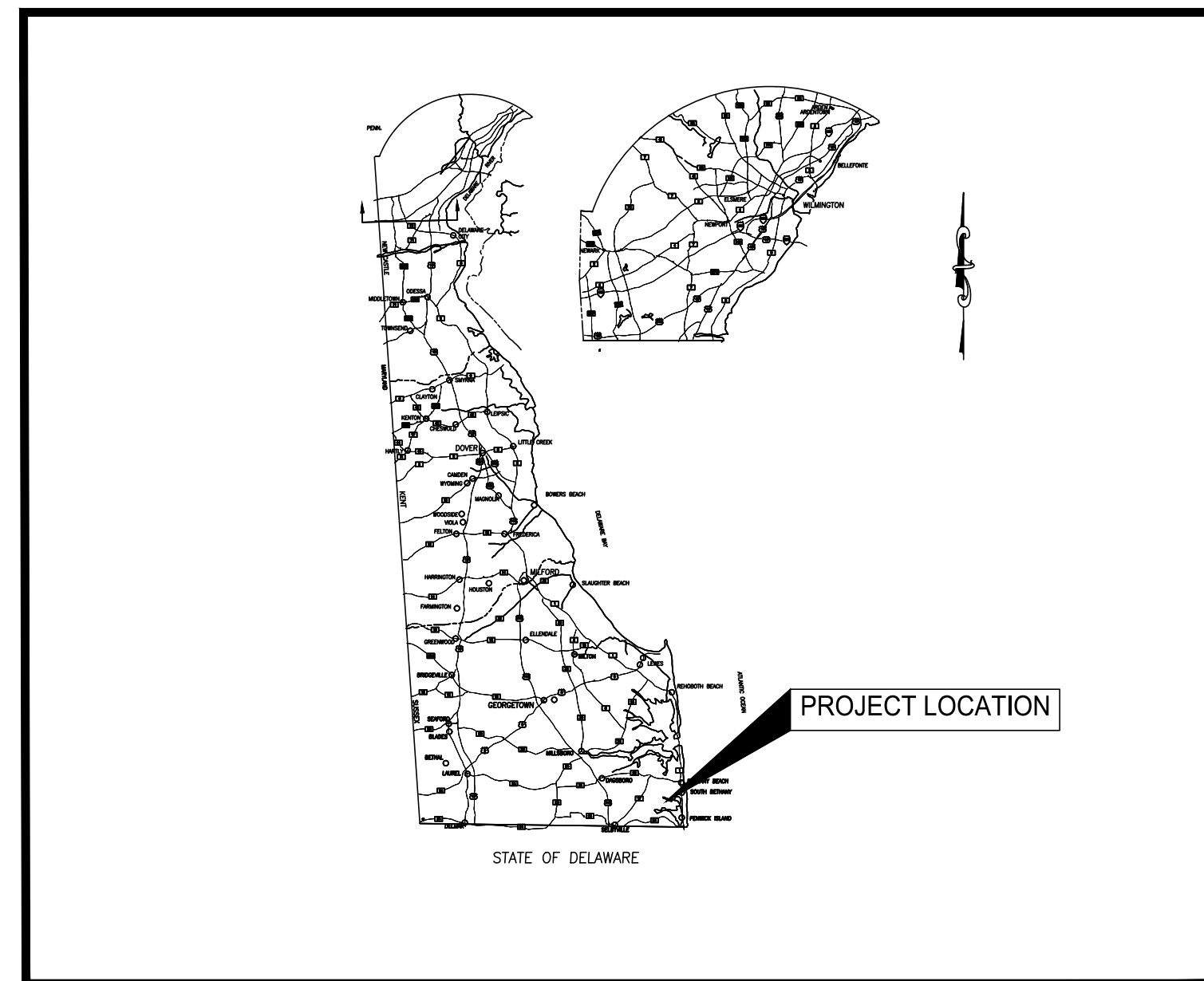


STATE OF DELAWARE
 DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
 DIVISION OF FISH AND WILDLIFE

ASSAWOMAN WILDLIFE AREA VIEWING TOWER

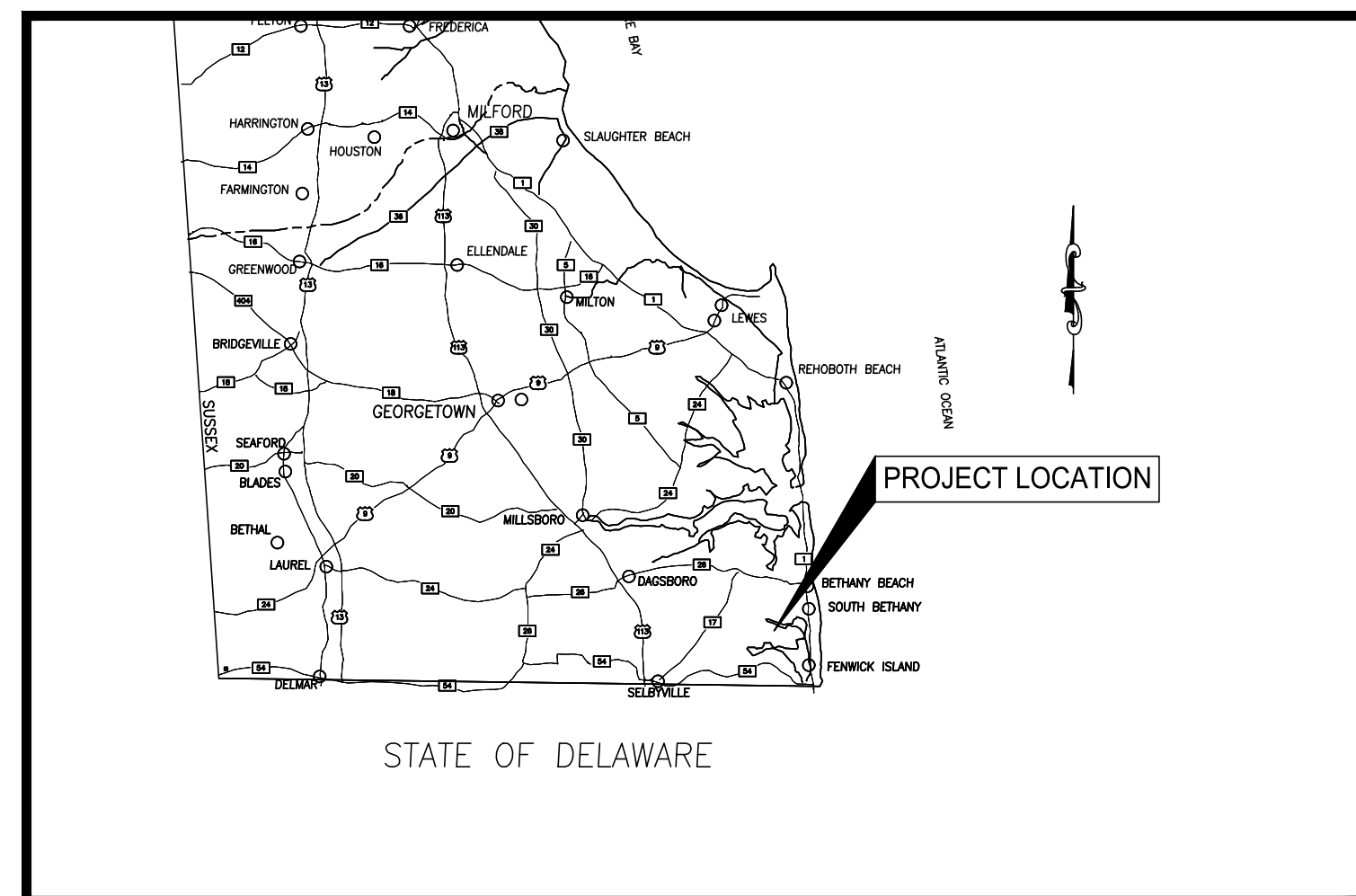
MULBERRY LANDING ROAD,
 FRANKFORD, DE 19945

CONTRACT NO. NAT25-001-ASSAWOMAN
 JANUARY 2025
 ISSUED FOR BID



LOCATION MAP

SCALE: 1"= 20 miles

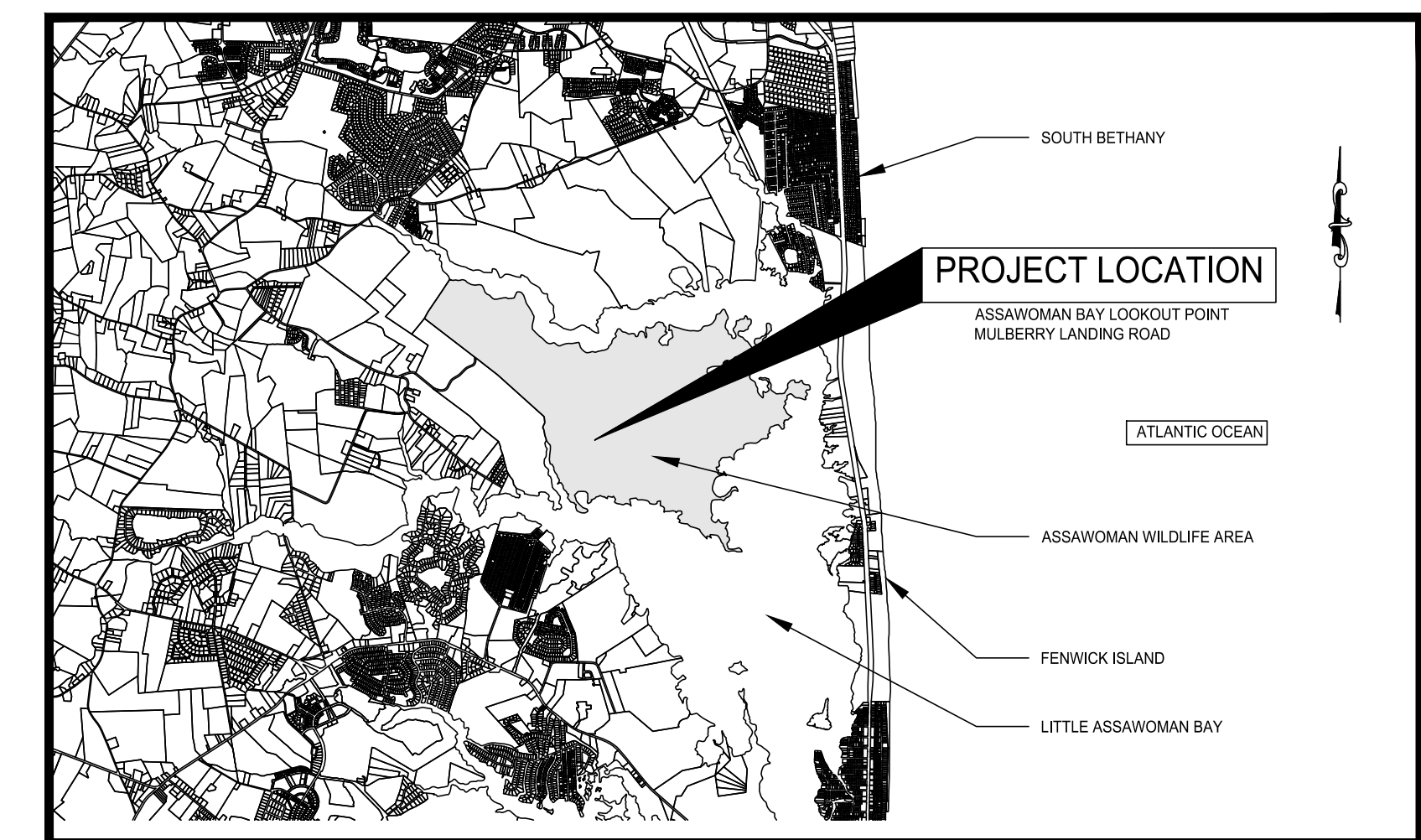


PROJECT LOCATION MAP

SCALE: 1"= 10 miles

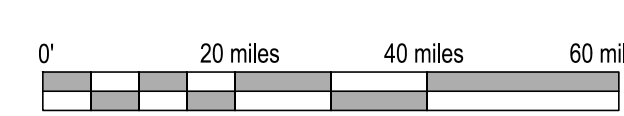
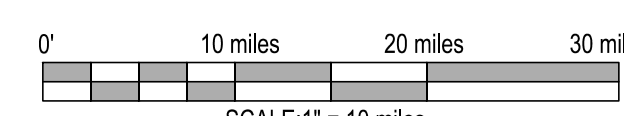
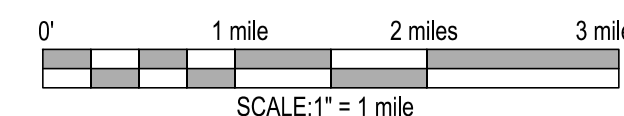


INDEX OF SHEETS	
SHEET NO.	TITLE
C300	COVER SHEET
C301	LEGEND
C302	NOTES AND ABBREVIATIONS
C303	DEMOLITION PLAN & TYPICAL SECTIONS
C304	SITE PLAN
C305	ALIGNMENT AND PROFILE
C306	CONSTRUCTION DETAILS
C307	STRIPING PLAN AND SIGN DETAILS
S601	TOWER ELEVATIONS
S602	APPROACH RAMP SECTIONS
S603	STRUCTURAL STEEL FRAMING
S604	STAIR ELEVATIONS & DETAILS
S605	VIEWING PLATFORM 1 DETAILS
S606	VIEWING PLATFORM 2 DETAILS
S607	STRUCTURAL DETAILS
S608	RAILING & MISCELLANEOUS DETAILS
SSMP500	EROSION AND SEDIMENT CONTROL COVER SHEET
SSMP501	EROSION AND SEDIMENT CONTROL SITE PLAN
SSMP502	EROSION AND SEDIMENT CONTROL DETAILS 1
SSMP503	EROSION AND SEDIMENT CONTROL DETAILS 2
SSMP504	EROSION AND SEDIMENT CONTROL DETAILS 3
SSMP505	EROSION AND SEDIMENT CONTROL DETAILS 4
SSMP506	EROSION AND SEDIMENT CONTROL DETAILS 5
SSMP507	EROSION AND SEDIMENT CONTROL DETAILS 6



SITE MAP

SCALE: 1"= 1 mile



CIVIL ENGINEER
 PREPARED BY:

 WALTER J. HOEL, III
 REGISTERED PROFESSIONAL ENGINEER
 NO. 11204
 APRIL 29, 2024
 DATE

OWNER
 DIVISION OF FISH AND WILDLIFE
 DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
 89 KINGS HIGHWAY
 DOVER, DELAWARE 19901
 (302) 735-8673
 (302) 539-3120 (FAX)

REVISIONS:

DATE:	DESCRIPTION:	BY:

ASSAWOMAN WILDLIFE AREA
 VIEWING TOWER
 COVER SHEET

SEAL:

 APRIL 29, 2024

CIVIL ENGINEER:

 CEI PROJECT NO.: 175013.97

DESIGNED BY:
 WJH

DRAWN BY:
 WJH

CHECKED BY:
 AES

DATE:
 JANUARY 2025

SCALE:
 NONE

SHEET NO.:

C300

CONTRACT NO.:
 NAT25-001-ASSAWOMAN

Project: 175013.97 - Assawoman Wildlife Area Viewing Tower; Date: 1/23/25; 10:17:25 AM; 10/17/2025; 12:17:14 PM

MANMADE ROADSIDE FEATURES			
FEATURE DESCRIPTION	EXISTING	PROPOSED	ID
BOLLARD - STEEL POLE	⊙	●	
BOLLARD - WOOD POST	⊠	■	
CURB, TYPE 1 AND TYPE 3		▬	C X
CURB, TYPE 2		▬	
CURB & GUTTER, TYPE 1		▬	
CURB & GUTTER, TYPE 2		▬	
CURB & GUTTER, TYPE 3		▬	
FENCE - CHAINLINK OR STRANDED	— X —	— X —	
FENCE - STOCKADE OR SPLIT RAIL	— ○ —	— ○ —	
FLAG POLE	FP ⊙	FP ●	
GUARDRAIL - STEEL BEAM, TYPE 1	— ○ —	— ○ —	
LAMP AND POST	LAMP ⊙		
MAILBOX	MB □	MB ■	
PAVEMENT	▬	▬	
PILLAR OR MISCELLANEOUS POST	○	●	
TRAFFIC SIGN AND POST	⊥	⊥	

DRAINAGE FEATURES			
FEATURE DESCRIPTION	EXISTING	PROPOSED	ID
BIOFILTRATION SWALE		← BFS →	
DITCH OR STREAM CENTERLINE	— ○ —	— X —	
DIRECTIONAL STREAM FLOW ARROW	→		
DRAINAGE INLET	C.B. □	■	DI X
DRAINAGE JUNCTION BOX	J.B. □	■	JB X
DRAINAGE MANHOLE	⊙	●	DM X
DRAINAGE PIPE AND FLOW ARROW	▬	▬	P X
FLARED END SECTION		◀	FES X
RIPRAP - AREA FEATURE	▬	▬	RR X
SAFETY END SECTION		▶	SES X
UNDERDRAIN		▬	UD X
UNDERDRAIN OUTLET		▬	UDO X

UTILITY FEATURES			
FEATURE DESCRIPTION	EXISTING	PROPOSED	
CABLE TV DISTRIBUTION BOX	TV		
COMMUNICATIONS - UNDERGROUND	— COMM —	— COMM —	
ELECTRIC - UNDERGROUND	— UG-E —	— UG-E —	
ELECTRIC MANHOLE	⊙		
ELECTRIC METER	E.M. □		
ELECTRIC TRANSFORMER	E.T. □		
GAS - UNDERGROUND	— UG-G —	— UG-G —	
GAS MANHOLE	⊙		
GAS METER	G.M. □		
GAS VALVE	G.V. ○		
GAS PUMP - SERVICE STATION	G.P. □		
IRRIGATION - UNDERGROUND	— IR —	— IR —	
ITMS - UNDERGROUND	— ITMS —	— ITMS —	
LIGHTING - UNDERGROUND	— LI —	— LI —	
LUMINAIRE - POLE MOUNTED	⊥	⊥	
MANHOLE - UNDETERMINED OWNER	⊙		
RAILROAD TRACKS	▬		
SANITARY - UNDERGROUND	— S —	— S —	
SANITARY SEWER MANHOLE	⊙	●	
SANITARY SEWER VALVE	S.V. ○		
SANITARY SEWER CLEANOUT OR VENT	⊙	⊙	
SEPTIC DRAIN FIELD	S.D.F. ▬	▬	
SIGNALIZATION - UNDERGROUND	— SIG —	— SIG —	
SOIL BORING LOCATION	⊙		
TELEPHONE BOOTH	⊙		
TELEPHONE MANHOLE	⊙		
TELEPHONE TEST POINT	T.P. ○		
TRAFFIC - CONDUIT JUNCTION WELL	J.W. □		
TRAFFIC - LIGHT POLE AND BASE	⊙		
TRAFFIC - PEDESTRIAN POLE & BASE	⊙		
TRAFFIC - SIGNAL CABINET & BASE	⊙		
TRAFFIC - SIGNAL POLE AND BASE	⊙		
UNKNOWN UTILITY - UNDERGROUND	— UG-UK —		
UTILITY BOX	UB		
UTILITY POLE GUY WIRE ANCHOR	→	→	
UTILITY POLE	⊙	●	
UTILITY TEST HOLE LOCATION	⊙		
WATER - UNDERGROUND	— W —	— W —	
WATER - FIRE HYDRANT	⊙	⊙	
WATER METER	W.M. □	W.M. ■	
WATER VALVE	W.V. ○	W.V. ●	
WATER - FIRE DEPARTMENT CONNECTION	F.D.C. ○		
WELL HEAD	WELL ○		

PAVEMENT SECTION(S)	
MILL AND OVERLAY - SEE TYPICAL SECTIONS FOR MATERIAL AND DEPTHS	▬
FULL DEPTH PAVEMENT	▬
SHARED USE PATH	▬
GRAVEL	▬
CONCRETE	▬

NATURAL ROADSIDE FEATURES		
FEATURE DESCRIPTION	EXISTING	PROPOSED
HEDGEROW OR THICKET	▬	
MARSH BOUNDARY LINE	— W —	
TREE - CONIFEROUS	⊙	
TREE - DECIDUOUS	⊙	
TREE STUMP	⊙	
SHRUBBERY	⊙	
WETLAND BOUNDARY - DELINEATED	— W- WL —	
WOODS LINE BOUNDARY	▬	▬

RIGHT-OF-WAY FEATURES		
FEATURE DESCRIPTION	EXISTING	PROPOSED
DENIAL OF ACCESS	— DA —	— DA —
EASEMENT - OTHERS	▬	
PERMANENT EASEMENT	— PE —	— PE —
PROPERTY LINE	▬	▬
PROPERTY MARKER - CONCRETE	CM □	C.M. ■
PROPERTY MARKER - IRON PIPE	I.P. ○	I.P. ●
RIGHT-OF-WAY BASELINE	100+00	100+00
RIGHT-OF-WAY LINE	— RW —	— RW —
RIGHT-OF-WAY & DENIAL OF ACCESS	— R/W-DA —	— R/W-DA —
RIGHT-TO-ENTER		— RTE —
TEMPORARY CONSTRUCTION EASEMENT		— TCE —
CLEAR ZONE		— CZ —
HORIZONTAL CLEARANCE		— HC —

SURVEY CONTROL & MONUMENTATION	
FEATURE DESCRIPTION	EXISTING
SURVEY BENCHMARK LOCATION	B.M. +
SURVEY TIE POINT LOCATION	T.P. +
SURVEY TRAVERSE POINT	△

MISCELLANEOUS FEATURES	
FEATURE DESCRIPTION	PROPOSED
BUTT JOINT	▬
CLEAR ZONE	— CZ —
CONSTRUCTION BASELINE	100+00
LIMIT OF CONSTRUCTION	— LOC —
DEMOLITION	▬
P.C.C. SIDEWALK	▬
6" P.C.C. SIDEWALK	▬
PAVEMENT PATCH	▬

IDENTIFIERS	
FEATURE DESCRIPTION	ID
ABANDON BY CONTRACTOR	AB C
ABANDON BY OTHERS	AB O
ADJUST BY CONTRACTOR	A C
ADJUST BY OTHERS	A O
BEST MANAGEMENT PRACTICE	BMP X
BUS STOP PAD / TYPE	BSP X
BUS STOP WITH SHELTER PAD / TYPE	BSSP X
CONCRETE SAFETY BARRIER	B X
CONVERT TO JUNCTION BOX	C.B. X
CONVERT TO DRAINAGE MANHOLE	CDM X
DO NOT DISTURB	DND X
ENERGY DISSIPATOR	ED X
FILL WITH FLOWABLE FILL	FF C
LANDSCAPE PLANTINGS	LS X
PEDESTRIAN CONNECTION / TYPE	PC X
RELOCATE BY CONTRACTOR	RL C
RELOCATE BY OTHERS	RL O
RELOCATE BY PROPERTY OWNER	RL PO
REMOVE BY CONTRACTOR	RM C
REMOVE BY OTHERS	RM O
REMOVE BY TRAFFIC CONTRACTOR	RM TC
RIGHT-OF-WAY MONUMENT	RM X

EROSION & SEDIMENT CONTROL FEATURES	
FEATURE DESCRIPTION	PROPOSED
LIMIT OF DISTURBANCE	— LOD —
PORTABLE SEDIMENT TANK	ST
PUMPING PIT	PP-2
SILT FENCE	— SF —
COMPOST FILTER LOG	— CFL —
SENSITIVE AREA PROTECTION	— SAP —
CONCRETE WASHOUT	CW
STABILIZED CONSTRUCTION ENTRANCE	SCE
STOCKPILE AREA	— SP —

PARTIAL STRUCTURAL LEGEND	
FEATURE DESCRIPTION	PROPOSED
PLUMB PIPE PILE	⊙
BATTERED PIPE PILE	⊙
HELICAL STEEL PILE	⊙
HELICAL STEEL PILE - BATTERED	⊙

BORING LEGEND	
FEATURE DESCRIPTION	PROPOSED
HAND AUGER LOCATION	■ HA1
DYNAMIC CONE PENETROMETER LOCATION	● B1

NOTE: SUBSOIL INVESTIGATION PERFORMED BY CENTURY ENGINEERING GEOTECHNICAL SECTION.

