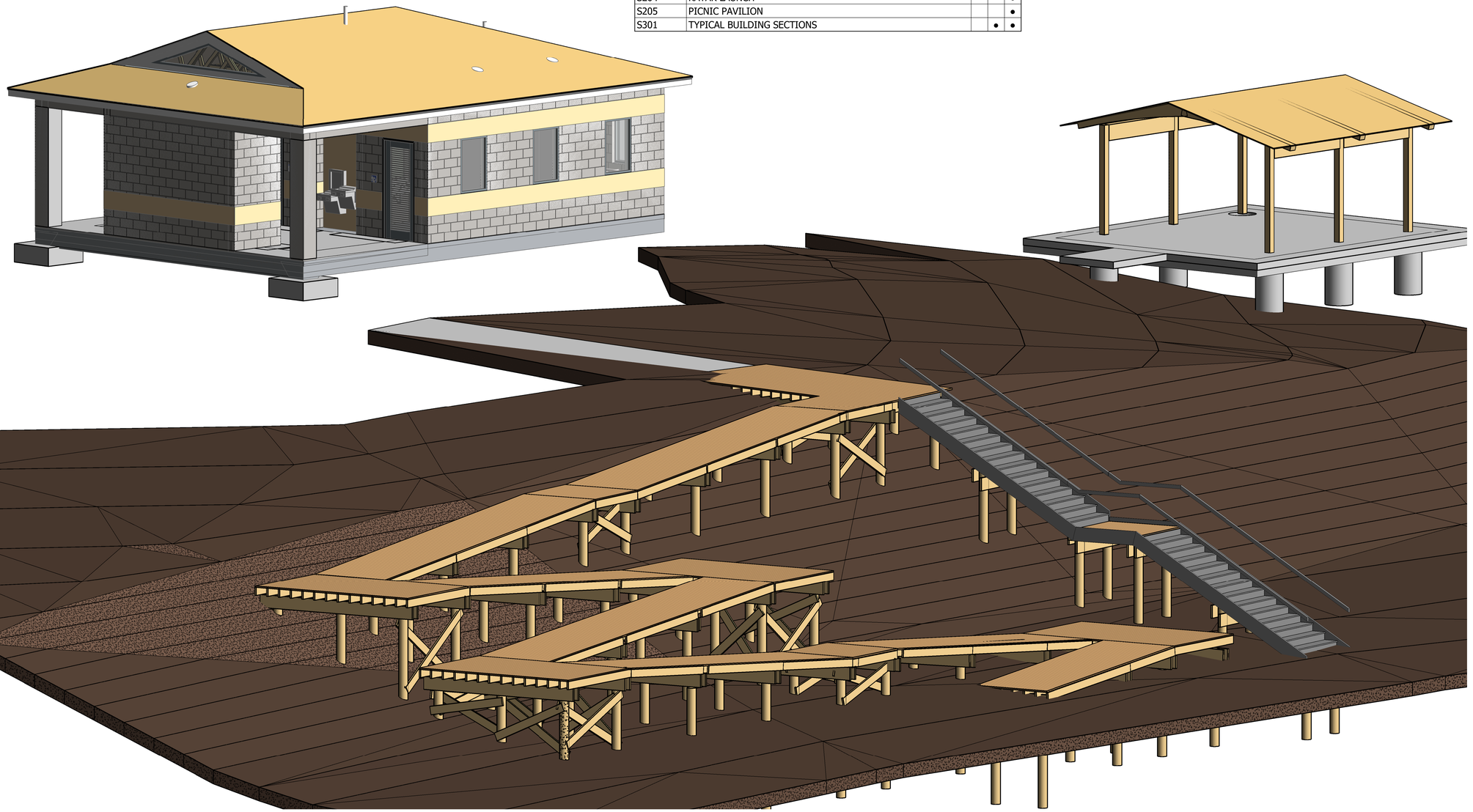
SHEET LIST				
SHEET NUMBER	SHEET NAME	60% CD 12/1/23	90% CD 2/19/24	100% CD 2/24/25
S000	COVER SHEET	●	●	●
S100	ABBREVIATIONS & SYMBOLS	●	●	●
S101	STRUCTURAL NOTES	●	●	●
S102	STRUCTURAL NOTES	●	●	●
S103	STRUCTURAL PLAN SPECIFICATIONS	●	●	●
S111	WIND DIAGRAMS	●	●	●
S201	RESTROOM GROUND & ROOF FRAMING PLANS AT PICNIC AREA	●	●	●
S202	SITE RAMPS & STAIRS AT PICNIC AREA			●
S203	RAMP PILE LAYOUT AT PICNIC AREA			●
S204	KAYAK LAUNCH			●
S205	PICNIC PAVILION			●
S301	TYPICAL BUILDING SECTIONS		●	●

SHEET LIST				
SHEET NUMBER	SHEET NAME	60% CD 12/1/23	90% CD 2/19/24	100% CD 2/24/25
S302	RAMP SECTIONS			●
S303	RAMP SECTIONS			●
S401	TYPICAL SCHEDULE	●	●	●
S402	TYPICAL SCHEDULE	●	●	●
S511	TYPICAL FOUNDATION & SLAB ON GRADE DETAILS	●	●	●
S521	TYPICAL MASONRY DETAILS	●	●	●
S701	TYPICAL WOOD DETAILS	●	●	●
S702	TYPICAL WOOD DETAILS	●	●	●
S907	WOOD DOCK & DECK DETAILS			●



CAMP HELEN STATE PARK
PARK IMPROVEMENTS

REVISION	DATE	SYMBOL
		A
		B
		C
		D

Department of Environmental Protection
Division of Recreation and Parks
Bureau of Design and Construction
3800 Commonwealth Blvd., Tallahassee, FL 32399 (850) 245-2300

ISSUE DATE: 2/24/2025
COMP. FILE No.:
STATE PROJECT No.: CN539

DESIGNER: CSC
DRAWN BY: TLC
REVIEWED BY: CSC
Consultant:

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BNI Project No. 23126

PROFESSIONAL REGISTRATION

CHRISTOPHER S. CHILDERS LICENSE NO. 50812 STATE OF FLORIDA PROFESSIONAL ENGINEER

Christopher S. Childers, P.E.
Fla. Reg. No. 50812
Digitally signed by Christopher S Childers
Date: 2025.02.21 16:18:49-05'00'

CAMP HELEN STATE PARK

SHEET TITLE: COVER SHEET

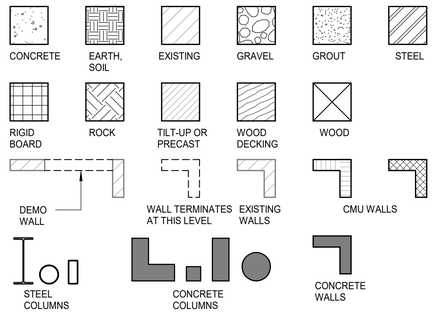
PROJECT TITLE: PARK IMPROVEMENTS

SHEET NO.
S000

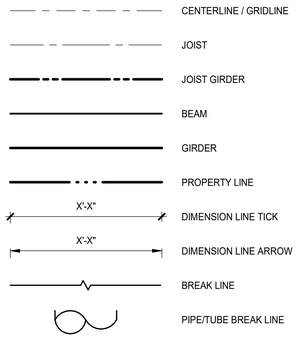
CONSTRUCTION DOCUMENTS

STRUCTURAL LEGEND AND ABBREVIATIONS

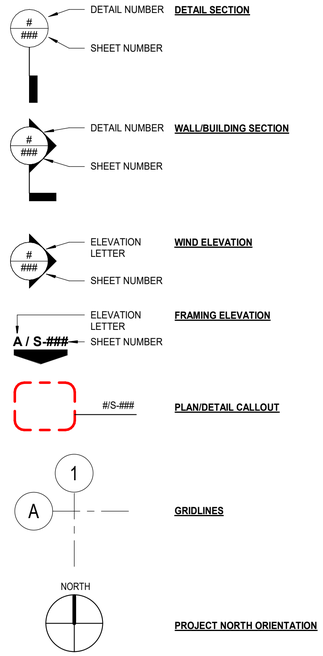
MATERIAL LEGEND



LINE SYMBOLS



SECTION SYMBOLS



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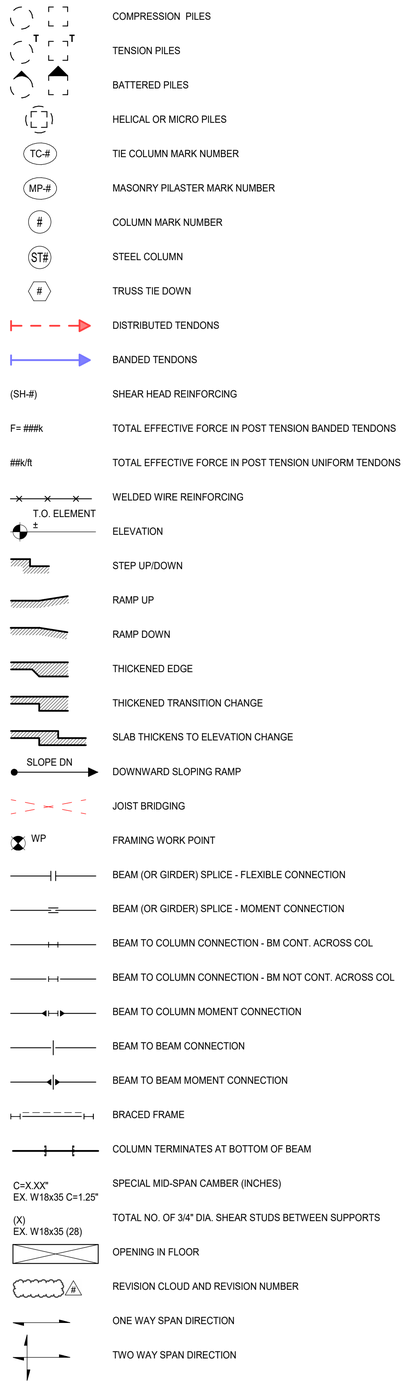
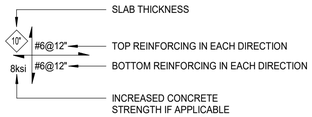


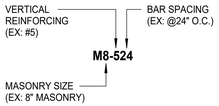
SLAB REINFORCING LEGEND:

ONE WAY SLAB EXAMPLE

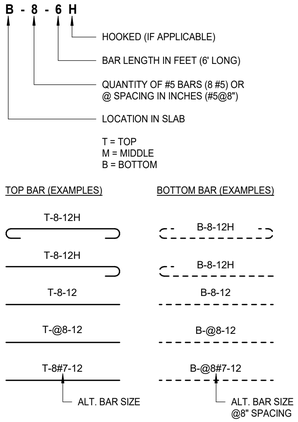
TWO WAY SLAB EXAMPLE



MASONRY REINFORCING LEGEND



SLAB BAR DESIGNATION LEGEND



TEXT SYMBOLS

@	AT (for spacing call-outs only)
℄	CENTERLINE
∅	DIAMETER
#	NUMBER, POUNDS (lbs)
d	NAIL (PENNY WEIGHT)
>	GREATER THAN
<	LESS THAN

STRUCTURAL CODE STANDARDS

ACI	American Concrete Institute
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
ANSI	American National Standards Institute
ASCE	American Society of Civil Engineers
ASTM	American Society of Testing & Materials
AWS	American Welding Society
CRSI	Concrete Reinforcing Steel Institute
FBC	Florida Building Code
FEMA	Federal Emergency Management Agency
IBC	International Building Code
ICC-ES	Internation Code Council-Evaluation Service
NDS	National Design Specification for Wood Construction
NFPA	National Forest Products Association
OSHA	Occupational Safety and Health Administration
PCI	Precast/Prestressed Concrete Institute
PTI	Post Tensioning Institute
SJI	Steel Joist Institute
TAS	Testing Application Standard
TMS	The Masonry Society
UL	Underwriter's Laboratory

STRUCTURAL ABBREVIATIONS

ACT	Actual				
ADDL	Additional	HC	Hollow core	PSF	Pounds per square foot
ADH	Adhesive	HDG	Hot dipped galvanized	PSI	Pounds per square inch
ADJ	Adjacent	HJR	Horizontal joint reinf	PT	Post tensioned/pressure treated
AFF	Above finished floor	HK	Hook	PVC	Polyvinyl chloride
AHJ	Authority Having Jurisdiction	HORIZ	Horizontal		
AHU	Air handling unit	HP	High point	R	Remainder
ALT	Alternate	HSA	Headed stud anchor	R#'-#"	Radial dimension
ALUM	Aluminum	HSS	Hollow structural section	RAD	Radius
APPROX	Approximate (ly)	HT	Height	RD	Round, roof drain
ARCH	Architect (ural)			REF	Refer, reference
ASD	Allowable Stress Design	ID	Inside diameter	REG	Regular
		IF	Inside face	REINF	Reinforce(d)(ment)(ing)
B, BOT	Bottom	IJ	Isolation joint	REQ	Require(d)(ment)
B-	Concrete beam mark	IN	Inch	RET	Return
B.O.	Bottom of	INCL	Include, included, including	REV	Revision
B/B	Back to back	INFO	Information	RM	Room
BLDG	Building	INSUL	Insulate, insulated, insulation	RO	Rough opening
BLK	Block (not concrete block)	INT	Interior	RP	Radius point
BM	Beam	INTERM	Intermediate	RT	Right
BP	Base plate	ITB	Inverted tee beam	RTU	Roof top unit
BRDG	Bridging			RW	Retaining wall
BRG	Bearing	JG	Joist girder	#SB-	Soffit beam mark, level specific
BSMT	Basement	JST	Joist	S	Stirrup, short
BTWN	Between	JT	Joint	SA	Sleeve anchor
				SB-	Soffit beam mark
C	Channel	k	KIP, Kilopound(s)	SC	Slip critical
C-	Column mark	K/FT	Kips per foot	SCHED	Schedule
C/C	Center to center	kg	Kilogram	SDL	Superimposed dead load
CANT	Cantilever	kN	Kilonewton	SECT	Section
CFS	Cold Formed Steel	KSF	Kips per square foot	SF	Square foot(feet), step footing
CG	Center of gravity	KSI	Kips per square inch	SHT	Sheet
CIP	Cast in place			SIM	Similar
CJ	Control joint	L	Length, long	SJ	Saw cut joint
CL	Center line, clear	LB	Link beam	SL	Slab, direction of floor or roof slope
CLR	Clear or clearance	lb	Pound	SL BRG	Slide bearing
CM	Construction manager	LG	Long	SLBB	Short leg back to back
CMU	Concrete masonry unit	LL	Live load	SLV	Short leg vertical
COL	Column	LLBB	Long leg back to back	SOG	Slab on grade
CONC	Concrete	LLH	Long leg horizontal	SP	Spacing(es)
CONN	Connection, connect	LLV	Long leg vertical	SPEC(S)	Specification(s)
CONST	Construction	LONG	Longitudinal	SQ	Square
CONST JT	Construction joint	LP	Low point	SS	Stainless steel
CONT	Continuous(ation)	LRFD	Load and resistance factor design	SSL	Short slotted holes
CONTR	Contractor	LSL	Long slotted holes	STD	Standard
COORD	Coordinate(tion)	LT WT	Lightweight	STIFF	Stiffeners
CTR ('D)	Center(ed)	LVL	Laminated veneer lumber	STL	Steel
		LW	Long way	STRUCT	Structural
D	Depth	LWC	Lightweight concrete	SW	Short way
DBA	Deformed bar anchor	LWIC	Lightweight insulating concrete	SW-#	Shear wall mark
DBL	Double			SYM	Symmetrical
DIA	Diameter	M	Mega 1000		
DIAG	Diagonal	m	Meter	T	Top, tie(s)
DIM	Dimension	MAS	Masonry	t	Thickness
DL	Dead load	MAX	Maximum	T&B	Top and bottom
DN	Down	MC	Miscellaneaous channel	T.O.	Top of
DS	Double stirrup	MC-	Masonry column mark	T.O.B	Top of beam
DT	Double ties	MECH	Mechanical	T.O.C	Top of concrete
DTL	Detail	MEP	Mechanical, Electrical, Plumbing	T.O.D	Top of deck
DWG (S)	Drawing(s)	MEZZ	Mezzanine	T.O.F	Top of footing
DWL	Dowel	MFR	Manufacturer(ed)	T.O.GB	Top of grade beam
		MID	Middle	T.O.PC	Top of pilecap, Top of precast
EA	Each	MIN	Minimum	T.O.SL	Top of slab
EB	Expansion bolt	MISC	Miscellaneous	T.O.SS	Top of structural steel
EE	Each end	MJ	Masonry joint	T.O.W	Top of wall
EF	Each face	mm	Millimeters	TB-	Tie beam mark
EJ	Expansion joint	MO	Masonry opening	TC-#	Tie Column Mark
EL	Elevation	MP-#	Masonry Pilaster	TEMP	Temporary, temperature
ELEV	Elevator	MPa	Megapascal	TERM	Terminate
EMBED	Embedment	MPH	Miles Per Hour	THK(N)	Thick, thicken(ed)
ENGR	Engineer	MTL	Metal	THRD	Threaded
EOR	Engineer of Record	Mu	Factored moment	TOL	Tolerance
EQ	Equal			TR	Tread
EQUIP	Equipment	N	Newton	TRAN	Transverse
ES	Each side	N/A	Not applicable	TT	Triple tie
EW	Each way	NA	Neutral axis	Tu	Factored torsion
EX	Example	NAVD	North American Vertical Datum	TW	Tunnel wall
EXIST	Existing	NGVD	National Geodetic Vertical Datum	TYP	Typical
EXP	Expansion	NIC	Not in contract		
EXT	Exterior	No.	Number	U BAR	U shape bar
		NOA	Notice of Acceptance	ULT	Ultimate
f'c	Compressive strength of concrete	NOM	Nominal	UNIF	Uniform
f'm	Compressive strength of masonry	NS	Near side	UON	Unless otherwise noted
F-	Footing mark	NTS	Not to scale	UPT	Upturned
FC	Filled cell			US	Underside
FD	Floor drain	O/O	Out to out		
FDN	Foundation	OC	On center	VERT	Vertical
FF	Finished floor	OD	Outside diameter	Vu	Factored shear
FLG	Flange	OF	Outside face		
FLR	Floor	OPNG	Opening	W	Width / Wide flange beam
FOC	Face of concrete	OPP	Opposite	w/	With
FRMG	Framing	OPP HD	Opposite hand	w/o	Without
FS	Far side	OVS	Oversize(d) holes	WA	Wedge anchor
FT	Foot, feet			WB	Wind brace
FTG	Footing	Pa	Pascal = N/Sq m	WD	Wood
FV	Field verify	PAF	Powder actuated fastener	WF-	Wall footing mark
fy	Yield strength of struct steel	PC	Precast	WL	Wind load
		PC-	Pile cap mark	WP	Work point, waterproofing
GA	Gauge	PCJ	Precast concrete joist	WS	Waterstop
GALV	Galvanized	PDT	Precast double tee	WT	Weight
GB-	Grade beam mark	PL	Plate	WWR	Welded wire reinforcing
GC	General contractor	PLF	Pounds per linear foot		
GL	Glu lam	PREFAB	Prefabricate(d)	XS	Extra Strong
GND	Ground	PROJ	Projection	XXS	Double Extra Strong
GR	Grade	PS	Prestressed		

	DATE	REVISION	SYMBOL	DATE	REVISION	SYMBOL
			C			A
			D			B

Department of Environmental Protection
Division of Recreation and Parks
Bureau of Design and Construction
3800 Commonwealth Blvd., Tallahassee, FL 32399 (850) 245-2300

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BNI Project No. 23126

DESIGNER: CSC
DRAWN BY: TLC
REVIEWED BY: CSC
Consultant:

PROFESSIONAL REGISTRATION

CHRISTOPHER S. CHILDERS — LICENSE — NO. 50812 — STATE OF FLORIDA — PROFESSIONAL ENGINEER

Christopher S. Childers, P.E.
Fla. Reg. No. 50812
Digitally signed by Christopher S Childers
Date: 2025.02.21 16:18:50-05'00'

ISSUE DATE: 2/24/2025
COMP. FILE No.:
STATE PROJECT No.: CN539

CAMP HELEN STATE PARK
SHEET TITLE: ABBREVIATIONS & SYMBOLS
PROJECT TITLE: PARK IMPROVEMENTS

SHEET NO.
S100

STRUCTURAL NOTES

GENERAL NOTES

GN-1 The governing Code for this Project is the Florida Building Code, 8th Edition (2023). This Code prescribes which edition of each referenced standard applies to this Project.

