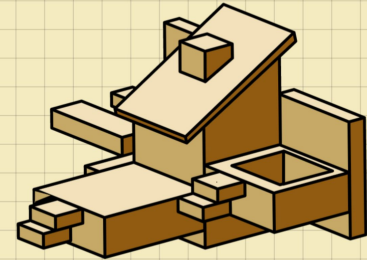


Group # 02: CON 496 - Capstone Project Presentation

A-Dale Matthews
Michelle Napolitano
Apiya Pompei



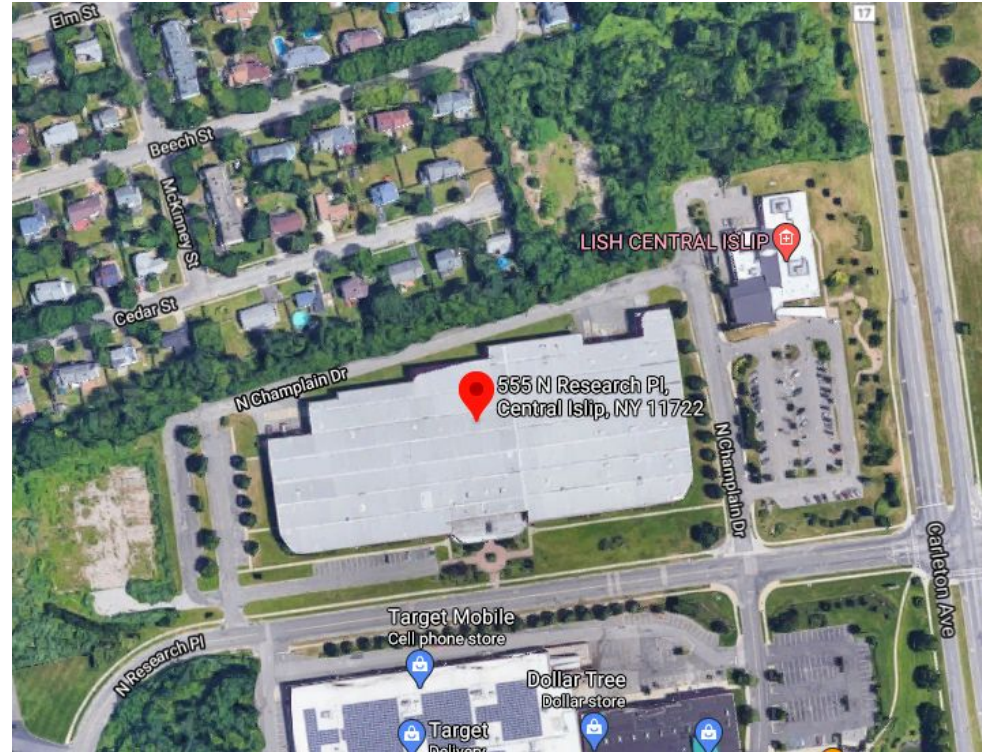
GROUP 02 DESIGN AND CONSTRUCTION

Table of Contents

- 1:
Drawings and Design Calculations
- 2:
Construction Documents
- 3:
Detail Bid Package

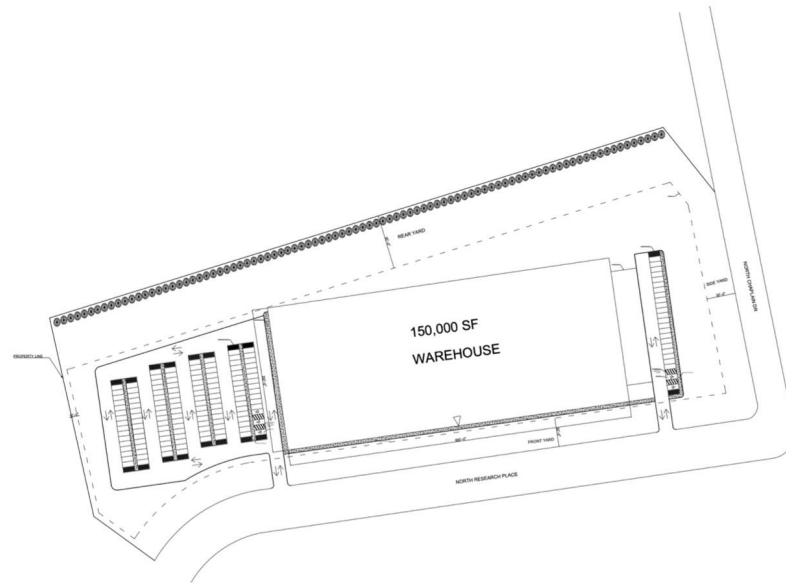
Location:
555 N Research Pl
Central Islip
NY 11722


Planned Development
Research-Industrial
Zone



1: Drawings & Design Calculations

A dark blue diagonal gradient bar that starts from the bottom left and extends towards the top right, covering the lower half of the slide.




 SITE PLAN
 SCALE: 1/64" = 1'-0"

Farmingdale
State College
 State University of New York

General Notes

No.	Revision/Issue	Date

File Name and Address

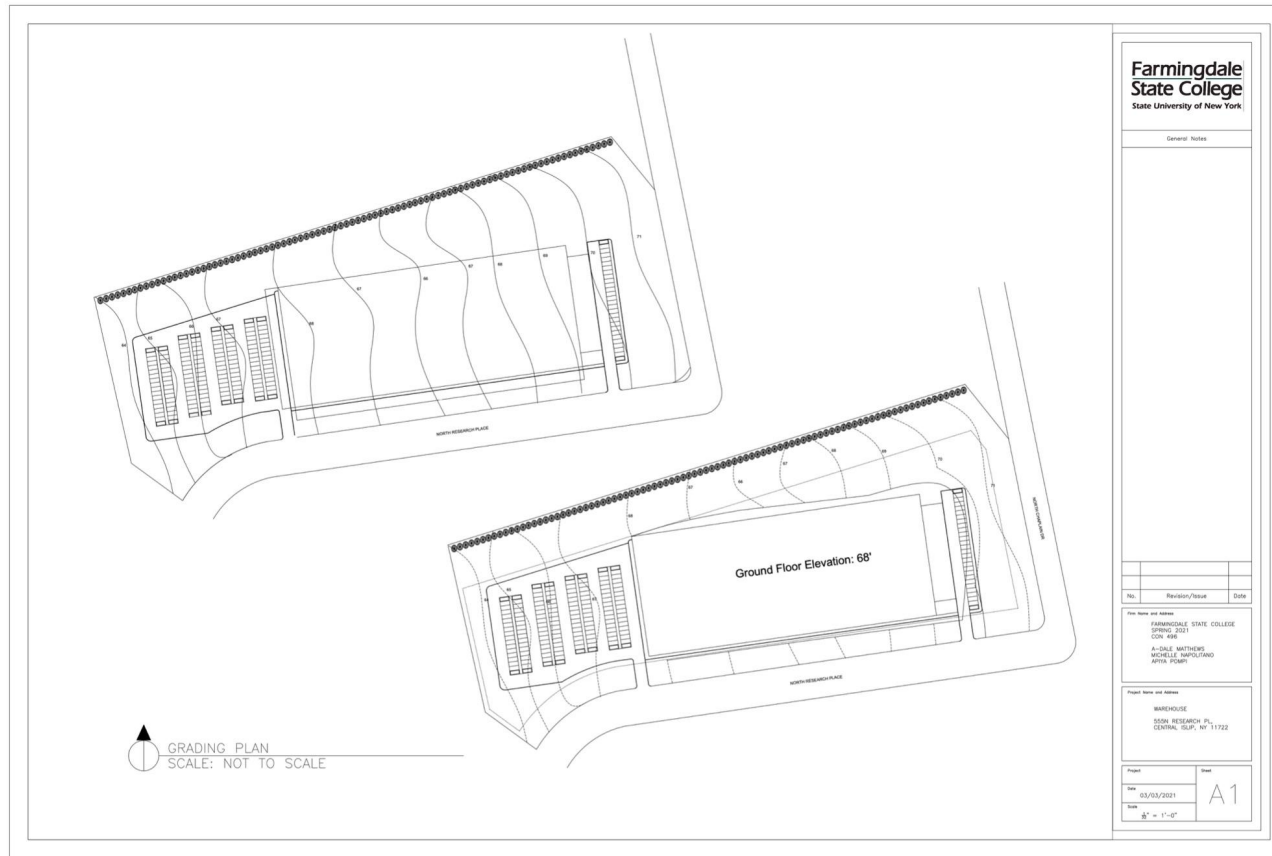
FARMINGDALE STATE COLLEGE
 OFFICE 201
 CDR 408
 GROUP 2 CAMPSTONE
 A-SALE MATTHEWS
 MICHELLE MARCOLINO
 ADINA FOGARTY

