CODES:

THE FOLLOWING CODES WERE USED IN THE DESIGN OF THIS PROJECT:
- 2020 BUILDING CODE OF NEW YORK (BASED ON THE2018 INTERNATIONAL BUILDING CODE)
- ASCE 7-16 "MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES"
- 2018 NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION
- ANSI/ACCT 03-2019 CHALLENGE COURSE AND CANOPY/ZIP LINE TOURS STANDARDS

DESIGN SPECIFICATIONS:

DESIGN LOADS
DEAD LOADS = 7 PSF
LIVE LOADS = 100 PSF & 2,000 LB/BRIDGE
GROUND SNOW LOADS = 50 PSF
WIND LOADS
EXPOSURE = C, kz = 1.13, kzt = 1, kd = 0.85,
V = 110 MPH
DESIGN WIND PRESSURE = 29.75 PSF

SEISMIC LOADS
RISK CATEGORY = II, Ie = 1, SITE CLASS = D
Ss = 0.111g S1 = 0.043g
Sms = 0.178g Sm1 = 0.103g
Sds = 0.119g Sd1 = 0.068g
SEISMIC DESIGN CATEGORY = B, R = 2
Cs = 0.0595g
BASIC SFRS IS GUYED WOOD POLES

GENERAL INFORMATION:

DO NOT SCALE DRAWINGS.

THE GREATER REQUIREMENTS SHALL GOVERN BETWEEN ANY DISCREPANCIES WITHIN PLANS, STRUCTURAL NOTES, TYPICAL DETAILS, MANUALS, ETC.

DO NOT DRILL, CUT, BORE OR OTHERWISE PENETRATE ANY STRUCTURAL MEMBERS WITHOUT PRIOR WRITTEN APPROVAL FROM THE ENGINEER OF RECORD.

THE PLANSET REPRESENTS A FINISHED STRUCTURE. IT IS THE CONTRACTOR'S/BUILDER'S RESPONSIBILITY TO ENSURE THE STRUCTURE IS SHORED/BRACED/STABILIZED DURING CONSTRUCTION.

CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, AND SITE CONDITIONS PRIOR TO STARTING WORK. CONTACT THE ENGINEER OF RECORD IF CONFLICTING OR PROHIBITIVE CONDITIONS ARE ENCOUNTERED.

TYPICAL DETAILS MAY OR MAY NOT BE SHOWN ON PLANS BUT APPLY UNLESS NOTED OTHERWISE.

ALL REFERENCES MADE TO MATERIALS TESTING STANDARDS SHALL BE THE LATEST EDITION.

NOTIFY THE ENGINEER OF RECORD OF ANY CHANGES TO THE PLANSET.

PATRON INFORMATION:

MAX PATRON WEIGHT = 300 LBS
MIN PATRON WEIGHT = N/A

EACH BRIDGE SPAN HAS A MAXIMUM ALLOWABLE WEIGHT OF 2,000 LB.
EACH PLATFORM HAS A MAXIMUM ALLOWABLE WEIGHT OF 8,000 LB.

WIRE ROPE INFORMATION:

WIRE ROPE REQUIREMENTS ARE APPLICABLE TO THE FOLLOWING CABLES USES:
ZIP LINES, BELAY CABLES, ELEMENT SUPPORT CABLES, GUY CABLES, AND TENSION CABLES.

Ø1/4" 7x19 GALVANIZED AIRCRAFT CABLE TO HAVE A MINIMUM BREAKING STRENGTH OF 5,880 LB. ALL GALVANIZED AIRCRAFT CABLE SHALL CONFORM TO US MILITARY SPECIFICATION MIL-W-83420 AND BE OF 7x19 STRAND CONSTRUCTION.

Ø3/8" 7x19 GALVANIZED AIRCRAFT CABLE TO HAVE A MINIMUM BREAKING STRENGTH OF 14,400 LB. ALL GALVANIZED AIRCRAFT CABLE SHALL CONFORM TO US MILITARY SPECIFICATION MIL-W-83420 AND BE OF 7x19 STRAND CONSTRUCTION.

Ø1/2" 6x26 EIPS IWRC CABLE TO HAVE A MINIMUM BREAKING STRENGTH OF 26,600 LB. ALL INDEPENDENT WIRE ROPE CORE SHALL CONFORM TO FEDERAL SPECIFICATION RR-W-410E TYPE I CLASS 2. STEEL MUST BE GALVANIZED.

Ø3/4" 6x26 EIPS IWRC CABLE TO HAVE A MINIMUM BREAKING STRENGTH OF 58,800 LB. ALL INDEPENDENT WIRE ROPE CORE SHALL CONFORM TO FEDERAL SPECIFICATION RR-W-410E TYPE I CLASS 2. STEEL MUST BE GALVANIZED.

FOUNDATIONS:

- ALL FOUNDATION SYSTEMS ARE TO EITHER BE DIRECT EMBEDMENT OR BEAR ON CONCRETE FOUNDATIONS AND BEAR ON UNDISTURBED, NATIVE SOILS.

SWAGE INFORMATION:

SEE INDUSTRY STANDARDS (ACCT AND ASTM) FOR INFORMATION ON NUMBER OF REQUIRED SWAGES.

SWAGES ARE THE BE INSTALLED PER THE MANUFACTURERS RECOMMENDATIONS.

SWAGES ARE TO CONFORM TO US MILITARY STANDARD MS51844E OR EQUIVALENT.

WIRE ROPE CLIP INFORMATION:

ALL WIRE ROPE CLIPS ARE TO BE SOURCED FROM THE CROSBY GROUP, LLC AND SHALL BE NON-MALLEABLE. SEE MANUFACTURERS RECOMMENDATIONS (SHOWN DIRECTLY ON WIRE ROPE CLIP PACKAGE) FOR INFORMATION ON NUMBER OF REQUIRED WIRE ROPE CLIPS.

SEE TYPICAL CABLE CONNECTIONS SHEET FOR INFORMATION ON NUMBER OF REQUIRED CABLE CLIPS.

CABLE CLIPS ARE TO BE DROP FORGED AND HOT DIPPED GALVANIZED PER MIL SPEC FF-C-480.

CABLE CLIPS ARE TO BE INSTALLED PER THE MANUFACTURERS RECOMMENDATIONS (SHOWN DIRECTLY ON WIRE ROPE CLIP PACKAGE). CABLE CLIPS ARE TO BE DROP FORGED AND HOT DIPPED GALVANIZED. U-BOLTS OF WIRE ROPE CLIPS MUST ALWAYS BEAR ON DEAD END OF CABLE.

HARDWARE:

RAPID LINKS ARE TO HAVE THE FOLLOWING MINIMUM ULTIMATE TENSILE CAPACITIES:
- Ø1/2" - 16,525 LB
- Ø5/8" - 31,950 LB

ALL A325 CONNECTION HARDWARE TO HAVE THE FOLLOWING MINIMUM ULTIMATE TENSILE CAPACITIES:
- Ø5/8" - 13,800 LB. (ASD), 20,700 LB. (LRFD)
- Ø3/4" - 19,900 LB. (ASD), 29,800 LB. (LRFD)
- Ø1" - 35,300 LB. (ASD), 53,000 LB. (LRFD)

ALL A325 CONNECTION BOLTS SHALL BE INSTALLED TO THE SNUG-TIGHT CONDITION PER AISC FOR STRUCTURAL JOINTS USING ASTM A325 OR ASTM A490 BOLTS IN STRICT ACCORDANCE WITH THE MANUFACTURERS PUBLISHED RECOMMENDATIONS.

ALL A307 CONNECTION HARDWARE TO HAVE THE FOLLOWING MINIMUM ULTIMATE TENSILE CAPACITIES:
- Ø5/8" - 6,900 LB. (ASD),10,400 LB. (LRFD)
- Ø3/4" - 9,940 LB. (ASD), 14,900 LB. (LRFD)
- Ø1" - 17,700 LB. (ASD), 26,500 LB. (LRFD)

ALL NUTS SHALL CONFORM TO ASTM A563. ALL WASHERS SHALL CONFORM TO ASTM F436 OR ASTM F959 TYPE 325.

A MINIMUM OF (2) BOLTS ARE REQUIRED FOR ALL CONNECTIONS. ALTERNATE CONNECTIONS TO THOSE SHOWN IN THE DRAWINGS WILL REQUIRE WRITTEN APPROVAL FROM THE ENGINEER OF RECORD.

WOOD POLES:

WOOD POLES ARE TO MEET THE PROVISIONS OF ASTM D3200 FOR SOUTHERN PINE. WOOD POLES ARE TO BE CLASS I OR CLASS II (DENOTED ON PLANS) AND ARE TO CONFORM WITH THE LATEST EDITION OF ANSI 05.1.

PULL TEST REQUIREMENTS:

HELICAL PIER GROUND ANCHORS SHALL BE PULL TESTED TO 2 TIMES THE MAXIMUM EXPECTED LOAD. PULL TESTS ARE TO MEET THE FOLLOWING REQUIREMENTS:

- THE EQUIPMENT USED TO CONDUCT THE PULL TEST SHALL NOT INFLUENCE THE RESULTS OF THE TEST.
- THE PULL TEST LOAD IS TO BE APPLIED FOR A MINIMUM OF TEN MINUTES. IF A TYPICAL RESCUE TAKES LONGER THAN 10 MINUTES, THE PULL TEST IS TO BE APPLIED FOR THE TIME REQUIRED TO PERFORM THE RESCUE.
- THE PULL TEST LOAD IS TO BE APPLIED COLINEAR TO THE GROUND ANCHOR.
- ENGINEER OF RECORD WILL BE RESPONSIBLE FOR DETERMINING ANCHOR PASS/FAIL LIMITS ON A PROJECT SPECIFIC BASIS.

INSPECTIONS:

AN ANNUAL INSPECTION (VISUAL AND TACTILE) SHALL BE CONDUCTED AND DOCUMENTED BY A PROPERLY QUALIFIED AND INSURED PROFESSIONAL. QUARTERLY INSPECTIONS SHALL BE PERFORMED BY A QUALIFIED STAFF MEMBER. INSPECTIONS SHALL INCLUDE, BUT NOT BE LIMITED TO, STRUCTURAL FRAMING, CONNECTIONS, CORROSION, DECAY, AND ALL SAFETY EQUIPMENT.

WOOD/TIMBER:

THE FOLLOWING MINIMUM REQUIREMENTS FOR WOOD/TIMBER MEMBERS ARE AS FOLLOWS:

- GLULAM - GROUND CONTACT PRESSURE TREATED WITH MINIMUM E = 1,500,000 PSI
- POST/COLUMN - PRESSURE TREATED DF #1 OR EQUIVALENT
- FRAMING LUMBER - PRESSURE TREATED DF #2 OR EQUIVALENT
- DECKING - PRESSURE TREATED DF #2 OR RW #2 OR EQUIVALENT

ALL STRUCTURAL MEMBERS NOTED ON DRAWINGS WHICH ARE EXPOSED TO WEATHER SHALL BE PRESSURE TREATED.

DO NOT DRILL, CUT, BORE OR OTHERWISE PENETRATE ANY STRUCTURAL MEMBERS WITHOUT PRIOR WRITTEN APPROVAL FROM THE ENGINEER OF RECORD.

GLUE LAMINATED MEMBERS:

GLUE LAMINATED MEMBERS SHALL CONFORM TO THE REQUIREMENTS OF ONE OF THE FOLLOWING STANDARDS:

- AMERICAN NATIONAL STANDARD FOR STRUCTURAL GLUE LAMINATED TIMBER, OR
- ANSI/AITC STANDARD A 190.1 AND ASTM D3737

THE MINIMUM GLUE LAMINATED TIMBER GRADES SHALL BE AS FOLLOWS:

- SIMPLE SPAN - 24F-V4
- CONTINUOUS/CANTILEVERED - 24F-V8

GLUE USED SHALL BE WET USE EXTERIOR WATERPROOF GLUE.

PARALLEL-STRAND LUMBER (PSL):

ALL PSL MEMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM D5456.

THE MINIMUM PSL TIMBER GRADES SHALL BE AS FOLLOWS:

- SIMPLE SPAN - 1.8E-DF
- CONTINUOUS/CANTILEVERED - 1.8E-DF

SAWN LUMBER:

ALL SAWN LUMBER SHALL CONFORM TO THE AMERICAN SOFTWOOD LUMBER STANDARD PS20 - I 5. LUMBER SHALL BE THE SPECIES/GRADE SHOWN ABOVE, UNLESS NOTED OTHERWISE.

ALL ATTACHMENTS OF WOOD FRAMING SHALL NOT BE LESS THAN THAT DESCRIBED IN TABLE 2304.10.1 FASTENING SCHEDULE FROM THE INTERNATIONAL BUILDING CODE 2018.

STORAGE OF ALL LUMBER ONSITE SHALL BE KEPT OFF OF THE GROUND, UNDER COVER, AND PROTECTED FROM DAMAGE.

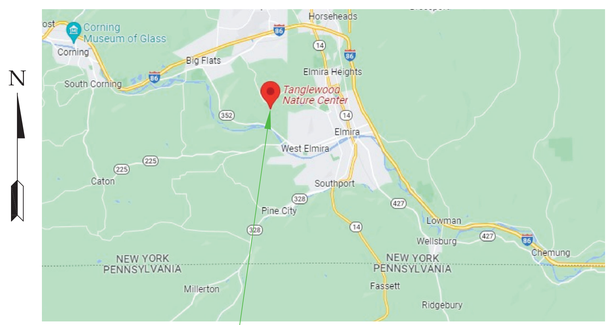
FASTENERS FOR PRESERVATIVE TREATED AND FIRE RETARDANT TREATED WOOD SHALL BE OF HOT-DIPPED ZINC-COATED GALVANIZED STEEL OR STAINLESS STEEL AND SHALL FOLLOW CURRENT MANUFACTURERS GUIDELINES BASED ON WEATHER EXPOSURE.

SOILS:

GEOTECHNICAL INFORMATION PROVIDED BY: TERRACON CONSULTANTS - NY, Inc. - PROJECT No.J5235110

- ALLOWABLE SOIL BEARING PRESSURE - 4' TO 9' DEEP = 6,000 SF - 9' TO 13' = 6,000 PSF
- ALLOWABLE SKIN FRICTION - 4' TO 9' DEEP = 550 SF - 9' TO 13' = 675 PSF
- COEFFICIENT OF FRICTION - 0.36

VICINITY MAP:



SHEET INDEX:

CONCRETE:

ALL CONCRETE TO HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2,500 PSI, AFTER 28 DAYS, WITH A MAXIMUM SLUMP AT PLACEMENT OF 4 1/2 in. A MAXIMUM WATER:CEMENT RATIO OF .5 IS REQUIRED FOR ALL CONCRETE.

CONCRETE REINFORCING (REBAR):

REBAR, SIZED #2 OR SMALLER, SHALL CONFORM TO ASTM A615 (Gr. 40), DEFORMED REBAR, SIZED #3 OR LARGER, SHALL CONFORM TO ASTM A615 (Gr. 60), DEFORMED

IF REBAR IS TO BE WELDED, IT IS TO BE COMPLETED IN ACCORDANCE WITH AWS D1.4. WELDED REBAR MUST CONFORM TO ASTM A706 (Gr. 60) LOW ALLOY, DEFORMED.

ALL REINFORCING IS TO BE INSTALLED WITH A MINIMUM OF 3 in GAP BETWEEN REBAR AND EDGE OF CONCRETE.

ACCESS PREVENTION:

ACCESS TO THE CANOPY WALKWAY SHALL BE CONTROLLED BY THE INSTALLATION OF A DOOR AT THE BRIDGE ENTRANCES. ALL DOORS SHALL BE SECURED WITH A DEAD BOLT LOCK.

FASTENERS:

SCREWS:

- GRK FASTENERS WITH CLIMATEK TM COATING. SDS FASTENERS ARE SIMPSON STRONG DRIVE SCREWS.

NAILS:

- ALL STRUCTURAL NAILS SHALL BE COMMON WIRE NAILS MEETING ASTM FI 667 UNLESS NOTED OTHERWISE. HOLES SHALL BE PRE-DRILLED, WHERE NECESSARY, TO AVOID SPLITTING.

TIMBER CONNECTORS:

- TIMBER CONNECTORS CALLED OUT BY LETTERS AND NUMBERS SHALL BE "STRONG-TIE", BY SIMPSON COMPANY, AS SPECIFIED IN THEIR CATALOG NO. C-C-2019. EQUIVALENT DEVICES BY OTHER MANUFACTURERS MAY BE SUBSTITUTED, PROVIDED THEY HAVE I.C.C. OR IAMPO UES APPROVAL FOR EQUAL OR GREATER LOAD CAPACITIES. PROVIDE NUMBER AND SIZE OF FASTENERS AS REQUIRED BY THE MANUFACTURER. CONNECTORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.

PHOENIX EXPERIENTIAL DESIGNS
A Signature Company

TANGLEWOOD NATURE CENTER - CANOPY WALKWAY

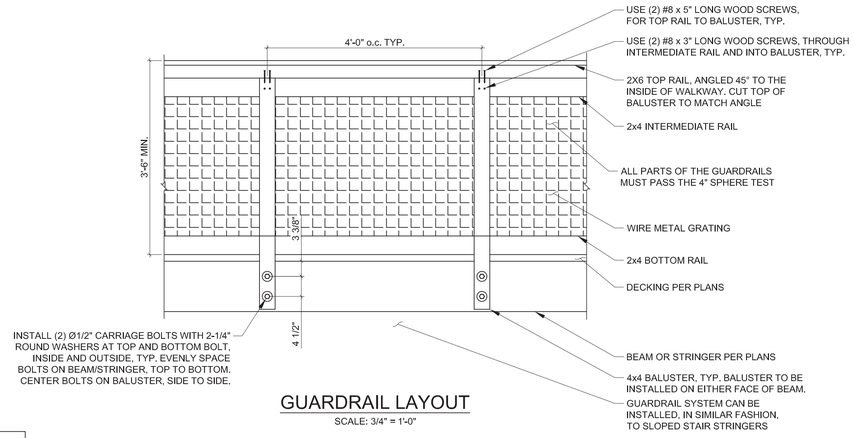
443 COLEMAN AVE
ELMIRA, NY 14903

PHOENIX EXPERIENTIAL DESIGNS JOB #: 2301

STATE OF NEW YORK · CHONG DONG PARK · LICENSED PROFESSIONAL ENGINEER · 078208

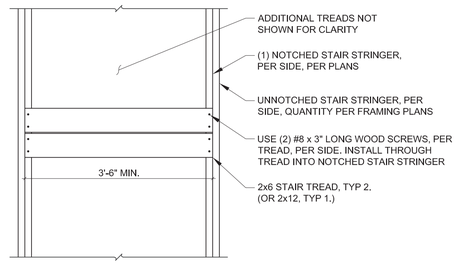
DRAWN:	MAR
ENGINEERED:	MAR
CHECKED:	DT
DATE:	06/06/2024

SHEET NUMBER:
S1.1
STRUCTURAL NOTES



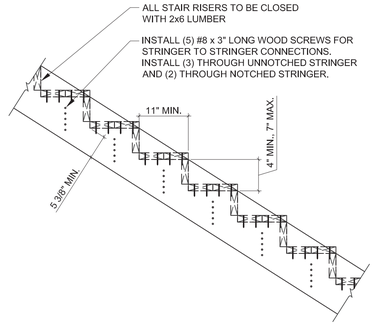
GUARDRAIL LAYOUT

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



STAIR TREAD CONNECTION (PLAN VIEW)

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



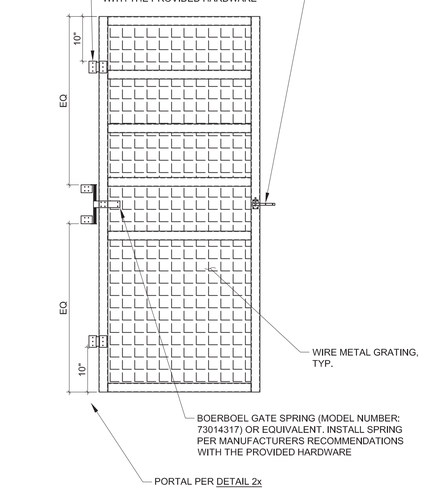
STAIR TREAD CONNECTION (SIDE VIEW)

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

00 TYPICAL GUARDRAIL LAYOUT

SCALE: AS NOTED

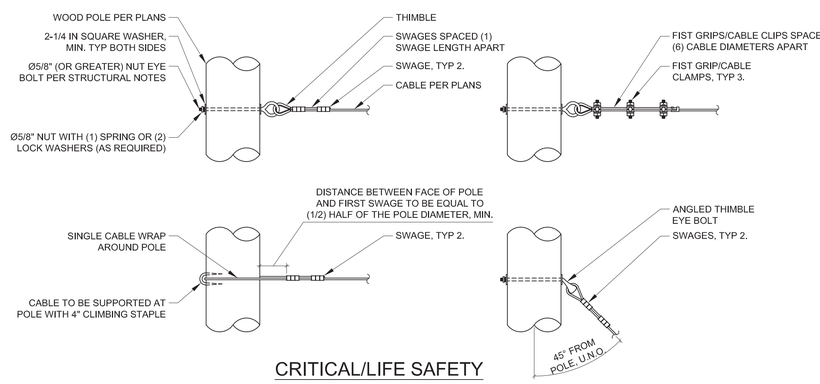
NOTICE:
1. ALL GATES ARE TO OPEN INWARDS
2. EXTRANEOUS GUARDRAIL COMPONENTS ARE NOT SHOWN FOR CLARITY.



