Robinson+Cole

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Also admitted in Massachusetts
and New York

November 1, 2022

Melanie A. Bachman, Esq.
Executive Director/Staff Attorney
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: **Docket No. 495A – Application of Cellco Partnership d/b/a Verizon Wireless for a Certificate of Environmental Compatibility and Public Need for the Construction, Maintenance and Operation of a Wireless Telecommunications Facility at 5151 Park Avenue, Fairfield, Connecticut**

Development and Management Plan Submission

Dear Ms. Bachman:

Enclosed please find fifteen (15) copies of the following:

1. Final Development and Management ("D&M") Plans prepared by Hudson Design Group LLC for the approved telecommunications facility at 5151 Park Avenue, Fairfield, Connecticut, incorporating the Council's conditions of approval. Also enclosed are three (3) full size (24" x 36") sets of D&M plans.

2. Design and Calculations 100' 3-Legged Tower dated September 25, 2022, prepared by ISE, Incorporated.

3. Tower Design Drawings dated October 19, 2022.

4. Geotechnical Engineering Report prepared by Terracon Consultants, Inc. dated August 10, 2022.

Together, this information constitutes the final D&M Plan submission for the approved telecommunications facility at 5151 Park Avenue, Fairfield, Connecticut.

We respectfully request that this information be reviewed, and this matter be placed on the next available Siting Council agenda for approval. Please feel free to contact me if you have any questions or require additional information. Thank you.

Sincerely,

Kenneth C. Baldwin

KCB/kmd
Enclosures

CELLCO PARTNERSHIP

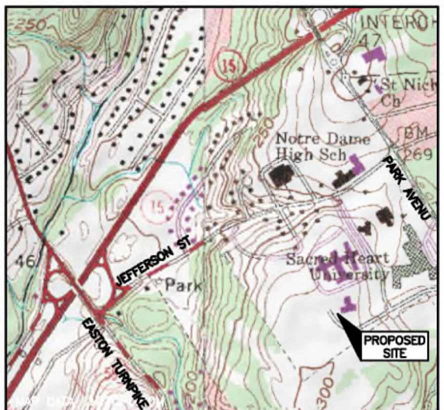
d.b.a. verizon

WIRELESS COMMUNICATIONS FACILITY

PLATTSVILLE RELO CT

DEVELOPMENT & MANAGEMENT PLAN - DOCKET No.495A

5151 PARK AVENUE FAIRFIELD, CT 06825



VICINITY MAP SCALE: 1"=800'-0"

DIRECTIONS TO SITE:

FROM VERIZON'S WALLINGFORD CT OFFICE
GET ON CT-15 S FROM ALEXANDER DR, CT-68 W AND US-5 N/N COLONY RD
HEAD SOUTH TOWARD ALEXANDER DR
SLIGHT RIGHT TOWARD ALEXANDER DR
TURN RIGHT TOWARD ALEXANDER DR
TURN RIGHT ONTO ALEXANDER DR
TURN RIGHT ONTO BARNES INDUSTRIAL PARK RD
TURN LEFT AT THE 1ST CROSS STREET ONTO CT-68 W
TURN RIGHT ONTO US-5 N/N COLONY RD
TURN LEFT TO MERGE ONTO CT-15 S TOWARD NEW HAVEN
FOLLOW CT-15 S TO PARK AVE IN TRUMBULL. TAKE EXIT 47 FROM CT-15 S., MERGE ONTO CT-15 S
TAKE EXIT 47 FOR PARK AVE., CONTINUE ON PARK AVE TO YOUR DESTINATION IN FAIRFIELD., AT THE TRAFFIC CIRCLE, TAKE THE 2ND EXIT ONTO PARK AVE CONTINUE STRAIGHT TO STAY ON PARK AVE., TURN RIGHT., DESTINATION WILL BE ON THE RIGHT

CONSULTANT TEAM

PROJECT ENGINEER

HUDSON DESIGN GROUP, LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: 1-(978)-557-5553
FAX: 1-(978)-336-5586

MEP ENGINEER

HUDSON DESIGN GROUP, LLC
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NORTH ANDOVER, MA 01845
TEL: 1-(978)-557-5553
FAX: 1-(978)-336-5586

PROJECT SUMMARY

SITE NAME:	PLATTSVILLE RELO CT
SITE ADDRESS:	5151 PARK AVENUE FAIRFIELD, CT 06825
PROPERTY OWNER:	BRIDGEPORT ROMAN CATHOLIC DIOCESAN CORP. 238 JEWETT AVENUE BRIDGEPORT, CT 06606
APPLICANT:	ANTHONY BEFERA CELLCO PARTNERSHIP d/b/a VERIZON 20 ALEXANDER DRIVE WALLINGFORD, CT 06108
CONSTRUCTION MANAGER:	MICHAEL HUMPHREYS STRUCTURE CONSULTING GROUP 20 ALEXANDER DRIVE WALLINGFORD, CT 06492
SITE ACQUISITION CONTACT:	BRIAN ROSS STRUCTURE CONSULTING GROUP 20 ALEXANDER DRIVE WALLINGFORD, CT 06492
LEGAL/REGULATORY COUNSEL:	KENNETH C. BALDWIN ESQ. ROBINSON + COLE LLP (860)275-8345
LATITUDE:	N41°13'08.19"
LONGITUDE:	W73°14'41.12"

SCOPE OF WORK INFO.

VERIZON WIRELESS IS PROPOSING TO INSTALL THE FOLLOWING IMPROVEMENTS ON PROPOSED TELECOMMUNICATION SITE:

- NEW 1,245 SQ. FT. MULTIUNIT STORAGE SHELTER ON EXISTING PARCEL OF LAND.
- NEW PANEL ANTENNAS: (4) ANTENNAS EACH AT ALPHA, BETA & GAMMA SECTORS, FOR A SUB-TOTAL OF (12)
  (2) ANTENNAS EACH AT DELTA SECTOR, FOR A SUB-TOTAL OF (2)
  TOTAL NUMBER OF PROPOSED ANTENNAS ARE (14)
- NEW RRHs: (4) RRHs EACH AT ALPHA, BETA & GAMMA SECTORS, FOR A TOTAL OF (12) RRHs
  (2) RRHs EACH AT DELTA SECTOR, FOR A SUB-TOTAL OF (2)
  TOTAL NUMBER OF PROPOSED RRHs ARE (14)
- NEW DIPLEXERS: (1) DIPLEXER EACH AT ALPHA, BETA & GAMMA SECTORS, FOR A TOTAL OF (3)
- NEW JUNCTION BOX: (2) JUNCTION BOXES (OVP) TOTAL.

ITEMS LISTED ABOVE TO BE MOUNTED ON PROPOSED TOWER.

- NEW EQUIPMENT CABINETS: (2) CABINETS INSIDE THE EQUIPMENT SHELTER.

ITEMS LISTED ABOVE TO BE INSTALLED WITHIN THE PROPOSED 1,245 SQ. FT. MULTIUNIT STORAGE SHELTER.

- NEW GENERATOR ON CONCRETE PAD
- NEW TELCO & POWER SERVICES WILL BE ROUTED UNDERGROUND FROM PROPOSED CABLE VAULT & EXISTING CABEL VAULT, RESPECTIVELY TO PROPOSED ELECTRICAL METER AND HOFFMAN BOX ON PROPOSED H-FRAME.
- FINAL UTILITY ROUTING TO BE DETERMINED/VERIFIED BY UTILITY COMPANIES.

SHEET INDEX

PREPARED FOR: CELLCO PARTNERSHIP D.B.A.

verizon

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45 BEECHWOOD DRIVE
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

STATE OF CONNECTICUT DANIEL P. HAMM LICENSED PROFESSIONAL ENGINEER 6.28... [seal and signature]

CHECKED BY: JX

APPROVED BY: DPH

SUBMITTALS

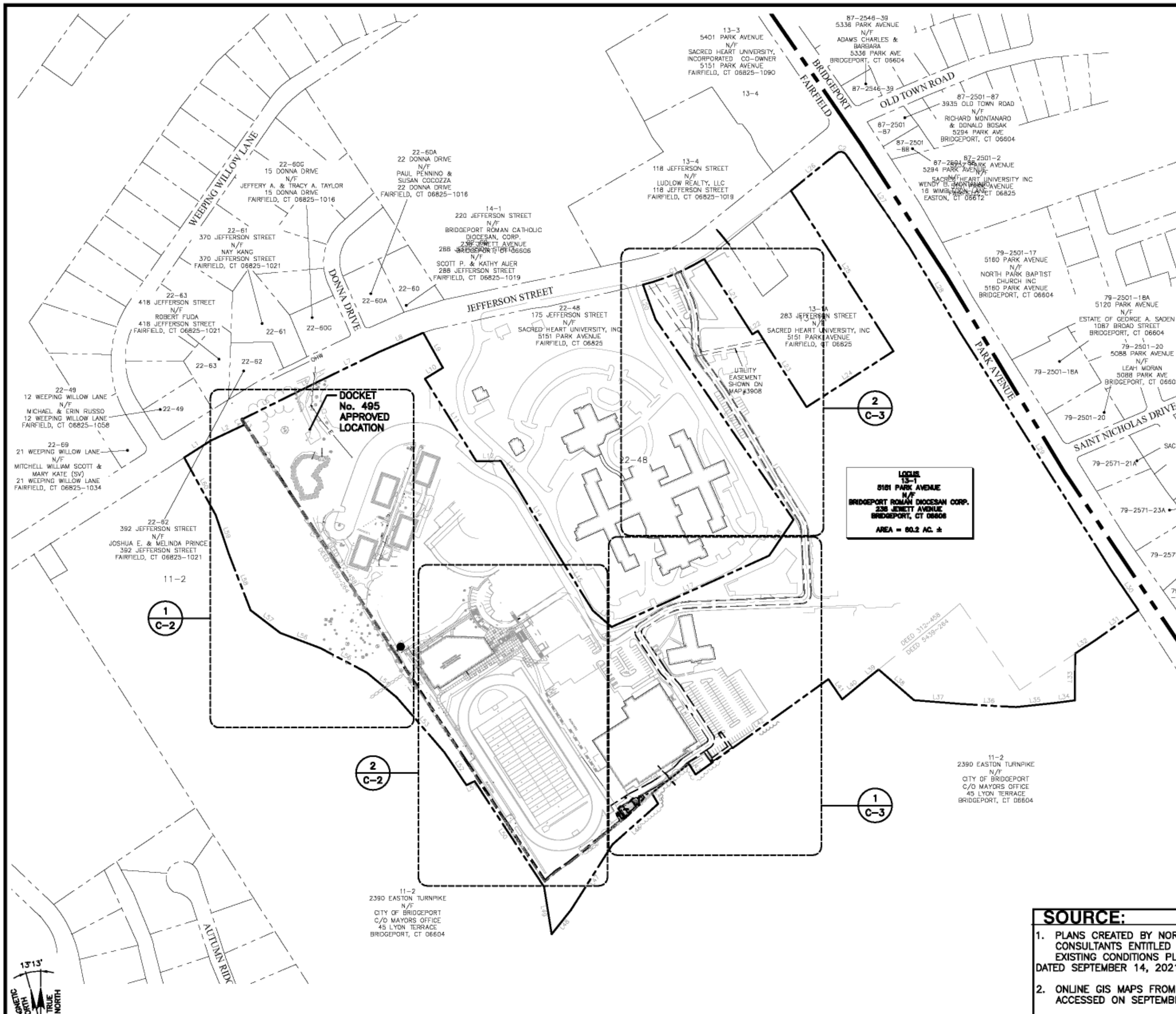
REV	DATE	DESCRIPTION	BY
1	10/27/22	ISSUED FOR D&M PLAN FILING	SLY
0	7/14/22	ISSUED FOR REVIEW	SLY

SITE NAME:
PLATTSVILLE RELO CT

SITE ADDRESS:
5151 PARK AVENUE
FAIRFIELD, CT 06825

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1



LEGEND

- PROPERTY LINE – SUBJECT PARCEL
- ABUTTERS PROPERTY LINE
- EXISTING CONTOUR LINE
- TREE LINE
- EXISTING TREE TO BE REMOVED
- BARBED WIRE FENCE REMAINS
- OHW — OVERHEAD WIRE (TRANSMISSION LINE)
- OH DOOR — OVERHEAD DOOR
- EXISTING CHAIN LINK FENCE
- EXISTING IRON FENCE
- EXISTING CATCH BASIN
- EXISTING BUILDING
- PROPOSED RETAINING WALL
- BOW — BOTTOM OF WALL
- TOW — TOP OF WALL
- PROPOSED CONCRETE PAD

LINE	BEARING	DISTANCE
L1	N57°14'31"E	97.44'
L2	N64°47'21"E	115.12'
L3	N33°20'19"W	2.46'
L4	N30°20'19"W	15.73'
L5	N63°40'01"E	184.50'
L6	N63°40'01"E	88.00'
L7	N64°11'29"E	202.39'
L8	N66°23'56"E	149.[illegible]
L9	S29°12'59"E	124[illegible]
L10	S58°01'01"W	65.00'
L11	S31°58'59"E	300.00'
L12	N89°37'31"E	76.32'
L13	S31°58'59"E	66.76'
L14	S31°11'49"E	253.20'
L15	S31°49'09"E	223.36'
L16	S49°05'08"E	77.34'
L17	N65°40'11"E	535.52'
L18	N34°07'02"E	134.21'
L19	N34°36'30"W	752.70'
L20	N19°53'59"W	114.56'
L21	S32°38'09"E	276.96'
L22	N57°21'51"E	20.00'
L23	S32°38'09"E	280.00'
L24	N57°21'51"E	320.00'
L25	N32°38'09"W	590.00'
L26	N50°51'49"E	183.29'
L27	S34°27'13"E	345.41'
L28	S30°50'09"E	311.88'
L29	S32°26'49"E	868.94'
L30	S34°08'48"E	149.59'
L31	S55°07'59"W	162.66'
L32	S56°34'51"W	74.63'
L33	S00°25'36"W	145.03'
L34	S82°28'36"W	61.69'
L35	S83°55'24"W	121.37'
L36	N86°43'47"W	168.76'
L37	N85°19'56"W	147.83'
L38	N49°13'35"W	145.54'
L39	S51°09'01"W	41.01'
L40	S50°28'51"W	105.04'
L41	N34°27'56"W	75.48'
L42	S54°22'31"W	506.07'
L43	N32°15'39"W	39.14'
L44	S51°25'51"W	146.23'
L45	S30°53'55"E	38.14'
L46	S48°18'10"W	189.22'
L47	S32°28'36"W	239.95'
L48	S38°26'32"W	95.97'
L49	N09°02'04"W	148.27'
L50	N33°20'19"W	391.69'
L51	S64°17'19"W	28.00'
L52	N33°59'11"W	121.37'
L53	N40°58'49"W	226.85'
L54	N50°23'31"W	119.51'
L55	N62°10'57"W	161.30'
L56	N69°19'53"W	134.29'
L57	N52°43'31"W	116.02'
L58	N21°08'12"W	187.99'
L59	N18°41'07"W	125.50'
L60	N28°36'53"W	202.95'

SOURCE:

1. PLANS CREATED BY NORTHEAST SURVEY CONSULTANTS ENTITLED ABUTTERS PLAN AND EXISTING CONDITIONS PLANT
DATED SEPTEMBER 14, 2021
2. ONLINE GIS MAPS FROM THE TOWN OF FAIRFIELD CT ACCESSED ON SEPTEMBER 27, 2021

ABUTTERS PLAN (1 / C-1)
22x34 SCALE: 1"=160'-0"
11x17 SCALE: 1"=320'-0"

GRAPHIC SCALE
0 80 160 320 480 FEET

PREPARED FOR: CELLCO PARTNERSHIP D.B.A.

verizon

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HUDSON
Design Group LLC
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N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

STATE OF CONNECTICUT
DANIEL P. HAMM
LICENSED PROFESSIONAL ENGINEER

CHECKED BY: JX

APPROVED BY: DPH

SUBMITTALS

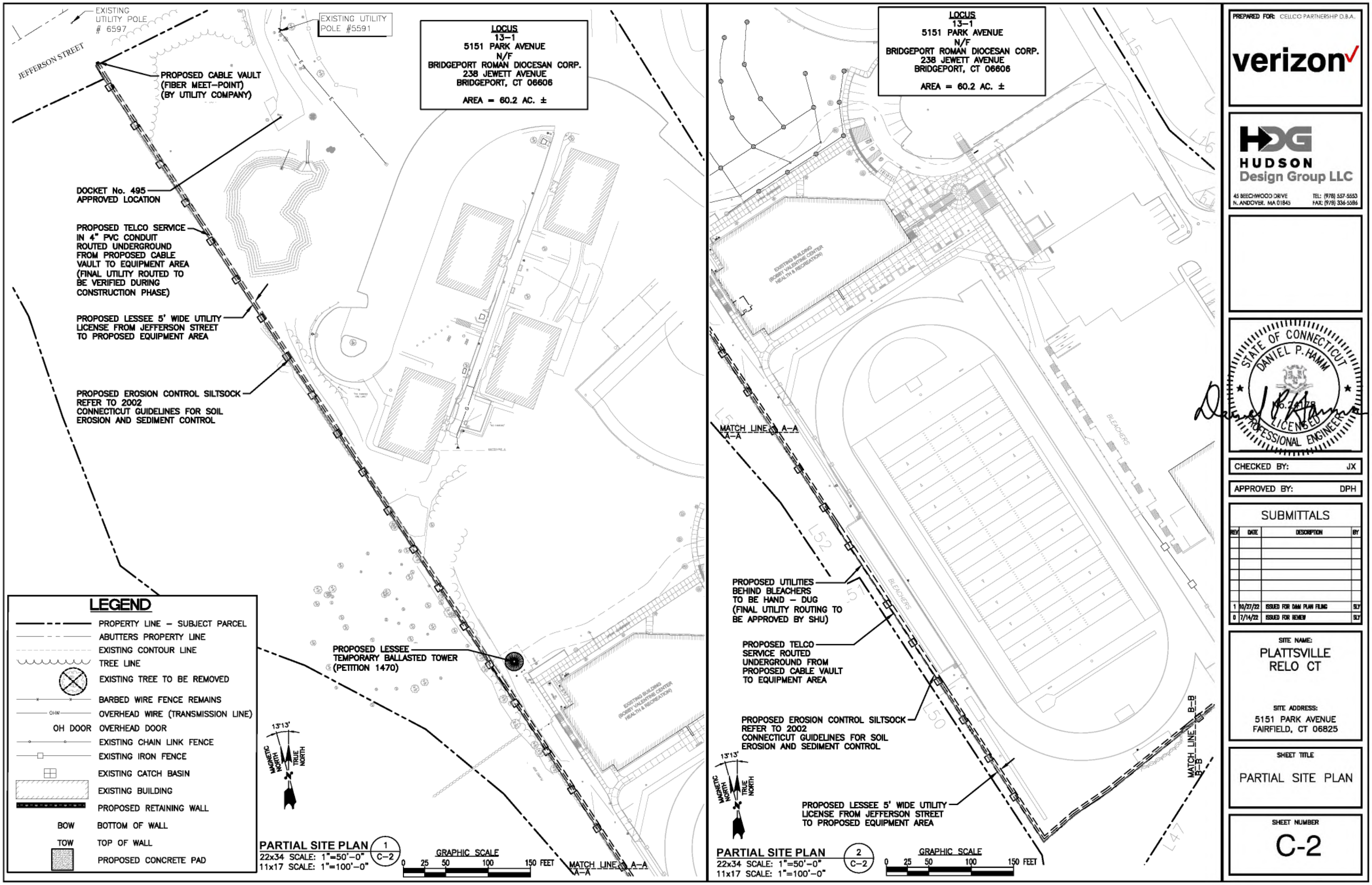
REV	DATE	DESCRIPTION	BY
1	10/27/22	ISSUED FOR D&M PLAN FILING	SLY
0	7/14/22	ISSUED FOR REVIEW	SLY

SITE NAME:
PLATTSVILLE RELO CT

SITE ADDRESS:
5151 PARK AVENUE
FAIRFIELD, CT 06825

SHEET TITLE
ABUTTERS PLAN

SHEET NUMBER
C-1



EXISTING UTILITY POLE # 6597
EXISTING UTILITY POLE #5591
JEFFERSON STREET
LOCUS
13-1
5151 PARK AVENUE
N/F
BRIDGEPORT ROMAN DIOCESAN CORP.
238 JEWETT AVENUE
BRIDGEPORT, CT 06606
AREA = 60.2 AC. ±
PROPOSED CABLE VAULT (FIBER MEET-POINT) (BY UTILITY COMPANY)
DOCKET No. 495 APPROVED LOCATION
PROPOSED TELCO SERVICE IN 4" PVC CONDUIT ROUTED UNDERGROUND FROM PROPOSED CABLE VAULT TO EQUIPMENT AREA (FINAL UTILITY ROUTED TO BE VERIFIED DURING CONSTRUCTION PHASE)
PROPOSED LESSEE 5' WIDE UTILITY LICENSE FROM JEFFERSON STREET TO PROPOSED EQUIPMENT AREA
PROPOSED EROSION CONTROL SILTSOCK REFER TO 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL
PROPOSED LESSEE TEMPORARY BALLASTED TOWER (PETITION 1470)
EXISTING BUILDING (BOBBY VALENTINE CENTER HEALTH & RECREATION)
LEGEND
PROPERTY LINE – SUBJECT PARCEL
ABUTTERS PROPERTY LINE
EXISTING CONTOUR LINE
TREE LINE
EXISTING TREE TO BE REMOVED
BARBED WIRE FENCE REMAINS
OHW
OVERHEAD WIRE (TRANSMISSION LINE)
OH DOOR
OVERHEAD DOOR
EXISTING CHAIN LINK FENCE
EXISTING IRON FENCE
EXISTING CATCH BASIN
EXISTING BUILDING
PROPOSED RETAINING WALL
BOW
BOTTOM OF WALL
TOW
TOP OF WALL
PROPOSED CONCRETE PAD
13°13'
MAGNETIC NORTH
TRUE NORTH
PARTIAL SITE PLAN
1
C-2
22x34 SCALE: 1"=50'-0"
11x17 SCALE: 1"=100'-0"
GRAPHIC SCALE
0 25 50 100 150 FEET
MATCH LINE A-A
BLEACHERS
PROPOSED UTILITIES BEHIND BLEACHERS TO BE HAND – DUG (FINAL UTILITY ROUTING TO BE APPROVED BY SHU)
PROPOSED TELCO SERVICE ROUTED UNDERGROUND FROM PROPOSED CABLE VAULT TO EQUIPMENT AREA
PROPOSED EROSION CONTROL SILTSOCK REFER TO 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL
PROPOSED LESSEE 5' WIDE UTILITY LICENSE FROM JEFFERSON STREET TO PROPOSED EQUIPMENT AREA
MATCH LINE B-B
PARTIAL SITE PLAN
2
C-2
22x34 SCALE: 1"=50'-0"
11x17 SCALE: 1"=100'-0"
GRAPHIC SCALE
0 25 50 100 150 FEET
PREPARED FOR: CELLCO PARTNERSHIP D.B.A.
verizon
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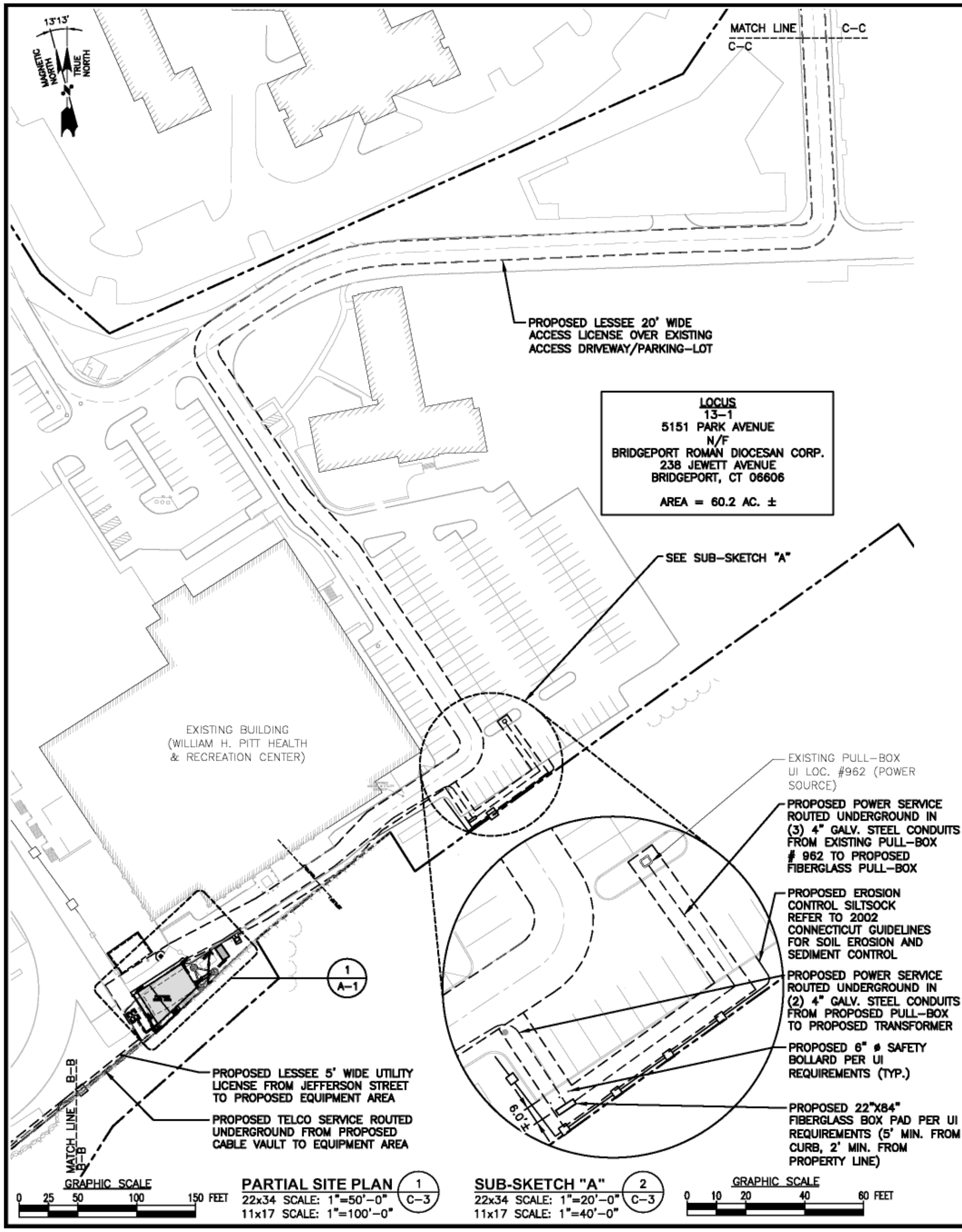
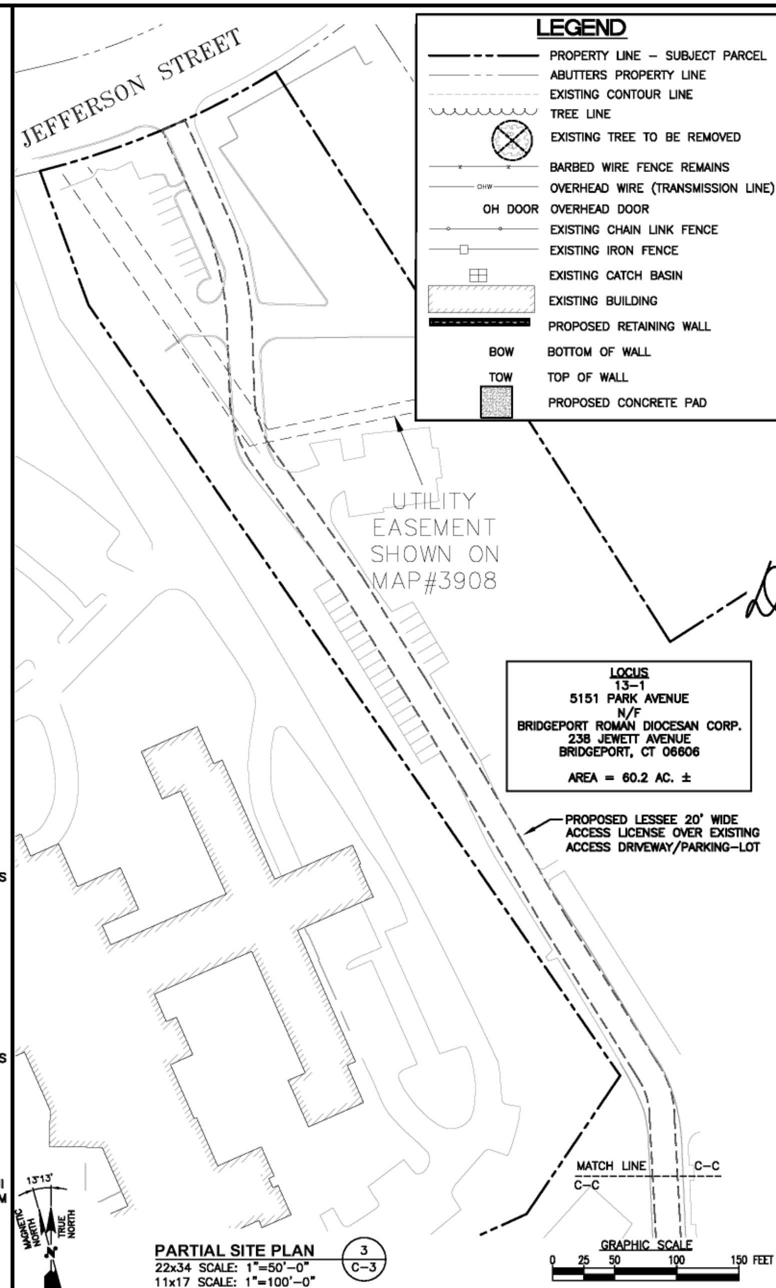
STATE OF CONNECTICUT
DANIEL P. HAMM
LICENSED PROFESSIONAL ENGINEER
CHECKED BY: JX
APPROVED BY: DPH
SUBMITTALS
REV DATE DESCRIPTION BY
1 10/27/22 ISSUED FOR D&M PLAN FILING SLY
0 7/14/22 ISSUED FOR REVIEW SLY
SITE NAME:
PLATTSVILLE RELO CT
SITE ADDRESS:
5151 PARK AVENUE
FAIRFIELD, CT 06825
SHEET TITLE
PARTIAL SITE PLAN
SHEET NUMBER
C-2





PREPARED FOR: CELLCO PARTNERSHIP D.B.A.

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STATE OF CONNECTICUT · DANIEL P. HAMM · LICENSED PROFESSIONAL ENGINEER

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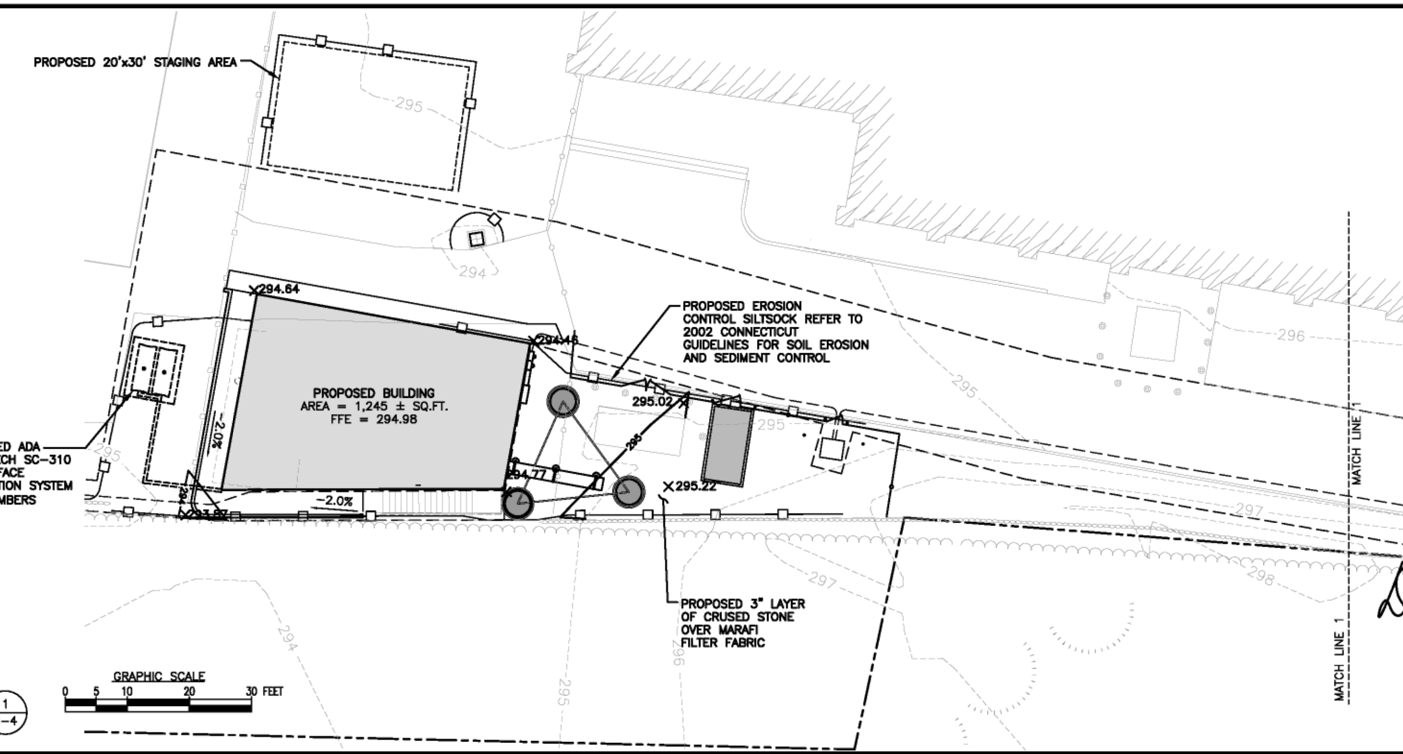
SHEET TITLE
PARTIAL SITE PLAN

SHEET NUMBER
C-3

LEGEND

- PROPERTY LINE – SUBJECT PARCEL
- ABUTTERS PROPERTY LINE
- EXISTING CONTOUR LINE
- TREE LINE
- EXISTING TREE TO BE REMOVED
- BARBED WIRE FENCE REMAINS
- OVERHEAD WIRE (TRANSMISSION LINE)
- OH DOOR — OVERHEAD DOOR
- EXISTING CHAIN LINK FENCE
- EXISTING IRON FENCE
- EXISTING CATCH BASIN
- EXISTING BUILDING
- PROPOSED RETAINING WALL
- BOW — BOTTOM OF WALL
- TOW — TOP OF WALL
- PROPOSED CONCRETE PAD

EARTHWORK:	
APPROXIMATE VOLUME OF CUT WITHIN SHELTER BUILDING:	146.9 CY
APPROXIMATE VOLUME OF FILL WITHIN SHELTER BUILDING:	171.4 CY
APPROXIMATE NUMBER OF TREES TO BE REMOVED >/=6" DBH:	15
TOTAL IMPACT AREA OF DISTURBED CONSTRUCTION SITE:	9,866 Sq.Ft.



COMPOUND PLAN (1 / C-4)
22x34 SCALE: 1"=10'-0"
11x17 SCALE: 1"=20'-0"

NOTES:
DOWNSPOUTS AT ROOF GUTTER SHALL BE SCREENED TO PREVENT BLOCKAGE AND TO PRESERVE THE INFILTRATION SYSTEM. RAINWATER BY-PASS SHALL BE DIRECTED TO PERVIOUS SURFACES.

ROOF RECHARGE CALCULATIONS:
73C, HARLTON-CHATFIELD COMPLEX,
0 TO 15 PERCENT SLOPES,
VERY ROCKY

FOOTPRINT PROPOSED IMPERVIOUS AREA: 1613 SQ FT
RECHARGE SIZING: HYDROLOGIC SOIL TYPE B
RECHARGE VOLUME: $\frac{(0.35\ \text{INCH})\times 1\text{FT}}{12\ \text{INCH}} \times (1613\ \text{SF})$
REQUIRED VOLUME = 47 CU FT.

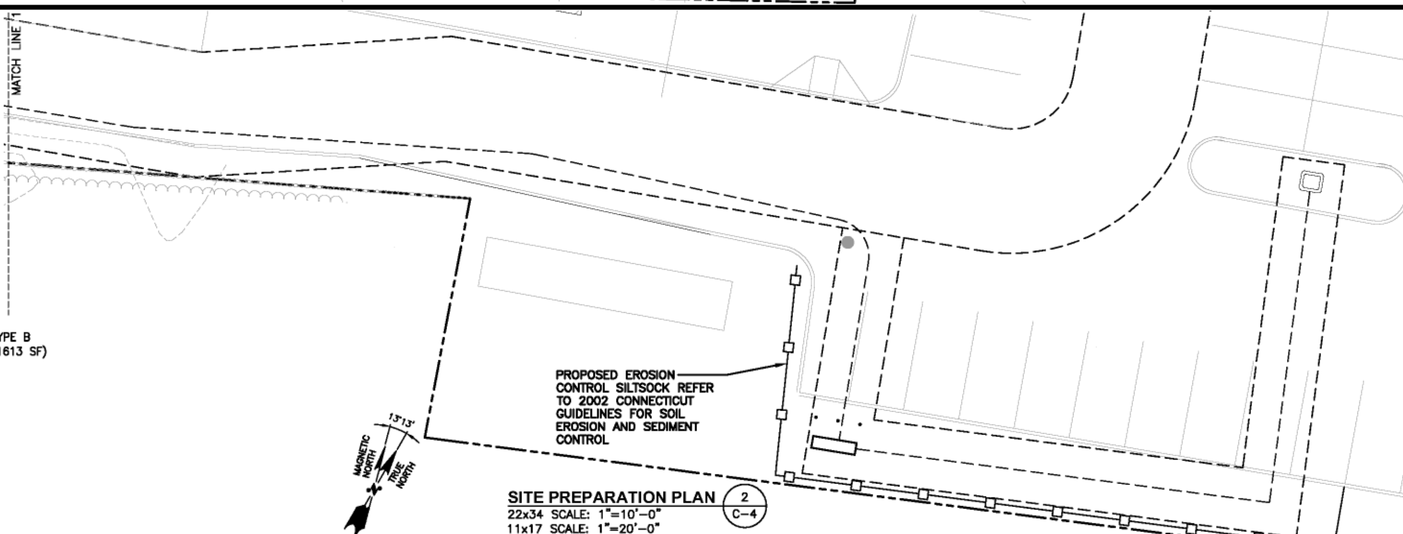
PROVIDED VOLUME PER SC-310 CHAMBER: 31 CU FT

TOTAL # OF CHAMBERS TO BE USED: 2 CHAMBER

VERIFY DRAIN TIME:

$$t = \frac{Rv}{K(\text{bottom area})} = \frac{47\ \text{cu ft}}{\left(1.02\ \frac{\text{IN.}}{\text{HR}} \times \frac{\text{FT}}{12\ \text{IN}}\right)(7.6' \times 5.6')}$$

t = 12.9 HOURS t < 72 HOURS



SITE PREPARATION PLAN (2 / C-4)
22x34 SCALE: 1"=10'-0"
11x17 SCALE: 1"=20'-0"

PREPARED FOR: CELLCO PARTNERSHIP D.B.A.

verizon

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STATE OF CONNECTICUT — DANIEL P. HAMM — LICENSED PROFESSIONAL ENGINEER

CHECKED BY: JX

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SUBMITTALS

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FAIRFIELD, CT 06825

SHEET TITLE
GRADING PLAN

SHEET NUMBER
C-4

LEGEND

——— - - ———	PROPERTY LINE – SUBJECT PARCEL
— — — —	ABUTTERS PROPERTY LINE
- - - -	EXISTING CONTOUR LINE
⌒⌒⌒⌒	TREE LINE
⊗	EXISTING TREE TO BE REMOVED
—x—x—	BARBED WIRE FENCE REMAINS
—OHW—	OVERHEAD WIRE (TRANSMISSION LINE)
OH DOOR	OVERHEAD DOOR
—o—o—	EXISTING CHAIN LINK FENCE
—□—	EXISTING IRON FENCE
⊞	EXISTING CATCH BASIN
▭	EXISTING BUILDING
▬	PROPOSED RETAINING WALL
BOW	BOTTOM OF WALL
TOW	TOP OF WALL
■	PROPOSED CONCRETE PAD

EARTHWORK:	
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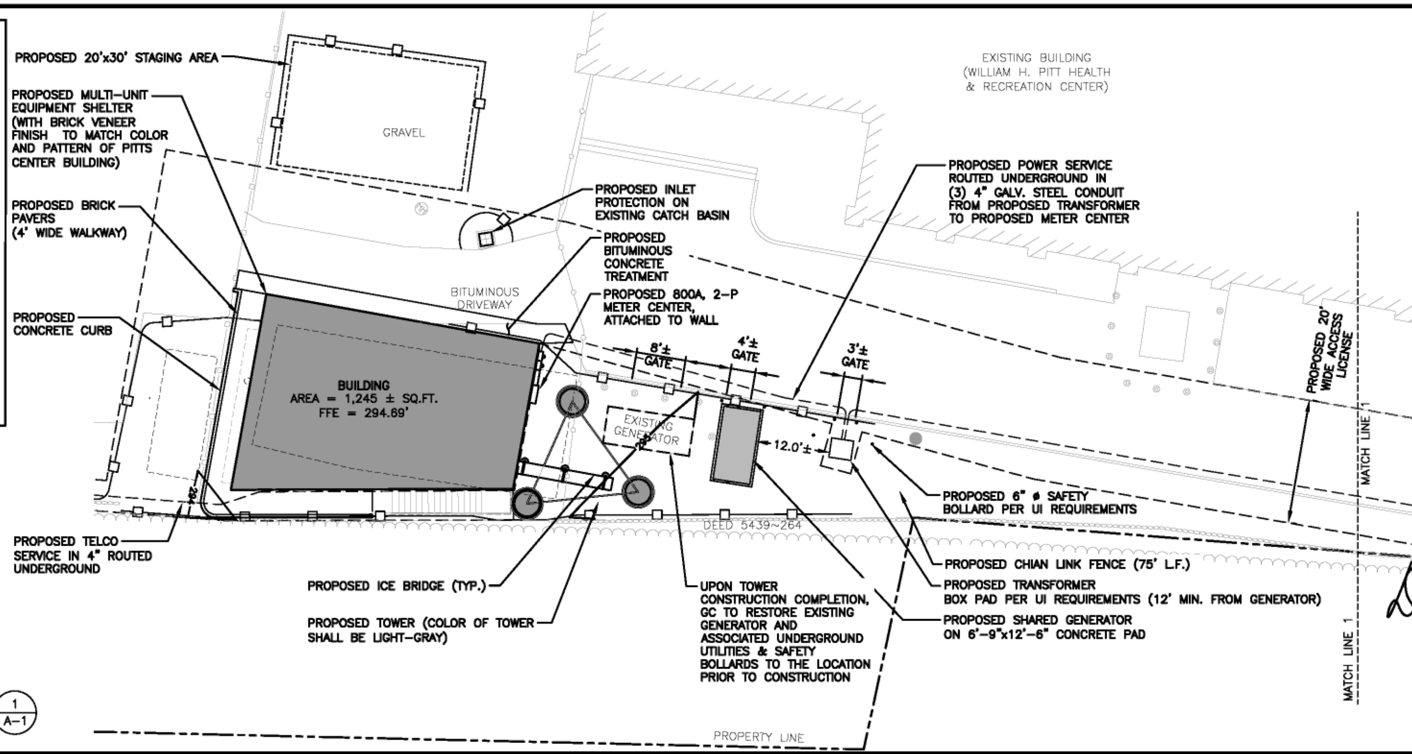
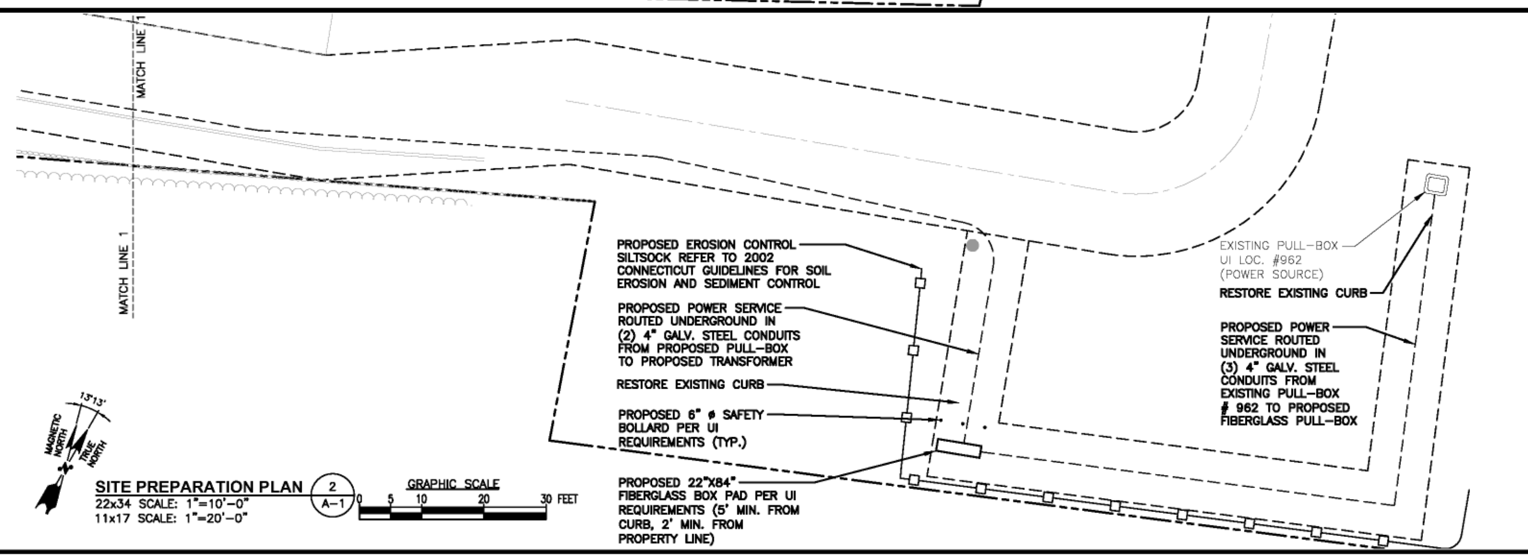
TOTAL IMPACT AREA OF DISTURBED CONSTRUCTION SITE:	9,866 Sq.Ft.



COMPOUND PLAN (1/A-1)
22x34 SCALE: 1"=10'-0"
11x17 SCALE: 1"=20'-0"



SITE PREPARATION PLAN (2/A-1)
22x34 SCALE: 1"=10'-0"
11x17 SCALE: 1"=20'-0"

GRAPHIC SCALE
0 5 10 20 30 FEET

PREPARED FOR: CELLCO PARTNERSHIP D.B.A.

verizon✓

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STATE OF CONNECTICUT DANIEL P. HAMM LICENSED PROFESSIONAL ENGINEER

CHECKED BY: JX

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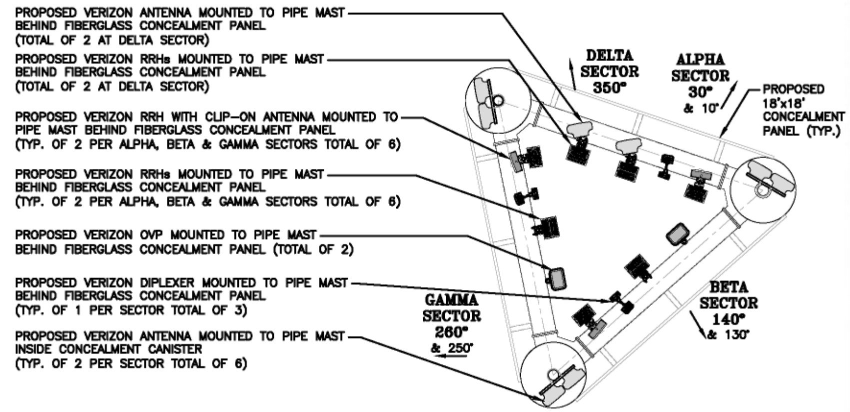
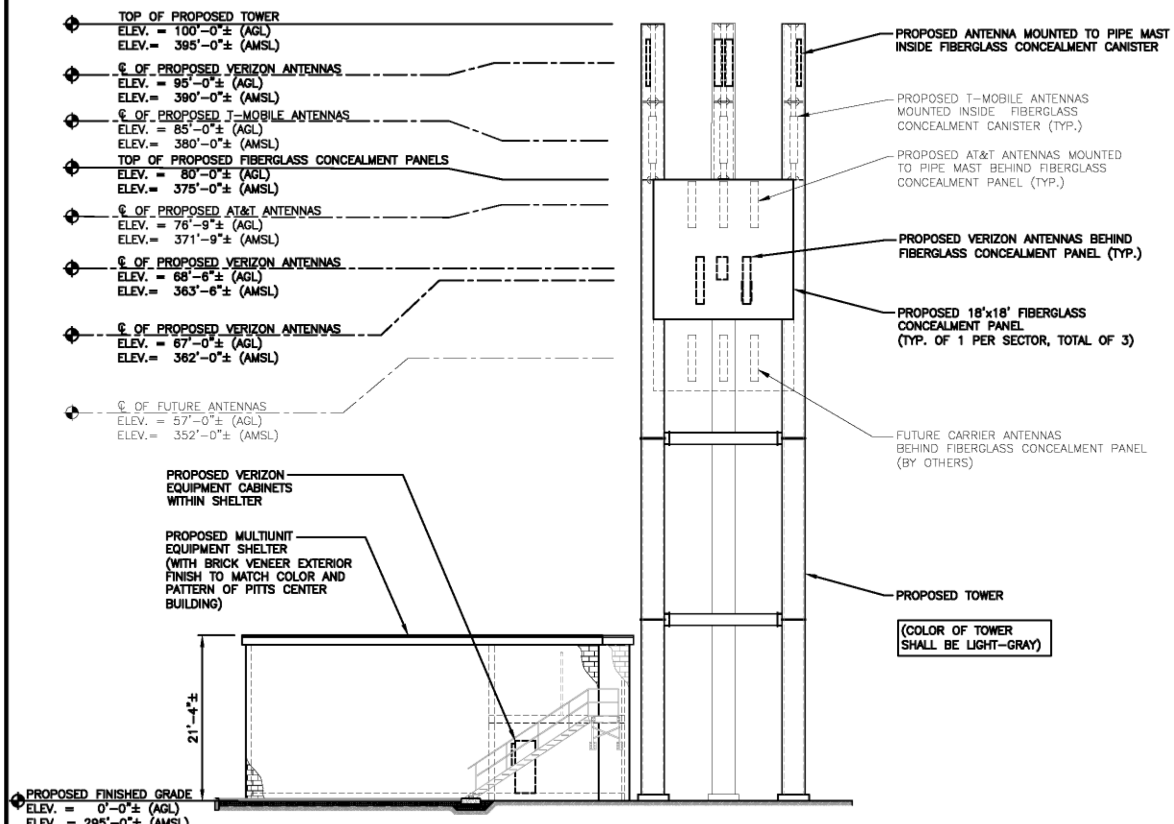
SHEET TITLE
COMPOUND PLAN

SHEET NUMBER
A-1



ANTENNA PLAN (2 / A-1.1)
22x34 SCALE: 1/4"=1'-0"
11x17 SCALE: 1/8"=1'-0"

GRAPHIC SCALE: 0 2 4 8 12 FEET



SOUTH ELEVATION (1 / A-1.1)
22x34 SCALE: 1/8"=1'-0"
11x17 SCALE: 1/16"=1'-0"

GRAPHIC SCALE: 0 4 8 16 24 FEET

TOWER NOTES:

1.) TOWER ELEVATION IS SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL REFER TO TOWER MANUFACTURER DRAWINGS FOR COMPLETE INSTALLATION AND BILL OF MATERIAL INFORMATION.
2.) TOWER MINIMUM DESIGN SPECIFICATIONS SHALL BE IN ACCORDANCE WITH ANSI/TIA/EIA 222-H "STRUCTURAL STANDARDS FOR SUPPORTING STRUCTURES AND ANTENNAS, REVISION H" AND GOVERNING FEDERAL, STATE, AND LOCAL CODE REQUIREMENTS
3.) TOWER MANUFACTURER SHALL BE RESPONSIBLE FOR DESIGN AND STRUCTURAL COMPONENTS OF THE TOWER.
4.) FINAL UTILITY CONNECTIONS SHALL BE COORDINATED WITH THE LOCAL UTILITIES.