REVISIONS:	DATE:	DESCRIPTION:	BY:

**ASSAWOMAN WILDLIFE AREA
VIEWING TOWER**

LEGEND

SEAL: 

August 30, 2024

CIVIL ENGINEER:

CENTURY ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 175013.97



DESIGNED BY:
WJH

DRAWN BY:
WJH

CHECKED BY:
JB

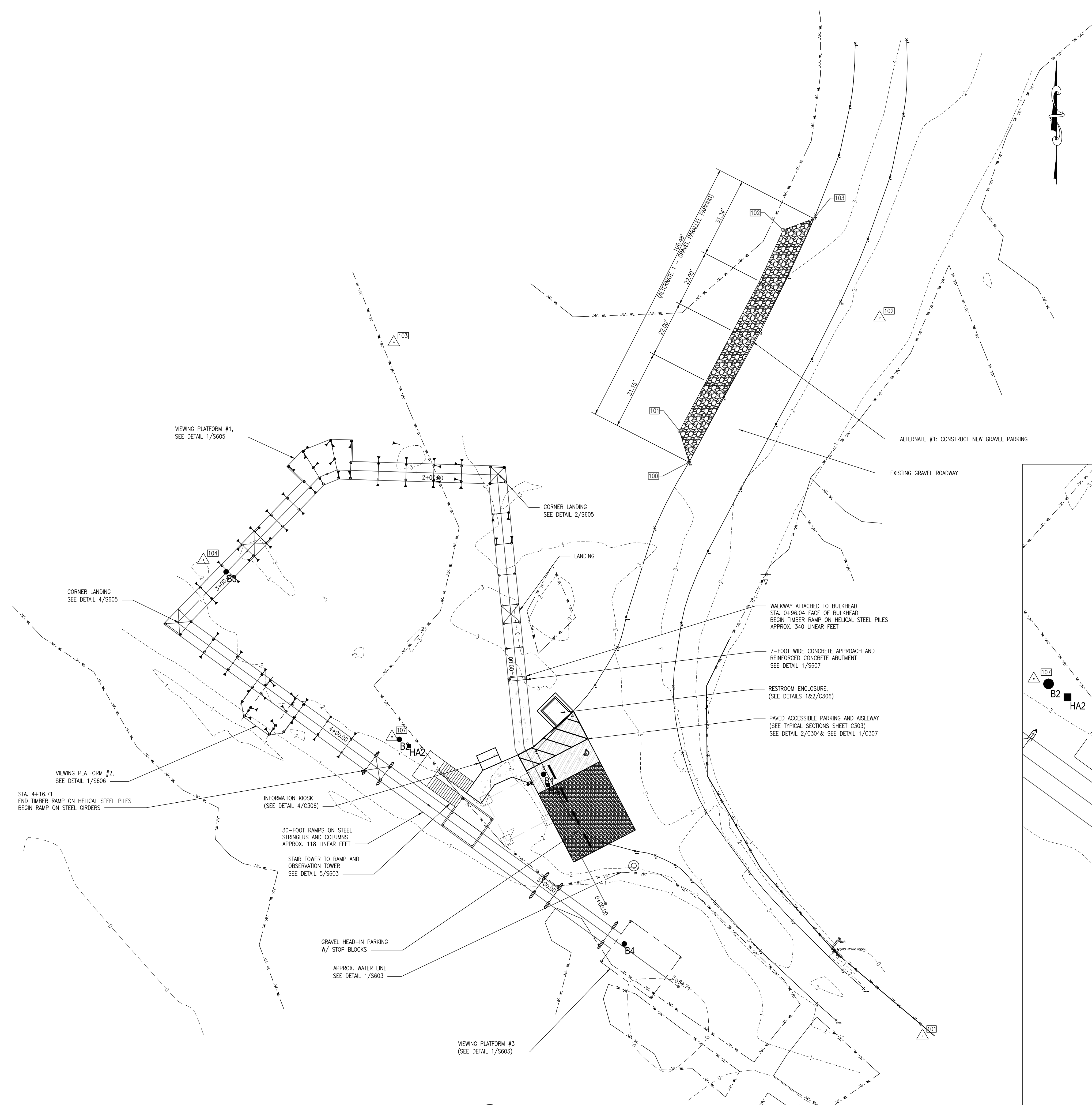
DATE:
JANUARY 2025

SCALE:
1" = 1'

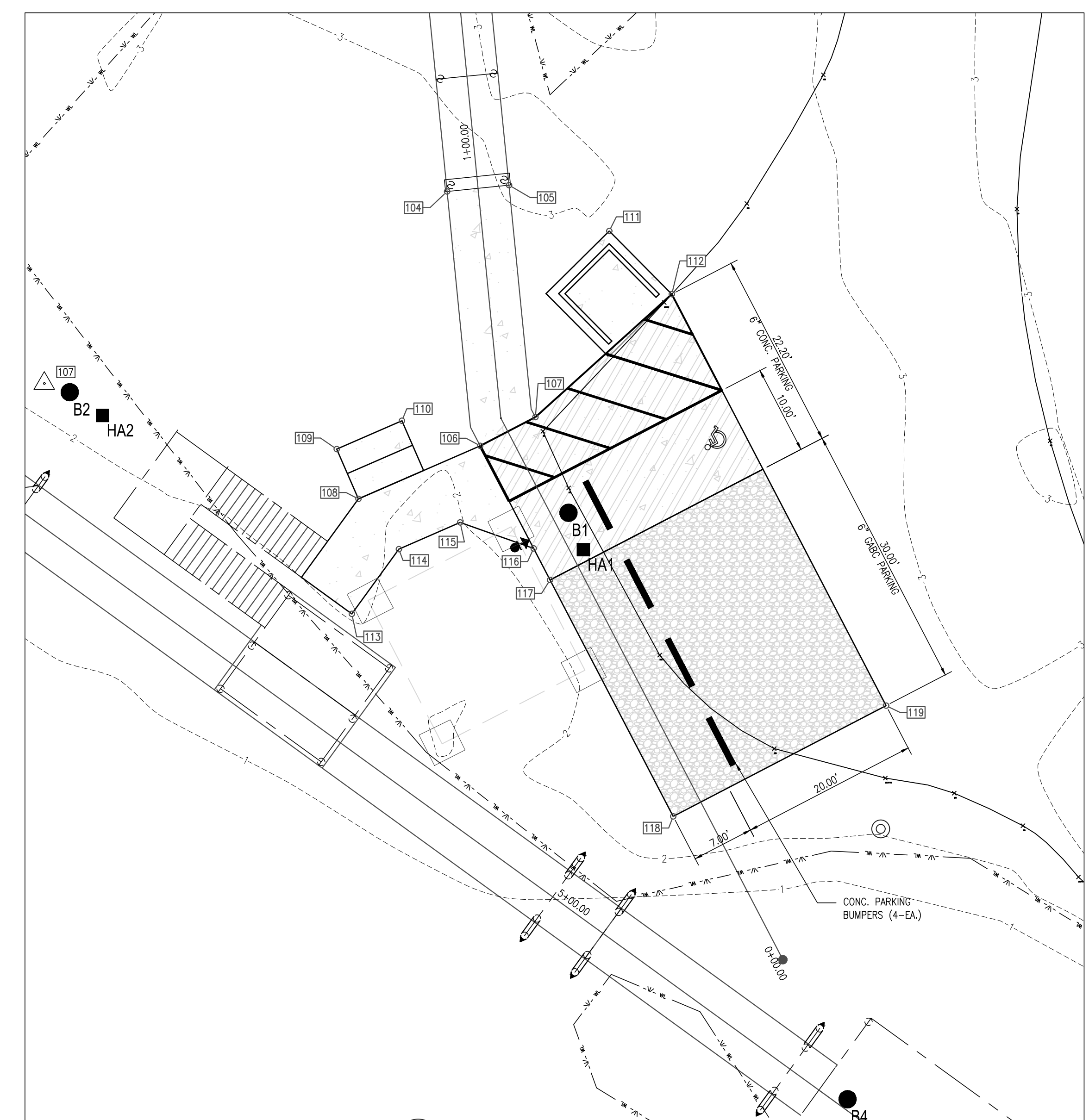
SHEET NO.:
C301

CONTRACT NO.:
NAT25-001-ASSAWOMAN

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1 SITE PLAN
 C304 SCALE: 1" = 20'



2 PARKING PLAN
 C304 SCALE: 1" = 10'

- NOTES:
1. INFORMATION KIOSK PROVIDED BY OWNER TO BE INSTALLED BY CONTRACTOR.
 2. SEE SHEET C305 FOR ALIGNMENT DATA.
 3. TREES NOT SHOWN FOR CLARITY.

Point #	Northing	Easting
100	179375.6274	752676.1359
101	179387.8089	752672.4467
102	179465.9771	752712.7863
103	179470.3778	752724.7293
104	179290.4242	752605.8873
105	179291.1396	752612.8506
106	179261.7995	752609.6077
107	179265.0321	752615.8166
108	179255.8283	752595.9139
109	179261.4269	752593.4727
110	179264.6245	752600.8058
111	179285.9720	752624.1231
112	179278.8682	752631.1613
113	179242.8907	752595.1710
114	179250.1735	752600.4587
115	179253.1776	752607.3481
116	179250.2540	752615.6187
117	179246.7060	752617.4659
118	179220.0964	752631.3197
119	179232.5649	752655.2684

REVISIONS:
 DATE: _____ DESCRIPTION: _____ BY: _____

**ASSAWOMAN WILDLIFE AREA
 VIEWING TOWER
 SITE PLAN**

SEAL:

 August 30, 2024
 CIVIL ENGINEER

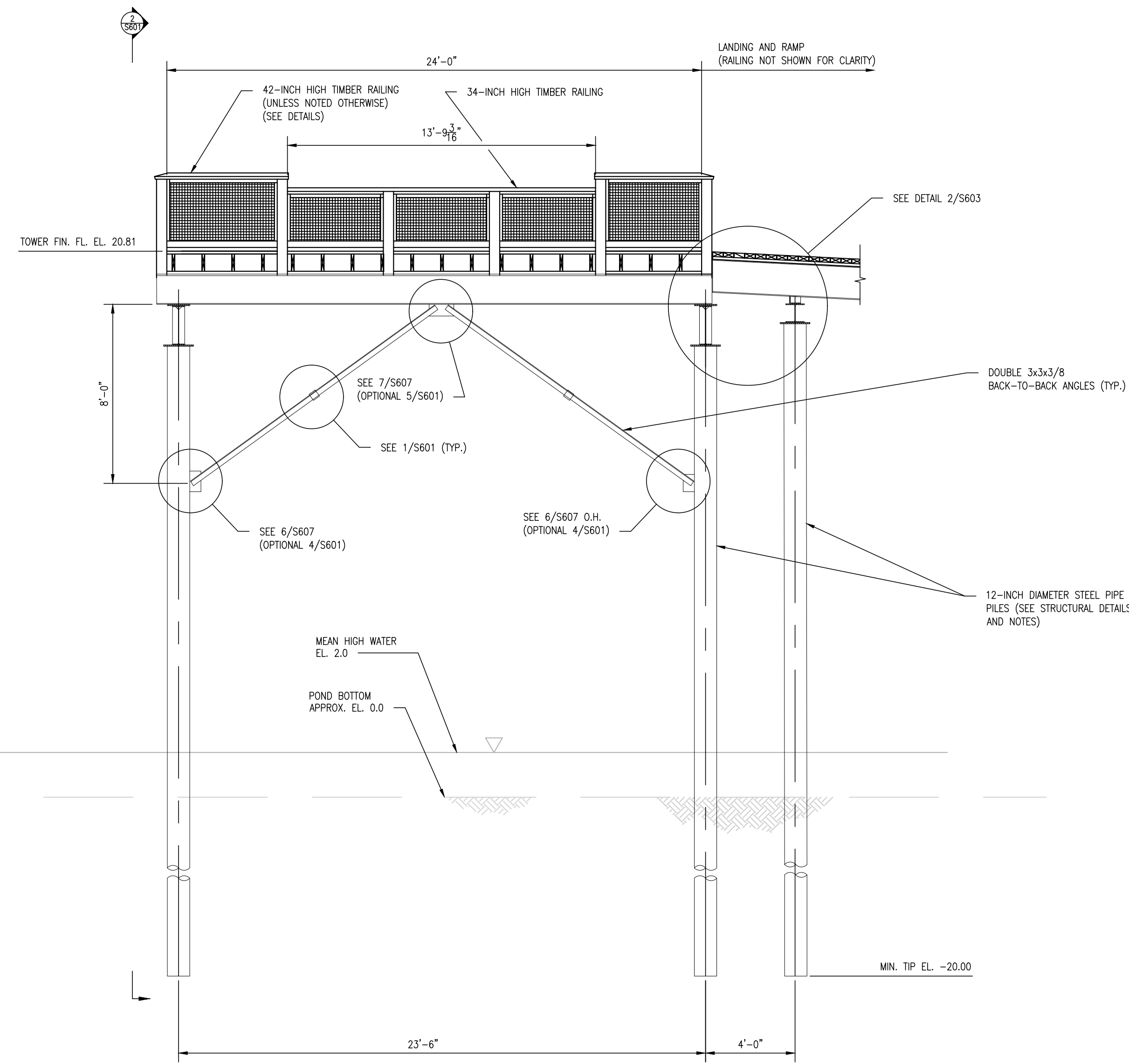
CENTURY ENGINEERING
 A Kleinfelder Company

CEI CONTRACT NO.: 175013.97

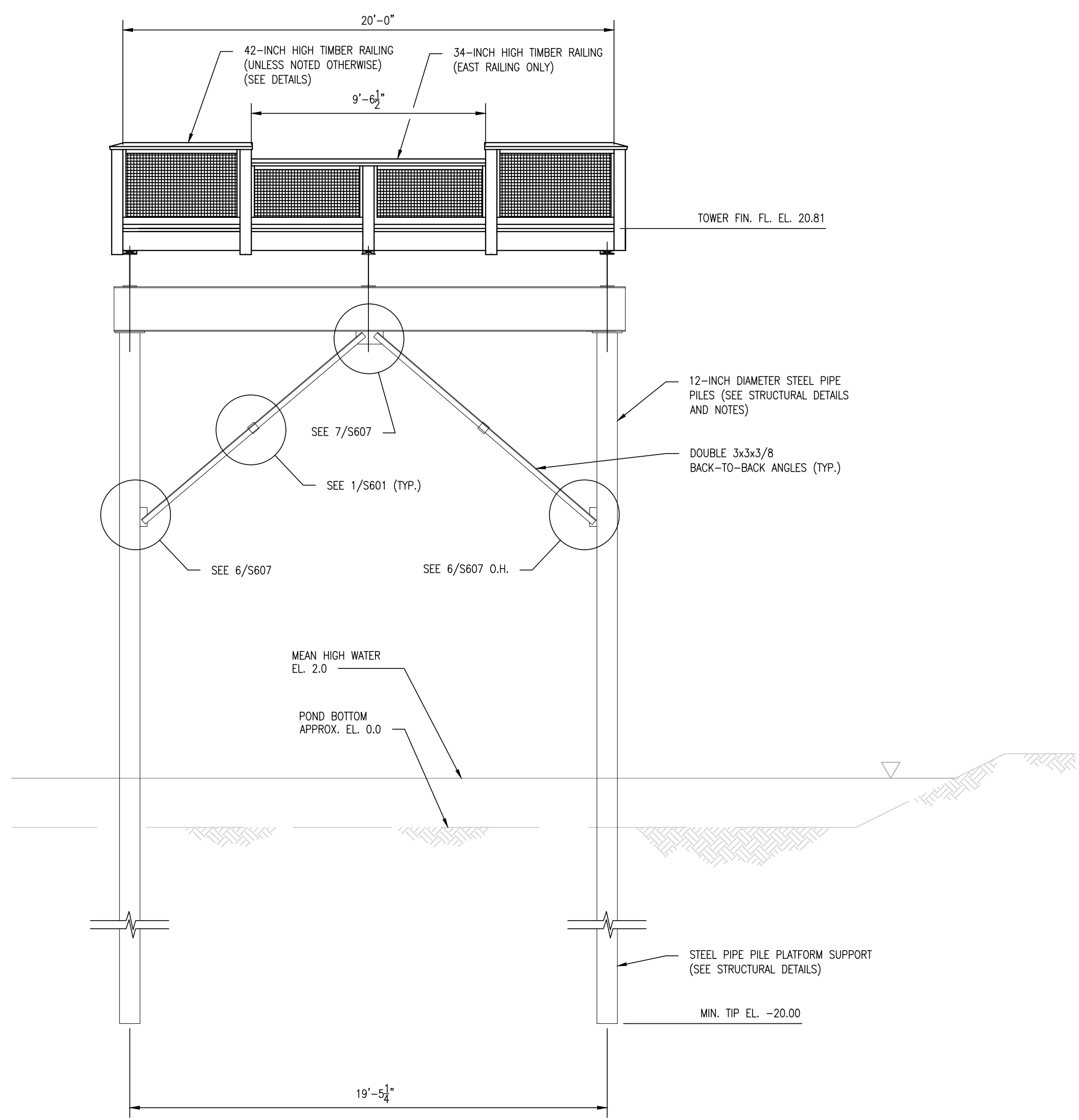
DESIGNED BY: WJH
 DRAWN BY: WJH
 CHECKED BY: JB

DATE: JANUARY 2025
 SCALE: 1" = 20'
 SHEET NO.: C304

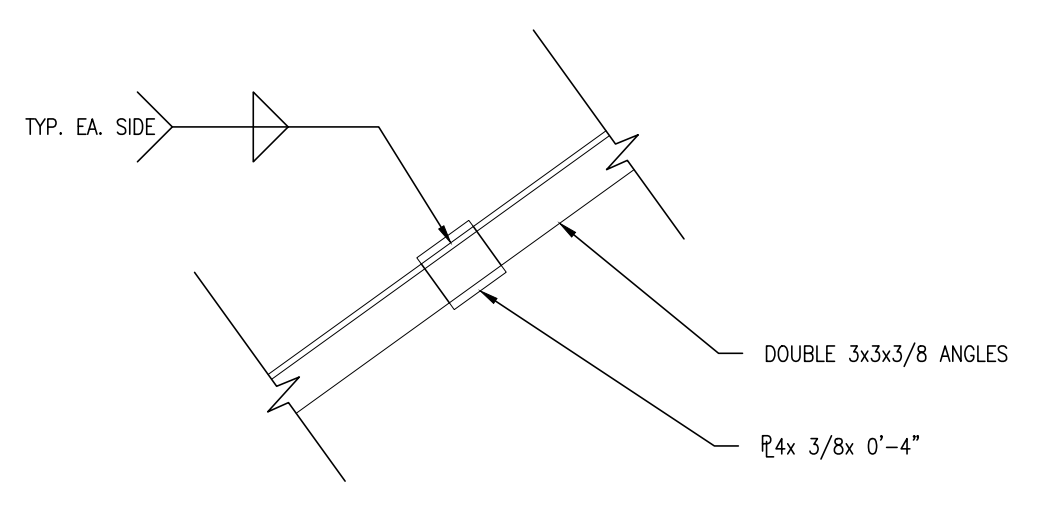
CONTRACT NO.: NAT25-001-ASSAWOMAN



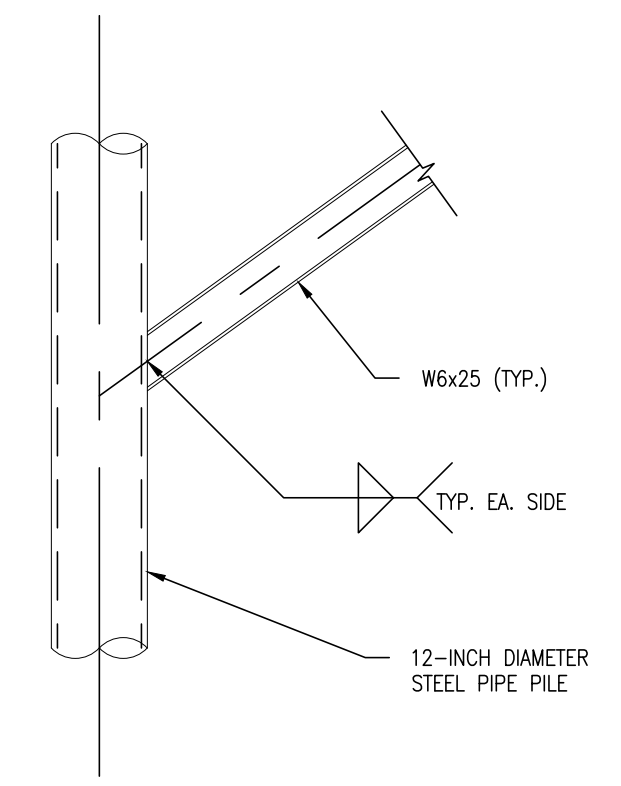
VIEWING PLATFORM #3
NORTH ELEVATION
SOUTH ELEVATION, SIMILAR
1
S601 SCALE: 1/4" = 1'-0"



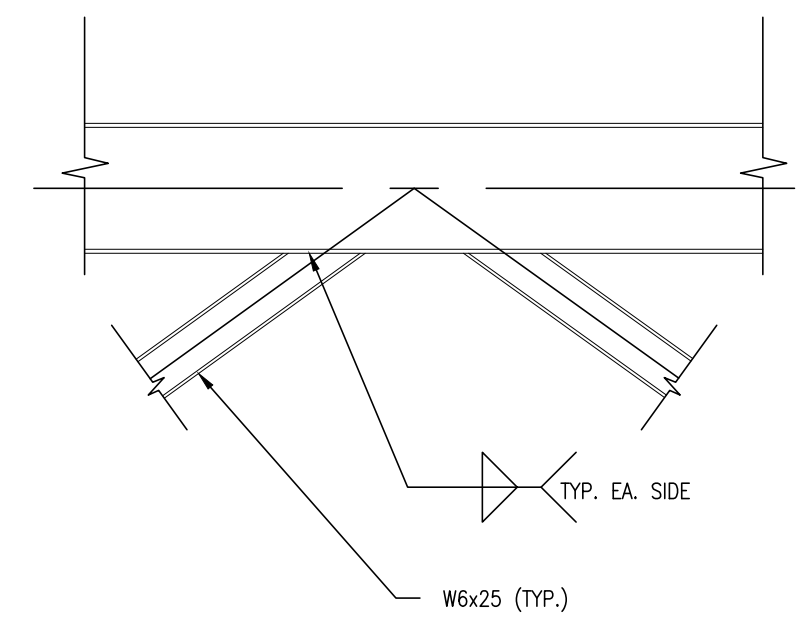
VIEWING PLATFORM #3
EAST ELEVATION, WEST ELEVATION SIM.
2
S601 SCALE: 1/4" = 1'-0"



3
S601 SCALE: 1" = 1'-0"



4
S601 SCALE: 1/2" = 1'-0"



5
S601 SCALE: 1/2" = 1'-0"

STRUCTURAL NOTES:
DESIGN: ALLOWABLE STRESS DESIGN.
LOADS: LIVE LOAD - 60 PSF PEDESTRIAN LOAD, IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE.
FOUNDATION PILES:
1. HELICAL ANCHORS SHALL BE BY A.B. CHANCE, OR APPROVED EQUAL. HELICAL ANCHORS SHALL BE INSTALLED TO OBTAIN A MINIMUM ULTIMATE BEARING CAPACITY OF 10 KIPS WITH A FACTOR OF SAFETY OF 2.0.
2. ALLOWABLE BEARING CAPACITY = 5 KIPS.
3. HELICAL ANCHORS SHALL BE INSTALLED TO A MINIMUM ULTIMATE CAPACITY OF 10 KIPS, AS DETERMINED BY TORQUE VALVE READINGS DURING INSTALLATION. TORQUE VALVE READINGS SHALL BE USED IN CONJUNCTION WITH APPLICABLE TABLES AND/OR CHARTS PROVIDED BY CHANCE ANCHOR AND SHALL TAKE INTO ACCOUNT THE SOIL TYPE AND CONDITIONS.
4. BEARING ANCHORS SHALL BE INSTALLED A MINIMUM OF 4'-0" AS MEASURED FROM THE UPPER MOST HELIX AND THE FINAL GRADE WITH A MINIMUM TIP 20'-0" BELOW FINAL GRADE. DIAGONAL ANCHORS SHALL BE THE SAME LENGTH AND CONFIGURATION AS BEARING ANCHORS AND SHALL BE INSTALLED A MINIMUM DEPTH OF 4'-0" AS MEASURED FROM THE UPPERMOST HELIX AND THE FINAL GRADE.
5. INSTALL TS12 TWIST STRAPS AS MANUFACTURED BY SIMPSON STRONG TIE OR APPROVED EQUAL AT EACH JOIST AS SHOWN ON PLANS. TWIST STRAPS SHALL BE HOT DIPPED GALVANIZED. TWIST STRAPS SHALL BE INSTALLED PER MANUFACTURERS REQUIREMENTS.