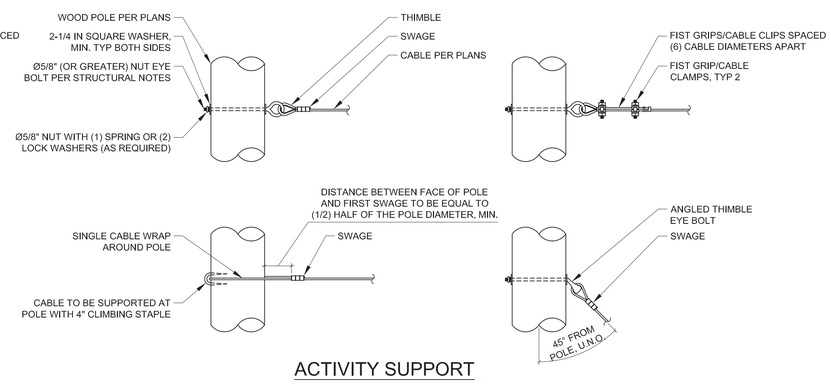
01 SELF LOCKING/LATCHING GATE

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

NOTICE:
1. REFER TO THE ANSI/ACCT 03-2019 CHALLENGE COURSE AND CANOPY/ZIP LINE TOURS STANDARDS FOR ADDITIONAL CABLE TERMINATION INFORMATION. THE CABLE TERMINATIONS SHOWN BELOW MAY NOT BE AN ALL ENCOMPASSING LIST OF POSSIBLE CONNECTIONS.
2. IN THIS DETAIL, THE WORDS 'CABLE' AND 'WIRE ROPE' ARE INTERCHANGEABLE.
3. TYPICAL NOTES ARE NOT SHOWN TO AVOID DESCRIPTION REDUNDANCY, BUT CONTINUE TO APPLY.
4. ALL BOLTED CONNECTIONS ON WOOD POLES TO USE 2-1/4 In SQUARE WASHERS, BOTH SIDES, UNLESS NOTED OTHERWISE.
5. MALLEABLE CABLE CLAMPS ARE NOT TO BE USED FOR ANY CABLE CONNECTIONS.
6. ALL CRITICAL/LIFE SAFETY CABLE CONNECTIONS ARE TO BE INSTALLED WITH A BACKUP LOOP. BACKUP LOOP MAY NOT BE SHOWN FOR CLARITY.
7. ALL CABLE CONNECTIONS ARE SHOWN ON WOOD POLES WITH NUT EYE BOLTS. WOOD POLE MAY BE SUBSTITUTED FOR STEEL COLUMN, STEEL POLE, ETC. AND NUT EYE BOLT SUBSTITUTED FOR THIMBLE EYE BOLT, WELDED PADEYE, ETC.
8. ALL CABLES INSTALLED 20° OR MORE BELOW HORIZONTAL ARE TO BE CONNECTED TO ANGLED THIMBLE EYE BOLTS.
9. CABLES CONNECTED TO THIMBLE, OR ANGLED THIMBLE, EYE BOLTS DO NOT REQUIRE THE INSTALLATION OF A THIMBLE.
10. ALL SWAGE, CABLE CLIP, AND FIST GRIP LAYOUTS SHOWN BELOW ARE FOR Ø1/2" CABLE. FOR Ø3/8" CABLE, ONE LESS OF EACH CONNECTION COMPONENT (IF POSSIBLE) IS REQUIRED.
11. ALL CABLE CLIP U-BOLTS ARE TO BEAR ON THE DEAD END OF THE CABLE.
12. THE CABLE WRAP CONNECTION OPTION IS NOT TO BE USED WHEN THE EXPECTED CABLE TENSION EXCEEDS 4,000 LB.



CRITICAL/LIFE SAFETY CABLE CONNECTIONS



ACTIVITY SUPPORT CABLE CONNECTIONS

02 TYPICAL CABLE CONNECTIONS

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

PHOENIX EXPERIENTIAL DESIGNS
a Signature Company

TANGLEWOOD NATURE CENTER - CANOPY WALKWAY

443 COLEMAN AVE
ELMIRA, NY 14903

PHOENIX EXPERIENTIAL DESIGNS JOB #: 2301

STATE OF NEW YORK · DONG TAO · 078208 · LICENSED PROFESSIONAL ENGINEER

DRAWN:	MAR
ENGINEERED:	MAR
CHECKED:	DT
DATE:	06/06/2024

SHEET NUMBER:
S1.2
TYPICAL DETAILS

PLAN NOTES

1. 15' (MAX. HEIGHT VARIES DUE TO SLOPE OF GRADE) 8x8 DF #2 COLUMN PER STRUCTURAL NOTES. FOR ENTRANCE PLATFORM - SURROUNDING TREE. SEE DETAIL 14 FOR FOUNDATION INFO. SEE SHEET S2.2 FOR FOUNDATION LAYOUT.
2. ENTRANCE PLATFORM WITH CUTOUT FOR EXISTING TREE. SEE SHEET S3.1 FOR MORE INFORMATION. SEE SHEET S5.1 FOR PLATFORM FRAMING INFORMATION.
3. 80' CLASS H1 (MIN.) POLE, PER STRUCTURAL NOTES, FOR EMERGENT TOWER, SEE DETAIL 11 FOR POLE EMBEDMENT INFO. SEE SHEET S2.2 FOR FOUNDATION LAYOUT.
4. OCTAGONAL EMERGENT TOWER (PLATFORM AT WALKWAY LEVEL SHOWN). SEE SHEET S3.2 FOR MORE INFORMATION. SEE SHEET S5.3 FOR PLATFORM FRAMING INFORMATION.
5. 60' CLASS 1 (MIN.) POLE, PER STRUCTURAL NOTES, FOR TRAPEZOID PLATFORM, SEE DETAIL 11 FOR POLE EMBEDMENT INFO. SEE SHEET S2.2 FOR FOUNDATION LAYOUT.
6. TRAPEZOID PLATFORM. SEE SHEET S3.3 FOR MORE INFORMATION. SEE SHEET S5.4 FOR PLATFORM FRAMING INFORMATION.
7. 70' CLASS 1 (MIN.) POLE, PER STRUCTURAL NOTES, FOR OBSERVATION PLATFORM. SEE DETAIL 11 FOR POLE EMBEDMENT INFO. SEE SHEET S2.2 FOR FOUNDATION LAYOUT.
8. SQUARE OBSERVATION PLATFORM WITH ENTRANCE SECTION. SEE SHEET S3.4 FOR MORE INFORMATION. SEE SHEET S5.2 FOR PLATFORM FRAMING INFORMATION.
9. 100' CLASS H2 (MIN.) POLE, PER STRUCTURAL NOTES, FOR SUSPENSION BRIDGE SUPPORT COLUMNS. SEE DETAIL 11 FOR POLE EMBEDMENT INFO. SEE SHEET S2.2 FOR FOUNDATION LAYOUT.
10. Ø3/4" BRIDGE SUSPENSION SUPPORT CABLE, PER STRUCTURAL NOTES, WITH CRITICAL/LIFE SAFETY CABLE CONNECTION PER TYPICAL DETAILS. SEE SHEET S3.5 FOR ADDITIONAL INFORMATION.
11. 35' CLASS 3 (MIN.) POLE, PER STRUCTURAL NOTES, FOR PASS THROUGH PLATFORM. SEE DETAIL 11 FOR POLE EMBEDMENT INFO. SEE SHEET S2.2 FOR FOUNDATION LAYOUT.
12. Ø3/4" GUY CABLES, PER STRUCTURAL NOTES, WITH CRITICAL/LIFE SAFETY CABLE CONNECTION PER TYPICAL DETAILS. SEE SHEET S3.5 FOR ADDITIONAL INFORMATION.
13. HELICAL PIER GROUND ANCHOR PER DETAIL 12. SEE SHEET S2.2 FOR FOUNDATION LAYOUT.
14. 4x12 BRIDGE GIRTS, PER STRUCTURAL NOTES, FOR WALKWAY SUPPORT. SEE SHEET S3.6 FOR MORE INFORMATION.
15. 5.125x16 PSL 1.8E - DF BRIDGE BEAMS, PER STRUCTURAL NOTES, FOR WALKWAY BEAMS. SEE SHEET S3.6 FOR MORE INFORMATION.
16. 1-1/2" x 1-1/2" x 1-1/2" FIBERGLASS GRATING FOR WALKWAY DECKING.
17. 2x6 DECKING, PER STRUCTURAL NOTES, FOR PLATFORM DECKING.
18. FIBERGLASS GRATING TO BE TERMINATED PERPENDICULAR TO BRIDGE BEAMS. ANGLED VOID AT WALKWAY INTERSECTION IS TO BE FILLED WITH 2x6 DECKING.
19. 10' x 10' PASS THROUGH PLATFORM. SEE SHEET S3.7 FOR MORE INFORMATION. SEE SHEET S5.4 FOR PLATFORM FRAMING INFORMATION.

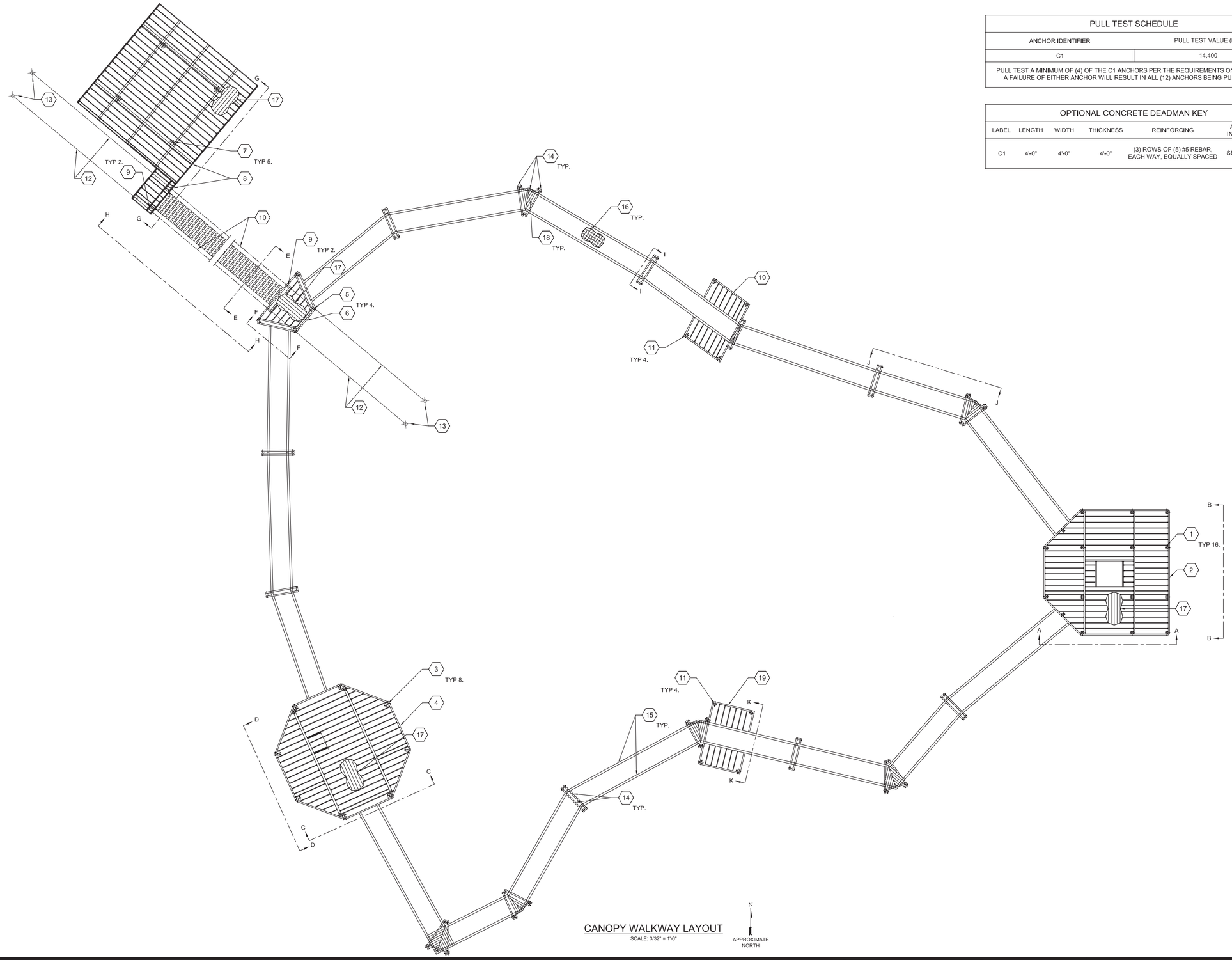
PULL TEST SCHEDULE

ANCHOR IDENTIFIER	PULL TEST VALUE (LB.)
C1	14,400

PULL TEST A MINIMUM OF (4) OF THE C1 ANCHORS PER THE REQUIREMENTS ON SHEET S1.1. A FAILURE OF EITHER ANCHOR WILL RESULT IN ALL (12) ANCHORS BEING PULL TESTED.

OPTIONAL CONCRETE DEADMAN KEY

LABEL	LENGTH	WIDTH	THICKNESS	REINFORCING	ADDITIONAL INFORMATION
C1	4'-0"	4'-0"	4'-0"	(3) ROWS OF (5) #5 REBAR, EACH WAY, EQUALLY SPACED	SEE DETAIL 13



CANOPY WALKWAY LAYOUT
SCALE: 3/32" = 1'-0"

N
APPROXIMATE NORTH

PHOENIX EXPERIENTIAL DESIGNS
A Signature Company

TANGLEWOOD NATURE CENTER - CANOPY WALKWAY

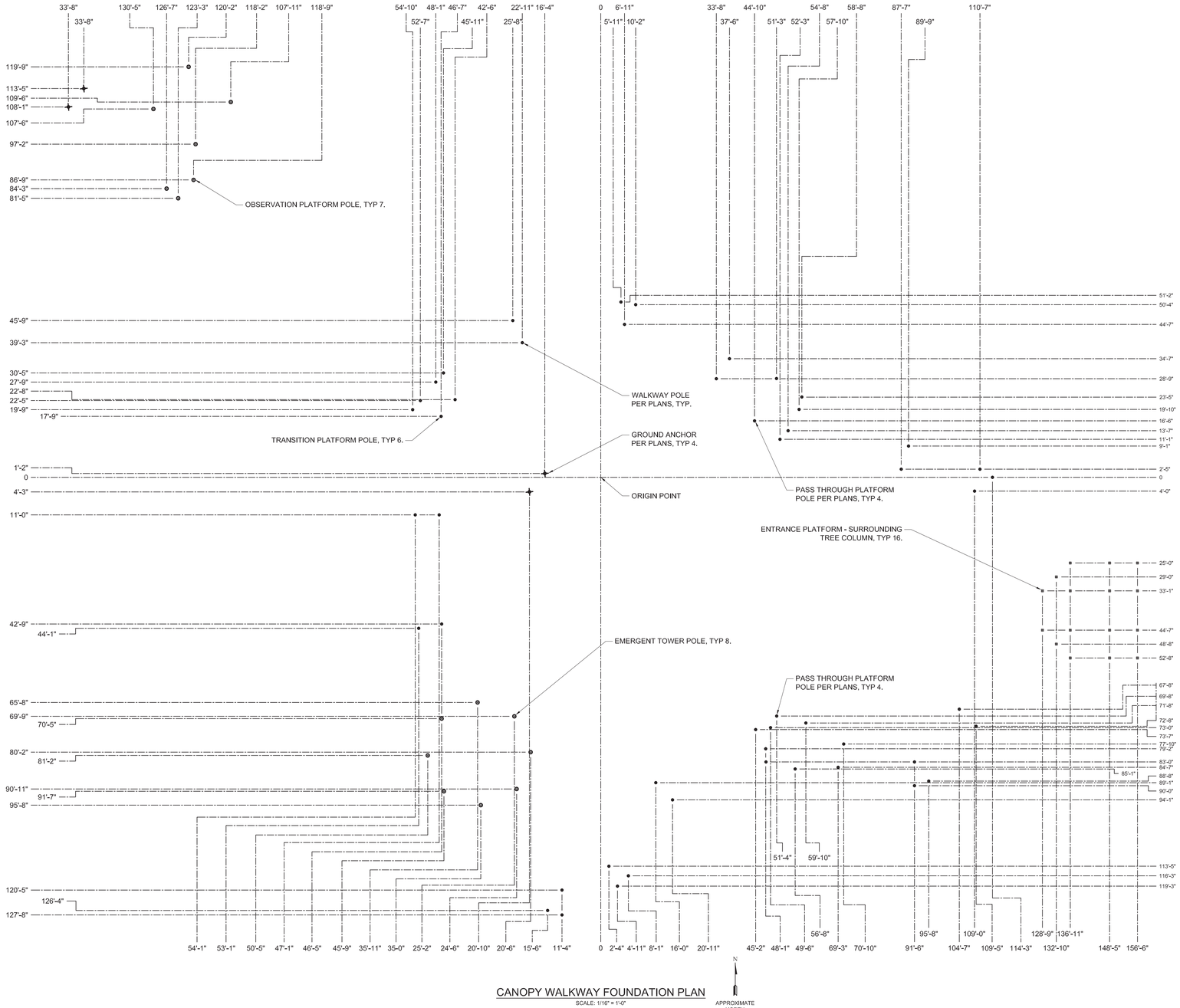
443 COLEMAN AVE
ELMIRA, NY 14903

PHOENIX EXPERIENTIAL DESIGNS JOB #: 2301

STATE OF NEW YORK · CHONG DAVID MIN · 078208 · LICENSED PROFESSIONAL ENGINEER

DRAWN:	MAR
ENGINEERED:	MAR
CHECKED:	DT
DATE:	06/06/2024

SHEET NUMBER:
S2.1
COURSE LAYOUT



CANOPY WALKWAY FOUNDATION PLAN

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

TANGLEWOOD NATURE CENTER - CANOPY WALKWAY

443 COLEMAN AVE
ELMIRA, NY 14903

PHOENIX EXPERIENTIAL DESIGNS JOB #: 2301

PHOENIX EXPERIENTIAL DESIGNS
a Signature Company

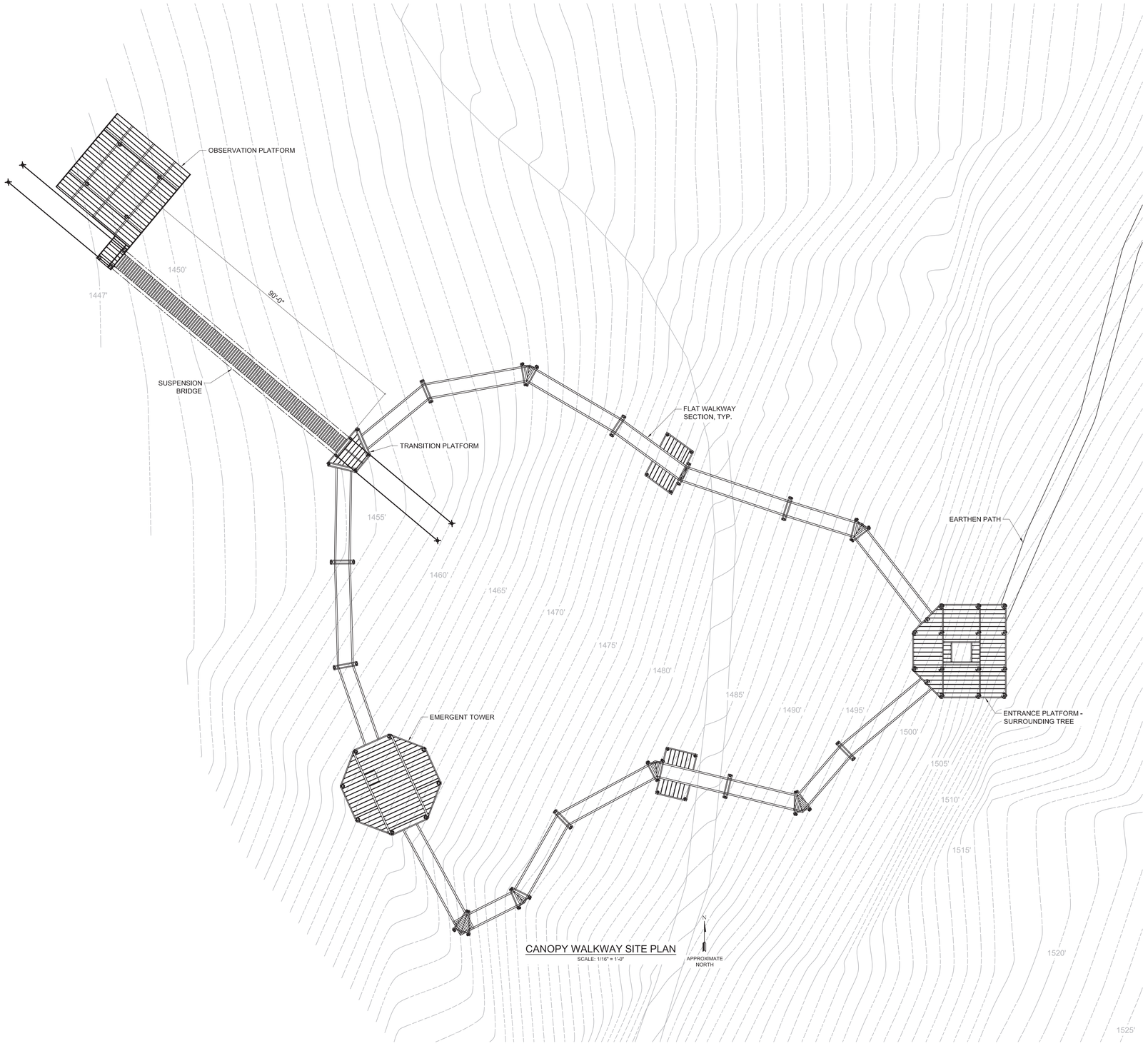
STATE OF NEW YORK
CHUN HONG DAVID TANG
078208
LICENSED PROFESSIONAL ENGINEER

DRAWN:	MAR
ENGINEERED:	MAR
CHECKED:	DT
DATE:	06/06/2024

SHEET NUMBER:

