH CARE S	/STEM		Issue Date 02/14/2025	Checked
	7	8		9	

SCALE: NONE

IEW SPS	Project Number 438-460 Building Number
H DAKOTA	Drawing Number IR502
	10





MANIFOLD-TO-- ELBOW CONNECTION (TYP.) _ POINT OF CONNECTION _ PVC SUPPLY MANIFOLD ____ BACKFLOW PREVENTER

MANIFOLD-TO-- TEE CONNECTION REMOTE CONTROL VALVE WITH FILTER AND PRESSURE _ REGULATOR

– DRIPLINE LATERAL AREA PERIMETER AIR/VACUUM RELIEF LATERAL BLANK TUBING CENTERED ON MOUND . OR BERM

AIR/VACUUM RELIEF VALVE PLUMBED TO BLANK TUBING AT – EACH HIGH POINT PERIMETER LATERALS _ 2" TO 4" FROM EDGE

 REMOTE CONTROL VALVE WITH FILTER AND PRESSURE REGULATOR
BACKFLOW PREVENTER
POINT OF CONNECTION
AIR/VACUUM RELIEF VALVE PLUMBED TO PVC
IN-LINE, SPRING CHECK VALVE TO HELP CONTROL LOW-HEAD DRAINAGE (TYP.)
 PVC SUPPLY MANIFOLD
 MANIFOLD-TO- ELBOW CONNECTION (TYP.)
PVC FLUSH MANIFOLD
PRESSURE- COMPENSATING DRIPLINE LATERAL
AUTOMATIC FLUSH VALVE PLUMBED TO TUBING (TYP.)



8

(7) SCALE: NONE

REMOTE CONTROL VALVE WITH FILTER BACKFLOW PREVENTER _____ POINT OF CONNECTION _____ PVC SUPPLY MANIFOLD ____ PVC TEE (TYP). COMPRESSION

- TEE (TYP.)

9

COMPRESSION

- ELBOW (TYP.) START CONNECTION: INSTALL PRESSURE REGULATOR AT EACH MANIFOLD CONNECTION SERVICING DRIPLINE SYSTEM (TYP.)

___ PVC ELL (TYP.) ____ ISLAND PERIMETER (TYP.)

DRIPLINE

AIR/VACUUM RELIEF VALVE PLUMBED TO

DRIPLINE AT EACH HIGH POINT (TYP.)

PERIMETER LATERALS 2''TO 4'' FROM EDGE

AUTOMATIC FLUSH VALVE PLUMBED TO TUBING (TYP.)

of ction ilities	Drawing Title IRRIGATION DETAILS	Phase BID DOCUMENTS	Project Title CONSTRU	JCT NEW SI	PS	Proje Build
ment	Approved: Project Director SIOUX FALLS VA		Location SIOUX FALL	S, SOUTH DAKOT	A	Draw
epartment erans Affairs	HEALTH CARE SYSTEM		Issue Date 02/14/2025	Checked	Drawn	
	7	8	9			10

	Project Number
	438-460
IEW SPS	Building Number
TH DAKOTA	Drawing Number
	IR503







ce of ruction acilities	IRRIGATION DETAILS	BID DOCUMENTS	CONSTRU	JCT NEW SPS	Buildi
ement	Approved: Project Director SIOUX FALLS VA		Location SIOUX FALLS	S, SOUTH DAKOTA	Drawi
Department eterans Affairs	HEALTH CARE SYSTEM		Issue Date 02/14/2025	Checked Drawn	
	7	8	9		10

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9

	Project Number
	438-460
IEW SPS	Building Number
Ή DAKOTA	Drawing Number
ed Drawn	11\304

