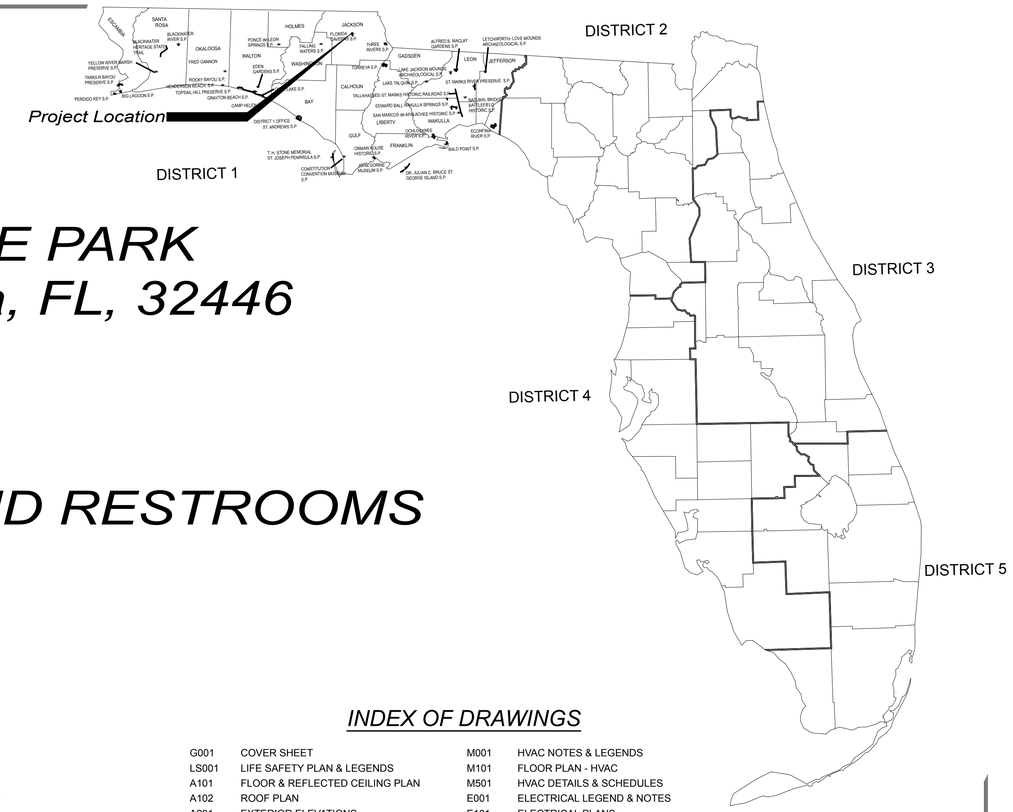
60% CONSTRUCTION DOCUMENTS



FLORIDA CAVERNS STATE PARK
3345 CAVERNS RD., Marianna, FL, 32446

DISTRICT 1

JACKSON COUNTY

FLORIDA CAVERNS CAMPGROUND RESTROOMS

PROJECT # 61351C

ABBREVIATIONS

A.F.F.	ABOVE FINISHED FLOOR
A.H.U.	AIR HANDLING UNIT
ALUM.	ALUMINUM
ALT.	ALTERNATE
APPROX.	APPROXIMATE
BD.	BOARD
BLDG.	BUILDING
BLKG.	BLOCK
BLK.	BLACK
BLT.	BUILT
BRK.	BRICK
BRKR.	BREAKER
BSMT.	BASEMENT
C.J.	CONTROL JOINT
CLG.	CEILING
CLR.	CLEAR
CMU.	CONCRETE MASONRY UNIT
C.O.	CLEAN OUT
CONC.	CONCRETE
CU.	COPPER
CU. FT.	CUBIC FOOT
CU. IN.	CUBIC INCH
CU. YD.	CUBIC YARD
DIA./Ø	DIAMETER
DBL.	DOUBLE
DBT.	DRY-BULB TEMPERATURE
DEG.	DEGREE
DEPT.	DEPARTMENT
DF.	DRINKING FOUNTAIN
DISC.	DISCONNECT
DL.	DEAD LOAD
DN.	DOWN
D.S.	DOWN SPOUT
DWG.	DRAWING
E.F.	EXHAUST FAN
EXH.	EXHAUST
EXP. JT.	EXPANSION JOINT
EXT.	EXTERIOR
FIN.	FINISH
FL.	FLOOR
FLUOR.	FLUORESCENT
FP.	FIREPLACE
FR.	FIRE RATING
FT.	FOOT/FEET
FTG.	FOOTING
GALV.	GALVANIZED
GFI.	GROUND FAULT CIRCUIT INTERRUPT
GOVT.	GOVERNMENT
GR.FL.	GROUND FLOOR
GYP.	GYPSUM
H.C.	HOLLOW CORE
H.D.G.	HOT DIPPED GALVANIZED
HDR.	HEADER
HDWR.	HARDWARE
H.P.	HORSEPOWER
HT.	HEIGHT
HTR.	HEATER
HV.	HIGH VOLTAGE
HVAC.	HEATING, VENTILATING AND AIR CONDITIONING
HWY.	HIGHWAY
ID.	INSIDE DIAMETER
IN.	INCH
INCAND.	INCANDESCENT
INCL.	INCLUDED
INSUL.	INSULATION
INT.	INTERIOR
INV. EL.	INVERT ELEVATION
JST.	JOIST
KD.	KILN DRIED
KW.	KILOWATT
KWH.	KILOWATT HOUR
LAM.	LAMINATED
LAV.	LAVATORY
LB.	POUND
LTG.	LIGHTING
LGTH.	LENGTH
LIN.	LINEAR
LL.	LIVE LOAD
MANUF.	MANUFACTURE
MAX.	MAXIMUM
MECH.	MECHANICAL
MIN.	MINIMUM
MLDG.	MOLDING
MHW.	MEAN HIGH WATER
MHHW.	MEAN HIGHER HIGH WATER
MLW.	MEAN LOW WATER
MLLW.	MEAN LOWER LOW WATER
MSL.	MEAN SEA LEVEL
MOD.	MODIFICATION
NTS.	NOT TO SCALE
NO.#	NUMBER
OA.	OVERALL
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
OFC.	OFFICE
O/H.	OVER HEAD
OPP.	OPPOSITE
PARTN.	PARTITION
PC.	PORTLAND CEMENT
PCF	POUNDS PER CUBIC FOOT
P.E.	PROFESSIONAL ENGINEER
PERF.	PERFORATE
PERP.	PERPENDICULAR
PL.	PLATE
PLG.	PILING
PLYWD.	PLYWOOD
PNL.	PANEL
PREFAB.	PREFABRICATED
PRELIM.	PRELIMINARY
PSF.	POUNDS PER SQUARE FOOT
PSI.	POUNDS PER SQUARE INCH
P.T.	PRESSURE TREATED
QS.	QUARTER SAWN
R.	RADIUS
RCPT.	RECEPTACLE
REBAR	REINFORCING BAR
REFRIG.	REFRIGERATION
REINF.	REINFORCING
RFG.	ROOFING
ROH.	ROUGH
RM.	ROOM
R.O.	ROUGH OPENING
RS.	ROUGH SAWN
S.C.	SOLID CORE
SCH.	SCHEDULE
SDG.	SIDING
SECT.	SECTION
SFTWD.	SOFTWOOD
SGD.	SLIDING GLASS DOOR
SH.	SHINGLES
SPEC.	SPECIFICATION
SPR.	SPRING
SQ.	SQUARE
SQ. FT.	SQUARE FOOT
SQ. IN.	SQUARE INCH
SQ. YD.	SQUARE YARD
SS.	STAINLESS STEEL
STL.	STEEL
SUB. FL.	SUBFLOOR
SUP.	SUPPLY
SW.	SWITCH
SYM.	SYMMETRICAL
SYP.	SOUTHERN YELLOW PINE
SYS.	SYSTEM
S4S.	SURFACED FOUR SIDES
TEL.	TELEPHONE
T&G.	TONGUE-AND-GROOVE
TYP.	TYPICAL
U.E.	UNDERGROUND ELECTRIC
U.G.	UNDER GROUND
UL.	UNDERWRITERS LABORATORIES, INC.
V.	VOLT
VENT.	VENTILATOR
VERT.	VERTICAL
VIF.	VERIFY IN FIELD
VOL.	VOLUME
VP.	VENT PIPE
VTR.	VENT THRU ROOF
W.	WATER
WB.	WET BULB TEMPERATURE
WC.	WATER CLOSET
WD.	WOOD
WP.	WATERPROOF
WWF.	WELDED WIRE FABRIC
YD.	YARD

REFERENCE LEGEND

G8 / A502 — SECTION IDENTIFICATION / SHEET NUMBER

G8 / A502 — DETAIL IDENTIFICATION / SHEET NUMBER

APPLICABLE CODES AND DESIGN DATA

CODE LIST

FLORIDA BUILDING CODE, BUILDING (FBC-B)	2023 Edition
FLORIDA BUILDING CODE, FUEL GAS (FBC-FG)	2023 Edition
FLORIDA BUILDING CODE, MECHANICAL (FBC-M)	2023 Edition
FLORIDA BUILDING CODE, PLUMBING (FBC-P)	2023 Edition
FLORIDA BUILDING CODE, EXISTING BUILDING (FBC-EB)	2023 Edition
FLORIDA BUILDING CODE, RESIDENTIAL (FBC-R)	2023 Edition
FLORIDA BUILDING CODE, ACCESSIBILITY (FBC-A)	2023 Edition
FLORIDA FIRE PREVENTION CODE (FFPC)	2023 Edition
NATIONAL ELECTRICAL CODE NFPA-70	2020 Edition
FDOT STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONST.	Latest Edition
FDOT DESIGN STANDARDS	Latest Edition

DESIGN DATA

CONSTRUCTION TYPE:	VB
OCCUPANCY CLASS:	U UTILITY & MISCELLANEOUS
OCCUPANT LOAD:	UNOCCUPIED BUILDING
TOTAL EXITS:	2
ENCLOSED AREA:	1,125 GSF

SEE LIFE SAFETY PLAN, SHEET LS001 FOR ADDITIONAL INFORMATION

SCOPE OF PROJECT

THIS PROJECT CONSISTS OF THREE NEW RESTROOM FACILITIES, BASED ONE SET OF BUILDING DRAWINGS, FOR FLORIDA CAVERNS STATE PARK. WORK INCLUDES AN ADA COMPLIANT MEN'S RESTROOMS WITH TWO SHOWERS. ADA COMPLIANT WOMEN'S RESTROOM WITH TWO SHOWERS, A COMMON CHASE WITH MOP SINK, AN ADA COMPLIANT UNISEX RESTROOM WITH A SHOWER. AS WELL AS A COVERED AREA WITH A WATER FOUNTAIN, BOTTLE FILLING STATION, VENDING MACHINES, AND A WASHER AND DRYER. CONSTRUCTION CONSISTS OF SLAB-ON-GRADE MONOLITHIC FOUNDATION, LOAD BEARING MASONRY WALLS, PRE-ENGINEERED WOOD TRUSSES, AND STANDING SEAM METAL ROOF. STRUCTURE TO BE NATURAL VENTILATED WITH CONTROLLED HEATING AND COOLING. LED LIGHTING TO BE USED THROUGHOUT, TIED TO A PHOTOCELL. INTERIOR FINISHES INCLUDE EPOXY FLOORS WITH INTEGRAL COVE BASE, PAINTED CMU AND GYPSUM BOARD WALLS, CERAMIC WALL TILE, PAINTED GYPSUM/ CEMENTITIOUS CEILINGS.

ALL WORK MUST BE PERFORMED PER CODE. MECHANICAL AND ELECTRICAL ITEMS NECESSARY FOR A COMPLETE, FUNCTIONAL, AND CODE COMPLIANT SYSTEM IS INCLUDED EVEN IF NOT SPECIFICALLY IDENTIFIED.

JODIE DODSON
DESIGNER

CN214 - TA37
CONSULTANT CONTRACT No.

7/19/2024
INITIAL ISSUE DATE

INDEX OF DRAWINGS

G001	COVER SHEET
LS001	LIFE SAFETY PLAN & LEGENDS
A101	FLOOR & REFLECTED CEILING PLAN
A102	ROOF PLAN
A201	EXTERIOR ELEVATIONS
A301	BUILDING SECTIONS
A302	WALL SECTIONS
A401	ENLARGED PLAN
A402	INTERIOR ELEVATIONS
A403	INTERIOR ELEVATIONS
A601	SCHEDULES
S000	COVER SHEET
S001	ABBREVIATIONS & SYMBOLS
S002	STRUCTURAL NOTES
S003	STRUCTURAL NOTES
S004	STRUCTURAL PLAN SPECIFICATIONS
S005	STRUCTURAL PLAN SPECIFICATIONS
S010	WINDLOAD DIAGRAMS
S101	FOUNDATION & GROUND FLOOR PLAN
S102	ROOF FRAMING PLAN
S301	BUILDING SECTIONS
S302	BUILDING SECTIONS
S401	TYPICAL SCHEDULES
S402	TYPICAL SCHEDULES
S511	TYPICAL SLAB ON GRADE DETAILS
S521	TYPICAL MASONRY DETAILS
S701	TYPICAL WOOD WALL DETAILS
S721	TYPICAL WOOD ROOF DETAILS
S722	TYPICAL WOOD ROOF DETAILS
M001	HVAC NOTES & LEGENDS
M101	FLOOR PLAN - HVAC
M501	HVAC DETAILS & SCHEDULES
E001	ELECTRICAL LEGEND & NOTES
E101	ELECTRICAL PLANS
P001	PLUMBING NOTES & LEGEND
P101	FLOOR PLAN - PLUMBING - DRAIN & VENT
P102	FLOOR PLAN - PLUMBING -PRESSURE
P501	PLUMBING DETAILS
P502	PLUMBING DETAILS
P601	PLUMBING SCHEDULES
P901	RISER DIAGRAM - PLUMBING - SANITARY
P902	RISER DIAGRAM - PLUMBING - PRESSURE

FLORIDA CAVERNS STATE PARK
FLORIDA CAVERNS CAMPGROUND RESTROOMS

STATE OF FLORIDA — JOEL DODSON — AR00015211 — REGISTERED ARCHITECT

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Division of Recreation and Parks Bureau of Design and Construction

#DrgID = DRAWING NUMBER
#LayID = SHEET NUMBER

WALL SECTION OR DETAIL MARKER REFERENCE

BUILDING SECTION REFERENCE

AREA OR DETAIL BLOW-UP REFERENCE

INTERIOR ELEVATION REFERENCE

ROOM NAME
ROOM NO — ROOM LABEL

REVISION AREA REFERENCE

COLUMN GRID REFERENCE

WINDOW REFERENCE

LOUVER REFERENCE

DOOR REFERENCE

RESTROOM ACCESSORY REFERENCE

NEW ELEMENTS KEYNOTE REFERENCE

SYMBOL LEGEND

ALUMINUM
BRICK / MASONRY
CONCRETE
CONCRETE MASONRY UNITS
EARTH
GRAVEL
GYPSUM BOARD
INSULATION, BATT
INSULATION, SPRAY FOAM
INSULATION, EIFS
INSULATION, RIGID
SAND
SHEATHING, CEMENTITIOUS
SHEATHING, PLYWOOD
SIDING, CEMENTITIOUS
VAPOR BARRIER
WOOD, BLOCKING
WOOD, FINISH GRADE
WOOD, ROUGH LUMBER

MATERIALS

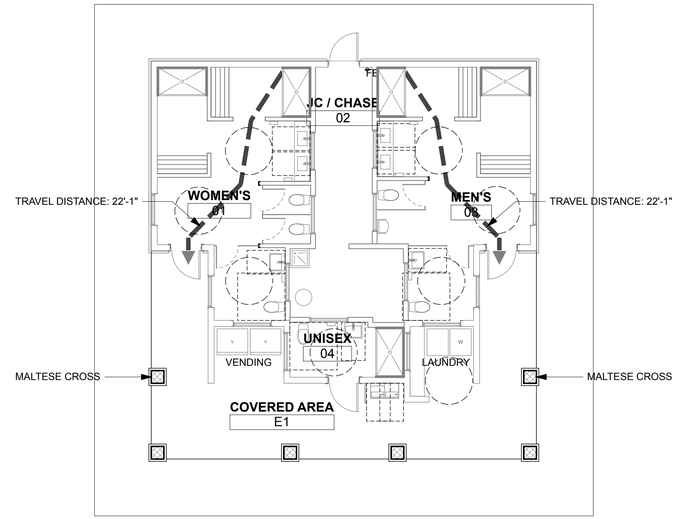
GENERAL NOTES:

1. THESE PLANS ARE THE PROPERTY OF DODSTONE ARCHITECTS, INC. USE OR COPY IS PERMITTED BY CONTRACT ONLY. ANY REVISIONS TO THESE PLANS REGARDLESS OF SCOPE WITHOUT WRITTEN PERMISSION OF DODSTONE ARCHITECTS, INC. OR ANY CONSTRUCTION EXECUTED FROM THESE PLANS WITHOUT THE EXPRESSED APPROVAL OF DODSTONE ARCHITECTS, INC. OR ANY CHANGE IN THE SCOPE, DESIGN, OR INTENT FOR ANY REASON BY ANY PERSON OTHER THAN DODSTONE ARCHITECTS, INC. SHALL THEREBY ABSOLVE DODSTONE ARCHITECTS, INC. FROM ANY LIABILITY CLAIMS, SUITS, OR LITIGATION BY ANY INTERESTED PARTIES IN THE PROJECT.
2. IF THE BIDDER/CONTRACTOR IS UNABLE TO INTERPRET THE CONTRACT DOCUMENTS, HE IS RESPONSIBLE FOR REQUESTING CLARIFICATION IN WRITING. IF THE CONTRACTOR PROCEEDS WITH ANY WORK BEFORE OBTAINING CLARIFICATION, HE SHALL BE HELD RESPONSIBLE FOR ANY DEFICIENCIES IN WORK.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND SEQUENCING ALL WORK.
4. THE CONTRACTOR SHALL BE RESTRICTED TO AREAS SPECIFIED BY OWNER FOR ON SITE STORAGE OF CONSTRUCTION MATERIALS.
5. ALL WORK PERFORMED SHALL COMPLY WITH APPLICABLE OSHA/EPA REGULATIONS, CURRENT BUILDING CODES, AND GENERALLY ACCEPTED PROFESSIONAL CRAFTSMANSHIP.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR ERECTING AND MAINTAINING ALL REASONABLE SAFEGUARDS TO PROTECT THE GENERAL HEALTH SAFETY AND WELFARE OF THE GENERAL PUBLIC. THIS SHALL INCLUDE POSTING DANGER SIGNS, AND OTHER WARNING SIGNS AGAINST POTENTIAL HAZARDS, AS WELL AS ENFORCING SAFETY REGULATIONS.
7. CONTRACTOR SHALL MAINTAIN A CLEAN WORK PREMISE AT ALL TIMES AND SHALL CLEAN DEBRIS FROM CONSTRUCTION SITE DAILY.
8. ALL DEBRIS GENERATED DURING CONSTRUCTION SHALL BE SORTED AND RECYCLED WHEREVER POSSIBLE AND AS CALLED FOR IN THE SPECIFICATIONS.
9. ALL NEW WORK TO BE IN ACCORDANCE WITH THE LATEST BUILDING CODES AS DESCRIBED ON THE LIFE SAFETY SHEET.
10. THE CONTRACTOR SHALL MAKE AVAILABLE TO THE BUILDING INSPECTOR ANY DOCUMENTATION NECESSARY TO VERIFY THAT ALL PRODUCTS REQUIRING APPROVAL PER FS 553.842 ARE IN COMPLIANCE. SHOP DRAWINGS SIGNED AND SEALED BY A LICENSED FLORIDA ARCHITECT OR ENGINEER ARE REQUIRED FOR ALL SPECIALTY ITEMS SUCH AS SHADE CELLS AND PRE-ENGINEERED METAL BUILDING. SHOP DRAWINGS MUST BE SUBMITTED BY THE GC TO THE CITY OF Marianna,'S INSPECTION STAFF PRIOR TO INSTALLATION.

USE OF DRAWINGS:

DODSTONE ARCHITECTS, INC. (DS) 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 THEY HAVE READ AND AGREED TO THE FOLLOWING TERMS AND CONDITIONS:

A. THIS ELECTRONIC DATA REMAINS THE PROPERTY OF DS, AND IN NO CASE SHALL THE TRANSFER OF THESE FILES BE CONSIDERED A SALE. THE FILES SHALL NOT BE USED FOR OTHER PROJECTS, ADDITIONAL TO THIS PROJECT, OR FOR COMPLETION OF THIS PROJECT BY OTHER.
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 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 ELECTRONIC DATA SHALL NOT MODIFY CONTRACTOR'S RESPONSIBILITY FOR COORDINATION WITH OTHER TRADES, OF FOR THE PROPER CHECKING AND COORDINATION OF DIMENSIONS, DETAILS, MEMBER SIZES 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 DS FROM ALL CLAIMS, DAMAGES, LOSSES, EXPENSES, PENALTIES, INCLUDING ATTORNEYS' FEES, ARISING OUT OF RESULTING FROM THE USE OF THE ELECTRONIC DATA BY CONTRACTOR OR OTHERS.

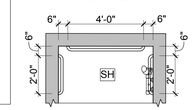


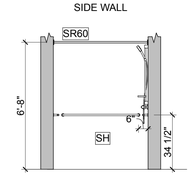
1 LIFE SAFTEY PLAN
SCALE: 1/8" = 1'-0"

NOTE:
GRAB BARS, SHOWER CONTROLS, & SHOWER INSERT ARE INCLUDED WITH SH.

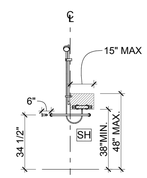
SHOWER CURTAIN, CURTAIN ROD, AND CURTAIN HOOKS ARE INCLUDED WITH SR42 & SR60.

SR60 ARE FOR SHOWERS ONLY. SR42 IS USED ELSEWHERE, SEE ENLARGED PLANS & INTERIOR ELEVATIONS FOR MORE INFORMATION.





ADA ROLL-IN SHOWER, & CURTAIN, ROD, & HOOKS
SH SR42 SR60



GENERAL NOTES

PER FBC-A, 2023, ANY DIMENSIONS PROVIDED AS A RANGE IS ASSUMED TO ADDRESS CONSTRUCTION TOLERANCES. DIMENSIONS LISTED AS 'MAX.' OR 'MIN.' ARE ASSUMED TO ADDRESS CONSTRUCTION TOLERANCES. FINAL MEASUREMENTS MUST BE WITHIN THE LISTED PARAMETERS. THE GC IS RESPONSIBLE FOR ACCOUNTING FOR FINAL INSTALLED CONDITIONS WHEN LOCATING ITEMS. ALL DIMENSIONS FOR PLUMBING FIXTURES AND RESTROOM ACCESSORY LOCATIONS ARE TO FINISHED FLOOR AND WALL SURFACES UNLESS NOTED OTHERWISE.

MOUNTING HEIGHTS ARE TYPICAL UNLESS NOTED OTHERWISE.

CONTROLS FOR FLUSH VALVES SHALL BE MOUNTED ON THE OPEN SIDE OF TOILET AREAS (FBC-A 604.9.5).

HANDICAP TOILET STALL DOOR WIDTH TO BE MINIMUM OF 32 INCHES CLEAR WHEN IN OPEN POSITION. ALL OTHER DOORS ARE TO BE MINIMUM 24 INCHES CLEAR.

TOILET STALL DOOR SWINGS OUT AND IS SELF CLOSING UNLESS OTHERWISE NOTED.

ACCESSIBILITY TO TOILET STALL DOOR MUST BE IN COMPLIANCE WITH FBC-A AND ADA GUIDELINES.

SEE 1/A401 FOR RESTROOM ACCESSORY SCHEDULE

APPLICABLE BUILDING CODES

ALL NEW WORK TO BE IN ACCORDANCE WITH THE LATEST BUILDING CODES ADOPTED BY THE BUILDING AUTHORITIES HAVING JURISDICTION. WHERE CONFLICTS OCCUR BETWEEN CODES OR BETWEEN CONSTRUCTION DOCUMENTS AND CODES, THE MOST RESTRICTIVE REQUIREMENTS SHALL GOVERN.

FLORIDA BUILDING CODE, BUILDING	8th EDITION (2023)
FLORIDA BUILDING CODE, RESIDENTIAL	8th EDITION (2023)
FLORIDA BUILDING CODE, EXISTING BUILDING	8th EDITION (2023)
FLORIDA BUILDING CODE, ACCESSIBILITY CODE	8th EDITION (2023)
FLORIDA BUILDING CODE, ENERGY CONSERV.	8th EDITION (2023)
FLORIDA BUILDING CODE, MECHANICAL	8th EDITION (2023)
FLORIDA BUILDING CODE, FUEL GAS	8th EDITION (2023)
FLORIDA BUILDING CODE, PLUMBING	8th EDITION (2023)
FLORIDA FIRE PREVENTION CODE	2023 EDITION
NATIONAL ELECTRICAL CODE	2020 EDITION
NFPA 101 - LIFE SAFETY CODE	2020 EDITION

DISPOSE OF ALL NON-ACCEPTABLE AND/OR REGULATED CONSTRUCTION AND DEMOLITION DEBRIS, LANDFILL MATERIAL, OR OTHER REGULATED ITEMS SUCH AS FLUORESCENTS, BALLASTS, HID LAMPS, MERCURY CONTAINING SWITCHES AND THERMOSTATS, NEON SIGNS, LEAD AND OTHER RECHARGEABLE BATTERIES, PAINTS PESTICIDES, AND OTHER CHEMICALS LEGALLY. OTHER MATERIALS MAY BE IDENTIFIED. IF YOU ARE UNCERTAIN IF AN ITEM IS REGULATED, CONTACT THE WATER QUALITY DIVISION'S AQUIFER PROTECTIONS SECTION AT EITHER (850) 891-1227 OR (850) 891-1226. PRIOR TO THE REMOVAL OF REGULATED MATERIALS LISTED ABOVE, CONTACT THE AQUIFER PROTECTION SECTION. RECEIPTS FOR PROPER DISPOSAL MUST BE PRESENTED TO THE LOCAL PERMITTING OFFICE.

CONSTRUCTION TYPE:

CATEGORIZED AS TYPE VB, UNSPRINKLERED
- EXTERIOR WALLS: 8" CMU BLOCK CONSTRUCTION
- INTERIOR WALLS: PRESSURE TREATED WOOD STUDS
- ROOF SUPPORT: PRE-ENGINEERED WOOD TRUSSES

NEW CONSTRUCTION:

ENCLOSED AREA = 1,125 GSF
AREA UNDER ROOF = 1,965 GSF

OCCUPANCY CLASSIFICATION:

PARK DAY-USE RESTROOM
U: UTILITY & MISCELLANEOUS

OCCUPANT LOAD:

UNOCCUPIED BUILDING

GENERAL BUILDING HEIGHT AND AREA LIMITATIONS:

PER TABLE 504.3, ALLOWABLE BUILDING HEIGHT IS:
U/NS = 40 FEET
AS DESIGNED = 17'-6" (MEASURE FROM FINISHED FLOOR TO RIDGE)

PER TABLE 504.4, ALLOWABLE NUMBER OF STORIES IS:
U/NS = 1 STORY
AS DESIGNED = 1 STORY

PER TABLE 506.2, ALLOWABLE BUILDING AREA IS:
U/NS = 8,500 GSF
AS DESIGNED = 1,965 GSF (INCLUDES ALL COVERED AREAS AND OVERHANGS)

EGRESS REQUIREMENTS:

PER 1006.2.1, MAXIMUM COMMON PATH OF EGRESS TRAVEL DISTANCE:
U/NS = 100 FEET

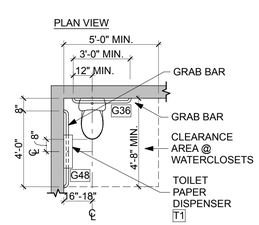
PER 1017.2, MAXIMUM EXIT ACCESS TRAVEL DISTANCE:
U/NS = 300 FEET
AS DESIGNED = 22'-1" FEET

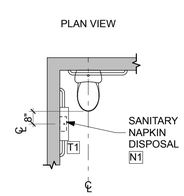
FIRE EXTINGUISHERS:

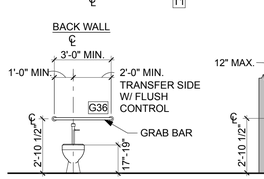
IN THE CHASE, PROVIDE A 10 LB. MULTI-PURPOSE (UL RATING AA-80C:C) FIRE EXTINGUISHER, MOUNT ON THE WALL USING THE MANUFACTURER'S STANDARD BRACKET SO THAT THE HANDLE IS 47" A.F.F.

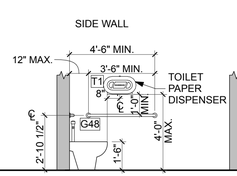
MALTESE CROSS:

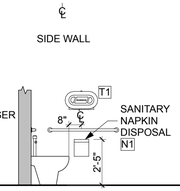
PROVIDE A FIREFIGHTER'S MALTESE CROSS WITH THE LETTER (R) AS REQUIRED BY FLORIDA STATE STATUTE. LOCATE THE CROSS WHERE INDICATED ON THE LIFE SAFTEY PLAN AND FIVE FEET ABOVE THE ADJACENT GRADE.

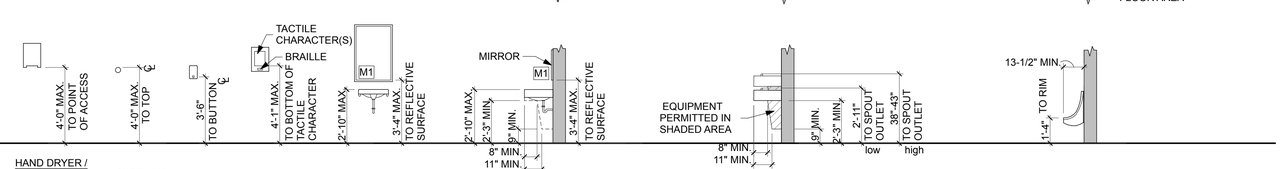


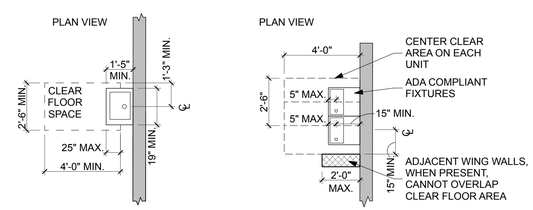


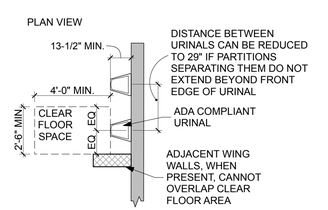












ADA TOILET, GRAB BAR & TOILET PAPER DISPENSER MOUNTING
G36 G48 T1

SANITARY NAPKIN RECEPTACLE
N1

HAND DRYER / PAPER TOWEL DISPENSER
HD

CLOTHING HOOK
H1

SOAP DISPENSER
S1

ADA SIGNAGE
A1 A2 A3

REQUIRED LAV CLEARANCES & MIRROR MOUNTING
M1

REQUIRED CLEARANCES @ DRINKING FOUNTAIN

REQUIRED CLEARANCES FOR URINALS

2 ADA COMPLIANCE DETAILS
SCALE: 1/4" = 1'-0"

	DATE	REVISION	SYMBOL	DATE	REVISION	SYMBOL

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

DESIGNER: JODIE DODSON
DRAWN BY: KZ/NS
REVIEWED BY: KZ
Consultant:
ISSUE DATE: 7/19/2024
COMP. FILE No.:
STATE PROJECT No. 61351C

DODSTONE ARCHITECTS
3011-1 Powell Road | Tallahassee, FL 32308
850.668.7238 | AA26001521

PROFESSIONAL REGISTRATION
JOEL DODSON AR0015211

SHEET TITLE
LIFE SAFETY PLAN & LEGENDS

PROJECT TITLE
FLORIDA CAVERNS CAMPGROUND RESTROOMS

FLORIDA CAVERNS STATE PARK

SHEET NO.
LS001

60% CONSTRUCTION DOCUMENTS - **NOT FOR CONSTRUCTION**

FLOOR PLAN KEYNOTES:	
#	DESCRIPTION:
N01	VENDING MACHINES BY OWNER. PROVIDE UTILITY CONNECTION AS REQUIRED.
N02	FLOOR DRAIN, SEE PLUMBING DRAWINGS. SLOPE FLOOR TO DRAIN @ 1/8" PER 12" MAX. FOR ADA COMPLIANCE. BEFORE APPLYING EPOXY FINISH, FLOOD SLAB w/ WATER TO CONFIRM ALL THE WATER DRAINS. CORRECT ANY BIRDBATHS FOUND. REPEAT WATER TEST UNTIL ALL WATER DRAINS ALLOW SLAB TO DRY TO A LEVEL SATISFACTORY TO THE EPOXY MANUFACTUERER BEFORE INSTALLING THE EPOXY.
N03	ELECTRICAL PANEL, SEE ELECTRICAL DRAWINGS.
N04	WATER HEATER, SEE PLUMBING DRAWINGS.
N05	MOP SINK, SEE PLUMBING DRAWINGS.
N06	BUILT-IN ADA COMPLIANT BENCH, SEE 1/A402
N07	SHOWER FLOOR DRAIN. COORDINATE LOCATION WITH SHOWER ENCLOSURE. ADJUST DEPTH OF TOPPING COAT BELOW SHOWER PAN AS REQUIRED FOR ADA COMPLIANCE.
N08	BUILT-IN SOLID SURFACE COUNTERTOP, SEE 3/A403. SEE PLUMBING DRAWINGS FOR LAVATORIES.
N09	BUILT-IN SOLID SURFACE COUNTERTOP @ LAUNDRY AREA, SEE 3/A403, SIM.
N10	WASHER AND DRYER BY OWNER. PROVIDE UTILITY CONNECTIONS AS REQUIRED. COORDINATE w/ OWNER.
N11	FIRE EXTINGUISHER, SEE LIFE SAFTEY PLAN.
N12	24"x24" SECRUABLE, FLUSH ACCESS HATCH. ADJUST LOCATION TO FACILITATE ACCESS TO PLUMBING LINES IN THE FUTURE.
N13	CANE GUARD @ FOUNTAIN, SEE DETAIL 1/A201
N14	CMU COLUMN, SEE STRUCTURAL DRAWINGS
N15	CONCRETE SIDEWALK, SLOPE AWAY FROM BUILDING, SEE CIVIL DRAWINGS FOR MORE INFORMATION.
N16	1/2" EXPANSION JOINT
N17	WALL FAN HEATER, SEE MECHANICAL & ELECTRCIAL DRAWINGS

1 FLOOR PLAN KEYNOTES
SCALE: 1' = 1'-0"

BASIC WALL TYPES:

8" CMU BLOCK WALL, SEE 7/A301

COMPOSITE WALL TYPES:

8" CMU BLOCK WALL w/ STONE VENEER WAINSCOT, SEE 3/A302

TYPICAL STUD WALL, SEE 1/A302

TYPICAL CHASE WALL, SEE 2/A302

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

NO CEILING, OPEN TO ABOVE

1/2" MOISTURE RESISTANT GYPSUM BOARD

1/4" SMOOTH CEMENTITIOUS SOFFIT PANEL

1/4" SMOOTH CEMENTITIOUS VENTED SOFFIT PANEL

AIR EXHAUST GRILLE, SEE MECHANICAL DRAWINGS

SOLAR TUBES, SEE 4/A102

RECESSED CAN LIGHTING, SEE ELECTRICAL DRAWINGS

24" CEILING MOUNTED LIGHTING, SEE ELECTRICAL DRAWINGS

48" CEILING MOUNTED LIGHTING, SEE ELECTRICAL DRAWINGS

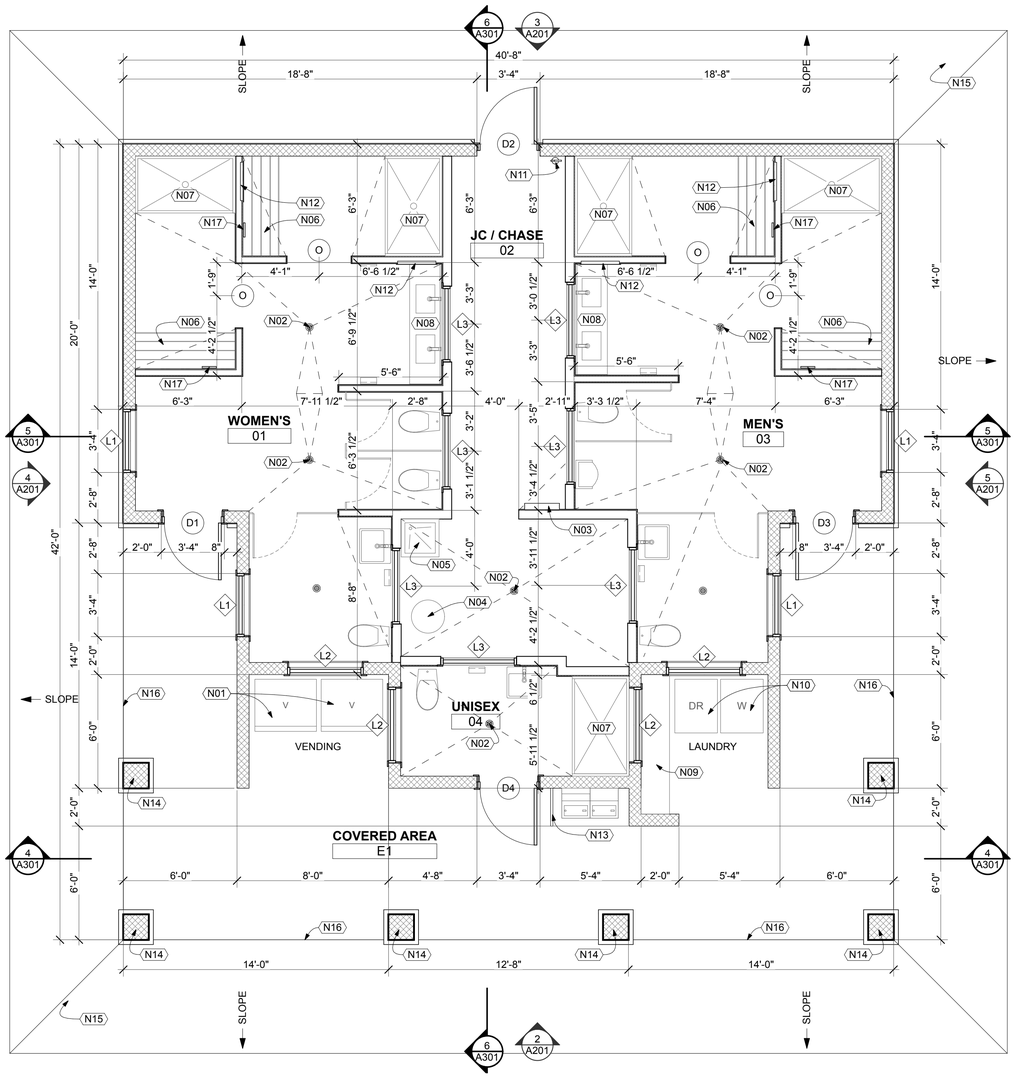
48" LIGHTING MOUNTED TO BOTTOM CHORD OF TRUSS, SEE ELECTRICAL DRAWINGS

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

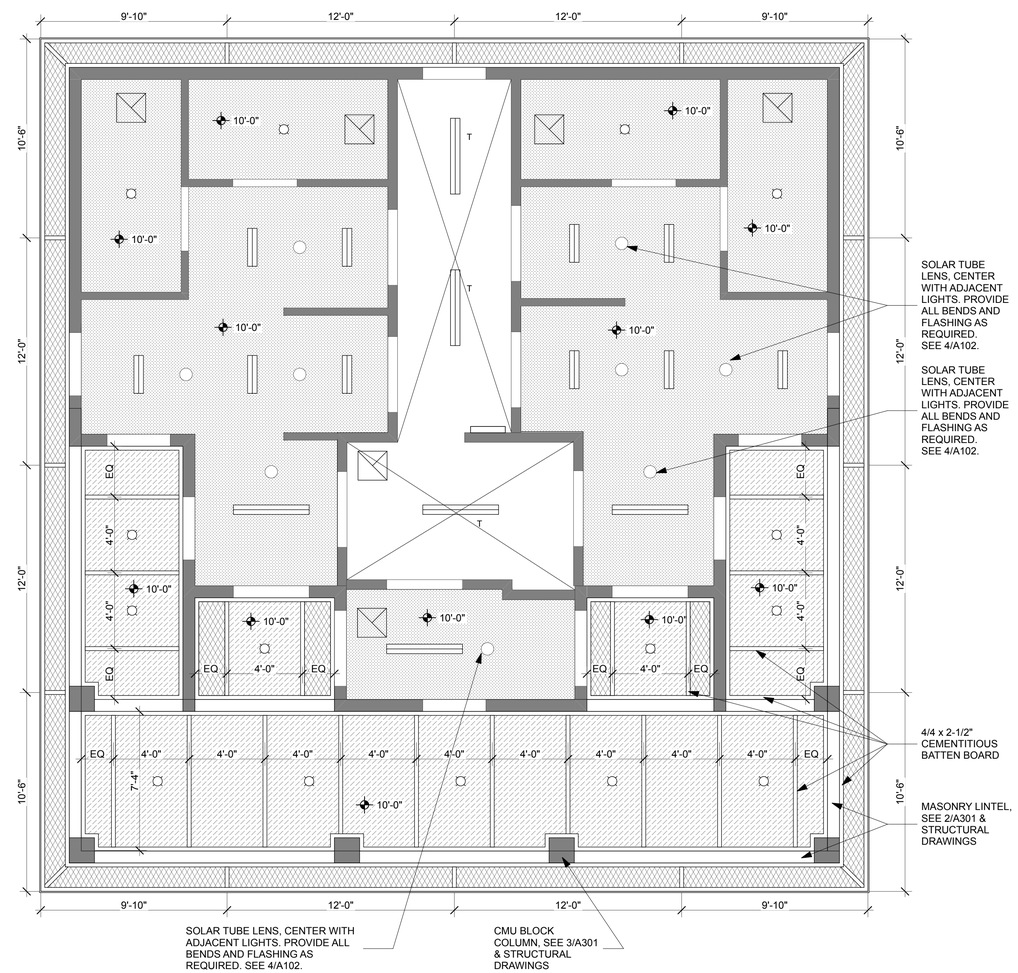
ATTIC VENTALATION CALCULATIONS:

TOTAL ATTIC AREA + EAVE AREA: 843 SF
843/150 = 5.62 SF OF FREE AREA REQUIRED

VENTED HARDI-SOFFIT PANELS PROVIDE 5 SQ. IN. (0.0347 SF) OF FREE AREA FOR EVERY 12 LINEAR INCHES. 198'-6" LINEAR FEET OF VENTED SOFFIT PANEL PRESENT, YIELDS 6.89 OF FREE AREA.



2 GROUND FLOOR
SCALE: 1/4" = 1'-0"



5 REFLECTED CEILING PLAN
SCALE: 1/4" = 1'-0"

DATE	REVISION	SYMBOL

DATE	REVISION	SYMBOL

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

DESIGNER: JODIE DODSON
DRAWN BY: KZ/NS
REVIEWED BY: KZ
Consultant:

ISSUE DATE: 7/19/2024
COMP. FILE No.:
STATE PROJECT No. 61351C

DODSTONE ARCHITECTS
3011-1 Powell Road | Tallahassee, FL 32308
850.668.7238 | FA#0015211

PROFESSIONAL REGISTRATION
JOEL DODSON AR0015211

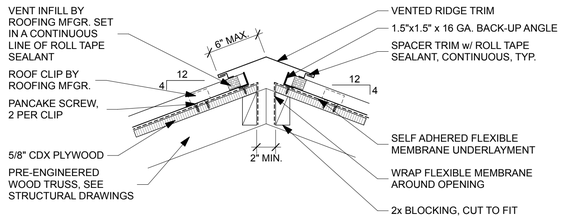
FLORIDA CAVERNS STATE PARK

SHEET TITLE
FLOOR & REFLECTED CEILING PLAN

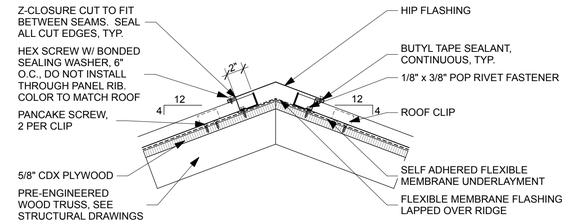
PROJECT TITLE
FLORIDA CAVERNS CAMPGROUND RESTROOMS

SHEET NO.
A101

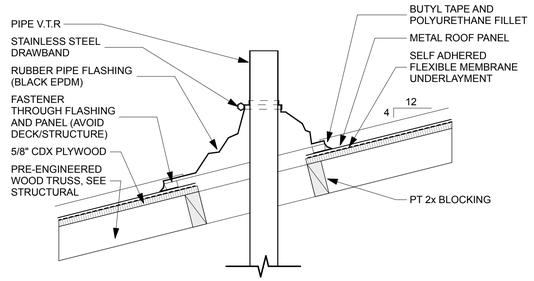
60% CONSTRUCTION DOCUMENTS - **NOT FOR CONSTRUCTION**



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



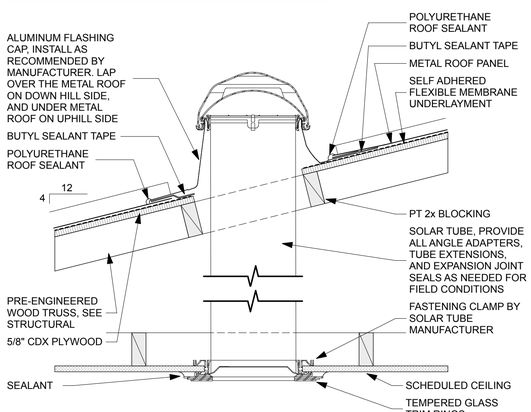
2 ROOF HIP
SCALE: 1 1/2"= 1'-0"



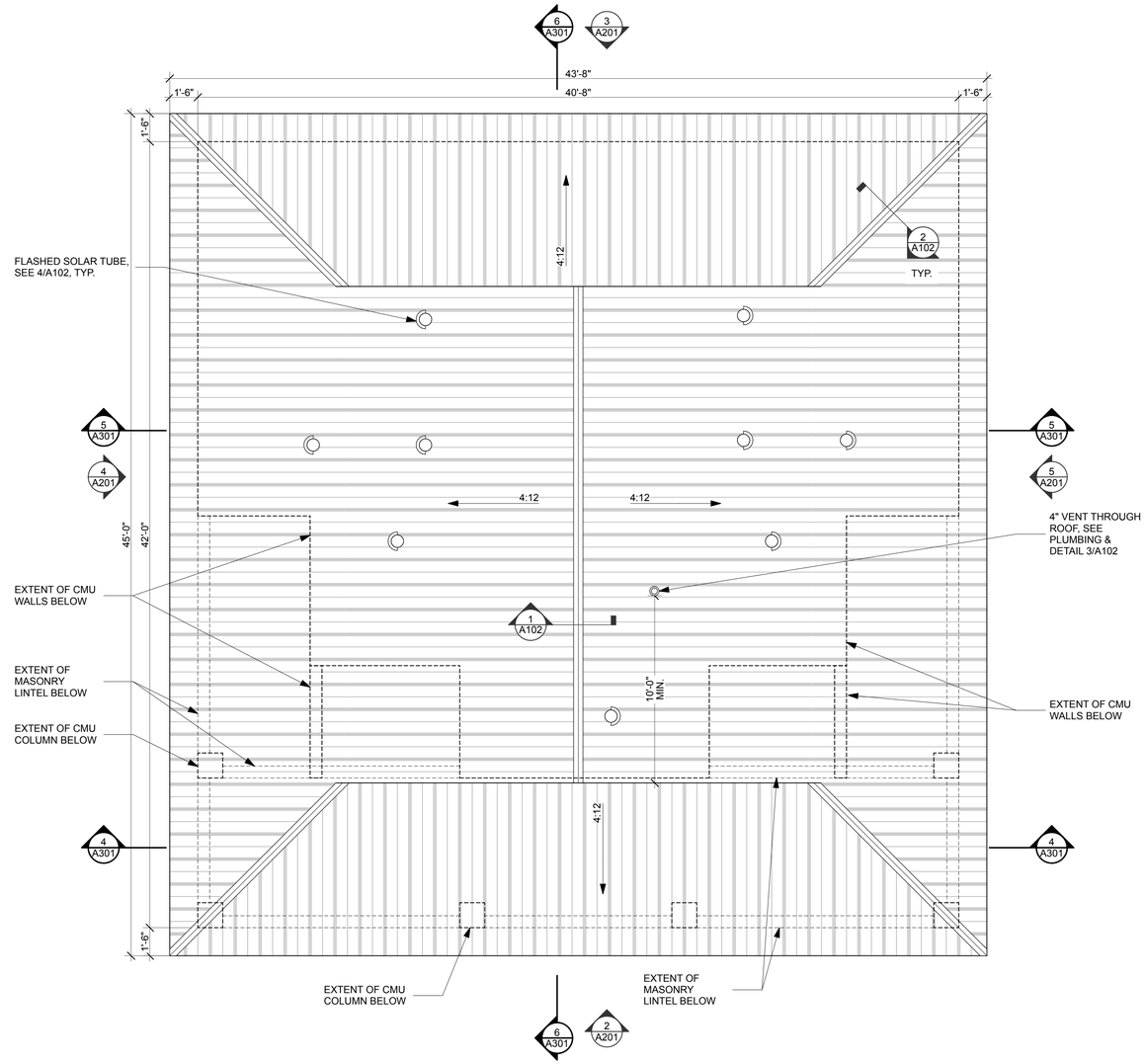
3 VENT DETAIL
SCALE: 1 1/2"= 1'-0"

BASIS-OF-DESIGN:
SOLATUBE, S160DS - DAI PB - FP MR - E1 1A SCH - TM - L9 - I
10" IMPACT RESISTANT SOLAR TUBE
FLORIDA APPROVAL NUMBER: 11480.1

CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL PARTS AND COMPONENTS NECESSARY FOR A WATER TIGHT AND CODE COMPLIANT INSTALLATION. INSTALL AS RECOMMENDED BY THE MANUFACTURER.