NOTE TO GENERAL CONTRACTOR:

'RF' DESIGN AND EQUIPMENT IS BASED UPON
RFDS ISSUED BY VZW DATED: 1/13/22 REV 1
THE CONTRACTOR OF RECORD SHALL CONTACT VZW PRIOR TO ANY AND ALL ORDERING/PURCHASING/INSTALLATION OF EQUIPMENT TO VERIFY THAT THE 'RF' LISTED IN THE DRAWING SET IS CURRENT AND UP TO DATE.

PREPARED FOR: CELLCO PARTNERSHIP D.B.A.
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FAX: (978) 336-5586

STATE OF CONNECTICUT — DANIEL P. HAMM — LICENSED PROFESSIONAL ENGINEER

CHECKED BY: JX

APPROVED BY: DPH

SUBMITTALS

REV	DATE	DESCRIPTION	BY
1	10/27/22	ISSUED FOR D&M PLAN FILING	SLY
0	7/14/22	ISSUED FOR REVIEW	SLY

SITE NAME:
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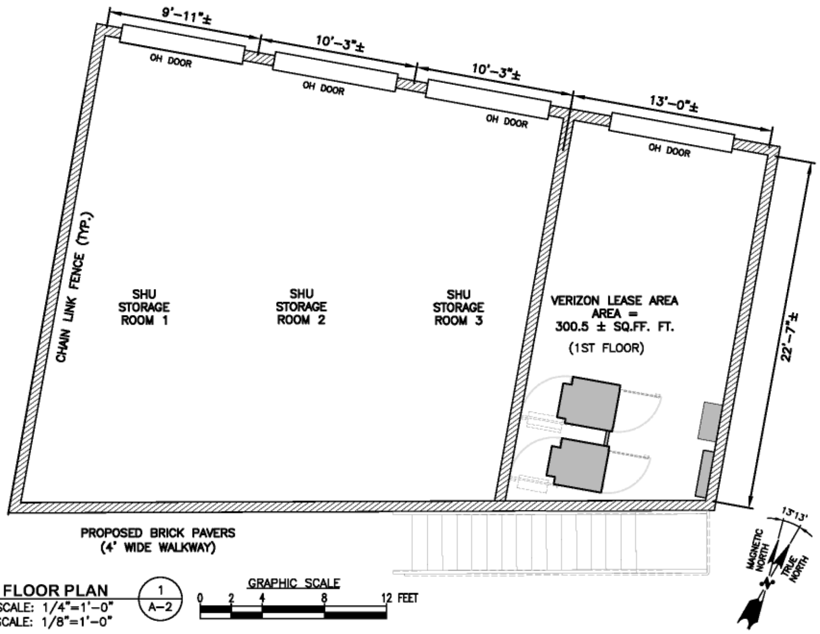
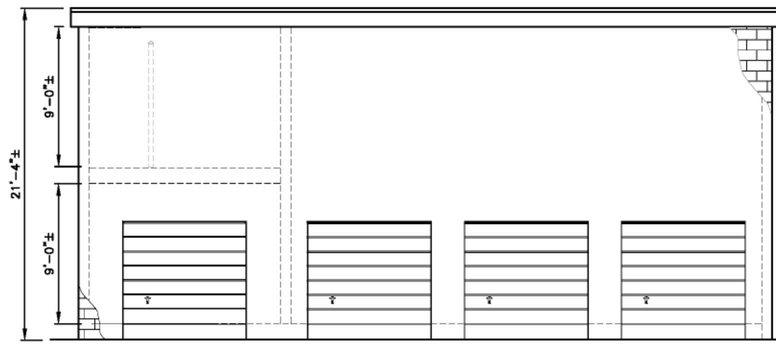
FAIRFIELD, CT 06825

SHEET TITLE
ELEVATION AND ANTENNA PLAN

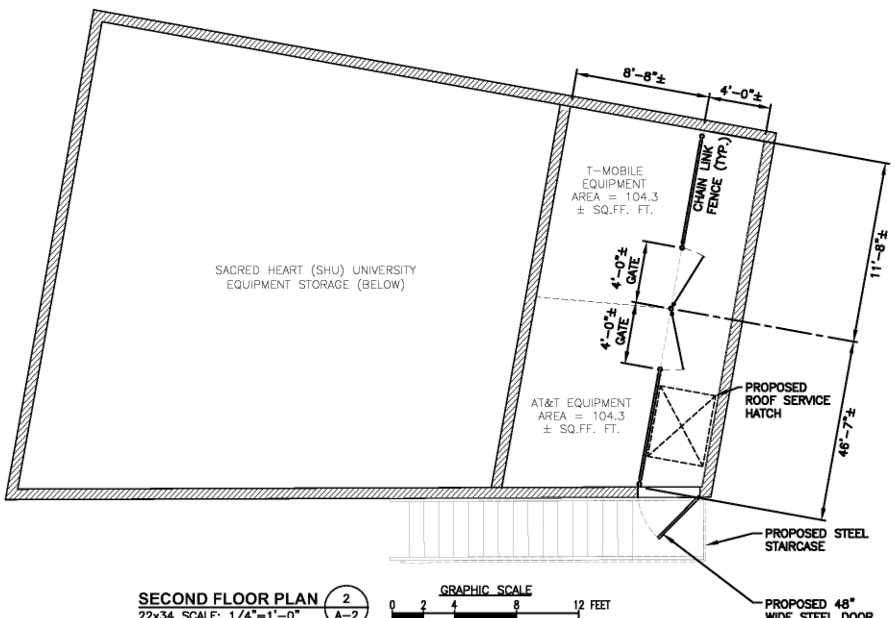
SHEET NUMBER
A-1.1



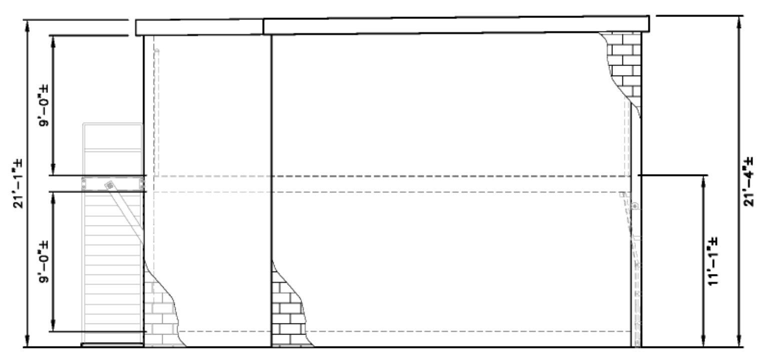
FIRST FLOOR PLAN (1 / A-2)
22x34 SCALE: 1/4"=1'-0"
11x17 SCALE: 1/8"=1'-0"
GRAPHIC SCALE 0 2 4 8 12 FEET



NORTH ELEVATION (4 / A-2)
22x34 SCALE: 1/4"=1'-0"
11x17 SCALE: 1/8"=1'-0"
GRAPHIC SCALE 0 2 4 8 12 FEET



SECOND FLOOR PLAN (2 / A-2)
22x34 SCALE: 1/4"=1'-0"
11x17 SCALE: 1/8"=1'-0"
GRAPHIC SCALE 0 2 4 8 12 FEET



EAST ELEVATION (3 / A-2)
22x34 SCALE: 1/4"=1'-0"
11x17 SCALE: 1/8"=1'-0"
GRAPHIC SCALE 0 2 4 8 12 FEET

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STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24175
LICENSED PROFESSIONAL ENGINEER

CHECKED BY: JX

APPROVED BY: DPH

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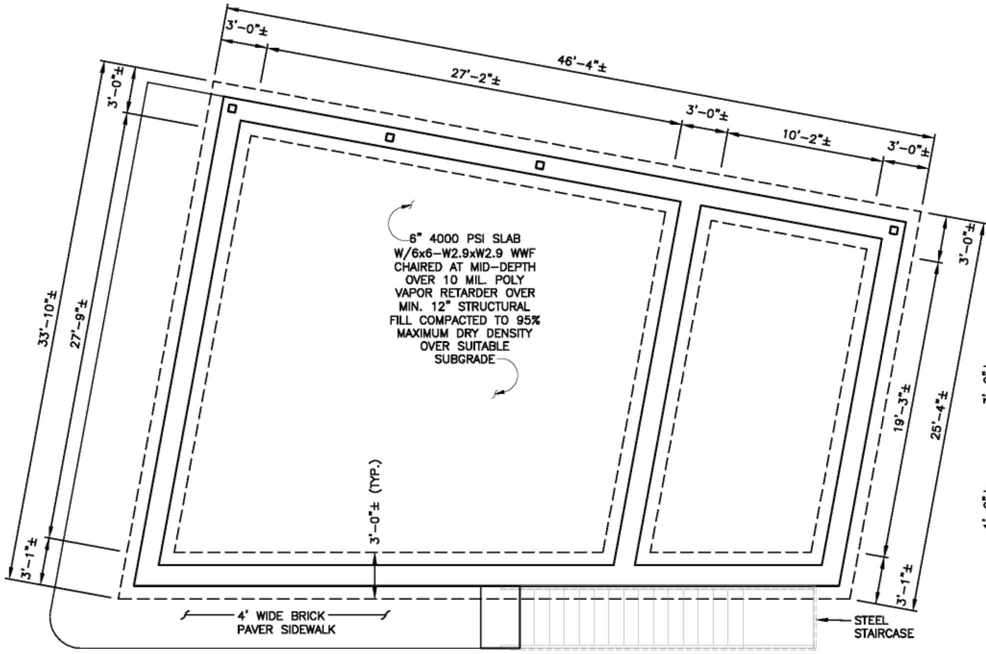
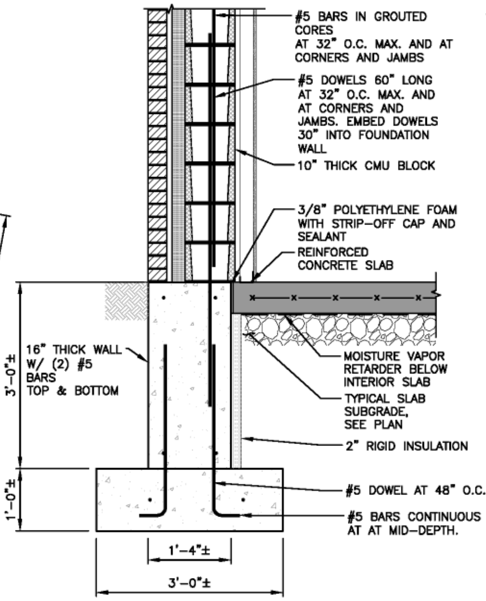
SHEET TITLE
FLOOR PLANS AND ELEVATIONS

SHEET NUMBER
A-2



FOUNDATION PLAN (1 / A-3)
22x34 SCALE: 1/4"=1'-0"
11x17 SCALE: 1/8"=1'-0"

GRAPHIC SCALE
0 2 4 8 12 FEET

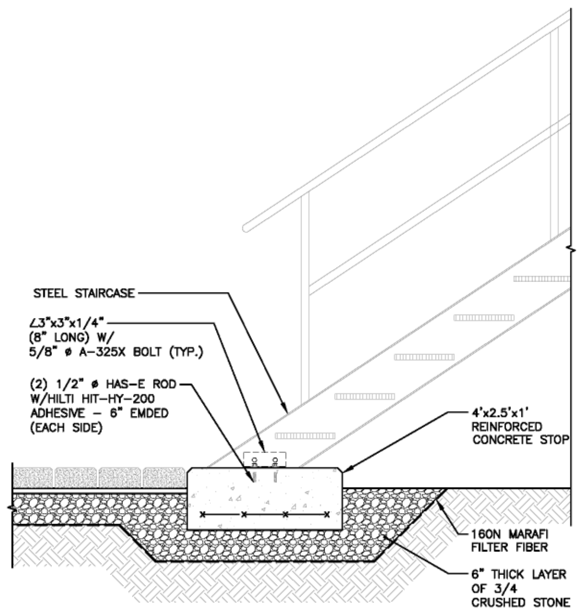


TYPICAL FOUNDATION WALL SECTION (2 / A-3)
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"

FOUNDATION NOTES & CONCRETE SPECIFICATIONS:

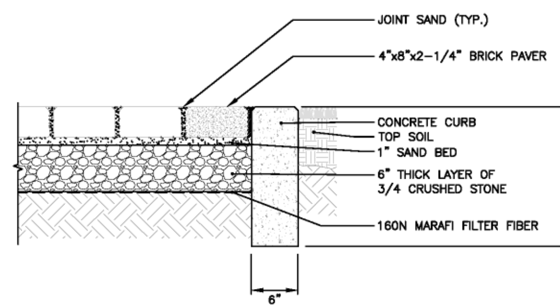
1. FOUNDATION AREA SHALL BE EXCAVATED TO THE DEPTH AND DIMENSIONS SHOWN ON THE PLANS. EXISTING LEDGE AND ALL OTHER EXISTING UNSUITABLE MATERIAL SHALL BE REMOVED AND LEGALLY DISPOSED OF OFF-SITE. THE SUBGRADE SHALL BE ROLLED WITH A 1-TON, VIBRATORY, WALK-BEHIND ROLLER AT A SPEED OF LESS THAN 2 FPS, 6 PASSES MINIMUM, TO PROVIDE UNYIELDING SURFACE.
2. UNDERCUT SOFT OR "WEAVING" AREAS A MINIMUM OF 12 INCHES DEEP. BACKFILL UNDERCUT AREA WITH FILL MEETING THE SPECIFICATIONS OF STRUCTURAL FILL.
3. CONCRETE TO HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH (f'c)=4000 psi. CONCRETE TO BE AIR ENTRAINED, DESIRED AIR CONTENT TO BE 6% (PLUS OR MINUS 2%)
4. REINFORCING BAR TO BE ASTM A615 GRADE 60.
5. WELDED WIRE FABRIC TO CONFORM TO THE REQUIREMENTS OF ASTM A185. WIRES FOR FABRIC TO CONFORM TO THE REQUIREMENTS OF ASTM A82.
6. ALL REINFORCING TO HAVE MINIMUM CONCRETE COVER PER ACI SPECIFICATIONS.
7. ALL CONCRETE MATERIALS AND WORKMANSHIP SHALL CONFORM TO LATEST EDITION OF ACI 318 AND APPLICABLE STATE BUILDING CODE.
8. BACK FILL BOTH SIDES OF FOUNDATION WALLS EVENLY WITH A COMPACTED STRUCTURAL FILL.

GRAPHIC SCALE
0 .5 1 2 3 FEET



CONCRETE STOOP SECTION (3 / A-3)
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"

GRAPHIC SCALE
0 .5 1 2 3 FEET



CONCRETE STOOP SECTION (4 / A-3)
22x34 SCALE: 1-1/2"=1'-0"
11x17 SCALE: 3/4"=1'-0"

GRAPHIC SCALE
0 0'-4" 0'-8" 1'-4" 2'-0"

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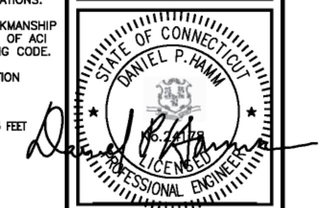

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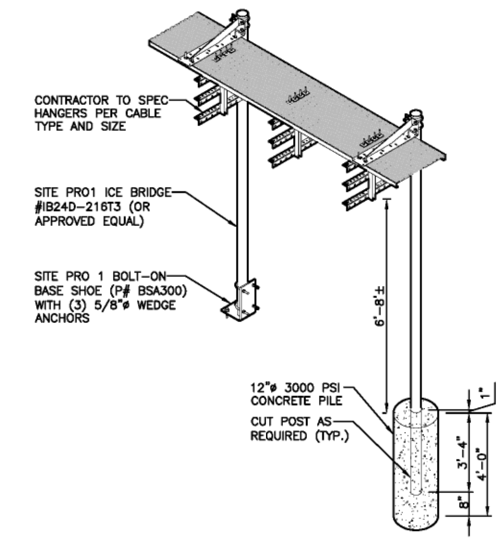
SHEET TITLE
FOUNDATION AND WALKWAY DETAILS

SHEET NUMBER
A-3



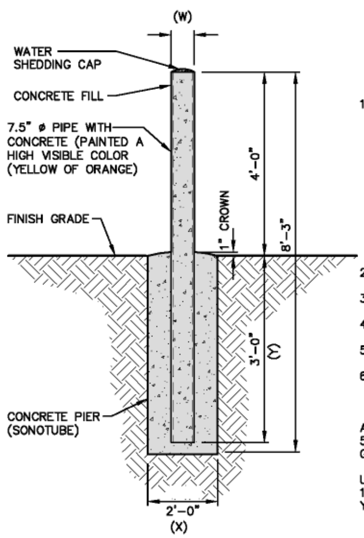
ICE BRIDGE DETAIL
SCALE: N.T.S
1 / A-4

21001 TRENCH REQUIREMENTS – PRIMARY & SECONDARY CABLES

A. CALLBEFORE YOU DIG!(1-800-922-4455).
B. TRENCH WIDTH DEPENDS ON TYPE OF TRENCHING EQUIPMENT USED.
C. A MINIMUM OF 12" SEPARATION, VERTICAL OR HORIZONTAL, SHALL BE MAINTAINED BETWEEN COMMUNICATION OR CATVCABLES AND ELECTRICAL CABLE(S) OR THEIR CONDUITS.
D. A MINIMUM SEPARATION OF 12" SHALL BE MAINTAINED BETWEEN ELECTRIC CONDUIT AND GAS SERVICE LINES. JOIN TRENCHING IS NOT PERMITTED WITH ANY GAS LINES.
E. A MINIMUM SEPARATION OF 12" SHALL BE MAINTAINED BETWEEN ELECTRIC CONDUITS AND WATER SERVICE LINES. SEPARATION BETWEEN ELECTRICAL CONDUITS AND MAIN WATER LINES SHALL BE 18".
F. THE TRENCH BOTTOM SHALL BE UNDISTURBED OR WELL TAMPED EARTH, (I.E. NOT LOOSE BACKFILL), SUCH THAT THE TRENCH BOTTOM WILL NOT SETTLE AND DISTURB UI CONDUITS. ALSO, THE TRENCH BOTTOM SHALL BE FREE FROM ALL SHARP OBJECTS AND STONES.
G. WHERE ROCK OR LEDGE IS ENCOUNTERED, THE MINIMUM CONDUIT COVER MAY BE REDUCED TO 24".
H. ALL BACKFILL SHALL BE FREE OF STONES, DEBRIS OR ANY SHARP OBJECT THAT MAY DAMAGE THE CONDUIT.
I. FOR 3-PHASE PRIMARY, 4" DIAMETER CONDUIT SHALL BE INSTALLED. FOR SINGLE-PHASE PRIMARY, 2 -3" DIAMETER CONDUIT SHALL BE INSTALLED. EITHER GALVANIZED STEEL OR SCHEDULE 40 PVC CONDUIT SHALL BE INSTALLED.
J. TO PROVIDE A MEANS OF PULLING IN THE CABLE(S), A NYLON DRAW CORD, (1/8 400 LB. MINIMUM TEST) SHALL BE INSTALLED IN THE CONDUIT. THE DRAW CORD SHALL EXTEND CONTINUOUSLY THROUGH THE ENTIRE LENGTH OF ALL CONDUIT SECTIONS. CONDUIT ENDS SHALL BE SEALED WITH BUSHINGS OR CAPS.
K. MACHINE DIGGING SHALL STOP 36 FROM VAULTS, FOUNDATIONS, EQUIPMENT, CABLES AND POLES. THE REMAINDER OF THE TRENCH SHALL BE HAND DUG.
L. ALL UI BURIED CONDUITS SHALL BE IDENTIFIED BY A RED MARKER TAPE (UI S.S. 40-86750). THE MARKER TAPE SHALL RUN DIRECTLY ABOVE THE ENTIRE LENGTH OF EACH CONDUIT SECTION WITH A MINIMUM VERTICAL SEPARATION OF 12".

23001 FIBERGLAS FOUNDATION – PADMOUNT EQUIPMENT

A. (1)FOR TRANSFORMER INSTALLATIONS, THE FRONT OF THE TRANSFORMER MUST BE LOCATED ON THE NARROW SIDEWALL, NOMINALLY 37-1/2".
(2) FOR SINGLE PHASE JUNCTION ENCLOSURE INSTALLATIONS, THE FRONT OF THE ABOVE GRADE JUNCTION ENCLOSURE MUST BE LOCATED ALONG THE WIDE SIDEWALL, NOMINALLY 43".
B. THE SYSTEM SHALL BE SOLIDLY GROUNDED WITH FOUR GROUND RODS AND A #4 AWG BARE CU GROUND GRID.
C. THE GROUND GRID SHALL BE INSTALLED AND CONNECTED AS SHOWN ON PAGE 1. THE GROUND GRID 'TAILS' SHALL BE BUGGED TOGETHER AND THEN BROUGHT, BELOW GRADE, INTO THE BOX PAD. EACH END SHALL BE OF SUFFICIENT LENGTH TO CONNECT TO THE TRANSFORMER TANK GROUND OR EQUIPMENT GROUND BUS (MINIMUM OF 3' ABOVE FINISHED GRADE, EACH END).
D. ALL CONDUCTOR NEUTRALS AND EQUIPMENT GROUNDS SHALL BE BONDED TOGETHER AND CONNECTED TO THE GROUND GRID. SEE APPROPRIATE EQUIPMENT DCS FOR DETAILS.
E. LOCATE THE BOX PAD IN ACCORDANCE WITH THE REQUIREMENTS OF STD. DS-20501 ENSURING THAT THE BOX PAD FRONT, DEPENDING ON EQUIPMENT TO BE USED, IS POSITIONED IN THE REQUIRED DIRECTION.
F. PRIMARY, SECONDARY AND SERVICE CONDUITS SHALL ENTER FROM BELOW THE BOX PAD LIP.
G. A TELEPHONE COMPANY GROUND MUST BE PROVIDED WHEN TELEPHONE COMPANY FACILITIES COME WITHIN THE IMMEDIATE VICINITY OF U.I. COMPANY FACILITIES. THE GROUND LEAD, 10', SHOULD BE LOCATED ON THE SIDE OF THE TRANSFORMER/ENCLOSURE CLOSEST TO THE TELEPHONE COMPANY FACILITIES



BOLLARD DETAIL
SCALE: N.T.S
2 / A-4

BOLLARD – SPC-B25

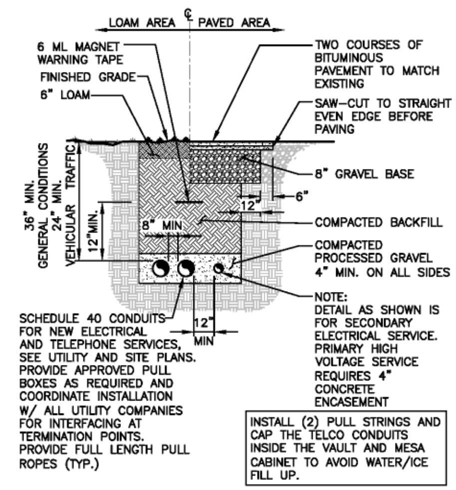
1. BOLLARD SHALL BE MADE OF RIGID GALVANIZED STEEL CONDUIT FILLED WITH CONCRETE, AND SHALL BE SET IN A CONCRETE SONOTUBE. DIAMETER OF THE BOLLARD STEEL CONDUIT AND THE SONOTUBE SHALL CONFORM TO THE FOLLOWING TABLE:

BOLLARD CLASSIFICATION	GS CONDUIT DIAMETER (W)	GS CONDUIT DEPTH (Y)	CONCRETE SONOTUBE DIAMETER (X)
PRECAST MANUFACTURER BOLLAR	7.5"	3'	2'

2. UNITED ILLUMINATING ENGINEERING SHALL BE CONTACTED FOR SELECTION OF CONDUIT AND SONOTUBE DIAMETERS.
3. FOUR FEET OF THE BOLLARD SHALL BE EXPOSED ABOVE THE CONCRETE SONOTUBE.
4. BOLLARD SHALL HAVE A ROUNDED TOP, OR A WATER SHEDDING CAP.
5. BOLLARD SHALL BE PAINTED WITH TWO COATS OF HIGH VISIBILITY YELLOW LATEX PAINT.
6. PRECAST BOLLARDS MEETING THE DIMENSION REQUIREMENTS AND SUPPLIED BY THE FOLLOWING MANUFACTURERS ARE ALSO ACCEPTED:

ARROW CONCRETE PRODUCTS
560 SALMON BROOK STREET
GRANBY, CONNECTICUT 06035

UNITED CONCRETE PRODUCTS
173 CHURCH STREET
YALESVILLE, CT 06492



BURIED CONDUIT DETAIL
SCALE: N.T.S
4 / A-4

PREPARED FOR: CELLCO PARTNERSHIP D.B.A.

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STATE OF CONNECTICUT
DANIEL P. HAMM
LICENSED PROFESSIONAL ENGINEER

CHECKED BY: JX

APPROVED BY: DPH

SUBMITTALS

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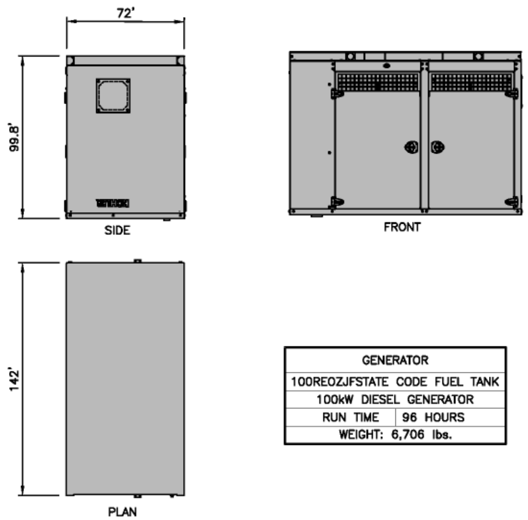
FAIRFIELD, CT 06825

SHEET TITLE
CABLE SUPPORT AND BOLLARD DETAILS

SHEET NUMBER
A-4

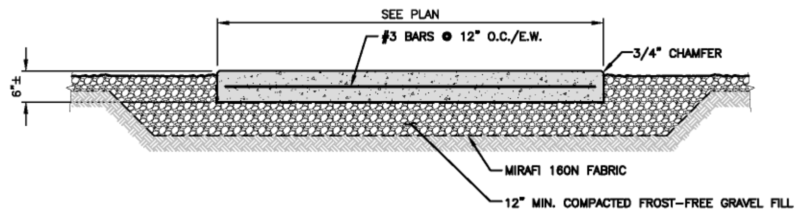
FOUNDATION NOTES & CONCRETE SPECIFICATIONS:

1. FOUNDATION AREA SHALL BE EXCAVATED TO THE DEPTH AND DIMENSIONS SHOWN ON THE PLANS. EXISTING LEDGE AND ALL OTHER EXISTING UNSUITABLE MATERIAL SHALL BE REMOVED AND LEGALLY DISPOSED OF OFF-SITE. THE SUBGRADE SHALL BE ROLLED WITH A 1-TON, VIBRATORY, WALK-BEHIND ROLLER AT A SPEED OF LESS THAN 2 FPS, 6 PASSES MINIMUM, TO PROVIDE UNYIELDING SURFACE.
2. UNDERCUT SOFT OR "WEAVING" AREAS A MINIMUM OF 12 INCHES DEEP. BACKFILL UNDERCUT AREA WITH FILL MEETING THE SPECIFICATIONS OF STRUCTURAL FILL.
3. CONCRETE TO HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH (f'c)=4000 psi. CONCRETE TO BE AIR ENTRAINED, DESIRED AIR CONTENT TO BE 6% (PLUS OR MINUS 2%)
4. REINFORCING BAR TO BE ASTM A615 GRADE 60.
5. WELDED WIRE FABRIC TO CONFORM TO THE REQUIREMENTS OF ASTM A185. WIRES FOR FABRIC TO CONFORM TO THE REQUIREMENTS OF ASTM A82.
6. ALL REINFORCING TO HAVE MINIMUM CONCRETE COVER PER ACI SPECIFICATIONS.
7. ALL CONCRETE MATERIALS AND WORKMANSHIP SHALL CONFORM TO LATEST EDITION OF ACI 318 AND APPLICABLE STATE BUILDING CODE.



GENERATOR	
100REOZJFSTATE CODE FUEL TANK	
100kW DIESEL GENERATOR	
RUN TIME	96 HOURS
WEIGHT: 6,706 lbs.	

GENERATOR DETAIL (1 / A-5)
SCALE: N.T.S



CONCRETE PAD DETAIL (2 / A-5)
SCALE: N.T.S

PREPARED FOR: CELLCO PARTNERSHIP D.B.A.

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SHEET TITLE
CONCRETE PAD AND GENERATOR DETAILS

SHEET NUMBER
A-5

SEQUENCE OF CONSTRUCTION

1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECPS), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECPS IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF RECPS EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECPS WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO THE COMPACTED SOIL AND FOLD THE REMAINING 12" PORTION OF RECPS BACK OVER THE SEED AND COMPACTED SOIL. SECURE RECPS OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE RECPS.
3. ROLL THE RECPS DOWN HORIZONTALLY ACROSS THE SLOPE. RECPS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECPS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
4. THE EDGES OF PARALLEL RECPS MUST BE STAPLED WITH APPROXIMATELY 2" – 5" OVERLAP DEPENDING ON THE RECPS TYPE.
5. CONSECUTIVE RECPS SPLICED DOWN THE SLOPE MUST BE END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE RECPS WIDTH.

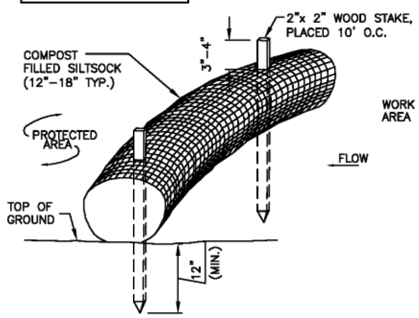
NOTES:

1. PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.
2. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.
3. BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.
4. THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
5. BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.

BLANKET EDGES STAPLED AND OVERLAPPED (4 IN. MIN.)

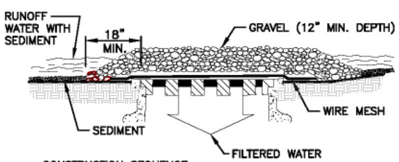
INSTALL BEGINNING OF ROLL IN 6 IN. x 6 IN. ANCHOR TRENCH, STAPLE, BACKFILL AND COMPACT SOIL

REFER TO 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL



1. SILTSOCK SHALL BE FILTREXX SILTSOXX, OR APPROVED EQUAL.
2. COMPOST MATERIAL SHALL BE DISPERSED ON SITE, AS DETERMINED BY THE ENGINEER.
3. SILTSOCK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS, AND REPAIR OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED.
4. SEE SPECIFICATIONS FOR SOCK SIZE, AND COMPOST FILL, REQUIREMENTS.

SILT SOCK DETAIL (1 / A-6)
SCALE: N.T.S



CONSTRUCTION SEQUENCE:

1. A WIRE MESH SHOULD BE PLACED OVER THE DROP INLET OR CURB OPENING SO THAT THE ENTIRE OPENING AND A MINIMUM OF 12 INCHES AROUND THE OPENING ARE COVERED BY THE MESH. THE MESH MAY BE ORDINARY HARDWARE CLOTH OR WIRE MESH WITH OPENINGS UP TO 1/2 INCH.

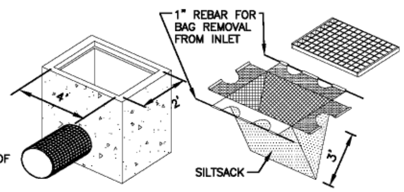
2. THE WIRE MESH SHOULD BE COVERED WITH CLEAN COARSE AGGREGATE SUCH AS SEWER STONE FOR A MINIMUM DEPTH OF 12 INCHES.

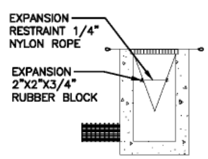
3) THE COARSE AGGREGATE SHOULD EXTEND AT LEAST 18 INCHES ON ALL SIDES OF THE DRAIN OPENING.

MAINTENANCE:

ALL STRUCTURES SHOULD BE INSPECTED AFTER EVERY RAIN STORM AND REPAIRS MADE AS NECESSARY. SEDIMENT SHOULD BE REMOVED FROM THE TRAPPING DEVICES AFTER THE SEDIMENT HAS REACHED A MAXIMUM OF ONE HALF THE DEPTH OF THE TRAP. THE SEDIMENT SHOULD BE DISPOSED OF IN A SUITABLE AREA AND PROTECTED FROM EROSION BY EITHER STRUCTURAL OR VEGETATIVE MEANS. THE TEMPORARY TRAPS SHOULD BE REMOVED AND THE AREA REPAIRED AS SOON AS THE CONTRIBUTING DRAINAGE AREA TO THE INLET HAS BEEN COMPLETELY STABILIZED.

STONE INLET PROTECTION DETAIL-ON SITE (2 / A-6)
SCALE: N.T.S





NOTE: REGULAR FLOW = 40 GAL./MIN./SF.
HIGH = 200 GAL./MIN./SF.

SILKSACK DETAIL - ON OR OFF SITE

GENERAL CONSTRUCTION SEQUENCE:

THIS IS A GENERAL CONSTRUCTION SEQUENCE OUTLINE SOME ITEMS OF WHICH MAY NOT APPLY TO PARTICULAR SITES.

1) CLEAR AND GRUB AREAS OF PROPOSED CONSTRUCTION.
2) INSTALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES AS REQUIRED.
3) REMOVE AND STOCKPILE TOPSOIL. STOCKPILE SHALL BE SEEDED TO PREVENT EROSION.
4) CONSTRUCT CLOSED DRAINAGE SYSTEM. PROTECT CULVERT INLETS AND CATCH BASINS WITH SEDIMENTATION BARRIERS.
5) CONSTRUCT ROADWAYS AND PERFORM SITE GRADING, PLACING HAY BALES AND SILTATION FENCES AS REQUIRED TO CONTROL SOIL EROSION.
6) INSTALL UNDERGROUND UTILITIES.
7) BEGIN TEMPORARY AND PERMANENT SEEDING AND MULCHING. ALL CUT AND FILL SLOPES SHALL BE SEEDED OR MULCHED IMMEDIATELY AFTER THEIR CONSTRUCTION. NO AREA SHALL BE LEFT UNSTABILIZED FOR A TIME PERIOD OF MORE THAN 30 DAYS.
8) DAILY, OR AS REQUIRED, CONSTRUCT, INSPECT, AND IF NECESSARY, RECONSTRUCT TEMPORARY BERMS, DRAINS, DITCHES, SILT FENCES AND SEDIMENT TRAPS INCLUDING MULCHING AND SEEDING.
9) BEGIN EXCAVATION FOR AND CONSTRUCTION OF TOWERS AND PLATFORMS.
10) FINISH PAVING ALL ROADWAYS, DRIVES, AND PARKING AREAS.
11) COMPLETE PERMANENT SEEDING AND LANDSCAPING.
12) NO STORM WATER FLOW SHALL BE DIVERTED TO ANY WETLANDS UNTIL A HEALTHY STAND OF GRASS HAS BEEN ESTABLISHED IN REGRADED AREAS.
13) AFTER GRASS HAS BEEN FULLY GERMINATED IN ALL SEEDED AREAS, REMOVE ALL TEMPORARY EROSION CONTROL MEASURES.

EROSION CONTROL MEASURES:

1) DISTURBED AREAS SHALL BE KEPT TO THE MINIMUM AREA NECESSARY TO CONSTRUCT THE ROADWAYS AND ASSOCIATED DRAINAGE FACILITIES.
2) HAY BALE BARRIERS AND SEDIMENT TRAPS SHALL BE INSTALLED AS REQUIRED. BARRIERS AND TRAPS ARE TO BE MAINTAINED AND CLEANED UNTIL ALL SLOPES HAVE A HEALTHY STAND OF GRASS.
3) BALED HAY AND MULCH SHALL BE MOWINGS OF ACCEPTABLE HERBACEOUS GROWTH, FREE FROM NOXIOUS WEEDS OR WOODY STEMS, AND SHALL BE DRY. NO SALT HAY SHALL BE USED.
4) FILL MATERIAL SHALL BE FREE FROM STUMPS, WOOD, ROOTS, ETC.
5) STOCKPILED MATERIALS SHALL BE PLACED IN AREAS SHOWN ON THE PLANS. STOCKPILES SHALL BE PROTECTED BY SILTATION FENCE AND SEEDED TO PREVENT EROSION. THESE MEASURES SHALL REMAIN UNTIL ALL MATERIAL HAS BEEN PLACED OR DISPOSED OFF SITE.
6) ALL DISTURBED AREAS SHALL BE LOAMED AND SEEDED. A MINIMUM OF 4 INCHES OF LOAM SHALL BE INSTALLED WITH NOT LESS THAN ONE POUND OF SEED PER 50 SQUARE YARDS OF AREA.
7) APPLICATION OF GRASS SEED, FERTILIZERS AND MULCH SHALL BE ACCOMPLISHED BY BROADCAST SEEDING OR HYDROSEEDING AT THE RATES OUTLINED BELOW:

   LIMESTONE: 75–100 LBS./1,000 SQUARE FEET.
   FERTILIZER: RATE RECOMMENDED BY MANUFACTURER.
   MULCH: HAY MULCH APPROXIMATELY 3 TONS/ACRE UNLESS EROSION CONTROL MATTING IS USED.

SEED MIX (SLOPES LESS THAN 4:1)	LBS./ACRE
CREEPING RED FESCUE	20
TALL FESCUE	20
REDTOP	2
	42

SLOPE MIX (SLOPES GREATER THAN 4:1)	LBS./ACRE
CREEPING RED FESCUE	20
TALL FESCUE	20
BIRDSFOOT TREEFOIL	8
	48

TREATMENT SWALE PLANTING SPECIFICATIONS

TALL FESCUE	20 LBS/ACRE	OR	0.45 LBS/10,000 SF
CREEPING RED FESCUE	20 LBS/ACRE	OR	0.45 LBS/10,000 SF
BIRDSFOOT TREFOIL	8 LBS/ACRE	OR	0.20 LBS/10,000 SF

LIME AND FERTILIZER SHOULD BE APPLIED PRIOR TO OR AT TIME OF SEEDING AND INCORPORATED INTO THE SOIL. THE FOLLOWING RATES ARE RECOMMENDED:

AGRICULTURAL LIMESTONE	2 TONS/ACRE	OR	100 LBS/1,000 SF
NITROGEN (N)	50 LBS/ACRE	OR	1.1 LBS/10,000 SF
PHOSPHATE (P205)	100 LBS/ACRE	OR	2.2 LBS/10,000 SF
POTASH (K20)	100 LBS/ACRE	OR	2.2 LBS/10,000 SF

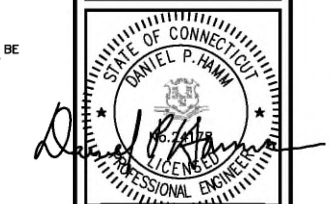
(THIS IS EQUIVALENT TO 500 LBS/ACRE OF 10-20-20 FERTILIZER OR 1,000 LBS/ACRE OF 5-10-10).

8) AFTER ALL DISTURBED AREAS HAVE BEEN STABILIZED THE TEMPORARY EROSION CONTROL MEASURES ARE TO BE REMOVED.
9) PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES.
10) ALL CATCH BASIN INLETS WILL BE PROTECTED WITH LOW POINT SEDIMENTATION BARRIER.
11) ALL STORM DRAINAGE OUTLETS WILL BE STABILIZE AND CLEANED AS REQUIRED, BEFORE THE DISCHARGE POINTS BECOME OPERATIONAL.
12) ALL DEWATERING OPERATIONS MUST DISCHARGE DIRECTLY INTO A SEDIMENT FILTER AREA.
13) NO DISCHARGE SHALL BE DIRECTED TOWARDS ANY PROPOSED DITCHES, SWALES, OR PONDS UNTIL THEY HAVE BEEN PROPERLY STABILIZED.

PREPARED FOR: CELLCO PARTNERSHIP D.B.A.

verizon

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586



CHECKED BY: JX

APPROVED BY: DPH

SUBMITTALS

REV	DATE	DESCRIPTION	BY
1	10/27/22	ISSUED FOR D&M PLAN FILING	SLY
0	7/14/22	ISSUED FOR REVIEW	SLY

SITE NAME:
PLATTSVILLE RELO CT

SITE ADDRESS:
5151 PARK AVENUE
FAIRFIELD, CT 06825

SHEET TITLE
EROSION CONTROL NOTES AND DETAILS

SHEET NUMBER
A-6

ISE, Incorporated
Structural Engineers
Telecommunications & Industrial Design

Design & Calculations
100' 3-Legged Tower

DATE: September 25, 2022

PROJECT: Verizon Plattsville Relo CT (553278)

CUSTOMER: Larson Valmont
1501 South Euclid Avenue
Tucson, AZ 85713

LOCATION: 5151 Park Avenue
Fairfield, CT 06825
Latitude: 41° 13' 08.19"
Longitude: 73° 14' 41.12"

ISE JOB NO. 18054

LARSON JOB NO. 553278

DESIGN CRITERIA:

CODE: 2018 Connecticut State Building Code, 2015 IBC, ASCE 7-10, TIA-222-G

WIND: 122 MPH Ultimate Wind Speed
Exposure C, Topographic Category 1, Risk Category II

SNOW: 30 psf

SOILS: Terracon Consultants Inc,
Geotechnical Engineering Report, #J1225042 dated 08/10/2022

SEISMIC: Seismic Design Category >> B
Soil Site Class >> C
$S_S = 0.211$, $S_1 = 0.065$, $S_{DS} = 0.169$, $S_{D1} = 0.074$
Per ASCE 7, Ch 13.3: $I = 1.0$, $a_p = 1.0$, $R_p = 3$
$C_s = 0.056$

Document Reviewed
and Approved by Alan Money
AMMTEC Consultants

STATE OF CONNECTICUT
ALAN E. MONEY
No. PEN 0031439
LICENSED
PROFESSIONAL ENGINEER
Oct 19, 2022

Alan Signature Digitally signed by Alan Signature
Date: 2022.10.19 18:04:05 -07'00'

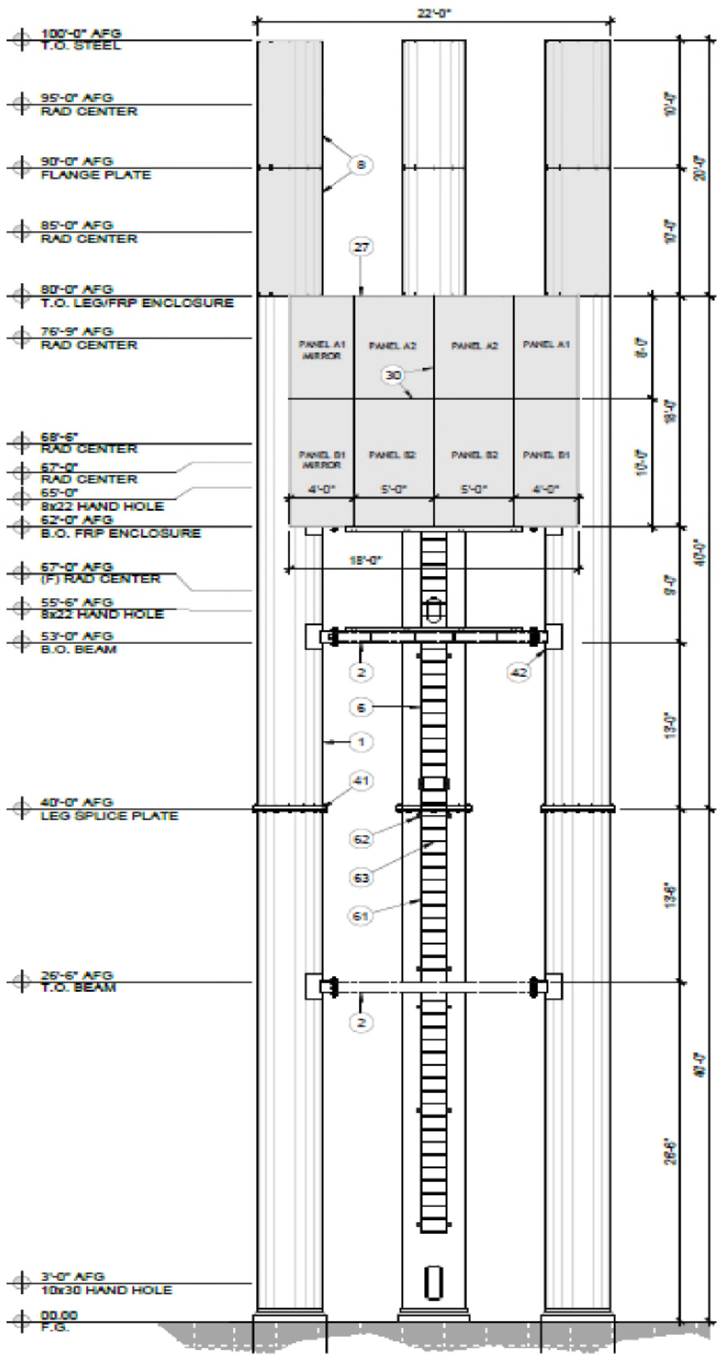
ISE, Incorporated
Structural Engineers ***Telecommunications & Industrial Design***

PO Box 50039 • Phoenix, Arizona • 85076 • Office: (602) 403-8614 • Fax: (623) 321-1283 • www.ISE-INC.biz

Project: Verizon Plattsville Relo ISE #: 18054 By: PB Date: 9/25/22

PROJECT DESCRIPTION

Verizon proposes to install 100' tall, 3-Legged tower for antennas and equipment installation at the site located in Fairfield, CT. Antennas will be installed within 48" Dia. Canister at a rad center of 95'-0'' AFG & 85'-0'' AFG and behind RF transparent FRP screen panels at a rad center of 76'-9'', 68'-6'', 67'-0'' AFG. Sketches of the proposed tower are as shown below:



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Project: Verizon Plattsville Relo ISE #: 18054 By: PB Date: 9/25/22

LOADING

WIND LOAD

Criteria: Exposure C, Topographic Category 1, Risk Category II

Wind Load for Elevation 62' AFG to 80' AFG

ASCE 7-10, CHAPTER 29, Sec 29.5

DESIGN WIND LOADS - OTHER STRUCTURES

Structure	Solid Signs			
Shape?	Case A		B (ft)	18
z (ft)	80		s (ft)	18
V (mph)	122		h (ft)	80

q_z (psf)	**43.71**	$0.00256 K_z K_{zt} K_d V^2$	Eqn 29.-1
K_z	**1.208**	$2.01*(z/z_g)^{2/\alpha}$	Sec 29.3.1
K_{zt}	1		Sec 26.8.2
K_d	0.95		Sec 26.6

G	0.85
C_f	**1.80**

F/A_f (psf)	**66.88**	$q_z G C_f$	Eqn 29.5-1
$(F/A_f)_{ASD}$ (psf)	**40.13**	$0.6*(F/A_f)$	

Tributary Width at 80' = 9'
Line Load at 80' = 66.88 psf x 9' = 601.92 plf

Tributary Width at 62' = 9'
Line Load at 62' = 66.88 psf x 9' = 601.92 plf

Line Load at 62' = 601.92 plf + 285.21 plf (Calc shown below)
= 887.13 plf

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Project: Verizon Plattsville Relo ISE #: 18054 By: PB Date: 9/25/22

Wind Load for elevation 52' AFG to 62' AFG (Future Concealment Panels)

ASCE 7-10, CHAPTER 29, Sec 29.5
DESIGN WIND LOADS - OTHER STRUCTURES

Structure	Solid Signs		
Shape?	Case A	B (ft)	10
z (ft)	62	s (ft)	10
V (mph)	122	h (ft)	62

q_z (psf)	**41.43**	$0.00256K_zK_{zt}K_dV^2$	Eqn 29.-1
K_z	**1.144**	$2.01*(z/z_g)^{2/\alpha}$	Sec 29.3.1
K_{zt}	1		Sec 26.8.2
K_d	0.95		Sec 26.6
G	0.85		
C_f	**1.80**		
F/A_f (psf)	**63.38**	q_zGC_f	Eqn 29.5-1
$(F/A_f)_{ASD}$ (psf)	**38.03**	$0.6*(F/A_f)$	

Tributary Width at 62' = 4.5'
Line Load at 62' = 63.38 psf x 4.5' = 285.21 plf

Tributary Width at 52' = 4.5'
Line Load at 52' = 63.38 psf x 4.5' = 285.21 plf

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Project: Verizon Plattsville Relo ISE #: 18054 By: PB Date: 9/25/22

Wind Loading for exposed legs

V (mph)	122
K_{zt}	1
K_d	0.95
G	0.85
C_f	**0.51**

Wind Load Calculation			**Cf**	**Wind Load**
			0.6	**On Leg**
H (ft)	**K_z**	**q_z (psf)**	**$q_zG_hC_f$ (psf)**	**[plf]**
16.4	0.86	31.31	15.97	63.87
20	0.90	32.65	16.65	66.60
30	0.98	35.56	18.13	72.53
40	1.04	37.78	19.27	77.06
50	1.09	39.59	20.19	80.77
60	1.14	41.14	20.98	83.93
70	1.17	42.50	21.67	86.70
80	1.21	43.71	22.29	89.17
90	1.24	44.81	22.85	91.41
100	1.27	45.81	23.36	93.46

DEAD LOAD

Platform loads

FRP Panels = 3 psf
Bar Grate = 10 psf
Misc equipment = 15 psf

LIVE LOAD

Platform Live Load = 40 psf

SNOW LOAD

Ground Snow Load, I_g = 30 psf

Project: Verizon Plattsville Relo ISE #: 18054 By: PB Date: 9/25/22

SEISMIC CHECK

Per Risa Results, Dead Only load case

LC	Node Label	X [lb]	Y [lb]	Z [lb]
1	N37	24.342	29018.548	-13.95
1	N38	-23.153	29093.839	-14.028
1	N41	-1.189	29041.719	27.979
1	Totals:	0	87154.106	0
1	COG (ft):	X: 9.009	Y: 47.365	Z: -5.194

Seismic Shear = C_sW = 0.056 x 87.15k = 4.88k

Per Risa Results, Wind only load case

LC	Node Label	X [lb]	Y [lb]	Z [lb]	MX [k-ft]	MY [k-ft]	MZ [k-ft]
4	N37	-464.415	-24120.931	18002.51	830.76	-28.872	4.023
4	N38	464.415	-24120.931	18002.51	830.76	28.872	-4.023
4	N41	0	48241.862	18616.363	837.724	0	0
4	Totals:	0	0	54621.383			

Wind Shear = 54.62k > 4.88 k → Wind Governs Design

FRP PANEL DESIGN & CALCULATIONS

FRP LAYUP

FRP PROPERTIES

Modulus of Elasticity E	2600000	psi	FS Bearing	4
Modulus of Shear G	450000	psi	FS Shear	3
Ultimate Flexural Stress F_b	30000	psi	FS Tension	3
Ultimate Tension/Compression Stress F_T, F_C	10,700	psi	FS Connections	4
Ultimate Bearing Stress F_p	30000	psi	FS Bending	2.5

FRP PANEL DESIGN

Concealment panels are sheathed with Carbon core 1" thick honeycomb core with fiberglass skins on each side.

The panels have been tested to 100 psf load on a 6' simply supported span longitudinal edges free with no failure.

For this application the panels are supported at 6' longitudinally.