Α

В

С

10

	1		2		3			4
	GENERAL CONSTRUCTION NOTES				IG.			
	1. Reference Standards: Unless noted otherwise,	all standards shall be cur	rent edition, with latest addenda, if applicable.	 Provide temporary strength. 	lateral support for all wall	s where grade varies on th	e two sides until slab ha	s reached its design
	 Contractor shall verify all existing dimensions, n construction, or installation and notify Structural different from those shown. 	nember sizes, and field on Engineer of Record if co	onditions prior to any demolition, fabrication, nditions, materials, sizes, and dimensions are	2. Provide required te	mporary bracing for struc	tural steel until permanent	bracing and walls are in	place.
	 The contract structural drawings and specificati not indicate the means or method of construction 	ons represent the finished n. The contractor is solel	d structure. Unless otherwise indicated, they do y responsible for the protection of the structure	3. Provide temporary strength and are pr	bracing for all walls, conc operly anchored in final fo	rete, masonry, light gage r rm.	netal, or wood until they	are of adequate des
4	during all phases of demolition, construction, an I. The finished structure has been designed for the their energialty Engineer(a) to require and use m	d installation. e loading indicated below	. It is the responsibility of the contractor(s) and	 Provide temporary anchored or cured 	shoring for all existing wa in final form.	lls, floors, and roof membe	ers until new construction	n is in place and prop
	construction including, but not limited to, wind, s	architectural and mecha	ing, material storage, and equipment.	 All temporary short of the project, at th Shore all foundatio 	e expense of the contract	backfilling and compactin	a.	
	 6. Details and conditions not specifically shown sh 	all be constructed in acco	ordance with details shown for similar conditions	7. Contractor shall pro	ovide adequate bracing a	nd shoring during all phase	es of construction and ere	ection of the structur
	and materials.7. Shop drawings prepared by suppliers, sub-cont	ractors, etc. shall be revie	ewed, coordinated, and signed/stamped by the	GENERAL FOUNDAT	ON NOTES:			
	contractor prior to submitting to the Structural E drawings, product data, design calculations, etc documents.	ngineer of Record. The S ., does not relieve the co	Structural Engineer of Record's review of shop ntractor from complying with the contract	1. All foundation exca to the construction	vations, backfill, and com of any footings. All report	paction shall be inspected s are to be submitted to St	and certified by a qualific ructural Engineer of Rec	ed soils testing firm ord in a timely mann
	8. Verify location of all box outs and openings. Op are for general information only and shall be ver	ening sizes and locations ified with all trades before	s shown for pipes, ducts, mechanical units, etc. e commencing the work.	2. Cross reference all placement of all an	architectural, mechanica chor rods, inserts, etc.	, electrical, and structural	drawings to assure prop	er dimensions and
	 9. Contractor is solely responsible for protection of 10. No structural repairs, corrections, or alterations 	f the existing building duri of work affecting a struct	ing all phases of construction. ural member shall be made without the approva	 All footing elevation All footings are cer 	ns are shown to top of foo Itered under walls or colur	tings, unless noted otherw nns above, unless noted o	ise. therwise.	
	of the Structural Engineer of Record. Design an 11. Do not scale the drawings.	d/or review may be an ac	dditional service.	 Continuous wall for otherwise. 	otings up through 1'-8" wie	le to be 10" thick. Footing	s over 1'-8" wide to be 1;	2" thick, unless not
	DESIGN CRITERIA LOADS AND STRESSES:			 Provide wall footing Footings up th Footings 2'-1" 	g reinforcement as follows rough 2'-0" wide = (2)- through 3'-0" wide = (3)-:	: #5 cont. #5 cont.		
	CODES:			Footings 3'-1" See details for	through 3'-6" wide = (3)- reinforcing in all footings	#5 cont. & #5 @ 12" transv over 3'-6" wide.	Ι.	
	 Minimum Design Loads for Buildings and Other DESIGN LOADS: 	Structures (ASCE 7-16).		 Provide 90 degree the same number a Masonry Notes for 	bend in all footing dowels and size as the vertical rei required lap length	. Cast dowels in footings fond the set of th	or columns, piers, and wa erwise. See General Cor	alls above. Dowels ncrete Notes or Ge
	SE Pisk Catagony		IA	8. Rebar and anchor	rods to be securely tied in	place prior to placing con	crete (i.e. no "wet-sticking	g" is allowed).
-	Seismic Importance Factor, I _e Mapped Spectral Response	1.5 Ss = 0.090 g]	GENERAL CONCRET	E NOTES:			
	Site Class Design Spectral Response	S ₁ = 0.035 g "D" S _{DS} = 0.096	g	1. Concrete construct ACI 318-14.	ion shall comply with the	provisions of the "Building	Code Requirements for a	Structural Concrete
	Acceleration Parameters, S _{DS} & S _{D1} Seismic Design Category	S _{D1} = 0.056	g	2. The "ACI Detailing 3. Reinforcing steel s	Manual" shall govern deta	ailing and fabrication of all	reinforcing steel, unless	noted otherwise.
	Response Modification Coefficients	Steel ordinal moment frar Steel ordinal Steel ordinal	ne ry conctrically brace frame R = 3.25	4. Provide minimum of	lanual of Standard Praction	e" by the Concrete Reinfo	rcing Steel Institute. Cla	y brick is not allowe
	Seismic Response Coefficients Design Base Shear	$C_{S} = 0.01$ $V = C_{S} * W$	יש וויסווני אומוויפ וע־ט.ט	Cast against a	nd permanently exposed	o earth = 3"		
	Analysis Procedure Used	Equivalent L Force Proce	ateral	#5 bars ar #6 bars ar	nd smaller = 1 1/2" nd larger = 2"			
	V Ultimate Design Wind Speed (3-sec gust), V _{ult}	VIND DESIGN CRITERIA 120 MPH	Α	Not exposed to Slabs, wal Beams, gi	o weather or in contact wil ls, & joists (#3 to #11 bars rders and columns, prima	h ground: :) = 3/4" ry reinforcement, ties, stirr	ups, or spirals = 1 1/2"	
-	Risk Category Wind Exposure	IV "C"	40	5. Provide corner bar size and spacing a	s at all corners and interso s all horizontal bars.	ections of walls, grade bea	ms, and edge beams. C	orner bar to be the
	Internal Pressure Coefficients	DOF SNOW LOAD DATA	18 *	6. At openings in stru minimum of 3'-0" b corner of opening i	ctural slabs or walls, prov eyond corners of opening n each face of wall or slab	de a minimum of (2)-#6 ba s, unless noted otherwise.	ars each side of opening. Provide (1)-#5 x 4'-0" loi	. Bars are to exten ng diagonal bar at
	Ground Snow Load, P _g Snow Exposure Factor, C _e Snow Load Importance Factor, I	40 PSF 1.0 1.2		7. Provide minimum o	concrete wall reinforcing a	s follows: (unless noted ot	herwise)	
	Thermal Factor, C _t Slope Factor, C _s	Heated $C_t = C_s = 1.0$	1.0	6 & 8 concre #4 @ 16" 	ie walls: o.c. vert & #4 @ 10" o.c. h valls:	oriz (center in wall)		
L	*See Plan for Unbalanced Snow Loads & Snow Drif	t Loads		#4 @ 16" 12" concrete w	o.c. vert & #4 @ 16" o.c. h valls:	oriz (each face)		
	FLOOR LIVE LOADS:			#4 @ 16" 16" concrete w #4 @ 16"	o.c. vert & #4 @ 12" o.c. h valls:	oriz (each face)		
	150 PSF Mechanical/Electrical areas100 PSF Stairs, and exits			8. Provide vertical co Joint and Construc	ntrol joints in exposed cor tion Joint Detail.	crete walls at a maximum	of 30'-0" intervals. See t	ypical details for C
	CONCRETE: (f'c) at 28 Days			9. No aluminum of an	y type shall be allowed in	the concrete work, unless	coated to prevent reaction	on with concrete.
	 3500 PSI Slab on grade [max w/c = 0.45, fly ash 4000 PSI Slab on steel deck, topping slabs [max 4500 PSI Piers, foundation walls, and exterior sla 	not permitted, no entrain w/c = 0.45, fly ash not pe abs [5%-7% air content]	ed air] ermitted, no entrained air]	to the total height a of construction.	diameter of embedded co t conduit crossings. The c	nduit shall be no larger tha conduit shall be placed suc	n 1/3 of the slab thicknes h that it does not signific	ss. This restriction antly impair the str
	4500 PSI Retaining walls, basement walls, pile c. 7000 PSI Non-shrink grout below baseplates	aps, and grade beams		11. Post-installed anch Kwik Bolt TZ Expa noted otherwise. In	ors in concrete shall be long nsion Anchors (ESR-1917 stall anchors in strict conf	CC approved for use in cra) or a Hilti HIT-HY 200 Ad ormance with anchor man	cked concrete. Approved nesive Anchoring Systen ufacturer's instructions. /	d anchors shall be n (ESR-3187), unl Anchor substitutio
	STEEL: (Fy)	ntrainment.		not be made withou 12. No pipe or conduit	ut written permission from of any type shall be place	the Structural Engineer of d in structural concrete me	Record. embers without written ap	oproval from the S
	60,000 PSI ASTM A615 grade 60 reinforcing 60,000 PSI ASTM A706 weldable reinforcing 50,000 PSI ASTM A992 wide-flange shapes			13. Composite slabs a without requiring te	nd beams are designed to mporary shoring. Some d	support the dead load of eflection of the deck and b	the wet concrete plus no eams will occur when th	rmal construction e wet concrete is
	36,000 PSI ASTM A36 plates, channels, and angle 50,000 PSI ASTM A500 grade C structural tubes (I 46,000 PSI ASTM A500 grade C structural pipe (H 02,000 PSI ASTM A225 bish strength belts	is, etc. ⊣SS) SS)		The contractor sha and deck.	Il include in the bid the co	st of the additional concret	e quantity caused by the	deflection of the b
	36,000 PSI ASTM A323 high strength bolts 36,000 PSI ASTM F1554 threaded anchor rods 50,000 PSI ASTM A108 headed studs			 14. Do not weld rebar, 15. Lap splice lengths drawings or details 	in continuous reinforcing s	hall be tension lap splices	and are shown below, u	I Engineer of Reco
	FOUNDATION LOADS: 2,000 PSF soil bearing, based on soil report prepare	ed by Geotek Engineering	g & Testing Services, Inc.,	f'c = 3000 PSI:	CI 455			
	micropiles shall be designed for unfactored load ind	icated on sheet SB102.	איזיקטימנוטה. טנפפו וופווטמו אוופא מווע	Bar Size	Case 1	Bars Case 2	Oth Case 1	er Bars Case 2
• •	35 PCF Active Lateral Earth Pressure (Equivalent F	luid Density)		#3 #4 #5	20 37" 47"	42 56" 70"	22 29" 36"	32" 43" 54"
ST 1.	Piles shall be installed within the following tolerance	es:		#6 #7 #8	56" 81" 93"	84" 122" 139"	43" 63" 72"	64" 94" 107"
	Plumb within 1° Pile Centerline within 3"			#9 #10	105" 118"	157" 177"	81" 91"	121" 136"
2.	Piles shall be designed to provide the required load at any pile and a 1/4" maximum vertical differential	capacities shown on pla settlement between any t	ns with a 1/2" maximum vertical settlement two adjacent pilies uon.	f'c = 4000 PSI:	101	190		151"
<u>ა</u> .	 a. Compession tests shall be performed per the project special b. Load tests shall be observed and documented be c. The maximum test load shall be 200% of the all 	the "Quick Test" procedure the testing and inspection wable load show on the	rrea. re described in ASTM D1143. ion agency. drawings.	Bar Size	CLASS Top Case 1	Bars Case 2	LENGIH Oth Case 1	er Bars Case
	 d. The test pile locations shall be determinated by e. Installation methods, procedures, equipment, pr to the production piles to the greates extent practice 	the contractor uon on the oducts, and final installati ticable, except where oth	drawings. ion torque shall be identical nerwise approved by the Owner or Architect.	#3 #4 #5	24" 32"	36" 48"	19" 25"	28" 37" 47"
	f. A load test shall be deemed acceptable provide deflection of the pile head at the design load is le continuous jacking is required to maintain the load	d the maximum test load ess than 0.25" uon on the ad.	is applied without pile failure and the drawings. Failure is defined when	#5 #6 #7	48" 70"	72" 106"	37" 54"	56" 81"
4. 5	The Architect shall be notified immediately if obstruc The testing and inspection agency and installing con	tions are encountered wh	nile instaling piles. Id or log of each nile as installed showing	#8 #9 #10	80" 91" 102"	121" 136" 153"	62" 70" 79"	93" 105" 118"
J.	location, top and bottom elevations, diameters, date information.	installed, type of strata er	ncountered, and any other pertinent	#11	113"	170"	87"	131"
6. -	The pile contractor shall cubmit calculations for the oby an engineer licensed in the project's jurisdiction.	lesign of piles. Those cal	culations shall be signed and sealed					
1.	Pile contractor shall submit shop drawings for review sequence, pile components and details, corrosion pr	/ showing dimensioned p otection system, and pile	ile layout plan and installation top atatchment.					
			CONS	SULTANT				
					HWAY 55) DLIS, MN 55441			
			IMEG CORP. RI TO THIS DRAW	EXERCISE PROPRIETARY RIGHTS, IN ING AND THE DATA SHOWN THERE ARE THE EVOLUSION SHOWN THERE	-9796 F: 763-541-0056 #19004249.04 CLUDING COPYRIGHTS, ON. SAID DRAWING			
				USED OR REPRODUCED FOR ANY (EXPRESS WRITTEN APPROVAL AND	DTHER PROJECT PARTICIPATION OF			
			IMEG CORP. @	2023 IMEG CORP.				