4 SOLAR TUBE DETAIL
SCALE: 1 1/2"= 1'-0"



5 ROOF PLAN
SCALE: 1/4" = 1'-0"

SYMBOL	REVISION	DATE	SYMBOL	REVISION	DATE

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: 7/19/2024
COMP. FILE No.:
STATE PROJECT No. 61351C

DESIGNER: JODIE DODSON
DRAWN BY: KZ/NS
REVIEWED BY: KZ
Consultant:

DODSTONE ARCHITECTS
3011-1 Powell Road | Tallahassee, FL 32308
850.656.7236 | #AR0015211

PROFESSIONAL REGISTRATION
JOEL DODSON AR0015211

FLORIDA CAVERNS STATE PARK

SHEET TITLE
ROOF PLAN

PROJECT TITLE
FLORIDA CAVERNS CAMPGROUND RESTROOMS

SHEET NO.
A102

60% CONSTRUCTION DOCUMENTS - **NOT FOR CONSTRUCTION**

NOTE:
THIS DETAIL WILL BE INCLUDED IN THE NEXT SUBMISSION (90% CDs).

1 CANE GUARD @ FOUNTAIN
SCALE: 1 1/2"= 1'-0"

EXTERIOR COLORS:

METAL ROOF	SIERRA TAN	PAC-CLAD, INC.
CMU SCORED BLOCK	AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE. SELECTIONS TO MADE FROM PHYSICAL SAMPLES PROVIDED TO ARCHITECT. CLEAR WATER REPELLANT APPLIED TO EXTERIOR OF SCORED BLOCK, SEE MASONRY SPECIFICATIONS.	
MORTAR	AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE.	

PAINT COLORS:

CEMENTITIOUS TRIM	TRIM COLOR	
EXTERIOR DOORS		
- DOOR FRAMES	TRIM COLOR	
- DOOR LEAF	FIELD COLOR	
EXTERIOR SOFFITS	TRIM COLOR	
COLUMNS	TRIM COLOR	
LOUVERS	AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE	

PAINT COLOR LEGEND:

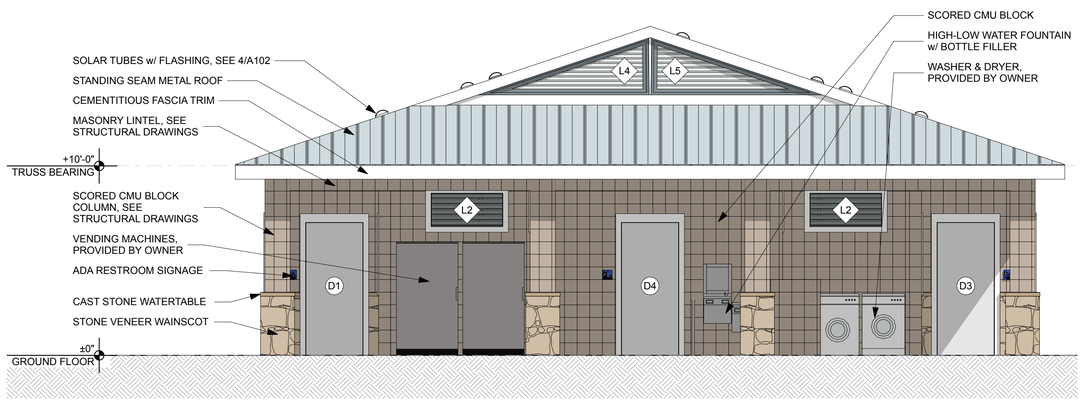
FIELD COLOR	INDIAN RIVER #985	BY BENJAMIN MOORE PAINTS
TRIM COLOR	WIND'S BREATH #981	BY BENJAMIN MOORE PAINTS

BUILDING VENTILATION:
NATURALLY VENTILATED
PER 1203.5.1, OPEN AREA OF AL LEAST 4% OF FLOOR AREA BEING VENTILATED IS REQUIRED.

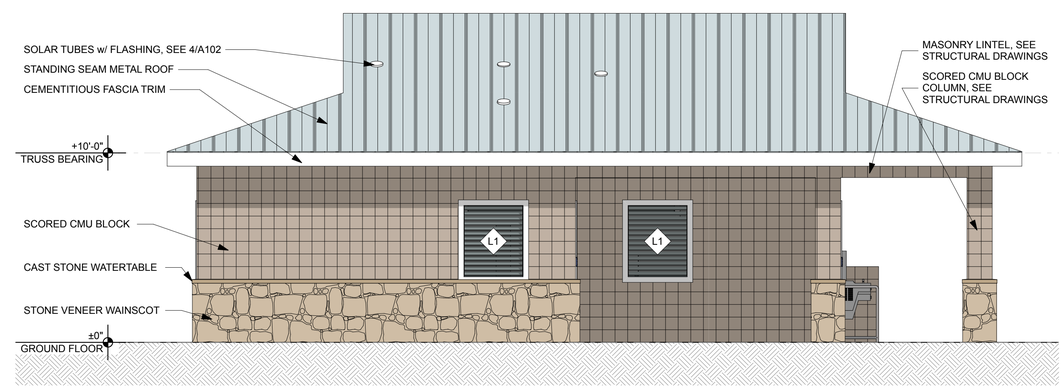
AREA NAME	NET AREA	FREE AREA REQUIRED	LOUVER ID	FREE AREA OF LOUVER	QUANTITY	FREE AREA PROVIDED
WOMEN'S	363 sf	14.5 sf	L1	6.2 sf EA	2	12.4 sf
			L2	3.3 sf EA	1	3.3 sf
						15.7 sf TOTAL
JC/CHASE	205 sf	8.2 sf	L4 *	6.1 sf EA	2	12.2 sf
			L5 *	6.1 sf EA	2	12.2 sf
						24.4 sf TOTAL
MEN'S	358 sf	14.3 sf	L1	6.2 sf EA	2	12.4 sf
			L2	3.3 sf EA	1	3.3 sf
						15.7 sf TOTAL
UNISEX	69 sf	2.76 sf	L2	3.3 sf EA	2	**6.6 sf TOTAL**

VENTILATED AREAS PROVIDED EQUAL OR EXCEED THE REQUIRED MINIMUMS.
ADDITIONAL INTERIOR LOUVERS, THAT ARE NOT INCLUDED IN THE CALCULATION ABOVE, HAVE ALSO BEEN PROVIDED TO ASSIST WITH CROSS VENTILATION.

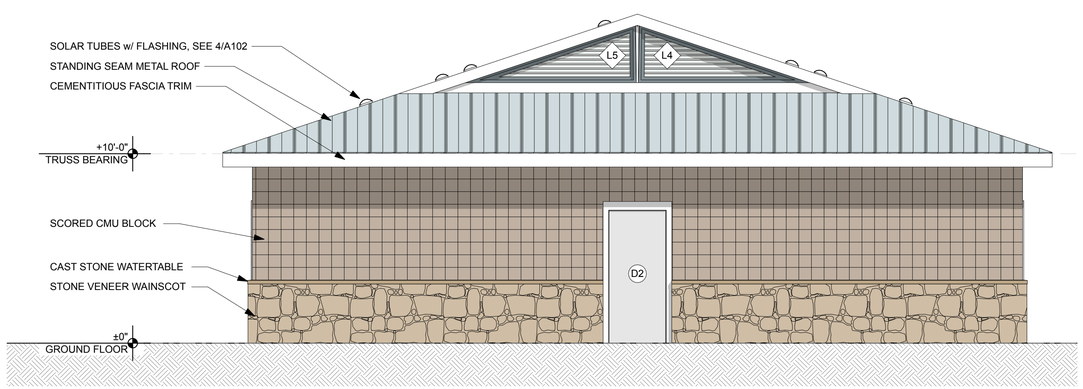
* LOUVER SHAPE IS TRIANGULAR, FREE AREA CALCULATION WAS HALFED.



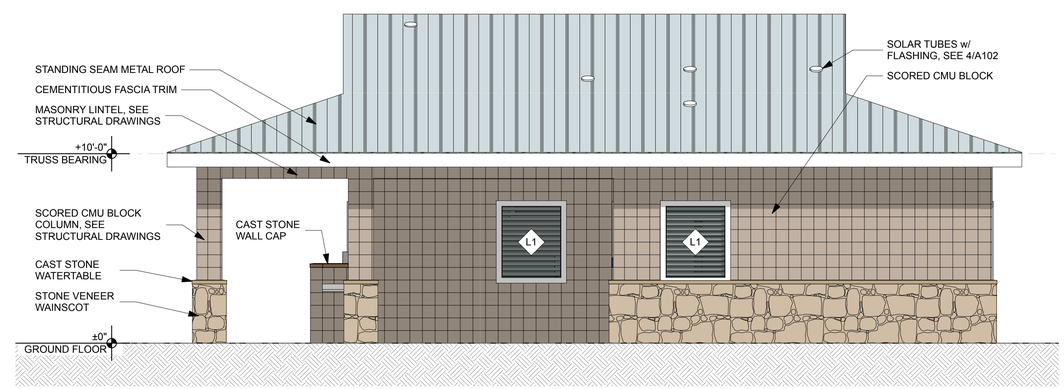
2 FRONT ELEVATION
SCALE: 1/4" = 1'-0"



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



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



5 RIGHT ELEVATION
SCALE: 1/4" = 1'-0"

SYMBOL	REVISION	DATE

SYMBOL	REVISION	DATE

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: 7/19/2024
COMP. FILE No.:
STATE PROJECT No. 61351C

DESIGNER: JODIE DODSON
DRAWN BY: KZ/NS
REVIEWED BY: KZ
Consultant:

DODSTONE ARCHITECTS
3011-1 Powell Road | Tallahassee, FL 32308
850.656.2326 | AA26001521

PROFESSIONAL REGISTRATION
JOEL DODSON AR0015211

FLORIDA CAVERNS STATE PARK

SHEET TITLE
EXTERIOR ELEVATIONS

PROJECT TITLE
FLORIDA CAVERNS CAMPGROUND RESTROOMS

SHEET NO.
A201

60% CONSTRUCTION DOCUMENTS - **NOT FOR CONSTRUCTION**

NOTE:
THIS DETAIL WILL BE INCLUDED IN THE NEXT SUBMISSION (90% CDs).

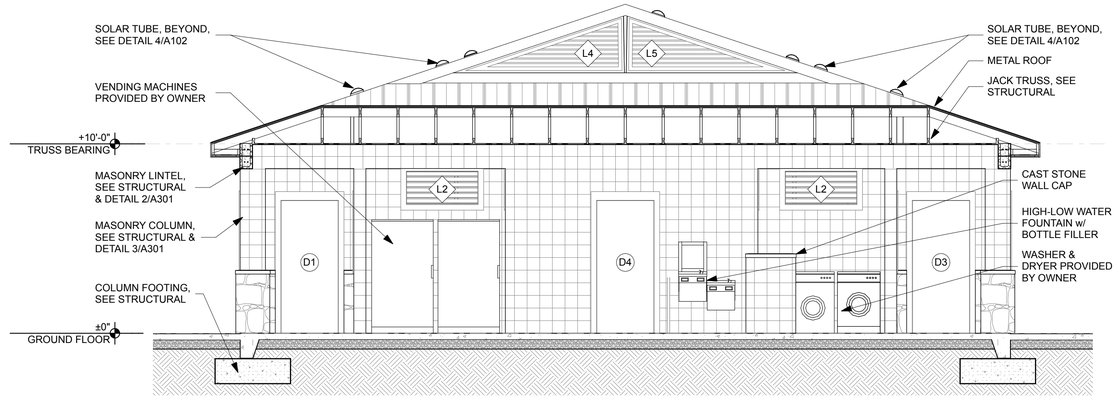
1 EAVE @ CMU WALL
SCALE: 1 1/2"= 1'-0"

NOTE:
THIS DETAIL WILL BE INCLUDED IN THE NEXT SUBMISSION (90% CDs).

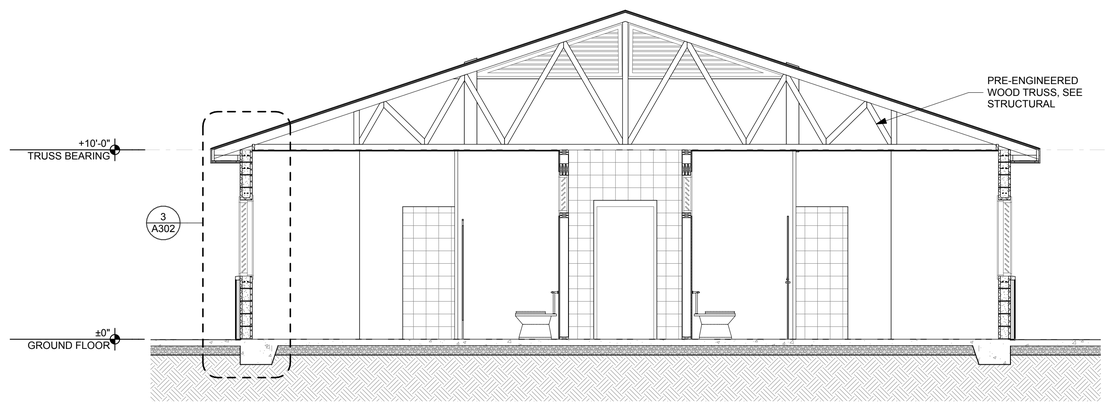
2 EAVE @ MASONRY LINTEL
SCALE: 1 1/2"= 1'-0"

NOTE:
THIS DETAIL WILL BE INCLUDED IN THE NEXT SUBMISSION (90% CDs).

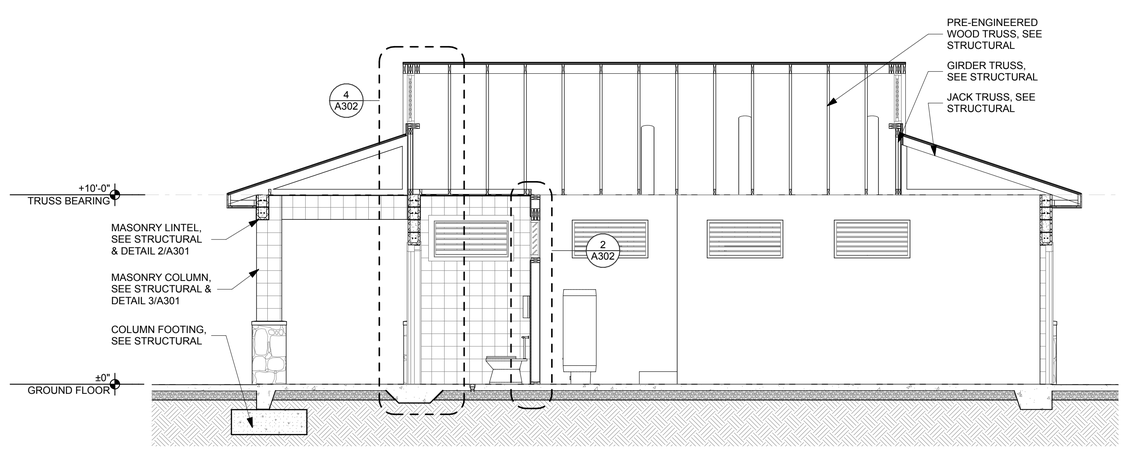
3 CMU BLOCK COLUMN DETAIL
SCALE: 3" = 1'-0"



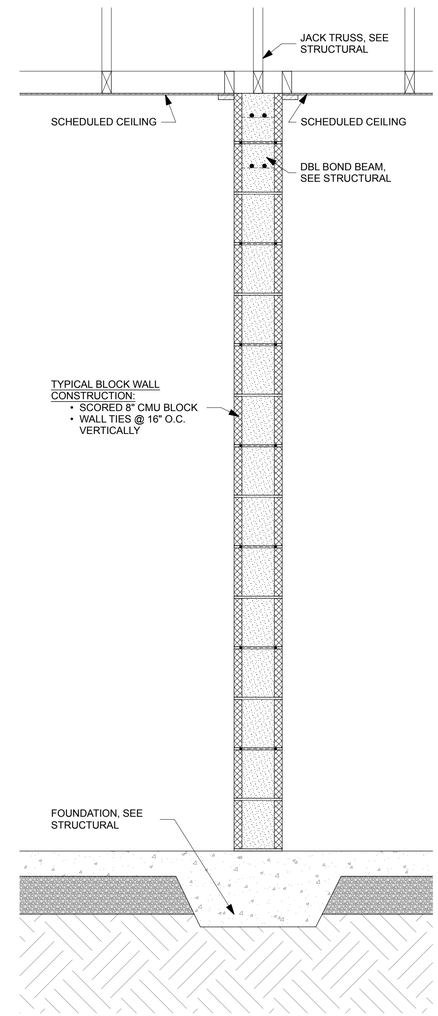
4 BUILDING SECTION THROUGH COVERED AREA
SCALE: 1/4" = 1'-0"



5 BUIDLING SECTION THROUGH RESTROOMS
SCALE: 1/4" = 1'-0"



6 BUILDING SECTION THROUGH JC / CHASE
SCALE: 1/4" = 1'-0"



7 TYP. BLOCK WALL
SCALE: 1" = 1'-0"

SYMBOL	REVISION	DATE

SYMBOL	REVISION	DATE

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: 7/19/2024
COMP. FILE No.:
STATE PROJECT No. 61351C

DESIGNER: JODIE DODSON
DRAWN BY: KZ/NS
REVIEWED BY: KZ
Consultant:

DODSTONE ARCHITECTS
3011-1 Powell Road | Tallahassee, FL 32308
850.668.7238 | #AR0015211

PROFESSIONAL REGISTRATION
JOEL DODSON AR0015211

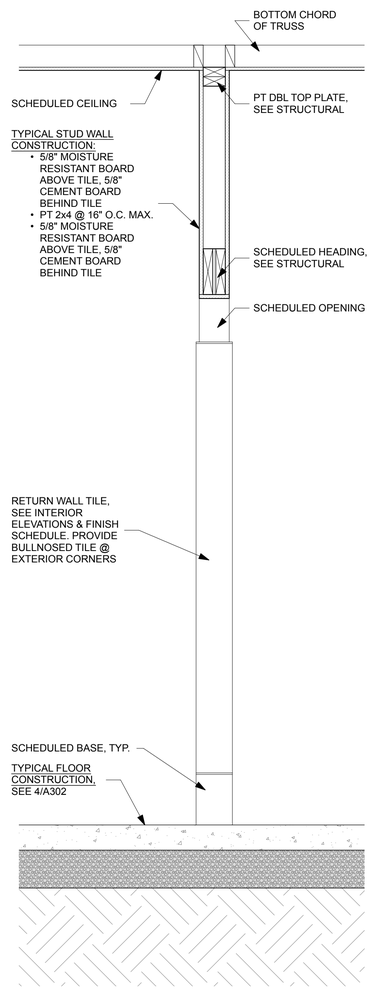
FLORIDA CAVERNS STATE PARK

SHEET TITLE
BUILDING SECTIONS

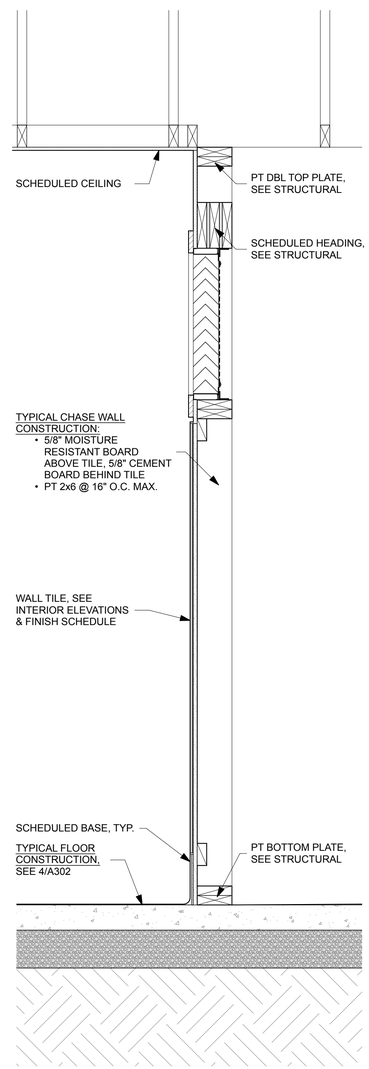
PROJECT TITLE
FLORIDA CAVERNS CAMPGROUND RESTROOMS

SHEET NO.
A301

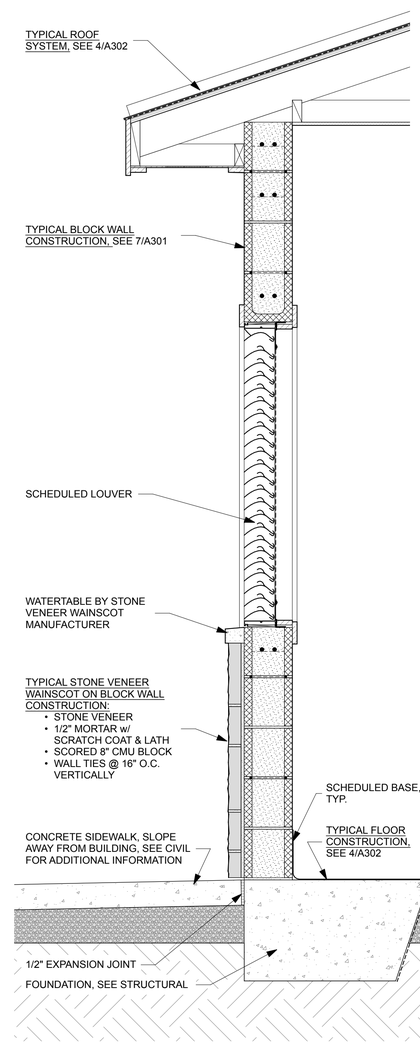
60% CONSTRUCTION DOCUMENTS - **NOT FOR CONSTRUCTION**



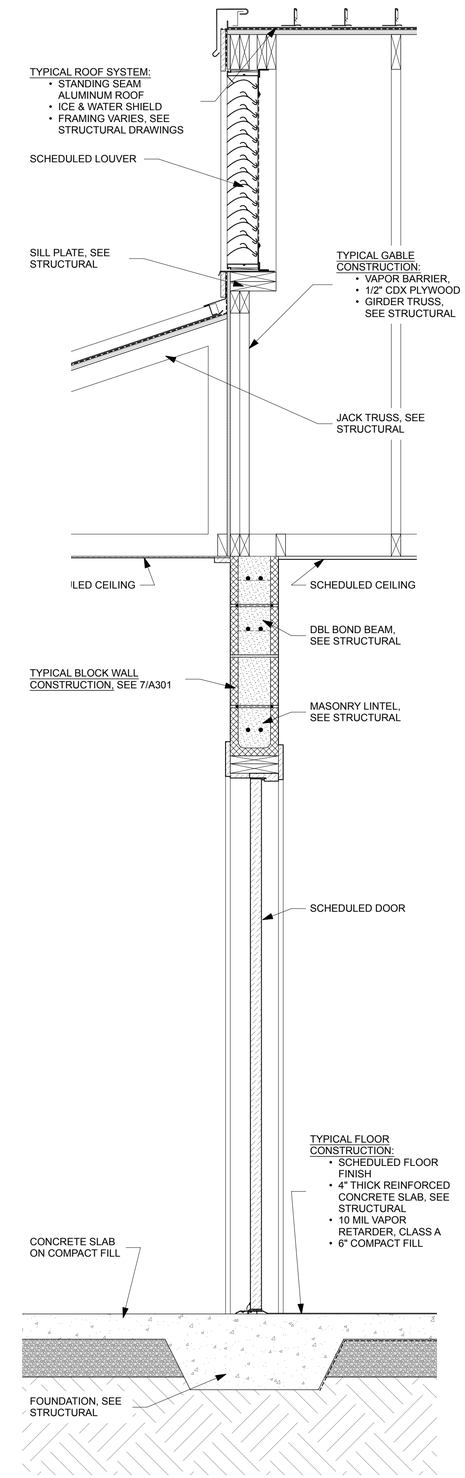
1 TYP. STUD WALL
SCALE: 1" = 1'-0"



2 TYP. CHASE WALL
SCALE: 1" = 1'-0"



3 EXTERIOR BLOCK WALL
SCALE: 1" = 1'-0"



4 BLOCK TO STUD WALL
SCALE: 1" = 1'-0"

SYMBOL	REVISION	DATE	SYMBOL	REVISION	DATE

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: 7/19/2024
COMP. FILE No.:
STATE PROJECT No. 61351C

DESIGNER: JODIE DODSON
DRAWN BY: KZ/NS
REVIEWED BY: KZ
Consultant:

DODSTONE ARCHITECTS
3011-1 Powell Road | Tallahassee, FL 32308
850.656.7236 | AA0013521

PROFESSIONAL REGISTRATION
JOEL DODSON AR0015211

FLORIDA CAVERNS STATE PARK

SHEET TITLE
WALL SECTIONS

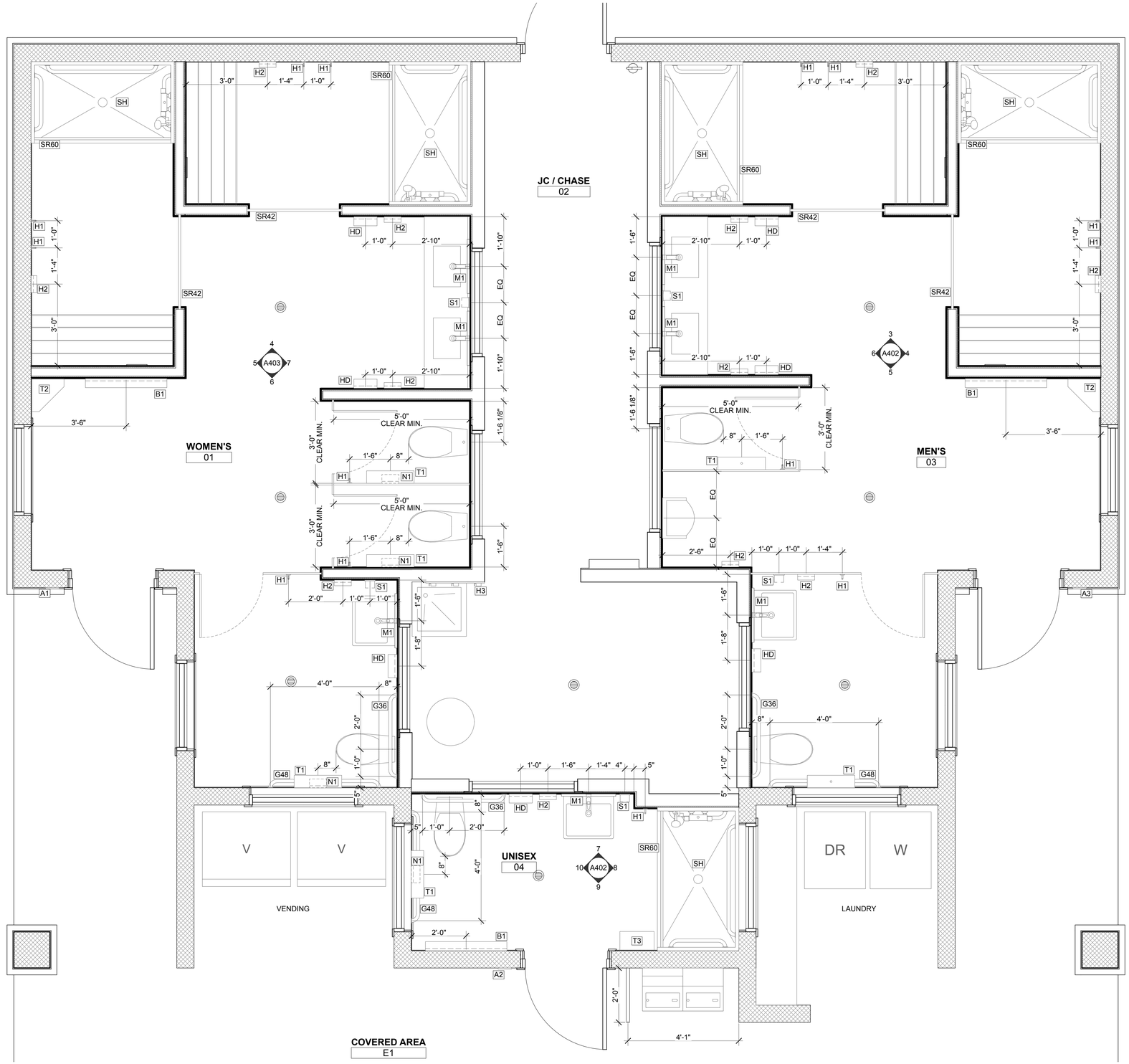
PROJECT TITLE
FLORIDA CAVERNS CAMPGROUND RESTROOMS

SHEET NO.
A302

60% CONSTRUCTION DOCUMENTS - **NOT FOR CONSTRUCTION**

TAG	DESCRIPTION	QTY.	MFR.	MODEL	NOTE
A1	ADA COMPLIANT WOMEN'S RESTROOM SIGN	1	BESTSIGNS SYSTEMS	ADA WOMEN'S	ADA COMPLIANT WOMEN'S RESTROOM SIGNAGE BY BESTSIGNS OR ARCHITECT APPROVED EQUAL. INCLUDE WOMEN'S SYMBOL, HANDICAP SYMBOL, & BRAILLE. INSTALL SO THAT BOTTOM OF TACTILE CHARACTERS ARE 49" A.F.F.
A2	ADA COMPLIANT UNISEX RESTROOM SIGN	1	BESTSIGNS SYSTEMS	ADA UNISEX / FAMILY	ADA COMPLIANT UNISEX/FAMILY RESTROOM SIGNAGE BY BESTSIGNS OR ARCHITECT APPROVED EQUAL. INCLUDE MEN'S & WOMEN'S SYMBOL, HANDICAP SYMBOL, & BRAILLE. INSTALL SO THAT BOTTOM OF TACTILE CHARACTERS ARE 49" A.F.F.
A3	ADA COMPLIANT MEN'S RESTROOM SIGN	1	BESTSIGNS SYSTEMS	ADA MEN'S	ADA COMPLIANT MEN'S RESTROOM SIGNAGE BY BESTSIGNS OR ARCHITECT APPROVED EQUAL. INCLUDE MEN'S SYMBOL, HANDICAP SYMBOL, & BRAILLE. INSTALL AT MEN'S RESTROOM LOCATIONS. INSTALL SO THAT BOTTOM OF TACTILE CHARACTERS ARE 49" A.F.F.
B1	BABY CHANGING STATION	3	KOALA KARE	KB300	SURFACE MOUNT AS RECOMMENDED BY MANUFACTURER AND AS REQUIRED FOR ADA COMPLIANCE. INSTALL SO THAT TOP OF UNIT CLOSED IS 48" A.F.F. INSTALL BLOCKING IN WALL AND FASTEN UNIT TO WALL SO UNIT IS CAPABLE OF SUPPORTING 200LBS.
G36	36" LONG GRAB BAR	3	BOBRICK	B-6806 x 36	1-1/2" DIAMETER SS GBAR BAR w/ EXPOSED FLANGE. PROVIDE BLOCKING IN WALL AS RECOMMENDED BY THE MANUFACTURER AND AS REQUIRED SO BARS CAN RESIST A MINIMUM OF 250 LBS. EXERTED HORIZONTALLY OR VERTICALLY. INSTALL SO CENTERLINE IS 34.5" A.F.F.
G48	48" LONG GRAB BAR	3	BOBRICK	B-6806 x 48	1-1/2" DIAMETER SS GBAR BAR w/ EXPOSED FLANGE. PROVIDE BLOCKING IN WALL AS RECOMMENDED BY THE MANUFACTURER AND AS REQUIRED SO BARS CAN RESIST A MINIMUM OF 250 LBS. EXERTED HORIZONTALLY OR VERTICALLY. INSTALL SO CENTERLINE IS 34.5" A.F.F.
H1	COLLAPSABLE HOOK	14	BOBRICK	B-983	SURFACE MOUNT AS RECOMMENDED BY MANUFACTURER AND AS REQUIRED FOR ADA COMPLIANCE. CENTERLINE OF OPERATOR MUST NOT BE MORE THAN 48" A.F.F.
H2	MOBILE DEVICE HOOK	12	BOBRICK	B-635	SURFACE MOUNTED DEVICE HOLDER. INSTALL SO THAT ACCESS POINT IS NO MORE THAN 48" A.F.F.
H3	MOP HOLDER & HOOK STRIP	1	BOBRICK	B223 x 24	SURFACE MOUNTED MOP HOLDER w/ 3 HOOK STRIPS. INSTALL SO TOP OF HOOKS IS NO MORE THAN 48" A.F.F.
M1	24" X 36" MIRROR	7	BOBRICK	B-290 x 2436	SURFACE MOUNTED MIRROR w/ STAINLESS STEEL FRAME. INSTALL SO REFLECTIVE SURFACE (NOT BOTTOM EDGE OF FRAME) IS NO MORE THAN 40" A.F.F.
N1	SANITARY NAPKIN DISPOSAL	4	BOBRICK	B-270	SURFACE MOUNTED SANITARY NAPKIN DISPOSAL. INSTALL SO TOP OF UNIT IS 2'-5" A.F.F.
S1	SOAP DISPENSER	5	BOBRICK	B-2111	SURFACE MOUNT AS RECOMMENDED BY MANUFACTURER AND AS REQUIRED FOR ADA COMPLIANCE. CENTERLINE OF OPERATOR MUST NOT BE MORE THAN 48" A.F.F.
SH	SINGLE PIECE ROLL-IN ADA SHOWER	5	BESTBATH	LSOS26337A75B	SINGLE PIECE ADA COMPLIANT ROLL-IN MOLDED FIBERGLASS/ GELCOAT SHOWER MODULE WITH FACTORY INSTALLED SOAP DISH, & GRAB BARS ON (3) WALLS.
SR42	42" SHOWER ROD & CURTAIN w/ HOOKS	4	BOBRICK	ROD: B-207x48"; CURTAIN: 204-2; HOOKS: 204-1	1" DIAMETER ROD w/ CONCEALED MOUNTING. PROVIDE BLOCKING WITHIN WALLS. INSTALL 74" A.F.F. EQUIP w/ ANTIMICROBIAL VINYL SHOWER CURTAIN AND SHOWER CURTAIN HOOKS.
SR60	60" SHOWER ROD & CURTAIN w/ HOOKS	5	BOBRICK	ROD: B-207x60"; CURTAIN: 204-2; HOOKS: 204-1	1" DIAMETER ROD w/ CONCEALED MOUNTING. PROVIDE BLOCKING WITHIN WALLS. INSTALL 74" A.F.F. EQUIP w/ ANTIMICROBIAL VINYL SHOWER CURTAIN AND SHOWER CURTAIN HOOKS.
T1	JUMBO DOUBLE ROLL TOILET TISSUE DISPENSER	6	BOBRICK	B-2892	SURFACE MOUNTED JUMBO ROLL TOILET PAPER DISPENSER. INSTALL SO SLOT WHERE PAPER IS ACCESSED IS NOT MORE THAN 48" A.F.F. WHERE INSTALLED ABOVE A GRAB BAR, MAINTAIN AT LEAST 12" CLEAR ABOVE THE BAR. WHERE INSTALLED BELOW A GRAB BAR, MAINTAIN AT LEAST 1 1/2" CLEAR BELOW THE BAR
T2	CORNER WASTE RECEPTABLE	2	BOBRICK	B-268	WALL-MOUNTED CORNER WASTE RECETACLE. MOUNT AS RECOMMENDED BY MANUFACTUER. INSTALL TOP OF WASTE RECEPTACLE 36" A.F.F.
T3	WASTE RECEPTACLE	1	BOBRICK	B-277	WALL-MOUNTED WASTE RECEPTACLE. MOUNT AS RECOMMENDED BY MANUFACTURER. INSTALL 36" A.F.F.

1 ACCESSORY SCHEDULE
SCALE: 1' = 1'-0"



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

DATE | REVISION | SYMBOL | DATE | REVISION | SYMBOL

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: 7/19/2024
COMP. FILE No.:
STATE PROJECT No. 61351C

DESIGNER: JODIE DODSON
DRAWN BY: KZ/NS
REVIEWED BY: KZ
Consultant:

DODSTONE ARCHITECTS
3011-1 Powell Road | Tallahassee, FL 32308
850.668.7238 | #AR0015211

PROFESSIONAL REGISTRATION
JOEL DODSON AR0015211

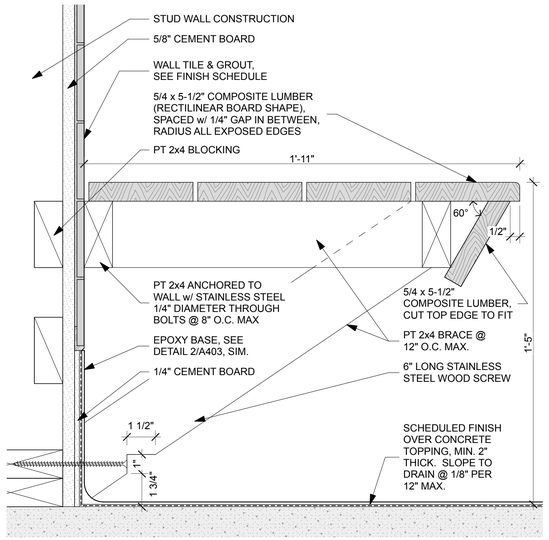
FLORIDA CAVERNS STATE PARK

SHEET TITLE
ENLARGED PLAN

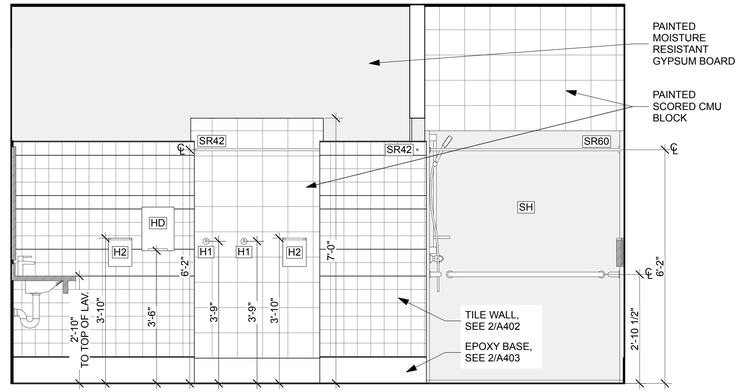
PROJECT TITLE
FLORIDA CAVERNS CAMPGROUND RESTROOMS

SHEET NO.
A401

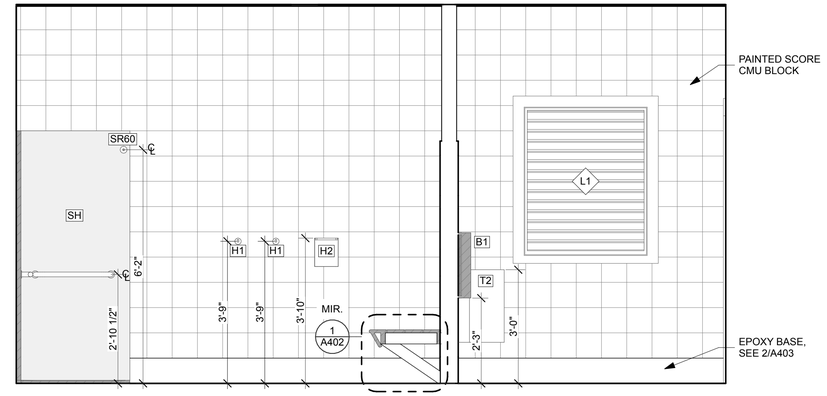
60% CONSTRUCTION DOCUMENTS - **NOT FOR CONSTRUCTION**



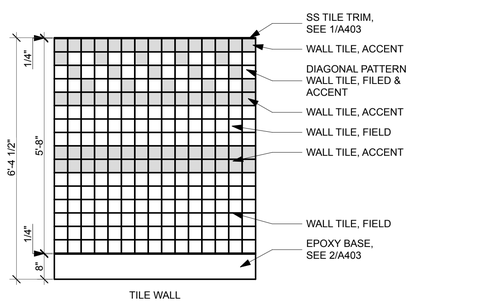
1 BENCH DETAIL
SCALE: 3" = 1'-0"



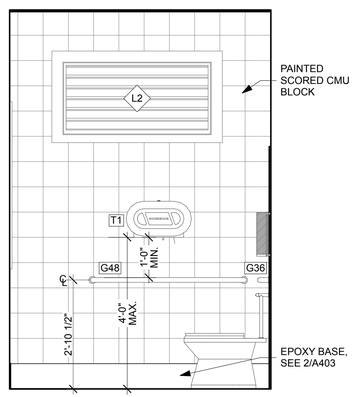
3 MEN'S - N
SCALE: 1/2" = 1'-0"



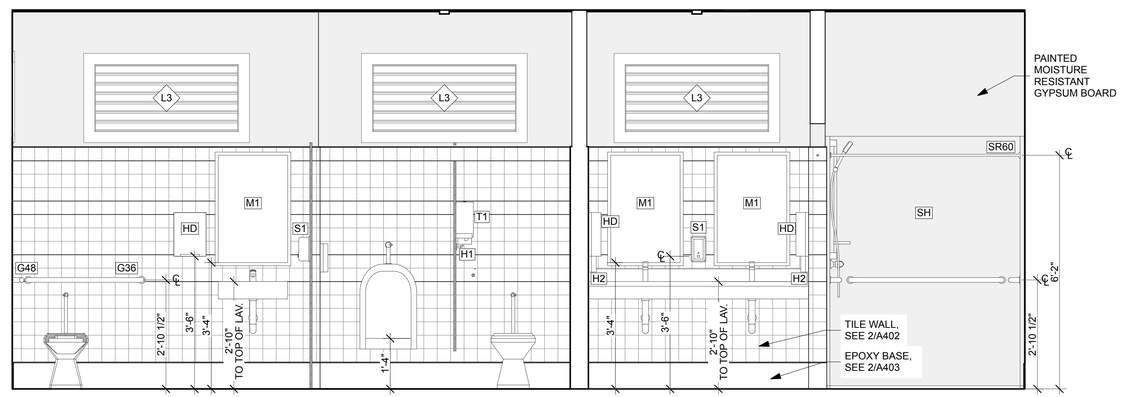
4 MEN'S - E
SCALE: 1/2" = 1'-0"



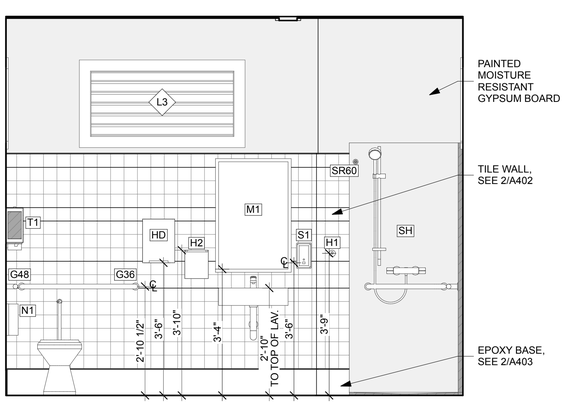
2 TILE WALL PATTERNS
SCALE: 1/2" = 1'-0"



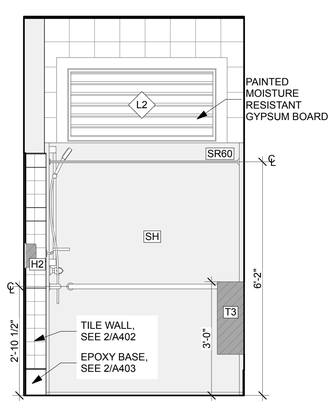
5 MEN'S - S
SCALE: 1/2" = 1'-0"



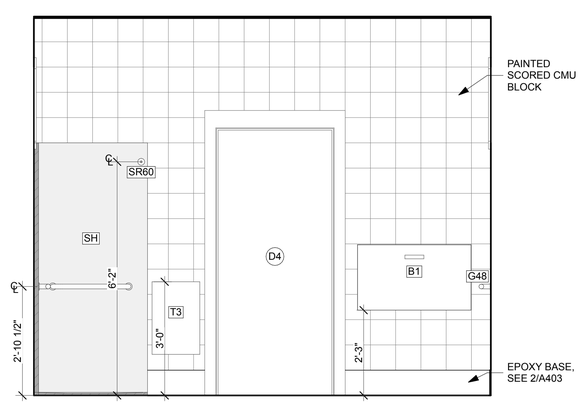
6 MEN'S - W
SCALE: 1/2" = 1'-0"



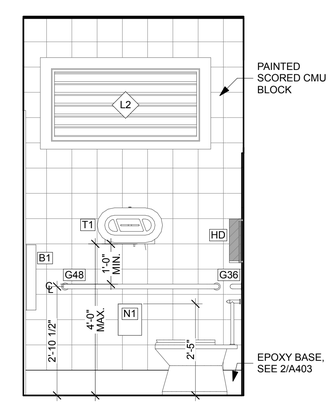
7 UNISEX - N
SCALE: 1/2" = 1'-0"



8 UNISEX - E
SCALE: 1/2" = 1'-0"



9 UNISEX - S
SCALE: 1/2" = 1'-0"



10 UNISEX - W
SCALE: 1/2" = 1'-0"

SYMBOL	DATE	REVISION

SYMBOL	DATE	REVISION

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: 7/19/2024
COMP. FILE No.:
STATE PROJECT No. 61351C

DESIGNER: JODIE DODSON
DRAWN BY: KZ/NS
REVIEWED BY: KZ

Consultant: DODSTONE ARCHITECTS
3011-1 Powell Road | Tallahassee, FL 32308
850.656.7236 | #AR0015211

PROFESSIONAL REGISTRATION
JOEL DODSON AR0015211

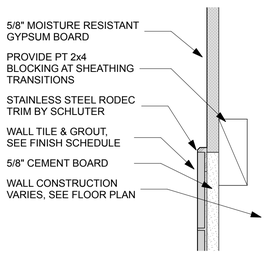
FLORIDA CAVERNS STATE PARK

SHEET TITLE
INTERIOR ELEVATIONS

PROJECT TITLE
FLORIDA CAVERNS CAMPGROUND RESTROOMS

SHEET NO.
A402

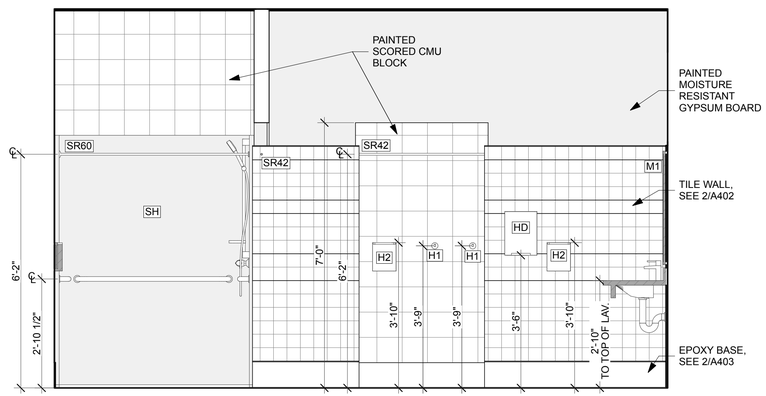
60% CONSTRUCTION DOCUMENTS - **NOT FOR CONSTRUCTION**



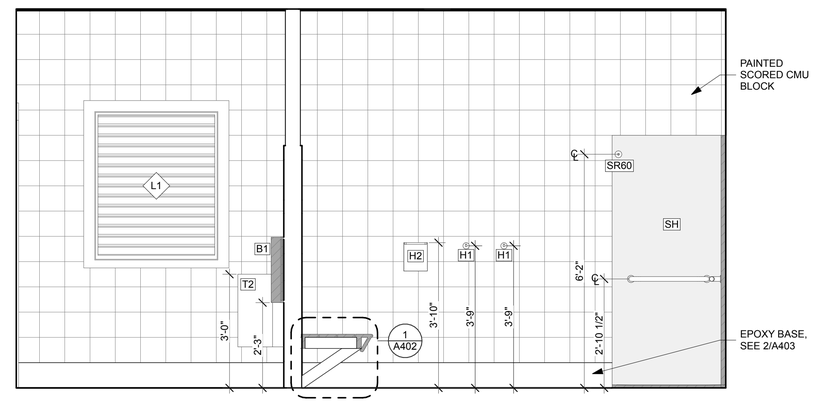
1 TILE TRIM DETAIL
SCALE: 3" = 1'-0"

NOTE:
THIS DETAIL WILL BE INCLUDED IN THE NEXT SUBMISSION (90% CDs).

