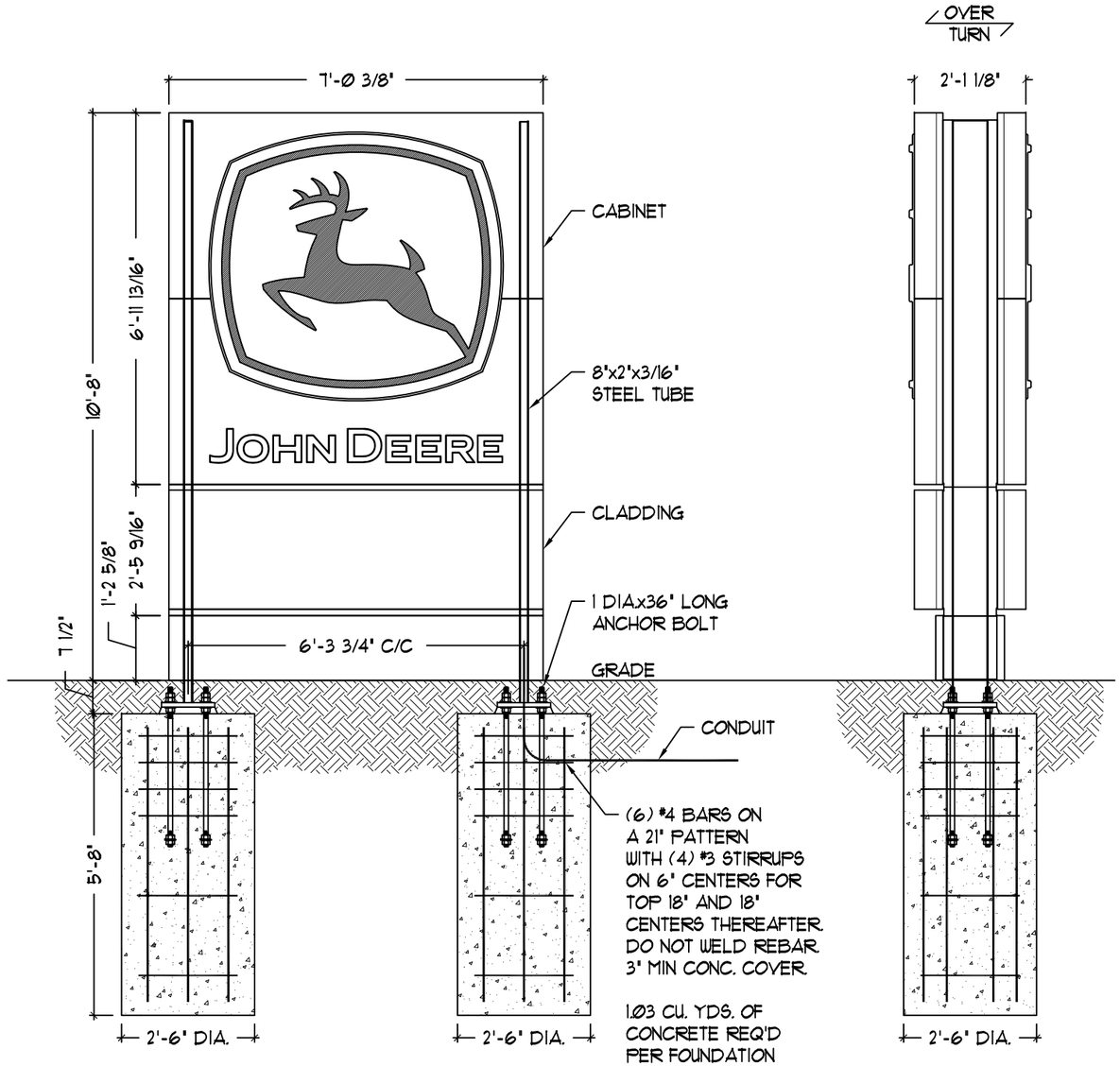
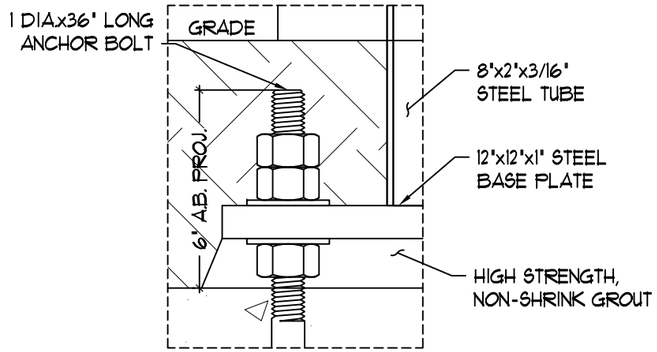
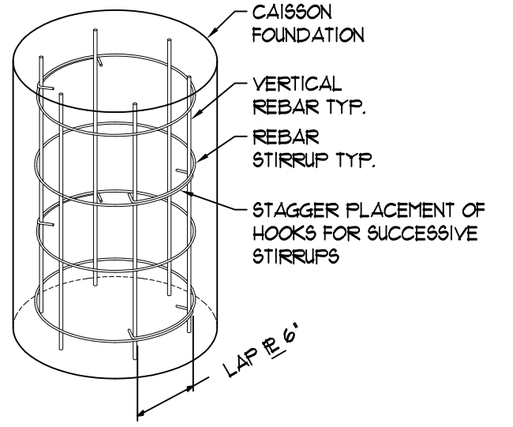