	4	5	6

f'c = 5000 PSI:

Bar Size

#3

#10

Case 1

Top Bars

grade varies on the two sides until slab has reached its design	

	Other Bars		
Case 2	Case 1	Case 2	
42"	22"	32"	
56"	29"	43"	
70"	36"	54"	
84"	43"	64"	
122"	63"	94"	
139"	72"	107"	
157"	81"	121"	
177"	91"	136"	
196"	101"	151"	

5	Other Bars			
Case 2	Case 1	Case 2		
36"	19"	28"		
48"	25"	37"		
60"	31"	47"		
72"	37"	56"		
106"	54"	81"		
121"	62"	93"		
136"	70"	105"		
153"	79"	118"		
170"	87"	131"		

117" 152 1. Tables are for normal weight concrete with Grade 60 uncoated reinforcing bars. For lightweight aggregate, multiply the values in the table by 1.33.

108

137'

CLASS B TENSION LAP SPLICE LENGTH

Case 2

Other Bars

Case 1

Case 2

41"

83"

94"

105"

2. Top bars are horizontal bars with more than 12" of concrete cast below the bars.

3. Compression lap splices (only where indicated on drawings) for Grade 60 uncoated reinforcing bars shall be 30 times the bar diameter.

4. Cases 1 and 2 are defined as follows:

Beams and columns: Case 1: Concrete cover at least 1.0 times the bar diameter and center-to-center spacing of at least 2.0 times the bar diameter. Case 2: Concrete cover less than 1.0 times or center-to-center spacing less than 2.0 times the bar diameter. All other members: Case 1: Concrete cover at least 1.0 times the bar diameter and center-to-center spacing at least 3.0 times the bar diameter. Case 2: Concrete cover less than 1.0 times the bar diameter or center-to-center spacing less than 3.0 times the

bar diameter.

CONCRETE SLAB AND JOINT NOTES AND DETAILS: 1. Control Joints (C.J.) - Locate saw cut control joints at column centerlines and at the following maximum spacing to create approximately square panels

- a. Concrete slabs on grade: i. 4"-5" thick slab = 12'-0"
- Coordinate control joint layout with floor finish requirements. b. Control joint depth to be 1", using an early entry saw.
- c. Cut control joints with an early entry saw as soon as possible without damage to the slab surface.
- 2. Provide 6x6-W1.4xW1.4 W.W.F. in all slabs on grade, unless noted otherwise. All mesh to be lapped a minimum of 12". Provide prefabricated sheets in lieu of rolled mesh. Reinforce with (2)-#5 x 3'-0" long at all re-entrant (inside) corners.
- 3. Place slab reinforcing between 1/4 and 1/3 of slab thickness down from top of slab.
- 4. Coordinate all floor finishes, slopes, recesses, floor drains, gutters, etc. with all disciplines (arch., mech., etc.).
- 5. Provide a preformed isolation joint in concrete slab at columns. The isolation joint can be either a circular or diamond shaped pattern.

6. Do not provide control joints in structural slabs, slabs on metal deck, or precast topping, unless noted otherwise.

7. Provide thickened slabs at masonry partitions and construction joints as detailed below.



TYPICAL LINTEL TYPES AND NOTES:

- 1. Verify size and location of all mechanical, U.V., U.H., louver, and duct openings with mechanical contractor.
- 2. For all openings through masonry walls not shown, including mechanical and electrical openings, provide one of the following: (unless noted otherwise)

a. Steel angle lintels:

- (1) L 3 1/2" x 3 1/2" x 1/4" for each 4" thickness of wall for spans up to 4'-0".
- (1) L 5" x 3 1/2" x 5/16" (LLV) for each 4" thickness of wall for spans up to 5'-0".
- (1) L 6" x 3 1/2" x 5/16" (LLV) for each 4" thickness of wall for spans up to 6'-0".
- 3. All steel lintel beams to bear a minimum of 8" on grouted or solid masonry, unless noted otherwise. All steel lintel angles
- to bear a minimum of 6" on solid or grouted masonry, unless noted otherwise. 4. All lintels in exterior walls to be hot-dipped galvanized, unless noted otherwise.

GENERAL STEEL NOTES: 1. Construction of structural steel shall comply with the provisions of "AISC 360-16 Specification for Structural Steel Buildings" and "AISC 341-16 Seismic Provisions for Structural Steel Buildings."

- 2. All shop connections shall be welded or bolted, field connections shall be bolted, unless noted otherwise. Bolted connections shall be Bearing Type (snug-tightened) and shall be made with a minimum of 3/4"ø ASTM A325-N Bolts. Direct-Tension Indicators are acceptable substitutions.
- 3. All welds as per latest specifications of the AWS E70xx electrodes.
- 4. Before encasing steel columns in concrete or masonry, paint column bases and tops of anchor rods with asphaltic paint.
- 5. The structural fabricator shall furnish all plates and angles cast in bond beams, concrete walls, or columns to support steel joists, beams, and steel deck.
- 6. 'C' denotes beam is continuous over columns, 'S' denotes beam simple shear splice.
- 7. All steel beams shall be true to line and elevation, column base plates grouted, and anchor rods tight before any loads are placed.
- 8. All column base and cap plates to be welded around all sides.
- 9. All welds not specified are 3/16" fillet weld, continuous and/or all around.
- 10. Structural fabricators shall show all welding requirements on structural steel shop drawings.
- 11. Fabricator shall select AISC simple shear connections for composite beams capable of carrying the reaction load indicated or the reaction load calculated and based on tributary area or at a minimum 75% of the total shear capacity. Connection design shall also be check for blast reaction given on sheet SG000.
- 12. Cuts, holes, or openings required in structural steel members for the work of other trades shall be shown on the shop drawings. Burning of holes and cuts in structural steel members in the field shall not be allowed, except by written permission from the Structural Engineer of Record.
- 13. The top of all beams receiving shear studs shall not be painted.
- 14. The contractor shall provide 4000 pounds of structural steel contingency material to be fabricated and erected as directed by the Structural Engineer of Record. Cost of material, labor, delivery, and associated services are to be included in the bid amount
- 15. All connections not specifically detailed shall be designed by a Professional Engineer licensed in the state where the project is located. Detailing shall be performed using rational engineering design and standard practice in conformance with the contract documents. The general details shown on the drawings are approximate only and do not indicate the required number of bolts, weld requirements, etc., unless specifically noted.
- 16. Shear stud connectors shall be manufactured by Nelson Stud Welding Co. or equal conforming to ASTM A108, and shall be field applied with automatic welding equipment through the composite steel deck with the use of a proper ferrule. Remove ferrules after welding.
- 17. Location, type, diameter, length, and spacing of shear stud connectors shall be detailed on the shop drawings.



STEEL DECK NOTES:

- noted otherwise).
- G-60 coating.

following pattern layout:

DIRECTION



		7	

. All steel decking shall comply with the specifications of the Steel Deck Institute (SDI). Thickness, type, and properties of decks shall be as shown on the drawings. 2. All steel deck shall span a minimum of three spans, unless otherwise approved.

3. Field weld 1 1/2" steel roof deck to supporting members with 5/8"ø puddle welds at 36/4 pattern. Where areas of warped deck occur, field weld steel deck maximum 6" o.c. at all supports. Typical, unless noted otherwise.