GN-2 To the best of our knowledge, the Structural Drawings and Specifications comply with the applicable requirements of the governing Building Code.

GN-3 Construction is to comply with the requirements of the governing Building Code and all other applicable Federal, State, and Local Codes, Standards, Regulations and Laws.

GN-4 Use these Notes in conjunction with the Plan Specifications or Project Specifications. If a conflict exists, the more stringent governs.

GN-5 See Plan Specifications or Project Specifications for testing.

GENERAL NOTES - CONTRACTOR REQUIREMENTS

GN-6 Contractor refers to the General Contractor, Construction Manager, or the organization that is assigned to have overall responsibility and supervision of the Project.

GN-7 The Contractor shall be solely responsible for, and have control over, the means, methods, supervision, techniques, sequences, procedures of construction, quality, and correctness of the work. The Contractor is solely responsible for jobsite safety including all OSHA requirements.

GN-8 The Contractor shall coordinate all Contract Documents with field conditions and dimensions and Project Shop Drawings prior to construction. Do not scale drawings; use only printed dimensions. Report any discrepancies in writing to the Architect prior to proceeding with work. Do not change size or location of structural members without written instructions from the Structural Engineer of Record.

GN-9 Contractors who discover discrepancies, omissions or variations in the Contract Documents during bidding shall immediately notify the Architect. The Architect will resolve the condition and issue a written clarification.

GN-10 The Contractor shall protect adjacent property, his own work and the public from harm. The Contractor is advised to document the condition of adjacent property with a photographic survey and other documentation, including crack monitoring, prior to and during construction.

GN-11 The Structure is designed to be structurally sound when completed. The Contractor shall not overload the structure during construction. Prior to completion, the Contractor is responsible for stability and temporary bracing, including, but not limited to, masonry walls. Wherever the Contractor is unsure of these requirements, the Contractor shall retain a Florida Licensed Engineer to design and inspect the temporary bracing and stability of the structure.

GENERAL NOTES - DRAWINGS

GN-12 The Structural drawings shall be used in conjunction with the architectural drawings and all other drawings and documents, including shop drawings prepared by equipment suppliers and delegated engineers.

GN-13 Openings shown on Structural Drawings are only pictorial. See the Architectural for complete information such as slab depressions, slopes, curbs, finishes, and opening locations in structural members as required by MEP systems and architectural elements.

GN-14 Details labeled "typical" apply to all situations that are the same or similar to those specifically referenced, whether or not they are keyed in at each location. Questions regard-ing the applicability of typical details shall be resolved by the Architect.

GN-15 When joists or beams are not specifically dimensioned, they are located equally between gridlines or equally between dimensioned members.

GN-16 See Architectural drawings for fireproofing and waterproofing details and requirements.

GENERAL NOTES - DESIGN LOADS

GN-17 Design Loads:

OCCUPANCY	LIVE LOAD	DEAD LOAD	CONCENTRATED LOAD
Roof Sloped	See Truss Notes		
Public Areas	100 psf	20 psf	
Storage	125 psf	10 psf	
Mechanical Room	150 psf	15 psf	
Electrical Room	150 psf	15 psf	
Planter Wet Soil Density	120 pcf		

Live Load reduction for beams, columns and foundations has been taken in accordance to the governing building code. Live Load reduction for slabs and joist is not permitted.

Design superimposed dead loads listed above do not include masonry walls or other concentrated loads. See architectural drawings for these loads. Concentrated live loads do not act concurrently with area live loads.

GN-18 Handrails and Guards:

Linear Loading	50 lbs/ft
Concentrated Loading	200 lbs/ft
Intermediate Rails	50 lbs
Applied Area	1 sf

Loads shall be applied to act in any direction at any point on the handrail or top rail to produce the maximum load effect. Linear and concentrated loading shall not be applied concurrently.
Glass in handrails and guards shall be designed with a safety factor of 4.

GN-19 Design Rain Loads:

Rain Load	20 psf
Rain Intensity	i = 4.5 in/hr
Static Head	ds = 1 in
Hydraulic Head	dh = 1 in

GN-20 Design Flood Loads:

Governing Code	FBC 8th Edition (2023) / ASCE 24-14
Flood Insurance Rate Map Page Number	12005C0163H panel 163H
Flood Zone	X (unshaded)
Flood Design Class	N/A
Base Flood Elevation	See Civil
Elevation of Lowest Horizontal Structure	21.00 feet
Dry Floodproof Elevation	See Civil

GN-21 Design Wind Loads:

Governing Code	FBC 8th Edition (2023) / ASCE 7-22
Building Risk Category	II
Ultimate Wind Speed	Vult = 143 mph
Allowable Stress Design Wind Speed	Vasd = 111 mph
Mean Roof Height	13 feet
Directionality Factor	Kd = 0.85
Gust-Effect Factor	G = 0.85
Exposure	C
Internal Pressure Coefficient	GCpi = +/-0.18

a. Roof Top Equipment Wind Loads

Horizontal Force	72 psf (ultimate), 43 psf (service)
Uplift Force	57 psf (ultimate), 34 psf (service)

All roof top mechanical equipment, equipment curbs, equipment tie downs, including all connections to the building structure for wind loading are to be designed and engineered by a Specialty Engineer retained by the mechanical equipment supplier. Signed and sealed drawings and calculations are to be submitted to the Engineer of Record for review and approval. The equipment manufacture shall provide the attachment of the unit to the structure and submit to the EOR loads, locations, and method of attachment. The EOR will make provisions in the design of the primary structural frame to accommodate the loads and attachments.

b. Enclosure Protection from Wind Borne Debris

This Building is located in a Wind Borne Debris Region and has been designed as enclosed. All parts of the building envelope, including but not limited to, cladding systems, exterior doors and windows, skylights, glass block shall meet impact test criteria or be protected with an external protection devise that has been tested and meets the impact test criteria in accordance with Section 1626 of the Florida Building Code and shall have a current Notice of Acceptance (NOA) or Florida Product Approval.

SHOP DRAWINGS AND OTHER SUBMITTALS

SD-1 Refer to the applicable Plan Specifications or Project Specifications for technical content requirements. Incomplete submittals will be returned without review.

SD-2 Submit specific components, such as columns, footings, etc., in a single package. Submit similar floors together.

SD-3 On first submittal, clearly flag and cloud all differences from the Contract Documents. On resubmittals, flag and cloud all changes and additions to previous submittal; only clouded items will be reviewed.

SD-4 Submittals for special structural, load-bearing items that are required by Codes or Standards to resist forces must be prepared by, or under the direct supervision of, a Delegated Engineer. Examples include Prefabricated Wood Components, Exterior Enclosure Systems, and Roof-top Unit Tie-downs.

SD-5 A Delegated Engineer is defined as a Florida Licensed Engineer who specializes in and undertakes the design of Structural Components or Structural Systems included in a specific submittal prepared for this Project and is an employee or officer of, or consultant to, the Contractor, Subcontractor, Fabricator, or Erector responsible for the submittal. The Delegated Engineer shall sign, seal and date the submittal, including calculations and drawings. See Plan Specifications or Project Specifications for more specific criteria.

SD-6 The Trade Contractor is responsible for confirming and correlating dimensions at the job sites, for tolerances, clearances, quantities, fabrication processes and techniques of construction, coordination of the work with other trades and full compliance with the Contract Documents.

SD-7 The Contractor shall review and approve submittals, including substitution requests and shop drawings, and shall sign and date each drawing prior to submitting to the Architect. This approval is to confirm that the submittal is complete, complies with the submittal requirements and is coordinated with field dimensions, other trades, erection sequencing and constructability. Submittals not reviewed by the Contractor will be returned without review.

SD-8 Bliss & Nyitray (BNI) reviews submittals to confirm that the submittal is in general conformance with the design concept presented in the Contract Documents. Quantities and dimensions are not checked. Notations on submittals do not authorize changes to the contract sum. Checking of the submittal by BNI shall not relieve the Contractor of responsibility for deviations from the Contract Documents and from errors or omissions in the submittal.

SD-9 BNI's review of Delegated Engineer submittals is limited to verifying that the specified structural submittal has been furnished, signed and sealed by the Delegated Engineer and that the Delegated Engineer has understood the design intent and used the specified structural criteria. No detailed check of calculations is made. The Delegated Engineer is solely responsible for his/her design, including but not limited to the accuracy of his/her calculations and compliance with the applicable codes and standards.

SD-10 BNI may transfer to the Contractor BIM files, CAD files or other electronic data for use in preparing Shop Drawings. The contractor shall email a request for BIM or CAD files along with an acknowledgement that he/she has read and agreed to the following terms and conditions:

A. This electronic data remains the property of BNI, and in no case shall the transfer of these files be considered a sale. The files shall not be used for other projects, additions to this project, or for completion of this project by others.
B. The Contractor is responsible for assuring that the electronic data accurately represents the Contract Documents. In the event of a conflict, the Contract Documents shall govern.
C. The electronic data is current as of the date of transfer but may subsequently be revised or supplemented. If so, then the Contractor may request updated electronic data.
D. The use of these electronic data shall not modify Contractor's responsibility for coordination with other trades, or for the proper checking and coordination of dimensions, details, member sizes and gage, and quantities of materials to facilitate complete and accurate fabrication and erection.
E. Do not scale dimensions since the electronic data may not be precise and, in some cases, have been intentionally altered for presentation purposes.
F. Contractor shall indemnify, defend and hold harmless BNI from all claims, damages, losses, expenses, penalties, and liabilities, including attorneys' fees, arising out of or resulting from the use of the electronic data by Contractor or others.

SHALLOW FOUNDATIONS

SF-1 Foundation design, soil preparation and compaction are based on Geotechnical Investigation, Data and Recommendations in Report # P23-0329 by Southern Earth Sciences dated 12 September 2023.

SF-2 Footing sizes and reinforcing are based on an allowable soil bearing capacity of 1500 psf. All footings shall bear on compacted fill, natural soil or rock prepared per the Geotechnical Report.

SF-3 Subgrade preparation shall be field controlled and tested by a Licensed Soils Engineer in accordance with the Geotechnical Report. At completion, that Engineer shall prepare and submit to the Owner, Architect, Contractor and Structural En-gineer a signed and sealed letter indicating that the recommendations of the Geotechni-cal Report have been followed.

SF-4 Foundation excavations shall be dry prior to placing concrete. Contact Geotechnical Engineer if a dry condition cannot be achieved. Reinforcing in salt-water environment shall be sprayed with fresh water no more than 1 hour prior to concrete placement.

SF-5 Provide waterproofing of underground structural members as indicated on the Architectural drawings.

SF-6 Center all footings under their respective columns or walls, u.o.n.

EXCAVATION, BACKFILL AND DEWATERING

EB-1 The Contractor is solely responsible for all excavation procedures including lagging, shoring, and protection of adjacent property, structures, streets and utilities in accordance with the requirements of the local building department and OSHA regulations. Do not excavate within one foot of the angle of repose of any soil bearing foundation unless the foundation is properly protected against settlement.

EB-2 In no case shall bulldozers or other heavy equipment be permitted closer than 5 feet from any retaining wall. If it is necessary to operate such equipment closer than 8 feet to the wall, the Contractor shall be the sole responsible party and at their own expense shall provide adequate support or bracing of the wall to withstand the additional superimposed loads from such equipment.

EB-3 The Contractor is responsible for the disposal of all accumulated water in a manner that does not in-convenience or damage the work.

SLABS ON GRADE

SG-1 Refer to Geotechnical Report for subgrade preparation more than 12" below bottom of slab.

SG-2 Above subgrade, use fill containing not more than 10% passing #200 sieve and maximum 1 inch diameter. Compact to 95% of maximum dry density as determined by modified proctor ASTM D-1557. Each layer of fill shall not exceed 6" loose thickness. Compact prior to placement of the next layer.

SG-3 Fill placement and compaction shall be monitored and accepted by the testing agency. Take a min. of one field density test (ASTM D-1556 or D-2922) for each 2,500 square feet of each layer. The testing agency shall randomly select test locations.

SG-4 For interior slabs use 10 mil vapor retarder complying with ASTM E1745 between soil and bottom of slab and install in conformance with ASTM E1643. Lap joints 6" and seal with manufacturer approved tape. Repair all punctures and tears, and seal around all penetrations. Do not use any sheeting below exterior concrete slabs.

SG-5 Reinforce slabs on grade with welded wire reinforcement supplied in flat sheets only. Use chairs to support wire reinforcement in the center of slab. Fiber reinforced concrete shall not be used at slabs to receive a broom finish.

SG-6 Provide crack control joints at 10 feet maximum to limit areas between joints to 100 sq. ft. in all floating slabs on grade 2 hours after final finish but not more than 8 hours after completion of the pour. Aspect ratio shall not exceed 1.25. Avoid L-shaped panels. Locate to conform to bay spacing whenever possible, add crack control joints at re-entrant corners which tend to invite cracks.

SG-7 In sidewalks and walkways, locate isolation joints at 20 ft. o.c. maximum score and tool between isolation joints in equal bays of 5 ft. or less.

SG-8 See the Architectural Drawings for slab on grade depressions and other requirements.

SG-9 Termite protection shall be provided by a Registered Termiticides, and a certificate of compliance shall be issued to the building department per the Florida Building Code, section 1816. Refer to the Architectural Drawings for additional information.

REINFORCED CONCRETE

RC-1 Comply with ACI 301 and 318 and Plan Specifications or Specification Sections 031000, 032000 and 033000.

RC-2 Provide structural concrete with a minimum ultimate compressive design strength in 28 days as follows:

Element	Strength
Footings	3000 psi
Columns & Poured Walls	3000 psi
Slabs on Grade	3000 psi

RC-3 Use normal weight concrete for all structural members. u.o.n.

RC-4 Provide ASTM A615 Grade 60 reinforcing steel. Reinforcing shall be accurately placed, rigidly supported and firmly tied in place, with appropriate bar supports and spacers. Lap continuous reinforc-ing 48 bar dia. Provide cover over reinforcing as follows:

Element	Bottom	Top	Sides
Footings	3"	2"	3"
Beams Above Grade	1 1/2"	1 1/2"	1 1/2"
Columns	-	-	1 5/8"
Slabs on Grade	2"	1"	2"
Slabs Exposed to Weather	1 1/2"	1 1/2"	1 1/2"

RC-5 Provide A706 reinforcing steel when the rebar is to be welded. Do not weld A615 bars.

RC-6 Deformed Bar Anchor (DBA) shall conform to ASTM A496 with a minimum yield strength of 70,000 PSI. Reinforcing bars, A615 or A706, is not an acceptable substitution for DBA's.

RC-7 Provide galvanized reinforcement in areas exposed to the environment, such as balconies, or as indicated on the drawings.

RC-8 Where specified, provide plain, cold-drawn electrically-welded wire reinforcement conforming to ASTM A185. Supply in flat sheets only. Lap splice two cross wire spacings.

RC-9 Utilities shall not penetrate beams or columns but may pass through slabs and walls individually, uon. For openings 24" long or less, cut reinforcing and replace alongside opening with splice bars of equivalent area with 48 bar dia. lap. Prepare and submit shop drawings for openings longer than 24". For rectangular openings 12" long or longer, add 1#5 x 6' mid depth diagonal at all 4 corners.

RC-10 Where reinforcing steel congestion permits, conduit and pipes up to 1" diameter may be embedded in concrete per ACI 318, Section 20.6. Space at 3 diameters o.c. Place in the middle third of the slab depth. If conduits are significantly congested, additional reinforcing perpendicular to piping may be required. Requests to embed larger pipes should be accompanied by a detailed description and be submitted to the architect for evaluation. Aluminum conduits shall not be placed in concrete.

RC-11 Provide construction joints in accordance with ACI 318, Section 26.5.6. Provide keyways and adequate dowels. Submit drawings showing location of construction joints and direction of pour for review.

RC-12 Provide 3/4" chamfer for all exposed corners.

RC-13 Provide reinforcing steel installer with a set of Structural Drawings for field reference. Inspect reinforcing steel placing from structural drawings.

CONCRETE MASONRY

CM-1 Construct masonry in accordance with Plan Specifications, Specification Sections 042000 and 042200; TMS 402/602 "Building Code Requirements and Specifications for Masonry Structures."

CM-2 The structure is supported by bearing walls, U.O.N. Erect masonry prior to casting concrete columns within bearing walls or casting beams and slabs supported by bearing walls.

CM-3 Use nominal 8x8x16, concrete masonry units conforming to ASTM C90. Block net area compressive strength shall be 2,000 psi. Lay masonry in running bond. Sawcut units which are not in multiples of 8". Units shall be at least 8" long. Bond corners by lapping ends 8" in successive courses. Design of walls is based on a f'm of 2,000 psi

	DATE	REVISION	SYMBOL
			C
			D

	DATE	REVISION	SYMBOL
			A
			B

Department of Environmental Protection
Division of Recreation and Parks
Bureau of Design and Construction
3800 Commonwealth Blvd., Tallahassee, FL 32399 (850) 245-2300

ISSUE DATE: 2/24/2025
COMP. FILE No.:
STATE PROJECT No.: CN539

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PROJECT TITLE
PARK IMPROVEMENTS

SHEET TITLE
STRUCTURAL NOTES

CAMP HELEN STATE PARK

SHEET NO.
S101

CONSTRUCTION DOCUMENTS

STRUCTURAL NOTES CONT'D

CM-4 Use Type S mortar in accordance with ASTM C270 except use Type M mortar for retaining walls. Head and bed joints shall be 3/8" for the thickness of the face shell. Webs are to be fully mortared in all courses of piers, columns, and pilasters; in the starting course; and where an adjacent cell is to be grouted. Remove mortar protrusions extending 1/2" or more into cells to be grouted.

CM-5 Use standard (9 gauge - 0.148 inch) horizontal joint reinforcing in every other course. Joint reinforcing and anchors in exterior walls shall conform to ASTM A 153 Class B2, with a coating thickness of 1.50 oz/sf; conform to ASTM A 641 in interior walls. Overlap discontinuous ends 6". Use prefabricated corners and tees. Use ladder type in walls with vertical reinforcing, otherwise use truss type. Extend joint reinforcing a minimum of 4" into tie columns.

CM-6 Use fine grout conforming to ASTM C476, with a minimum compressive strength of 2500 psi in 28 days. Aggregate to conform to ASTM C404 for fine grout, with slump of 8" to 10". Grout all masonry containing reinforcing, all cells of 4 hour rated walls, bond beams, cells with expansion anchors, and where indicated on the drawings. Allow mortar to cure 24 hours prior to grouting. Provide cleanout openings at the base of cells containing reinforcing steel to clean the cell and to tie the vertical bar to the dowel. In high-lift grouting, use 5'-0" (max.) lifts, with 1/2 hour to 1 hour between lifts. Vibrate each lift and reconsolidate the previous lift.

CM-7 Use ASTM A-615 Grade 60 reinforcing steel. Reinforce walls where indicated on the drawings and at all intersections, each side of openings and at the ends of walls. Use bar spacers at 10 ft. o.c. where grout pour height exceeds 10 ft. Provide reinforcing dowels of the same size and spacing as vertical reinforcing.

CM-8 Beams not scheduled are min. 8" x 12" tie beams with 2 #5 bars top and bottom and #3 ties spaced at 24" o.c. typical and 4 ties at 12" o.c. at ends and intersections, u.o.n. Columns not scheduled are min. 8" x 12" tie columns with 4 #5 vertical bars and #3 ties at 8" o.c. Use 30" lap splices. Hook all bars at discontinuous ends.

CM-9 Reinforced masonry wall construction shall be inspected by an Engineer or Architect in accordance with TMS 402/602.

CM-10 Where anchor bolts, wedge anchors or anchors set in epoxy are set in a masonry wall, fill cells with grout for bolted course, one course above and two courses below.

CM-11 Provide lintels or headers with min. 8" bearing over all masonry openings.

CM-12 Use pressure-treated wood for wood in contact with masonry.

POST-INSTALLED ANCHORS - GENERAL

AN-1 Substitution requests will be considered for products having an ICC-ES report recognizing the product for the appropriate application. Substitute concrete anchors must be approved for use in cracked concrete. Substitution requests shall include signed and sealed calculations prepared by a Florida Licensed Engineer who demonstrates that substituted product is capable of achieving the equivalent performance values of the design basis product.