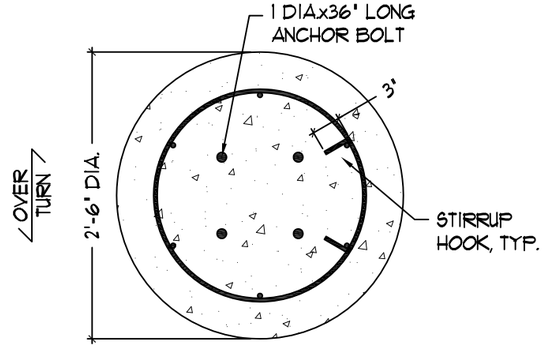
ALL STEEL BELOW GRADE (INCLUDING EXPOSED ANCHOR BOLTS) SHALL BE COATED WITH CARBOLINE BITUMASTIC 50 COAL TAR OR EQUAL AFTER INSTALLATION AND PRIOR TO LANDSCAPING.



ANCHOR BOLT PROJECTION DETAIL



STIRRUP ILLUSTRATION
N.T.S.



SECTION @ CAISSON

INSTALLATION ADDRESS:

JOHN DEERE
(REVELS TURF & TRACTOR)
5118 RAWLS CHURCH RD.
FUQUAY-VARINA, NC 27526

CLIENT:

Pattison id

520 WEST SUMMIT HILL DR, SUITE 702 - KNOXVILLE, TN 37902
Tel (865) 693-1105 - Fax (865) 693-1106 - Toll Free (866) 218-1976

	DATE	DESCRIPTION
1	-/-/-	----------
2	-/-/-	----------
3	-/-/-	----------

SEAL & SIGNATURE:

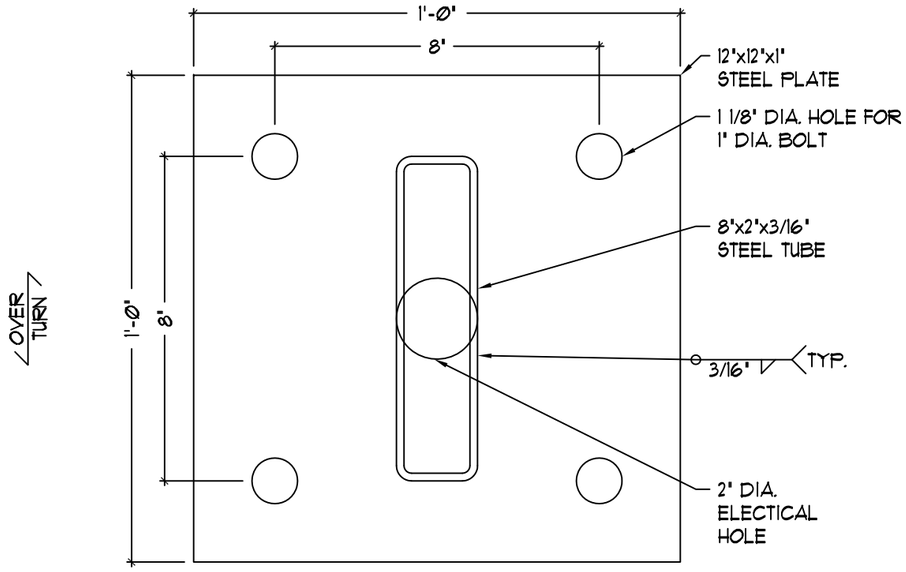
Hailey Vickers Digitally signed by Hailey Vickers Date: 2024.09.20 21:13:48 -05'00'