DIMENSION LUMBER:
1. ALL LUMBER SHALL BE PRESSURE TREATED WITH CHROMATED COPPER ARSENATE (CCA-C) WITH A MINIMUM RETENTION OF 0.15 POUNDS PER CUBIC FOOT.
2. APPROACH RAMP AND OBSERVATION PLATFORM DECKING SHALL BE 2X6 TIMBER EXCEPT DECKING AT STEEL SUPPORT RAMPS SHALL BE 3X6 TIMBER.
3. ALL TIMBER DECKING SHALL BE ATTACHED TO EACH SUPPORTING JOIST USING TWO (2) STAINLESS STEEL DECK SCREWS AT EACH JOIST.
4. THRU-FLOW DECK SHALL BE ATTACHED TO EACH SUPPORTING JOIST USING #10 PAN HEAD STAINLESS STEEL SCREWS AND ANCHOR CLIPS, AS RECOMMENDED BY THE MANUFACTURER.

TIMBER FASTENERS:
1. TIMBER FASTENERS SHALL BE COMPLY WITH SECTION 061063 - EXTERIOR ROUGH CARPENTRY.

STEEL CONSTRUCTION:
1. ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A242 OR A588, WITH A MINIMUM YIELD STRENGTH OF 50 KSI, UNLESS NOTED OTHERWISE. REFER TO SECTION 051200 - STRUCTURAL STEEL FRAMING.
2. FASTENERS SHALL BE HIGH STRENGTH WEATHERING STEEL BOLTS (ASTM A325-3 OR A490-3), UNLESS NOTED OTHERWISE.
3. PIPE PILES SHALL HAVE A MINIMUM WALL THICKNESS OF 0.25 INCHES AND CONFORM TO ASTM A690, WITH A MINIMUM YIELD STRENGTH OF 50 KSI.
4. DOUBLE 3" x 3" x 3/8" ANGLE DIAGONAL BRACES, AS SHOWN ON 1/S601 AND 2/S601, MAY BE SUBSTITUTED WITH W6x25 BRACES AT THE CONTRACTORS DISCRETION. PROVIDE SHOP DRAWINGS FOR ALL STRUCTURAL STEEL.

REVISIONS:	DESCRIPTION:
DATE:	
BY:	

ASSAWOMAN WILDLIFE AREA
VIEWING TOWER
TOWER ELEVATIONS

SEAL:
WALTER J. HOY, III
REGISTERED PROFESSIONAL ENGINEER
NO. 11204
DELAWARE
August 30, 2024
CIVIL ENGINEER

CENTURY ENGINEERING
A Kiewit Company

CEI CONTRACT NO.: 175013.97



DESIGNED BY: WJH

DRAWN BY: WJH

CHECKED BY: JB

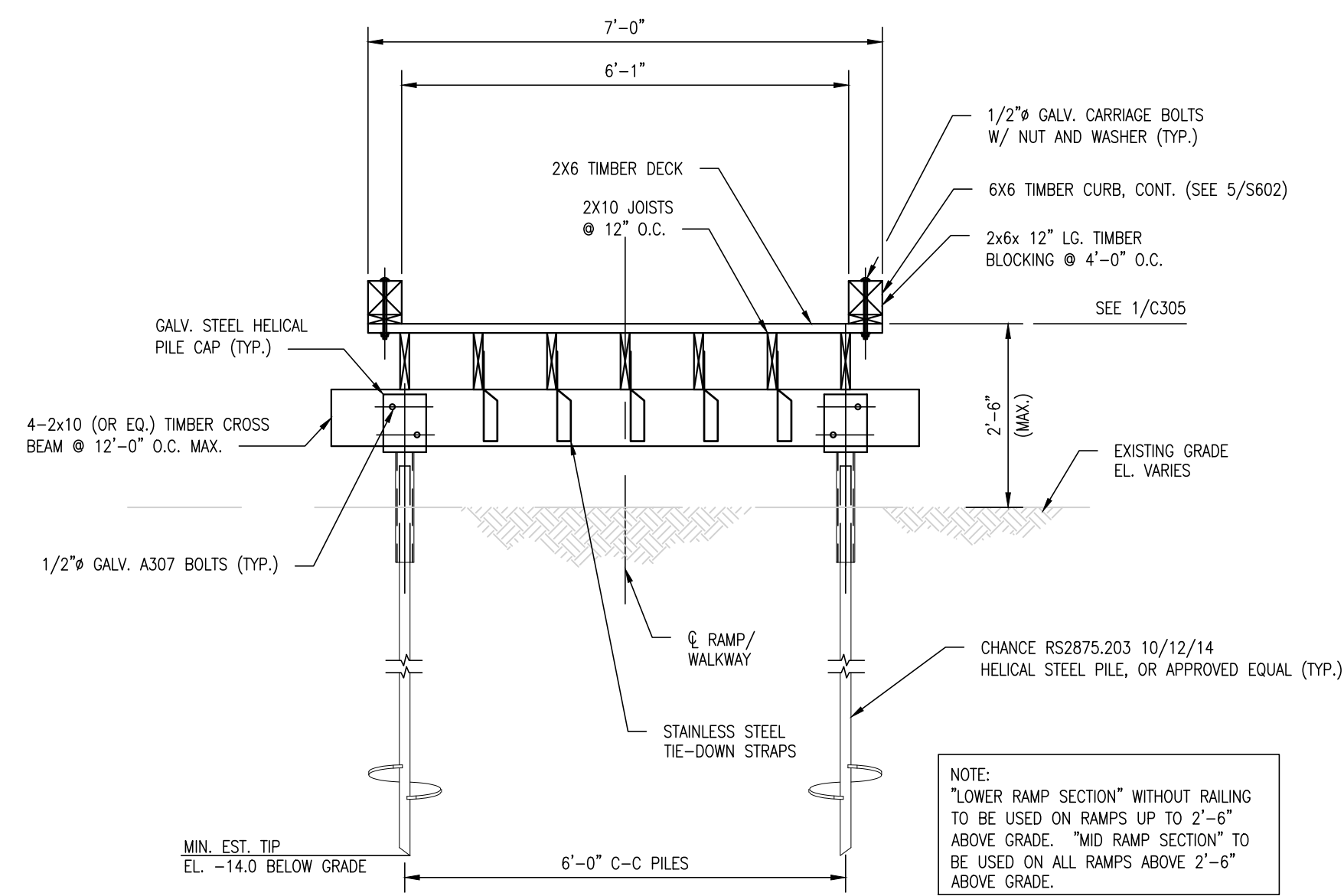
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SCALE: AS SHOWN

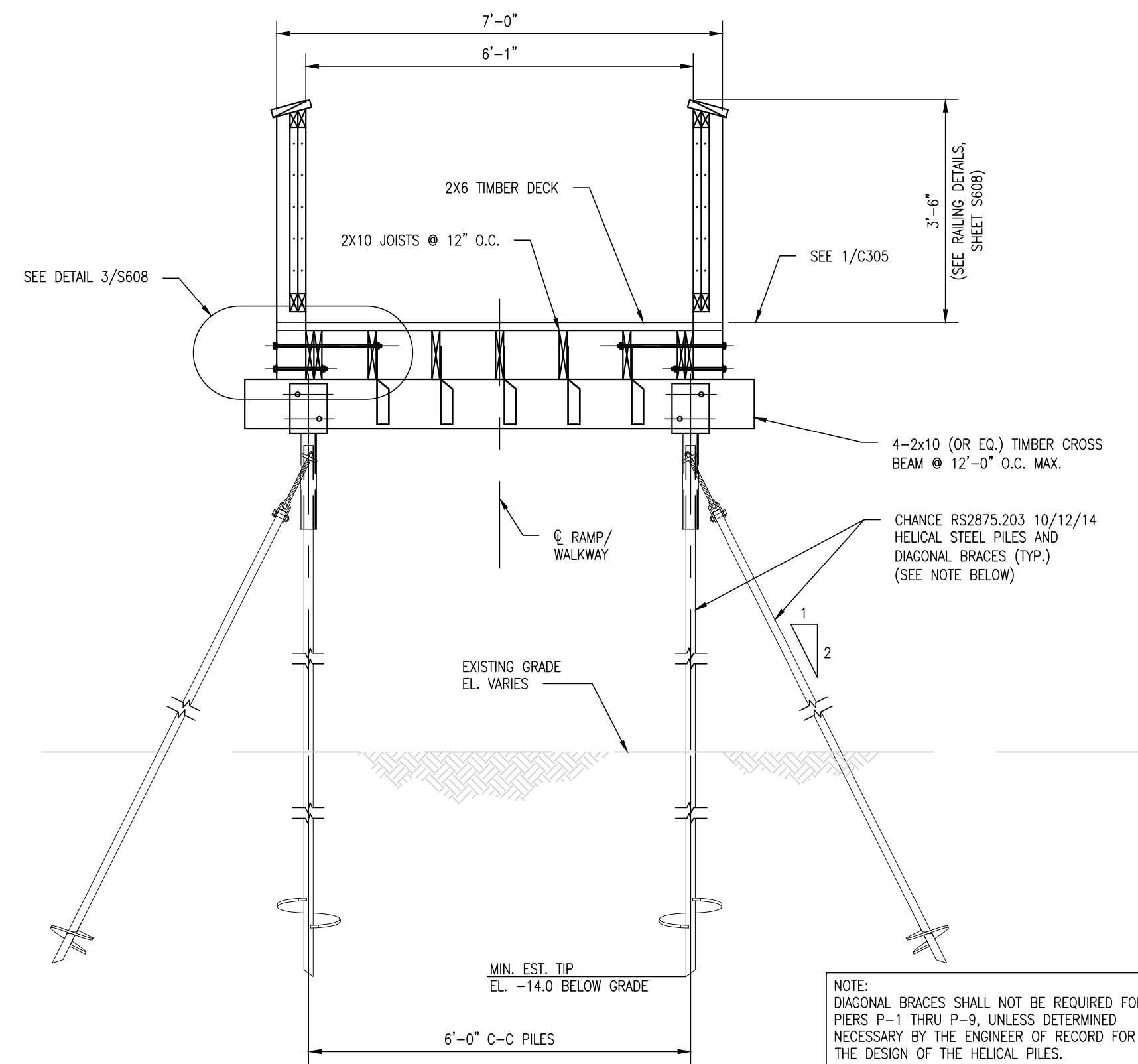
SHEET NO.: S601

CONTRACT NO.: NAT25-001-ASSAWOMAN

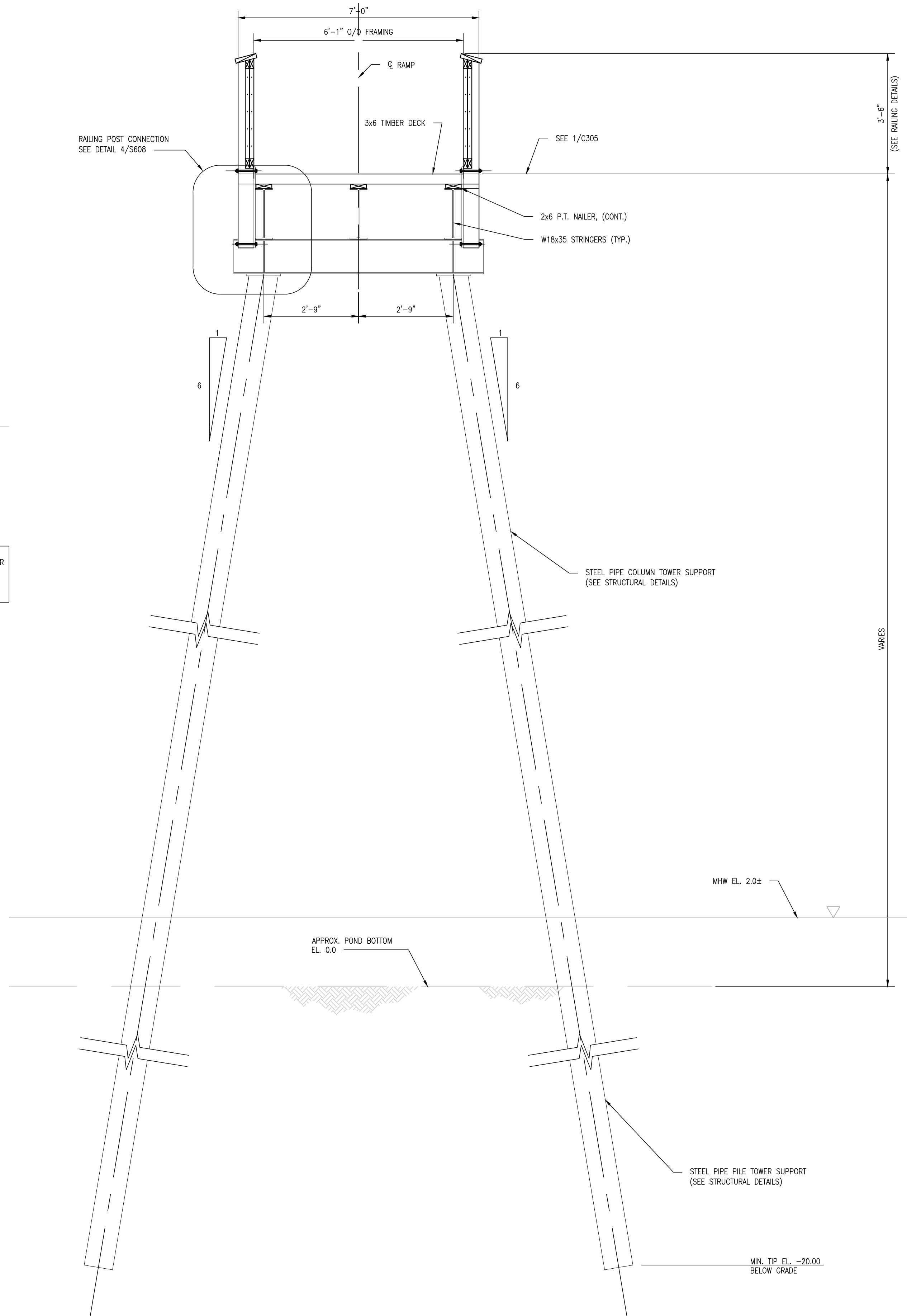
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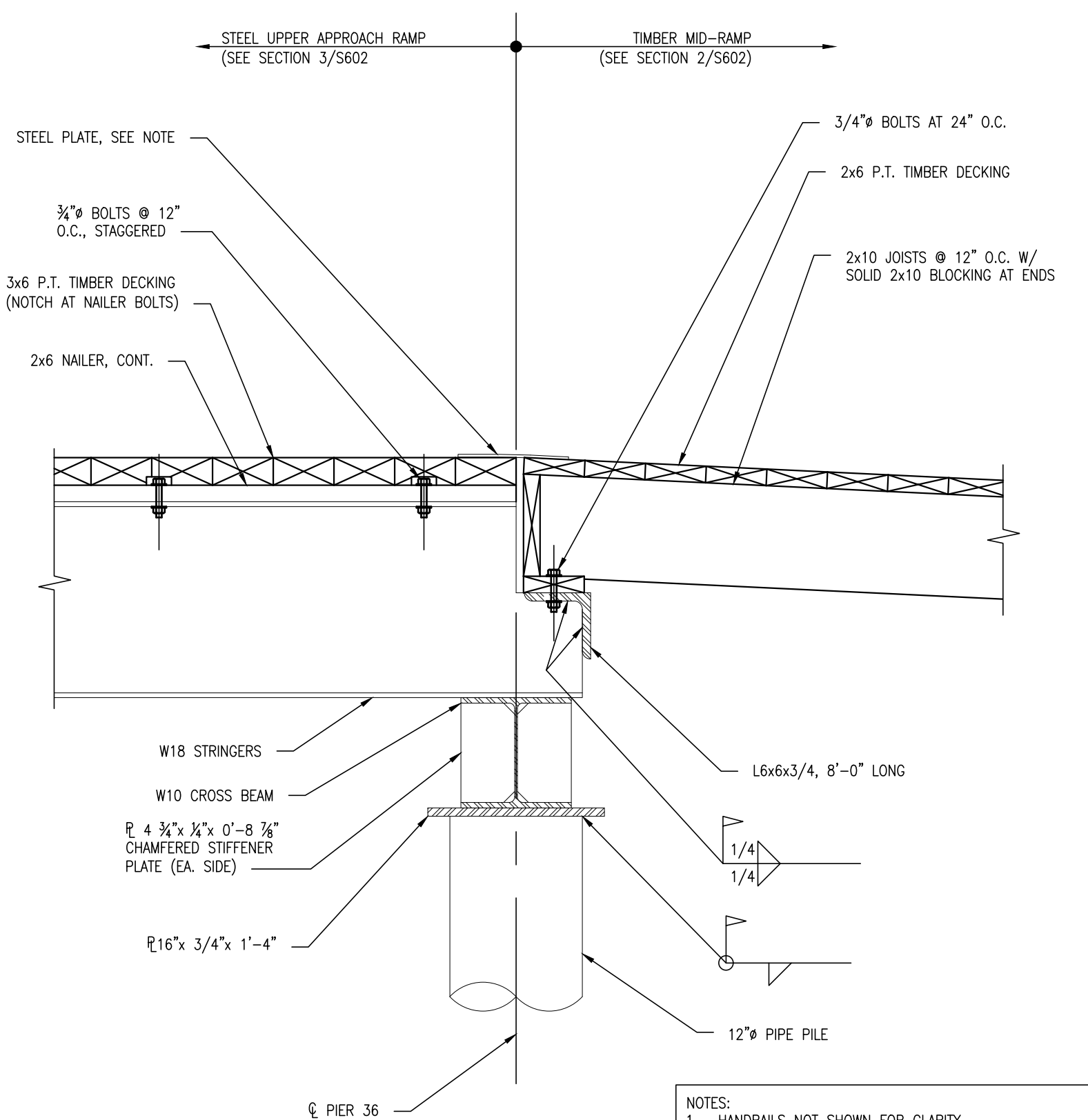
1 LOWER RAMP SECTION
STA. 0+95.37 TO 1+77.56
S602 SCALE: 1/2" = 1'-0"



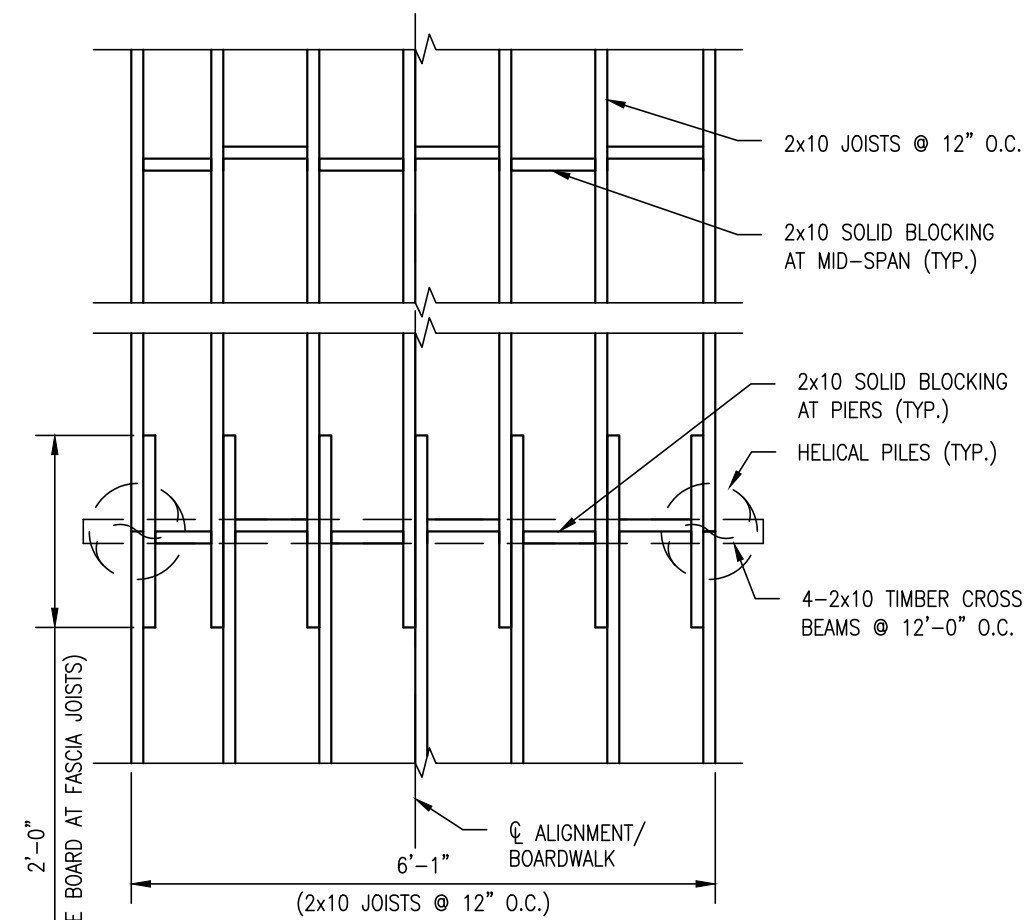
2 MID RAMP SECTION
STA. 1+88.85 TO 4+05.17
S602 SCALE: 1/2" = 1'-0"



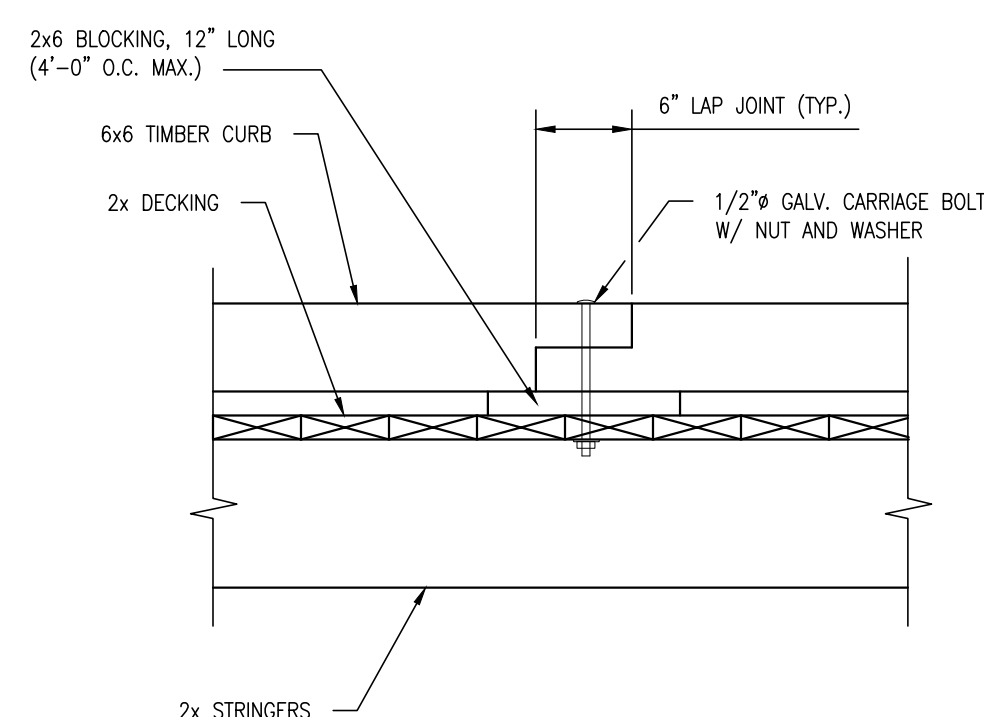
3 UPPER RAMP SECTION
STA. 4+16 TO STA. 5+23
S602 SCALE: 1/2" = 1'-0"