AN-2 Confirm the absence of reinforcing steel by drilling a 1/4" diameter pilot hole for each anchor in non-post-tension applications. For post-tensioned slabs, confirm the absence of reinforcing steel by nondestructive testing prior to drilling holes. Do not cut reinforcing steel without approval of the Structural Engineer.

AN-3 Install in accordance with manufacturer's printed installation instructions (MPII) (ACI 314-19, 26.7.2). Refer to MPII for appropriate drill size. Clean hole and remove dust.

AN-4 Anchors listed below may not be used to substitute the specified anchors in a product's Notice of Acceptance (NOA) or Florida Product Approval.

AN-5 Anchors shall be installed in concrete having a minimum age of 21-days at time of anchor installation (ACI 318-19, 26.7.2(f))

AN-6 **All anchors are to be Type 316 stainless steel.**

POST-INSTALLED ANCHORS - MECHANICAL ANCHORS

AN-7 For anchoring into concrete: Wedge-Type Mechanical anchors shall have been tested and qualified for use in accordance with ACI 355.2 and ICC-ES AC193. Pre-approved anchors include Hilti Kwik Bolt TZ, DeWalt Power-Stud+SD1, and Simpson Strong-Bolt 2.

AN-8 For anchoring into grouted masonry: Wedge-Type Mechanical anchors shall have been tested and qualified for use in accordance with ICC-ES AC01. Pre-approved anchors include the Hilti Kwik Bolt III, DeWalt Power-Stud+SD1, and Simpson Wedge-All.

POST-INSTALLED ANCHORS - SCREW ANCHORS

AN-9 For anchoring into concrete: Screw anchors shall have been tested and qualified for use in accordance with ACI 355.2 and ICC-ES AC193. Pre-approved anchors include the ¼"Ø Hilti KH-EZ and the ¼"Ø DeWalt Screw Bolt +.

AN-10 For anchoring into grouted or ungrouted masonry: Screw Anchors shall have been tested and qualified for use in accordance with ICC-ES AC106. Pre-approved anchor is the ITW Redhead Tapcon.

AN-11 All anchoring shall be Type 316 stainless steel

POST-INSTALLED ANCHORS - ADHESIVE ANCHORS

AN-12 For upwardly inclined or horizontal anchors, installer shall be certified by the ACI/CRSI Adhesive Anchor Installation Certification Program.

AN-13 Install adhesive anchors in accordance with manufacturer's requirements for concrete age, temperature, moisture condition, acceptable drilling methods, and hole preparation in conformance with ACI 318-19, 26.7.1(i).

AN-14 For anchoring into concrete: Adhesive anchors shall have been tested and qualified for use in accordance with ACI 355.4 and ICC-ES AC308. Pre-approved standard cure time adhesives include Hilti RE500v3, DeWalt Pure 110+, and Simpson Set-XP.

AN-15 For anchoring into grouted masonry: Adhesive anchors shall have been tested and qualified for use in accordance with ICC-ES AC58. Pre-approved anchors include Hilti HIT-HY 200-R, DeWalt PURE110+, and Simpson Set-XP.

AN-16 Threaded rods for use with adhesive are Type 316 Stainless Steel U.O.N.

PRE-ENGINEERED WOOD TRUSSES

WT-1 Design and fabricate all metal connected trusses to comply with Plan Specifications or Specification Sections 061753, and Florida Building Code, 8th Edition (2023), and NDS "National Design Specification", and TPI 1 "National Design Standard for Metal Plate Connected Wood Truss Construction".

WT-2 Truss System: In accordance with Rule 61G15-31.003 of the Florida Administrative Code, the Truss System Engineer, a Delegated Engineer, shall design the Truss System. The Truss System Engineer shall submit shop drawings and calculations for review to Architect/Engineer for the assemblage of prefabricated, engineered wood trusses and truss girders, together with all bracing, connections and other structural elements and all spacing and location criteria (truss placement plan), that, in combination, function to support the dead, live and wind loads applicable to the roof Truss System. The Truss System does not include walls, or any other structural support systems. These shop drawings and calculations shall be signed and sealed by the Truss System Engineer. Truss Placement Plan that do not deviate from the permit drawings is not required to be signed and sealed.

WT-3 Truss Design Engineer: In accordance with Rule 61G15-31.003 of the Florida Administrative Code, the Truss Design Engineer, a Delegated Engineer, shall design the individual trusses of the Truss System, but does not design the Truss System. The Truss Design Engineer shall submit shop (piece) drawings and calculations for all different trusses and their connections to each other, of the Truss System such that each truss will function to support the dead, live and wind loads applicable to each truss and truss girder that together comprise the Truss System. These shop drawings and calculations shall be signed and sealed by the Truss Design Engineer.

WT-4 The Truss System Engineer and the Truss Design Engineer shall each be responsible for their own work. However, they may be the same individual providing two separate services.

WT-5 The loads, layouts and connections provided on the structural construction documents are the minimums to be followed by the Truss System Engineer and the Truss Design Engineer.

WT-6 Pre-fabricated wood trusses shall be fabricated from Southern Pine, kiln dried, #2 or better for chords and #3 grade or better for webs. Use stress-rated timber for all wood structural members. Moisture content of all lumber used in wood truss fabrication shall not exceed 19%. Use stainless steel connector plates.

WT-7 No wane, skips or other defects shall occur in the plate contact area or scarfed area of web members. Plates shall be connected with one required each side of truss.

WT-8 Minimum design loads for trusses:

A. Sloped top chord roof trusses, [ ]:12
Top Chord: Dead Load = 15 psf Live Load = 20 psf
Bottom Chord: Dead Load = 10 psf Live Load = 10 psf

B. Mechanical Units - See plans for location and loads.

C. Fabricator to design trusses and supply additional bridging as required to resist the wind uplift force shown on these drawings.

Bottom chord live loads do not act concurrently with top chord live loads.

WT-9 Roof sheathing shall be 19/32" thick Exposure 1, Structural 1 plywood roof sheathing. Connect to the prefabricated wood trusses as shown in the drawings. Place face grain perpendicular to supports. Place sheathing with staggered joints and continuous over 2 or more spans with grade stamp exposed for inspection. Provide 1/16" space at end joints and 1/8" at edge joints. Provide plyclips along edge joints between supports. All fasteners to be Type 316 stainless steel.

WT-10 Handling, erection and bracing of wood trusses shall be in accordance with "Handling and Erecting Wood Trusses Commentary and Recommendations (HET-80)" by the Truss Plate Institute, latest editions.

WT-11 For trusses spanning 60 feet or greater, the contractor shall contract a qualified registered engineer for the design of the temporary installation bracing and permanent bracing of the trusses.

WT-12 Permanent truss bracing or bridging members shall be 2" x 4" minimum Southern Pine with minimum locations as noted on plans. Additional bracing required to strengthen truss components should be noted on the erection drawings in accordance with truss manufacturer's recommendations. Minimum permanent bridging criteria for pre-engineered trusses:

A. Provide 2" x 4" continuous horizontal bridging at top and bottom chords at ridge and 10'-0" O.C. maximum. Add diagonal cross bracing (12:12 slope) at each bridging line on 20' O.C. max or twice the horizontal run of the diagonal.

B. In the plane of the bottom chord: Place 2" x 4" between continuous lateral bracing at 45 degree angle at each end of building, and at 20' O.C.

C. Provide continuous 2" x 4" @ 48" O.C. perpendicular to trusses at top chord where roof plywood is not rigidly attached to top chord of truss.

D. Provide continuous 2" x 4" @ 48" O.C. at bottom chord where a rigid ceiling is not firmly attached directly to the bottom chord.

WOOD

WD-1 All wood construction and connections shall conform to AITC "American Institute of Timber Construction" manual, and to NDS "National Design Specifications" for wood construction, and to the Florida Building Code, 8th Edition (2023), Chapter 23, and Plan Specifications or Specification Section 061100.

WD-2 All member sizes are to be as shown on drawings and provide the following minimum properties:

Member	Species	Fb (psi)	Fv (psi)	Fc Perp (psi)	Fc Parallel (psi)	E (psi)	E_{min} (psi)
A. 2"-4" Wide	S.P.#2	1100	175	565	1450	1,400,000	510,000
B. 5"-6" Wide	S.P.#2	1000	175	565	1400	1,400,000	510,000
C. 8" Wide	S.P.#2	925	175	565	1350	1,400,000	510,000
D. 10" Wide	S.P.#2	800	175	565	1300	1,400,000	510,000
E. 12" Wide	S.P.#2	750	175	565	1250	1,400,000	510,000
F. Timbers	S.P.#2	850	165	375	525	1,200,000	440,000

WD-3 All wood in contact with concrete or masonry shall be pressure treated.

WD-4 All bolts for bolted connections shall conform to ASTM F593 — type 316 stainless steel, U.O.N. Use washers between wood and all bolt heads and nuts

WD-5 All metal wood connectors shall be stainless steel type 316

WD-6 Do not splice structural members between supports unless otherwise indicated.

WD-7 Where beams or columns are formed of two or more members, they shall be full length and fastened together per table on these drawings.

WD-8 Do not notch in middle third of joists; limit notches to one-sixth depth of joist. Holes may be bored in the middle third of the depth of the joist, and not larger than one-sixth depth of joist; do not locate closer than 2 inches from top or bottom. Space between holes shall not be less than depth of Joist.

WD-9 Exterior non-shear walls shall have 19/32" plywood, rated Exposure 1 sheathing with studs spaced not more than 16" O.C. Plywood shall be nailed to support with 10d galvanized box nails @ 6" O.C. maximum at all panel edges and intermediate framing, and at 4" o.c. at corner studs. Block all panel edges. For interior and exterior shear walls, see drawings for sheathing type, thickness, and attachment.

	DATE	REVISION	SYMBOL
			A
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Department of Environmental Protection
Division of Recreation and Parks
Bureau of Design and Construction
3800 Commonwealth Blvd., Tallahassee, FL 32399 (850) 245-2300

ISSUE DATE: 2/24/2025
COMP. FILE No.:
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PROJECT TITLE
PARK IMPROVEMENTS

CAMP HELEN STATE PARK

SHEET TITLE
STRUCTURAL NOTES

SHEET NO.
S102

CONSTRUCTION DOCUMENTS

STRUCTURAL PLAN SPECIFICATIONS

GENERAL NOTES

SGN-1 These Plan Specifications are intended to be used for projects without Project Specification Books. If they are accidentally issued along with a Project Specification Books, the Project Specification Books shall supersede the Plan Specifications.

RISK CATEGORY	1.0 MULITPLIER	0.60 MULITPLIER	0.42 MULITPLIER
Risk Category II	700 YEAR MRI	50-YEAR MRI	25-YEAR MRI

SGN-2 The structure is designed for lateral movement of H/400 or better. This drift is based on wind loads with a 50-year mean recurrence interval.

SGN-3 The floor and roof members are designed for a vertical deflection of L/240 for total load, and L/360 for live load at occupied floors and L/240 at roofs. It is advised that all interior partitions and exterior precast or curtain wall system be attached to the structure by the Delegated engineer, with a connection that would allow for vertical movement.

SHOP DRAWINGS AND SUBMITTALS

SSD-1 To account for unforeseeable conditions, the Contractor shall provide 2 tons of reinforcing bars, 1 ton of post-tensioning tendons, 50 cubic yards of concrete, and 2 tons of structural steel framing in addition to the material specified on the contract documents. The price shall encompass all cost associated with detailing, fabrication, delivery, and installation. Any unused material shall be credited back to the Owner.

SSD-2 Material substitution shall not be submitted in the shop drawings without a substitution request being made to the Architect in advance and in writing, along with detailed substitution cost savings to be credited to the Owner. Upon approval by the Architect, the material substitution can be included in the submitted shop drawings.

SSD-3 All signed and sealed Shop Drawings prepared by a Delegated Engineer shall be accompanied by signed and sealed calculations. Shop Drawing submittals without calculations will be returned without review.

SSD-4 All structural Shop Drawings shall be submitted in PDF format to BNI for review and approval. Submittals shall be reviewed and electronically stamped by the Contractor as having “No Exception Taken”.

SSD-5 Manufacturer Literature and Product Data shall be submitted in PDF format. The submittals will be stamped as “Received, for record only” by BNI and returned accordingly.

SSD-6 All structural Shop Drawings and calculations prepared by a Delegated Engineer shall be submitted in PDF format and electronically signed and sealed by the Delegated Engineer. Once the submittal is approved by BNI, then a signed and sealed hard copy shall be submitted to BNI to receive an “Approved” stamp so the submittal can be submitted to the building department.

REINFORCED CONCRETE

SRC-1 Prepare and submit formwork shop drawings in compliance with ACI 301 and ACI 347R. Formwork design for safety, structural adequacy, and efficiency is the Contractor’s responsibility.

SRC-2 Provide form-facing panels that will provide continuous, true, and smooth concrete surfaces.

SRC-3 Formwork for the sides of beams, walls, columns and similar elements, that does not support the weight of concrete may be removed after curing at not less than 50 degrees for 24 hours after placing concrete if concrete is hard enough to not be damaged by form removal.

SRC-4 Prepare and submit reinforcing steel shop drawings prepared according to ACI 315 and ACI SP-66. Include bar sizes, length, material, grade, bar schedules, stirrup spacing, bent bar diagrams, arrangement location of splices, length of splices, tie spacing, hoop spacing and supports of reinforcement.

SRC-5 Fabricate and install steel reinforcement according to CRSI’s “Manual of Standard Practice.”

SRC-6 Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that reduce bond to concrete.

SRC-7 Repair cut and damaged zinc coatings with zinc repair material according to ASTM A780.

SRC-8 Submit design mixes for each concrete mix for the following concrete grades:

Element	Strength	Air Yes/No	Max. Aggregate Size	W/C or W/(C&P)*	Exposure Class*
Footing	3000	N	1”	0.64	F0
Wall Footing	3000	N	1”	0.64	P0
Slab on Grade	3000	N	1”	0.64	S0

* Letter in Exposure Category denotes Exposure Class:
F: Freezing and thawing.
S: Sulfate.
P: Requires low permeability.
C: Corrosion protection of reinforcement.

SRC-9 The minimum portland cement content of any concrete mix with slag cement is 280 lbs/CY, for all other concrete mixes, the minimum portland cement content is 423 lbs/CY. Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:

A. Concrete mixes containing fly ash: 15%-20%.

SRC-10 Concrete mixes containing slag cement: 40%-50%.

SRC-11 Concrete mixes containing fly ash and slag cement: 50% with fly ash or slag not exceeding 25%.

SRC-12 Provide concrete having entrained air content of 3%-5% except 1%-3% for concrete to receive a hard trowel finish (floor slabs).

SRC-13 Place concrete within 90 minutes of adding water to the mix. The Contractor may request additional time from the special inspector who can authorize an additional 30 minutes.

SRC-14 The amount of water added to the mix at the site is limited to the amount identified on the batch ticket as that being withheld at the batch plant. Water shall be added prior to initial discharge of concrete. No water can be added at the site if the batch ticket does not clearly identify the amount withheld at the plant. No water may be added once concrete placement has started.

SRC-15 Provide batch ticket for each ready-mixed batch discharged and used in the Work, indicating Project identification name and number, date, mix type and number, batch time, mix time, quantity, and amount of water added, and amount withheld at the plant. Record approximate location of final deposit in structure.

SRC-16 Deposit concrete continuously in one layer or in horizontal layers so that no new concrete will be placed on concrete that has hardened. Avoid inclined construction joints. Consolidate concrete with mechanical vibrating equipment. Do not use vibrators to transport concrete inside forms.

SRC-17 Cure concrete according to ACI 308.1 and as follows:

A. Curing Compound: Apply to all concrete surfaces that are not permanently exposed. Provide a second coat applied at 90 degrees to initial application within three hours of initial application.
B. Curing and Sealing Compound: Apply to permanently exposed concrete surfaces. Repeat process after 24 hours.
C. Contractor shall confirm that curing compounds are compatible with flooring finishes and will not adversely affect the performance or warranty of the flooring.

SRC-18 Sample all concrete after water and admixtures have been added. Obtain at least one composite sample for each 100 CY or fraction thereof of each concrete mix placed daily. For slabs 6 inches or thinner, increase frequency to each 50 CY or fraction thereof of each concrete mix placed daily.

SRC-19 Cast and laboratory cure one set of four standard cylinder specimens and cast and field cure one set of four standard cylinder specimens for each composite sample. Take sample at point of placement for pumped concrete.

SRC-20 Test one specimen at 7-days and three at 28-days. If one of the first two 28-day test falls below specified strength, test the remaining specimen at 56-days.

SRC-21 Strength of each concrete mix will be satisfactory if the average of two cylinders at 28-days equals or exceeds the specified concrete strength, if not, then the average of any three consecutive strength tests (two at 28-days and one at 56-day) equals or exceeds specified compressive strength and no compressive strength test falls below specified compressive strength by 10% or 500 psi, whichever is less.

SRC-22 Provide test results to Architect, Engineer, and Concrete Company.

SRC-23 Contractor shall notify Architect and BNI of any concrete that fails to meet the design strength. Additional testing including destructive testing may be required to validate the in-place concrete strength. Testing with a Swiss Hammer is not an acceptable method of establishing in-place concrete strength.

CONCRETE MASONRY

SCM-1 Provide structural unit masonry that develops indicated net-area compressive strengths at 28-days. Mortar for unit masonry shall comply with ASTM C270. Contractor shall meet ASTM C270 requirements based on the Property or Performance Specification. Contractor shall determine the net-area compressive strength of masonry based on paragraph 1 or 2.

A. Determine net-area compressive strength of masonry from average net-area compressive strengths of masonry units and mortar types (unit-strength method) according to Tables 1 and 2 in TMS 602.

1. Preconstruction Testing Service: Owner will engage a qualified independent testing agency to perform preconstruction testing indicated below. Retesting of materials that fail to comply with specified requirements shall be done at Contractor's expense.

a. Concrete Masonry Unit Test (Property and Proportion Specification): For each type of unit required, according to ASTM C140 for compressive strength.
b. Mortar Aggregate Ratio Test (Proportion Specification): For each mix provided, according to ASTM C780.
c. Mortar Test (Property Specification): For each mix required, according to ASTM C109 for compressive strength.
d. Mortar Test (Property Specification): For each mix required, according to ASTM C780 for compressive strength.
e. Grout Test (Compressive Strength) (Property and Performance Specification): For each mix required, according to ASTM C1019.

B. Determine net-area compressive strength of masonry by testing masonry prisms according to ASTM C1314.

1. Prism Test: For each type of construction required, according to ASTM C1314.

SCM-2 Prepare and submit reinforcing steel shop drawings prepared according to ACI 315. Include bar sizes, length, material, grade, bar schedules, bent bar diagrams, arrangement location of splices, length of splices, tie spacing, hoop spacing and supports of reinforcement.

SCM-3 Submit grout mix designs complying with material and compressive strength requirements of ASTM C476.

SCM-4 During construction, cover tops of walls, projections, and sills with waterproof sheeting at the end of each workday. Cover partially completed masonry when construction is not in progress.

SCM-5 Allow wet masonry units to dry prior to placement.

SCM-6 Comply with tolerances in TMS 602, and as follow:

A. In Elevation: +/- 1/4” in story height, +/- 3/4” Max
B. Plumbness: +/- 1/4” in 10 feet, +/- 3/8” in 20 feet, +/- 1/2” Max
C. Location in Plan: +/- 1/2” in 20 feet, +/- 3/4” Max

SCM-7 Stop work by racking back units in each course from those in the course below; do not tooth. When resuming work, clean masonry surfaces that are to receive mortar, remove loose masonry units and mortar, and wet brick if required before laying fresh masonry

SCM-8 Design, provide and install bracing that will assure stability of masonry during construction. Include provisions to protect against wind or other natural or construction forces that might collapse or otherwise damage a partially or completely built masonry wall in a partially completed structure.

SCM-9 Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that reduce bond to grout.

SCM-10 Lay masonry units to top of grout pour prior to placing grout. Maximum grout pour height is 12 feet or top of bond beam, whichever is lower.

SCM-11 Provide cleanouts when grout pour exceeds 5 feet, to tie vertical bars to prevent displacement, and to remove dust, dirt, and mortar droppings.

SCM-12 Do not place grout until entire height of masonry to be grouted has attained sufficient strength to resist grout pressure. Place grout within 90 minutes of introducing water to the mix. Terminate grout 1 1/2 inches below bond beam course or where cell above is to be grouted.

SCM-13 Consolidate pours exceeding 12” in height and each lift by mechanical vibration and reconsolidate after initial water loss and settlement has occurred.

PREFABRICATED WOOD TRUSSES

SWT-1 Submit fabrication and installation details for trusses.