S2.2

FOUNDATION PLAN



CANOPY WALKWAY SITE PLAN

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

PHOENIX EXPERIENTIAL DESIGNS
A Signature Company

TANGLEWOOD NATURE CENTER - CANOPY WALKWAY

443 COLEMAN AVE
ELMIRA, NY 14903

PHOENIX EXPERIENTIAL DESIGNS JOB #: 2301

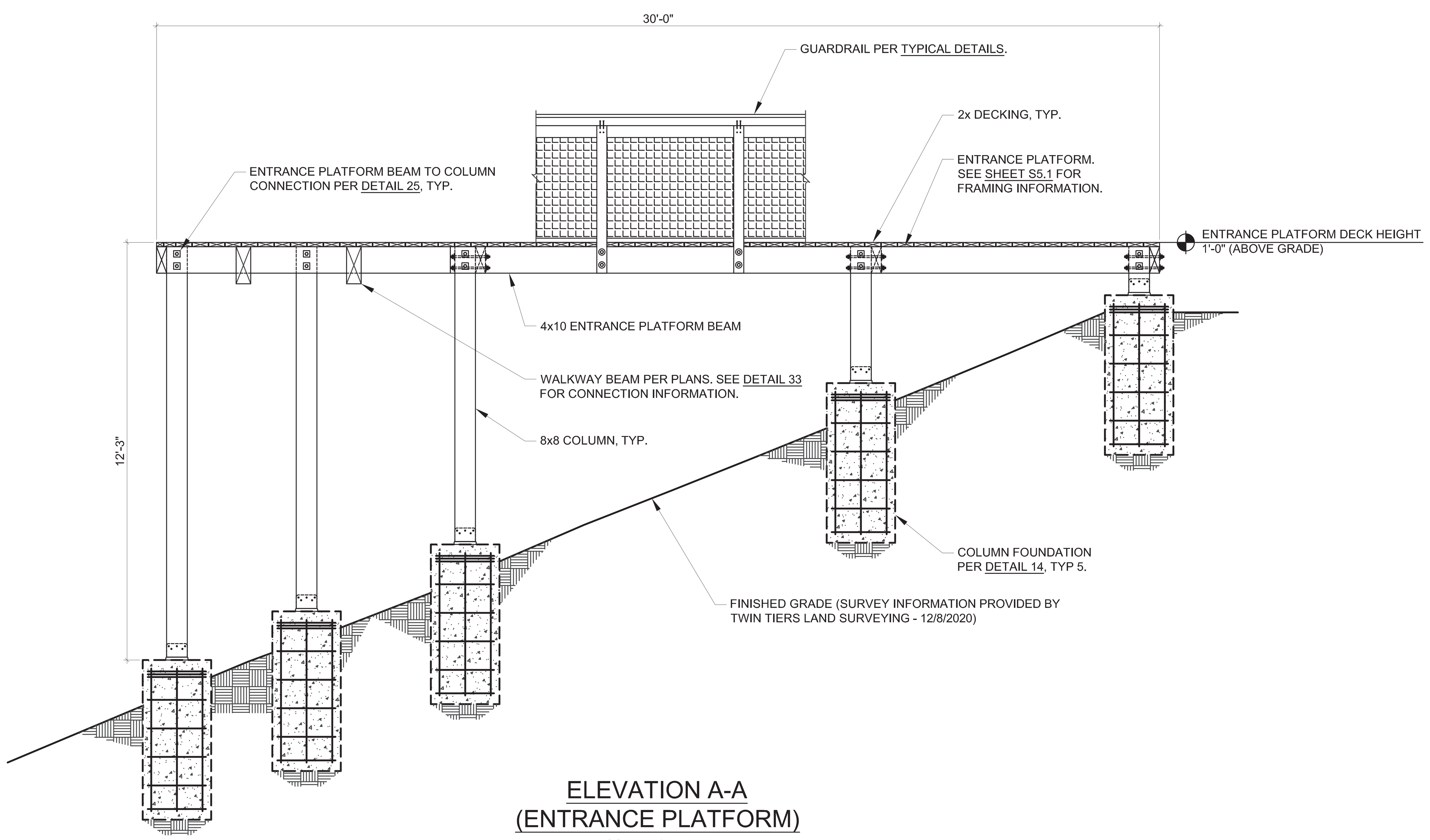
STATE OF NEW YORK
CHUN HONG DAVID TAN
078208
LICENSED PROFESSIONAL ENGINEER
6-10-24

DRAWN:	MAR
ENGINEERED:	MAR
CHECKED:	DT
DATE:	06/06/2024

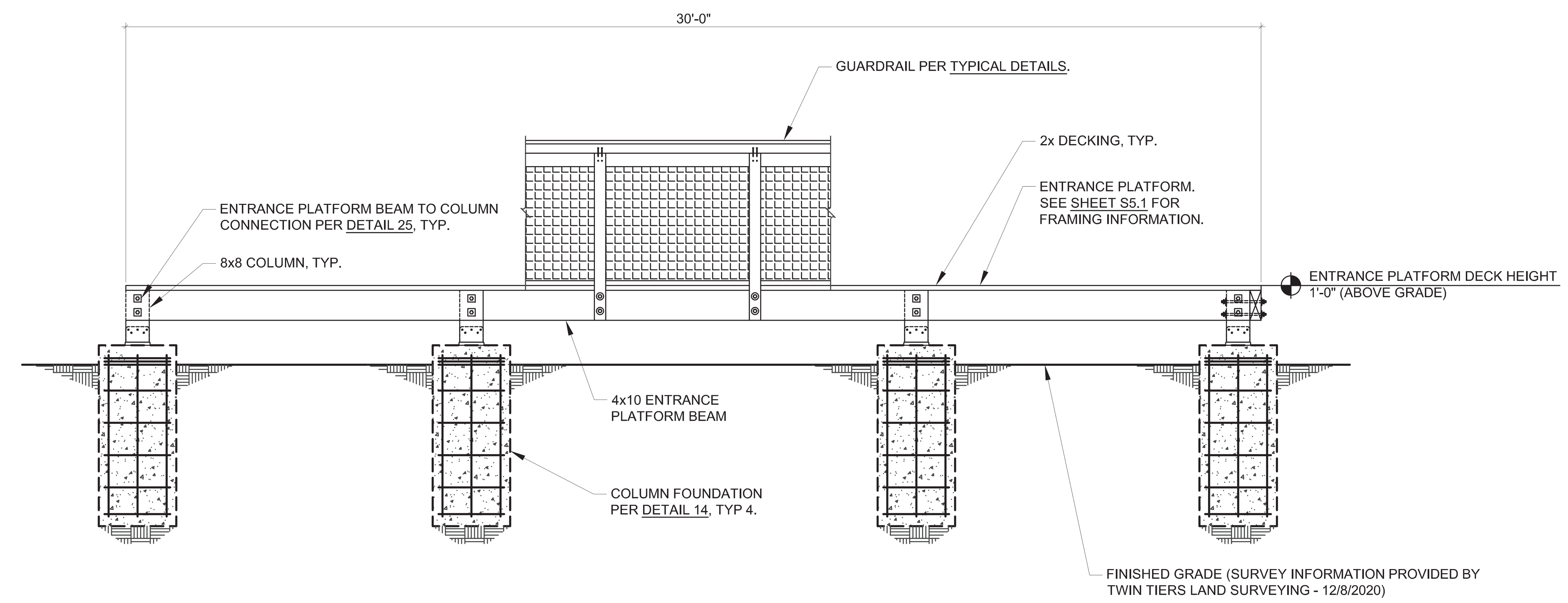
SHEET NUMBER:

S2.3

SITE PLAN



ELEVATION A-A
(ENTRANCE PLATFORM)
SCALE: 3/8" = 1'-0"



ELEVATION B-B
(ENTRANCE PLATFORM)
SCALE: 3/8" = 1'-0"

Signature

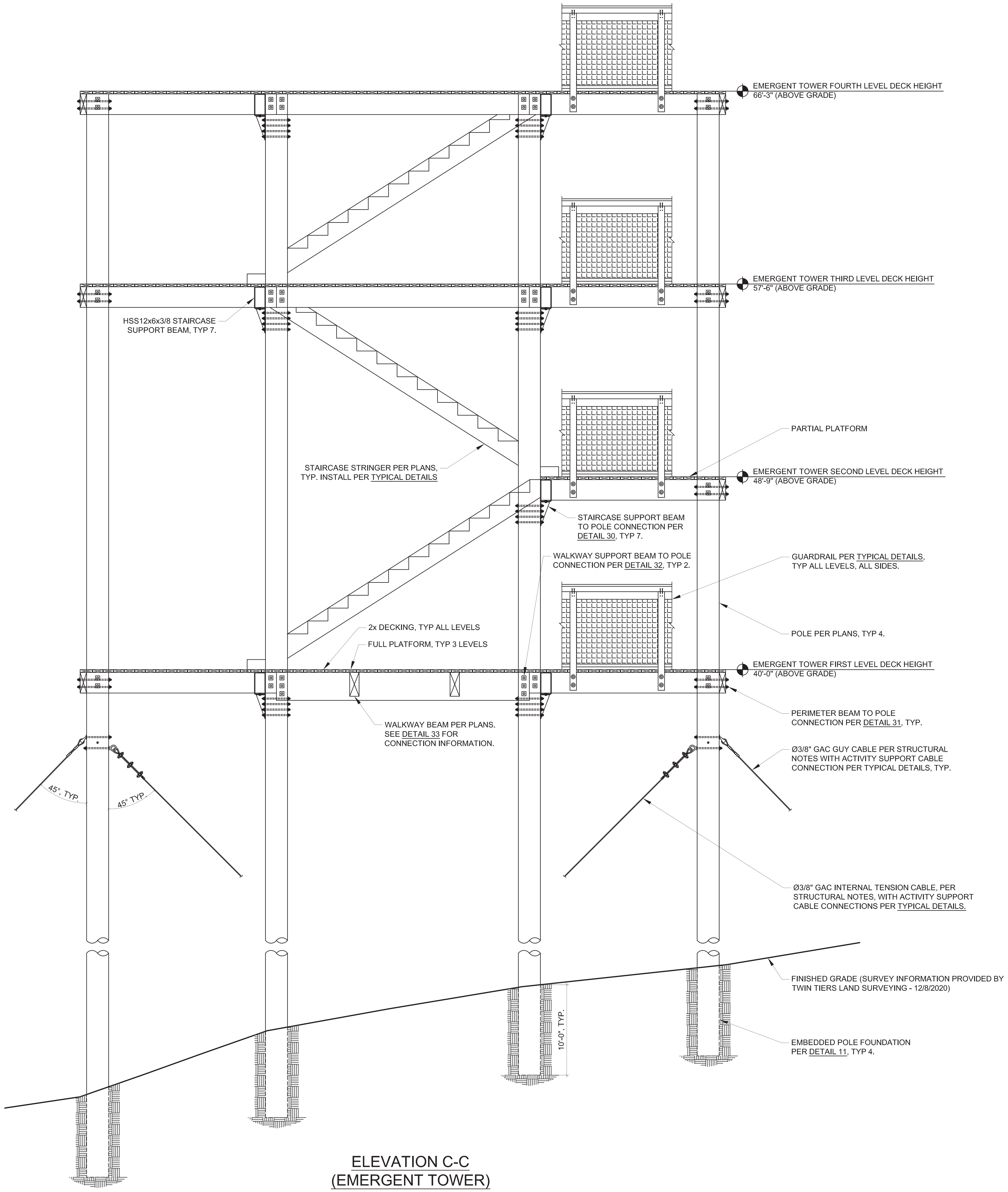
TANGLEWOOD NATURE CENTER - CANOPY WALKWAY

443 COLEMAN AVE
ELMIRA, NY 14903

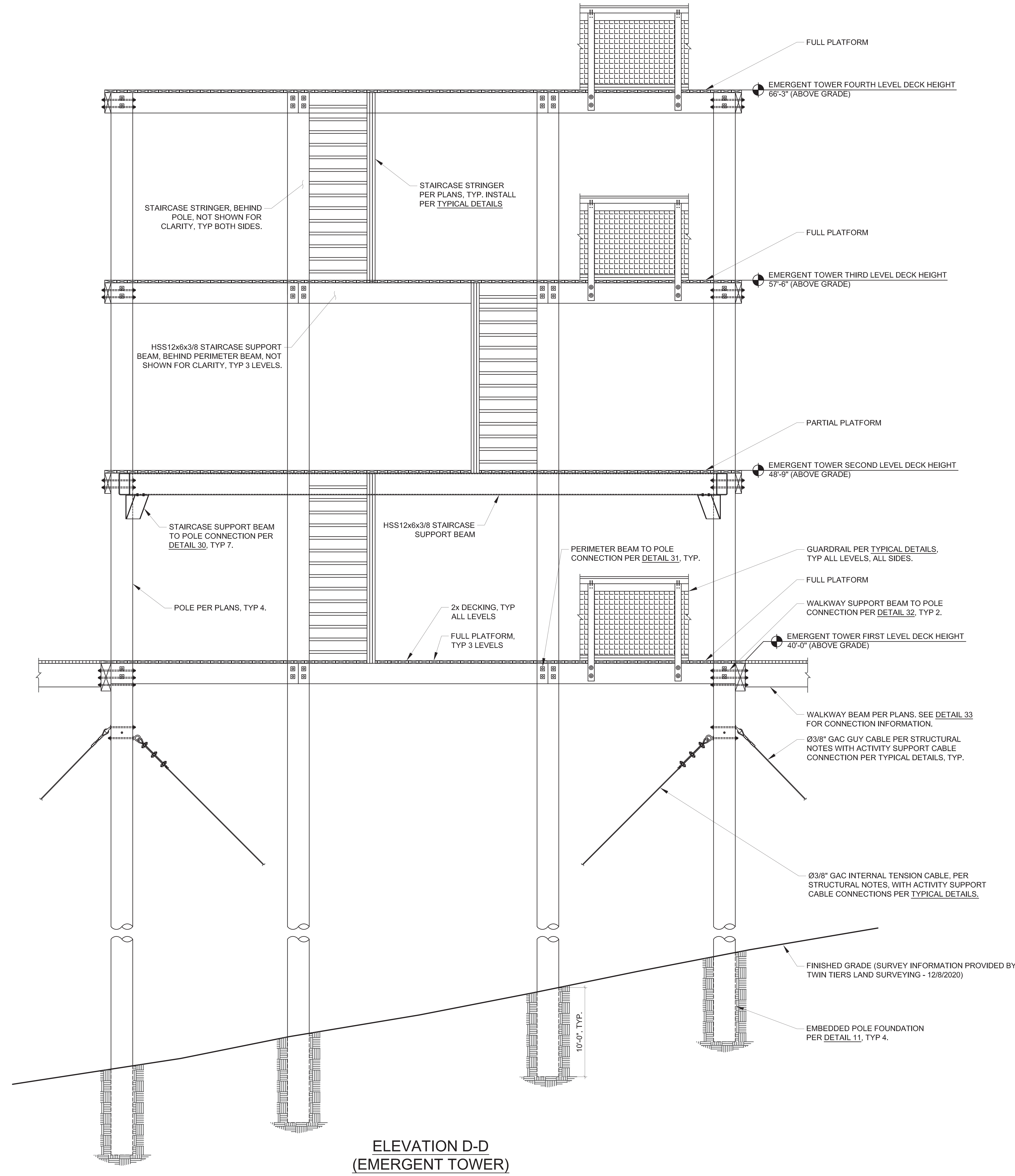
SIGNATURE JOB #: 2301

DRAWN:	MAR
ENGINEERED:	MAR
CHECKED:	DT
DATE:	06/06/2024

SHEET NUMBER:
S3.1
ELEVATIONS - A-A & B-B



ELEVATION C-C
(EMERGENT TOWER)
SCALE: 3/8" = 1'-0"



ELEVATION D-D
(EMERGENT TOWER)
SCALE: 3/8" = 1'-0"

PHOENIX EXPERIENTIAL DESIGNS
A Signature Company

TANGLEWOOD NATURE CENTER - CANOPY WALKWAY

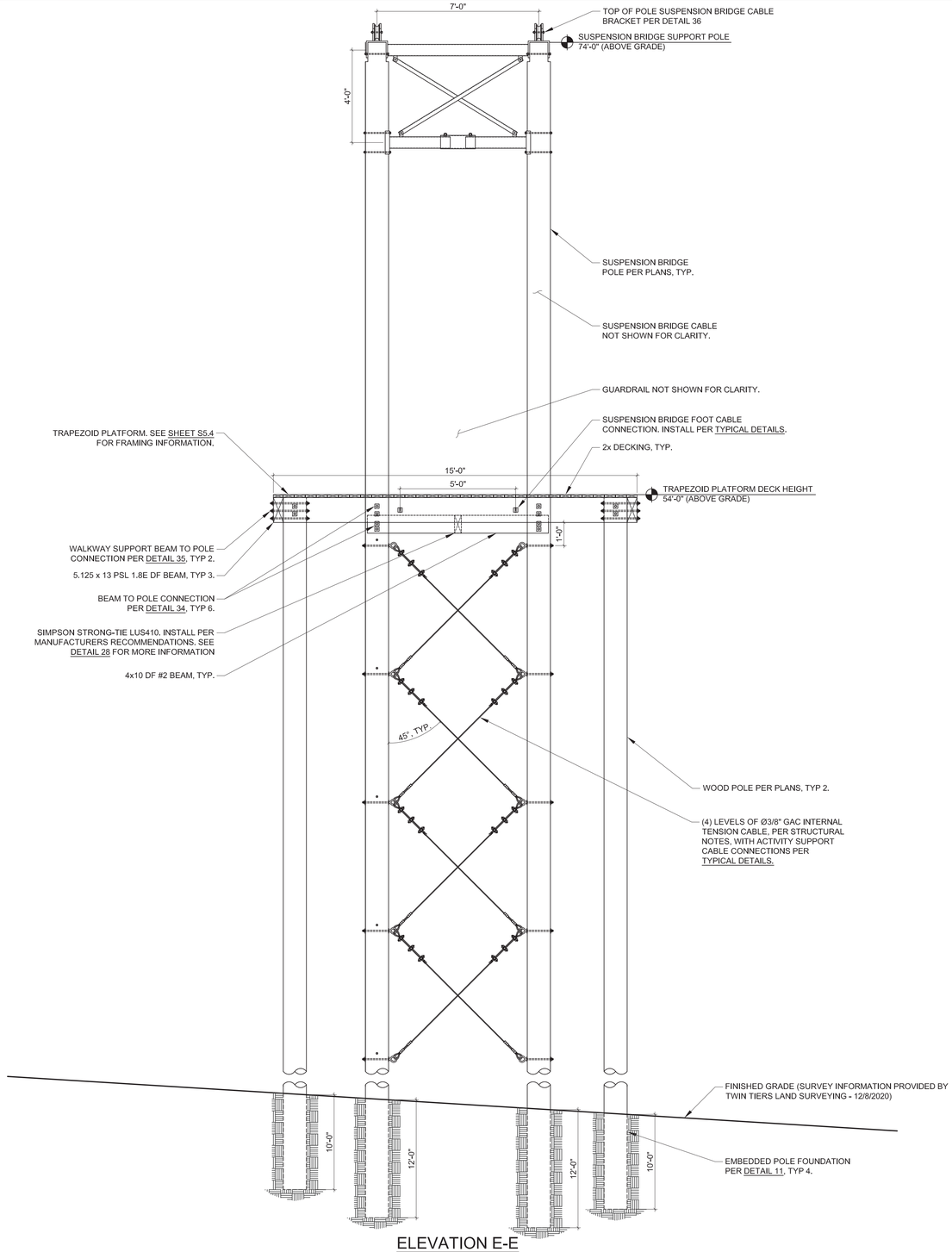
443 COLEMAN AVE
ELMIRA, NY 14903

PHOENIX EXPERIENTIAL DESIGNS JOB #: 2301

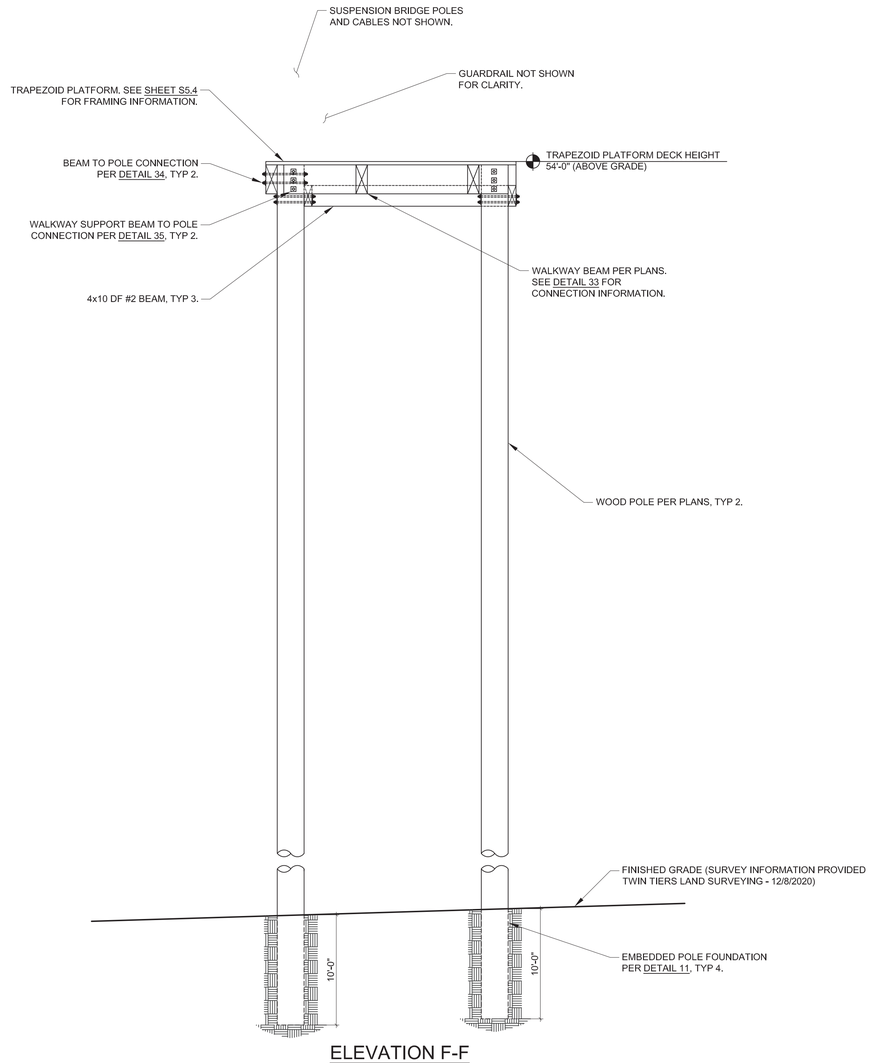
STATE OF NEW YORK
078208
LICENSED PROFESSIONAL ENGINEER

DRAWN:	MAR
ENGINEERED:	MAR
CHECKED:	DT
DATE:	06/06/2024

SHEET NUMBER:
S3.2
ELEVATIONS - C-C & D-D



ELEVATION E-E
(TRAPEZOID TOWER)
SCALE: 3/8" = 1'-0"