6 MID RAMP TO UPPER RAMP CONNECTION
S602 SCALE: 1" = 1'-0"



4 BOARDWALK STRINGER LAYOUT PLAN
S602 SCALE: 1/2" = 1'-0"



5 BOARDWALK TIMBER CURB DETAIL
S602 SCALE: 1" = 1'-0"

REVISIONS:	DATE:	DESCRIPTION:	BY:

ASSAWOMAN WILDLIFE AREA
VIEWING TOWER
APPROACH RAMP SECTIONS

SEAL:
WALTER J. HOEY, III
REGISTERED
NO. 11204
DELAWARE
PROFESSIONAL ENGINEER
August 30, 2024
CIVIL ENGINEER

CENTURY
ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 175013.97



DESIGNED BY:
WJH

DRAWN BY:
WJH

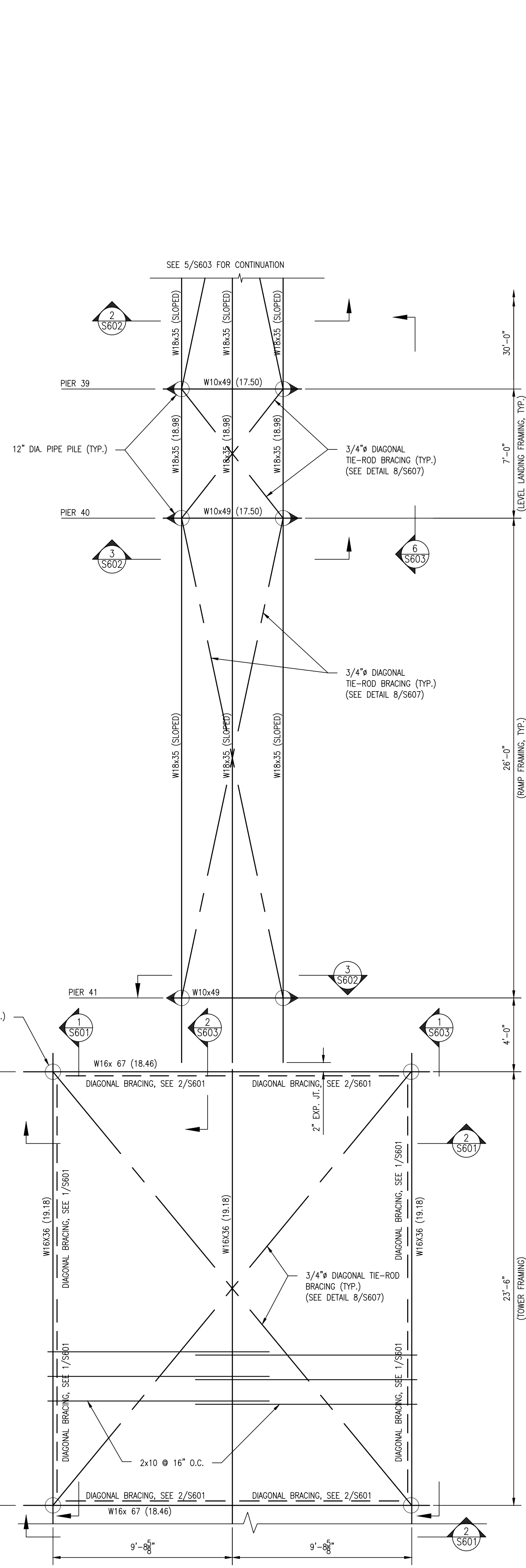
CHECKED BY:
JB

DATE:
JANUARY 2025

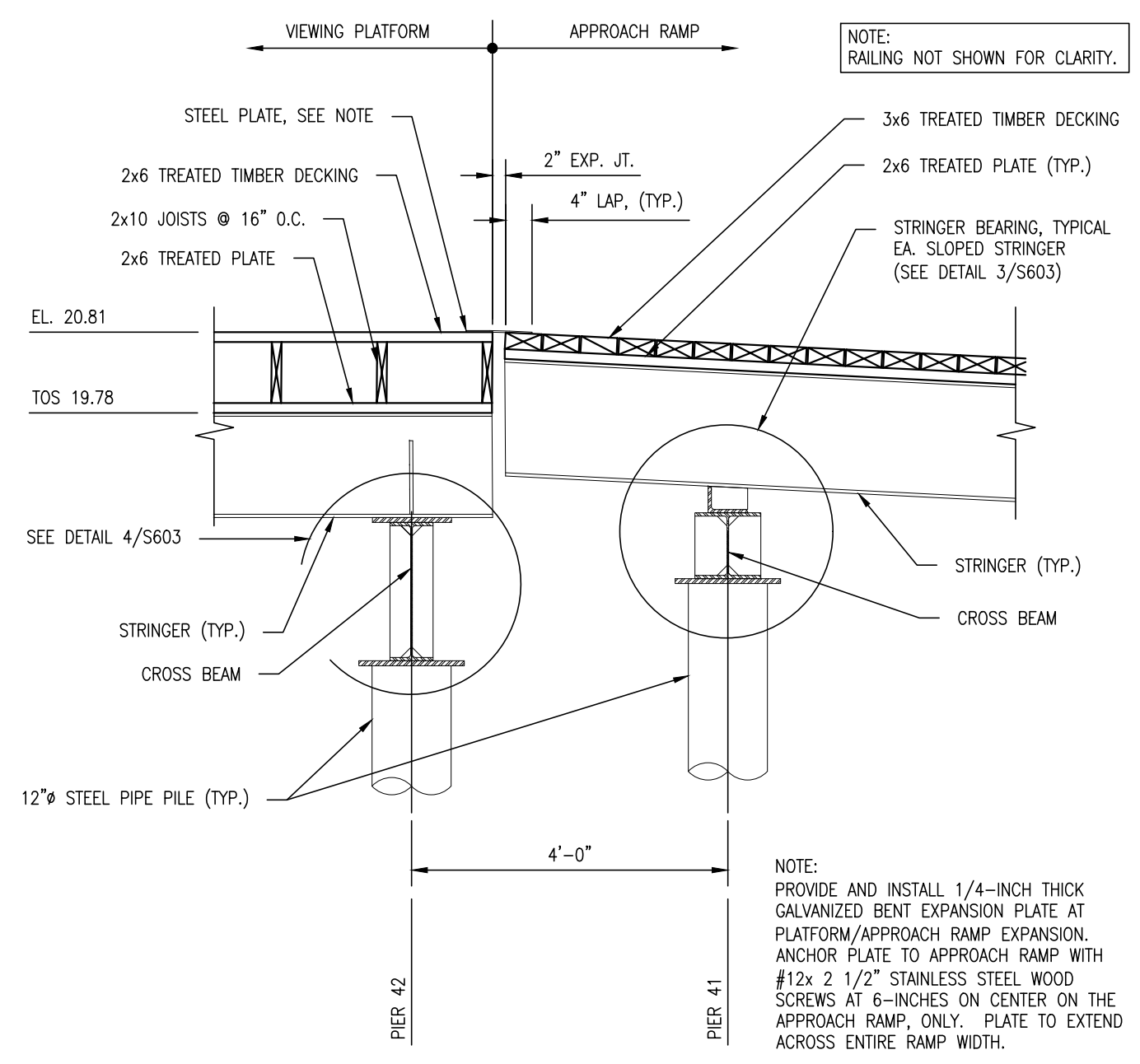
SCALE:
AS SHOWN

SHEET NO.:
S602

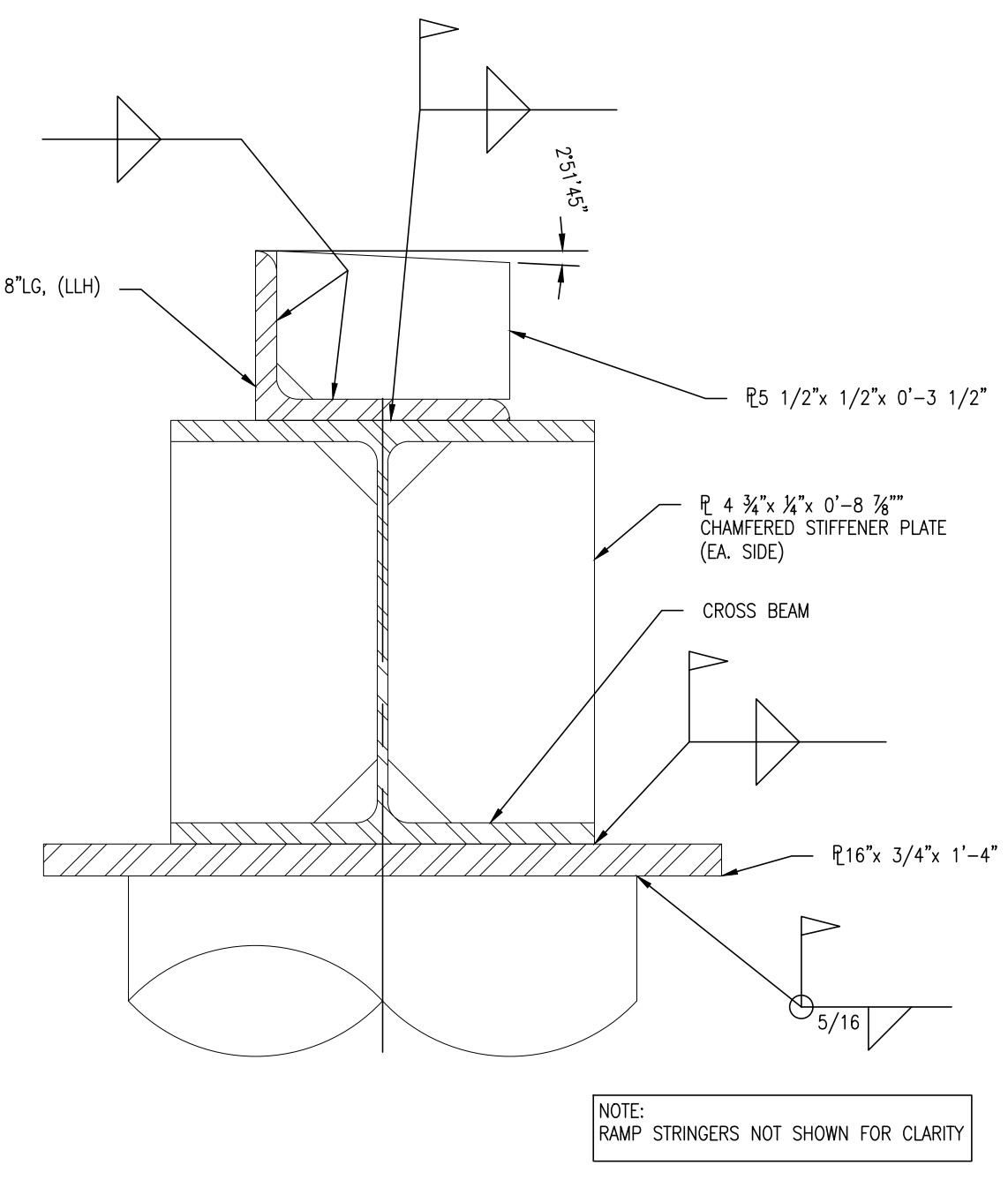
CONTRACT NO.:
NAT25-001-ASSAWOMAN



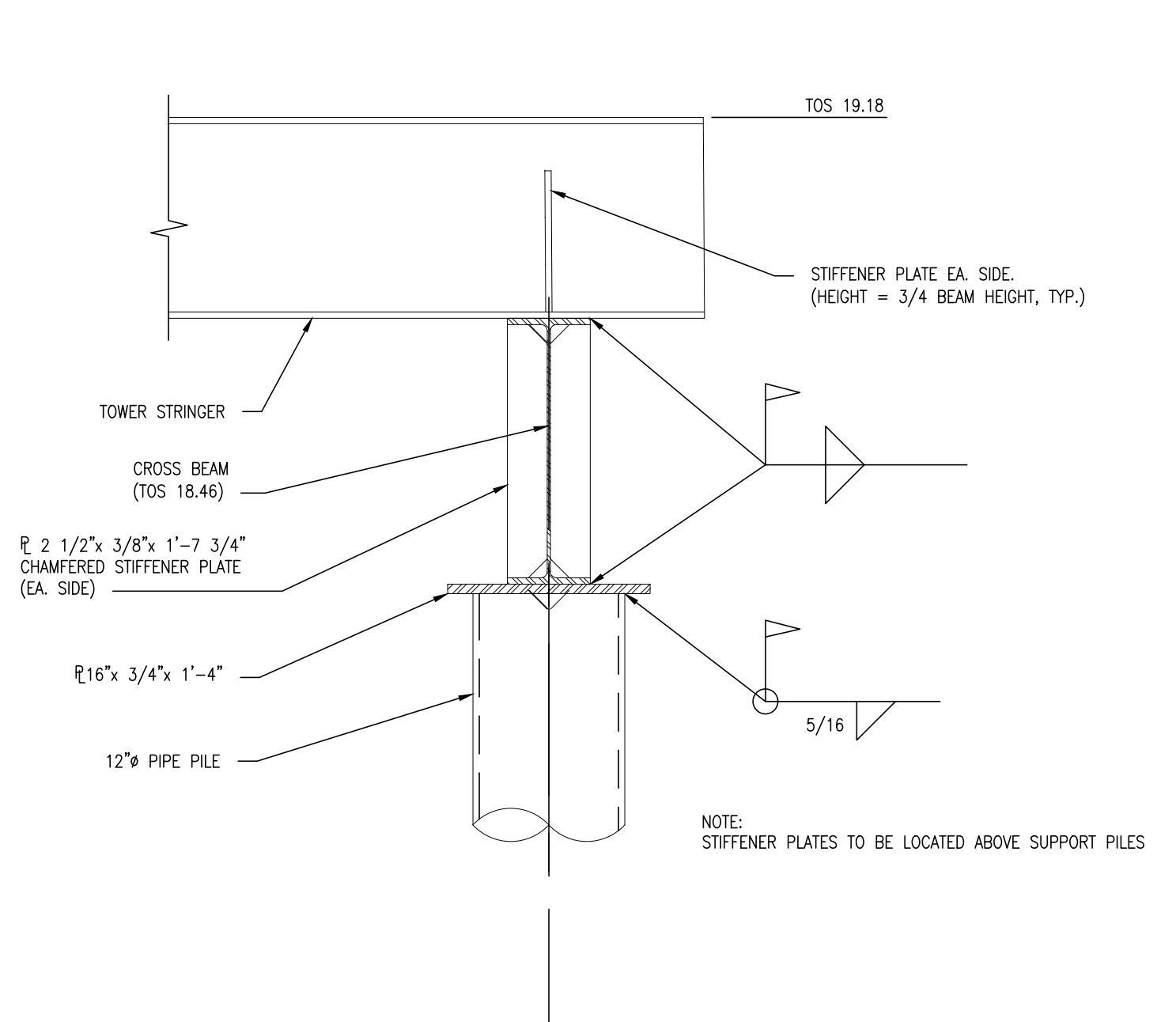
1 VIEWING PLATFORM #3 PLAN
SCALE: 1/4" = 1'-0"



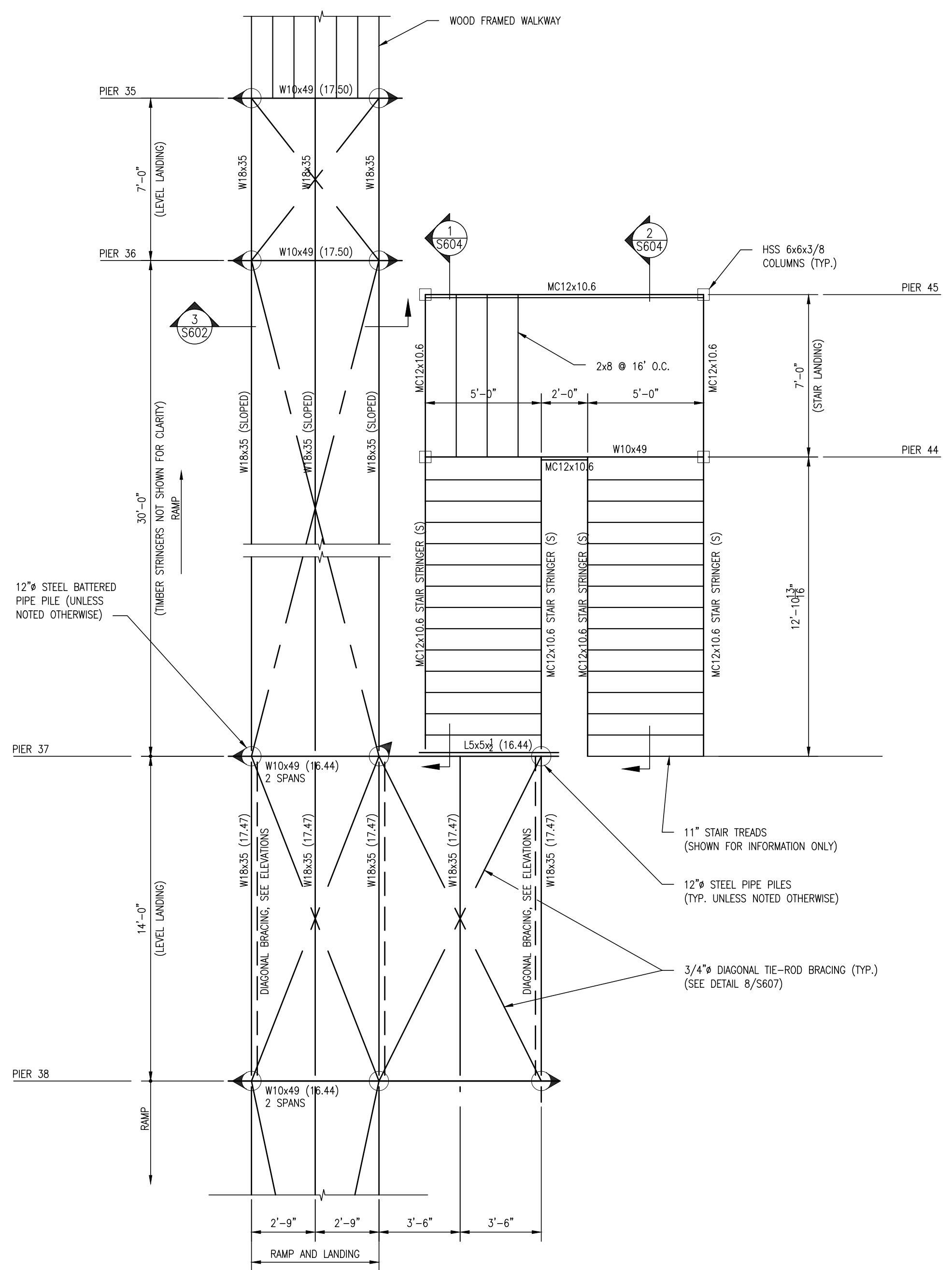
2 VIEWING PLATFORM TO RAMP SECTION
SCALE: 1/2" = 1'-0"



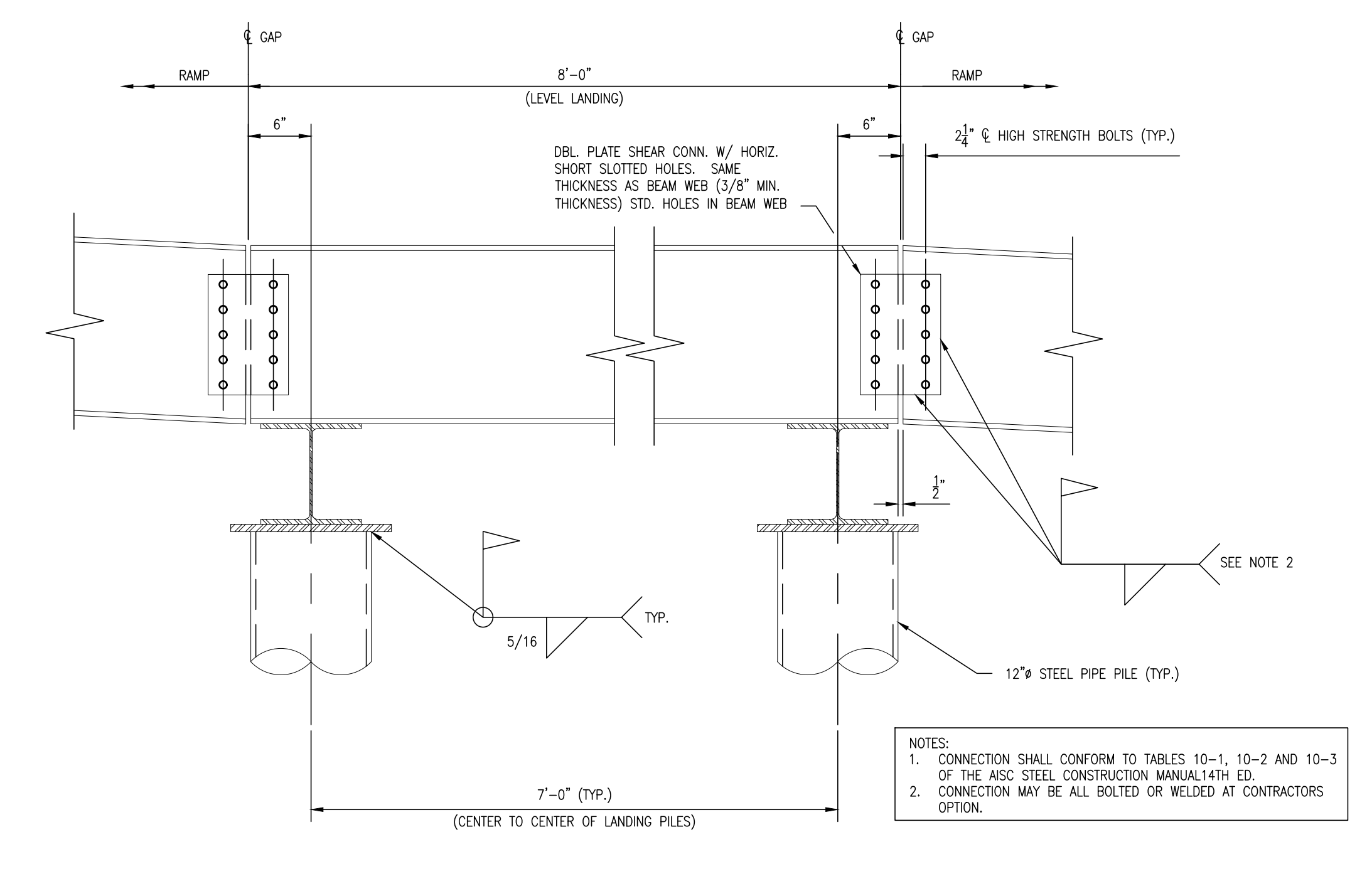
3 UPPER RAMP BEARING DETAIL
SCALE: 1/2" = 1'-0"



4 VIEWING PLATFORM FRAMING SECTION
SCALE: 1" = 1'-0"



5 STAIR TOWER FRAMING PLAN
SCALE: 1/4" = 1'-0"



6 STEEL RAMP LANDING FRAMING SECTION
SCALE: 1" = 1'-0"

NOTES:
1. CONNECTION SHALL CONFORM TO TABLES 10-1, 10-2 AND 10-3 OF THE AISC STEEL CONSTRUCTION MANUAL 14TH ED.
2. CONNECTION MAY BE ALL BOLTED OR WELDED AT CONTRACTORS OPTION.