A. Show location, pitch, span, camber, configuration, and spacing for each type of truss required.
B. Indicate sizes, stress grades, and species of lumber.
C. Indicate locations, sizes, and materials for permanent bracing required to prevent buckling of individual truss members due to design loads.
D. Indicate type, size, material, finish, design values, orientation, and location of metal connector plates.
E. Show splice details and bearing details.
F. Indicate truss-to-truss connection manufacturer, type, location, and fasteners.
G. Indicate joining requirements for multiple ply trusses or girders.
H. Contact BNI prior to submittal of shop drawings if truss placement drawings deviate from the structural drawings. Truss placements that deviate from the structural drawings may be rejected.

SWT-2 Metal Connector-Plate Manufacturer Qualifications: A manufacturer that is a member of TPI and that complies with quality-control procedures in TPI 1 for manufacture of connector plates.

SWT-3 Fabricator Qualifications: Shop that participates in a recognized quality-assurance program, complies with quality-control procedures in TPI 1.

SWT-4 Handle and store trusses to comply with recommendations in SBCA BCSI, "Building Component Safety Information: Guide to Good Practice for Handling, Installing, Restraining, & Bracing Metal Plate Connected Wood Trusses."

A. Store trusses flat, off of ground, and adequately supported to prevent lateral bending.
B. Protect trusses from weather by covering with waterproof sheeting, securely anchored.
C. Provide for air circulation around stacks and under coverings.

SWT-5 Inspect trusses showing discoloration, corrosion, or other evidence of deterioration. Discard and replace trusses that are damaged or defective.

SWT-6 Maximum Deflection under Design Loads:
A. Roof Trusses: Vertical deflection of 1/360 of span.

SWT-7 Fabricate wood trusses within manufacturing tolerances in TPI 1
A. Length: ½” up to 30 feet long, thereafter, ¾”.
B. Height: ¼” up to 60 inches high, thereafter, ½”

SWT-8 Steel Sheet Protection:

A. Stainless Steel Sheet: ASTM A240 or ASTM A666, Type 316, for exterior locations and for exposed applications in coastal environments.

SWT-9 Installation:

A. Install wood trusses only after supporting construction is in place and is braced and secured.
B. If trusses are delivered to Project site in more than one piece, assemble trusses before installing.
C. Hoist trusses in place by lifting equipment suited to sizes and types of trusses required, exercising care not to damage truss members or joints by out-of-plane bending or other causes.
D. Install trusses plumb, square, and true to line and securely fasten to supporting construction.
E. Install and fasten permanent bracing during truss erection and before construction loads are applied. Anchor ends of permanent bracing where terminating at walls or beams.

SWT-10 Install wood trusses within installation tolerances in TPI 1.

A. Out-of-plumb tolerance: The lesser of D/50 or 2 inches maximum.
B. Out-of-plane tolerances or bow is limited to the lesser of L/200 or 2 inches maximum.
C. Location variances of 1/4 inch
D. Top-chord bearing gap of 1/2 inch for parallel-chord trusses are permitted.

SWT-11 Do not alter trusses in field. Do not cut, drill, notch, or remove truss members.

SWT-12 Replace wood trusses that are damaged or do not comply with requirements.

A. Damaged trusses may be repaired according to truss repair details signed and sealed by the qualified professional engineer responsible for truss design, when approved by Architect.

WOOD FRAMING

SWD-1 Framing with Engineered Wood Products: Install engineered wood products to comply with manufacturer's written instructions.

SWD-2 Install shear wall panel to comply with manufacturer's written instructions.

SWD-3 Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.

SWD-4 For interior non-load bearing partitions and walls, provide minimum 2x4 nominal size wood studs spaced 24 inches O.C. unless otherwise indicated on the Architectural drawings.

SWD-5 For non-load-bearing partitions, provide double-jamb studs and headers not less than 4-inch nominal depth for openings 48 inches and less in width, 6-inch nominal depth for openings 48 to 72 inches in width, 8-inch nominal depth for openings 72 to 120 inches in width, and not less than 10-inch nominal depth for openings 10 to 12 feet in width.

SWD-6 Treat ends of timber beams and posts exposed to weather by dipping in water-repellent preservative for 15 minutes.

SWD-7 Under non-load-bearing partitions, provide double joists separated by solid blocking equal to depth of studs above.

SWD-8 For exposed framing, hand-select material for uniformity of appearance and freedom from characteristics, on exposed surfaces and edges, that would impair finish appearance, including decay, honeycomb, knot-holes, shake, splits, torn grain, and wane.

SWD-9 Roof Sheathing: DOC PS 1, Exposure 1, Structural I sheathing. Span Rating: Not less than 32/16. Nominal Thickness: Not less than 19/32 inch.

DATE	REVISION	SYMBOL
		A
		B
		C
		D

Department of Environmental Protection
Division of Recreation and Parks
Bureau of Design and Construction
3800 Commonwealth Blvd., Tallahassee, FL 32399 (850) 245-2300

ISSUE DATE: 2/24/2025
COMP. FILE No.:
STATE PROJECT No.: CN539

DESIGNER: CSC
DRAWN BY: TLC
REVIEWED BY: CSC
Consultant:

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www.blissnyitray.com CA No. 674
BNI Project No. 23126

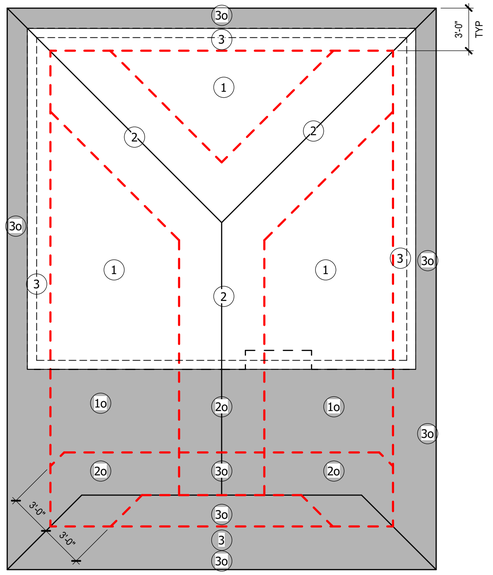
PROFESSIONAL REGISTRATION
CHRISTOPHER S. CHILDERS LICENSE NO. 50812 STATE OF FLORIDA PROFESSIONAL ENGINEER
Christopher S. Childers, P.E.
Fla. Reg. No. 50812
Digitally signed by Christopher S Childers
Date: 2025.02.21 16:18:54-05'00'

PROJECT TITLE
CAMP HELEN STATE PARK
PARK IMPROVEMENTS

SHEET TITLE
STRUCTURAL PLAN SPECIFICATIONS

SHEET NO.
S103

CONSTRUCTION DOCUMENTS



ROOF WINDLOAD PLAN

3/16" = 1'-0"

NORTH

ROOF WIND PRESSURES (PSF)				
ZONES	TRIBUTARY AREA (SF)			
	10	100	200	500
1	-45/+20	-27.5/+10.9	-22.3/+10.9	-22.3/+10.9
2	-58.6/+20	-39.4/+10.9	-33.6/+10.9	-33.6/+10.9
3	-63.2/+20	-42.2/+10.9	-35.9/+10.9	-35.9/+10.9

OVERHANG PRESSURES (PSF)				
ZONE	TRIBUTARY AREA (SF)			
	10	100	200	500
2o	-84.1	-59.1	-51.6	-50
3o	-90.9	-61.9	-53.2	-50

WALL WIND PRESSURES (PSF)				
ZONE	TRIBUTARY AREA (SF)			
	10	100	200	500
4	-29.1/+26.8	-25.1/+22.8	-23.9/+21.6	-22.3/+20
5	-35.9/+26.8	-27.9/+22.8	-25.5/+21.6	-22.3/+20

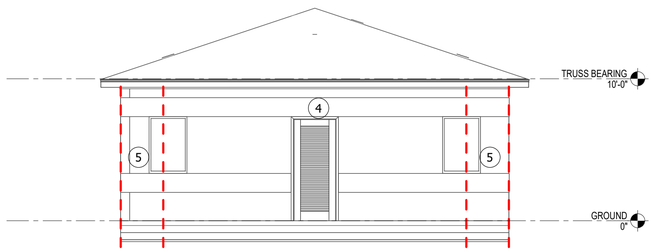
WIND PRESSURE NOTES

1. Numbers on this sheet are the components and cladding gross allowable pressures perpendicular to the surface (in P.S.F.) based on tributary area. Multiply service pressures by 1.67 to obtain W pressures for factored loads using strength design (ASCE 7-16 2.3).
2. Pressures are derived from ASCE 7-22.
3. Directionality factor Kd = .85
4. Negative pressures act away from surface, positive pressures act toward surface.
5. Dimensions shown on the skewed or radial elevations are measured parallel to surface.

WIND PRESSURE LEGEND

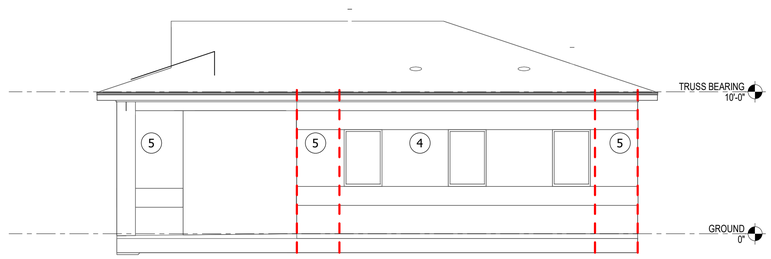
(#) Denotes wind pressure zone

Denotes wind load separation



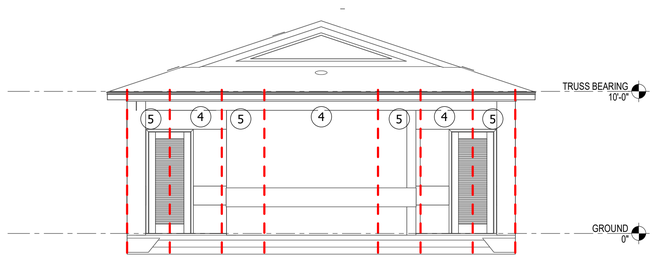
A NORTH WINDLOAD ELEVATION

3/16" = 1'-0"



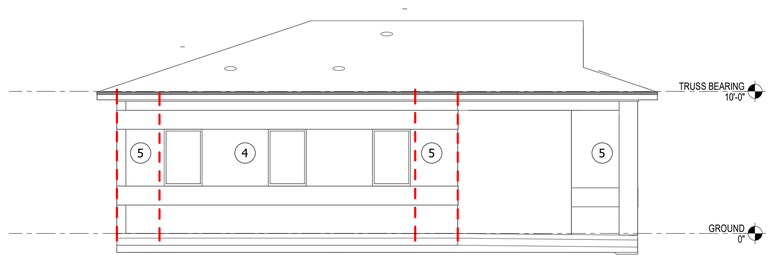
B EAST WINDLOAD ELEVATION

3/16" = 1'-0"



C SOUTH WINDLOAD ELEVATION

3/16" = 1'-0"



D WEST WINDLOAD ELEVATION

3/16" = 1'-0"

	DATE	REVISION	SYMBOL
			A
			B
			C
			D

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Division of Recreation and Parks
Bureau of Design and Construction
3800 Commonwealth Blvd., Tallahassee, FL 32399 (850) 245-2300

DESIGNER: CSC
DRAWN BY: TLC
REVIEWED BY: CSC
Consultant:

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BNI Project No. 23126

ISSUE DATE: 2/24/2025
COMP. FILE No.:
STATE PROJECT No.: CN539

PROFESSIONAL REGISTRATION

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Christopher S. Childers, P.E.
Fla. Reg. No. 50812

Digitally signed by Christopher S Childers
Date: 2025.02.21 16:18:55-05'00'

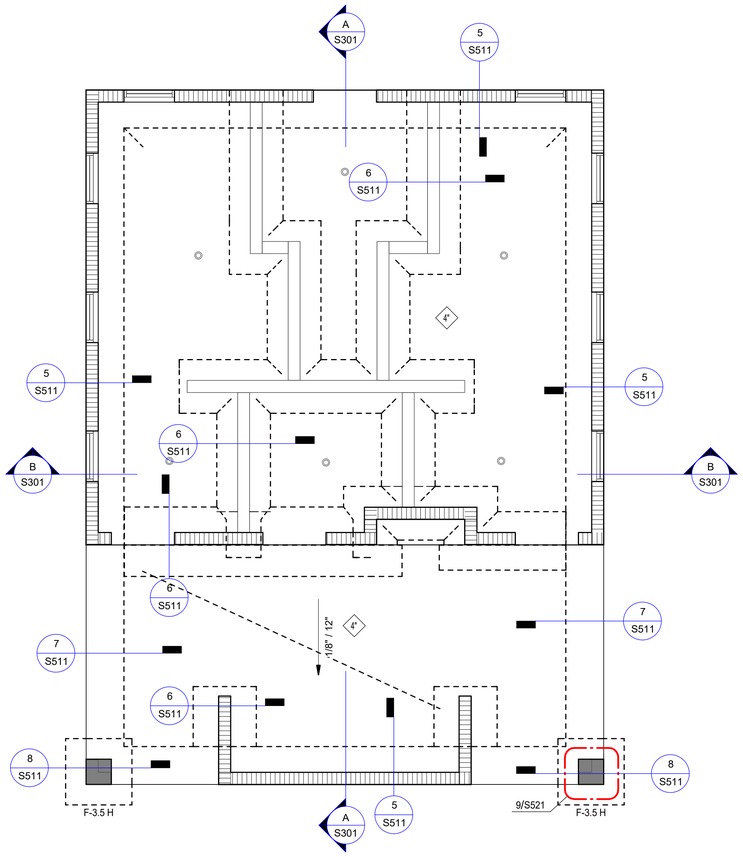
PROJECT TITLE
PARK IMPROVEMENTS

CAMP HELEN STATE PARK

SHEET TITLE
WIND DIAGRAMS

SHEET NO.
S111

CONSTRUCTION DOCUMENTS



FOUNDATION & GROUND FLOOR PLAN

TOP OF SLAB = 0'-0" (REF ELEV = +21.00')

1/4" = 1'-0"

NORTH

PLAN NOTES:

1. SEE ARCHITECTURAL DRAWINGS FOR WALL DIMENSIONS NOT SHOWN.
2. SEE TYPICAL DETAILS FOR ADDITIONAL INFORMATION.
3. SEE DETAIL 2 / S511 FOR SLAB ON GRADE CONTROL JOINTS

SLAB REINFORCING KEYNOTES:

4" DENOTES 4" SLAB ON GRADE REINFORCED WITH 6x6-W2.9xW2.9 WWR ON VAPOR RETARDER OVER WELL COMPACTED SUBGRADE, REFER TO 3 / S511

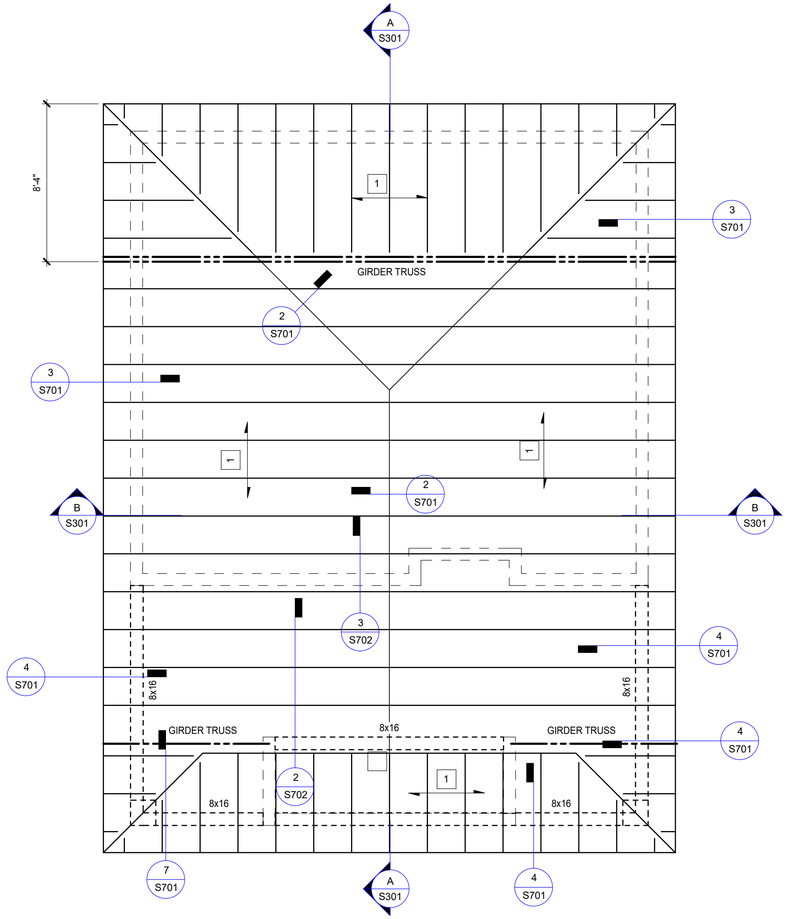
MASONRY REINFORCING NOTES:

M.1 FOR TYPICAL DETAILS SEE SHEETS S521

M.2 SEE DETAIL 4 / S521 FOR MASONRY CONTROL JOINTS

M.3 ALL EXTERIOR MASONRY WALLS ARE: M8-524 U.O.N.

M.4 ALL INTERIOR MASONRY WALLS ARE: M8-548 U.O.N.