ELEVATION F-F
(TRAPEZOID TOWER)
SCALE: 3/8" = 1'-0"

PHOENIX EXPERIENTIAL DESIGNS
A Signature Company

TANGLEWOOD NATURE CENTER - CANOPY WALKWAY

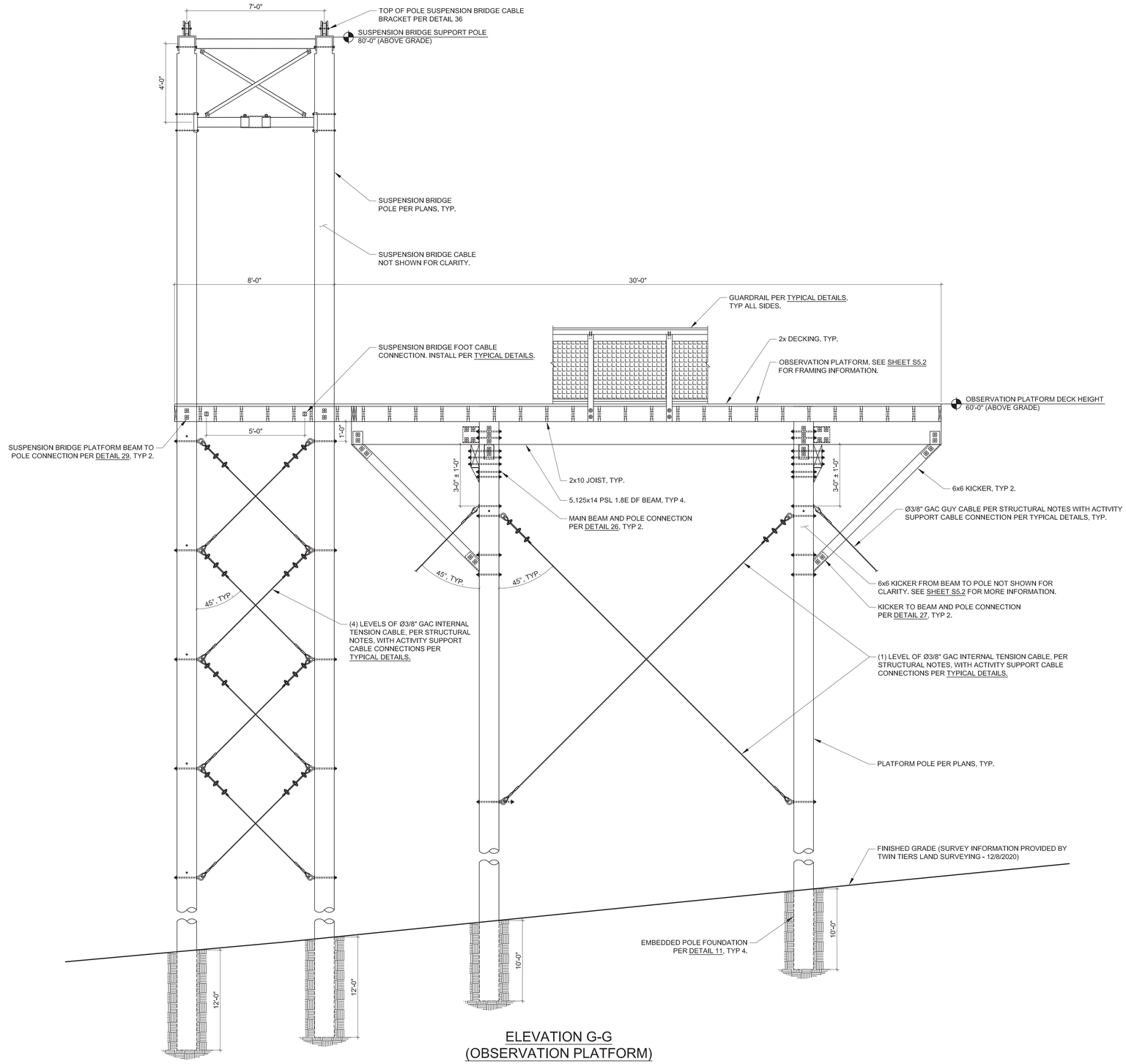
443 COLEMAN AVE
ELMIRA, NY 14903

PHOENIX EXPERIENTIAL DESIGNS JOB #: 2301

STATE OF NEW YORK · CHOON YONG DAVID TAN · 078208 · LICENSED PROFESSIONAL ENGINEER

DRAWN:	MAR
ENGINEERED:	MAR
CHECKED:	DT
DATE:	06/06/2024

SHEET NUMBER:
S3.3
ELEVATIONS - E-E & F-F



ELEVATION G-G
(OBSERVATION PLATFORM)

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

PHOENIX EXPERIENTIAL DESIGNS
a Signature Company

TANGLEWOOD NATURE CENTER - CANOPY WALKWAY

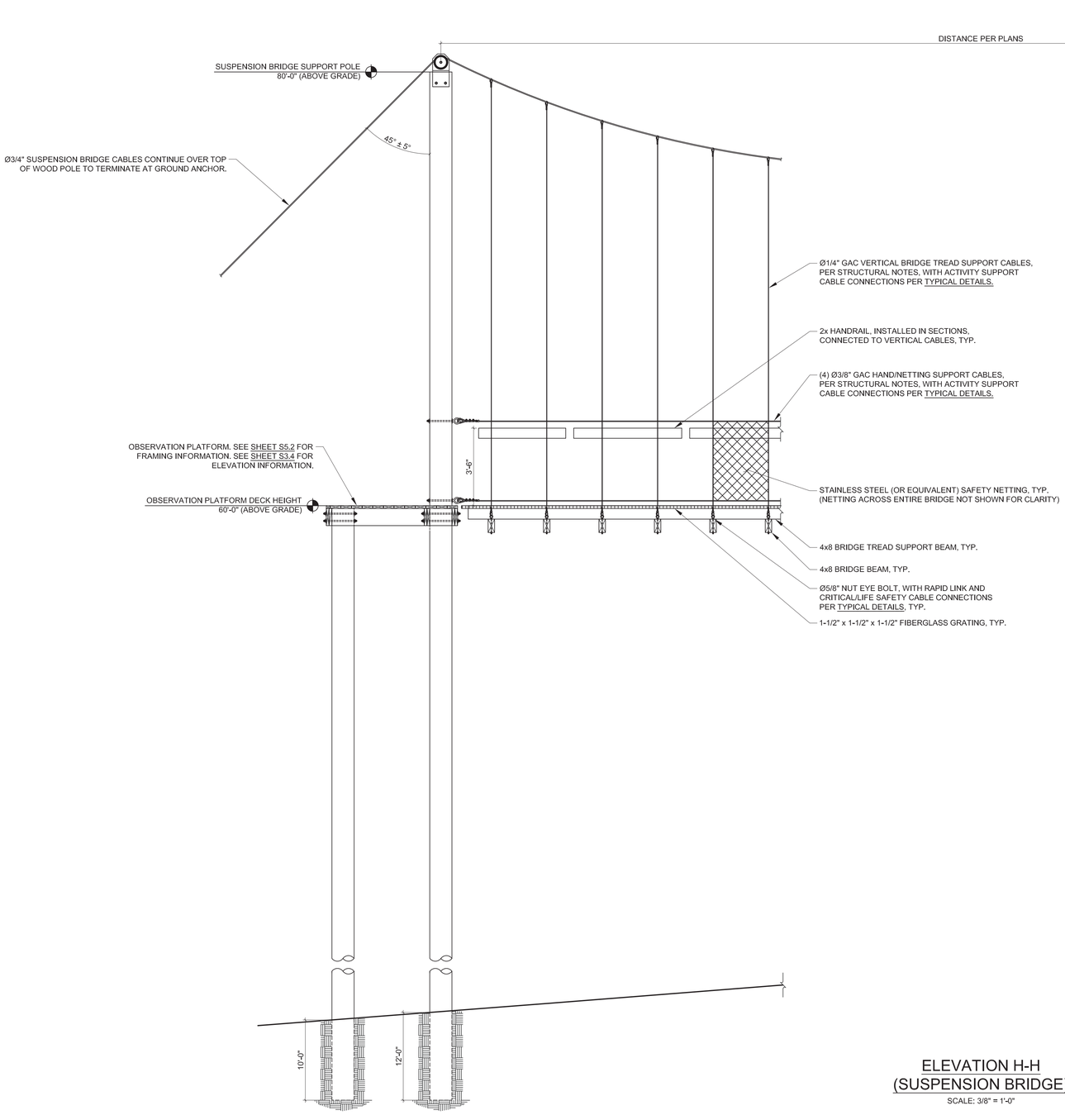
443 COLEMAN AVE
ELMIRA, NY 14903

PHOENIX EXPERIENTIAL DESIGNS JOB #: 2301

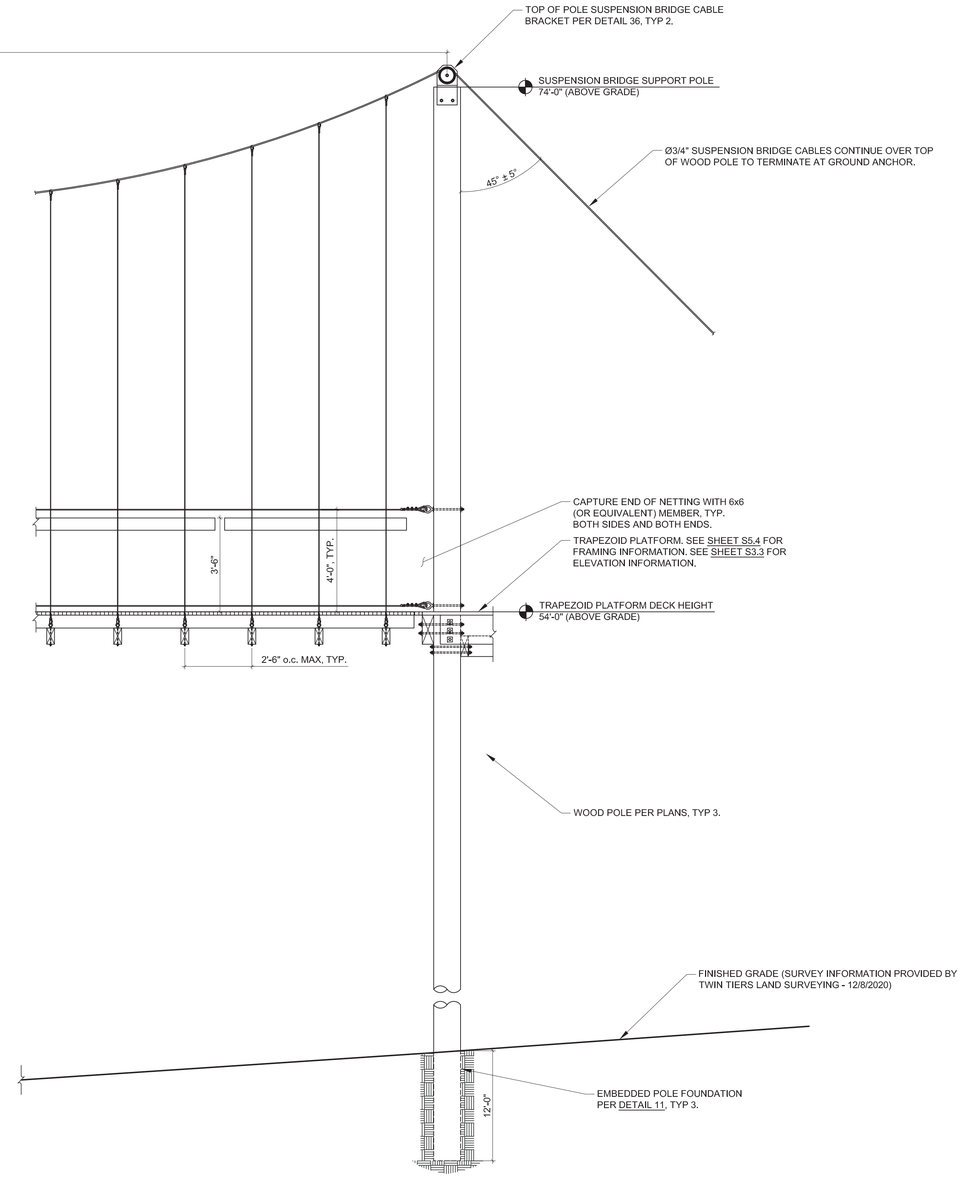
STATE OF NEW YORK · CHUAN NONG DU · 078208 · LICENSED PROFESSIONAL ENGINEER

DRAWN:	MAR
ENGINEERED:	MAR
CHECKED:	DT
DATE:	06/06/2024

SHEET NUMBER:
S3.4
ELEVATION - G-G



ELEVATION H-H
(SUSPENSION BRIDGE)
SCALE: 3/8" = 1'-0"



PHOENIX EXPERIENTIAL DESIGNS
A Signature Company

TANGLEWOOD NATURE CENTER - CANOPY WALKWAY

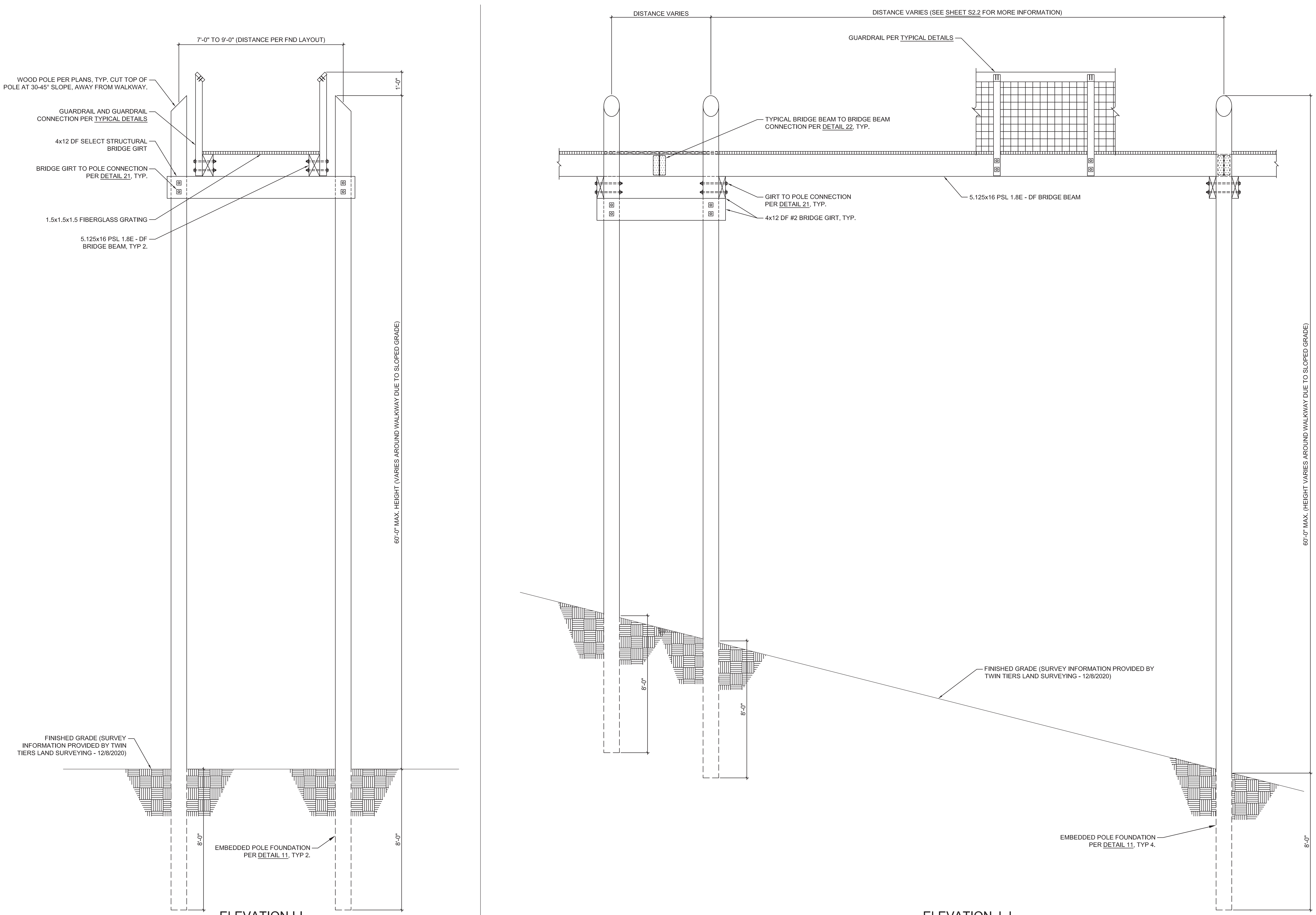
443 COLEMAN AVE
ELMIRA, NY 14903

PHOENIX EXPERIENTIAL DESIGNS JOB #: 2301

STATE OF NEW YORK
DAVID HONG DAVIS
078208
LICENSED PROFESSIONAL ENGINEER

DRAWN:	MAR
ENGINEERED:	MAR
CHECKED:	DT
DATE:	06/06/2024

SHEET NUMBER:
S3.5
ELEVATION - H-H



ELEVATION I-I
(WALKWAY)
SCALE: 1/2" = 1'-0"

ELEVATION J-J
(WALKWAY)
SCALE: 1/2" = 1'-0"

PHOENIX EXPERIENTIAL DESIGNS

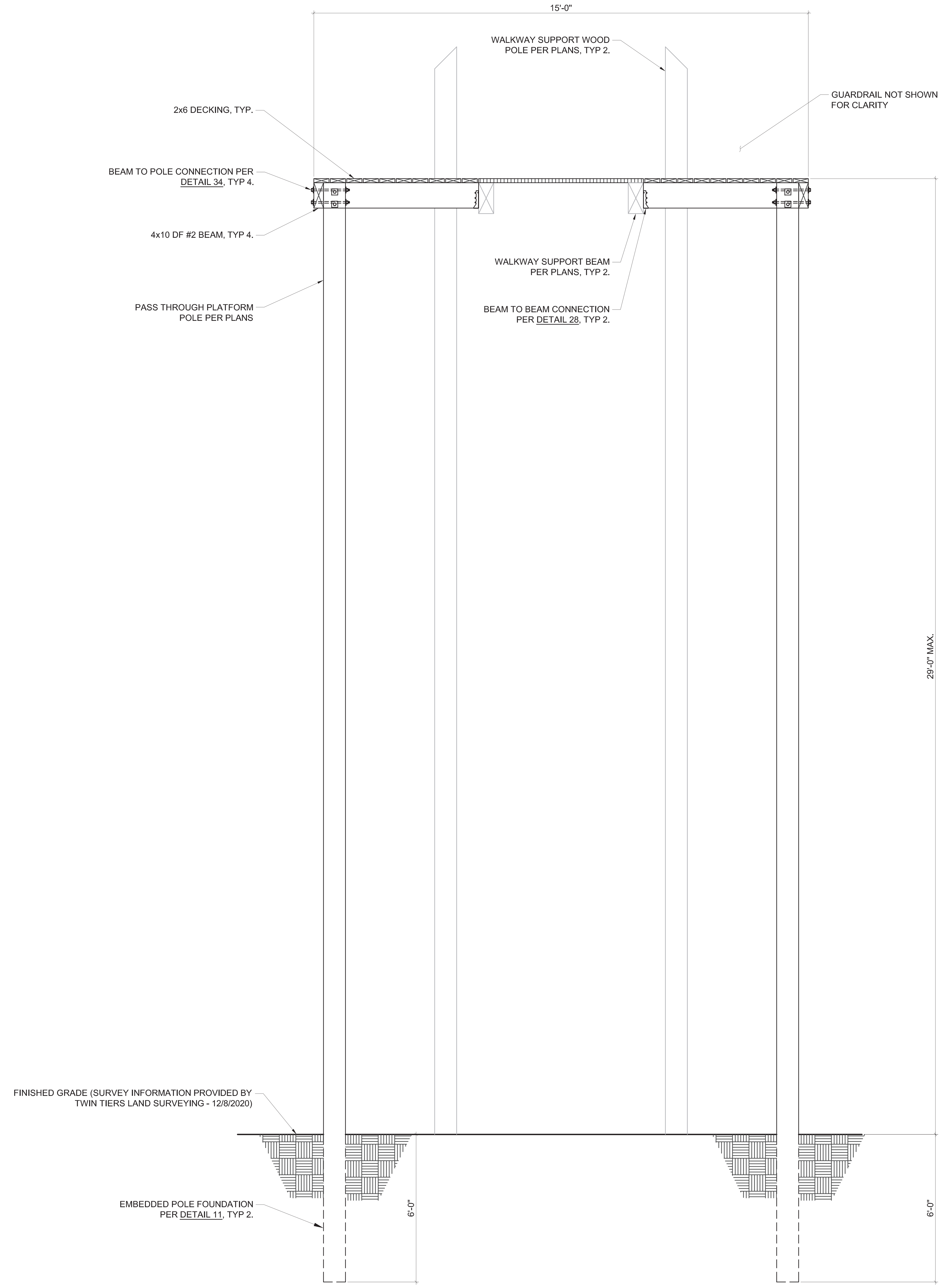
TANGLEWOOD NATURE CENTER - CANOPY WALKWAY

443 COLEMAN AVE
ELMIRA, NY 14903

PHOENIX EXPERIENTIAL DESIGNS JOB #: 2301

DRAWN:	MAR
ENGINEERED:	MAR
CHECKED:	DT
DATE:	06/06/2024

SHEET NUMBER:
S3.6
ELEVATIONS - I-I & J-J



ELEVATION K-K
(PASS THROUGH PLATFORM)