4. 1 1/2" steel roof deck shall have; (1)-#10 TEK screw side lap connector installed between adjacent supports (unless

Composite steel deck with concrete slabs shall be welded to all supporting members with 5/8" ø puddle welds at 36/4 pattern. For deck units with spans greater than 5'-0", sidelaps and perimeter edges of units between span supports shall be fastened at intervals not exceeding 36" o.c., using one of the following methods: a) #10 self-drilling screws b) Crimp or button punch

c) Arc puddle welds 5/8" minimum visible diameter, or minimum 1" long fillet weld. 6. See plans and details for composite deck thickness, depth, and profile. All composite steel deck to be galvanized with

7. Steel conform deck shall be attached at all supports sufficiently to prevent movement. Steel deck fasteners are not required for conform decks supporting concrete stoop slabs.

8. For steel conform deck supporting interior floor slabs attach deck to supporting members with 5/8"ø puddle welds per the 0.6C Conform Deck – 30/4 weld pattern



ROOF BEAM/ GIRDER BLAST REACTION TABLE					
DESCRIPTION	SPAN	END REACTION (kips, LRFD)			
W12x14 BEAM	8'-0" TO 12'-2"	50			
W12x26 BEAM	12'-2"	90			
W14x22 BEAM	19'-8"	55			
W16x36 BEAM	12'-2"	140			
W18x35 BEAM	29'-5"	78			
W18x46 BEAM	20'-0"	115			
W12x19 GIRDER	17'-0"	31			
W14x22 GIRDER	8'-1" TO 18'-3"	44			
W14x30 GIRDER	19'-2"	42			
W16x26 GIRDER	15'-10" TO 20'-0"	50			
	21'-1" TO 23'-10"	76			
W18x35GIRDER	20'-0"	54			
W21x44 GIRDER	20'-0"	145			
W24x55 GIRDER	26'-7"	145			

ROOF MEMBER REACTION TABLE NOTES:

 CONNECTIONS MUST BE DESIGNED FOR THE REACTION LOADS LISTED IN THE TABLES AT A MINIMUM. THESE SHOULD NOT BE COMBINED WITH OTHER LOADS (I.E., BLAST DESIGN COMBO=1.0 * BLAST)

REACTIONS ARE VERTICAL AND ARE TO BE CONSIDERED IN THE UP AND DOWN

 REACTIONS ARE EQUIVALENT STATIC REACTIONS REPORTED AS ULTIMATE LOADS FOR CONNECTION DESIGN PER LRFD. IF ASD IS USED, DIVIDE THE REACTIONS B YA FACTOR OF 1.5. USE PROPER MATERIAL-AND LIMIT-STATE-SPECIFIC REDUCTION FACTOR (ϕ OR Ω) PER CODE FOR CONNECTION DESIGN.

	VIEV	V KEY				
• NAME - 100'-0"	LEVEL NAME		NDICATES NOTE USED TO DESCRIBE DDITIONAL INFORMATION ABOUT /ORK REQUIRED, SPECIFIC TO THE HEET AND/OR DETAIL			
		INDICATES DIR	ECTION OF TRUE NORTH			
		PLAN OR DETA	IL NUMBER			
		PLAN OR DETA	IL NAME			
	VIEW 1/8" = 1'-0"					
NOR1		PLAN OR DETA	IL SCALE			
	SIM	INDICATES SIMI IN MULTIPLE LC	ILAR DETAIL REFERENCED DCATIONS			
		DETAIL REFERF	RED TO BY SECTION CUT			
	\$300	SHEET DETAIL	IS LOCATED ON			
LINE TYPE KE	<u>Y:</u>					
	 NEW WORK (DARK SOLID LINE/LINE WEIGH) 	HT WILL VARY)				
	– NEW WORK BELOW OR BEYO (DARK DASH LINE)	ND VIEW				
	- EXISTING TO BE REMOVED (DARK DASH LINE)					
	– EXISTING WORK TO REMAIN (HALFTONED SOLID LINE/LINE	WEIGHT WILL	VARY)			
	NON STRUCTURAL (HALFTONED LIGHT SOLID LINE)					
	- GRID OR CENTERLINE					
MATERIAL LEO	GEND:					
	CONCRETE - CAST-IN-PLACE		MASONRY			
	EXISTING		METAL / COLD-FORM STUD			
	EARTH		PRECAST CONCRETE			
	GRAVEL OR GRANULAR FILL		STEEL			
	GROUT OR DRYPACK OR SAN	D				
	CX COL PX PIE	LUMN MARK R MARK OTING MARK (T	OP ELEVATION)			
	STRUCTURAL S	YMBOL	LIST			
GENERAL S	YMBOLS:					
SYMBOL	DESCRIPTION		DETAIL REFERENCE			
(100'-0")	TOP OF ELEVATION		N/A			
		I				
FOUNDATIO	N SYMBOLS:					
SYMBOL	DESCRIPTION		DETAIL REFERENCE			
	STEP IN FOOTING		1/SB200			
STEEL SYMI	BOLS:					
SYMBOL	DESCRIPTION		DETAIL REFERENCE			
	STEEL DECK (DIRECTION)		SEE PLAN NOTES			
[##]	HEADED STUD ANCHORS (HS/	A) ON BEAM				
—	BEAM SPLICE		3/SF220			

,		STR		BREVIATION KEY	
	ES NOTE USED TO DESCRIBE	ABBR: #	DESCRIPTION	DN:	
ADDITIO WORK R SHEET A	NAL INFORMATION ABOUT EQUIRED, SPECIFIC TO THE ND/OR DETAIL	@ °	AT DEGREE		
DIRECTION	I OF TRUE NORTH	Ø (E)	EXISTING		
	BER	ARCH B.O.	ARCHITECT, -U BOTTOM OF	RE, -URAL	A
ETAIL NAME	Ξ	bf BF	BEAM FLANGE BRACE FRAME	WIDTH	
		BM B.N. BOTT	BOUNDARY NA BOTTOM	ILING	
ETAIL SCAL	E	BTWN CFSF	BETWEEN COLD FORM ST		
SIMILAR DE		CJP CLR	COMPLETE JOI CLEAR	NT PENETRATION WELD	
E LOCATION	NS BY SECTION CUT	CL CMU	CENTERLINE CONCRETE MA	SONRY UNIT	
AIL IS LOCA	ATED ON	COL CONC CONN	CONCRETE		
		CONST	CONSTRUCTIO CONTINUOUS	N .	
RY)		DIA		N	
,		DET	DETAIL DRAWING		
		DWL EA	DOWEL EACH EACH EACE		
		EFF	EFFECTIVE		
ILL VARY)		ELEC EMBED	ELECTRICAL EMBEDMENT		B
		E.N. EOD EOS	EDGE OF DECK EDGE OF SLAB	<	
		EQ EQUIP	EQUAL EQUIPMENT		
		EIC EW EXP	EACH WAY EXPANSION		
м	ASONRY	EXT f'c	EXTERIOR CONCRETE CO	MPRESSIVE STRENGTH	
		FDN F.N. FT	FOUNDATION FIELD NAILING FOOT		
MI	ETAL / COLD-FORM STUD	FTG Fy	FOOTING YIELD STRESS		
۔۔۔۔ جزیر ج		GA GALV	GAGE OR GAUG	GE	
PF	RECAST CONCRETE	HSA HSB	HEADED STUD HIGH STRENGT	ANCHOR TH BOLT	
1 51	TEEL	JT K, KIP	JOINT KILOPOUND (1,		
		KSF KSI L	KIPS PER SQUA	ARE INCH	
		LBS	POUNDS LIVE LOAD		c
		LLH LLV LONG	LONG LEG HOR LONG LEG VER	TICAL	
<		LSH LSV	LONG SIDE HOI	RIZONTAL RTICAL	
		MAX MECH	MAXIMUM		
		MANUF MIN		ER	
K (TOP ELE	VATION)		NOT TO SCALE ON CENTER		
	T	OH OPNG	OPPOSITE HAN OPENING		
		PCF P.H.	POUNDS PER C	CUBIC FOOT	
DE	ETAIL REFERENCE	PJP PL	PARTIAL JOINT PLATE	PENETRATION WELD	
	N/A	PLF PSF PSI	POUNDS PER S POUNDS PER S	QUARE FOOT	
		PT R	POST-TENSION RADIUS	I, -ED, -ING	
		REQD	REQUIRED ROOF TOP UNI	T	D
DE		SC SCHED	SLIP CRITICAL SCHEDULE	E-RESISTING SYSTEM	
	1/SB200	SIM	SIMILAR SNOW LOAD	E-RESISTING STSTEM	
		S.M.S. SP	SHEET METAL S SPACE(S)	SCREW	
DE		SPECS SQ STIFF	SQUARE STIFFENER		
9	SEE PLAN NOTES	STL SYM	STEEL SYMMETRICAL	OM	
1		T.O. TC	TOP OF PRE-TENSIONE	D BOLT	
	3/SF220	TEMP tf	TEMPERATURE BEAM FLANGE	THICKNESS	
		TRANS TYP	TRANSVERSE		
SEE	FRAME ELEVATION	UON VERT	UNLESS OTHER VERTICAL		
SEE	FRAME ELEVATION	W/ WP	WITH WORK POINT		
		WT WWR	WEIGHT WELDED WIRE	REINFORCING	
		(-STRUC	TURAL		
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SHEET NC).	SHEET TITLE			
SG000 SG001	GENERAL NOTES TESTING SCHEDULES				
SB100 SB101	GROUND LEVEL FOUNDATION PL	N PLAN AN			
SB103	ENLARGED PLANS AND SECTION	S			_
SB200 SB201 SE102	SECTIONS - FOUNDATION SECTIONS - FOUNDATION	ρ ανι			
SF103 SF210		<u></u> u x			
SF220 SF221	SECTIONS - ROOF SECTIONS - ROOF				
SF230	BRACE FRAME ELEVATIONS & SE	CTIONS			
	Project Title			Project Number	٦
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			-	Building Number	
	Location			Drawing Number	
	Sioux Falls, SD.			awing Number	
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MOMENT CONNECTION