3 ADA SINK COUNTER DETAIL
SCALE: 1 1/2"= 1'-0"

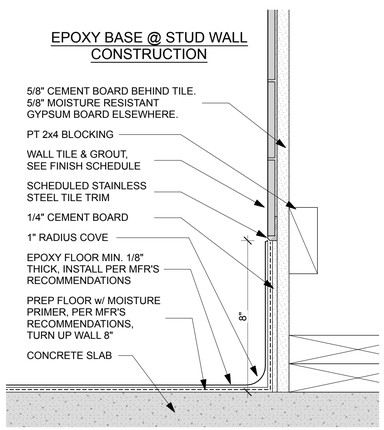


4 WOMEN'S - N
SCALE: 1/2" = 1'-0"

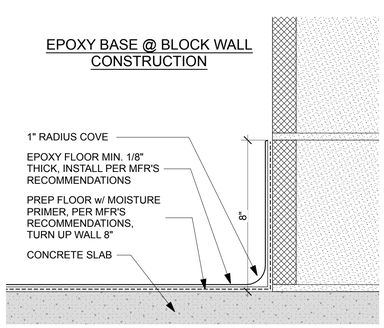


5 WOMEN'S - W
SCALE: 1/2" = 1'-0"

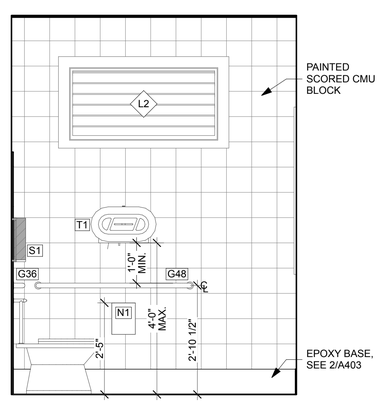
EPOXY BASE @ STUD WALL CONSTRUCTION



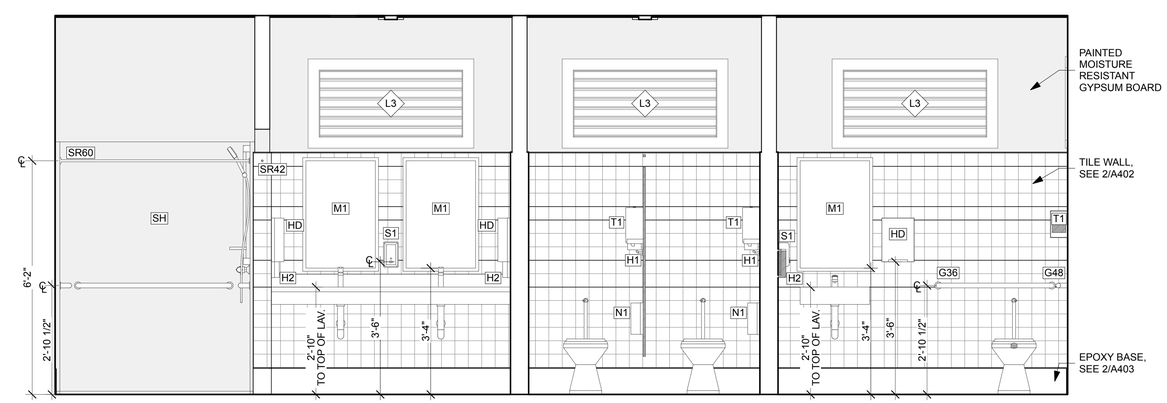
EPOXY BASE @ BLOCK WALL CONSTRUCTION



2 EPOXY BASE DETAIL
SCALE: 3" = 1'-0"



6 WOMEN'S - S
SCALE: 1/2" = 1'-0"



7 WOMEN'S - E
SCALE: 1/2" = 1'-0"

SYMBOL	REVISION	DATE	SYMBOL	REVISION	DATE

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: 7/19/2024
COMP. FILE No.:
STATE PROJECT No. 61351C

DESIGNER: JODIE DODSON
DRAWN BY: KZ/NS
REVIEWED BY: KZ
Consultant :

DODSTONE ARCHITECTS
3011-1 Powell Road | Tallahassee, FL 32308
850.656.7238 | AA0011521

PROFESSIONAL REGISTRATION
JOEL DODSON AR0015211

PROJECT TITLE
FLORIDA CAVERNS STATE PARK

SHEET TITLE
INTERIOR ELEVATIONS

PROJECT TITLE
FLORIDA CAVERNS CAMPGROUND RESTROOMS

SHEET NO.
A403

60% CONSTRUCTION DOCUMENTS - **NOT FOR CONSTRUCTION**

HARDWARE SET 1.0

3 EA	FULL MORTISE HINGES	T4A3386 NRP (4.5"x4.5")	US32D	McKINNEY
1 EA	PASSAGE LATCH	AU 5405LN	626	ASSA ABLOY
1 EA	DEADBOLT	D131 / D132	626	ASSA ABLOY
1 EA	MORTISE CYLINDER	AS REQUIRED	626	ASSA ABLOY
1 EA	SURFACE CLOSER	CPS8501	630	NORTON
1 EA	GASKETING	S88BL		PEMKO
1 EA	SWEEP	315CN		PEMKO
1 EA	THRESHOLD	2005AV		PEMKO
1 EA	KICKPLATE	K1050 8" LAR	US32D	ROCKWOOD
1 EA	DOOR STOP	460	ALUM	ROCKWOOD
3 EA	SILENCERS	608		ROCKWOOD

HARDWARE SET 2.0

3 EA	FULL MORTISE HINGES	T4A3386 NRP (4.5"x4.5")	US32D	McKINNEY
1 EA	PASSAGE LATCH	AU 5405LN	626	ASSA ABLOY
1 EA	DEADBOLT	D111 / D112	626	ASSA ABLOY
1 EA	MORTISE CYLINDER	AS REQUIRED	626	ASSA ABLOY
1 EA	SURFACE CLOSER	CPS8501	630	NORTON
1 EA	GASKETING	S88BL		PEMKO
1 EA	SWEEP	315CN		PEMKO
1 EA	THRESHOLD	2005AV		PEMKO
1 EA	KICKPLATE	K1050 8" LAR	US32D	ROCKWOOD
1 EA	DOOR STOP	460	ALUM	ROCKWOOD
3 EA	SILENCERS	608		ROCKWOOD

GENERAL DOOR COMMENTS:

1. ALL DOORS ON EGRESS PATH TO HAVE ADA COMPLIANT LEVER STYLE HANDLES.
2. SEE HARDWARE SCHEDULE LISTED ELSEWHERE ON THIS PAGE.
3. SET ALL SILL FLASHING IN A FULL BED OF SEALANT.
4. PER NFPA 100, FINISHED FLOOR SURFACE ON BOTH SIDES OF ALL DOORS SHALL NOT VARY BY MORE THAN 1/2" FOR A DISTANCE NOT LESS THAN THE WIDEST DOOR LEAF.
5. SUBMIT FLORIDA APPROVED NUMBER OR ENGINEERING DATA PREPARED BY A FLORIDA LICENSED ENGINEER DEMONSTRATING COMPLIANCE WITH THE FLORIDA BUILDING CODE'S DESIGN PRESSURE REQUIREMENTS FOR ALL EXTERIOR DOORS. INSTALL AS REQUIRED BY MANUFACTURER TO RESIST THE DESIGN LOADS SHOWN ON THE STRUCTURAL DRAWINGS. BASIS-OF-DESIGN: OPAQUE FIBERGLASS DOORS BY PLASTPRO OR ARCHITECT APPROVED EAUAL. FL-17184.7.

DOOR SCHEDULED NOTES:

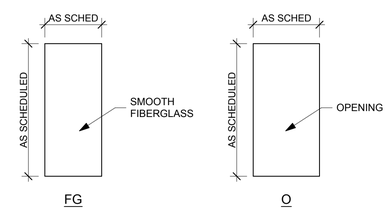
1. PROVIDE ADA COMPLIANT SILL, SET IN FULL BED OF SEALANT.

ABBREVIATIONS:

ALUM = ALUMINUM
FG = FIBERGLASS
O = OPENING
N/A = NOT APPLICABLE

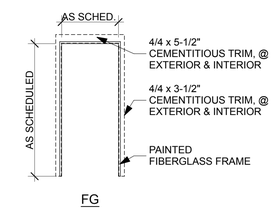
ID	DOOR LEAF PROPERTIES					DOOR FRAME PROPERTIES			DETAILS			HW SET	NOTE
	TYPE	W x H	THICKNESS	MATERIAL	FINISH	TYPE	MATERIAL	FINISH	HEAD	JAMB	SILL		
D1	FG	3'-0"×7'-0"	1 3/4"	FG	PAINT	FG	FG	PAINT				1.0	1
D2	FG	3'-0"×7'-0"	1 3/4"	FG	PAINT	FG	FG	PAINT				1.0	1
D3	FG	3'-0"×7'-0"	1 3/4"	FG	PAINT	FG	FG	PAINT				1.0	1
D4	FG	3'-0"×7'-0"	1 3/4"	FG	PAINT	FG	FG	PAINT				2.0	1
O	O	3'-6"×7'-0"	1 5/8"	N/A	N/A	N/A	N/A	N/A				N/A	

2 DOOR SCHEDULE



3 DOOR LEAF TYPES

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



4 DOOR FRAME TYPES

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

INTERIOR PAINT COLORS:

WALL PAINT:
INDIAN RIVER #985 BY BENJAMIN MOORE PAINTS
TRIM COLOR:
WIND'S BREATH #981 BY BENJAMIN MOORE PAINTS
CEILING COLOR:
SUPER WHITE #OC152 BY BENJAMIN MOORE PAINTS

WALL TILE:

FIELD - 4"x4"
DESIGNER WHITE #61, MATTE FINISH, BY AMERICAN OLEAN
ACCENT - 4"x4"
ALMOND #87, MATTE FINISH, BY AMERICAN OLEAN

OTHER INTERIOR COLORS:

TOILET PARTITION:
MOCHA #9212 BY ASI ACCURATE PARTITIONS
SOLID SURFACE COUNTERTOPS:
WHITEWATER 9198EA BY WILSONART
EPOXY FLOOR & BASE FINISH:
1/16" MADRAS FB-706 BY FLAKE
SEALED CONCRETE:
CLEAR

GENERAL FINISH NOTES:

1. PRIOR TO INSTALLING THE EPOXY FINISH, FLOOD THE FLOOR w/ WATER TO CONFIRM IT WILL ALL DRAIN PROPERLY TO THE FLOOR DRAINS. MAKE ADJUSTMENTS AS REQUIRED TO ACHIEVE POSITIVE DRAINAGE TO THE DRAINS WHILE MAINTAINING ADA COMPLIANCE.

ABBREVIATIONS:

BD. = BOARD
CEM. = CEMENTITIOUS
CMU = CONCRETE MASONRY UNIT (BLOCK)
GYP. = GYPSUM
N/A = NOT APPLICABLE

FINISH SCHEDULE NOTES:

1. PROVIDE ADA COMPLIANT ALUMINUM THRESHOLD AT DOORS. SET IN FULL BED OF SEALANT.
2. SLOPE CONCRETE TO DRAINS @ 1/8" PER 12" MAX.
3. AT STUD WALL CONSTRUCTION, USE CEMENT BOARD BEHIND TILE AND BEHIND EPOXY BASE. USE MOISTURE RESISTANT GYPSUM BOARD ELSEWHERE. SEE DETAIL 1/A403 & 2/A403.
4. INSTALL STAINLESS STEEL TRIM AT ALL EXPOSED EDGES OF TILE. SEE 2/A402. BASIS-OF-DESIGN: 1/4" JOLLY, J 60EB BY SCHLUTER OR APPROVED EQUAL. PROVIDE CONNECTOR PIECES AS REQUIRED.
5. OMIT CEILINGS IN THIS ROOM.

ROOM NO.	ROOM NAME	FLOOR		WALL		CEILING	NOTE
		FINISH	BASE	MATERIAL	FINISH		
01	WOMEN'S	EPOXY	EPOXY	GYP; TILE; CMU	PAINT; TILE	GYP	1, 2, 3, 4
02	JC / CHASE	SEALED	NONE	N/A	N/A	OPEN	1, 5
03	MEN'S	EPOXY	EPOXY	GYP; TILE; CMU	PAINT; TILE	GYP	1, 2, 3, 4
04	UNISEX	EPOXY	EPOXY	GYP; TILE; CMU	PAINT; TILE	GYP	1, 2, 3, 4
E1	COVERED AREA	SEALED	N/A	N/A	N/A	CEM. BD.	

SPECIFICATIONS/BASIS-OF-DESIGN:
ALL PRODUCTS LISTED ARE 'BASIS-OF-DESIGN'. PRODUCTS DETERMINED TO BE 'EQUAL' BY THE ARCHITECT OR BY DEP'S DESIGNATED REPRESENTATIVE WILL ALSO BE ACCEPTED.

1 FINISH SCHEDULE

ID	L1	L2	L3	L4	L5
ELEVATION					
W x H SIZE	3'-4"×4'-0"	4'-0"×2'-0"	4'-0"×2'-0"	9'-0"×3'-0"	9'-0"×3'-0"
SILL HEIGHT	3'-4"	6'-8"	6'-8"	13'-9"	13'-9"
FRAME MATERIAL	HM	HM	HM	HM	HM
QUANITY	4	4	7	2	2
HEAD					
JAMB					
SILL					
BASIS-OF-DESIGN	EXTERIOR LOUVER. BASIS-OF-DESIGN: EME520MD RUSKIN. FL21829.5	EXTERIOR LOUVER. BASIS-OF-DESIGN: EME520MD RUSKIN. FL21829.5	INTERIOR LOUVER. BASIS-OF-DESIGN: ELF40V RUSKIN. SEE MECHANICAL DRAWINGS.	EXTERIOR LOUVER. BASIS-OF-DESIGN: EME520MD RUSKIN. FL21829.5	EXTERIOR LOUVER. BASIS-OF-DESIGN: EME520MD RUSKIN. FL21829.5
FREE AREA	47%	47%	35%	47%	47%

GENERAL LOUVER COMMENTS:

1. SEE MECHANICAL DRAWINGS FOR BASIS-OF-DESIGN PRODUCTS: INSTALLED AS REQUIRED BY MANUFACTURER TO RESIST THE DESIGN LOADS SHOWN ON THE STRUCTURAL DRAWINGS. SUBSTITUTIONS WILL ONLY BE CONSIDERED w/ DOCUMENTATION SHOWING A VALID FLORIDA APPROVAL NUMBER FOR DESIGN LOADS INDICATED ON THE STRUCTURAL DRAWINGS, AND SUFFICIENT FREE AREA TO MEET VENTILATION REQUIREMENTS.
2. SET ALL SILL FLASHING IN FULL BED OF SEALANT.

5 LOUVER SCHEDULE

SYMBOL	REVISION	DATE

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: 7/19/2024
COMP. FILE No.:
STATE PROJECT No. 61351C

DESIGNER: JODIE DODSON
DRAWN BY: KZ/NS
REVIEWED BY: KZ
Consultant:
DODSTONE ARCHITECTS
3011-1 Powell Road | Tallahassee, FL 32308
850.668.7208 | #AR0015211

PROFESSIONAL REGISTRATION
JOEL DODSON AR0015211

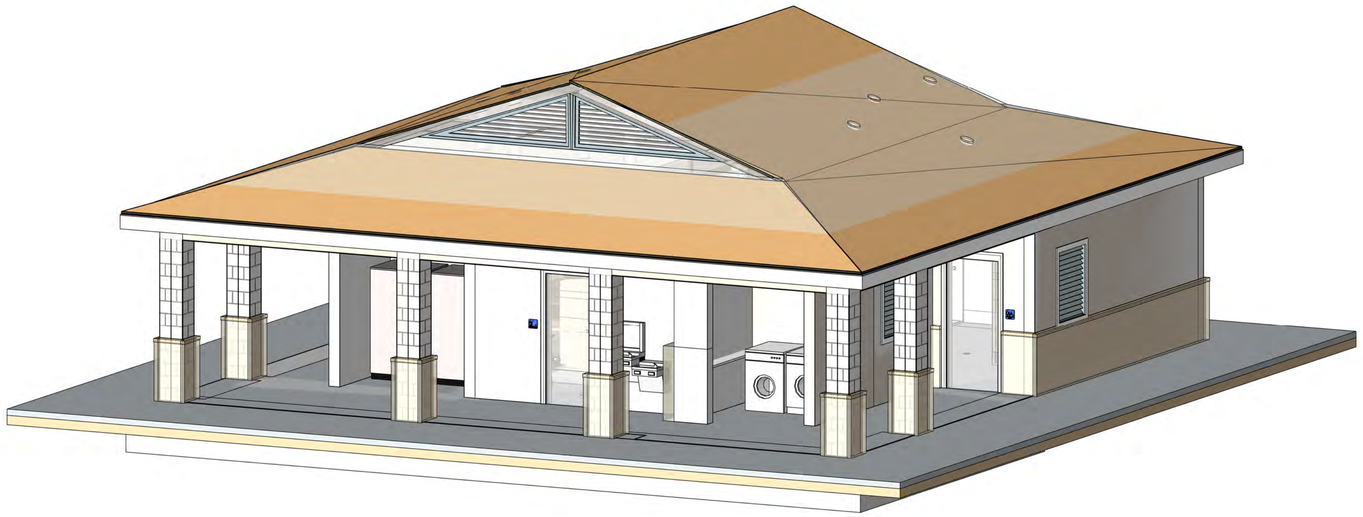
FLORIDA CAVERNS STATE PARK

SHEET TITLE
SCHEDULES

PROJECT TITLE
FLORIDA CAVERNS CAMPGROUND RESTROOMS

SHEET NO.
A601

60% CONSTRUCTION DOCUMENTS - **NOT FOR CONSTRUCTION**



FLORIDA CAVERNS STATE PARK

CAMPGROUND RESTROOMS

SHEET LIST		
SHEET NUMBER	SHEET NAME	7/19/24 50% CD
S000	COVER SHEET	•
S001	ABBREVIATIONS & SYMBOLS	•
S002	STRUCTURAL NOTES	•
S003	STRUCTURAL NOTES	•
S004	STRUCTURAL PLAN SPECIFICATIONS	•
S005	STRUCTURAL PLAN SPECIFICATIONS	•
S010	WINDLOAD DIAGRAMS	•
S101	FOUNDATION & GROUND FLOOR PLAN	•
S102	ROOF FRAMING PLAN	•
S301	BUILDING SECTIONS	•
S302	BUILDING SECTIONS	•
S401	TYPICAL SCHEDULES	•
S402	TYPICAL SCHEDULES	•
S511	TYPICAL SLAB ON GRADE DETAILS	•
S521	TYPICAL MASONRY DETAILS	•
S701	TYPICAL WOOD WALL DETAILS	•
S721	TYPICAL WOOD ROOF DETAILS	•
S722	TYPICAL WOOD ROOF DETAILS	•

BLISS & NYITRAY, INC.
STRUCTURAL ENGINEERS
227 N. Bronough St., Suite 7300
Tallahassee, FL 32301
Tel. (850) 222 - 4454
www.blissnyitraysc.com CA No. 674
BNI Project No. 24118

To the best of the Structural Engineer's knowledge, the Plans and Specifications comply with the applicable minimum building codes.

60% CD - NOT FOR CONSTRUCTION

REVISION	DATE	SYMBOL	REVISION	DATE
		A		
		B		
		C		
		D		

ISSUE DATE: 07/19/2024
COMP. FILE No.:
STATE PROJECT No. 61351C

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

George & Associates
Consulting Engineers, Inc.
CIV. ENGINEERING · ENVIRONMENTAL · SURVEYING & MAPPING · LAND USE
ENGINEERING BUSINESS NO. 7870
SURVEYING BUSINESS LICENSE NO. LB6580
1957 Commonwealth Lakes Drive, Tallahassee, FL 32303
PHONE: 850.521.0534 · FAX: 850.521.0535

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
PROFESSIONAL ENGINEER
CHRISTOPHER S. CHILDERS
LICENSE
NO. 50812
STATE OF FLORIDA
NOT FOR CONSTRUCTION
Christopher S. Childers, P.E.
Fla. Reg. No. 50812

FLORIDA CAVERNS STATE PARK

SHEET TITLE
COVER SHEET

PROJECT TITLE
FLORIDA CAVERNS CAMPGROUND RESTROOMS

SHEET NO.
S000

STRUCTURAL LEGEND AND ABBREVIATIONS

MATERIAL LEGEND

CONCRETE, EARTH, SOIL, EXISTING, GRAVEL, GROUT, STEEL

RIGID BOARD, ROCK, TILT-UP OR PRECAST, WOOD DECKING, WOOD

DEMO WALL, WALL TERMINATES AT THIS LEVEL, EXISTING WALLS, CMU WALLS

STEEL COLUMNS, CONCRETE COLUMNS, CONCRETE WALLS

LINE SYMBOLS

- CENTERLINE / GRIDLINE
- JOIST
- JOIST GIRDER
- BEAM
- GIRDER
- PROPERTY LINE
- X'-X" — DIMENSION LINE TICK
- X'-X" — DIMENSION LINE ARROW
- BREAK LINE
- PIPE/TUBE BREAK LINE

SECTION SYMBOLS

- # / ### — DETAIL NUMBER / SHEET NUMBER — **DETAIL SECTION**
- # / ### — DETAIL NUMBER / SHEET NUMBER — **WALL/BUILDING SECTION**
- # / ### — ELEVATION LETTER / SHEET NUMBER — **WIND ELEVATION**
- A / S-### — ELEVATION LETTER / SHEET NUMBER — **FRAMING ELEVATION**
- #/S-### — **PLAN/DETAIL CALLOUT**
- 1 / A — **GRIDLINES**
- NORTH — **PROJECT NORTH ORIENTATION**

SYMBOLS LEGEND:

- COMPRESSION PILES
- TENSION PILES
- BATTERED PILES
- HELICAL OR MICRO PILES
- TC-# — TIE COLUMN MARK NUMBER
- MP-# — MASONRY PILASTER MARK NUMBER
- # — COLUMN MARK NUMBER
- ST# — STEEL COLUMN
- A — TRUSS TIE DOWN
- DISTRIBUTED TENDONS
- BANDED TENDONS
- (SH-#) — SHEAR HEAD REINFORCING
- F= ###k — TOTAL EFFECTIVE FORCE IN POST TENSION BANDED TENDONS
- ##k/ft — TOTAL EFFECTIVE FORCE IN POST TENSION UNIFORM TENDONS
- WELDED WIRE REINFORCING
- T.O. ELEMENT — ELEVATION
- STEP UP/DOWN
- RAMP UP
- RAMP DOWN
- THICKENED EDGE
- THICKENED TRANSITION CHANGE
- SLAB THICKENS TO ELEVATION CHANGE
- SLOPE DN — DOWNWARD SLOPING RAMP
- JOIST BRIDGING
- WP — FRAMING WORK POINT
- BEAM (OR GIRDER) SPLICE - FLEXIBLE CONNECTION
- BEAM (OR GIRDER) SPLICE - MOMENT CONNECTION
- BEAM TO COLUMN CONNECTION - BM CONT. ACROSS COL
- BEAM TO COLUMN CONNECTION - BM NOT CONT. ACROSS COL
- BEAM TO COLUMN MOMENT CONNECTION
- BEAM TO BEAM CONNECTION
- BEAM TO BEAM MOMENT CONNECTION
- BRACED FRAME
- COLUMN TERMINATES AT BOTTOM OF BEAM
- C=X.XX" EX. W18x35 C=1.25" — SPECIAL MID-SPAN CAMBER (INCHES)
- (X) EX. W18x35 (28) — TOTAL NO. OF 3/4" DIA. SHEAR STUDS BETWEEN SUPPORTS
- OPENING IN FLOOR
- REVISION CLOUD AND REVISION NUMBER
- ONE WAY SPAN DIRECTION
- TWO WAY SPAN DIRECTION

SLAB REINFORCING LEGEND:

ONE WAY SLAB EXAMPLE

- 8" — SLAB THICKNESS
- #5@12" — BOTTOM REINFORCING

TWO WAY SLAB EXAMPLE

- SLAB THICKNESS
- 10" — #6@12" — TOP REINFORCING IN EACH DIRECTION
- 8ksi — #6@12" — BOTTOM REINFORCING IN EACH DIRECTION
- INCREASED CONCRETE STRENGTH IF APPLICABLE

MASONRY REINFORCING LEGEND

VERTICAL REINFORCING (EX: #5) — BAR SPACING (EX: @24" O.C.)

M8-524

MASONRY SIZE (EX: 8" MASONRY)

SLAB BAR DESIGNATION LEGEND

B - 8 - 6 H

- HOOKED (IF APPLICABLE)
- BAR LENGTH IN FEET (6' LONG)
- QUANTITY OF #5 BARS (8 #5) OR @ SPACING IN INCHES (#5@8")
- LOCATION IN SLAB

T = TOP
M = MIDDLE
B = BOTTOM

TOP BAR (EXAMPLES)	BOTTOM BAR (EXAMPLES)
T-8-12H	B-8-12H
T-8-12H	B-8-12H
T-8-12	B-8-12
T-@8-12	B-@8-12
T-8#7-12 (ALT. BAR SIZE)	B-@8#7-12 (ALT. BAR SIZE @8" SPACING)

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	PTI	Post Tensioning Institute
AISC	American Institute of Steel Construction	SJI	Steel Joist Institute
AISI	American Iron and Steel Institute	TAS	Testing Application Standard
AITC	American Institute of Timber Construction	TMS	The Masonry Society
ANSI	American National Standards Institute	UL	Underwriter's Laboratory
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		

STRUCTURAL ABBREVIATIONS

ACT	Actual
ADDL	Additional
ADH	Adhesive
ADJ	Adjacent
AFF	Above finished floor
AHJ	Authority Having Jurisdiction
AHU	Air handling unit
ALT	Alternate
ALUM	Aluminum
APPROX	Approximate (ly)
ARCH	Architect (ural)
ASD	Allowable Stress Design
B, BOT	Bottom
B-	Concrete beam mark
B.O.	Bottom of
B/B	Back to back
BLDG	Building
BLK	Block (not concrete block)
BM	Beam
BP	Base plate
BRDG	Bridging
BRG	Bearing
BSMT	Basement
BTWN	Between
C	Channel
C-	Column mark
C/C	Center to center
CANT	Cantilever
CFS	Cold Formed Steel
CG	Center of gravity
CIP	Cast in place
CJ	Control joint
CL	Center line, clear
CLR	Clear or clearance
CM	Construction manager
CMU	Concrete masonry unit
COL	Column
CONC	Concrete
CONN	Connection, connect
CONST	Construction
CONST JT	Construction joint
CONT	Continuous(ation)
CONTR	Contractor
COORD	Coordinate(tion)
CTR (TD)	Center(ed)
D	Depth
DBA	Deformed bar anchor
DBL	Double
DIA	Diameter
DIAG	Diagonal
DIM	Dimension
DL	Dead load
DN	Down
DS	Double stirrup
DT	Double ties
DTL	Detail
DWG (S)	Drawing(s)
DWL	Dowel
EA	Each
EB	Expansion bolt
EE	Each end
EF	Each face
EJ	Expansion joint
EL	Elevation
ELEV	Elevator
EMBED	Embedment
ENGR	Engineer
EOR	Engineer of Record
EQ	Equal
EQUIP	Equipment
ES	Each side
EW	Each way
EX	Example
EXIST	Existing
EXP	Expansion
EXT	Exterior
f'c	Compressive strength of concrete
f'm	Compressive strength of masonry
F-	Footing mark
FC	Filled cell
FD	Floor drain
FDN	Foundation
FF	Finished floor
FLG	Flange
FLR	Floor
FOC	Face of concrete
FRMG	Framing
FS	Far side
FT	Foot, feet
FTG	Footing
FV	Field verify
fy	Yield strength of struct steel
GA	Gauge
GALV	Galvanized
GB-	Grade beam mark
GC	General contractor
GL	Glu lam
GND	Ground

GR	Grade
HC	Hollow core
HDG	Hot dipped galvanized
HJR	Horizontal joint reinf
HK	Hook
HORIZ	Horizontal
HP	High point
HSA	Headed stud anchor
HSS	Hollow structural section
HT	Height
ID	Inside diameter
IF	Inside face
IJ	Isolation joint
IN	Inch
INCL	Include, included, including
INFO	Information
INSUL	Insulate, insulated, insulation
INT	Interior
INTERM	Intermediate
ITB	Inverted tee beam
JG	Joist girder
JST	Joist
JT	Joint
k	KIP, Kilopound(s)
K/FT	Kips per foot
kg	Kilogram
kN	Kilonewton
KSF	Kips per square foot
KSI	Kips per square inch
L	Length, long
LB	Link beam
lb	Pound
LG	Long
LL	Live load
LLBB	Long leg back to back
LLH	Long leg horizontal
LLV	Long leg vertical
LONG	Longitudinal
LP	Low point
LRFD	Load and resistance factor design
LSL	Long slotted holes
LT WT	Lightweight
LVL	Laminated veneer lumber
LW	Long way
LWC	Lightweight concrete
LWIC	Lightweight insulating concrete
M	Mega 1000
m	Meter
MAS	Masonry
MAX	Maximum
MC	Miscellaneous channel
MC-	Masonry column mark
MECH	Mechanical
MEP	Mechanical, Electrical, Plumbing
MEZZ	Mezzanine
MFR	Manufacturer(ed)
MID	Middle
MIN	Minimum
MISC	Miscellaneous
MJ	Masonry joint
mm	Millimeters
MO	Masonry opening
MP-#	Masonry Pilaster
MPa	Megapascal
MPH	Miles Per Hour
MTL	Metal
Mu	Factored moment
N	Newton
N/A	Not applicable
NA	Neutral axis
NAVD	North American Vertical Datum
NGVD	National Geodetic Vertical Datum
NIC	Not in contract
No.	Number
NOA	Notice of Acceptance
NOM	Nominal
NS	Near side
NTS	Not to scale
O/O	Out to out
OC	On center
OD	Outside diameter
OF	Outside face
OPNG	Opening
OPP	Opposite
OPP HD	Opposite hand
OVS	Oversize(d) holes
Pa	Pascal = N/Sq m
PAF	Powder actuated fastener
PC	Precast
PC-	Pile cap mark
PCJ	Precast concrete joist
PDT	Precast double tee
PL	Plate
PLF	Pounds per linear foot
PREFAB	Prefabricate(d)

PROJ	Projection
PS	Prestressed
PSF	Pounds per square foot
PSI	Pounds per square inch
PT	Post tensioned/pressure treated
PVC	Polyvinyl chloride
R	Remainder
R#'-#"	Radial dimension
RAD	Radius
RD	Round, roof drain
REF	Refer, reference
REG	Regular
REINF	Reinforce(d)(ment)(ing)
REQ	Require(d)(ment)
RET	Return
REV	Revision
RM	Room
RO	Rough opening
RP	Radius point
RT	Right
RTU	Roof top unit
RW	Retaining wall
#SB-	Soffit beam mark, level specific
S	Stirrup, short
SA	Sleeve anchor
SB-	Soffit beam mark
SC	Slip critical
SCHED	Schedule
SDL	Superimposed dead load
SECT	Section
SF	Square foot(feet), step footing
SHT	Sheet
SIM	Similar
SJ	Saw cut joint
SL	Slab, direction of floor or roof slope
SL BRG	Slide bearing
SLBB	Short leg back to back
SLV	Short leg vertical
SOG	Slab on grade
SP	Spacing(es)
SPEC(S)	Specification(s)
SQ	Square
SS	Stainless steel
SSL	Short slotted holes
STD	Standard
STIFF	Stiffeners
STL	Steel
STRUCT	Structural
SW	Short way
SW-#	Shear wall mark
SYM	Symmetrical
T	Top, tie(s)
t	Thickness
T&B	Top and bottom
T.O.	Top of
T.O.B	Top of beam
T.O.C	Top of concrete
T.O.D	Top of deck
T.O.F	Top of footing
T.O.GB	Top of grade beam
T.O.PC	Top of pilecap, Top of precast
T.O.SL	Top of slab
T.O.SS	Top of structural steel
T.O.W	Top of wall
TB-	Tie beam mark
TC-#	Tie Column Mark
TEMP	Temporary, temperature
TERM	Terminate
THK(N)	Thick, thicken(ed)
THRD	Threaded
TOL	Tolerance
TR	Tread
TRAN	Transverse
TT	Triple tie
Tu	Factored torsion
TW	Tunnel wall
TYP	Typical
U BAR	U shape bar
ULT	Ultimate
UNIF	Uniform
UON	Unless otherwise noted
UPT	Upturned
US	Underside
VERT	Vertical
Vu	Factored shear
W	Width / Wide flange beam
w/	With
w/o	Without
WA	Wedge anchor
WB	Wind brace
WD	Wood
WF-	Wall footing mark
WL	Wind load
WP	Work point, waterproofing
WS	Waterstop
WT	Weight
WWR	Welded wire reinforcing
XS	Extra Strong
XXS	Double Extra Strong

BLISS & NYITRAY, INC.
STRUCTURAL ENGINEERS
227 N. Bronough St., Suite 7300
Tallahassee, FL 32301
Tel: (850) 222 - 4454
www.bnstructures.com CA No. 674
BNI Project No. 24118

To the best of the Structural Engineer's knowledge, the Plans and Specifications comply with the applicable minimum building codes.

60% CD - NOT FOR CONSTRUCTION

SYMBOL	REVISION	DATE
A		
B		
C		
D		

ISSUE DATE: 07/19/2024
COMP. FILE No.:
STATE PROJECT No. 61351C

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

George & Associates
Consulting Engineers, Inc.
CIVIL · ENVIRONMENTAL · TRANSPORTATION · SYSTEMS ELECTRICAL · LAND USE
ENGINEERING LICENSE NO. 7870
1957 Commonwealth Lane, Tallahassee, FL 32303
PHONE: 850.521.0344 · FAX: 850.521.0345

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 — LICENSED — NO. 50812 — STATE OF FLORIDA — PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION
Christopher S. Childers, P.E.
Fla. Reg. No. 50812

PROJECT TITLE: FLORIDA CAVERNS CAMPGROUND RESTROOMS

FLORIDA CAVERNS STATE PARK

SHEET TITLE: ABBREVIATIONS & SYMBOLS

SHEET NO. S001

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	

Live Load reduction for beams, columns and foundations has not 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 Design Rain Loads:

Rain Load	10 psf
Rain Intensity	i = 2.1in/hr
Static Head	ds = 2 in
Hydraulic Head	dh = 2 in

GN-19 Design Wind Loads:

Governing Code	FBC 8th Edition (2023) / ASCE 7-22
Building Risk Category	II
Ultimate Wind Speed	Vult = 122 mph
Allowable Stress Design Wind Speed	Vasd = 98 mph
Mean Roof Height	13.5 feet
Directionality Factor	Kd = .85
Gust-Effect Factor	G = .85
Exposure	B
Internal Pressure Coefficient	GCpi = +/- 0.18

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 the 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 Framing and Connections, Prefabricated Wood Components,

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 #TBA by TBA dated TBA. The Geotechnical Report is not available at this time.

SF-2 Footing sizes and reinforcing are based on an assumed allowable soil bearing capacity of 1,500 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.

SF-7 Top of all footings is ____ below the ground floor level, 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 For basement walls, do not backfill against walls until 7 days after the walls are braced by the structure or are temporarily braced.

EB-3 Do not backfill cantilevered retaining walls until concrete has attained 100% of its design strength and is 7 days old. Do not backfill until after completion and inspec-tion of any waterproofing.

EB-4 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-5 The Contractor is responsible for the disposal of all accumulated water in a manner that does not in-convenience or damage the work.

SHALLOW FOUNDATIONS ON VIBRO-COMPACTED SOIL

SF-1 Foundation design, soil preparation and compaction soil are based on Geotechnical Investigation, Data and Recommendations in Report #_____ by _____ dated _____. The Geotechnical Report is not available at this time.

SF-2 Footing sizes and reinforcing are based on an assumed allowable soil bearing capacity of 1,500 psf with a maximum total settlement as indicated in the forthcoming Geotechnical Report. All footings shall bear on vibro-compacted soil prepared per the forthcoming Geotechnical Report and Plan Specifications or Specification Section 316110, and field controlled and tested by a Licensed Soils Engineer in accordance with the Geotechnical Report.

SF-3 Center all footings under their respective columns or walls, U.O.N.

SF-4 Top of all footings is 6" below the ground floor level, 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 For basement walls, do not backfill against walls until 7 days after the walls are braced by the structure or are temporarily braced.

EB-3 Do not backfill cantilevered retaining walls until concrete has attained 100% of its design strength and is 7 days old. Do not backfill until after completion and inspec-tion of any waterproofing.

EB-4 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-5 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.

Provide crack control joints at 15 feet maximum to limit areas between joints to 225 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-6 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-7 See the Architectural Drawings for slab on grade depressions and other requirements.

SG-8 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	4,000 psi
Elevated Beams & Slabs	4,000 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 and Pile Caps	3"	2"	3"
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 In addition to specified reinforcing, provide _____ tons of reinforcing bars to be detailed, fabricated, delivered to site and placed as directed by the Architect/Engineer to account for unforeseeable conditions.

RC-10 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-11 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-12 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-13 Provide 3/4" chamfer for all exposed corners.

RC-14 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.

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.

CM-3 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-4 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.

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. 24118

To the best of the Structural Engineer's knowledge, the Plans and Specifications comply with the applicable minimum building codes.

60% CD - NOT FOR CONSTRUCTION

SYMBOL	REVISION	DATE
A		
B		
C		
D		

ISSUE DATE: 07/19/2024
COMP. FILE No.:
STATE PROJECT No. 61351C

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

George & Associates
Consulting Engineers, Inc.
CIV. ENGINEERING · TRANSPORTATION · SYSTEMS ELEC. · LAND SUR.
ENGINE DATA CERTIFICATE NO. 7870
1567 Commonwealth Blvd. Suite 101, Tallahassee, FL 32303
PH.&FAX 850.562.0534 - FAX 850.562.0535

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
LICENSED
NO. 50812
STATE OF FLORIDA
PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION
Christopher S. Childers, P.E.
Fla. Reg. No. 50812

PROJECT TITLE
FLORIDA CAVERNS CAMPGROUND RESTROOMS

FLORIDA CAVERNS STATE PARK

SHEET TITLE
STRUCTURAL NOTES

SHEET NO.
S002

STRUCTURAL NOTES CONT'D

CM-5 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-6 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-7 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-8 Reinforced masonry wall construction shall be inspected by an Engineer or Architect in accordance with TMS 402/602.

CM-9 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-10 Provide lintels or headers with min. 8" bearing over all masonry openings.

CM-11 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))

POST-INSTALLED ANCHORS - MECHANICAL ANCHORS

AN-6 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-7 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.

AN-8 For drop-in anchors for fastening to the underside of post-tensioned slabs and hollowcore with a maximum embedment of ¾": Pre-approved anchor is the DeWalt Mini-Undercut +.

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.

POST-INSTALLED ANCHORS - ADHESIVE ANCHORS

AN-11 For upwardly inclined or horizontal anchors, installer shall be certified by the ACI/CRSI Adhesive Anchor Installation Certification Program.

AN-12 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-13 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-14 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-15 Threaded rods for use with adhesive are galvanized ASTM F1554 Grade 36 U.O.N.

POST-INSTALLED ANCHORS - POWDER-ACTUATED FASTENERS

AN-16 Powder-actuated fasteners shall not be used to fasten to concrete or masonry U.O.N.

AN-17 Powder-actuated fasteners may be used to fasten cold-formed structural steel tracks and clips to walls but not to the underside of concrete or masonry elements where the fastener will be primarily loaded in tension.

AN-18 Powder-actuated fasteners shall have been tested and qualified for use in accordance with ICC-ES AC70.

AN-19 For anchoring into structural steel: Pre-approved anchors include the Hilti X-U, DeWalt CSI, and Simpson PDPA, with penetration of the entire tipped-portion of the fastener.

AN-20 Provide a minimum of two fasteners per connection.

AN-21 Refer to manufacturer's instructions for installation and appropriate cartridge load.

AN-22 Provide fastener spacing and edge distance as shown on the Drawings. Minimum fastener spacing is 1 inch and edge distance of 1/2 inch.

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-preservative treated 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%.

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 = 20 psf
B. Flat top chord roof trusses
Top Chord: Dead Load = 10 psf Live Load = 30 psf (or Rain Load)
Bottom Chord: Dead Load = 10 psf Live Load = 10 psf

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

D. 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 Wood-preservative treated 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.

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)	(psi)	$Fc_{Parallel}$	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	

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 A307, U.O.N. Use washers between wood and all bolt heads and nuts

WD-5 All metal wood connectors shall be galvanized or 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 Stud walls shall be of stud size and spacing as specified in the schedule on the drawings. Provide horizontal blocking in stud walls per schedule.

WD-9 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-10 Frame floor openings with headers and trimmers supported by metal joist hangers; double headers and trimmers where span of header exceeds 48 inches or supporting more than one joist.

WD-11 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.

WD-12 Floor Sheathing shall be 5/8" for joist spacing at 16" o.c. maximum, and 3/4" for joist or truss spacing of 24" O.C. Plywood should be nailed to support as specified on the drawings with grade stamp exposed for inspection

WD-13 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.

WD-14 Horizontal laminated members shall conform to the latest edition of ANSI 117, have wet-use adhesive and dry-use service conditions, balanced layup tension zone requirements top and bottom and:

Stress Class Designation	=	24F-1.8E
Combination Symbol	=	24F-V8
Fb±	=	2400 psi
Fc (perpendicular)	=	740 psi
Fc (parallel)	=	1600 psi
Ft (parallel)	=	1150 psi
Fv	=	300 psi
E	=	1,800,000 psi
E min	=	950,000 psi

WD-15 Laminated veneer lumber (LVL) members shall be manufactured by Boise Cascade, Inc., Weyerhaeuser, Inc. or approved equal and nailed together per manufacturer's recommendations.

WD-16 Parallel-strand lumber (PSL) shall be manufactured by Weyerhaeuser, Inc. or approved equal.

60% CD - NOT FOR CONSTRUCTION

SYMBOL	REVISION	DATE
A		
B		
C		
D		

ISSUE DATE: 07/19/2024
COMP. FILE No.:
STATE PROJECT No. 61351C

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

George & Associates Consulting Engineers, Inc.
CIVIL · ENVIRONMENTAL · TRANSPORTATION · SYSTEMS ELECTRONIC · LAND USE
ENGINEERING BUSINESS No. 7870
1967 Commonwealth Lane, Suite 200, Tallahassee, FL 32303
PHONE 850.562.0530 · FAX 850.562.0545

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
NOT FOR CONSTRUCTION
Christopher S. Childers, P.E.
Fla. Reg. No. 50812

BLISS & NYITRAY, INC.
STRUCTURAL ENGINEERS
227 N. Bronough St, Suite 7300
Tallahassee, FL 32301
Tel: (850) 222 - 4454
www.bnicorporate.com CA No. 674
BNI Project No: 24T18

To the best of the Structural Engineer's knowledge the Plans and Specifications comply with the applicable minimum building codes.

PROJECT TITLE
FLORIDA CAVERNS CAMPGROUND RESTROOMS

SHEET TITLE
STRUCTURAL NOTES

FLORIDA CAVERNS STATE PARK

SHEET NO.
S003

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 1 tons of reinforcing bars, and 50 cubic yards of concrete 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 Sustainable Design: Provide product data for recycled content indicating postconsumer and preconsumer recycled content and cost. For steel reinforcing, postconsumer recycled content plus one-half of preconsumer recycled content shall not be less than 60 percent. Provide environmental product declaration for each product including statement of costs.

SRC-5 Sustainable Design: Provide product certificates indicating that concrete is manufactured within 500 miles of Project site from aggregates that have been extracted, harvested, or recovered, as well as manufactured, within 500 miles of Project site. Provide laboratory test reports for curing and sealing compounds indicating compliance with requirements for low-emitting materials.

SRC-6 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-7 Fabricate and install steel reinforcement according to CRSI’s “Manual of Standard Practice.”

SRC-8 Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that reduce bond to concrete.