ROOF FRAMING PLAN

1/4" = 1'-0"

NORTH

PLAN NOTES:

1 ROOFING (SEE ARCH.) OVER 5/8" STRUCTURAL 1 PLYWOOD ROOF SHEATHING OVER PREFABRICATED WOOD TRUSSES BY DELEGATED ENGINEER @24" MAX. SEE STRUCTURAL NOTES FOR FASTENING REQUIREMENTS

2 REFER TO STRUCTURAL NOTES FOR TRUSS BRIDGING REQUIREMENTS

3 ALL TRUSS CONNECTIONS TO HAVE A STAINLESS STEEL SIMPSON STRONG-TIE H10 AS INSTALLED U.O.N. SEE DETAIL 3 / S701

SYMBOL	DATE	REVISION
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SYMBOL	DATE	REVISION
C		
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REVIEWED BY: CSC
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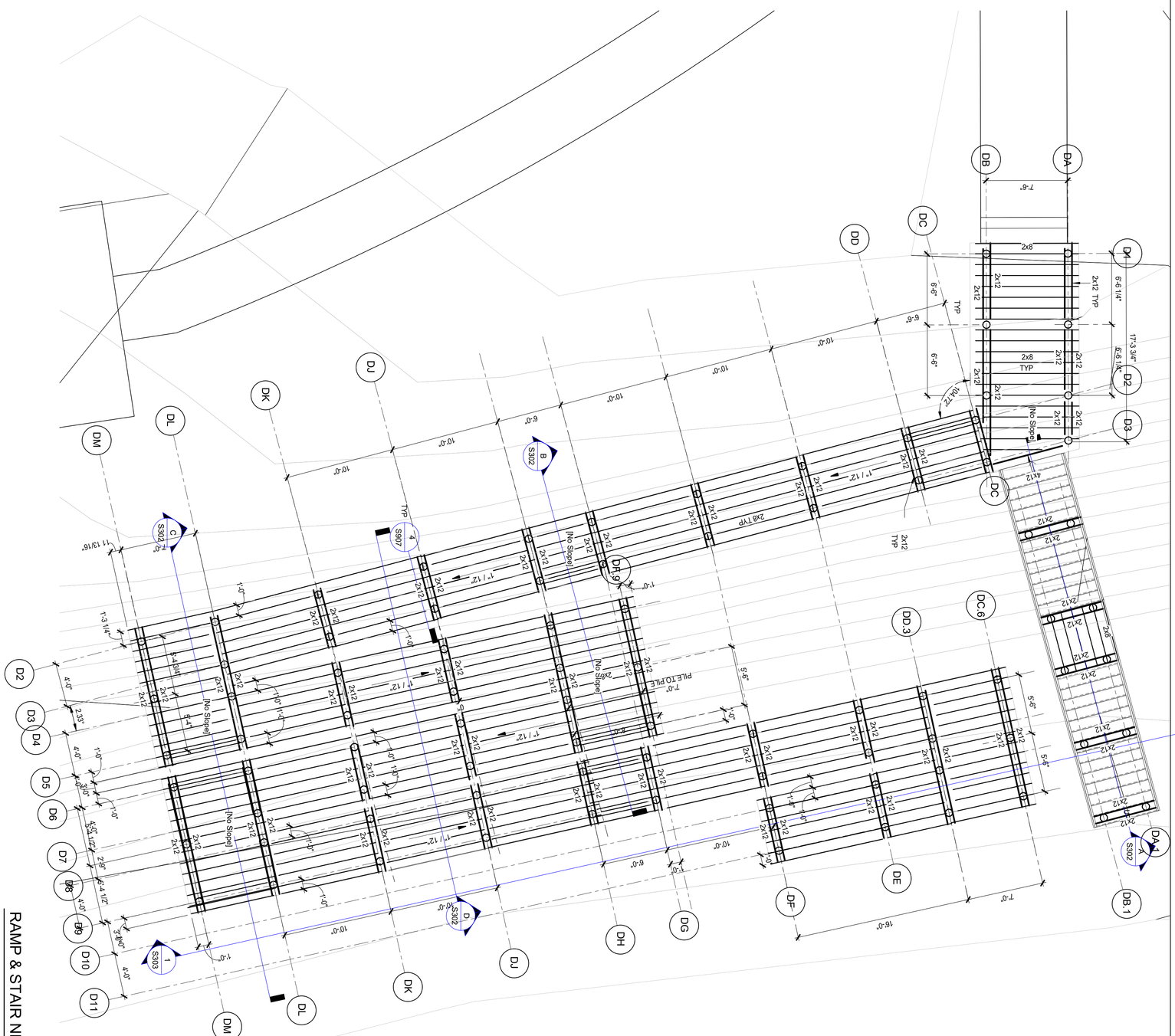
PROJECT TITLE
CAMP HELEN STATE PARK
PARK IMPROVEMENTS

SHEET TITLE
RESTROOM GROUND & ROOF FRAMING PLANS AT PICNIC AREA

SHEET NO.
S201



RAMP & STAIR NEAR RESTROOM & PICNIC AREA

3/16" = 1'-0"

SHEET NO.
S202

CAMP HELEN STATE PARK

SHEET TITLE
SITE RAMPS & STAIRS AT PICNIC AREA

PROJECT TITLE
PARK IMPROVEMENTS

PROFESSIONAL REGISTRATION
Christopher S. Childers, P.E.
Florida Registration No. 50812
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Date: 2025.02.21 16:18:58-05'00'

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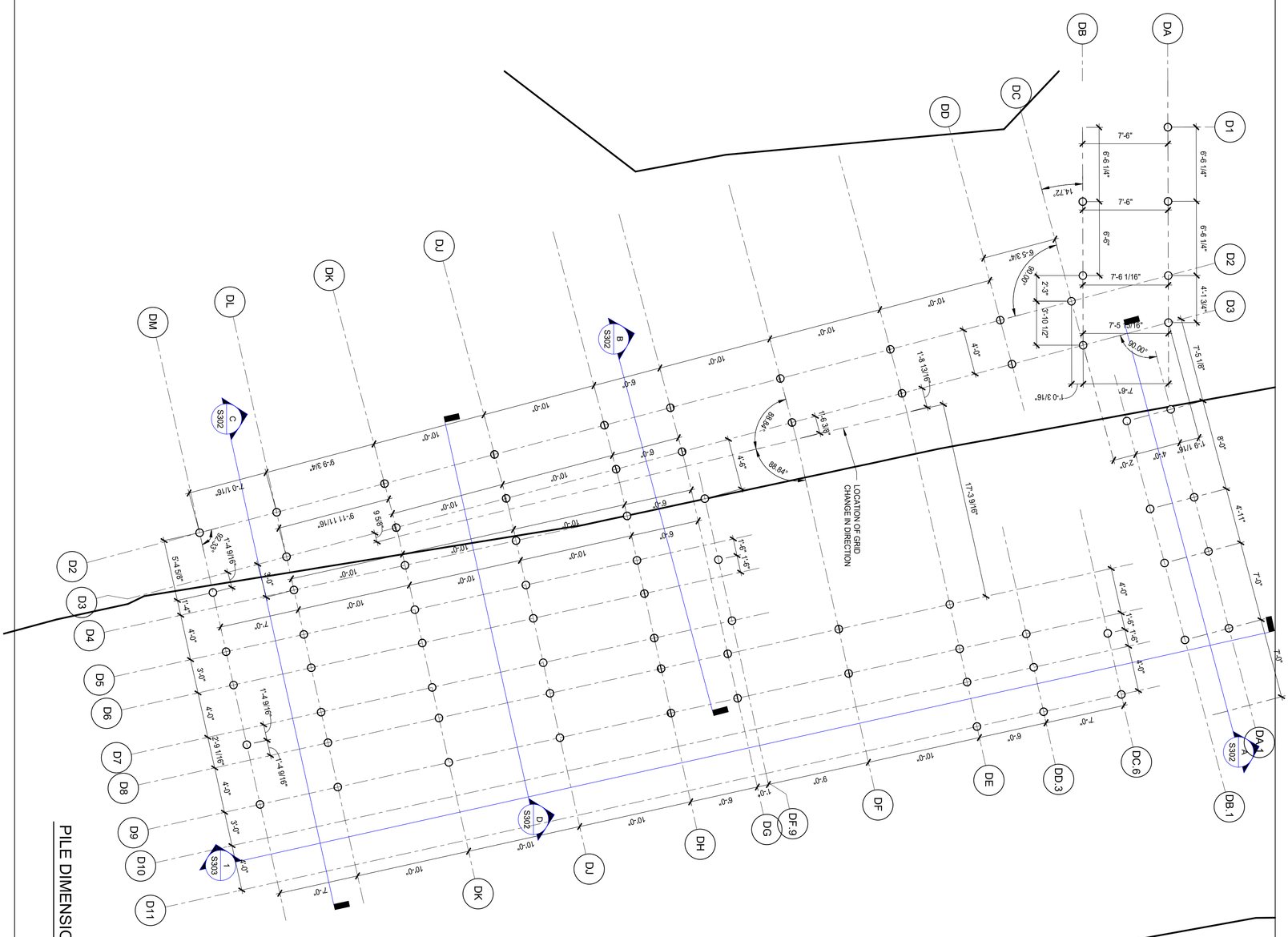
CONSTRUCTION DOCUMENTS



PILE DIMENSION PLAN

3/16" = 1'-0"

SHEET NO.

S203

CAMP HELEN STATE PARK

SHEET TITLE

RAMP PILE LAYOUT AT PICNIC AREA

PROJECT TITLE

PARK IMPROVEMENTS

PROFESSIONAL REGISTRATION

STATE OF FLORIDA PROFESSIONAL ENGINEER
CHRISTOPHER S. CHILDERS LICENSE NO. 50812

Christopher S. Childers, P.E.
Florida Registration No. 50812
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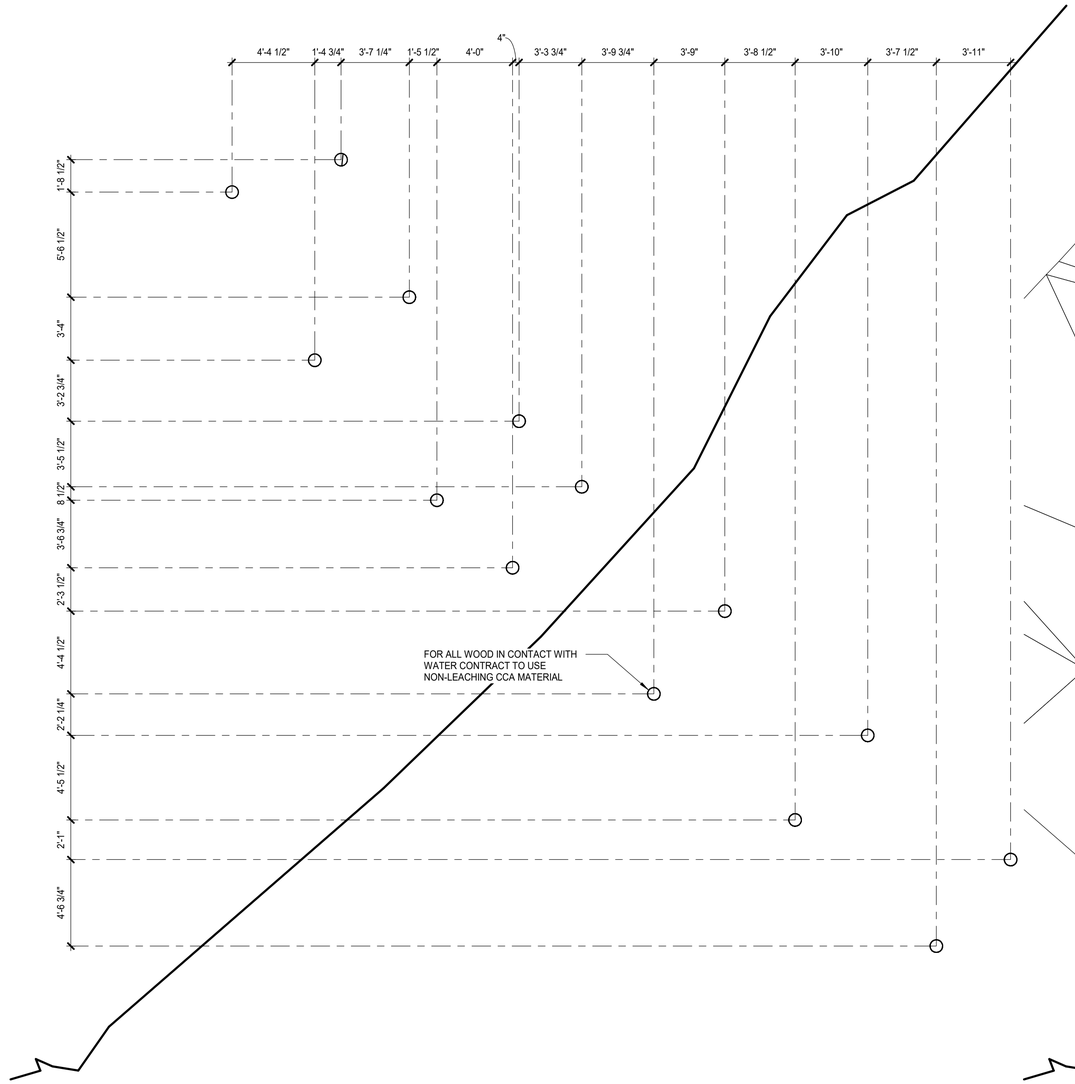
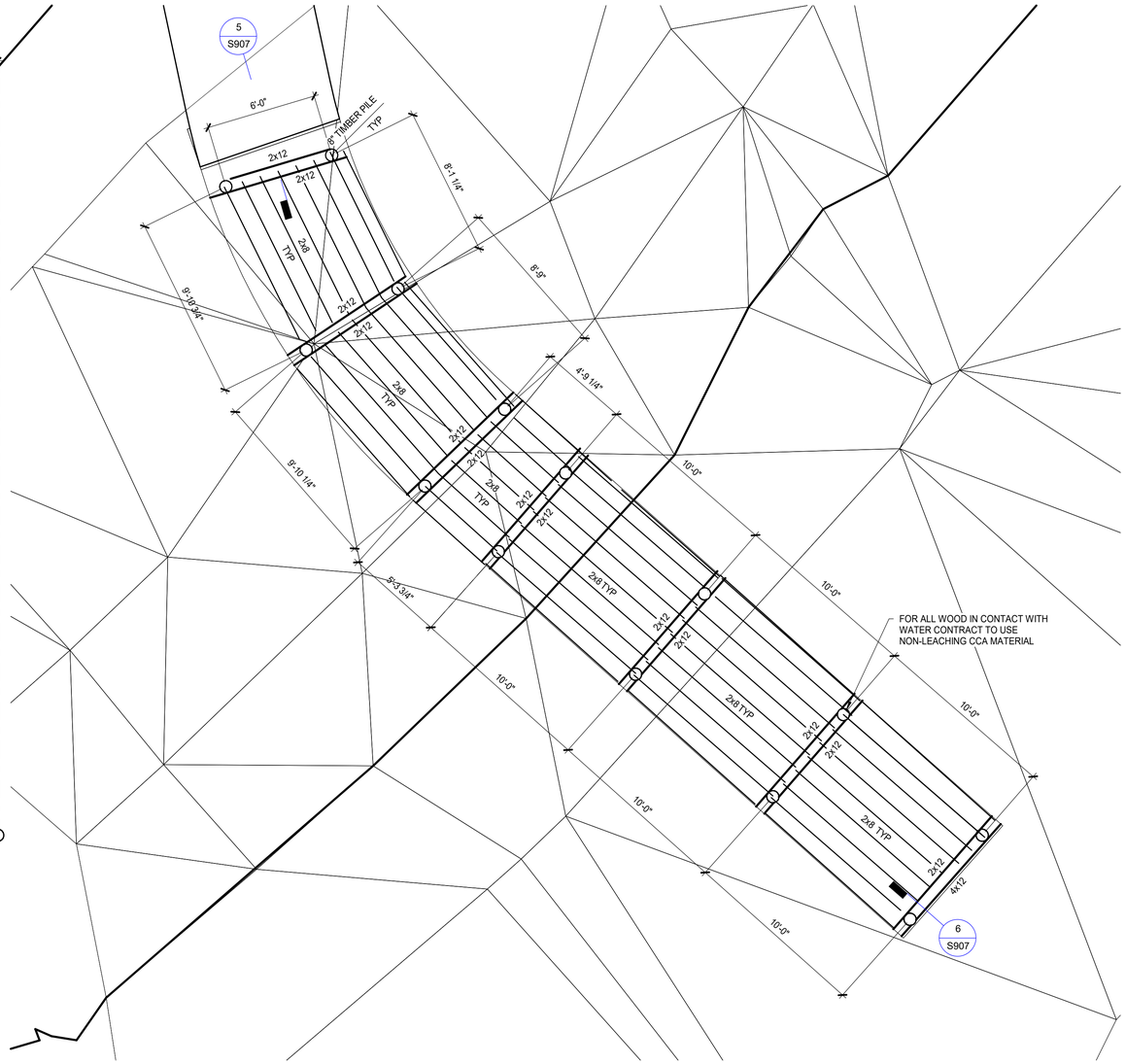
CONSTRUCTION DOCUMENTS



KAYAK LAUNCH PILE LAYOUT PLAN

1/4" = 1'-0"



KAYAK LAUNCH FRAMING PLAN

1/4" = 1'-0"

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DRAWN BY:	TLC	COMP. FILE No.:		A	
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Consultant:				C	
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Date: 2025.02.21 16:19:00-05'00'

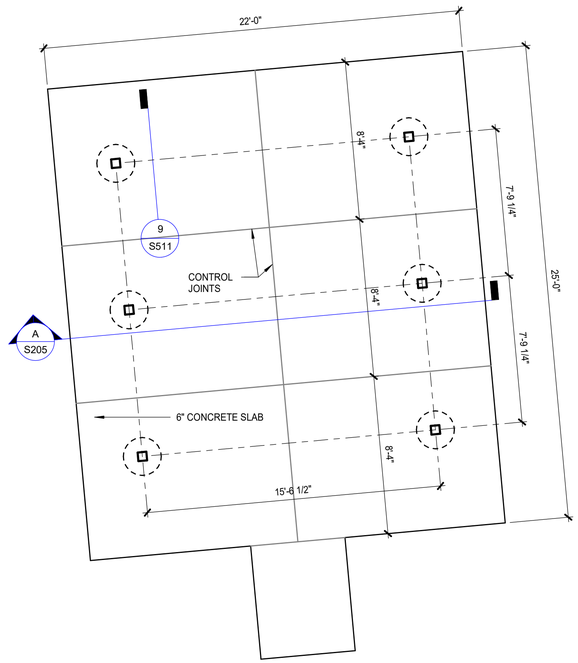
CAMP HELEN STATE PARK

SHEET TITLE: KAYAK LAUNCH

PROJECT TITLE: PARK IMPROVEMENTS

SHEET NO.
S204

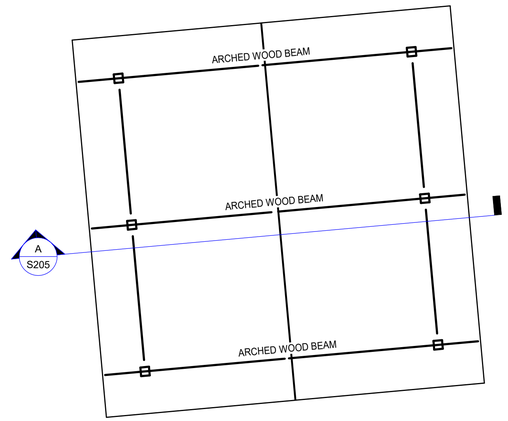
CONSTRUCTION DOCUMENTS



PAVILION GROUND

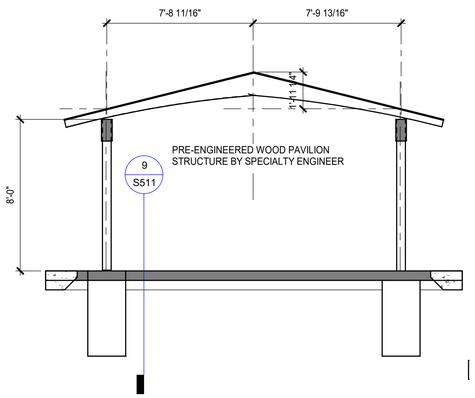
TOP OF SLAB = 0'-0" (REF ELEV = +21.00')

1/4" = 1'-0"



PAVILION ROOF FRAMING PLAN

1/4" = 1'-0"



A PAVILION SECTION

1/4" = 1'-0"

DESIGNER:	CSC
DRAWN BY:	TLC
REVIEWED BY:	CSC

Consultant: BNI

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		B	
		C	
		D	

ISSUE DATE: 2/24/2025
COMP. FILE No.:
STATE PROJECT No.: CN539

Department of Environmental Protection
Division of Recreation and Parks
Bureau of Design and Construction
3800 Commonwealth Blvd., Tallahassee, FL 32399 (850) 245-2300

