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REPAIR CAPE LOOKOUT LIGHTHOUSE

CAPE LOOKOUT NATIONAL SEASHORE

100% STAMPED CONSTRUCTION DOCUMENTS

7/7/2023



A/E FIRM		Mark	Sheet	REVISION	Date	Initial
PRIME/ARCH: LIOLLO ARCHITECTURE CHARLESTON, SC	MEP: DWG INC. MOUNT PLEASANT, SC					
STRUCTURAL: BENNETT PRESERVATION ENGINEERING CHARLESTON, SC						
CONSERVATION: BUILDING CONSERVATION ASSOCIATES, INC PHILADELPHIA, PA						

QUALITY DESIGN CERTIFICATION	
<input type="checkbox"/> Prepared in Accordance with Design Development (Title I) _____ Drawing No. _____	
<input type="checkbox"/> Variance from Design Development (Title I) Approved by Superintendent on _____ Drawing No. _____	
<input type="checkbox"/> Construction Drawing Not Preceded by Design Development (Title I)	
Project Manager _____	Date _____



CONSTRUCTION DOCUMENTS

UNITED STATES
DEPARTMENT OF THE INTERIOR

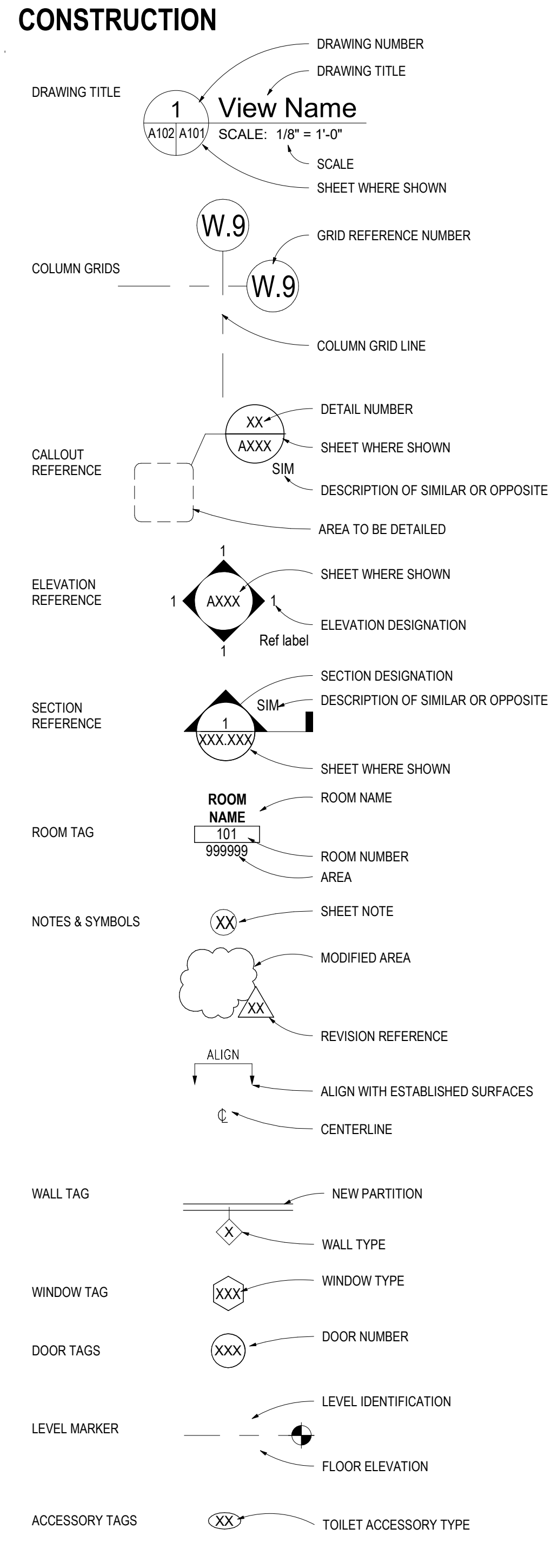
NATIONAL PARK SERVICE
DENVER SERVICE CENTER

TITLE OF PROJECT		DRAWING NO.
REPAIR CAPE LOOKOUT LIGHTHOUSE		623-181663
LOCATION WITHIN PARK		PMIS/PKG NO.
HARKERS ISLAND		226858
NAME OF PARK		SHEET
CAPE LOOKOUT NATIONAL SEASHORE		1 OF 59
REGION	STATE	COUNTY
SOUTHEAST	NORTH CAROLINA	CARTERET

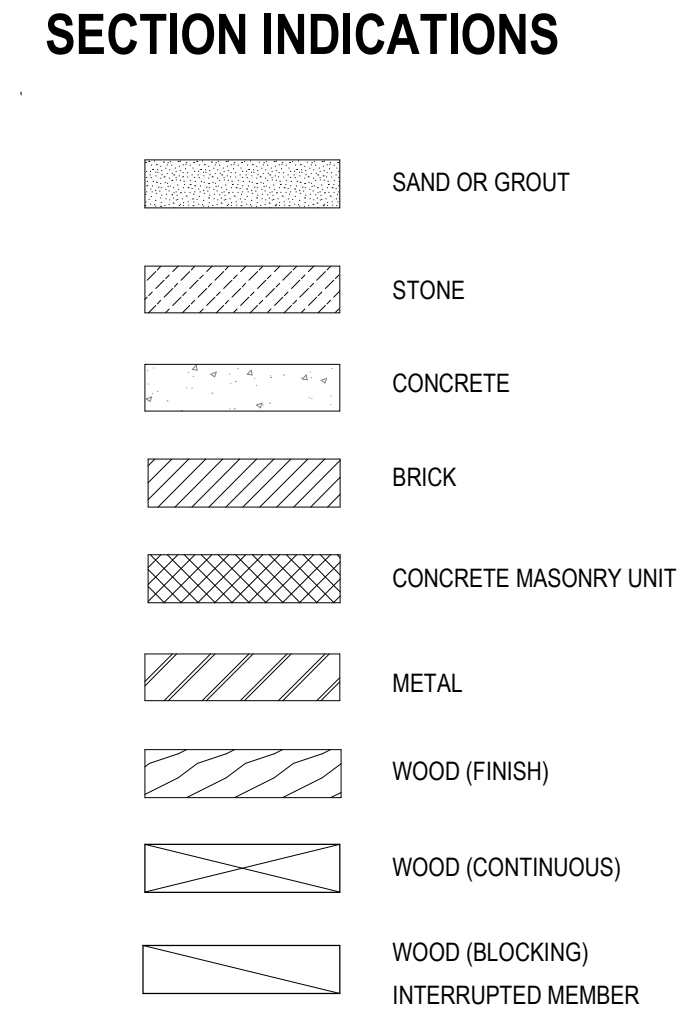
ABBREVIATIONS

ACCES	ACCESSORY	LVLG	LEVELING
AFF	ABOVE FINISHED FLOOR	LVR	LOUVER
AL	ALUMINUM	MATL	MATERIAL
ALT	ALTERNATE	MAX	MAXIMUM
ALUM	ALUMINUM	MFD	MANUFACTURED
ANOD	ANODIZED	MFR	MANUFACTURER
APPL	APPLIANCE	MECH	MECHANICAL
ARCH	ARCHITECT(URAL)	MIN	MINIMUM
AUTO	AUTOMATIC	MISC	MISCELLANEOUS
AVG	AVERAGE	MLWK	MILLWORK
&	AND	MO	MASONRY OPENING
@	AT	MOIST	MOISTURE
BLDG	BUILDING	MOT	MOTOR(IZED)
BD	BOARD	MTD	MOUNTED
BLKG	BLOCKING	MTL	METAL
B.O.	BOTTOM OF	NIC	NOT IN CONTRACT
BU	BUILT UP	NOM	NOMINAL
CAB	CABINET	NTS	NOT TO SCALE
CEM	CEMENT(ITIOUS)	OC	ON CENTER
CI	CONTRACTOR INSTALLED	OH	OPPOSITE HAND
CLG	CEILING	OI	OWNER INSTALLED
COATG	COATING	OPNG	OPENING(S)
CONC	CONCRETE	OPP	OPPOSITE
CONSTR	CONSTRUCTION	OPR	OPERABLE
CONT	CONTINUOUS(ATION)	OS	OWNER SUPPLIED
CONTR	CONTRACT(OR)	OVHD	OVERHEAD
COV	COVER	PTN	PARTITION
CS	CONTRACTOR SUPPLIED	PNL	PANEL
D	DEPTH	PORT	PORTABLE
DBL	DOUBLE	PREFIN	PREFINISHED
DES	DESIGN(ED)	PREFAB	PREFABRICATED
DET	DETAIL	PLSTC	PLASTIC
DIA	DIAMETER	PLYWD	PLYWOOD
DIAG	DIAGONAL	PRTECN	PROTECTION
DIM	DIMENSION	PT	PAINT
DISP	DISPENSER	RECES	RECESSED
DIV	DIVISION	RECPT	RECEPTACLE
DN	DOWN	REF	REFER(ENCE)
DR	DOOR	REFL	REFLECTED
DSCON	DISCONNECT	REQD	REQUIRED
DWGS	DRAWINGS	RESIS	RESIST(ANT)(IVE)
EA	EACH	REINF	REINFORCE(D)(ING)(MENT)
ELEC	ELECTRICAL	RESIL	RESILIENT
EMBED	EMBEDD(ED)(ING)	REV	REVISION
ENGR	ENGINEER(ED)	RFG	ROOFING
ENTR	ENTRANCE	RM	ROOM
EQ	EQUAL	RO	ROUGH OPENING
EQUIP	EQUIPMENT	SF	SQUARE FEET
EXIST	EXISTING	SGL	SINGLE
EXPS	EXPOSE(D)	SIM	SIMILAR
EXT	EXTERIOR	SST	STAINLESS STEEL
FAB	FABRICATION	STD	STANDARD
FIN	FINISH	STL	STEEL
FLDG	FOLDING	STRUCT	STRUCTURAL
FRMG	FRAMING	SURF	SURFACE
FLR	FLOOR(ING)	SYS	SYSTEM(S)
FXD	FIXED	SYM	SYMMETRICAL
FXTR	FIXTURE	SUSP	SUSPENDED
GA	GAUGE	TEMP	TEMPORARY
GALV	GALVANIZED	THK	THICK
GL	GLASS	T.O.	TOP OF
H	HIGH	TRANS	TRANSPARENT
HD	HEAD	TRTD	TREATED
HDWD	HARDWOOD	TYP	TYPICAL
HDWE	HARDWARE	UNDRLAY	UNDERLAYMENT
HORIZ	HORIZONTAL	UNO	UNLESS NOTED OTHERWISE
HT	HEIGHT	UTIL	UTILITY
HVAC	HEATING, VENTILATING, AND AIR CONDITIONING	VEH	VEHICLE
INFO	INFORMATION	VERT	VERTICAL
INSTRUM	INSTRUMENT(ATION)	VIF	VERIFY IN FIELD
INSUL	INSULATION	W/	WITH
INT	INTERIOR	W	WIDTH
INFILTR	INFILTRATION	WD	WOOD
JT	JOINT	WDW	WINDOW
LB	POUND	W/O	WITHOUT
LT	LIGHT	WT	WEIGHT
		WTRPRF	WATERPROOFING

GRAPHIC SYMBOLS



GRAPHIC SYMBOLS



PROJECT NOTES

LIGHTHOUSE CONTAINS HAZARDOUS MATERIALS. SEE SPECIFICATIONS FOR HAZARDOUS MATERIAL REPORT & ASSOCIATED SPECIFICATIONS.