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

PHOENIX EXPERIENTIAL DESIGNS

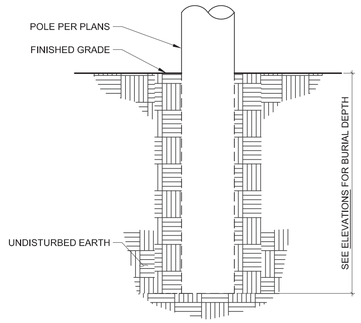
TANGLEWOOD NATURE CENTER - CANOPY WALKWAY

443 COLEMAN AVE
ELMIRA, NY 14903

PHOENIX EXPERIENTIAL DESIGNS JOB #: 2301

DRAWN:	MAR
ENGINEERED:	MAR
CHECKED:	DT
DATE:	06/06/2024

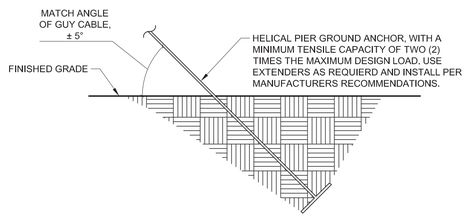
SHEET NUMBER:
S3.7
ELEVATION - K-K



NOTICE:
- PER TERRACON GEOTECHNICAL REPORT - PROJECT No. J5235110

11 EMBEDDED POLE FOUNDATION

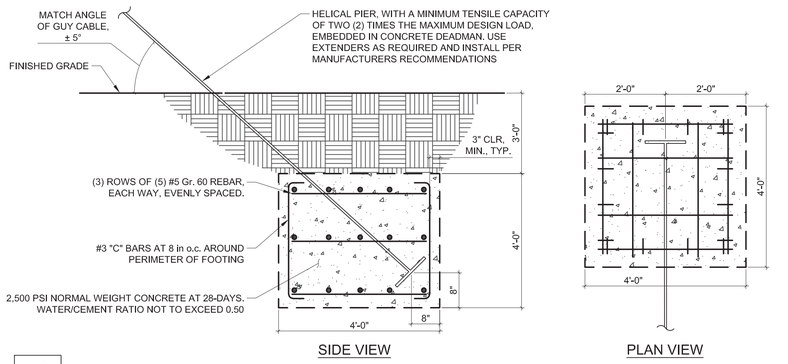
SCALE: 3/4" = 1'-0"



NOTICE:
- SEE SHEETS S1.1 AND S2.1 FOR PULL TEST REQUIREMENTS AND VALUES.

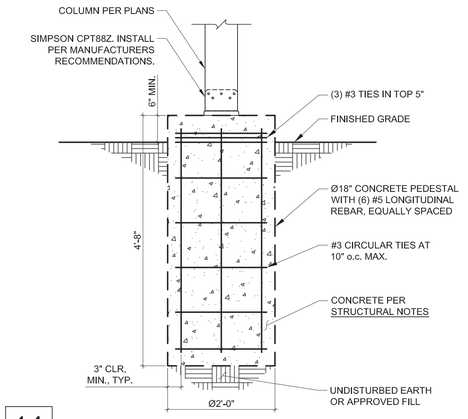
12 GROUND ANCHOR

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



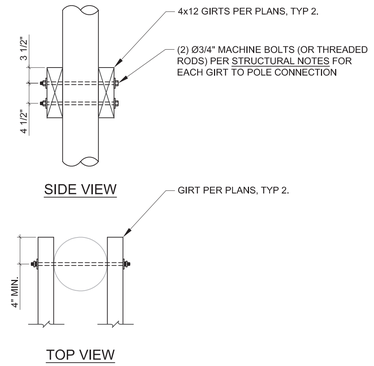
13 OPTIONAL CONCRETE DEADMAN

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



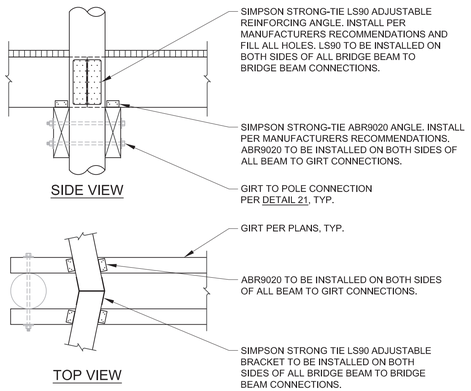
14 8x8 COLUMN FOUNDATION

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



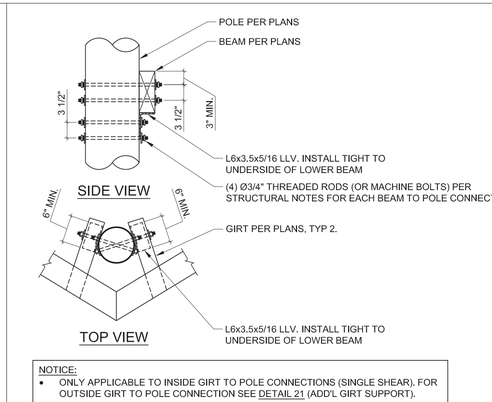
21 2-POLE GIRT TO POLE CONNECTION

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



22 TYPICAL BEAM TO BEAM AND BEAM TO GIRT CONNECTION

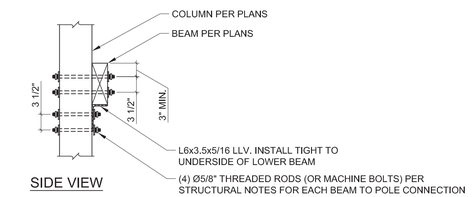
SCALE: 3/4" = 1'-0"



NOTICE:
- ONLY APPLICABLE TO INSIDE GIRT TO POLE CONNECTIONS (SINGLE SHEAR). FOR OUTSIDE GIRT TO POLE CONNECTION SEE DETAIL 21 (ADD'L GIRT SUPPORT).