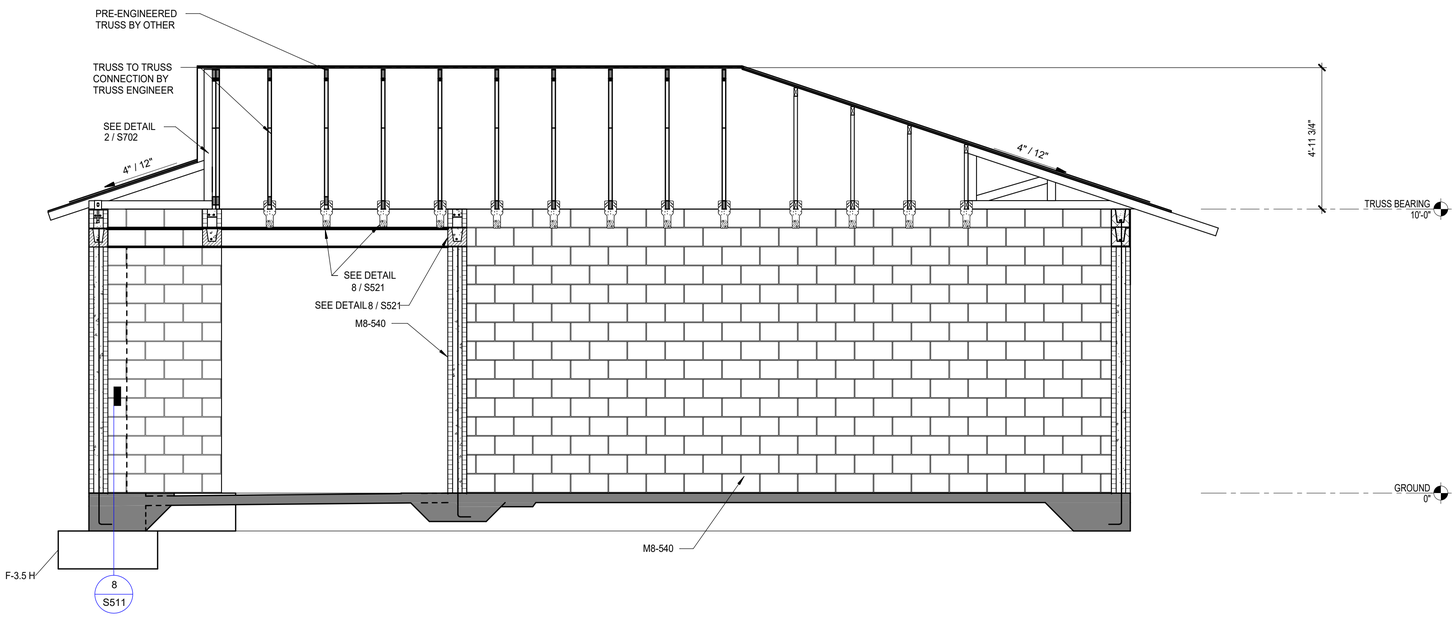
CAMP HELEN STATE PARK

SHEET TITLE: PICNIC PAVILION

PROJECT TITLE: PARK IMPROVEMENTS

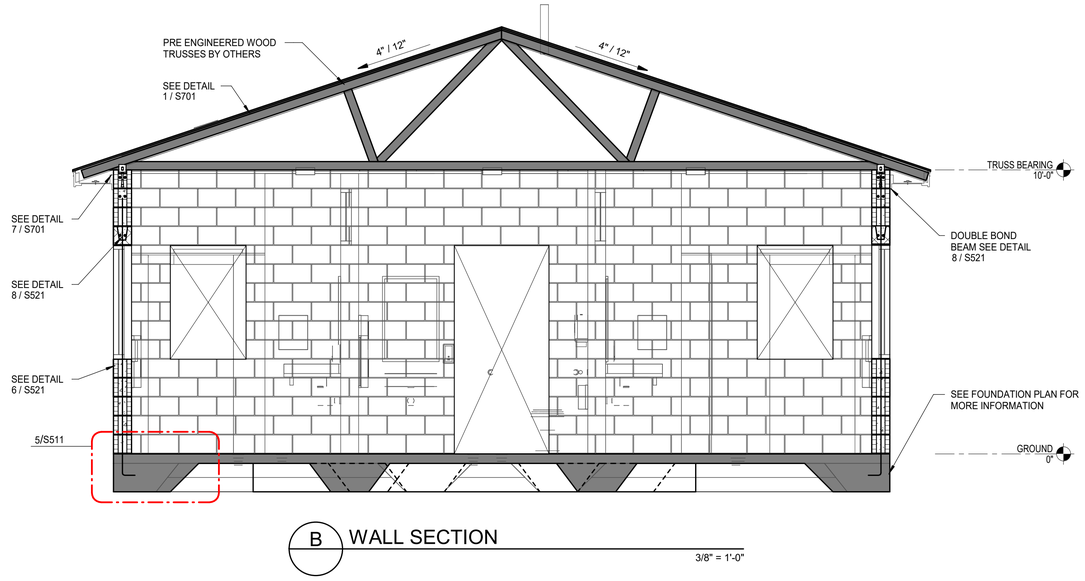
SHEET NO.
S205

CONSTRUCTION DOCUMENTS



A WALL SECTION

3/8" = 1'-0"



B WALL SECTION

3/8" = 1'-0"

REVISION	DATE

SYMBOL	REVISION	DATE
A		
B		
C		
D		

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Division of Recreation and Parks
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3800 Commonwealth Blvd., Tallahassee, FL 32399 (850) 245-2300

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STATE PROJECT No.: CN539

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Fla. Reg. No. 50812

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Christopher S Childers
Date: 2025.02.21
16:19:03-05'00'

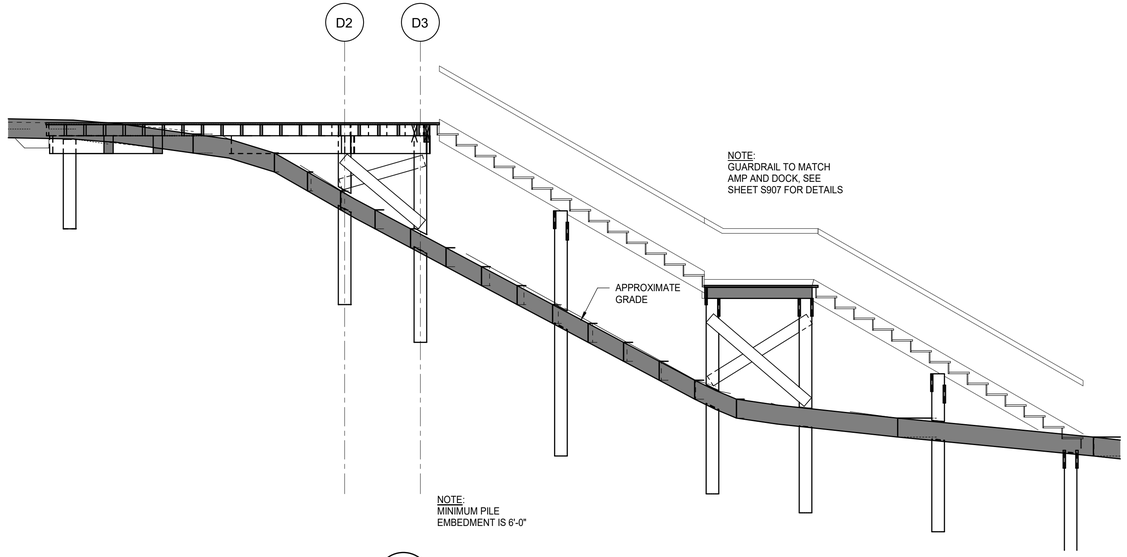
CAMP HELEN STATE PARK

SHEET TITLE
TYPICAL BUILDING SECTIONS

PROJECT TITLE
PARK IMPROVEMENTS

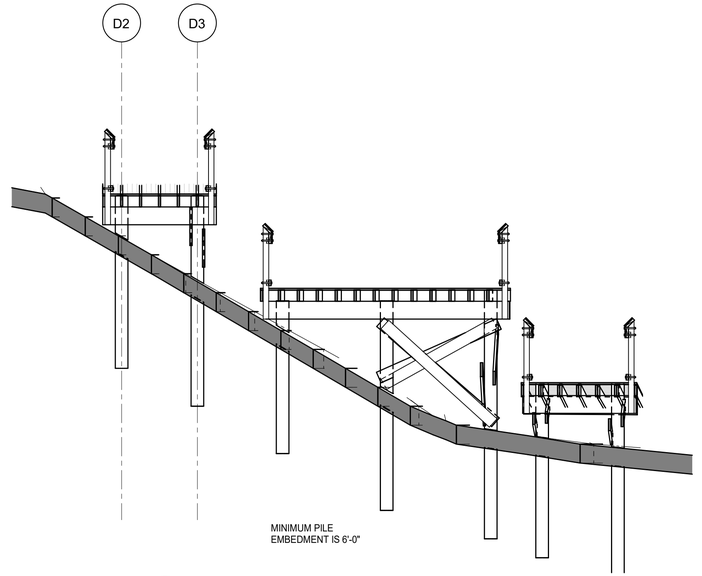
SHEET NO.
S301

CONSTRUCTION DOCUMENTS



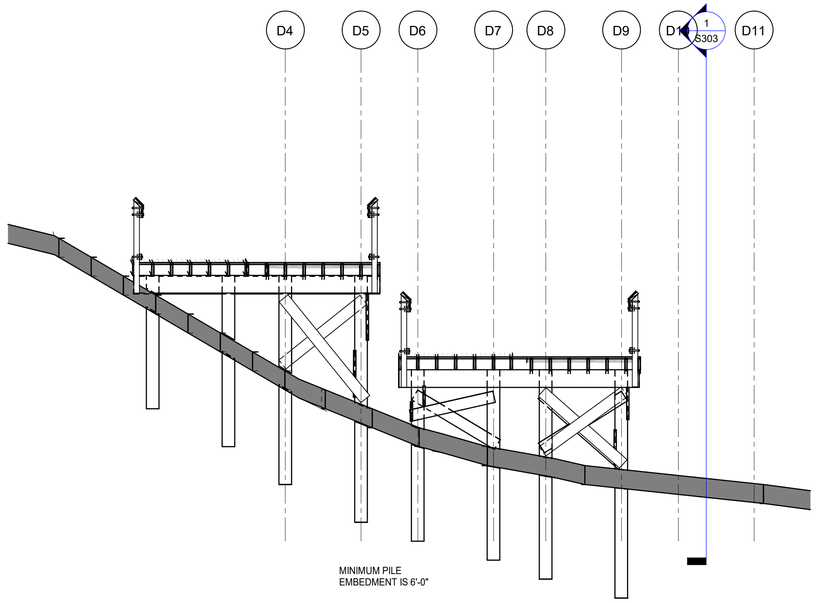
A STAIR SECTION

1/4" = 1'-0"



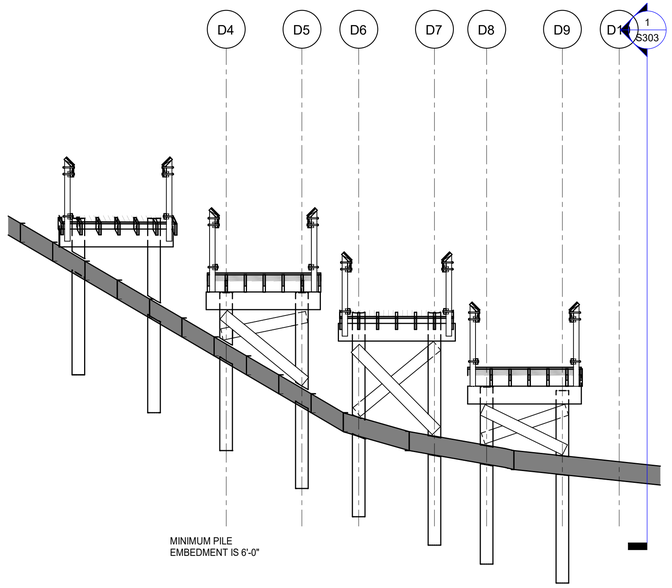
B TRANSVERSE SECTION THRU RAMP
AT LANDING

1/4" = 1'-0"



C TRANSVERSE SECTION THRU RAMP
AT LANDING

1/4" = 1'-0"



D TRANSVERSE SECTION THRU RAMP

1/4" = 1'-0"

	DATE	REVISION	SYMBOL
			C
			D

	DATE	REVISION	SYMBOL
			A
			B

ISSUE DATE: 2/24/2025
COMP. FILE No.:
STATE PROJECT No.: CN539

DESIGNER: CSC
DRAWN BY: TLC
REVIEWED BY: CSC
Consultant:

BLISS & NYITRAY, INC.
STRUCTURAL ENGINEERS
227 N. Bronough St., Suite 7300
Tallahassee, FL 32301
Tel:(850)222-4454
www.blissnyitray.com CA No. 674
BNI Project No. 23126

PROFESSIONAL REGISTRATION

CHRISTOPHER S. CHILDERS LICENSE NO. 50812 STATE OF FLORIDA PROFESSIONAL ENGINEER

Christopher S. Childers, P.E.
Fla. Reg. No. 50812

Digitally signed by
Christopher S Childers
Date: 2025.02.21
16:19:05-05'00'

CAMP HELEN STATE PARK

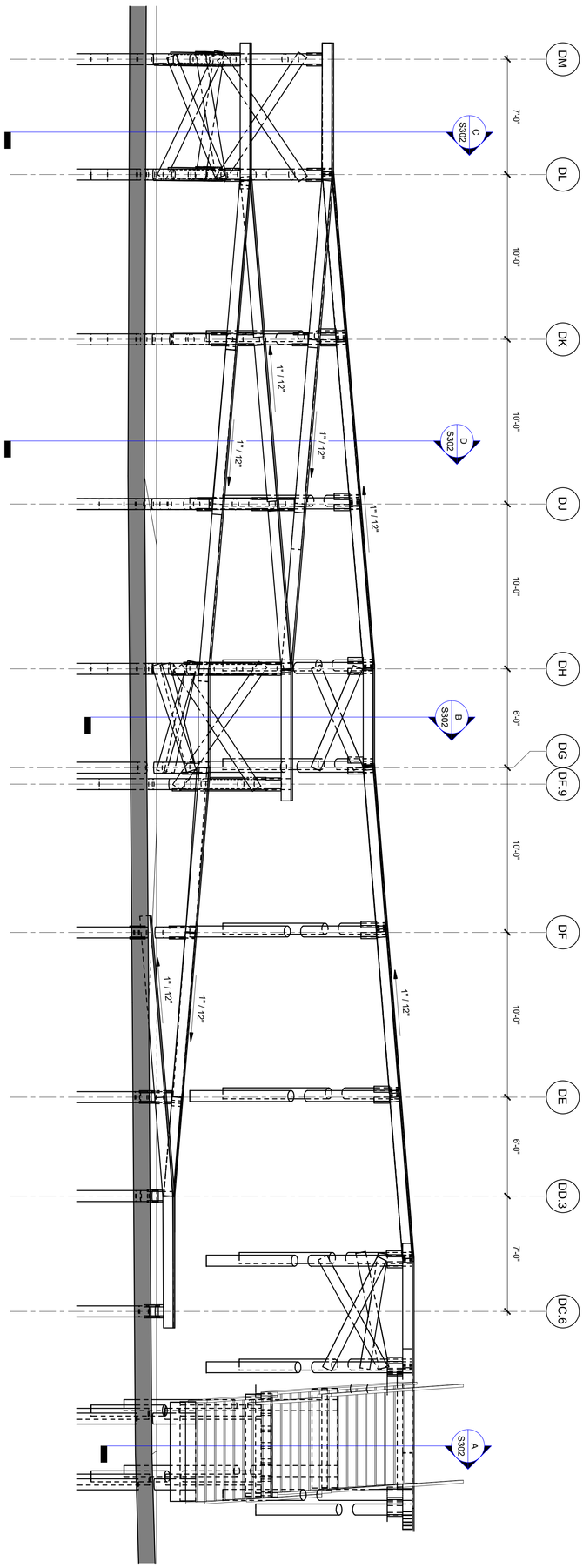
SHEET TITLE
RAMP SECTIONS

PROJECT TITLE
PARK IMPROVEMENTS

SHEET NO.
S302

Department of Environmental Protection
Division of Recreation and Parks
Bureau of Design and Construction
3800 Commonwealth Blvd., Tallahassee, FL 32399 (850) 245-2300

CONSTRUCTION DOCUMENTS



1 RAMP LONGITUDINAL SECTION
PICNIC AREA
1/4" = 1'-0"

SHEET NO.
S303

CAMP HELEN STATE PARK

SHEET TITLE
RAMP SECTIONS

PROJECT TITLE
PARK IMPROVEMENTS

PROFESSIONAL REGISTRATION
Christopher S. Childers, P.E.
Florida Registration No. 50812
Digitally signed by Christopher S Childers
Date: 2025.02.21 16:19:06-05'00'

STATE OF FLORIDA · PROFESSIONAL ENGINEER · CHRISTOPHER S. CHILDERS · LICENSE NO. 50812

DESIGNER : CSC	ISSUE DATE: 2/24/2025	SYMBOL	REVISION	DATE	SYMBOL	REVISION	DATE
DRAWN BY: TLC	COMP. FILE No.:	A			C		
REVIEWED BY: CSC	STATE PROJECT No.: CN539	B			D		

Consultant :
BLISS & NYITRAY, INC.
STRUCTURAL ENGINEERS
227 N. Bronough St., Suite 7300
Tallahassee, FL 32301
Tel:(850)222-4454
www.bnengineers.com CA No. 674
BNI Project No. 23T26

Department of Environmental Protection
Division of Recreation and Parks
Bureau of Design and Construction
3800 Commonwealth Blvd., Tallahassee, FL 32399 (850) 245-2300

CONSTRUCTION DOCUMENTS

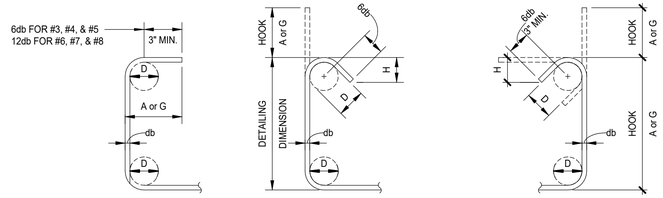
MINIMUM LAP SPLICE LENGTH SCHEDULE

BAR SIZE	f'c = 3000 psi		f'c = 4000 psi		f'c = 5000 psi		f'c = 6000 psi		f'c = 7000 psi		f'c = 8000 psi		f'c = 10,000 psi		48db
	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	
#3	22"	28"	19"	25"	17"	22"	16"	20"	16"	19"	16"	18"	16"	16"	18"
#4	29"	38"	25"	33"	23"	29"	21"	27"	19"	25"	18"	23"	16"	21"	24"
#5	36"	47"	31"	41"	28"	36"	26"	33"	24"	31"	22"	29"	20"	26"	30"
#6	43"	56"	37"	49"	34"	44"	31"	40"	28"	37"	27"	35"	24"	31"	36"
#7	63"	81"	54"	71"	49"	63"	45"	58"	41"	54"	39"	50"	35"	45"	42"
#8	72"	93"	62"	81"	56"	72"	51"	66"	47"	61"	44"	57"	39"	51"	48"
#9	81"	105"	70"	91"	63"	81"	57"	74"	53"	69"	50"	64"	44"	58"	54"
#10	91"	118"	79"	102"	71"	92"	64"	84"	60"	77"	56"	72"	50"	65"	61"
#11	101"	131"	87"	114"	78"	102"	71"	93"	66"	86"	62"	80"	55"	72"	68"

1. LISTED LAP LENGTHS ARE BASED ON CLASS "B" SPLICE.
2. "TOP BAR" IS DEFINED WHEN MORE THAN 12" OF FRESH CONCRETE IS PLACED BELOW HORIZONTAL REINFORCEMENT. ALL OTHER REINFORCEMENT IS REFERRED TO AS "OTHER BARS".
3. FOR TOP REINFORCEMENT IN SLABS AND BEAMS THAT ARE 12" THICK OR LESS, TABULATED SPLICE LENGTHS FOR "OTHER BARS" SHALL BE USED.
4. LISTED LAP LENGTHS ARE BASED ON NORMAL WEIGHT CONCRETE. MULTIPLY TABULATED LENGTHS x1.33 FOR LIGHT WEIGHT CONCRETE.
5. LISTED LAP LENGTHS ARE BASED ON UNCOATED AND GALVANIZED REINFORCEMENT. MULTIPLY ABOVE LENGTHS x1.2 FOR EPOXY COATED REINFORCEMENT.
6. FOR CONCRETE STRENGTHS IN BETWEEN THOSE TABULATED HERE, USE LAP SPLICE LENGTHS OF LOWER CONCRETE STRENGTH.
7. FOR TRANSFER SLAB WHERE REINF COVERS IS LESS THAN db, MULTIPLY SPLICE LENGTHS x1.5.