CAPE LOOKOUT NATIONAL SEASHORE IS A CERTIFIED INTERNATIONAL DARK SKY PARK. GC SHALL UTILIZE DARK SKY COMPLIANT FIXTURES IF ANY WORK OCCURS AT NIGHT. SEE DIVISION 1 SPECIFICATIONS FOR GENERAL WORK RESTRICTIONS

SEE DIVISION 1 SPECIFICATIONS FOR FURTHER DEFINITIONS OF THE CONTRACT LINE ITEMS LISTED BELOW.

CONTRACT LINE ITEMS

CLIN 1	EXTERIOR COATING - REMOVE, REPAIR MASONRY, AND RECOAT
CLIN 2	REMOVE AND REPLACE EXTERIOR DOORS
CLIN 3	REMOVE AND REPLACE WINDOWS
CLIN 4	REMOVE LANTERN AND CONSTRUCT STRUCTURAL CAP. INCLUDES MINOR MECHANICAL AND ELECTRICAL
CLIN 8	CAST IRON STAIRS, LANDINGS, CENTER COLUMN, HANDRAIL
CLIN 9	CLEAN AND REPOINT INTERIOR BRICK
CLIN 10	REPAIR AND REPLACE CAST IRON TOP OF LIGHTHOUSE & INSTALL THREADED ROD TIE DOWNS IN LIEU OF REINSTALLING STEEL FRAME
CLIN 11	ELECTRICAL WORK
CLIN 12	MECHANICAL WORK

SPECIFICATION

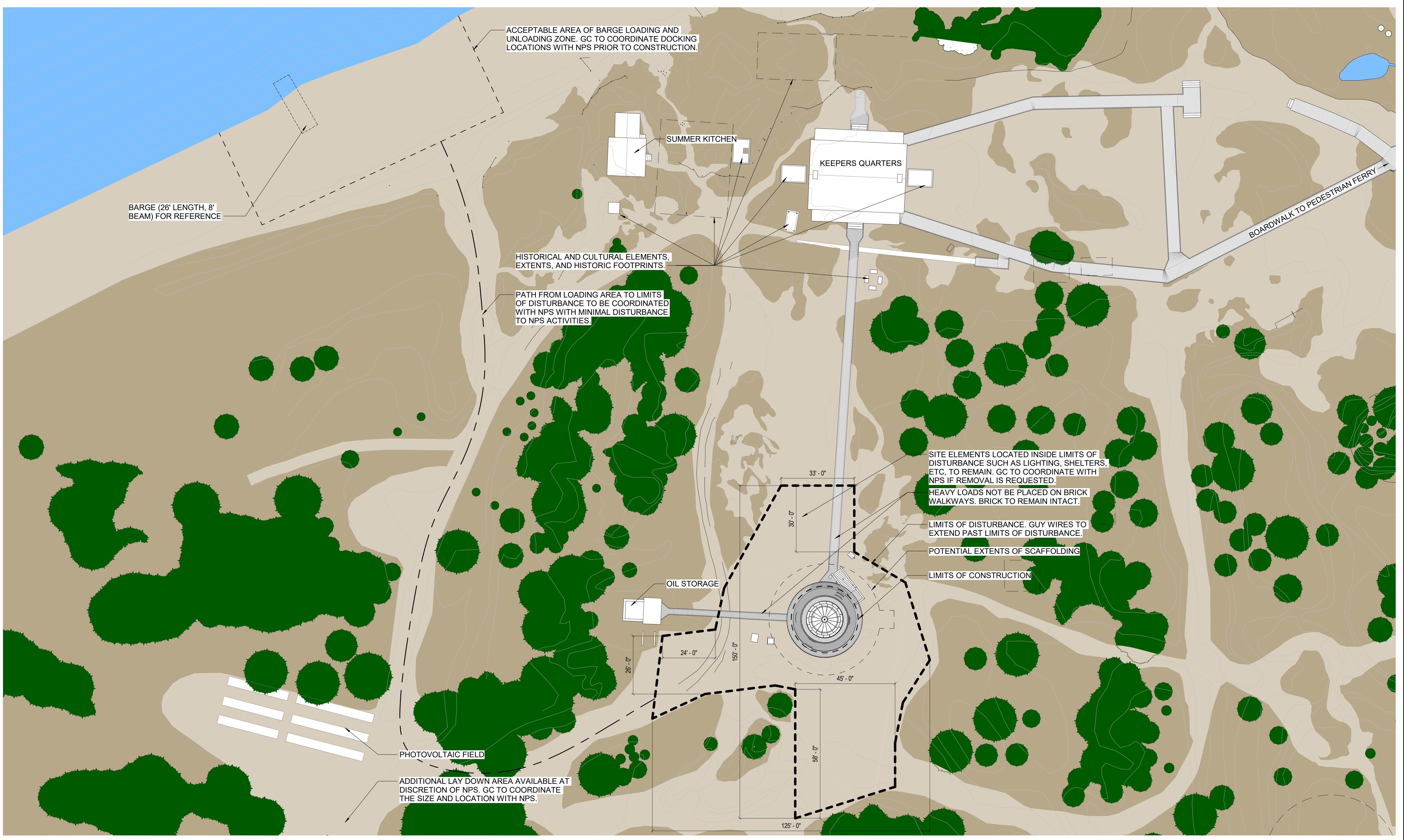
REFER TO THE DIVISIONS BELOW FOR SPECIFICATIONS AND RELATED INFORMATION. REFER TO ALL THE SPECIFICATIONS FOR A HOLISTIC COMPREHENSION OF PROJECT REQUIREMENTS.

DIVISION 01	GENERAL REQUIREMENTS
DIVISION 02	BRACING & SHORING / SELECT DEMO / HISTORIC CONDITIONS / ABATEMENT
DIVISION 03	CONCRETE
DIVISION 05	HISTORIC METAL REPAIR & REPLICATIONS / METAL FABRICATION
DIVISION 06	WOOD CARPENTRY
DIVISION 07	ROOFING & SEALANTS
DIVISION 08	WOOD WINDOWS & DOORS
DIVISION 09	PAINTING & COATING REMOVAL / PAINTING / COATING
DIVISION 23	MECHANICAL
DIVISION 26	ELECTRICAL



DESIGNED: DC	SUB SHEET NO. G2	TITLE OF SHEET PROJECT INFORMATION	DRAWING NO. 181663
CADD: HT			PMIS/PKG NO. 226858
TECH. REVIEW: JW			SHEET 2 OF 59
DATE: 7/7/2023			CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS

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1 SITE PLAN
SCALE: 1" = 20'-0"

DESIGNED: DC
CADD: HT
TECH. REVIEW: JW
DATE: 7/7/2023

SUB SHEET NO. G3

TITLE OF SHEET
SITE PLAN

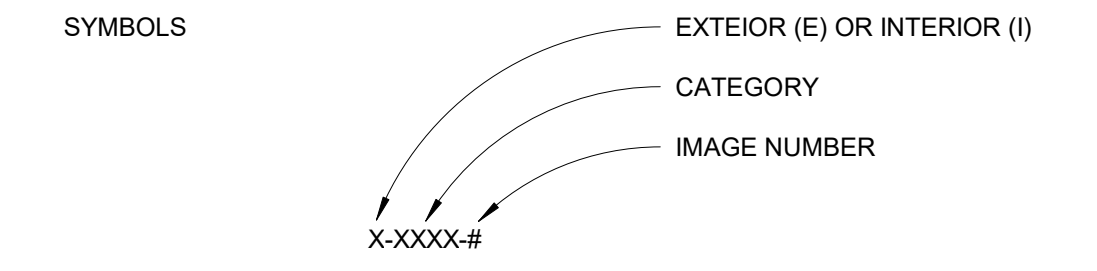
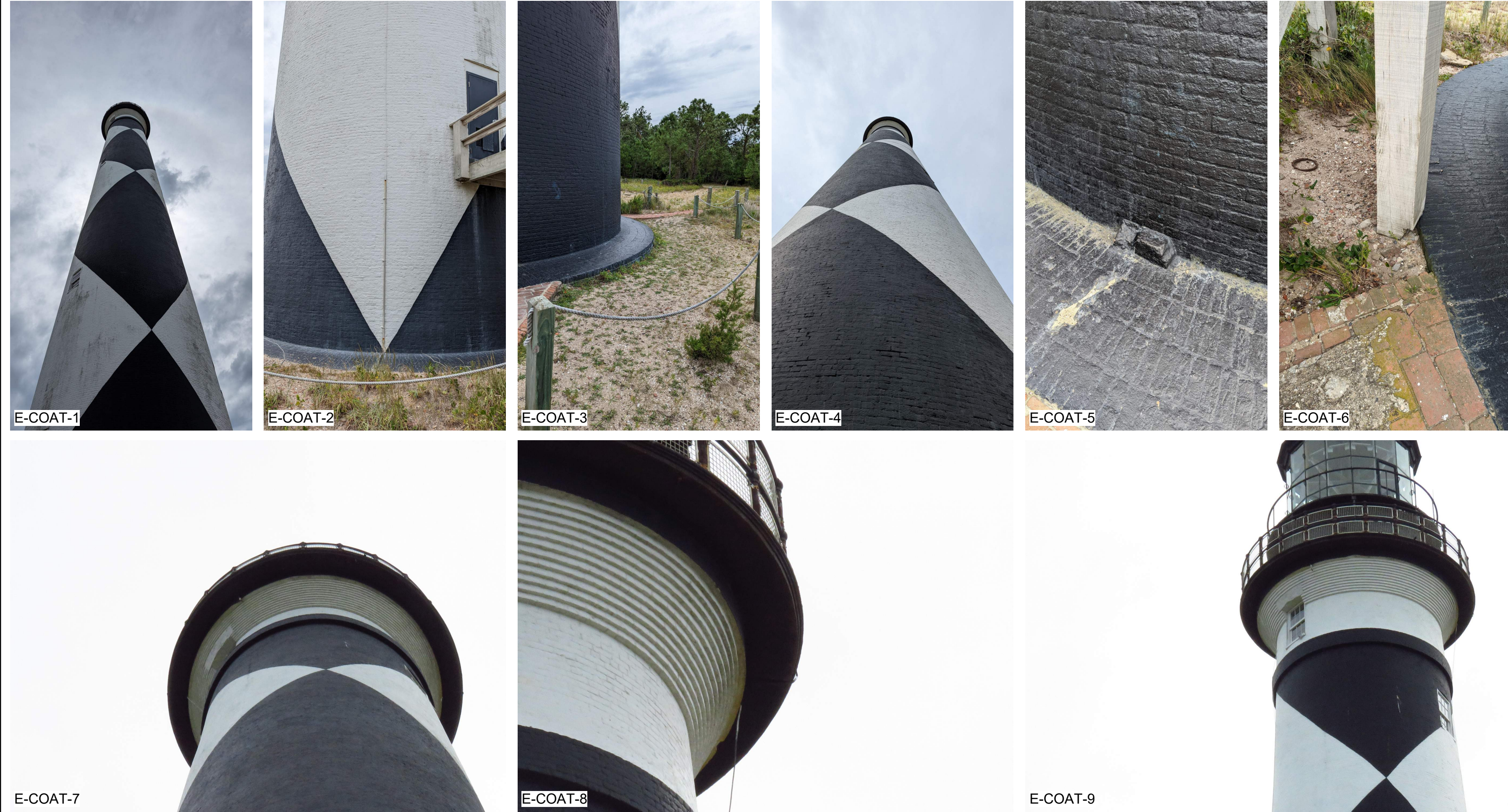
CAPE LOOKOUT NATIONAL SEASHORE
LIGHTHOUSE REPAIRS