Project Name and Address

CDR 408 WAREHOUSE
 220N RESEARCH PL.
 CENTRAL, LISP, NY 11722

Project	Sheet
Date 01/15/2021 Scale 1/64" = 1'-0"	A1

Site Plan



Grading Plan

Excavation of Building Footprint

Station	Existing Elevation	New Elevation	Cut Depth	Fill Depth	Weighted Value	Area	Cut Volume	Fill Volume
Corner Point	68.1	68	0.1		1	1,875	187	-
Corner Point	68.3	68	0.3		1	1,875	562	-
Corner Point	69.5	68	1.5		1	1,875	2,813	-
Corner Point	69.3	68	1.3		1	1,875	2,437	-
Exterior Point	68.24	68	0.24		2	1,875	900	-
Exterior Point	68.46	68	0.46		2	1,875	1,725	-
Exterior Point	68.43	68	0.43		2	1,875	1,613	-
Exterior Point	68.32	68	0.32		2	1,875	1,200	-
Exterior Point	69.5	68	1.5		2	1,875	5,625	-
Exterior Point	69.31	68	1.31		2	1,875	4,913	-
Exterior Point	69.15	68	1.15		2	1,875	4,313	-
Exterior Point	67.03	68		0.97	2	1,875	-	3,638
Exterior Point	66.05	68		1.95	2	1,875	-	7,313
Exterior Point	68.02	68	0.02		2	1,875	75	-
Exterior Point	67.2	68		0.8	2	1,875	-	3,000
Exterior Point	66.2	68		1.8	2	1,875	-	6,750
Exterior Point	67.75	68		0.25	2	1,875	-	938
Interior Point	67.16	68		0.84	4	1,875	-	6,300
Interior Point	67.28	68		0.72	4	1,875	-	5,400
Interior Point	67.2	68		0.8	4	1,875	-	6,000
Interior Point	67.11	68		0.89	4	1,875	-	6,675
Interior Point	66.12	68		1.88	4	1,875	-	14,100
Interior Point	66.26	68		1.74	4	1,875	-	13,050
Interior Point	66.33	68		1.67	4	1,875	-	12,525
Interior Point	66.29	68		1.71	4	1,875	-	12,825
Interior Point	68.01	68	0.01		4	1,875	75	-
Interior Point	67.92	68		0.08	4	1,875	-	600
Interior Point	67.8	68		0.2	4	1,875	-	1,500
Interior Point	67.68	68		0.32	4	1,875	-	2,400

Total Cut (ft3)	Total Fill (ft3)
26,438	103,013
Total Cut (CY)	Total Fill (CY)
979	3,815

Storm Water Management

Rational Method: $Q = ciA$

Q = flow (cfs) C = coefficient I = rainfall intensity (in/hr) A = area (acres)

Coefficient of roof and pavement = 0.9

Rainfall intensity = 2 in/hr

Area of building = 150,000 SF = 3.44 Acres

Area of parking lot = 95,608 SF = 2.19 Acres

Total Area = 3.44 + 2.19 = 5.63 Acres

$Q = (0.9)(2)(5.63)$

$Q = 10.13$ cfs

Site must hold the Q for 2 hours

10.13 cfs x 7200 seconds = 72,936 cfs for 2 hours

Drywell 12' diameter (depth 2-20 ft)

Storage per VF = 113.04 cf

Ground water level 29.94 ft. Minimum 2 ft gap between drywell and water table

Drywell Depth 10' = 65 drywells (12' dia x 10')

Drywell Depth 20' = 33 drywells (12' dia x 20')

Waste Water Management

Septic Tank

70 employees per 8 hour shift

15 GPD per employee

$70 \times 15 \text{ GPD} = 1,050 \text{ GPD}$

10' Diameter Septic Tank = 500 gal/VF

10' diameter x 5' depth = 2,500 GPD capacity

Leaching Pool

Required Leaching = 1,050 GPD

Leaching Rate = 1.5 GPD/SF

Sidewall Area = $1,050 \text{ GPD} / (1.5 \text{ GPD/SF}) = 700 \text{ SF}$

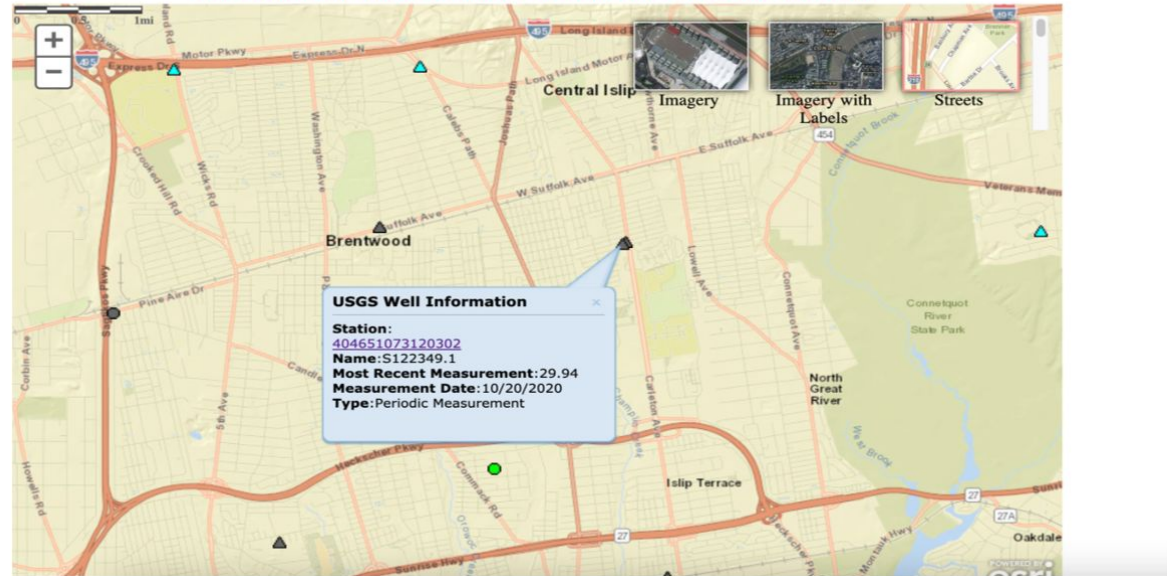
10' diameter leaching pool = 31.4 SF/VF

$700 \text{ SF} / (31.4 \text{ SF/VF}) = 22.29 \text{ VF}$

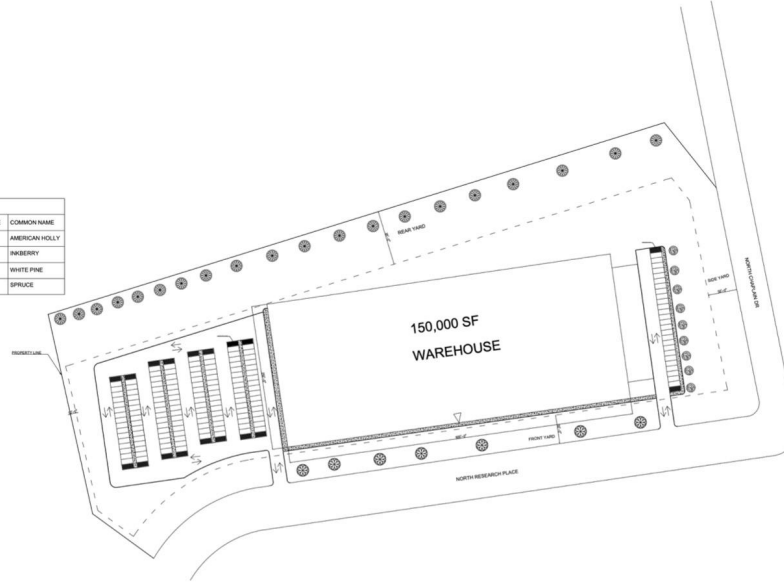
(2) 10' dia. leaching pools with 12' depth = total 24 VF

New York Active Water Level Network

Click site symbol to open information pop-up. Click Station ID in pop-up for county information and site selection.
Map loading slowly? Try a different browser. Web browser performance varies significantly.



PLANT LIST			
SYMBOL	QTY	BOTANICAL NAME	COMMON NAME
	9	ILEX OPACA	AMERICAN HOLLY
	17	ILEX GLABRA	INKBERRY
	12	PINUS STROBUS	WHITE PINE
	7	PICEA SP	SPRUCE



LANDSCAPE PLAN
SCALE: $\frac{1}{32}'' = 1'-0''$

**Farmingdale
State College**
State University of New York

General Notes

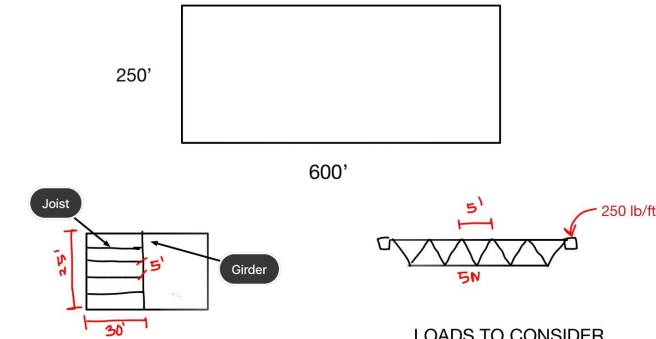
No.	Revision/Issue	Date

File Name and Address
FARMINGDALE STATE COLLEGE
SPRING 2021
CON 406
GROUP 2 CAPSTONE
A-GALE, MATTHEWS
MICHELLE, NAYLOR, PANG
APRIL, JOHNSON