BRACE ABOVE

BRACE BELOW

		1	2			3
A						
В						
C						
C						
D						
PM						
1:40:25						
28/2025						
2/2						
E						
s_C.rvt						
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w SPS/:						
Falls Ne						
A Sioux]			
h DC-V/				CONSUL		
VA-Was					12755 HIGHWAY 55 SUITE 100 MINNEAPOLIS, MN 55441 P: 763-545-9196 F: 763-54	41-0056
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STATEMENT OF SPECIAL INSPECTION:

Special Inspections and Testing requirements per Chapter 17 of the IBC in addition to Section 110 of the IBC (Inspection preformed by the Building Official). See Specs. for additional information.

Structural Testing & Special Inspection Program

Summary Schedule					
IBC Section	Report Frequency				
1704.2.5	Shop Fabrication	SI-S	Upon Completion		
1705.2	Steel	SI-S	Weekly		
1705.3	Concrete	SI-S	Weekly		
1705.6	Soils/Earthwork	SI-T	Upon Completion		
1705.7-1705.9	Deep Foundation	SI-T	Continuous		

SI-S Special Inspector-Structural SI-T=Special Inspector-Technical

<u> 1703.1 - APPROVALS</u>

1. Agency must be approved by the Building Official or AHJ.

2. Agency must be independent of the contractor responsible for work and disclose possible conflicts of interests.

1704.2.4 - SPECIAL INSPECTOR RESPONSIBILITIES:

- Submit inspection reports to the Building Official, Architect, Engineer of Record (EOR), and Contractor, stating the work was 1. or was not in conformance with construction documents.
- 2. Discrepancies shall be brought to the immediate attention of the contractor for correction.
- 3. If discrepancy is not corrected, it shall be brought to the attention of the building official and EOR in a timely manner to provide remediation or acceptance prior to the completion of work.
- 4. Submit a final report documenting required special inspections and correction of any discrepancies noted.

1704.2.5 - FABRICATION:

Where fabrication of structural members and assemblies are being fabricated on the premises of a fabricator's shop, special inspection is required of the fabricated item. Note: Where Special Inspection and Testing of Shop Fabricated Components is required, it shall conform to the Special Inspection and Testing required in the field for the material specific section the component is fabricated from.

Exception: Special Inspection of the Fabricator's shop is not required if approved per Section 1704.2.5.2.

	TABLE 1705.6 REQUIRED VERIFICATION AND INSPECTION SOILS					
	Verification and Inspection Task	Continuous During Task Listed	Periodically During Task Listed			
1.	Continuous inspections shall be performed during installation of pile foundations and shall include equipment used, pile dimensionst, tip elevations, final depth, final installation torque, and other pertinent installation data.	X				
2.	Verify excavations are extended to proper depth and have reached proper material.		Х			
3.	Perform classification and testing of controlled fill materials.		Х			
4.	Verify use of proper materials, densities and lift thicknesses during placement and compaction of controlled fill.	X				
5.	Prior to placement of compacted fill, observe subgrade and verify that site has been prepared properly.		Х			

TABLE 1705.7 REQUIRED VERIFICATION AND INSPECTION OF DEEP FOUNDATION ELEMENTS

Ver	ification and Inspection Task	Continuous During Task Listed	Periodically During Task Listed
1.	Verify element materials, sizes and lengths comply with the requirements.	Х	
2.	Determine capacities of test elements and conduct additional load tests, as required.	X	
3.	Observe driving operations and maintain complete and accurate records for each element.	Х	
4.	Verify placement locations and plumbness, confirm type and size of hammer, record number of blows per foot of penetration, determine required penetrations to achieve design capacity, record tip and butt elevations and document any damage to foundation element.	X	
5.	For steel elements, perform additional inspections in accordance with Section 1705.2.		
6.	For concrete elements and concrete-filled elements, perform additional inspections in accordance with Section 1705.3.		
7.	For specialty elements, perform additional inspections as determined by the registered design professional in responsible charge.		

HELICAL & MICROPILE PILE FOUNDATIONS:

	Verification and Inspection Task	Continuous	Periodic
1.	Continuous inspections shall be performed during installation of pile foundations and shall include equipment used, pile dimensionst, tip elevations, final depth, final installation torque, and other pertinent installation data.	Х	

TABLE 1705.3 REQUIRED Verification and Inspection Inspection of reinforcing steel, including prestressir Inspection of reinforcing steel welding in accordance Inspection of anchors cast in concrete where allowal or where strength design is used. Inspection of anchors post-installed in hardened co Verifying use of required design mix. At the time fresh concrete is sampled to fabricate s perform slump and air content tests, and determine concrete. Inspection of concrete and shotcrete placement for Inspection for maintenance of specified curing tem Inspection of prestressed concrete: a. Application of prestressing forces. b. Grouting of bonded prestressing tendons in the s Erection of precast concrete members. Verification of in-situ concrete strength, prior to stream tensioned concrete and prior to removal of shores a structural slabs. Inspect formwork for shape, location and dimension being formed. For SI: 1 inch=25.4mm a. Where applicable, see also Section 17.05.11, Special inspections for seismic resistance. b. Specific requirements for special inspection shall be included in the research report for the anchor issued by an approved source in accordance with ACI 355.2 or other shall be approved by the building official prior to the commencement of the work. Exceptions: 1. Non-structural concrete slabs supported directly on the ground. 2. Concrete patios, driveways and sidewalks on grade. In addition to the requirements below also comply w/ AISC 360-10 Chapter N