ISE Incorporated
P.O. Box 50039
Phoenix, Arizona 85076
Phone: 602-403-8614
FAX: 623-321-1283

JOB :	Verizon Plattsville Relo
CLIENT :	Larson
ISE JOB NO:	18054
DATE :	8/19/2022
BY :	PB

FRP VERTICAL POST ANALYSIS

LOADING

Tributary Width, wt	6	ft
Wind Pressure	40.13	psf
Span, L	18	ft
Linear Wind Load	**240.78**	plf
Mn	**9751.59**	lb-ft

SECTIONAL PROPERTIES - STRONGWELL EXTERN

Section	4x1/4 Tube	
E	**2600000**	psi
b	**4**	in
t	**0.25**	in
A	**3.74**	in^2
I_x	**8.82**	in^4
S_x	**4.41**	in^3

APPLIED STRESSES

Applied Bending Stress	**2211.24**	psi	M/S

ALLOWABLE STRESSES

Per Strongwell Design Manual,

Allowable Bending Stress	**6157.6**	psi	$[E/16(b/t)^{0.85}]/2.5$	**OK**
Allowable Shear Stress	**1500**	psi	4500/3	**OK**

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JOB : Verizon Plattsville Relo
CLIENT : Larson
ISE JOB NO: 18054
DATE : 8/19/2022
BY : PB

FRP HORIZONTAL BEAM ANALYSIS

LOADING

Tributary Width, wt	9	ft
Wind Pressure	40.13	psf
Span, L	18	ft
Linear Wind Load	**361.17**	plf
Mn	**14627.39**	lb-ft

SECTIONAL PROPERTIES - STRONGWELL EXTERN

Section	4x1/4 Tube	
E	**2600000**	psi
b	**4**	in
t	**0.25**	in
A	**3.74**	in^2
I_x	**8.82**	in^4
S_x	**4.41**	in^3

APPLIED STRESSES

Applied Bending Stress	**3316.87**	psi	M/S

ALLOWABLE STRESSES

Per Strongwell Design Manual,

Allowable Bending Stress	**6157.6**	psi	$[E/16(b/t)^{0.85}]/2.5$	**OK**
Allowable Shear Stress	**1500**	psi	4500/3	**OK**

ISE Incorporated
P.O. Box 50039
Phoenix, Arizona 85076
Phone: 602-403-8614
FAX: 623-321-1283

JOB :	VZW plattsville Relo
CLIENT :	Larson
ISE JOB NO:	18054
DATE :	8/19/2022
BY :	PB

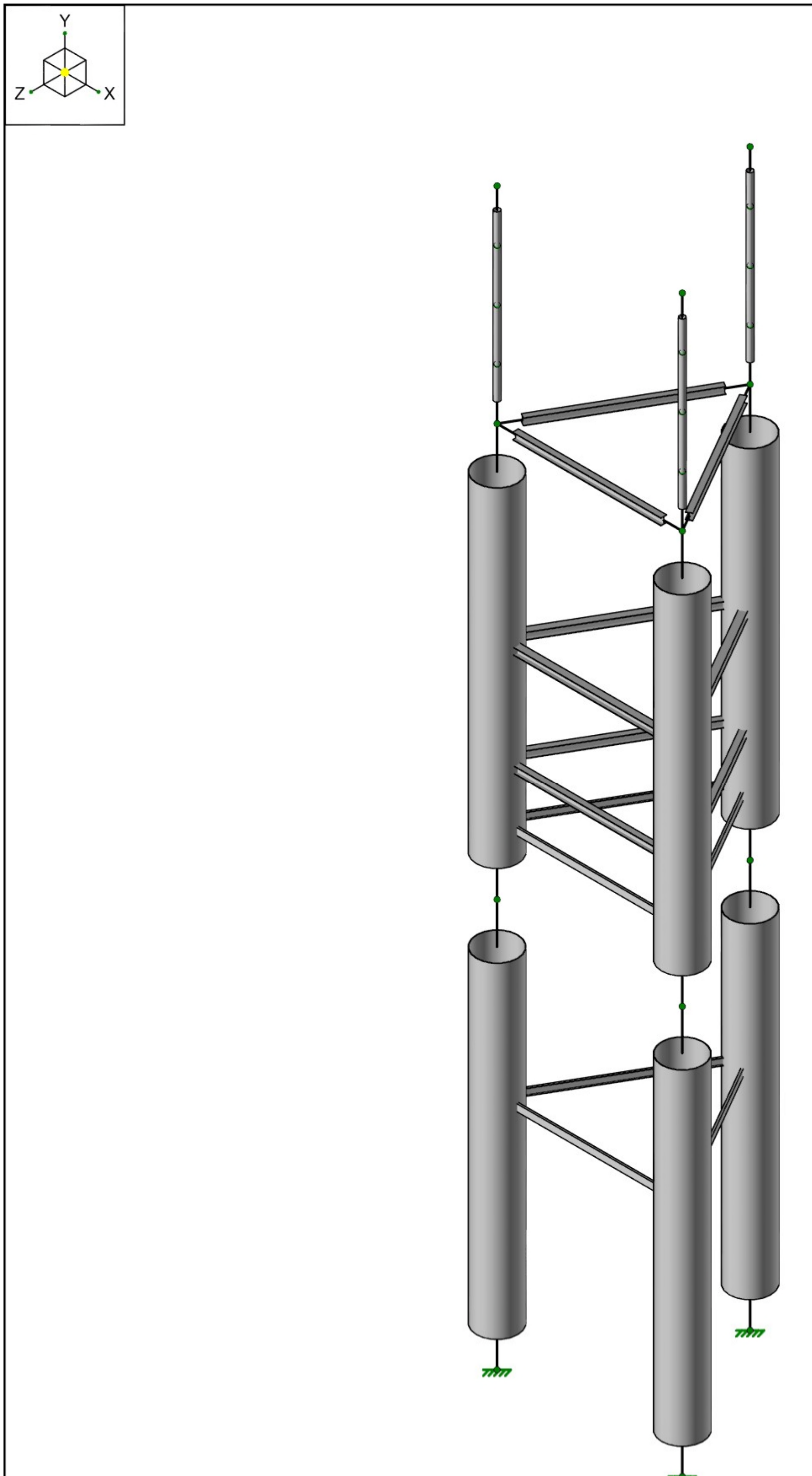
FRP PANEL TO PANEL CONNECTION

LOADING

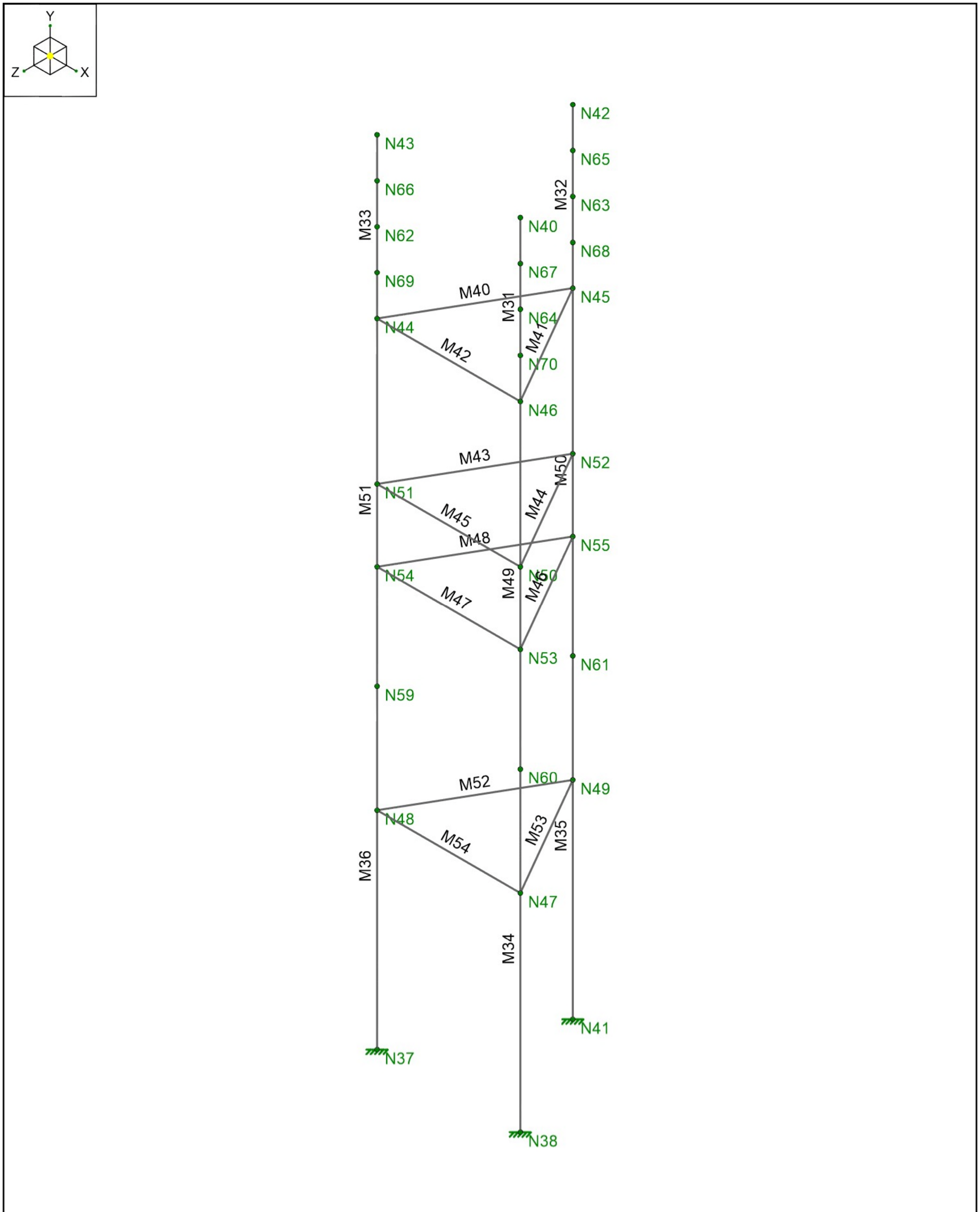
Tributary Width, wt		9	ft
Wind Pressure		40.13	psf
Span, L		18	ft
Linear Wind Load		**361.17**	plf
Wind Load		**6501.06**	lb

CONNECTION ***Per Strongwell Design Manual*

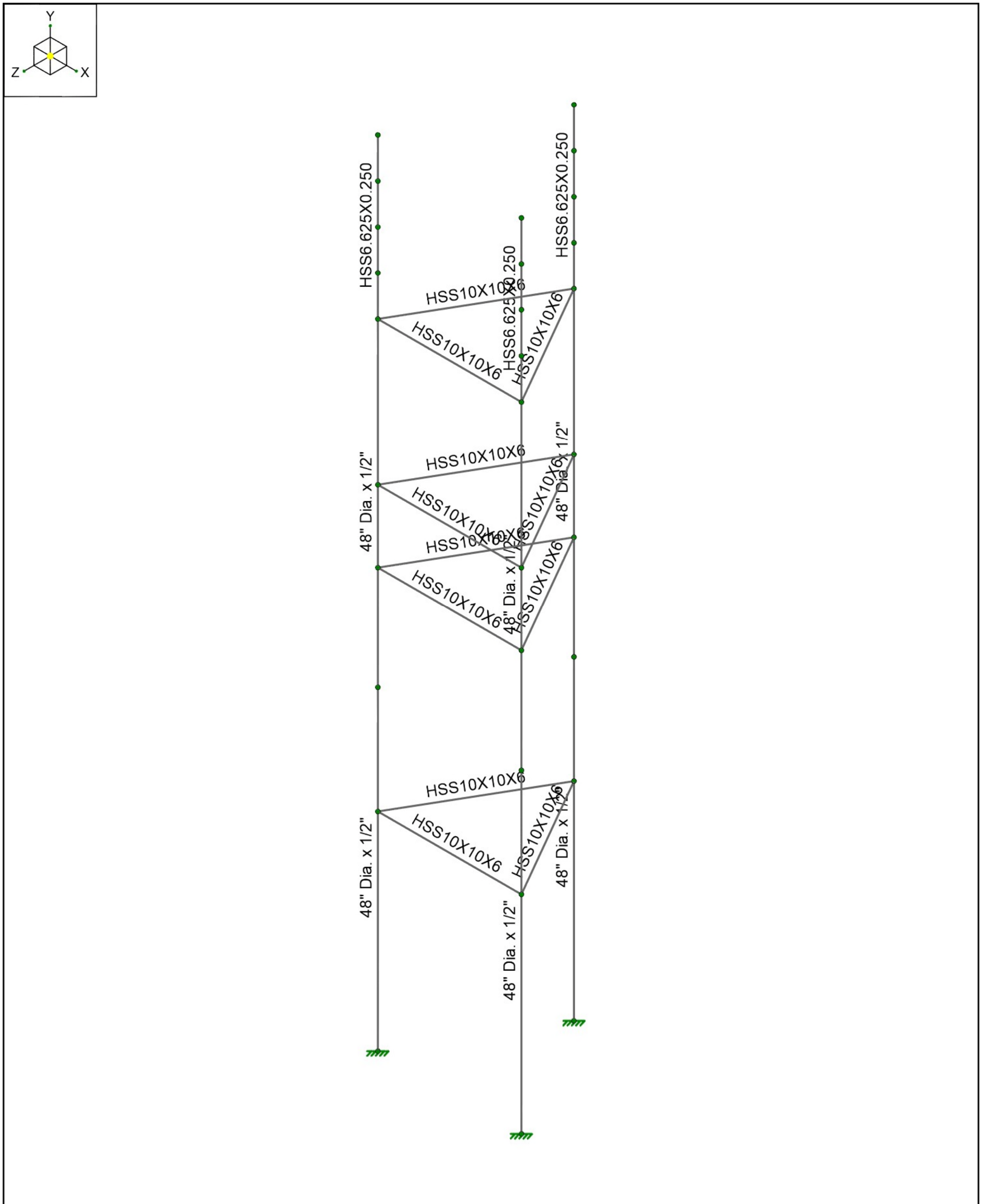
Bolt Type		FibreBolts			
Bolt Diameter	d_b	1/2	in		
Number of Bolts	n	15			
Bolt Shear	V	**433.404**	lb		
Ultimate Shear Capacity	V_u	**2400**	lb		
Available Shear Capacity	V_a	**600**	lb	FOS = 4	**OK**
Ultimate Tensile Capacity	T_u	**2000**	lb		
Available Tensile Capacity	T_a	**500**	lb	FOS = 4	**OK**



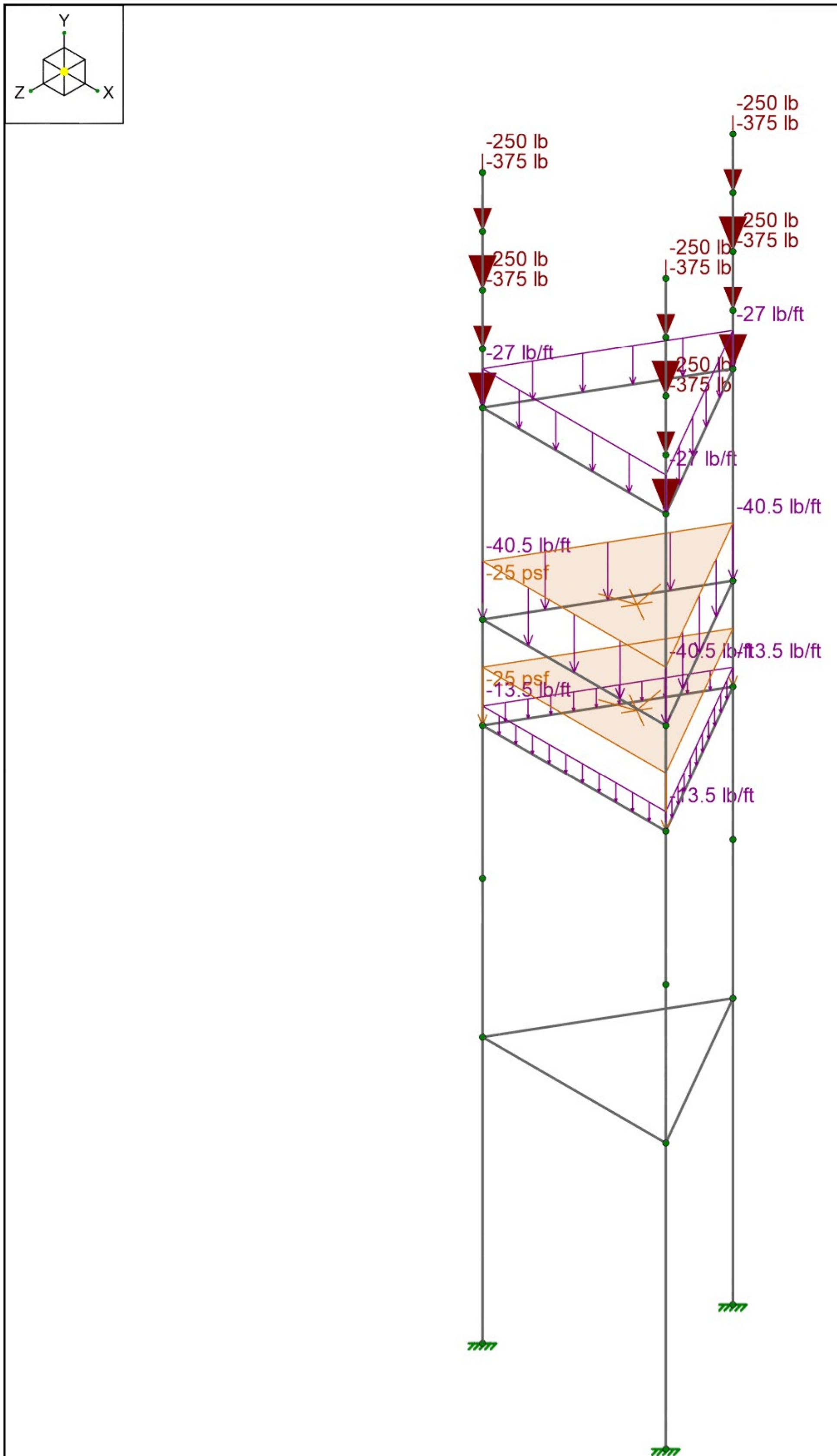
ISE	VZW Plattsville Relo (553278)	SK-1
PB		Aug 18, 2022
ISE Job No. 18054		18054 Tower Model.r3d



ISE	VZW Plattsville Relo (553278)	SK-2
PB		Sep 12, 2022
ISE Job No. 18054		18054 Tower Model.r3d

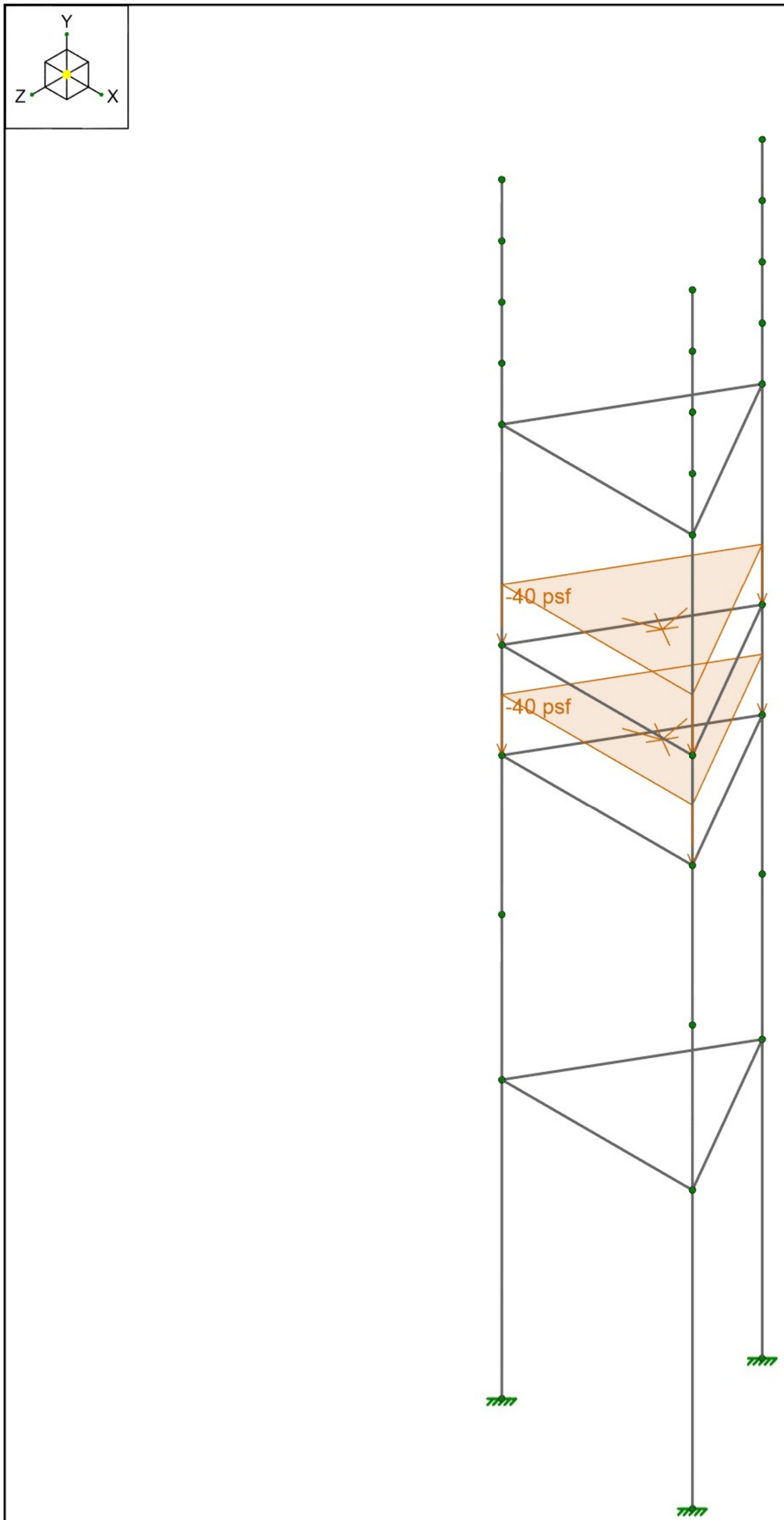


ISE	VZW Plattsville Relo (553278)	SK-3
PB		Sep 12, 2022
ISE Job No. 18054		18054 Tower Model.r3d



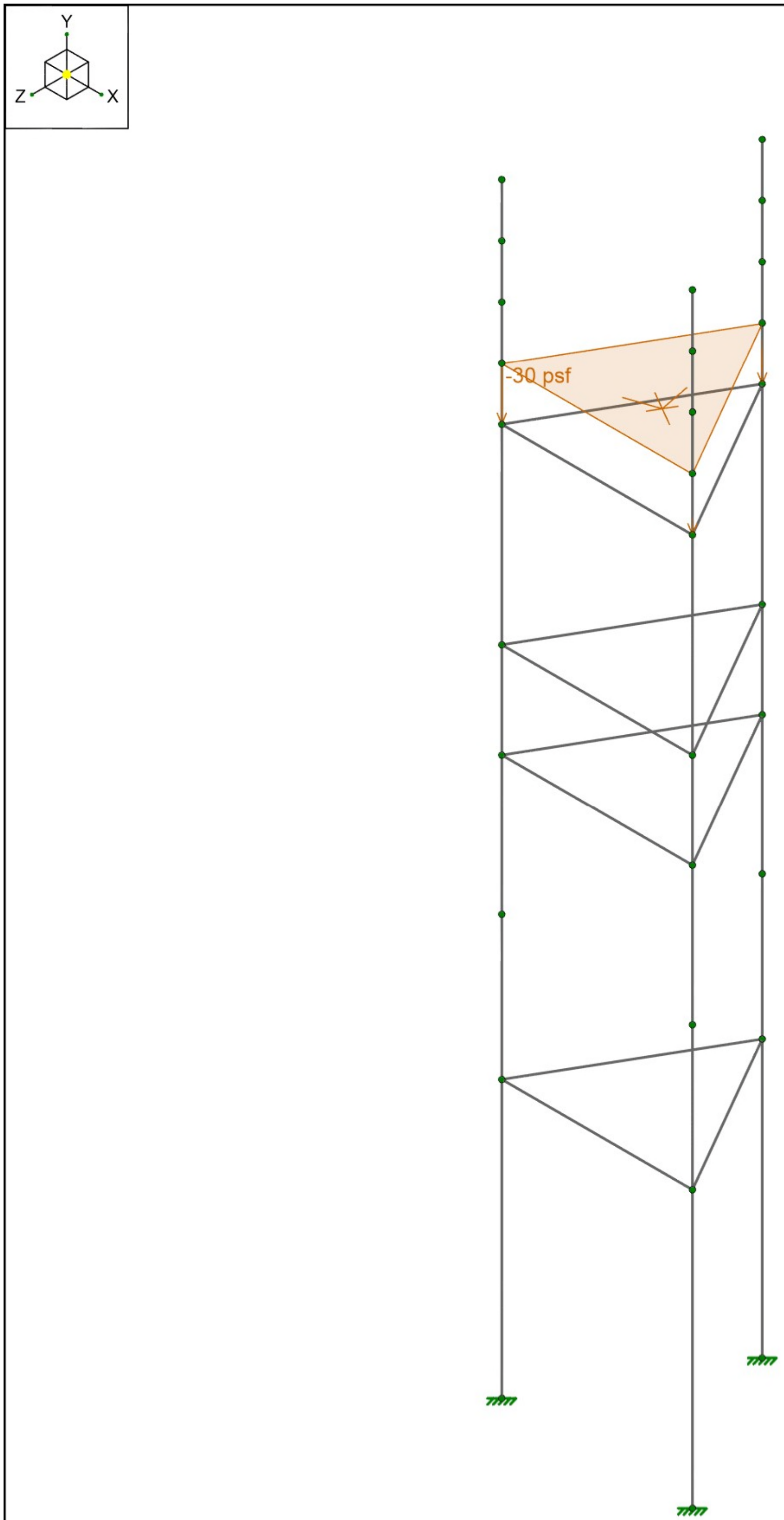
Loads: BLC 1, Dead Load

ISE	VZW Plattsville Relo (553278)	SK-4
PB		Sep 12, 2022
ISE Job No. 18054		18054 Tower Model.r3d



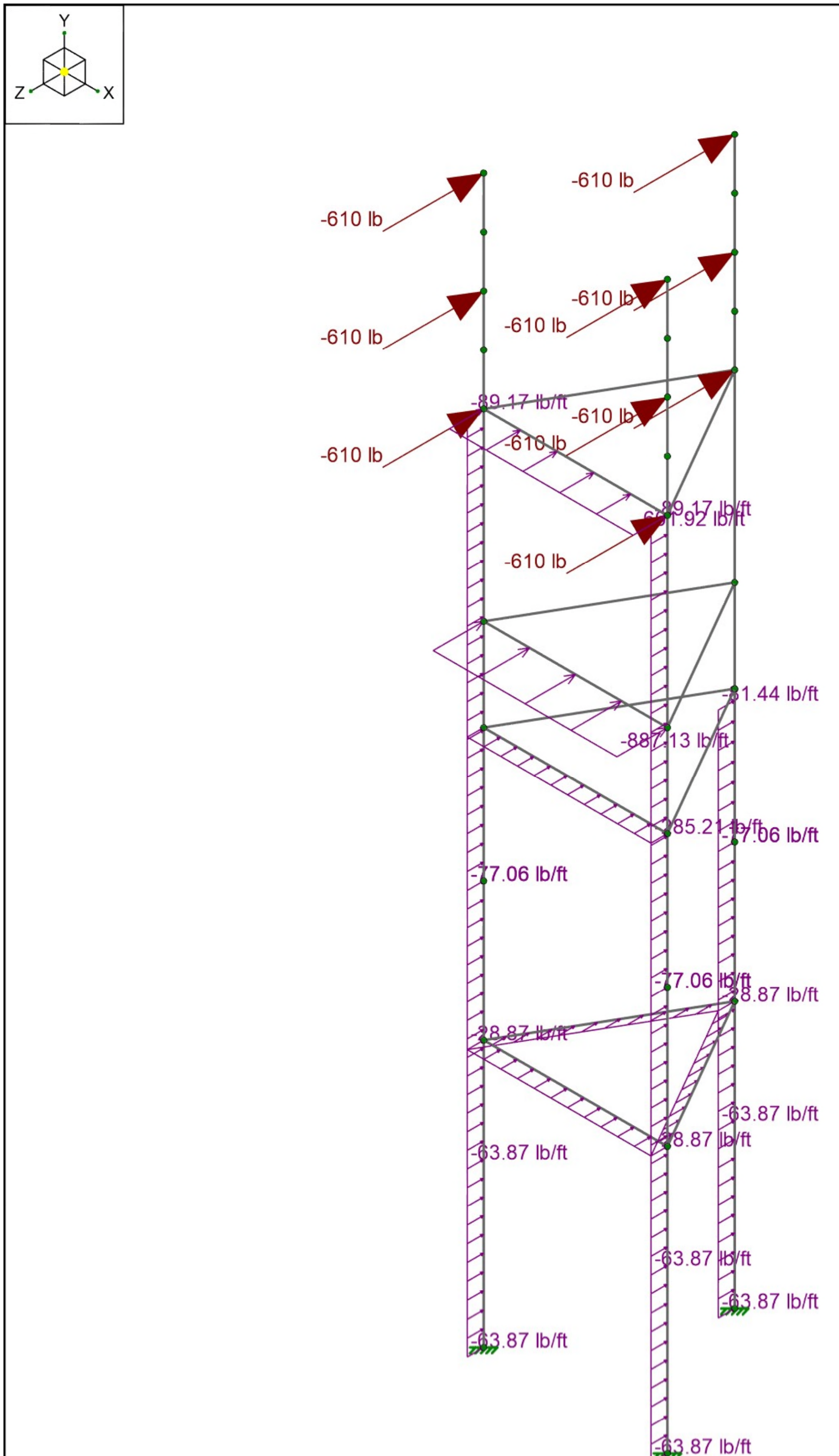
Loads: BLC 2, Live Load

ISE	VZW Plattsville Relo (553278)	SK-5
PB		Sep 12, 2022
ISE Job No. 18054		18054 Tower Model.r3d



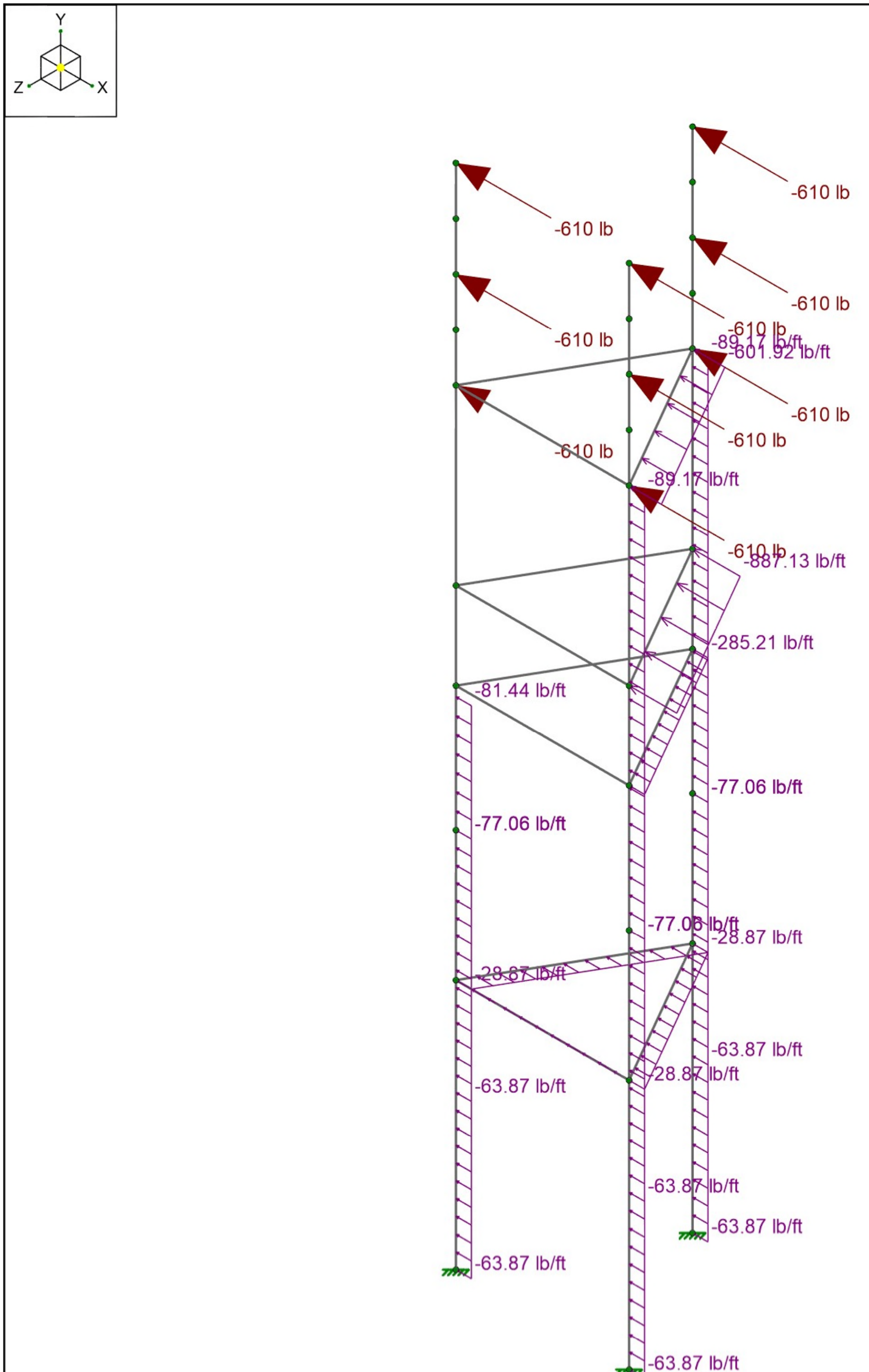
Loads: BLC 3, Snow Load

ISE	VZW Plattsville Relo (553278)	SK-7
PB		Sep 12, 2022
ISE Job No. 18054		18054 Tower Model.r3d



Loads: BLC 4, Front Wind Load

ISE	VZW Plattsville Relo (553278)	SK-8
PB		Sep 12, 2022
ISE Job No. 18054		18054 Tower Model.r3d



Loads: BLC 5, Side Wind Load

ISE	VZW Plattsville Relo (553278)	SK-9
PB		Sep 12, 2022
ISE Job No. 18054		18054 Tower Model.r3d

Node Coordinates

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
1	N37	0	0.5	0	
2	N38	18	0.5	0	
3	N41	9	0.5	-15.5885	
4	N40	18	100	0	
5	N42	9	100	-15.5885	
6	N43	0	100	0	
7	N44	0	80	0	
8	N45	9	80	-15.5885	
9	N46	18	80	0	
10	N47	18	26.5	0	
11	N48	0	26.5	0	
12	N49	9	26.5	-15.5885	
13	N50	18	62	0	
14	N51	0	62	0	
15	N52	9	62	-15.5885	
16	N53	18	53	0	
17	N54	0	53	0	
18	N55	9	53	-15.5885	
19	N59	0	40	0	
20	N60	18	40	0	
21	N61	9	40	-15.5885	
22	N62	0	90	0	
23	N63	9	90	-15.5885	
24	N64	18	90	0	
25	N65	9	95	-15.5885	
26	N66	0	95	0	
27	N67	18	95	0	
28	N68	9	85	-15.5885	
29	N69	0	85	0	
30	N70	18	85	0	

Node Boundary Conditions

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
1	N37	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N38	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N41	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e⁵°F⁻¹]	Density [lb/ft³]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A36 Gr.36	29000	11154	0.3	0.65	490	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	0.3	0.65	490	50	1.1	65	1.1
3	A992	29000	11154	0.3	0.65	490	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	0.3	0.65	527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	0.3	0.65	490	35	1.6	60	1.2
7	A1085	29000	11154	0.3	0.65	490	50	1.4	65	1.3

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	Tower Legs	48" Dia. x 1/2"	Column	HSS Pipe	A572 Gr.50	Typical	74.613	21045.48	21045.48	42090.96
2	Platform	HSS10X10X6	Beam	Tube	A500 Gr.B Rect	Typical	13.2	202	202	320

Hot Rolled Steel Section Sets (Continued)

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
3	Mast Pipe	HSS6.625X0.250	Column	HSS Pipe	A500 Gr.B RND	Typical	4.68	23.9	23.9	47.9

Member Primary Data

	Label	I Node	J Node	Section/Shape	Type	Design List	Material	Design Rule
1	M31	N46	N40	Mast Pipe	Column	HSS Pipe	A500 Gr.B RND	Typical
2	M32	N45	N42	Mast Pipe	Column	HSS Pipe	A500 Gr.B RND	Typical
3	M33	N44	N43	Mast Pipe	Column	HSS Pipe	A500 Gr.B RND	Typical
4	M34	N38	N60	Tower Legs	Column	HSS Pipe	A572 Gr.50	Typical
5	M35	N41	N61	Tower Legs	Column	HSS Pipe	A572 Gr.50	Typical
6	M36	N37	N59	Tower Legs	Column	HSS Pipe	A572 Gr.50	Typical
7	M40	N44	N45	Platform	Beam	Tube	A500 Gr.B Rect	Typical
8	M41	N45	N46	Platform	Beam	Tube	A500 Gr.B Rect	Typical
9	M42	N46	N44	Platform	Beam	Tube	A500 Gr.B Rect	Typical
10	M43	N51	N52	Platform	Beam	Tube	A500 Gr.B Rect	Typical
11	M44	N52	N50	Platform	Beam	Tube	A500 Gr.B Rect	Typical
12	M45	N50	N51	Platform	Beam	Tube	A500 Gr.B Rect	Typical
13	M46	N55	N53	Platform	Beam	Tube	A500 Gr.B Rect	Typical
14	M49	N60	N46	Tower Legs	Column	HSS Pipe	A572 Gr.50	Typical
15	M47	N53	N54	Platform	Beam	Tube	A500 Gr.B Rect	Typical
16	M50	N61	N45	Tower Legs	Column	HSS Pipe	A572 Gr.50	Typical
17	M48	N54	N55	Platform	Beam	Tube	A500 Gr.B Rect	Typical
18	M51	N59	N44	Tower Legs	Column	HSS Pipe	A572 Gr.50	Typical
19	M52	N48	N49	Platform	Beam	Tube	A500 Gr.B Rect	Typical
20	M53	N49	N47	Platform	Beam	Tube	A500 Gr.B Rect	Typical
21	M54	N47	N48	Platform	Beam	Tube	A500 Gr.B Rect	Typical

Node Loads and Enforced Displacements (BLC 1 : Dead Load)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/ft, lb*s²*ft)]
1	N62	L	Y	-375
2	N64	L	Y	-375
3	N63	L	Y	-375
4	N45	L	Y	-375
5	N46	L	Y	-375
6	N44	L	Y	-375
7	N66	L	Y	-250
8	N65	L	Y	-250
9	N67	L	Y	-250
10	N68	L	Y	-250
11	N70	L	Y	-250
12	N69	L	Y	-250

Node Loads and Enforced Displacements (BLC 4 : Front Wind Load)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/ft, lb*s²*ft)]
1	N43	L	Z	-610
2	N40	L	Z	-610
3	N42	L	Z	-610
4	N63	L	Z	-610
5	N46	L	Z	-610
6	N45	L	Z	-610
7	N44	L	Z	-610
8	N62	L	Z	-610
9	N64	L	Z	-610

Node Loads and Enforced Displacements (BLC 5 : Side Wind Load)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/ft, lb*s²*ft)]
1	N42	L	X	-610
2	N40	L	X	-610
3	N43	L	X	-610
4	N64	L	X	-610
5	N63	L	X	-610
6	N62	L	X	-610
7	N44	L	X	-610
8	N45	L	X	-610
9	N46	L	X	-610

Member Distributed Loads (BLC 1 : Dead Load)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/ft]	End Magnitude [lb/ft, F, psf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M42	Y	-27	-27	0	%100
2	M41	Y	-27	-27	0	%100
3	M40	Y	-27	-27	0	%100
4	M46	Y	-13.5	-13.5	0	%100
5	M47	Y	-13.5	-13.5	0	%100
6	M48	Y	-13.5	-13.5	0	%100
7	M45	Y	-40.5	-40.5	0	%100
8	M44	Y	-40.5	-40.5	0	%100
9	M43	Y	-40.5	-40.5	0	%100

Member Distributed Loads (BLC 4 : Front Wind Load)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/ft]	End Magnitude [lb/ft, F, psf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M36	Z	-63.87	-63.87	0	15.9
2	M34	Z	-63.87	-63.87	0	15.9
3	M35	Z	-63.87	-63.87	0	15.9
4	M36	Z	-63.87	-77.06	15.9	39.5
5	M35	Z	-63.87	-77.06	15.9	39.5
6	M34	Z	-63.87	-77.06	15.9	39.5
7	M51	Z	-77.06	-89.17	0	%100
8	M49	Z	-77.06	-89.17	0	%100
9	M50	Z	-77.06	-81.44	0	12
10	M42	Z	-601.92	-601.92	0	%100
11	M47	Z	-285.21	-285.21	0	%100
12	M54	Z	-28.87	-28.87	0	%100
13	M52	Z	-28.87	-28.87	0	%100
14	M53	Z	-28.87	-28.87	0	%100
15	M45	Z	-887.13	-887.13	0	%100

Member Distributed Loads (BLC 5 : Side Wind Load)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/ft]	End Magnitude [lb/ft, F, psf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M51	X	-77.06	-81.44	0	12
2	M49	X	-77.06	-89.17	0	%100
3	M50	X	-77.06	-89.17	0	%100
4	M34	X	-63.87	-63.87	0	15.9
5	M35	X	-63.87	-63.87	0	15.9
6	M36	X	-63.87	-63.87	0	15.9
7	M36	X	-63.87	-77.06	15.9	%100
8	M34	X	-63.87	-77.06	15.9	%100
9	M35	X	-63.87	-77.06	15.9	%100

Member Distributed Loads (BLC 5 : Side Wind Load) (Continued)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/ft]	End Magnitude [lb/ft, F, psf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
10	M41	X	-601.92	-601.92	0	%100
11	M46	X	-285.21	-285.21	0	%100
12	M52	X	-28.87	-28.87	0	%100
13	M54	X	-28.87	-28.87	0	%100
14	M53	X	-28.87	-28.87	0	%100
15	M44	X	-887.13	-887.13	0	%100

Member Distributed Loads (BLC 6 : BLC 1 Transient Area Loads)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/ft]	End Magnitude [lb/ft, F, psf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M46	Y	-38.111	-70.229	2	4
2	M46	Y	-70.229	-88.044	4	6
3	M46	Y	-88.044	-109.42	6	8
4	M46	Y	-109.42	-112.614	8	10
5	M46	Y	-112.614	-94.135	10	12
6	M46	Y	-94.135	-62.658	12	14
7	M46	Y	-62.658	-31.532	14	16
8	M46	Y	-31.532	-16.653	16	18
9	M47	Y	-1.26	-25.362	0	2
10	M47	Y	-25.362	-56.015	2	4
11	M47	Y	-56.015	-83.503	4	6
12	M47	Y	-83.503	-113.299	6	8
13	M47	Y	-113.299	-119.016	8	10
14	M47	Y	-119.016	-95.415	10	12
15	M47	Y	-95.415	-69.779	12	14
16	M47	Y	-69.779	-35.825	14	16
17	M47	Y	-35.825	-1.26	16	18
18	M48	Y	-0.913	-23.798	0	2
19	M48	Y	-23.798	-54.616	2	4
20	M48	Y	-54.616	-75.894	4	6
21	M48	Y	-75.894	-99.315	6	8
22	M48	Y	-99.315	-112.798	8	10
23	M48	Y	-112.798	-90.591	10	12
24	M48	Y	-90.591	-56.535	12	14
25	M48	Y	-56.535	-24.075	14	16
26	M48	Y	-24.075	-0.913	16	18
27	M43	Y	-0.913	-23.798	0	2
28	M43	Y	-23.798	-54.616	2	4
29	M43	Y	-54.616	-75.894	4	6
30	M43	Y	-75.894	-99.315	6	8
31	M43	Y	-99.315	-112.798	8	10
32	M43	Y	-112.798	-90.591	10	12
33	M43	Y	-90.591	-56.535	12	14
34	M43	Y	-56.535	-24.075	14	16
35	M43	Y	-24.075	-0.913	16	18
36	M44	Y	-1.25	-38.111	0	2
37	M44	Y	-38.111	-70.229	2	4
38	M44	Y	-70.229	-88.044	4	6
39	M44	Y	-88.044	-109.42	6	8
40	M44	Y	-109.42	-112.614	8	10
41	M44	Y	-112.614	-94.135	10	12
42	M44	Y	-94.135	-62.658	12	14
43	M44	Y	-62.658	-31.532	14	16
44	M44	Y	-31.532	-16.653	16	18
45	M45	Y	-1.26	-25.362	0	2
46	M45	Y	-25.362	-56.015	2	4

Member Distributed Loads (BLC 6 : BLC 1 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/ft]	End Magnitude [lb/ft, F, psf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
47	M45	Y	-56.015	-83.503	4	6
48	M45	Y	-83.503	-113.299	6	8
49	M45	Y	-113.299	-119.016	8	10
50	M45	Y	-119.016	-95.415	10	12
51	M45	Y	-95.415	-69.779	12	14
52	M45	Y	-69.779	-35.825	14	16
53	M45	Y	-35.825	-1.26	16	18
54	M46	Y	-1.25	-38.111	0	2

Member Distributed Loads (BLC 7 : BLC 2 Transient Area Loads)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/ft]	End Magnitude [lb/ft, F, psf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M47	Y	-57.32	-2.015	16	18
2	M48	Y	-1.46	-38.077	0	2
3	M48	Y	-38.077	-87.385	2	4
4	M48	Y	-87.385	-121.43	4	6
5	M48	Y	-121.43	-158.904	6	8
6	M48	Y	-158.904	-180.477	8	10
7	M48	Y	-180.477	-144.946	10	12
8	M48	Y	-144.946	-90.455	12	14
9	M48	Y	-90.455	-38.52	14	16
10	M48	Y	-38.52	-1.46	16	18
11	M43	Y	-1.46	-38.077	0	2
12	M43	Y	-38.077	-87.385	2	4
13	M43	Y	-87.385	-121.43	4	6
14	M43	Y	-121.43	-158.904	6	8
15	M43	Y	-158.904	-180.477	8	10
16	M43	Y	-180.477	-144.946	10	12
17	M43	Y	-144.946	-90.455	12	14
18	M43	Y	-90.455	-38.52	14	16
19	M43	Y	-38.52	-1.46	16	18
20	M44	Y	-2	-60.978	0	2
21	M44	Y	-60.978	-112.367	2	4
22	M44	Y	-112.367	-140.871	4	6
23	M44	Y	-140.871	-175.071	6	8
24	M44	Y	-175.071	-180.183	8	10
25	M44	Y	-180.183	-150.616	10	12
26	M44	Y	-150.616	-100.252	12	14
27	M44	Y	-100.252	-50.452	14	16
28	M44	Y	-50.452	-26.645	16	18
29	M45	Y	-2.015	-40.58	0	2
30	M45	Y	-40.58	-89.624	2	4
31	M45	Y	-89.624	-133.606	4	6
32	M45	Y	-133.606	-181.278	6	8
33	M45	Y	-181.278	-190.425	8	10
34	M45	Y	-190.425	-152.664	10	12
35	M45	Y	-152.664	-111.646	12	14
36	M45	Y	-111.646	-57.32	14	16
37	M45	Y	-57.32	-2.015	16	18
38	M46	Y	-2	-60.978	0	2
39	M46	Y	-60.978	-112.367	2	4
40	M46	Y	-112.367	-140.871	4	6
41	M46	Y	-140.871	-175.071	6	8
42	M46	Y	-175.071	-180.183	8	10
43	M46	Y	-180.183	-150.616	10	12
44	M46	Y	-150.616	-100.252	12	14

Member Distributed Loads (BLC 7 : BLC 2 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/ft]	End Magnitude [lb/ft, F, psf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
45	M46	Y	-100.252	-50.452	14	16
46	M46	Y	-50.452	-26.645	16	18
47	M47	Y	-2.015	-40.58	0	2
48	M47	Y	-40.58	-89.624	2	4
49	M47	Y	-89.624	-133.606	4	6
50	M47	Y	-133.606	-181.278	6	8
51	M47	Y	-181.278	-190.425	8	10
52	M47	Y	-190.425	-152.664	10	12
53	M47	Y	-152.664	-111.646	12	14
54	M47	Y	-111.646	-57.32	14	16

Member Distributed Loads (BLC 8 : BLC 3 Transient Area Loads)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/ft]	End Magnitude [lb/ft, F, psf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	M40	Y	-1.095	-28.558	0	2
2	M40	Y	-28.558	-65.539	2	4
3	M40	Y	-65.539	-91.073	4	6
4	M40	Y	-91.073	-119.178	6	8
5	M40	Y	-119.178	-135.358	8	10
6	M40	Y	-135.358	-108.71	10	12
7	M40	Y	-108.71	-67.842	12	14
8	M40	Y	-67.842	-28.89	14	16
9	M40	Y	-28.89	-1.095	16	18
10	M41	Y	-1.5	-45.733	0	2
11	M41	Y	-45.733	-84.275	2	4
12	M41	Y	-84.275	-105.653	4	6
13	M41	Y	-105.653	-131.304	6	8
14	M41	Y	-131.304	-135.137	8	10
15	M41	Y	-135.137	-112.962	10	12
16	M41	Y	-112.962	-75.189	12	14
17	M41	Y	-75.189	-37.839	14	16
18	M41	Y	-37.839	-19.984	16	18
19	M42	Y	-1.512	-30.435	0	2
20	M42	Y	-30.435	-67.218	2	4
21	M42	Y	-67.218	-100.204	4	6
22	M42	Y	-100.204	-135.958	6	8
23	M42	Y	-135.958	-142.819	8	10
24	M42	Y	-142.819	-114.498	10	12
25	M42	Y	-114.498	-83.735	12	14
26	M42	Y	-83.735	-42.99	14	16
27	M42	Y	-42.99	-1.512	16	18

Member Area Loads (BLC 1 : Dead Load)

	Node A	Node B	Node C	Direction	Load Direction	Magnitude [psf]
1	N51	N52	N50	Y	Two Way	-25
2	N54	N55	N53	Y	Two Way	-25

Member Area Loads (BLC 2 : Live Load)

	Node A	Node B	Node C	Direction	Load Direction	Magnitude [psf]
1	N51	N52	N50	Y	Two Way	-40
2	N54	N55	N53	Y	Two Way	-40

Member Area Loads (BLC 3 : Snow Load)

	Node A	Node B	Node C	Direction	Load Direction	Magnitude [psf]
1	N44	N45	N46	Y	Two Way	-30

Basic Load Cases

	BLC Description	Category	Y Gravity	Nodal	Distributed	Area(Member)
1	Dead Load	DL	-1	12	9	2
2	Live Load	LL				2
3	Snow Load	SL				1
4	Front Wind Load	WLZ		9	15	
5	Side Wind Load	WLX		9	15	
6	BLC 1 Transient Area Loads	None			54	
7	BLC 2 Transient Area Loads	None			54	
8	BLC 3 Transient Area Loads	None			27	

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	Dead Only	Yes	Y	1	1								
2	Live Load Only	Yes	Y	2	1								
3	Snow Load Only	Yes	Y	3	1								
4	Wind Only (0 Deg)	Yes	Y	4	1								
5	Wind Only (90 Deg)	Yes	Y	5	1								
6	1.4 DL	Yes	Y	1	1.4								
7	1.2 DL + 1.6 LL + 0.5 SL	Yes	Y	1	1.2	2	1.6	3	0.5				
8	1.2 DL + 1 LL + 1.6 SL	Yes	Y	1	1.2	2	1	3	1.6				
9	1.2 DL + 1.6 SL + 0.5 WL (0 Deg)	Yes	Y	1	1.2	3	1.6	4	0.5				
10	1.2 DL + 1.6 SL + 0.5 WL (45 Deg)	Yes	Y	1	1.2	3	1.6	4	0.354	5	0.354		
11	1.2 DL + 1.6 SL + 0.5 WL (90 Deg)	Yes	Y	1	1.2	3	1.6	5	0.5				
12	1.2 DL + 1 LL + 0.5 SL + 1 WL (0 Deg)	Yes	Y	1	1.2	4	1	2	1	3	0.5		
13	1.2 DL + 1 LL + 0.5 SL + 1 WL (45 Deg)	Yes	Y	1	1.2	4	0.707	5	0.707	2	1	3	0.5
14	1.2 DL + 1 LL + 0.5 SL + 1 WL (90 Deg)	Yes	Y	1	1.2	5	1	2	1	3	0.5		
15	0.9 DL + 1 WL (0 Deg)	Yes	Y	1	0.9	4	1						
16	0.9 DL + 1 WL (45 Deg)	Yes	Y	1	0.9	4	0.707	5	0.707				
17	0.9 DL + 1 WL (90 Deg)	Yes	Y	1	0.9	5	1						
18	D+LL+SL+WL(45Deg)	Yes	Y	1	1	2	1	3	1	4	0.707	5	0.707
19	D+LL+SL+WL(90 Deg)	Yes	Y	1	1	2	1	3	1	5	1		