Project Name and Address
CON 406 WAREHOUSE
5500 RESEARCH PL.
CENTRAL Islip, NY 11722

Project	Sheet
Date 03/13/2021	A1
Scale $\frac{1}{32}'' = 1'-0''$	

LANDSCAPE PLAN



Total load = 50psf
 Actual joist space = 5N
 Complete total load = 5' x 30' = 150

50psf x 150 = 7,500 lb = 7.5 kips

Weight per joist : 7,500/30' = 250 lb/ft

LOADS TO CONSIDER

Metal roof = 4
 HVAC = 4
 Weather proofing = 12
 Sprinklers = 2
 Light fixtures = 3

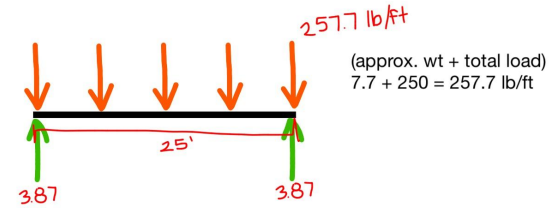
Snow load = 25
 Total loads = 50psf

FROM THE TABLE

Span : 30'
 Approximate weight : 7.7 kips
 Depth (in) : 18" } Joist designation = 18k5

★ Capacity of 276lb per joist ★

Center Joist Girder

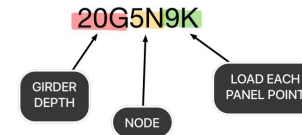


Girder point load
 $(257.7)(30')(2) / (2) = 7,731 \text{ lb} = 7.731 \text{ kips}$
 $7.731/2 = 3.87 \text{ kips}$

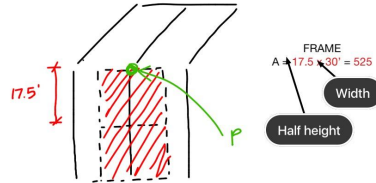
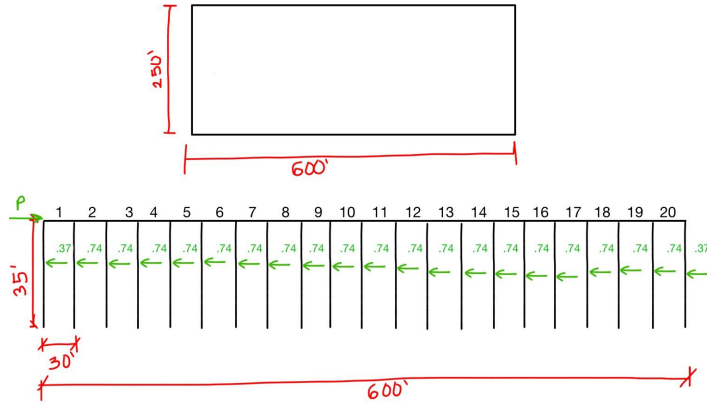
3.86 kips x 5N = 19.32
 $19.32/2 = 9.66 \text{ kips}$

Joist girder depth = 20"
 Joist girder span = 25"
 Number of joist spaces = 5N@ 5'
 Load at each panel point = 9kips

Girder designation



Wind Load Shear



$$Q_z = .00256 \times K_z \times K_{2t} \times V^2 \times I$$

$$Q_z = .00256 \times .76 \times 1 \times 120^2 \times 1$$

$$Q_z = 28.02 \text{ lb/ft}^2$$

$$P = Q_z \times A$$

$$P = 28.02 \times 525$$

$$P = 14,710.5 = 14.7105 \text{ kips}$$

$$\text{SHEAR} : 14.7105 = 2(x) + 19(2x)$$

$$14.7105 = 40(x)$$

$$x = 0.3677625 = 0.37$$

LONG ISLAND

Velocity = 120mph
I = 1.00

Exposure B building
K₂ = 0.76
I = 1.00
K_{2t} = 1.00

$$\begin{aligned} \uparrow \sum M = 0 & \quad -0.37(17.5) + V_1(17.5) = 0 & \quad V_1 = 0.37 \text{ K} \\ \sum F_x = 0 & \quad 14.7105 - B_1 - 0.37 = 0 & \quad B_1 = 14.3405 \text{ K} \\ \sum F_y = 0 & \quad 0.37 - S_1 = 0 & \quad S_1 = 0.37 \text{ K} \end{aligned}$$

$$\begin{aligned} \uparrow \sum M = 0 & \quad -0.74(17.5) + 0.37(17.5) + V_2(17.5) = 0 & \quad V_2 = 0.37 \text{ K} \\ \sum F_x = 0 & \quad 14.3405 - 0.74 - B_2 = 0 & \quad B_2 = 13.6005 \text{ K} \\ \sum F_y = 0 & \quad -0.37 + 0.37 - S_2 = 0 & \quad S_2 = 0 \text{ K} \end{aligned}$$

$$\begin{aligned} \uparrow \sum M = 0 & \quad -0.74(17.5) + 0.37(17.5) + V_3(17.5) = 0 & \quad V_3 = 0.37 \text{ K} \\ \sum F_x = 0 & \quad 13.6005 - 0.74 - B_3 = 0 & \quad B_3 = 12.8605 \text{ K} \\ \sum F_y = 0 & \quad -0.37 + 0.37 - S_3 = 0 & \quad S_3 = 0 \text{ K} \end{aligned}$$

$$\begin{aligned} \uparrow \sum M = 0 & \quad -0.74(17.5) + 0.37(17.5) + V_4(17.5) = 0 & \quad V_4 = 0.37 \text{ K} \\ \sum F_x = 0 & \quad 12.8605 - 0.74 - B_4 = 0 & \quad B_4 = 12.1205 \text{ K} \\ \sum F_y = 0 & \quad -0.37 + 0.37 - S_4 = 0 & \quad S_4 = 0 \text{ K} \end{aligned}$$

$$\begin{aligned} \uparrow \sum M = 0 & \quad -0.74(17.5) + 0.37(17.5) + V_5(17.5) = 0 & \quad V_5 = 0.37 \text{ K} \\ \sum F_x = 0 & \quad 12.1205 - 0.74 - B_5 = 0 & \quad B_5 = 11.3805 \text{ K} \\ \sum F_y = 0 & \quad -0.37 + 0.37 - S_5 = 0 & \quad S_5 = 0 \text{ K} \end{aligned}$$

⑥

$$\begin{aligned} \uparrow \sum M = 0 & -0.74(17.5) + 0.37(17.5) + V_6(17.5) = 0 & V_6 = 0.37 \\ \sum F_x = 0 & 11.3805 - 0.74 - B_6 = 0 & B_6 = 10.6405k \\ \sum F_y = 0 & -0.37 + 0.37 - S_6 = 0 & S_6 = 0k \end{aligned}$$

⑦

$$\begin{aligned} \uparrow \sum M = 0 & -0.74(17.5) + 0.37(17.5) + V_7(17.5) = 0 & V_7 = 0.37 \\ \sum F_x = 0 & 10.6405 - 0.74 - B_7 = 0 & B_7 = 9.9005k \\ \sum F_y = 0 & -0.37 + 0.37 - S_7 = 0 & S_7 = 0k \end{aligned}$$

⑧

$$\begin{aligned} \uparrow \sum M = 0 & -0.74(17.5) + 0.37(17.5) + V_8(17.5) = 0 & V_8 = 0.37 \\ \sum F_x = 0 & 9.9005 - 0.74 - B_8 = 0 & B_8 = 9.1605k \\ \sum F_y = 0 & -0.37 + 0.37 - S_8 = 0 & S_8 = 0k \end{aligned}$$

⑨

$$\begin{aligned} \uparrow \sum M = 0 & -0.74(17.5) + 0.37(17.5) + V_9(17.5) = 0 & V_9 = 0.37 \\ \sum F_x = 0 & 9.1605 - 0.74 - B_9 = 0 & B_9 = 8.4205k \\ \sum F_y = 0 & -0.37 + 0.37 - S_9 = 0 & S_9 = 0k \end{aligned}$$

⑩

$$\begin{aligned} \uparrow \sum M = 0 & -0.74(17.5) + 0.37(17.5) + V_{10}(17.5) = 0 & V_{10} = 0.37 \\ \sum F_x = 0 & 8.4205 - 0.74 - B_{10} = 0 & B_{10} = 7.6805k \\ \sum F_y = 0 & -0.37 + 0.37 - S_{10} = 0 & S_{10} = 0k \end{aligned}$$

⑪

$$\begin{aligned} \uparrow \sum M = 0 & -0.74(17.5) + 0.37(17.5) + V_{11}(17.5) = 0 & V_{11} = 0.37k \\ \sum F_x = 0 & 7.6805 - 0.74 - B_{11} = 0 & B_{11} = 6.9405k \\ \sum F_y = 0 & -0.37 + 0.37 - S_{11} = 0 & S_{11} = 0k \end{aligned}$$