REVISIONS:	DATE:	DESCRIPTION:

ASSAWOMAN WILDLIFE AREA
VIEWING TOWER
STRUCTURAL STEEL FRAMING

SEAL:

 August 30, 2024
 CIVIL ENGINEER

CENTURY ENGINEERING
 A Kleinfelder Company

CEI CONTRACT NO.: 175013.97



DESIGNED BY:
WJH

DRAWN BY:
WJH

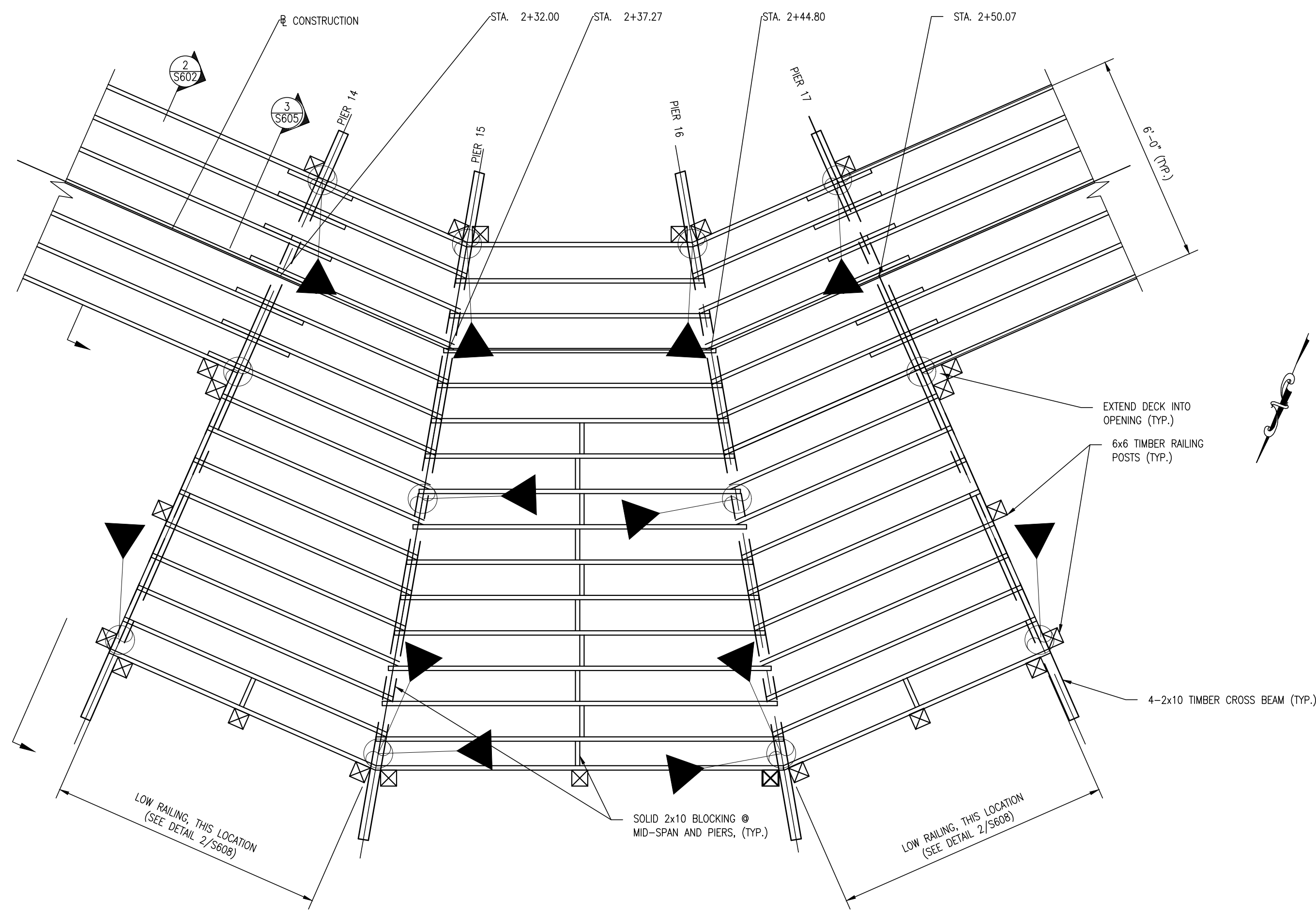
CHECKED BY:
JB

DATE:
JANUARY 2025

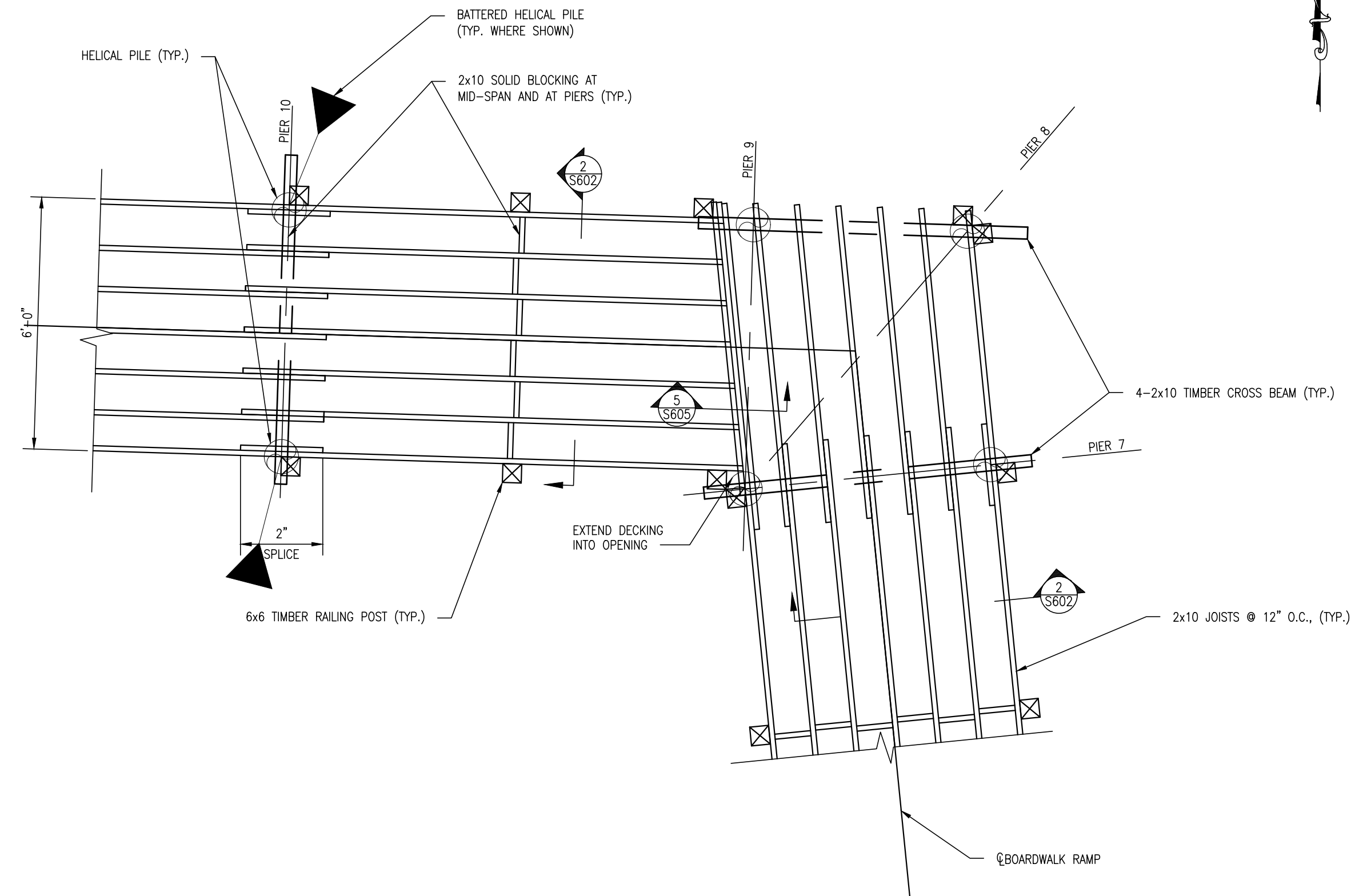
SCALE:
AS SHOWN

SHEET NO.:
S603

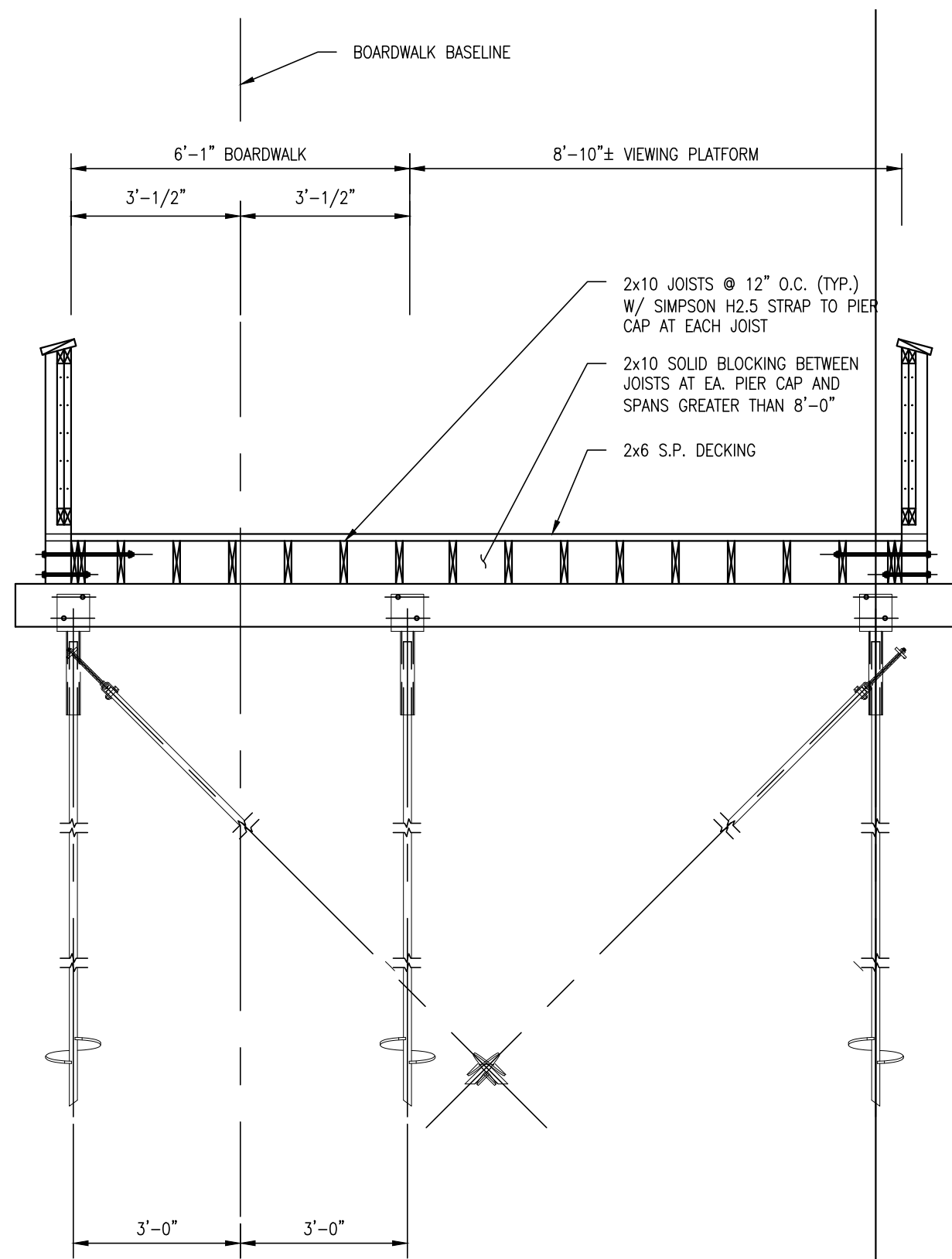
CONTRACT NO.:
NAT25-001-ASSAWOMAN



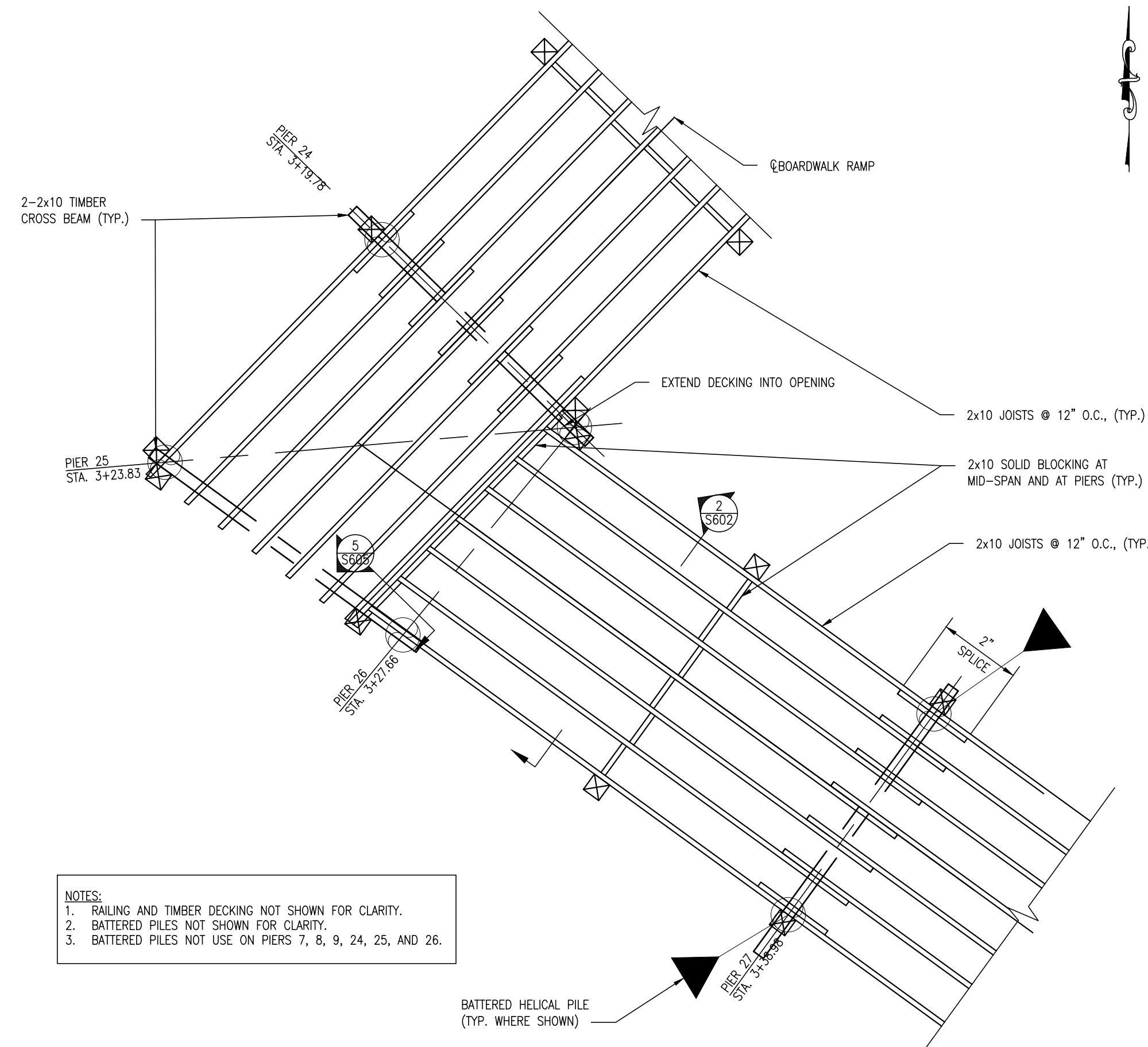
1 VIEWING PLATFORM 1- FRAMING PLAN
SCALE: 3/8" = 1'-0"



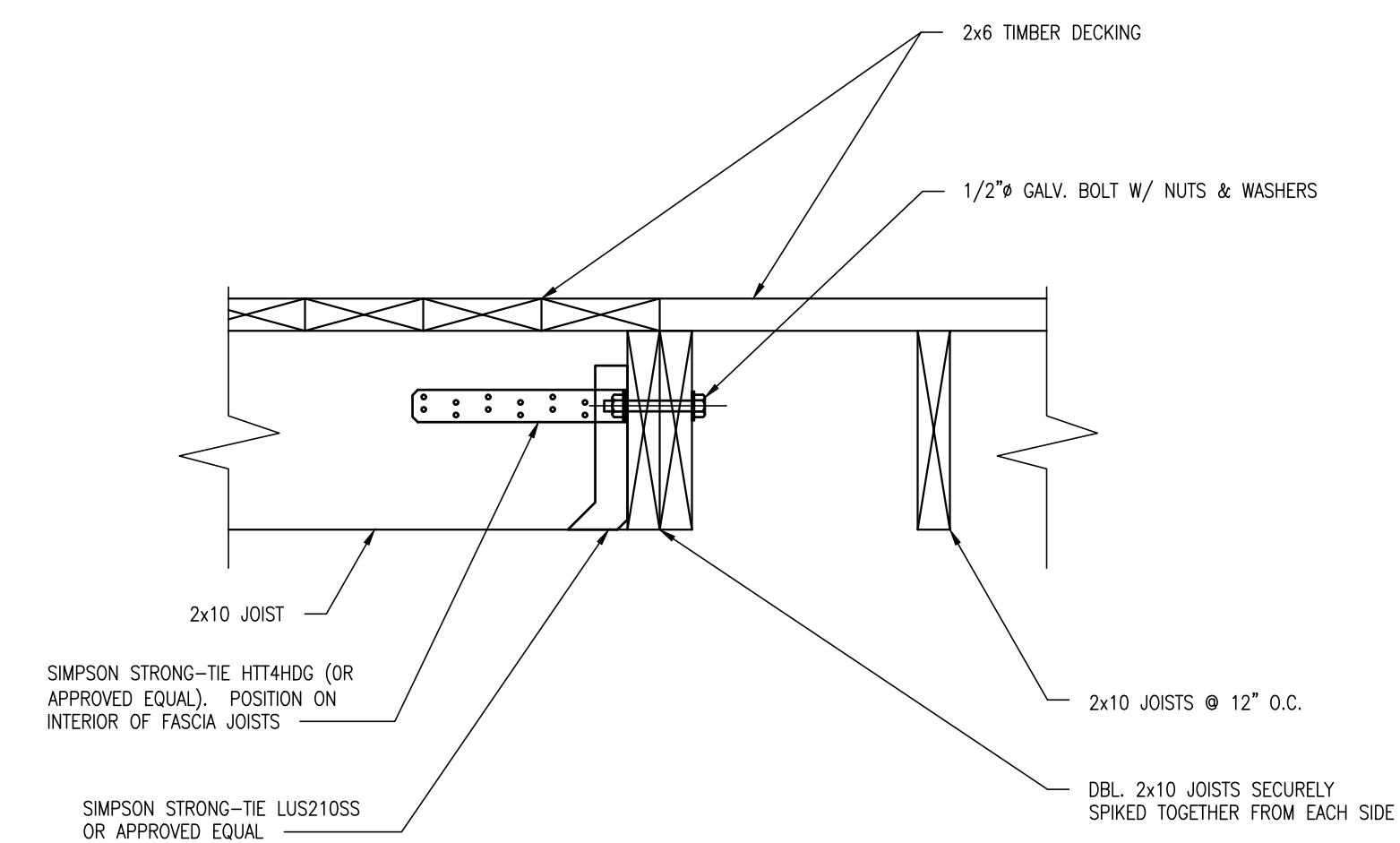
2 BOARDWALK FRAMING PLAN
SCALE: 3/8" = 1'-0"



3 VIEWING PLATFORM 1- FRAMING PLAN
SCALE: 3/8" = 1'-0"



4 BOARDWALK FRAMING PLAN
SCALE: 3/8" = 1'-0"



5 BOARDWALK SECTION AT DIRECTION CHANGE
SCALE: 1-1/2" = 1'-0"

- NOTES:
1. RAILING AND TIMBER DECKING NOT SHOWN IN ALL VIEWS FOR CLARITY.
 2. BATTERED PILES NOT SHOWN FOR CLARITY.
 3. BATTERED HELICAL PILES SHOWN OFFSET IN PLAN VIEW FOR CLARITY. CONTRACTOR SHALL INSTALL BATTERED PILES AS CLOSE TO PARALLEL TO TIMBER CROSS BEAMS AS POSSIBLE.
 4. BATTERED PILES NOT USE ON PIERS 7, 8, 9, 24, 25, AND 26.
 5. 2x10 TIMBER BLOCKING REQUIRED AS SHOWN AND AT MID-SPAN OF ALL JOISTS WITH A CLEAR SPAN OF 8'-0" OR GREATER.