Envelope Node Reactions

	Node Label		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N37	max	18106.384	17	81365.521	14	18002.51	4	837.07	12	-0.003	3	4.119	12
2		min	-468.272	12	-24120.931	4	-969.542	17	-27.458	17	-39.151	13	-828.437	14
3	N38	max	18297.732	19	41721.752	7	18002.51	4	837.043	12	28.872	4	0.354	6
4		min	-32.409	6	-41776.407	5	-19.638	6	-0.223	6	-50.58	14	-828.218	14
5	N41	max	18252.357	5	87954.317	12	18642.918	15	844.165	12	0	4	0.209	7
6		min	-4.582	7	-7.009	5	-35.499	2	-0.305	19	-0.573	14	-861.484	14
7	Totals:	max	54621.449	19	124647.327	7	54621.383	4						
8		min	0	4	0	5	0	5						

Envelope Node Displacements

	Node Label		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotation [rad]	LC	Z Rotation [rad]	LC
1	N37	max	0	12	0	4	0	17	0	17	0	13	0	14
2		min	0	17	0	14	0	4	0	12	0	3	0	12
3	N38	max	0	6	0	5	0	6	0	6	0	14	0	14
4		min	0	19	0	7	0	4	0	12	0	4	0	6
5	N41	max	0	7	0	5	0	2	0	19	0	14	0	14
6		min	0	5	0	12	0	15	0	12	0	4	0	7
7	N40	max	0.013	12	0.017	5	0.001	2	1.898e-6	2	1.062e-3	14	4.686e-2	14
8		min	-13.123	14	-0.016	7	-13.229	12	-4.7e-2	12	-6.042e-4	4	-4.578e-5	4
9	N42	max	0.002	7	0	5	0.006	11	2.019e-5	11	1.565e-5	14	4.719e-2	14
10		min	-13.415	14	-0.034	12	-13.205	12	-4.692e-2	12	0	4	-2.411e-6	8
11	N43	max	0.006	8	0.01	4	0.146	14	9.726e-5	14	8.129e-4	13	4.686e-2	14
12		min	-13.121	14	-0.031	14	-13.228	12	-4.7e-2	12	1.038e-7	3	-1.679e-5	8
13	N44	max	0.002	7	0.01	4	0.122	19	9.62e-5	5	8.129e-4	13	6.482e-3	14
14		min	-4.765	14	-0.03	14	-4.839	12	-6.615e-3	12	1.038e-7	3	-1.641e-5	8
15	N45	max	0.001	7	0	5	0.002	19	1.973e-5	11	1.565e-5	14	6.803e-3	14
16		min	-4.98	14	-0.032	12	-4.835	12	-6.536e-3	12	0	4	-2.356e-6	8
17	N46	max	0.003	12	0.017	5	0.001	7	1.898e-6	2	1.062e-3	14	6.48e-3	14
18		min	-4.767	14	-0.014	7	-4.839	12	-6.616e-3	12	-6.042e-4	4	-4.578e-5	4
19	N47	max	0	7	0.008	5	0	7	1.683e-6	7	4.034e-4	14	4.584e-3	14
20		min	-0.818	14	-0.007	7	-0.831	12	-4.676e-3	12	-2.302e-4	4	-1.708e-5	12
21	N48	max	0	12	0.004	4	0.024	14	1.145e-4	19	3.122e-4	13	4.585e-3	14
22		min	-0.818	14	-0.014	14	-0.831	12	-4.677e-3	12	2.509e-8	3	-1.422e-6	6
23	N49	max	0	7	0	5	0	19	1.814e-6	11	4.57e-6	14	4.833e-3	14
24		min	-0.857	14	-0.015	12	-0.832	12	-4.65e-3	12	0	4	-1.146e-6	7
25	N50	max	0.001	12	0.015	5	0.001	8	9.982e-7	3	9.47e-4	14	6.485e-3	14
26		min	-3.352	14	-0.013	7	-3.404	12	-6.593e-3	12	-5.513e-4	4	-1.896e-5	4
27	N51	max	0.001	7	0.009	4	0.091	19	1.381e-4	5	7.267e-4	13	6.456e-3	14
28		min	-3.349	14	-0.027	14	-3.404	12	-6.592e-3	12	7.376e-8	3	-1.543e-5	7
29	N52	max	0.001	7	0	5	0.001	14	1.595e-5	7	5.627e-7	7	6.776e-3	14
30		min	-3.507	14	-0.03	12	-3.401	12	-6.535e-3	12	-9.123e-6	5	-2.499e-6	7
31	N53	max	0.001	7	0.014	5	0.001	7	4.327e-7	3	8.251e-4	14	6.362e-3	14
32		min	-2.652	14	-0.012	7	-2.694	12	-6.479e-3	12	-4.753e-4	4	-2.362e-5	4
33	N54	max	0.001	12	0.008	4	0.075	14	1.42e-4	5	6.334e-4	13	6.329e-3	14
34		min	-2.652	14	-0.025	14	-2.694	12	-6.477e-3	12	5.932e-8	3	-1.639e-5	7
35	N55	max	0.001	7	0	5	0.001	19	1.721e-5	7	1.823e-6	14	6.672e-3	14
36		min	-2.777	14	-0.027	12	-2.694	12	-6.41e-3	12	0	4	-2.432e-6	7
37	N59	max	0.001	4	0.006	4	0.049	14	1.716e-4	14	4.759e-4	13	5.883e-3	14
38		min	-1.684	14	-0.02	14	-1.709	12	-5.966e-3	12	4.253e-8	3	-7.576e-6	4
39	N60	max	0.001	7	0.011	5	0.001	7	2.866e-6	7	6.182e-4	14	5.882e-3	14
40		min	-1.683	14	-0.01	7	-1.709	12	-5.966e-3	12	-3.551e-4	4	-5.001e-6	7
41	N61	max	0	7	0	5	0	5	5.221e-7	5	3.171e-6	14	6.146e-3	14
42		min	-1.763	14	-0.021	12	-1.711	12	-5.981e-3	12	0	4	-1.665e-6	7
43	N62	max	0.004	8	0.01	4	0.134	14	9.707e-5	14	8.129e-4	13	3.885e-2	14
44		min	-7.815	14	-0.031	14	-7.905	12	-3.899e-2	12	1.038e-7	3	-1.676e-5	8
45	N63	max	0.002	7	0	5	0.003	8	2.015e-5	11	1.565e-5	14	3.918e-2	14
46		min	-8.069	14	-0.034	12	-7.891	12	-3.891e-2	12	0	4	-2.406e-6	8
47	N64	max	0.008	12	0.017	5	0.001	7	1.898e-6	2	1.062e-3	14	3.885e-2	14
48		min	-7.817	14	-0.015	7	-7.906	12	-3.899e-2	12	-6.042e-4	4	-4.578e-5	4
49	N65	max	0.002	7	0	5	0.005	11	2.019e-5	11	1.565e-5	14	4.52e-2	14
50		min	-10.622	14	-0.034	12	-10.428	12	-4.493e-2	12	0	4	-2.411e-6	8
51	N66	max	0.005	8	0.01	4	0.14	14	9.725e-5	14	8.129e-4	13	4.487e-2	14
52		min	-10.348	14	-0.031	14	-10.447	12	-4.501e-2	12	1.038e-7	3	-1.679e-5	8
53	N67	max	0.011	12	0.017	5	0.001	7	1.898e-6	2	1.062e-3	14	4.487e-2	14
54		min	-10.35	14	-0.016	7	-10.447	12	-4.501e-2	12	-6.042e-4	4	-4.578e-5	4
55	N68	max	0.002	7	0	5	0.003	19	2.002e-5	11	1.565e-5	14	2.705e-2	14

Envelope Node Displacements (Continued)

	Node Label		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotation [rad]	LC	Z Rotation [rad]	LC
56		min	-6.039	14	-0.033	12	-5.877	12	-2.678e-2	12	0	4	-2.391e-6	8
57	N69	max	0.003	8	0.01	4	0.128	14	9.644e-5	14	8.129e-4	13	2.672e-2	14
58		min	-5.804	14	-0.031	14	-5.886	12	-2.686e-2	12	1.038e-7	3	-1.665e-5	8
59	N70	max	0.005	12	0.017	5	0.001	7	1.898e-6	2	1.062e-3	14	2.672e-2	14
60		min	-5.806	14	-0.015	7	-5.887	12	-2.686e-2	12	-6.042e-4	4	-4.578e-5	4

Envelope Member End Reactions

	Member	Member End		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-ft]	LC	y-y Moment[k-ft]	LC	z-z Moment[k-ft]	LC
1	M31	I	max	1704.57	6	0.062	12	1244.599	12	0	19	0	5	0.001	12
2			min	0	2	-1244.414	14	0	2	0	1	-18.7	12	-18.699	14
3		J	max	0	19	0.002	12	612.381	12	0	19	0	19	0	19
4			min	0	1	-612.375	14	0	2	0	1	0	1	0	1
5	M32	I	max	1704.57	6	0.003	8	1244.487	12	0	19	0	11	0	8
6			min	0	2	-1244.872	14	-0.028	11	0	1	-18.699	12	-18.703	14
7		J	max	0	19	0	8	612.377	12	0	19	0	19	0	19
8			min	0	1	-612.392	14	-0.001	11	0	1	0	1	0	1
9	M33	I	max	1704.57	6	0.023	8	1244.598	12	0	19	0.001	14	0	8
10			min	0	2	-1244.415	14	-0.135	14	0	1	-18.7	12	-18.699	14
11		J	max	0	19	0.001	8	612.381	12	0	19	0	19	0	19
12			min	0	1	-612.375	14	-0.005	14	0	1	0	1	0	1
13	M34	I	max	41721.752	7	32.422	6	18030.732	12	28.872	4	0.223	6	0.354	6
14			min	-41776.407	5	-18277.366	14	-19.646	6	-50.58	14	-837.043	12	-828.218	14
15		J	max	28641.158	7	360.096	7	14389.795	15	30.151	4	0.049	3	1.308	4
16			min	-33695.891	5	-15288.838	5	-212.114	7	-51.883	14	-224.705	12	-221.361	14
17	M35	I	max	87954.317	12	4.606	7	18841.776	12	0	4	0.305	19	0.209	7
18			min	-7.009	5	-18338.293	14	-35.5	2	-0.573	14	-844.165	12	-861.484	14
19		J	max	65465.875	12	0.685	3	16763.553	12	0.406	5	2.382	7	0.166	7
20			min	-5.315	5	-14522.508	14	-9.247	3	-0.033	7	-219.178	15	-229.458	14
21	M36	I	max	81365.521	14	468.286	12	18031.387	12	-0.003	3	27.458	17	4.119	12
22			min	-24120.931	4	-18288.216	14	-974.436	17	-39.151	13	-837.07	12	-828.437	14
23		J	max	60136.559	14	1050.287	4	14394.534	15	-0.004	3	3.248	5	2.195	7
24			min	-19455.211	4	-15812.273	14	-1741.46	14	-39.518	13	-224.522	12	-217.358	17
25	M40	I	max	6121.482	18	5202.107	19	1020.311	14	0.442	19	4.478	4	39.276	19
26			min	88.996	2	-6513.718	4	-376.209	4	-0.103	15	-8.226	14	-58.691	4
27		J	max	6121.482	18	3858.971	5	1020.311	14	0.442	19	10.14	14	62.746	12
28			min	88.996	2	-7716.546	12	-376.209	4	-0.103	15	-2.293	4	-34.868	5
29	M41	I	max	4448.791	12	8805.315	18	377.458	12	0.457	14	5.895	5	71.242	18
30			min	-1055.524	5	-1.085	2	-3992.882	5	0	3	-2.305	12	-0.001	2
31		J	max	4448.791	12	6762.763	16	5392.563	14	0.457	14	18.492	14	6.694	8
32			min	-6472.804	5	-1996.854	8	0.261	3	0	3	0.002	3	-64.48	16
33	M42	I	max	3471.806	19	1916.433	8	368.458	19	0.264	19	14.067	4	6.654	9
34			min	-4319.207	4	-7424.422	5	-5417.28	4	0	4	-2.381	19	-66.799	5
35		J	max	3471.806	19	1.141	2	5418.53	12	0.264	19	14.078	12	72.121	19
36			min	-4319.207	4	-8913.19	19	0.318	3	0	4	0.003	3	-0.002	2
37	M43	I	max	3657.459	13	6345.834	14	722.622	14	0.465	14	4.02	4	43.539	14
38			min	-180.53	3	-6524.989	4	-335.903	4	-0.051	4	-5.629	14	-58.771	4
39		J	max	3657.459	13	3873.927	5	722.622	14	0.465	14	7.378	14	67.791	12
40			min	-180.53	3	-9081.623	12	-335.903	4	-0.051	4	-2.026	4	-34.929	5
41	M44	I	max	4642.189	13	10102.678	13	336.201	12	0.451	19	15.18	5	75.894	13
42			min	-193.957	3	-0.449	3	-6488.11	5	0	1	-2.029	12	0.001	3
43		J	max	3508.917	12	6524.989	4	7341.87	14	0.451	19	22.863	14	11.235	7
44			min	-5076.099	5	-3274.38	7	0.03	3	0	1	0	3	-62.401	16
45	M45	I	max	4309.302	14	3116.493	7	140.776	14	0.377	14	21.959	4	11.026	7
46			min	-1226.559	4	-7428.986	5	-7984.17	4	0	4	-0.415	14	-66.878	5
47		J	max	4309.302	14	0.49	3	7984.591	12	0.377	14	21.963	12	76.674	14

Envelope Member End Reactions (Continued)

	Member	Member End		Axial[lb]	LC	y Shear[lb]	LC	z Shear[lb]	LC	Torque[k-ft]	LC	y-y Moment[k-ft]	LC	z-z Moment[k-ft]	LC
48			min	-1226.559	4	-10207.352	14	-0.027	3	0	4	0	3	0	3
49	M46	I	max	2836.991	5	9692.249	13	277.66	4	0.478	14	2.492	5	73.95	13
50			min	-979.375	7	-0.38	3	-1924.271	5	0	1	-1.64	4	-0.002	3
51		J	max	270.101	5	6415.6	4	2522.145	14	0.478	14	7.942	13	10.354	7
52			min	-979.375	7	-2982.574	7	-0.055	3	0	1	0	3	-61.986	16
53	M49	I	max	28641.158	7	359.885	7	14369.291	15	30.151	4	0.049	3	1.308	4
54			min	-33695.891	5	-15259.762	5	-211.984	7	-51.883	14	-224.705	12	-221.361	14
55		J	max	5824.348	8	1000.927	8	4173.388	16	9.588	4	43.075	16	65.37	5
56			min	-11277.113	5	-6709.1	5	-582.042	8	-20.873	14	-5.794	8	-9.937	8
57	M47	I	max	2207.308	16	2824.603	7	65.704	14	0.387	14	5.983	12	10.144	7
58			min	-975.997	7	-7297.325	5	-2567.015	12	0	4	0	1	-65.697	5
59		J	max	2207.308	16	0.381	3	2566.89	4	0.387	14	5.982	4	74.597	14
60			min	-975.997	7	-9782.971	14	-0.218	8	0	4	-0.002	8	-0.002	3
61	M50	I	max	65465.875	12	0.685	3	16796.722	12	0.406	5	2.382	7	0.166	7
62			min	-5.315	5	-14521.928	14	-9.247	3	-0.033	7	-219.178	15	-229.458	14
63		J	max	17384.014	12	0	4	10023.591	12	0	4	89.966	12	17.379	19
64			min	-7.032	5	-1962.97	19	-41.232	5	-4.267	14	-0.052	5	-0.002	2
65	M48	I	max	120.902	4	5995.617	14	546.638	14	0.495	14	3.358	4	42.12	14
66			min	-2289.043	14	-6415.6	4	-277.66	4	-0.062	15	-4.163	14	-57.797	4
67		J	max	120.902	4	3816.062	5	546.638	14	0.495	14	5.676	14	65.909	12
68			min	-2289.043	14	-8679.539	12	-277.66	4	-0.062	15	-1.64	4	-34.422	5
69	M51	I	max	60136.559	14	1050.373	4	14373.971	15	-0.004	3	3.248	5	2.195	7
70			min	-19455.211	4	-15840.75	14	-1741.489	14	-39.518	13	-224.522	12	-217.358	17
71		J	max	15708.721	19	2671.017	4	3597.27	4	-0.005	3	32.579	4	72.745	19
72			min	-6514.241	4	-8503.467	19	-2948.876	19	-15.614	18	-34.498	19	-29.091	4
73	M52	I	max	6.509	3	3327.32	14	347.015	5	0.374	14	1.228	12	26.769	14
74			min	-1169.085	13	-4665.747	4	-3.629	12	-0.037	12	-1.4	5	-42.02	4
75		J	max	6.509	3	2782.071	5	-0.06	3	0.374	14	0.796	5	43.89	12
76			min	-1080.591	14	-5227.511	12	-263.459	12	-0.037	12	-1.175	12	-25.087	5
77	M53	I	max	954.233	5	5830.429	13	263.176	4	0.374	14	0.003	7	49.36	13
78			min	-424.004	12	-0.575	2	-216.98	19	0	3	-1.173	4	-0.002	3
79		J	max	694.403	5	4901.946	16	233.45	5	0.374	14	1.226	4	1.827	6
80			min	-874.044	12	-609.195	6	-0.353	7	0	3	-0.003	7	-46.453	16
81	M54	I	max	924.617	4	609.115	6	-0.058	3	0.31	17	1.329	19	1.826	6
82			min	-482.781	14	-5300.167	5	-260.724	18	0	7	-0.053	4	-47.702	5
83		J	max	924.617	4	0.487	2	259.83	4	0.31	17	-0.001	3	49.676	14
84			min	-255.08	7	-5867.256	14	-109.095	19	0	7	-0.634	19	-0.002	3

Envelope AISC 15TH (360-16): LRFD Member Steel Code Checks

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1	M31	HSS6.625X0.250	0.632	0	12	0.024	10		12	88488.105	176904	29.988	29.988	2.598	H1-1b
2	M32	HSS6.625X0.250	0.632	0	14	0.024	10		14	88488.105	176904	29.988	29.988	1.978	H1-1b
3	M33	HSS6.625X0.250	0.632	0	12	0.024	10		12	88488.105	176904	29.988	29.988	2.598	H1-1b
4	M34	48" Dia. x 1/2"	0.231	0	16	0.031	0		14	2.83897e+6	3.35758e+6	3705.566	3705.566	1.469	H1-1b
5	M35	48" Dia. x 1/2"	0.243	0	12	0.019	0		12	2.83897e+6	3.35758e+6	3705.566	3705.566	1.434	H1-1b
6	M36	48" Dia. x 1/2"	0.238	0	14	0.027	0		13	2.83897e+6	3.35758e+6	3705.566	3705.566	1.464	H1-1b
7	M40	HSS10X10X6	0.404	18	12	0.05	18	y	12	445149.418	546480	162.84	162.84	2.291	H1-1b
8	M41	HSS10X10X6	0.497	18	16	0.06	0	y	18	445149.418	546480	162.84	162.84	2.286	H1-1b
9	M42	HSS10X10X6	0.473	18	19	0.059	18	y	19	445149.793	546480	162.84	162.84	2.296	H1-1b
10	M43	HSS10X10X6	0.433	18	12	0.059	18	y	12	445149.418	546480	162.84	162.84	2.312	H1-1b
11	M44	HSS10X10X6	0.528	0	13	0.068	0	y	13	445149.418	546480	162.84	162.84	2.312	H1-1b
12	M45	HSS10X10X6	0.489	18	14	0.069	18	y	14	445149.793	546480	162.84	162.84	2.314	H1-1b
13	M46	HSS10X10X6	0.459	0	13	0.065	0	y	13	445149.418	546480	162.84	162.84	2.308	H1-1b
14	M49	48" Dia. x 1/2"	0.064	0	5	0.028	0		5	2.83476e+6	3.35758e+6	3705.566	3705.566	3	H1-1b
15	M47	HSS10X10X6	0.467	18	14	0.066	18	y	14	445149.793	546480	162.84	162.84	2.31	H1-1b

Envelope AISC 15TH (360-16): LRFD Member Steel Code Checks (Continued)

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
16	M50	48" Dia. x 1/2"	0.071	0	12	0.017	0		12	2.83476e+6	3.35758e+6	3705.566	3705.566	1.553	H1-1b
17	M48	HSS10X10X6	0.415	18	12	0.056	18	y	12	445149.418	546480	162.84	162.84	2.307	H1-1b
18	M51	48" Dia. x 1/2"	0.069	0	14	0.024	0		13	2.83476e+6	3.35758e+6	3705.566	3705.566	3	H1-1b
19	M52	HSS10X10X6	0.277	18	12	0.034	18	y	12	445149.418	546480	162.84	162.84	2.286	H1-1b
20	M53	HSS10X10X6	0.309	0	13	0.04	0	y	13	445149.418	546480	162.84	162.84	2.287	H1-1b
21	M54	HSS10X10X6	0.309	18	14	0.04	18	y	14	445149.793	546480	162.84	162.84	2.286	H1-1b

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Phoenix, Arizona 85076
Phone: 602-403-8614
FAX: 623-321-1283

JOB : VZW Platsville Relo
CLIENT : Larson
ISE JOB NO: 18054
DATE : 12-09-2022
BY : PB

HSS 10"x10"x3/8" To Leg Connection

LOADING

Axial		6.47	k
Shear		11.00	k
Moment		76.70	k-ft

PROPERTIES

	F_y	F_u
Plate	36	58
Beam	46	58
Bolt	-	120

ELEMENT PROPERTIES

Plate thickness	t	1	in
Flange Width	d	17	in

BRACING DETAILS
HSS10"X10"X3/8" - A500 GR. B

BOLT DETAILS

Bolt Type		A325	
Bolt Diameter	d_b	0.75	in
Bolt Area	A_b	0.442	in^2
# Bolts	N	20	
Edge Distance		2	in

HSS LEG
48" O.D. X 1/2" A500 GR. B

Bolts
(20) 3/4"Dia. A325 Bolts

WELD AT HSS Tube

Weld Size	0.375	in			
Allowable Weld Force	21.508	K/in	[(0.707)Twf+Twg](0.48)Fyw		
Weld Force	2.593	K/in	OK	12.1%	

Use 3/8" Weld

BOLT CAPACITY

Bolt Shear	V_u	11.77	k	OK	65.8%	AISC Table 7-1
Bolt Shear Capacity	V_a	17.90	k			

AVAILABLE STEEL BEARING/TEAROUT - PLATE

For Edge Distance (2")	78.30	k	OK	15.0%	AISC Table 7-5
For Bolt Spacing (3")	62.00	k	OK	19.0%	AISC Table 7-4
Bolt Tension	11.77	k			
Bolt Tension Capacity	29.80	k	OK	39.5%	AISC Table 7-2

PLATE

Plate Bending	Mpb=	131.44	k-in	(M/14")*Arm
Bend Line	L=	18.00	in	
Required Plate Thickness	Tpl =	0.81	in	$Tpl = [4M/\varnothing F_y L]^{1/2}$

Use 1"x 18"x 18" Square A572-50 Plate

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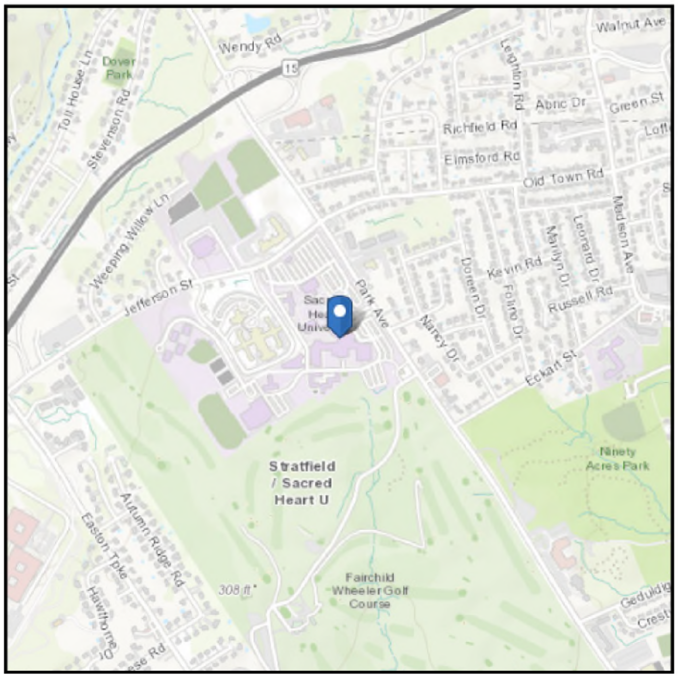
				Sum A_x	Sum A_y	Sum A_z	Sum P_x	Sum P_y	Sum P_z	Bolt Loads and Stresses				
				20	20	20	-6.5	0.0	11.0			LOAD		STRESS
Bolt #:	X	Y	Z	A_x	A_y	A_z	P_x	P_y	P_z	Theta	Pz'	KIPS		KSI
1	1.00	7.00	2.00	1.00	1.00	1.00	2.945	0.000	0.550	9	1	2.994	T	0.75
2	1.00	7.00	4.00	1.00	1.00	1.00	6.213	0.000	0.550	27	0	6.232	T	1.57
3	1.00	7.00	-2.00	1.00	1.00	1.00	-3.592	0.000	0.550	45	0	3.613	C	0.91
4	1.00	7.00	-4.00	1.00	1.00	1.00	-6.860	0.000	0.550	63	0	6.864	C	1.73
5	1.00	2.00	7.00	1.00	1.00	1.00	11.115	0.000	0.550	81	0	11.115	T	2.80
6	1.00	4.00	7.00	1.00	1.00	1.00	11.115	0.000	0.550	99	0	11.115	T	2.80
7	1.00	-2.00	7.00	1.00	1.00	1.00	11.115	0.000	0.550	117	0	11.118	T	2.80
8	1.00	-4.00	7.00	1.00	1.00	1.00	11.115	0.000	0.550	135	0	11.122	T	2.80
9	1.00	-7.00	2.00	1.00	1.00	1.00	2.945	0.000	0.550	153	0	2.985	T	0.75
10	1.00	-7.00	4.00	1.00	1.00	1.00	6.213	0.000	0.550	171	-1	6.236	T	1.57
11	1.00	-7.00	-2.00	1.00	1.00	1.00	-3.592	0.000	0.550	189	-1	3.632	C	0.91
12	1.00	-7.00	-4.00	1.00	1.00	1.00	-6.860	0.000	0.550	207	0	6.877	C	1.73
13	1.00	-2.00	-7.00	1.00	1.00	1.00	-11.762	0.000	0.550	225	0	11.768	C	2.96
14	1.00	-4.00	-7.00	1.00	1.00	1.00	-11.762	0.000	0.550	243	0	11.764	C	2.96
15	1.00	2.00	-7.00	1.00	1.00	1.00	-11.762	0.000	0.550	261	0	11.762	C	2.96
16	1.00	4.00	-7.00	1.00	1.00	1.00	-11.762	0.000	0.550	279	0	11.762	C	2.96
17	1.00	7.00	0.00	1.00	1.00	1.00	-0.324	0.000	0.550	297	0	0.409	C	0.10
18	1.00	0.00	7.00	1.00	1.00	1.00	11.115	0.000	0.550	315	0	11.122	T	2.80
19	1.00	-7.00	0.00	1.00	1.00	1.00	-0.324	0.000	0.550	333	0	0.587	C	0.15
20	1.00	0.00	-7.00	1.00	1.00	1.00	-11.762	0.000	0.550	351	1	11.774	C	2.96

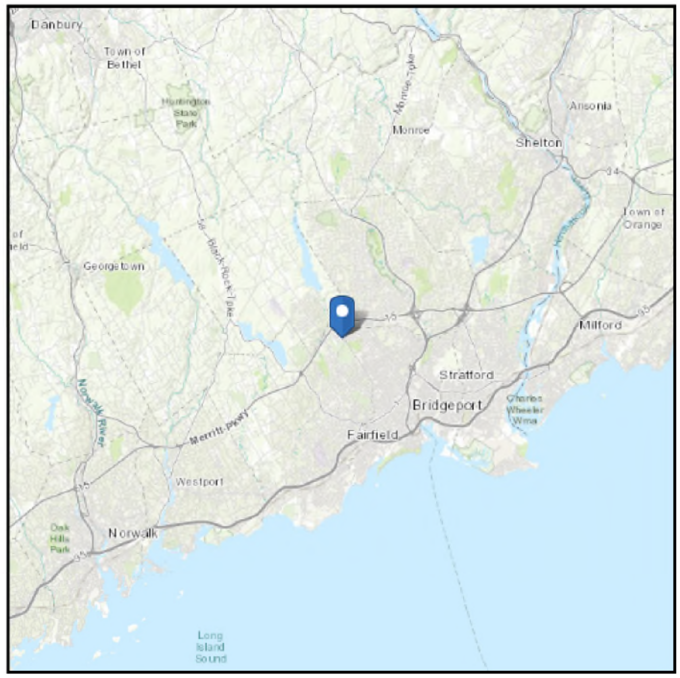
ASCE 7 Hazards Report

Address:
5151 Park Ave
Fairfield, Connecticut
06825

Standard: ASCE/SEI 7-10
Risk Category: II
Soil Class: C - Very Dense Soil and Soft Rock

Elevation: 270.11 ft (NAVD 88)
Latitude: 41.221522
Longitude: -73.241725





Wind

Results:

Wind Speed	122 Vmph
10-year MRI	76 Vmph
25-year MRI	86 Vmph
50-year MRI	92 Vmph
100-year MRI	99 Vmph

Data Source: ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1–CC-4, and Section 26.5.2, incorporating errata of March 12, 2014

Date Accessed: Tue Aug 16 2022

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-10 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is in a hurricane-prone region as defined in ASCE/SEI 7-10 Section 26.2. Glazed openings need not be protected against wind-borne debris.

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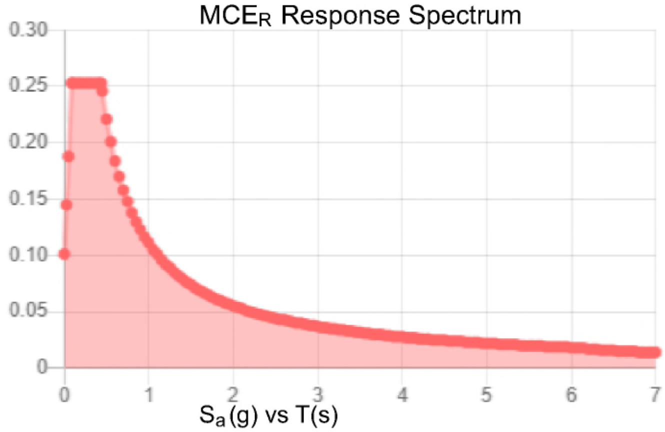
Seismic

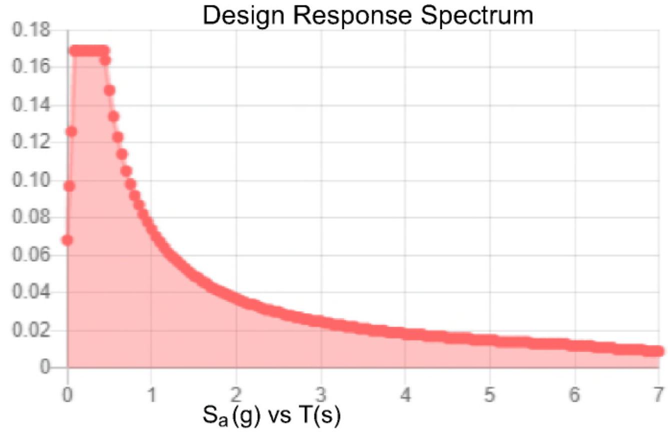
Site Soil Class: C - Very Dense Soil and Soft Rock

Results:

S_S :	0.211	S_{DS} :	0.169
S_1 :	0.065	S_{D1} :	0.074
F_a :	1.2	T_L :	6
F_v :	1.7	PGA :	0.115
S_{MS} :	0.253	PGA_M :	0.138
S_{M1} :	0.111	F_{PGA} :	1.2
		I_e :	1

Seismic Design Category B





Data Accessed: **Tue Aug 16 2022**

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-10, incorporating Supplement 1 and errata of March 31, 2013, and ASCE/SEI 7-10 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-10 Ch. 21 are available from USGS.

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Monopole Flange Plate Connection

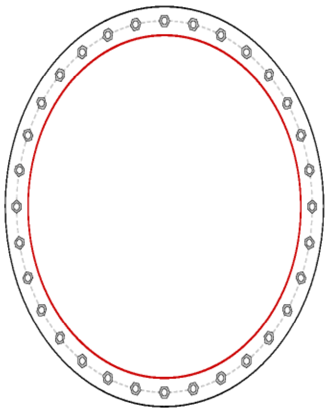
Elevation = 40 ft.

BU #	
Site Name	
Order #	

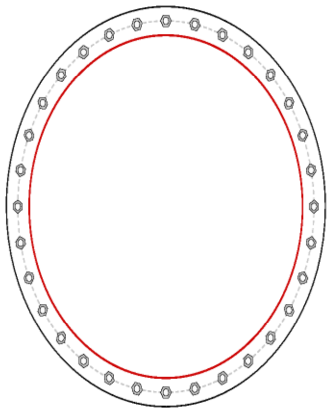
TIA-222 Revision	H

Applied Loads	
Moment (kip-ft)	1852.78
Axial Force (kips)	65.47
Shear Force (kips)	16.76

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(32) 1" ø bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 52" BC

Top Plate Data

56" OD x 2" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Bottom Plate Data

56" OD x 2" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Top Stiffener Data

N/A

Bottom Stiffener Data

N/A

Top Pole Data

48" x 0.5" round pole (A572-50; Fy=50 ksi, Fu=65 ksi)

Bottom Pole Data

48" x 0.5" round pole (A572-50; Fy=50 ksi, Fu=65 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	51.39	
Allowable (kips)	54.53	
Stress Rating:	**94.2%**	Pass

Top Plate Capacity

Max Stress (ksi):	15.04	(Flexural)
Allowable Stress (ksi):	45.00	
Stress Rating:	**33.4%**	Pass
Tension Side Stress Rating:	**25.1%**	Pass

Bottom Plate Capacity

Max Stress (ksi):	15.04	(Flexural)
Allowable Stress (ksi):	45.00	
Stress Rating:	**33.4%**	Pass
Tension Side Stress Rating:	**25.1%**	Pass

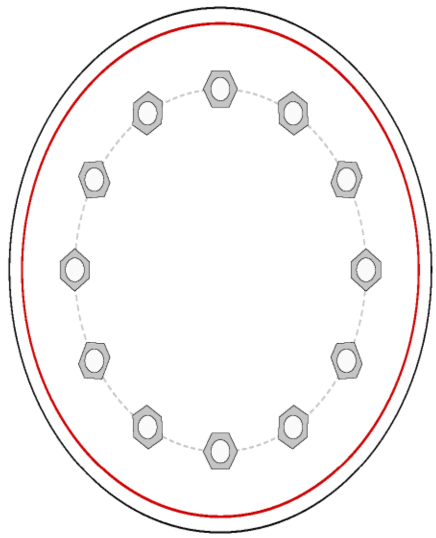
Analysis Date: 9/25/2022

Monopole Base Plate Connection

Site Info	
BU #	
Site Name	
Order #	

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	0

Applied Loads	
Moment (kip-ft)	1852.78
Axial Force (kips)	87.96
Shear Force (kips)	18.91



Connection Properties

Anchor Rod Data

(12) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 34.5" BC

Base Plate Data

50" ID x 3" Plate (A572-60; Fy=60 ksi, Fu=75 ksi)

Stiffener Data

N/A

Pole Data

48" x 0.5" round pole (A572-50; Fy=50 ksi, Fu=65 ksi)

Analysis Results

Anchor Rod Summary *(units of kips, kip-in)*

Pu_c = 221.77	ϕPn_c = 243.75	**Stress Rating**
Vu = 1.58	ϕVn = 73.13	**91.0%**
Mu = n/a	ϕMn = n/a	Pass

Base Plate Summary

Max Stress (ksi):	50.07	(Flexural)
Allowable Stress (ksi):	54	
Stress Rating:	**92.7%**	Pass

Analysis Date: 9/25/2022

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Phoenix, Arizona 85076
Phone: 602-403-8614
FAX: 623-321-1283

Job: Verizon Platsville Relo
Project: ISE Job No. 18054
Client: Larson
Date: September 12, 2022
Designed by: PB

Pole to Base Weld Connection

Flange Ring Assembly

Dp =	48.000	inch	
Factored Moment: Mu =	861.484	Kip-Ft	Factored Moment
Factored Base Shear: V =	18.907	Kips	Factored Shear
Groove Weld Thickness: Twg =	0.375	inch	Groove Thickness
Filet Weld Thickness: Twf =	0.375	linch	Filet Weld Thickness
Weld Material Yield: Fyw =	70.000	ksi	
Allowable Weld Force: Fallow =	21.508	kip/inch	Fallow = [(.707)Twf + Twg] (.48)Fyw
Weld Force: Fw =	4.285	kip/inch	Fw = (3/4)Sqrt [{Mu/p(Dp^2/4)}^2 + {V/pDp}^2]
Base Weld Stress Ratio =	19.921	%	

DESIGN:
APPLY GROOVE WELD AND APPLY 0.375" FILET CAP WELD TO POLE AT TOP OF PLATE

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Job: Verizon Platsville Relo
Project: ISE Job No. 18054
Client: Larson
Date: September 25, 2022
Designed by: PB

Anchor Bolt Development (ACI 318)

Anchor bolts are mechanically anchored with nuts and load plates at bottom of bolts.
Failure cones emanate at 35 degrees from top of nut.
The failure cones from the 4 bolts overlap and exit the sides of the caisson.
Concrete is assumed to crack and carry no load so,
vertical reinforcing steel must be developed to transfer bolt loads.
Calculations presented below determine the required length of anchor bolt embedment
and reinforcing development necessary to transfer the design loads.

Minimum Development Length per ACI 318 12.2.2, Eq 12-1.

$l_d = d_b[f_y/\sqrt{(f_c)}](3/40)(\varphi_t\varphi_e\lambda/2.5)$:

where; fy = 60,000psi, f'c = 4000 psi, and φtφeλ = 1.0,

$l_d = 28.46\ d_b$ For # 8 Bars l_d = 28.46 in.

Anchor Bolts are 2.25" dia. by 84" Long with 72" Embedment on 34.5" Bolt Circle

Reinforcing Cage Diameter = 48 in.

Minimum Required AB Depth

cover = 3.00 in.
bottom grip = 3.00 in.
½(Cage-BC) = 6.75 in.

$l_{min} = l_d$ + cover + bottom grip + ½(Cage-BC)/tan55 = 39.19 in.

Bolt Embedment Provided = 72.00 in.

Anchor bolts are restrained by fully developed reinforcement satisfying the requirements of 318 Appendix D.

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Job: Verizon Platsville Relo
Project: ISE Job No. 18054
Client: Larson
Date: September 25, 2022
Designed by: PB

Foundation Design -

	M (kip-ft)	V (kips)	A (kips)
Unfactored Base Reactions	860.753	18.907	76.213
Factored Base Reactions	861.484	18.907	87.955

Design per Geotechnical Investigation Report:

Terracon Geotechnical Engineering Report #J1225042 dated 08/10/2022

Use 54" diameter x 18'-0" deep pier w/ 6" above grade projection

Reinforcing: Use (16) - #8 Vertical

Per LPile Analysis Results:

Ultimate factored Pier Moment Capacity w/ φ = 0.65 is 1021.083 Ft-Kip

Maximum Pier Moment Load Case 3 (1.2D + 1.0 W)

M = 925.098 Ft-Kip

Pier Head Deflection for Load Case 1 (Unfactored Wind Force) = 0.583"

Plots of deflection, Bending Moment and Shear follow the LPile results printout.

The following Load Cases are plotted:

Load Case 1 - Unfactored Design Wind Force Base Reactions (122 mph)

Load Case 2 - Factored Design Wind Force Base Reactions (122 mph) 1.2D + 1.0 W

Project: Verizon Plattsville Relo ISE #: 18054 By: PB Date: 9/25/22

ANCHORAGE

Factored Leg reactions from RISA-3D results,

Max Downward = 87.955 k
Max Shear = 18.907 k
Max Moment = 861.484 k-ft

Use 1/2 Moment Capacity of 48" x ½" Pole
Moment = 1852.78 k-ft

Use (12) 2.25"∅ x 84"ASTM A615-75 Bolts on 34.5"∅ Bolt Circle with 60"Embedment
3 x 50"∅ A572 Gr 60 Base Plate

Calculations attached to report

FOUNDATION

Unfactored Leg reactions from RISA-3D results,

Max Downward = 76.213 k
Max Shear = 18.907 k
Max Moment = 860.753 k-ft

Use 54"∅ Pier x 18' deep pier w/ 6" above grade projection per leg
w/ (16) #8 vertical reinforcement bars.

Per Terracon Geotechnical Engineering Report #J1225042 dated 08/10/2022-

Allowable End Bearing Pressure = 20 KSF
Axial Load = 76.213 K
Face Area = 15.90 sq. ft
Bearing Pressure = 4.80 KSF < 20 KSF OK

Lpile was used for lateral analysis. Calculations attached to report.

```
================================================================================

                     LPile for Windows, Version 2019-11.009

                 Analysis of Individual Piles and Drilled Shafts
                Subjected to Lateral Loading Using the p-y Method
                           © 1985-2019 by Ensoft, Inc.
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================================================================================

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--------------------------------------------------------------------------------
                             Files Used for Analysis
--------------------------------------------------------------------------------

Path to file locations:
\Users\Prash\Desktop\ISE Working\18054 VZW Plattsville Relo (553278)\New
Work\Design Report\Calcs\LPile\

Name of input data file:
18054 Lpile.lp11d

Name of output report file:
18054 Lpile.lp11o

Name of plot output file:
18054 Lpile.lp11p

Name of runtime message file:
18054 Lpile.lp11r



--------------------------------------------------------------------------------
                            Date and Time of Analysis
--------------------------------------------------------------------------------
```

Date: September 12, 2022 Time: 8:33:45

Problem Title

Project Name: Verizon Plattsville Relo

Job Number: ISE #18054

Client: Larson Valmont

Engineer: PB

Description: 100' SST

Program Options and Settings

Computational Options:
- Conventional Analysis

Engineering Units Used for Data Input and Computations:
- US Customary System Units (pounds, feet, inches)

Analysis Control Options:
- Maximum number of iterations allowed = 500
- Deflection tolerance for convergence = 1.0000E-05 in
- Maximum allowable deflection = 100.0000 in
- Number of pile increments = 100

Loading Type and Number of Cycles of Loading:
- Static loading specified

- Use of p-y modification factors for p-y curves not selected
- Analysis uses layering correction (Method of Georgiadis)
- No distributed lateral loads are entered
- Loading by lateral soil movements acting on pile not selected
- Input of shear resistance at the pile tip not selected
- Input of moment resistance at the pile tip not selected
- Input of side resistance moment along pile not selected
- Computation of pile-head foundation stiffness matrix not selected
- Push-over analysis of pile not selected
- Buckling analysis of pile not selected

Output Options:
- Output files use decimal points to denote decimal symbols.
- Values of pile-head deflection, bending moment, shear force, and soil reaction are printed for full length of pile.
- Printing Increment (nodal spacing of output points) = 1
- No p-y curves to be computed and reported for user-specified depths
- Print using wide report formats

Pile Structural Properties and Geometry

Number of pile sections defined = 1
Total length of pile = 18.000 ft
Depth of ground surface below top of pile = 0.0000 ft

Pile diameters used for p-y curve computations are defined using 2 points.

p-y curves are computed using pile diameter values interpolated with depth over the length of the pile. A summary of values of pile diameter vs. depth follows.

Point No.	Depth Below Pile Head feet	Pile Diameter inches
1	0.000	54.0000
2	18.000	54.0000

Input Structural Properties for Pile Sections:

Pile Section No. 1:

Section 1 is a round drilled shaft, bored pile, or CIDH pile
Length of section = 18.000000 ft

```
   Shaft Diameter                                          =    54.000000 in
   Shear capacity of section                               =       0.0000 lbs



--------------------------------------------------------------------------------
                       Ground Slope and Pile Batter Angles
--------------------------------------------------------------------------------

Ground Slope Angle                                         =        0.000 degrees
                                                           =        0.000 radians

Pile Batter Angle                                          =        0.000 degrees
                                                           =        0.000 radians


--------------------------------------------------------------------------------
                       Soil and Rock Layering Information
--------------------------------------------------------------------------------

The soil profile is modelled using 5 layers

Layer 1 is modelled using an elastic subgrade modulus

   Distance from top of pile to top of layer               =       0.0000 ft
   Distance from top of pile to bottom of layer            =     2.250000 ft
   Effective unit weight at top of layer                   =   120.000000 pcf
   Effective unit weight at bottom of layer                =   120.000000 pcf
   Elastic subgrade at top of layer                        =       0.0000 pci
   Elastic subgrade at bottom of layer                     =       0.0000 pci


Layer 2 is sand, p-y criteria by Reese et al., 1974

   Distance from top of pile to top of layer               =     2.250000 ft
   Distance from top of pile to bottom of layer            =     3.500000 ft
   Effective unit weight at top of layer                   =   120.000000 pcf
   Effective unit weight at bottom of layer                =   120.000000 pcf
   Friction angle at top of layer                          =    32.000000 deg.
   Friction angle at bottom of layer                       =    32.000000 deg.
   Subgrade k at top of layer                              =       0.0000 pci
   Subgrade k at bottom of layer                           =       0.0000 pci

   NOTE: Default values for subgrade k will be computed for this layer.

Layer 3 is sand, p-y criteria by Reese et al., 1974

   Distance from top of pile to top of layer               =     3.500000 ft
   Distance from top of pile to bottom of layer            =    15.000000 ft
```

```
   Effective unit weight at top of layer                =   120.000000 pcf
   Effective unit weight at bottom of layer             =   120.000000 pcf
   Friction angle at top of layer                       =    34.000000 deg.
   Friction angle at bottom of layer                    =    34.000000 deg.
   Subgrade k at top of layer                           =       0.0000 pci
   Subgrade k at bottom of layer                        =       0.0000 pci

   NOTE: Default values for subgrade k will be computed for this layer.

Layer 4 is sand, p-y criteria by Reese et al., 1974

   Distance from top of pile to top of layer            =    15.000000 ft
   Distance from top of pile to bottom of layer         =    16.000000 ft
   Effective unit weight at top of layer                =    57.600000 pcf
   Effective unit weight at bottom of layer             =    57.600000 pcf
   Friction angle at top of layer                       =    34.000000 deg.
   Friction angle at bottom of layer                    =    34.000000 deg.
   Subgrade k at top of layer                           =       0.0000 pci
   Subgrade k at bottom of layer                        =       0.0000 pci

   NOTE: Default values for subgrade k will be computed for this layer.

Layer 5 is sand, p-y criteria by Reese et al., 1974

   Distance from top of pile to top of layer            =    16.000000 ft
   Distance from top of pile to bottom of layer         =    18.000000 ft
   Effective unit weight at top of layer                =    82.600000 pcf
   Effective unit weight at bottom of layer             =    82.600000 pcf
   Friction angle at top of layer                       =    38.000000 deg.
   Friction angle at bottom of layer                    =    38.000000 deg.
   Subgrade k at top of layer                           =       0.0000 pci
   Subgrade k at bottom of layer                        =       0.0000 pci

   NOTE: Default values for subgrade k will be computed for this layer.

 (Depth of the lowest soil layer extends 0.000 ft below the pile tip)



--------------------------------------------------------------------------------
                        Summary of Input Soil Properties
--------------------------------------------------------------------------------

Layer          Soil Type           Layer      Effective    Angle of
Elastic
 Num.            Name              Depth       Unit Wt.    Friction        kpy
Subgrade
          (p-y Curve Type)          ft           pcf          deg.         pci
Mod. pci
-----   ------------------   ----------   ----------   ----------   ----------
```

```
----------
  1           Elastic                0.00     120.0000       --           --
    0.00
              Subgrade             2.2500     120.0000       --           --
    0.00
  2            Sand                2.2500     120.0000      32.0000     default
  --
          (Reese, et al.)          3.5000     120.0000      32.0000     default
  --
  3            Sand                3.5000     120.0000      34.0000     default
  --
          (Reese, et al.)         15.0000     120.0000      34.0000     default
  --
  4            Sand               15.0000      57.6000      34.0000     default
  --
          (Reese, et al.)         16.0000      57.6000      34.0000     default
  --
  5            Sand               16.0000      82.6000      38.0000     default
  --
          (Reese, et al.)         18.0000      82.6000      38.0000     default
  --
```

Static Loading Type

Static loading criteria were used when computing p-y curves for all analyses.

Pile-head Loading and Pile-head Fixity Conditions

Number of loads specified = 2

```
Load    Load         Condition               Condition            Axial Thrust
Compute Top y     Run Analysis
 No.    Type            1                        2                 Force, lbs
vs. Pile Length
-----   ----   --------------------   ----------------------   ----------------
---------------    ------------
   1     1     V =       18907. lbs   M =    10329036. in-lbs           76213.
     No               Yes
   2     1     V =       18907. lbs   M =    10337808. in-lbs           87955.
     No               Yes
```

V = shear force applied normal to pile axis
M = bending moment applied to pile head

```
y = lateral deflection normal to pile axis
S = pile slope relative to original pile batter angle
R = rotational stiffness applied to pile head
Values of top y vs. pile lengths can be computed only for load types with
specified shear loading (Load Types 1, 2, and 3).
Thrust force is assumed to be acting axially for all pile batter angles.



--------------------------------------------------------------------------------
     Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness
--------------------------------------------------------------------------------

Axial thrust force values were determined from pile-head loading conditions

Number of Pile Sections Analyzed = 1

Pile Section No. 1:
-------------------

Dimensions and Properties of Drilled Shaft (Bored Pile):
--------------------------------------------------------

Length of Section                                          =    18.000000 ft
Shaft Diameter                                             =    54.000000 in
Concrete Cover Thickness (to edge of long. rebar)          =     3.000000 in
Number of Reinforcing Bars                                 =           16 bars
Yield Stress of Reinforcing Bars                           =       60000. psi
Modulus of Elasticity of Reinforcing Bars                  =    29000000. psi
Gross Area of Shaft                                        =        2290. sq. in.
Total Area of Reinforcing Steel                            =    12.640000 sq. in.
Area Ratio of Steel Reinforcement                          =         0.55 percent
Edge-to-Edge Bar Spacing                                   =     8.169245 in
Maximum Concrete Aggregate Size                            =     1.000000 in
Ratio of Bar Spacing to Aggregate Size                     =         8.17
Offset of Center of Rebar Cage from Center of Pile         =       0.0000 in

Axial Structural Capacities:
----------------------------

Nom. Axial Structural Capacity = 0.85 Fc Ac + Fy As        =     8502.176 kips
Tensile Load for Cracking of Concrete                      =     -989.558 kips
Nominal Axial Tensile Capacity                             =     -758.400 kips


Reinforcing Bar Dimensions and Positions Used in Computations:

     Bar         Bar Diam.      Bar Area         X              Y
    Number        inches         sq. in.       inches         inches
  ----------    ----------     ----------    ----------     ----------
```

1	1.000000	0.790000	23.500000	0.00000
2	1.000000	0.790000	21.711169	8.993061
3	1.000000	0.790000	16.617009	16.617009
4	1.000000	0.790000	8.993061	21.711169
5	1.000000	0.790000	0.00000	23.500000
6	1.000000	0.790000	-8.993061	21.711169
7	1.000000	0.790000	-16.617009	16.617009
8	1.000000	0.790000	-21.711169	8.993061
9	1.000000	0.790000	-23.500000	0.00000
10	1.000000	0.790000	-21.711169	-8.993061
11	1.000000	0.790000	-16.617009	-16.617009
12	1.000000	0.790000	-8.993061	-21.711169
13	1.000000	0.790000	0.00000	-23.500000
14	1.000000	0.790000	8.993061	-21.711169
15	1.000000	0.790000	16.617009	-16.617009
16	1.000000	0.790000	21.711169	-8.993061

NOTE: The positions of the above rebars were computed by LPile

Minimum spacing between any two bars not equal to zero = 8.169 inches between bars 11 and 12.

Ratio of bar spacing to maximum aggregate size = 8.17

Concrete Properties:

Compressive Strength of Concrete	=	4000. psi
Modulus of Elasticity of Concrete	=	3604997. psi
Modulus of Rupture of Concrete	=	-474.341649 psi
Compression Strain at Peak Stress	=	0.001886
Tensile Strain at Fracture of Concrete	=	-0.0001154
Maximum Coarse Aggregate Size	=	1.000000 in

Number of Axial Thrust Force Values Determined from Pile-head Loadings = 2

Number	Axial Thrust Force kips
1	76.213
2	87.955

Definitions of Run Messages and Notes:

C = concrete in section has cracked in tension.