NORTH CAROLINA PROFESSIONAL SEAL 053178 ENGINEER HAILEY VICKERS

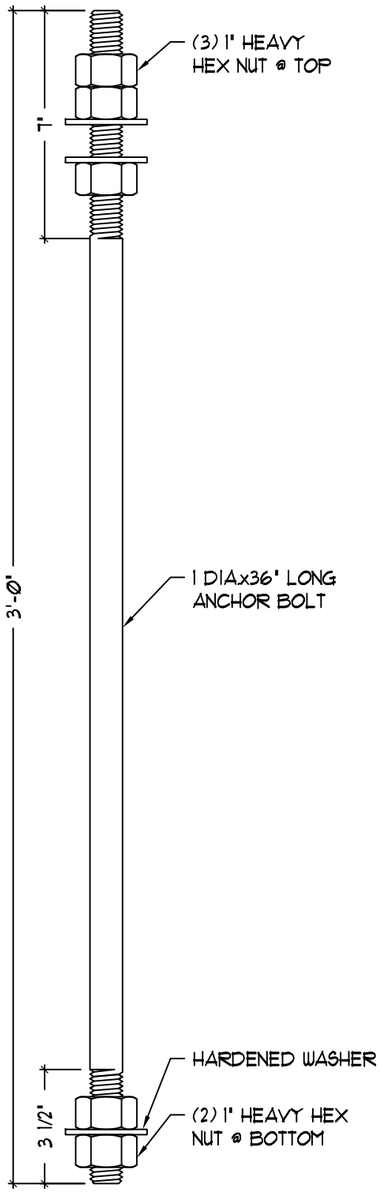
9/20/24

LINK Engineering, L.L.C.
135 South David Lane • Knoxville, Tennessee 37922
Phone: (865) 539-4001 • www.linkengr.com
North Carolina Certificate of Authorization No.: P-0483

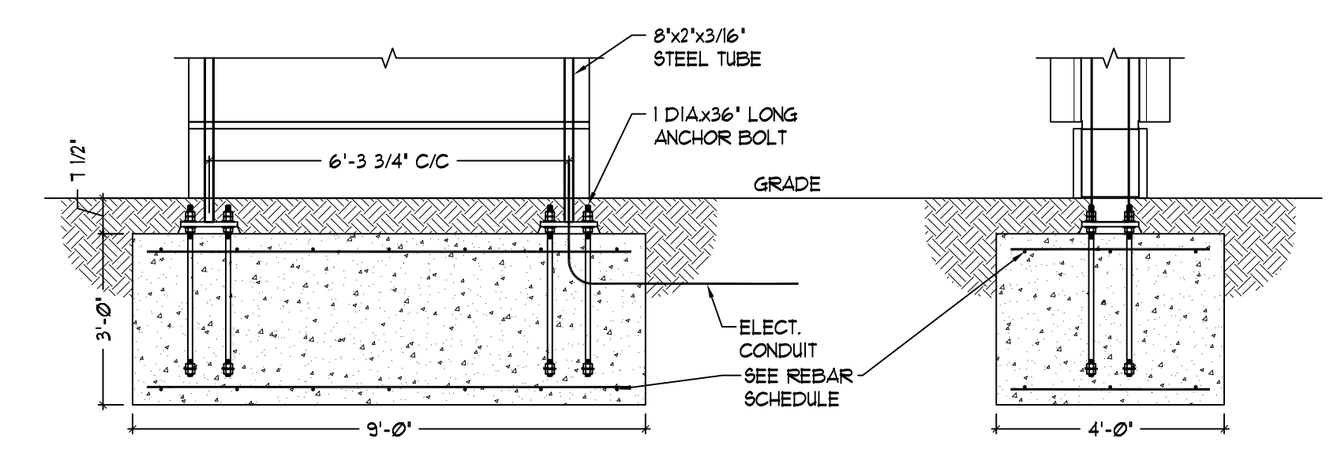
Project Number:		Drawing Number:	
24-0605		B2583290	
SHT.	OF	DATE:	BY:
1	3	9/20/24	GHK