DRAWING NO. 623
181663
PMIS/PKG NO. 226858
SHEET 3 OF 59

SCALE: 1" = 20'-0"

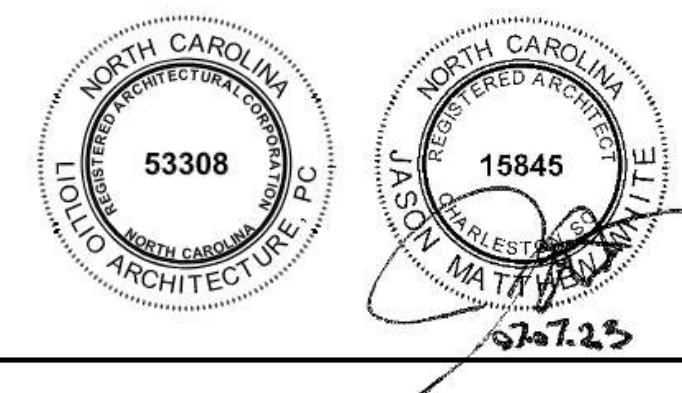
EXTERIOR EXISTING CONDITIONS

NAMING CONVENTION



CATEGORIES	CODE	MEANING
	COAT	COATING
	MTL	METAL
	ELEC	ELECTRICAL
	MECH	MECHANICAL
	MAS	MASONRY
	LANT	LANTERN/WATCH LEVEL

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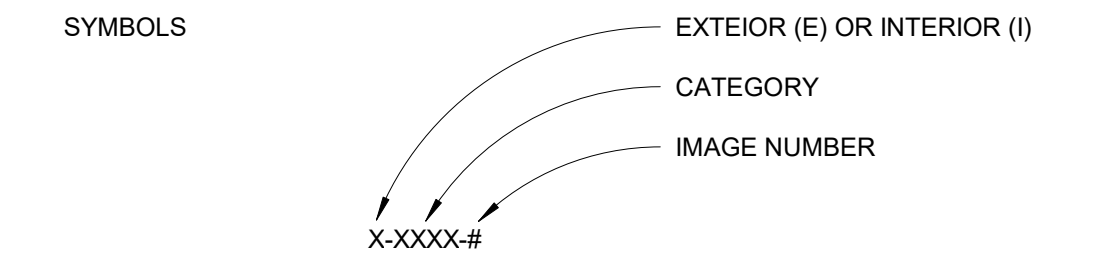
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TECH. REVIEW: JW			SHEET
DATE: 7/7/2023			4 OF 59

CAPE LOOKOUT NATIONAL SEASHORE
LIGHTHOUSE REPAIRS

INTERIOR EXISTING CONDITIONS

NAMING CONVENTION

INTERIOR FERROUS METAL STAIRS, LANDING AND HANDRAILS - EXISTING CONDITIONS.

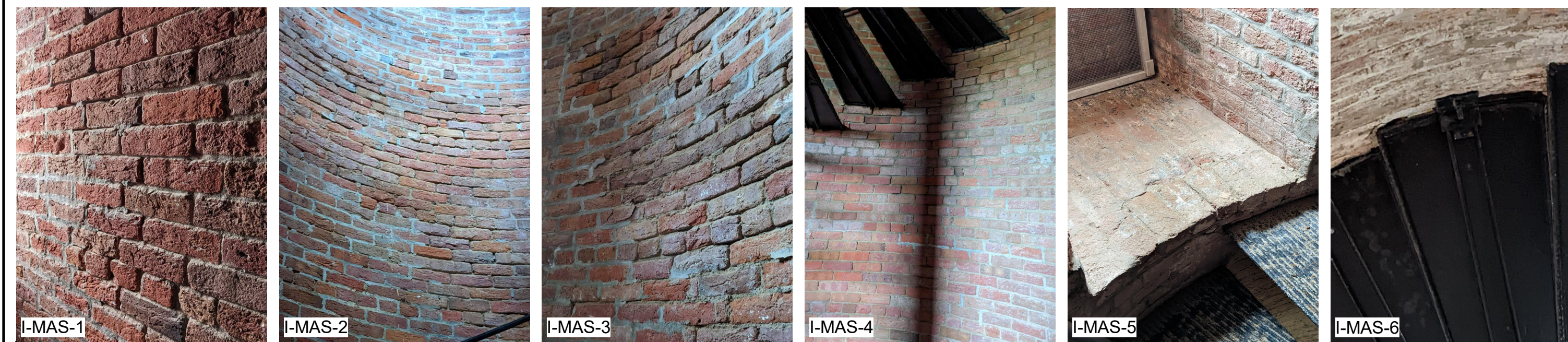


CATEGORIES	CODE	MEANING
	COAT	COATING
	MTL	METAL
	ELEC	ELECTRICAL
	MECH	MECHANICAL
	MAS	MASONRY
	LANT	LANTERN/WATCH LEVEL

ELECTRICAL AND MECHANICAL - EXISTING CONDITIONS.



INTERIOR MASONRY - EXISTING CONDITIONS.



LANTERN & WATCH LEVEL - EXISTING CONDITIONS.