Y = stress in reinforcing steel has reached yield stress.
T = ACI 318 criteria for tension-controlled section met, tensile strain in reinforcement exceeds 0.005 while simultaneously compressive strain in concrete more than 0.003. See ACI 318, Section 10.3.4.
Z = depth of tensile zone in concrete section is less than 10 percent of section depth.

Bending Stiffness (EI) = Computed Bending Moment / Curvature.
Position of neutral axis is measured from edge of compression side of pile.
Compressive stresses and strains are positive in sign.
Tensile stresses and strains are negative in sign.

Axial Thrust Force = 76.213 kips

Bending Curvature rad/in.	Bending Moment in-kip	Bending Stiffness kip-in2	Depth to N Axis in	Max Comp Strain in/in	Max Tens Strain in/in	Max Conc Stress ksi	Max Steel Stress ksi	Run Msg
0.0002694	18678.	69336825.	8.2897826	0.0022331	-0.0123132	3.9996802	-60.0000000	CY
0.0002744	18687.	68108117.	8.2532976	0.0022645	-0.0125518	3.9975478	-60.0000000	CY
0.0003044	18740.	61568086.	8.0674676	0.0024555	-0.0139807	3.9999595	-60.0000000	CY
0.0003344	18785.	56180616.	7.9264644	0.0026504	-0.0154058	3.9973675	-60.0000000	CY
0.0003644	18825.	51663890.	7.8152318	0.0028477	-0.0168286	3.9835974	-60.0000000	CY

Axial Thrust Force = 87.955 kips

Bending Curvature rad/in.	Bending Moment in-kip	Bending Stiffness kip-in2	Depth to N Axis in	Max Comp Strain in/in	Max Tens Strain in/in	Max Conc Stress ksi	Max Steel Stress ksi	Run Msg
0.0002544	18886.	74246185.	8.4748661	0.0021558	-0.0115805	3.9938632	-60.0000000	CY
0.0002594	18898.	72860442.	8.4371959	0.0021884	-0.0118179	3.9974066	-60.0000000	CY
0.0002644	18910.	71526186.	8.4013689	0.0022211	-0.0120551			

```
    3.9994526   -60.0000000 CY
    0.0002694        18921.     70239825.     8.3669279     0.0022538    -0.0122924
    3.9987728   -60.0000000 CY
    0.0002744        18930.     68992988.     8.3296896     0.0022855    -0.0125308
    3.9909763   -60.0000000 CY
    0.0003044        18981.     62360753.     8.1385492     0.0024772    -0.0139591
    3.9950992   -60.0000000 CY
    0.0003344        19025.     56898634.     7.9929403     0.0026726    -0.0153836
    3.9992305   -60.0000000 CY
```

Summary of Results for Nominal Moment Capacity for Section 1

Moment values interpolated at maximum compressive strain = 0.003
or maximum developed moment if pile fails at smaller strains.

Load No.	Axial Thrust kips	Nominal Mom. Cap. in-kip	Max. Comp. Strain
1	76.213	18850.371	0.00300000
2	87.955	19085.954	0.00300000

Note that the values of moment capacity in the table above are not
factored by a strength reduction factor (phi-factor).

In ACI 318, the value of the strength reduction factor depends on whether
the transverse reinforcing steel bars are tied hoops (0.65) or spirals (0.75).

The above values should be multiplied by the appropriate strength reduction
factor to compute ultimate moment capacity according to ACI 318,
or the value required by the design standard being followed.

The following table presents factored moment capacities and corresponding
bending stiffnesses computed for common resistance factor values used for
reinforced concrete sections.

Axial Load No.	Resist. Factor	Nominal Ax. Thrust kips	Nominal Moment Cap in-kips	Ult. (Fac) Ax. Thrust kips	Ult. (Fac) Moment Cap in-kips	Bend. Stiff. at Ult Mom kip-in^2
1	0.65	76.213000	18850.	49.538450	12253.	256274037.
2	0.65	87.955000	19086.	57.170750	12406.	260181178.

1	0.75	76.213000	18850.	57.159750	14138.	248599206.
2	0.75	87.955000	19086.	65.966250	14314.	252284362.
1	0.90	76.213000	18850.	68.591700	16965.	164333294.
2	0.90	87.955000	19086.	79.159500	17177.	167016487.

Layering Correction Equivalent Depths of Soil & Rock Layers

Layer No.	Top of Layer Below Pile Head ft	Equivalent Top Depth Below Grnd Surf ft	Same Layer Type As Layer Above	Layer is Rock or is Below Rock Layer	F0 Integral for Layer lbs	F1 Integral for Layer lbs
1	0.00	0.00	N.A.	No	0.00	0.00
2	2.2500	2.2500	No	No	0.00	20029.
3	3.5000	2.6088	Yes	No	20029.	643653.
4	15.0000	14.1084	Yes	No	663681.	92470.
5	16.0000	13.1950	Yes	No	756152.	N.A.

Notes: The F0 integral of Layer n+1 equals the sum of the F0 and F1 integrals for Layer n. Layering correction equivalent depths are computed only for soil types with both shallow-depth and deep-depth expressions for peak lateral load transfer. These soil types are soft and stiff clays, non-liquefied sands, and cemented c-phi soil.

Computed Values of Pile Loading and Deflection for Lateral Loading for Load Case Number 1

Pile-head conditions are Shear and Moment (Loading Type 1)

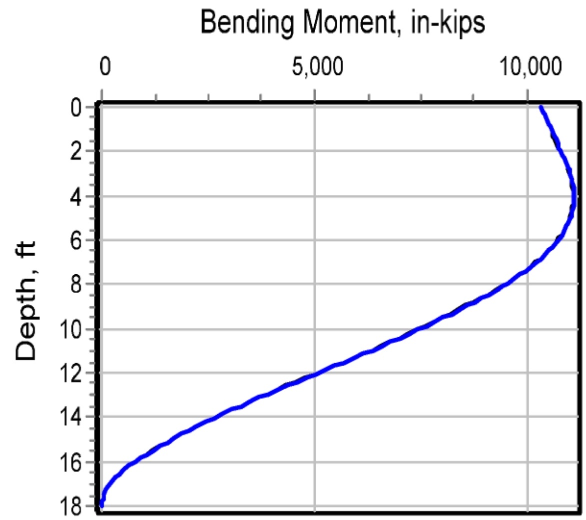
```
Shear force at pile head                          =      18907.0 lbs
Applied moment at pile head                       =   10329036.0 in-lbs
Axial thrust load on pile head                    =      76213.0 lbs
```

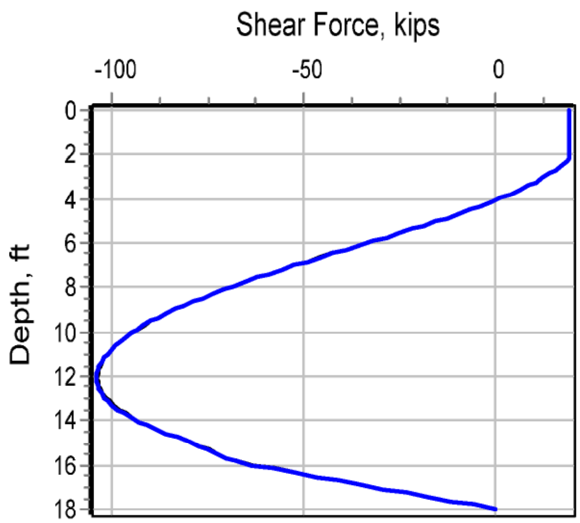
Output Summary for Load Case No. 1:

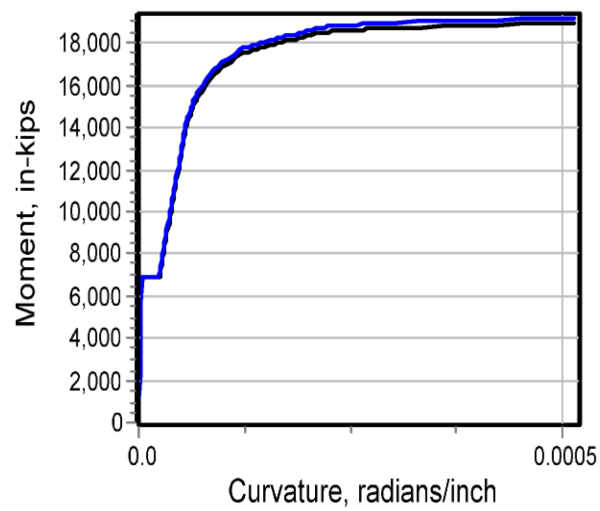
```
Pile-head deflection              =     0.58344754 inches
Computed slope at pile head       =    -0.00688828 radians
Maximum bending moment            =      11088990. inch-lbs
Maximum shear force               =       -103867. lbs
Depth of maximum bending moment   =     4.14000000 feet below pile head
Depth of maximum shear force      =    12.06000000 feet below pile head
Number of iterations              =             79
Number of zero deflection points =              1



--------------------------------------------------------------------------------
                 Computed Values of Pile Loading and Deflection
                   for Lateral Loading for Load Case Number 2
--------------------------------------------------------------------------------

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head                                =       18907.0 lbs
Applied moment at pile head                             =    10337808.0 in-lbs
Axial thrust load on pile head                          =       87955.0 lbs

Output Summary for Load Case No. 2:

Pile-head deflection              =     0.57930461 inches
Computed slope at pile head       =    -0.00680512 radians
Maximum bending moment            =      11101175. inch-lbs
Maximum shear force               =       -104107. lbs
Depth of maximum bending moment   =     4.14000000 feet below pile head
Depth of maximum shear force      =    12.06000000 feet below pile head
Number of iterations              =             72
Number of zero deflection points =              1


--------------------------------------------------------------------------------
            Summary of Pile-head Responses for Conventional Analyses
--------------------------------------------------------------------------------

Definitions of Pile-head Loading Conditions:

Load Type 1: Load 1 = Shear, V, lbs, and Load 2 = Moment, M, in-lbs
Load Type 2: Load 1 = Shear, V, lbs, and Load 2 = Slope, S, radians
Load Type 3: Load 1 = Shear, V, lbs, and Load 2 = Rot. Stiffness, R, in-lbs/rad.
Load Type 4: Load 1 = Top Deflection, y, inches, and Load 2 = Moment, M, in-lbs
Load Type 5: Load 1 = Top Deflection, y, inches, and Load 2 = Slope, S, radians


Load Load                Load                  Axial    Pile-head  Pile-head  Max
Shear Max Moment
Case Type   Pile-head    Type     Pile-head   Loading  Deflection  Rotation    in
```

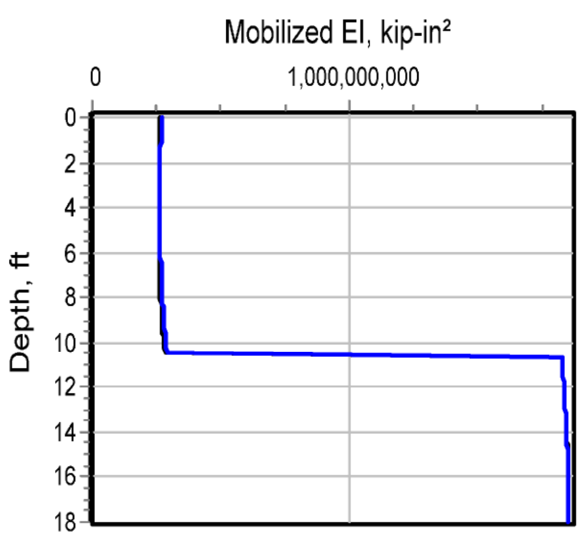
```
Pile    in Pile
 No.  1      Load 1       2        Load 2       lbs      inches     radians
lbs      in-lbs
---- ----- ---------- ---------- ---------- ---------- ---------- ----------
---------- ----------
  1  V, lb     18907.  M, in-lb    1.03E+07     76213.     0.5834   -0.00689
-103867.   1.11E+07
  2  V, lb     18907.  M, in-lb    1.03E+07     87955.     0.5793   -0.00681
-104107.   1.11E+07


Maximum pile-head deflection = 0.5834475380 inches
Maximum pile-head rotation   = -0.0068882849 radians = -0.394670 deg.

The analysis ended normally.
```

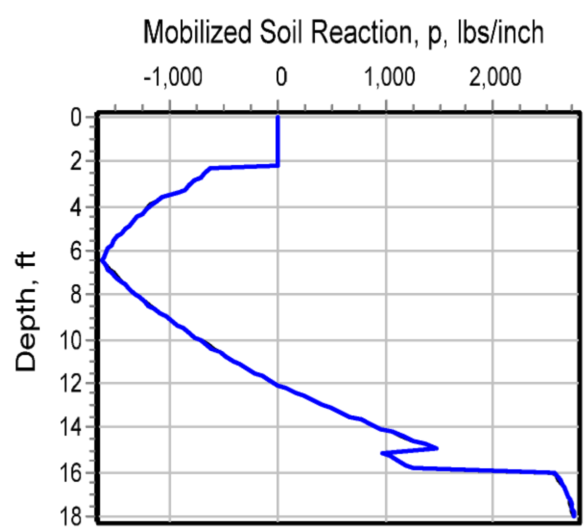

Deflection, inches
0
0.2
0.4
Depth, ft
0 2 4 6 8 10 12 14 16 18


Bending Moment, in-kips
0
5,000
10,000
Depth, ft
0 2 4 6 8 10 12 14 16 18


Shear Force, kips
-100
-50
0
Depth, ft
0 2 4 6 8 10 12 14 16 18


Moment, in-kips
0 2,000 4,000 6,000 8,000 10,000 12,000 14,000 16,000 18,000
0.0
0.0005
Curvature, radians/inch


Mobilized EI, kip-in²
0
1,000,000,000
Depth, ft
0 2 4 6 8 10 12 14 16 18


Mobilized Soil Reaction, p, lbs/inch
-1,000
0
1,000
2,000
Depth, ft
0 2 4 6 8 10 12 14 16 18

Monopole Flange Plate Connection

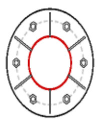
Elevation = 80 ft.

BU #	
Site Name	
Order #	

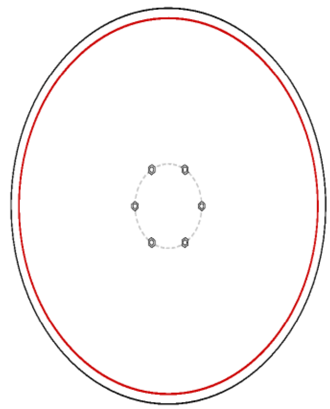
TIA-222 Revision	H

Applied Loads	
Moment (kip-ft)	18.70
Axial Force (kips)	1.70
Shear Force (kips)	1.25

Top Plate - External



Bottom Plate - Internal



Connection Properties

Bolt Data

(6) 5/8" ø bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 10.5" BC

Top Plate Data

13.5" OD x 1" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Top Stiffener Data

(6) 6"H x 3"W x 0.25"T, Notch: 0.5"
plate: Fy= 36 ksi ; weld: Fy= 70 ksi
horiz. weld: 0.25" fillet
vert. weld: 0.25" fillet

Top Pole Data

6.625" x 0.25" round pole (A500-42; Fy=42 ksi, Fu=58 ksi)

Bottom Pole Data

48" x 0.5" round pole (A572-50; Fy=50 ksi, Fu=65 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	13.95	
Allowable (kips)	20.34	
Stress Rating:	**68.6%**	Pass

Top Plate Capacity

Max Stress (ksi):	9.98	(Roark's Flexural)
Allowable Stress (ksi):	45.00	
Stress Rating:	**22.2%**	Pass
Tension Side Stress Rating:	**N/A**	

Top Stiffener Capacity

Horizontal Weld:	**37.8%**	Pass
Vertical Weld:	**20.2%**	Pass
Plate Flexure+Shear:	**27.9%**	Pass
Plate Tension+Shear:	**57.3%**	Pass
Plate Compression:	**68.9%**	Pass

Top Pole Capacity

Punching Shear:	**11.2%**	Pass

Analysis Date: 9/25/2022

ISE Incorporated
P.O. Box 50039
Phoenix, Arizona 85076
Phone: 602-403-8614
FAX: 623-321-1283

Job: Verizon Platsville Relo
Project: ISE Job No. 18054
Client: Larson
Date: September 25, 2022
Designed by: PB

TOP PLATE AND BOLTS DESIGN AT 80' AFG FOR WIND FORCES

Geometry

Plate Shape =	Round	
Plate Diameter =	49.5 in	
Pole Diameter, Dp =	6.625 in	
Bolt Circle Diameter: BC =	10.5 in	
Number of Bolts: J =	6	
Bolt Group Moment of Inertia: I_{bg} =	82.6875 in²	$I_{bg} = (1/8)(J*BC^2)$
Bolt Diameter: D_b =	0.625 in	
Gross Bolt Area: A_g =	0.307 in²	$A_g = \pi D_b^2/4$
Net Bolt Area: A_n =	0.226 in²	$A_n = (\pi/4)(d-0.9743)/n)^2$

Materials

Bolt Steel Yield Strength: F_y =	81 ksi	A325
Bolt Steel Ultimate Strength: F_u =	120 ksi	A325
Plate Steel Yield Strength: F_y =	50 ksi	A572 GR50

Loading

	Structure Base Reactions		
	M (kip-ft)	V (kip)	A (kip)
Factored:	18.700	1.250	1.700

Analysis

BOLTS **OK**

Bolt Tension: P_{ut} =	13.964 k	$(M*BC/2) / I_{bg} - A/J$		
Bolt Compression: P_{uc} =	14.531 k	$(M*BC/2) / I_{bg} + A/J$		
Bolt Shear: V_u =	0.208 k	V / N		
Available Shear Strength, Φrn =	12.400 k	AISC Table 7-1	**10.10%**	**OK**
Available Tensile Strength, Φrn =	20.700 k	AISC Table 7-2	**70.20%**	**OK**

PLATE **OK**

Plate Bending: Mpb =	217.96 k-in	(T/C) x Mom Arm	
Bend Line, L =	4.000 in		
Required Plate Thickness: Tpl =	2.201 in	$Tpl = [4M/\varnothing F_y L]^{1/2}$	
Thickness Provided =	2.500 in		**OK**
Plate Stress Ratio =	**0.775**	**≤ 1.0**	

Design Summary

(6) 0.63" Diameter A325 Bolts on 10.5" BC Diameter
2.5" X 49.5" Round A572 GR50 Top Cap Plate With Coax Holes

SUMMARY OF SPECIAL INSPECTIONS

NO.	DESCRIPTION OF TYPE OF INSPECTION REQUIRED, LOCATION, REMARKS, ETC	REFERENCED STANDARD	CONTINUOUS / PERIODIC
1).	STEEL CONSTRUCTION		
1.1	MATERIAL VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS AND WASHERS:		
	A). IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS	AISC 360 SECTION A3.3 & APPLICABLE ASTM MATERIAL STANDARDS	PERIODIC
1.2	INSPECTION OF HIGH-STRENGTH BOLTING:		
	A). SNUG-TIGHT JOINTS	AISC 360 SECTION M2.5	PERIODIC
1.3	MATERIAL VERIFICATION OF STRUCTURAL STEEL AND COLD-FORMED STEEL DECK:		
	A). FOR STRUCTURAL STEEL, IDENTIFICATION MARKINGS TO CONFORM TO AISC 360.	AISC 360 SECTION M5.5	PERIODIC
1.4	MATERIAL VERIFICATION OF WELD FILLER MATERIALS		
	A). IDENTIFICATION MARKINGS TO CONFORM TO AWS SPECIFICATION IN THE APPROVED CONSTRUCTION DOCUMENTS	AISC 360, SECTION A3.5 AND APPLICABLE AWS A5 DOCUMENT	PERIODIC
1.5	INSPECTION OF WELDING:		
	A). SINGLE-PASS FILLET WELDS ≤5/16"	AWS D1.1	PERIODIC
	B). ALL WELDED CONNECTIONS SHALL CONFORM TO THE LATEST VERSION OF THE AMERICAN WELDING SOCIETY A.W.S. D1.1.	AWS D1.1	PERIODIC
	C). WELD ELECTRODES SHALL CONFORM TO E70 ELECTRODES OR WIRE.	E-70XX	PERIODIC
	D). CONTINUOUS INSPECTION OF SHOP WELDING IS NOT REQUIRED. VISUAL INSPECTION SHALL BE PERFORMED BEFORE AND AFTER GALVANIZING.	VISUAL INSPECTION PER EOR	PERIODIC
	E). IF A WELD IS IN QUESTION PER THE VISUAL INSPECTION THEN IT SHALL BE TESTED USING AN APPROPRIATE TEST, EX. DIE PENETRATION, OR MAGNETIC PARTICLE, U.T. ETC.	INSPECT AND REPORT	PERIODIC
1.6	INSPECTION OF STEEL FRAME JOINT DETAILS FOR COMPLIANCE:		
	A). DETAILS SUCH AS BRACING AND STIFFENING.	INSPECT AND REPORT	PERIODIC
	B). MEMBER LOCATIONS.	INSPECT AND REPORT	PERIODIC
	C). APPLICATION OF JOINT DETAILS AT EACH CONNECTION.	INSPECT AND REPORT	PERIODIC
2).	FOUNDATION CONSTRUCTION:		
	A). GEOTECHNICAL ENGINEER OF RECORD MAY SERVE AS THE SPECIAL INSPECTOR FOR THE FOUNDATION CONSTRUCTION.	--	PER 2018 IBC
	B). SHALL VERIFY THE DIAMETER, DEPTH AND QUALITY OF EXCAVATION PRIOR TO THE CONCRETE PLACEMENT.	INSPECT AND REPORT	PERIODIC
	C). SHALL VERIFY THE ON SITE SOILS ARE AS DETERMINED IN THE SOILS REPORT.	INSPECT AND REPORT	PERIODIC
3).	CAST IN PLACE CONCRETE (FOUNDATION):		
	A). REINFORCING CAGE SHALL BE INSPECTED TO ENSURE THAT THE PROPER GEOMETRY, SIZE, LENGTH, QUAINTLY AND GRADE MATERIAL ARE USED.	60 KSI (40 KSI TIES)	INSPECT AND REPORT
	B). ALL CONCRETE SHALL BE AS SPECIFIED BY ACI-318, LATEST EDITION TO ENSURE THE COMPRESSIVE STRENGTH IS ATTAINED AS DESCRIBED IN THE FOUNDATION NOTES.	4000 PSI AT 28 DAYS	INSPECT AND REPORT
	C). CONTINUOUS INSPECTION IS REQUIRED DURING THE CONCRETE PLACEMENT.	--	CONTINUOUS
4).	ANCHOR BOLTS INSTALLED IN CONCRETE:		
	A). PLACEMENT SHALL BE ORIENTED ON PROPER BOLT CIRCLE AS SHOWN ON THE STRUCTURAL PLANS, WITH TOP AND BOTTOM TEMPLATES INSTALLED.	INSPECT AND REPORT	PERIODIC
	B). SHALL BE PLUMB.	INSPECT AND REPORT	PERIODIC
	C). SHALL HAVE A MINIMUM EMBEDMENT (PER PLAN) INTO FOUNDATION	INSPECT AND REPORT	PERIODIC
	D). SHALL BE TIGHTENED TO SNUG TIGHT CONDITION PER AISC STEEL MANUAL OF STEEL CONSTRUCTION.	INSPECT AND REPORT	PERIODIC

FIBERGLASS REINFORCED PLASTIC (FRP) SHAPES:

1. ALL FRP SHAPES AND PLATE SHALL CONFORM TO STRONGWELL EXTREN 500/525 SERIES.
2. APPLY RESIN ADHESIVE TO ALL FRP MATING SURFACES PRIOR TO BOLTING.
3. STRONGWELL FIBREBOLTS AND NUTS OR EQUAL.
4. ALL CUT EDGES AND HOLES SHALL BE SEALED WITH A RESIN COMPATIBLE WITH THE RESIN MATRIX USED IN THE STRUCTURAL SHAPE.
5. THE FABRICATOR AND CONTRACTOR SHALL EXERCISE PRECAUTIONS NECESSARY TO PROTECT THE FIBERGLASS PULTRUDED STRUCTURAL SHAPES FROM ABUSE TO PREVENT BREAKAGE, NICKS, GOUGES, ETC. DURING FABRICATION, HANDLING, AND INSTALLATION.
6. STRUCTURAL SHAPES SHALL BE FABRICATED AND ASSEMBLED AS INDICATED ON THE DESIGN DRAWINGS.
7. FIBERBOLTS BOLTS AND NUTS SHALL BE TIGHTENED TO AND LOCKED WITH EPOXY AS FOLLOWS:

1/2" DIAMETER NUTS	8 FT-LBS TORQUE	5/8" DIAMETER NUTS	16 FT-LBS TORQUE
3/4" DIAMETER NUTS	24 FT-LBS TORQUE		

FIBERGLASS PANEL NOTES:

FABRICATE PANELS TO FIT PER DIMENSIONS SHOWN IN PLAN.
PANELS TO BE MINIMUM 3/8" THICKNESS.

1. PANELS ARE TO BE FABRICATED IN A CONTIGUOUS LAYUP PER PLANS USING RF TRANSPARENT MATERIALS.
2. ARCHITECT SHALL SPECIFY ANY REQUIRED FINISHES OR TREATMENTS TO ACHIEVE DESIRED APPEARANCE.
3. FABRICATOR SHALL USE A GLASS-RESIN RATIO OF 35% ± 3%: REINFORCEMENT BY WEIGHT.
4. EACH SKIN SHALL BE FABRICATED WITH GENERAL PURPOSE RESIN OR POLYESTER VINYL RESIN WHERE REQUIRED FOR FIRE TREATMENT, CHOPPED STRAND MAT.
5 CORNER FLANGES MAY BE FASTENED WITH 3/4"Ø NON-METALLIC THREADED ROD AND NUTS: STRONGWELL FIBREBOLT STUDS AND NUTS OR EQUIVALENT. A TORQUE WRENCH MUST BE USED TO TIGHTEN FASTENERS TO A MAXIMUM 16 FT-LBS.
6. FRP PANELS AND SHAPES SHALL BE COATED WITH A FLAT GEL-COAT FINISH TO PROVIDE ULTRAVIOLET PROTECTION.
7. ALL CUT AND DRILLED EDGES SHALL BE COATED WITH RESIN.
8. FABRICATOR AND INSTALLER SHALL TEST FIT ALL PANELS PRIOR TO FINAL ASSEMBLY/INSTALLATION TO ASSURE SQUARENESS AND CORNER FITS.

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PLATTSVILLE RELO CT

100' TALL 3 LEG MONUMENT

5151 PARK AVENUE, FAIRFIELD , CT 06825
LATITUDE: N41° 13' 08.19" LONGITUDE: W73° 14' 41.12"

SHEET INDEX

GSN	GENERAL NOTES
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S3.0	26'-6" AFG, 53' AFG & 80' AFG FRAMING PLANS
S4.0	PLATE AND HAND HOLE SCHEDULES
S5.0	CANISTER FRAMING
S6.0	LADDER DETAILS
S7.0	FOUNDATION PLAN & DETAILS
S8.0	FOUNDATION TEMPLATE
FRP1.0	FRP ENCLOSURE ELEVATION & DETAILS
FRP2.0	FRP PANEL DETAILS

GENERAL NOTES:

1. THE CONTRACTOR SHALL VERIFY DIMENSIONS, CONDITIONS, AND ELEVATIONS BEFORE STARTING WORK. SEE SPECIAL CONSTRUCTION NOTES THIS PAGE. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY IF ANY DISCREPANCIES ARE FOUND.
2. THE TYPICAL NOTES AND DETAILS SHALL APPLY IN ALL CASES UNLESS SPECIFICALLY DETAILED ELSEWHERE. WHERE NO DETAIL IS SHOWN, THE CONSTRUCTION SHALL BE AS SHOWN FOR OTHER SIMILAR WORK AND AS REQUIRED BY THE BUILDING CODE.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH LOCAL CONSTRUCTION SAFETY ORDERS. APPROVAL OF SHOP DRAWINGS BY THE ARCHITECT OR STRUCTURAL ENGINEER SHALL NOT BE CONSTRUED AS ACCEPTING THIS RESPONSIBILITY.
4. ALL STRUCTURAL FRAMING MEMBERS SHALL BE ADEQUATELY SHORED AND BRACED DURING ERECTION AND UNTIL FULL LATERAL AND VERTICAL SUPPORT IS PROVIDED BY ADJOINING MEMBERS.

CONSTRUCTION NOTES:

1. IF EXISTING CONDITIONS ARE NOT AS INDICATED ON DRAWINGS, THE CONTRACTOR SHALL CONTACT THE STRUCTURAL ENGINEER (GLEN HUNT) AT ISE INCORPORATED, FOR IN FIELD ADJUSTMENT(S), PRIOR TO PROCEEDING WITH ANY CONSTRUCTION.
2. CONTRACTOR TO FIELD VERIFY AND/OR FIELD LOCATE ALL ITEMS LABELED AS FIELD VERIFY OR FIELD LOCATE.

STRUCTURAL STEEL:

1. ALL STRUCTURAL STEEL CODE CHECKS BASED ON THE AISC, 15TH EDITION PER THE ASCE 7 STANDARD.
2. VERIFY ALL STEEL MATERIAL GRADES WITH STRUCTURAL DESIGN REPORT.
3. WIDE FLANGE BEAMS (W BEAM): A992 (50 KSI).
4. ALL STEEL PIPE TO BE PER ASTM A53 GR B (35 KSI), U.N.O.
5. ALL STEEL ROUND TUBES (HSS) TO BE PER ASTM A500 GR. B (42 KSI), U.N.O.
6. ALL OTHER STRUCTURAL STEEL SHAPES & PLATES SHALL BE PER ASTM A36 (36 KSI), U.N.O.
7. ALL BOLTS FOR STEEL-TO-STEEL CONNECTIONS SHALL BE ASTM A325, U.N.O.
8. ALL BOLTED CONNECTIONS SHALL BE TIGHTENED TO "SNUG TIGHT" CONDITION AS DEFINED BY AISC.
9. ALL WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN WELDING SOCIETY (AWS) D1.1
10. ALL STEEL SURFACES SHALL BE GALVANIZED IN ACCORDANCE WITH THE ASTM A123 AND ASTM A153 STANDARDS, U.N.O.

CODE COMPLIANCE:

2018 Connecticut State Building Code, 2015IBC, ASCE 7-10, TIA-222-G
122 MPH Ultimate Wind Speed
Exposure C, TOPO Category 1, Structure Class II
Ground Elevation 315' AMSL

SNOW: 30 PSF

SOILS: Terracon Consultants Inc,
Geotechnical Engineering Report, #J1225042 Dated 08/10/2022

SEISMIC DESIGN CLASS: B

SOIL SITE CLASS: D

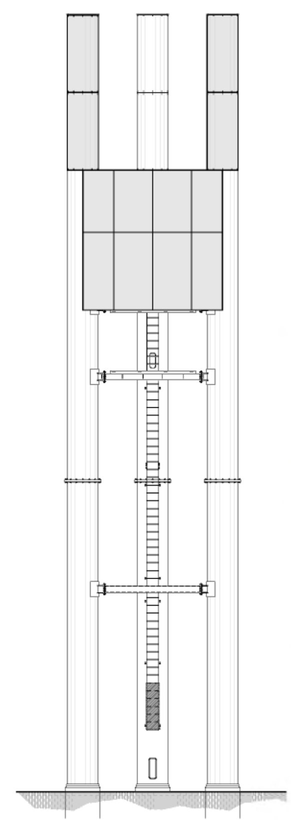
S_s =0.211, S_1 = 0.065, S_{DS} = 0.169, S_{D1} = 0.074, C_S = 0.056

CONNECTIONS

PROCEDURE FOR MAKING STRUCTURAL EPOXY JOINTS

ADHESIVE: WELD-ON 45 OR 3M 540
PER MANUFACTURE SPECIFICATIONS & RECOMMENDATIONS.

SURFACE PREPARATION
1) SAND MATING SURFACES WITH 80 GRIT SANDPAPER UNTIL THE SURFACE GLOSS HAS BEEN
REMOVED. THE SURFACING VEIL MUST BE GROUND OFF TO EXPOSE THE GLASS
REINFORCEMENT. SAND BLASTING EQUIPMENT CAN ALSO BE USED.
2) REMOVE ALL DUST WITH A CLEAN CLOTH; AIR BLASTING EQUIPMENT MAY ALSO BE USED.
AVOID RECONTAMINATION OF THE SURFACE FROM HANDLING. MIXING OF EPOXY MIX EQUAL
VOLUME PORTIONS OF THE BASE AND HARDENER IN A SMALL WAX COATED PAPER CUP WITH
A CLEAN STICK UNTIL A UNIFORM GRAY COLOR IS ATTAINED AND ALL MARBLED APPEARANCE IS
GONE.
NOTE:
OTHER ADHESIVE SYSTEMS COMPATIBLE WITH FIBERGLASS CAN BE UTILIZED AND THE
MANUFACTURER'S MIXING INSTRUCTIONS FOR THESE SYSTEMS SHOULD BE FOLLOWED.
APPLICATION AND CURE
1) APPLY THE MIXED EPOXY UNIFORMLY TO ALL SURFACES TO BE JOINED. A THIN APPLICATION IS
OFTEN MORE BENEFICIAL THAN A THICK APPLICATION.
2) AVOID INTRODUCING MOISTURE INTO THE JOINT.
3) JOIN THE SURFACES TO BE BONDED. THE POT LIFE AT 77°F FOR A 3 OZ. MIXTURE OF EQUAL
VOLUMES OF BASE AND HARDENER IS 2.5 HOURS.
4) SECURE THE JOINT WITH CLAMPS (OR RIVETS OR BOLTS) AND ALLOW 24 HOURS FOR A FULL CURE.
THE ASSEMBLY CAN OFTEN BE HANDLED WITH REASONABLE CARE IN LESS THAN 8 HOURS.
THE STRUCTURE SHOULD NOT BE REQUIRED TO SUPPORT ITS DESIGN LOAD UNTIL AT LEAST 48 HOURS
(AT 70°F) AFTER BONDING. LOWER TEMPERATURES REQUIRE A LONGER CURE.
5) AFTER SECURING THE JOINT, WIPE AWAY EXCESS EPOXY.



Reviewed and Approved by Alan Money
AMMTEC Consultants

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GENERAL NOTES
5151 PARK AVENUE, FAIRFIELD, CT 06825
LATITUDE: N41° 13' 08.19" LONGITUDE: W73° 14' 41.12"

STATE OF CONNECTICUT · ALAN E. MONEY · No. PEN 0031438 · LICENSED · PROFESSIONAL ENGINEER

Alan Signature
Digitally signed by Alan Signature
Date: 2022.10.19 18:38:27 -07'00'

PROGRESS LOG

0	10/19/22	ISSUED TO CLIENT	CK
A	09/19/22	ISSUED FOR REVIEW	CK

SHEET NUMBER	PROGRESS
GSN	0

DRAWING DATE
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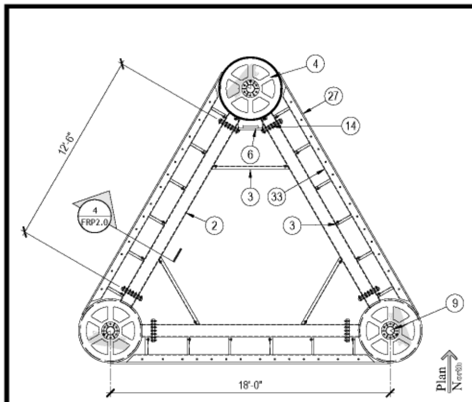
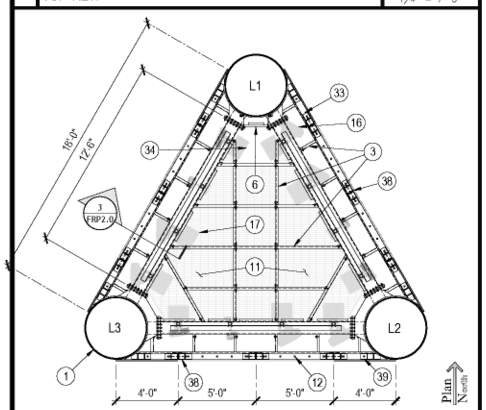
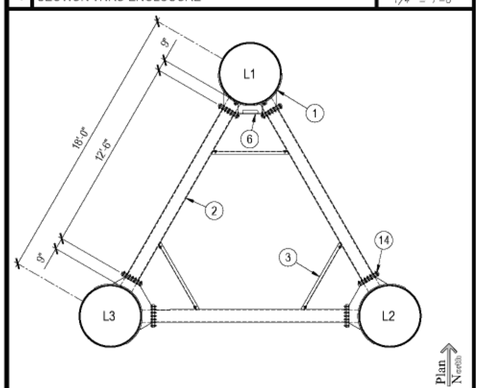


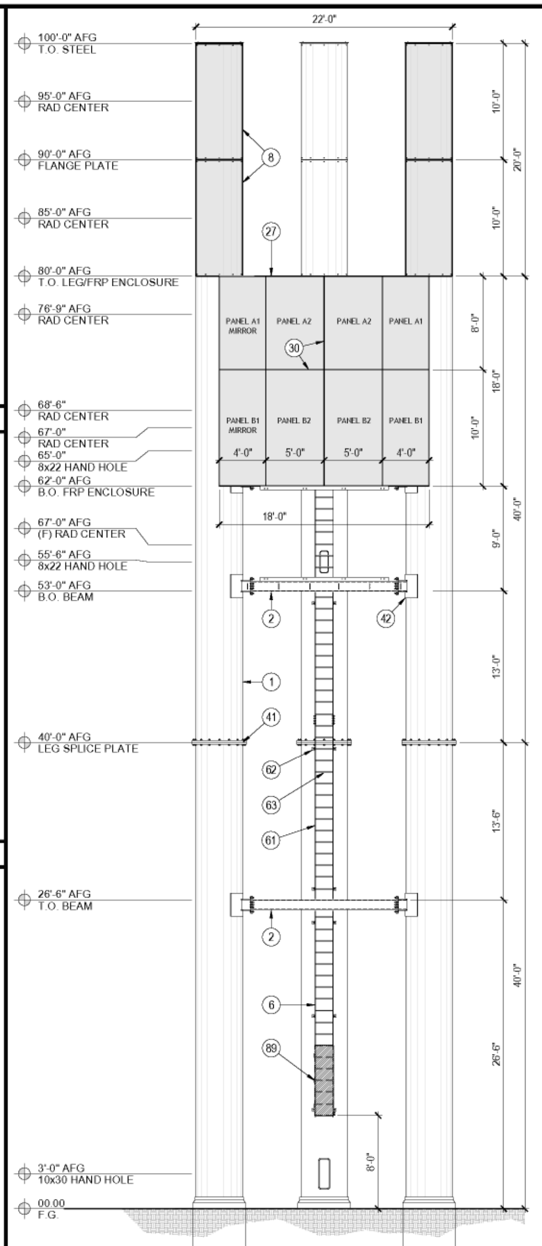
5 TOP VIEW
SCALE: 1/4" = 1'-0"



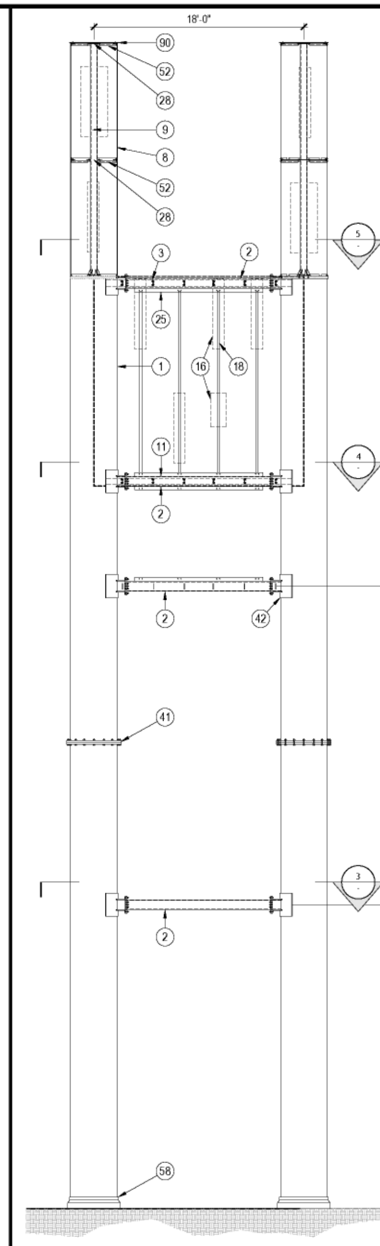
4 SECTION THRU ENCLOSURE
SCALE: 1/4" = 1'-0"



3 FRAMING PLAN
SCALE: 1/4" = 1'-0"



2 TYPICAL ELEVATION
SCALE: 3/16" = 1'-0"



1 TOWER FRAMING ELEVATION
SCALE: 3/16" = 1'-0"

KEY NOTES

		MARK	DESCRIPTION
46	CONTINUOUS TONGUE EDGE		
47	3" GROVE TAB @ 12" O.C.	1	48"Ø x 1/2" LEG
48	1 1/16" HOLES, FIELD DRILL	2	HSS 10x10x 3/8" A500 GR B
49	1/4" FRP SKIN	3	C6x11.5
50	5/8"Ø STRONGWELL FIBREBOLT OR EQUAL	4	1" LEG CAP PLATE
51	1 1/16" HOLES	5	FLANGED JOINT
52	HSS 2x2x3/16"	6	3/8" x 3" BAR w/ 1" ROUND RUNG LADDER w/ SAFETY CLIMB
53	3/8" GRADE B BOLTS	7	FRP TUBE FRAMED PANEL FINISH PER ARCHITECTURAL
54	MAST BASE PLATE, SEE SCHEDULE SHEET S4.0	8	48"Ø x 1/4" FRP CANISTER
55	LEG FLANGE PLATE, SEE SCHEDULE SHEET S4.0	9	6 5/8"Ø SCHED 40 MAST
56	LEG MATING PLATE, SEE SCHEDULE	10	3/8" PLATE GUSSETS
57	BOLT PER SCHEDULE - SHEET S4.0	11	MCNICHOLS 'GW 125' 1 1/4"X3/16" BAR GRATE
58	LEG BASE PLATE, SEE SCHEDULE SHEET S4.0	12	5/8"Ø A307 BOLT IN 11/16" Ø HOLE
59	ANCHOR BOLT, SEE SCHEDULE SHEET S4.0	13	3/8"Ø A36 TAB
60	CLIMBING HAND HOLE AT LEG L1	14	1" A572-50 FLANGE PLATE
61	3/8" x 3" PLATE	15	ANCHOR BOLT HOLE, SEE SCHEDULE - SHEET S4.0
62	1/4"x 3" BENT PLATE	16	ANTENNA BY OTHERS
63	1"Ø A36 ROD w/ NON SKID FINISH	17	RRU BY OTHERS
64	1/4" HOLE, FIELD DRILL	18	Ø2.375" O.D. SCH 40 ANTENNA PIPE
65	7/16"Ø HOLE	19	5/8"Ø A325 BOLT IN 11/16" Ø HOLE
66	BULKHEAD RADIUS PLATE	20	CONCRETE GRADE BEAM F'C - 4000 PSI
67	BOLKHEAD ARM ASSEMBLY	21	3/8" A36 PLATE
68	1/4" Ø x 1 1/4" SELF DRILLING SCREW BY McMASTER-CARR	22	3/8"Ø U-BOLT BOLT
69	(3) #3 TIES IN TOP 3"	23	3/8"Ø GRADE B BOLT IN 7/16" Ø HOLE
70	BASE PLATE, SEE SCHEDULE SHEET S4.0	24	1/2"Ø A325 BOLT IN 9/16" Ø HOLE
71	ANCHOR BOLT TEMPLATE SCHEDULE	25	NOT USED
72	NOT USED	26	11/16" Ø HOLE
73	(2) #5 TOP AND BOTTOM	27	1" HONEYCOMB FRP PANEL
74	#4 TIES @ 12" O.C.	28	MAST FLANGE PLATE, SEE SCHEDULE.
75	#4 TIES @ 6" O.C.	29	VALMONT FRP 5"x 5/16" TUBE FRAMING
76	#4 TIES @ 3" O.C.	30	FRP SHEATHING/PANEL SEAM
77	(5) #4 TIES @ 1 3/4" O.C. MAX	31	∠2x2x3/16"
78	(16) #8 VERTICAL	32	∠4x4x1/4"
79	(2) #5 8" x 48" TOP & BOTTOM HOOKED INTO GRADE BEAM	33	∠6x6x3/8"
80	CONCRETE PIER F'c - 4000 PSI	34	PLATFORM ACCESS
81	135° SEISMIC BEND IN NON LINEAR VERT. PLACEMENT	35	3/4"Ø A325 BOLT
82	CONDUIT BY OTHERS	36	13/16" Ø HOLE
83	#4 @ 12" O.C. EACH WAY	37	FIELD DRILL TO MATCH FRAMING
84	#4 TOP AND BOTTOM	38	VALMONT FRP 5X5X5/16" TUBE
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91		45	LEG CAP PLATE, SEE SCHEDULE

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PLATTSVILLE RELO CT
100' TALL 3 LEG MONUMENT

PLANS, ELEVATION & SECTIONS

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STATE OF CONNECTICUT
ALAN E. MONEY
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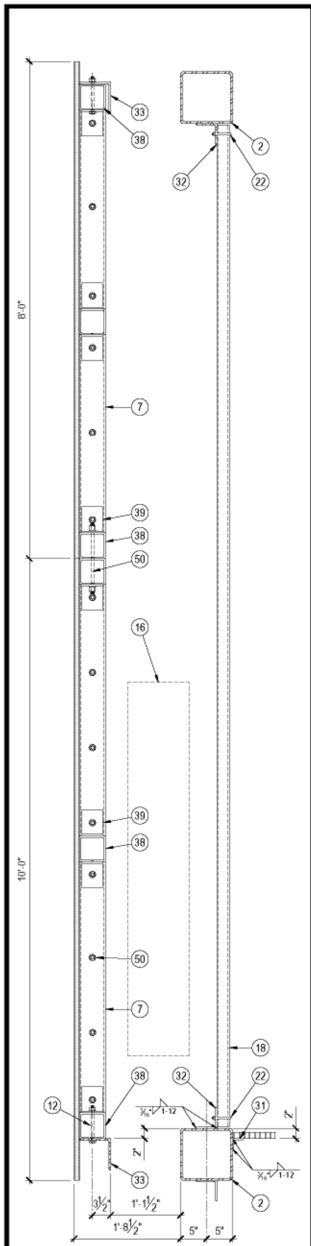
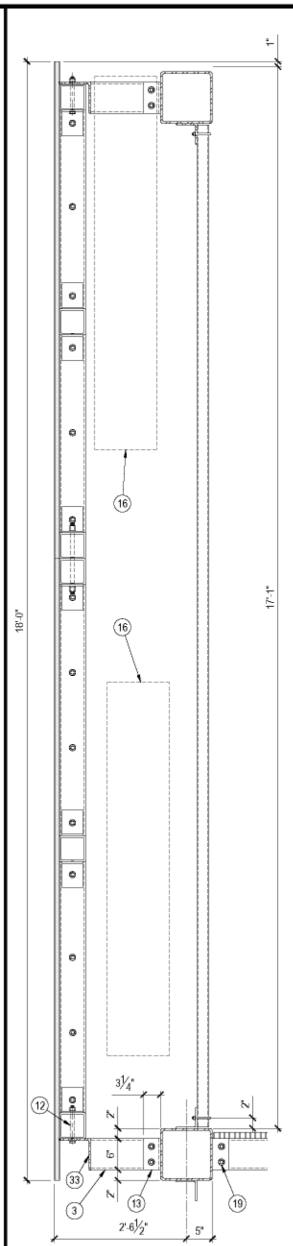
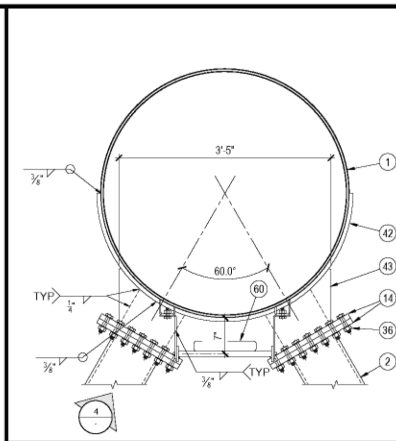


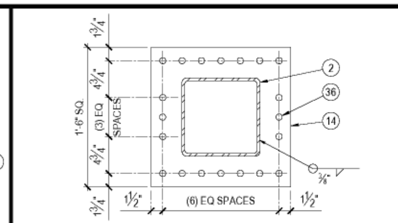
3 TOWER WALL SECTION



2 TOWER WALL SECTION

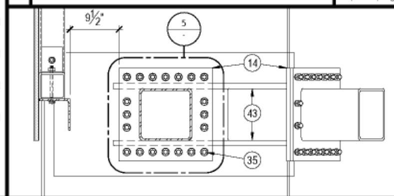


6 TOWER SECTION



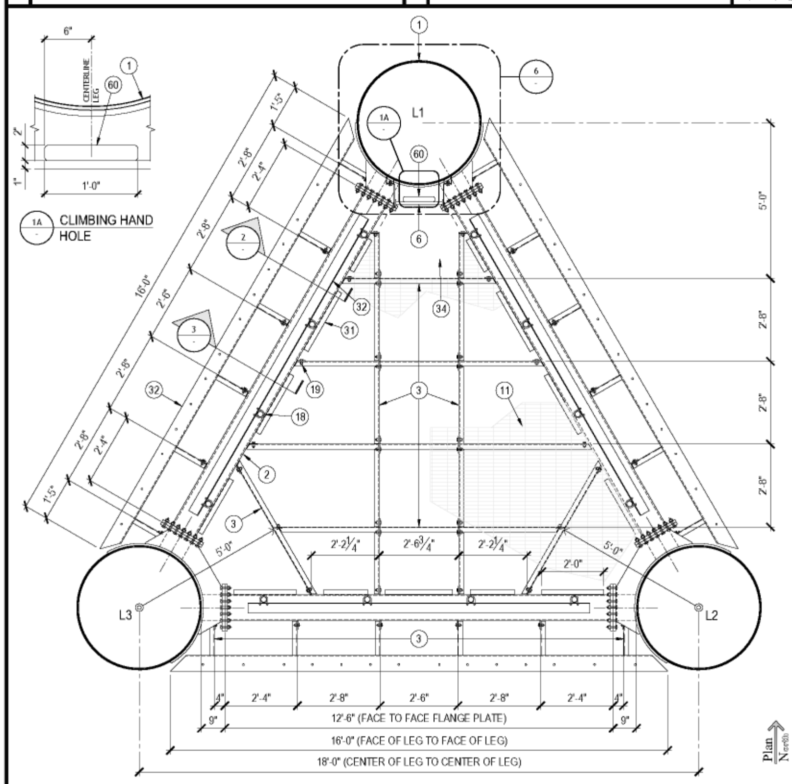
5 HSS MATING/FLANGE PLATE

SCALE: 1" = 1'-0"



4 HSS BEAM TO LEG CONNECTION

SCALE: 1" = 1'-0"



1 62' AFG PLATFORM FRAMING

SCALE: 3/16" = 1'-0"

KEY NOTES

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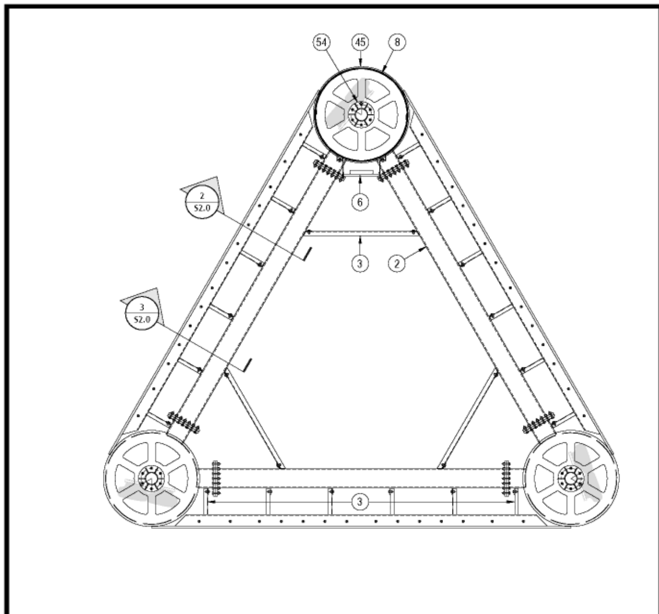
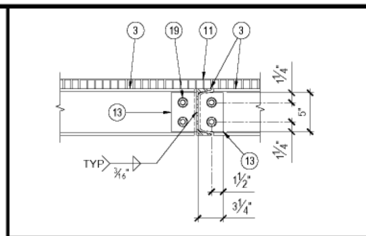
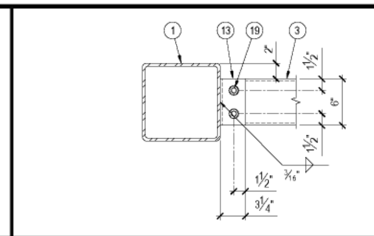