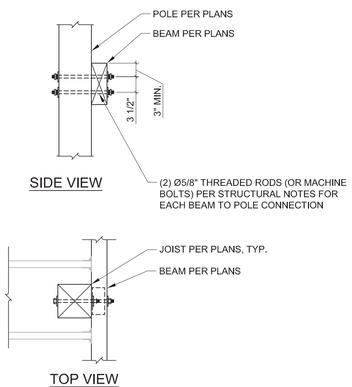
23 3-POLE GIRT TO POLE CONNECTION

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



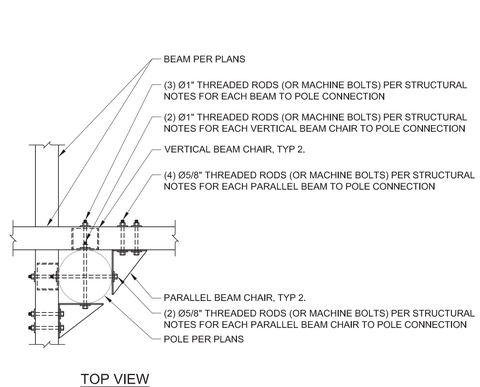
24 CENTRAL BEAM TO COLUMN CONNECTION - ENTRANCE PLATFORM

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



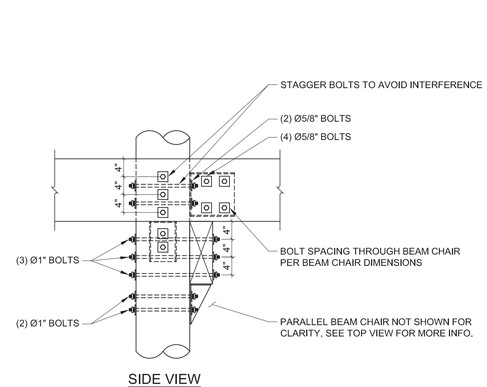
25 BEAM TO COLUMN CONNECTION - ENTRANCE PLATFORM

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



26 MAIN BEAM TO POLE CONNECTION - OBSERVATION PLATFORM

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



PHOENIX EXPERIENTIAL DESIGNS
A Signature Company

TANGLEWOOD NATURE CENTER - CANOPY WALKWAY

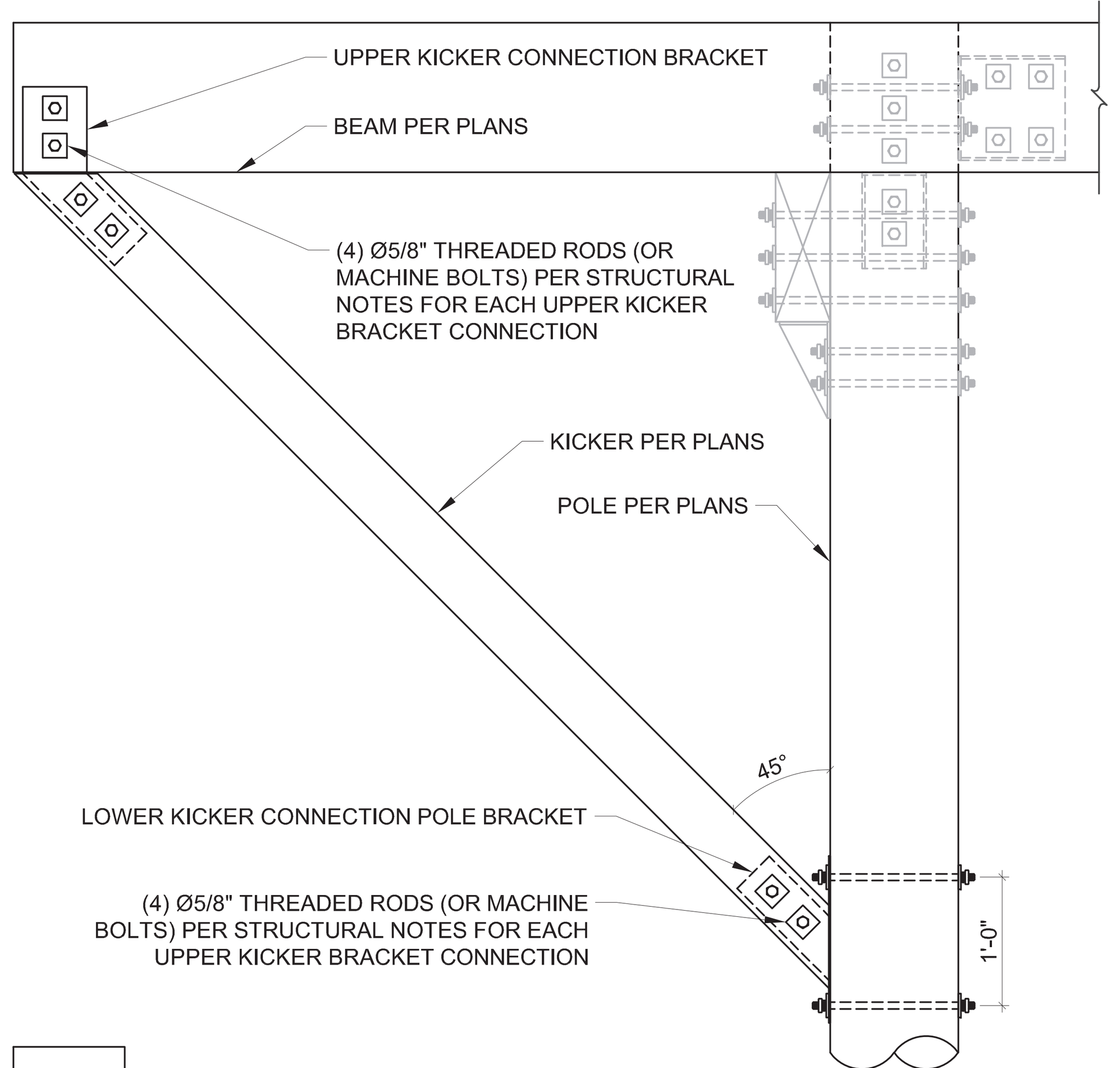
443 COLEMAN AVE
ELMIRA, NY 14903

PHOENIX EXPERIENTIAL DESIGNS JOB #: 2301

STATE OF NEW YORK
DAVID T. HONG
078208
LICENSED PROFESSIONAL ENGINEER

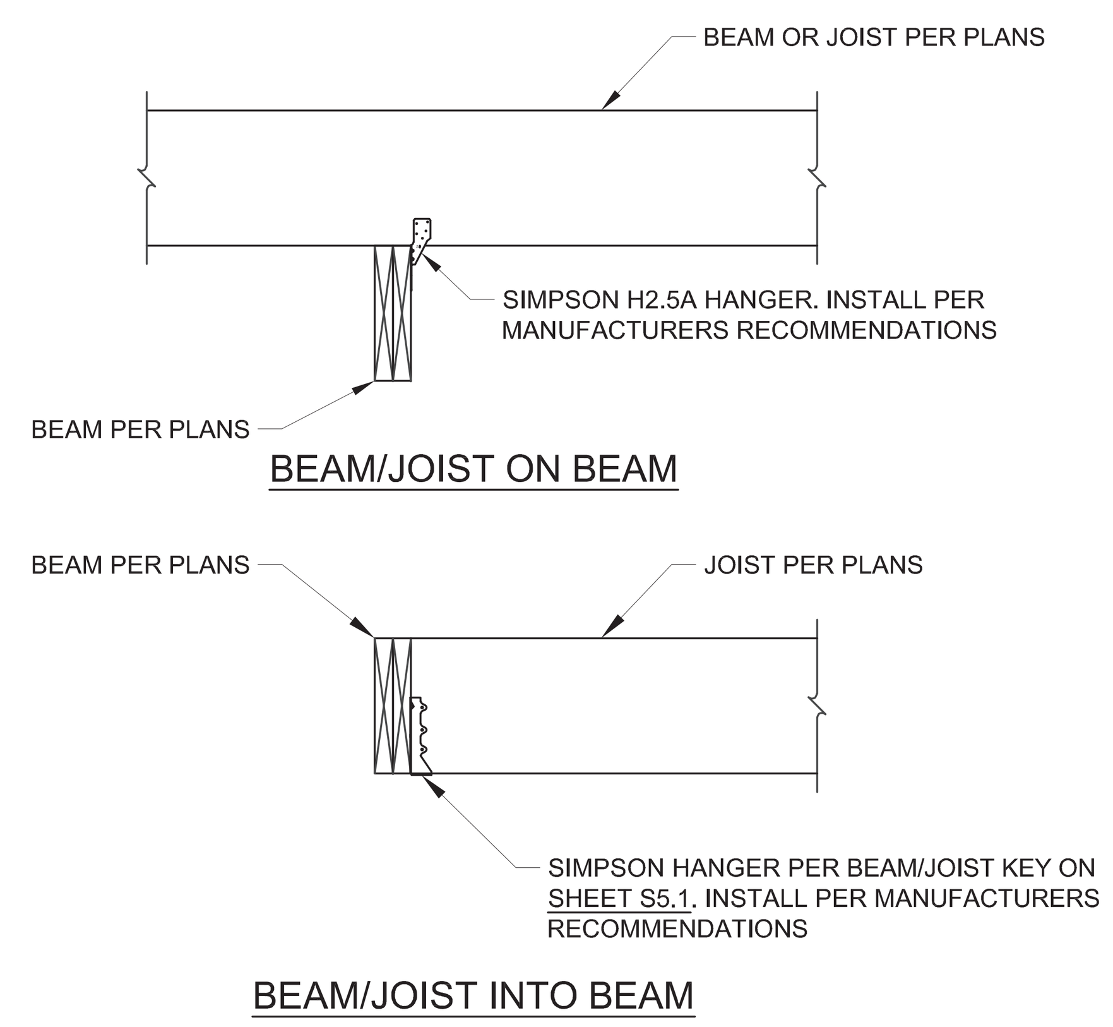
DRAWN:	MAR
ENGINEERED:	MAR
CHECKED:	DT
DATE:	06/06/2024

SHEET NUMBER:
S4.1
DETAILS - I



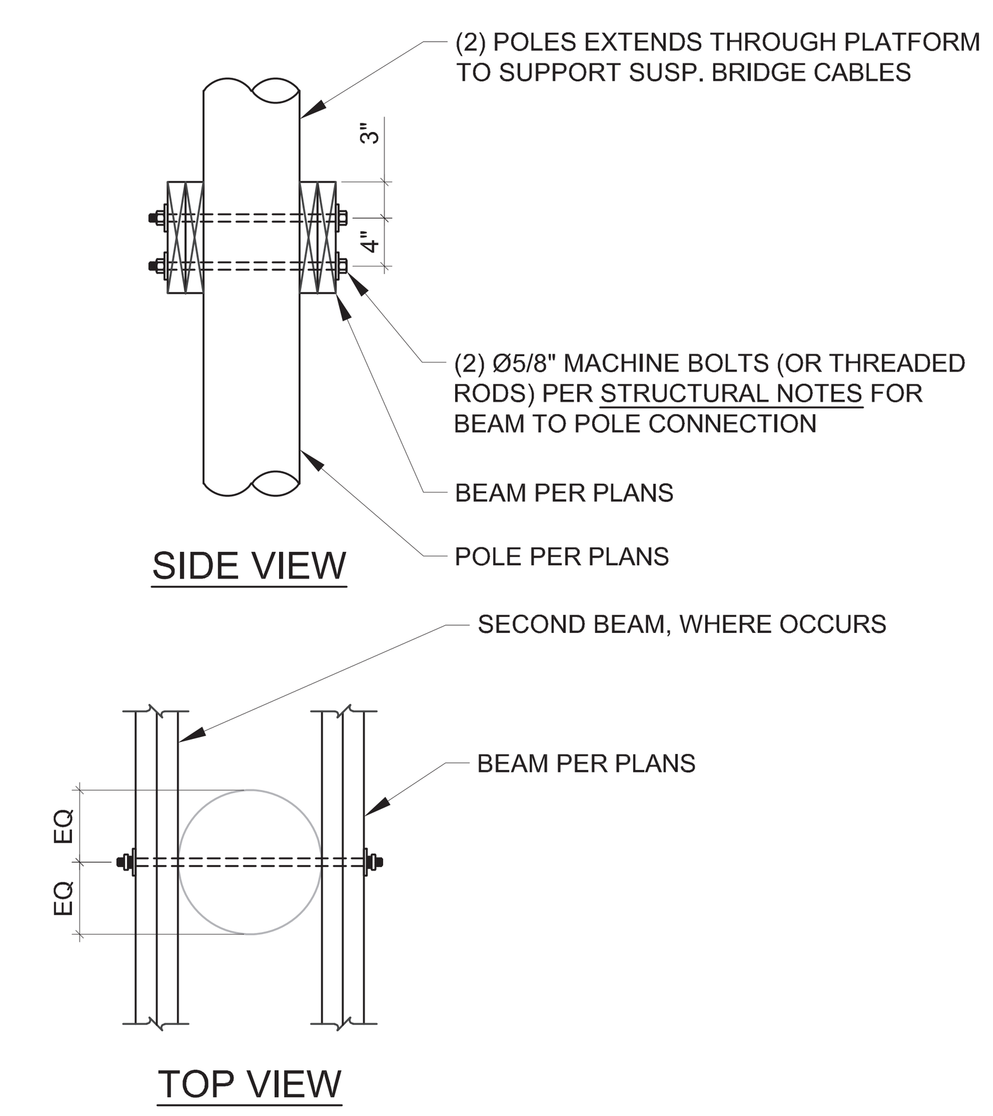
27 KICKER TO BEAM AND POLE CONNECTION

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



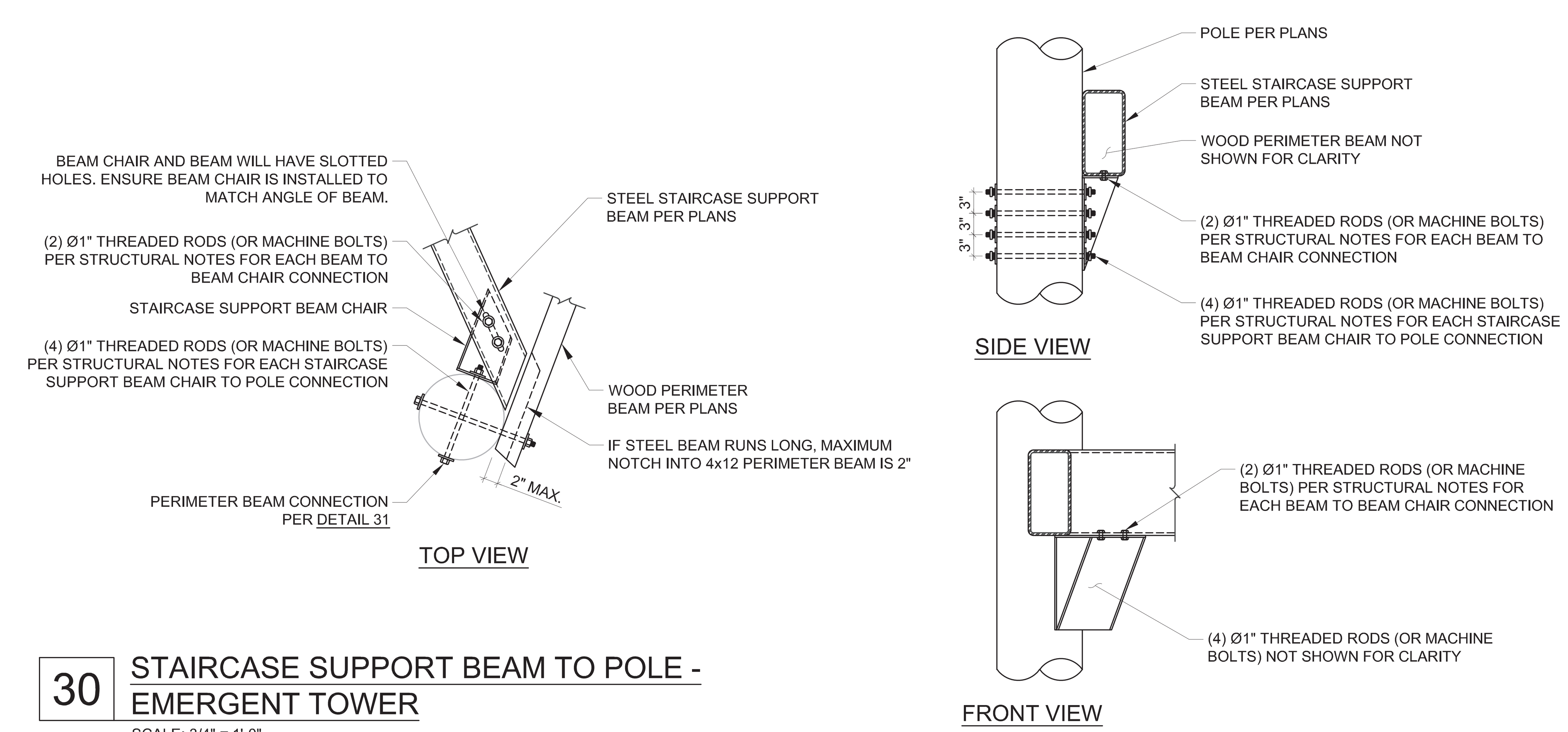
28 BEAM/JOIST TO BEAM CONNECTION

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



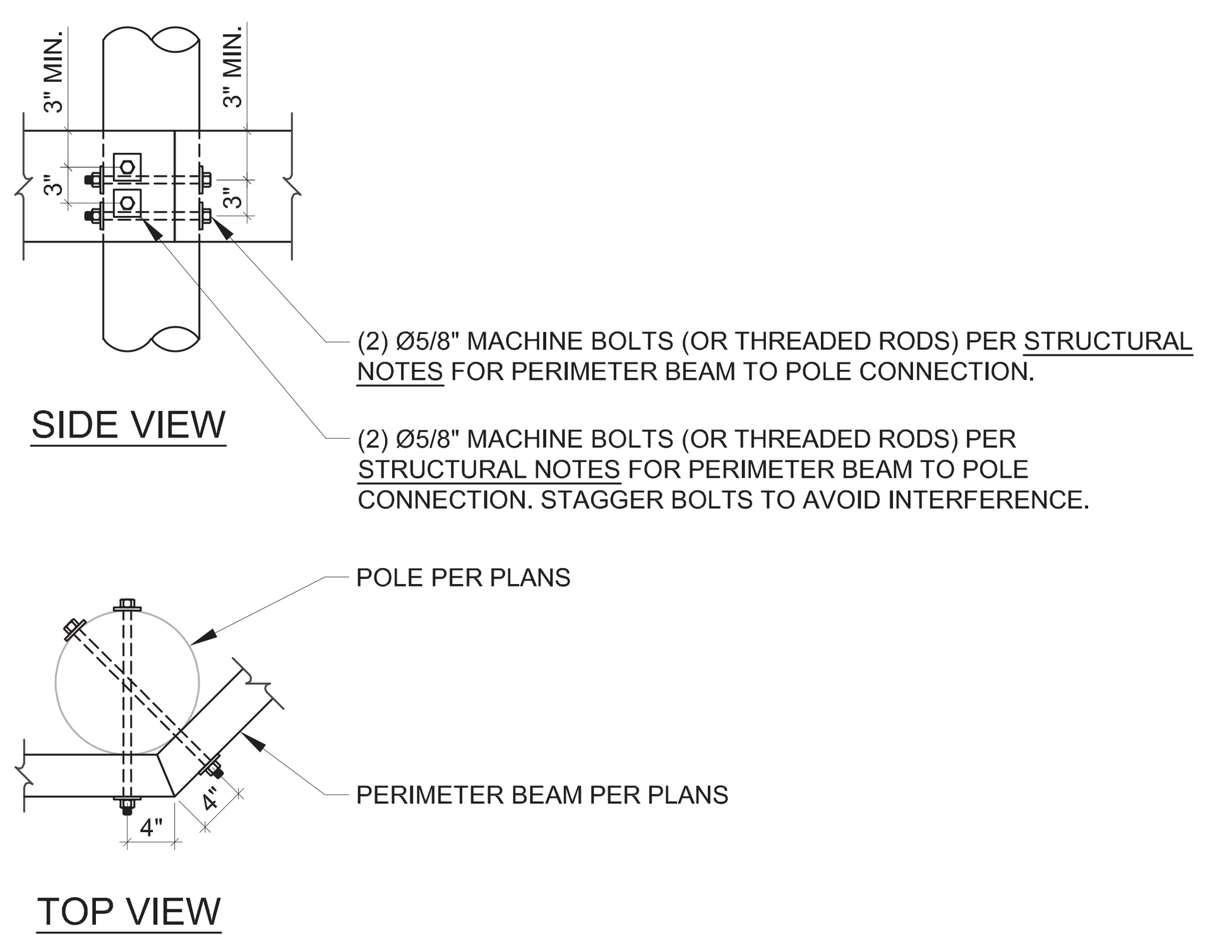
29 SUSP. BRIDGE PLATFORM BEAM TO POLE - EMERGENT TOWER

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



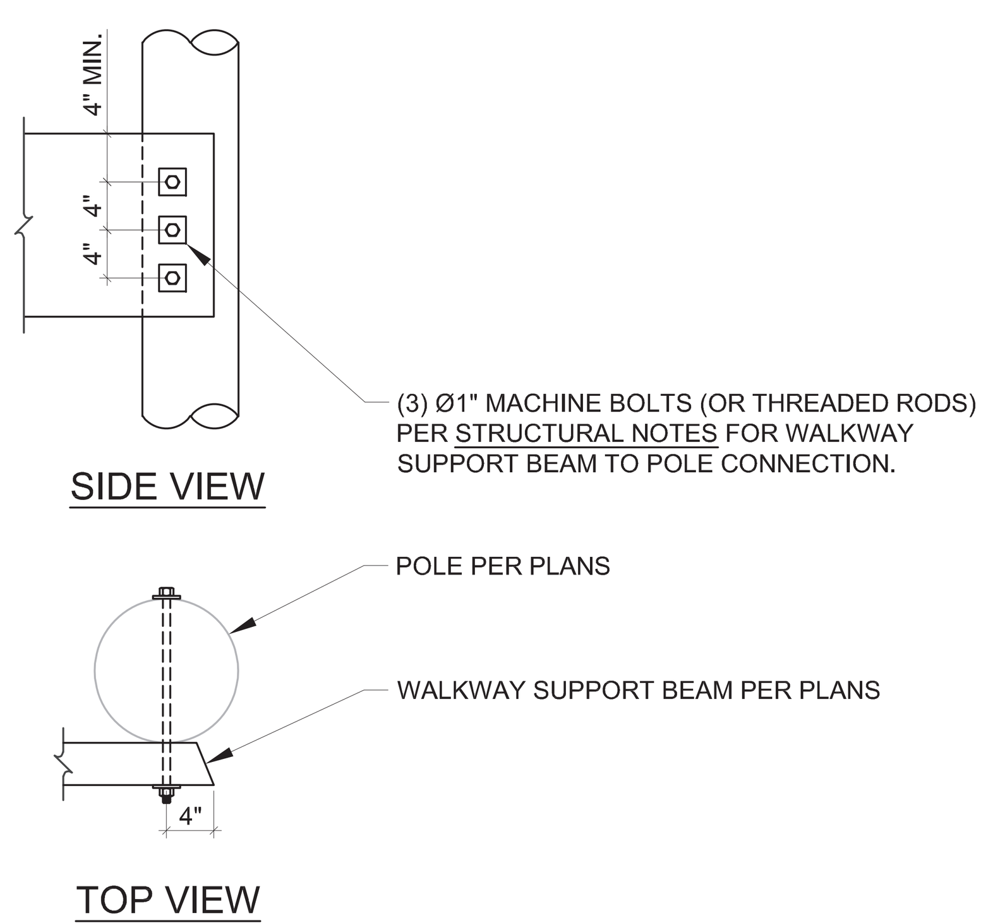
30 STAIRCASE SUPPORT BEAM TO POLE - EMERGENT TOWER

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



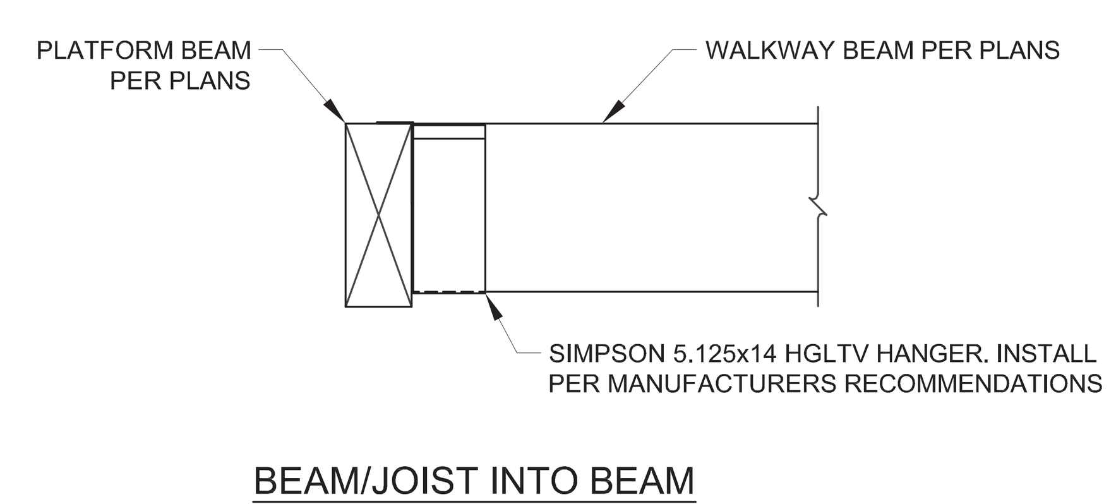
31 PERIMETER BEAM TO POLE - EMERGENT TOWER

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



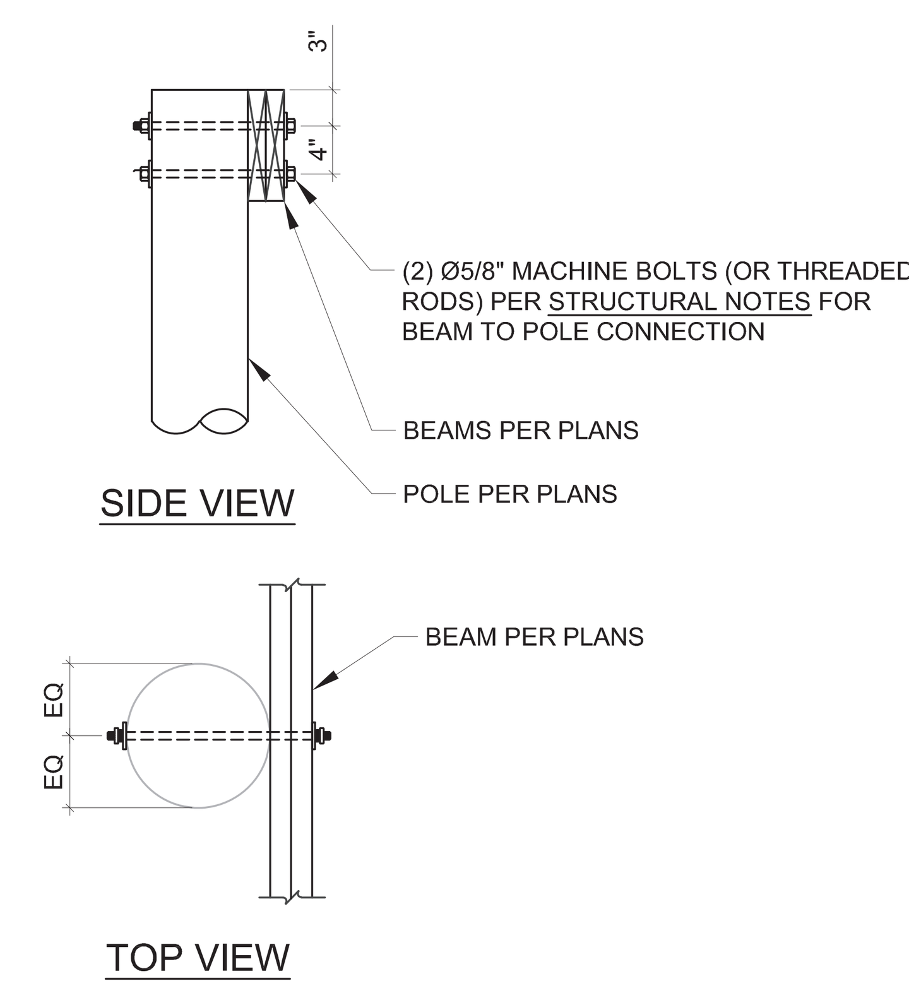
32 WALKWAY SUPPORT BEAM TO POLE - EMERGENT TOWER

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



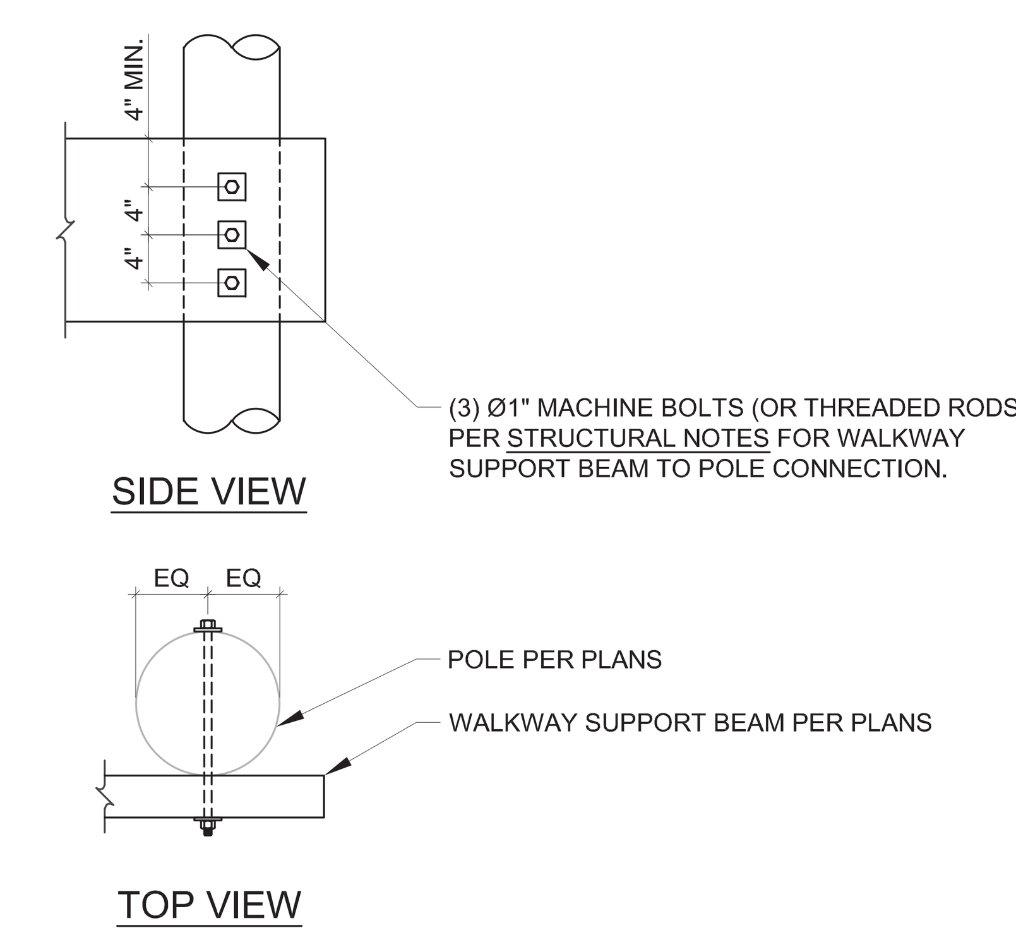
33 WALKWAY BEAM TO PLATFORM BEAM - EMERGENT TOWER

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



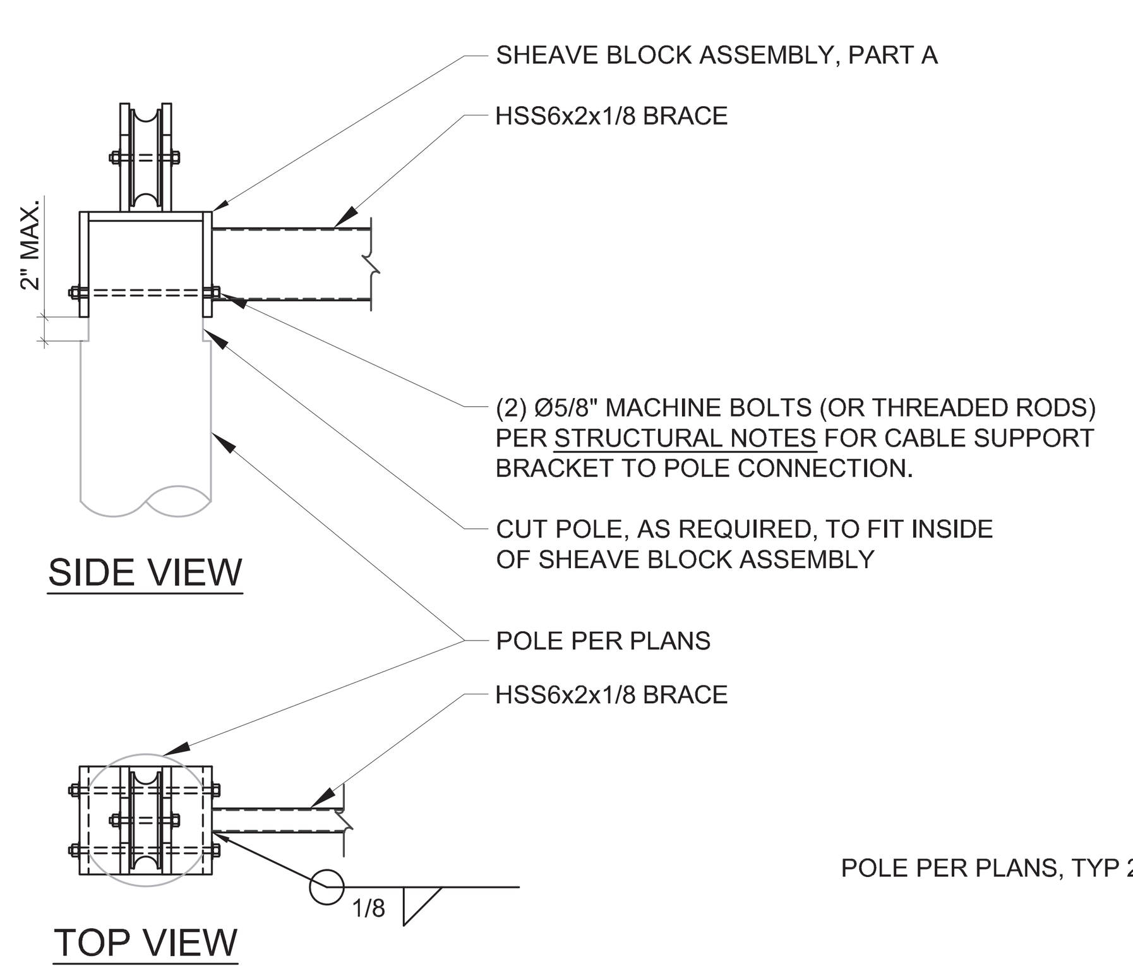
34 BEAM TO POLE

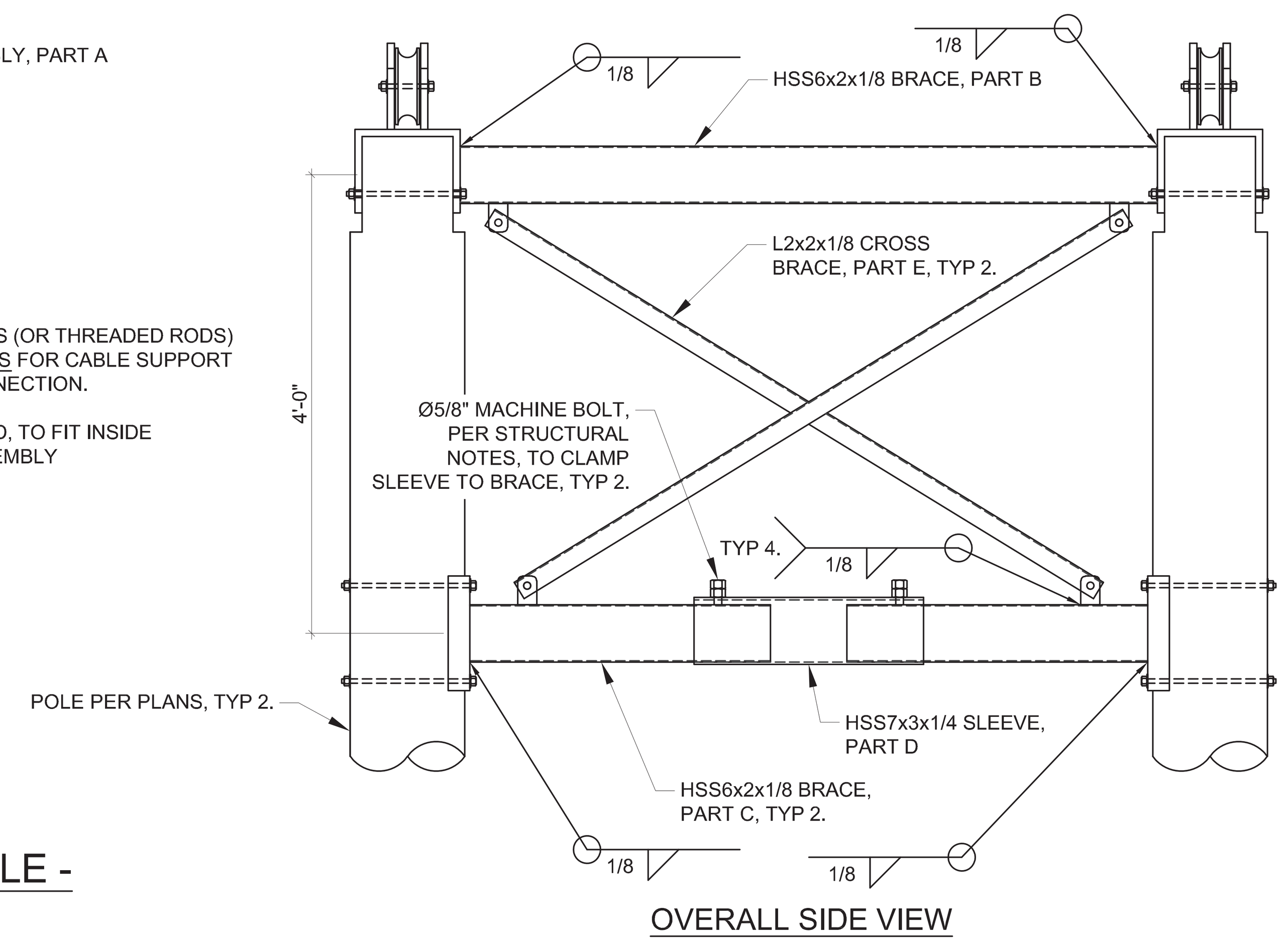
SCALE: 3/4" = 1'-0"