Welding Inspection Tasks		Bolting Inspection Tasks	
elding procedure specifications (WPSs) available	Р	Manufacturer's certifications available for fastener materials	Р
anufacturer certifications for welding consumables available	Р	Fasteners marked in accordance with ASTM requirements	0
aterial identification (type/grade)	0	Proper fasteners selected for the joint detail (grade, type, bolt length if threads are to be excluded from shear plane)	0
elder identifications system (1)	0	Proper bolting procedure selected for joint detail	0
-up of groove welds (including joint geometry)	0	Connecting elements, including the appropriate faving surface condition and hole	0
onfiguration and finish of access holes	0	preparation, if specified, meet applicable requirements	0
-up of fillet welds	0	Pre-installation verification testing by installation personnel observed and documented for fastener assemblies and methods used	0
eck welding equipment		Proper storage provided for bolts, nuts, washers and other fastener components	0
e of qualified welders	0	Fastener assemblies, of suitable condition, placed in all holes and washers (if	0
ontrol and handling of welding consumables	0	required) are positioned as required.	0
welding over cracked tack welds	0	Joint brought to the snug-tight condition prior to the pretensioning operation	0
vironmental conditions	0	Fastener component not turned by the wrench prevented from rotating	0
PS followed	0	Fasteners are pretensioned in accordance with the RCSC Specification, progressing systematically from the most rigid point toward the free edges.	0
elding techniques	0	Document acceptance or rejection of bolted connections	Р
elds cleaned	0	0 - Observe these items on a random basis. Operations need not be	
ze, length and location of welds	Р	delayed pending these inspections.	
elds meet visual acceptance criteria	Р	P - Perform these tasks for each welded joint or steel member	
c strikes	Р	N5.7	
area (2)	Р	Anchor Bolts and other embedded items supporting structural steel, verify diameter	r, grade,
cking removed and weld tabs removed (if required)	Р	type, length of embedded item, and the embedment depth prior to placing concrete	
pair activities	Р		
ocument acceptance or rejection of welded joint or member	Р	TABLE N6.1	
The fabricator or erector, as applicable, shall maintain a system by which a welded a joint or member can be identified. Stamps, if used, shall be the low-stre	elder who has ss type.	Inspection of Steel Elements of Composite Construction Prior to Con Placement	crete
When welding of double plates, continuity plates or stiffeners has been perfor	med in the k-	Placement and installation of steel deck	Р
ea, visually inspect the web k-area for cracks within 3 in. (75mm) of the weld.		Placement and installation of steel headed stud anchors	Р
Observe these items on a random basis. Operations need not be delayed pen prections.	ding these	Document acceptance or rejection of steel elements	Р
Perform these tasks for each welded joint or member		 Observe these items on a random basis. Operations need not be delayed pend inspections. 	ing these
N5.5		P - Perform these tasks for each steel member.	
Non-destructive Testing (NDT) of Welds shall be perfore to a coordance with AWS D1.1/D1.1M based on the followin	rmed in g criteria:		
For structures in Risk Category III or IV, Ultrasonic Testing (UT) shall be all Complete Joint Penetration (CJP) groove welds for materials 5/16" thi	performed on ck or greater.		
Structures in Risk Category II, UT shall be performed on 10% of CJP gro materials 5/16" thick or greater.	ove welds for		
When flange or web thickness exceeds 2", thermally cut access holes sh using Magnetic Particle Testing (MT) or Penetrant Testing (PT), any crac unacceptable.	all be tested k is		
Welded joints requiring soundness per Appendix 3, Table A-3.1 shall be Radiographic Testing (RT) or UT. Reduction in the rate of UT is prohibite	tested by ed.		
Reduction rate for UT - Where the initial rate for UT is 100%, the NDT rate individual welder is permitted to be reduced to 25% provided the reject rates and the reject rates are shown in the rest of the rest o	te for an Ite is 5% or		



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O VERIFICATION AND IN	ISPECTION			ON
	Continuous	Periodic	Referenced Standard (a)	IBC Reference
ing tendons, and placement.		Х	ACI 318: 3.5, 7.1 - 7.7	1910.4
ce with Table 1705.2.2, item 2b.			AWS D1.4, ACI 318: 3.5.2	
vable loads have been increased		Х	ACI 318: 8.1.3, 21.2.8	1908.5, 1909.1
oncrete members (b).		Х	ACI 318: 3.8.6, 8.1.3, 21.2.8	1909.1
		Х	ACI 318: Ch. 4, 5.2 - 5.4	1904.2, 1910.2, 1910.3
specimens for strength tests, e the temperature of the	Х		ASTM C 172, ASTM C 31, ACI 318: 5.6, 5.8	1910.10
r proper application techniques.	х		ACI 318: 5.9, 5.10	1910.6, 1910.7, 1910.8
perature and techniques.		Х	ACI 318: 5.11 - 5.13	1910.9
	х		ACI 318: 18.20 ACI 318: 18.18.4	
seismic force-resisting system.	х			
		Х	ACI 318: Ch. 16	
essing of tendons in post- and forms from beams and		Х	ACI 318: Ch. 6.2	
ons of the concrete member		Х	ACI 318: Ch. 6.1.1	

/erif	cation an	d Inspection	Continuous	Periodic	Referenced Standard (a
۱.	Materia	al verification of cold-formed steel deck			
	a.	Identification markings to conform to ASTM standards specified in the approved construction documents		Х	Applicable ASTM materia standards
	b.	Manufacturer's certified test reports		Х	
2.	Inspec	tion of welding:	1 1		
	a.	Cold-formed steel deck:			
	1	. Floor and roof deck welds		Х	AWS D1.3
	b.	Reinforcing steel:			
	1	. Verification of weldability of reinforcing steel other than ASTM A706		Х	
	2	. Reinforcing steel resisting flexural and axial forces in intermediate and special moment frames, and boundary elements of special structural walls of concrete and shear reinforcement.	Х	Х	AWS D1.4 ACI 318: Section 3.5.2
	3	. Shear reinforcement	Х		
	4	. Other reinforcing steel		х	

OPEN-WEB STEEL JOISTS				
Verification and Inspection	Continuous	Periodic	IBC Reference	
Verify size and grade of joists upon placement		Х		
After setting, verify proper bearing length is provided		Х		

qualification procedures. Where specific requirements are not provided special inspection requirements shall be specified by the registered design professional and

less based on a minimum of 40 welds tested. For continuous welds over 3', each 12" Increase rate for UT - Where the initial rate for UT is 10%, the NDT rate for an individual welder shall be increased to 100% if the reject rate is over 5% based on a

increment shall be considered on weld.

minimum of 20 welds tested. Rate may be reduced if reduction rate criterion is met.

of ction lities	Drawing Title TESTING SCHEDULES	Phase BID DOCUMENTS	Project Title CONSTRUCT	Project Title CONSTRUCT NI		
nent	Approved:		Sioux Falls, SD.			
epartment rans			NEDIssue DateCheck02/14/2025MI	cke PN		
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ARCHITECT/ENGINEER	OF RECORD	STAMP Michaeling Reen	Office of Construction	Drawing Title PARTIAL BAS PLAN	EMENT FOUNDATION	Phase BID DOCUMENTS	Project Title CONSTRU	ICT NEV
ANDER	SON	MICHAEL P. MERRON	and Facilities Management				Location Sioux Falls, SI).
13605 1st Ave. N. #100 Plymo P 763.412.4000 F 763.412.409 Anderson Engineering of Minnesota, I	outh, MN 55441 90 ae-mn. com LLC Proj# 16584	2-14-2020011	VA U.S. Department of Veterans Affairs	[→] Approved:		FULLY SPRINKLERED	Issue Date 02/14/2025	Checked MPM/T
4	5		6	7		8	9	

R LOCATION OF WALLS NO	DT DIMENSIONED ON	
COLUMN. SEE SHEET <u>SB1</u>	101 FOR SCHED.	
PIER BELOW GRADE. SEE	SHEET <u>SB101</u> FOR	
NCRETE SPREAD FOOTING OR SCHEDULE.	Э.	
NCRETE CONTINUOUS FO OR SCHEDULE.	OTING.	
EE SECTION <u>1/SB200</u> . ETAIL, SEE SECTION 4/SB2	200	
WALL CORNER DETAILS RI	ETAINING EARTH,	
WALL CONTROL JT, SEE S	ECTION 6/SB200	
WALL CONSTR JT, SEE SE	CTION <u>7/SB200</u> .	
SECTION <u>9/SB200</u> .		
ONS. DROP TOP OF FTG E E TO PASS OVER FTG.	ELEVATONS AS REQ'D	
'ES AT ALL LOCATIONS WH ERIFY LOCATIONS WITH M	HERE MECH PIPES ECH. DWGS, SEE	
TS DRAWINGS FOR BELO	W GRADE	
TAILS. TO BE HOT-DIPPED GALV	'ANIZED.	
LD VERIFY EXISTING DIME	ENSIONS &	
CATE EXISTING REINFORC	CING IN EXISTING	
CATE ALL UNDERGROUNE , ELECTRICAL CONDUIT, E) UTILITIES, TX. PRIOR TO HELICAL	
COORDINATE WITH HELICA	ALPILE DESIGNER AND).	
ATION THROUGH FOLINDATION 4	AT STAIR TOWFR	
ERED ON PIER. SEE PLAN	SB101 FOR COLUMN	
SIGNED BY SUPPLIER. HEL JTSIDE OF EXISTING FOOT	lical Ings.	
FOOTING REINFORCING IN		
T).		
TION WALL WITH HILTI-HY T).	200 ADHESIVE	
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G DIRECTION	SHORT DIRECTION
(2)-#5	
(3)-#5	
	Project Number
EW SPS	438-460
	Building Number
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	Drawing Number
d Drawn	

OR ANCHOR RODS	, SEE <u>12/SF230</u> .
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E PL PE	ANCHOR BOLTS	BOT. OF BASE PL EL.	COMMENTS
۱	(4) 3/4"ø	99'-2"	
SB201	SEE 3/SB201	91'-4" VIF	
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۱	(4) 1"ø	99'-2"	1
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SB201	SEE 3/SB201	100'-0" VIF	
\	(4) 3/4"ø	99'-2"	
;	(4) 3/4"ø	99'-2"	

PROVIDE HSS6x3x3/8" POST EACH SIDE OF WINDOW/ DOOR, SEE <u>12/SB201</u>. COORDINATE LOCATIONS W/ ARCH. CORE DRILL 24" MAX DIA OPENING FOR MECH DUCTS. PROVIDE MIN 10" SOLID CONCRETE BETWEEN OPENINGS. TOP OF OPENINGS SHALL BE LOCATED WITHIN 9" OF UNDERSIDE CONC FLOOR STRUCTURE. PROVIDE MIN 12" SOLID CONCRETE FROM EDGE OF OPENING TO EDGE OF CONCRETE COLUMN. 11) PROVIDE #6 TOP, BTM AND STIRRUPS EA. WAY @ 12" OC MAX.