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DESIGNED: DC	SUB SHEET NO. G5	TITLE OF SHEET EXISTING CONDITIONS	DRAWING NO. 623
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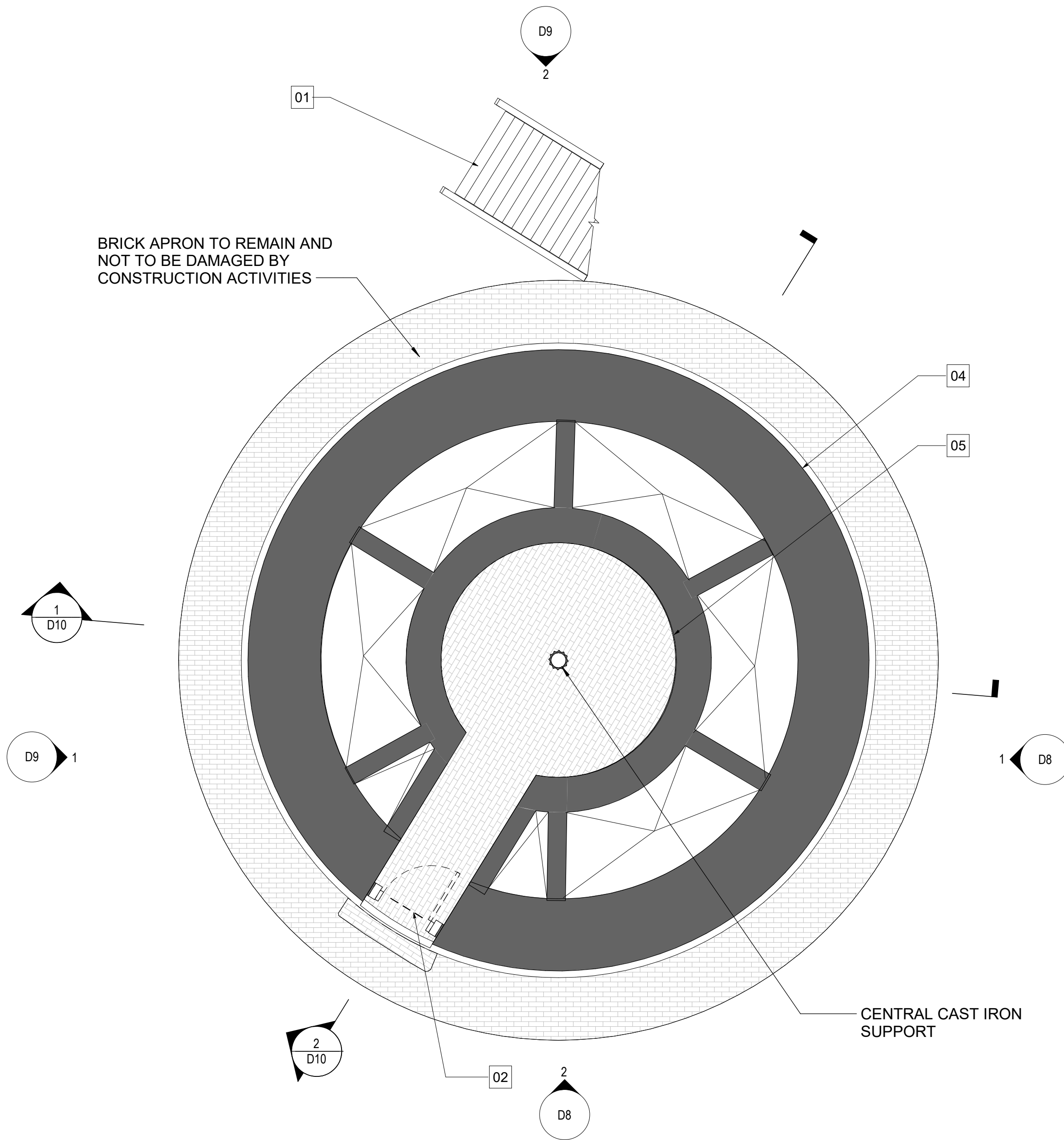
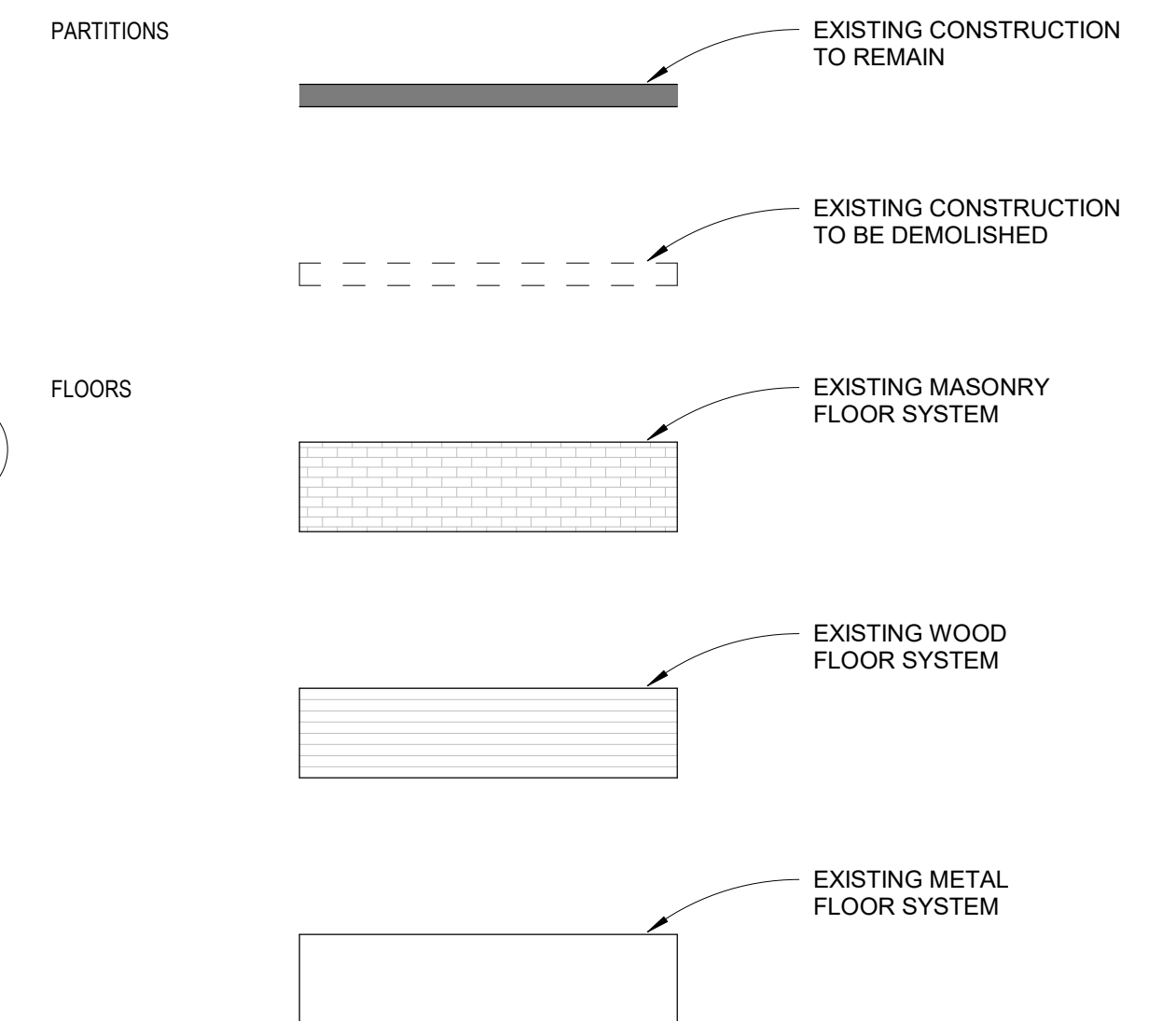
CAPE LOOKOUT NATIONAL SEASHORE
LIGHTHOUSE REPAIRS

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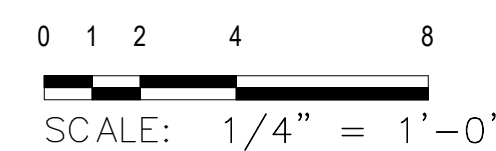
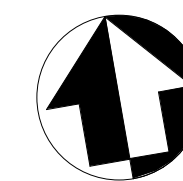
SHEET NOTES

- 01 CONSTRUCTION TO REMAIN
- 02 DOOR AND FRAME TO BE REMOVED. (CLIN 2)
- 03 WOOD WINDOW, SILL AND FRAME TO BE REMOVED. (CLIN 3)
- 04 REMOVE COATINGS FROM EXTERIOR MASONRY. CONTRACTOR SHALL INSPECT BRICK CONDITIONS PRIOR TO DEMOLITION. ASSUME 3,000 SF REPOINTING OF EXTERIOR MASONRY. ASSUME 300 SF OF EXTERIOR INCOMPATIBLE MORTAR REPLACEMENT. ASSUME 60 SF OF EXTERIOR BRICK MASONRY REPLACEMENT. (CLIN 1)
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- 06 CAST IRON SPIRAL STAIRCASE. DOCUMENT ALL INDIVIDUAL IRONWORK ELEMENTS OF THE LIGHTHOUSE, BOTH AT THE INTERIOR AND EXTERIOR OF THE STRUCTURE, NOTING THEIR SPECIFIC GEOMETRY, CONNECTIONS AND LOCATION, OR OTHER INFORMATION NECESSARY FOR ACCURATE RECONSTRUCTION. (CLIN 8)
- 07 AREA OF SIGNIFICANT DETERIORATION. PREP MASONRY FOR REPOINTING. (CLIN 9)
- 08 TREAD TO BE REMOVED AND AREA PREPPED FOR NEW TREAD. (CLIN 8)

DEMO PLAN LEGEND



1 DEMO PLAN - (1) FIRST LANDING
SCALE: 1/4" = 1'-0"



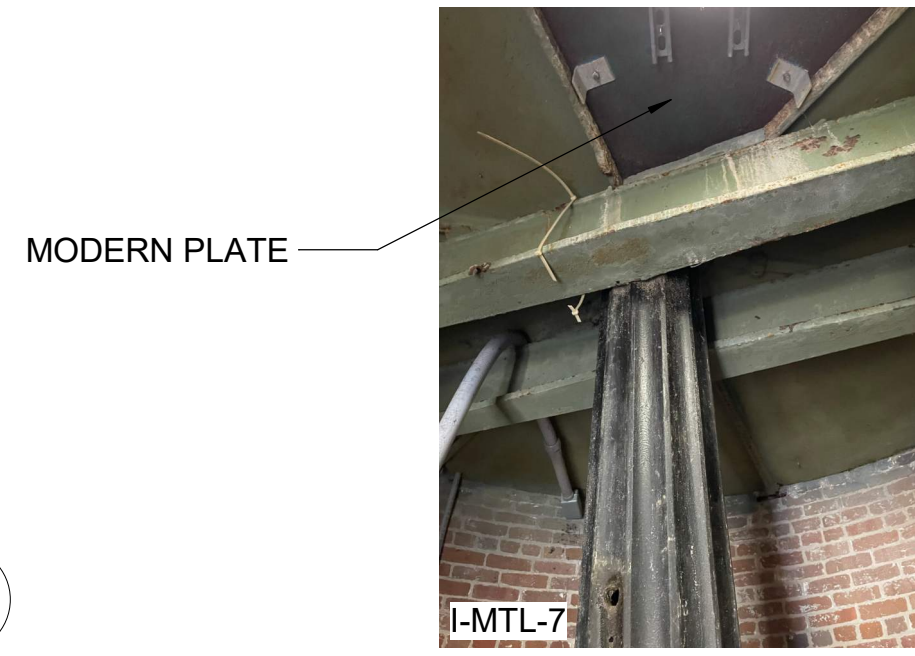
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TECH. REVIEW:	JW
DATE:	7/7/2023

SUB SHEET NO.	D1
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TITLE OF SHEET	DEMOLITION PLANS
CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS	