SRC-9 Repair cut and damaged zinc coatings with zinc repair material according to ASTM A780.

SRC-10 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	W1
Slab on Grade	3000	N	1”	0.64	S0

* Letter in Exposure Category denotes Exposure Class:
F: Freezing and thawing
S: Sulfate
W: Concrete in contact with water
C: Corrosion protection of reinforcement

SRC-11 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%.

B. Concrete mixes containing slag cement: 40%-50%.

C. 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 Concrete columns shall be cast at least 24 hours before horizontal members they support are cast.
Exception: Tie columns and grout in masonry cells shall be cast at least 4 hours before beams are slabs are cast on top of masonry.

SRC-17 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-18 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-19 Sample all concrete after water and admixtures have been added. Obtain at least one composite sample for each 50 CY or fraction thereof of each concrete mix placed daily.

SRC-20 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-21 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-22 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-23 Provide test results to Architect, Engineer, and Concrete Company.

SRC-24 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 Sustainable Design: Provide product certificates for wood products indicating that they have been manufactured within 500 miles of Project site from materials that have been extracted, harvested, or recovered, as well as manufactured, within 500 miles of Project site. Include chain-of-custody certificates for “FSC Pure” certified wood, including statement of costs, and qualification data products for manufacturer and vendor.

SWT-3 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-4 Fabricator Qualifications: Shop that participates in a recognized quality-assurance program, complies with quality-control procedures in TPI 1.

SWT-5 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-6 Inspect trusses showing discoloration, corrosion, or other evidence of deterioration. Discard and replace trusses that are damaged or defective.

SWT-7 Maximum Deflection under Design Loads:
A. Roof Trusses: Vertical deflection of 1/360 of span.
B. Floor Trusses: Vertical deflection of 1/360 of span.

SWT-8 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-9 Steel Sheet Protection:

A. Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A653, G60 coating designation for interior locations.
B. Hot-Dip Heavy-Galvanized-Steel Sheet: ASTM A653; Structural Steel (SS), high-strength low-alloy steel Type A (HSLAS Type A), or high-strength low-alloy steel Type B (HSLAS Type B); G185 coating designation; and not less than 0.036 inch thick. Use for wood-preservative-treated lumber.
C. Stainless Steel Sheet: ASTM A240 or ASTM A666, Type 316, for exterior locations and for exposed applications in coastal environments.

SWT-10 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-11 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-12 Do not alter trusses in field. Do not cut, drill, notch, or remove truss members.

SWT-13 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.

SWT-14 Wood-preservative treated Roof Sheathing: DOC PS 1, Exposure 1, Structural I sheathing. Span Rating: Not less than 32/16. Nominal Thickness: Not less than 5/8 inch.

WOOD FRAMING

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

SWD-2 Sustainable Design: Provide product certificates for wood products indicating that they have been manufactured within 500 miles of Project site from materials that have been extracted, harvested, or recovered, as well as manufactured, within 500 miles of Project site. Include chain-of-custody certificates for “FSC Pure” certified wood, including statement of costs, and qualification data products for manufacturer and vendor.

SWD-3 Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry accurately to other construction. Locate blocking, grounds, and similar supports to comply with requirements for attaching other construction.

SWD-4 Install shear wall panel to comply with manufacturer's written instructions.

SWD-5 Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.

SWD-6 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-7 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-8 Wood joists, beams or girders which frame into pockets of exterior concrete or masonry walls shall have 1/2-inch airspace at top, sides and ends or shall be pressure treated.

SWD-9 Treat ends of timber beams and posts exposed to weather by dipping in water-repellent preservative for 15 minutes.

SWD-10 Under non-load-bearing partitions, provide double joists separated by solid blocking equal to depth of studs above.

BLISS & NYITRAY, INC.
STRUCTURAL ENGINEERS
227 N. Bronough St., Suite 7300
Tallahassee, FL 32301
Tel: (850) 222 - 4454
www.bliss-nyitray.com CA No. 674
BNI Project No. 24T18

To the best of the Structural Engineer's knowledge the Plans and Specifications comply with the applicable minimum building codes.

60% CD - NOT FOR CONSTRUCTION

REVISION	DATE	SYMBOL

REVISION	DATE	SYMBOL

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

ISSUE DATE: 07/19/2024
COMP. FILE No.:
STATE PROJECT No. 61351C

George & Associates
Consulting Engineers, Inc.
CIVIL · ENVIRONMENTAL · TRANSPORTATION · SYSTEMS ELEPHONY · LAND USE
ENGINEERING BUSINESS NO. 7870
1967 Commerce Park Way, Suite 100, Tallahassee, FL 32303
PHONE 850.921.0334 · FAX 850.921.0345

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
NOT FOR CONSTRUCTION
Christopher S. Childers, P.E.
Fla. Reg. No. 50812

PROJECT TITLE
FLORIDA CAVERNS STATE PARK

SHEET TITLE
STRUCTURAL PLAN SPECIFICATIONS

PROJECT TITLE
FLORIDA CAVERNS CAMPGROUND RESTROOMS

SHEET NO.
S004

STRUCTURAL PLAN SPECIFICATIONS CONT'D

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 Sustainable Design: Provide product certificates for wood products indicating that they have been manufactured within 500 miles of Project site from materials that have been extracted, harvested, or recovered, as well as manufactured, within 500 miles of Project site. Include chain-of-custody certificates for “FSC Pure” certified wood, including statement of costs, and qualification data products for manufacturer and vendor.

SWT-3 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-4 Fabricator Qualifications: Shop that participates in a recognized quality-assurance program, complies with quality-control procedures in TPI 1.

SWT-5 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-6 Inspect trusses showing discoloration, corrosion, or other evidence of deterioration. Discard and replace trusses that are damaged or defective.

SWT-7 Maximum Deflection under Design Loads:
A. Roof Trusses: Vertical deflection of 1/360 of span.
B. Floor Trusses: Vertical deflection of 1/360 of span.

SWT-8 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-9 Steel Sheet Protection:

A. Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A653, G60 coating designation for interior locations.
B. Hot-Dip Heavy-Galvanized-Steel Sheet: ASTM A653; Structural Steel (SS), high-strength low-alloy steel Type A (HSLAS Type A), or high-strength low-alloy steel Type B (HSLAS Type B); G185 coating designation; and not less than 0.036 inch thick. Use for wood-preservative-treated lumber.
C. Stainless Steel Sheet: ASTM A240 or ASTM A666, Type 316, for exterior locations and for exposed applications in coastal environments.

SWT-10 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-11 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-12 Do not alter trusses in field. Do not cut, drill, notch, or remove truss members.

SWT-13 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.

SWT-14 Wood-preservative treated Roof Sheathing: DOC PS 1, Exposure 1, Structural I sheathing. Span Rating: Not less than 32/16. Nominal Thickness: Not less than 5/8 inch.

WOOD FRAMING

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

SWD-2 Sustainable Design: Provide product certificates for wood products indicating that they have been manufactured within 500 miles of Project site from materials that have been extracted, harvested, or recovered, as well as manufactured, within 500 miles of Project site. Include chain-of-custody certificates for “FSC Pure” certified wood, including statement of costs, and qualification data products for manufacturer and vendor.

SWD-3 Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry accurately to other construction. Locate blocking, grounds, and similar supports to comply with requirements for attaching other construction.

SWD-4 Install shear wall panel to comply with manufacturer's written instructions.

SWD-5 Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.

SWD-6 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-7 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-8 Wood joists, beams or girders which frame into pockets of exterior concrete or masonry walls shall have 1/2-inch airspace at top, sides and ends or shall be pressure treated.

SWD-9 Treat ends of timber beams and posts exposed to weather by dipping in water-repellent preservative for 15 minutes.

SWD-10 Under non-load-bearing partitions, provide double joists separated by solid blocking equal to depth of studs above.

SWD-11 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-12 Store I-Joist on site in a vertical position and protect from the weather. Joists shall be handled with care so they are not damaged. Temporary construction loads that causes stresses beyond design loads are not permitted.

SWD-13 Wall and Parapet Sheathing: DOC PS 1, Exposure 1, Structural I sheathing. Span Rating: Not less than 24/0. Nominal Thickness: As specified on the drawings, but not less than 5/8 inch for exterior walls and not less than 3/8 inch for interior shear walls.

SWD-14 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.

Subflooring Plywood: DOC PS 1, Exposure 1, Structural I, C-D Grade single-floor sheathing. Span Rating: Not less than 40/20 for 5/8 inch plywood, and not less than 48/24 for 3/4 inch plywood. Nominal Thickness: Not less than 5/8 inch for supports at 16 inches O.C., and not less than 3/4 inch for supports at 24 inches O.C.

60% CD - NOT FOR CONSTRUCTION

SYMBOL	REVISION	DATE
A		
B		

SYMBOL	REVISION	DATE
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

DESIGNER: DLB
DRAWN BY: TLC
REVIEWED BY: CSC
ISSUE DATE: 07/19/2024
COMP. FILE No.:
STATE PROJECT No. 61351C

Consultant:
George & Associates
Consulting Engineers, Inc.
CIVIL · ENVIRONMENTAL · TRANSPORTATION · SYSTEMS ELECTRONIC · LAND USE
ENGINEERING BUSINESS NO. 2820
1967 Commonwealth Lane, Suite 200, Tallahassee, FL 32303
PHONE 850.921.9534 · FAX 850.921.9545

PROFESSIONAL REGISTRATION
CHRISTOPHER S. CHILDERS
LICENSE
NO. 50812
STATE OF FLORIDA
PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION
Christopher S. Childers, P.E.
Fla. Reg. No. 50812

BLISS & NYITRAY, INC.
STRUCTURAL ENGINEERS
227 N. Bronough St. Suite 7300
Tallahassee, FL 32301
Tel: (850) 222 - 4454
www.bnynyweed.com CA No. 674
BNI Project No: 24T18

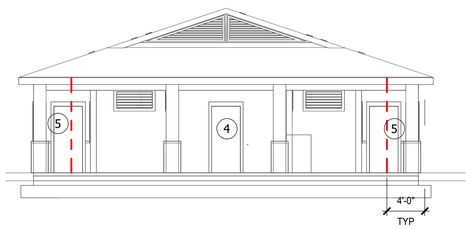
To the best of the Structural Engineer's knowledge the Plans and Specifications comply with the applicable minimum building codes.

FLORIDA CAVERNS STATE PARK

SHEET TITLE
STRUCTURAL PLAN SPECIFICATIONS

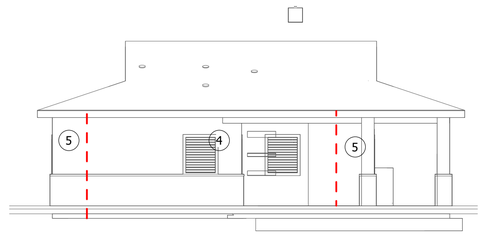
PROJECT TITLE
FLORIDA CAVERNS CAMPGROUND RESTROOMS

SHEET NO.
S005



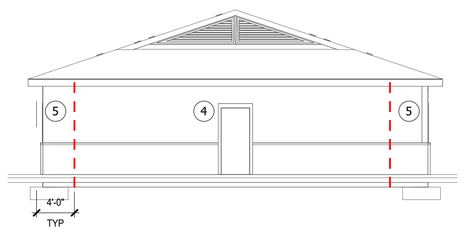
A SOUTH ELEVATION

1/8" = 1'-0"



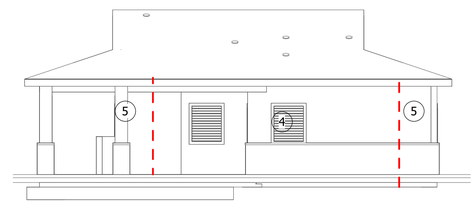
B WEST ELEVATION

1/8" = 1'-0"



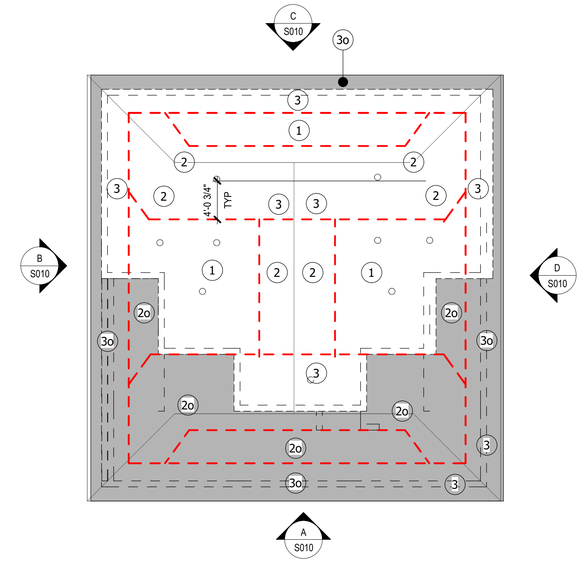
C NORTH ELEVATION

1/8" = 1'-0"



D EAST ELEVATION

1/8" = 1'-0"



ROOF WIND DIAGRAM

1/8" = 1'-0"

NORTH

ROOF WIND PRESSURES (PSF)				
ZONES	TRIBUTARY AREA (SF)			
	10	100	200	500
1	-23/+10	-14/+10	-12/+10	-12/+10
2	-30/+10	-20/+10	-17/+10	-17/+10
3	-33/+10	-22/+10	-19/+10	-19/+10

OVERHANG PRESSURES (PSF)				
ZONE	TRIBUTARY AREA (SF)			
	10	100	200	500
2o				
Zone 3o @ Zone 4	-43	-30	-27	-26
Zone 3o @ Zone 5	-47	+32	-27	-26

WALL WIND PRESSURES (PSF)				
ZONE	TRIBUTARY AREA (SF)			
	10	100	200	500
4	-15/+14	-13/+12	-12/+11	-12/+10
5	-19/+14	-14/+12	-12/+11	12/+10

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 7-22 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

BLISS & NYITRAY, INC.
STRUCTURAL ENGINEERS
227 N. Bronough St., Suite 7300
Tallahassee, FL 32301
Tel: (850) 222-4454
www.bnstructures.com CA No. 674
BNI Project No. 24T18

To the best of the Structural Engineer's knowledge, the Plans and Specifications comply with the applicable minimum building codes.

60% CD - NOT FOR CONSTRUCTION

SYMBOL	REVISION	DATE

SYMBOL	REVISION	DATE
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: 07/19/2024
COMP. FILE No.:
STATE PROJECT No. 61351C

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

George & Associates
Consulting Engineers, Inc.
FIA. ENGINEERING, INFRASTRUCTURE, SYSTEMS ELEVATORS - LICENSE
ENGINEERING CERTIFICATE NO. 7870
1567 Commonwealth Lake Drive, Tallahassee, FL 32303
PHONE 850.521.0344 - FAX 850.521.0345

PROFESSIONAL REGISTRATION

CHRISTOPHER S. CHILDERS
LICENSE
NO. 50812
STATE OF FLORIDA
PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION

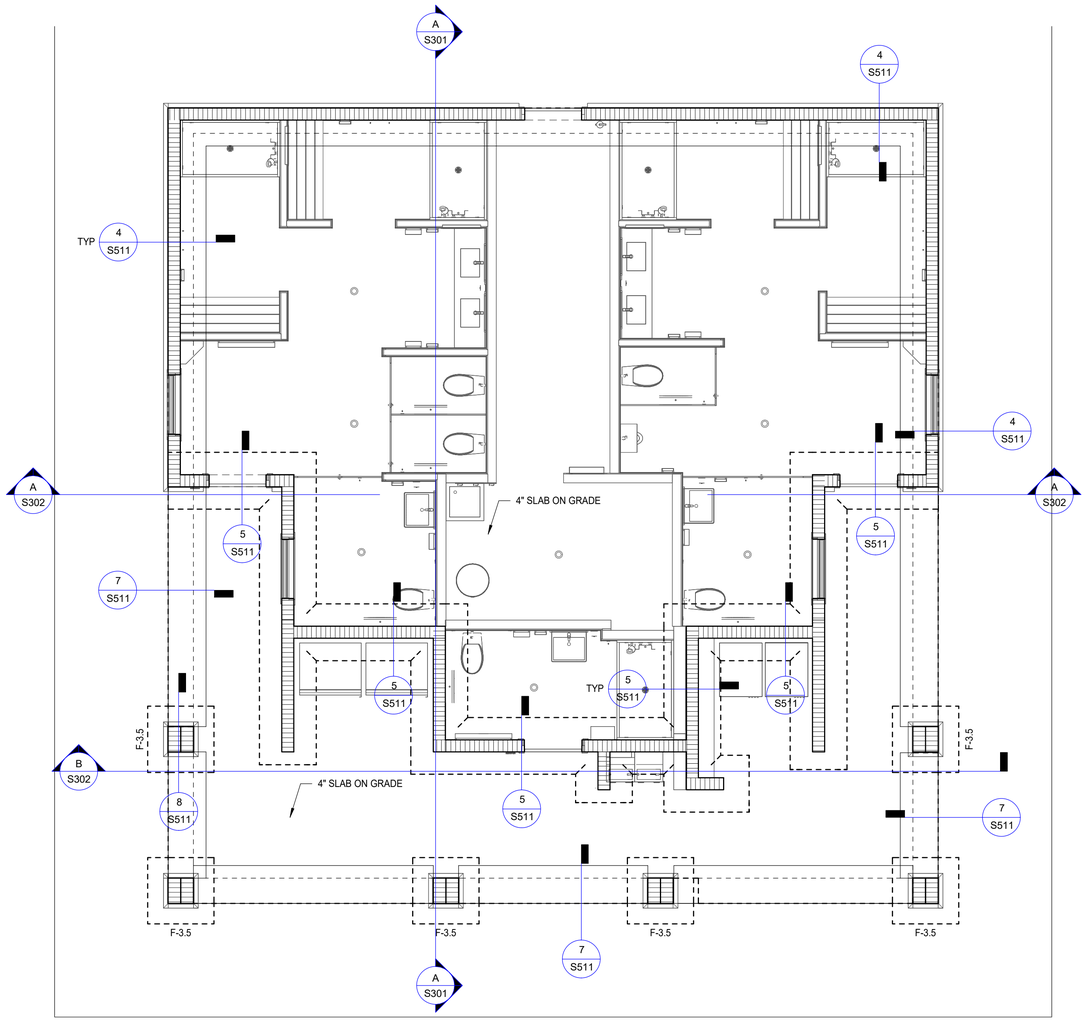
Christopher S. Childers, P.E.
Fla. Reg. No. 50812

FLORIDA CAVERNS STATE PARK

SHEET TITLE
WINDLOAD DIAGRAMS

PROJECT TITLE
FLORIDA CAVERNS CAMPGROUND RESTROOMS

SHEET NO.
S010



GROUND FLOOR PLAN

T.O. SLAB = +0" U.O.N.
T.O. FOUNDATION= -2'-0"

1/4" = 1'-0"

MASONRY REINFORCING NOTES:

M.1 FOR SCHEDULES AND TYPICAL DETAILS SEE SHEETS S521

M.2 SEE DETAIL 6/S521 FOR MASONRY CONTROL JOINTS

M.3 ALL EXTERIOR MASONRY WALLS ARE: M8-548 U.O.N.

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

60% CD - NOT FOR CONSTRUCTION

SYMBOL	REVISION	DATE
C		
D		

SYMBOL	REVISION	DATE
A		
B		

ISSUE DATE: 07/19/2024
COMP. FILE No.:
STATE PROJECT No. 61351C

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

George & Associates
Consulting Engineers, Inc.
CIV. ENGINEERING TRANSPORTATION ENVIRONMENTAL
ENGINEERING BUSINESS NO. 2670
LANDSCAPE ARCHITECTURE SURVEYING
1967 Commerce Park Blvd. Tallahassee, FL 32303
PHONE 850.521.0534 - FAX 850.521.0535

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
LICENSED
NO. 50812
STATE OF FLORIDA
PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION

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

BLISS & NYITRAY, INC.
STRUCTURAL ENGINEERS
227 N. Bronough St. Suite 7300
Tallahassee, FL 32301
Tel: (850) 222 - 4454
www.bnynyinc.com CA No. 674
BNI Project No. 24T18

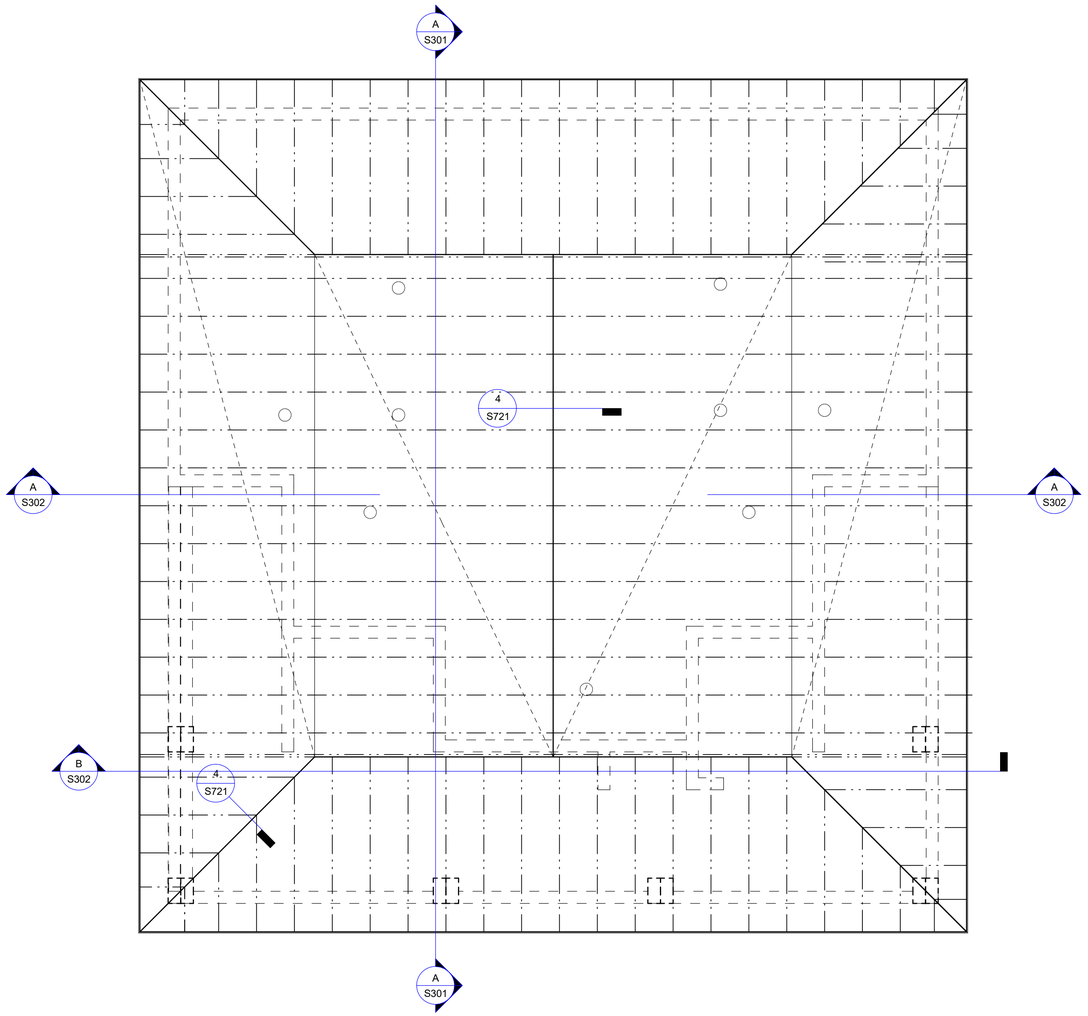
To the best of the Structural Engineer's knowledge the Plans and Specifications comply with the applicable minimum building codes.

PROJECT TITLE
FLORIDA CAVERNS STATE PARK

SHEET TITLE
FOUNDATION & GROUND FLOOR PLAN

PROJECT TITLE
FLORIDA CAVERNS CAMPGROUND RESTROOMS

SHEET NO.
S101



ROOF FRAMING PLAN

1/4" = 1'-0"

PLAN NOTES:

1. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN.
2. SEE TYPICAL DETAILS FOR ADDITIONAL INFORMATION

PLAN KEYNOTES:

1. PRE-ENGINEERED WOOD ROOF TRUSSES AT 24" ON CENTER MAX. TRUSSES ARE SUPPORTED BY WALLS OR EXISTING ROOF STRUCTURE.
2. 19/32" STRUCTURAL 1 PRESSURE TREATED PLYWOOD SHEATHING

BLISS & NYITRAY, INC.
STRUCTURAL ENGINEERS
227 N. Bronough St., Suite 7300
Tallahassee, FL 32301
Tel. (850) 222 - 4454
www.bliss-nyitray.com CA No. 674
BNI Project No. 24118

To the best of the Structural Engineer's knowledge, the Plans and Specifications comply with the applicable minimum building codes.

60% CD - NOT FOR CONSTRUCTION

REVISION	DATE	SYMBOL	REVISION	DATE
		A		
		B		
		C		
		D		

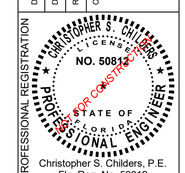
ISSUE DATE: 07/19/2024
COMP. FILE No.:
STATE PROJECT No. 61351C

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

George & Associates
Consulting Engineers, Inc.
CIVIL · ENVIRONMENTAL · TRANSPORTATION · SURVEYING & MAPPING · LAND USE
ENGINEERING BUSINESS NO. 7870
1567 Commonwealth Blvd. Suite 201 Tallahassee, FL 32303
PHONE 850.521.0534 - FAX 850.521.0545

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



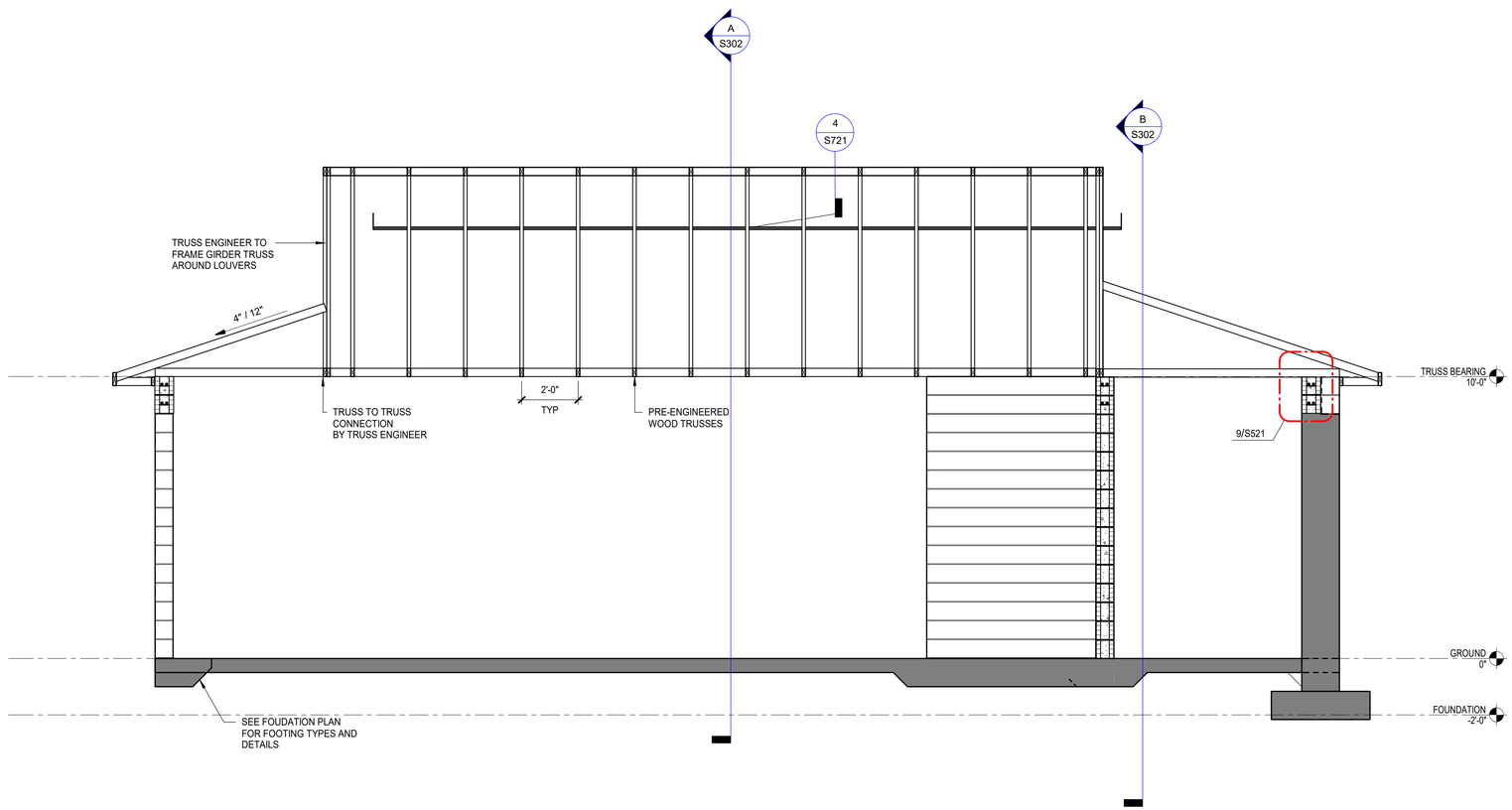
Christopher S. Childers, P.E.
Fla. Reg. No. 50812

PROJECT TITLE
FLORIDA CAVERNS CAMPGROUND RESTROOMS

FLORIDA CAVERNS STATE PARK

SHEET TITLE
ROOF FRAMING PLAN

SHEET NO.
S102



A TYPICAL BUILDING SECTION

3/8" = 1'-0"

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. 24118

To the best of the Structural Engineer's knowledge, the Plans and Specifications comply with the applicable minimum building codes.

PROJECT TITLE
FLORIDA CAVERNS CAMPGROUND RESTROOMS

SHEET TITLE
BUILDING SECTIONS

FLORIDA CAVERNS STATE PARK

SHEET NO.
S301

PROFESSIONAL REGISTRATION
CHRISTOPHER S. CHILDERS
LICENSED
NO. 50812
STATE OF FLORIDA
PROFESSIONAL ENGINEER
ISSUED FOR CONSTRUCTION
Christopher S. Childers, P.E.
Fla. Reg. No. 50812

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

George & Associates
Consulting Engineers, Inc.
CIV. ENGINEERING - TRANSPORTATION - SYSTEMS ENGINEERING - LAND USE
ENGINEERING BUSINESS NO. 7870
1967 Commonwealth Lake Blvd. Tallahassee, FL 32303
PHONE 850.521.0534 - FAX 850.521.0345

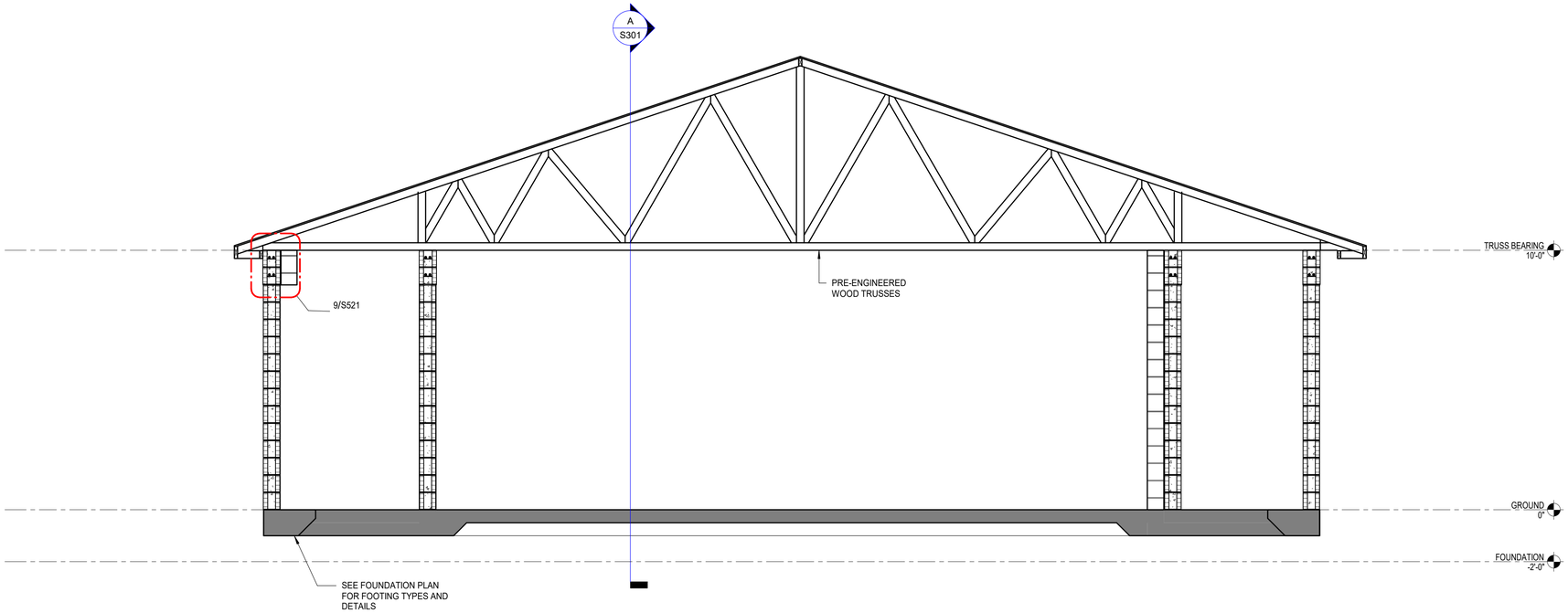
ISSUE DATE: 07/19/2024
COMP. FILE No.:
STATE PROJECT No. 61351C

SYMBOL	REVISION	DATE
A		
B		

SYMBOL	REVISION	DATE
C		
D		

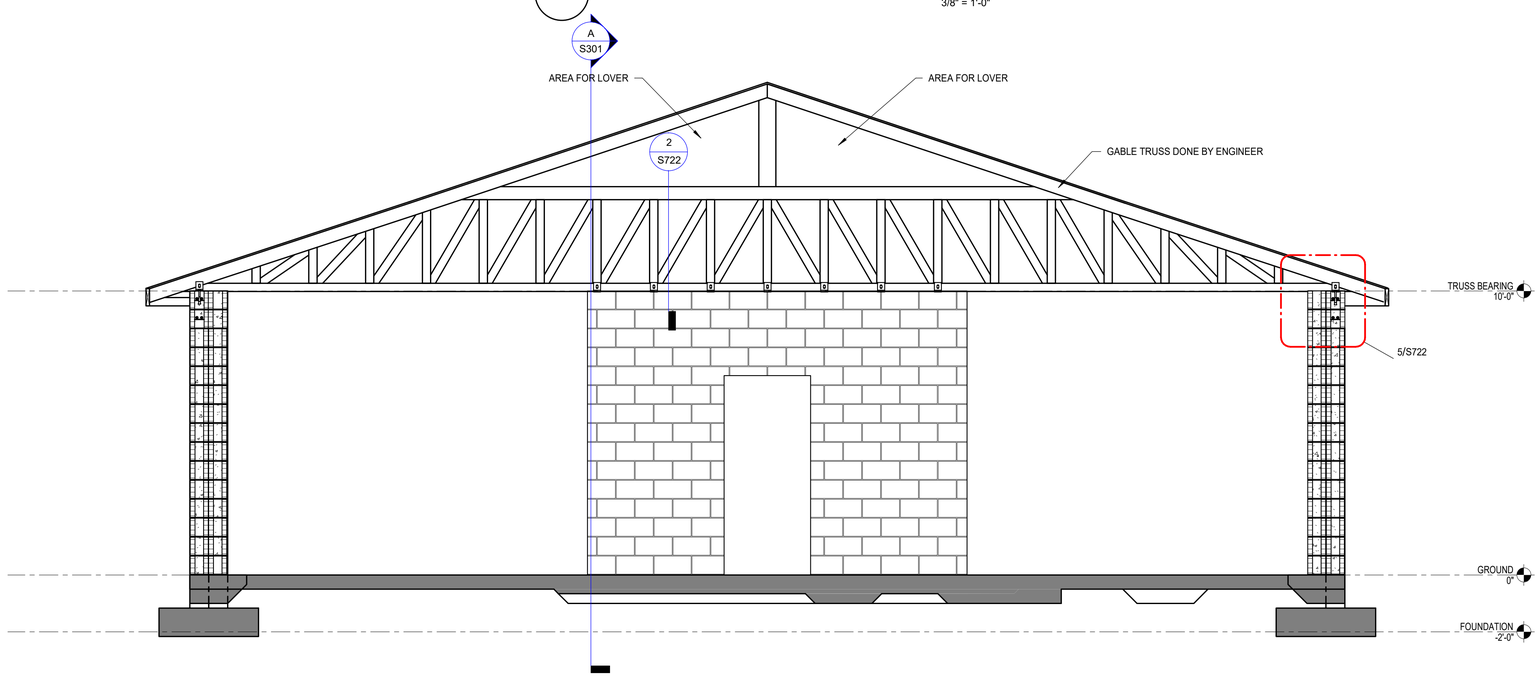
60% CD - NOT FOR CONSTRUCTION

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



A BUILDING SECTION

3/8" = 1'-0"



B LOUVER GABLE WALL SECTION

3/8" = 1'-0"

60% CD - NOT FOR CONSTRUCTION

SYMBOL	REVISION	DATE
A		
B		
C		
D		

ISSUE DATE: 07/19/2024

COMP. FILE No.:

STATE PROJECT No. 61351C

DESIGNER: DLB

DRAWN BY: TLC

REVIEWED BY: CSC

Consultant:

George & Associates
Consulting Engineers, Inc.
Fla. Engineering, Inspection & Testing Lic. No. 4000
ENGINEERING CERTIFICATE NO. 7870
1567 Commonwealth Lane, Suite 202, Tallahassee, FL 32303
PHONE 850.521.0344 - FAX 850.521.0345

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
NOT FOR CONSTRUCTION

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

FLORIDA CAVERNS STATE PARK

SHEET TITLE
BUILDING SECTIONS

PROJECT TITLE
FLORIDA CAVERNS CAMPGROUND
RESTROOMS

SHEET NO.
S302

BLISS & NYITRAY, INC.
STRUCTURAL ENGINEERS
227 N. Bronough St., Suite 7300
Tallahassee, FL 32301
Tel: (850) 222 - 4454
www.bnstructures.com CA No. 674
BNI Project No. 24T18

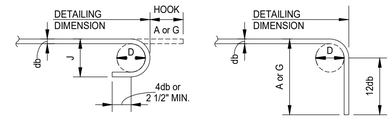
To the best of the Structural Engineer's knowledge, the Plans and Specifications comply with the applicable minimum building codes.

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"



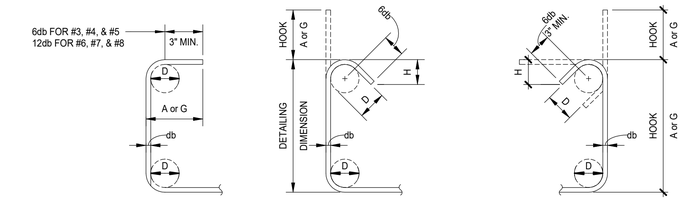
180° HOOK **90° HOOK**

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"



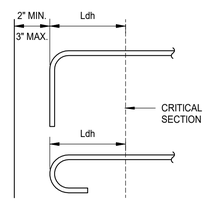
90° **135°** **135° SEISMIC**

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

MIN 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"

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"

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

3/4" = 1'-0"

60% CD - NOT FOR CONSTRUCTION

SYMBOL	REVISION	DATE
A		
B		
C		
D		

ISSUE DATE: 07/19/2024
COMP. FILE No.:
STATE PROJECT No. 61351C

DESIGNER: DLB
DRAWN BY: TLC
REVIEWED BY: CSC

Consultant:
George & Associates Consulting Engineers, Inc.
CIV. ENGINEERING, TRANSPORTATION, SYSTEMS ELEC. LANDUSE
ENGINEERING LICENSE NO. 7870
1562 Commerce Blvd. Tallahassee, FL 32303
PHONE: 850.521.0534 - FAX: 850.521.0345

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
LICENSED
NO. 50812
STATE OF FLORIDA
PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION
Christopher S. Childers, P.E.
Fla. Reg. No. 50812

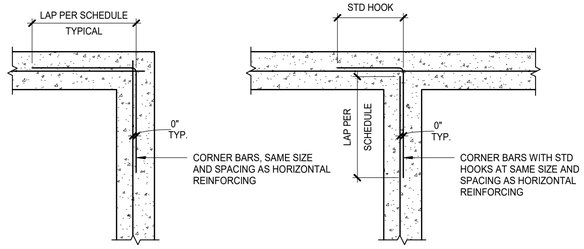
BLISS & NYITRAY, INC.
STRUCTURAL ENGINEERS
227 N. Bronough St., Suite 7300
Tallahassee, FL 32301
Tel: (850) 222 - 4454
www.bliss-nyitray.com CA No. 674
BNI Project No. 24T18

To the best of the Structural Engineer's knowledge, the Plans and Specifications comply with the applicable minimum building codes.

PROJECT TITLE
FLORIDA CAVERNS STATE PARK
FLORIDA CAVERNS CAMPGROUND RESTROOMS

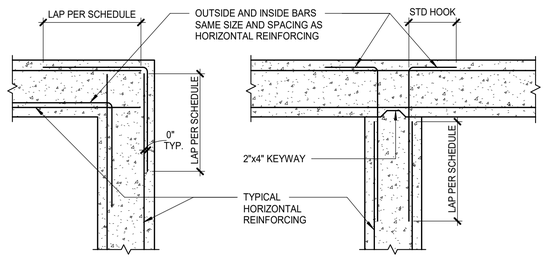
SHEET TITLE
TYPICAL SCHEDULES

SHEET NO.
S401



CORNERS - SINGLE CURTAIN

INTERSECTIONS - SINGLE CURTAIN

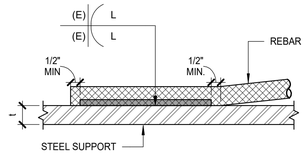


CORNERS - DOUBLE CURTAIN

INTERSECTIONS - DOUBLE CURTAIN

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

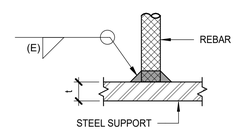
1 TYPICAL HORIZONTAL REINFORCING
CONCRETE TIE BEAMS, WALLS AND FOOTINGS 3/4" = 1'-0"



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

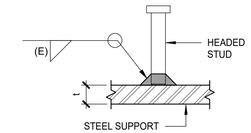
2 DEVELOPMENT OF WELDED REBAR
PARALLEL TO STEEL SUPPORT 3" = 1'-0"



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"

60% CD - NOT FOR CONSTRUCTION

SYMBOL	REVISION	DATE
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

George & Associates
Consulting Engineers, Inc.
CIV., ENVIRONMENTAL, TRANSPORTATION, STRUCTURAL ENGINEERS, LAND USE
ENGINEERING BUSINESS NO. 2870
1957 Commonwealth Lake Drive, Tallahassee, FL 32303
PHONE: 850.521.0534 - FAX: 850.521.0545

Consultant:

REVIEWED BY: CSC
DRAWN BY: TLC
DESIGNER: DLB

COMP. FILE No.:
STATE PROJECT No. 61351C
ISSUE DATE: 07/19/2024

PROFESSIONAL REGISTRATION
CHRISTOPHER S. CHILDERS
LICENSED
NO. 50812
STATE OF FLORIDA
PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION
Christopher S. Childers, P.E.
Fla. Reg. No. 50812

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. 24118

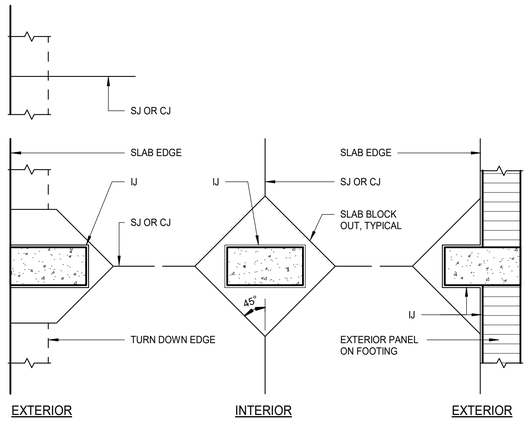
To the best of the Structural Engineer's knowledge, the Plans and Specifications comply with the applicable minimum building codes.

PROJECT TITLE
FLORIDA CAVERNS CAMPGROUND RESTROOMS

SHEET TITLE
TYPICAL SCHEDULES

FLORIDA CAVERNS STATE PARK

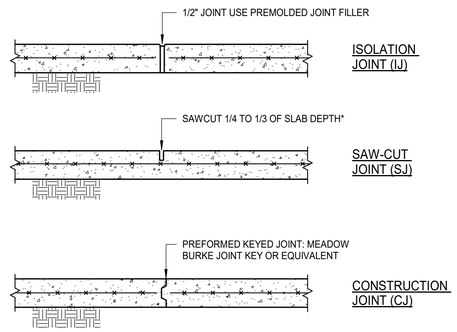
SHEET NO.
S402



LEGEND

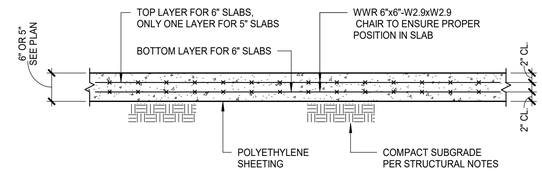
CJ DENOTES CONTROL JOINT
IJ DENOTES ISOLATION JOINT
SJ DENOTES SLAB JOINT

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

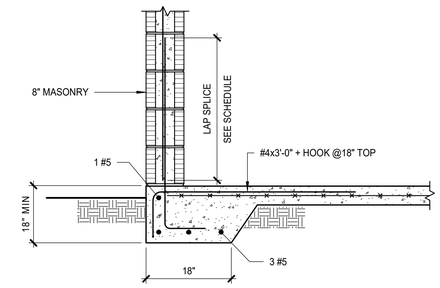


*PROVIDE SEALANT WHERE REQUIRED BY ARCHITECT SAWCUT AS SOON AS POSSIBLE AFTER CONCRETE HARDENS. SAW CUTTING MUST BE COMPLETE WITHIN 8 HRS. AFTER POURING.