1 MINIMUM LAP SCHEDULE
FOR REINFORCING GRADE OF 60 KSI

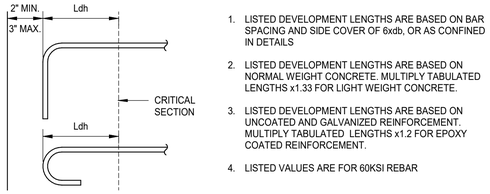
3/4" = 1'-0"



D = FINISHED BEND DIAMETER

STIRRUPS & TIES HOOKS DIMENSION					SEISMIC STIRRUP/TIE			
BAR SIZE	D	90° A or G	135°		135° SEISMIC HOOK			
			A or G	APPROX H	SIZE	D	A or G	APPROX H
#3	1 1/2"	4"	4"	2 1/2"	#3	1 1/2"	4 1/4"	3"
#4	2"	4 1/2"	4 1/2"	3"	#4	2"	4 1/2"	3"
#5	2 1/2"	6"	5 1/2"	3 3/4"	#5	2 1/2"	5 1/2"	3 3/4"
#6	4 1/2"	12"	8"	4 1/2"	#6	4 1/2"	8"	4 1/2"
#7	5 1/4"	14"	9"	5 1/4"	#7	5 1/4"	9"	5 1/4"
#8	6"	16"	10 1/2"	6"	#8	6"	10 1/2"	6"

4 STIRRUPS & TIES STANDARD HOOK DETAIL
3/4" = 1'-0"



1. LISTED DEVELOPMENT LENGTHS ARE BASED ON BAR SPACING AND SIDE COVER OF 6xdb, OR AS CONFINED IN DETAILS
2. LISTED DEVELOPMENT LENGTHS ARE BASED ON NORMAL WEIGHT CONCRETE. MULTIPLY TABULATED LENGTHS x1.33 FOR LIGHT WEIGHT CONCRETE.
3. LISTED DEVELOPMENT LENGTHS ARE BASED ON UNCOATED AND GALVANIZED REINFORCEMENT. MULTIPLY TABULATED LENGTHS x1.2 FOR EPOXY COATED REINFORCEMENT.
4. LISTED VALUES ARE FOR 60KSI REBAR

LDH DEVELOPMENT OF STD HOOKS IN TENSION

BAR SIZE	f'c (psi)							6xdb
	3000	4000	5000	6000	7000	8000	10,000	
#3	6"	6"	6"	6"	6"	6"	6"	2 1/4"
#4	6"	6"	6"	6"	6"	6"	6"	3"
#5	8"	8"	8"	7"	7"	7"	6"	3 3/4"
#6	11"	10"	10"	10"	9"	8"	8"	4 1/2"
#7	14"	13"	12"	12"	11"	10"	9"	5 1/4"
#8	16"	15"	15"	15"	14"	13"	11"	6"
#9	20"	18"	18"	17"	16"	15"	14"	6 3/4"
#10	23"	22"	21"	21"	19"	18"	16"	7 3/4"
#11	27"	26"	25"	24"	22"	21"	19"	8 1/2"

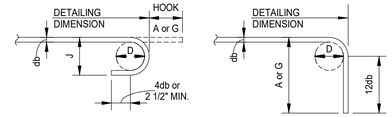
2 DEVELOPMENT OF STD HOOKS SCHEDULE
FOR REINFORCING GRADE OF 60 KSI
NORMAL WEIGHT CONCRETE

3/4" = 1'-0"

MINIMUM LAP SPLICE LENGTH SCHEDULE FOR MASONRY

MASONRY FILLED CELL	BAR SIZE								
	#3	#4	#5	#6	#7	#8	#9	#10	#11
8" MASONRY, f'm=2000, FBC	-	20"	25"	34"	48"	-	-	-	-
8" MASONRY, f'm=2500, FBC	-	20"	25"	30"	42"	-	-	-	-
8" MASONRY, f'm=2000, IBC	-	14"	22"	42"	60"	-	-	-	-
8" MASONRY, f'm=2500, IBC	-	12"	20"	38"	53"	-	-	-	-
12" MASONRY, f'm=2000, FBC	-	20"	25"	30"	35"	44"	57"	-	-
12" MASONRY, f'm=2500, FBC	-	20"	25"	30"	35"	40"	51"	-	-
12" MASONRY, f'm=2000, IBC	-	12"	14"	26"	36"	55"	72"	-	-
12" MASONRY, f'm=2500, IBC	-	12"	12"	23"	32"	49"	64"	-	-
12" MASONRY, f'm=2000, DOUBLE REINF, FBC	-	20"	26"	39"	55"	-	-	-	-
12" MASONRY, f'm=2500, DOUBLE REINF, FBC	-	20"	25"	35"	49"	-	-	-	-

5 MINIMUM LAP SCHEDULE FOR MASONRY
3/4" = 1'-0"



180° HOOK **90° HOOK**

D = FINISHED BEND DIAMETER

END HOOKS DIMENSION (ALL GRADES)

BAR SIZE	D	180° HOOKS		90° HOOK A or G
		A or G	J	
#3	2 1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3 3/4"	7"	5"	10"
#6	4 1/2"	8"	6"	12"
#7	5 1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9 1/2"	15"	11 3/4"	19"
#10	10 3/4"	17"	13 1/4"	22"
#11	12"	19"	14 3/4"	24"

3 STANDARD HOOK DETAIL
3/4" = 1'-0"

REVISION	DATE	SYMBOL
		C
		D
		A
		B

Department of Environmental Protection
Division of Recreation and Parks
Bureau of Design and Construction
3800 Commonwealth Blvd., Tallahassee, FL 32399 (850) 245-2300

ISSUE DATE: 2/24/2025
COMP. FILE No.:
STATE PROJECT No.: CN539

DESIGNER: CSC
DRAWN BY: TLC
REVIEWED BY: CSC

Consultant:
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STRUCTURAL ENGINEERS
227 N. Bronough St., Suite 7300
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www.blissnyitray.com CA No. 674
BNI Project No. 23126

PROFESSIONAL REGISTRATION

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Christopher S. Childers, P.E.
Fla. Reg. No. 50812

Digitally signed by Christopher S Childers
Date: 2025.02.21 16:19:08-05'00'

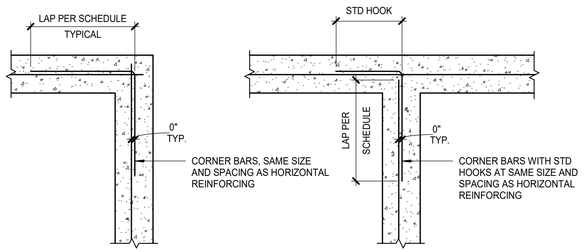
PROJECT TITLE
PARK IMPROVEMENTS

CAMP HELEN STATE PARK

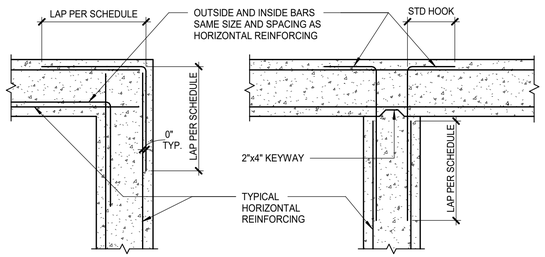
SHEET TITLE
TYPICAL SCHEDULE

SHEET NO.
S401

CONSTRUCTION DOCUMENTS



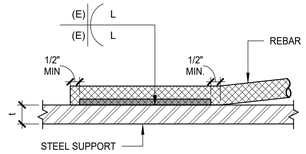
CORNERS - SINGLE CURTAIN INTERSECTIONS - SINGLE CURTAIN



CORNERS - DOUBLE CURTAIN INTERSECTIONS - DOUBLE CURTAIN

NOTE:
ZERO DIMENSIONS IS USED TO INDICATE THAT THE BARS
ARE INTENDED TO BE PLACED IN THE SAME PLANE

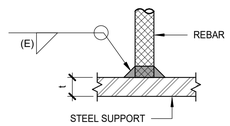
1 TYPICAL HORIZONTAL REINFORCING
CONCRETE TIE BEAMS, WALLS AND FOOTINGS 3/4" = 1'-0"



MINIMUM WELD LENGTH, L				
REBAR	(E)	PLATE THICKNESS, t		
		3/8"	1/2"	> 1/2"
#3	1/8	1 1/4"	1 1/4"	1 1/4"
#4	1/8	1 3/4"	1 3/4"	1 3/4"
#5	1/8	2 1/4"	2 1/4"	2 1/4"
#6	3/16	2 1/2"	2 1/2"	2 1/2"
#7	3/16	3"	3"	3"
#8	1/4	3 1/2"	3 1/2"	3 1/2"
#9	1/4	-	3 3/4"	3 3/4"
#10	5/16	-	4 1/4"	4 1/4"
#11	5/16	-	-	4 3/4"

NOTES:
1. USE E80 ELECTRODES
2. REBAR SHALL BE A706, GR60
3. STEEL SUPPORT SHALL BE A36 OR STRONGER
4. (E) IS BASED ON 0.2db AND ROUNDED UP TO NEAREST 16TH

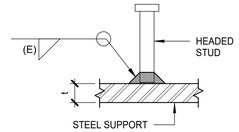
2 DEVELOPMENT OF WELDED REBAR
PARALLEL TO STEEL SUPPORT 3" = 1'-0"



REBAR	(E)	t (MIN)
#3	3/16	3/8"
#4	1/4	3/8"
#5	5/16	3/8"
#6	3/8	3/8"
#7	7/16	7/16"
#8	1/2	1/2"
#9	9/16	9/16"
#10	5/8	5/8"
#11	11/16	11/16"

NOTES:
1. USE E80 ELECTRODES
2. REBAR SHALL BE A706, GR60
3. STEEL SUPPORT SHALL BE A36 OR STRONGER

4 DEVELOPMENT OF WELDED REBAR
PERPENDICULAR TO STEEL SUPPORT 3" = 1'-0"



HSA Ø	(E)	t (MIN)
3/8" - 7/16"	3/16	3/8"
1/2"	1/4	3/8"
5/8"	5/16	3/8"
3/4"	3/8	3/8"
7/8"	7/16	7/16"
1"	1/2	1/2"

NOTES:
1. HEADED STUDS SHALL BE WELDED VIA STUD WELDING GUN. FILLET WELDING OF HEADED STUDS SHALL BE PREAPPROVED BY THE ENGINEER OF RECORD.
2. STEEL SUPPORT SHALL BE A36 OR STRONGER
3. THE BASE OF THE STUD SHALL BE PREPARED TO FIT AGAINST THE BASE METAL. THEREFORE THE FLUX LOAD (PELLET) SHOULD BE REMOVED OR FLATTENED BY GRINDING OR CHISELING.
4. REPAIR OF STUDS IN WHICH A FULL 360 DEGREE FLASH IS NOT OBTAINED MAY BE REPAIRED BY ADDING THE MINIMUM FILLET WELD IN PLACE OF THE MISSING FLASH AND TO EXTEND 3/8" BEYOND EACH END

3 HEADED STUD ANCHOR WELD
3" = 1'-0"

REVISION	DATE	SYMBOL
		C
		D
		A
		B

Department of Environmental Protection
Division of Recreation and Parks
Bureau of Design and Construction
3800 Commonwealth Blvd., Tallahassee, FL 32399 (850) 245-2300

ISSUE DATE: 2/24/2025
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DESIGNER: CSC
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PROFESSIONAL REGISTRATION

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Christopher S. Childers, P.E.
Fla. Reg. No. 50812

Digitally signed by
Christopher S Childers
Date: 2025.02.21
16:19:09-05'00'

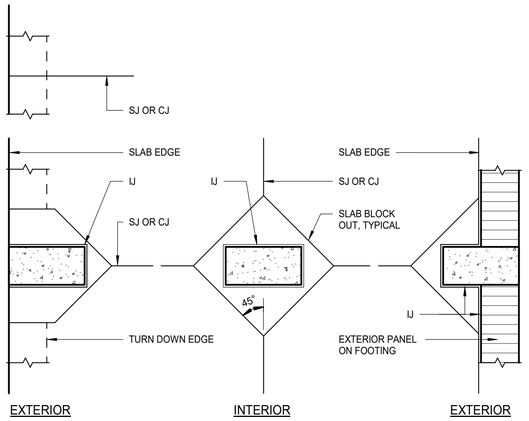
CAMP HELEN STATE PARK

SHEET TITLE: TYPICAL SCHEDULE

PROJECT TITLE: PARK IMPROVEMENTS

SHEET NO.
S402

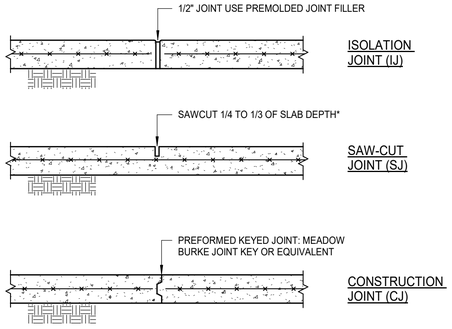
CONSTRUCTION DOCUMENTS



LEGEND

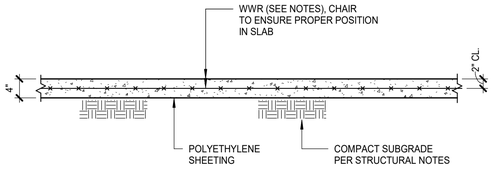
CJ DENOTES CONTROL JOINT
IJ DENOTES ISOLATION JOINT
SJ DENOTES SLAB JOINT

1 CONTROL JOINTS AT COLUMNS
PLAN VIEW — 3/4" = 1'-0"

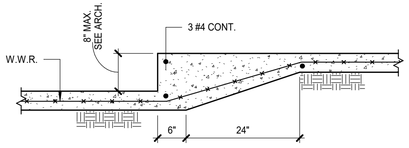


*PROVIDE SEALANT WHERE REQUIRED BY ARCHITECT SAWCUT AS SOON AS POSSIBLE AFTER CONCRETE HARDENS. SAW CUTTING MUST BE COMPLETE WITHIN 8 HRS. AFTER POURING.

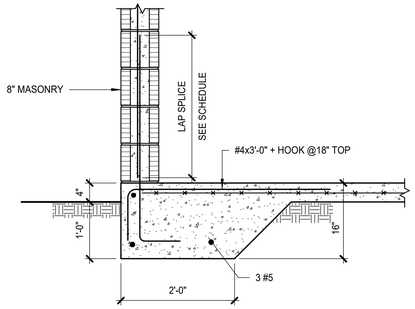
2 SLAB ON GRADE CONTROL JOINTS
3/4" = 1'-0"



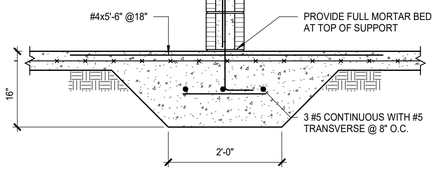
3 TYPICAL SLAB ON GRADE DETAIL
WITH W.W.R. — 3/4" = 1'-0"



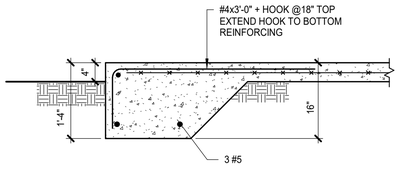
4 TYPICAL SLAB STEP DETAILS
3/4" = 1'-0"



5 MASONRY WALL
ON THICKENED SLAB — 3/4" = 1'-0"



6 THICKENED SLAB DETAIL
AT INTERIOR — 3/4" = 1'-0"



7 MASONRY WALL
ON THICKENED SLAB — 3/4" = 1'-0"

8 COLUMN FOUNDATION
3/4" = 1'-0"

9 PAVILION COLUMN FOUNDATION
3/4" = 1'-0"

SYMBOL	DATE	REVISION
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Date: 2025.02.21 16:19:11-05'00'

PROJECT TITLE
PARK IMPROVEMENTS

SHEET TITLE
TYPICAL FOUNDATION & SLAB ON GRADE DETAILS

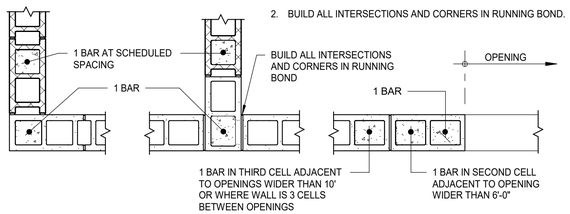
CAMP HELEN STATE PARK

SHEET NO.
S511

CONSTRUCTION DOCUMENTS

NOTES:

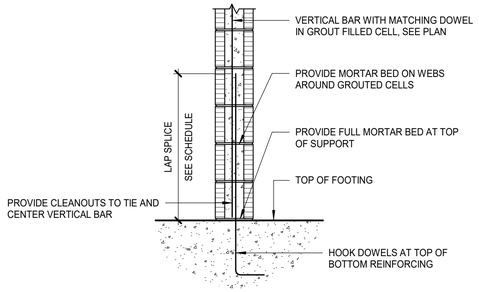
1. SEE "MASONRY NOTES" FOR JOINT REINFORCEMENT, INCLUDING PREFABRICATED CORNERS AND TEES.
2. BUILD ALL INTERSECTIONS AND CORNERS IN RUNNING BOND.



AT CORNERS AT INTERSECTIONS AT OPENINGS

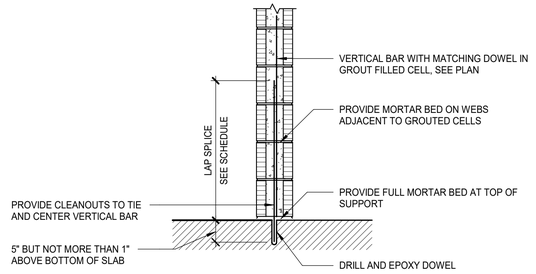
1 8" MASONRY WALL REINFORCING

NOT REQUIRED IN UN-REINFORCED WALLS 3/4" = 1'-0"



2 REINFORCED MASONRY WALL

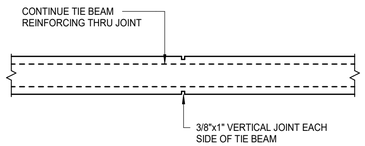
AT BASE WITH EMBEDDED DOWEL 3/4" = 1'-0"



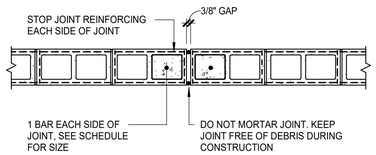
3 REINFORCED MASONRY WALL

AT BASE WIITH EPOXIED DOWEL 3/4" = 1'-0"
ONLY TO BE USED FOR INTERIOR WALLS
AT CONTRACTOR'S OPTION

NOTE:
AT 12'-0" O.C. FROM CORNERS AND AT 20'-0" O.C. (MAX) THEREAFTER



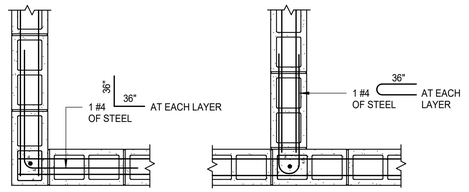
AT BOND BEAM



AT FOUNDATION

4 MASONRY CONTROL JOINT DETAILS

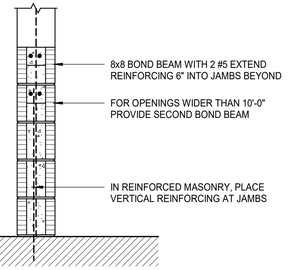
3/4" = 1'-0"



AT CORNERS AT INTERSECTIONS

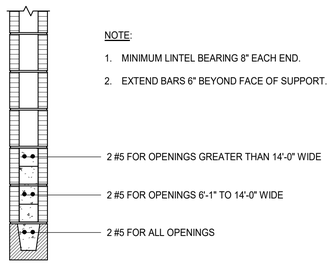
5 BOND BEAM REINFORCING

PLAN VIEWS 3/4" = 1'-0"

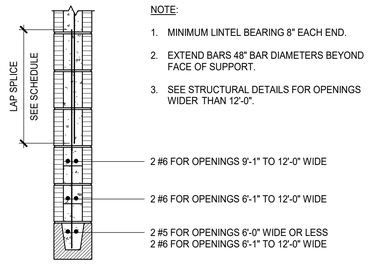


6 TYPICAL MASONRY SILL DETAIL

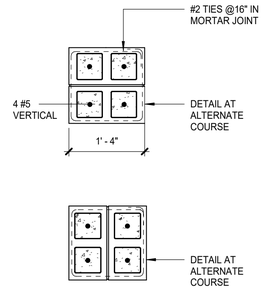
3/4" = 1'-0"



FOR INTERIOR WALLS



FOR EXTERIOR WALLS



7 TYP INTERIOR WALL LINTEL DETAIL

SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS 3/4" = 1'-0"

8 TYPICAL EXTERIOR LINTEL DETAIL

SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS 3/4" = 1'-0"

9 MASONRY COLUMN DETAILS

PLAN VIEW 3/4" = 1'-0"

	DATE	REVISION	SYMBOL	DATE	REVISION	SYMBOL
			C			A
			D			B

ISSUE DATE: 2/24/2025
COMP. FILE No.:
STATE PROJECT No.: CN539

DESIGNER: CSC
DRAWN BY: TLC
REVIEWED BY: CSC
Consultant:

BLISS & NYITRAY, INC.
STRUCTURAL ENGINEERS
227 N. Bronough St., Suite 7300
Tallahassee, FL 32301
Tel:(850)222-4454
www.blissnyitray.com CA No. 674
BNI Project No. 23126

Department of Environmental Protection
Division of Recreation and Parks
Bureau of Design and Construction
3800 Commonwealth Blvd., Tallahassee, FL 32399 (850) 245-2300