DRAWING NO.	623
181663	
PMIS/PKG NO.	226858
SHEET	6 OF 59

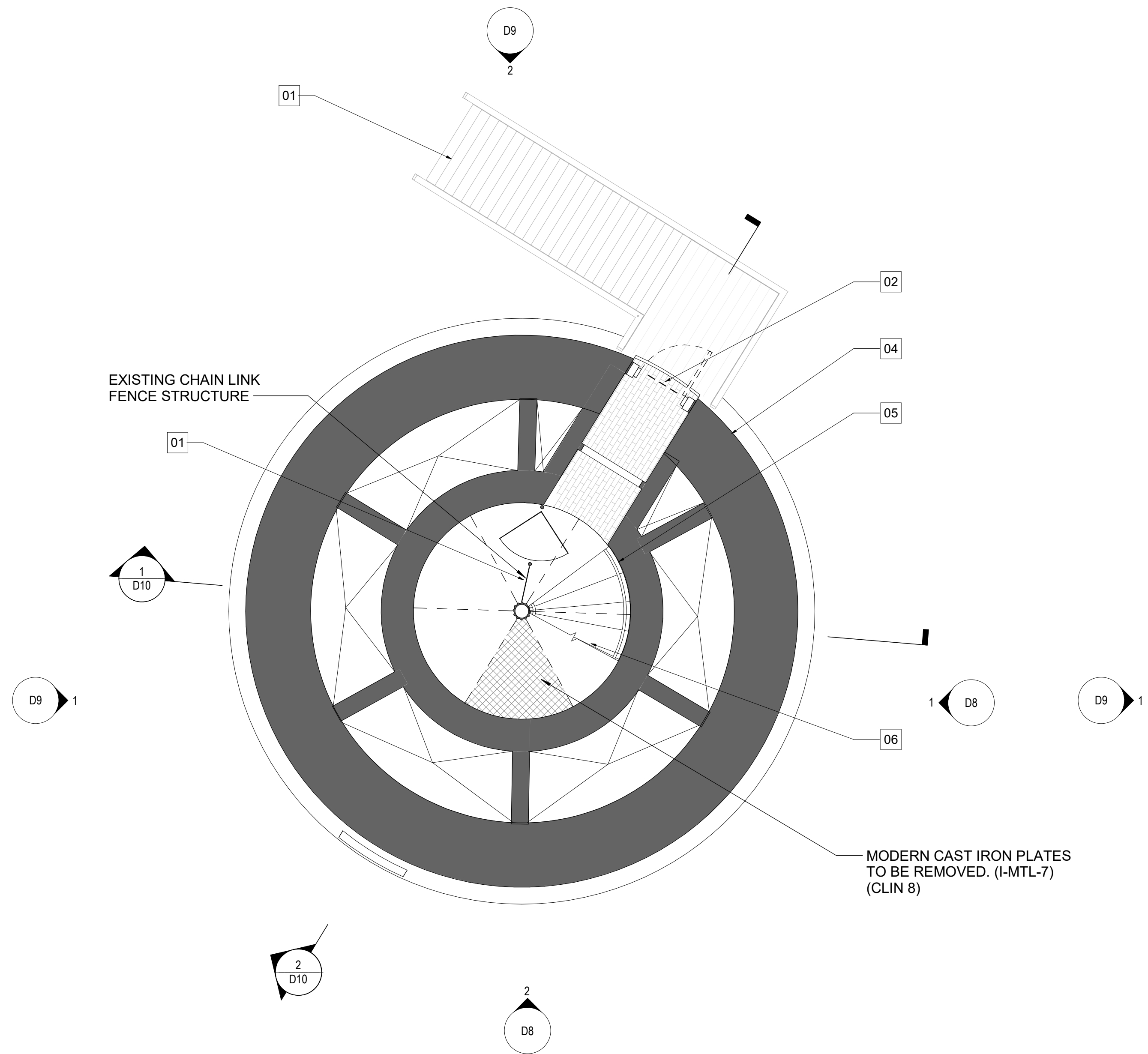
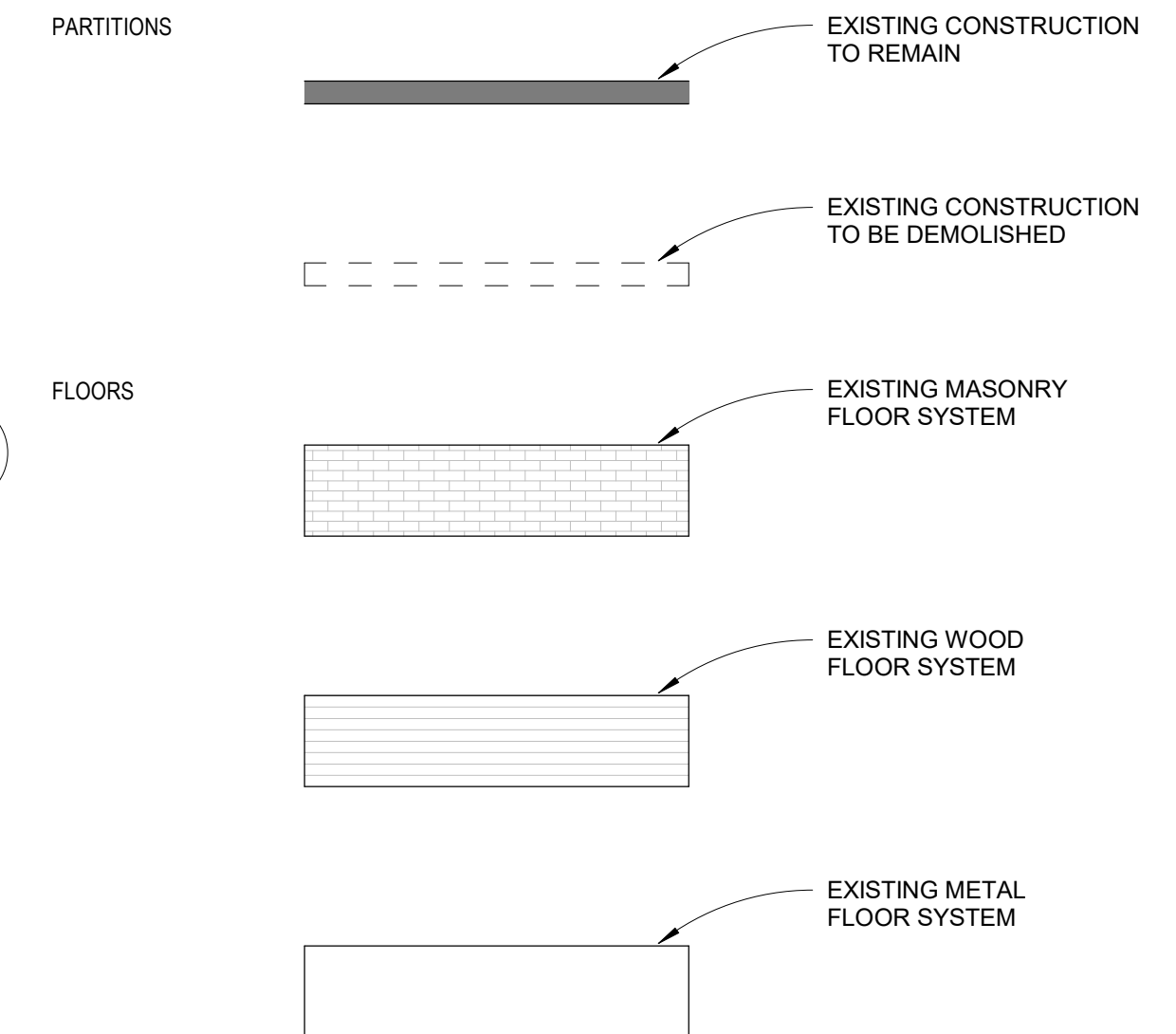
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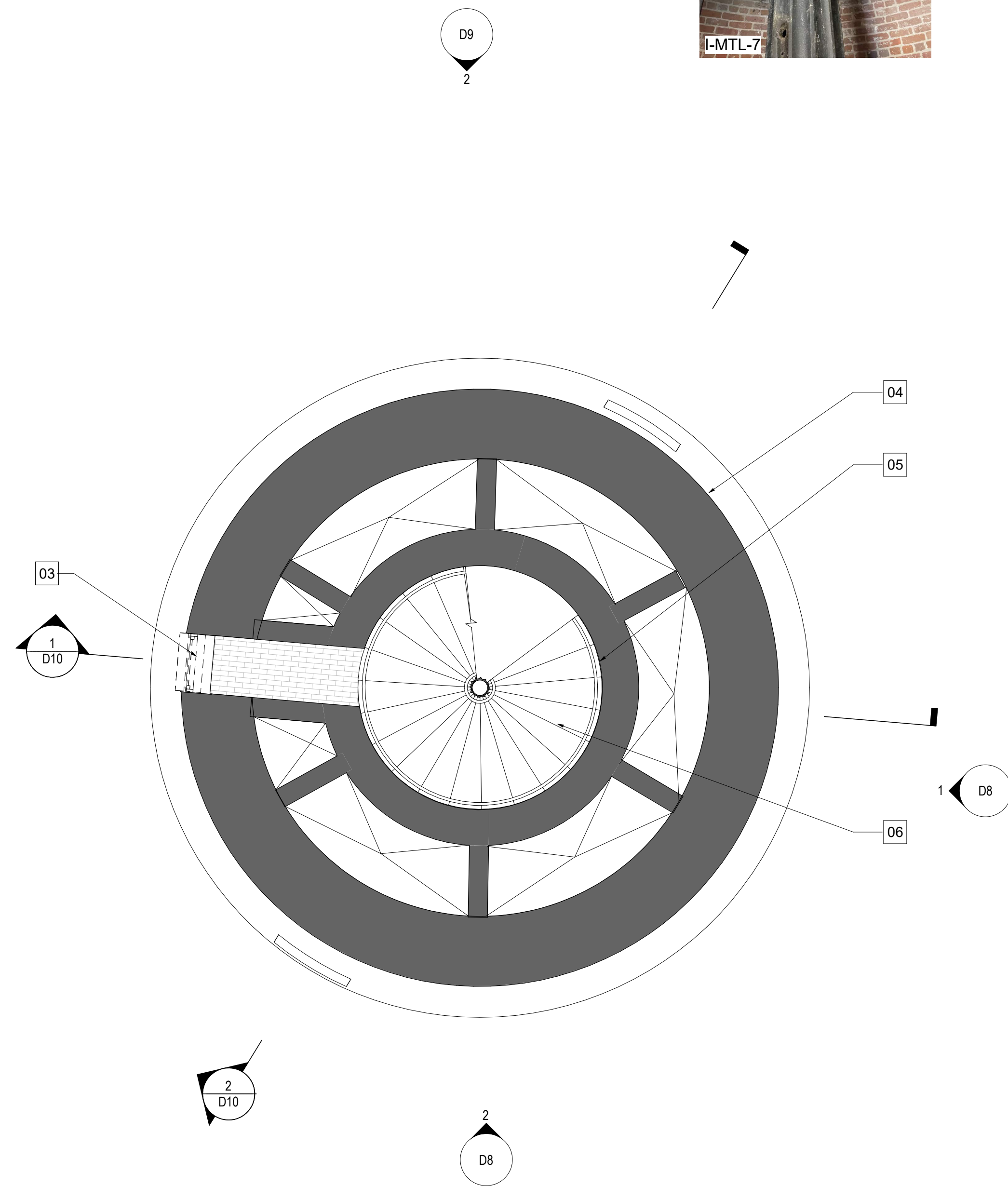
SHEET NOTES

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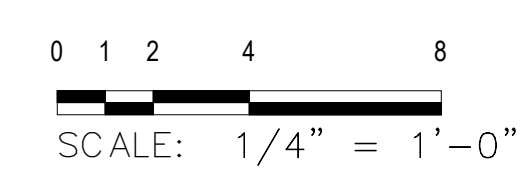
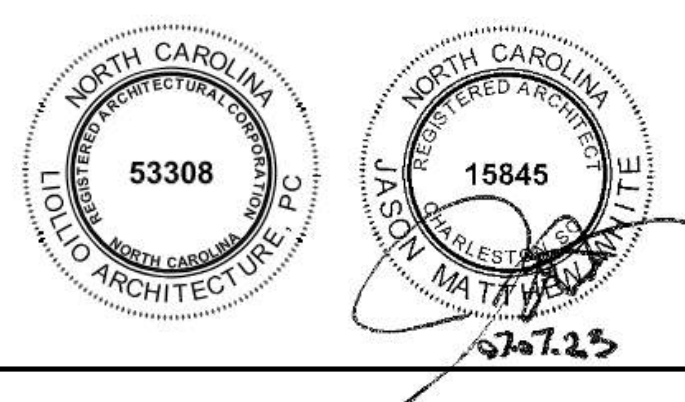
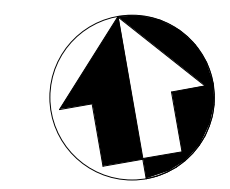
DEMO PLAN LEGEND