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

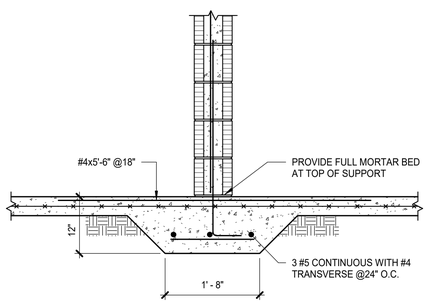


3 TYPICAL SLAB ON GRADE DETAIL
WITH W.W.R. 3/4" = 1'-0"



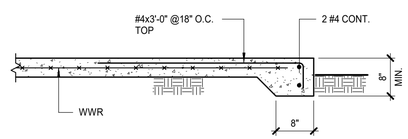
SEE STRUCTURAL NOTES FOR CONCRETE COVERAGE RECOMMENDATIONS

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

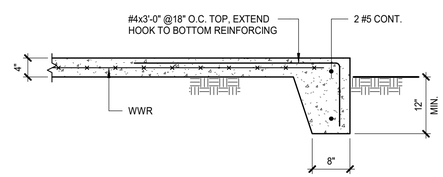


SEE STRUCTURAL NOTES FOR CONCRETE COVERAGE RECOMMENDATIONS

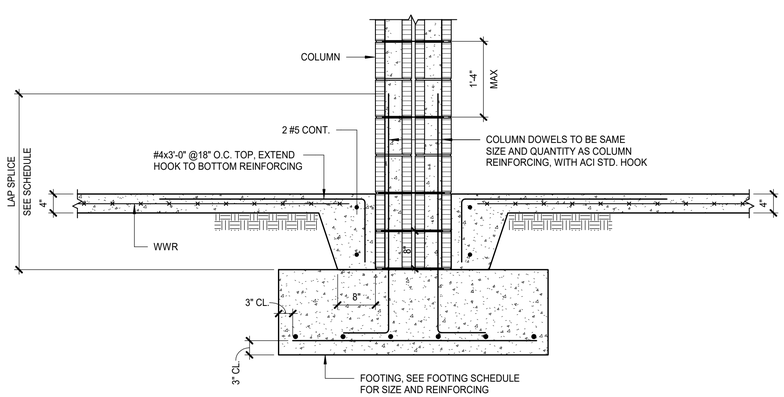
5 THICKENED SLAB DETAIL
AT INTERIOR 3/4" = 1'-0"



6 SLAB EDGE AT DOORS DETAIL
AT MASONRY OPENINGS 3/4" = 1'-0"



7 SLAB EDGE DETAIL
3/4" = 1'-0"



8 COLUMN FOOTING DETAIL
3/4" = 1'-0"

BLISS & NYITRAY, INC.
STRUCTURAL ENGINEERS
227 N. Bronough St., Suite 7300
Tallahassee, FL 32301
Tel: (850) 222 - 4454
www.bliss-nyitray.com CA No. 674
BNI Project No. 24T18

To the best of the Structural Engineer's knowledge, the Plans and Specifications comply with the applicable minimum building codes.

60% CD - NOT FOR CONSTRUCTION

SYMBOL	REVISION	DATE
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

George & Associates
Consulting Engineers, Inc.
CIVIL · ENVIRONMENTAL · TRANSPORTATION · SURVEYING · LAND USE
ENGINEERING BUSINESS NO. 2870
1567 Commonwealth Lake Drive, Tallahassee, FL 32303
PHONE: 850.521.0334 · FAX: 850.521.0345

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

ISSUE DATE: 07/19/2024
COMP. FILE No.:
STATE PROJECT No. 61351C

PROFESSIONAL REGISTRATION
CHRISTOPHER S. CHILDERS, LICENSE NO. 50812, STATE OF FLORIDA, PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION
Christopher S. Childers, P.E.
Fla. Reg. No. 50812

FLORIDA CAVERNS STATE PARK

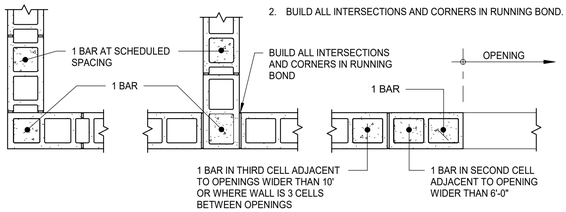
SHEET TITLE
TYPICAL SLAB ON GRADE DETAILS

PROJECT TITLE
FLORIDA CAVERNS CAMPGROUND RESTROOMS

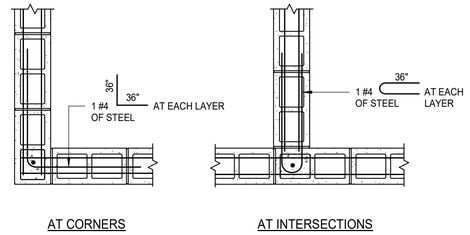
SHEET NO.
S511

NOTES:

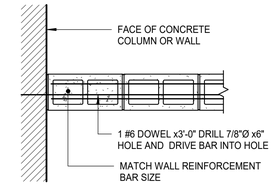
1. SEE "MASONRY NOTES" FOR JOINT REINFORCEMENT, INCLUDING PREFABRICATED CORNERS AND TEES.
2. BUILD ALL INTERSECTIONS AND CORNERS IN RUNNING BOND.



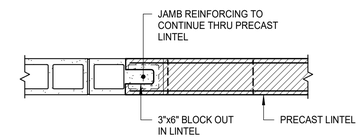
1 8" MASONRY WALL REINFORCING
NOT REQUIRED IN UN-REINFORCED WALLS 3/4" = 1'-0"



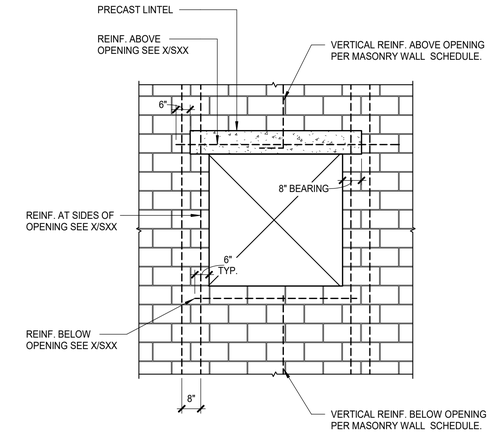
2 BOND BEAM REINFORCING
PLAN VIEWS 3/4" = 1'-0"



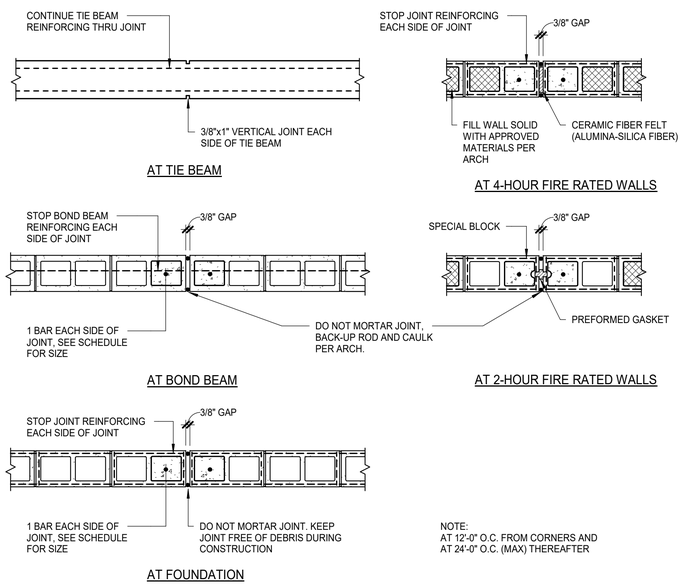
3 BOND BEAM DETAIL
TO CONCRETE COLUMN OR WALL 3/4" = 1'-0"



4 PRECAST LINTEL SUPPORT
PLAN VIEW 3/4" = 1'-0"

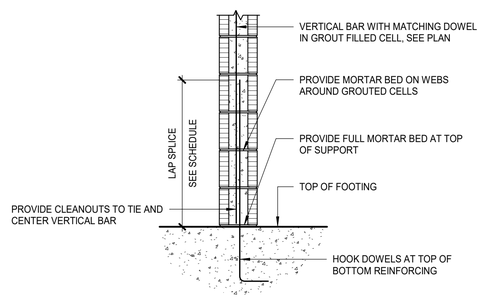


5 TYPICAL WALL OPENING ELEVATION
3/8" = 1'-0"

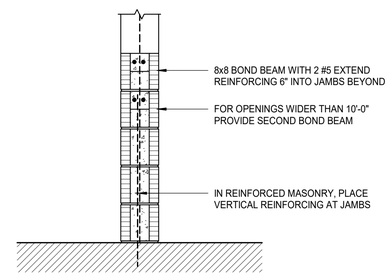


NOTE:
AT 12'-0" O.C. FROM CORNERS AND AT 24'-0" O.C. (MAX) THEREAFTER

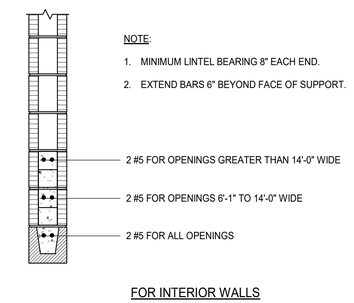
6 MASONRY CONTROL JOINT DETAILS
3/4" = 1'-0"



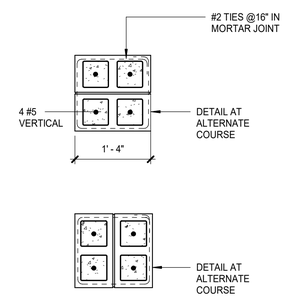
7 REINFORCED MASONRY WALL
AT BASE WITH EMBEDDED DOWEL 3/4" = 1'-0"



8 TYPICAL MASONRY SILL DETAIL
3/4" = 1'-0"



9 TYPICAL LINTEL DETAIL
SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS 3/4" = 1'-0"



10 MASONRY COLUMN DETAILS
3/4" = 1'-0"

60% CD - NOT FOR CONSTRUCTION

SYMBOL	REVISION	DATE
A		
B		
C		
D		

ISSUE DATE: 07/19/2024
COMP. FILE No.:
STATE PROJECT No. 61351C

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

George & Associates Consulting Engineers, Inc.
CIV. ENGINEERING TRANSPORTATION ENGINEERING LAND USE
ENGINEERING BUSINESS NO. 7870
1967 Commonwealth Blvd. Suite 201 Tallahassee, FL 32303
PH.NE 850.562.0534 - FAX 850.562.0535

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
NOT FOR CONSTRUCTION
Christopher S. Childers, P.E.
Fla. Reg. No. 50812

BLISS & NYITRAY, INC.
STRUCTURAL ENGINEERS
227 N. Bronough St., Suite 7300
Tallahassee, FL 32301
Tel: (850) 222 - 4454
www.bliss-nyitray.com CA No. 674
BNI Project No. 24T18

To the best of the Structural Engineer's knowledge, the Plans and Specifications comply with the applicable minimum building codes.

PROJECT TITLE
FLORIDA CAVERNS CAMPGROUND RESTROOMS

SHEET TITLE
FLORIDA CAVERNS STATE PARK
TYPICAL MASONRY DETAILS

SHEET NO.
S521

FASTENING SCHEDULE

PER 2017 FBC TABLE 2304.10.1
TO BE USED UNLESS NOTED OTHERWISE ON PLANS AND/OR DETAILS

	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER	SPACING AND LOCATION
	Roof		
1	Blocking between ceiling joists, rafters or trusses to top plate or other framing below	3-8d common (2 1/2" × 0.131")	Each end, toenail
	Blocking between rafters or truss not at the wall top plate, to rafter or truss	2-8d common (2 1/2" × 0.131")	Each end, toenail
		2-16d common (3 1/2" × 0.162")	End nail
	Flat blocking to truss and web filler	16d common (3 1/2" × 0.162") @ 6" OC	Face nail
2	Ceiling joists to top plate	3-8d common (2 1/2" × 0.131")	Each joist, toenail
3	Ceiling joist not attached to parallel rafter,laps over partitions (no thrust) (see Section 2308.7.3.1, Table 2308.7.3.1)	3-16d common (3 1/2" × 0.162")	Face nail
4	Ceiling joist attached to parallel rafter (heel joint) (see Section 2308.7.3.1, Table 2308.7.3.1)	Per Table 2308.7.3.1	Face nail
5	Collar tie to rafter	3-10d common (3" × 0.148")	Face nail
6	Rafter or roof truss to top plate (See Section 2308.7.5, Table 2308.7.5)	3-10 common (3" × 0.148")	Toenail
7	Roof rafters to ridge valley or hip rafters; or roof rafter to 2-inch ridge beam	2-16d common (3 1/2" × 0.162")	End nail
		3-10d common (3 1/2" × 0.148")	Toenail
	Wall		
8	Stud to stud (not at braced wall panels)	16d common (3 1/2" × 0.162")	24" OC face nail
9	Stud to stud and abutting studs at intersecting wall corners (at braced wall panels)	16d common (3 1/2" × 0.162")	16" OC face nail
10	Built-up header (2" to 2" header)	16d common (3 1/2" × 0.162")	16" OC each edge, face nail
11	Continuous header to stud	4-8d common (2 1/2" × 0.131")	Toenail
12	Top plate to top plate	16d common (3 1/2" × 0.162")	16" OC face nail
13	Top plate to top plate, at end joints	8-16d common (3 1/2" × 0.162")	Each side of end joint, face nail (minimum 24" lap splice length each side of end joint)
14	Bottom plate to joist, rim joist, band joist or blocking (not at braced wall panels)	16d common (3 1/2" × 0.162")	16" OC face nail
15	Bottom plate to joist, rim joist, band joist or blocking at braced wall panels	2-16d common (3 1/2" × 0.162")	16" OC face nail
16	Stud to top or bottom plate	4-8d common (2 1/2" × 0.131"); or	Toenail
		2-16d common (3 1/2" × 0.162")	End nail
17	Top or bottom plate to stud	2-16d common (3 1/2" × 0.162")	End nail
18	Top plates, laps at corners and intersections	2-16d common (3 1/2" × 0.162")	Face nail
19	1" brace to each stud and plate	2-8d common (2 1/2" × 0.131")	Face nail
20	1" × 6" sheathing to each bearing	2-8d common (2 1/2" × 0.131")	Face nail
21	1" × 8" and wider sheathing to each bearing	3-8d common (2 1/2" × 0.131")	Face nail
	Floor		
22	Joist to sill, top plate, or girder	3-8d common (2 1/2" × 0.131")	Toenail
23	Rim joist, band joist, or blocking to top plate, sill or other framing below	8d common (2 1/2" × 0.131")	6" OC, toenail
24	1" × 6" subfloor or less to each joist	2-8d common (2 1/2" × 0.131")	Face nail
25	2" subfloor to joist or girder	2-16d common (3 1/2" × 0.162")	Face nail
26	2" planks (plank & beam – floor & roof)	2-16d common (3 1/2" × 0.162")	Each bearing, face nail
27	Built-up girders and beams, 2" lumber layers	20d common (4" × 0.192")	32" OC, face nail at top and bottom, staggered on opposite sides
28	Ledger strip supporting joists or rafters	3-16d common (3 1/2" × 0.162")	Each joist or rafter, face nail
29	Joist to band joist or rim joist	3-16d common (3 1/2" × 0.162")	End nail
30	Bridging or blocking to joist, rafter or truss	2-8d common (2 1/2" × 0.131")	Each end, toenail
	Wood structural panels (WSP), subfloor, roof and interior wall sheathing to framing and particleboard wall sheathing to framing [a]		
			Edges (inches) / Intermediate supports (inches)
31	3/8" – 1/2"	6d common or deformed (2" × 0.113") (subfloor and wall)	6 / 12
		8d box or deformed (2 1/2" × 0.113") (roof)	6 / 12
		2 3/8" × 0.113" nail (subfloor and wall)	6 / 12
		1 3/4" 16 gage staple, 7/16" crown (subfloor and wall)	4 / 8
		2 3/8" × 0.113" nail (roof)	4 / 8
		13/4" 16 gage staple, 7/16" crown (roof)	3 / 6
32	19/32" – 3/4"	8d common (2 1/2" × 0.131"); or 6d deformed (2" × 0.113")	6 / 12
		2 3/8" × 0.113" nail; or 2" 16 gage staple, 7/16" crown	4 / 8
33	7/8" – 11/4"	10d common (3" × 0.148"); or 8d deformed (21/2" × 0.131")	6 / 12
	Other exterior wall sheathing		
34	1/2" fiberboard sheathing [b]	1 1/2" galvanized roofing nail (7/16" head diameter); or 1 1/4" 16 gage staple with 7/16" or 1" crown	3 / 6
35	25/32" fiberboard sheathing [b]	1 3/4" galvanized roofing nail (7/16" diameter head); or 1 1/2" 16 gage staple with 7/16" or 1" crown	3 / 6
	Wood structural panels, combination subfloor underlayment to framing		
36	3/4" and less	8d common (2 1/2" × 0.131")	6 / 12
37	7/8" – 1"	8d common (2 1/2" × 0.131")	6 / 12
38	11/8" – 1 1/4"	10d common (3" × 0.148")	6 / 12
	Panel siding to framing		
39	1/2" or less	6d corrosion-resistant siding (1 7/8" × 0.106")	6 / 12
40	5/8"	8d corrosion-resistant siding (2 3/8" × 0.128")	6 / 12
	Interior paneling		
41	1/4"	4d casing (1 1/2" × 0.080")	6 / 12
42	3/8"	6d casing (2" × 0.099")	6 / 12

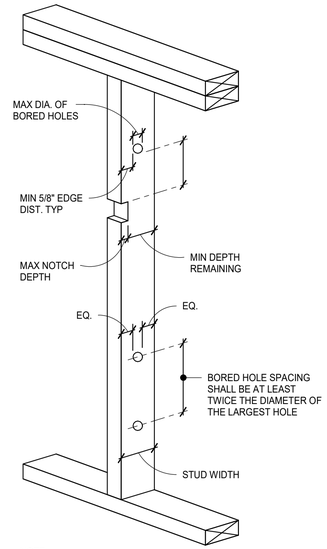
1 FASTENING SCHEDULE
12" = 1'-0"

FASTENING SCHEDULE NOTES

a. Nails spaced at 6 inches at intermediate supports where spans are 48 inches or more. For nailing of wood structural panel and particle board diaphragms and shear walls, refer to Section 2305. Nails for wall sheathing are permitted to be common, box or casing.

b. Spacing shall be 6 inches on center on the edges and 12 inches on center at intermediate supports for nonstructural applications. Panel supports at 16 inches (20 inches if strength axis in the long direction of the panel, unless otherwise marked).

c. Where a rafter is fastened to an adjacent parallel ceiling joist in accordance with this schedule and the ceiling joist is fastened to the top plate in accordance with this schedule, the number of toenails in the rafter shall be permitted to be reduced by one nail.



NOTE:
NOTCHES OR BORED HOLES NOT PERMITTED IN MORE THAN THREE ADJACENT STUDS WITHOUT REVIEW AND APPROVAL BY ENGINEER

NOTCHES IN BEARING WALL STUDS		
STUD SIZE	MAX DEPTH OF NOTCH	MIN. DEPTH REMAINING AFTER NOTCH
2x4	7/8"	2 5/8"
2x6	1 3/8"	4 1/8"

BORED HOLES IN BEARING WALL STUDS		
STUD SIZE	MAX DIA. OF BORED HOLE	MIN. DEPTH REMAINING AFTER BORED HOLE
2x4	1 3/8"	5/8" EACH SIDE OF HOLE
2x6	2 3/16"	5/8" EACH SIDE OF HOLE

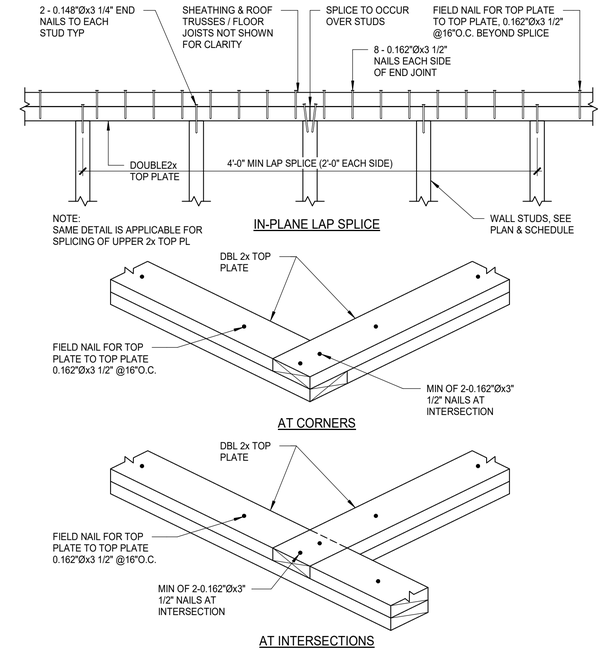
NOTE:
STUDS MAY NOT BE BORED IN EXCESS OF 40% OF THE STUD. IF STUDS ARE DOUBLED, BORINGS MAY BE INCREASED TO 60% OF WIDTH PROVIDED NOT MORE THAN (2) SUCCESSIVE STUDS ARE BORED. BORINGS SHALL NOT BE MADE AT THE SAME SECTION WHERE CUT OR NOTCH HAS BEEN MADE.

STUD SIZE	MAX DEPTH OF NOTCH	MIN. DEPTH REMAINING AFTER NOTCH
2x4	1 3/8"	2 1/8"
2x6	2 3/16"	3 3/8"

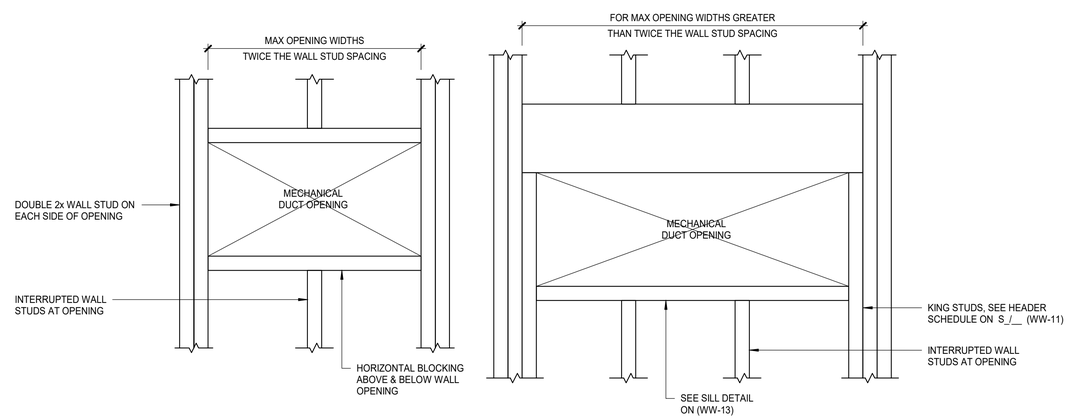
BORED HOLES IN NON-BEARING WALL STUDS		
STUD SIZE	MAX DIA. OF BORED HOLE	MIN. DEPTH REMAINING AFTER BORED HOLE
2x4	2 1/16"	5/8" EACH SIDE OF HOLE
2x6	3 1/4"	5/8" EACH SIDE OF HOLE

NOTE:
STUDS MAY NOT BE BORED IN EXCESS OF 60% OF THE STUD. BORINGS SHALL NOT BE MADE AT THE SAME SECTION WHERE CUT OR NOTCH HAS BEEN MADE.

2 TYPICAL HOLES & NOTCHES
IN WOOD STUDS
1 1/2" = 1'-0"



3 TYPICAL TOP PLATE SPLICES
1 1/2" = 1'-0"



4 MECHANICAL DUCT OPENINGS
IN BEARING WALL
1 1/2" = 1'-0"

60% CD - NOT FOR CONSTRUCTION

SYMBOL	DATE	REVISION
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: 07/19/2024
COMP. FILE No.:
STATE PROJECT No. 61351C

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

George & Associates Consulting Engineers, Inc.
CIVIL · ENVIRONMENTAL · TRANSPORTATION · SURVEYING & MAPPING · LAND USE
ENGINEERING LICENSE NO. 7870
LAND SURVEYING BUSINESS LICENSE NO. 7070
1967 Commonwealth Lane, Suite 200, Tallahassee, FL 32303
PH.NE 850.562.0505 • FAX 850.562.0515

PROFESSIONAL REGISTRATION
CHRISTOPHER S. CHILDERS
LICENSE NO. 50812
STATE OF FLORIDA
PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION
Christopher S. Childers, P.E.
Fla. Reg. No. 50812

BLISS & NYITRAY, INC.
STRUCTURAL ENGINEERS
227 N. Bronough St., Suite 7300
Tallahassee, FL 32301
Tel: (850) 222-4454
www.bliss-nyitray.com CA No. 674
BNI Project No. 24T18

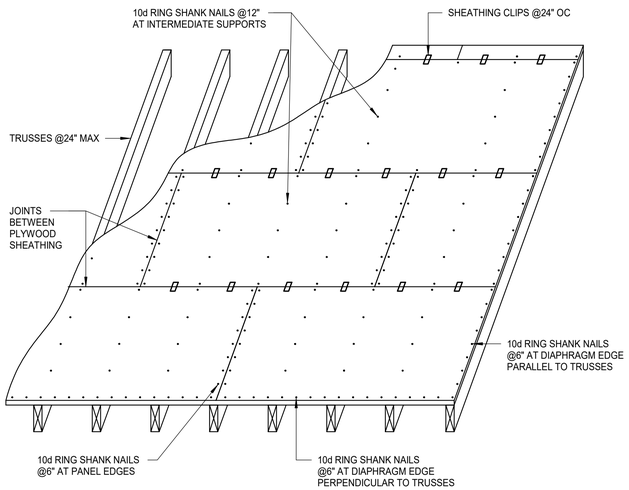
To the best of the Structural Engineer's knowledge, the Plans and Specifications comply with the applicable minimum building codes.

PROJECT TITLE
FLORIDA CAVERNS STATE PARK

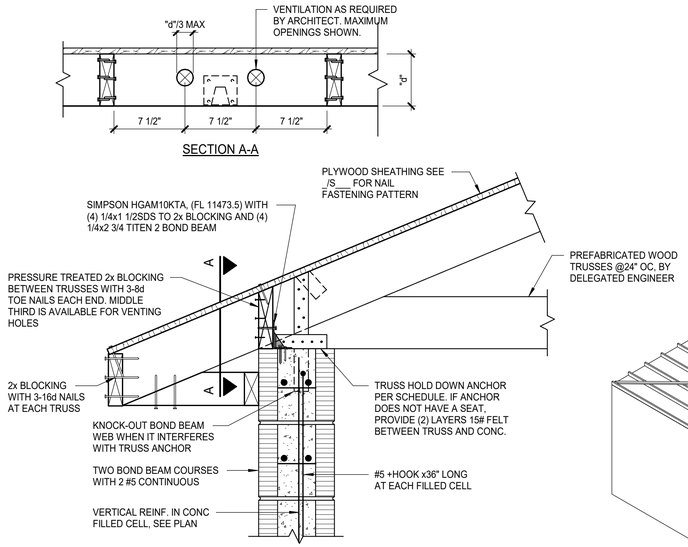
SHEET TITLE
TYPICAL WOOD WALL DETAILS

PROJECT TITLE
FLORIDA CAVERNS CAMPGROUND RESTROOMS

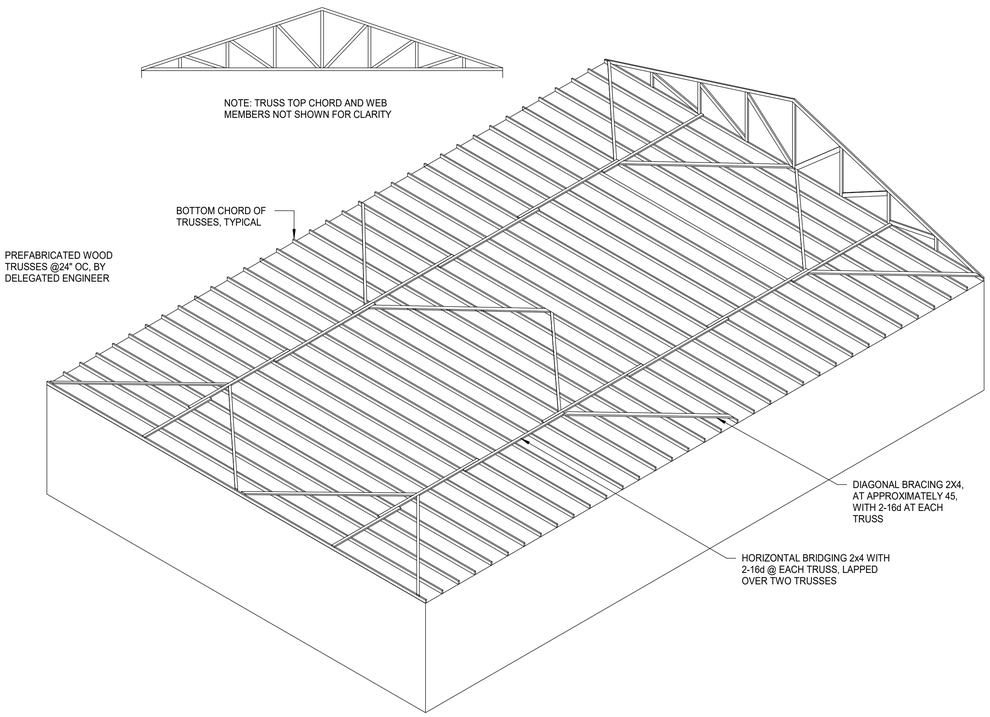
SHEET NO.
S701



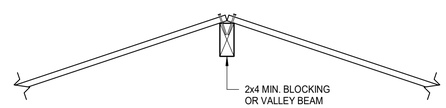
1 TYPICAL ROOF SHEATHING NAIL PATTERN
UNBLOCKED DIAPHRAGM 3/8" = 1'-0"



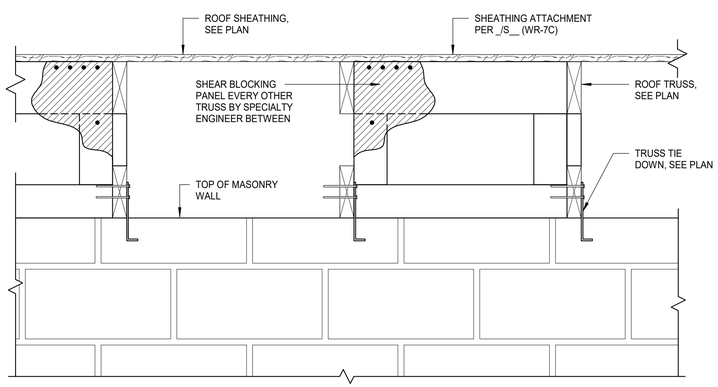
2 ROOF TRUSS TO CMU WALL
1 1/2" = 1'-0"



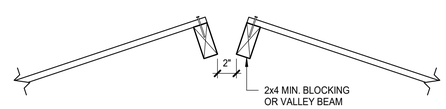
12 TRUSS BOTTOM CHORD PERMANENT BRACING
1/8" = 1'-0"



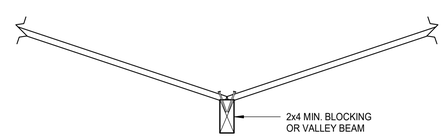
TYPICAL RIDGE DETAIL



3 TYPICAL BLOCKING DETAIL
AT EXTERIOR MASONRY WALL 1 1/2" = 1'-0"



TYPICAL HIP DETAIL



TYPICAL VALLEY DETAIL

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

60% CD - NOT FOR CONSTRUCTION

SYMBOL	REVISION	DATE	SYMBOL	REVISION	DATE
A			C		
B			D		

ISSUE DATE: 07/19/2024
COMP. FILE No.:
STATE PROJECT No. 61351C

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

George & Associates Consulting Engineers, Inc.
CIVIL · ENVIRONMENTAL · TRANSPORTATION · SURVEYING ENGINEERS · LAND USE
ENGINEERING BUSINESS NO. 7870
1967 Commerce Park Way, Suite 200, Tallahassee, FL 32303
PHONE 850.562.0534 · FAX 850.562.0545

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
NOT FOR CONSTRUCTION
Christopher S. Childers, P.E.
Fla. Reg. No. 50812

BLISS & NYITRAY, INC.
STRUCTURAL ENGINEERS
227 N. Bronough St. Suite 7300
Tallahassee, FL 32301
Tel: (850) 222 - 4454
www.bnicorporate.com CA No. 674
BNI Project No: 24T18

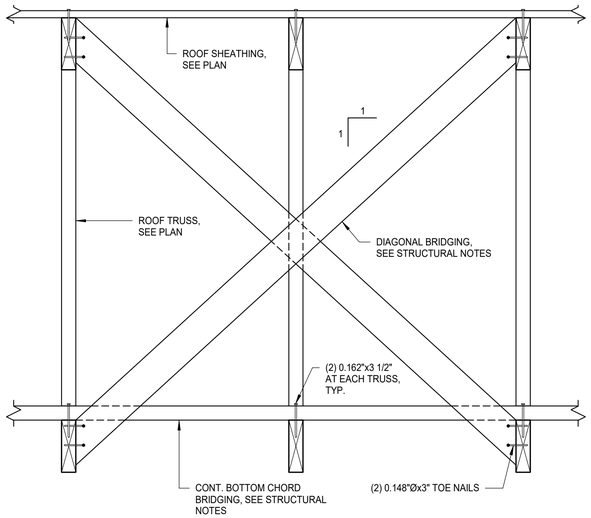
To the best of the Structural Engineer's knowledge the Plans and Specifications comply with the applicable minimum building codes.

PROJECT TITLE
FLORIDA CAVERNS STATE PARK

SHEET TITLE
TYPICAL WOOD ROOF DETAILS

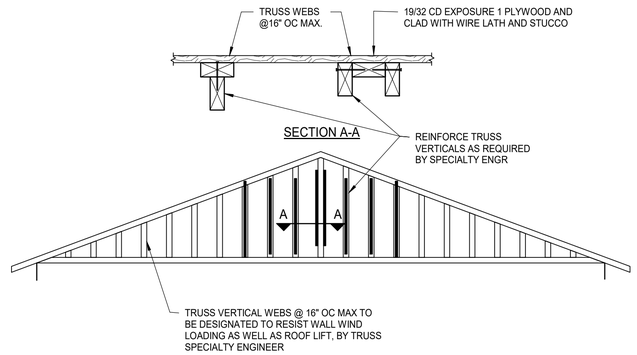
PROJECT TITLE
FLORIDA CAVERNS CAMPGROUND RESTROOMS

SHEET NO.
S721



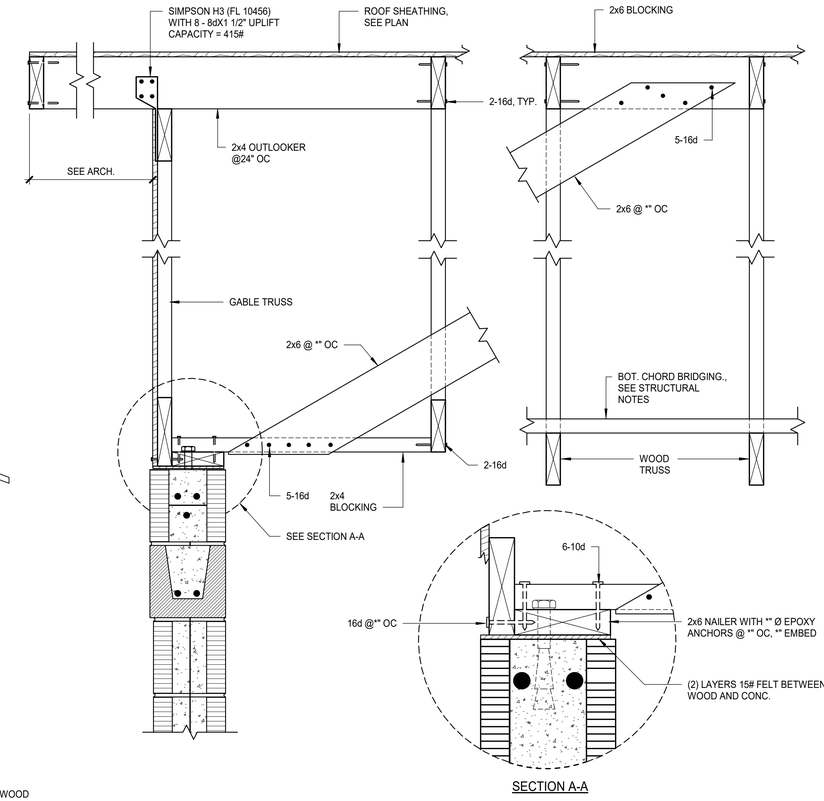
1 TYPICAL TRUSS BRIDGING

1 1/2" = 1'-0"



2 GABLE END TRUSS

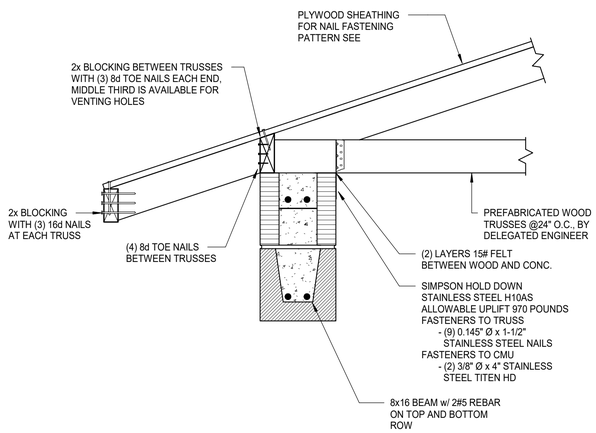
1/4" = 1'-0"



3 GABLE END WALL BRACING

AT MASONRY WALL

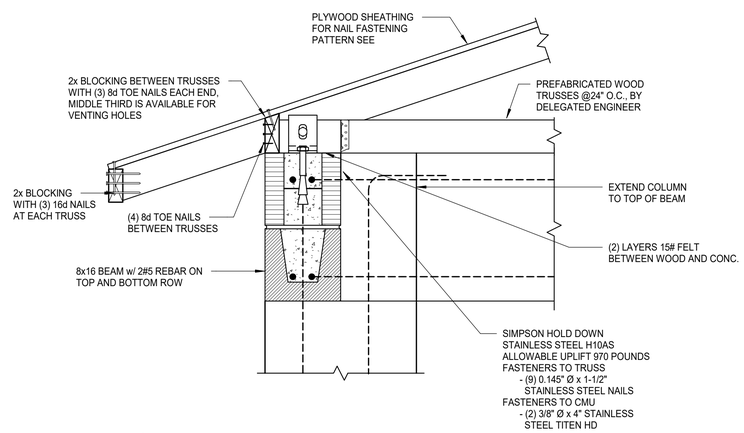
1 1/2" = 1'-0"



4 ROOF TRUSS

AT BEAM

1 1/2" = 1'-0"



5 ROOF TRUSS

AT BEAM

1 1/2" = 1'-0"

60% CD - NOT FOR CONSTRUCTION

SYMBOL	DATE	REVISION
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

George & Associates
Consulting Engineers, Inc.
CIV. ENGINEERING · TRANSPORTATION · SYSTEMS PLANNING · LAND USE
ENGINEERING CERTIFICATE NO. 7870
LANDSCAPE ARCHITECTURE CERTIFICATE NO. 26000182
15962 Commonwealth Blvd., Suite 100, Tallahassee, FL 32303
PHONE: 850.921.0334 · FAX: 850.921.0345

ISSUE DATE: 07/19/2024
COMP. FILE No.:
STATE PROJECT No. 61351C

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

PROFESSIONAL REGISTRATION
CHRISTOPHER S. CHILDERS · LICENSED · NO. 50812 · STATE OF FLORIDA · PROFESSIONAL ENGINEER
NOT FOR CONSTRUCTION
Christopher S. Childers, P.E.
Fla. Reg. No. 50812

BLISS & NYITRAY, INC.
STRUCTURAL ENGINEERS
227 N. Bronough St., Suite 7300
Tallahassee, FL 32301
Tel: (850) 222 - 4454
www.bliss-nyitray.com CA No. 674
BNI Project No. 24T18

To the best of the Structural Engineer's knowledge, the Plans and Specifications comply with the applicable minimum building codes.

FLORIDA CAVERNS STATE PARK

SHEET TITLE
TYPICAL WOOD ROOF DETAILS

PROJECT TITLE
FLORIDA CAVERNS CAMPGROUND RESTROOMS

SHEET NO.
S722

LEGEND

ALL MAY NOT APPLY

- SUPPLY DIFFUSER
- OPTIONAL AIR DISTRIBUTION CORE STYLE (REFER TO MANUFACTURER FOR MORE OPTIONS) — 2-WAY, 3-WAY
- RETURN GRILLE
- EXHAUST GRILLE
- AIR HANDLING UNIT (VERTICAL/HORIZONTAL)
- CEILING RECESSED AIR HANDLER
- WALL MOUNT AIR HANDLER
- 1 OR 4-WAY CEILING MOUNT CASSETTE AIR HANDLER
- BCU-# — BC CONTROLLER
- CU/HP-# — CONDENSING UNIT HEAT PUMP
- EF-# — CEILING MOUNTED EXHAUST FAN
- MANUAL BALANCING DAMPER
- SD — DUCT MOUNTED SMOKE DETECTOR
- TS — DUCT MOUNTED TEMPERATURE SENSOR
- M — DUCT MOUNTED MOTORIZED DAMPER
- BD — DUCT MOUNTED BACKDRAFT DAMPER
- BARO — DUCT MOUNTED BAROMETRIC DAMPER
- DUCT CONTINUES UP
- THERMOMETER
- PRESSURE GAUGE
- H — DUCT HUMIDITY SENSOR
- DUCT FLOW METER
- M — MOTORIZED CONTROL VALVE
- BALANCING VALVE
- SHUT-OFF/ISOLATION VALVE
- SA/RA TAKE-OFF WITH FLEX TAKE-OFF W/ DAMPER
- SA/RA TAKE-OFF WITH RIGID DUCT TAKE-OFF W/ DAMPER
- SQUARE TO ROUND
- DEMOLITION HATCH INDICATION — EQUIPMENT, PIPE, DUCT, FITTINGS, ETC TO BE DEMOLISHED WILL BE INDICATED SPECIFICALLY OR BY HATCHED MARKING.
- AIR DISTRIBUTION DEVICE TAG — A / 110 / 6x6 — DEVICE TAG / AIRFLOW (CFM) / DEVICE SIZE
- SUPPLY/RETURN DUCT FIRST DIMENSION = WIDTH SECOND DIMENSION =HEIGHT — W x H
- SUPPLY/RETURN DUCT ROUND PIPE D=INSIDE DIAMETER DIMENSION — DØ
- # — DEMOLITION KEYNOTE
- # — KEYNOTE
- CONNECT TO EXISTING AT THIS POINT
- DEMOLISH BACK TO THIS POINT
- ACCESS PANEL
- UNION
- FLEXIBLE CONNECTION
- CHECK VALVE
- STRAINER
- PUMP
- T — TEMPERATURE SENSOR
- FD — FIRE DAMPER
- SD — SMOKE DAMPER
- FD/SD — COMBINATION FIRE/SMOKE DAMPER
- C — CONDENSATE DRAIN PIPE
- C — CLEAN-OUT IN CD
- CD TRAP (REFER TO DETAIL)
- REF — INSULATED REFRIGERANT LINES
- T — THERMOSTAT
- S — SENSOR - ZONE SENSOR
- TS — TEMPERATURE SENSOR
- CO — CARBON MONOXIDE SENSOR
- CO2 — CARBON DIOXIDE SENSOR
- DG / UC — DOOR GRILLE AND 1" UNDERCUT

ABBREVIATIONS

ALL MAY NOT APPLY

AHU	AIR HANDLING UNIT
BTU	BRITISH THERMAL UNIT
CD	CONDENSATE
CFM	CUBIC FEET PER MINUTE
CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
CRAH	COMPUTER ROOM AIR HANDLER
CRCU	COMPUTER ROOM CU
CHS	CONDENSING UNIT
CWS	CHILLED WATER SUPPLY
ΔP	DIFFERENCE IN PRESSURE
ΔT	DIFFERENCE IN TEMPERATURE
DB	DRY BULB TEMPERATURE (DEG. F)
DEG. F	DEGREES FAHRENHEIT
DDC	DISTRIBUTED DIGITAL CONTROLS
DN	DOWN
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EF	EXHAUST FAN
ESP	EXTERNAL STATIC PRESSURE (In W.C.)
EWT	ENTERING WATER TEMPERATURE
EX	EXISTING
FD	FIRE DAMPER
FPI	FINS PER INCH
GPM	GALLONS PER MINUTE
HHWS	HEATING HOT WATER SUPPLY
HHWR	HEATING HOT WATER RETURN
HP	HEAT PUMP
HWS	HOT WATER SUPPLY
In W.C.	INCHES OF WATER COLUMN
LAT	LEAVING AIR TEMPERATURE
LWT	LEAVING WATER TEMPERATURE
MBH	1,000 BTUS PER HOUR
MFG.	MANUFACTURER
OA	OUTSIDE AIR
RA	RETURN AIR
RAG	RETURN AIR GRILLE
RND	ROUND
RPM	REVOLUTIONS PER MINUTE
SA	SUPPLY AIR
SD	SMOKE DAMPER
SM	SURFACE MOUNTED
SS	STAINLESS STEEL
TSP	TOTAL STATIC PRESSURE
UNO	UNLESS NOTED OTHERWISE
V/PZ	VOLT/PHASE
VFD	VARIABLE FREQUENCY DRIVE
WB	WET BULB TERMPERATURE (DEG. F)

CODE REFERENCE

ALL MAY NOT APPLY

THE LATEST EDITIONS OF THE ESTABLISHED STANDARDS OF THE FOLLOWING ORGANIZATIONS, AND INDIVIDUAL STANDARDS NAMED SHALL BE FOLLOWED THE SAME AS IF THEY WERE FULLY WRITTEN HEREIN AND CONSTITUTE A PART OF THE SPECIFICATION REQUIREMENTS EXCEPT WHERE OTHERWISE SPECIFIED:

FBC, BUILDING FLORIDA BUILDING CODE 8TH EDITION

FBC, MECHANICAL FLORIDA BUILDING CODE 8TH EDITION

FBC, EXISTING BUILDING FLORIDA BUILDING CODE 8TH EDITION

FBC, FUEL GAS FLORIDA BUILDING CODE 8TH EDITION

FBC, ENERGY CONSERVATION FLORIDA BUILDING CODE 8TH EDITION

FFPC FLORIDA FIRE PREVENTION CODE, 2023 8TH EDITION

NFPA 13 STANDARD FOR THE INSTALLATION OF FIRE SPRINKLER SYSTEMS

NFPA 51B STANDARD FOR FIRE PREVENTION DURING WELDING, CUTTING AND OTHER HOT WORK

NFPA 54 NATIONAL FUEL GAS CODE

NFPA 90A STANDARD FOR THE INSTALLATION OF AIR CONDITIONING AND VENTILATION SYSTEMS

NFPA 90B STANDARD FOR THE INSTALLATION OF WARM AIR HEATING AND AIR CONDITIONING SYSTEMS

NFPA 101 LIFE SAFETY CODE

NFPA 101A GUIDE ON ALTERNATIVE APPROACHES TO LIFE SAFETY

NFPA 101B CODE FOR MEANS OF EGRESS FOR BUILDINGS AND STRUCTURES

NFPA 900 BUILDING ENERGY CODE

ASTM AMERICAN SOCIETY FOR TESTING AND MATERIALS

ANSI AMERICAN NATIONAL STANDARDS INSTITUTE

ASME AMERICAN SOCIETY OF MECHANICAL ENGINEERS

ADA AMERICAN WITH DISABILITIES ACT

UL UNDERWRITERS LABORATORIES

THESE CODE AND STANDARDS SHALL BE CONSIDERED A MINIMUM REQUIREMENT. THE CONTRACTOR SHALL NOT RELIEVED FROM PROVIDING HIGHER GRADE MATERIALS, PRODUCTS AND WORKMANSHIP WHICH MAY BE SPECIFIED WITHIN THESE DOCUMENTS.

DUCTWORK SPECIFICATIONS

1.SHEET METAL DUCTWORK

1.1.DUCT MATERIAL CLASS "A" GALVANIZED STEEL OR ROLLED STEEL IN COMPLIANCE WITH SMACNA 205-3RD EDITION LOW/MEDIUM PRESSURE DUCT STANDARDS TABLE 1.1. DUCTS SHALL BE TESTED, VERIFIED AND RECORDED IN ACCORDANCE WITH ASHRAE 90.1-2013 REQUIREMENT BASED ON LEAKAGE RATE LESS THAN 4% PER 100SF OF DUCT.
1.2.SEALER: LOW VOC MASTIC PAINT.