⑫

$$\begin{aligned} \uparrow \sum M = 0 & -0.74(17.5) + 0.37(17.5) + V_{12}(17.5) = 0 & V_{12} = 0.37k \\ \sum F_x = 0 & 6.9405 - 0.74 - B_{12} = 0 & B_{12} = 6.2005k \\ \sum F_y = 0 & -0.37 + 0.37 - S_{12} = 0 & S_{12} = 0k \end{aligned}$$

⑬

$$\begin{aligned} \uparrow \sum M = 0 & -0.74(17.5) + 0.37(17.5) + V_{13}(17.5) = 0 & V_{13} = 0.37k \\ \sum F_x = 0 & 6.2005 - 0.74 - B_{13} = 0 & B_{13} = 5.4605k \\ \sum F_y = 0 & -0.37 + 0.37 - S_{13} = 0 & S_{13} = 0k \end{aligned}$$

⑭

$$\begin{aligned} \uparrow \sum M = 0 & -0.74(17.5) + 0.37(17.5) + V_{14}(17.5) = 0 & V_{14} = 0.37k \\ \sum F_x = 0 & 5.4605 - 0.74 - B_{14} = 0 & B_{14} = 4.7205k \\ \sum F_y = 0 & -0.37 + 0.37 - S_{14} = 0 & S_{14} = 0k \end{aligned}$$

⑮

$$\begin{aligned} \uparrow \sum M = 0 & -0.74(17.5) + 0.37(17.5) + V_{15}(17.5) = 0 & V_{15} = 0.37k \\ \sum F_x = 0 & 4.7205 - 0.74 - B_{15} = 0 & B_{15} = 3.9805k \\ \sum F_y = 0 & -0.37 + 0.37 - S_{15} = 0 & S_{15} = 0k \end{aligned}$$

(16) $\begin{array}{l} \downarrow 0.37K \\ \leftarrow 3.9805K \\ \downarrow S_{16} \end{array} \quad \begin{array}{l} \uparrow V_{16} \\ \leftarrow B_{16} \\ \downarrow 0.74K \end{array}$

$$\begin{aligned}
 +\sum M &= 0 & -0.74(17.5) + 0.37(17.5) + V_{16}(17.5) &= 0 & V_{16} &= 0.37K \\
 \sum F_x &= 0 & 3.9805 - 0.74 - B_{16} &= 0 & B_{16} &= 3.2405 \\
 \sum F_y &= 0 & -0.37 + 0.37 - S_{16} &= 0 & S_{16} &= 0K
 \end{aligned}$$

(17) $\begin{array}{l} \downarrow 0.37K \\ \leftarrow 3.2405K \\ \downarrow S_{17} \end{array} \quad \begin{array}{l} \uparrow V_{17} \\ \leftarrow B_{17} \\ \downarrow 0.74K \end{array}$

$$\begin{aligned}
 +\sum M &= 0 & -0.74(17.5) + 0.37(17.5) + V_{17}(17.5) &= 0 & V_{17} &= 0.37K \\
 \sum F_x &= 0 & 3.2405 - 0.74 - B_{17} &= 0 & B_{17} &= 2.5005 \\
 \sum F_y &= 0 & -0.37 + 0.37 - S_{17} &= 0 & S_{17} &= 0K
 \end{aligned}$$

(18) $\begin{array}{l} \downarrow 0.37K \\ \leftarrow 2.5005K \\ \downarrow S_{18} \end{array} \quad \begin{array}{l} \uparrow V_{18} \\ \leftarrow B_{18} \\ \downarrow 0.74K \end{array}$

$$\begin{aligned}
 +\sum M &= 0 & -0.74(17.5) + 0.37(17.5) + V_{18}(17.5) &= 0 & V_{18} &= 0.37K \\
 \sum F_x &= 0 & 2.5005 - 0.74 - B_{18} &= 0 & B_{18} &= 1.7605 \\
 \sum F_y &= 0 & -0.37 + 0.37 - S_{18} &= 0 & S_{18} &= 0K
 \end{aligned}$$

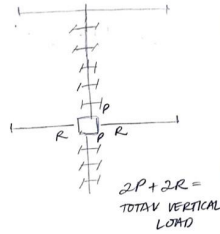
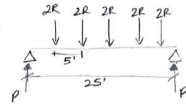
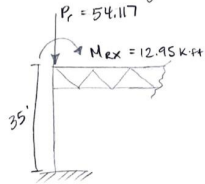
(19) $\begin{array}{l} \downarrow 0.37K \\ \leftarrow 1.7605K \\ \downarrow S_{19} \end{array} \quad \begin{array}{l} \uparrow V_{19} \\ \leftarrow B_{19} \\ \downarrow 0.74K \end{array}$

$$\begin{aligned}
 +\sum M &= 0 & -0.74(17.5) + 0.37(17.5) + V_{19}(17.5) &= 0 & V_{19} &= 0.37K \\
 \sum F_x &= 0 & 1.7605 - 0.74 - B_{19} &= 0 & B_{19} &= 1.0205 \\
 \sum F_y &= 0 & -0.37 + 0.37 - S_{19} &= 0 & S_{19} &= 0K
 \end{aligned}$$

(20) $\begin{array}{l} \downarrow 0.37K \\ \leftarrow 1.0205K \\ \downarrow V_{20} \end{array} \quad \begin{array}{l} \uparrow V_{20} \\ \leftarrow B_{20} \\ \downarrow 0.37K \end{array}$

$$\begin{aligned}
 \sum F_y &= 0 & -0.37 - V_{20} &= 0 & V_{20} &= 0.37K
 \end{aligned}$$

Column design Interior (typ)



$$R = 7.731$$

$$2R = 15.462$$

$$= (15.462)(5) = 38.655 + (5.462) = 54.117$$

$$P_r = 54.117$$

$$\left. \begin{array}{l} W10 \times 49 \\ @ 28 \end{array} \right\} P_c = 124 \text{ kips} \quad \text{moment capacity} = 104$$

$$\frac{P_r}{P_c} = \frac{54.117}{124} = 0.436 \geq .2 \quad \checkmark$$

$$\frac{P_r}{P_c} + \frac{8}{9} \left(\frac{M_{ex}}{M_{cx}} \right) = \frac{54.117}{124} + \frac{8}{9} \left(\frac{12.95}{104} \right) = .5471 \leq 1 \quad \checkmark$$

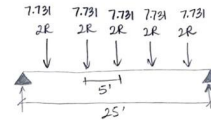
$$\left. \begin{array}{l} W8 \times 67 \\ @ 28 \end{array} \right\} P_c = 118 \quad \text{moment capacity} = 87.6$$

$$\frac{54.117}{81.2} = .66 \quad \checkmark$$

$$\frac{54.117}{118} + \frac{8}{9} \left(\frac{12.95}{139} \right) = .608 \leq 1 \quad \checkmark$$

close to
min .5
close .7

Column design Exterior



$$R = 7.731 \text{ k}$$

$$P_r = \left[\left(\frac{7.731 \times 5}{2} \right) + 7.731 \right] = 27.0585 + .37 = 27.4285$$

$$M_{ex} = (\text{SHEAR}) \times \frac{1}{2} (\text{HEIGHT})$$

$$= (.37) \times \frac{1}{2} (35') = 6.475 \text{ k-ft}$$

$$K = .8 \quad L = 35'$$

$$KL = (.8)(35') = 28$$

$$P_c = 27.4285$$

$$M_{ex} = 6.475$$

CHOOSE COLUMN

$$\left. \begin{array}{l} W10 \times 49 \\ @ 28 \end{array} \right\} P_c = 124 \text{ kips} \quad \text{moment capacity} = 104$$

$$\frac{P_r}{P_c} = \frac{27.4285}{124} = 0.221 \geq .2 \quad \times$$

$$\frac{P_r}{P_c} + \frac{8}{9} \left(\frac{M_{ex}}{M_{cx}} \right) = \frac{27.4285}{124} + \frac{8}{9} \left(\frac{6.475}{104} \right) = .276 \quad \times$$

$$\left. \begin{array}{l} W8 \times 67 \\ @ 28 \end{array} \right\} P_c = 118 \quad \text{moment capacity} = 139$$

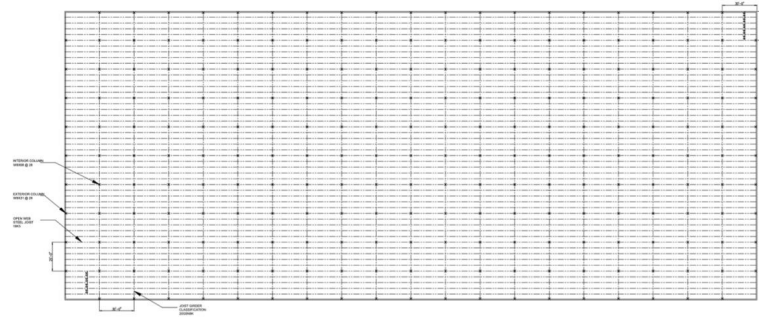
$$\frac{27.4285}{118} = .232 \quad \times$$

$$\frac{27.4285}{118} + \frac{8}{9} \left(\frac{6.475}{139} \right) = .273 \quad \times$$

$$\left. \begin{array}{l} W8 \times 31 \\ @ 28 \end{array} \right\} P_c = 49.6 \quad \text{moment capacity} = 41.4$$

$$\frac{P_r}{P_c} = \frac{27.4285}{49.6} = .5529 \quad \checkmark$$

$$\frac{27.4285}{49.6} + \frac{8}{9} \left(\frac{6.475}{41.4} \right) = .698 \quad \checkmark$$