BASE PLATE DETAIL



ANCHOR BOLT DETAIL



4.0 CU. YDS. OF CONCRETE REQ'D

ELEVATION

SIDE VIEW

OPTIONAL SPREAD FOUNDATION

ALL STEEL BELOW GRADE (INCLUDING EXPOSED ANCHOR BOLTS) SHALL BE COATED WITH CARBOLINE BITUMASTIC 50 COAL TAR OR EQUAL AFTER INSTALLATION AND PRIOR TO LANDSCAPING.

REBAR SCHEDULE
SPREAD FOUNDATION

DO NOT WELD REBAR
3" MIN. CONC. COVER

PLACEMENT	SIZE	SPACING	QUANTITY
OVER TURN BOTTOM STEEL	#4	16"	7
OVER TURN TOP STEEL	#4	16"	7
BOTTOM CROSS STEEL	#4	18"	3
TOP CROSS STEEL	#4	18"	3

INSTALLATION ADDRESS:

JOHN DEERE
(REVELS TURF & TRACTOR)
5118 RAWLS CHURCH RD.
FUQUAY-VARINA, NC 27526

CLIENT:

Pattison id

520 WEST SUMMIT HILL DR, SUITE 702 - KNOXVILLE, TN 37902
Tel (865) 693-1105 - Fax (865) 693-1106 - Toll Free (866) 218-1976

	DATE	DESCRIPTION
1	-/-/-	----------
2	-/-/-	----------
3	-/-/-	----------

SEAL & SIGNATURE:

Hailey Vickers Digitally signed by Hailey Vickers Date: 2024.09.20 21:13:23 -05'00'

NORTH CAROLINA PROFESSIONAL SEAL 053178 ENGINEER HAILEY VICKERS

9/20/24

LINK Engineering, L.L.C.
135 South David Lane • Knoxville, Tennessee 37922
Phone: (865) 539-4001 • www.linkengr.com
North Carolina Certificate of Authorization No.: P-0483

Project Number:	Drawing Number:
24-0605	B2583290

SHT.	OF	DATE:	BY:
2	3	9/20/24	GHK

	PROJECT #	24-0605		OWNER:	JOHN DEERE - (REVELS TURF & TRACTOR)	
	September 20, 2024				5118 RAWLS CHURCH RD.	
	DRAWING #	B2583290			FUQUAY-VARINA, NC 27526	
	WIND LOAD	20.592	PSF			
	WIND SPEED	120	MPH	CLIENT:	PATTISON ID.	
	# COLUMNS	2	NCBC 2018/IBC 2015		520 WEST SUMMIT DR., STE. 702	
	DESIGNER	GHK			KNOXVILLE, TN	

	ITEM	HEIGHT	WIDTH	SHAPE FACTOR	CENTROID HEIGHT	AREA	TOTAL FORCE	MOMENT	BASE MOMENT	CENTROID	ADJUSTED MOMENT
	SIGN	6.934	7.031	1.000	3.841	49.109	1.011	3.885			
	SIGN	2.344	7.031	1.000	1.289	16.479	1.351	6.692			
	BASE	1.339	7.031	1.000	0.736	9.412	1.544	8.643	7.565	4.898	8.389
	SUBGRADE	0.625	0.000	1.000	0.313	0.000	1.544	9.354			
	OAH	10.667									

COLUMN CALCULATIONS (CODES P=PIPE,O=OTHER,T=TUBE)