PROFESSIONAL REGISTRATION

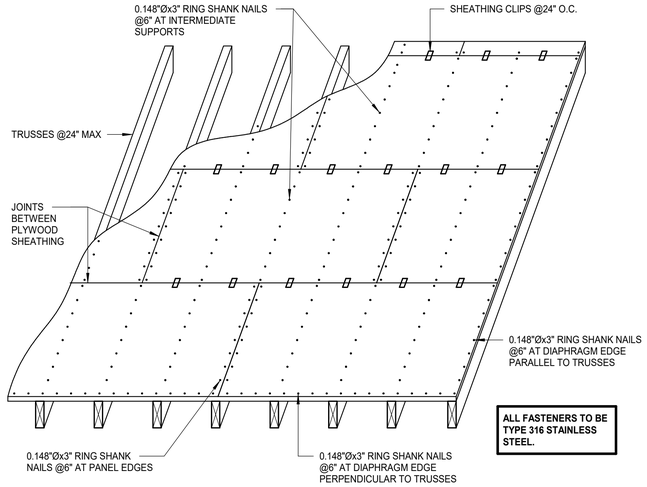
CHRISTOPHER S. CHILDERS LICENSE NO. 50812 STATE OF FLORIDA PROFESSIONAL ENGINEER

Christopher S. Childers, P.E.
Fla. Reg. No. 50812
Digitally signed by Christopher S Childers
Date: 2025.02.21 16:19:13-05'00'

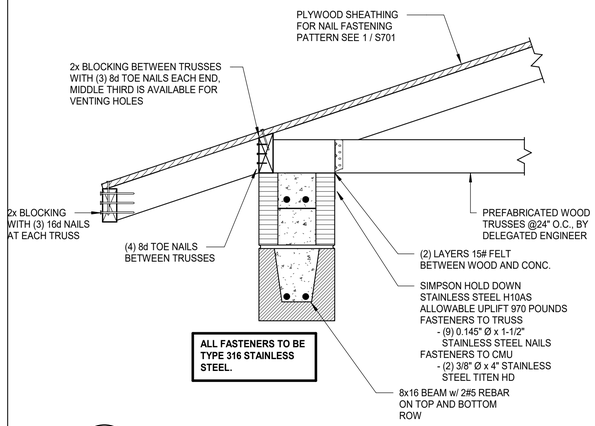
PROJECT TITLE: PARK IMPROVEMENTS
SHEET TITLE: TYPICAL MASONRY DETAILS
CAMP HELEN STATE PARK

SHEET NO.
S521

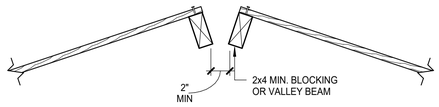
CONSTRUCTION DOCUMENTS



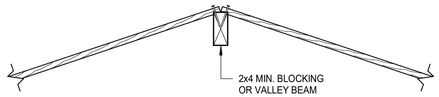
1 TYPICAL ROOF SHEATHING NAIL PATTERN
UNBLOCKED DIAPHRAGM — 3/8" = 1'-0"



4 ROOF TRUSS AT BEAM
1 1/2" = 1'-0"

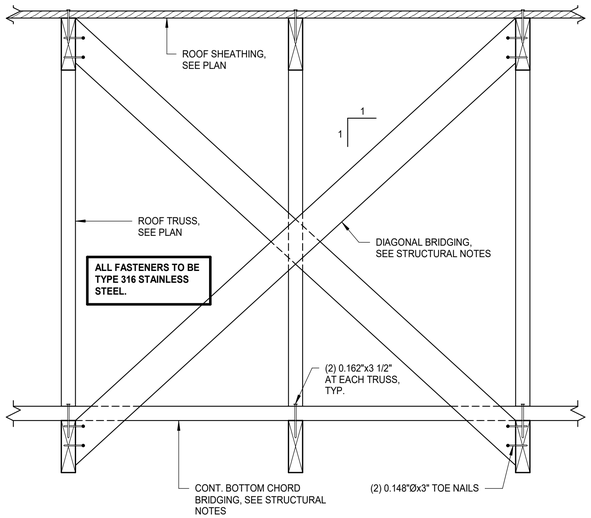


TYPICAL VENTED RIDGE DETAIL

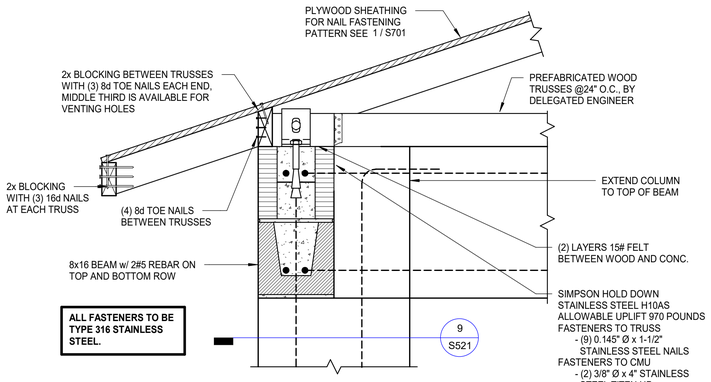


TYPICAL RIDGE DETAIL

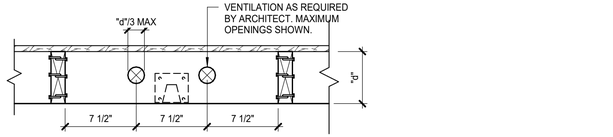
2 TYPICAL RIDGE & VALLEY DETAILS
1 1/2" = 1'-0"



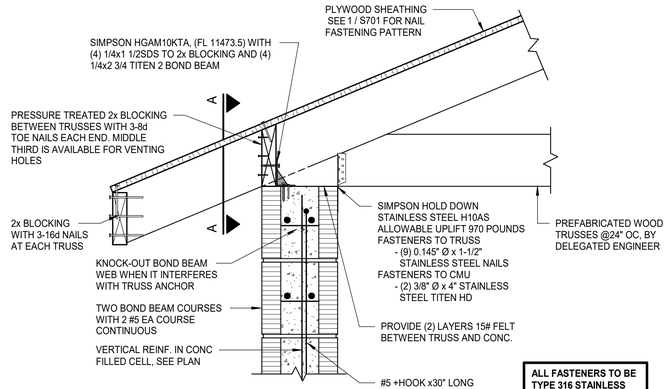
5 TYPICAL TRUSS BRIDGING
1 1/2" = 1'-0"



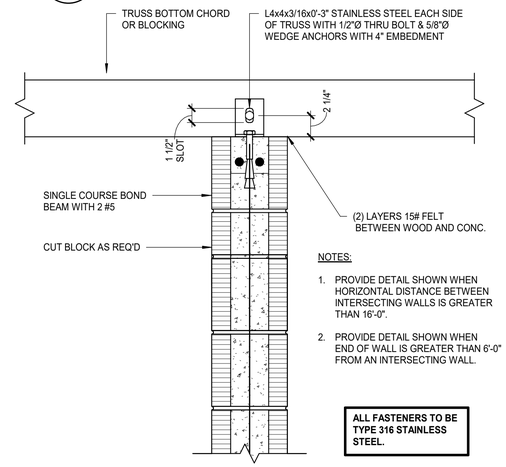
7 MASONRY COLUMN TO BEAM CONNECTION
1 1/2" = 1'-0"



SECTION A-A



3 ROOF TRUSS TO CMU WALL
1 1/2" = 1'-0"



6 INTERIOR PARTITION WALL AT ROOF TRUSS
1 1/2" = 1'-0"

SHEET NOTE:
ALL NAILS & FASTENERS TO BE STAINLESS STEEL.

DATE	REVISION	SYMBOL

DATE	REVISION	SYMBOL
		C
		D

DATE	REVISION	SYMBOL
		A
		B

Department of Environmental Protection
Division of Recreation and Parks
Bureau of Design and Construction
3800 Commonwealth Blvd., Tallahassee, FL 32399 (850) 245-2300

ISSUE DATE: 2/24/2025
COMP. FILE No.:
STATE PROJECT No.: CN539

DESIGNER: CSC
DRAWN BY: TLC
REVIEWED BY: CSC
Consultant:

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PROFESSIONAL REGISTRATION
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Christopher S. Childers, P.E.
Fla. Reg. No. 50812
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Date: 2025.02.21 16:19:14-05'00'

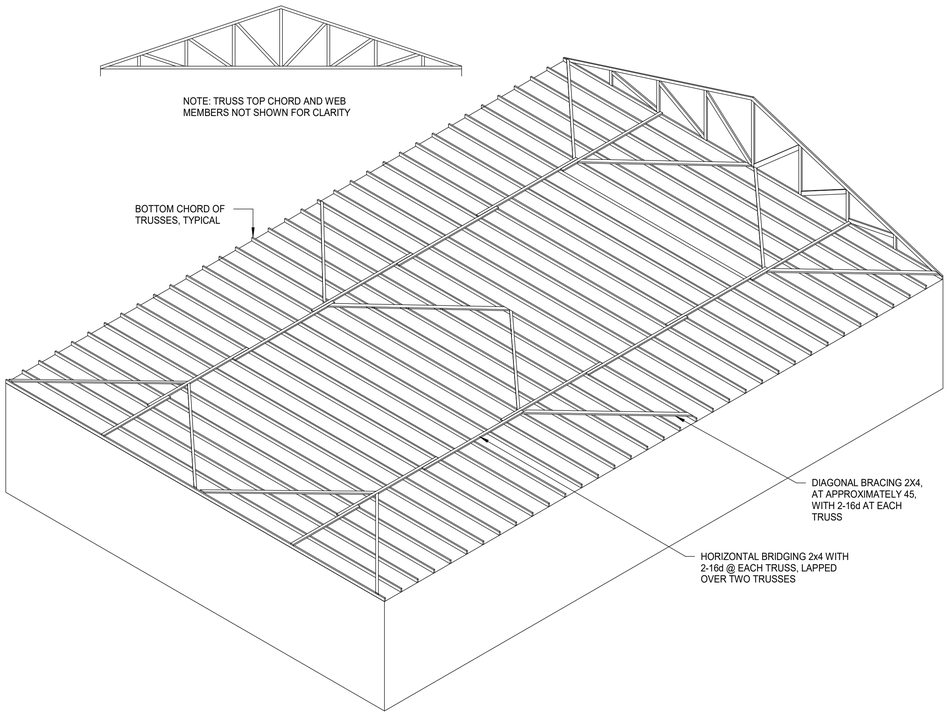
CONSTRUCTION DOCUMENTS

CAMP HELEN STATE PARK

SHEET TITLE: TYPICAL WOOD DETAILS

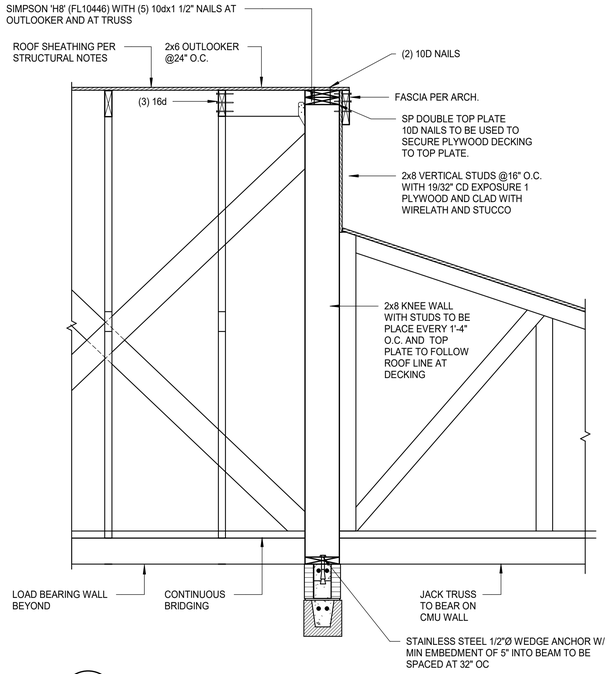
PROJECT TITLE: PARK IMPROVEMENTS

SHEET NO.
S701



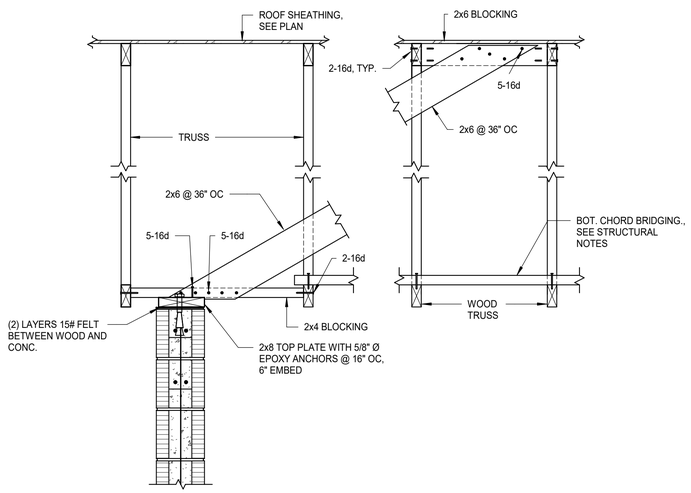
1 TRUSS BOTTOM CHORD PERMANENT BRACING

1/8" = 1'-0"



2 SECTION AT ROOF

3/4" = 1'-0"



3 GABLE END WALL BRACING AT MASONRY WALL

1" = 1'-0"

SHEET NOTE:
ALL NAILS & FASTENERS TO BE STAINLESS STEEL.

	DATE	REVISION	SYMBOL
			C
			D

	DATE	REVISION	SYMBOL
			A
			B

Department of Environmental Protection
Division of Recreation and Parks
Bureau of Design and Construction
3800 Commonwealth Blvd., Tallahassee, FL 32399 (850) 245-2300

DESIGNER: CSC
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ISSUE DATE: 2/24/2025
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Date: 2025.02.21 16:19:16-05'00'

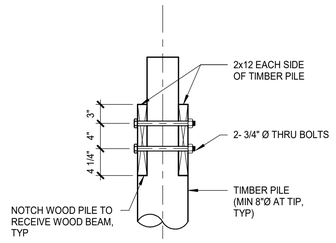
CAMP HELEN STATE PARK

SHEET TITLE: TYPICAL WOOD DETAILS

PROJECT TITLE: PARK IMPROVEMENTS

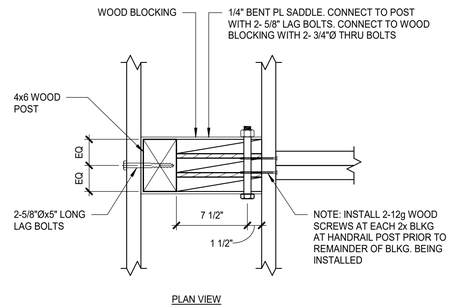
SHEET NO.
S702

CONSTRUCTION DOCUMENTS



1 TYPICAL WOOD GIRDER ATTACHMENT
TO WOOD PILE

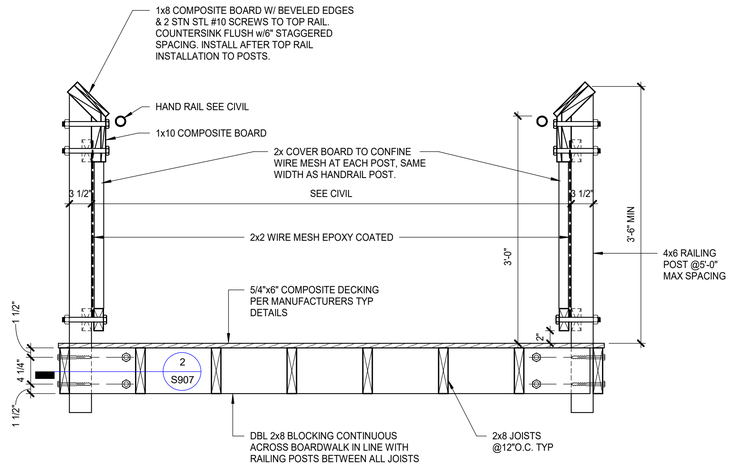
1" = 1'-0"



PLAN VIEW

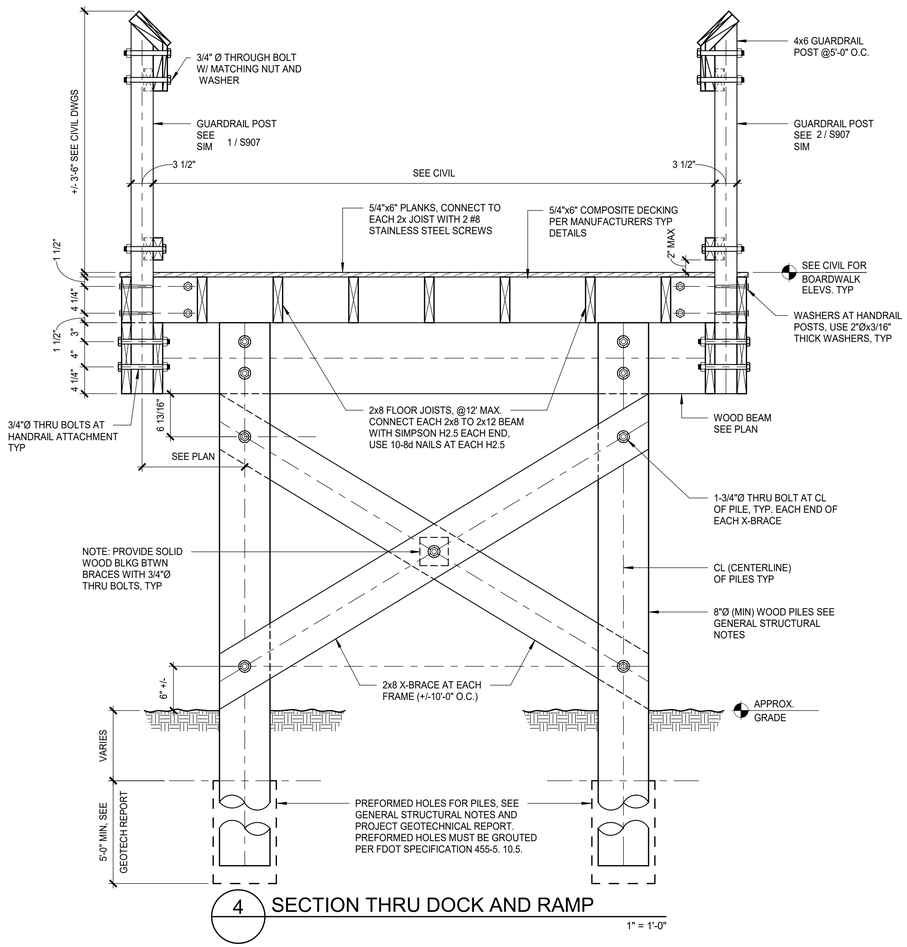
2 GUARDRAIL ATTACHMENT DETAIL

1 1/2" = 1'-0"



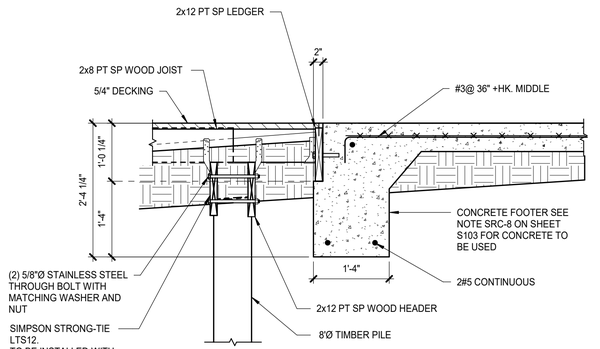
3 TYPICAL HANDRAIL ATTACHMENT

1" = 1'-0"



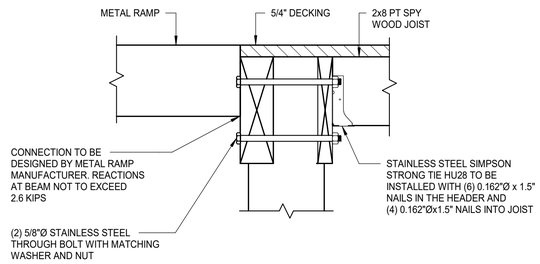
4 SECTION THRU DOCK AND RAMP

1" = 1'-0"



5 WOOD RAMP TO CONCRETE SLAB DETAIL

3/4" = 1'-0"



6 METAL RAMP TO WOOD RAMP TRANSITION

1 1/2" = 1'-0"

SHEET NOTE:
ALL NAILS & FASTENERS TO BE STAINLESS STEEL.

	DATE	REVISION	SYMBOL

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			C
			D
			A
			B

Department of Environmental Protection
Division of Recreation and Parks
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DESIGNER: CSC
DRAWN BY: TLC
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Fla. Reg. No. 50812
Digitally signed by
Christopher S Childers
Date: 2025.02.21
16:19:17-05'00'

CAMP HELEN STATE PARK

SHEET TITLE: WOOD DOCK & DECK DETAILS

PROJECT TITLE: PARK IMPROVEMENTS

SHEET NO.
S907

CONSTRUCTION DOCUMENTS