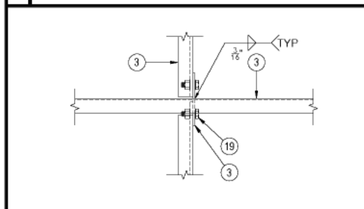
3 | 80' AFG FRAMING



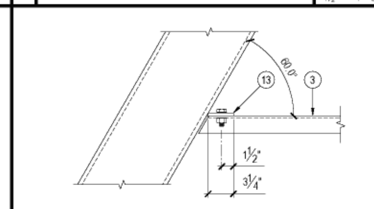
7 | CHANNEL INTERSECTION - SECTION VIEW



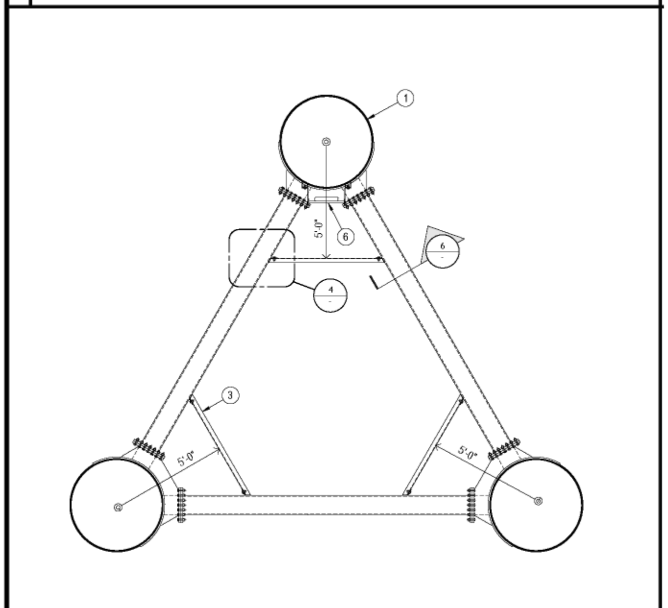
6 | CHANNEL TO HSS SECTION — SCALE: 1 1/2" = 1'-0"



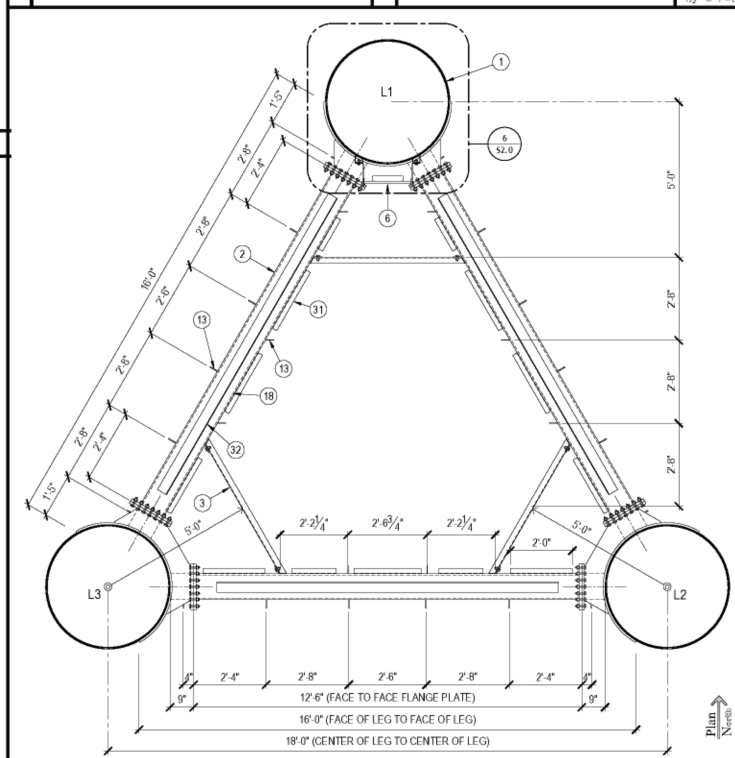
5 | CHANNEL INTERSECTION - PLAN VIEW



4 | CHANNEL TO HSS BEAM - PLAN VIEW — SCALE: 1 1/2" = 1'-0"



2 | 26'-6" AFG FRAMING



1 | 53' AFG FRAMING — SCALE: 3/16" = 1'-0"

KEY NOTES

		MARK	DESCRIPTION
46	CONTINUOUS TONGUE EDGE		
47	3" GROVE TAB @ 12" O.C.	1	48"Ø x 1/2" LEG
48	1 1/16" HOLES, FIELD DRILL	2	HSS 10x10x 3/8" A500 GR B
49	1/4" FRP SKIN	3	C6x11.5
50	5/8"Ø STRONGWELL FIBREBOLT OR EQUAL	4	1" LEG CAP PLATE
51	1 1/16" HOLES	5	FLANGED JOINT
52	HSS 2x2x3/16"	6	3/8" x 3" BAR w/ 1" ROUND RUNG LADDER w/ SAFETY CLIMB
53	3/8" GRADE B BOLTS	7	FRP TUBE FRAMED PANEL FINISH PER ARCHITECTURAL
54	MAST BASE PLATE, SEE SCHEDULE SHEET S4.0	8	48"Ø x 1/4" FRP CANISTER
55	LEG FLANGE PLATE, SEE SCHEDULE SHEET S4.0	9	6 5/8"Ø SCHED 40 MAST
56	LEG MATING PLATE, SEE SCHEDULE	10	3/8" PLATE GUSSETS
57	BOLT PER SCHEDULE - SHEET S4.0	11	MCNICHOLS 'GW 125' 1 1/4"X3/16" BAR GRATE
58	LEG BASE PLATE, SEE SCHEDULE SHEET S4.0	12	5/8"Ø A307 BOLT IN 11/16" Ø HOLE
59	ANCHOR BOLT, SEE SCHEDULE SHEET S4.0	13	3/8"Ø A36 TAB
60	CLIMBING HAND HOLE AT LEG L1	14	1" A572-50 FLANGE PLATE
61	3/8" x 3" PLATE	15	ANCHOR BOLT HOLE, SEE SCHEDULE - SHEET S4.0
62	1/4"x 3" BENT PLATE	16	ANTENNA BY OTHERS
63	1"Ø A36 ROD w/ NON SKID FINISH	17	RRU BY OTHERS
64	1/4" HOLE, FIELD DRILL	18	Ø2.375" O.D. SCH 40 ANTENNA PIPE
65	7/16"Ø HOLE	19	5/8"Ø A325 BOLT IN 11/16" Ø HOLE
66	BULKHEAD RADIUS PLATE	20	CONCRETE GRADE BEAM F'C - 4000 PSI
67	BOLKHEAD ARM ASSEMBLY	21	3/8" A36 PLATE
68	1/4" Ø x 1 1/4" SELF DRILLING SCREW BY McMASTER-CARR	22	3/8"Ø U-BOLT BOLT
69	(3) #3 TIES IN TOP 3"	23	3/8"Ø GRADE B BOLT IN 7/16" Ø HOLE
70	BASE PLATE, SEE SCHEDULE SHEET S4.0	24	1/2"Ø A325 BOLT IN 9/16" Ø HOLE
71	ANCHOR BOLT TEMPLATE SCHEDULE	25	NOT USED
72	NOT USED	26	1 1/16" Ø HOLE
73	(2) #5 TOP AND BOTTOM	27	1" HONEYCOMB FRP PANEL
74	#4 TIES @ 12" O.C.	28	MAST FLANGE PLATE, SEE SCHEDULE.
75	#4 TIES @ 6" O.C.	29	VALMONT FRP 5"x 5/16" TUBE FRAMING
76	#4 TIES @ 3" O.C.	30	FRP SHEATHING/PANEL SEAM
77	(5) #4 TIES @ 1 3/4" O.C. MAX	31	∠2x2x3/16"
78	(16) #8 VERTICAL	32	∠4x4x1/4"
79	(2) #5 8"⌈x 48" TOP & BOTTOM HOOKED INTO GRADE BEAM	33	∠6x6x3/8"
80	CONCRETE PIER F'c - 4000 PSI	34	PLATFORM ACCESS
81	135° SEISMIC BEND IN NON LINEAR VERT. PLACEMENT	35	3/4"Ø A325 BOLT
82	CONDUIT BY OTHERS	36	13/16" Ø HOLE
83	#4 @ 12" O.C. EACH WAY	37	FIELD DRILL TO MATCH FRAMING
84	#4 TOP AND BOTTOM	38	VALMONT FRP 5X5X5/16" TUBE
85	6" CONCRETE SLAB	39	VALMONT FRP ∠5X5X5/16"
86	4" ABC FILL	40	DOUBLE VALMONT FRP ∠5X5X5/16" STRONG BACK
87	LADDER STAND-OFF	41	FLANGED LEG SPLICE, SEE SCHEDULE
88	LADDER STAND-OFF MOUNT	42	3/4" PLATE LEG WALL REINFORCEMENT
89	COTTERMAN 6' LADDER GUARD OR APPROVED EQUAL	43	1" A500 GRADE B GUSSET PLATE
90	50"Ø x 3/8" FRP CAP PLATE	44	3/16" A36 PLATE FLANLGE
91		45	LEG CAP PLATE, SEE SCHEDULE

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PLATTSVILLE RELO CT

100' TALL 3 LEG MONUMENT

26'-6" AFG, 53' AFG & 80' AFG FFRAMING PLANS

5151 PARK AVENUE, FAIRFIELD, CT 06825
LATITUDE: N41° 13' 08.19" LONGITUDE: W73° 14' 41.12"

STATE OF CONNECTICUT — ALAN E. MONEY — No. PEN 0027426 — LICENSED PROFESSIONAL ENGINEER

PROGRESS LOG

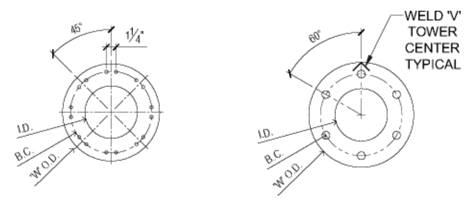
0	10/19/22	ISSUED TO CLIENT	CK
A	09/19/22	ISSUED FOR REVIEW	CK

SHEET NUMBER	PROGRESS
S3.0	0

DRAWING DATE
October 19, 2022

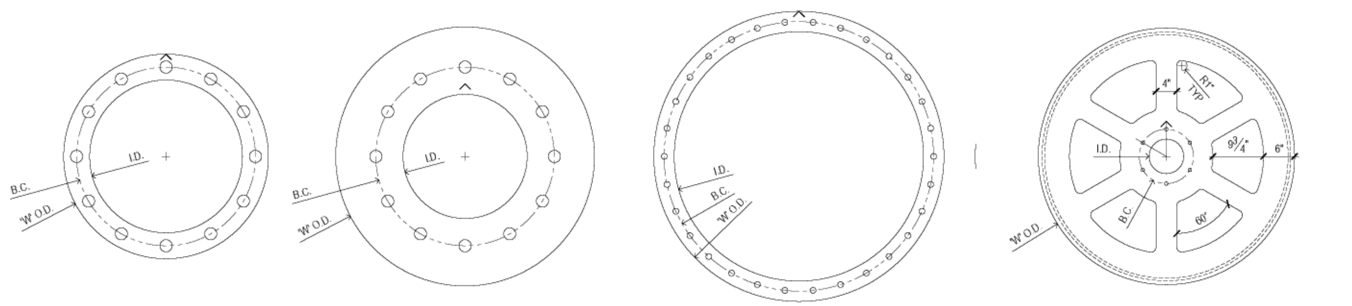
BASE/FLANGE/MATING/TEMPLATE PLATES

LOCATION	(t) THICKNESS	PLATE GRADE	BOLT HOLE	(#) BOLT Ø (GRADE)	W/OD (A36 PL)	B.C.	I.D.
(LEG) BASE PLATE	3"	A572-60 GR 60	2 5/8" Ø	(12) 2 1/4" Ø x 84" A615-75 (75 KSI)	50" Ø	34.5" Ø	24" Ø
A.B. TEMPLATE (12) BOLT LEG (BOTTOM)	1/2"	A572-50 GR 50	2 3/8" Ø	(12) 2 1/4" Ø x 84" A615-75 (75 KSI)	39.5" Ø	34.5" Ø	29.5" Ø
LEG FLANGE AND MATING PLATES	2"	A572-50 GR 50	1 1/16"	(32) 1" Ø (A325)	56" Ø	52"	48 1/8"
LEG CAP PLATE	2 1/2"	A572-50 GR 50	9/16" Ø	(6) 1/2" Ø (A325)	49.5" Ø	10.5" Ø	6 3/4" Ø
MAST BASE PLATE	1"	A572-50 GR 50	11/16" Ø	(6) 5/8" Ø (A325)	13.5" Ø	10.5" Ø	6 3/4" Ø
MAST FLANGE PLATE	3/8"	A572-50 GR 50	7/16" Ø	(16) 3/8" Ø (GRADE B)	12.5" Ø	10.5" Ø	6 3/4" Ø



(16) HOLE ROUND MAST FLANGE PLATE

(6) HOLE ROUND MAST BASE PLATE



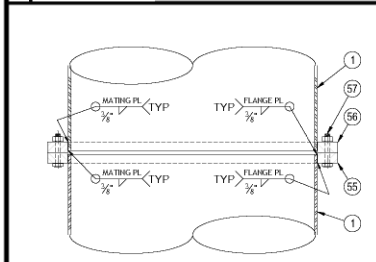
(12) HOLE ANCHOR BOLT TEMPLATE

(12) HOLE ROUND BASE PLATE

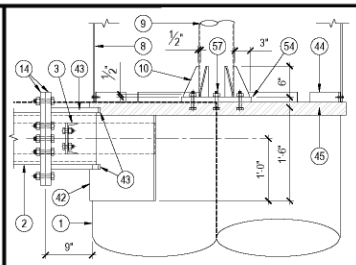
(30) HOLE ROUND FLANGE\MATING PLATE

(6) HOLE LEG CAP PLATE w/ CUT OUTS

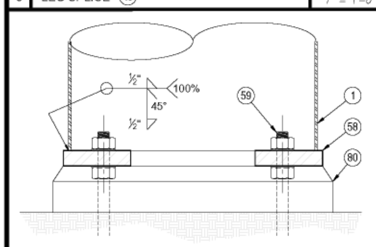
1 BASE PLATE & TEMPLATE SCHEDULE



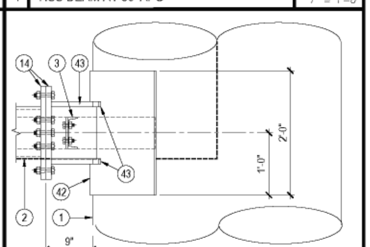
6 LEG SPLICE (43) SCALE: 1" = 1'-0"



4 HSS BEAM AT 80' AFG SCALE: 1" = 1'-0"

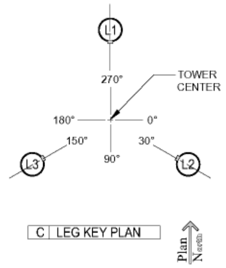


5 LEG - BASE PLATE CONNECTION (58) SCALE: 1" = 1'-0"

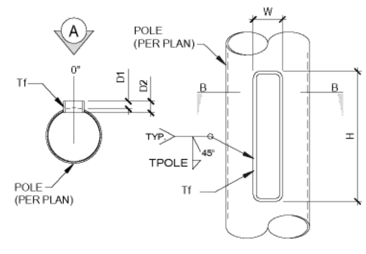


3 HSS BEAM AT 62' AFG SCALE: 1" = 1'-0"

LEG	ELEV AFG	QTY	W (IN)	H (IN)	ORIENTATION (PLAN NORTH)	D1 (IN)	D2 (IN)	TF (IN)
L1	65'-0"	1	8	22	0°	1 1/2	2 1/4	3/8
	55'-6"	1	8	22	0°	1 1/2	2 1/4	3/8
	3'-0"	1	8	22	0°	1 1/2	2 1/4	3/8
L2	65'-0"	1	8	22	120°	1 1/2	2 1/4	3/8
	55'-6"	1	8	22	120°	1 1/2	2 1/4	3/8
	3'-0"	1	8	22	120°	1 1/2	2 1/4	3/8
L3	65'-0"	1	10	30	240°	2 1/2	4 1/2	3/4
	55'-6"	1	10	30	240°	2 1/2	4 1/2	3/4
	3'-0"	1	10	30	240°	2 1/2	4 1/2	3/4



C LEG KEY PLAN



B SECTION 'B-B'

A ELEVATION

Tf = THICKNESS OF FLANGE
ATP = ABOVE TOP OF PLATE

2 COAX HAND HOLE SCHEDULE

KEY NOTES

		MARK	DESCRIPTION
46	CONTINUOUS TONGUE EDGE	1	48"Ø x 1/2" LEG
47	3" GROVE TAB @ 12" O.C.	2	HSS 10x10x 3/8" A500 GR B
48	11/16" HOLES, FIELD DRILL	3	C6x11.5
49	1/4" FRP SKIN	4	1" LEG CAP PLATE
50	5/8"Ø STRONGWELL FIBREBOLT OR EQUAL	5	FLANGED JOINT
51	11/16" HOLES	6	3/8" x 3" BAR w/ 1" ROUND RUNG LADDER w/ SAFETY CLIMB
52	HSS 2x2x3/16"	7	FRP TUBE FRAMED PANEL FINISH PER ARCHITECTURAL
53	3/8" GRADE B BOLTS	8	48"Ø x 1/4" FRP CANISTER
54	MAST BASE PLATE, SEE SCHEDULE SHEET S4.0	9	6 5/8"Ø SCHED 40 MAST
55	LEG FLANGE PLATE, SEE SCHEDULE SHEET S4.0	10	3/8" PLATE GUSSETS
56	LEG MATING PLATE, SEE SCHEDULE	11	MCNICHOLS 'GW 125' 1 1/4"X3/16" BAR GRATE
57	BOLT PER SCHEDULE - SHEET S4.0	12	5/8"Ø A307 BOLT IN 11/16" Ø HOLE
58	LEG BASE PLATE, SEE SCHEDULE SHEET S4.0	13	3/8"Ø A36 TAB
59	ANCHOR BOLT, SEE SCHEDULE SHEET S4.0	14	1" A572-50 FLANGE PLATE
60	CLIMBING HAND HOLE AT LEG L1	15	ANCHOR BOLT HOLE, SEE SCHEDULE - SHEET S4.0
61	3/8" x 3" PLATE	16	ANTENNA BY OTHERS
62	1/4"x 3" BENT PLATE	17	RRU BY OTHERS
63	1"Ø A36 ROD w/ NON SKID FINISH	18	Ø2.375" O.D. SCH 40 ANTENNA PIPE
64	1/4" HOLE, FIELD DRILL	19	5/8"Ø A325 BOLT IN 11/16" Ø HOLE
65	7/16"Ø HOLE	20	CONCRETE GRADE BEAM F'C - 4000 PSI
66	BULKHEAD RADIUS PLATE	21	3/8" A36 PLATE
67	BOLKHEAD ARM ASSEMBLY	22	3/8"Ø U-BOLT BOLT
68	1/4" Ø x 1 1/4" SELF DRILLING SCREW BY McMASTER-CARR	23	3/8"Ø GRADE B BOLT IN 7/16" Ø HOLE
69	(3) #3 TIES IN TOP 3"	24	1/2"Ø A325 BOLT IN 9/16" Ø HOLE
70	BASE PLATE, SEE SCHEDULE SHEET S4.0	25	NOT USED
71	ANCHOR BOLT TEMPLATE SCHEDULE	26	11/16" Ø HOLE
72	NOT USED	27	1" HONEYCOMB FRP PANEL
73	(2) #5 TOP AND BOTTOM	28	MAST FLANGE PLATE, SEE SCHEDULE.
74	#4 TIES @ 12" O.C.	29	VALMONT FRP 5"x 5/16" TUBE FRAMING
75	#4 TIES @ 6" O.C.	30	FRP SHEATHING/PANEL SEAM
76	#4 TIES @ 3" O.C.	31	∠2x2x3/16"
77	(5) #4 TIES @ 1 3/4" O.C. MAX	32	∠4x4x1/4"
78	(16) #8 VERTICAL	33	∠6x6x3/8"
79	(2) #5 8" x 48" TOP & BOTTOM HOOKED INTO GRADE BEAM	34	PLATFORM ACCESS
80	CONCRETE PIER F'c - 4000 PSI	35	3/4"Ø A325 BOLT
81	135° SEISMIC BEND IN NON LINEAR VERT. PLACEMENT	36	13/16" Ø HOLE
82	CONDUIT BY OTHERS	37	FIELD DRILL TO MATCH FRAMING
83	#4 @ 12" O.C. EACH WAY	38	VALMONT FRP 5X5X5/16" TUBE
84	#4 TOP AND BOTTOM	39	VALMONT FRP ∠5X5X5/16"
85	6" CONCRETE SLAB	40	DOUBLE VALMONT FRP ∠5X5X5/16" STRONG BACK
86	4" ABC FILL	41	FLANGED LEG SPLICE, SEE SCHEDULE
87	LADDER STAND-OFF	42	3/4" PLATE LEG WALL REINFORCEMENT
88	LADDER STAND-OFF MOUNT	43	1" A500 GRADE B GUSSET PLATE
89	COTTERMAN 6' LADDER GUARD OR APPROVED EQUAL	44	3/16" A36 PLATE FLANLGE
90	50"Ø x 3/8" FRP CAP PLATE	45	LEG CAP PLATE, SEE SCHEDULE
91			

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ISE JOB #: 18054

PLATTSVILLE RELO CT
100' TALL 3 LEG MONUMENT

PLATE AND HAND HOLE SCHEDULES

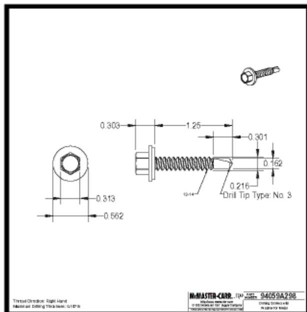
5151 PARK AVENUE, FAIRFIELD, CT 06825
LATITUDE N41° 13' 08.19" LONGITUDE W73° 14' 41.12"

PROGRESS LOG

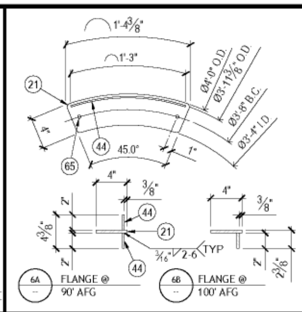
0	10/19/22	ISSUED TO CLIENT	CK
A	09/19/22	ISSUED FOR REVIEW	CK

SHEET NUMBER: S4.0
PROGRESS: 0

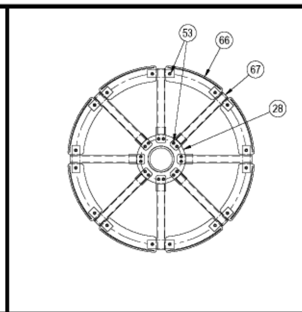
DRAWING DATE: October 19, 2022



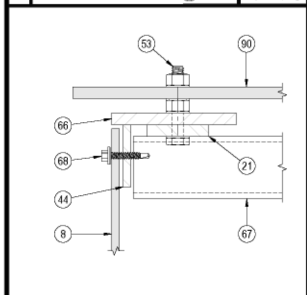
10 SELF DRILLING SCREW (68) SCALE: 1" = 1'-0"



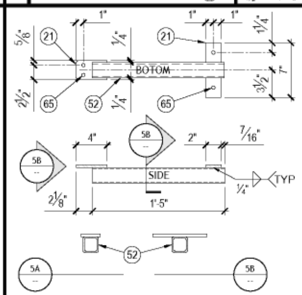
6 BULKHEAD RADIUS PLATE (66) SCALE: 1½" = 1'-0"



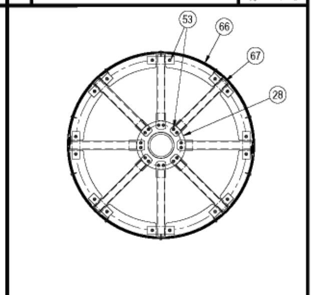
5 BULKHEAD ASSEMBLY SCALE: ¾" = 1'-0"



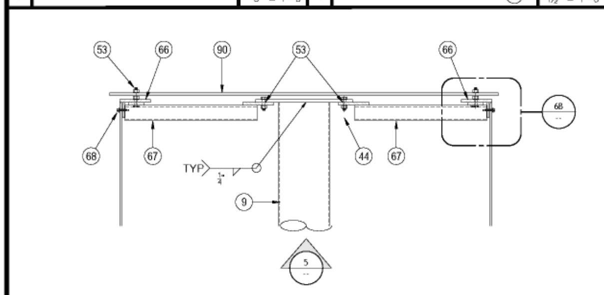
9 FRP CAP PLATE ATTACHMENT SCALE: 6" = 1'-0"



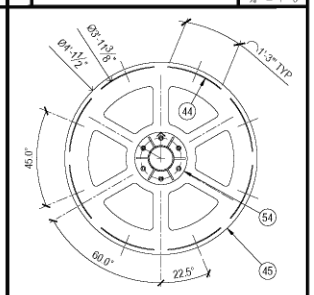
5 BULKHEAD ARM ASSEMBLY (67) SCALE: 1½" = 1'-0"



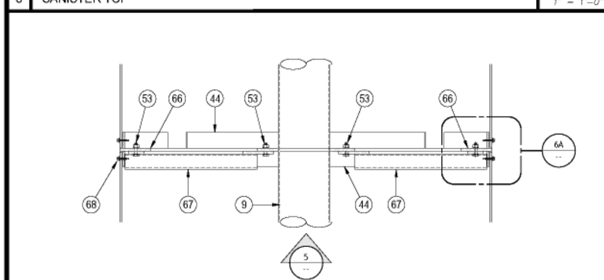
4 ENCLOSED BULKHEAD ASSEMBLY SCALE: ¾" = 1'-0"



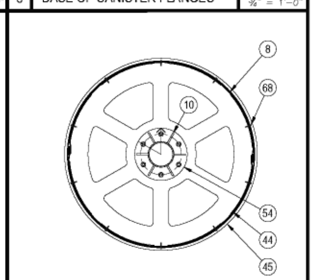
8 CANISTER TOP SCALE: 1" = 1'-0"



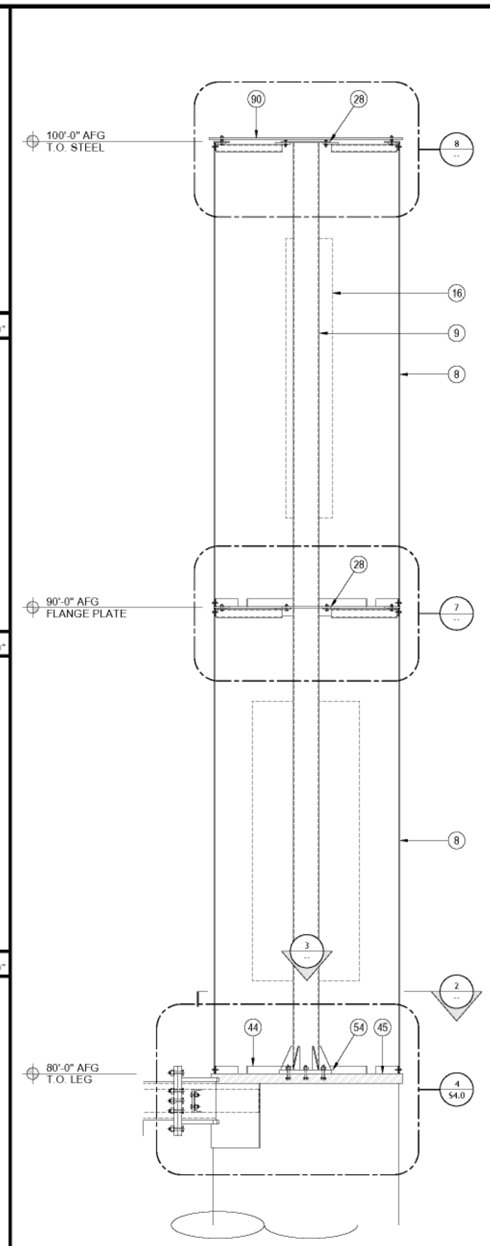
3 BASE OF CANISTER FLANGES SCALE: ¾" = 1'-0"



7 CANISTER MIDDLE FLANGE SCALE: 1" = 1'-0"



2 CANISTER BASE - LEG CAP PLATE SCALE: ¾" = 1'-0"



1 TYPICAL 80' AFG - 100' AFG CANISTER SCALE: ¾" = 1'-0"

KEY NOTES

		MARK	DESCRIPTION
46	CONTINUOUS TONGUE EDGE		
47	3" GROVE TAB @ 12" O.C.	1	48"Ø x ½" LEG
48	1 1/16" HOLES, FIELD DRILL	2	HSS 10x10x ⅜" A500 GR B
49	¼" FRP SKIN	3	C6x11.5
50	⅝"Ø STRONGWELL FIBREBOLT OR EQUAL	4	1" LEG CAP PLATE
51	1 1/16" HOLES	5	FLANGED JOINT
52	HSS 2x2x3/16"	6	⅜" x 3" BAR w/ 1" ROUND RUNG LADDER w/ SAFETY CLIMB
53	⅜" GRADE B BOLTS	7	FRP TUBE FRAMED PANEL FINISH PER ARCHITECTURAL
54	MAST BASE PLATE, SEE SCHEDULE SHEET S4.0	8	48"Ø x ¼" FRP CANISTER
55	LEG FLANGE PLATE, SEE SCHEDULE SHEET S4.0	9	6 ⅝"Ø SCHED 40 MAST
56	LEG MATING PLATE, SEE SCHEDULE	10	⅜" PLATE GUSSETS
57	BOLT PER SCHEDULE - SHEET S4.0	11	MCNICHOLS 'GW 125' 1¼"X3/16" BAR GRATE
58	LEG BASE PLATE, SEE SCHEDULE SHEET S4.0	12	⅝"Ø A307 BOLT IN 1 1/16" Ø HOLE
59	ANCHOR BOLT, SEE SCHEDULE SHEET S4.0	13	⅜"Ø A36 TAB
60	CLIMBING HAND HOLE AT LEG L1	14	1" A572-50 FLANGE PLATE
61	⅜" x 3" PLATE	15	ANCHOR BOLT HOLE, SEE SCHEDULE - SHEET S4.0
62	¼"x 3" BENT PLATE	16	ANTENNA BY OTHERS
63	1"Ø A36 ROD w/ NON SKID FINISH	17	RRU BY OTHERS
64	¼" HOLE, FIELD DRILL	18	Ø2.375" O.D. SCH 40 ANTENNA PIPE
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66	BULKHEAD RADIUS PLATE	20	CONCRETE GRADE BEAM F'C - 4000 PSI
67	BOLKHEAD ARM ASSEMBLY	21	⅜" A36 PLATE
68	¼" Ø x 1 ¼" SELF DRILLING SCREW BY McMASTER-CARR	22	⅜"Ø U-BOLT BOLT
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75	#4 TIES @ 6" O.C.	29	VALMONT FRP 5"x 5/16" TUBE FRAMING
76	#4 TIES @ 3" O.C.	30	FRP SHEATHING/PANEL SEAM
77	(5) #4 TIES @ 1 ¾" O.C. MAX	31	∠2x2x3/16"
78	(16) #8 VERTICAL	32	∠4x4x¼"
79	(2) #5 8"⌈ x 48" TOP & BOTTOM HOOKED INTO GRADE BEAM	33	∠6x6x⅜"
80	CONCRETE PIER F'c - 4000 PSI	34	PLATFORM ACCESS
81	135° SEISMIC BEND IN NON LINEAR VERT. PLACEMENT	35	¾"Ø A325 BOLT
82	CONDUIT BY OTHERS	36	13/16" Ø HOLE
83	#4 @ 12" O.C. EACH WAY	37	FIELD DRILL TO MATCH FRAMING
84	#4 TOP AND BOTTOM	38	VALMONT FRP 5X5X5/16" TUBE
85	6" CONCRETE SLAB	39	VALMONT FRP ∠5X5X5/16"
86	4" ABC FILL	40	DOUBLE VALMONT FRP ∠5X5X5/16" STRONG BACK
87	LADDER STAND-OFF	41	FLANGED LEG SPLICE, SEE SCHEDULE
88	LADDER STAND-OFF MOUNT	42	¾" PLATE LEG WALL REINFORCEMENT
89	COTTERMAN 6' LADDER GUARD OR APPROVED EQUAL	43	1" A500 GRADE B GUSSET PLATE
90	50"Ø x ⅜" FRP CAP PLATE	44	3/16" A36 PLATE FLANLGE
91		45	LEG CAP PLATE, SEE SCHEDULE

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www.iseinc.biz

ISE JOB #: 18054

PLATTSVILLE RELO CT

100 TALL 3 LEG MONUMENT

CANISTER FRAMING

5151 PARK AVENUE, FAIRFIELD , CT 06825
LATITUDE: N41° 13' 08.19" LONGITUDE: W73° 14' 41.12"

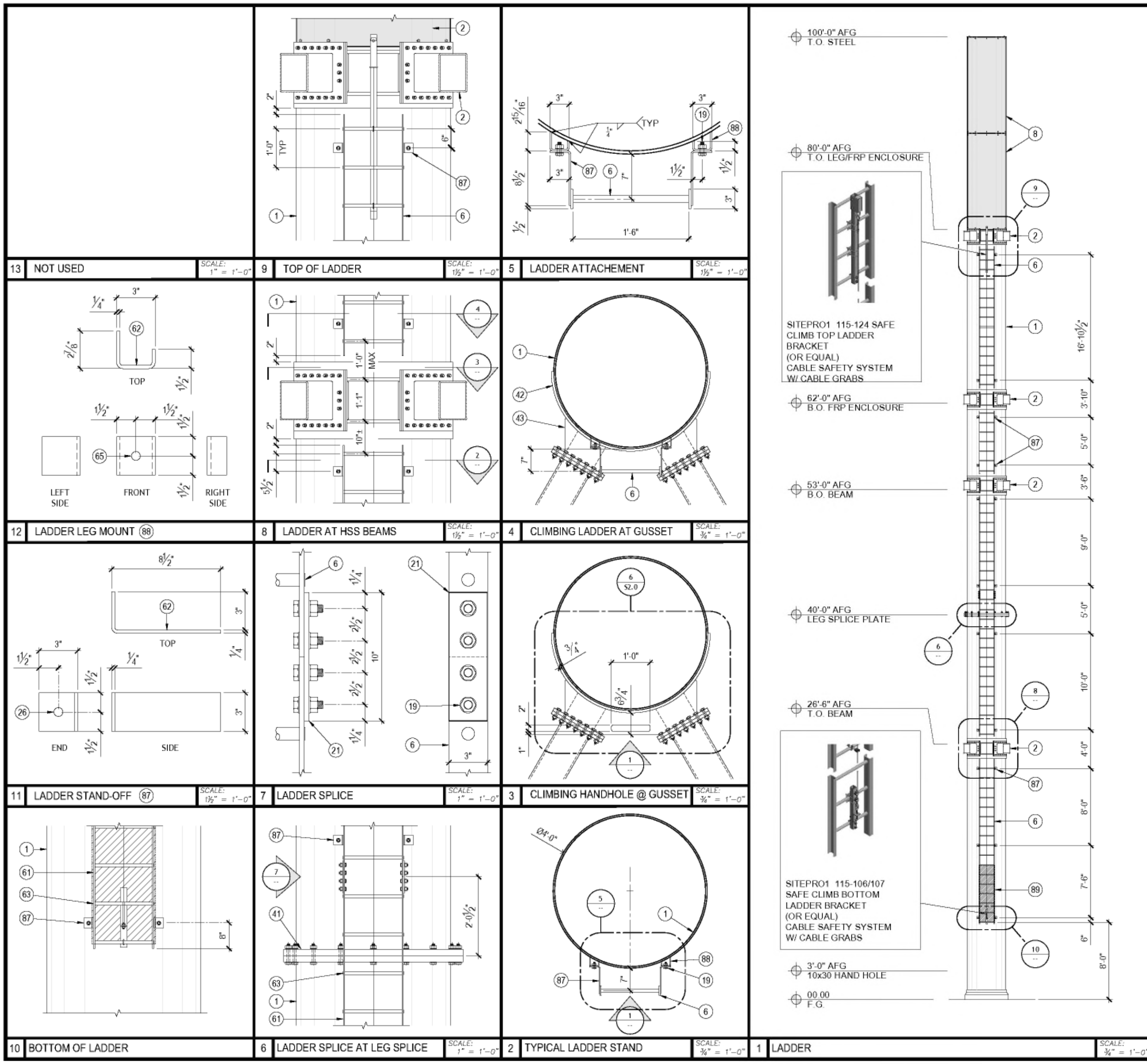
STATE OF CONNECTICUT
ALAN E. MONEY
No. PEN 0031429
LICENSED PROFESSIONAL ENGINEER

PROGRESS LOG

0	10/19/22	ISSUED TO CLIENT	CK
A	09/18/22	ISSUED FOR REVIEW	CK

SHEET NUMBER	PROGRESS
S5.0	0

DRAWING DATE
October 19, 2022



KEY NOTES

		MARK	DESCRIPTION
46	CONTINUOUS TONGUE EDGE		
47	3" GROVE TAB @ 12" O.C.	1	48"Ø x $\frac{1}{2}$" LEG
48	$1\frac{1}{16}$" HOLES, FIELD DRILL	2	HSS 10x10x $\frac{3}{8}$" A500 GR B
49	$\frac{1}{4}$" FRP SKIN	3	C6x11.5
50	$\frac{5}{8}$"Ø STRONGWELL FIBREBOLT OR EQUAL	4	1" LEG CAP PLATE
51	$1\frac{1}{16}$" HOLES	5	FLANGED JOINT
52	HSS 2x2x$\frac{3}{16}$"	6	$\frac{3}{8}$" x 3" BAR w/ 1" ROUND RUNG LADDER w/ SAFETY CLIMB
53	$\frac{3}{8}$" GRADE B BOLTS	7	FRP TUBE FRAMED PANEL FINISH PER ARCHITECTURAL
54	MAST BASE PLATE, SEE SCHEDULE SHEET S4.0	8	48"Ø x $\frac{1}{4}$" FRP CANISTER
55	LEG FLANGE PLATE, SEE SCHEDULE SHEET S4.0	9	6 $\frac{5}{8}$"Ø SCHED 40 MAST
56	LEG MATING PLATE, SEE SCHEDULE	10	$\frac{3}{8}$" PLATE GUSSETS
57	BOLT PER SCHEDULE - SHEET S4.0	11	MCNICHOLS 'GW 125' $1\frac{1}{4}$"X$\frac{3}{16}$" BAR GRATE
58	LEG BASE PLATE, SEE SCHEDULE SHEET S4.0	12	$\frac{5}{8}$"Ø A307 BOLT IN $1\frac{1}{16}$" Ø HOLE
59	ANCHOR BOLT, SEE SCHEDULE SHEET S4.0	13	$\frac{3}{8}$"Ø A36 TAB
60	CLIMBING HAND HOLE AT LEG L1	14	1" A572-50 FLANGE PLATE
61	$\frac{3}{8}$" x 3" PLATE	15	ANCHOR BOLT HOLE, SEE SCHEDULE - SHEET S4.0
62	$\frac{1}{4}$"x 3" BENT PLATE	16	ANTENNA BY OTHERS
63	1"Ø A36 ROD w/ NON SKID FINISH	17	RRU BY OTHERS
64	$\frac{1}{4}$" HOLE, FIELD DRILL	18	Ø2.375" O.D. SCH 40 ANTENNA PIPE
65	$\frac{7}{16}$"Ø HOLE	19	$\frac{5}{8}$"Ø A325 BOLT IN $1\frac{1}{16}$" Ø HOLE
66	BULKHEAD RADIUS PLATE	20	CONCRETE GRADE BEAM F'C - 4000 PSI
67	BOLKHEAD ARM ASSEMBLY	21	$\frac{3}{8}$" A36 PLATE
68	$\frac{1}{4}$" Ø x 1 $\frac{1}{4}$" SELF DRILLING SCREW BY McMASTER-CARR	22	$\frac{3}{8}$"Ø U-BOLT BOLT
69	(3) #3 TIES IN TOP 3"	23	$\frac{3}{8}$"Ø GRADE B BOLT IN $\frac{7}{16}$" Ø HOLE
70	BASE PLATE, SEE SCHEDULE SHEET S4.0	24	$\frac{1}{2}$"Ø A325 BOLT IN $\frac{9}{16}$" Ø HOLE
71	ANCHOR BOLT TEMPLATE SCHEDULE	25	NOT USED
72	NOT USED	26	$1\frac{1}{16}$" Ø HOLE
73	(2) #5 TOP AND BOTTOM	27	1" HONEYCOMB FRP PANEL
74	#4 TIES @ 12" O.C.	28	MAST FLANGE PLATE, SEE SCHEDULE.
75	#4 TIES @ 6" O.C.	29	VALMONT FRP 5"x $\frac{5}{16}$" TUBE FRAMING
76	#4 TIES @ 3" O.C.	30	FRP SHEATHING/PANEL SEAM
77	(5) #4 TIES @ 1 $\frac{3}{4}$" O.C. MAX	31	∠2x2x$\frac{3}{16}$"
78	(16) #8 VERTICAL	32	∠4x4x$\frac{1}{4}$"
79	(2) #5 8"⌈x 48" TOP & BOTTOM HOOKED INTO GRADE BEAM	33	∠6x6x$\frac{3}{8}$"
80	CONCRETE PIER F'c - 4000 PSI	34	PLATFORM ACCESS
81	135° SEISMIC BEND IN NON LINEAR VERT. PLACEMENT	35	$\frac{3}{4}$"Ø A325 BOLT
82	CONDUIT BY OTHERS	36	$\frac{13}{16}$" Ø HOLE
83	#4 @ 12" O.C. EACH WAY	37	FIELD DRILL TO MATCH FRAMING
84	#4 TOP AND BOTTOM	38	VALMONT FRP 5X5X$\frac{5}{16}$" TUBE
85	6" CONCRETE SLAB	39	VALMONT FRP ∠5X5X$\frac{5}{16}$"
86	4" ABC FILL	40	DOUBLE VALMONT FRP ∠5X5X$\frac{5}{16}$" STRONG BACK
87	LADDER STAND-OFF	41	FLANGED LEG SPLICE, SEE SCHEDULE
88	LADDER STAND-OFF MOUNT	42	$\frac{3}{4}$" PLATE LEG WALL REINFORCEMENT
89	COTTERMAN 6' LADDER GUARD OR APPROVED EQUAL	43	1" A500 GRADE B GUSSET PLATE
90	50"Ø x $\frac{3}{8}$" FRP CAP PLATE	44	$\frac{3}{16}$" A36 PLATE FLANLGE
91		45	LEG CAP PLATE, SEE SCHEDULE

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PLATTSVILLE RELO CT
100' TALL 3 LEG MONUMENT

LADDER DETAILS

5151 PARK AVENUE, FAIRFIELD , CT 06825
LATITUDE: N41° 13' 08.19" LONGITUDE: W73° 14' 41.12"

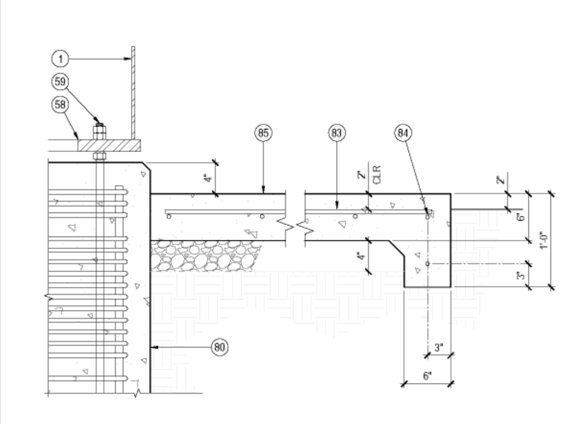
STATE OF CONNECTICUT · ALAN E. MONEY · No. PEN 0031439 · LICENSED · PROFESSIONAL ENGINEER
Oct 19, 2022

PROGRESS LOG

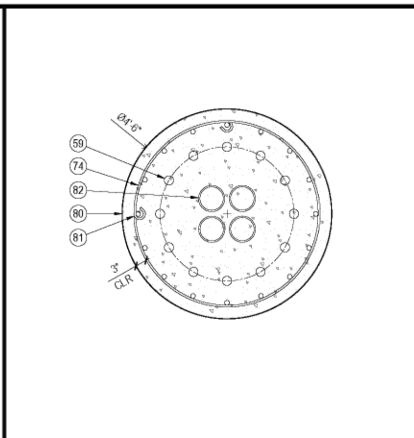
0	10/19/22	ISSUED TO CLIENT	CK
A	09/19/22	ISSUED FOR REVIEW	CK

SHEET NUMBER	PROGRESS
S6.0	0

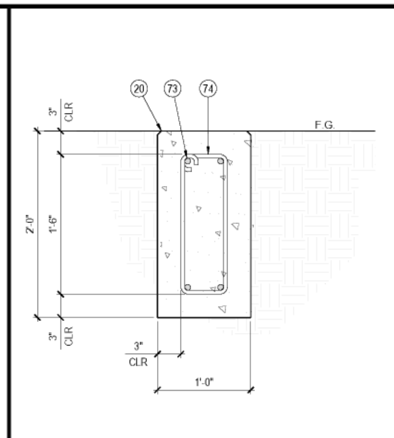
DRAWING DATE
October 19, 2022



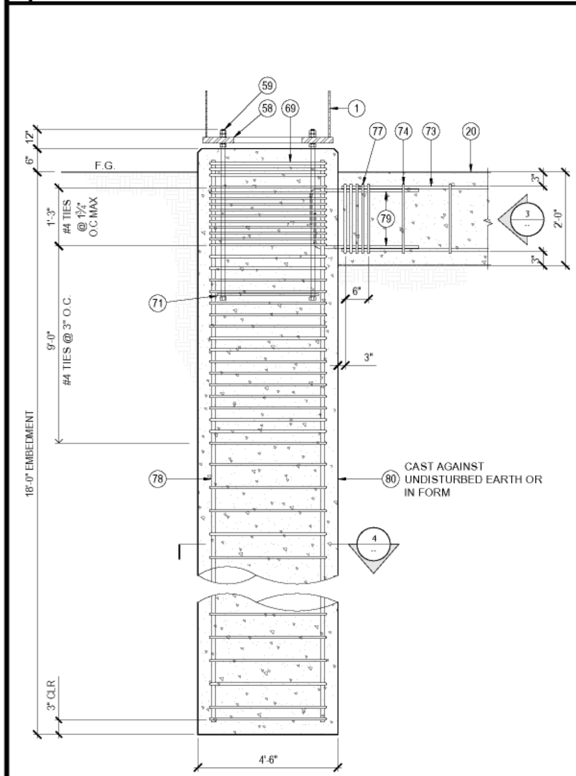
5 ENTRY SLAB



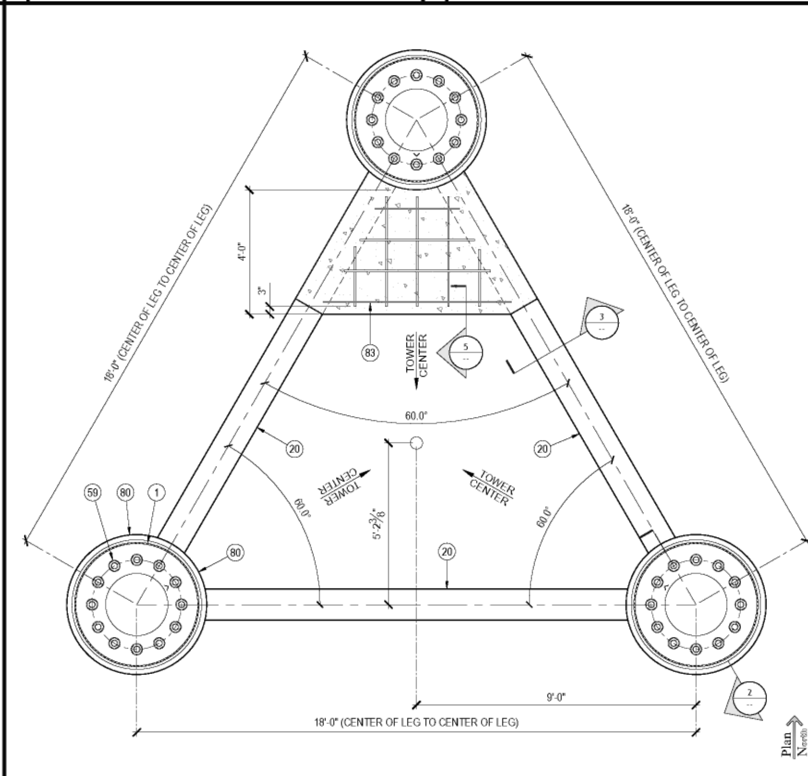
4 PIER PLAN



3 GRADE BEAM SECTION



2 PIER SECTION — SCALE: N.T.S.



1 62' AFG PLATFORM FRAMING — SCALE: 3/16" = 1'-0"