STRUCTURAL PLAN
SCALE: $\frac{1}{32}'' = 1'-0''$

No.	Revision/Issue	Date

Site Name and Address
FARMINGDALE STATE COLLEGE
SPRING 2021
CON. #95
A-DALE MATTHEWS
MICHELLE MATFOLIANO
ARTHUR PUGH

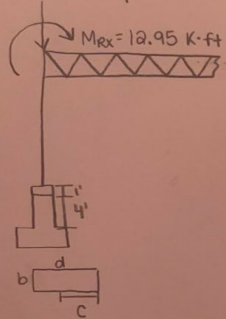
Project Name and Address
WAREHOUSE
5500 RESEARCH PL.
CENTRAL Islip, NY 11732

Project	Sheet
Date 03/03/2021	A1
Scale $\frac{1}{32}'' = 1'-0''$	

Preliminary Foundation Calculations:

Footing Design
(interior columns)

$$P = 54.117 \text{ Kips}$$



$$b = 4'$$

$$d = 6'$$

$$c = 3'$$

$$I = \frac{(b)(d)^3}{12} \quad I = \frac{(4)(6)^3}{12} \quad I = 72$$

$$M_r = M_{ex} + (\text{wind load})(5)$$

$$M_r = (12.95) + (14.7105)(5)$$

$$M_r = 86.5025$$

check:

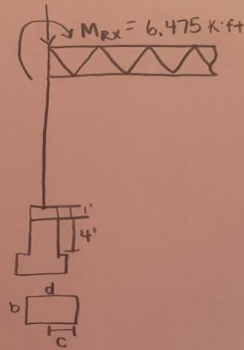
$$\frac{P}{A_{\text{footing}}} + \frac{M_r}{I} < 4$$

$$\frac{54.117}{(4)(6)} + \frac{86.5025}{72} < 4$$

$$3.456 < 4 \quad \checkmark$$

Footing Design
(exterior columns)

$$P = 27.4285$$



$$b = 3'$$

$$d = 6'$$

$$c = 3'$$

$$I = \frac{(b)(d)^3}{12} \quad I = \frac{(3)(6)^3}{12} \quad I = 54$$

$$M_r = M_{ex} + (\text{wind load})(5)$$

$$M_r = (6.475) + (14.7105)(5)$$

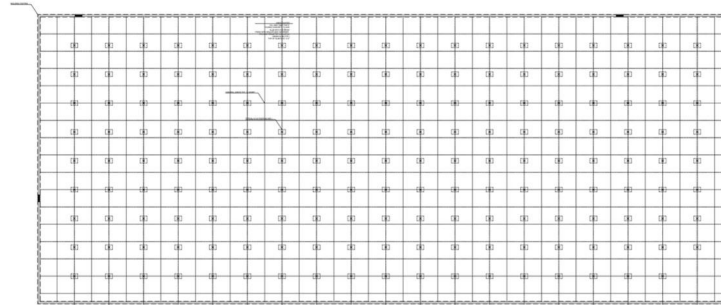
$$M_r = 80.0275$$

check:

$$\frac{P}{A_{\text{footing}}} + \frac{M_r}{I} < 4$$

$$\frac{27.4285}{(3)(6)} + \frac{80.0275}{54} < 4$$

$$3.01 < 4 \quad \checkmark$$



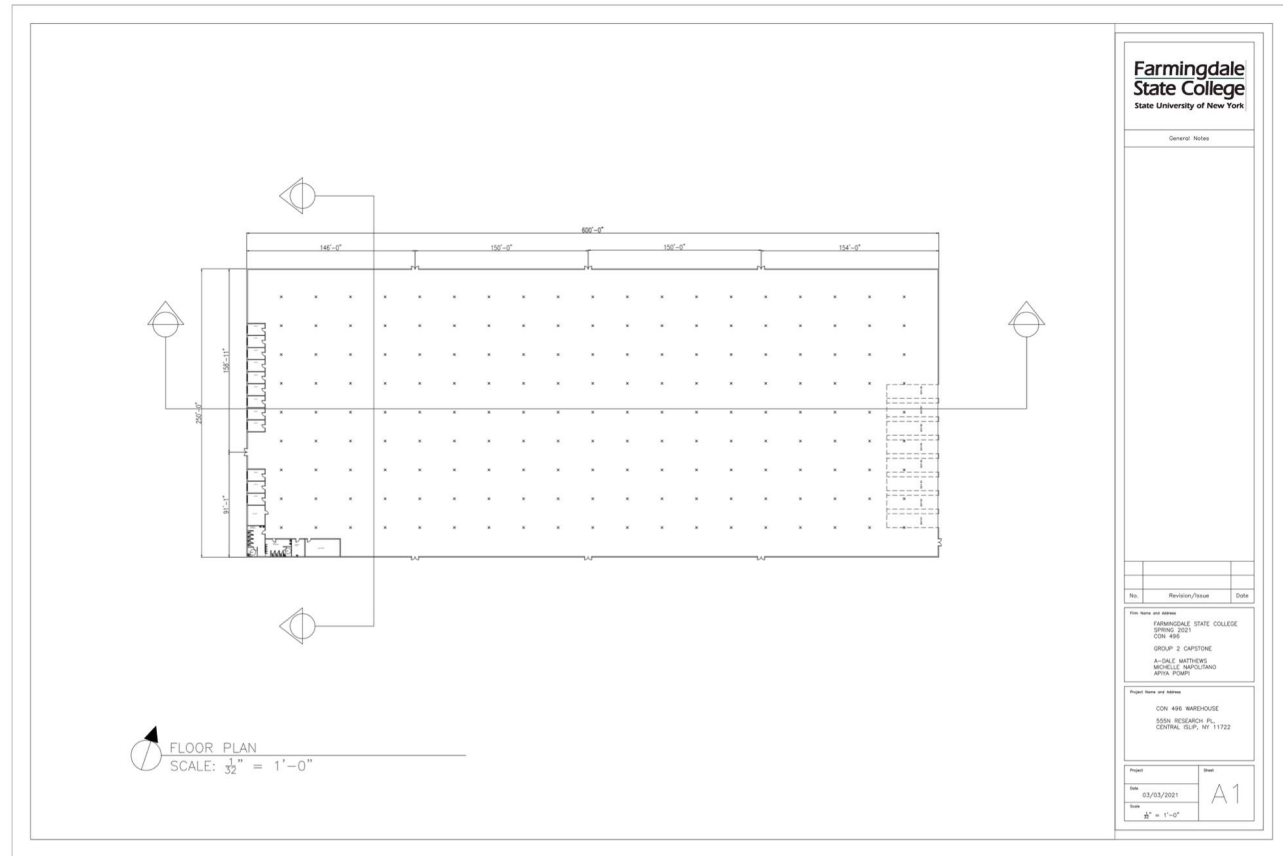
FOUNDATION PLAN
SCALE: $\frac{1}{32}'' = 1'-0''$

No.	Revision/Issue	Date

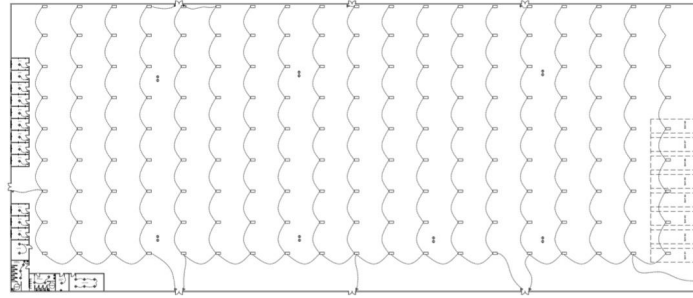
File Name and Dates
FARMINGDALE STATE COLLEGE
SPRING 2021
CON 498
GROUP 2 CAPSTONE
A-GALE, MATTHEWS
MICHELLE, INFUSILIANO
APRIL, PUNNETT

Project Name and Address
CON 498 WAREHOUSE
5500 HESSEMAN PL.
CENTRAL Islip, NY 11722