	ITEM	COLUMN WIDTH	COLUMN DEPTH	COLUMN WALL	Ixx COLUMN	DESIGN MODULUS COLUMN	OBLIQUE LOAD MOMENT	AVAILABLE FLEXURAL STRENGTH	COLUMN CENTER DISTANCE	OBLIQUE LOAD FACTOR	UNITY
=											
T	SIGN	2.000	8.000	0.174	22.4	7.51	2.831	17.23	6.146	1.458	0.164
T	SIGN	2.000	8.000	0.174	22.4	7.51	4.877	17.23			0.283
T	BASE	2.000	8.000	0.174	22.4	7.51	6.299	17.23			0.365
T	SUBGRADE	2.000	8.000	0.174	22.4	7.51	6.817	17.23			0.396

BOLT CALCULATIONS

	ITEM	MOMENT	BOLT SPACING	BOLTS/ PLATE	OBLIQUE TENSION/ BOLT	BOLT DIAM.	ALLOW. STRESS	ALLOWABLE TENSION
	BASE PL.	9.354	8.000	4.000	5.113	1.000	19.100	15.001

PLATE CALCULATIONS

	ITEM	TENSION/ BOLT	MOMENT ARM	MOMENT PLATE	PLATE WIDTH	PLATE DEPTH	PLATE THICK.	MINIMUM THICK.
	BASE PL.	5.113	3.031	15.499	6.031	12.000	1.000	0.756

ANCHOR BOLT PROJECTION	ANCHOR EMBEDMENT	ANCHOR BOLT MIN. LENGTH
6.000	10.172	17.000

SPREAD FOUNDATION		
MOMENT AT GRADE	9.354	
TOTAL FORCE	1.544	kip
WEIGHT OF SIGN	0.852	kip
SLAB WIDTH	9.000	ft
SLAB LENGTH	4.000	ft
SLAB DEPTH	3.000	ft
SLAB WEIGHT	16.200	kip
TOTAL WEIGHT	17.052	kip
OVERTURNING MOMENT	13.987	
FACTOR OF SAFETY	2.438	
e = OTM/WT	0.820	
L/2 - e	1.180	
SOIL PRESSURE 2*WT/(3*(L/2-e)*WIDTH)	1071	
CONCRETE	4.000	yd^3
EXCAVATION	4.000	yd^3
MIN. THICKNESS W/O REBAR	7.487	in
SQRT(M*12*6*1.7*.75/(.178*12*WIDTH)		
ACTUAL THICKNESS	36.000	in

BOTTOM STEEL AREA REQ'D PER FT OF WIDTH		0.043	
TOP STEEL AREA REQ'D PER FT OF WIDTH		0.025	
LONG BOTTOM STEEL	REBAR SIZE	4.000	
	WEIGHT PER FT	0.668	
	SPACING	16.000	in
	AREA PER BAR	0.200	in^2
BOTTOM STEEL AREA REQ'D PER FT OF WIDTH		0.043	
	AREA PER FT	0.156	
	EST NO. REQ'D	6.750	
	NUMBER REQ'D	7.000	
	LENGTH	3.500	ft
	WEIGHT	16.366	
	EDGE	6.000	
LONG TOP STEEL	REBAR SIZE	4.000	
	WEIGHT PER FT	0.668	
	SPACING	16.000	in
	AREA PER BAR	0.200	in^2
TOP STEEL AREA REQ'D PER FT OF WIDTH		0.025	
	AREA PER FT	0.156	
	EST NO. REQ'D	6.750	
	NUMBER REQ'D	7.000	
	LENGTH	3.500	ft
	WEIGHT	16.366	
	EDGE	6.000	
CROSS STEEL	REBAR SIZE	4.000	
	WEIGHT PER FT	0.668	
	SPACING	18.000	in
	LENGTH	8.500	ft
	EST NO. REQ'D	2.667	
	NUMBER REQ'D	3.000	
	EDGE	6.000	in
	WEIGHT	34.068	
	TOTAL WEIGHT	66.800	
FOUNDATION WIDTH		9.000	ft
FOUNDATION LENGTH		4.000	ft
CAISSON			
MOMENT		9.354	FT-KIP
FORCE		1.544	KIP
REFERENCE IBC 1807.3.2 & TABLE 1806.2			
ASSUME SOIL CLASS #4 SW, SP, SM, SC, GM & GC			
LATERAL BEARING PRESSURE - PSF/FT OF DEPTH		150.0	PSF/FT
S1		566.7	
DEPTH		5.667	FT.
DIAMETER		2.500	FT.
		6.057	FT.
		2.551	FT.
CALCULATED DEPTH		5.573	FT.
MINIMUM THICKNESS WITHOUT REINFORCEMENT		23.783	IN.
ACTUAL DIAMETER		30.000	IN.
CONCRETE		1.030	CU. YD.