1 DEMO PLAN - (2) SECOND LANDING
SCALE: 1/4" = 1'-0"



2 DEMO PLAN - (2) SECOND WINDOW LEVEL
SCALE: 1/4" = 1'-0"

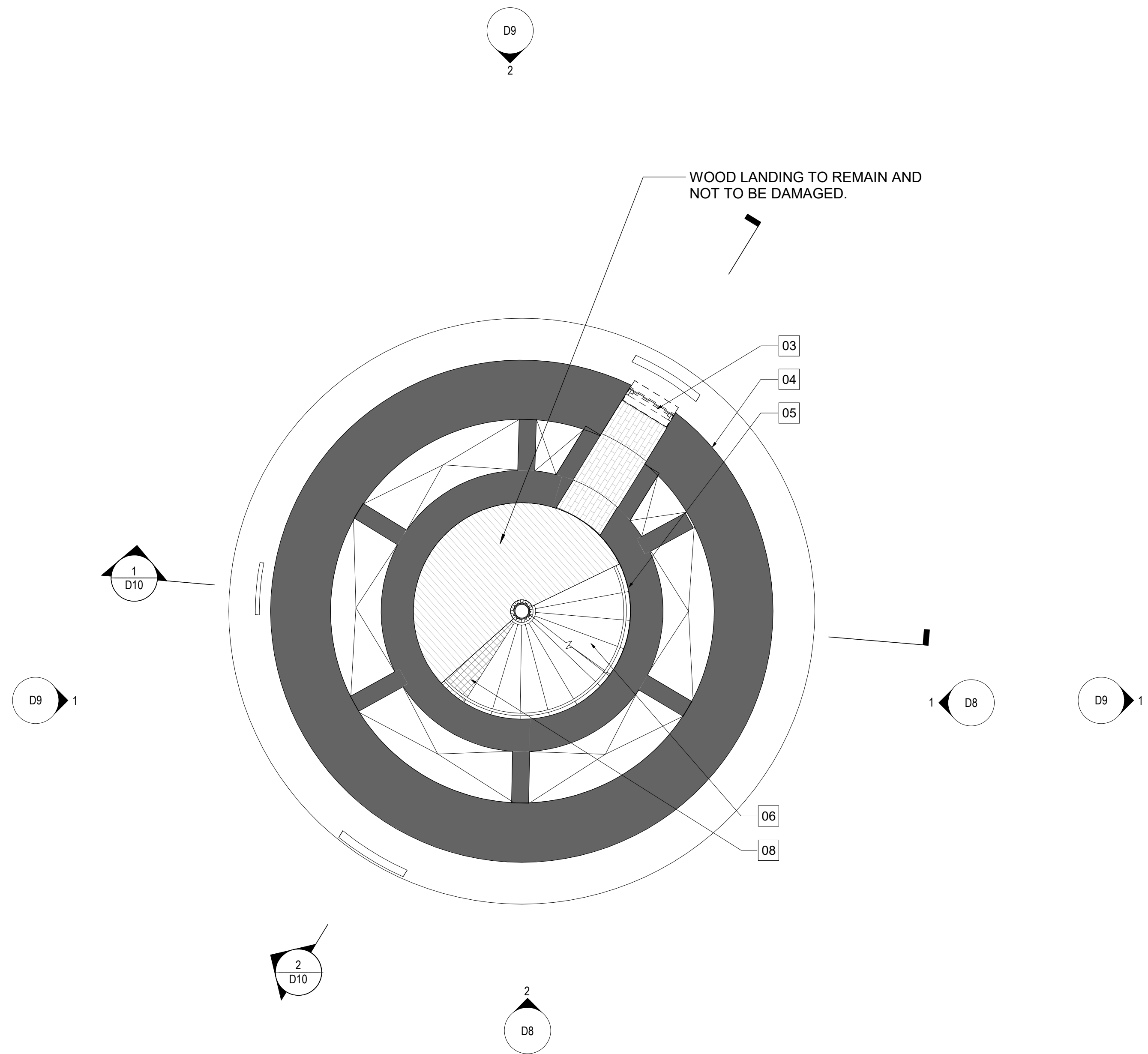
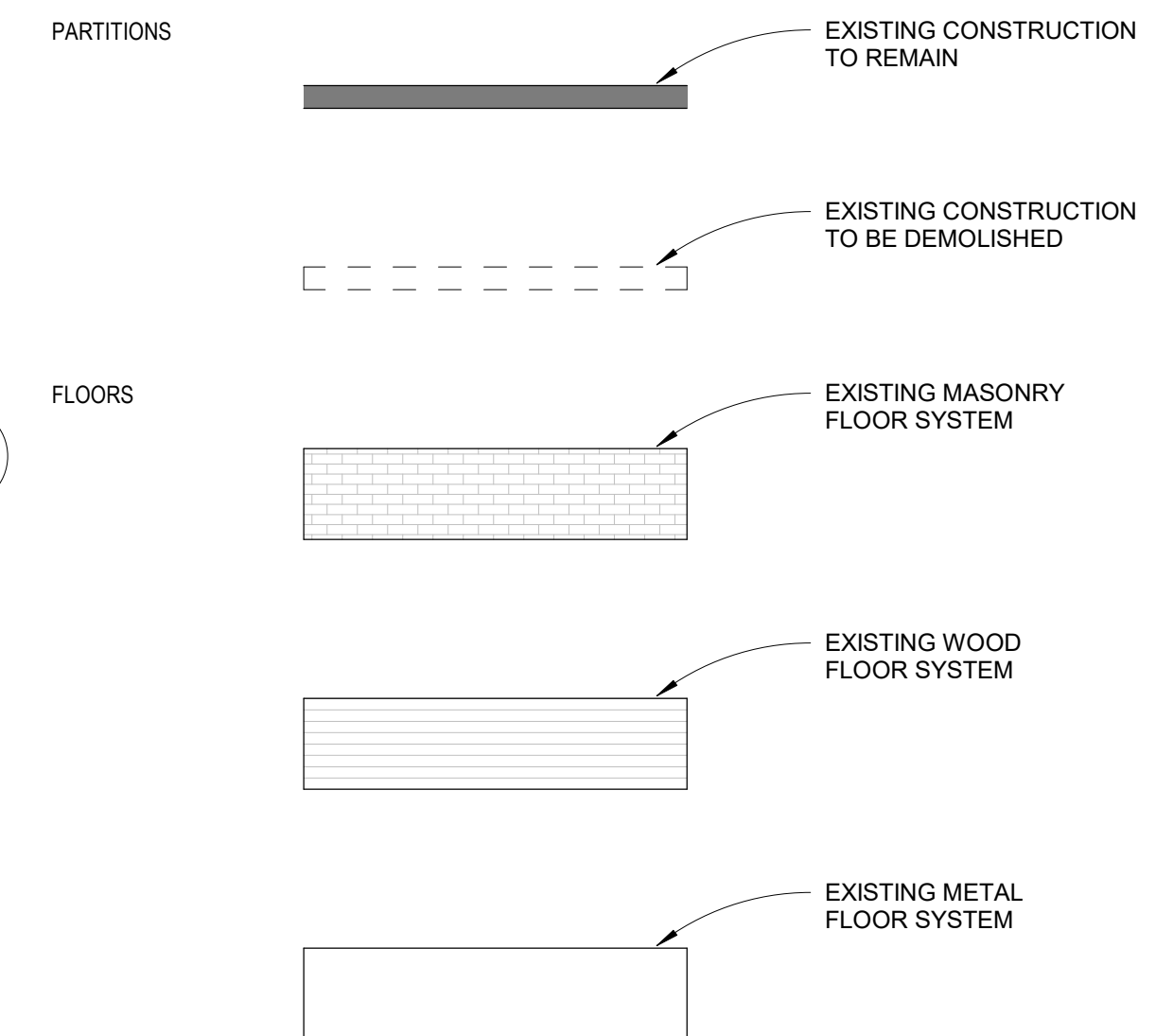


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CADD: HT			181663
TECH. REVIEW: JW			PMIS/PKG NO. 226858
DATE: 7/7/2023			SHEET 7 OF 59
CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS			

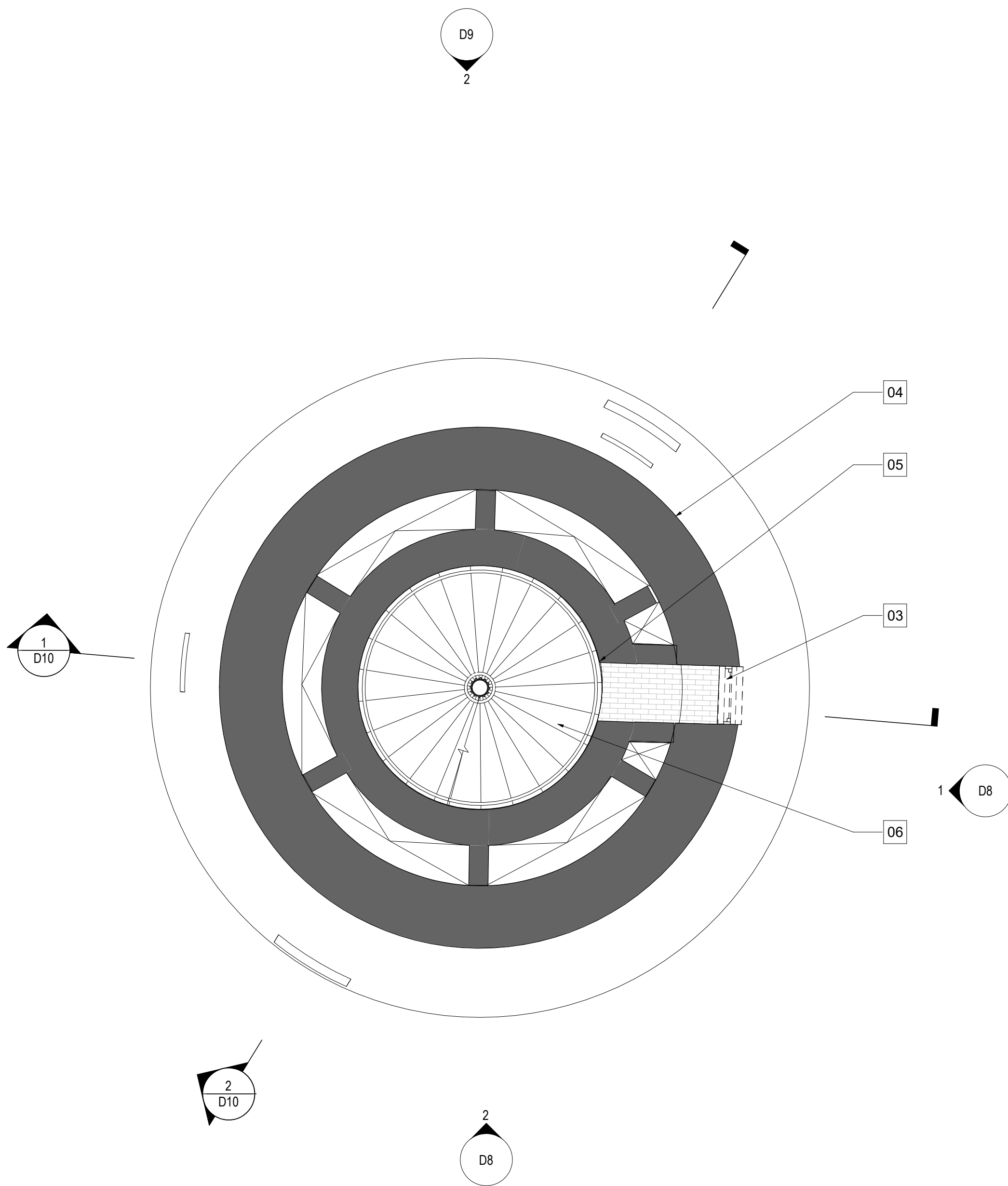
SHEET NOTES

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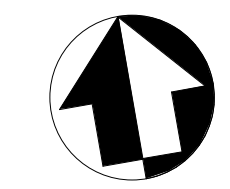
DEMO PLAN LEGEND