KEY NOTES

MARK	DESCRIPTION	MARK	DESCRIPTION
46	CONTINUOUS TONGUE EDGE	1	48"Ø x $\frac{1}{2}$" LEG
47	3" GROVE TAB @ 12" O.C.	2	HSS 10x10x $\frac{3}{8}$" A500 GR B
48	$1\frac{1}{16}$" HOLES, FIELD DRILL	3	C6x11.5
49	$\frac{1}{4}$" FRP SKIN	4	1" LEG CAP PLATE
50	$\frac{5}{8}$"Ø STRONGWELL FIBREBOLT OR EQUAL	5	FLANGED JOINT
51	$1\frac{1}{16}$" HOLES	6	$\frac{3}{8}$" x 3" BAR w/ 1" ROUND RUNG LADDER w/ SAFETY CLIMB
52	HSS 2x2x$\frac{3}{16}$"	7	FRP TUBE FRAMED PANEL FINISH PER ARCHITECTURAL
53	$\frac{3}{8}$" GRADE B BOLTS	8	48"Ø x $\frac{1}{4}$" FRP CANISTER
54	MAST BASE PLATE, SEE SCHEDULE SHEET S4.0	9	6 $\frac{5}{8}$"Ø SCHED 40 MAST
55	LEG FLANGE PLATE, SEE SCHEDULE SHEET S4.0	10	$\frac{3}{8}$" PLATE GUSSETS
56	LEG MATING PLATE, SEE SCHEDULE	11	MCNICHOLS 'GW 125' $1\frac{1}{4}$"X$\frac{3}{16}$" BAR GRATE
57	BOLT PER SCHEDULE - SHEET S4.0	12	$\frac{5}{8}$"Ø A307 BOLT IN $1\frac{1}{16}$" Ø HOLE
58	LEG BASE PLATE, SEE SCHEDULE SHEET S4.0	13	$\frac{3}{8}$"Ø A36 TAB
59	ANCHOR BOLT, SEE SCHEDULE SHEET S4.0	14	1" A572-50 FLANGE PLATE
60	CLIMBING HAND HOLE AT LEG L1	15	ANCHOR BOLT HOLE, SEE SCHEDULE - SHEET S4.0
61	$\frac{3}{8}$" x 3" PLATE	16	ANTENNA BY OTHERS
62	$\frac{1}{4}$"x 3" BENT PLATE	17	RRU BY OTHERS
63	1"Ø A36 ROD w/ NON SKID FINISH	18	Ø2.375" O.D. SCH 40 ANTENNA PIPE
64	$\frac{1}{4}$" HOLE, FIELD DRILL	19	$\frac{5}{8}$"Ø A325 BOLT IN $1\frac{1}{16}$" Ø HOLE
65	$\frac{7}{16}$"Ø HOLE	20	CONCRETE GRADE BEAM F'C - 4000 PSI
66	BULKHEAD RADIUS PLATE	21	$\frac{3}{8}$" A36 PLATE
67	BOLKHEAD ARM ASSEMBLY	22	$\frac{3}{8}$"Ø U-BOLT BOLT
68	$\frac{1}{4}$" Ø x 1 $\frac{1}{4}$" SELF DRILLING SCREW BY McMASTER-CARR	23	$\frac{3}{8}$"Ø GRADE B BOLT IN $\frac{7}{16}$" Ø HOLE
69	(3) #3 TIES IN TOP 3"	24	$\frac{1}{2}$"Ø A325 BOLT IN $\frac{9}{16}$" Ø HOLE
70	BASE PLATE, SEE SCHEDULE SHEET S4.0	25	NOT USED
71	ANCHOR BOLT TEMPLATE SCHEDULE	26	$1\frac{1}{16}$" Ø HOLE
72	NOT USED	27	1" HONEYCOMB FRP PANEL
73	(2) #5 TOP AND BOTTOM	28	MAST FLANGE PLATE, SEE SCHEDULE.
74	#4 TIES @ 12" O.C.	29	VALMONT FRP 5"x $\frac{5}{16}$" TUBE FRAMING
75	#4 TIES @ 6" O.C.	30	FRP SHEATHING/PANEL SEAM
76	#4 TIES @ 3" O.C.	31	∠2x2x$\frac{3}{16}$"
77	(5) #4 TIES @ 1 $\frac{3}{4}$" O.C. MAX	32	∠4x4x$\frac{1}{4}$"
78	(16) #8 VERTICAL	33	∠6x6x$\frac{3}{8}$"
79	(2) #5 8"⌈ x 48" TOP & BOTTOM HOOKED INTO GRADE BEAM	34	PLATFORM ACCESS
80	CONCRETE PIER F'c - 4000 PSI	35	$\frac{3}{4}$"Ø A325 BOLT
81	135° SEISMIC BEND IN NON LINEAR VERT. PLACEMENT	36	$\frac{13}{16}$" Ø HOLE
82	CONDUIT BY OTHERS	37	FIELD DRILL TO MATCH FRAMING
83	#4 @ 12" O.C. EACH WAY	38	VALMONT FRP 5X5X$\frac{5}{16}$" TUBE
84	#4 TOP AND BOTTOM	39	VALMONT FRP ∠5X5X$\frac{5}{16}$"
85	6" CONCRETE SLAB	40	DOUBLE VALMONT FRP ∠5X5X$\frac{5}{16}$" STRONG BACK
86	4" ABC FILL	41	FLANGED LEG SPLICE, SEE SCHEDULE
87	LADDER STAND-OFF	42	$\frac{3}{4}$" PLATE LEG WALL REINFORCEMENT
88	LADDER STAND-OFF MOUNT	43	1" A500 GRADE B GUSSET PLATE
89	COTTERMAN 6' LADDER GUARD OR APPROVED EQUAL	44	$\frac{3}{16}$" A36 PLATE FLANLGE
90	50"Ø x $\frac{3}{8}$" FRP CAP PLATE	45	LEG CAP PLATE, SEE SCHEDULE
91			

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PLATTSVILLE RELO CT

100' TALL 3 LEG MONUMENT

FOUNDATION PLAN

5151 PARK AVENUE, FAIRFIELD , CT 06825
LATITUDE: N41° 13' 08.19" LONGITUDE: W73° 14' 41.12"

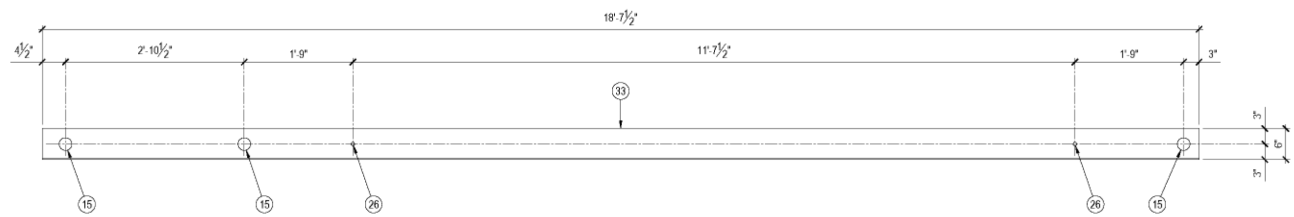
STATE OF CONNECTICUT — ALAN E. MONEY — PROFESSIONAL ENGINEER — LICENSED
OCT 19, 2022

PROGRESS LOG

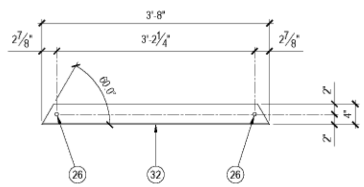
0	10/19/22	ISSUED TO CLIENT	CK
A	09/19/22	ISSUED FOR REVIEW	CK

SHEET NUMBER	PROGRESS
S7.0	0

DRAWING DATE
October 19, 2022



4 ABT-3 (33)



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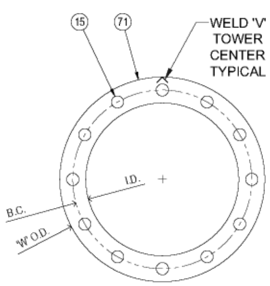
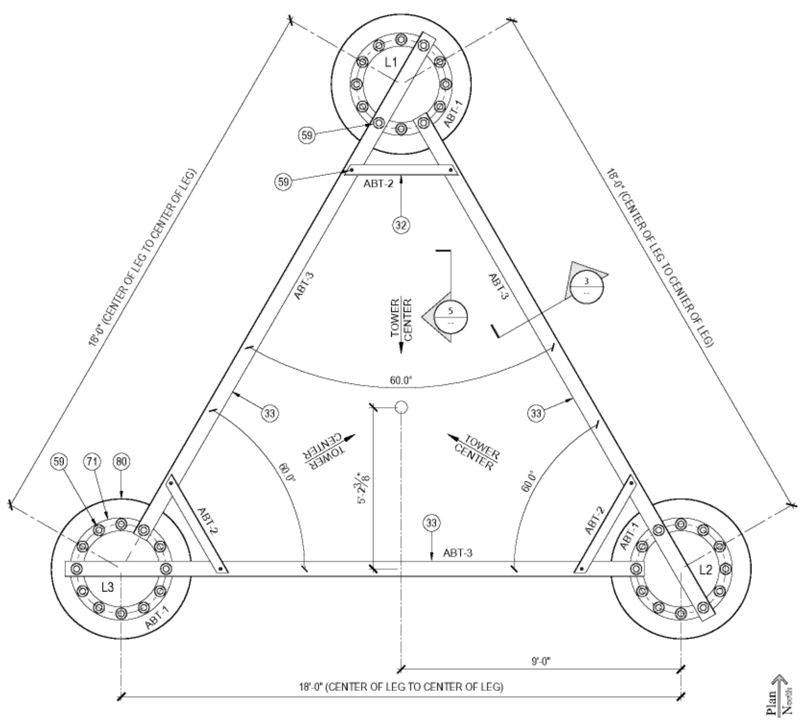


4 ABT-1

SCALE: 1" = 1'-0"



1 ANCHOR BOLT/FOUNATION TEMPLATE

SCALE: 1/2" = 1'-0"

KEY NOTES

		MARK	DESCRIPTION
46	CONTINUOUS TONGUE EDGE		
47	3" GROVE TAB @ 12" O.C.	1	48"Ø x $\frac{1}{2}$" LEG
48	1$\frac{1}{16}$" HOLES, FIELD DRILL	2	HSS 10x10x $\frac{3}{8}$" A500 GR B
49	$\frac{1}{4}$" FRP SKIN	3	C6x11.5
50	$\frac{5}{8}$"Ø STRONGWELL FIBREBOLT OR EQUAL	4	1" LEG CAP PLATE
51	1$\frac{1}{16}$" HOLES	5	FLANGED JOINT
52	HSS 2x2x$\frac{3}{16}$"	6	$\frac{3}{8}$" x 3" BAR w/ 1" ROUND RUNG LADDER w/ SAFETY CLIMB
53	$\frac{3}{8}$" GRADE B BOLTS	7	FRP TUBE FRAMED PANEL FINISH PER ARCHITECTURAL
54	MAST BASE PLATE, SEE SCHEDULE SHEET S4.0	8	48"Ø x $\frac{1}{4}$" FRP CANISTER
55	LEG FLANGE PLATE, SEE SCHEDULE SHEET S4.0	9	6 $\frac{5}{8}$"Ø SCHED 40 MAST
56	LEG MATING PLATE, SEE SCHEDULE	10	$\frac{3}{8}$" PLATE GUSSETS
57	BOLT PER SCHEDULE - SHEET S4.0	11	MCNICHOLS 'GW 125' 1$\frac{1}{4}$"X$\frac{3}{16}$" BAR GRATE
58	LEG BASE PLATE, SEE SCHEDULE SHEET S4.0	12	$\frac{5}{8}$"Ø A307 BOLT IN 1$\frac{1}{16}$" Ø HOLE
59	ANCHOR BOLT, SEE SCHEDULE SHEET S4.0	13	$\frac{3}{8}$"Ø A36 TAB
60	CLIMBING HAND HOLE AT LEG L1	14	1" A572-50 FLANGE PLATE
61	$\frac{3}{8}$" x 3" PLATE	15	ANCHOR BOLT HOLE, SEE SCHEDULE - SHEET S4.0
62	$\frac{1}{4}$"x 3" BENT PLATE	16	ANTENNA BY OTHERS
63	1"Ø A36 ROD w/ NON SKID FINISH	17	RRU BY OTHERS
64	$\frac{1}{4}$" HOLE, FIELD DRILL	18	Ø2.375" O.D. SCH 40 ANTENNA PIPE
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67	BOLKHEAD ARM ASSEMBLY	21	$\frac{3}{8}$" A36 PLATE
68	$\frac{1}{4}$" Ø x 1 $\frac{1}{4}$" SELF DRILLING SCREW BY McMASTER-CARR	22	$\frac{3}{8}$"Ø U-BOLT BOLT
69	(3) #3 TIES IN TOP 3"	23	$\frac{3}{8}$"Ø GRADE B BOLT IN $\frac{7}{16}$" Ø HOLE
70	BASE PLATE, SEE SCHEDULE SHEET S4.0	24	$\frac{1}{2}$"Ø A325 BOLT IN $\frac{9}{16}$" Ø HOLE
71	ANCHOR BOLT TEMPLATE SCHEDULE	25	NOT USED
72	NOT USED	26	1$\frac{1}{16}$" Ø HOLE
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PLATTSVILLE RELO CT

100' TALL 3 LEG MONUMENT

FOUNDATION TEMPLATE

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LATITUDE: N41° 13' 08.19" LONGITUDE: W73° 14' 41.12"

STATE OF CONNECTICUT
LICENSED PROFESSIONAL ENGINEER

PROGRESS LOG

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SHEET NUMBER	PROGRESS
S8.0	0

DRAWING DATE
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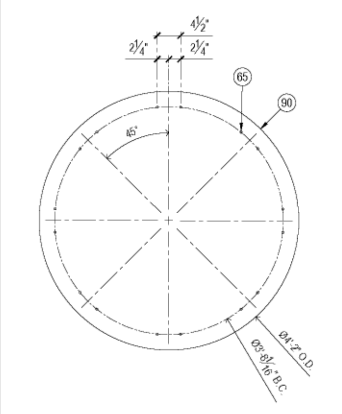
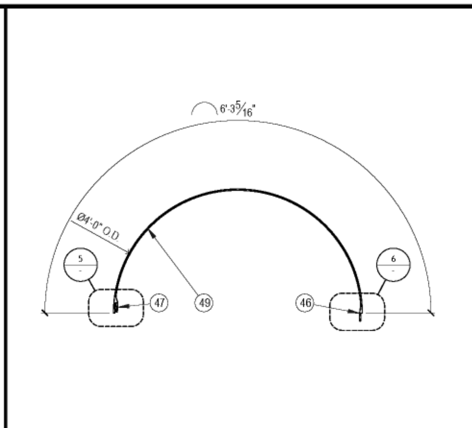
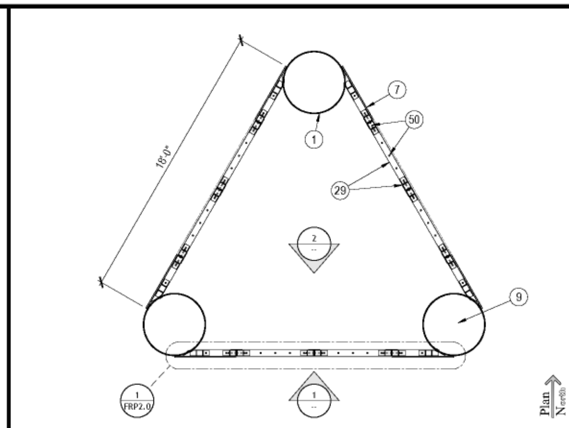


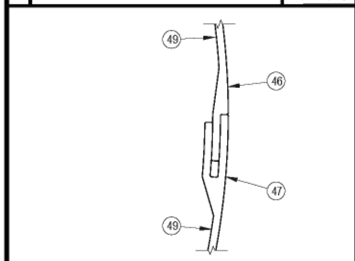
9 CANISTER COVER PLATE SCALE: 1" = 1'-0"



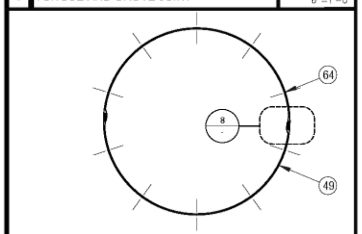
4 PANEL SECTION SCALE: 1" = 1'-0"



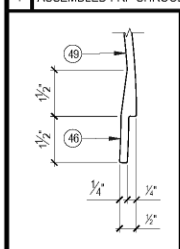
2 FRP ENCLOSURE SECTION SCALE: 1/2" = 1'-0"



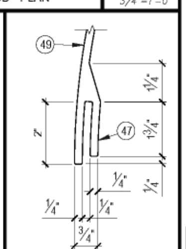
8 TONGUE AND GROVE JOINT SCALE: 6"=1'-0"



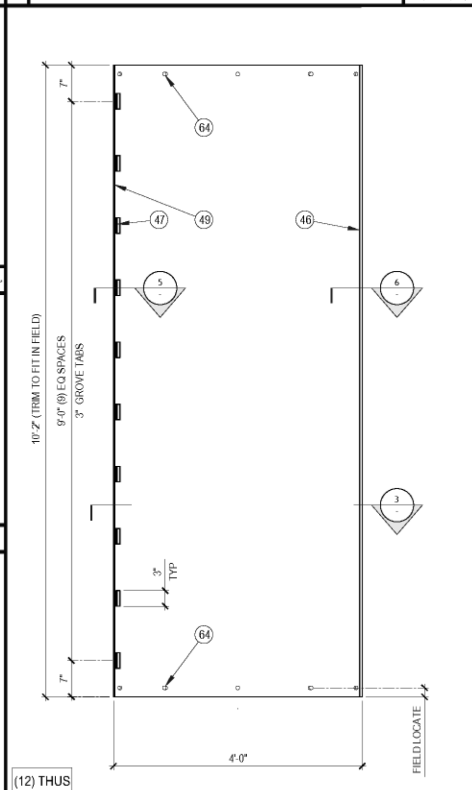
7 ASSEMBLED FRP SHROUD - PLAN SCALE: 3/4"=1'-0"



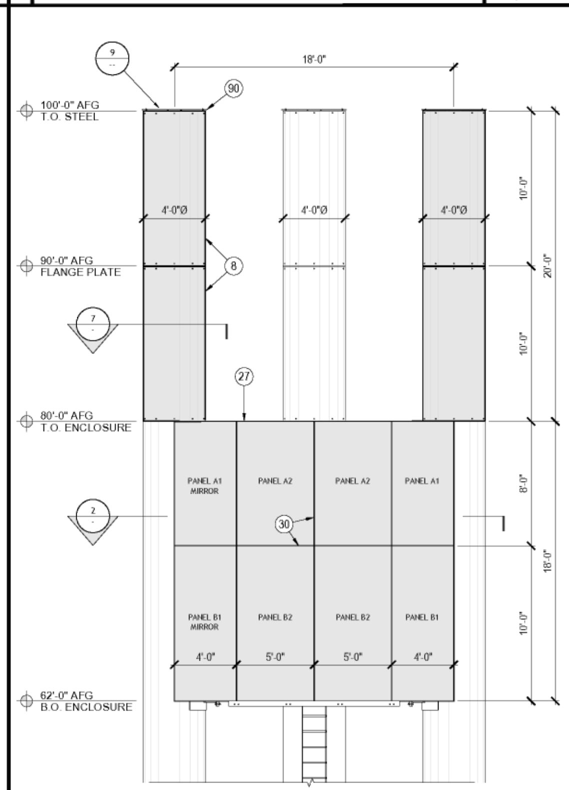
6 TONGUE TAB



5 GROVE TAB SCALE: 6"=1'-0"



3 ENCLOSURE PANEL INTERIOR ELEVATION SCALE: 1/2"=1'-0"



1 TYPICAL ENCLOSURE ELEVATION SCALE: 1/4" = 1'-0"

KEY NOTES

		MARK	DESCRIPTION
46	CONTINUOUS TONGUE EDGE		
47	3" GROVE TAB @ 12" O.C.	1	48"Ø x ½" LEG
48	1¹⁄₁₆" HOLES, FIELD DRILL	2	HSS 10x10x ⅜" A500 GR B
49	¼" FRP SKIN	3	C6x11.5
50	⅝"Ø STRONGWELL FIBREBOLT OR EQUAL	4	1" LEG CAP PLATE
51	1¹⁄₁₆" HOLES	5	FLANGED JOINT
52	HSS 2x2x³⁄₁₆"	6	⅜" x 3" BAR w/ 1" ROUND RUNG LADDER w/ SAFETY CLIMB
53	⅜" GRADE B BOLTS	7	FRP TUBE FRAMED PANEL FINISH PER ARCHITECTURAL
54	MAST BASE PLATE, SEE SCHEDULE SHEET S4.0	8	48"Ø x ¼" FRP CANISTER
55	LEG FLANGE PLATE, SEE SCHEDULE SHEET S4.0	9	6 ⅝"Ø SCHED 40 MAST
56	LEG MATING PLATE, SEE SCHEDULE	10	⅜" PLATE GUSSETS
57	BOLT PER SCHEDULE - SHEET S4.0	11	MCNICHOLS 'GW 125' 1¼"X³⁄₁₆" BAR GRATE
58	LEG BASE PLATE, SEE SCHEDULE SHEET S4.0	12	⅝"Ø A307 BOLT IN 1¹⁄₁₆" Ø HOLE
59	ANCHOR BOLT, SEE SCHEDULE SHEET S4.0	13	⅜"Ø A36 TAB
60	CLIMBING HAND HOLE AT LEG L1	14	1" A572-50 FLANGE PLATE
61	⅜" x 3" PLATE	15	ANCHOR BOLT HOLE, SEE SCHEDULE - SHEET S4.0
62	¼"x 3" BENT PLATE	16	ANTENNA BY OTHERS
63	1"Ø A36 ROD w/ NON SKID FINISH	17	RRU BY OTHERS
64	¼" HOLE, FIELD DRILL	18	Ø2.375" O.D. SCH 40 ANTENNA PIPE
65	⁷⁄₁₆"Ø HOLE	19	⅝"Ø A325 BOLT IN 1¹⁄₁₆" Ø HOLE
66	BULKHEAD RADIUS PLATE	20	CONCRETE GRADE BEAM F'C - 4000 PSI
67	BOLKHEAD ARM ASSEMBLY	21	⅜" A36 PLATE
68	¼" Ø x 1 ¼" SELF DRILLING SCREW BY McMASTER-CARR	22	⅜"Ø U-BOLT BOLT
69	(3) #3 TIES IN TOP 3"	23	⅜"Ø GRADE B BOLT IN ⁷⁄₁₆" Ø HOLE
70	BASE PLATE, SEE SCHEDULE SHEET S4.0	24	½"Ø A325 BOLT IN ⁹⁄₁₆" Ø HOLE
71	ANCHOR BOLT TEMPLATE SCHEDULE	25	NOT USED
72	NOT USED	26	1¹⁄₁₆" Ø HOLE
73	(2) #5 TOP AND BOTTOM	27	1" HONEYCOMB FRP PANEL
74	#4 TIES @ 12" O.C.	28	MAST FLANGE PLATE, SEE SCHEDULE.
75	#4 TIES @ 6" O.C.	29	VALMONT FRP 5"x ⁵⁄₁₆" TUBE FRAMING
76	#4 TIES @ 3" O.C.	30	FRP SHEATHING/PANEL SEAM
77	(5) #4 TIES @ 1 ¾" O.C. MAX	31	∠2x2x³⁄₁₆"
78	(16) #8 VERTICAL	32	∠4x4x¼"
79	(2) #5 8" x 48" TOP & BOTTOM HOOKED INTO GRADE BEAM	33	∠6x6x⅜"
80	CONCRETE PIER F'c - 4000 PSI	34	PLATFORM ACCESS
81	135° SEISMIC BEND IN NON LINEAR VERT. PLACEMENT	35	¾"Ø A325 BOLT
82	CONDUIT BY OTHERS	36	1³⁄₁₆" Ø HOLE
83	#4 @ 12" O.C. EACH WAY	37	FIELD DRILL TO MATCH FRAMING
84	#4 TOP AND BOTTOM	38	VALMONT FRP 5X5X⁵⁄₁₆" TUBE
85	6" CONCRETE SLAB	39	VALMONT FRP ∠5X5X⁵⁄₁₆"
86	4" ABC FILL	40	DOUBLE VALMONT FRP ∠5X5X⁵⁄₁₆" STRONG BACK
87	LADDER STAND-OFF	41	FLANGED LEG SPLICE, SEE SCHEDULE
88	LADDER STAND-OFF MOUNT	42	¾" PLATE LEG WALL REINFORCEMENT
89	COTTERMAN 6' LADDER GUARD OR APPROVED EQUAL	43	1" A500 GRADE B GUSSET PLATE
90	50"Ø x ⅜" FRP CAP PLATE	44	³⁄₁₆" A36 PLATE FLANLGE
91		45	LEG CAP PLATE, SEE SCHEDULE

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Phoenix, Arizona 85076

ISE JOB #: 18054

PLATTSVILLE RELO CT

100' TALL 3 LEG MONUMENT

FRP ENCLOSURE DETAILS

5151 PARK AVENUE, FAIRFIELD, CT 06825
LATITUDE: N41° 13' 08.19" LONGITUDE: W73° 14' 41.12"

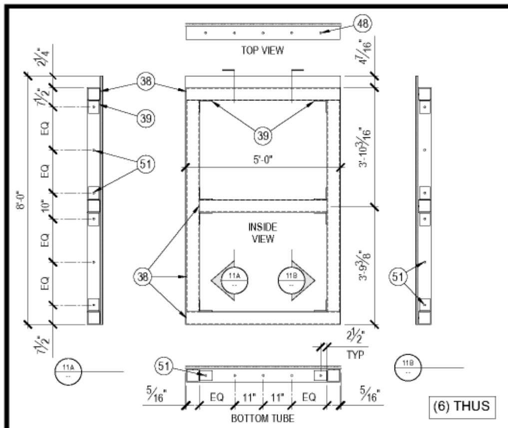
STATE OF CONNECTICUT
PROFESSIONAL ENGINEER
LICENSED

PROGRESS LOG

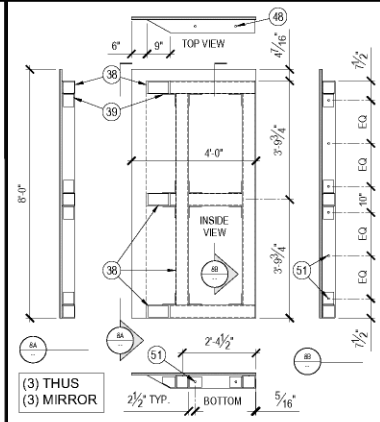
0	10/19/22	ISSUED TO CLIENT	CK
A	09/19/22	ISSUED FOR REVIEW	CK

SHEET NUMBER	PROGRESS
FRP1.0	0

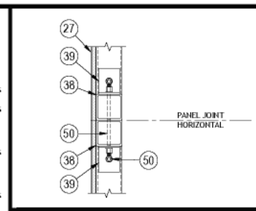
DRAWING DATE
October 19, 2022



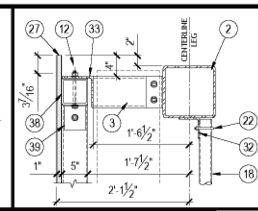
11 PANEL 'A2' SCALE: 6"=1'-0"



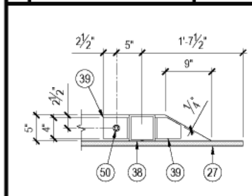
8 PANEL 'A1' SCALE: 3/8" = 1'-0"



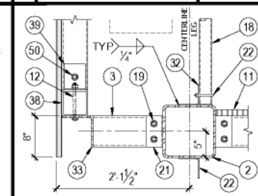
6 HORIZONTAL PANEL JOINT SCALE: 1" = 1'-0"



4 PANEL TOP CONNECTION SCALE: 1" = 1'-0"

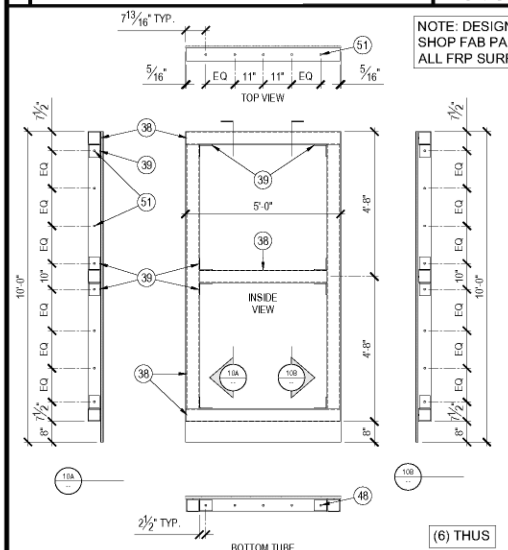


5 PANEL VERTICAL EDGE SCALE: 1" = 1'-0"

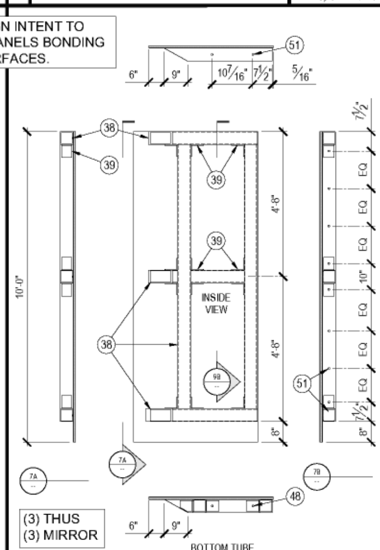


3 PANEL BOTTOM SCALE: 1" = 1'-0"

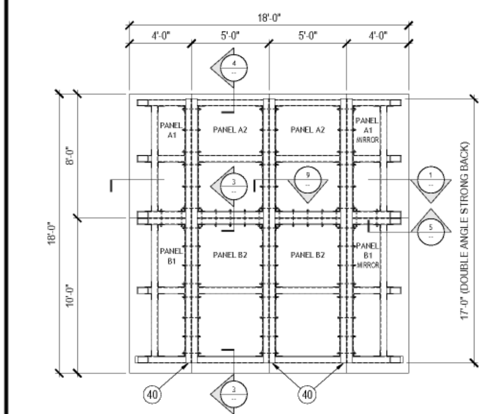
NOTE: DESIGN INTENT TO SHOP FAB PANELS BONDING ALL FRP SURFACES.



10 PANEL 'B2' SCALE: 3/4"=1'-0"

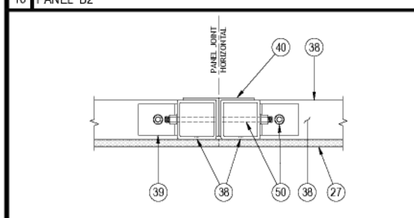


7 PANEL 'B1'

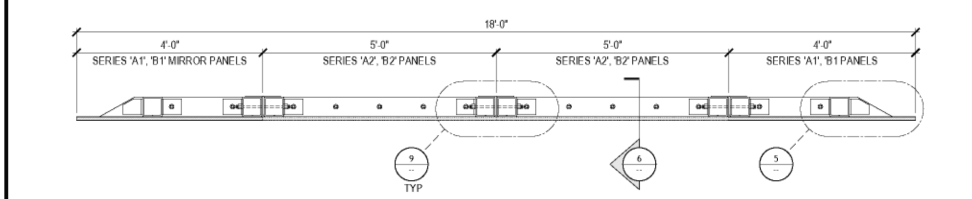


NOTE: DESIGN INTENT TO SHOP FABRICATE EACH PANEL BONDING ALL FRP SURFACES. INSTALL STRONG BACKS AND FRP BOLTING IN FIELD. FINAL ASSEMBLY TO BE COMPLETELY BONDED ALL SURFACES

2 PANELS ASSEMBLED SCALE: 1/4" = 1'-0"



9 VERTICAL PANEL JOINT SCALE: 3/8"=1'-0"



1 PANEL ASSEMBLY SECTION SCALE: 3/4" = 1'-0"

KEY NOTES

		MARK	DESCRIPTION
46	CONTINUOUS TONGUE EDGE		
47	3" GROVE TAB @ 12" O.C.	1	48"Ø x 1/2" LEG
48	1 1/16" HOLES, FIELD DRILL	2	HSS 10x10x 3/8" A500 GR B
49	1/4" FRP SKIN	3	C6x11.5
50	5/8"Ø STRONGWELL FIBREBOLT OR EQUAL	4	1" LEG CAP PLATE
51	1 1/16" HOLES	5	FLANGED JOINT
52	HSS 2x2x3/16"	6	3/8" x 3" BAR w/ 1" ROUND RUNG LADDER w/ SAFETY CLIMB
53	3/8" GRADE B BOLTS	7	FRP TUBE FRAMED PANEL FINISH PER ARCHITECTURAL
54	MAST BASE PLATE, SEE SCHEDULE SHEET S4.0	8	48"Ø x 1/4" FRP CANISTER
55	LEG FLANGE PLATE, SEE SCHEDULE SHEET S4.0	9	6 5/8"Ø SCHED 40 MAST
56	LEG MATING PLATE, SEE SCHEDULE	10	3/8" PLATE GUSSETS
57	BOLT PER SCHEDULE - SHEET S4.0	11	MCNICHOLS 'GW 125' 1 1/4"X3/16" BAR GRATE
58	LEG BASE PLATE, SEE SCHEDULE SHEET S4.0	12	5/8"Ø A307 BOLT IN 11/16" Ø HOLE
59	ANCHOR BOLT, SEE SCHEDULE SHEET S4.0	13	3/8"Ø A36 TAB
60	CLIMBING HAND HOLE AT LEG L1	14	1" A572-50 FLANGE PLATE
61	3/8" x 3" PLATE	15	ANCHOR BOLT HOLE, SEE SCHEDULE - SHEET S4.0
62	1/4"x 3" BENT PLATE	16	ANTENNA BY OTHERS
63	1"Ø A36 ROD w/ NON SKID FINISH	17	RRU BY OTHERS
64	1/4" HOLE, FIELD DRILL	18	Ø2.375" O.D. SCH 40 ANTENNA PIPE
65	7/16"Ø HOLE	19	5/8"Ø A325 BOLT IN 11/16" Ø HOLE
66	BULKHEAD RADIUS PLATE	20	CONCRETE GRADE BEAM F'C - 4000 PSI
67	BOLKHEAD ARM ASSEMBLY	21	3/8" A36 PLATE
68	1/4" Ø x 1 1/4" SELF DRILLING SCREW BY McMASTER-CARR	22	3/8"Ø U-BOLT BOLT
69	(3) #3 TIES IN TOP 3"	23	3/8"Ø GRADE B BOLT IN 7/16" Ø HOLE
70	BASE PLATE, SEE SCHEDULE SHEET S4.0	24	1/2"Ø A325 BOLT IN 9/16" Ø HOLE
71	ANCHOR BOLT TEMPLATE SCHEDULE	25	NOT USED
72	NOT USED	26	11/16" Ø HOLE
73	(2) #5 TOP AND BOTTOM	27	1" HONEYCOMB FRP PANEL
74	#4 TIES @ 12" O.C.	28	MAST FLANGE PLATE, SEE SCHEDULE.
75	#4 TIES @ 6" O.C.	29	VALMONT FRP 5"x 5/16" TUBE FRAMING
76	#4 TIES @ 3" O.C.	30	FRP SHEATHING/PANEL SEAM
77	(5) #4 TIES @ 1 3/4" O.C. MAX	31	∠2x2x3/16"
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81	135° SEISMIC BEND IN NON LINEAR VERT. PLACEMENT	35	3/4"Ø A325 BOLT
82	CONDUIT BY OTHERS	36	13/16" Ø HOLE
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84	#4 TOP AND BOTTOM	38	VALMONT FRP 5X5X5/16" TUBE
85	6" CONCRETE SLAB	39	VALMONT FRP ∠5X5X5/16"
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91		45	LEG CAP PLATE, SEE SCHEDULE

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Phoenix, Arizona 85076
ISE JOB #: 18054

PLATTSVILLE RELO CT
100' TALL 3 LEG MONUMENT

FRP PANEL DETAILS
5151 PARK AVENUE, FAIRFIELD, CT 06825
LATITUDE: N41° 13' 08.19" LONGITUDE: W73° 14' 41.12"

PROGRESS LOG

0	10/19/22	ISSUED TO CLIENT	CK
A	09/19/22	ISSUED FOR REVIEW	CK

SHEET NUMBER: FRP2.0
PROGRESS: 0

DRAWING DATE: October 19, 2022

Geotechnical Engineering Report

Plattsville Relo CT Communications Facility
Fairfield, Connecticut
August 10, 2022
Terracon Project No. J1225042

Prepared for:
Hudson Design Group, LLC
North Andover, Massachusetts

Prepared by:
Terracon Consultants, Inc.
Manchester, New Hampshire

Environmental ■ Facilities ■ Geotechnical ■ Materials

August 10, 2022

Terracon
GeoReport

Hudson Design Group, LLC
45 Beechwood Drive
North Andover, MA 01845

Attn: Mr. Sylvester Bhembe
P: (978) 557 5553 Ext. 235
E: sbhembe@hudsondesigngroupllc.com

Re: Geotechnical Engineering Report
Plattsville Relo CT Communications Facility
5151 Park Avenue
Fairfield, Connecticut
Terracon Project No. J1225042

Dear Mr. Bhembe:

We have completed the Geotechnical Engineering services for the above referenced project. This study was performed in general accordance with Terracon Proposal No. PJ1225042 dated June 21, 2022. This report presents the findings of the subsurface exploration and provides geotechnical recommendations concerning earthwork and the design and construction of foundations and floor slabs for the proposed project.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further service, please contact us.

Sincerely,
Terracon Consultants, Inc.

STATE OF CONNECTICUT ★ SCOTT M. CARTER ★ 28591 LICENSED PROFESSIONAL ENGINEER

Marc A Gullison, P.E. (NH)
Project Engineer

Scott M. Carter, P.E.
Geotechnical Dept. Manager

Michael A. Ciance, P.E.
Principal

REPORT TOPICS

Note: This report was originally delivered in a web-based format. **Orange Bold** text in the report indicates a referenced section heading. The PDF version also includes hyperlinks which direct the reader to that section and clicking on the ***GeoReport*** logo will bring you back to this page. For more interactive features, please view your project online at client.terracon.com.

ATTACHMENTS

Note: Refer to each individual Attachment for a listing of contents.

Geotechnical Engineering Report

Plattsville Relo CT Communications Facility
5151 Park Avenue
Fairfield, Connecticut
Terracon Project No. J1225042
August 10, 2022

INTRODUCTION

This report presents the results of the subsurface exploration (completed by others) and geotechnical engineering services performed for the proposed telecommunications facility to be located at 5151 Park Avenue in Fairfield, Connecticut. The purpose of this report is to provide subsurface data and geotechnical engineering recommendations relative to:

- Subsurface soil and rock conditions
- Groundwater conditions
- Site preparation and earthwork
- Demolition considerations
- Excavation considerations
- Foundation design and construction
- Floor slab design and construction
- Exterior slab design and construction
- Seismic site classification per IBC
- Frost considerations

The geotechnical field services for this project included the advancement of one test boring (B-1) to approximately 34 feet below the existing site grade at the proposed tower location, and two borings (B-2 and B-3) to depths ranging between 8.3 and 16.5 feet below existing grades within the vicinity of the proposed equipment shelter. Borings were drilled on July 1, 2022 by Seaboard Drilling (Seaboard) of Chicopee, Massachusetts under contract with Hudson Design Group (HDG). Terracon personnel did not observe the advancement of the borings; a copy of the boring logs prepared by Seaboard and the soil samples were provided for our review.

Maps showing the site and boring locations, as reported to Terracon, are shown in the **Site Location** and **Exploration Plan** sections, respectively. Two sets of boring logs are included in with this report: Seaboard's original boring logs, and our typed boring logs following review and classification of soil samples. The boring logs and laboratory results are shown in the **Exploration Results** section.

SITE CONDITIONS

The following description of site conditions is derived from our review of provided site plans and publicly available topographic maps.

Item	Description
Parcel Information	The project is located at the Sacred Heart University campus at 5151 Park Avenue in Fairfield, Connecticut. The proposed tower is located at approximate coordinates 41.2189° N, 73.2448° W. See **Site Location**.
Existing Improvements	The proposed communications facility is located behind the William H. Pitt Health & Recreation Center at Sacred Heart University (SHU). There is an existing generator and multiple storage containers currently located in the vicinity of the proposed telecommunications facility.
Current Ground Cover	Within the project area, surface conditions are generally comprised of gravel, pavement, and a partially wooded area.
Existing Topography (from Compound Plan A-1)	The facility area is at approximately elevation (El.) of 295 feet.

PROJECT DESCRIPTION

Our initial understanding of the project was provided in our proposal and was discussed during project planning. Our final understanding of the project conditions is as follows:

Item	Description
Information Provided	HDG provided the following information: ■ "Plattsville Relo CT" Plan Set, prepared by HDG, last revision dated April 5, 2022 ■ Fairfield CT Boring Log Excel Files, drilled by Seaboard Drilling, dated July 1, 2022
Project Description	The project includes construction of a new telecommunications facility including a 100-foot-tall self-supported three-legged tower, generator, transformer, and other ancillary equipment. A 1,245 square-foot, two-story multi-unit equipment shelter is also planned adjacent to the tower. The shelter will be used for both SHU storage and telecommunications equipment.
Finished Grade	Sheet A-1.1 indicates the proposed finished grade will generally match existing grades at approximate El. 295 feet.

GEOTECHNICAL CHARACTERIZATION

Subsurface Conditions

Test borings generally encountered approximately 2 feet of existing fill consisting of silty sand with gravel and asphalt. Glacial till was encountered below the fill layer and consisted of medium dense to very dense silty sand with gravel. Boring B-1 encountered weathered rock from approximately 16 feet to 34 feet, at which point the boring was terminated upon practical auger refusal on probable bedrock. Borings B-2 and B-3 encountered auger refusal conditions at 16.5 feet and 8.3 feet, respectively.

We have developed a general characterization of the subsurface conditions based upon our review of the subsurface exploration (completed by others), laboratory data, geologic setting, and our understanding of the project. This characterization, termed GeoModel, forms the basis of our geotechnical calculations and evaluation of site preparation and foundation options. Conditions encountered at each exploration point are indicated on the individual logs. The individual logs, including Seaboard's original boring logs and our typed boring logs following review and classification of soil samples, can be found in the **Exploration Results** section. The GeoModel can be found in the **Figures** section of this report.

As part of our analyses, we identified the following model layers within the subsurface profile. For a more detailed view of the model layer depths at each boring location, refer to the GeoModel.

Model Layer	Layer Name	General Description
1	**Fill**	Silty sand with gravel, with asphalt fragments, brown to dark brown
2	**Glacial Till**	Silty sand with gravel, gray-brown to brown, medium dense to very dense
3	**Weathered Rock**	Weathered rock

Groundwater Conditions

Groundwater observations were not noted on boring logs (prepared by Seaboard drilling) for B-1 and B-3; however, the boring log for B-2 noted water at a depth of approximately 15 feet below existing ground surface. This description is an indicator of the probable groundwater level at the time of drilling. Groundwater level fluctuations occur due to seasonal variations in the amount of rainfall, runoff, and other factors not evident at the time the borings were performed. The possibility of groundwater level fluctuations should be considered when developing the design and construction plans for the project.

GEOTECHNICAL OVERVIEW

The site appears suitable for the proposed development based upon the geotechnical conditions presented on Seaboard's boring logs and our review of the recovered samples, provided the recommendations in this report are implemented during design and construction.

As noted in the **Geotechnical Characterization** section, test borings encountered approximately 2 feet of existing fill throughout the site. Supporting new foundations, floor slab, and exterior slabs on existing unimproved fill may cause structures to settle beyond tolerable limits. We recommend existing fill be removed from proposed building footprints, foundation bearing zones, and exterior concrete slabs/pads and replaced with compacted Structural Fill. Excavation recommendations are discussed further in the **Earthwork** section. The geotechnical engineer should be provided the opportunity to review the exposed subsurface conditions and provide supplemental recommendations, as warranted.

Exposed subgrades could become unstable with typical earthwork and construction traffic, especially after precipitation events, due to the elevated percentage of fines within the natural underlying glacial till deposit. Effective site drainage should be completed early in the construction sequence and maintained after construction to avoid potential issues. If possible, the grading should be performed during the warmer and drier times of the year (typically May to October). If grading is performed during the winter months (typically November to April), an increased risk for possible undercutting and replacement of unstable subgrade will persist. Additional site preparation recommendations, including subgrade improvement and fill placement, are provided in the **Earthwork** section.

The **Drilled Pier Foundations** section addresses support of tower legs on drilled piers bearing in the glacial till and/or bedrock. The **Shallow Foundations** section addresses support of the building on shallow foundations bearing on a minimum 12 inches of compacted Structural Fill over proof-rolled native glacial till. The **Floor Slabs** section addresses slab-on-grade support on a minimum 6 inches of compacted Floor Slab Base Course over proof-rolled native glacial till. The **Exterior Slabs** section addresses slab-on-grade support on a minimum 24 inches of compacted Crushed Stone over proof-rolled native glacial till.

The **General Comments** section provides an understanding of the report limitations.

EARTHWORK

Earthwork is anticipated to include demolition/removal of existing structures, clearing and grubbing, excavations, and fill placement. The following sections provide recommendations for use in the preparation of specifications for the work. Recommendations include critical quality criteria, as necessary, to render the site in the state considered in our geotechnical engineering evaluation for foundations, floor slabs, and exterior slabs.

Demolition

The proposed telecommunications tower and storage facility will be constructed within the footprint of an existing generator and storage containers which will need to be demolished/removed, as well as exterior sidewalks, pavements, and utilities. We recommend existing foundations, slabs, pavements, and utilities be removed from within the proposed structure footprints and at least 5 feet beyond the outer edge of planned foundations.

For areas outside the proposed structure footprints and foundation bearing zones, existing foundations, slabs, and utilities should be removed where they conflict with proposed utilities and pavements. In such cases, existing foundations, slabs, and utilities should be removed to a depth of at least 2 feet below the affected utility or design pavement subgrade elevation.

Site Preparation

Existing vegetation and root mat (if encountered) should be stripped before placing new fill. Complete stripping of the topsoil should be performed in the proposed building area. Stripping depths on the order of 6 to 12 inches should be anticipated to remove topsoil (where encountered); however, the thickness of the topsoil/subsoil layer may vary across the project site.

Subgrade Preparation

As noted in the **Geotechnical Characterization** section, each boring encountered existing fill to approximately 2 feet below existing ground surface. Supporting new foundations and slabs on existing unimproved fill may cause structures to settle beyond tolerable limits. Consequently, we recommend complete over-excavation and removal of the existing undocumented fill and replacement with compacted Structural Fill within the proposed building footprint, foundation bearing zones, and below exterior slabs/pads to mitigate the risk of post-construction settlement.

Following over-excavation to design footing/slab grade, native till subgrades should be proof-rolled with at least six passes in perpendicular directions using a minimum 10-ton vibratory roller in open areas; or a minimum 1-ton self-propelled vibratory roller or large vibratory plate compactor in trenches. The proof-rolling should be performed under the direction of the Geotechnical Engineer. Areas excessively deflecting under the proof-roll should be delineated and subsequently addressed by the Geotechnical Engineer. Soft or unstable areas should be over-excavated to more competent material and replaced with compacted Structural Fill or General Fill depending on the anticipated future use. Excessively wet or dry material should either be removed, or moisture conditioned and recompacted.

Fill Material Types

The following section presents material property requirements and suitable placement locations for various types of fill. Regardless of its source, compacted fill should consist of approved materials that are free of organic matter and debris. Frozen material should not be used, and fill should not be placed on a frozen subgrade.

Reuse of On-site Soil: Excavated fill and glacial till may be selectively reused as raise-in-grade fill (General Fill) within pavement and landscaping areas. Excavated fill and till are not suitable for reuse as Structural Fill and should not be placed beneath settlement sensitive structures and within foundation bearing zones. Portions of the fill and till have an elevated percentage of fines and will be sensitive to moisture conditions (particularly during seasonally wet periods) and may not be suitable for reuse when above optimum moisture content. Excavated on-site soils may be used as General Fill, provided they have the following properties:

- Free of deleterious materials
- A maximum particle size equal to the lesser of 6 inches or 2/3 of the lift thickness
- A suitable moisture content allowing for effective compaction
- Compactive efforts yield a firm and stable surface

Imported Fill Materials: Imported fill materials should meet the material property requirements in the following table.

Fill Type	Connecticut State Department of Transportation (CTDOT) Item	Application
Structural Fill	M.02.01 – Granular Fill, Broken or crushed stone (Grading “A”)	Beneath foundations, within foundation bearing zones, and as backfill within 5 feet of exterior foundation walls. Structural Fill should also be used as raise-in-grade fill to achieve subgrade elevations beneath floor slabs and settlement sensitive structures.
Crushed Stone [1]	M.01.02 – No. 6 Coarse Aggregate	Below exterior slabs or other ancillary structures where frost heave may be a concern. As backfill of underdrains and over wet subgrades as needed. Crushed Stone may be substituted for Structural Fill when approved by the Geotechnical Engineer.
Floor Slab Base Course	M.05.01 – Processed Aggregate Base	Below floor slabs as aggregate base course.
Pervious Structural Backfill / Non-Frost Susceptible (NFS) Fill	M.02.05[2] – Pervious Structure Fill	Below exterior slabs, sidewalks, pavements, or other ancillary structures where frost heave may be a concern.

1. Crushed Stone should be separated from soil subgrades, excavation sidewalls, and backfill using a non-woven geotextile (such as Mirafi 140N or similar).
2. Pervious structural backfill shall consist of broken or crushed stone, broken or crushed gravel, or reclaimed miscellaneous aggregate containing no more than 2% by weight of asphalt cement or mixtures thereof.

Fill Compaction Requirements

Fill materials should meet the following compaction requirements.

Item	Description
Maximum Lift Thickness	*Vibratory Rollers:* 12 inches or less in loose thickness *Plate Compactors:* 6 inches or less in loose thickness when hand-guided equipment (i.e., jumping jack or plate compactor) is used
Minimum Compaction Requirements [1, 2]	*General Fill:* At least 92% of the material's maximum dry density *Structural Fill:* At least 95% of the material's maximum dry density *Crushed Stone:* Densified and compacted using at least six (6) passes of a vibratory roller or large vibratory plate compactor
Water Content Range [1]	±3% of optimum water content

1. Maximum density and optimum water content as determined by the Modified Proctor test (ASTM D1557, Method C).
2. We recommend testing fill for moisture content and compaction during placement. If the results of in-place density tests indicate the specified moisture or compaction limits have not been met, the area represented by the test should be reworked and retested, as required, until the specified moisture and compaction requirements are achieved.

Utility Trench Backfill

Trench excavations should be made with sufficient working space to permit construction including backfill placement and compaction. Trenches should be backfilled with material that approximately matches the permeability characteristics of the surrounding soil. Fill placed as backfill for utilities located below slabs should consist of compacted Structural Fill or suitable bedding material approved by the utility designer.

Grading and Drainage

All grades must provide effective drainage away from structures during and after construction and should be maintained throughout the life of the structures. Water retained next to structures can result in soil movements greater than those discussed in this report. Greater movements can result in unacceptable differential floor slab and/or foundation movements, cracked slabs and walls, and roof leaks. The roof should have gutters/drains with downspouts that discharge into the site drainage system.

Exposed ground should be sloped and maintained at a minimum 5% away from the building for at least 10 feet beyond the perimeter of the building. Locally, flatter grades may be necessary to transition ADA access requirements for flatwork. After building construction and landscaping have been completed, final grades should be verified to document effective drainage has been achieved. Grades around the structure should also be periodically inspected and adjusted, as necessary, as part of the structure's maintenance program. Where paving or flatwork abuts the structure, a maintenance program should be established to effectively seal and maintain joints and prevent surface water infiltration.

Earthwork Construction Considerations

Shallow excavations for the proposed structures are anticipated to be accomplished with conventional construction equipment. Upon completion of filling and grading, care should be taken to maintain the subgrade water content prior to construction. Construction traffic over the completed subgrades should be avoided. The site should also be graded to prevent ponding of surface water on the prepared subgrades or in excavations. Water collecting over or adjacent to construction areas should be removed. If the subgrade freezes, desiccates, saturates, or is disturbed, the affected material should be removed, or the materials should be scarified, moisture conditioned, and recompacted prior to construction.

We do not anticipate the groundwater table affecting shallow excavations efforts. If dewatering becomes necessary, a temporary dewatering system could be necessary to achieve the recommended depth of over-excavation. Dewatering is a means and methods consideration for the contractor.

As a minimum, excavations should be performed in accordance with OSHA 29 CFR, Part 1926, Subpart P, “Excavations” and its appendices, and in accordance with any applicable local, and/or state regulations.

Construction site safety is the sole responsibility of the contractor who controls the means, methods, and sequencing of construction operations. Under no circumstances shall the information provided herein be interpreted to mean Terracon is assuming responsibility for construction site safety, or the contractor's activities; such responsibility shall neither be implied nor inferred.

Construction Observation and Testing

The earthwork efforts should be monitored under the direction of the Geotechnical Engineer. Monitoring should include documentation of adequate removal of demolition debris, pavements, vegetation, topsoil, and unsuitable fill. Foundation excavations and subgrade preparation should also be observed by the Geotechnical Engineer. If unanticipated conditions are encountered, the Geotechnical Engineer should be notified to evaluate the need for supplemental mitigation recommendations.

In addition to the documentation of the essential parameters necessary for construction, the continuation of the Geotechnical Engineer into the construction phase of the project provides the continuity to maintain the Geotechnical Engineer’s evaluation of subsurface conditions, including assessing variations and associated design changes. Each lift of compacted fill should be tested, evaluated, and reworked, as necessary, until approved by the Geotechnical Engineer prior to placement of additional lifts.

DRILLED PIER FOUNDATIONS (TOWER)

The following sections address support of the tower on drilled pier foundations.

Axial Capacity Recommendations

Design recommendations for drilled pier foundations are presented in the following table.

Pier Embedment Depth Below Existing Ground Surface (feet)	Material	Allowable Skin Friction (psf) [1, 2, 3]	Allowable End Bearing Pressure (psf) [1, 2]
0 to 3.5	Existing Fill / Frost zone	Neglect	Neglect
3.5 to 8	Glacial Till	400	Neglect
8 to 12	Glacial Till	600	12,000
12 to 16	Glacial Till	800	16,000
Varies	Weathered Rock	1,000	20,000

1. Design capacities are dependent upon the method of installation, and quality control parameters. The values provided are estimates and should be verified when installation protocol have been finalized.
2. We assumed a factor of safety of 2.0 to calculate the allowable skin friction and 3.0 to calculate the allowable end bearing pressure.
3. Applicable for compressive loading only. Reduce to 2/3 of values shown for uplift loading. The effective weight of the pier can be added to uplift load capacity.
4. Piers should extend at least one diameter into the bearing stratum for end bearing to be considered.

Contribution to pier capacity from soil within the frost zone to a depth of 3.5 feet should be ignored. We anticipate drilled piers will be designed to resist tension loads and, therefore, reinforcing steel should be installed throughout its entire length. Design of the deep foundations should be completed by the Structural Engineer using the geotechnical engineering design criteria provided herein. The required foundation size and depth should be determined based upon analyses for vertical loads, lateral loads, and overturning moments.