REVISIONS:

DATE:	DESCRIPTION:	BY:

ASSAWOMAN WILDLIFE AREA
VIEWING TOWER
VIEWING PLATFORM 1 DETAILS



August 30, 2024
CIVIL ENGINEER

CEI CONTRACT NO.: 175013.97



DESIGNED BY:
WJH

DRAWN BY:
WJH

CHECKED BY:
JB

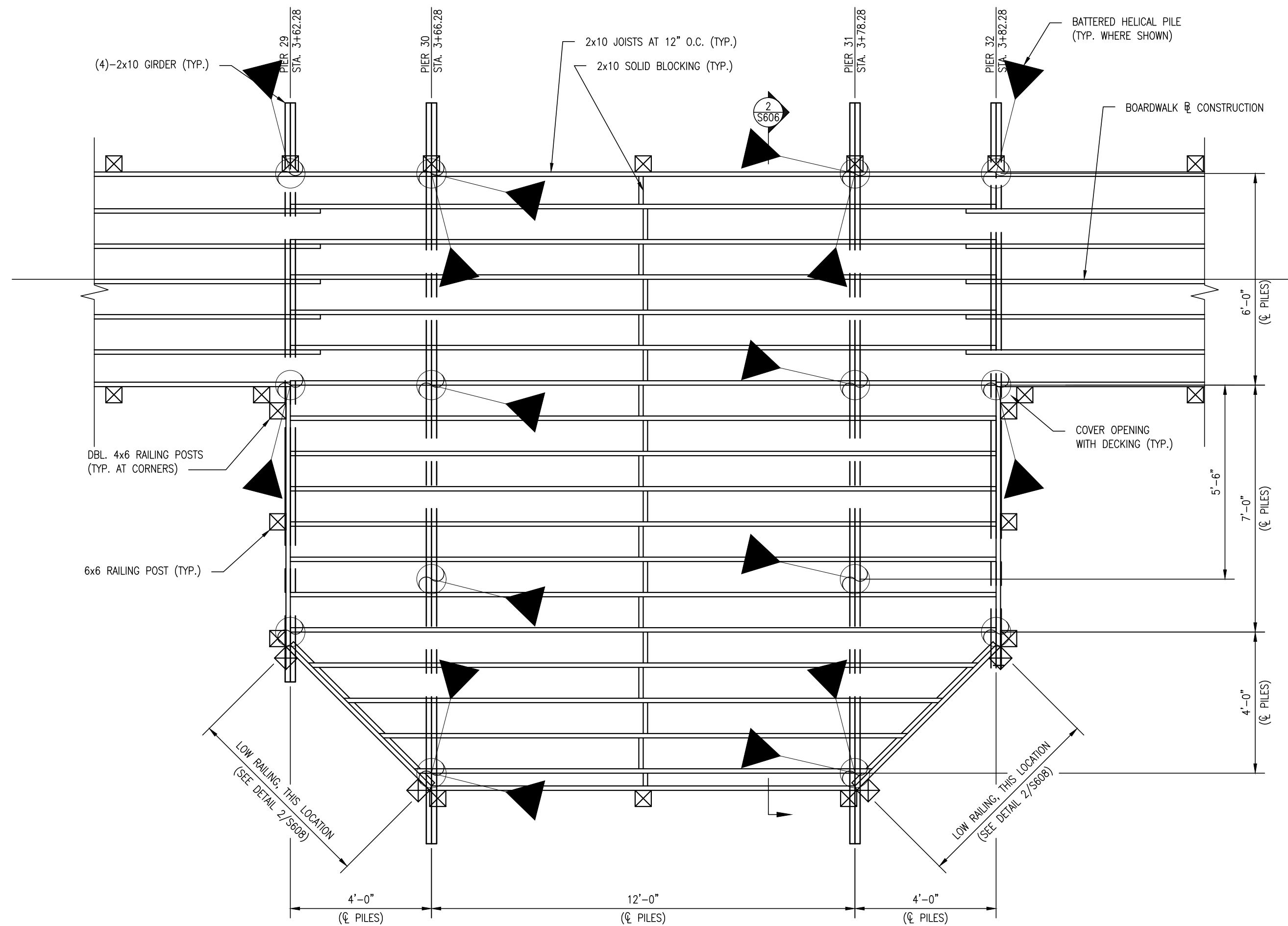
DATE:
JANUARY 2025

SCALE:
AS SHOWN

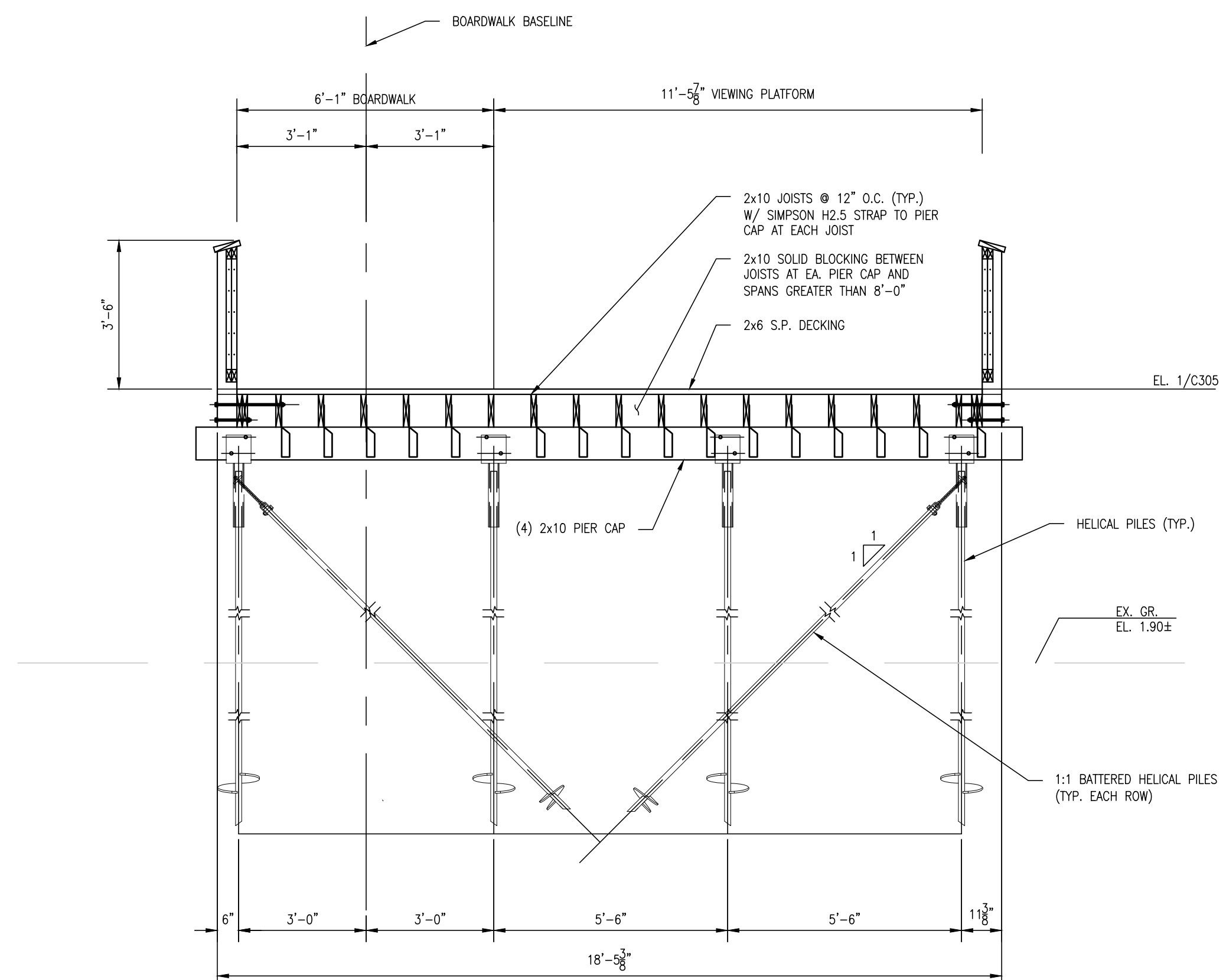
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CONTRACT NO.:
NAT25-001-ASSAWOMAN

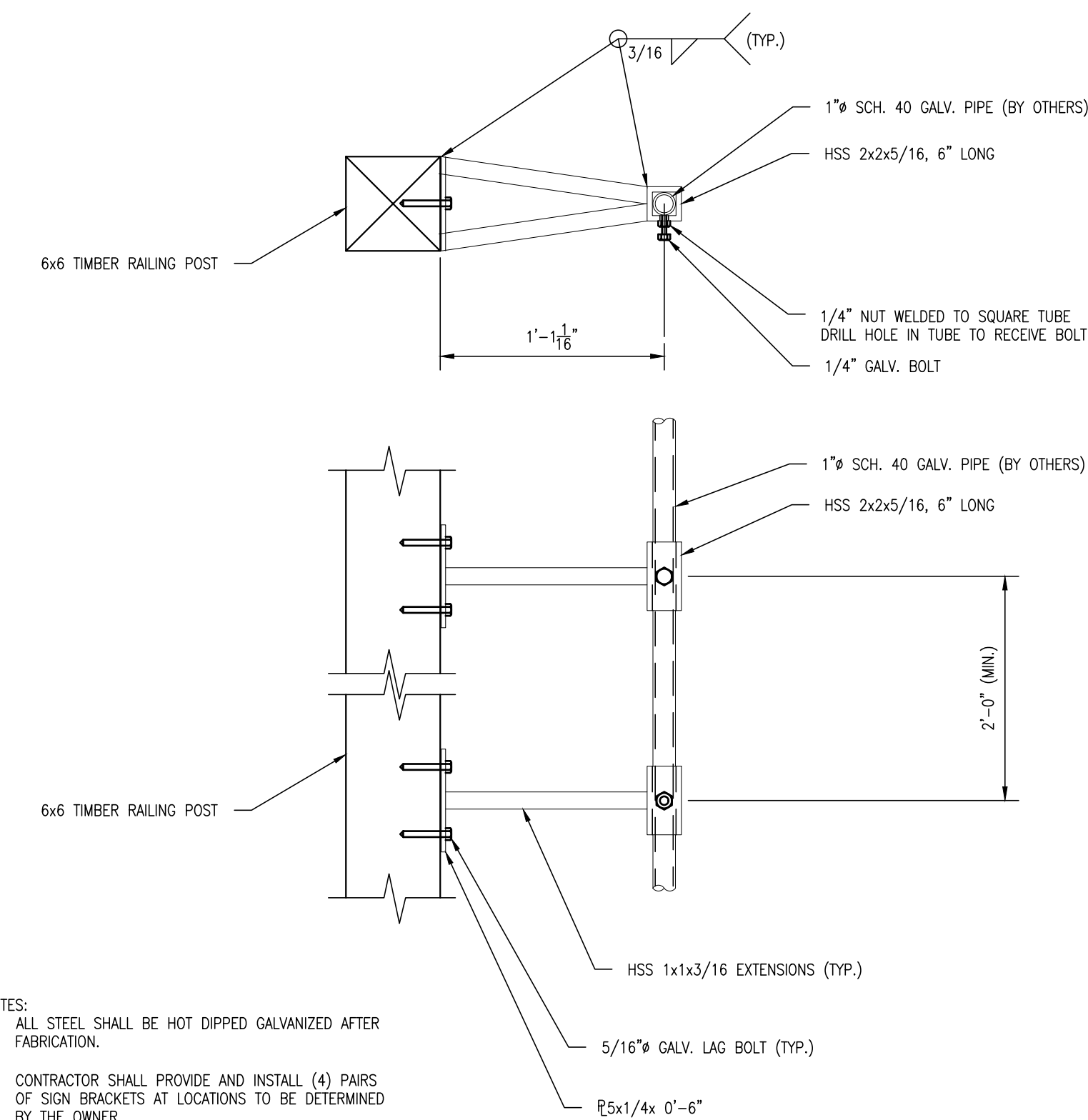
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1 VIEWING PLATFORM 2- FRAMING PLAN
SCALE: 3/8" = 1'-0"



2 VIEWING PLATFORM 2 SECTION
SCALE: 3/8" = 1'-0"



3 INFORMATION SIGN BRACKET DETAILS
SCALE: 1-1/2" = 1'-0"

REVISIONS:

DATE:	DESCRIPTION:	BY:

ASSAWOMAN WILDLIFE AREA
VIEWING TOWER
VIEWING PLATFORM 2 DETAILS

SEAL:
WALTER J. HOEY, III
REGISTERED PROFESSIONAL ENGINEER
NO. 11204
DELAWARE
August 30, 2024
CIVIL ENGINEER

CENTURY ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 175013.97



DESIGNED BY: WJH

DRAWN BY: WJH

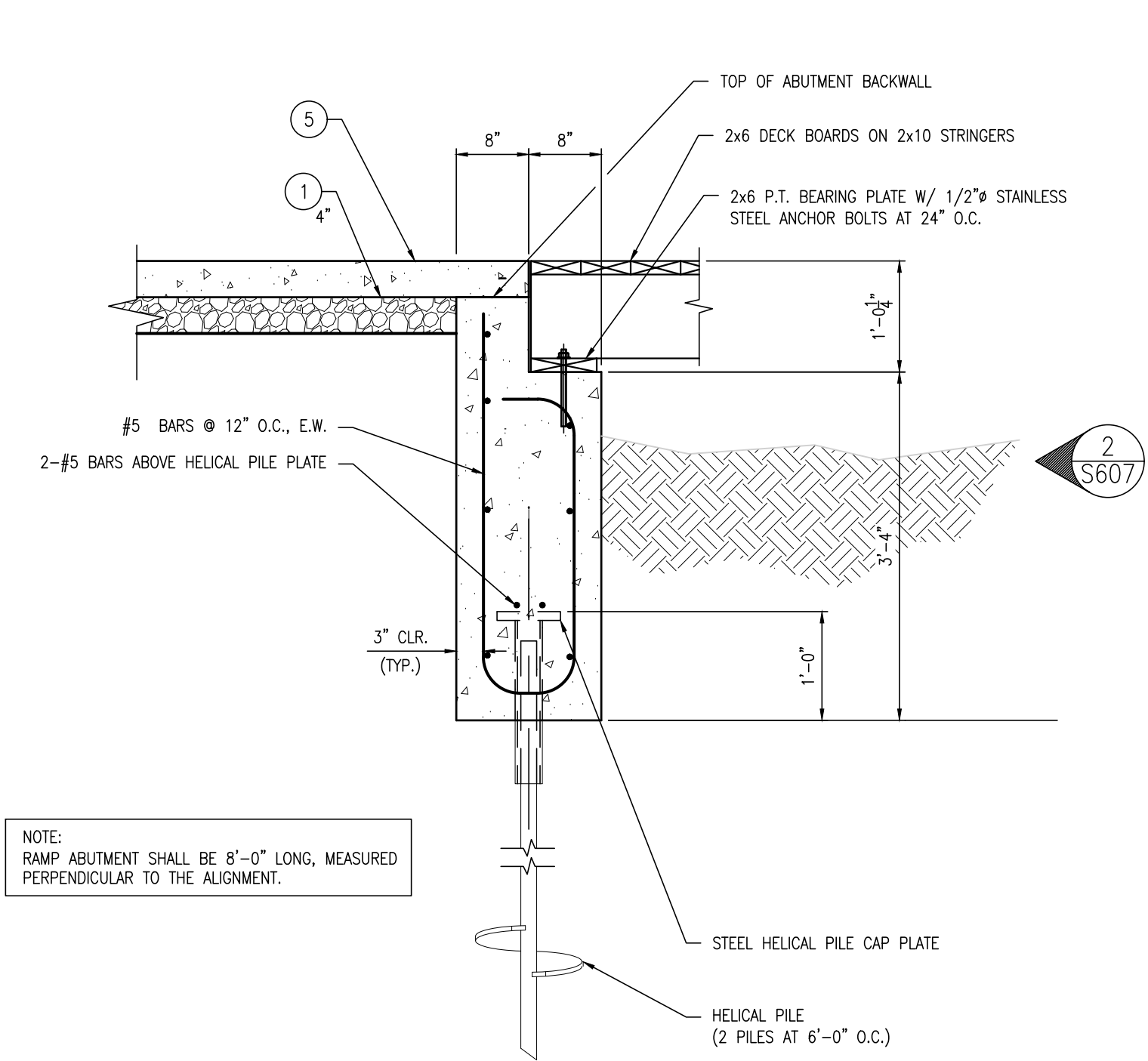
CHECKED BY: JB

DATE: JANUARY 2025

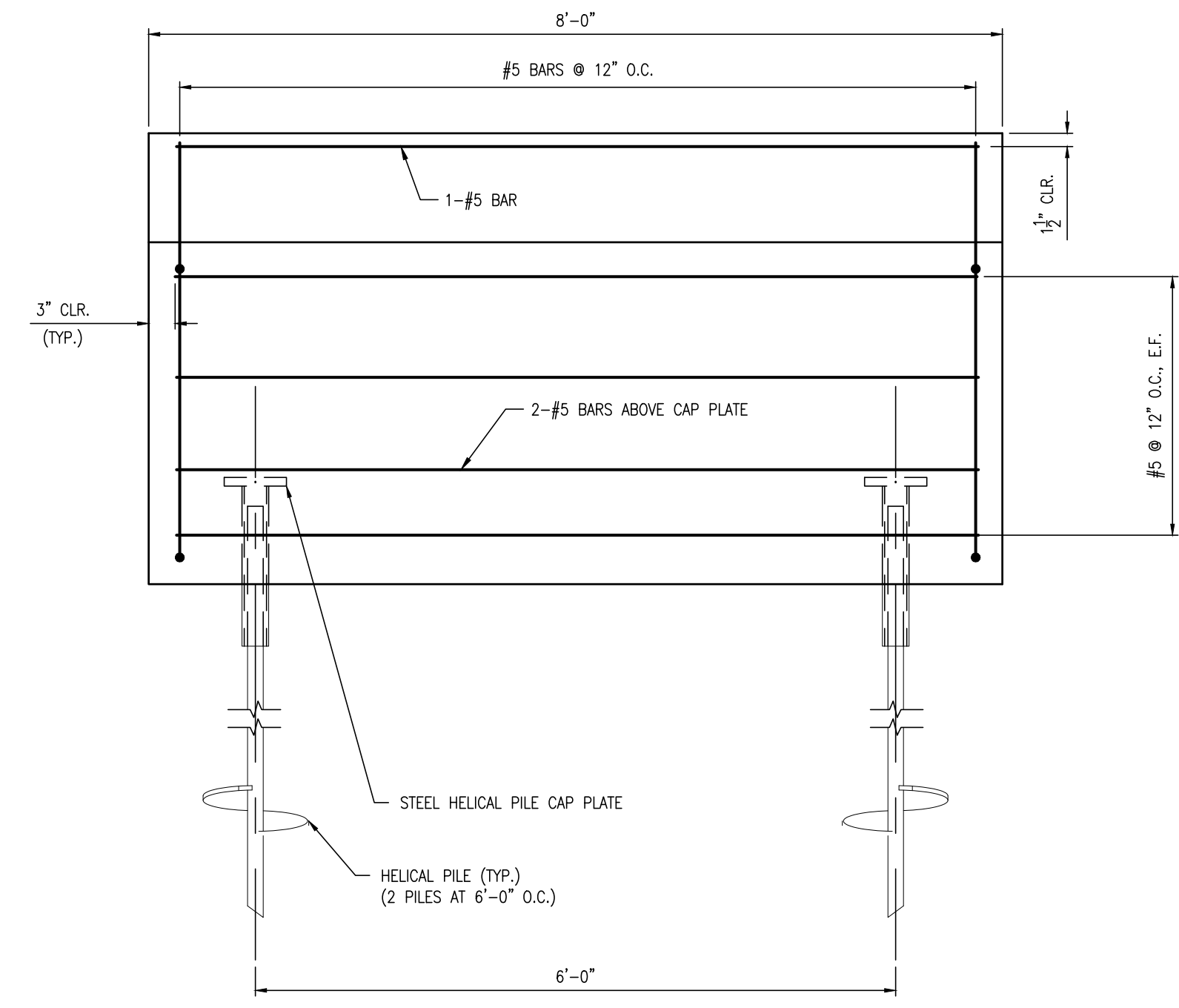
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SHEET NO.: S606

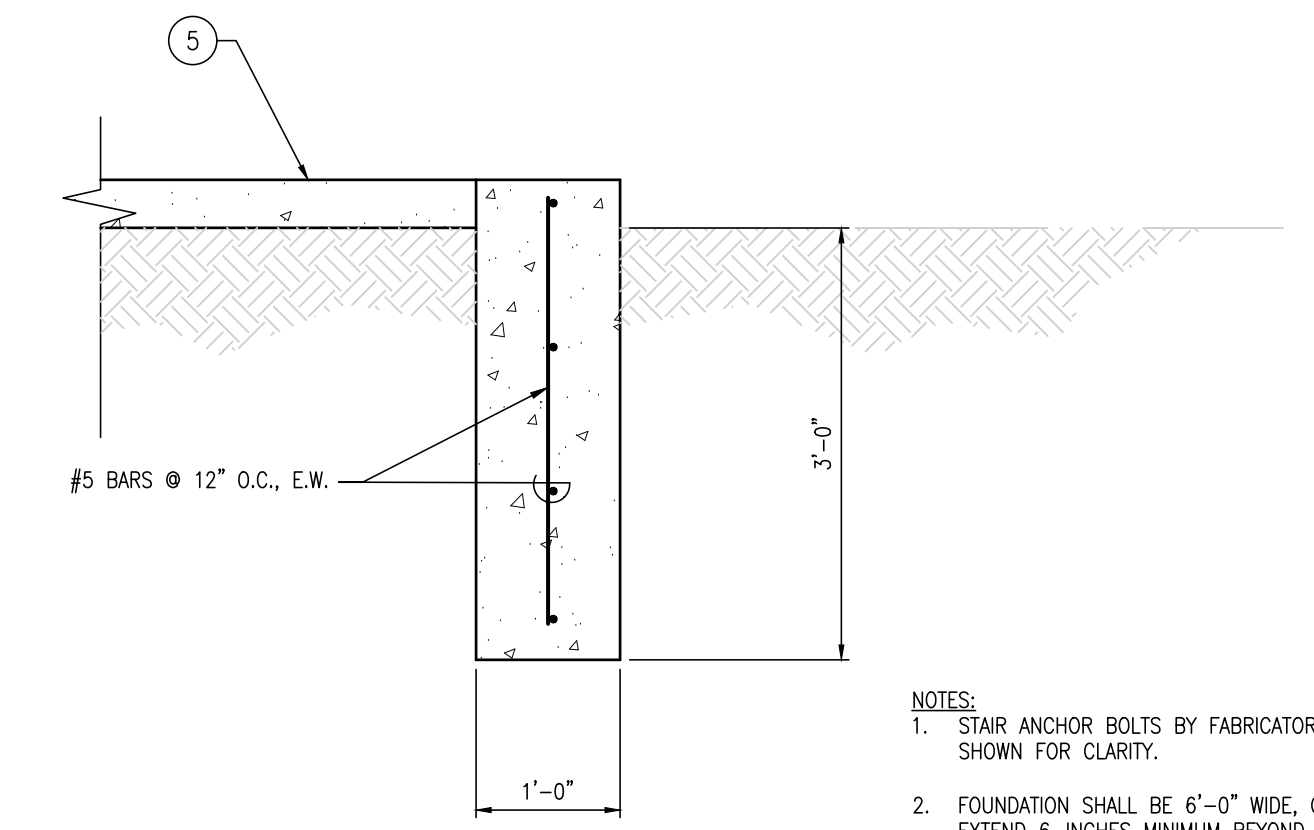
CONTRACT NO.: NAT25-001-ASSAWOMAN



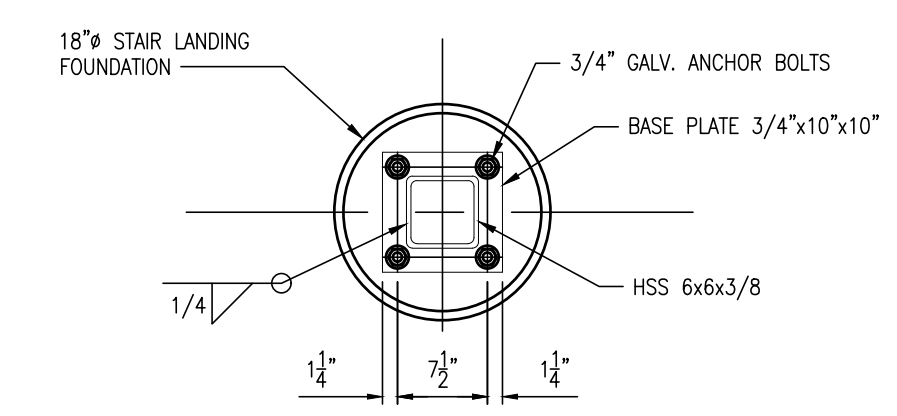
1 BOARDWALK RAMP ABUTMENT SECTION
SCALE: 3/4" = 1'-0"