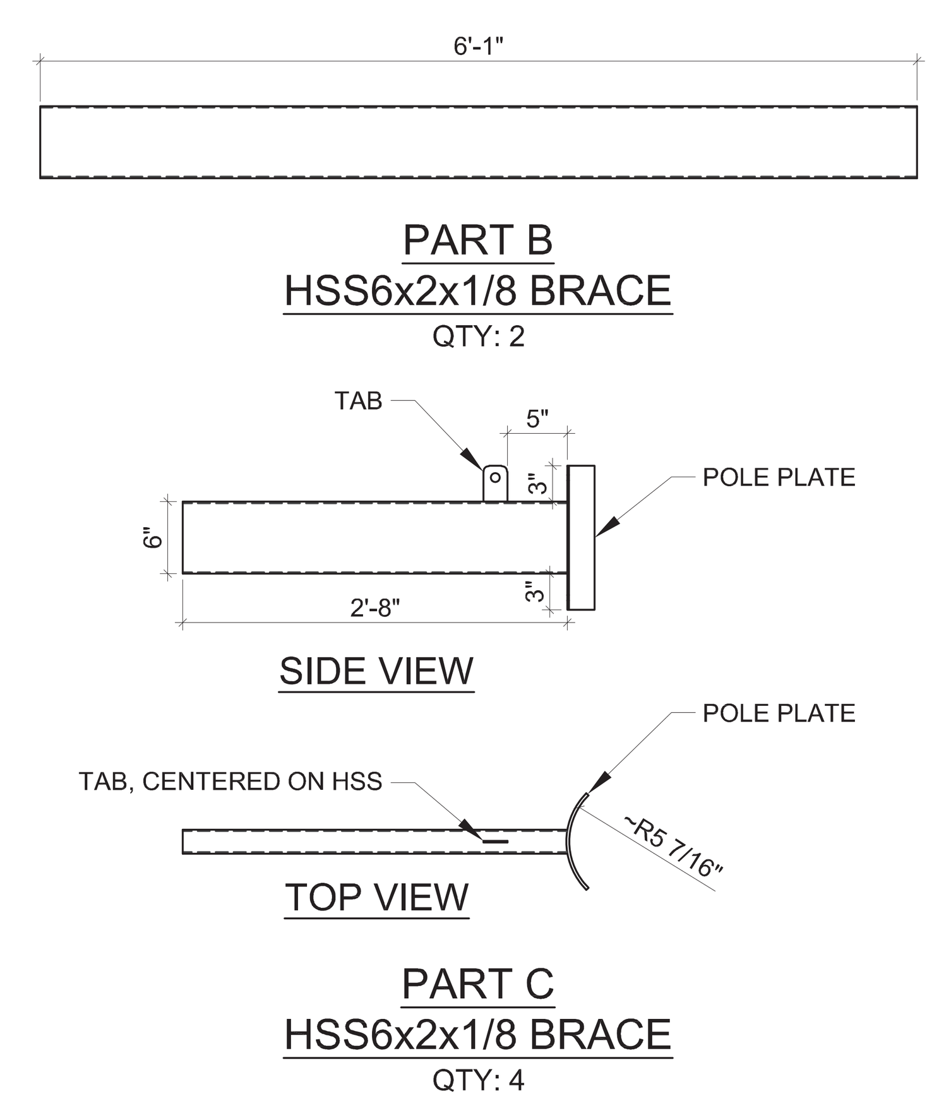


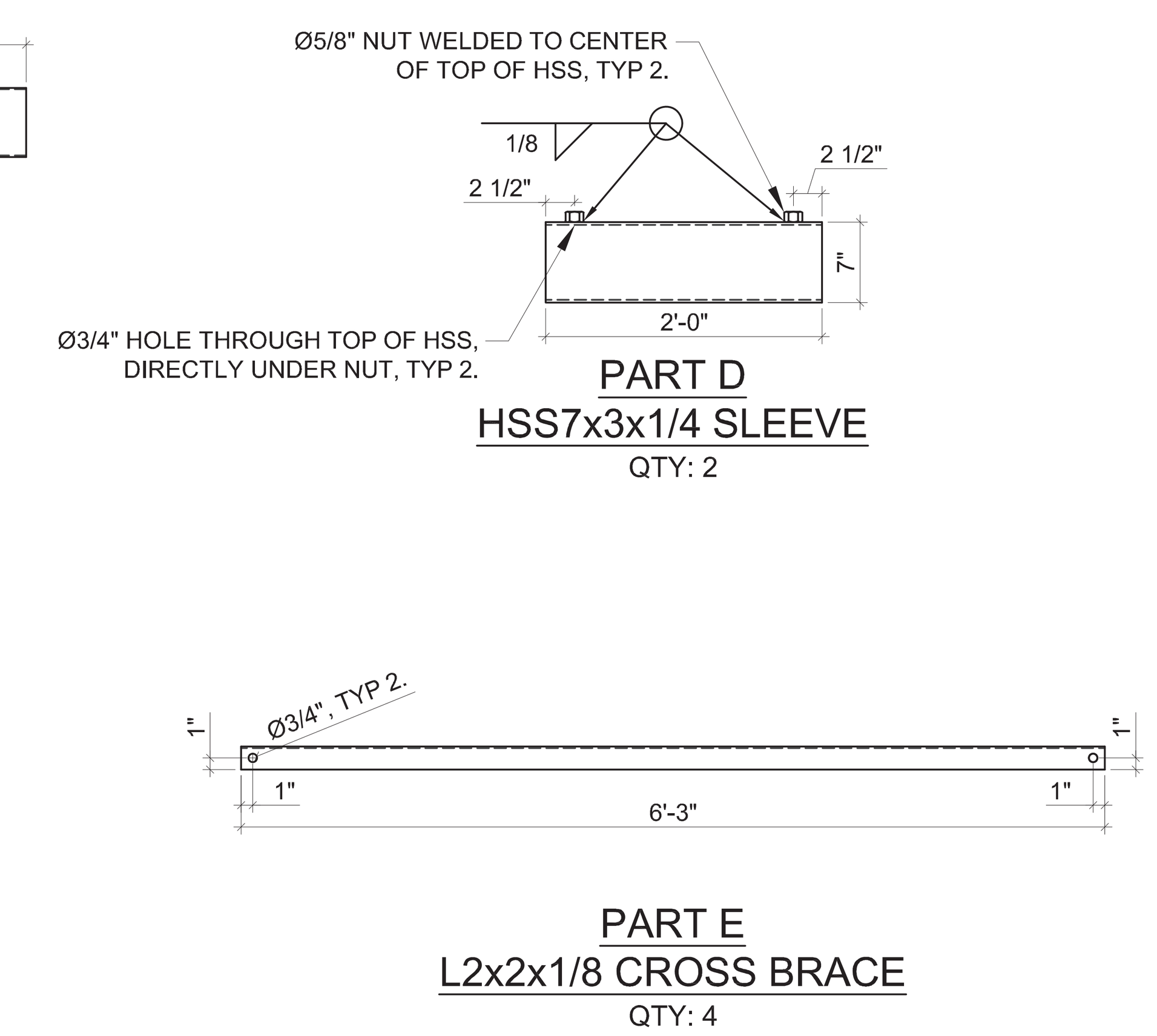
35 WALKWAY SUPPORT BEAM TO POLE - TRAPEZOID TOWER

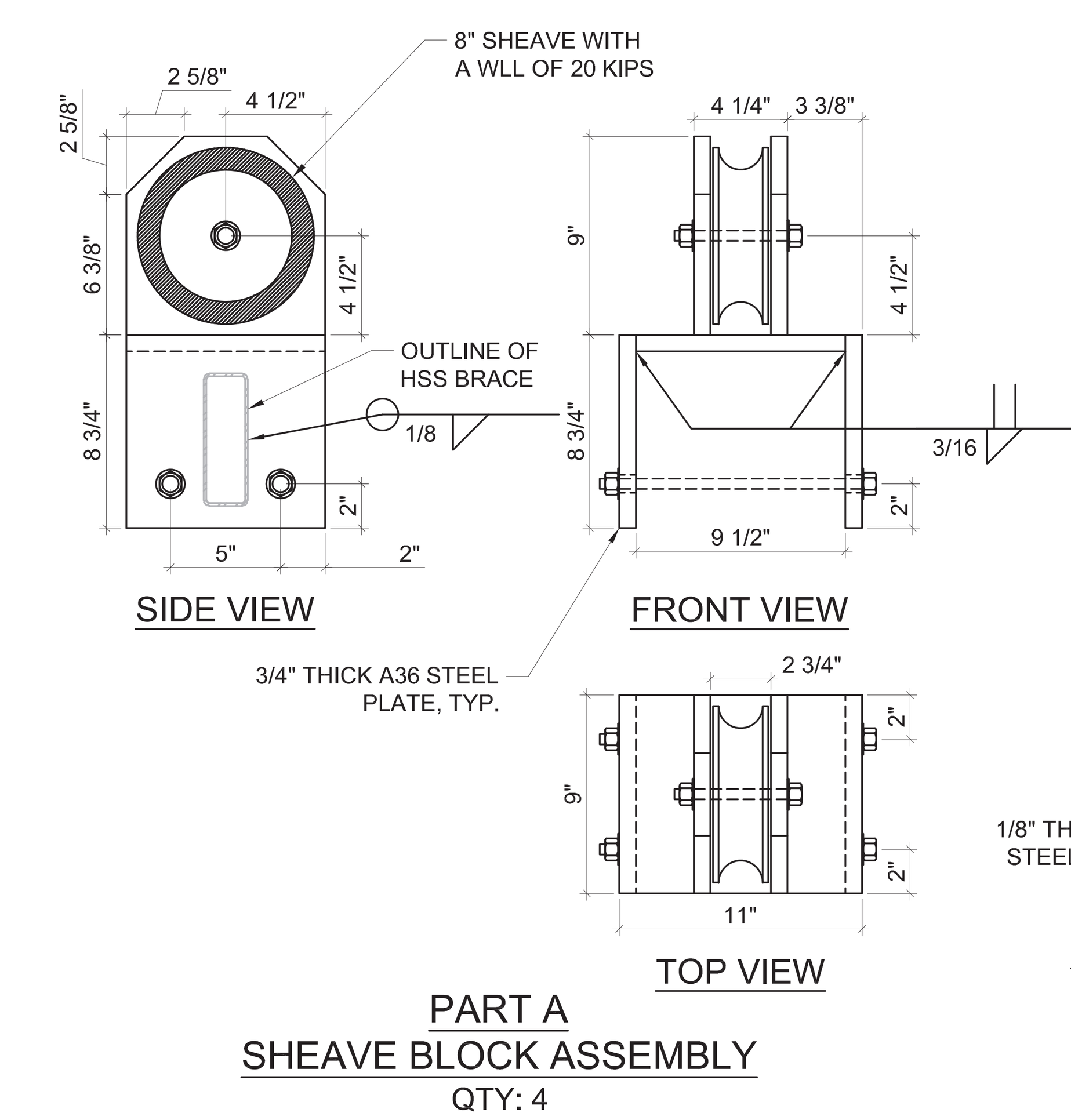
SCALE: 3/4" = 1'-0"

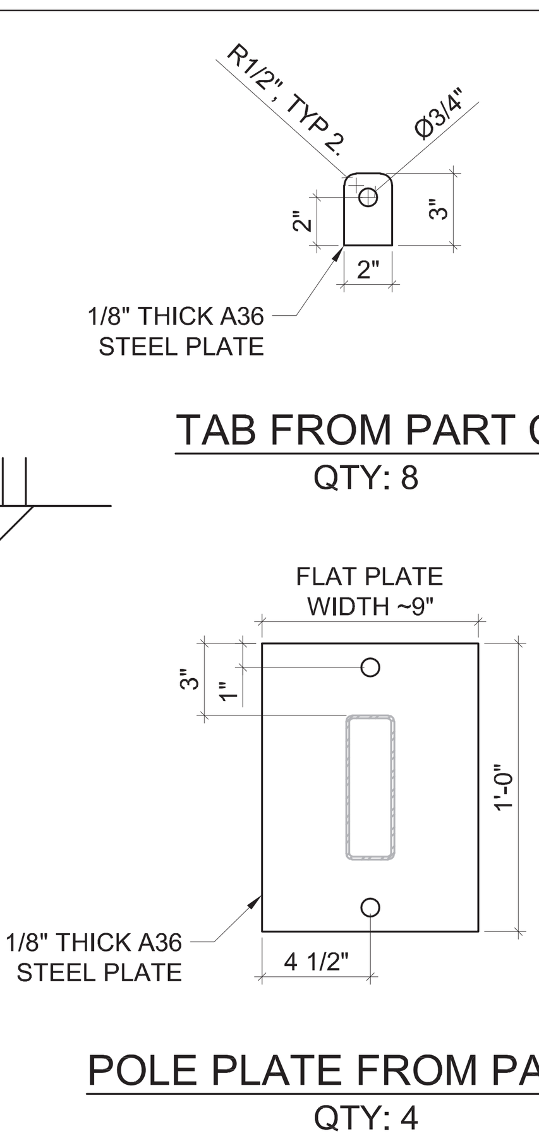












36 CABLE SUPPORT BRACKET TO POLE - SUSPENSION BRIDGE

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

PHOENIX EXPERIENTIAL DESIGNS

A Signature Company

TANGLEWOOD NATURE CENTER - CANOPY WALKWAY

443 COLEMAN AVE
ELMIRA, NY 14903

PHOENIX EXPERIENTIAL DESIGNS JOB #: 2301

STATE OF NEW YORK — LICENSED PROFESSIONAL ENGINEER — 078208

DRAWN:	MAR
ENGINEERED:	MAR
CHECKED:	DT
DATE:	06/06/2024

SHEET NUMBER:

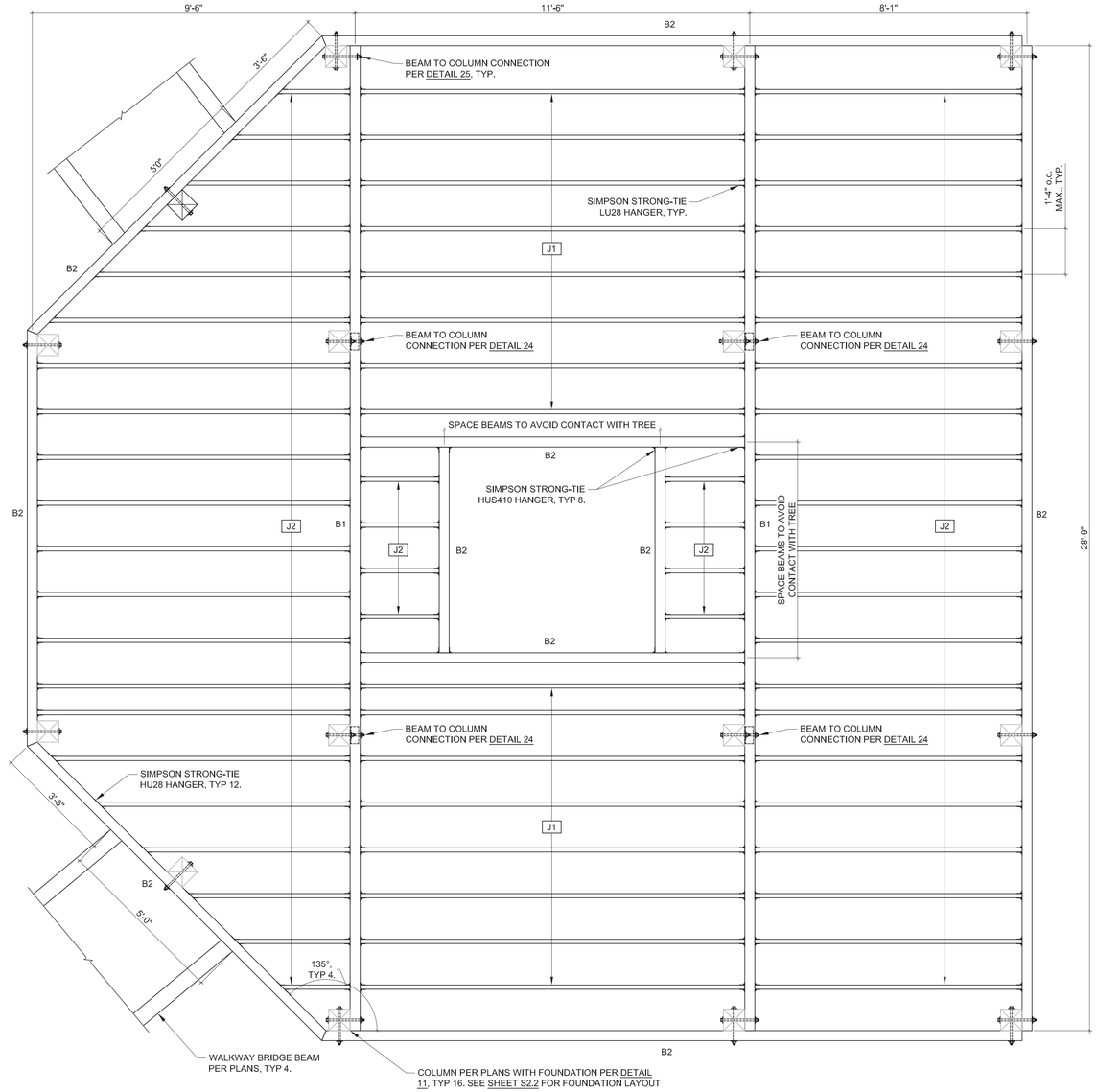
S4.2

DETAILS - II

TYPICAL SHEET NOTES
ALL DECKING TO BE 2x6 AND TO RUN IN THE DIRECTION WITH THE SHORTEST SPAN.

BEAM KEY				
LABEL	SIZE	TYPE	END CONNECTION	ADDITIONAL INFORMATION
B1	4x12	DF #2	BOLTED	SEE DETAIL 24
B2	4x10	DF #2	BOLTED/HANGER	SEE DETAIL 25

JOIST KEY					
LABEL	SIZE	TYPE	SPACING	END CONNECTION	ADDITIONAL INFORMATION
J1	2x10	DF #2	16" o.c. MAX	SIMPSON LU28 HANGER	INSTALL PER MFG RECOMMENDATIONS
J2	2x8	DF #2	16" o.c. MAX	SIMPSON LU28 HANGER SIMPSON HU28 HANGER (SKEWED)	INSTALL PER MFG RECOMMENDATIONS



ENTRANCE PLATFORM - SURROUNDING TREE
FRAMING PLAN
SCALE: 1/2" = 1'-0"

PHOENIX EXPERIENTIAL DESIGNS
A Signature Company

TANGLEWOOD NATURE CENTER - CANOPY WALKWAY

443 COLEMAN AVE
ELMIRA, NY 14903

PHOENIX EXPERIENTIAL DESIGNS JOB #: 2301

STATE OF NEW YORK · MOON HONG DAVID MAR · LICENSED PROFESSIONAL ENGINEER · 078208 · 6.20.24

DRAWN:	MAR
ENGINEERED:	MAR
CHECKED:	DT
DATE:	06/06/2024

SHEET NUMBER:
S5.1
PLATFORM FRAMING PLANS - I

TYPICAL SHEET NOTES
ALL DECKING TO BE 2x6 AND TO RUN IN THE DIRECTION WITH THE SHORTEST SPAN.