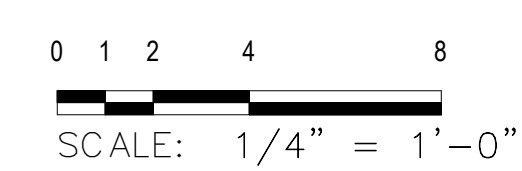
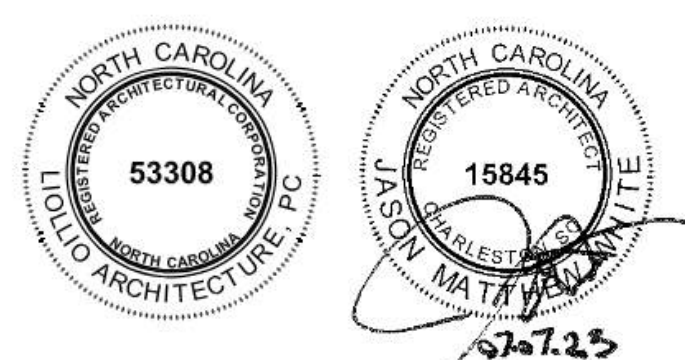
1 DEMO PLAN - (3) THIRD LANDING
SCALE: 1/4" = 1'-0"



2 DEMO PLAN - (3) THIRD WINDOW LEVEL
SCALE: 1/4" = 1'-0"



7/10/2023 3:15:01 PM Autodesk Docs://22602 NPS CALO Lighthouse/2022 1010 - NPS CALO Lighthouse Repairs R22 DD.rvt

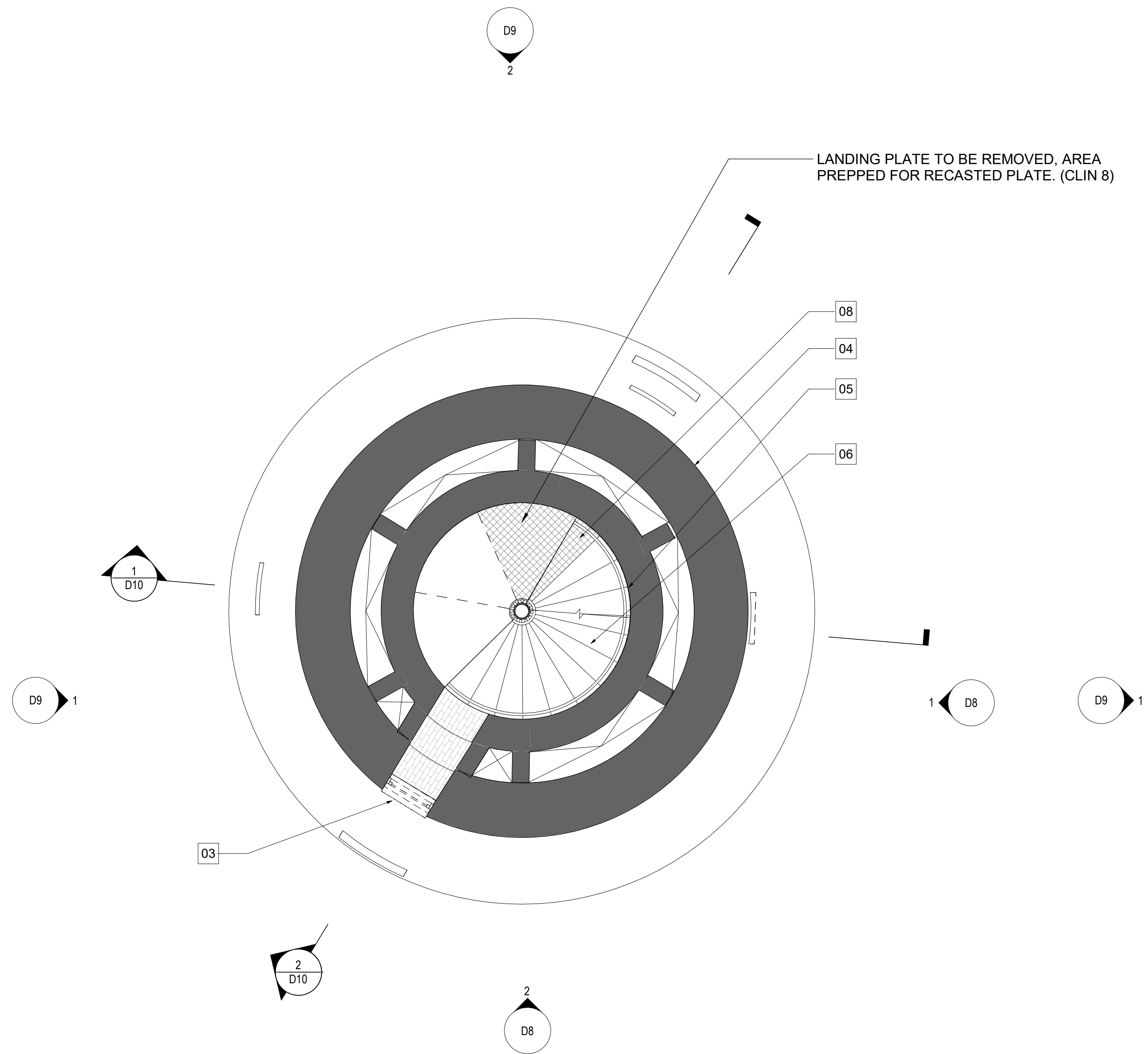
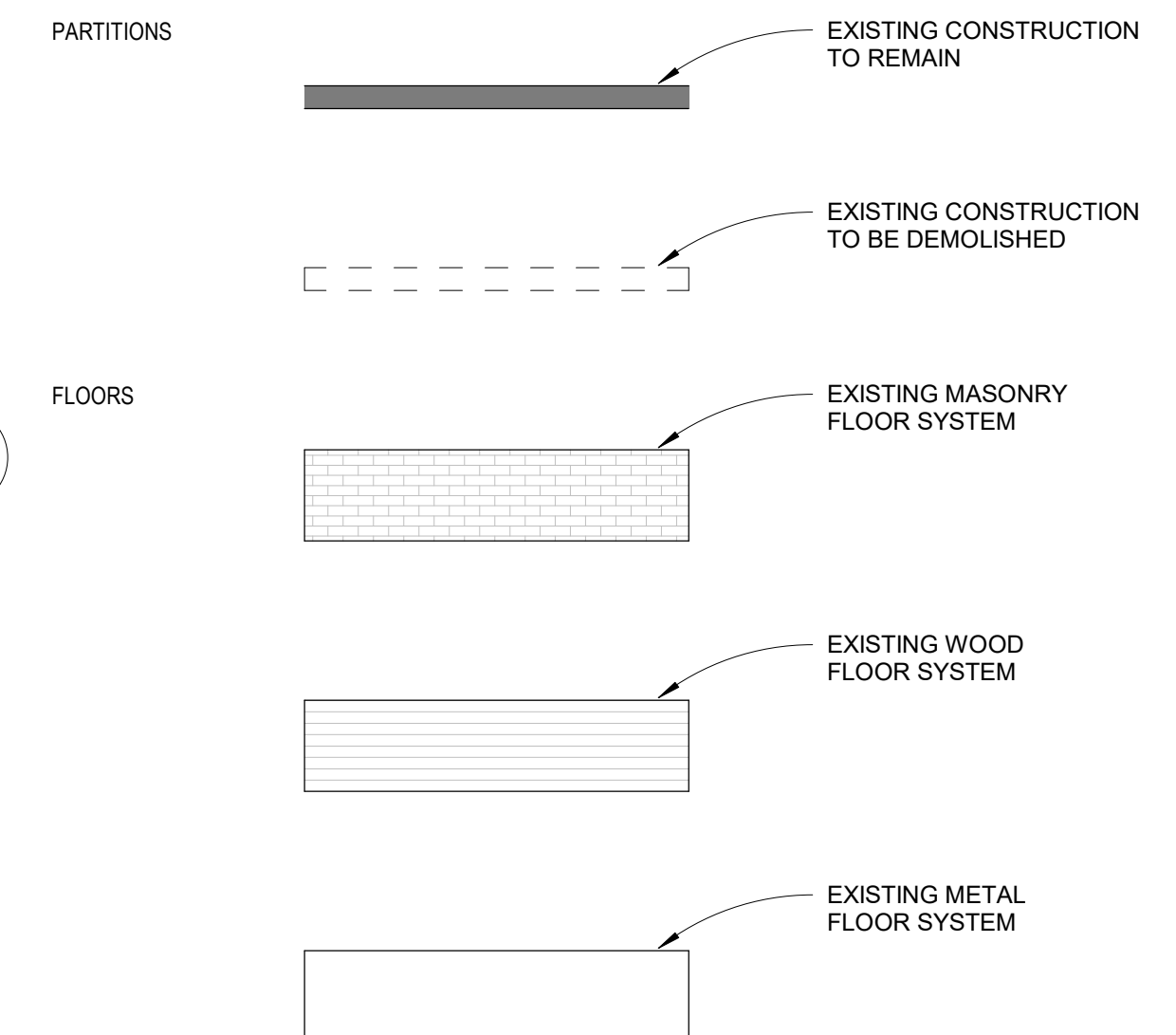


DESIGNED: DC	SUB SHEET NO. D3	TITLE OF SHEET DEMOLITION PLANS	DRAWING NO. 623
CADD: HT			181663
TECH. REVIEW: JW			PMIS/PKG NO. 226858
DATE: 7/7/2023			SHEET 8 OF 59
CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS			