Project	Sheet
Date: 05/03/2021 Scale: $\frac{1}{32}'' = 1'-0''$	A1



Floor Plan



ELECTRICAL LEGEND	
SYMBOL	DESCRIPTION
1	1-200 AMP
2	2-100 AMP
3	3-50 AMP
4	4-20 AMP
5	5-15 AMP
6	6-10 AMP
7	7-5 AMP
8	8-3 AMP
9	9-1 AMP
10	10-0.5 AMP
11	11-0.25 AMP
12	12-0.125 AMP
13	13-0.0625 AMP
14	14-0.03125 AMP
15	15-0.015625 AMP
16	16-0.0078125 AMP
17	17-0.00390625 AMP
18	18-0.001953125 AMP
19	19-0.0009765625 AMP
20	20-0.00048828125 AMP
21	21-0.000244140625 AMP
22	22-0.0001220703125 AMP
23	23-0.00006103515625 AMP
24	24-0.000030517578125 AMP
25	25-0.0000152587890625 AMP
26	26-0.00000762939453125 AMP
27	27-0.000003814697265625 AMP
28	28-0.0000019073486328125 AMP
29	29-0.00000095367431640625 AMP
30	30-0.000000476837158203125 AMP
31	31-0.0000002384185791015625 AMP
32	32-0.00000011920928955078125 AMP
33	33-0.000000059604644775390625 AMP
34	34-0.0000000298023223876953125 AMP
35	35-0.00000001490116119384765625 AMP
36	36-0.000000007450580596923828125 AMP
37	37-0.0000000037252902984619140625 AMP
38	38-0.00000000186264514923095703125 AMP
39	39-0.000000000931322574615478515625 AMP
40	40-0.0000000004656612873077392578125 AMP
41	41-0.00000000023283064365386962890625 AMP
42	42-0.000000000116415321826934814453125 AMP
43	43-0.0000000000582076609134674071875 AMP
44	44-0.00000000002910383045673370359375 AMP
45	45-0.000000000014551915228366851796875 AMP
46	46-0.0000000000072759576141834258984375 AMP
47	47-0.00000000000363797880709171294921875 AMP
48	48-0.000000000001818989403545856474609375 AMP
49	49-0.0000000000009094947017729282373046875 AMP
50	50-0.00000000000045474735088646141865234375 AMP
51	51-0.000000000000227373675443230709326171875 AMP
52	52-0.0000000000001136868377216153546630859375 AMP
53	53-0.00000000000005684341886080767733154296875 AMP
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86	86-0.0000000000000000000000066174449004241821043607608673498034472332421875 AMP
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96	96-0.0000000000000000000000000064623485355704904401960555345129241643866350068359375 AMP
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99	99-0.0000000000000000000000000008077935669463113050245069419315552053658125008544921875 AMP
100	100-0.00000000000000000000000000040389678347315565251225347096577760268290625042724609375 AMP


ELECTRICAL PLAN
 SCALE: $\frac{1}{32}'' = 1'-0''$

Farmingdale State College
 State University of New York

General Notes

No.	Revisions/Issues	Date

Date Name and address
 FARMINGDALE STATE COLLEGE
 SPRING 2021
 COR. 400

Project Name and Address
 COR. 400 BARRHOUSE
 5000 RESEARCH PL.
 CENTRAL Islip, NY 11722

Project	Sheet
Date: 03/03/2021 Title: 400 BARRHOUSE	A1



Early Suppression, Fast Response Sprinkler Head is the recommended sprinkler system for warehouses.

International Building Code requires a sprinkler for any warehouse with an area exceeding 9000 SQ ft.

The sprinklers run along the warehouse and encompass areas that do not exceed 9000 SQ ft.




 SPRINKLER PLAN
 SCALE: $\frac{1}{32}'' = 1'-0''$

Farmingdale
State College
 State University of New York

General Notes

No.	Revision/Issue	Date

Firm Name and Address
 FARMINGDALE STATE COLLEGE
 SPRING 2021
 COR. 408
 GROUP 2: CAPSTONE
 A-DALE MATTHEWS
 MICHELLE BARTOLINO
 APRA POIRY

Project Name and Address
 COR. 408 WAREHOUSE
 550N. BEDFORD RD.
 CENTRAL Islip, NY 11722

Project

Date

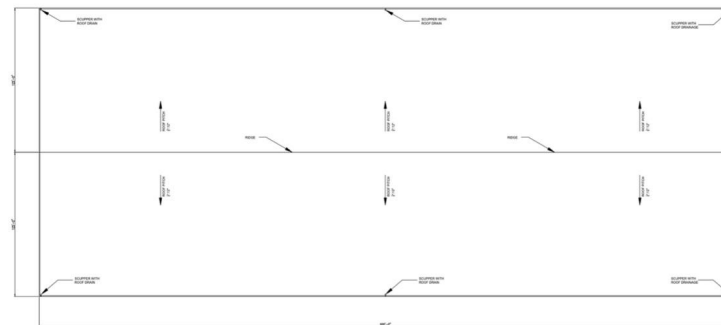
Scale

1/32" = 1'-0"

Sheet

A1

SPRINKLER PLAN



**METAL ROOF
DECKING**

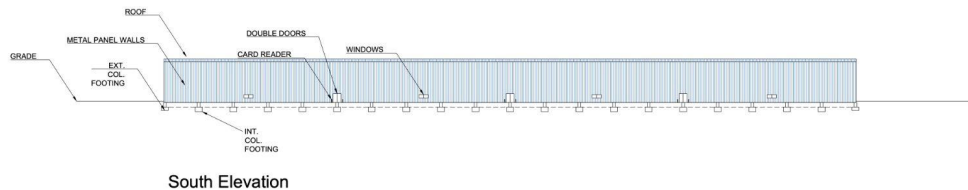
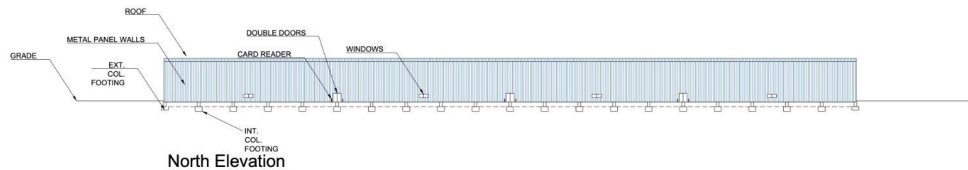
 **ROOF PLAN**
SCALE: $\frac{1}{32}'' = 1'-0''$


No.	Revisions/Issues	Date

File Name and Address
FARMINGDALE STATE COLLEGE
CORNELL, NY 14831
GROUP 2 CAPSTONE
A-DALE MATTHEWS
MICHELLE TAPFOLAND
ARTYON POWERS

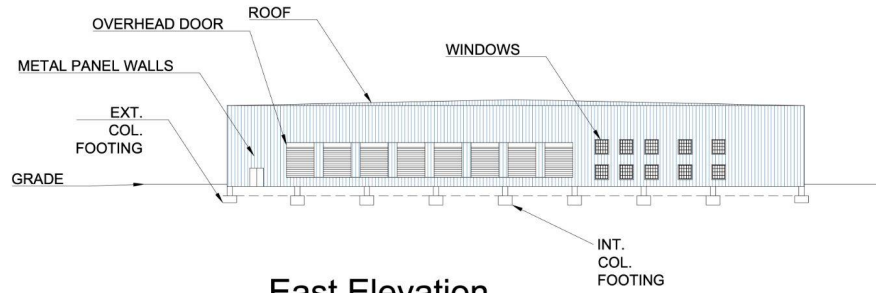
Project Name and Address
CON 486 WAREHOUSE
550N RESEARCH PL.
CORNELL, NY 14853

Project	Sheet
Date 03/03/2021	A1
Scale $\frac{1}{32}'' = 1'-0''$	

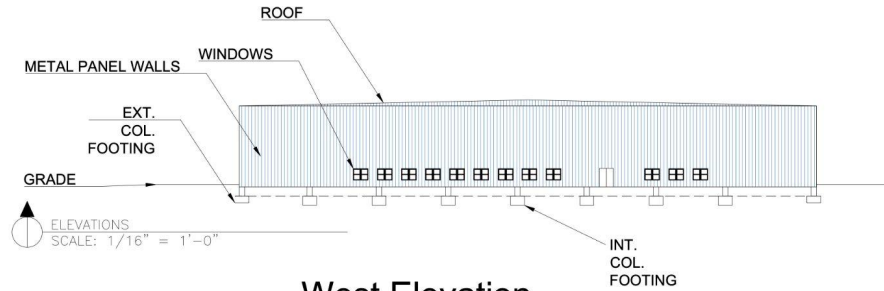



 ELEVATIONS
 SCALE: 1/32" = 1'-0"

<div style="border: 1px solid black; height: 20px; width: 100%;"></div> Warehouse 100' (Sheet)		
General Notes		
No.	Revision/Issue	Date
Plan Name and Address FARMINGDALE STATE COLLEGE SPRING 2022 CEN 486 A-DALE WITHERS MOBILE, ALABAMA AREA 7000		
Project Name and Address WAREHOUSE 550N RESEARCH PL. CENTRAL, ALA. 36712		
Project	Sheet	
Date	03/03/2021	
Scale	1/32" = 1'-0"	
		A1



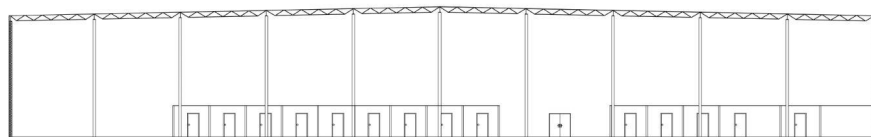
East Elevation



West Elevation

ELEVATIONS
SCALE: 1/16" = 1'-0"

Revision (See Table)		
General Notes		
No.	Revision/Issue	Date
File Name and Address		
FARMINGDALE STATE COLLEGE BUILDING 2021 CON. 400		
A-1000 MATTHEWS MICHELLE WAPOLSKO JAMES JONES		
Project Name and Address		
WAREHOUSE 5550A RESEARCH PL. CEDAR RAPIDS, IA 52402		
Project	Sheet	A1
Date	03/03/2021	
Scale	1/16" = 1'-0"	



CROSS SECTION

SCALE: $\frac{3}{32}'' = 1'-0''$

Project List Item

General Notes

No.	Revision/Issue	Date

Pre Name and Address
 FARMINGDALE STATE COLLEGE
 SPRING, 2021
 CON 406
 AUSTIN, MICHIGAN
 MICHELLE, MICHIGAN
 AFTER, 2021

Project Name and Address
 WAREHOUSE
 550N RESEARCH PL.
 CENTRAL, SLP, NY 11722

Project

CON

02/03/2021

Scale

$\frac{3}{32}'' = 1'-0''$

Sheet

A1

HVAC



Due to the nature of the project, the Modine Explosion Proof Unit Heater was the chosen HVAC system for this project.