BEAM KEY

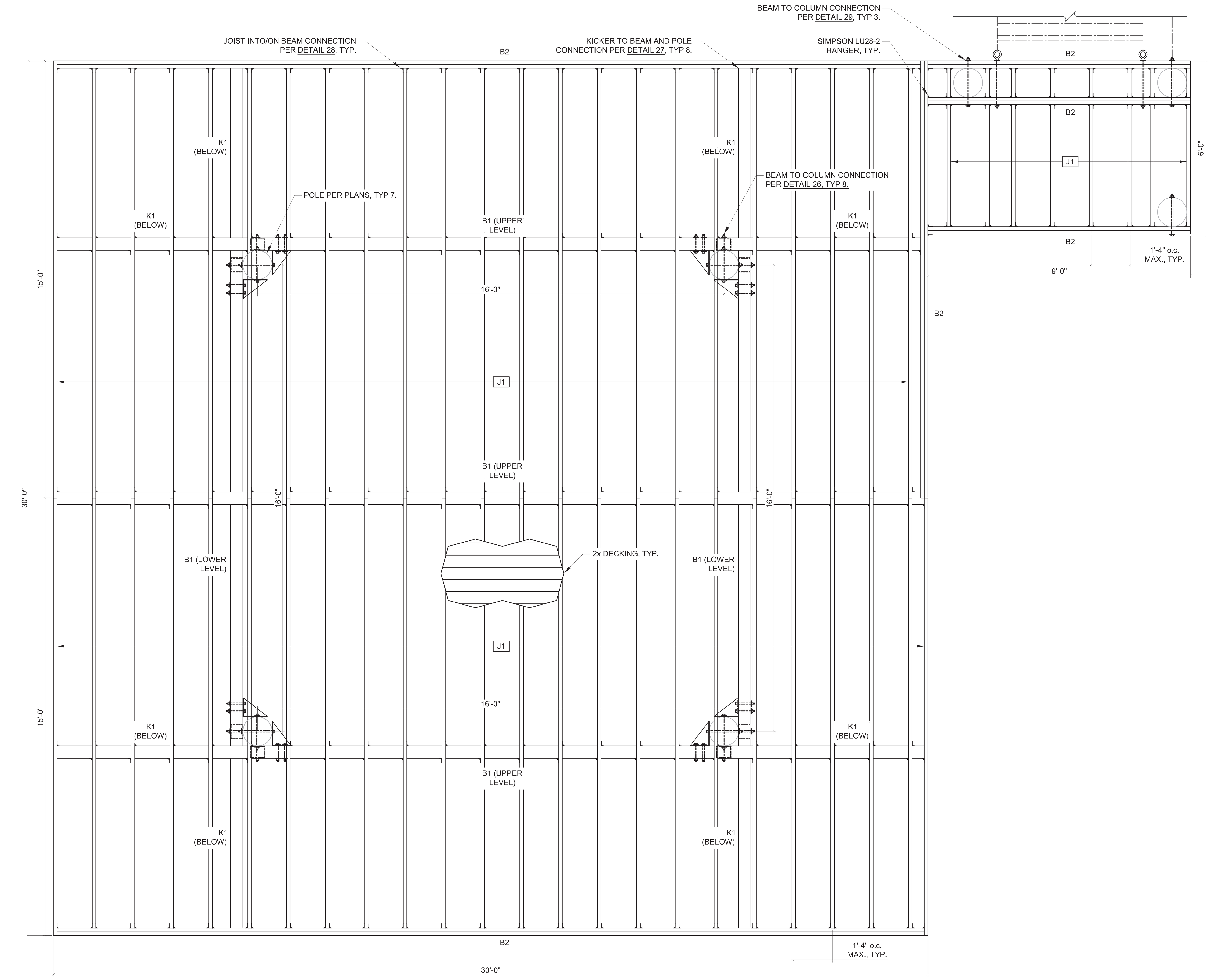
LABEL	SIZE	TYPE	END CONNECTION	ADDITIONAL INFORMATION
B1	5.125x14	PSL 1.8E DF	BOLTED	SEE DETAIL 26
B2	(2) 2x10	DF #2	BOLTED OR SIMPSON LU28-2 HANGER	SEE DETAIL 29

JOIST KEY

LABEL	SIZE	TYPE	SPACING	END CONNECTION	ADDITIONAL INFORMATION
J1	2x10	DF #2	16" o.c. MAX	SIMPSON LU28 HANGER	INSTALL PER MFG RECOMMENDATIONS

KICKER KEY

LABEL	SIZE	TYPE	END CONNECTION	ADDITIONAL INFORMATION
K1	6x6 (MIN.)	DF #2	BOLTED	SEE DETAIL 27



OBSERVATION PLATFORM FRAMING PLAN

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

Signature

TANGLEWOOD NATURE CENTER - CANOPY WALKWAY

443 COLEMAN AVE
ELMIRA, NY 14903

SIGNATURE JOB #: 2301

DRAWN:	MAR
ENGINEERED:	MAR
CHECKED:	DT
DATE:	06/06/2024

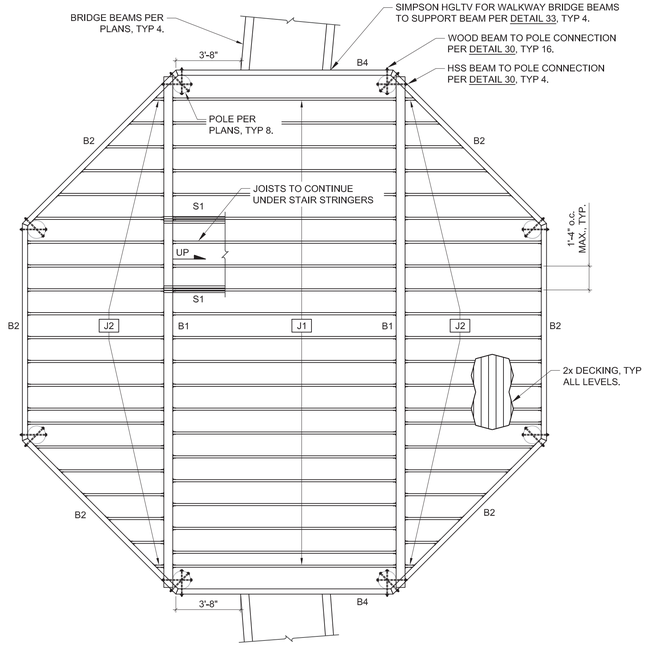
SHEET NUMBER:
S5.2
PLATFORM FRAMING PLANS - II

TYPICAL SHEET NOTES
ALL DECKING TO BE 2x6 AND TO RUN IN THE DIRECTION WITH THE SHORTEST SPAN.

BEAM KEY				
LABEL	SIZE	TYPE	END CONNECTION	ADDITIONAL INFORMATION
B1	HSS12x6x3/8	A500 Gr. B	BOLTED	SEE DETAIL 30
B2	4x12	DF #2	BOLTED	SEE DETAIL 31
B3	(2) 2x12	DF #2	SIMPSON LU28-2 HANGER	SEE DETAIL 28
B4	6x16	DF #2	BOLTED	SEE DETAIL 32

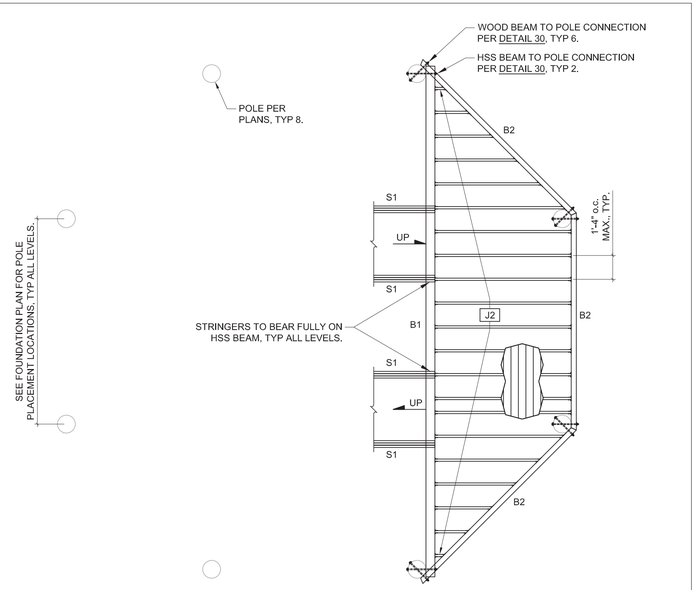
JOIST KEY					
LABEL	SIZE	TYPE	SPACING	END CONNECTION	ADDITIONAL INFORMATION
J1	2x12	DF #2	16" o.c. MAX	SIMPSON LU28 HANGER	INSTALL PER MFG RECOMMENDATIONS
J2	2x10	DF #2	16" o.c. MAX	SIMPSON LU28 HANGER	INSTALL PER MFG RECOMMENDATIONS

STRINGER KEY				
LABEL	SIZE	TYPE	END CONNECTIONS	ADDITIONAL INFORMATION
S1	(1) NOTCHED 2x12 AND (2) UNNOTCHED 2x12'S	DF #2	SIMPSON LSCZ STRAPS/BEARING	INSTALL PER MFG RECOMMENDATIONS



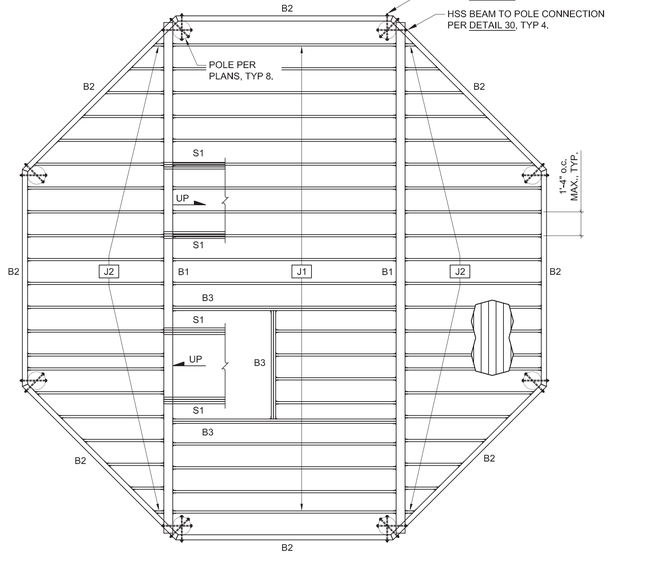
EMERGENT TOWER - FIRST LEVEL FRAMING PLAN

SCALE: 1/4" = 1'-0"



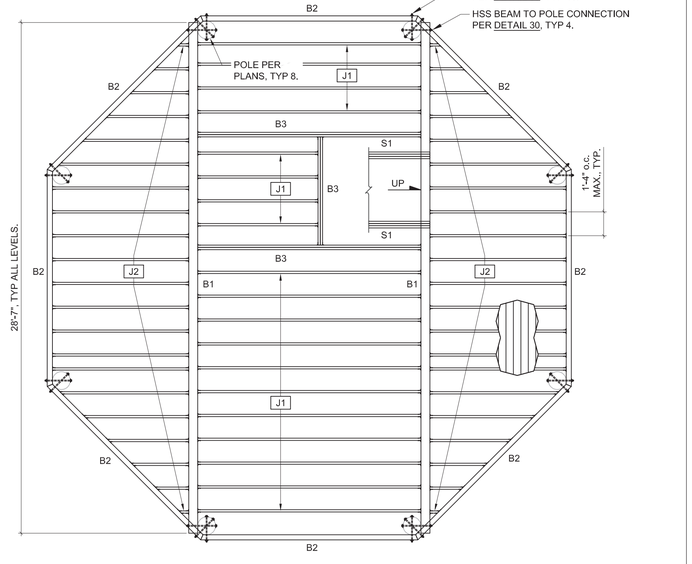
EMERGENT TOWER - SECOND LEVEL FRAMING PLAN

SCALE: 1/4" = 1'-0"



EMERGENT TOWER - THIRD LEVEL FRAMING PLAN

SCALE: 1/4" = 1'-0"



EMERGENT TOWER - FOURTH LEVEL FRAMING PLAN

SCALE: 1/4" = 1'-0"

TANGLEWOOD NATURE CENTER - CANOPY WALKWAY

443 COLEMAN AVE
ELMIRA, NY 14903

SIGNATURE JOB #: 2301

STATE OF NEW YORK — CHOON HONG DAVID TAN — 078208 — LICENSED PROFESSIONAL ENGINEER

DRAWN:	MAR
ENGINEERED:	MAR
CHECKED:	DT
DATE:	06/06/2024

SHEET NUMBER: S5.3

PLATFORM FRAMING PLANS - III

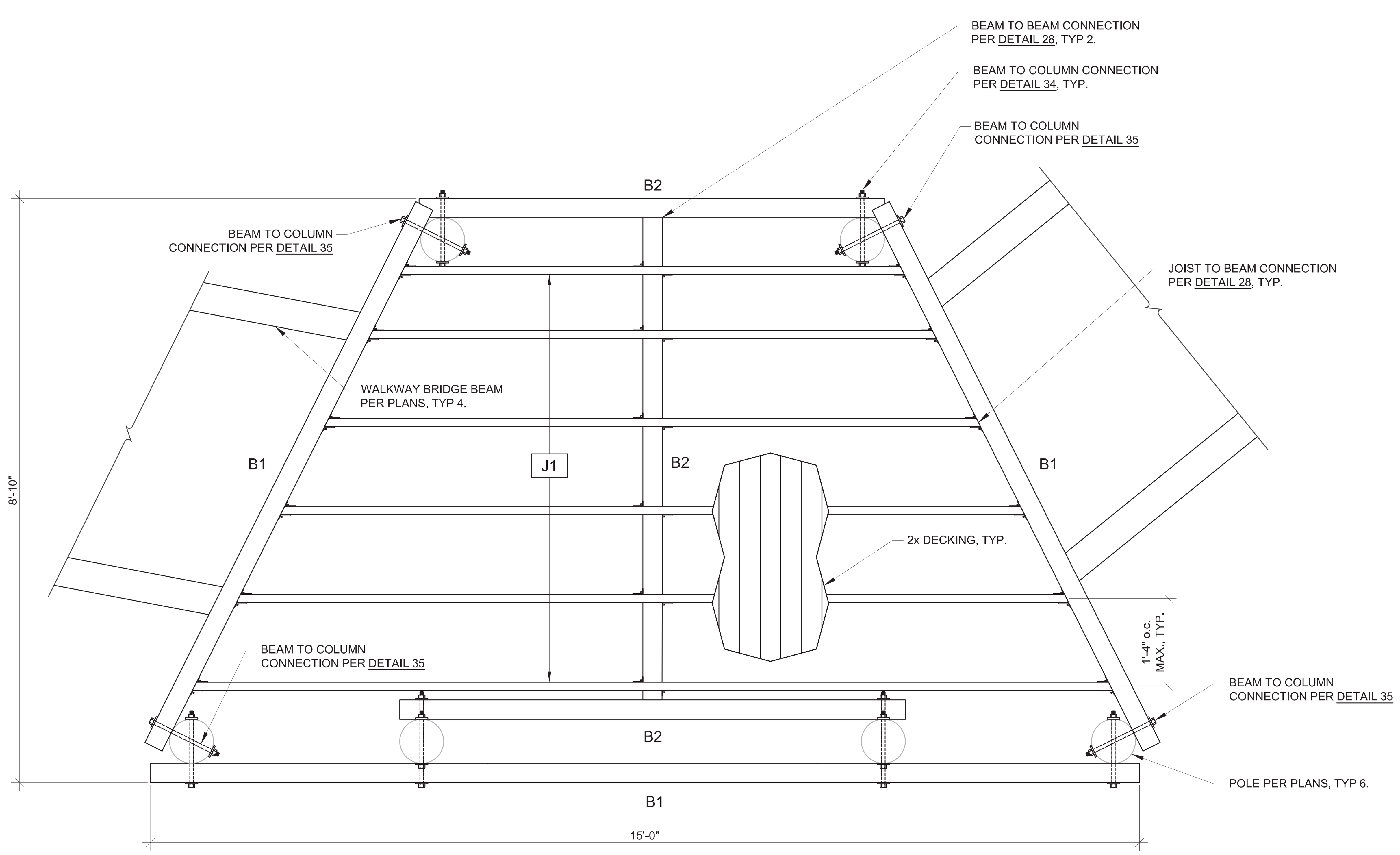
TYPICAL SHEET NOTES
ALL DECKING TO BE 2x6 AND TO RUN IN THE DIRECTION WITH THE SHORTEST SPAN.

BEAM KEY

LABEL	SIZE	TYPE	END CONNECTION	ADDITIONAL INFORMATION
B1	5.125x14	PSL 1.8E DF	BOLTED	SEE DETAIL 35
B2	4x10	DF #2	BOLTED OR SIMPSON LUS410 HANGER	SEE DETAIL 34

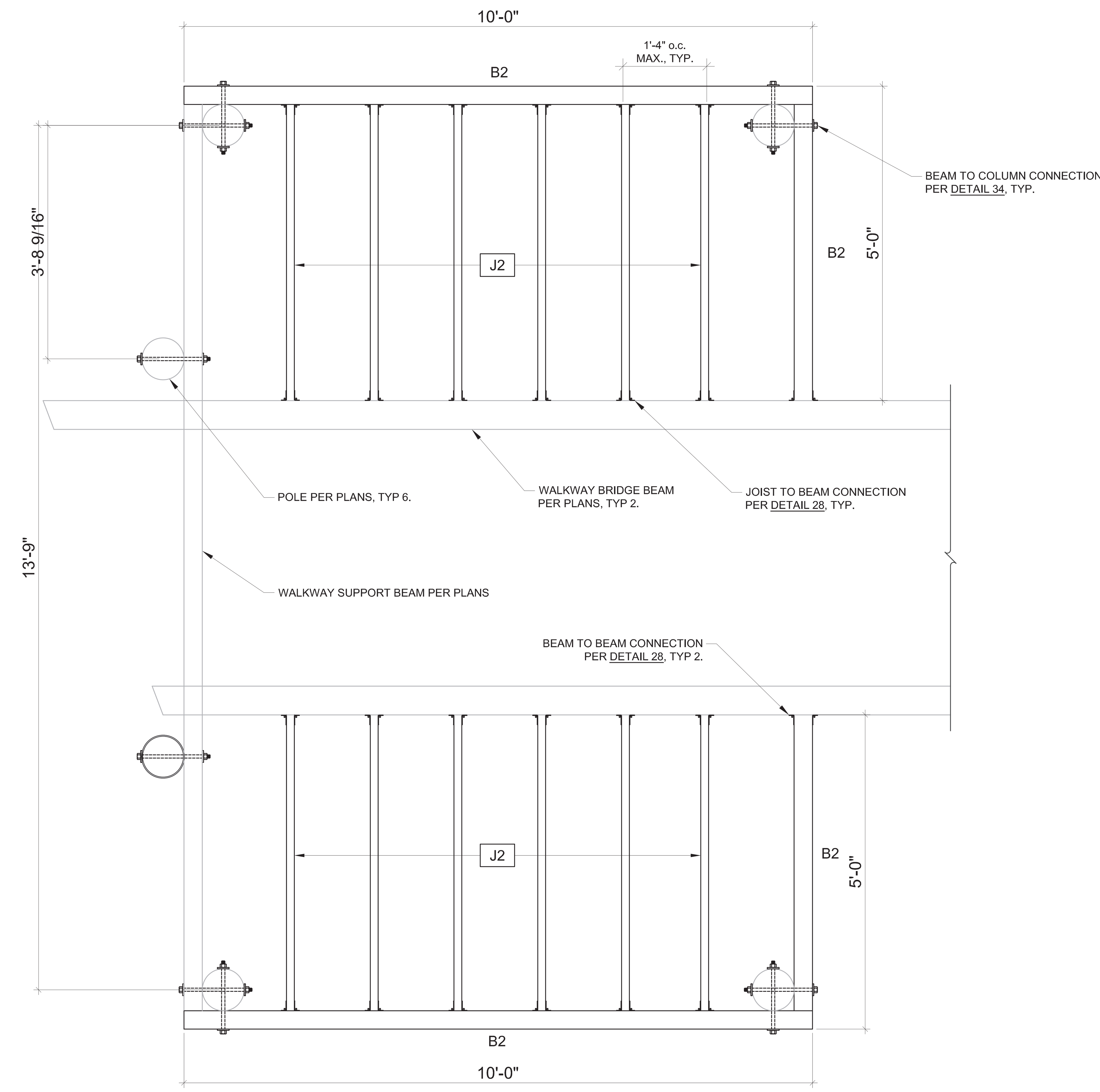
JOIST KEY

LABEL	SIZE	TYPE	SPACING	END CONNECTION	ADDITIONAL INFORMATION
J1	2x10	DF #2	16" o.c. MAX	SIMPSON LU28 HANGER	INSTALL PER MFG RECOMMENDATIONS
J2	2x8	DF #2	16" o.c. MAX	SIMPSON LU28 HANGER	INSTALL PER MFG RECOMMENDATIONS



TRAPEZOID PLATFORM FRAMING PLAN

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



PASS THROUGH PLATFORM FRAMING PLAN

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

PHOENIX EXPERIENTIAL DESIGNS A Signature Company

TANGLEWOOD NATURE CENTER - CANOPY WALKWAY

443 COLEMAN AVE
ELMIRA, NY 14903

PHOENIX EXPERIENTIAL DESIGNS JOB #: 2301

DRAWN:	MAR
ENGINEERED:	MAR
CHECKED:	DT
DATE:	06/06/2024

SHEET NUMBER: S5.4
PLATFORM FRAMING PLANS - IV