2.GENERAL:

2.1.LINES SHALL BE RUN STRAIGHT, LEVEL, PLUMB, AND ROUTED AS INDICATED IN THESE DRAWINGS. ALL LABELED DUCT DIMENSIONS ARE INTERNAL SIZES AND INDICATE FULL INSIDE CLEAR FREE AREA.
2.2.MINOR MODIFICATIONS TO DUCT ROUTING DUE TO OBSTRUCTIONS OR COORDINATION WITH OTHER TRADES WILL BE FURNISHED WITHOUT ADDITIONAL COST TO THE OWNER. ANY CHANGES IN SIZE TO DUCTWORK MUST BE APPROVED BY THE ENGINEER PRIOR TO FABRICATION AND INSTALLATION.
2.3.ALL MITERED RECTANGULAR DUCT 90 DEGREE ELBOWS SHALL BE PROVIDED WITH TURNING VANES.
2.4.ALL SUPPLY, RETURN AND EXHAUST DUCTS SHALL BE EXTERNALLY INSULATED UNLESS OTHERWISE NOTED. INSULATION SHALL BE EQUAL TO JOHNS MANVILLE MICROLIGHT XL 2" THICK 0.75 PCF R6.0 OUT OF THE BOX WITH FSK VAPOR BARRIER. SEAL WITH FIRE RATED MASTIC SEAL PER UL-181A-M AT ALL JOINTS AND SEAMS; OR APPROVED ACRYLIC FOIL PRESSURE SENSITIVE TAPE PER UL-181A-P APPLIED USING SQUEEGEE APPROVED METHOD AT JOINTS AND SEAMS. RUBBER BASE TAPES ARE NOT ALLOWED.
2.5.DUCTBOARD IS NOT ALLOWED UNLESS SPECIFICALLY APPROVED BY THE ENGINEER OF RECORD.
2.6.DUCTS SHALL HAVE MINIMUM INSULATION VALUES AS LISTED IN FBC-EC 403.2.9.1.

3.FLEXIBLE DUCTS:

3.1.DUCT TO AIR TERMINALS SHALL BE LIMITED IN LENGTH AS SHOWN IN DETAILS.
3.2.SHALL BE UL LISTED AS A CLASS 1 AIR DUCT COMPLYING WITH UL STANDARD 181, NFPA 90A & 90B AND HAVE A FLAME SPREAD RATING OF NOT OVER 25 AND A SMOKE DEVELOPMENT RATING NOT OVER 50.
3.3.SHALL HAVE A POSITIVE OPERATING PRESSURE OF 10" MINIMUM. FLEXIBLE DUCT SHALL HAVE BEEN TESTED FOR A MAXIMUM INTERNAL OPERATING TEMPERATURE OF 200°F UNDER CONTINUOUS OPERATION.
3.4.SHALL BE RATED FOR A MINIMUM AIR VELOCITY OF 5000 FPM.
3.5.INSULATION SHALL BE A MINIMUM OF 2" THICK 3/4 PCF DENSITY FIBERGLASS. SUPPLY DUCTS SHALL HAVE INSULATION WITH A MINIMUM R-VALUE OF 4.2, BUT R-6 FOR SUPPLY DUCT IN ATTIC AND OUTDOOR SPACES. OUTER LINER SHALL BE A BI-DIRECTIONAL FIBERGLASS REINFORCED METALIZED VAPOR BARRIER. FLEXIBLE DUCTWORK SHALL BE INSTALLED AS STRAIGHT AS POSSIBLE, AND SHALL BE ROUTED AND SUPPORTED WITHOUT FORMING CRIMPS OR OTHER AIR FLOW RESTRICTIONS.
3.6.PROVIDE SQUARE TO ROUND ADAPTERS OR BOOTS TO CONNECT TO AIR DEVICE NECK WHERE REQUIRED. FLEXIBLE DUCT SHALL HAVE A FULL 10-YEAR WARRANTY.
3.7.INNER LINER SHALL CONSIST OF A CPE CORE PERMANENTLY BONDED TO A COATED SPRING STEEL WIRE HELIX (MIN. .041" THICK).
3.8.SHALL BE THERMAFLEX TYPE M-KE, FLEXMASTER TYPE 8M OR EQUAL.
3.9.SHALL BE SUPPORTED SO THAT HORIZONTAL RUNS ARE STRAIGHT AND WITHOUT SAGS OR BENDS. SHEET METAL SADDLES SHALL BE PROVIDED AT ALL HANGERS FOR FLEX DUCTS TO PREVENT KINKING OF THE DUCTS AND EXCESSIVE COMPRESSION OF THE INSULATION.

HVAC GENERAL NOTES

1.ONLY NEW EQUIPMENT SHALL BE PROVIDED UNLESS INDICATED AS EXISTING TO REMAIN.

2.ALL CONNECTIONS TO EQUIPMENT SHALL BE MADE WITH FLEXIBLE REGIONS FOR VIBRATION ISOLATION.

3.ALL EQUIPMENT SHALL BE LABELED SO THAT USERS CAN IDENTIFY EACH PIECE OF EQUIPMENT. LABELS SHALL BE CONSISTENT WITH EQUIPMENT TAGS THAT ARE LISTED IN THE SCHEDULES WITHIN THESE DOCUMENTS. ANY ABOVE CEILING EQUIPMENT SHALL HAVE A LABEL PROVIDED ON THE CEILING BELOW THE UNIT FOR EASE OF LOCATING BY MAINTENANCE PERSONNEL.

4.ALL EQUIPMENT SHALL BE INSTALLED PER MANUFACTURERS WRITTEN INSTRUCTIONS AND RECOMMENDATIONS.

5.INSTALL DUCTWORK AND PIPING AS HIGH AS POSSIBLE ABOVE CEILING.

6.COORDINATE THE INSTALLATION OF DUCTWORK AND PIPING WITH ELECTRICAL EQUIPMENT SO THAT THE REQUIRED CODE CLEARANCES TO ELECTRICAL EQUIPMENT IS MAINTAINED.

7.DUCTWORK AND PIPING INSTALLATIONS SHALL ALLOW FOR EQUIPMENT RECOMMENDED MAINTENANCE CLEARANCES. CONVENIENT ACCESS FOR REMOVAL OF FILTERS SHALL BE MAINTAINED.

8.MATERIALS INSTALLED WITHIN A RETURN AIR PLENUM SHALL BE NONCOMBUSTIBLE.

9.COORDINATE THE PLACEMENT AIR DISTRIBUTION EQUIPMENT WITH THE CEILING AND LIGHTING LAYOUT.

10.THE CEILING DIFFUSERS SHALL BE 4-WAY THROW UNLESS OTHERWISE NOTED.

11.AT THE ONSET OF TEST AND BALANCE ACTIVITIES PROVIDE NEW FILTERS TO ALL UNITS. DO NOT OPERATE UNITS WITHOUT FILTERS DURING CONSTRUCTION. SEAL ALL OPEN ENDED DUCTS DURING CONSTRUCTION.

12.ENSURE ALL EQUIPMENT HAS BEEN CLEANED AT THE END OF THE PROJECT.

13.DO NOT LOCATE AIR INTAKES CLOSER THAN 10 FEET FROM ANY VENT OR EXHAUST OUTLETS. ROUTE TOILET EXHAUST TO LOCATION SHOWN ON PLANS. WALL CAPS SHALL BE ALUMINUM CONSTRUCTION WITH BACKDRAFT DAMPER, BIRD AND INSECT SCREENS.

14.PROVIDE FIRE DAMPER IF SHOWN ON PLANS, WHERE DUCT PENETRATES FIRE-RATED CONSTRUCTION. ATTACH 1/2" OR LARGER TEXT LABELING THE DAMPER ACCESS LOCATION(S).

15.INSTALL DUCT MOUNTED SMOKE DETECTOR (FURNISHED BY DIVISION 26) IN SUPPLY AIR DUCT BEFORE ANY TAKE OFFS FOR AIR HANDLING UNITS WITH SUPPLY AIR CAPACITY OF 2000 CFM OR GREATER.

16.WHERE FIRE, SMOKE, COMBINATION FIRE SMOKE DAMPERS CONTROL DAMPERS, VALVES, COILS OR OTHER DEVICE NEEDING ACCESS ARE INSTALLED, PROVIDE DUCT ACCESS DOORS. WHERE INSTALLED IN INACCESSIBLE LOCATIONS, PROVIDE CEILING/WALL ACCESS PANELS. PANELS LOCATED IN RATED ASSEMBLIES SHALL BEAR A UL RATING. COORDINATE LOCATION OF SUCH ACCESS WITH ARCHITECT PRIOR TO INSTALLATION.

17.PROVIDE MEANS OF TEST AND BALANCE IN ALL TAKE OFF FITTINGS OF SUPPLY EXHAUST, RETURN SYSTEMS AND AT EACH POINT WHERE A BRANCH SERVES TWO OR MORE GRILLES, WHETHER SHOWN ON THE PLANS OR NOT.

18.WHERE CONFLICTS BETWEEN LIGHT SWITCHES AND THERMOSTAT/HUMIDISTAT LOCATIONS, THE LIGHT SWITCH TAKES PRECEDENCE. CONTROLLERS SHALL BE MOUNTED ADJACENT AND WITHIN 48" AFF.

19.PRODUCE MANAFACTURER'S INSTALLATION INSTRUCTION AT INSPECTION PER FBC-M304.1:

19.1.SPLIT A/C EQUIPMENT: LENNOX, TRANE, CARRIER, DAIKIN
19.2.ROOFTOP A/C EQUIPMENT: LENNOX, TRANE, CARRIER, YORK, DAIKIN
19.3.DOAS -HIGH % OA A/C EQUIPMENT: AAON, ADDISON, DESERT AIRE, COMPUAIRE
19.4.AIR DISTRIBUTION: PRICE, METALAIRE, TITUS
19.5.FANS: PENNBERRY, GREENHECK, BROAN, PANASONIC, COOK
19.6.LOUVERS: GREENHECK, RUSKIN, POTTORFF

DESIGN CRITERIA

BUILDING TYPE GROUP U, UTILITY & MISCELLANEOUS

CLIMATE ZONE 2A, JACKSON COUNTY, FLORIDA

OUTDOOR DESIGN CONDITIONS (SUMMER)95 DEG Fdb, 77 DEG Fwb

OUTDOOR DESIGN CONDITIONS (WINTER)20 DEG Fdb

INTERIOR DESIGN CONDITIONS 75 DEG F COOLING, 72 DEG F HEATING

ENERGY COMPLIANCE METHOD TOTAL BUILDING PERFORMANCE

MECHANICAL SHEET INDEX

SHEET NUMBER	SHEET NAME
M001	HVAC NOTES & LEGENDS
M101	FLOOR PLAN - HVAC
M501	HVAC DETAILS & SCHEDULES

GENERAL NOTES

1.THE ENGINEER SHALL NOT BE HELD RESPONSIBLE FOR ANY MISUSE AND/OR MISREPRESENTATION OF THIS SET OF DOCUMENTS.

2.THE CONTRACTOR ASSUMES RESPONSIBILITY FOR THE USE OF THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL MAKE THEMSELVES AWARE OF PROJECT CONDITIONS AND OWNER REQUIREMENTS PRIOR TO PROCUREMENT OF EQUIPMENT AND SERVICES. CHANGES IN PROJECT COST WILL NOT BE GRANTED DUE TO FIELD CONFLICTS AND OR PROJECT CONDITIONS.

3.THIS SET OF DRAWINGS AND SPECIFICATIONS SHALL NOT BE CONSIDERED A SET OF CONSTRUCTION DOCUMENTS UNLESS A SIGNATURE AND DATE ARE AFFIXED TO THE DRAWINGS AND SPECIFICATIONS BY THE ENGINEER OF RESPONSIBLE CHARGE OF THE GIVEN DISCIPLINE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED UNLESS EMBOSSED AND THE SHA AUTHENTICATION CODE MUST BE VERIFIED ON ELECTRONIC COPIES.

4.CONFLICTS BETWEEN THIS SET OF DRAWINGS AND THE CONTRACT SPECIFICATIONS SHALL BE RESOLVED BY THE ENGINEER OF RECORD. THE CONTRACTOR DOES NOT HAVE THE AUTHORITY TO INTERPRET CONFLICTS AND RESOLVE ISSUES WITHOUT WRITTEN DIRECTION FROM THE ENGINEER OF RECORD.

5.ANY CONFLICTS IN THE FIELD OR WITHIN THESE DOCUMENTS SHALL BE RECORDED AND PROVIDED TO THE ENGINEER OF RECORD ON THE CONTRACTOR'S STANDARD LETTERHEAD. WRITTEN DIRECTION RESOLVING CONFLICT WILL BE ISSUED BY THE ENGINEER OF RECORD.

6.PRIOR TO INSTALLATION, COORDINATE AND ADJUST THE FINAL LOCATION OF ALL WALL MOUNTED DEVICES AND EQUIPMENT WITH ALL CASEWORK, SHELVING OR OTHER WALL MOUNTED FURNISHINGS.

7.PLANS ARE DIAGRAMMATIC IN NATURE AND INTENDED TO SHOW THE GENERAL SCOPE OF THE WORK TO BE PERFORMED. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR ALL DIMENSIONS.

8.DUE TO THE SMALL SCALE OF THE DRAWINGS, AND TO UNFORESEEN JOB CONDITIONS, ALL REQUIRED OFFSETS, TRANSITIONS AND FITTINGS MAY NOT BE SHOWN BUT SHALL BE PROVIDED AT NO ADDITIONAL COST.

9.THE CONTRACTOR SHALL COORDINATE WITH OTHER TRADES AND EXISTING EQUIPMENT TO ENSURE THE EQUIPMENT SPECIFIED WILL WORK FOR THE SPACES PROVIDED. FINAL DIMENSIONS OF SYSTEMS SHOWN ON THESE PLANS SHALL BE COORDINATED IN THE FIELD. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR PROVIDING OFFSETS AND TRANSITIONS TO FIT IN SPACES PROVIDED AND AT NO COST TO THE OWNER.

10.THE CONTRACTOR IS RESPONSIBLE FOR ANY SPECIAL REQUIREMENTS INVOLVED IN INSTALLING EQUIPMENT IN THE BUILDING. DISMANTLING AND REASSEMBLING OF ANY EQUIPMENT SHALL BE DONE AS REQUIRED TO BRING INTO THE BUILDING AND EQUIPMENT ROOMS.

11.ALL WORK PERFORMED AS PART OF THIS PROJECT SHALL BE PERFORMED BY EXPERIENCED TRADESMEN WHO ARE TRAINED, EXPERIENCED, AND SKILLED IN THE TASKS INCIDENTAL TO THE PROJECT.

12.ALL WORK SHALL COMPLY WITH APPLICABLE OSHA AND EPS REGULATIONS AND GUIDELINES.

13.THE CONTRACTOR PERFORMING WORK ON THIS PROJECT WILL BE RESPONSIBLE FOR REGULARLY CLEANING THE WORK AREA OF ANY DEBRIS ASSOCIATED WITH THE WORK BEING PERFORMED. THE SITE SHALL BE CLEAN OF ALL CONSTRUCTION DEBRIS AT THE COMPLETION OF THE JOB, BEFORE FINAL PAYMENT IS MADE.

14.REASONABLE PRECAUTIONS SHALL BE MADE FOR SAFETY AND HEALTH INCLUDING BUT NOT LIMITED TO WARNING SIGNS, SAFETY PRECAUTIONS, AND BARRICADES FOR PEDESTRIANS.

15.COORDINATE ALL DEMOLITION, CLEANING, AND CONSTRUCTION WORK. CONTRACTOR SHALL PROVIDE OWNER A FULL CONSTRUCTION SCHEDULE.

16.CONTRACTOR SHALL BE HELD TO PROVIDED SCHEDULE. THEY SHALL BE RESPONSIBLE FOR PROVIDING SUFFICIENT MANPOWER AND EQUIPMENT TO COMPLETE THE WORK IN THE TIME INDICATED.

17.THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION AND SECURITY OF ALL EQUIPMENT AND MATERIALS. THE LOCATION OF STORAGE SHALL BE RESTRICTED SPECIFICALLY TO THE AREA ALLOTTED BY THE OWNER.

18.ALL ITEMS INSTALLED UNDER THE SCOPE OF THIS PROJECT SHALL BE NEW, CLEAN, AND FREE OF DEFECTS.

19.IF DRAWING CHANGES ARE NEEDED FOR INSPECTION DUE TO FIELD CHANGES MADE BY THE CONTRACTOR WITHOUT PRIOR APPROVAL OF THE ENGINEER AND AGREED UPON TERMS, THEN THE CONTRACTOR SHALL PAY HOURLY RATES TO THE ENGINEER OF RECORD FOR MAKING NECESSARY CHANGES.

20.SUPPORTS, HANGERS, WIRING, AND PIPING SHALL BE INSTALLED IN A NEAT FASHION AND IN AN ORDERLY APPEARANCE.

21.ALL ROOF EQUIPMENT SHALL BE SECURED TO STRUCTURE TO RESIST A 120 MPH WIND LOAD.

22.PROTECT THE ROOF FROM DAMAGE WHENEVER ANY WORK ON THE ROOF IS REQUIRED.

23.CONTRACTOR SHALL MAINTAIN THE INTEGRITY OF ALL PARTITIONS LABELED WITH A SPECIAL LISTING ON THE ARCHITECTURAL PLANS. THIS INCLUDES FIRE, SMOKE ACOUSTICAL AND OTHER UL WALL OR CEILING ASSEMBLIES.

24.STRUCTURAL PENETRATIONS INCLUDING BUT NOT LIMITED TO WALL, FLOOR, OR BEAM SHALL BE APPROVED BY THE STRUCTURAL ENGINEER. ALL BEAM SLEEVES AND REINFORCING APPROVED BY STRUCTURAL ENGINEER SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.

25.CONTRACTOR SHALL GUARANTEE THE WORK AND MATERIALS FOR PERIOD OF ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION. THIS GUARANTEE SHALL BE IN ADDITION TO THE WARRANTIES PROVIDED BY THE MATERIAL SUPPLIES AND MANUFACTURERS.

26.VALUE ENGINEERING OR CHANGES TO PLANS MUST BE APPROVED BY THE ENGINEER OF RECORD AND RESUBMITTED THROUGH THE BUILDING DEPARTMENT PRIOR TO BEING INSTALLED.

UNDER DEVELOPMENT

FSM Engineering
150 John Knox Road Tallahassee, FL 32303
p.850.222.5683 FL CA 28968

Robert E. Gelhardt II, P.E., State of Florida, Professional Engineer, License No. FL 77568. This Item has been digitally signed and sealed by Robert E. Gelhardt II, P.E. on the date indicated here. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

SYMBOL	REVISION	DATE
A		
B		
C		
D		

ISSUE DATE: 07/19/2024
COMP. FILE No.:
STATE PROJECT No. 61351C

DESIGNER: LJ
DRAWN BY: LJ
REVIEWED BY: REGII
Consultant:

DODSTONE ARCHITECTS
3011-1 Powell Road | Tallahassee, FL 32308
850.656.7205 | FAA26001932

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

NOT FOR CONSTRUCTION

FLORIDA CAVERNS STATE PARK

SHEET TITLE
HVAC NOTES & LEGENDS

PROJECT TITLE
FLORIDA CAVERNS CAMPGROUND RESTROOMS

60% CONSTRUCTION DOCUMENT

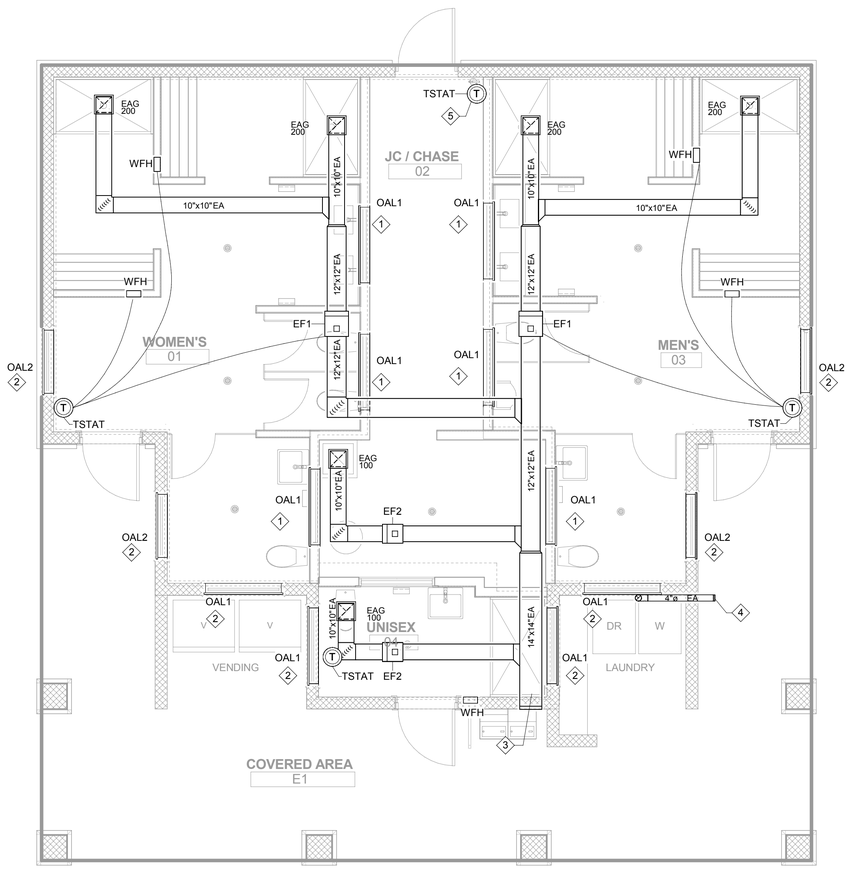
SHEET NO.
M001

HVAC GENERAL NOTES

1. CONTRACTOR SHALL VENT DRYER EXHAUST LOW ON WALL, REFER TO VENT DETAIL.

MECHANICAL KEYED NOTES

X	
1	MOUNT TRANSFER AIR LOUVER HIGH IN CHASE.
2	MOUNT OUTSIDE AIR LOUVER HIGH ON WALL.
3	TERMINATE EXHAUST DISCHARGE AT GABLE LOUVER.
4	TERMINATE DRYER VENT EXHAUST 16" ABOVE GRADE WITH WALL CAP.
5	THERMOSTAT FOR HEAT TRACE WIRE ON DOMESTIC PIPING.



1 M101 **FLOOR PLAN - MECHANICAL**

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

SYMBOL	DATE	REVISION
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: 07/19/2024
COMP. FILE No.:
STATE PROJECT No. 61351C

DESIGNER: LJ
DRAWN BY: LJ
REVIEWED BY: REGII
Consultant :

DODSTONE ARCHITECTS
3011-1 Powell Road | Tallahassee, FL 32308
850.656.7205 | FAA26001932

PROFESSIONAL REGISTRATION
NOT FOR CONSTRUCTION

FLORIDA CAVERNS STATE PARK

SHEET TITLE
FLOOR PLAN - HVAC

PROJECT TITLE
FLORIDA CAVERNS CAMPGROUND RESTROOMS

60% CONSTRUCTION DOCUMENT

SHEET NO.
M101

FSM Engineering
150 John Knox Road p.850.222.5683
Tallahassee, FL 32303 FL CA 28968

Robert E. Gelhardt II, P.E., State of Florida, Professional Engineer, License No. FL 77568. This Item has been digitally signed and sealed by Robert E. Gelhardt II, P.E. on the date indicated here. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

UNDER DEVELOPMENT

EXHAUST FAN SCHEDULE

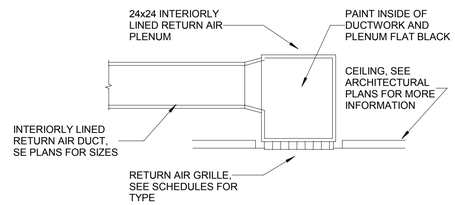
MARK	MANUFACTURER	MODEL	EA CFM	EXT. SP (IN WG)	VOLTS/PHASE	HP	NOTES
EF1	GREENHECK	SQ-80-HP-VG	400	0.13 in-wg	115/1	1/4	
EF2	GREENHECK	SQ-60-HP-VG	100	0.13 in-wg	115/1	1/4	

REMARKS:
1. MOUNT EXHAUST FANS IN CEILING PLENUM WITH VIBRATION ISOLATING HANGERS.
2. VARI-GREEN MOTORS OR EQUIVALENT. TIE- IN THERMOSTAT WITH EXHAUST FAN CONTROLS.
3. VFD INTEGRATED INTO FAN.

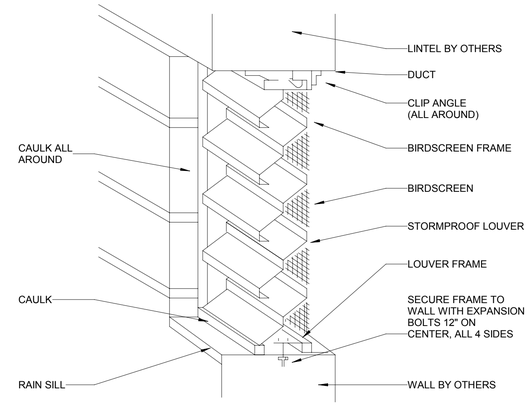
HEATER SCHEDULE

MARK	MANUFACTURER	MODEL	VOLTS/PHASE	AMPS	NOTES
WFH	CADET	COM-PAK CSC202TW	208/1	7.2	1-3

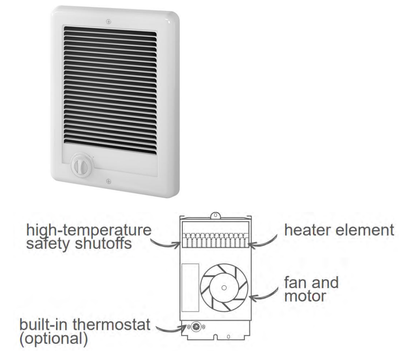
REMARKS:
1. COMPLETE UNIT WITH THERMOSTAT, WALL CAN AND GRILLE.
2. 5120 BTU LOAD. THERMOSTAT RANGE BETWEEN 40 AND 85 DEGREE F.
3. 1500 WATT INPUT.



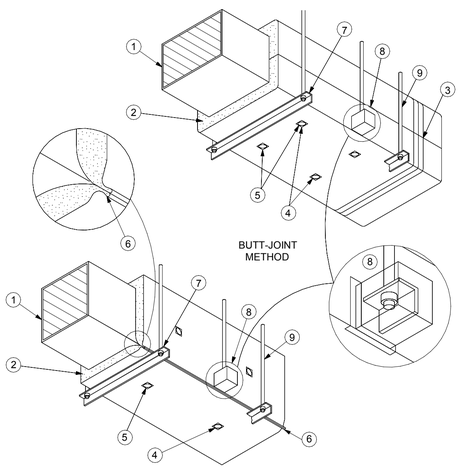
1 M501 RETURN AIR GRILLE CONNECTION DETAIL
SCALE: NTS



2 M501 TYPICAL WALL LOUVER DETAIL
SCALE: NTS



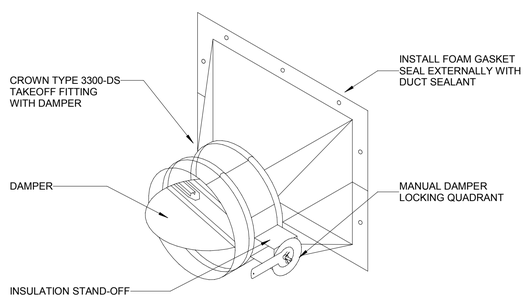
3 M501 WALL FAN HEATER
SCALE: NTS



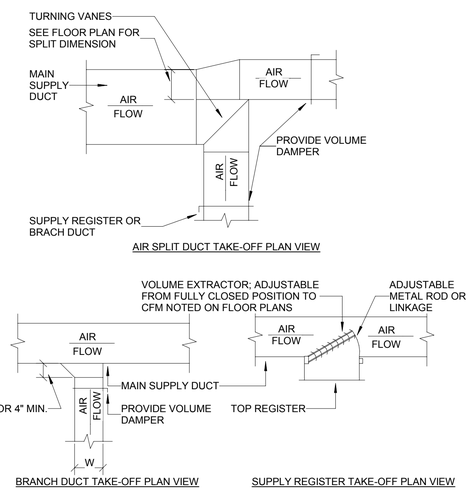
NOTES:

1. GALVANIZED METAL DUCT WITH SEALED SEAMS AND JOINTS USING PS-S POLY TYPE NO.P-301 PRODUCT.
2. BLANKET INSULATION WITH FACTORY-APPLIED VAPOR-RETARDER JACKET, 2" THICK R-6, 3/4 LB. CU. FT. DENSITY.
3. FACTORY LAP ALL SEALS (SEALED WITH ADHESIVE AND/OR STAPLES AND VAPOR-RETARDER TAPE). TAPE ALLOWS ALL JOINTS WITH FASON (SMANCA) ALUMINUM REINFORCED PRESSURE SENSITIVE TAPE; COAT EDGES, SEAMS, AND JOINTS WITH INSUL-COUSTIC PRODUCT BY "SURE-COAT M1-110" PRODUCT FIRE RESISTANT MASTIC.
4. MECHANICAL FASTENERS SUPPORTING INSULATION ON UNDERSIDE OF DUCTS OVER 24" WIDE (SPACE 3" MAXIMUM FROM THE BUTT JOINT).
5. VAPOR-RETARDER TAPE OVER TEARS AND PENETRATIONS OF THE VAPOR-RETARDER JACKET TO KEEP AIR TIGHT CONDITION.
6. ALTERNATE METHOD OF LAP SEAL - LONGITUDINAL JOINT LAPPED AND FOLDED, THEN STAPLED SECURELY IN PLACE.
7. HANGER ON EXTERIOR OF INSULATION. ENCAPSULATE EXPOSED END OF ANGLE. SEAL WITH ADHESIVE OR VAPOR-RETARDER TAPE.
8. HANGER EMBEDDED IN INSULATION. ENCAPSULATE EXPOSED END OF ANGLE. SEAL WITH ADHESIVE OR VAPOR RETARDER TAPE.
9. COMPLETELY ENCAPSULATE HANGER ROD AND ANGLE. SEAL TOP PENETRATION. ENCAPSULATE AND SEAL STRAP HANGERS IN A SIMILAR MANNER.

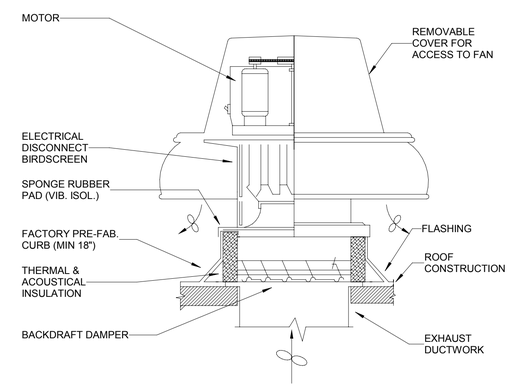
4 M501 BLANKET FIBERGLASS INSULATION DETAIL
SCALE: NTS



5 M501 DUCT TAKEOFF DETAIL
SCALE: NTS



6 M501 SUPPLY DUCTWORK TAKE-OFF DETAIL
SCALE: NTS



SEE ARCHITECTURAL DRAWINGS FOR ROOF CURB CONSTUCTION DETAILS.

NOTE: ALL ROOF MOUNTED EQUIPMENT (FANS) MUST ADHERE TO CURRENT HURRICANE CODES REGARDING ROOF TIE-IN AND WIND RESISTANCE. MOUNT FAN ON THE CURB AS PER MANUFACTURER'S RECOMMENDED FASTENING.

7 M501 ROOF MOUNTED EXHAUST FAN
SCALE: NTS

UNDER DEVELOPMENT

FSM Engineering
150 John Knox Road Tallahassee, FL 32303
p.850.222.5683 FL CA 28968

Robert E. Gelhardt II, P.E., State of Florida, Professional Engineer, License No. FL 77568. This Item has been digitally signed and sealed by Robert E. Gelhardt II, P.E. on the date indicated here. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

SYMBOL	REVISION	DATE	SYMBOL	REVISION	DATE
A			C		
B			D		

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

DODSTONE ARCHITECTS
3011-1 Powell Road | Tallahassee, FL 32308
850.656.7205 | FAA26001652

ISSUE DATE: 07/19/2024
COMP. FILE No.:
STATE PROJECT No. 61351C

DESIGNER: LJ
DRAWN BY: LJ
REVIEWED BY: REGII
Consultant:

PROFESSIONAL REGISTRATION
NOT FOR CONSTRUCTION

FLORIDA CAVERNS STATE PARK

SHEET TITLE
HVAC DETAILS & SCHEDULES

PROJECT TITLE
FLORIDA CAVERNS CAMPGROUND RESTROOMS

60% CONSTRUCTION DOCUMENT

SHEET NO.
M501

ELECTRICAL SPECIFICATIONS

SECTION 16050 – BASIC ELECTRICAL MATERIALS AND METHODS

1. ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA 70, ARTICLE 100, BY A TESTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION, AND MARKED FOR INTENDED USE.
2. IDENTIFICATION DEVICE COLORS: USE THOSE PRESCRIBED BY ANSI A13.1, NFPA 70, AND THESE SPECIFICATIONS.
3. COLORED ADHESIVE MARKING TAPE FOR RACEWAYS, WIRES, AND CABLES: SELF–ADHESIVE VINYL TAPE, NOT LESS THAN 1 INCH WIDE BY 3 MILS THICK (25 MM WIDE BY 0.08 MM THICK).
4. TAPE MARKERS FOR CONDUCTORS: VINYL OR VINYL–CLOTH, SELF–ADHESIVE, WRAPAROUND TYPE WITH PREPRINTED NUMBERS AND LETTERS.
5. ENGRAVED–PLASTIC LABELS, SIGNS, AND INSTRUCTION PLATES: ENGRAVING STOCK, MELAMINE PLASTIC LAMINATE PUNCHED OR DRILLED FOR MECHANICAL FASTENERS 1/16–INCH (1.6–MM) MINIMUM THICKNESS FOR SIGNS UP TO 20 SQ. IN. (129 SQ. CM) AND 1/8–INCH (3.2–MM) MINIMUM THICKNESS FOR LARGER SIZES. ENGRAVED LEGEND IN BLACK LETTERS ON WHITE BACKGROUND.
6. PULL STRINGS: PROVIDE PULL STRINGS IN ALL SPARE OR EMPTY CONDUITS AND RACEWAYS.
7. COORDINATE NAMES, ABBREVIATIONS, COLORS, AND OTHER DESIGNATIONS USED FOR ELECTRICAL IDENTIFICATION WITH CORRESPONDING DESIGNATIONS INDICATED IN THE CONTRACT DOCUMENTS OR REQUIRED BY CODES AND STANDARDS. USE CONSISTENT DESIGNATIONS THROUGHOUT PROJECT.
8. CUT, CHANNEL, CHASE, AND DRILL FLOORS, WALLS, PARTITIONS, CEILINGS, AND OTHER SURFACES REQUIRED TO PERMIT ELECTRICAL INSTALLATIONS. PERFORM CUTTING BY SKILLED MECHANICS OF TRADES INVOLVED. SLEEVE ALL CABLE PENETRATIONS OF WALLS. SEAL ALL CONDUIT PENETRATIONS.
9. REPAIR, REFINISH AND TOUCH UP DISTURBED FINISH MATERIALS AND OTHER SURFACES TO MATCH ADJACENT UNDISTURBED SURFACES.
10. ALL WORK SHALL COMPLY WITH CODES & STANDARDS LISTED ON THE PLANS.
11. WITHIN 30 DAYS OF NOTICE TO PROCEED, CONTRACTOR SHALL SCHEDULE AND ATTEND A SITE MEETING WITH UTILITY REPRESENTATIVE TO COORDINATE LOCATION, SCHEDULING, AND REQUIREMENTS FOR NEW ELECTRICAL SERVICE; NOTIFY ENGINEER OF ANY REQUIREMENTS IN EXCESS OF THOSE SHOWN ON THESE PLANS.

SECTION 16060 – GROUNDING AND BONDING

1. EQUIPMENT GROUNDING CONDUCTORS: COMPLY WITH NFPA 70, ARTICLE 250, FOR TYPES, SIZES, AND QUANTITIES OF EQUIPMENT GROUNDING CONDUCTORS, UNLESS SPECIFIC TYPES, LARGER SIZES, OR MORE CONDUCTORS THAN REQUIRED BY NFPA 70 ARE INDICATED.
2. INSTALL INSULATED EQUIPMENT GROUNDING CONDUCTORS IN ALL FEEDERS AND BRANCH CIRCUITS.
3. ALL GROUNDING CONDUCTORS SHALL BE COPPER; COMPLY WITH DIVISION 16 SECTION "CONDUCTORS AND CABLES" AND ASTM B, AS APPLICABLE.
4. EQUIPMENT GROUNDING CONDUCTORS: INSULATED WITH GREEN–COLORED INSULATION.
5. GROUNDING ELECTRODE CONDUCTORS: STRANDED COPPER CABLE.
6. UNDERGROUND CONDUCTORS: BARE, TINNED, STRANDED, UNLESS OTHERWISE INDICATED.
7. CONNECTORS: COMPLY WITH IEEE 837 AND UL 467; LISTED FOR USE FOR SPECIFIC TYPES, SIZES, AND COMBINATIONS OF CONDUCTORS AND CONNECTED ITEMS.
8. IN RACEWAYS, USE INSULATED EQUIPMENT GROUNDING CONDUCTORS.
9. EXOTHERMIC–WELDED CONNECTIONS: USE FOR CONNECTIONS TO STRUCTURAL STEEL AND FOR UNDERGROUND CONNECTIONS.
10. GROUNDING CONDUCTORS: ROUTE ALONG SHORTEST AND STRAIGHTEST PATHS POSSIBLE, UNLESS OTHERWISE INDICATED. AVOID OBSTRUCTING ACCESS OR PLACING CONDUCTORS WHERE THEY MAY BE SUBJECTED TO STRAIN, IMPACT, OR DAMAGE.
11. BONDING STRAPS AND JUMPERS: INSTALL SO VIBRATION BY EQUIPMENT MOUNTED ON VIBRATION ISOLATION HANGERS OR SUPPORTS IS NOT TRANSMITTED TO RIGIDLY MOUNTED EQUIPMENT.

SECTION 16120 – CONDUCTORS AND CABLES

1. CONDUCTOR MATERIAL: COPPER COMPLYING WITH NEMA WC 5 OR 7; SOLID CONDUCTOR FOR NO. 10 AWG AND SMALLER, STRANDED FOR NO. 8 AWG AND LARGER. ALUMINUM CONDUCTORS PERMITTED ONLY WHERE SPECIFICALLY INDICATED ("AL") ON RISER OR PLAN.
2. CONDUCTOR INSULATION TYPES: TYPE THHN–THWN COMPLYING WITH NEMA WC 5 OR WC 7.
3. TYPE MC, NM, SE, OR UF CABLE NOT PERMITTED.
4. BRANCH CIRCUITS CONCEALED IN CEILINGS, WALLS, AND PARTITIONS: TYPE THHN–THWN, SINGLE CONDUCTORS IN RACEWAY.
6. CONCEAL CABLES AND RACEWAYS IN FINISHED WALLS, CEILINGS, AND FLOORS.
7. USE MANUFACTURER–APPROVED PULLING COMPOUND OR LUBRICANT WHERE NECESSARY; COMPOUND USED MUST NOT DETERIORATE CONDUCTOR OR INSULATION. DO NOT EXCEED MANUFACTURER'S RECOMMENDED MAXIMUM PULLING TENSIONS AND SIDEWALL PRESSURE VALUES.
8. IN EXPOSED LOCATIONS, ALL CONDUCTORS AND CABLES SHALL BE INSTALLED IN RACEWAY.
9. MAKE SPLICES AND TAPS THAT ARE COMPATIBLE WITH CONDUCTOR MATERIAL AND THAT POSSESS EQUIVALENT OR BETTER MECHANICAL STRENGTH AND INSULATION RATINGS THAN UNSPLICED CONDUCTORS.
10. WIRING AT OUTLETS: INSTALL CONDUCTOR AT EACH OUTLET, WITH AT LEAST 6 INCHES (150 MM) OF SLACK.

SECTION 16130 – RACEWAYS AND BOXES

1. PERMANENENTLY LABEL ALL RACEWAYS AND JUNCTION/PULL BOX COVERS TO INDICATE PANEL/CIRCUIT NUMBERS CONTAINED.
2. UNLESS OTHERWISE NOTED, PROVIDE NEMA 1 ENCLOSURES IN INDOOR LOCATIONS, NEMA 3R ENCLOSURES IN OUTDOOR LOCATIONS.
3. MINIMUM RACEWAY SIZE: 3/4" TRADE SIZE.
4. KEEP RACEWAYS AT LEAST 6 INCHES (150 MM) AWAY FROM PARALLEL RUNS OF HOT–WATER PIPES. INSTALL HORIZONTAL RACEWAY RUNS ABOVE WATER PIPING.
5. PROTECT STUB–UPS FROM DAMAGE WHERE CONDUITS RISE THROUGH FLOOR SLABS. ARRANGE SO CURVED PORTIONS OF BENDS ARE NOT VISIBLE ABOVE FINISHED SLAB.
6. MAKE BENDS AND OFFSETS SO ID IS NOT REDUCED. KEEP LEGS OF BENDS IN SAME PLANE AND KEEP STRAIGHT LEGS OF OFFSETS PARALLEL, UNLESS OTHERWISE INDICATED.
7. CONCEAL CONDUIT AND EMT WITHIN FINISHED WALLS, CEILINGS, AND FLOORS.
8. INSTALL EXPOSED RACEWAYS PARALLEL OR AT RIGHT ANGLES TO NEARBY SURFACES OR STRUCTURAL MEMBERS AND FOLLOW SURFACE CONTOURS AS MUCH AS POSSIBLE.
9. INSTALL RACEWAY SEALING FITTINGS AT SUITABLE, APPROVED, AND ACCESSIBLE LOCATIONS AND FILL THEM WITH UL–LISTED SEALING COMPOUND. INSTALL RACEWAY SEALING FITTINGS WHERE CONDUITS PASS FROM WARM TO COLD LOCATIONS, SUCH AS BOUNDARIES OF REFRIGERATED SPACES AND WHERE OTHERWISE REQUIRED BY NFPA 70.
10. FLEXIBLE CONNECTIONS: USE MAXIMUM OF 72 INCHES (1830 MM) OF FLEXIBLE CONDUIT FOR RECESSED AND SEMIRECESSED LIGHTING FIXTURES; FOR EQUIPMENT SUBJECT TO VIBRATION, NOISE TRANSMISSION, OR MOVEMENT; AND FOR ALL MOTORS. USE LFMC IN DAMP OR WET LOCATIONS. INSTALL SEPARATE GROUND CONDUCTOR ACROSS FLEXIBLE CONNECTIONS.

SECTION 16140 – WIRING DEVICES

1. STRAIGHT–BLADE–TYPE RECEPTACLES: COMPLY WITH NEMA WD 1, NEMA WD 6, DSCC W–C–596G, AND UL 498. STRAIGHT–BLADE AND LOCKING RECEPTACLES: HEAVY–DUTY GRADE. ALL 20A/120V RECEPTACLES SHALL BE TAMPER–RESISTANT TYPE.
2. GFCI RECEPTACLES: STRAIGHT BLADE, HEAVY–DUTY GRADE, WITH INTEGRAL NEMA WD 6, CONFIGURATION 5–20R DUPLEX RECEPTACLE; COMPLYING WITH UL 498 AND UL 943.
3. SINGLE– AND DOUBLE–POLE SWITCHES: COMPLY WITH DSCC W–C–896F AND UL 20.
4. SNAP SWITCHES: HEAVY–DUTY GRADE, QUIET TYPE.
5. DEVICE & COVERPLATE FINISH: PER ARCHITECTS DIRECTION, UNLESS OTHERWISE INDICATED OR REQUIRED BY NFPA 70.
6. INSTALL DEVICES AND ASSEMBLIES LEVEL, PLUMB, AND SQUARE WITH BUILDING LINES.
7. ARRANGEMENT OF DEVICES: UNLESS OTHERWISE INDICATED, MOUNT FLUSH, WITH LONG DIMENSION VERTICAL. GROUP ADJACENT SWITCHES UNDER SINGLE, MULTIGANG WALL PLATES.
8. REMOVE WALL PLATES AND PROTECT DEVICES AND ASSEMBLIES DURING PAINTING.
9. AFTER INSTALLING WIRING DEVICES AND AFTER ELECTRICAL CIRCUITRY HAS BEEN ENERGIZED, TEST FOR PROPER POLARITY, GROUND CONTINUITY, AND COMPLIANCE WITH REQUIREMENTS.
10. TEST GFCI OPERATION WITH BOTH LOCAL AND REMOTE FAULT SIMULATIONS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.

SECTION 16410 – ENCLOSED SWITCHES

1. ENCLOSED SWITCHES SHALL BE MANUFACTURED BY SQUARE–D, CUTLER–HAMMER, GE, OR SIEMENS.
2. ALL ENCLOSED SWITCHES SHALL BE LOCKABLE.
3. MOUNT INDIVIDUAL WALL–MOUNTING SWITCHES WITH TOPS AT UNIFORM HEIGHT, UNLESS OTHERWISE INDICATED.
4. ENCLOSED SWITCHES SHALL BE UL LISTED FOR THE APPLICATION USED; ENCLOSURES SHALL BE NEMA–3R UNLESS NOTED OTHERWISE.
5. MOTOR STARTERS SHALL BE NEMA–RATED, WITH OVERLOADS SIZED PER LOAD. COORDINATE COIL VOLTAGE WITH CONTROLS.
6. PROVIDE FUSES FOR ALL FUSIBLE DEVICES.

SECTION 16442 – PANELBOARDS

1. MANUFACTURERS: PANELBOARDS SHALL BE MANUFACTURED BY SQUARE–D, CUTLER–HAMMER, GE, OR SIEMENS.
2. ENCLOSURES: FLUSH– AND SURFACE–MOUNTED CABINETS. NEMA PB 1, TYPE 1.
3. PHASE AND GROUND BUSES: HARD–DRAWN COPPER, 98 PERCENT CONDUCTIVITY.
4. CONDUCTOR CONNECTORS: SUITABLE FOR USE WITH CONDUCTOR MATERIAL.
5. SERVICE EQUIPMENT LABEL: UL LABELED FOR USE AS SERVICE EQUIPMENT FOR PANELBOARDS WITH MAIN SERVICE DISCONNECT SWITCHES.
6. FUTURE DEVICES: MOUNTING BRACKETS, BUS CONNECTIONS, AND NECESSARY APPURTENANCES REQUIRED FOR FUTURE INSTALLATION OF DEVICES.
7. PANELBOARD SHORT–CIRCUIT RATING: SERIES RATED TO INTERRUPT SYMMETRICAL SHORT–CIRCUIT CURRENT AVAILABLE AT TERMINALS.
8. MAIN OVERCURRENT PROTECTIVE DEVICES: CIRCUIT BREAKER.
9. MOLDED–CASE CIRCUIT BREAKER: UL 489, WITH INTERRUPTING CAPACITY TO MEET AVAILABLE FAULT CURRENTS.
10. MOUNT TOP OF TRIM 74 INCHES (1880 MM) ABOVE FINISHED FLOOR, UNLESS OTHERWISE INDICATED.
11. MOUNT PLUMB AND RIGID WITHOUT DISTORTION OF BOX. MOUNT RECESSED PANELBOARDS WITH FRONTS UNIFORMLY FLUSH WITH WALL FINISH.
12. INSTALL FILLER PLATES IN UNUSED SPACES.
13. PROVIDE NEW TYPE–WRITTEN PANEL DIRECTORIES, SHOWING ALL EXISTING AND NEW CIRCUITS.
14. PANELBOARD NAMEPLATES: LABEL EACH PANELBOARD WITH ENGRAVED METAL OR LAMINATED–PLASTIC NAMEPLATE MOUNTED WITH CORROSION–RESISTANT SCREWS.
15. WHERE BREAKER IS SERVING HARD–WIRED APPLIANCE WITHOUT A SEPARATE DISCONNECT (NOT WITHIN SIGHT), PROVIDE A PERMANENTLY INSTALLED PROVISION TO LOCK THE BREAKER IN THE "OFF" POSITION.