These Unit Heaters are specifically designed to be used in hazardous industrial environments and provide minimal risks to those that utilize them.

They are electric and can be moved to avoid becoming hazards themselves.

Electrical – Warehouse

**41,500 Lumens - LED High Bay - 1000W MH
Equal - 4000K - 120-277V**



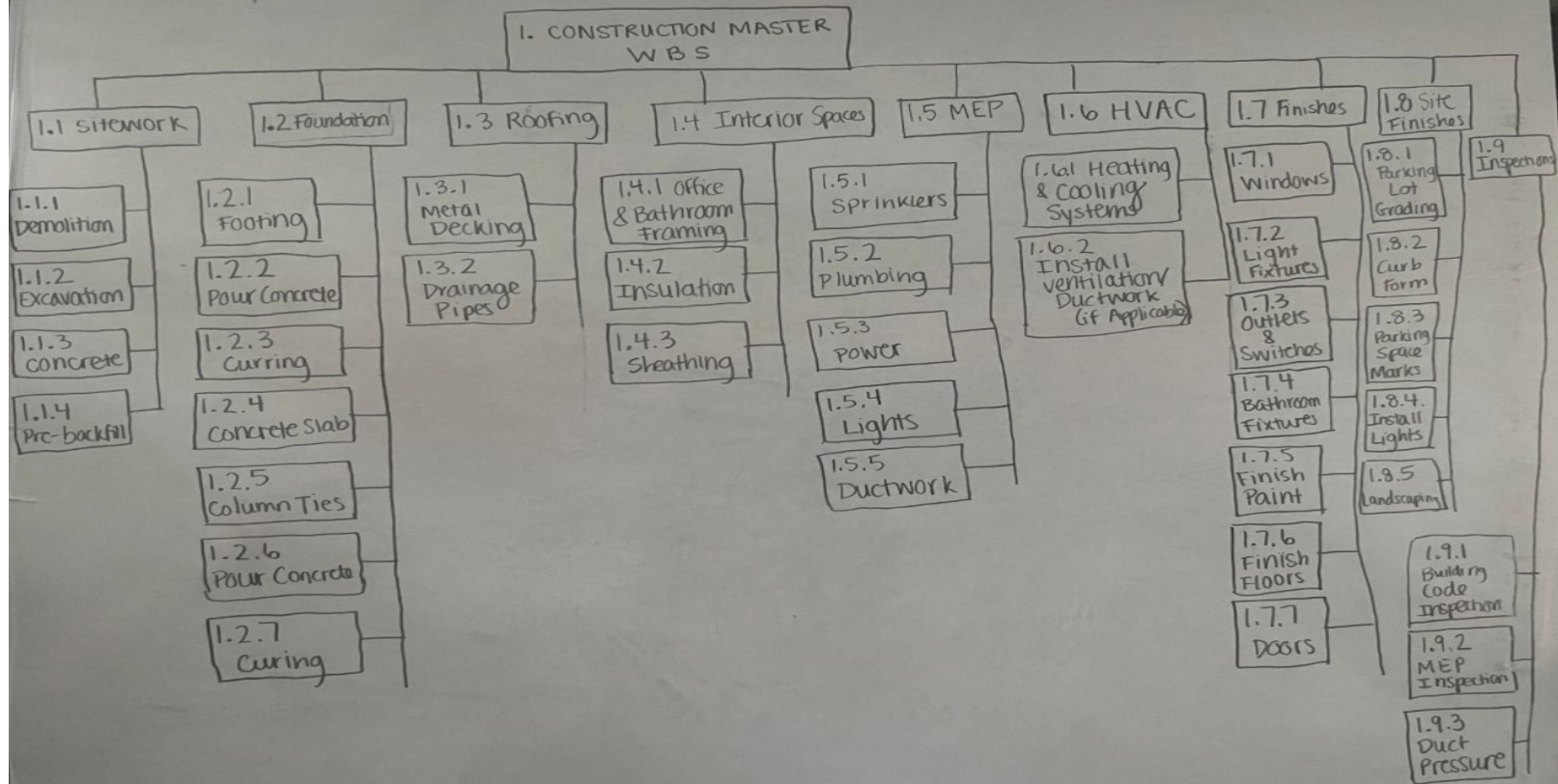
Due to the nature of the project, the LED High Bay with 41,500 lumens was the chosen lighting system for this project.

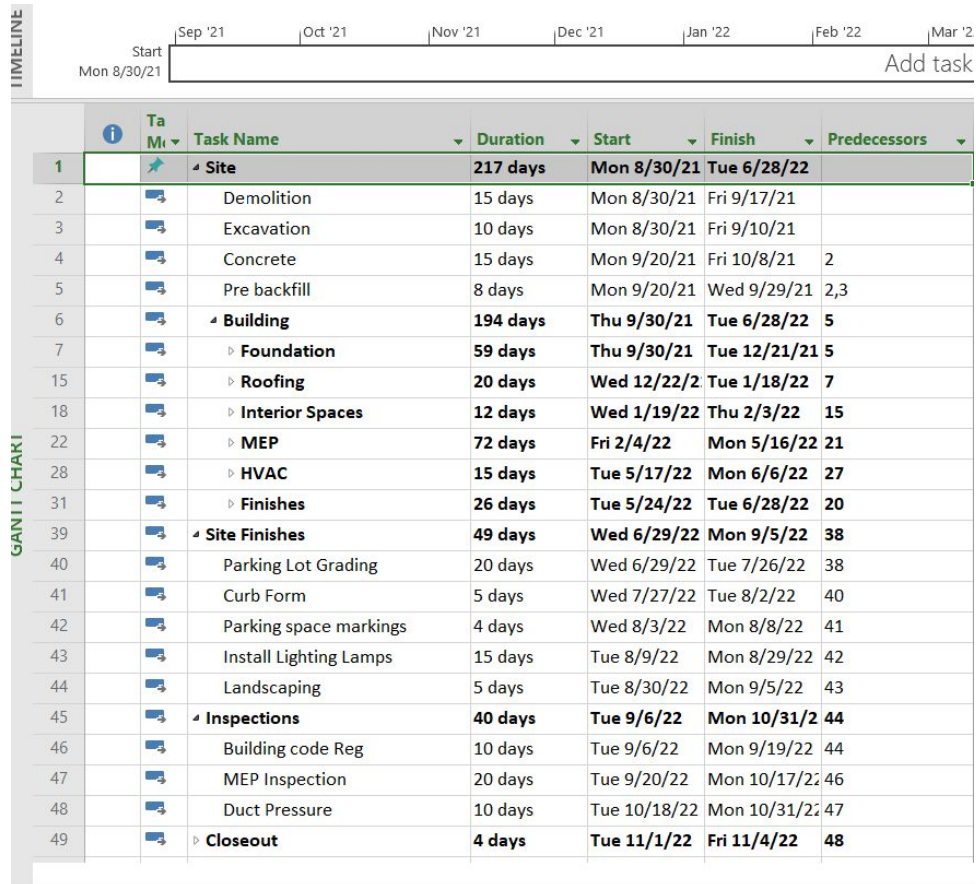
This being a 150,000 SF warehouse with 35 ft ceilings, approximately 6,747,723 lumens were needed.

$6,747,723 / 41,500 = 163$ LED High Bays

2. Construction Documents

WORK BREAKDOWN STRUCTURE





**REQUEST FOR PROPOSAL
CON 496 WAREHOUSE PROJECT**

DATE: MAY 12 2021

SUBJECT: Request for Proposal (RFP) for Construction

PROJECT ADDRESS: Warehouse
555 N Research Pl
Central Islip, NY 11752

You are invited to submit a proposal for the above referenced project to Group 02 Design and Construction "Owner's Representative" at Lupton Hall, Farmingdale State College, Farmingdale, NY 11735. It is requested that you submit four (4) sealed copies of your proposal by mail or personal delivery to the address listed above no later than 5:00 PM, Friday May 21, 2021, Any proposals received after that date and time will not be accepted.