PROVIDE 6" CONCRETE THICKENED CONCRETE SLAB UNDER EQUIPMENT/ SHELVING. SEE ARCH EQUIPMENT PLAN FOR QUANTITY, SIZE & LOCATION. REINFORCE PAD W/

PROVIDE 4" CONCRETE HOUSEKEEPING PAD UNDER MECHANICAL UNITS. SEE MECHANICAL FOR QUANTITY, SIZE & LOCATION. REINFORCE PAD W/ #4 @ 16"OC EACH WAY.

PROVIDE 3'-0"x3'-0"x1'-0" THICKENED SLAB AT STAIR POSTS W/ (3)-#5 EA WAY BOT. GC TO COOR'D QUANTITIES & LOCATIONS UNDERGROUND DUCT, SEE MECH FOR LOCATION, DEPTH AND

MIN VOID BELOW CONC SLAB. TOP OF SLAB EL VARIES. PROVIDE THICKENED SLAB 12" DEEP x 24" WIDE AT BASE OF STAIR W/ (2)-#5 CONT. COOR'D LOCATION & LENGTH W/ ARCH.) 4" CONCRETE SLAB-ON-GRADE W/ #4 @ 24"OC EA WAY CENTERED + 1 1/2 LB/CY MD FIBERMESH REINF. OVER EXCAVATE AND BACK FILL PER GEOTECH REPORT T.O. SLAB EL = SEE PLAN. ALIGN SLABS WITH EXISTING GROUND

20. VERIFY DEPRESSED OR RECESSED SLAB LOCATIONS & DIMENSIONS 1. SEE SECTIONS FOR STEEL STUD SIZE, GAUGE AND CONNECTIONS. 2. CONTRACTOR TO FIELD VERIFY EXISTING DIMENSIONS &

7. PROVIDE PIPE SLEEVES AT ALL LOCATIONS WHERE MECH/ CIVIL PIPES PENETRATE WALL. VERIFY LOCATIONS WITH MECH/ CIVIL 18. SEE GENERAL NOTES FOR THICKENED SLABS AT CMU PARTITION

14. FOR TYP CONC FDN WALL CONSTR JT, SEE SECTION 7/SB200 15. FOR TYP ADD'L REINF AT CONC WALL OPGS LARGER THAN 12" IN ANY DIRECTION, SEE SECTION <u>9/SB200</u>. 6. CONTRACTOR TO VERIFY UNDERGROUND UTILITIES LOCATIONS AND INVERT ELEVATIONS. DROP TOP OF FTG ELEVATONS AS REQ'D

2. FOR TYP CONC FDN WALL CORNER DETAILS RETAINING EARTH, 13. FOR TYP CONC FDN WALL CONTROL JT, SEE SECTION 6/SB200

TYPICAL EXTERIOR T.O. FOOTING & PILE CAP EL = (99'-0") UON TYPICAL INTERIOR T.O. FOOTING, GRADE BM & PILE CAP EL = (99'-0") 1. TYP ANCHOR ROD DETAIL, SEE SECTION 4/SB200

GBX INDICATES CONCRETE GRADE BEAM. SEE DETAILS FOR SIZE AND REINFORCING. TOP OF GRADE BEAM EL = (99'-0")

CX INDICATES STEEL COLUMN. SEE THIS SHEET FOR SCHED. PX INDICATES CONC PIER BELOW GRADE. SEE THIS SHEET FOR

SEE ARCH DWGS FOR LOCATION OF WALLS NOT DIMENSIONED ON

ELEVATIONS ARE BASED ON THE GROUND LEVEL ELEVATION OF

10

(NOT ALL SHOWN). VERIFY ALL DIMENSIONS W/ ARCH DRAWINGS.

100'-0" EQUIVALENT TO CIVIL ELEVATION OF 1499.48'

o t	Drawing Title	Phase	Project Title		
tion ities	GROUND LEVEL COLUMN LOADS	BID DOCUMENTS	CONSTRUC	CT NEW S	SPS
nent			Location Sioux Falls, SD.		
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rans			02/14/2025	MPM/TGL	MAQ
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EW SPS	438-460
	Building Number

PILE LAYOUT IS APPROXIMATE ONLY. FINAL DESIGN AND LAYOUT BY PILE CONTRACTOR. FOR BIDDING PURPOSE: STEEL HELICAL PILE ESTIMATED LENGTH 30 FEET. MICROPILE ESTIMATED LENGTH OF 80 FEET.

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Drawing Number

SB102

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FOR ADD'L INFO

4 SECTION AT CART WASH

1 LEVEL 01 CART WASH FLOOR FRAMING PLAN

GENERAL PLAN NOTES: FLOOR

- VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS.
- DO NOT SCALE DRAWINGS.
- FOR SCHEDULES SEE SHEET SB101.
- FOR PERMISSABLE CONSTRUCTION JOINT LOCATIONS IN COMPOSITE SLABS, SEE <u>2/SF210</u>.
- FOR OPENINGS IN COMPOSITE SLABS, SEE <u>1/SF210</u>. FOR OPENINGS LARGER THAN 24", PROVIDE W10X12 FRAME AROUND OPG. VERIFY SIZE, LOCATION AND QTY WITH ARCH & MECH.
- VERIFY ALL OPENINGS IN SLAB WITH ARCHITECT & MECHANICAL.
- VERIFY EXISTING DIMENSIONS & ELEVATIONS.
- CONTRACTOR TO LOCATE REINFORCING IN EXISTING WALLS & SLABS AS REQUIRED.

KEY PLAN NOTES: FLOOR FRAMING

- 4" TOTAL COMPOSITE CONCRETE FLOOR SLAB W/ #4 @ 12" OC EA WAY DOWELED TO EXISTING SLAB, OVER 1.0C-20 GA FORM DECK OR APPROVED EQUAL (3" CONC SLAB + 1" DECK = 4" MIN TOTAL SLAB THICKNESS).
- T.O. SLAB EL =99'-4" (SLOPE SLAB PER ARCH DRAWINGS) 4" MIN SLAB THICKNESS.
- 2 DEMO EXISTING SLAB AT FACE OF EXIST CONC JOIST, SEE SECTION 3/SB103.