SECTION 16511 – LIGHTING

1. LIGHTING FIXTURES: PER FIXTURE SCHEDULE ON PROJECT PLANS. SUBSTITUTE FIXTURES OF SIMILAR STYLE AND EQUAL OR BETTER PERFORMANCE AND QUALITY WILL BE CONSIDERED.
2. ALL LIGHTING SHALL BE LED ONLY; NO FLUORESCENT OR HID.
3. WHERE EXIT SIGNS ARE USED, THEY SHALL BE LED–TYPE.
4. FIXTURES: SET LEVEL, PLUMB, AND SQUARE WITH CEILINGS AND WALLS. INSTALL LAMPS IN EACH FIXTURE.
5. FOR EMERGENCY LIGHTING FIXTURES, PROVIDE UNSWITCHED HOT CONDUCTOR OF AREA LIGHTING CIRCUIT AS INDICATED ON THE PLANS.
6. PROVIDE ALL BACKBOXES, SUPPORTS, STEMS, HARDWARE, LAMPS, AND DRIVERS FOR A COMPLETE AND FUNCTIONAL INSTALLATION.

ELECTRICAL LEGEND

	1 X 2 LIGHTING FIXTURE.
	1 X 2 LIGHTING FIXTURE WITH EMERGENCY BATTERY PACK.
	1 X 4 LIGHTING FIXTURE.
	RECESSED CAN LIGHTING FIXTURE.
	WALL SCONCE.
	LED EXIT LIGHT, SAME AS ABOVE, WALL MOUNTED
	WALL–MOUNTED EMERGENCY LIGHTING FIXTURE, WITH INTEGRAL BATTERY. PROVIDE UNSWITCHED HOT CONDUCTOR.
	WALL–MOUNTED OSCILLATING FAN, GLOBAL INDUSTRIES MODEL #WB293129 OR APPROVED EQUAL. MOUNT 90" A.F.F.; PROVIDE MOUNTING HARDWARE AS REQUIRED.
$	120V/20A QUIET–TYPE SNAP SWITCH. SWITCHES SHALL BE MOUNTED 44" A.F.F. UNLESS NOTED OTHERWISE. "3" INDICATES 3 WAY SWITCH, "4" INDICATES 4 WAY SWITCH. "LV" INDICATES LOW VOLTAGE SWITCH, WATTSTOPPER #LMSW–102; COORDINATE LOW VOLTAGE CAT5E CONTROL WIRING.
OS	CEILING MOUNTED OCCUPANCY SENSOR; EQUAL TO WATTSTOPPER DT–300 WITH BZ–250 POWER PACKS, AS REQUIRED.
PC	PHOTOCELL
	20A/120V DUPLEX RECEPTACLE. MOUNT AT 18" A.F.F., UNLESS NOTED OTHERWISE.
	120V/20A DUPLEX RECEPTACLE, WITH INTEGRAL GFI PROTECTION. RECEPTACLES SHALL BE MOUNTED 18" A.F.F., UNLESS NOTED OTHERWISE. "WP" INDICATES CAST–ALUMINUM WEATHERPROOF IN USE COVER.
	120V/20A DUPLEX RECEPTACLE, WITH INTEGRAL GFI PROTECTION. RECEPTACLES SHALL BE MOUNTED 44" A.F.F. UNLESS NOTED OTHERWISE.
	240V/30A DRYER RECEPTACLE WITH 3/4" C.–3 #10, #10 GND, TO PANEL.
	POWER PANEL. SEE SCHEDULE
	ENCLOSED SAFETY SWITCH; RATING AS INDICATED. FIELD COORDINATE EXACT LOCATION TO ASSURE NEC–REQUIRED CLEARANCES ARE MET.
J	JUNCTION BOX FOR EQUIPMENT CONNECTOIN. "HD" INDICATES HAND–DRYER; COORDINATE ROUGH–IN HEIGHT WITH ARCHITECTURAL ELEVATIONS.
EF	EXHAUST FAN, WITH INTEGRAL DISCONNECT; COORDINATE WITH MECHANICAL.
	CIRCUIT CONDUCTORS IN CONDUIT/EMT. MIINIMUM CONDUCTOR SIZE SHALL BE #12 AWG. 120V CIRCUIT HOMERUNS LONGER THAN 100FT SHALL BE #10 AWG, MINIMUM. PROVIDE DEDICATED GREEN EQUIPMENT GROUNDING CONDUCTOR IN ALL RACEWAYS. MC CABLE NOT PERMITTED.
	CONDUCTORS IN CONDUIT, CONCEALED IN WALLS, CEILING, OR BELOW GRADE. HOMERUN TO PANEL INDICATED.

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR.
C	CONDUIT.
EM	EMERGENCY.
EX	EXISTING TO REMAIN.
GND	GROUND.
NL	DENOTES NIGHT LIGHT, NON–SWITCHED FIXTURE.
RE	REPLACE EXISTING DEVICE.
RLD	EXISTING RELOCATED.
RV	EXISTING REMOVE.
WAP	WIRELESS ACCESS POINT.
WP	WEATHERPROOF.

CODES AND STANDARDS

NFPA 70	NATIONAL ELECTRICAL CODE (NEC), 2020 EDITION
NFPA 72	NATIONAL FIRE ALARM CODE, 2019 EDITION

FLORIDA FIRE PREVENTION CODE, EIGHTH EDITION.

FLORIDA BUILDING CODE, EIGHTH EDITION.

LOAD CALCULATION

BATHHOUSE LOAD CALCULATION:

HEATING/VENTILATION	(??.?KVA @ 100%)	?.? KVA
RECEPTACLES	(??.?KVA @ 100%)	?.? KVA
LIGHTING	(??.?KVA @ 125%)	?.? KVA
WATER HEATER	(9.0KVA @ 100%)	9.0 KVA
HMC	(??.?KVA @ 50%)	?.? KVA
DEMAND LOAD:	??.? KVA (???A @ 120/240V)	

UNDER DEVELOPMENT

REVISION	DATE	SYMBOL	REVISION	DATE
		A		
		B		
		C		
		D		

ISSUE DATE: 07/19/2024
COMP. FILE No.:
STATE PROJECT No.: 61351C

DESIGNER : J.M.L./J.D.S.
DRAWN BY: J. SCOTT
REVIEWED BY: J. LAMB
Consultant :

APPLIED RESEARCH AND DESIGN, INC.
3998 BRADFORDVILLE ROAD, STE. B
TALLAHASSEE, FL. 32309
(850) 668-6324 – FAX (850) 668-6358
EB # 8948
JAMES M. LAMB, PE#52688

PROFESSIONAL REGISTRATION
JAMES M. LAMB
PE 52688

Department of Environmental Protection
Division of Recreation and Parks
Bureau of Design and Construction
3540 Thomasville Rd., Tallahassee, FL 32309 (850) 488–5372

60% REVIEW SUBMITTAL - NOT FOR CONSTRUCTION

FLORIDA CAVERNS STATE PARK

SHEET TITLE
ELECTRICAL LEGEND & NOTES

PROJECT TITLE
FLORIDA CAVERNS CAMPGROUND RESTROOMS

SHEET NO.
E001

NEW PANEL: RR

MAIN: 225A MCB
SERVICE: 120/240V, 1-PHASE, 3-WIRE
LOCATION: SEE PLAN
RATING: 10,000 AIC
TYPE: NEMA-1, SURFACE

CKT	DESCRIPTION	BKR	P	LOAD	KVA A	KVA B	LOAD	BKR	P	DESCRIPTION	CKT
1	DRYER	30	2	2.50	4.30		1.80	20	1	HAND DRYER	2
3				2.50		4.30	1.80	20	1	HAND DRYER	4
5	REC - JANITOR'S CLOSET	20	1	0.18	1.98		1.80	20	1	HAND DRYER	6
7	WASHER	20G	1			1.80	1.80	20	1	HAND DRYER	8
9	HAND DRYER	20	1	1.80	3.60		1.80	20	1	HAND DRYER	10
11	HAND DRYER	20	1	1.80		2.19	0.39	20	1	LTS - WOMEN	12
13	VENDING	20G	1	1.00	1.39		0.39	20	1	LTS - MEN	14
15	VENDING	20G	1	1.00		1.25	0.25	20	1	LTS - CHASE/SINGLE RR	16
17	UNIT HEATER	20	1	1.50	1.69		0.19	20	1	LTS - EXTERIOR	18
19	UNIT HEATER	20	1	1.50		1.68	0.18	20	1	REC - MEN	20
21	UNIT HEATER	20	1	1.50	1.68		0.18	20	1	REC - MEN	22
23	UNIT HEATER	20	1	1.50		1.68	0.18	20	1	REC - MEN	24
25	UNIT HEATER	20	1	1.50	1.68		0.18	20	1	REC - WOMEN	26
27	HEAT TRACE	20	1	0.50		0.68	0.18	20	1	REC - WOMEN	28
29	SPARE	20	1		0.18		0.18	20	1	REC - WOMEN	30
31	SPARE	20G	1			0.18	0.18	20	1	REC - SINGLE RR	32
33	SPARE	20G	1		0.00			20	1	SPARE	34
35	SPARE	20G	1			0.54	0.54	20	1	REC - UTILITY	36
37	EXHAUST FAN	20	1	0.50	0.50			20	1	SPARE	38
39	CIRCULATION FANS	20	1	0.52		5.02	4.50	60	2	WATER HEATER **	40
41	SPARE	20	1		4.50		4.50				42
					21.50	19.32					

TOTAL CONNECTED LOAD (KVA): 40.82 KVA 170.1 AMPS

LETTER 'G' BESIDE BREAKER SIZE INDICATES 'GFCI' TYPE CIRCUIT BREAKER

Lighting Fixture Schedule

TYPE	DESCRIPTION	MNFR/SUPPLIER	MODEL #	LAMPS	NOTES
A	2FT SURFACE-MOUNTED VANDAL-RESISTANT	H.E. WILLIAMS	AVX-2-L42/835-CPC-UNV	37 WATTS LED	OPTION 'EM/10WRM' REQUIRED FOR FIXTURES INDICATED WITH HATCHING
B	4FT SURFACE-MOUNTED VANDAL-RESISTANT	H.E. WILLIAMS	AVX-4-L62/835-CPC-UNV	71 WATTS LED	
C	EXTERIOR CUTOFF WALL PACK	H.E. WILLIAMS	VWPH-L60/740-T3-???-SDGL-UNV	49 WATTS LED	ARCHITECT TO SELECT COLOR
D	4FT VAPOR-TITE	H.E. WILLIAMS	96-4-L62/840-HIAFR-UNV	48 WATTS LED	FIXTURE TO BE MOUNTED TO BOTTOM CHORD OF TRUSS
E1	EXIT SIGN WITH BATTERY BACKUP	BEGHELLI	PX-A-R-SA-AT	2 WATTS LED	
E2	EMERGENCY LIGHTING UNIT	BEGHELLI	XMR S1WL HO	14 WATTS LED	
F	DOWNLIGHT	H.E. WILLIAMS	6DR-TL-L30/835-UNV-OM-OF-CS-WET/CC	26.9 WATTS LED	

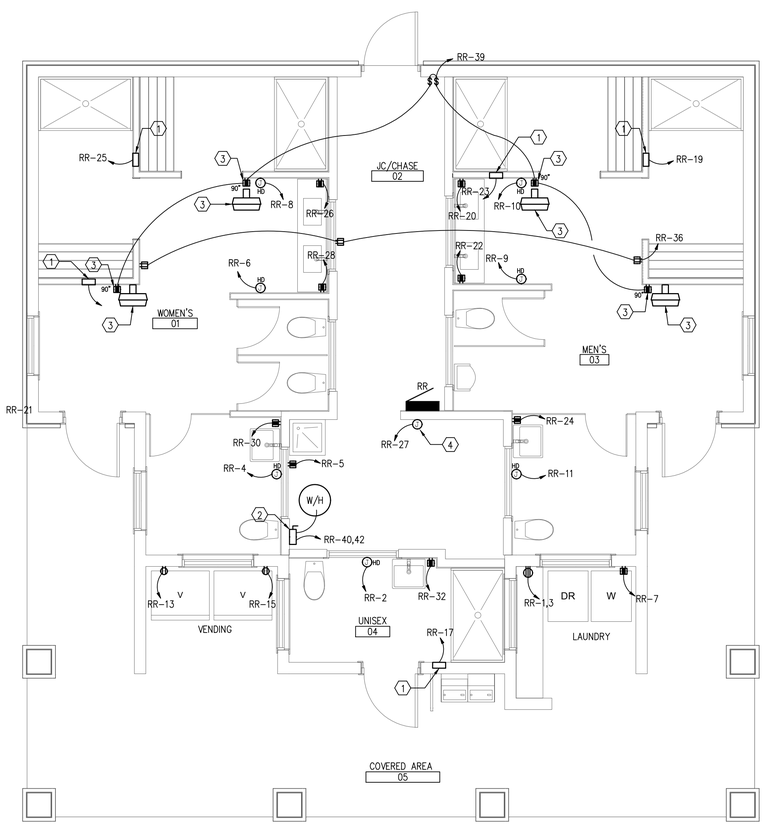
NOTES:
1. VERIFY ALL CEILING FINISHES, FIXTURE TRIMS, AND VOLTAGES PRIOR TO ORDERING AND PROVIDE AS REQUIRED.
2. FIXTURES SHOWN ARE BASIS OF DESIGN; FIXTURES OF SIMILAR STYLE, PERFORMANCE, AND ELECTRICAL CHARACTERISTICS THAT ARE ACCEPTABLE TO THE OWNER AND ENGINEER WILL BE ALLOWED.
3. PROVIDE ALL LOW-VOLTAGE WIRING AS REQUIRED, FOR DIMMING AND CONTROLS.
4. PROVIDE LAMPS/BALLASTS/DRIVERS WITH ALL FIXTURES.
5. PROVIDE ALL BOXES, BACKBOXES, SUPPORTS, FEEDS, TRIMS, STEMS, ROUGH-INS AND BLOCKING AS MAY BE REQUIRED FOR INSTALLATION.

NOTE:
SERVICE EQUIPMENT IN OTHER THAN DWELLING UNITS SHALL BE LEGIBLY MARKED IN THE FIELD WITH THE MAXIMUM AVAILABLE FAULT CURRENT. THE FIELD MARKING(S) SHALL INCLUDE THE DATE THE FAULT CURRENT CALCULATION WAS PERFORMED AND BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED.

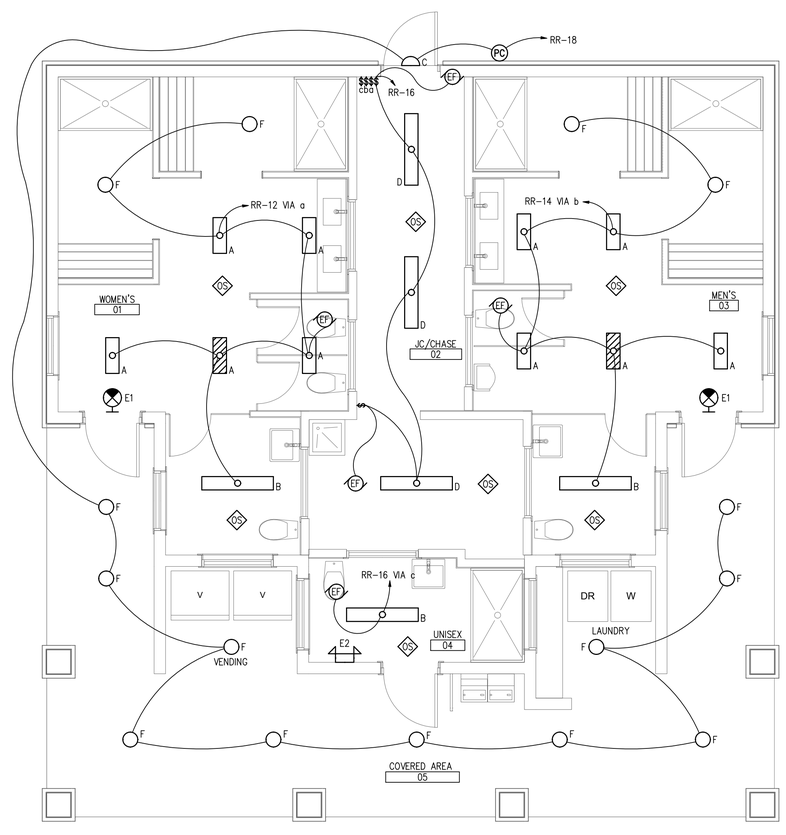
NOTE:
ARC FLASH WARNING LABELS ARE REQUIRED ON ALL EQUIPMENT DESIGNATED IN NEC, ART. 110.16, INCLUDING ALL EQUIPMENT SHOWN ON THE RISER, AND ANY OTHER ELECTRICAL EQUIPMENT, SUCH AS SWITCHBOARDS, PANELBOARDS, INDUSTRIAL CONTROL PANELS, METER SOCKET ENCLOSURES, AND MOTOR CONTROL CENTERS, THAT ARE IN OTHER THAN DWELLING UNITS, AND ARE LIKELY TO REQUIRE EXAMINATION, ADJUSTMENT, SERVICING OR MAINTENANCE WHILE ENERGIZED; EQUIPMENT SHALL BE FIELD MARKED TO WARN QUALIFIED PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS. THE MARKING SHALL BE LOCATED SO AS TO BE CLEARLY VISIBLE TO QUALIFIED PERSONS BEFORE EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE OF THE EQUIPMENT.

PROVIDE WARNING RIBBON PER NEC 300.5 D 3; UNDERGROUND SERVICE CONDUCTORS THAT ARE NOT ENCASED IN CONCRETE AND THAT ARE BURIED 18 INCHES OR MORE BELOW GRADE SHALL HAVE THEIR LOCATION IDENTIFIED BY A WARNING RIBBON THAT IS PLACED IN THE TRENCH AT LEAST 12 INCHES ABOVE THE UNDERGROUND INSTALLATION.

CALL SUNSHINE 811 OR GO ONLINE TO www.sunshine811.com, AT LEAST TWO FULL BUSINESS DAYS BEFORE DIGGING TO HAVE UTILITIES LOCATED AND MARKED.



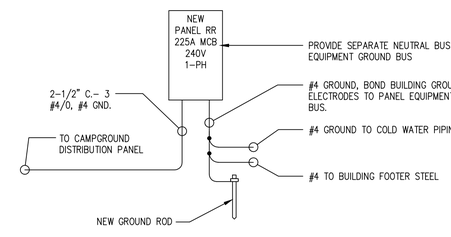
POWER PLAN
SCALE: 1/4" = 1' - 0"



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

GENERAL NOTES:
1. PROVIDE DEDICATED NEUTRAL WITH ALL 120V BRANCH CIRCUITS.
2. CONTRACTOR SHALL COORDINATE REQUIREMENTS FOR LOW VOLTAGE SYSTEMS (INCLUDING DATA, SECURITY, ACCESS CONTROL) WITH OWNER PRIOR TO ROUGH-IN.

WORK NOTES:
(THIS SHEET ONLY)
1. UNIT HEATER (1.5KW/120V): PROVIDE NEW 3/4" C.-2 #12, #12 GND. TO PANEL.
2. WATER HEATER: PROVIDE NEW 60A/2P FUSED 240V NEMA-1 SAFETY SWITCH. PROVIDE NEW 3/4" C.-2 #6, #10 GND. TO PANEL.
3. PROVIDE NEW SWITCHED GFCI RECEPACLE AT 90" A.F.F., FOR CIRCULATION FAN (TYPICAL)
4. PROVIDE CONNECTION TO HEAT-TRACE EQUIPMENT (COORDINATE WITH MECHANICAL)



POWER RISER DIAGRAM
SCALE: NTS

SYMBOL	REVISION	DATE
A		
B		

SYMBOL	REVISION	DATE
C		
D		

Department of Environmental Protection
Division of Recreation and Parks
Bureau of Design and Construction
3540 Thomasville Rd., Tallahassee, FL 32309 (850) 488-5372

DESIGNER : J.M.L./J.D.S.
DRAWN BY: J. SCOTT
REVIEWED BY: J. LAMB
Consultant : APPLIED RESEARCH AND DESIGN, INC.
3998 BRADFORDVILLE ROAD, STE. B
TALLAHASSEE, FL 32309
(850) 668-6324 – FAX (850) 668-6358
EB # 8948
JAMES M. LAMB, PE#52688

ISSUE DATE: 07/19/2024
COMP. FILE No.:
STATE PROJECT No.: 61351C

PROFESSIONAL REGISTRATION
JAMES M. LAMB
PE 52688

60% REVIEW SUBMITTAL - NOT FOR CONSTRUCTION

PROJECT TITLE
FLORIDA CAVERNS STATE PARK

SHEET TITLE
ELECTRICAL PLANS

PROJECT TITLE
FLORIDA CAVERNS CAMPGROUND RESTROOMS

SHEET NO.
E101

PLUMBING LEGEND

120 HOT WATER SUPPLY	DHW
HOT WATER RETURN	HWR
COLD WATER SUPPLY	DCW
SANITARY	SAN
KITCHEN GREASE SANITARY	GW
STORM	ST
STORM OVERFLOW	OF
VENT PIPING	VENT
CONDENSATE	C
ELBOW, TURNED DOWN	DN
ELBOW, TURNED UP	UP
ELBOW, 90°	
CONNECTION, TOP	
CONNECTION, BOTTEM	
CONNECTION, SIDE	
CAP, AIR AND WATER TIGHT	
VENT THROUGH ROOF	VTR
RECIRCULATION PUMP	RCP-#
CHECK VALVE / BACKFLOW PREVENTOR	
BALL VALVE	
FLOW CONTROL VALVE	
WATER METER	M
PRESSURE REGULATOR	R
SOLENOID SHUTOFF VALVE	
HOSE BIBB WITH VACUUM BREAKER	HB-#
AIR ADMITTANCE VALVE (BOD: STUDOR)	AAV
UNION	
WALL CLEANOUT	WCO
FLOOR CLEANOUT	FCO
FLOOR DRAIN	FD
FLOOR SINK	FS
EXISTING SYSTEM PIPING	EX ###
TO BE DEMOLISHED	EX.###
DEMOLITION KEYNOTE	#
RENOVATION KEYNOTE	#
CONNECT TO EXISTING	
LIMITS OF DEMOLITION	
ACCESS PANEL	A / AP
MIN. INVERT ELEVATION	MIN. I.E. #+0 SP B.F.F. +0

ALL MAY NOT APPLY

ABBREVIATIONS

AAV	AIR ADMITTANCE VALVE
AFF	ABOVE FINISHED FLOOR
AHAP	AS HIGH AS POSSIBLE
BFP	BACK FLOW PREVENTOR
BF	BELOW FLOOR
BFF	BELOW FINISHED FLOOR
BG	BELOW GRADE
BOD	BASIS OF DESIGN
C	CONDENSATE
CO	CLEAN OUT
CWV	COMBINATION WASTE AND VENT
DCW	DOMESTIC COLD WATER
DHW	DOMESTIC HOT WATER
DN	DOWN
ECO	EXTERIOR CLEANOUT
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EX	EXISTING
FC	FLOW CONTROL VALVE
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
GWH	GAS WATER HEATER
HB	HOSE BIBB
HD	HUB DRAIN
HWR	HOT WATER RETURN
IE	INVERT ELEVATION
IM	ICE MAKER VALVE BOX
IRP	IN-LINE RECIRCULATION PUMP
L	LAVATORY
MS	MOP SINK
PF	PLUMBING FIXTURE
SAN	SANITARY WASTE
SH	SHOWER
SK	STAINLESS STEEL SINK
TYP	TYPICAL
TMV	THERMOSTATIC MIXING VALVE
UNO	UNLESS NOTED OTHERWISE
UR	URINAL
VTR	VENT THROUGH ROOF
WC	WATER CLOSET
WCO	WALL CLEAN OUT
WH	WALL HYDRANT
WHA	WATER HAMMER ARRESTER
WHY	FREEZE PROOF WALL HYDRANT
XT	EXPANSION TANK

POTABLE WATER

1.ALL POTABLE WATER PIPING SHALL BE DISINFECTED IN ACCORDANCE WITH THE PLUMBING CODE AND VERIFIED BY WRITTEN REPORT FROM THE STATE BOARD OF HEALTH.

2.ALL PLUMBING PIPING SHALL BE CONCEALED IN FLOORS, WALLS, OR ABOVE CEILINGS AS APPLICABLE EXCEPT AT IMMEDIATE FIXTURE.

3.PROVIDE HANGERS FOR SUPPLY PIPING AT A MAXIMUM SPACING OF 3 FEET.

4.PROVIDE WATER HAMMER ARRESTORS AT EACH FIXTURE, QUICK CLOSING VALVE, OR BATTERY OF FIXTURES WHERE REQUIRED AND PER FBC-P 604.9. ARRESTORS SHALL BE FACTORY FABRICATED. SIZED PER PLUMBING AND DRAINAGE INSTITUTE STANDARD P.D.I WH-201. AIR CHAMBERS SHALL NOT BE CONSIDERED AN EQUAL TO WATER HAMMER ARRESTORS AS SPECIFIED.

5.BALL VALVES 1/4" THRU 2" SHALL BE TWO PIECE - 600 WOG, TEFLON SEATS, ANSI 316 STAINLESS STEEL BALL AND STEM (EXTENSION STEM ON INSULATED HOT WATER AND TEMPERED HOT WATER), BRONZE BODY WITH THREADED OR SOLDER ENDS.

6.DURING CONSTRUCTION ALL PRESSURE PIPING SYSTEMS SHALL RECEIVE A HYDROSTATIC TEST OF 1-1/2 TIMES THE OPERATING PRESSURE FOR A PERIOD OF NOT LESS THAN EIGHT (8) HOURS. NO LEAKAGE EVIDENT DURING THE TEST PERIOD IS ALLOWED. NOTIFY THE ARCHITECT AND ENGINEER OF RECORD 24 HOURS IN ADVANCE OF ANY TESTING SO THAT THEY MAY OBSERVE IF THE NEED IS CALLED FOR. PIPING SYSTEMS, EQUIPMENT, SPECIALTIES, PUMPS, TRAPS, VALVES, STRAINERS, ETC. SHALL BE INSPECTED AND TESTED FOR PROPER FUNCTIONALITY AT THE CONCLUSION OF CONSTRUCTION AND ANY LEAKAGE OR MALFUNCTIONS SHALL BE REPAIRED.

7.PROVIDE ISOLATION AND ASSE1024 DUAL CHECK BACKFLOW PREVENTION BEFORE AND BEVERAGE CONNECTION, CARBONATED DEVICE(ASSE1022), STERILIZATION EQUIPMENT, AND ICE MACHINE SUPPLY, PER FBC-P608.3 AND 608.17.

8.MOUNT HOSE BIBBS 24" ABOVE FINISHED GRADE, UNLESS OTHERWISE NOTED.

9.ALL PRESSURE PIPING SHALL BE INSTALLED ABOVE CEILING AND IN WALLS UNLESS NOTED OTHERWISE.

10.BELOW GRADE

10.1.PIPING SHALL BE COATED WITH HEAVY TROWEL GRADE LION OIL CO. NOKORODE SEALKOTE OR APPROVED EQUAL.
10.2.UNDERGROUND SERVICE PIPING SHALL BE COPPER TUBING.

11.PIPING SPECIFICATIONS

11.1.ABOVE GRADE DOMESTIC COLD WATER SUPPLY PIPING SHALL BE HIGH IMPACT CPVC WITH SOLVENT WELD FITTINGS.

11.1.1.PROVIDE TRANSITION FITTINGS AS REQUIRED TO INSTALL VALVES, FIXTURE STOPS, EQUIPMENT AND OTHER COMPONENTS.
11.1.2.ALL PIPES AND FITTINGS SHALL CONFORM TO ASTM 1784.

12.INSULATION SPECIFICATIONS

12.1.INSULATE COLD WATER SUPPLY PIPING IN EXTERIOR WALLS AND ATTIC AS WELL AS ALL HOT WATER WITH 1" IMCOLOCK PRE-SLIT, PRE-GLUED INSULATION. INSULATE FITTINGS WITH MITERED CUT PIECES OF IMCOLOCK, 1" INSULATION.

12.2.THERE SHALL BE NO EXPOSED HOT WATER SUPPLY PIPING EXCEPT WITHIN MECHANICAL OR EQUIPMENT ROOMS.

12.3.PIPING UNDER HANDICAPPED LAVATORIES SHALL BE INSULATED PER AMERICANS WITH DISABILITIES ACT WITH FACTORY FABRICATED SEAMLESS MICROBIAL PVC RESIN INSULATION.

CODE REFERENCE (ALL MAY NOT APPLY)

THE LATEST EDITIONS OF THE ESTABLISHED STANDARDS OF THE FOLLOWING ORGANIZATIONS, AND INDIVIDUAL STANDARDS NAMED SHALL BE FOLLOWED THE SAME AS IF THEY WERE FULLY WRITTEN HEREIN AND CONSTITUTE A PART OF THE SPECIFICATION REQUIREMENTS EXCEPT WHERE OTHERWISE SPECIFIED:

FBC,BUILDING	FLORIDA BUILDING CODE 8TH EDITION
FBC,PLUMBING	FLORIDA BUILDING CODE 8TH EDITION
FBC,EXISTING BUILDING	FLORIDA BUILDING CODE 8TH EDITION
FBC, FUEL GAS	FLORIDA BUILDING CODE 8TH EDITION
FBC, ENERGY CONSERVATION	FLORIDA BUILDING CODE 8TH EDITION
FFPC	FLORIDA FIRE PREVENTION CODE, 2023 8TH EDITION
NFPA 54	NATIONAL FUEL GAS CODE
NFPA 101	LIFE SAFETY CODE
NFPA 101A	GUIDE ON ALTERNATIVE APPROACHES TO LIFE SAFETY
NFPA 101B	CODE FOR MEANS OF EGRESS FOR BUILDINGS AND STRUCTURES
NFPA 900	BUILDING ENERGY CODE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ADA	AMERICAN WITH DISABILITIES ACT
UL	UNDERWRITERS LABORATORIES

THESE CODE AND STANDARDS SHALL BE CONSIDERED A MINIMUM REQUIREMENT. THE CONTRACTOR SHALL NOT RELIEVED FROM PROVIDING HIGHER GRADE MATERIALS, PRODUCTS AND WORKMANSHIP WHICH MAY BE SPECIFIED WITHIN THESE DOCUMENTS

INTERIOR CLEANOUT SCHEDULE

LOCATION	TYPE	JR SMITH M#:
FLOOR (FCO) (CAST IRON BODY, BRONZE PLUG, NICKEL BRONZE TOP)		4028C
WALL (WCO) (CAST IRON BODY, BRONZE PLUG STAINLESS STEEL COVER)		4532S
EXPOSED (TCO) (CAST IRON BODY, BRONZE PLUG, THREADED CAP)	HORIZONTAL VERTICAL	4400C 4512S

EXTERIOR CLEANOUT SCHEDULE

	TYPE	JR SMITH M#:
ONE WAY (CAST IRON BODY, BRONZE PLUG, CAST IRON TOP TAPER THREAD)		4233L
TWO WAY (CAST IRON BODY, BRONZE PLUG, CAST IRON TOP TAPER THREAD)		4233L

WATER HAMMER ARRESTOR SCHEDULE

FIXTURE UNITS	1-11	12-32	33-60	61-113	114-154	155-330
JR SMITH M#:	5005	5010	5020	5030	5040	5050

SUBMITTAL REQUIREMENTS

1.USE OF AN APPROVAL STAMP ON SUBMITTAL DOCUMENTS CERTIFIES THAT THE CONTRACTOR HAS COMPLIED WITH THE CONTRACT DOCUMENT REQUIREMENTS.

2.THE CONTRACTOR SHALL NOT BE RELIEVED OF RESPONSIBILITY FOR DEVIATIONS FROM REQUIREMENTS OF THE CONTRACT DOCUMENTS BY THE ARCHITECT/ENGINEER'S APPROVAL OF SHOP DRAWINGS, PRODUCT DATA, SAMPLES, OR SIMILAR SUBMITTAL ITEMS UNLESS THE CONTRACTOR HAS SPECIFICALLY INFORMED THE ARCHITECT/ENGINEER IN WRITING OF SUCH DEVIATION AT THE TIME OF SUBMITTAL AND THE ARCHITECT/ENGINEER HAS GIVEN WRITTEN APPROVAL TO THE SPECIFIC DEVIATION. THE CONTRACTOR SHALL NOT BE RELIEVED OF RESPONSIBILITY FOR ERRORS OR OMISSIONS IN SHOP DRAWINGS, PRODUCT DATA, SAMPLES, OR SIMILAR SUBMITTAL ITEMS BY THE ARCHITECT/ENGINEER'S APPROVAL THEREOF.

3.CONTRACTOR SHALL SUPPLY TO THE ARCHITECT SUBMITTALS ON THE FOLLOWING WHERE APPLICABLE (ALL MAY NOT APPLY):

3.1.PLUMBING FIXTURES
3.2.PIPE AND FITTINGS
3.3.INSULATION MATERIALS
3.4.PLUMBING ACCESSORIES AND SPECIALITIES
3.5.VALVES
3.6.HOT WATER HEATER

ENERGY SYSTEMS - WATER HEATING

1.SERVICE WATER HEATING EQUIPMENT SHALL ALLOW LAVATORY OUTLET TEMPERATURES IN PUBLIC FACILITY RESTROOMS SHALL BE LIMITED TO 110°F. CONTROL BY TMV.

2.WATER-HEATING EQUIPMENT SHALL MEET THE REQUIREMENTS OUTLINED IN FBC CHAPTER 4, TABLE C404.2 AND THE EFFICIENCY SHALL BE VERIFIED THROUGH DATA FURNISHED BY THE MANUFACTURER THROUGH CERTIFICATION UNDER AN APPROVED CERTIFICATION PROGRAM.

3.ALL HOT WATER SUPPLY PIPING IN THE HOT WATER SYSTEM SHALL BE INSULATED WITH MINIMUM 1IN OF INSULATION HAVING A CONDUCTIVITY OF 0.27 (BTU / IN / H X FT^2 X °F).

4.CIRCULATING HOT WATER SYSTEM PUMPS OR HEAT TRACE SHALL BE ARRANGED TO BE TURNED OFF EITHER AUTOMATICALLY OR MANUALLY WHEN THERE IS LIMITED HOT WATER DEMAND. READY ACCESS SHALL BE PROVIDED TO THE OPERATING CONTROLS.

PLUMBING GENERAL NOTES

1.LOCATIONS OF ANY WASTE AND SUPPLY PIPING SHOWN ARE ONLY APPROXIMATE. THE PLUMBING CONTRACTOR SHALL VERIFY THESE LOCATIONS BEFORE PROCEEDING WITH WORK.

2.ALL PLUMBING PIPE SHALL BE RUN STRAIGHT, SQUARE, AND LEVEL. NO SAGGING OF PLUMBING PIPING SHALL BE ACCEPTED.

3.ALL DRAINAGE PIPING 3" AND LARGER SHALL HAVE A MINIMUM SLOPE OF 1/8" PER FOOT, PIPING 2-1/2" AND SMALLER SHALL HAVE A MINIMUM SLOPE OF 1/4" PER FOOT UNLESS OTHERWISE NOTED.

4.VENT PIPING SHOWN ON FLOOR PLAN IS ONLY INDICATIVE EXCEPT FOR VTR LOCATIONS.

5.CONTRACTOR SHALL INSTALL DIELECTRIC UNIONS AT CONNECTIONS OF DISSIMILAR METALS.

6.VALVES AND FITTINGS SHALL BE OF THE SAME SIZE AS THE LINE IN WHICH THEY ARE INSTALLED.

7.ALL WATER SANITARY WASTE, VENT AND SUPPLY PIPING SHALL BE INSTALLED AS CLOSE TO PLANS AS POSSIBLE WITH NO CHANGE IN SIZING.

8.SEE ARCHITECTURAL DRAWINGS FOR EXACT PLUMBING FIXTURE LOCATIONS, MOUNTING HEIGHTS, DIMENSIONS AND ADDITIONAL REQUIREMENTS NOT COVERED ON THESE DRAWINGS.

9.PIPING SHALL NOT BE RUN ABOVE ELECTRICAL OR SERVER EQUIPMENT, COORDINATE WITH FIELD CONDITIONS.

10.DO NOT PENETRATE WALL FOOTINGS AS REQUIRED TO CLEAR PLUMBING SERVICES. WHERE ABSOLUTELY NECESSARY, ALL PIPES PENETRATING BEARING WALL OR FOOTING MUST BE SLEEVED AND IN A LOCATION APPROVED BY THE STRUCTURAL ENGINEER.

11.CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY SUPPORTING DEVICES OR ALL FIXTURES INCLUDED IN THESE CONTRACT DOCUMENTS.

12.WALL BRACKETS, HANGERS, SUPPORTS, ETC. SHALL BE PROVIDED WHERE REQUIRED IN ACCORDANCE WITH THE BEST STANDARD PRACTICE OF THE TRADE AND AS PER CODE. ADDITIONAL SUPPORTS SHALL BE PROVIDED TO TRANSMIT LOADS TO THE MAIN STRUCTURE WHERE REQUIRED. CPVC PIPING SUPPORTS SHALL BE 3'-0" ON CENTER FOR 1/2" THRU 1" AND 4'-0" ON CENTER FOR 1-1/2" AND LARGER. ALL EXPOSED SUPPORTS SHALL BE HOT DIPPED GALVANIZED OR FIBERGLASS REINFORCED "UNISTRUT" TYPE INCLUDING HARDWARE.

13.POWER WIRING, PANELS, TRANSFORMERS, AND DISCONNECT SWITCHES FOR PLUMBING EQUIPMENT SHALL BE PROVIDED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. ALL CONTROL WIRING, RELAYS, AND PANELS SHALL BE PROVIDED AND INSTALLED BY THE PLUMBING CONTRACTOR. ALL MOTOR STARTERS REQUIRED FOR ANY PLUMBING EQUIPMENT SHALL BE FURNISHED BY THE PLUMBING CONTRACTOR AND INSTALLED BY THE ELECTRICAL CONTRACTOR.

14.INSTALL ACCESS PANELS (MINIMUM 18x18) WHERE EQUIPMENT REQUIRING ACCESS RESIDES ABOVE AN INACCESSIBLE CEILING TYPE.

15.ALL CONCEALED VALVES, WATER HAMMER ARRESTORS, CLEANOUTS, ETC., CONCEALED IN WALLS SHALL BE PROVIDED WITH AN ACCESS PANEL, ZURN MODEL ZN-1460 OR APPROVED EQUAL.

16.ALL CONCEALED PIPING IN CHASE AREAS SHALL BE SUPPORTED WITH A PIPING SUPPORT SYSTEM, SUMNER POSIFIX, STAKFIX AND CHANNEL OR APPROVED EQUAL.

17.PURGE, CLEAN, DISINFECT & TEST WATER PIPING SYSTEMS. SUBMIT REPORT & WATER SAMPLES TO A.H.J. USE PROCEDURE PRESCRIBED BY A.H.J., OR IF METHOD NOT PRESCRIBED USE AWWA C651 OR AWWA C652.

18.CONTRACTOR SHALL INSTALL WATER HAMMER ARRESTORS AT ALL QUICK CLOSING VALVES. REFER TO FPC 604.9.

SANITARY WASTE AND VENT

1.GRAVITY FLOW SYSTEMS HAVE SPACE PRIORITY FOR SLOPING PIPES.

2.SLOPING PIPES SHALL BE STARTED AT THE HIGHEST POINT POSSIBLE.

3.ALL SOIL, WASTE, AND VENT PIPING SHALL BE TESTED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE AND LOCAL PERMITTING AUTHORITIES REQUIREMENTS.

4.THE GENERAL CONTRACTOR SHALL VERIFY ALL FLOOR DRAIN AND WATER SUPPLY LOCATIONS BEFORE POURING SLABS.

5.CONDENSATE, SANITARY AND VENT PIPING SHALL BE COLLECTED AND TERMINATED AT A POINT SHOWN ON THE DRAWINGS.

5.1.PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR CONDENSATE PIPES AFTER AIR UNIT TRAP, MECHANICAL CONTRACTOR RESPONSIBLE FOR FIRST 12" OF CONDENSATE AND TRAP.

6.INVERT SHOWN ON PLANS IS AN ESTIMATE OF MINIMUM INVERT CALCULATED USING ENGINEERING ESTIMATES OF SLOPE, FITTING DIMENSIONS AND OTHER FACTORS THAT MAY NOT MATCH THE EXACT FIELD CONDITIONS. DUE DILIGENCE HAS BEEN PUT FORTH TO COORDINATE THIS WITH THE SITE CONNECTIONS BUT IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ACTUAL SITE CONNECTION INVERT AND ITS CONNECTION TO THE BUILDING SERVICE PIPING. ANY ISSUES SHALL BE BROUGHT TO THE ATTENTION OF THE EOR PRIOR TO COMMENCING WITH INSTALLATION OF UNDERGROUND PIPING.

7.WHEN REQUIRED BY CODE PLUMBING CONTRACTOR SHALL PROVIDE AND INSTALL AN AIR GAP SERVING INDIVIDUAL FIXTURES, DEVICES, OR APPLIANCES.

8.ALL SANITARY WASTE LINES SHALL BE INSTALLED UNDER THE FLOOR SLAB, UNLESS OTHERWISE NOTED. VENT PIPING SHALL BE INSTALLED ABOVE CEILING AND IN WALLS UNLESS NOTED OTHERWISE.

9.FLOOR DRAIN TRAPS SHALL BE DEEP SEAL (MIN. 4"). FURNISH AND INSTALL TRAP PRIMERS, WHERE INDICATED, OR IF LOCAL CODES REQUIRE THEM. VERIFY AND INCLUDE IN BID. PER FBC-P 1002.4 ANY TRAPPED FIXTURE SUBJECT TO EVAPORATION SHALL BE FURNISHED WITH 1/2" TRAP PRIMER CONNECTION TO NEAREST DCW WATER SUPPLY LINE, WITH VALVE CONFORMING TO ASSE1018. USE SELF SEAL RUBBER TYPE THAT CONFORM TO ASSE1044 FOR REMOTE DRAINS THAT ARE OVER 20' FROM THE WATER SUPPLY.

10.SIZE AND LOCATION OF CLEANOUTS SHALL BE IN ACCORDANCE WITH FLORIDA PLUMBING CODE AND ALL JURISDICTIONAL REGULATIONS.

11.PIPING SPECIFICATIONS

11.1.CONDENSATE, DOMESTIC WASTE, AND VENT PIPING SHALL BE SCHEDULE 40 PVC/DWV PIPE WITH SOLVENT WELD DRAINAGE FITTINGS CONFORMING TO ASTM D-2665.

11.2.VENT PIPING SHALL BE MINIMUM OF 2", UNLESS NOTED OTHERWISE.

11.3.PIPING INSTALLED WITHIN A RETURN AIR PLENUM SHALL BE CAST IRON WITH HUB AND SPIGOT FITTINGS OR PVC PIPING WITH 1/2" THICK FIRE WRAP INSULATION SEALED TO PROVIDE FS/SD=25/50.

11.4.UNLESS NOTED OTHERWISE, ASSUME ALL COMBINED DISCHARGE CONNECTIONS ARE WYE TYPE.

GENERAL NOTES

1.THE ENGINEER SHALL NOT BE HELD RESPONSIBLE FOR ANY MISUSE AND/OR MISREPRESENTATION OF THIS SET OF DOCUMENTS.

2.THE CONTRACTOR ASSUMES RESPONSIBILITY FOR THE USE OF THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL MAKE THEMSELVES AWARE OF PROJECT CONDITIONS AND OWNER REQUIREMENTS PRIOR TO PROCUREMENT OF EQUIPMENT AND SERVICES. CHANGES IN PROJECT COST WILL NOT BE GRANTED DUE TO FIELD CONFLICTS AND OR PROJECT CONDITIONS.

3.THIS SET OF DRAWINGS AND SPECIFICATIONS SHALL NOT BE CONSIDERED A SET OF CONSTRUCTION DOCUMENTS UNLESS A SIGNATURE AND DATE ARE AFFIXED TO THE DRAWINGS AND SPECIFICATIONS BY THE ENGINEER OF RESPONSIBLE CHARGE OF THE GIVEN DISCIPLINE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED UNLESS EMBOSSED AND THE SHA AUTHENTICATION CODE MUST BE VERIFIED ON ELECTRONIC COPIES.

4.CONFLICTS BETWEEN THIS SET OF DRAWINGS AND THE CONTRACT SPECIFICATIONS SHALL BE RESOLVED BY THE ENGINEER OF RECORD. THE CONTRACTOR DOES NOT HAVE THE AUTHORITY TO INTERPRET CONFLICTS AND RESOLVE ISSUES WITHOUT WRITTEN DIRECTION FROM THE ENGINEER OF RECORD.

5.ANY CONFLICTS IN THE FIELD OR WITHIN THESE DOCUMENTS SHALL BE RECORDED AND PROVIDED TO THE ENGINEER OF RECORD ON THE CONTRACTOR'S STANDARD LETTERHEAD. WRITTEN DIRECTION RESOLVING CONFLICT WILL BE ISSUED BY THE ENGINEER OF RECORD.

6.PRIOR TO INSTALLATION, COORDINATE AND ADJUST THE FINAL LOCATION OF ALL WALL MOUNTED DEVICES AND EQUIPMENT WITH ALL CASEWORK, SHELVING OR OTHER WALL MOUNTED FURNISHINGS.

7.PLANS ARE DIAGRAMMATIC IN NATURE AND INTENDED TO SHOW THE GENERAL SCOPE OF THE WORK TO BE PERFORMED. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR ALL DIMENSIONS.

8.DUE TO THE SMALL SCALE OF THE DRAWINGS, AND TO UNFORESEEN JOB CONDITIONS, ALL REQUIRED OFFSETS, TRANSITIONS AND FITTINGS MAY NOT BE SHOWN BUT SHALL BE PROVIDED AT NO ADDITIONAL COST.

9.THE CONTRACTOR SHALL COORDINATE WITH OTHER TRADES AND EXISTING EQUIPMENT TO ENSURE THE EQUIPMENT SPECIFIED WILL WORK FOR THE SPACES PROVIDED. FINAL DIMENSIONS OF SYSTEMS SHOWN ON THESE PLANS SHALL BE COORDINATED IN THE FIELD. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR PROVIDING OFFSETS AND TRANSITIONS TO FIT IN SPACES PROVIDED AND AT NO COST TO THE OWNER.

10.THE CONTRACTOR IS RESPONSIBLE FOR ANY SPECIAL REQUIREMENTS INVOLVED IN INSTALLING EQUIPMENT IN THE BUILDING. DISMANTLING AND REASSEMBLING OF ANY EQUIPMENT SHALL BE DONE AS REQUIRED TO BRING INTO THE BUILDING AND EQUIPMENT ROOMS.

11.ALL WORK PERFORMED AS PART OF THIS PROJECT SHALL BE PERFORMED BY EXPERIENCED TRADESMEN WHO ARE TRAINED, EXPERIENCED, AND SKILLED IN THE TASKS INCIDENTAL TO THE PROJECT.