Lateral Loading Recommendations

The following table lists input values for use in LPile analyses. These parameters are based on correlations with SPT results, published values, and our experience with similar soil types. Since deflection or a service limit criterion will most likely control lateral capacity design, no safety/resistance factor is included with the parameters.

Depth (feet)	Material	LPile (P-y) Curve Soil Model	Effective Unit Weight, γ (pcf) [1]	Friction Angle, Φ (deg)	P-Multiplier [2]
0 to 3.5	Fill	Sand (Reese) [3]	120	32	0.7 [2]
3.5 to 15	Glacial Till	Sand (Reese) [3]	120	34	1.0
15 to 16	Glacial Till	Sand (Reese) [3]	57.6	34	1.0
Varies	Weathered Rock	Sand (Reese) [3]	82.6	38	1.0

1. Design groundwater depth is assumed to be 15 feet
2. The P-Multiplier should be reduced to 0.7 within the active zone frost depth of 3.5 feet.
3. Use a default value for Soil Modulus, k.

SHALLOW FOUNDATIONS

If the site has been prepared in accordance with the requirements noted in the **Earthwork** section, the following design parameters are applicable for the design of shallow foundations to support the equipment building and other ancillary structures (if warranted).

Design Parameters – Compressive Loads

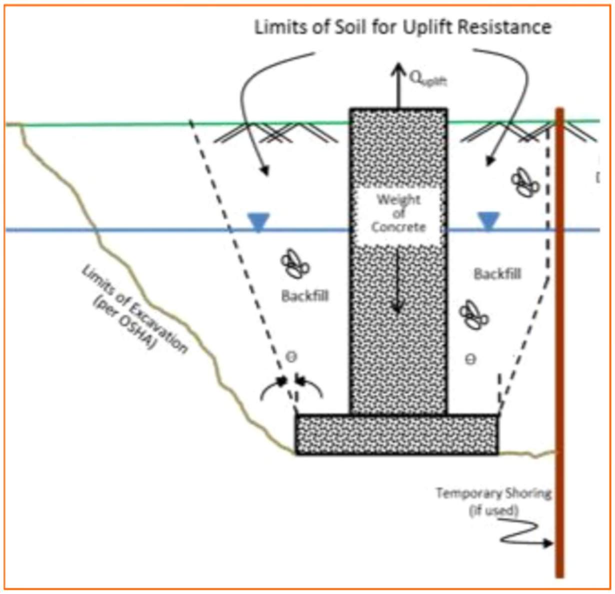
Item	Description
Maximum Net Allowable Bearing Pressure [1]	5,000 psf
Required Bearing Stratum [2]	Minimum 6 inches of compacted Structural Fill over proof-rolled native glacial till
Minimum Foundation Dimensions	Columns: 30 inches Continuous: 18 inches
Ultimate Passive Resistance [3] **(Equivalent Fluid Pressures)**	390 pcf (Structural Fill)
Ultimate Coefficient of Sliding Friction [4]	0.50 (Cast-in-Place Concrete on Structural Fill)
Minimum Embedment below Finished Grade [5]	Exterior footings: 42 inches Interior footings in unheated areas: 42 inches Interior footings in heated areas: 18 inches

Item	Description
Estimated Total Settlement from Structural Loads	Less than about 1 inch
Estimated Differential Settlement [6]	About 1/2 of total settlement

1. The maximum net allowable bearing pressure is the pressure in excess of the minimum surrounding overburden pressure at the footing base elevation. An appropriate factor of safety has been applied. Values assume that exterior grades are no steeper than 2H:1V next to the structure.
2. Unsuitable or soft soils should be over-excavated and replaced per the recommendations presented in the **Earthwork** section.
3. Use of passive earth pressures require the sides of the excavation for the spread footing foundation to be nearly vertical and the concrete placed neat against these vertical faces or that the footing forms be removed, and compacted Structural Fill is placed against the vertical footing face.
4. Can be used to compute sliding resistance where foundations are placed on suitable soil/materials. Should be neglected for foundations subject to net uplift conditions.
5. Embedment necessary to minimize the effects of frost and/or seasonal water content variations. For sloping ground, maintain depth below the lowest adjacent exterior grade within 5 horizontal feet of the structure. Interior footings in heated areas may be founded above frost depth if allowed by local building codes.
6. Differential settlements are as measured over a span of 40 feet.

Design Parameters - Uplift Loads

Uplift resistance of spread footings can be developed from the effective weight of the footing and the overlying soils. As illustrated on the subsequent figure, the effective weight of the soil prism defined by diagonal planes extending up from the top of the perimeter of the foundation to the ground surface at an angle, θ, of 20 degrees from the vertical can be included in uplift resistance. The maximum allowable uplift capacity should be taken as a sum of the effective weight of soil plus the dead weight of the foundation, divided by an appropriate factor of safety. A maximum total unit weight of 120 pcf should be used for the backfill. This unit weight should be reduced to 57.6 pcf for portions of the backfill or natural soils below the groundwater elevation.



Foundation Construction Considerations

As noted in the **Earthwork** section, the foundation excavations should be evaluated under the direction of the Geotechnical Engineer. The base of all foundation excavations should be free of water and loose soil prior to placing concrete. Concrete should be placed soon after excavating to reduce bearing soil disturbance. Care should be taken to prevent wetting or drying of the bearing materials during construction. Excessively wet or dry material or any loose/disturbed material in the bottom of the foundation excavations should be removed/reconditioned before foundation concrete is placed.

If unsuitable material is encountered at the base of the planned footing excavation, the excavation should be extended deeper to suitable soils. The over-excavation should be backfilled up to the footing base elevation, with Structural Fill placed, as recommended in the **Earthwork** section.

FLOOR SLABS

Design parameters for floor slabs assume the requirements in the **Earthwork** section have been followed. Specific attention should be given to positive drainage away from the structure and positive drainage of the base course beneath the floor slab.

Floor Slab Design Parameters

Item	Description
Floor Slab Support [1, 2]	*Heated Interior Space:* Minimum 6 inches of compacted Floor Slab Base Course over proof-rolled native glacial till. *Unheated Interior Space:* Minimum 42 inches of compacted Floor Slab Base Course or NFS Fill over proof-rolled native glacial till.
Estimated Modulus of Subgrade Reaction [3]	200 pounds per square inch per inch (psi/in) for point loads
Modulus Correction Factor, K_c [3]	$K_c = k\left(\frac{b+1}{2b}\right)^2$

1. Floor slabs should be structurally independent of building foundations or walls to reduce the possibility of floor slab distress caused by differential movements between the slab and foundation.
2. Other design considerations such as cold temperatures and condensation development could warrant a different base course material.
3. Modulus of subgrade reaction is an estimated value based upon our experience with the subgrade condition, the requirements noted in the **Earthwork** section, and the floor slab support as noted in this table. It is provided for point loads. It is common to reduce the k-value to account for dimensional effects of large, loaded areas using the modulus correction factor provided, where K_c is the corrected or design modulus value and b is the mat width (short dimension) or tributary loaded area. The native soil at subgrade is expected to develop a subgrade modulus value of 200 psi/in when combined with the base course. Soft or unstable subgrade will be remediated by scarifying and re-compacting or by over-excavation and replacement.

The use of a vapor retarder should be considered beneath concrete slabs on grade covered with wood, tile, carpet, or other moisture sensitive or impervious coverings, or when the slab will support equipment sensitive to moisture. When conditions warrant the use of a vapor retarder, the slab designer should refer to ACI 302 and/or ACI 360 for procedures and cautions regarding the use and placement of a vapor retarder.

Saw-cut control joints should be placed in the slab to help control the location and extent of cracking. For additional recommendations refer to the ACI Design Manual. Joints or cracks should be sealed with a waterproof, non-extruding compressible compound specifically recommended for heavy duty concrete pavement and wet environments.

Where floor slabs are tied to perimeter walls or turn-down slabs to meet structural or other construction objectives, our experience indicates differential movement between the walls and slabs will likely be observed in adjacent slab expansion joints or floor slab cracks beyond the length of the structural dowels. The Structural Engineer should account for potential differential settlement through use of control joints, appropriate reinforcing, or other means.

Floor Slab Construction Considerations

Finished subgrade, within and for at least 10 feet beyond the floor slab, should be protected from traffic, rutting, or other disturbance and maintained in a relatively moist condition until floor slabs are constructed. If the subgrade should become damaged or desiccated prior to construction of floor slabs, the affected material should be removed, and compacted Structural Fill should be added to replace the resulting excavation. Final conditioning of the finished subgrade should be performed immediately prior to placement of the floor slab support course.

The Geotechnical Engineer should approve the condition of the floor slab subgrades immediately prior to placement of the floor slab support course, reinforcing steel, and concrete. Attention should be paid to high traffic areas that were rutted and disturbed earlier, and to areas where backfilled trenches are located.

EXTERIOR SLABS

The following sections present design parameters for slab-on-grade support of ancillary structures and assumes the requirements in the **Earthwork** section have been followed. Specific attention should be given to positive drainage away from the structure and positive drainage of the base course beneath the slab.

Slab Design Parameters

Item	Description
Slab Support [1, 2]	Minimum 24 inches of compacted Crushed Stone or NFS Fill over proof-rolled native glacial till
Allowable Bearing Capacity [3]	2,500 psf
Estimated Modulus of Subgrade Reaction [4]	200 pounds per square inch per inch (psi/in) for point loads
Modulus Correction Factor, K_c [4]	$K_c = k\left(\frac{b+1}{2b}\right)^2$
Ultimate Coefficient of Sliding Friction	0.50 (Cast-in-place Concrete on Crushed Stone)
Settlement	
Total	<1.0 inch
Differential	About 1/2 of total settlement

1. Slabs should be structurally independent of foundations to reduce the possibility of slab distress caused by differential movements between the slab and the foundation.
2. Other design considerations such as cold temperatures and condensation development could warrant a different base course material.

Item	Description

3. Allowable bearing capacity developed using a factor of safety of 3.0.
4. Modulus of subgrade reaction is an estimated value based upon our experience with the subgrade condition, the requirements noted in the **Earthwork** section, and the slab support as noted in this table. It is provided for point loads. It is common to reduce the k-value to account for dimensional effects of large-loaded areas using the modulus correction factor provided, where K_c is the corrected or design modulus value and b is the mat width (short dimension) or tributary loaded area. The native soil at subgrade is expected to develop a subgrade modulus value of 200 psi/in when combined with the base course. Soft or unstable subgrade will be remediated by scarifying and re-compacting or by over-excavation and replacement.

Slab Construction Considerations

Design parameters for slabs assume the requirements in the **Earthwork** section have been followed. Specific attention should be given to positive drainage away from the structure and positive drainage of the base course beneath the slab. Air entraining admixtures should be used for concrete exposed to freezing. Note that supporting the slab on the minimal 24 inches of Crushed Stone Non-Frost Susceptible (NFS) Fill placed over the native subgrade may result in the slab being subject to heave. To eliminate settlement or heave, the native soil would need to be replaced with Crushed Stone or NFS Fill to the full frost penetration depth of 42 inches.

Finished subgrade, within and for at least 10 feet beyond the exterior slab, should be protected from traffic, rutting, or other disturbance and maintained in a relatively moist condition until slabs are constructed. If the subgrade should become damaged or desiccated prior to construction of slabs, the affected material should be removed, and Structural Fill or Crushed Stone should be placed to achieve design slab subgrade elevation. Final conditioning of the finished subgrade should be performed immediately prior to placement of the slab support course. The Geotechnical Engineer should approve the condition of the slab subgrades immediately prior to placement of the slab support course, reinforcing steel, and concrete.

SEISMIC CONSIDERATIONS

The seismic design requirements for buildings and other structures are based on Seismic Design Category. Site Classification is required to determine the Seismic Design Category for a structure. The Site Classification is based on the upper 100 feet of the site profile defined by a weighted average value of either shear wave velocity, standard penetration resistance, or undrained shear strength in accordance with Section 20.4 of ASCE 7 and the International Building Code (IBC).

Based on the soil and bedrock properties encountered at the site and as described on the exploration logs and results, it is our professional opinion that the **Seismic Site Classification is C**. Subsurface explorations at this site were extended to a maximum depth of 34 feet. The site properties below the boring depth to 100 feet were estimated based on our experience and knowledge of geologic conditions of the general area. Additional deeper borings or geophysical testing may be performed to confirm the conditions below the current boring depth.

FROST CONSIDERATIONS

The soils on this site are frost susceptible, and small amounts of water can affect the performance of the slabs on-grade. Exterior slabs should be anticipated to heave during winter months. If frost action needs to be eliminated in critical areas, we recommend the use of Crushed Stone or NFS Fill. Placement of NFS Fill in large areas may not be feasible; however, the following recommendations are provided to help reduce potential frost heave:

- Provide surface drainage away from the building and slabs, and toward the site storm drainage system.
- Install drains around the perimeter of the building, stoops, and below exterior slabs, and connect them to the site storm drainage system.
- Grade subgrades so groundwater potentially perched in overlying more permeable subgrades, such as sand or aggregate base, slope toward a site drainage system.
- Place NFS Fill as backfill beneath slabs critical to the project.
- Place a 3 horizontal to 1 vertical (3H:1V) transition zone between NFS Fill and other soils.

As an alternative to extending NFS Fill to the full frost depth, consideration can be made to placing extruded polystyrene or cellular concrete under a buffer of at least 2 feet of NFS Fill.

GENERAL COMMENTS

Our analysis and opinions are based upon our understanding of the project, the geotechnical conditions in the area, and the data obtained from explorations performed by others. Natural variations will occur between exploration point locations or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction. Terracon should be retained as the Geotechnical Engineer, where noted in this report, to provide observation and testing services during pertinent construction phases. If variations appear, we can provide further evaluation and supplemental recommendations. If variations are noted in the absence of our observation and testing services on-site, we should be immediately notified so that we can provide evaluation and supplemental recommendations.

Our Scope of Services does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

Our services and any correspondence or collaboration through this system are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and are accomplished in accordance with generally accepted geotechnical engineering practices with no third-party beneficiaries intended. Any third-party access to services or correspondence is solely for information purposes to support the services provided by Terracon to our client. Reliance upon the services and any work product is limited to our client and is not intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

Site characteristics as provided are for design purposes and not to estimate excavation cost. Any use of our report in that regard is done at the sole risk of the excavating cost estimator as there may be variations on the site that are not apparent in the data that could significantly impact excavation cost. Any parties charged with estimating excavation costs should seek their own site characterization for specific purposes to obtain the specific level of detail necessary for costing. Site safety, and cost estimating including, excavation support, and dewatering requirements/design are the responsibility of others. If changes in the nature, design, or location of the project are planned, our conclusions and recommendations shall not be considered valid unless we review the changes and either verify or modify our conclusions in writing.

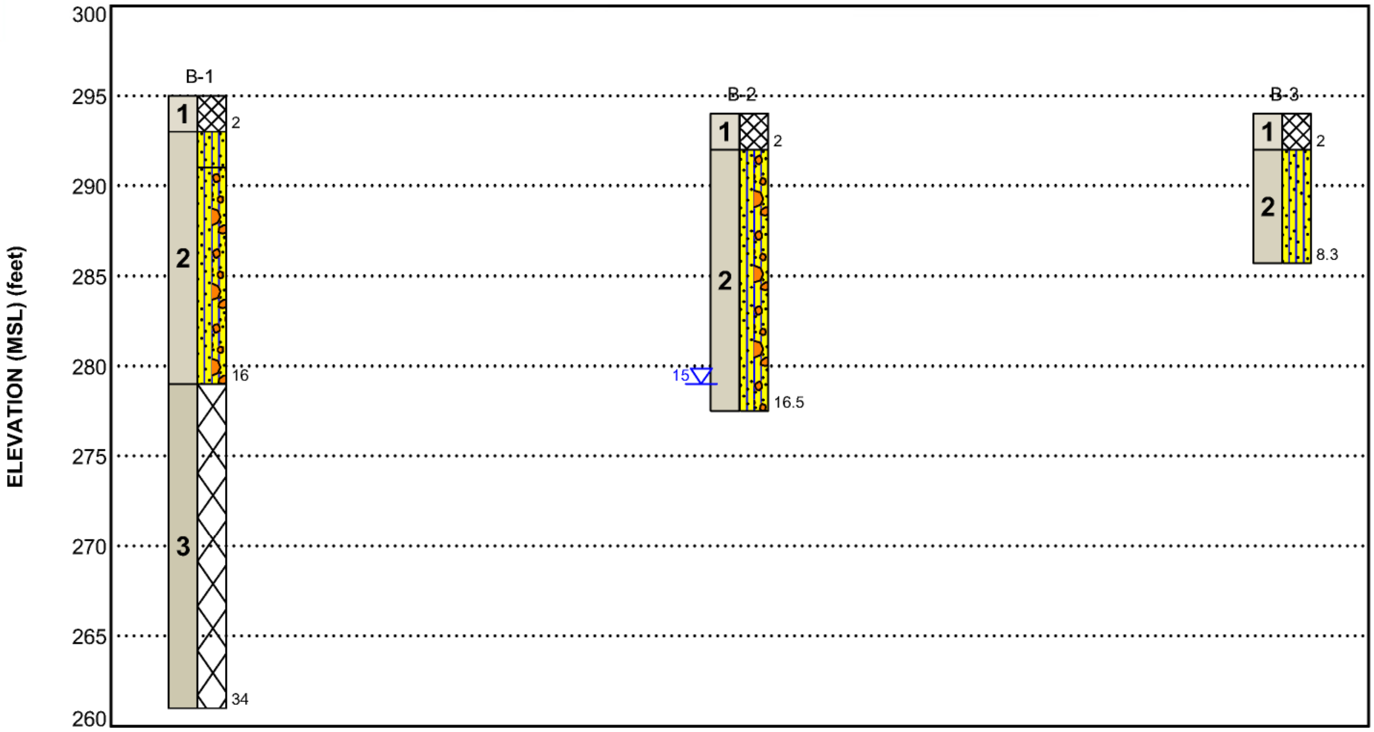
FIGURES

Contents:

GeoModel

GEOMODEL

Plattsville Relo CT Communications Facility ■ Fairfield, CT
Terracon Project No. J1225042



This is not a cross section. This is intended to display the Geotechnical Model only. See individual logs for more detailed conditions.

Model Layer	Layer Name	General Description
1	**Fill**	Silty sand with gravel, with asphalt, brown to dark brown
2	**Glacial Till**	Silty sand with gravel, gray-brown to brown, medium dense to very dense
3	**Weathered Rock**	Weathered rock

LEGEND

- Fill
- Weathered Rock
- Silty Sand
- Silty Sand with Gravel

First Water Observation

Groundwater levels are temporal. The levels shown are representative of the date and time of our exploration. Significant changes are possible over time.
Water levels shown are as measured during and/or after drilling. In some cases, boring advancement methods mask the presence/absence of groundwater. See individual logs for details.

NOTES:
Layering shown on this figure has been developed by the geotechnical engineer for purposes of modeling the subsurface conditions as required for the subsequent geotechnical engineering for this project.
Numbers adjacent to soil column indicate depth below ground surface.

ATTACHMENTS

EXPLORATION AND TESTING PROCEDURES

Field Exploration

Boring No.	Boring Depth (feet)	Location
B-1	34.0	Telecommunications Tower
B-2 and B-3	8.3 to 16.5	Storage Shelter

Boring Layout and Elevations: Terracon provided a recommended boring layout plan for use by HDG and Seaboard Drilling. Upon completion of drilling, Seaboard Drilling provided a sketch to HDG showing final as-drilled locations. Approximate ground surface elevations at exploration locations were interpolated by Terracon from the "Plattsville Relo CT Compound Plan", prepared by HDG, last revision dated April 5, 2022. If elevations and a more precise boring layout are desired, we recommend borings be surveyed.

Subsurface Exploration Procedures: Seaboard Drilling of Chicopee, Massachusetts was retained by HDG to advance three test borings with a track-mounted rotary drill rig using continuous flight hollow stem augers, and/or drive and wash methods, as necessary, depending on soil conditions. Terracon was not present during the boring program. Near continuous sampling was performed in the upper 15 feet of each boring. In the split-barrel sampling procedure, a standard 2-inch outer diameter split-barrel sampling spoon was driven into the ground by a 140-pound automatic hammer falling a distance of 30 inches. The number of blows required to advance the sampling spoon the last 12 inches of a normal 18-inch penetration was recorded as the Standard Penetration Test (SPT) resistance value. The SPT resistance values, also referred to as N-values, are indicated on the boring logs at the test depths.

The sampling depths, penetration distances, and other sampling information was recorded on the field boring logs, prepared by Seaboard as part of the drilling operations. The samples were brought to our soil laboratory for review and classification by a Geotechnical Engineer. The final boring logs were prepared from the driller's field boring logs and represent the Geotechnical Engineer's interpretation of the driller's field logs and include modifications based on observation of the samples in our laboratory.

Laboratory Testing

The project engineer reviewed the field data and assigned laboratory tests to understand the engineering properties of the various soil strata, as necessary, for this project. Procedural standards noted below are for reference to methodology in general. In some cases, variations to methods were applied because of local practice or professional judgment. Standards noted below include reference to other, related standards. Such references are not necessarily applicable to describe the specific test performed.

- ASTM D2216 Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
- ASTM D422 Standard Test Method for Particle-Size Analysis of Soils

The laboratory testing program included examination of soil samples by an engineer. Based on the material's texture and plasticity, we described and classified the soil samples in accordance with the Unified Soil Classification System, as shown in the **Supporting Information** section.

SITE LOCATION AND EXPLORATION PLANS

Contents:

Note: All attachments are one page unless noted above.

SITE LOCATION

Plattsville Relo CT Communications Facility ■ Fairfield, Connecticut
August 10, 2022 ■ Terracon Project No. J1225042

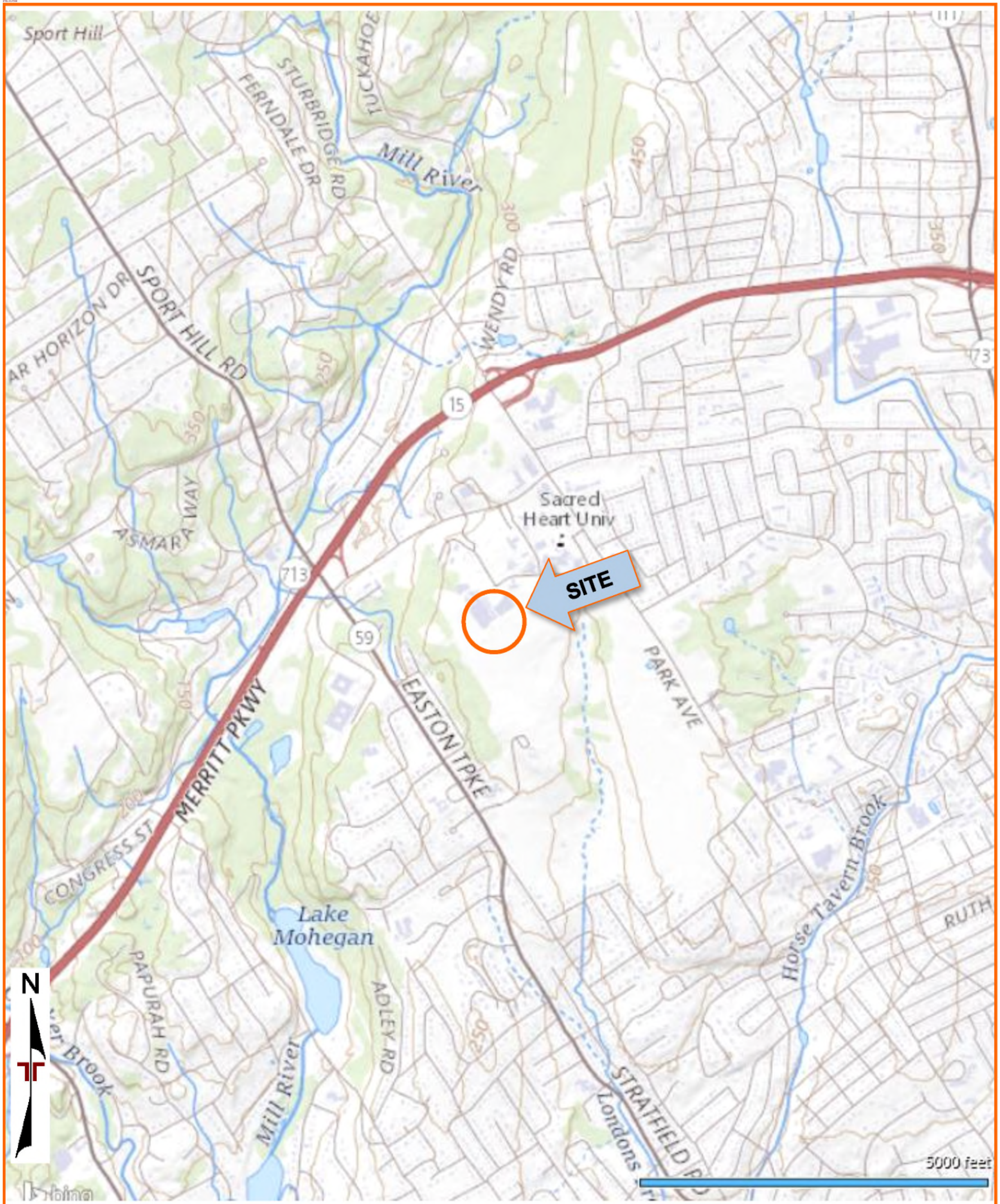


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP COURTESY OF THE U.S. GEOLOGICAL SURVEY

EXPLORATION PLAN WITH AERIAL IMAGE

Plattsville Relo CT Communications Facility ■ Fairfield, Connecticut
August 10, 2022 ■ Terracon Project No. J1225042

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

EXPLORATION PLAN WITH PROJECT OVERLAY

Plattsville Relo CT Communications Facility ■ Fairfield, Connecticut
August 10, 2022 ■ Terracon Project No. J1225042

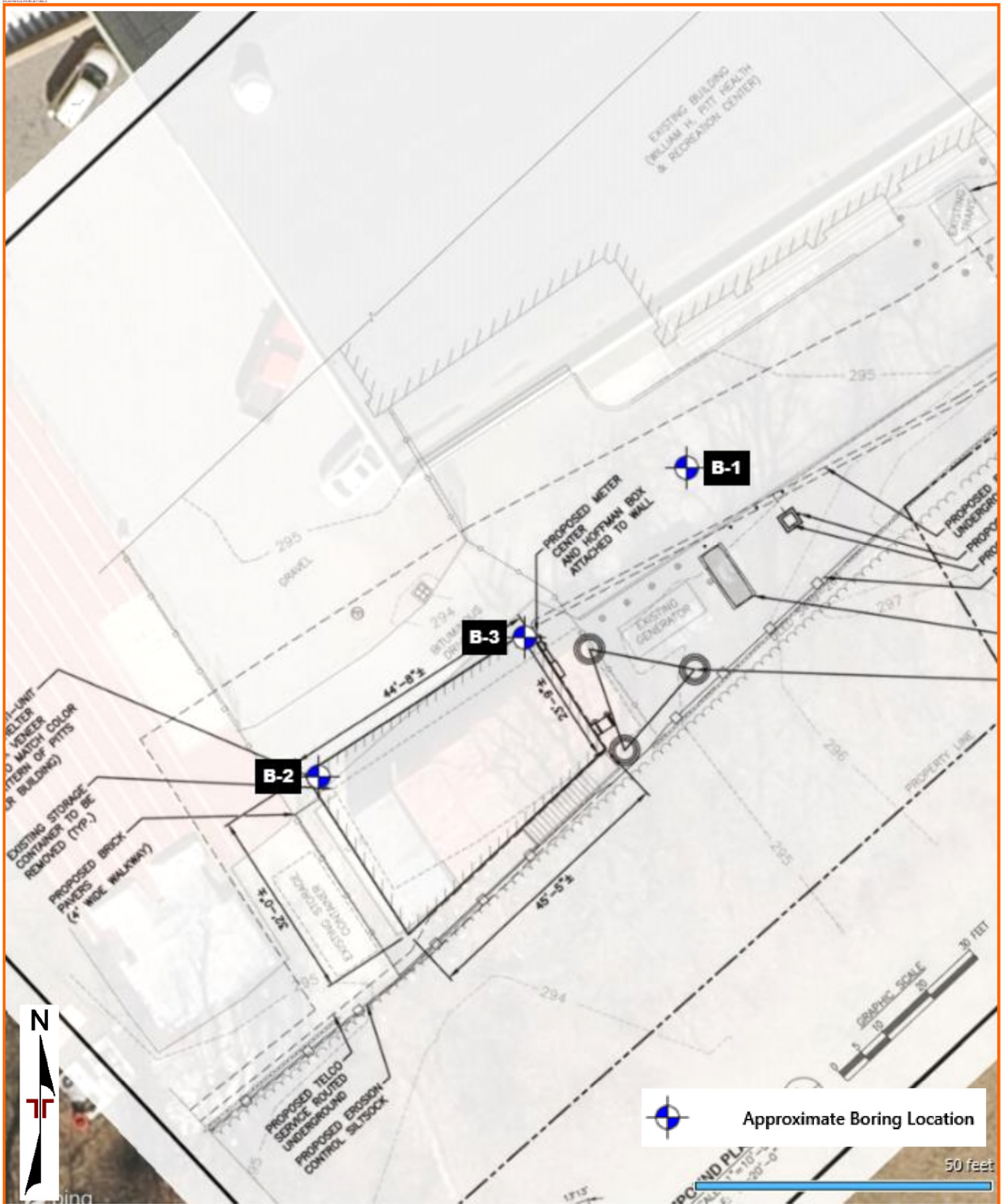


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

PLAN COURTESY OF HUDSON DESIGN GROUP, LLC

EXPLORATION RESULTS

Contents:

Note: All attachments are one page unless noted above.

Client: Hudson Design Group				**SEABOARD DRILLING, INC.**	**Test Boring/ Monitor Well ID:** B-1
Location: Plattsville Relo Ct				649 Meadow St., Chicopee, MA 01013	
Project: 20094-1445					
Contractor: Seaboard Drilling, Inc.				**DRILLING/SOIL LOG**	**Sheet No.** 1 of 1
	Casing		**Core Barrel**	**Hammer (Weight-lb./fall-30")**	**Start:** 7/1/2022
Type	**HSA**	**SS**	**N/A**	**140/30 300/24**	**Finish:** 7/1/2022
O.D. Inch	**8-1/2"**			**Rig Type: Mobile B-53**	**Driller:** Dale Griffin
I.D. Inch	**4-1/4"**				

Depth (ft.) Range	Blows	Sample No.	Recovery	FIELD CLASSIFICATIONS AND REMARKS
0-2'	13-13-16-14	S-1	20"	fine to coarse SAND and Gravel (fill)
2-4'	19-17-19-19	S-2	22"	fine to coarse SAND, little Gravel, trace Silt
4-6'	25-25-25-27	S-3	22"	Glacial Till
6-8'	37-42-40-45	S-4	0	No recovery (rock in tip spoon)
8-10'		S-5		Roller bit through a boulder
10-12'	19-19-23-25	S-6	16"	Glacial Till into weathered rock
12-14'	23-40-21-26	S-7	14"	Weathered rock
14-16'	45-41-31-50/5	S-8		Weathered rock
16-34'		S-9		Roller bit through weathered rock form 16-34'
34'				Roller bit refusal End fo Boring @ 34'

SAMPLE PENETRATION RESISTANCE - 140 lb. Wt. Falling 30" on 2" O.D. sampler

Density (# Hammer Blows)		Cohesive Consistence (# Hammer Blows)				PROPORTIONS	
0-4	Very Loose	0-2	Very Soft	3-4	Soft	Trace	0 to 10%
5-9	Loose	5-8	Medium-Stiff	9-15	Stiff	Little	10 to 20%
10-29	Medium-Dense	16-30	Very Stiff	31+	Hard	Some	20 to 35%
30-49	Dense					and	30 to 50%
50+	Very Dense						

Client: Hudson Design Group **Location:** Plattsville Relo Ct **Project:** 20094-1445 **Contractor: Seaboard Drilling, Inc.**	**SEABOARD DRILLING, INC.** **649 Meadow St., Chicopee, MA 01013** **DRILLING/SOIL LOG**	**Test Boring/ Monitor Well ID:**	**B-2**
		Sheet No.	**1 of 1**

	Casing		**Core Barrel**	**Hammer (Weight-lb./fall-30")**	**Start:**	7/1/2022
Type	**HSA**	**SS**	**N/A**	**140/30 300/24**	**Finish:**	7/1/2022
O.D. Inch	**8-1/2"**			**Rig Type: Mobile B-53**	**Driller:**	**Doug Feeley**
I.D. Inch	**4-1/4"**					

Depth (ft.) Range	Blows	Sample No.	Recovery	FIELD CLASSIFICATIONS AND REMARKS
0-2'	11-5-5-5	S-1	1"	Crushed Asphalt, Gravel, Brown fine SAND
2-4'	6-6-31-28	S-2	3"	Brown fine to coarse SAND and Gravel (dry)
5-7'	20-22-21-20	S-3	22"	Brown fine to med SAND and Silt, some Gravel, trace Coarse Sand (moist) (auger grinding @9')
7-9'	19-26-21-37	S-4	8"	Brown fine to med SAND and Silt and Gravel (moist)
10-12'	12-13-14-13	S-5	14"	Brown fine to coarse SAND and Silt and Gravel (moist)
12-14'	18-22-28-25	S-6	17"	Similar to S-5 above (auger grinding @ 14' water @ 15')
15-17'	24-48-50/3"	S-7	10"	Brown fine to coarse SAND, some Silt, some Gravel (weathered rock)
				Auger Refusal @ 16.5'
				End of Boring @ 16.5'

SAMPLE PENETRATION RESISTANCE - 140 lb. Wt. Falling 30" on 2" O.D. sampler

Density (# Hammer Blows)		Cohesive Consistence (# Hammer Blows)				PROPORTIONS	
0-4	Very Loose	0-2	Very Soft	3-4	Soft	Trace	0 to 10%
5-9	Loose	5-8	Medium-Stiff	9-15	Stiff	Little	10 to 20%
10-29	Medium-Dense	16-30	Very Stiff	31+	Hard	Some	20 to 35%
30-49	Dense					and	30 to 50%
50+	Very Dense						

Client: Hudson Design Group				**SEABOARD DRILLING, INC.**	**Test Boring/ Monitor Well ID:** B-3
Location: Plattsville Relo Ct				649 Meadow St., Chicopee, MA 01013	
Project: 20094-1445					
Contractor: Seaboard Drilling, Inc.				**DRILLING/SOIL LOG**	**Sheet No.** 1 of 1
	Casing		**Core Barrel**	**Hammer (Weight-lb./fall-30")**	**Start:** 7/1/2022
Type	**HSA**	**SS**	**N/A**	**140/30 300/24**	**Finish:** 7/1/2022
O.D. Inch	**8-1/2"**			**Rig Type: Mobile B-53**	**Driller: Doug Feeley**
I.D. Inch	**4-1/4"**				

Depth (ft.) Range	Blows	Sample No.	Recovery	FIELD CLASSIFICATIONS AND REMARKS
0-2'	4-2-1-1	S-1	4"	Brown fine to coarse SAND, Silt and Gravel (fill)
2-4'	2-4-6-9	S-2	8"	Brown fine SAND and Silt, little Gravel, little med to ocarse Sand (moist)
5-7'	13-19-50/5"	S-3	13"	Brown fine to coarse SAND, little Gravel (auger grinding @ 6')
7-9'				Augered to 8' refusal @8.25'
8-10'	50/1"	S-4	0	no recovery
				Auger Refusal @ 8.25' End of Boring @ 8.25'

SAMPLE PENETRATION RESISTANCE - 140 lb. Wt. Falling 30" on 2" O.D. sampler

Density (# Hammer Blows)		Cohesive Consistence (# Hammer Blows)				PROPORTIONS	
0-4	Very Loose	0-2	Very Soft	3-4	Soft	Trace	0 to 10%
5-9	Loose	5-8	Medium-Stiff	9-15	Stiff	Little	10 to 20%
10-29	Medium-Dense	16-30	Very Stiff	31+	Hard	Some	20 to 35%
30-49	Dense					and	30 to 50%
50+	Very Dense						

BORING LOG NO. B-1

PROJECT: Plattsville Relo CT Communications Facility

CLIENT: Hudson Design Group, LLC North Andover, MA

SITE: 5151 Park Avenue Fairfield, CT

LOCATION See Exploration Plan

Latitude: 41.2191° Longitude: -73.2447°

Approximate Surface Elev.: 295 (Ft.) +/-

MODEL LAYER	DEPTH	DESCRIPTION	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS
1		**FILL - SILTY SAND WITH GRAVEL**, brown				X	20	13-13-16-14 N=29
	2.0		293+/-					
2		**SILTY SAND (SM)**, trace gravel, brown, dense				X	22	19-17-19-19 N=36
	4.0		291+/-					
		SILTY SAND WITH GRAVEL (SM), gray-brown to brown, dense to very dense		5		X	22	25-25-25-27 N=50
		No recovery (rock fragment in sampler tip)				X	0	37-42-40-45 N=82
		Advanced rollerbit through boulder at 8 feet						
		Similar, with weathered rock		10		X	16	19-19-23-25 N=42
						X	14	23-40-21-26 N=61
				15		X		45-41-31-50/5" N=72
	16.0		279+/-					
3		**WEATHERED ROCK**						
		Advanced rollbit through weathered rock from 16 feet to 34 feet		20				
				25				
				30				
	34.0		261+/-					
		Practical Rollerbit Refusal on Probable Bedrock at 34 Feet						

Stratification lines are approximate. In-situ, the transition may be gradual.

Samples obtained using a 2" O.D. split spoon sampler

Hammer Type: Automatic

Advancement Method:
4-1/4-inch I.D. hollow stem augers

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Elevations were interpolated from a topographic site plan.

Notes:

The original field log was prepared by Seaboard Drilling and the soil samples were sent to our laboratory for review. We prepared this boring log based on a review of the samples and interpretations from Seaboard Drilling's field log. Soil descriptions may differ between the two boring logs.

WATER LEVEL OBSERVATIONS

Water level not determined

Terracon
77 Sundial Ave, Ste 401W
Manchester, NH

Boring Started: 07-01-2022	Boring Completed: 07-01-2022
Drill Rig: Mobile B-53	Driller: Seaboard / D. Griffin
Project No.: J1225042	

BORING LOG NO. B-2

PROJECT: Plattsville Relo CT Communications Facility

CLIENT: Hudson Design Group, LLC
North Andover, MA

SITE: 5151 Park Avenue
Fairfield, CT

LOCATION See Exploration Plan

Latitude: 41.2189° Longitude: -73.2450°

Approximate Surface Elev.: 294 (Ft.) +/-

MODEL LAYER	DEPTH	DESCRIPTION	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS
1	2.0	**FILL - SILTY SAND WITH GRAVEL**, with asphalt, brown	292+/-			X	1	11-5-5-5 N=10
2		**SILTY SAND WITH GRAVEL (SM)**, gray brown to brown, dense				X	3	6-6-31-28 N=37
				5		X	22	20-22-21-20 N=43
						X	8	19-26-21-37 N=47
		Increased auger resistance at 9 feet						
		Similar, medium dense		10		X	14	12-13-14-13 N=27
						X	17	18-22-28-25 N=50
		Increased auger resistance at 14 feet		15	▽			
	16.5	Similar, with weathered rock	277.5+/-			X	10	24-48-50/3"

Auger Refusal on Probable Bedrock at 16.5 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Samples obtained using a 2" O.D. split spoon sampler

Hammer Type: Automatic

Advancement Method:
4-1/4-inch I.D. hollow stem augers

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Elevations were interpolated from a topographic site plan.

Notes:

The original field log was prepared by Seaboard Drilling and the soil samples were sent to our laboratory for review. We prepared this boring log based on a review of the samples and interpretations from Seaboard Drilling's field log. Soil descriptions may differ between the two boring logs.

WATER LEVEL OBSERVATIONS

▽ *15 feet while drilling*

Terracon
77 Sundial Ave, Ste 401W
Manchester, NH

Boring Started: 07-01-2022	Boring Completed: 07-01-2022
Drill Rig: Mobile B-53	Driller: Seaboard / D. Feeley
Project No.: J1225042	

BORING LOG NO. B-3

PROJECT: Plattsville Relo CT Communications Facility

CLIENT: Hudson Design Group, LLC North Andover, MA

SITE: 5151 Park Avenue Fairfield, CT

LOCATION See Exploration Plan

Latitude: 41.2190° Longitude: -73.2448°

Approximate Surface Elev.: 294 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	Description	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS
1		2.0	**FILL - SILTY SAND WITH GRAVEL**, dark brown	292+/-			X	4	4-2-1-1 N=3
2			**SILTY SAND (SM)**, trace gravel, brown				X	8	2-4-6-9 N=10
					5		X	13	13-19-50/5"
		8.3	Increased auger resistance at 6 feet	285.7+/-				0	50/1"
			Auger Refusal on Probable Bedrock at 8.3 Feet						

Stratification lines are approximate. In-situ, the transition may be gradual.

Samples obtained using a 2" O.D. split spoon sampler

Hammer Type: Automatic

Advancement Method:
4-1/4-inch I.D. hollow stem augers

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Elevations were interpolated from a topographic site plan.

Notes:

The original field log was prepared by Seaboard Drilling and the soil samples were sent to our laboratory for review. We prepared this boring log based on a review of the samples and interpretations from Seaboard Drilling's field log. Soil descriptions may differ between the two boring logs.

WATER LEVEL OBSERVATIONS

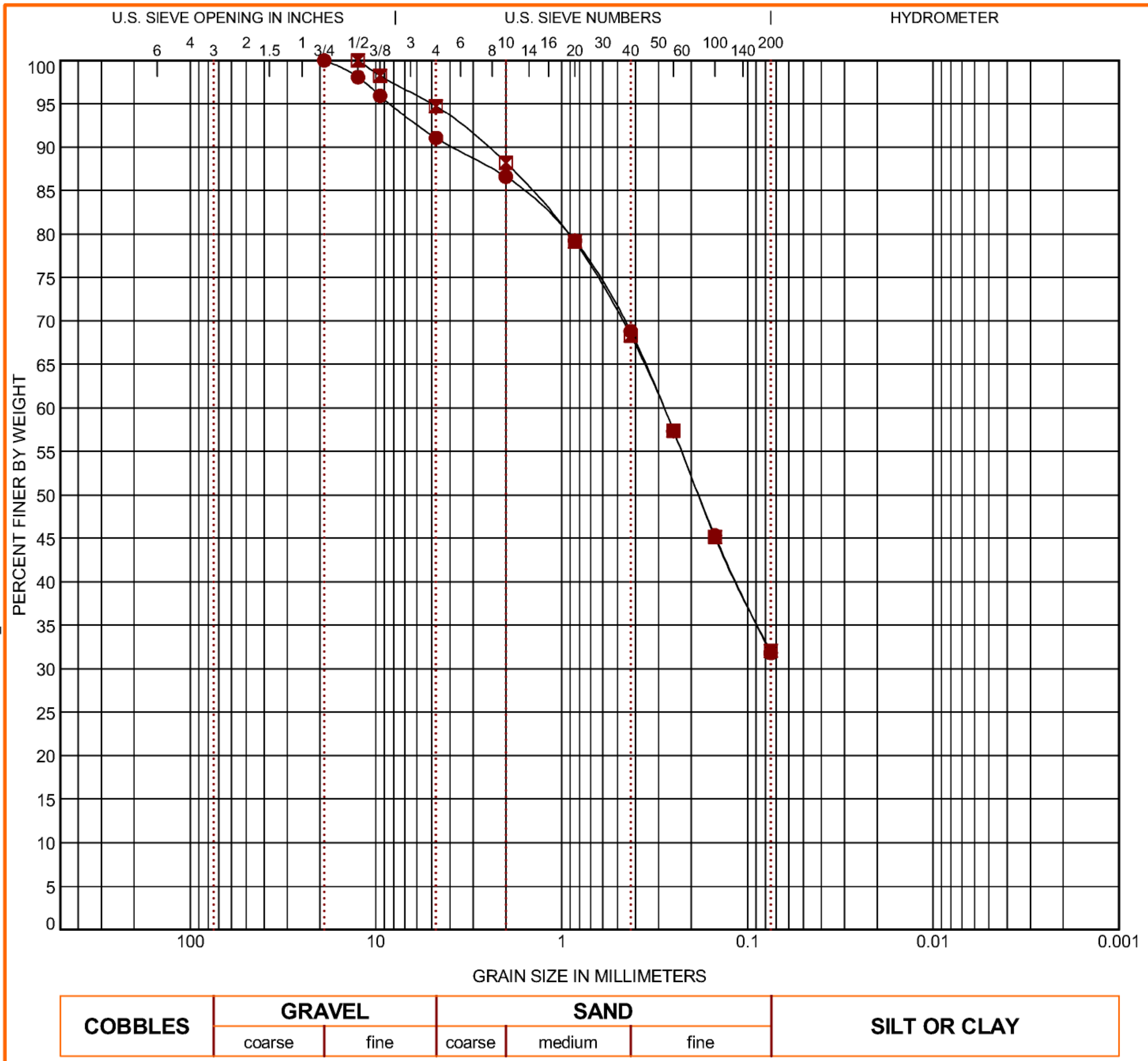
Water level not determined

Terracon
77 Sundial Ave, Ste 401W
Manchester, NH

Boring Started: 07-01-2022	Boring Completed: 07-01-2022
Drill Rig: Mobile B-53	Driller: Seaboard / D. Feeley
Project No.: J1225042	

GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



Boring ID		Depth (Ft)	USCS Classification	WC (%)	LL	PL	PI	Cc	Cu
●	B-1	4 - 6	Silty Sand (SM)	9.2					
⊠	B-2	5 - 7	Silty Sand (SM)	9.6					

Boring ID		Depth (Ft)	D_{100}	D_{60}	D_{30}	D_{10}	%Cobbles	%Gravel	%Sand	%Silt	%Fines	%Clay
●	B-1	4 - 6	19	0.283			0.0	8.9	59.2		31.8	
⊠	B-2	5 - 7	12.5	0.284			0.0	5.3	62.7		32.0	

PROJECT: Plattsville Relo CT Communications Facility

SITE: 5151 Park Avenue
Fairfield, CT

Terracon
77 Sundial Ave, Ste 401W
Manchester, NH

PROJECT NUMBER: J1225042

CLIENT: Hudson Design Group, LLC
North Andover, MA

SUPPORTING INFORMATION

Contents:

Note: All attachments are one page unless noted above.

GENERAL NOTES

DESCRIPTION OF SYMBOLS AND ABBREVIATIONS

Plattsville Relo CT Communications Facility ■ Fairfield, CT

Terracon Project No. J1225042

SAMPLING	WATER LEVEL	FIELD TESTS
Standard Penetration Test	**Water Initially Encountered** **Water Level After a Specified Period of Time** **Water Level After a Specified Period of Time** **Cave In Encountered** Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Groundwater level variations will occur over time. In low permeability soils, accurate determination of groundwater levels is not possible with short term water level observations.	**N** **Standard Penetration Test Resistance (Blows/Ft.)** **(HP)** **Hand Penetrometer** **(T)** **Torvane** **(DCP)** **Dynamic Cone Penetrometer** **UC** **Unconfined Compressive Strength** **(PID)** **Photo-Ionization Detector** **(OVA)** **Organic Vapor Analyzer**

DESCRIPTIVE SOIL CLASSIFICATION

Soil classification as noted on the soil boring logs is based Unified Soil Classification System. Where sufficient laboratory data exist to classify the soils consistent with ASTM D2487 "Classification of Soils for Engineering Purposes" this procedure is used. ASTM D2488 "Description and Identification of Soils (Visual-Manual Procedure)" is also used to classify the soils, particularly where insufficient laboratory data exist to classify the soils in accordance with ASTM D2487. In addition to USCS classification, coarse grained soils are classified on the basis of their in-place relative density, and fine-grained soils are classified on the basis of their consistency. See "Strength Terms" table below for details. The ASTM standards noted above are for reference to methodology in general. In some cases, variations to methods are applied as a result of local practice or professional judgment.

LOCATION AND ELEVATION NOTES

Exploration point locations as shown on the Exploration Plan and as noted on the soil boring logs in the form of Latitude and Longitude are approximate. See Exploration and Testing Procedures in the report for the methods used to locate the exploration points for this project. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

STRENGTH TERMS

RELATIVE DENSITY OF COARSE-GRAINED SOILS (More than 50% retained on No. 200 sieve.) Density determined by Standard Penetration Resistance		CONSISTENCY OF FINE-GRAINED SOILS (50% or more passing the No. 200 sieve.) Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance		
Descriptive Term (Density)	**Standard Penetration or N-Value Blows/Ft.**	**Descriptive Term (Consistency)**	**Unconfined Compressive Strength Qu, (tsf)**	**Standard Penetration or N-Value Blows/Ft.**
Very Loose	0 - 3	Very Soft	less than 0.25	0 - 1
Loose	4 - 9	Soft	0.25 to 0.50	2 - 4
Medium Dense	10 - 29	Medium Stiff	0.50 to 1.00	4 - 8
Dense	30 - 50	Stiff	1.00 to 2.00	8 - 15
Very Dense	> 50	Very Stiff	2.00 to 4.00	15 - 30
		Hard	> 4.00	> 30

RELEVANCE OF SOIL BORING LOG

The soil boring logs contained within this document are intended for application to the project as described in this document. Use of these soil boring logs for any other purpose may not be appropriate.

UNIFIED SOIL CLASSIFICATION SYSTEM

Terracon GeoReport

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests [A]				Soil Classification: Group Symbol	Soil Classification: Group Name [B]
Coarse-Grained Soils: More than 50% retained on No. 200 sieve	**Gravels:** More than 50% of coarse fraction retained on No. 4 sieve	**Clean Gravels:** Less than 5% fines [C]	$Cu \geq 4$ and $1 \leq Cc \leq 3$ [E]	GW	Well-graded gravel [F]
			$Cu < 4$ and/or [$Cc<1$ or $Cc>3.0$] [E]	GP	Poorly graded gravel [F]
		Gravels with Fines: More than 12% fines [C]	Fines classify as ML or MH	GM	Silty gravel [F, G, H]
			Fines classify as CL or CH	GC	Clayey gravel [F, G, H]
	Sands: 50% or more of coarse fraction passes No. 4 sieve	**Clean Sands:** Less than 5% fines [D]	$Cu \geq 6$ and $1 \leq Cc \leq 3$ [E]	SW	Well-graded sand [I]
			$Cu < 6$ and/or [$Cc<1$ or $Cc>3.0$] [E]	SP	Poorly graded sand [I]
		Sands with Fines: More than 12% fines [D]	Fines classify as ML or MH	SM	Silty sand [G, H, I]
			Fines classify as CL or CH	SC	Clayey sand [G, H, I]
Fine-Grained Soils: 50% or more passes the No. 200 sieve	**Silts and Clays:** Liquid limit less than 50	**Inorganic:**	$PI > 7$ and plots on or above "A"	CL	Lean clay [K, L, M]
			$PI < 4$ or plots below "A" line [J]	ML	Silt [K, L, M]
		Organic:	Liquid limit - oven dried / Liquid limit - not dried < 0.75	OL	Organic clay [K, L, M, N]
					Organic silt [K, L, M, O]
	Silts and Clays: Liquid limit 50 or more	**Inorganic:**	PI plots on or above "A" line	CH	Fat clay [K, L, M]
			PI plots below "A" line	MH	Elastic Silt [K, L, M]
		Organic:	Liquid limit - oven dried / Liquid limit - not dried < 0.75	OH	Organic clay [K, L, M, P]
					Organic silt [K, L, M, Q]
Highly organic soils:	Primarily organic matter, dark in color, and organic odor			PT	Peat

[A] Based on the material passing the 3-inch (75-mm) sieve.

[B] If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

[C] Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.

[D] Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay.

[E] $Cu = D_{60}/D_{10}$ $\quad Cc = \dfrac{(D_{30})^2}{D_{10} \times D_{60}}$

[F] If soil contains $\geq$ 15% sand, add "with sand" to group name.

[G] If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

[H] If fines are organic, add "with organic fines" to group name.

[I] If soil contains $\geq$ 15% gravel, add "with gravel" to group name.

[J] If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

[K] If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

[L] If soil contains $\geq$ 30% plus No. 200 predominantly sand, add "sandy" to group name.

[M] If soil contains $\geq$ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.

[N] $PI \geq 4$ and plots on or above "A" line.

[O] $PI < 4$ or plots below "A" line.

[P] PI plots on or above "A" line.

[Q] PI plots below "A" line.