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ment			Location Sioux Falls, SD).
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nent			Location Sioux Falls, S	D.
epartment rans	Approved:	FULLY SPRINKLERED	Issue Date 02/14/2025	Checke MPN
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				GENERAL PLAN NOTES: FLOOR 1. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS.
25	27			2. <u>DO NOT SCALE DRAWINGS.</u>
	7 (A1.0)			3. FOR SCHEDULES SEE SHEET <u>SB101</u> .
	A1			 SEE ARCHITECTURAL DRAWINGS FOR LOCATION OF WALLS NOT DIMENSIONED ON PLAN.
				5. FOR PERMISSABLE CONSTRUCTION JOINT LOCATIONS IN COMPOSITE SLABS, SEE <u>2/SF210</u> .
				6. FOR OPENINGS IN COMPOSITE SLABS, SEE <u>1/SF210</u> . FOR OPENINGS LARGER THAN 24", PROVIDE W10X12 FRAME AROUND OPG. VERIFY SIZE,
 		(A1.7)		7. PROVIDE POUR STOPS AT TOPPING SLABS AS REQUIRED.
		(A1.8)		8. VERIFY ALL OPENINGS IN SLAB WITH ARCHITECT & MECHANICAL.
		AZ		 ALL REACTIONS SHOWN ON PLAN ARE UNFACTORED. VERIFY EXISTING DIMENSIONS & ELEVATIONS.
		(A2.1)		11. CONTRACTOR TO LOCATE REINFORCING IN EXISTING WALLS & SLABS AS REQUIRED.
- X 3;2,		A2.9	L	
	E 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
· · · · · · · · · · · · · · · · · · ·	(E) COMPOSITE SLAB T.O. SLAB EL = 113'-0"	A2.10		5 1/2" TOTAL COMPOSITE CONCRETE FLOOR SLAB W/ #5 @ 16" O
(E) W14X211 13 SF210		- A3		EA WAY, OVER 2"-18 GA COMPOSITE STEEL FLOOR DECK OR APPROVED EQUAL (3 1/2" CONC SLAB + 2" DECK =5 1/2" TOTAL SLAB THICKNESS). T.O. SLAB EL =113'-0"
	ELINITO TRACTOR TO THE TOT TOT THE TOT TOT THE TOT TOT TOT THE TOT TOT TOT			2 PROVIDE 4" CONCRETE HOUSEKEEPING PAD UNDER MECHANICAL UNITS. SEE MECHANICAL FOR QUANTITY, SIZE & LOCATION. REINFORCE PAD W/ #4 @ 16"OC EACH WAY. SEE <u>2/SF102</u> SIM.
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			3 PROVIDE ADDITIONAL SLAB REINFORCING AROUND PERIMETER SEE PLAN & <u>3/SF210</u> .
	(E) W14X145, 6th Strand			4 PROVIDE STL BM AT EDGE OF MECHANICAL UNITS. COORDINATE LOCATIONS WITH MECH DWGS.
	INGTHO +			5 RAMP CONC FLOOR TO DOOR OPENING, SEE ARCH.
(E) W14	4X68			 PROVIDE STUB BEAM HSS9x5x5/16" SHOP WELDED TO FACE OF STL COL W/ 1/4" FILLET WELD ALL AROUND. PROVIDE 5/16" BENT PLATE.
	14 (E) W14X1	09		
	210 ENITO			BM LEGEND
5'-9" 5'-9"	ELOW			NUMBER OF 3/4"ø x 4" HEADED STUDS
45°	(E) W14X68			BM SIZE CAMBER
W12x14 9 5				<u>Wx [X] (X")</u> XX K
W16x3	E S S S S S S S S S S S S S S S S S S S			REACTION (KIPS)
W12x14 C6 W16x36 [20]	E) W10X45			
				GENERAL PLAN NOTES: ROOF FRAMING
5 SF230 SF210		30.6		1. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS.
	SIM	30.5		2. <u>DO NOT SCALE DRAWINGS.</u>
		30.4		 FOR SCHEDULES SEE SHEET <u>SBIUT</u>. SEE ARCHITECTURAL DRAWINGS. FOR LOCATION OF WALLS NOT
				DIMENSIONED ON PLAN. 5. FOR PERMISSABLE CONSTRUCTION JOINT LOCATIONS IN COMPOSITE
				SLABS, SEE
		(30.1)		LARGER THAN 24", PROVIDE W12X14 FRAME AREADO OPG. VERIFY SIZE LOCATION AND QTY WITH ARCH & MECH.
		30		7. PROVIDE POUR STOPS AT TOPPING SLABS AS REQUIRED.
				8. DESIGN ROOF BEAM CONNECTIONS FOR BLAST REACTIONS GIVEN ON SHEET SG000.
14 [4]				9. FOR STEEL BEAM TO STEEL COLUMN CONNECTION, SEE SECTION
				10. VERIFY EXISTING DIMENSIONS AND ELEVATIONS.
1 🕅 7 SF220				AS REQUIRED.
1 <u>—</u> (E) 18"x18"			SEE FO	E PLAN, ARCH, MECH, OR ELEC R SIZE AND LOCATION OF PAD
			1 1/2" CLR, TYP	
1'-0" VIF				DNC PAD #4 @ 18" OC (2 MIN) EACH WAY
(E) 18"x12" (E) 6" (C	CONC SLAB		2'-0" T	YP#5 @ 18" OC EACH WAY
	3 EL = 111'-11'		1/2" TOOLED RADIUS	MIN MAX
<u> </u> i			SLAB ON GRADE	
			SEE TYPICAL DETAILS (COMPOSITE	THICK SEE F
			SLAB AT SIM) ———	- AT CONTRACTOR'S OPTION, BARS MAY BE INSTALLED IN SLAB USING HILTI HIT-HY 200 ADHESIVE WITH 3" EMBEDMENT. DRILLED
5	27		•	HOLES SHALL CLEAR SLAB REINF
			<u>NOTE:</u> 1. SEE MEC	CHANICAL AND ELECTRICAL DWGS FOR THE FOLLOWING:
			A. LOC/ B. LOC/ C. DET/	ATION AND DIMENSIONS OF PADS. ATION AND SIZE OF ANCHOR BOLTS. AILS OF SUPPORTS, ISOLATORS AND OTHERS.
		Т	YPICAL CON	ICRETE
			QUIPMENT F	PAD DETAIL
			" = 1'-0"	

of tion ities	Drawing Title FIRST FLOOR & ROOF FRAMING PLAN	Phase BID DOCUME	NTS	Project Title CONSTRU	CT NE
nent				Location Sioux Falls, SD	•
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ment epartment erans	Approved:	FULLY SPRINKLERED	Location SiOUX Falls, SD. Issue Date 02/14/2025	Checked MPM/T
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GENERAL PLAN NOTES: ROOF FRAMING

VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS.

SEE ARCHITECTURAL DRAWINGS. FOR LOCATION OF WALLS NOT

FOR PERMISSABLE CONSTRUCTION JOINT LOCATIONS IN COMPOSITE

FOR OPENINGS IN COMPOSITE SLABS, SEE ______. FOR OPENINGS LARGER THAN 24", PROVIDE W12X14 FRAME **XRCUIN**D OPG. VERIFY SIZE, LOCATION AND QTY WITH ARCH & MECH.

PROVIDE POUR STOPS AT TOPPING SLABS AS REQUIRED.

DESIGN ROOF BEAM CONNECTIONS FOR BLAST REACTIONS GIVEN ON

FOR STEEL BEAM TO STEEL COLUMN CONNECTION,

3/SF220, 4/SF220 5/SF220 10. VERIFY EXISTING DIMENSIONS AND ELEVATIONS.

11. CONTRACTOR TO LOCATE REINFORCING IN EXISTING WALLS & SLABS

BM SIZE -

1) 5 1/2" TOTAL COMPOSITE CONCRETE FLOOR SLAB W/ #5 @ 16" OC EA WAY, OVER 2"-18 GA COMPOSITE STEEL FLOOR DECK OR APPROVED EQUAL (3 1/2" CONC SLAB + 2" DECK =5 1/2" TOTAL SLAB THICKNESS). T.O. SLAB EL =123'-10"

С

) PROVIDE ADDITIONAL SLAB REINFORCING AROUND PERIMETER. SEE PLAN & 3/SF210

3 PROVIDE STUB BEAM HSS 9X5X5/16" SHOP WELDED TO FACE OF STL COL W/ 1/4" FILLET WELD ALL AROUND 4 L 3X3X5/16" KICKER AT BEAM MIDSPAN.

5) L 5X5X3/8" FIELD WELDED TO STEEL BEAMS.

6 L 3X3X5/16" KICKER CENTERED BETWEEN STEEL BEAMS.

	Project Number
EW SPS	438-460
	Building Number
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	Drawing Number
d Drawn 1/TGL MAQ	SF103

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rans			02/14/2025	MPM
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ARCHITECT/ENGINEER OF RECORD	STAMP	Office
ANDERSON	MICHAEL P. MICHAEL P. MICHAEL P. MERRON	Construe and Faci Manage
13605 1st Ave. N. #100 Plymouth, MN 55441 P 763.412.4000 F 763.412.4090 ae-mn.com Anderson Engineering of Minnesota, LLC Proj # 16584	2-14-20275	VA U.S. D of Vete Affairs

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