2 BOARDWALK RAMP ABUTMENT ELEVATION
SCALE: 3/4" = 1'-0"

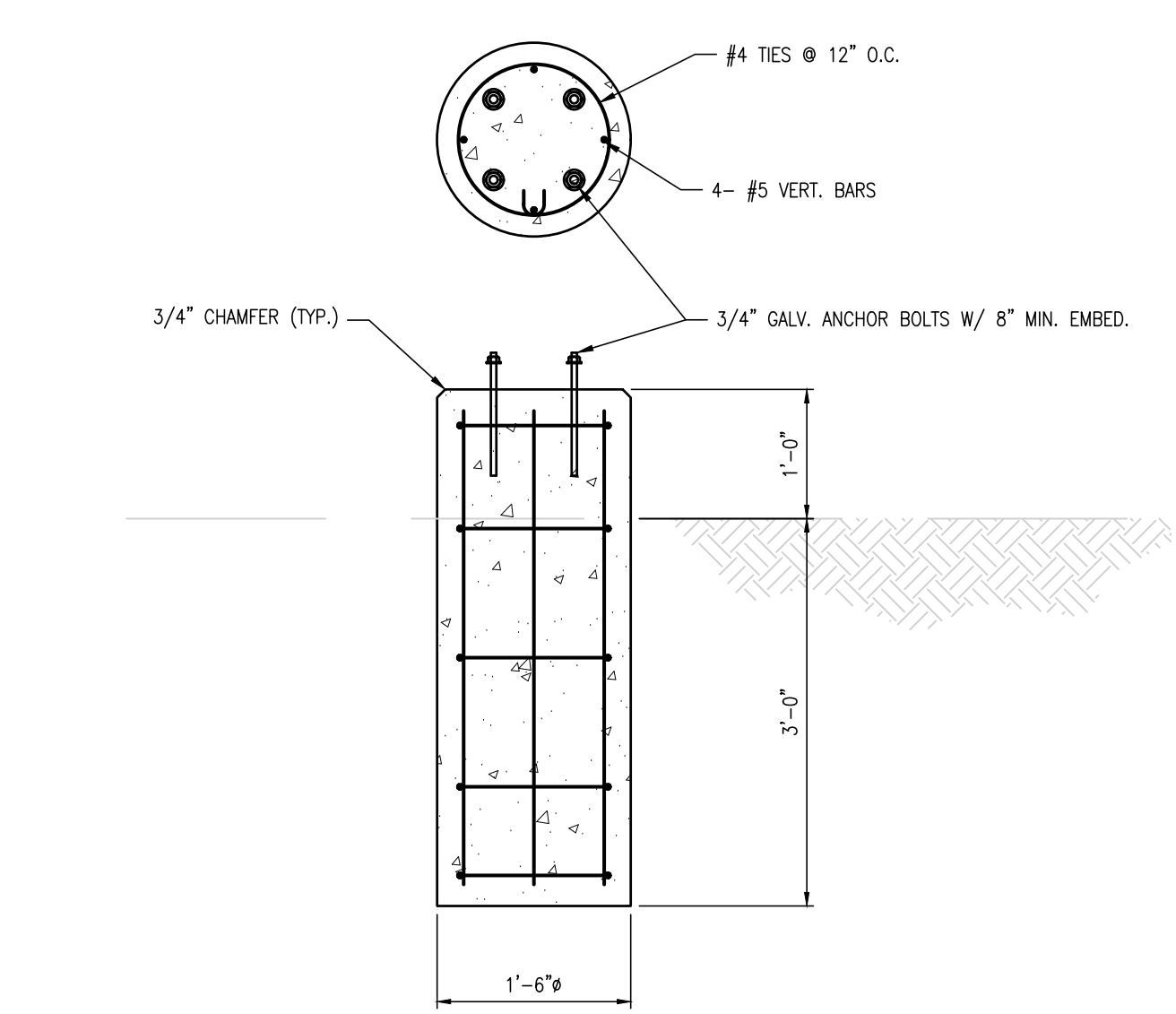


3 STAIR STRINGER FOUNDATION SECTION
SCALE: 3/4" = 1'-0"

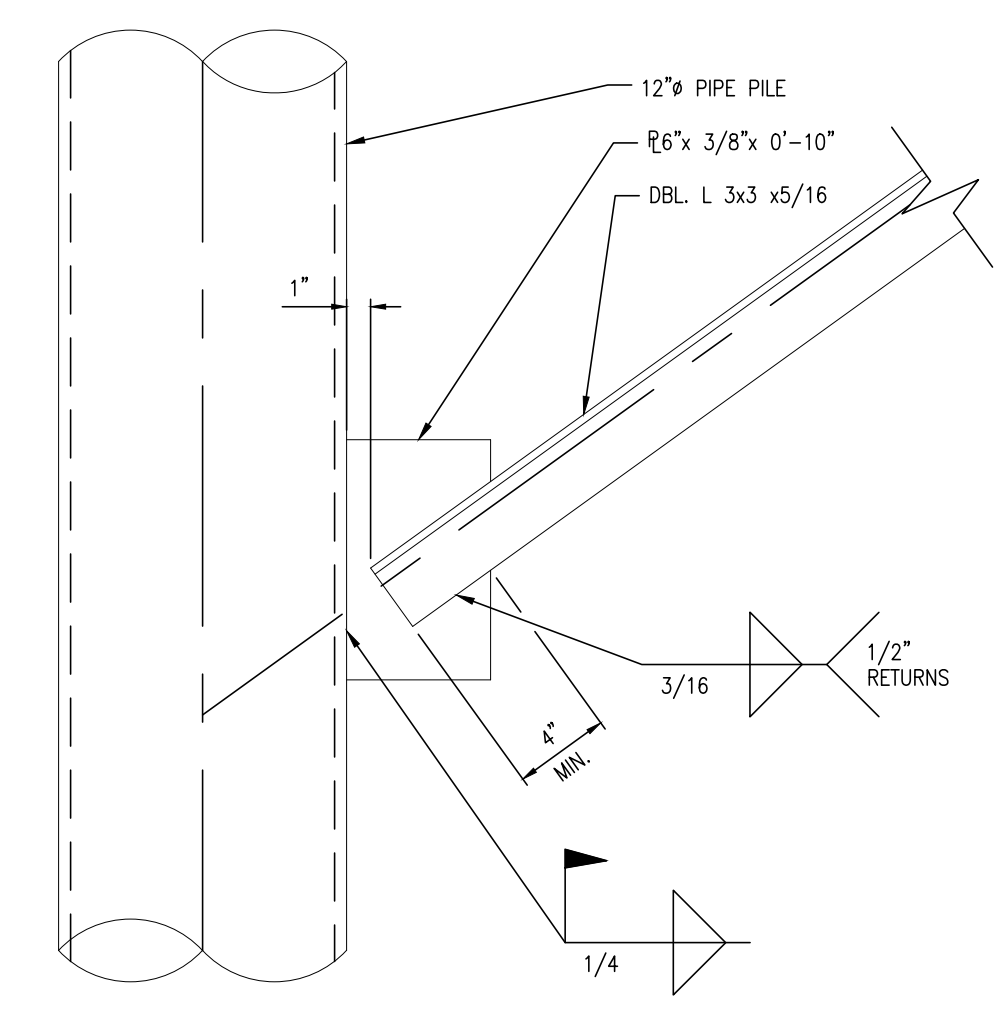


4 STAIR FOUNDATION BASE PLATE PLAN
SCALE: 3/4" = 1'-0"

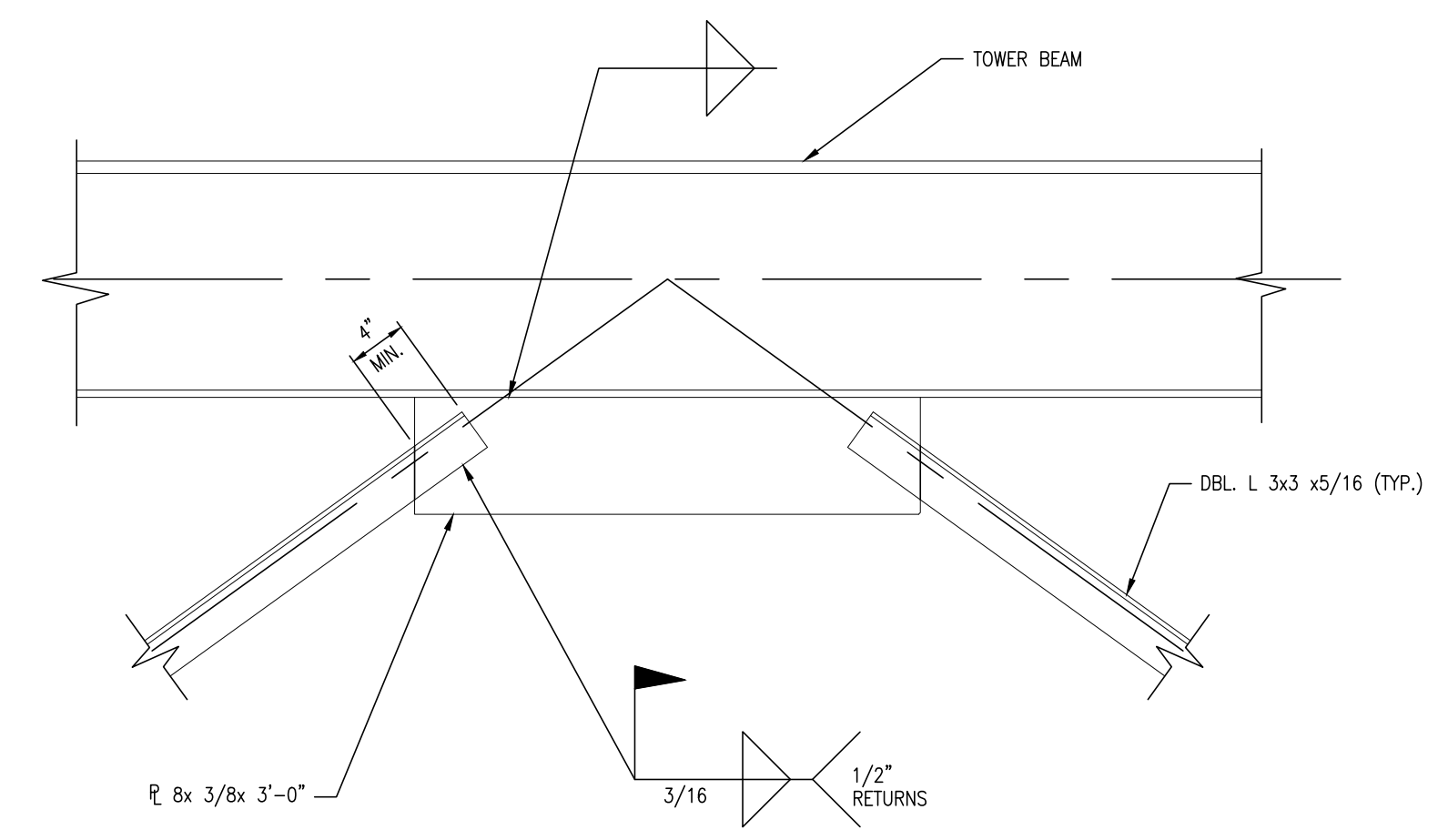
NOTES:
1. STAIR ANCHOR BOLTS BY FABRICATOR. NOT SHOWN FOR CLARITY.
2. FOUNDATION SHALL BE 6'-0" WIDE, OR EXTEND 6-INCHES MINIMUM BEYOND STAIR FRAMING, WHICHEVER IS GREATER.



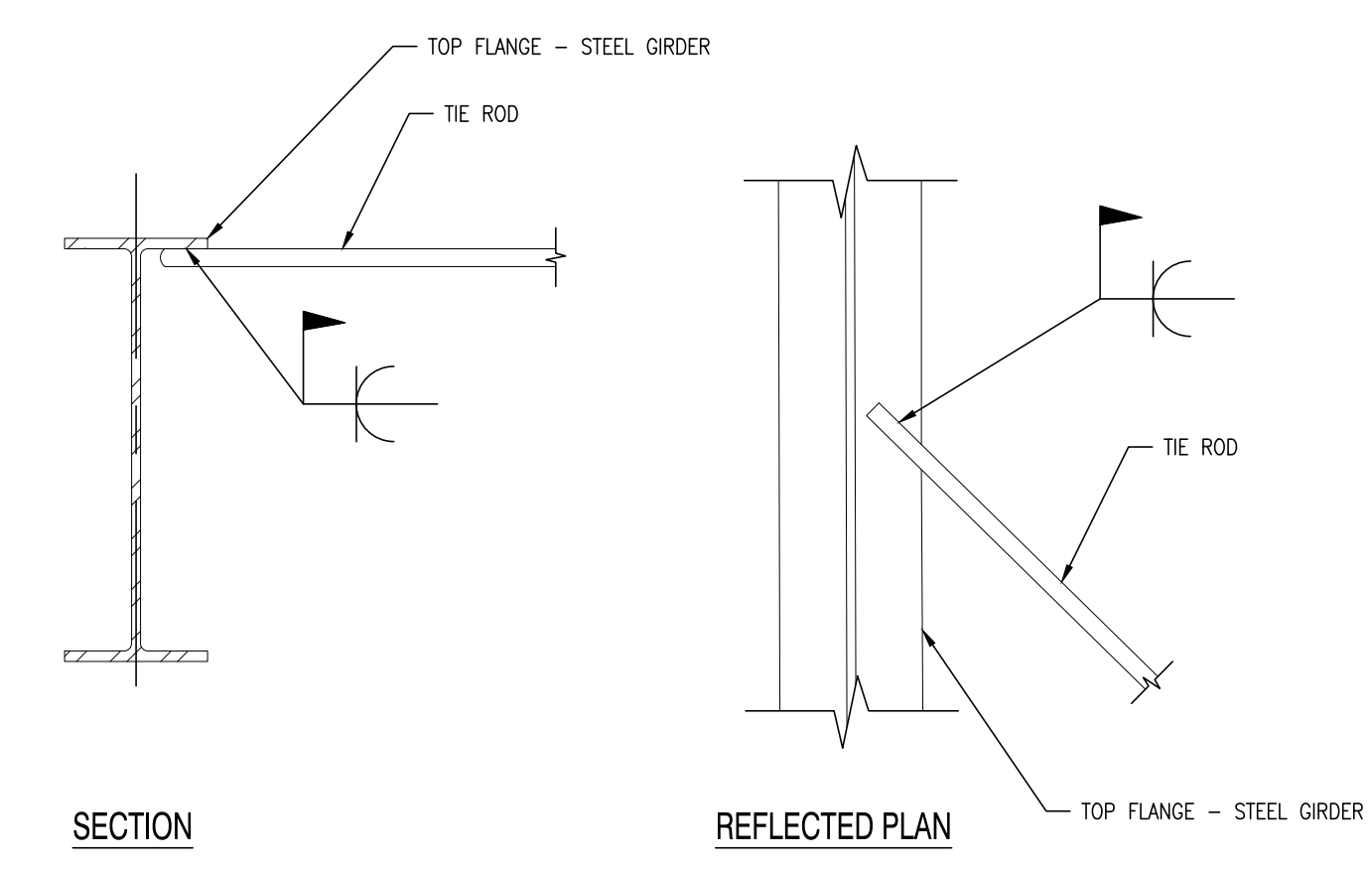
5 STAIR LANDING FOUNDATION SECTION
SCALE: 3/4" = 1'-0"



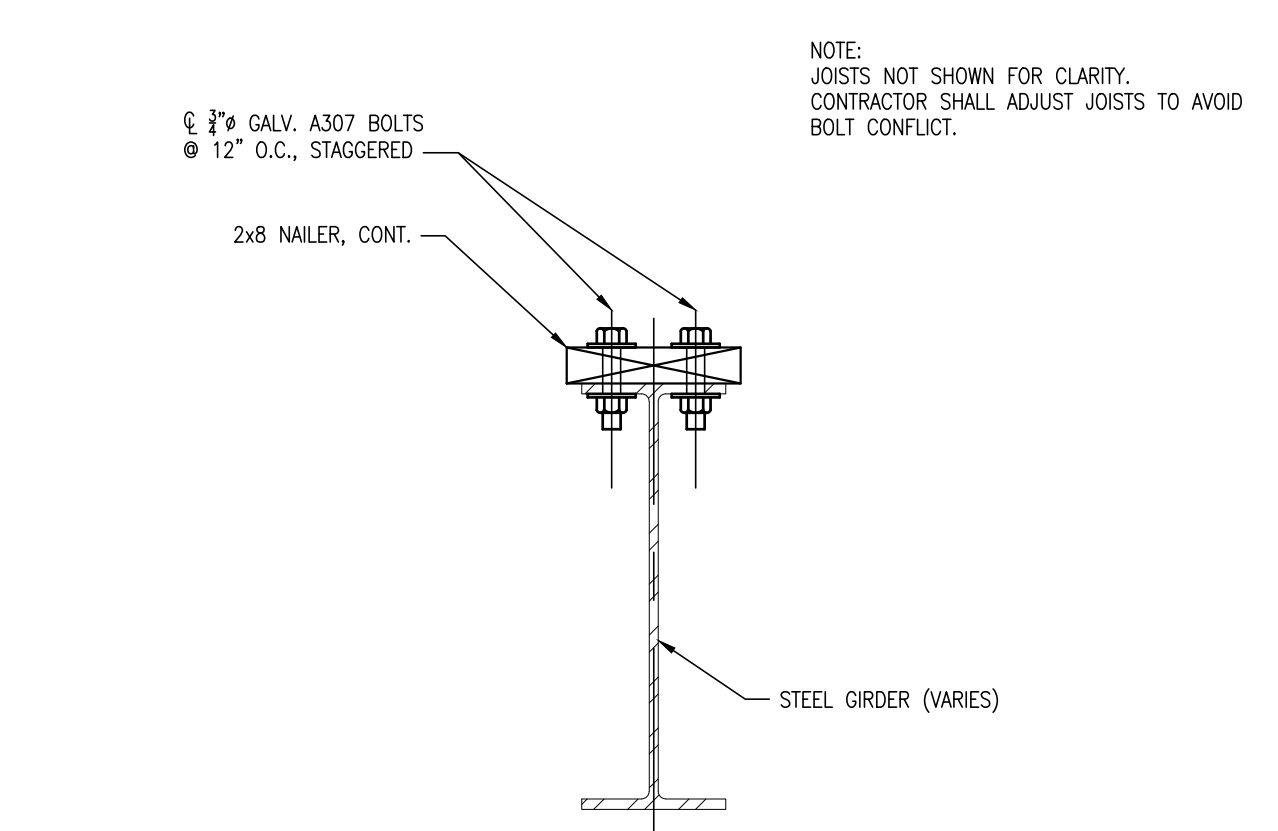
6 TOWER LEG STRUT CONNECTION
SCALE: 1 1/2" = 1'-0"



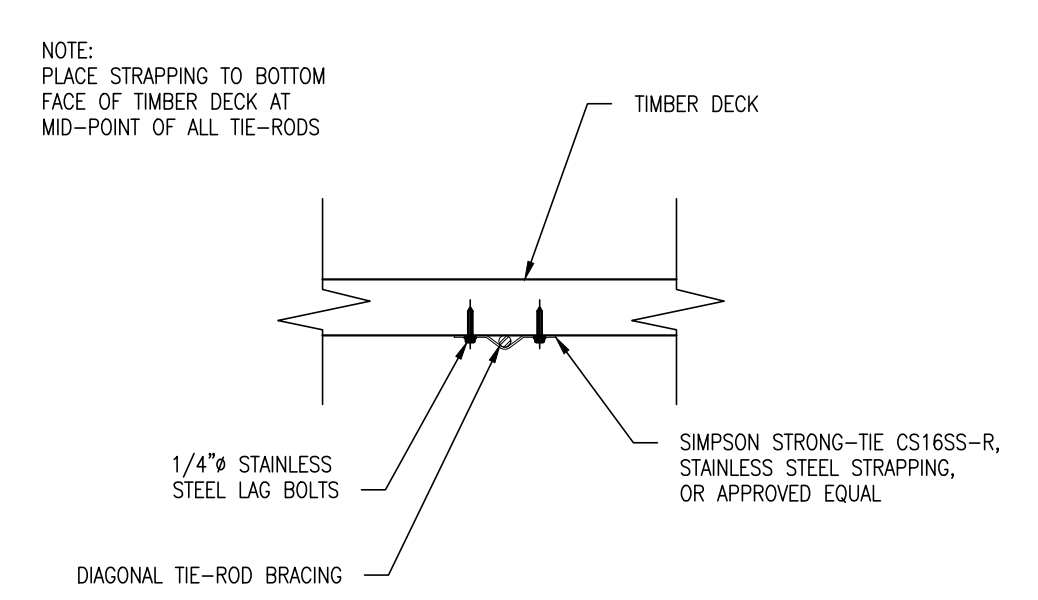
7 PLATFORM BEAM STRUT CONNECTION
SCALE: 1" = 1'-0"



8 TIE-ROD CONNECTION DETAIL
SCALE: 1" = 1'-0"



9 NAILER TO GIRDER CONNECTION DETAIL
SCALE: 1-1/2" = 1'-0"



10 SECTION - DIAGONAL BRACING ATTACHMENT BELOW DECK
SCALE: 1" = 1'-0"

TYPICAL SECTION LEGEND	
1	GRADED AGGREGATE BASE COURSE, TYPE B (DELDOT ITEM NO. 301001). CONTRACTOR MAY UTILIZE MILLINGS IN PLACE OF GABC WITH APPROVAL OF THE ENGINEER. GABC AND MILLINGS SHALL NOT BE INTERMINGLED.
2	SEPARATION GEOTEXTILE (DELDOT ITEM NO. 708002)
3	NATIVE SAND/SOIL FILL
4	PORTLAND CEMENT CONCRETE SIDEWALK 6" (DELDOT ITEM NO. 705002)
5	PORTLAND CEMENT CONCRETE SIDEWALK 4" (DELDOT ITEM NO. 705001)

REVISIONS:	BY:
DATE:	DESCRIPTION:

ASSAWOMAN WILDLIFE AREA
VIEWING TOWER
STRUCTURAL DETAILS

SEAL:
WALTER J. HOEY, III
REGISTERED
NO. 11204
DELAWARE
PROFESSIONAL ENGINEER
August 30, 2024
CIVIL ENGINEER

CENTURY
ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 175013.97



DESIGNED BY:
WJH

DRAWN BY:
WJH

CHECKED BY:
JB

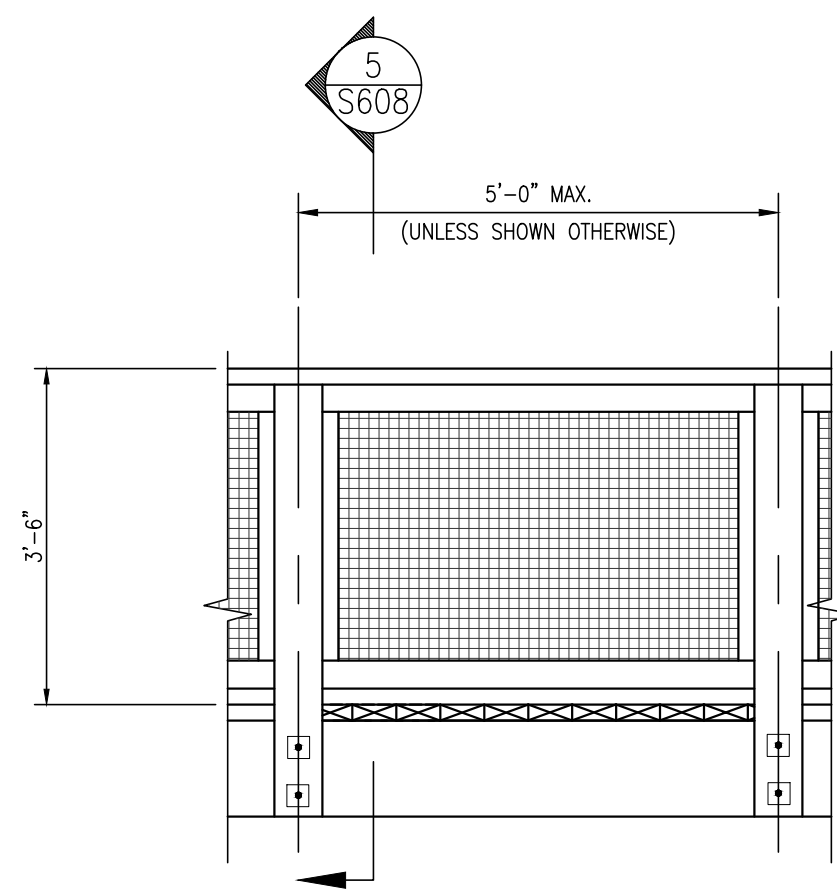
DATE:
JANUARY 2025

SCALE:
AS SHOWN

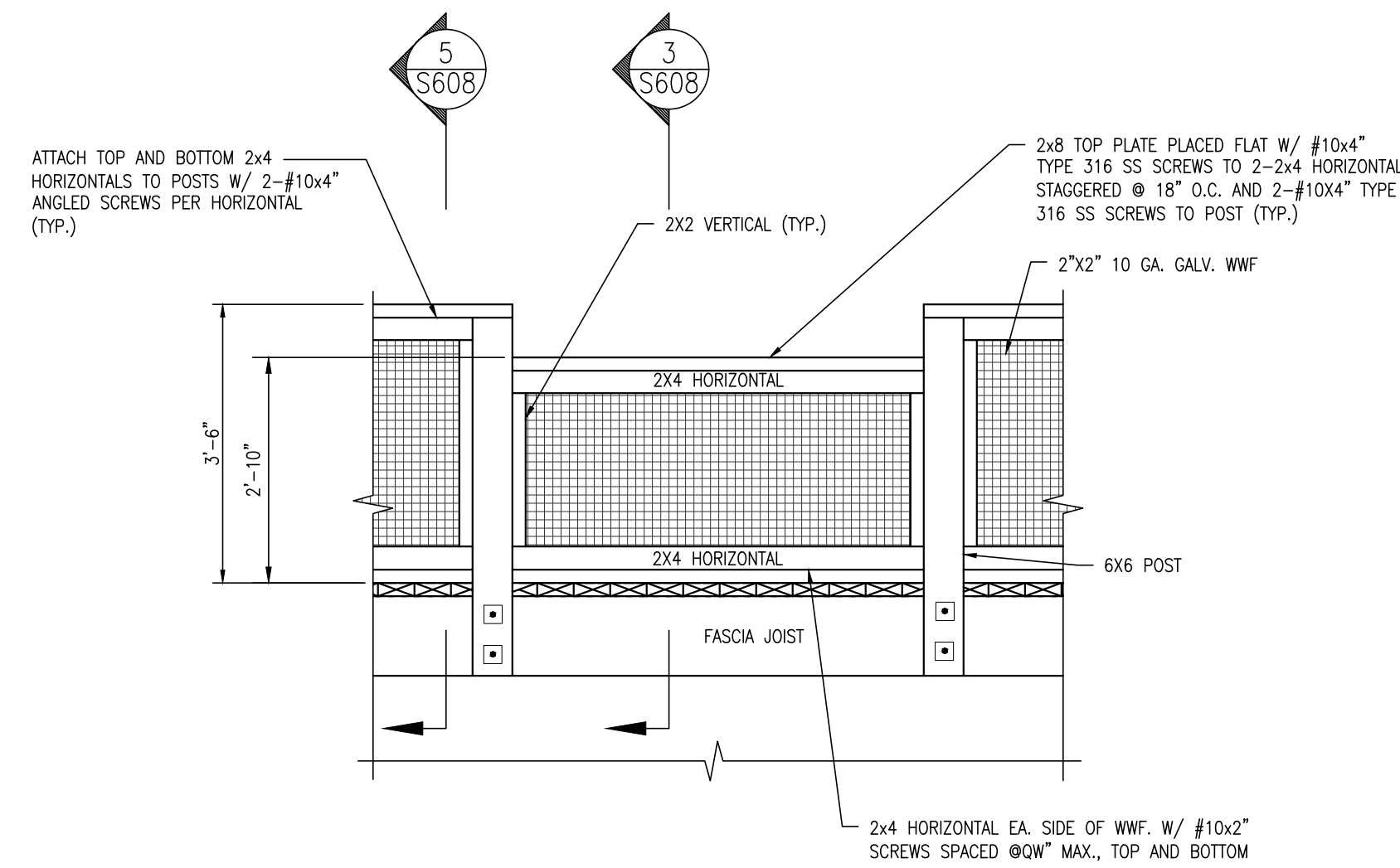
SHEET NO.:
S607

CONTRACT NO.:
NAT25-001-ASSAWOMAN

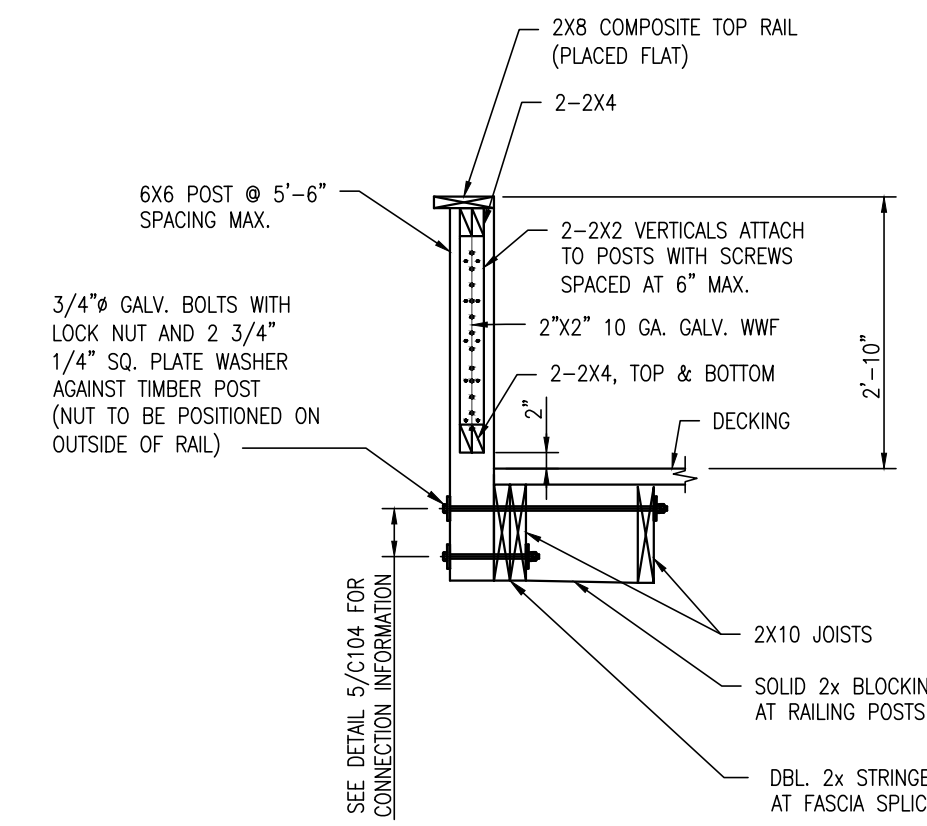
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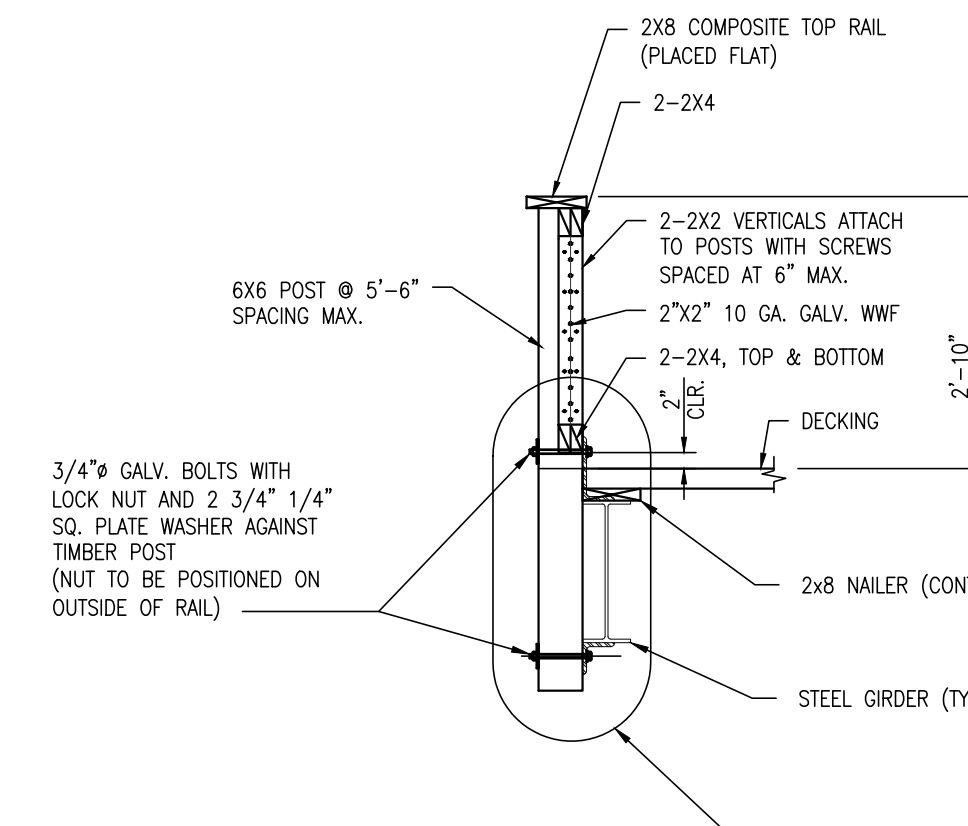
1 STANDARD RAILING SECTION
SCALE: 1/2" = 1'-0"



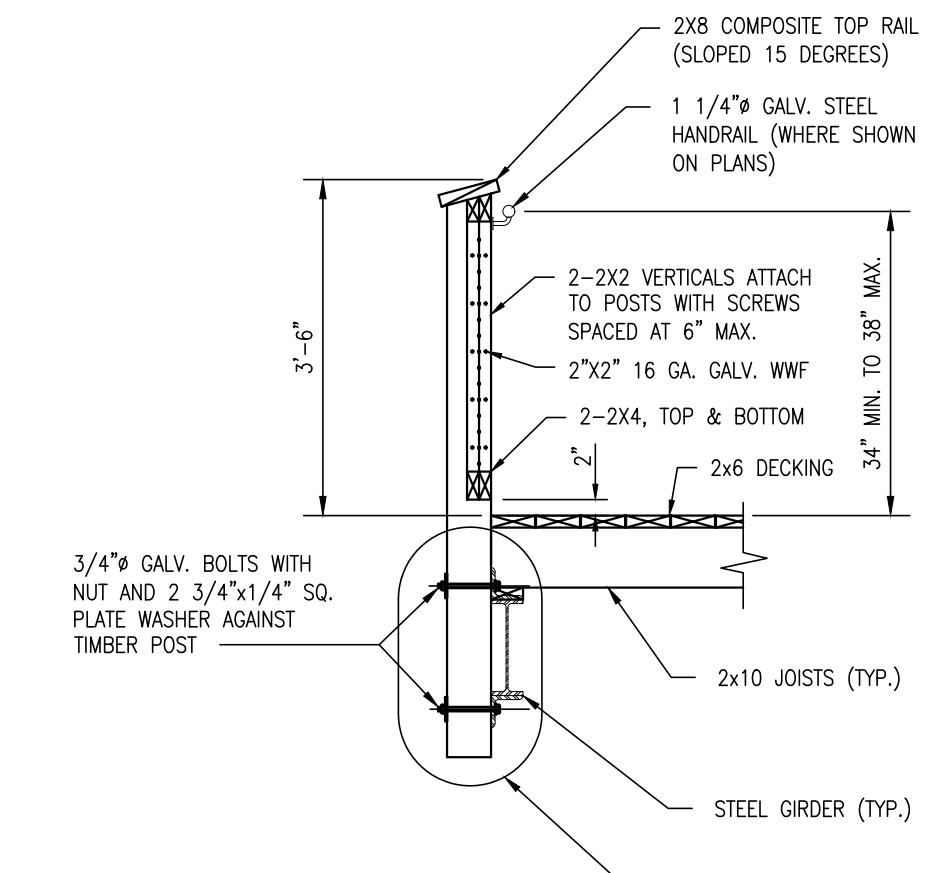
2 TYPICAL DEPRESSED RAILING ELEVATION AND SECTION
SCALE: 1/2" = 1'-0"



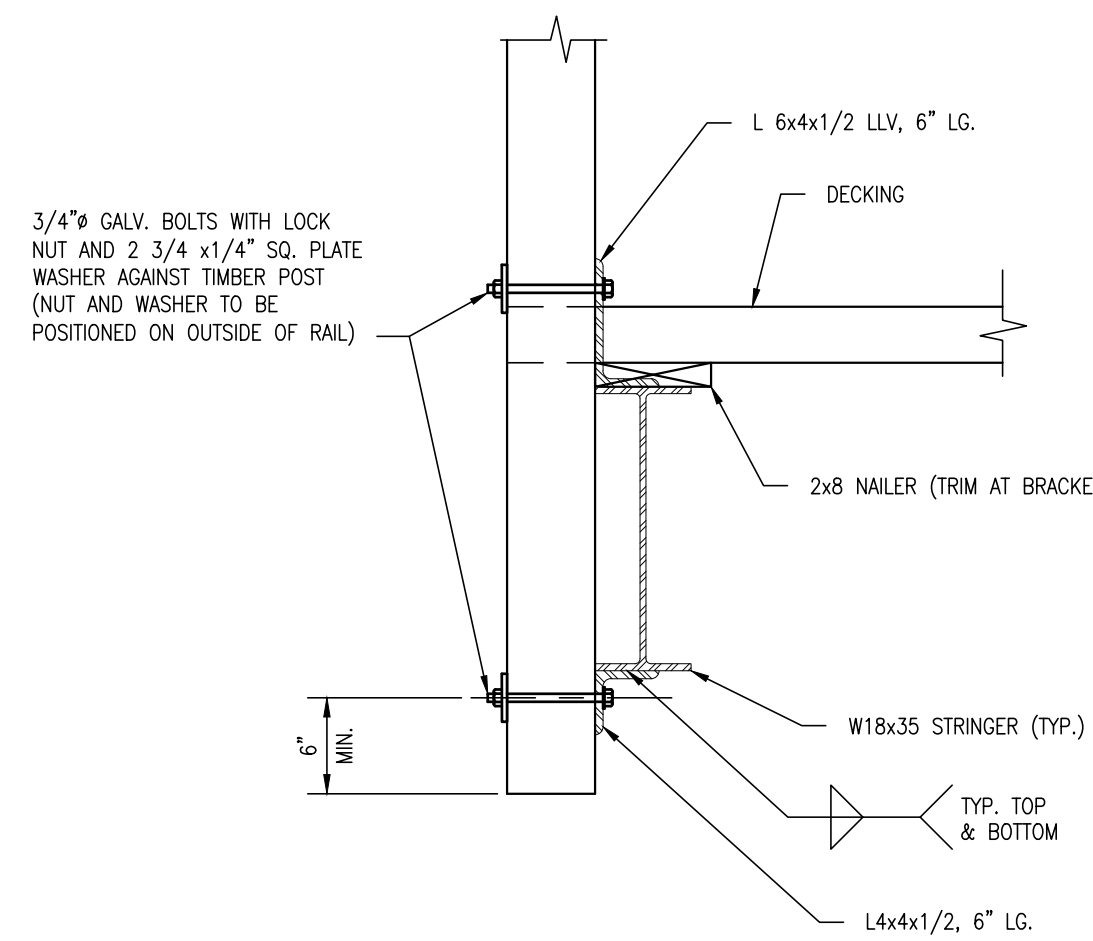
3 LOW RAILING SECTION AT VIEWING PLATFORMS
SCALE: 1/2" = 1'-0"



4 TOWER RAILING CONNECTION SECTION
SCALE: 1/2" = 1'-0"

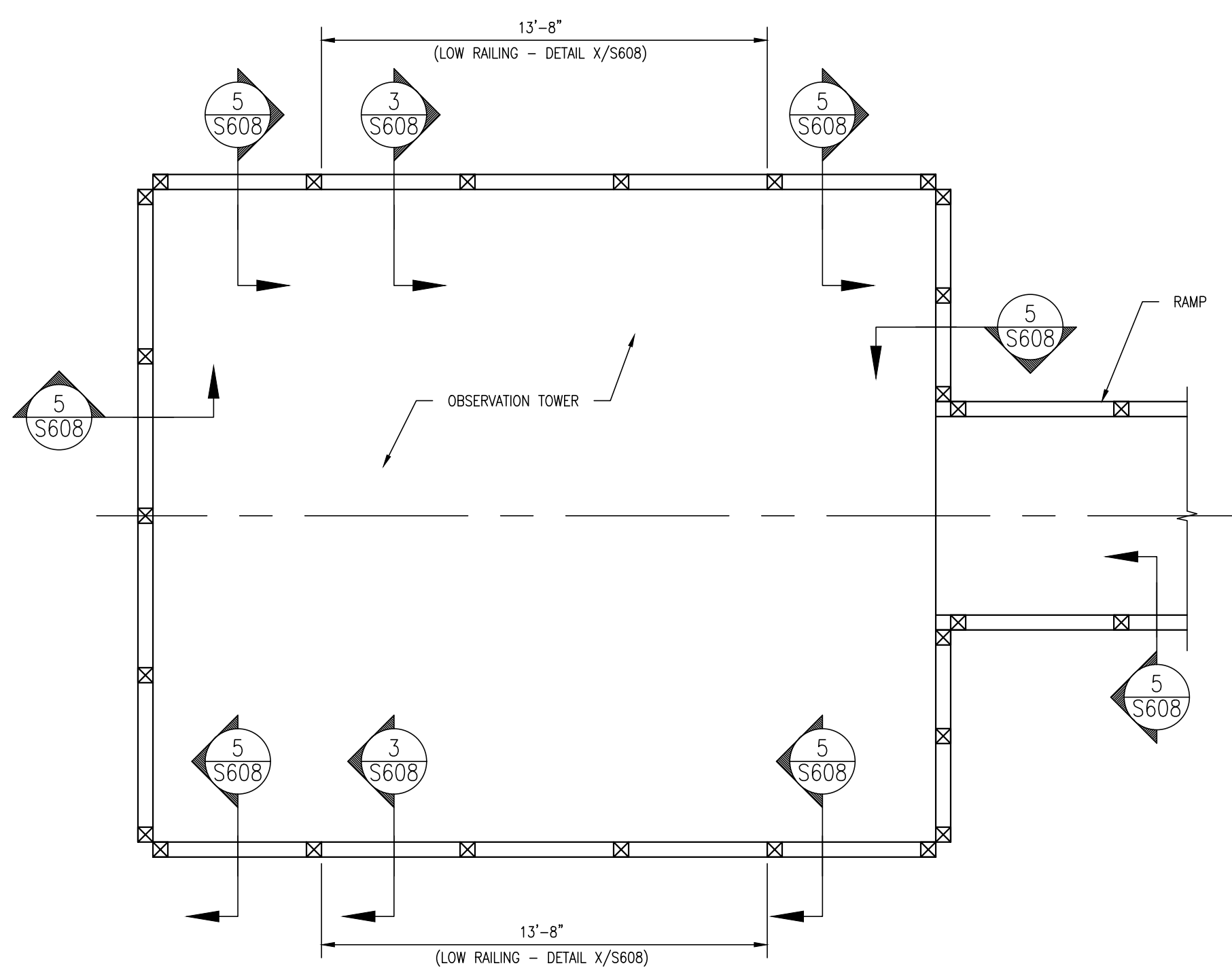


5 TOWER RAILING CONNECTION SECTION
SCALE: 1/2" = 1'-0"

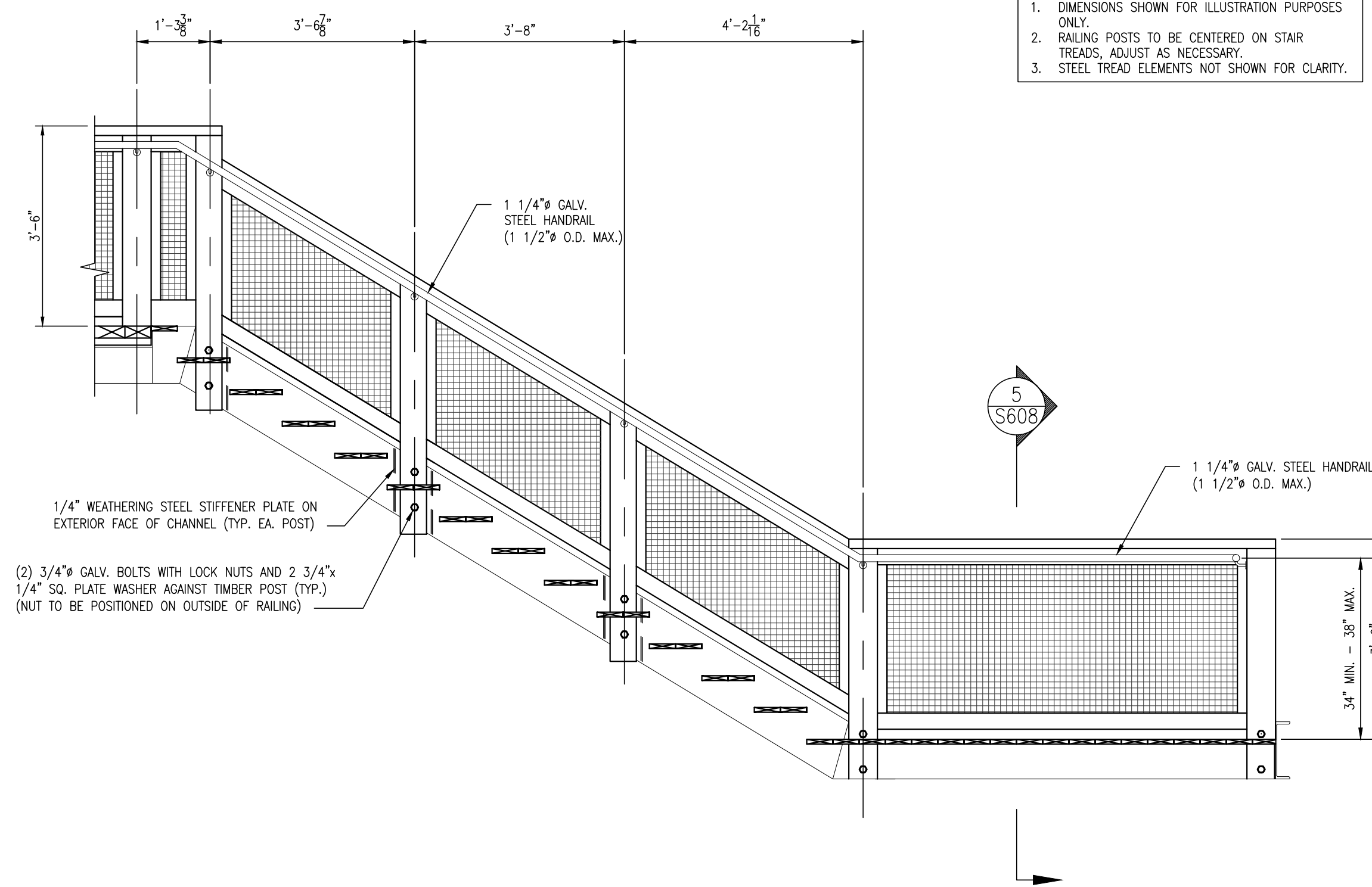


NOTE:
GALV. WWF INFIL NOT SHOWN FOR CLARITY. SEE 3/S608

6 RAMP RAILING CONNECTION TO GIRDER SECTION
SCALE: 1" = 1'-0"



7 TOWER RAILING PLAN
SCALE: 1/4" = 1'-0"



8 STAIR RAILING SECTION
SCALE: 1/2" = 1'-0"

NOTES:
1. DIMENSIONS SHOWN FOR ILLUSTRATION PURPOSES ONLY.
2. RAILING POSTS TO BE CENTERED ON STAIR TREADS, ADJUST AS NECESSARY.
3. STEEL TREAD ELEMENTS NOT SHOWN FOR CLARITY.

REVISIONS:

DATE:	DESCRIPTION:

BY: _____

ASSAWOMAN WILDLIFE AREA
VIEWING TOWER

RAILING & MISCELLANEOUS DETAILS

SEAL:
WALTER J. HOEY, III
REGISTERED PROFESSIONAL ENGINEER
NO. 11204
STATE OF DELAWARE
August 30, 2024
CIVIL ENGINEER

CENTURY ENGINEERING
A Kleinfelder Company

CEI CONTRACT NO.: 175013.97



DESIGNED BY: WJH

DRAWN BY: WJH

CHECKED BY: JB

DATE: JANUARY 2025

SCALE: AS SHOWN

SHEET NO.: S608

CONTRACT NO.: NAT25-001-ASSAWOMAN