General Notes:

1. Design is based on a 120 mph, 3 second gust wind design per the NCBC 2018/IBC 2015, Category II, Exposure C
2. Spread foundation is based on a presumptive safe vertical soil bearing pressure minimum of 2000 psf. Caisson foundation is based on a presumptive safe lateral soil bearing pressure minimum of 150 psf per foot of depth. Isolated lateral bearing footings subject to short-term lateral loads and not adversely affected by a 1/2" motion at grade are permitted to be designed using twice the tabulated value of the corresponding soil class.
3. A soil report was not provided. Foundation analysis assumes Soil Classification 4. Allowable bearing pressure should be verified prior to placement of concrete. In the event that the stated requirements are not met and conditions appear deleterious, cease and secure excavation and immediately contact PATTISON ID.
4. Foundation shall not be placed at the top of, or on the side of a slope exceeding 3:1, or adjacent to a fill slope unless re-evaluated by a competent Professional Engineer. Do not place foundation in fill.
5. Concrete shall be mixed to attain a minimum 28 day compressive strength of 3000 psi.
6. Steel reinforcing bars shall conform to ASTM A615, Grade 60 with deformations in accordance with ASTM A305. Welding of reinforcing bars is prohibited.
7. All voids between column base plate and foundation surface shall be completely filled with high-strength, non-shrink grout.
8. Anchor bolts shall meet ASTM F1554 Grade 36. Exposed surfaces shall be galvanized or coated to prevent corrosion.
9. All support members shall be free from defects. Steel tube shall meet ASTM A500 Grade B with a minimum yield strength of 46000 psi. Steel angle, channel and plate shall meet ASTM A36.
10. Steel welds shall be made with E70xx low hydrogen electrodes by persons qualified in accordance with AWS standards within the past two years.
11. All structural bolts shall conform to ASTM A325, and be zinc coated unless noted otherwise. When used with structural bolts, heavy hex nuts shall conform to ASTM A563, and washers shall conform to ASTM F436. Pretension all high strength bolts using the Turn-of-Nut method unless noted otherwise.
12. The scope of this engineer does not include onsite observations.
13. LINK Engineering will not be responsible for the safety on this job site before, during or after installation of this structure. It is the responsibility of the owners, contractors and installers to ensure that the installation and erection of this structure is performed using methods that are in full compliance with OSHA regulations.
14. Any deviation from this design or from any part of this drawing, including the General Notes, without prior written consent from LINK Engineering voids this drawing in its entirety.
15. The structure designed on this drawing is intended to be installed at the address shown and should not be used at any other location.

INSTALLATION ADDRESS:

JOHN DEERE
(REVELS TURF & TRACTOR)
5118 RAWLS CHURCH RD.
FUQUAY-VARINA, NC 27526

CLIENT:

Pattison id

520 WEST SUMMIT HILL DR, SUITE 702 - KNOXVILLE, TN 37902
Tel (865) 693-1105 - Fax (865) 693-1106 - Toll Free (866) 218-1976

	DATE	DESCRIPTION
1	-/-/-	----------
2	-/-/-	----------
3	-/-/-	----------

SEAL & SIGNATURE:

Hailey Vickers Digitally signed by Hailey Vickers Date: 2024.09.20 21:12:59 -05'00'

NORTH CAROLINA PROFESSIONAL SEAL 053178 ENGINEER HAILEY VICKERS

9/20/24

LINK Engineering, L.L.C.
135 South David Lane • Knoxville, Tennessee 37922
Phone: (865) 539-4001 • www.linkengr.com
North Carolina Certificate of Authorization No.: P-0483

Project Number:	Drawing Number:		
24-0605	B2583290		
SHT.	OF	DATE:	BY:
3	3	9/20/24	GHK