DESCRIPTION OF PROJECT:

The Scope of work for this project will consist of:

Insert Scope of Work depending upon what section the proposal is being requested for

NOTE:

A mandatory job walkthrough is required before submission of a proposal. To schedule a job walkthrough please contact Owner's Representative, attention A-Dale Matthews, Michelle Napolitano, or Apiya Pompei at (631)-668-7325. Additional questions for a complete understanding of the scope of work can be directed to the Owner's Representatives.

PROJECT DOCUMENTS:

The following are intended for use on this project and are enclosed:

- Project Drawings
- Project Specifications

Contract Documents will be sent upon acceptance of Proposal.

Division	Subcontractor	RFI #	Subject	Question	Date Submitted	Response	Response Date
01 General Requirements							
02 Existing Conditions							
03 Concrete							
05 Metals							
07 Thermal and Moisture Protection							
08 Openings							
09 Finishes							
10 Specialties							
11 Equipment							
12 Furnishings							
21 Fire Suppression							
22 Plumbing							
23 Heating, Ventilation, and Air Conditioning							
26 Electrical							
28 Electronic Safety and Security							
31 Earthwork							
32 Exterior Improvements							
46 Waste and Wastewater Equipment							

3. Detail Bid Package

A dark blue diagonal bar that starts from the bottom left corner and extends towards the top right, covering the lower half of the slide.



Invitation to Bid

- Bid Due Date:** May 21, 2021
- Project Information:** CON 496 Warehouse Project
555 N Research Pl,
Central Islip, NY 11735
- Project Description:** Construction of a 150,000 SQ. FT warehouse in the Planned Development Research-Industrial Zone of Central Islip. All construction divisions are encouraged to bid. The building consists of structural steel framing and metal panels on a concrete slab. Interiors consist of office build-out as well as mechanical, electrical, plumbing, fire suppression system, and security.
- Submission of Bids:** Group 02 Design and Construction
Lupton Hall
Farmingdale State College
Farmingdale, NY 11735
- Approximate Start Date:** August 30, 2021 / Specified Duration: 300 Days
Budget Estimate: STBD
- Bid Documents:**
- Plans, Specifications, and bid documents may be obtained from Group 02 Design and Construction's Office.
- Bid Instructions:**
- Subcontractor submission of bid proposal shows intent to enter Group 02 Design and Construction's Subcontract Agreement, as well as adhere to Group 02 Design and Construction's insurance and payment process requirements.
 - Pricing is to be provided as per plans and specifications. Bid price is to be broken out by specific specification section.
 - Bids may not be modified, withdrawn, or canceled by bidder after receipt by Group 02 Design and Construction.
- Questions pertaining to the bid may be directed as follows:**
- Project specific questions - Apiya Pompei
 - Plan specific questions - A-Dale Matthews
 - Specification specific questions - Michelle Napolitano

Please complete information below and return to Group 02 Design and Construction:

Company Name: _____

Estimator Contact: _____

Phone: _____

Email: _____

Bidding? _____ YES

_____ NO

CONTRACTOR'S BID BREAKDOWN FORM

Title :	Group #2 Warehouse												Based on			
Location:	Warehouse												____% Design			
Project #:	Group #2												Sheet: 4 of 27			
ITEM DESCRIPTION	QUANTITY		PRIME CONTRACTOR						SUBCONTRACTOR						TOTAL COST	
			MATERIAL		LABOR			EQUIPT	MATERIAL		LABOR			EQUIPT		
	#	Unit	Unit	Total	Unit	MH	Total	Total	Unit	Total	Unit	MH	Total	Total	Unit	Total
Div.1-Gen. Req.																
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Bid Breakdown

Slab on Grade

Perimeter	1700 FT
Area of Slab	150000 SF
Depth of Slab	4 IN

Length of WWF	150 FT
Width of WWF	5 FT

FORMWORK		
Perimeter of Slab	1700	FT
Perimeter of Walkways	1256	FT
Height	4	IN
Total	985.333	SF
Total formwork 984 sq. ft		

CONCRETE		
Volume of Slab	50000	FT
Volume of Slab	1851.85	CY
Walkways & Sidewalks	145	CY
1,997 CY of concrete		

Welded Wire Fabric (WWF)		
Area of Slab	150000	SF
Area of WWF Panel	750	SF
# of Rolls	200	Rolls
200 (5ft x 150ft) 6x6 W1.4 x W1.4 WWF		

Asphalt		
Total	7,468	SF
	4,680	SF
	5,580	SF
	7,036	SF
	57,256	SF
	82,020	SF
Thickness	4	IN
Conversion	27,340	CF
	148	PCF
	4,046,320	LBS
		2,023 TONS

Plant List				
Botanical Name	Common Name	Qty	Price	Total
Llex Opaca	American Holly (3 Gal.)	9	101.95	917.55
llex Glabra	Inkberry (5 Gal.)	17	105.99	1,801.83
Pinus Strobus	White Pine	12	99.95	1,199.40
Picea SP	Spruce	7	89.95	629.65
Grand Total				4,548.43



AIA Document A101-2017

Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum

AGREEMENT made as of the day of twenty-one May in the year two-thousand
twenty-one

BETWEEN the Owner:

Amit Bandyopadhyay, Ph.D. P. E.
SUNY Distinguished Service Professor
Fellow, American Society of Civil Engineers
Director, Green Building Institute
Architecture and Construction Management
State University of New York - Farmingdale State College
Farmingdale, NY 11735

and the Contractor:

Group 2 Design and Construction
Lupton Hall
2350 Broadhollow Rd.
Farmingdale, NY 11735

for the following Project:

Warehouse
555N Research Pl
Central Islip, NY 11722

The Architect:

Group 2 Design and Construction
Lupton Hall
2350 Broadhollow Rd.
Farmingdale, NY 11735

The Owner and Contractor agree as follows:

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

The parties should complete A101™-2017, Exhibit A, Insurance and Bonds, custom parenthetically within Agreement.

AIA Document A201™-2017, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

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AIA Document A201 - 2017

General Conditions of the Contract for Construction

for the following PROJECT:
(Name and location or address)
CON 496 Warehouse
555 N Research Pl
Central Islip, NY 11752

THE OWNER:
(Name, legal status and address)
Dr. Amit Bandyopadhyay
Farmingdale State College
Farmingdale NY, 11735

THE ARCHITECT:
(Name, legal status and address)
Group 02 Design and Construction
Farmingdale State College
Farmingdale NY, 11735

TABLE OF ARTICLES

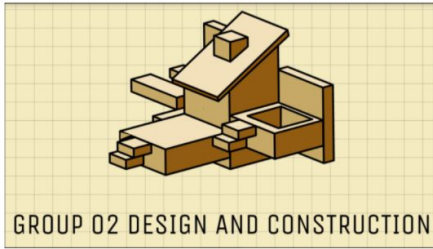
	<u>GENERAL PROVISIONS</u>
2	OWNER
3	CONTRACTOR
4	ARCHITECT
5	SUBCONTRACTORS
6	CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS
7	CHANGES IN THE WORK
8	TIME
9	PAYMENTS AND COMPLETION
10	PROTECTION OF PERSONS AND PROPERTY
11	INSURANCE AND BONDS
12	UNCOVERING AND CORRECTION OF WORK
13	MISCELLANEOUS PROVISIONS
14	TERMINATION OR SUSPENSION OF THE CONTRACT
15	CLAIMS AND DISPUTES

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

For guidance in modifying this document to include supplementary conditions, see AIA Document A503™, Guide for Supplementary Conditions.

Red Flag Clauses:

- The Contractor must notify the Owner within 14 days of discovering an error in the drawings or specifications with the in-field conditions.
- The Contractor must notify the Owner within 21 days of a delay.
- The Contractor must notify the Owner prior to starting work of an additional claim in regards to that portion of work.



GROUP 02 DESIGN AND CONSTRUCTION

CONTRACT SPECIFICATIONS

CENTRAL ISLIP PLANNED DEVELOPMENT RESEARCH-INDUSTRIAL ZONE

WAREHOUSE
555 N RESEARCH PL
CENTRAL ISLIP, NEW YORK 11722

Project No:

CON 496 - FINAL PROJECT
Contract G – General Construction and Site Work
Contract H – Heating, Ventilation and Air-Conditioning Work Contract P – Plumbing Work
Contract E – Electrical and Fire Alarm Work

Final Bid Specification
April 2021

The Divisions being used on this project are:

- 01 - General Requirements
- 02 - Existing Conditions
- 03 - Concrete
- 05 - Metals
- 07 - Thermal and Moisture Protections
- 08 - Openings
- 09 - Finishes
- 10 - Specialties
- 11 - Equipments
- 12 - Furnishings
- 21 - Fire Suppression
- 22 - Plumbing
- 23 - Heating, Ventilation, and Air-Conditioning
- 26 - Electrical
- 28 - Electronic Safety and Security
- 31 - Earthworks
- 32 - Exterior Improvements
- 46 - Waste and Wastewater Equipment

Remaining Items:

- Finalizing the Drawings
- Finalizing the Specifications
- Finalizing the Schedule
- Finalizing the Estimate
- Finalizing the Work Breakdown Structure

Thank you for your time!
Any Questions?