12.ALL WORK SHALL COMPLY WITH APPLICABLE OSHA AND EPS REGULATIONS AND GUIDELINES.

13.THE CONTRACTOR PERFORMING WORK ON THIS PROJECT WILL BE RESPONSIBLE FOR REGULARLY CLEANING THE WORK AREA OF ANY DEBRIS ASSOCIATED WITH THE WORK BEING PERFORMED. THE SITE SHALL BE CLEAN OF ALL CONSTRUCTION DEBRIS AT THE COMPLETION OF THE JOB, BEFORE FINAL PAYMENT IS MADE.

14.REASONABLE PRECAUTIONS SHALL BE MADE FOR SAFETY AND HEALTH INCLUDING BUT NOT LIMITED TO WARNING SIGNS, SAFETY PRECAUTIONS, AND BARRICADES FOR PEDESTRIANS.

15.COORDINATE ALL DEMOLITION, CLEANING, AND CONSTRUCTION WORK. CONTRACTOR SHALL PROVIDE OWNER A FULL CONSTRUCTION SCHEDULE.

16.CONTRACTOR SHALL BE HELD TO PROVIDED SCHEDULE. THEY SHALL BE RESPONSIBLE FOR PROVIDING SUFFICIENT MANPOWER AND EQUIPMENT TO COMPLETE THE WORK IN THE TIME INDICATED.

17.THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION AND SECURITY OF ALL EQUIPMENT AND MATERIALS. THE LOCATION OF STORAGE SHALL BE RESTRICTED SPECIFICALLY TO THE AREA ALLOTTED BY THE OWNER.

18.ALL ITEMS INSTALLED UNDER THE SCOPE OF THIS PROJECT SHALL BE NEW, CLEAN, AND FREE OF DEFECTS.

19.IF DRAWING CHANGES ARE NEEDED FOR INSPECTION DUE TO FIELD CHANGES MADE BY THE CONTRACTOR WITHOUT PRIOR APPROVAL OF THE ENGINEER AND AGREED UPON TERMS, THEN THE CONTRACTOR SHALL PAY HOURLY RATES TO THE ENGINEER OF RECORD FOR MAKING NECESSARY CHANGES.

20.SUPPORTS, HANGERS, WIRING, AND PIPING SHALL BE INSTALLED IN A NEAT FASHION AND IN AN ORDERLY APPEARANCE.

21.CONTRACTOR SHALL MAINTAIN THE INTEGRITY OF ALL PARTITIONS LABELED WITH A SPECIAL LISTING ON THE ARCHITECTURAL PLANS. THIS INCLUDES FIRE, SMOKE ACOUSTICAL AND OTHER UL WALL OR CEILING ASSEMBLIES.

22.STRUCTURAL PENETRATIONS INCLUDING BUT NOT LIMITED TO WALL, FLOOR, OR BEAM SHALL BE APPROVED BY THE STRUCTURAL ENGINEER. ALL BEAM SLEEVES AND REINFORCING APPROVED BY STRUCTURAL ENGINEER SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.

23.CONTRACTOR SHALL GUARANTEE THE WORK AND MATERIALS FOR PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE. THIS GUARANTEE SHALL BE IN ADDITION TO THE WARRANTIES PROVIDED BY THE MATERIAL SUPPLIES AND MANUFACTURERS.

24.VALUE ENGINEERING OR CHANGES TO PLANS MUST BE APPROVED BY THE ENGINEER OF RECORD AND RESUBMITTED THROUGH THE BUILDING DEPARTMENT PRIOR TO BEING INSTALLED.

PLUMBING SHEET INDEX

SHEET NUMBER	SHEET NAME
P001	PLUMBING NOTES & LEGEND
P101	FLOOR PLAN - PLUMBING - DRAIN & VENT
P102	FLOOR PLAN - PLUMBING - PRESSURE
P501	PLUMBING DETAILS
P502	PLUMBING DETAILS
P601	PLUMBING SCHEDULES
P901	RISER DIAGRAM - PLUMBING - SANITARY
P902	RISER DIAGRAM - PLUMBING - PRESSURE

UNDER DEVELOPMENT

FSM Engineering
150 John Knox Road Tallahassee, FL 32303
p.850.222.5683 FL CA 28968

Robert E. Gelhardt II, P.E., State of Florida, Professional Engineer, License No. FL 77568. This Item has been digitally signed and sealed by Robert E. Gelhardt II, P.E. on the date indicated here. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

SYMBOL	REVISION	DATE	SYMBOL	REVISION	DATE
A			C		
B			D		

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

DODSTONE ARCHITECTS
3011-1 Powell Road | Tallahassee, FL 32308
850.656.7205 | FAA26001552

DESIGNER :	SB
DRAWN BY:	LJ
REVIEWED BY:	REGIII
Consultant :	
ISSUE DATE:	07/19/2024
COMP. FILE No.:	
STATE PROJECT No.	61351C

PROFESSIONAL REGISTRATION
NOT FOR CONSTRUCTION

FLORIDA CAVERNS STATE PARK

SHEET TITLE
PLUMBING NOTES & LEGEND

PROJECT TITLE
FLORIDA CAVERNS CAMPGROUND RESTROOMS

60% CONSTRUCTION DOCUMENT

SHEET NO.
P001

UNDER DEVELOPMENT

SANITARY GENERAL NOTES

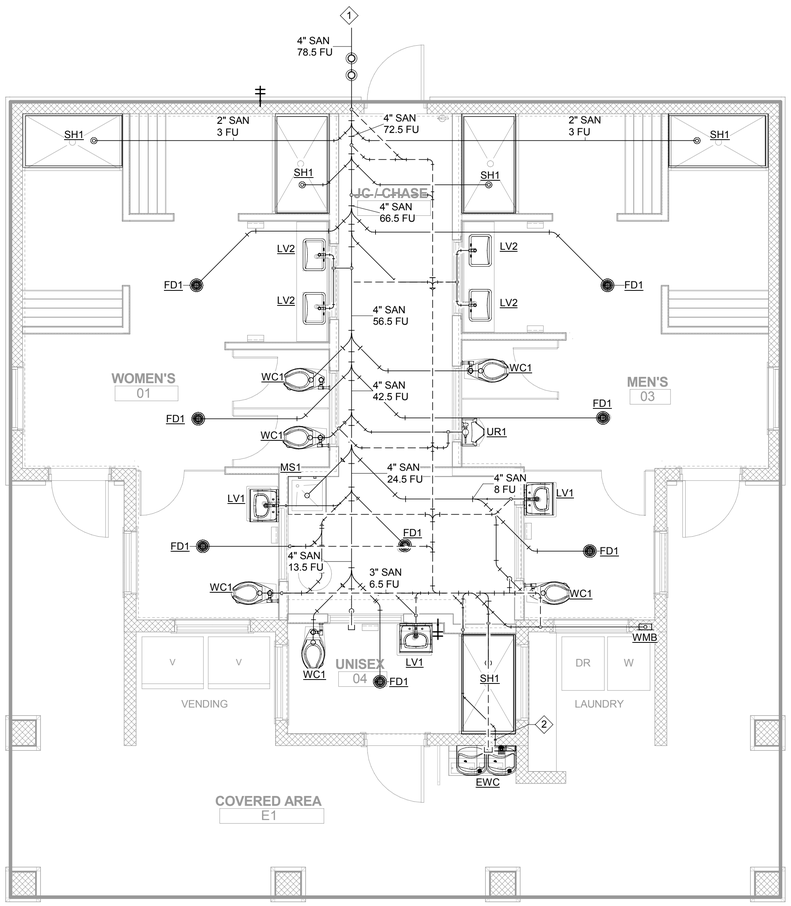
1. SANITARY SEWER SYSTEM HAS BEEN DESIGNED & ROUTED WITH COORDINATION OF STRUCTURAL FOOTERS & FOUNDATION PLANS. THESE DOCUMENTS SHOULD BE FIELD VERIFIED PRIOR TO INSTALLATION TO ASSURE COMPLIANCE. COORDINATE SLAB CUT WITH ARCHITECT DEMO SHEETS.

2. CONTRACTOR SHALL FIELD VERIFY EXISTING SANITARY PRIOR TO COMMENCEMENT OF WORK.

3. CONTRACTOR SHALL REFER TO OWNER/ ARCHITECT FOR RE-USE OF FIXTURES IN RENOVATION PHASE. CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER DISPOSAL OF DEMOLISHED PIPES AND FIXTURES.

4. CONTRACTOR SHALL RECONNECT NEW PIPING TO EXISTING PIPES BELOW GRADE AT PROPER ELEVATION INVERT.

X	SANITARY KEYED NOTES
1	PROVIDE 4" SANITARY WITH TWO WAY CLEANOUT NO FURTHER THAN 5' FROM EXIT OF BUILDING. ELEVATION INVERT STARTS AT 18" BELOW GRADE.
2	4" VENT PIPING SHALL ROUTE OUT OF WALL.



1 P101 **FLOOR PLAN - SANITARY**
Scale: 1/4" = 1'-0"

FSM Engineering
150 John Knox Road Tallahassee, FL 32303
p.850.222.5683 FL CA 28968

Robert E. Gelhardt II, P.E., State of Florida, Professional Engineer, License No. FL 77568. This Item has been digitally signed and sealed by Robert E. Gelhardt II, P.E. on the date indicated here. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

SYMBOL	REVISION	DATE
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

DODSTONE ARCHITECTS
3011-1 Powell Road | Tallahassee, FL 32308
850.656.7205 | FAA26001932

ISSUE DATE: 07/19/2024
COMP. FILE No.:
STATE PROJECT No. 61351C

DESIGNER: LJ
DRAWN BY: LJ
REVIEWED BY: REGII
Consultant :

PROFESSIONAL REGISTRATION
NOT FOR CONSTRUCTION

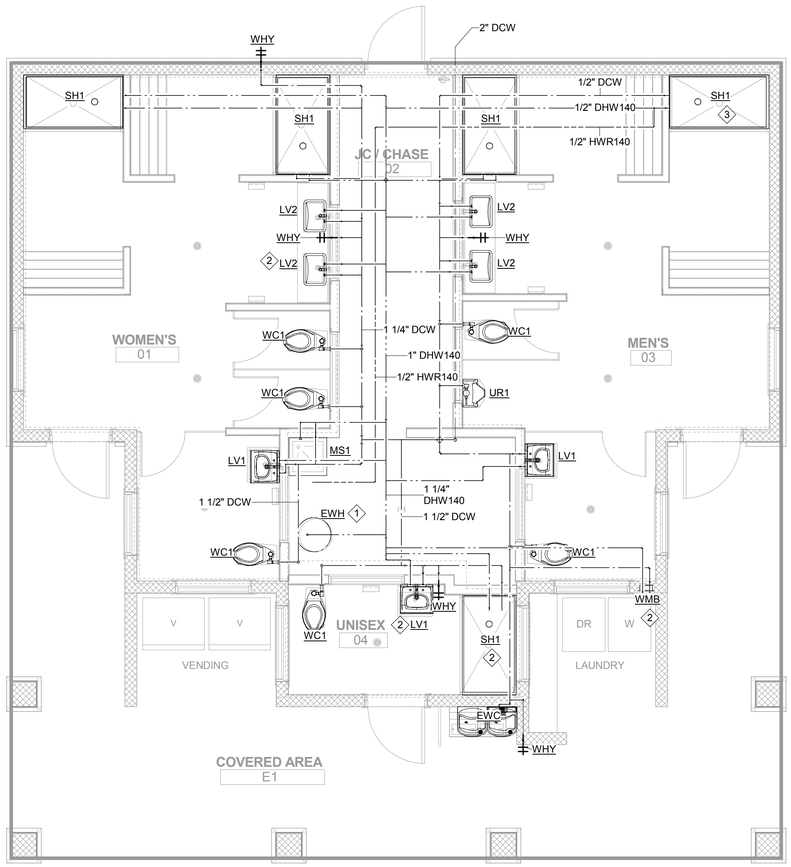
FLORIDA CAVERNS STATE PARK

SHEET TITLE
FLOOR PLAN - PLUMBING - DRAIN & VENT

PROJECT TITLE
FLORIDA CAVERNS CAMPGROUND RESTROOMS

60% CONSTRUCTION DOCUMENT

SHEET NO.
P101



1 P102 **FLOOR PLAN - PRESSURE**

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

PRESSURE GENERAL NOTES

1. WATER PIPING MATERIAL & FITTINGS FROM PLUMBING FIXTURES ON ALL FLOORS SHALL BE EITHER A) COPPER (AS SPEC'D IN PLUMBING MATERIAL SCHEDULE), OR B) CPVC PRODUCT.

2. ALL HOT WATER & HOT WATER RETURN SYSTEM SHALL BE INSULATED AS INDICATED IN PLUMBING MATERIAL SCHEDULE.

3. ALL FAUCETS SHALL BE EQUIPPED WITH TEMPERATURE & PRESSURE VALVES AS REQUIRED BY ASME-A112.1070-2014, ASSE-1016-2011, ASSE-1017-2014 & ASSE-1070-2014 USING THERMOSTATIC MIXING VALVES; HOT WATER DELIVERED TO MIXING VALVES FROM WATER HEATERS SHALL BE SUPPLIED AT 120F DEGREES IN ORDER TO CONTROL BACTERIA; ADJUSTMENTS MUST BE MADE AT FIXTURES TO ASSURE TEMPERED WATER COMPLIANCE AS SET FORTH BY GOVERNING CODES.

4. ALL FAUCETS SHALL HAVE FACTORY BUILT-IN TEMPERATURE LIMIT TO PREVENT SCALDING.

PRESSURE KEYED NOTES

X	
1	PROVIDE HEAT TRACE WIRE AND WRAP ALL EXPOSED PIPES IN CHASE. CONNECT TO TSTAT AND ENABLE AT TEMPERATURES BELOW 40 DEGREES F.. REFER TO MANUFACTURER INSTALLATION FOR SETTINGS.
2	PROVIDE LAVATORIES, WASHER MACHINE BOX, AND SHOWERS WITH THERMOSTATIC MIXING VALVES AT THE FIXTURE, SET HEATING TO 120 DEGREE F OUTPUT.
3	INSTALL ADA SHOWER HEAD, HAND WAND, AND SHOWER VALVE. TYPICAL ALL SHOWERS.

SYMBOL	REVISION	DATE	SYMBOL	REVISION	DATE
A			C		
B			D		

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

DESIGNER: SB
DRAWN BY: LJ
REVIEWED BY: REGIII
Consultant :

ISSUE DATE: 07/19/2024
COMP. FILE No.:
STATE PROJECT No. 61351C

DODSTONE ARCHITECTS
3011-1 Powell Road | Tallahassee, FL 32308
850.656.7205 | FAA26001832

PROFESSIONAL REGISTRATION
NOT FOR CONSTRUCTION

FLORIDA CAVERNS STATE PARK

SHEET TITLE
FLOOR PLAN - PLUMBING - PRESSURE

PROJECT TITLE
FLORIDA CAVERNS CAMPGROUND RESTROOMS

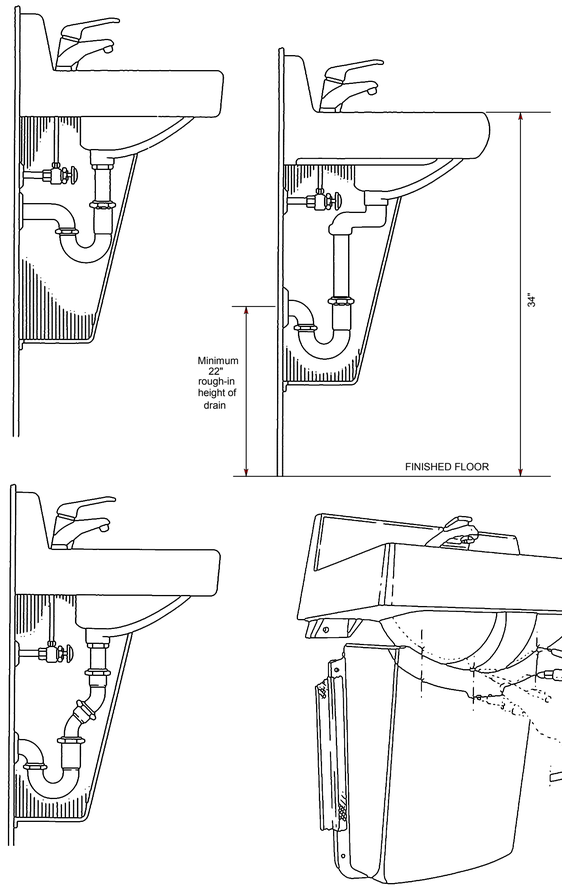
60% CONSTRUCTION DOCUMENT

SHEET NO.
P102

FSM Engineering
150 John Knox Road p.850.222.5683
Tallahassee, FL 32303 FL CA 28968

Robert E. Gelhardt II, P.E., State of Florida, Professional Engineer, License No. FL 77568. This Item has been digitally signed and sealed by Robert E. Gelhardt II, P.E. on the date indicated here. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

UNDER DEVELOPMENT

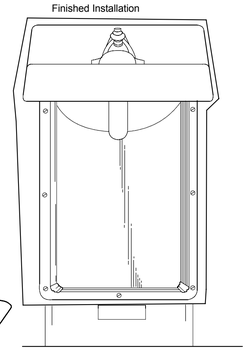


Standard Installation: TheLav Shieldis designed to be used in combination with ADA conforming 20" x 18" wall-hung china lavatories with waste outlets a maximum of 8.5" from wall (Illustration #1). IMPORTANT: A recommended height of 22 inches from floor is best for waste drain rough-in to allow for P-trap clearance.

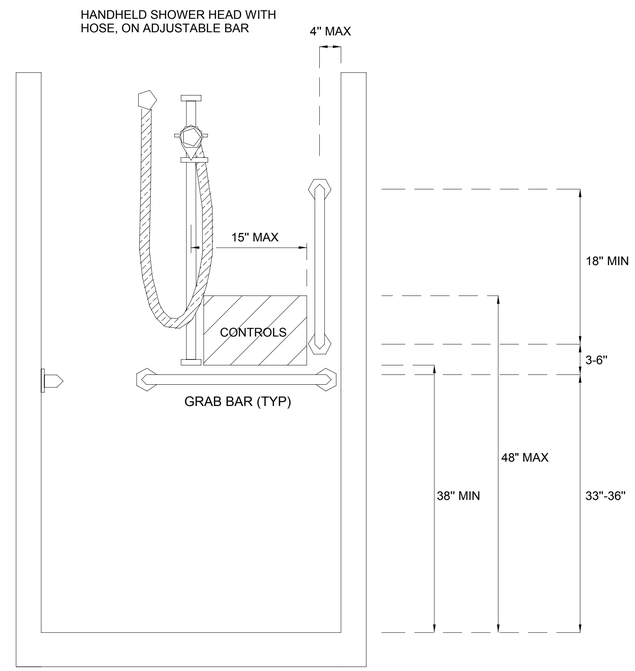
Installation Variations: If drain rough-in is less than 22" from floor or P-trap interfers with slanted front surface of Lav Shield, complete installation by flexing Lav Shield into place (for minor interference) or modify drain piping with offset tailpiece piping

Installation Note: Depending on the make and model of the lavatory, some scribing and coping may be required for satisfactory fit to underside of lavatory.

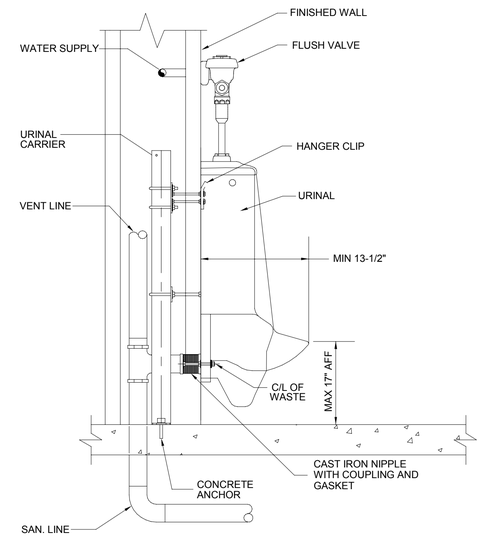
Finished Installation



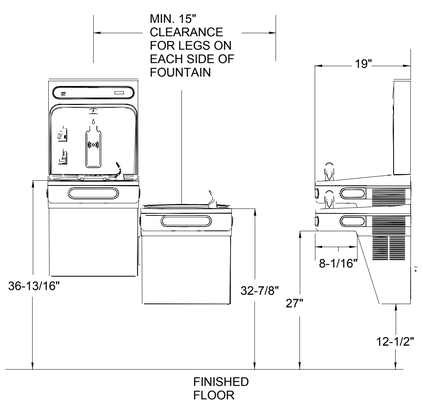
1 P501 TYPICAL "LAV-SHIELD" LAVATORY-SINK ANSI-ADA DETAIL
SCALE: NTS



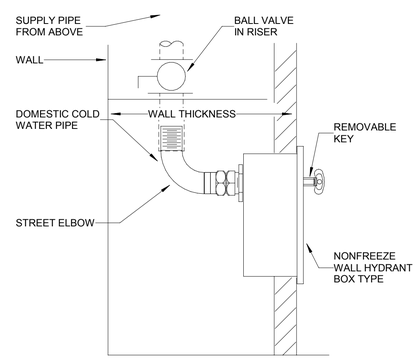
2 P501 HANDICAPPED ADA SHOWER
SCALE: NTS



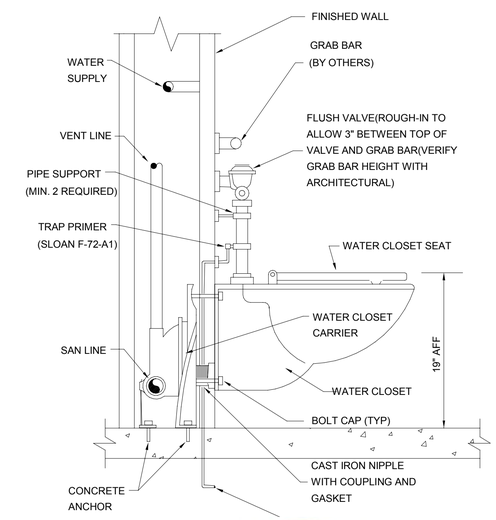
3 P501 HANDICAPPED URINAL DETAIL
SCALE: NTS



4 P501 ADA DUAL HEIGHT DRINKING FOUNTAIN DETAIL
SCALE: NTS



5 P501 WALL HYDRANT DETAIL
SCALE: NTS



6 P501 ADA WALL MOUNTED FLUSH VALVE DETAIL
SCALE: NTS

UNDER DEVELOPMENT

Robert E. Gelhardt II, P.E., State of Florida, Professional Engineer, License No. FL 77568. This Item has been digitally signed and sealed by Robert E. Gelhardt II, P.E. on the date indicated here. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

SYMBOL	REVISION	DATE
A		
B		

SYMBOL	REVISION	DATE
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: 07/19/2024
COMP. FILE No.:
STATE PROJECT No. 61351C

DESIGNER: SB
DRAWN BY: LJ
REVIEWED BY: REGIII
Consultant:

DODSTONE ARCHITECTS
3011-1 Powell Road | Tallahassee, FL 32308
850.656.7205 | FAA26001832

PROFESSIONAL REGISTRATION
NOT FOR CONSTRUCTION

FLORIDA CAVERNS STATE PARK

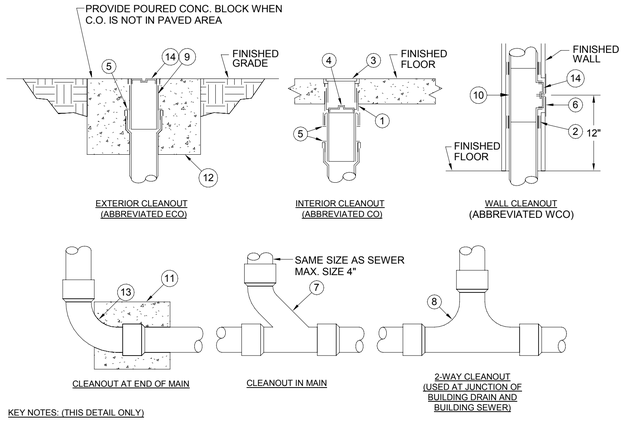
SHEET TITLE
PLUMBING DETAILS

PROJECT TITLE
FLORIDA CAVERNS CAMPGROUND RESTROOMS

60% CONSTRUCTION DOCUMENT

FSM Engineering
150 John Knox Road p.850.222.5683
Tallahassee, FL 32303 FL CA 28968

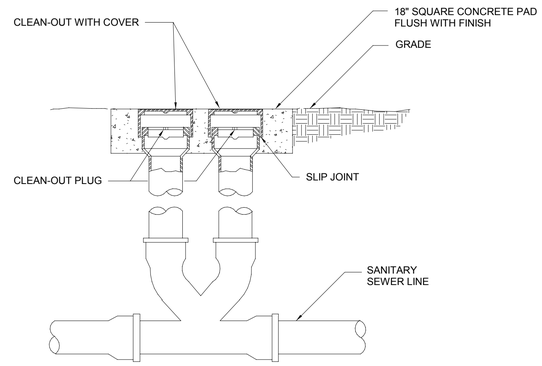
SHEET NO.
P501



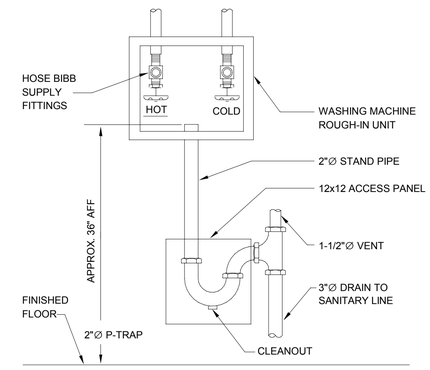
KEY NOTES: (THIS DETAIL ONLY)

1. CAST IRON 2-PIECE CLEANOUT BODY WITH ADJUSTABLE HEAD.
2. NO-HUB COUPLING (FOR ABOVE GROUND APPLICATION ONLY).
3. POLISHED NICKEL BRONZE SCORIATED TOP (PROVIDE CARPET MARKER FOR CARPETED FLOORS).
4. BRONZE TAPERED THREAD, RAISED HEAD CLEANOUT PLUG.
5. PUSH-ON NEOPRENE RUBBER COMPRESSION GASKET.
6. STAINLESS STEEL ROUND WALL ACCESS COVER.
7. COMBINATION "Y" & 1/8" BEND FITTING.
8. TWO-WAY CLEANOUT FITTING.
9. CAST IRON CLEANOUT FERRULE.
10. CAST IRON CLEANOUT TEE.
11. 12" x 12" x 12" CONCRETE THRUST BLOCK.
12. 24" x 24" x 12" CONCRETE PAD FLUSH WITH GRADE.
13. LONG SWEEP ELBOW.
14. BRONZE TAPERED THREAD, RECESSED HEAD CLEANOUT PLUG.

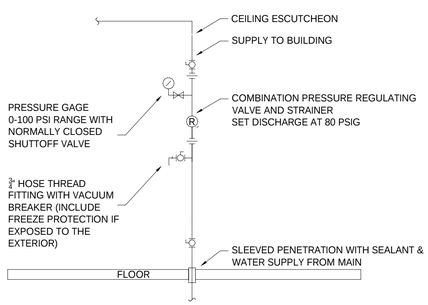
1 TYPICAL CLEANOUT
P502
SCALE: NTS



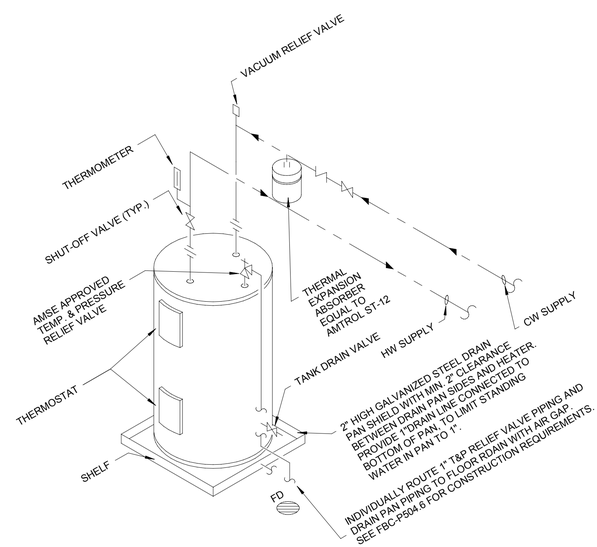
2 OUTSIDE CLEANOUT DETAIL
P502
SCALE: NTS



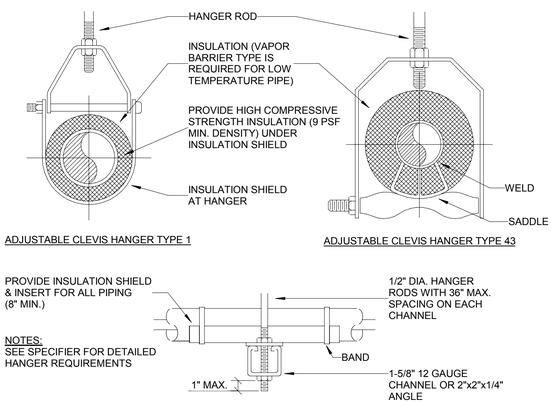
3 LAUNDRY MACHINE CONNECTION
P502
SCALE: NTS



4 WATER SERVICE ENTRANCE DETAIL
P502
SCALE: NTS



5 WATER HEATER PIPING DIAGRAM DETAIL
P502
SCALE: NTS



MAXIMUM PIPE/TUBING SUPPORT SPACING																		
NOM. SIZE	IN.	THRU 3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24
PIPE	FT.	7	7	7	9	10	11	12	14	16	17	19	22	23	25	27	28	30	32
TUBING	FT.	5 FT	6	7	8	8	9	10	12	13	14	16	-	-	-	-	-	-	-
NOTE: FOR TRAPEZE HANGER TAKE SPACING OF SMALLEST SIZE ON TRAPEZE.																			

6 PIPE HANGERS DETAIL
P502
SCALE: NTS

UNDER DEVELOPMENT

FSM Engineering
150 John Knox Road Tallahassee, FL 32303
p.850.222.5683 FL CA 28968

Robert E. Gelhardt II, P.E., State of Florida, Professional Engineer, License No. FL 77568. This Item has been digitally signed and sealed by Robert E. Gelhardt II, P.E. on the date indicated here. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

SYMBOL	REVISION	DATE
A		
B		

SYMBOL	REVISION	DATE
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: 07/19/2024
COMP. FILE No.:
STATE PROJECT No. 61351C

DESIGNER: SB
DRAWN BY: LJ
REVIEWED BY: REGIII
Consultant:

DODSTONE ARCHITECTS
3011-1 Powell Road | Tallahassee, FL 32308
850.656.7205 | FAA26001652

PROFESSIONAL REGISTRATION
NOT FOR CONSTRUCTION

FLORIDA CAVERNS STATE PARK

SHEET TITLE
PLUMBING DETAILS

PROJECT TITLE
FLORIDA CAVERNS CAMPGROUND RESTROOMS

60% CONSTRUCTION DOCUMENT

SHEET NO.
P502

PLUMBING FIXTURE CALCULATION

MARK	QUANTITY	CWFU	TOTAL CWFU	HWFU	TOTAL HWFU	TWFU	COMBINED FU	WFU	TOTAL WFU
EWC	1	0.25	0.25	0	0	0.25	0.25	0.5	0.5
FD1	8	0	0	0	0	0	0	3	24
LV1	3	1.5	4.5	1.5	4.5	2	6	1	3
LV2	4	1.5	6	1.5	6	2	8	1	4
MS1	1	2.25	2.25	2.25	2.25	3	3	2	2
SH1	5	3	15	3	15	4	20	3	15
UR1	1	5	5	0	0	5	5	4	4
WC1	6	10	60	0	0	10	60	4	24
WHY	5	2	10	0	0	2	10	0	0
WMB	1	2.25	2.25	2.25	2.25	3	3	2	2
TOTAL: 35	35		105.25		30		115.25		78.5

NOTE:FIXTURE UNITS BASED ON TABLES FBC-P 709 & E103.3.

BUILDING SERVICE PIPING

TYPE	FU	SIZE	DEV LENGTH
DCW METER	115.3	1-1/2"	XX'
DCW DISTRIB.		2"	
SEWAGE	78.5	4"	XX'

REMARKS:
BRING ANY ISSUES TO EOR.
RESIDUAL PRESSURE: XX PSI
WATER LINE SIZED PER FBC-P TABLE 201.1
SEWER SIZED PER FBC-P TABLE 710.1(1)

PLUMBING FIXTURE SCHEDULE

MARK	TYPE	MFG/ MODEL	FIXTURE DESCRIPTION	CW	HW	SAN
EWC	ADA DUAL HEIGHT DRINKING FOUNTAIN	ELKAY/VRCTLDDMWSK	WALL MOUNT, DUAL HEIGHT, ADA COMPLIANT, BOTTLE FILLING STATION, VANDAL RESISTANT, BI-LEVEL, NON-FILTERED, NON-REFRIGERATED, STAINLESS STEEL,OUTDOOR RATED, BUBBLER ACTIVATION, NO ELECTRICAL.	1/2"	0"	1 1/2"
EWH	ELECTRIC WATER HEATER	A.O. Smith/DSE-30-9	30 GALLON STORAGE TANK, 9 KW INPUT, 53 GPH ECOVERY AT 72 DEGREE RISE, 208V/1PH, 43.3 FLA, 3/4" INLETS/OUTLETS, 28" DIAMETER.	3/4"	3/4"	0"
FD1	FLOOR DRAIN	ZURN/Z-400 BRONZE	FLOOR DRAIN WITH ROUND STRAINER, 2" TO 6" PIPE SIZE, NO HUB, PUSH ON, THREADED OUTLET AND INSIDE CAULK FOR OUTLET TYPES, 5" TO 10" STRAINER, BRONZE STRAINER.	0"	0"	3"
LV1	LAVATORY	KOHLER/K-2005	SINK BASIN: (20-1/2" x 18-1/4" x 12-1/8") VITREOUS CHINA, WALL HUNG, WALL CARRIER WITH CONCEALED ARMS, FRONT OVERFLOW, SELF DRAINING FAUCET LEDGE, SIDE SPLASH SHIELD, ADA COMPLIANT, FAUCET: DELTA D501LF-HDF CENTERSET, PROVIDE LAV SHIELD.	1/2"	1/2"	1 1/2"
LV2	LAVATORY	KOHLER/K-2196-4	RECTANGULAR UNDERMOUNT SINK WITH OVERFLOW, NO FAUCET HOLES, COUNTER-MOUNT FAUCET, ADA COMPLIANT, FAUCET: DELTA D501LF-HDF.	1/2"	1/2"	1 1/2"
MS1	MOP SINK	E.L. MUSTEE/63M	MOP BASIN, FLOOR MOUNTED, 24"X24" BASIN, 10" DEEP, FAUCET: T&S BRASS B-0665-BSTC-R.	3/4"	3/4"	3"
SH1	SHOWER	KOHLER/KSS-PURIST-4-RTHS-CP	KOHLER ADA KSS-PURIST-4-RTHS-CP SHOWER COMBO REQUIRES K-8593, K-9514, K-98360, K-98359, K-45981, OR CODES/STANDARDS K-45982 SHOWER HOSE, 2.5 GPM, 60 IN. HOSE LENGTH, SHOWER HEAD 1.75 GPM AND 80 PSI., 5-1/2" DIAMETER SPRAYFACE, 1/2" - 14 NPT CONNECTION, 30" ADJUSTABLE SLIDEBAR	1/2"	1/2"	2"
UR1	ADA URINAL	KOHLER/K-5016-ET	ADA WALL HUNG URINAL, VITREOUS CHINA, 0.125 GPF TOUCHLESS FLUSHOMETER, HARD WIRED. MOUNTING HEIGHT SHALL BE 17" FROM BOWL FLOOD RIM TO FINISHED FLOOR. INSTALL WITH WALL CARRIER.	3/4"	0"	3"
WC1	FLOOR MOUNT FLUSH VALVE WATER CLOSET	KOHLER/K-96058	WATER CLOSET, ADA, FLOOR MOUNT, FLUSH VALVE, VITREOUS CHINA, SIPHON JET FLUSHING ACTION, ELONGATED RIM, MIN. 17" RIM HEIGHT, 1 1/2" TOP SPUD, TOUCHLESS BATTERY-POWERED 1.6 GPF PISTON (PAIR WITH SLOAN ROYAL 111-1.6 FLUSH VALVES). INSTALL WITH WATER HAMMER ARRESTOR.	1 1/2"	0"	3"
WHY	WALL MOUNTED HOSEBIB	WOODFORD/B65	WOODFORD 24 WALL FAUCET IS ANTI-SIPHON, VACUUM BREAKER PROTECTED WALL FAUCET, ENCLOSED IN A FLUSH MOUNTED WALL BOX, 3 DIFFERENT INLETS, ADJUSTABLE BRASS NUT WITH DEEP STEM GUARD, STANDARD "O" SIZE WASHER, HANDLES FURNISHED WITH POLYCARBONATE WHEEL HANDLE AND LOOSE TEE KEY, MAX. PRESSURE OF 125 PSI., MAX. TEMP. OF 120 F	3/4"	0"	0"
WMB	WASHING MACHINE SUPPLY BOX	GUY GRAY/FBB200TS	11"x9" RECESSED SUPPLY BOX WITH WALL FLANGE MANUFACTURED FROM 18 GAUGE STEEL WITH WHITE POWDER COAT FINISH. FURNISH WITH SUPPLY VALVES AND 2" DRAIN OUTLET.	1/2"	1/2"	2"

UNDER DEVELOPMENT

FSM Engineering
150 John Knox Road Tallahassee, FL 32303
p.850.222.5683 FL CA 28968

Robert E. Gelhardt II, P.E., State of Florida, Professional Engineer, License No. FL 77568. This Item has been digitally signed and sealed by Robert E. Gelhardt II, P.E. on the date indicated here. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

SYMBOL	REVISION	DATE
A		
B		

SYMBOL	REVISION	DATE
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

DESIGNER: SB
DRAWN BY: LJ
REVIEWED BY: REGIII
Consultant :

DODSTONE ARCHITECTS
3011-1 Powell Road | Tallahassee, FL 32308
850.656.7205 | FAA26001652

ISSUE DATE: 07/19/2024
COMP. FILE No.:
STATE PROJECT No. 61351C

PROFESSIONAL REGISTRATION
NOT FOR CONSTRUCTION

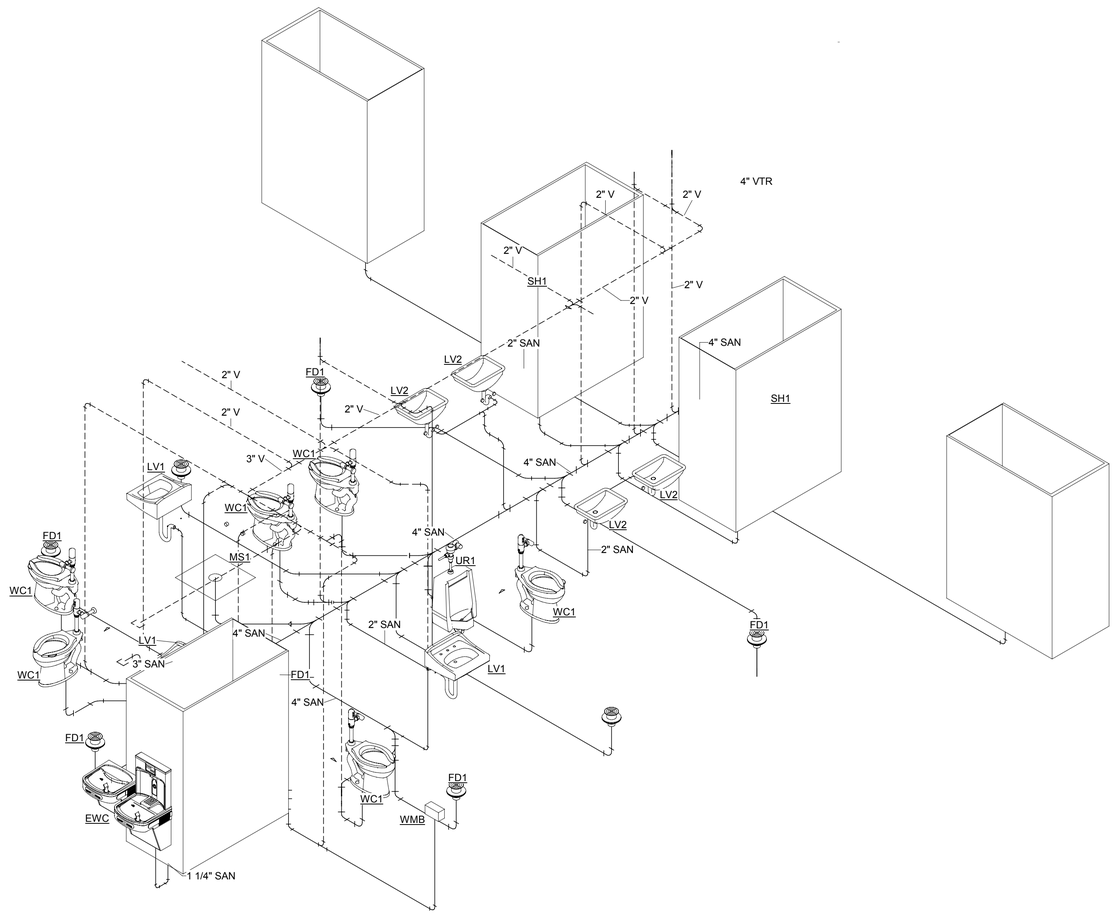
FLORIDA CAVERNS STATE PARK

SHEET TITLE
PLUMBING SCHEDULES

PROJECT TITLE
FLORIDA CAVERNS CAMPGROUND RESTROOMS

60% CONSTRUCTION DOCUMENT

SHEET NO.
P601



1
P901

SANITARY RISER

Scale:

UNDER DEVELOPMENT

SYMBOL	REVISION	DATE
A		
B		

SYMBOL	REVISION	DATE
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

DESIGNER : Designer
DRAWN BY: LJ
REVIEWED BY: Checker
Consultant :

ISSUE DATE: 07/19/2024
COMP. FILE No.:
STATE PROJECT No. 61351C

DODSTONE ARCHITECTS
3011-1 Powell Road | Tallahassee, FL 32308
850.656.7205 | FAA26001932

PROFESSIONAL REGISTRATION
NOT FOR CONSTRUCTION

FLORIDA CAVERNS STATE PARK

SHEET TITLE
RISER DIAGRAM - PLUMBING - SANITARY

PROJECT TITLE
FLORIDA CAVERNS CAMPGROUND RESTROOMS

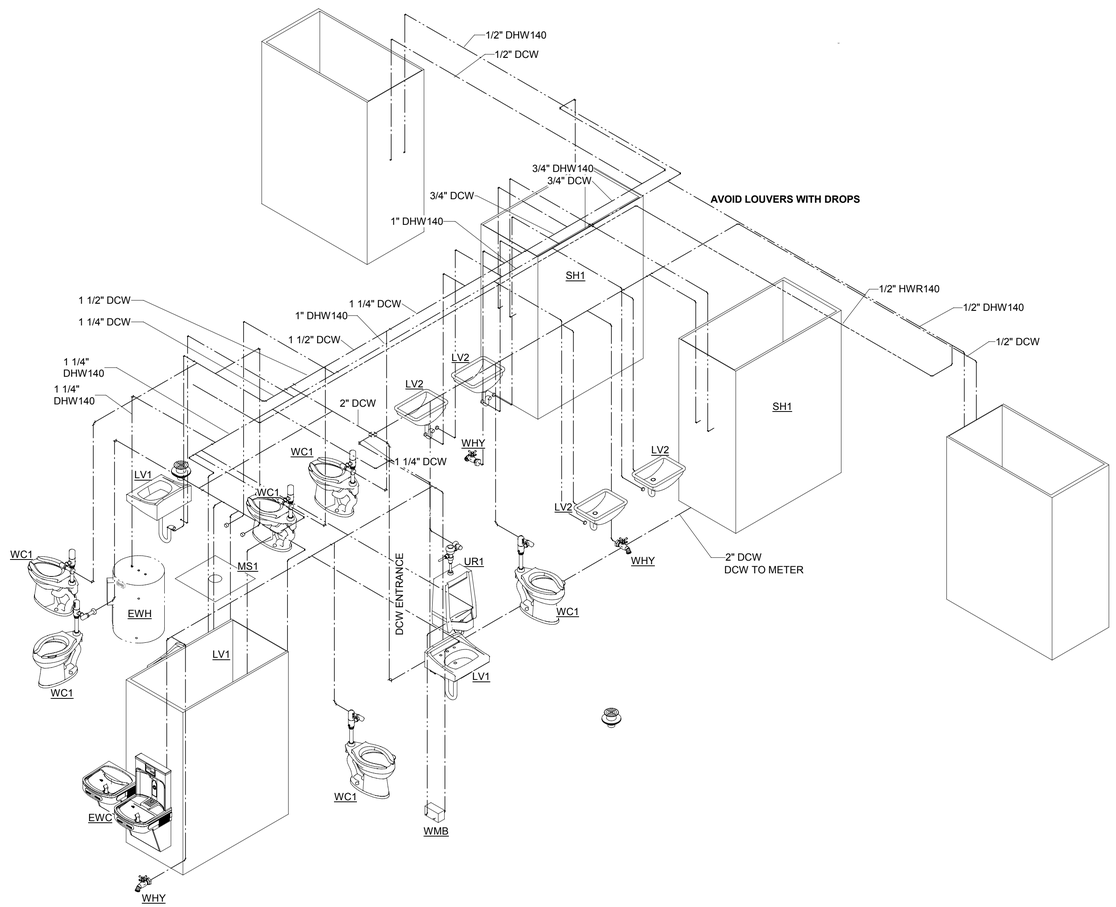
60% CONSTRUCTION DOCUMENT

SHEET NO.
P901

FSM Engineering
150 John Knox Road Tallahassee, FL 32303
p.850.222.5683 FL CA 28968

Robert E. Gelhardt II, P.E., State of Florida, Professional Engineer, License No. FL 77568. This Item has been digitally signed and sealed by Robert E. Gelhardt II, P.E. on the date indicated here. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

NOTE:
60% SET, AT 90% RISER LOCATIONS WILL BE COORDINATED WITH LOUVER LOCATIONS, WORK IN PROGRESS.



1 P902 **PRESSURE RISER**
Scale:

UNDER DEVELOPMENT

SYMBOL	REVISION	DATE
A		
B		

SYMBOL	REVISION	DATE
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

DESIGNER: Designer
DRAWN BY: LJ
REVIEWED BY: Checker
Consultant:

DODSTONE ARCHITECTS
3011-1 Powell Road | Tallahassee, FL 32308
850.656.7205 | FAA26001832

ISSUE DATE: 07/19/2024
COMP. FILE No.:
STATE PROJECT No. 61351C

PROFESSIONAL REGISTRATION
NOT FOR CONSTRUCTION

FLORIDA CAVERNS STATE PARK

SHEET TITLE
RISER DIAGRAM - PLUMBING - PRESSURE

PROJECT TITLE
FLORIDA CAVERNS CAMPGROUND RESTROOMS

60% CONSTRUCTION DOCUMENT

SHEET NO.
P902

FSM Engineering
150 John Knox Road Tallahassee, FL 32303 p.850.222.5683 FL CA 28968

Robert E. Gelhardt II, P.E., State of Florida, Professional Engineer, License No. FL 77568. This Item has been digitally signed and sealed by Robert E. Gelhardt II, P.E. on the date indicated here. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.