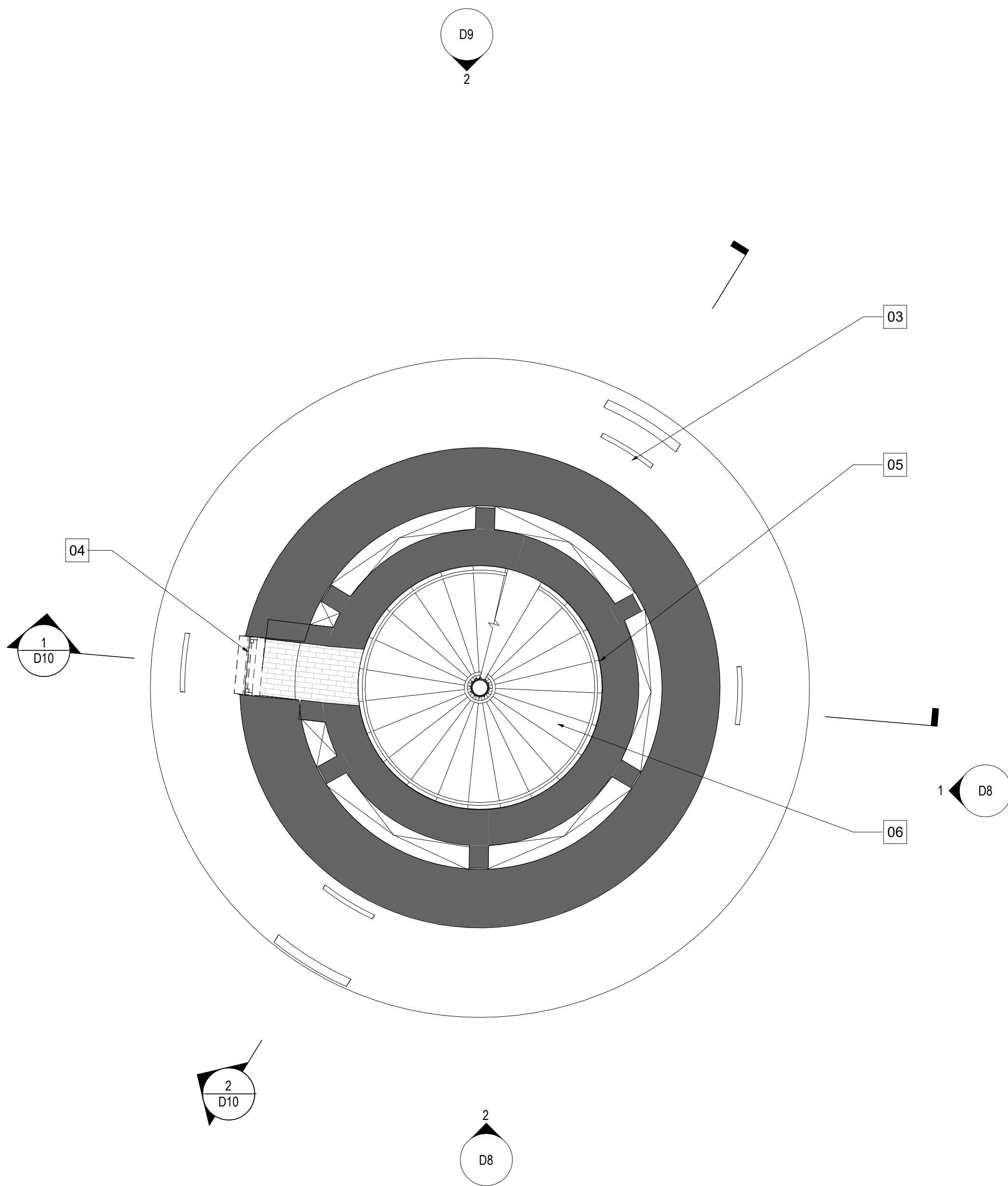
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- 04 REMOVE COATINGS FROM EXTERIOR MASONRY. CONTRACTOR SHALL INSPECT BRICK CONDITIONS PRIOR TO DEMOLITION. ASSUME 3,000 SF REPOINTING OF EXTERIOR MASONRY. ASSUME 300 SF OF EXTERIOR INCOMPATIBLE MORTAR REPLACEMENT. ASSUME 60 SF OF EXTERIOR BRICK MASONRY REPLACEMENT. (CLIN 1)
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- 06 CAST IRON SPIRAL STAIRCASE. DOCUMENT ALL INDIVIDUAL IRONWORK ELEMENTS OF THE LIGHTHOUSE, BOTH AT THE INTERIOR AND EXTERIOR OF THE STRUCTURE, NOTING THEIR SPECIFIC GEOMETRY, CONNECTIONS AND LOCATION, OR OTHER INFORMATION NECESSARY FOR ACCURATE RECONSTRUCTION. (CLIN 8)
- 07 AREA OF SIGNIFICANT DETERIORATION. PREP MASONRY FOR REPOINTING. (CLIN 9)
- 08 TREAD TO BE REMOVED AND AREA PREPPED FOR NEW TREAD. (CLIN 8)

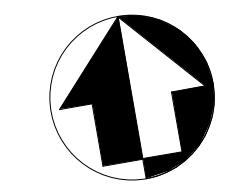
DEMO PLAN LEGEND



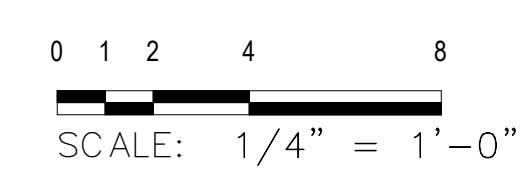
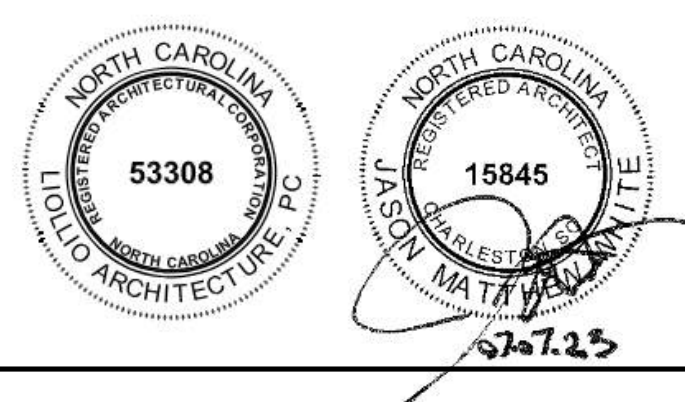
1 DEMO PLAN - (4) FOURTH LANDING
SCALE: 1/4" = 1'-0"



2 DEMO PLAN - (4) FOURTH WINDOW LEVEL
SCALE: 1/4" = 1'-0"



7/10/2023 3:15:03 PM Autodesk Docs://22602 NPS CALO Lighthouse/2022 1010 - NPS CALO Lighthouse Repairs R22 DD.rvt

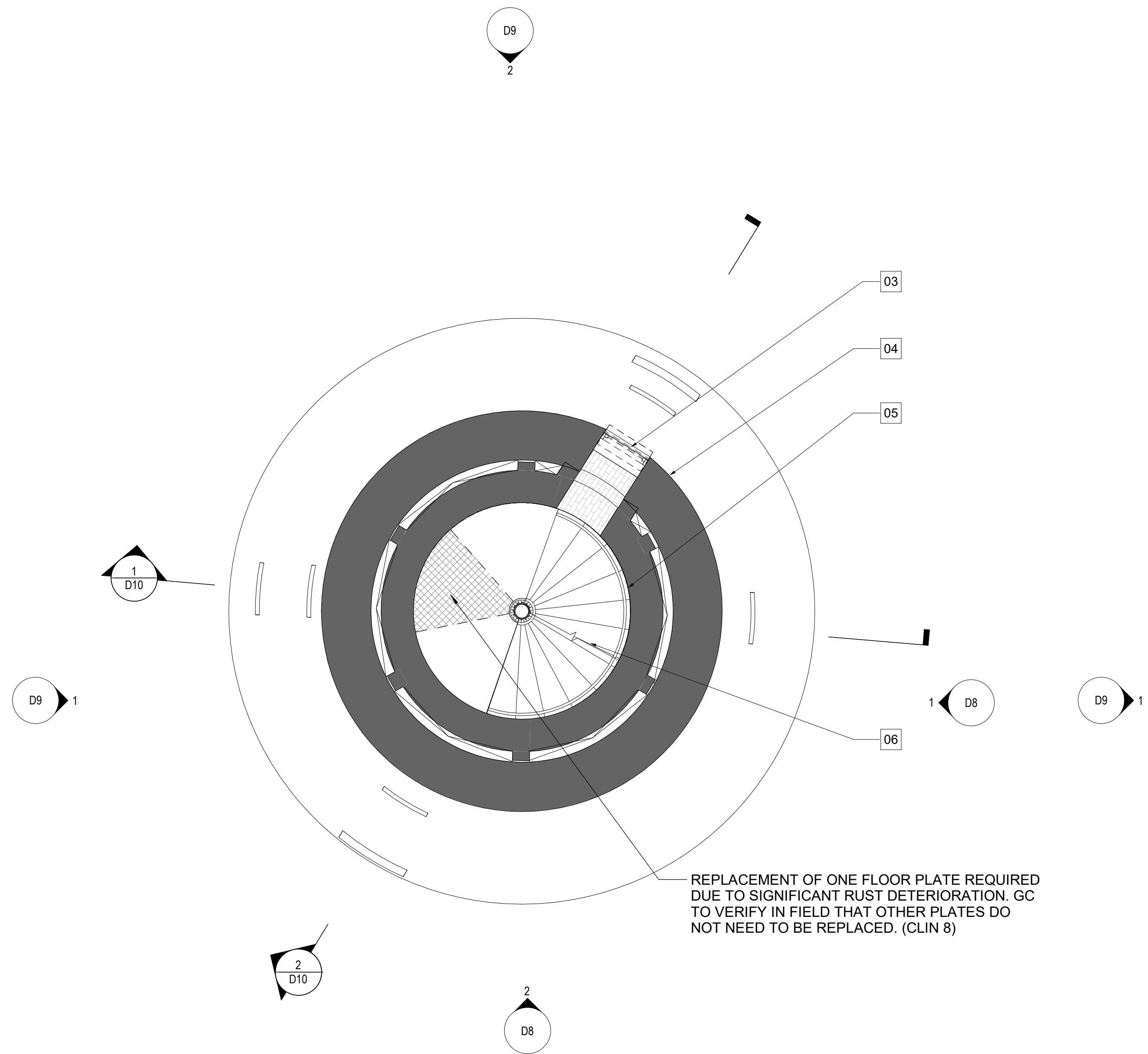
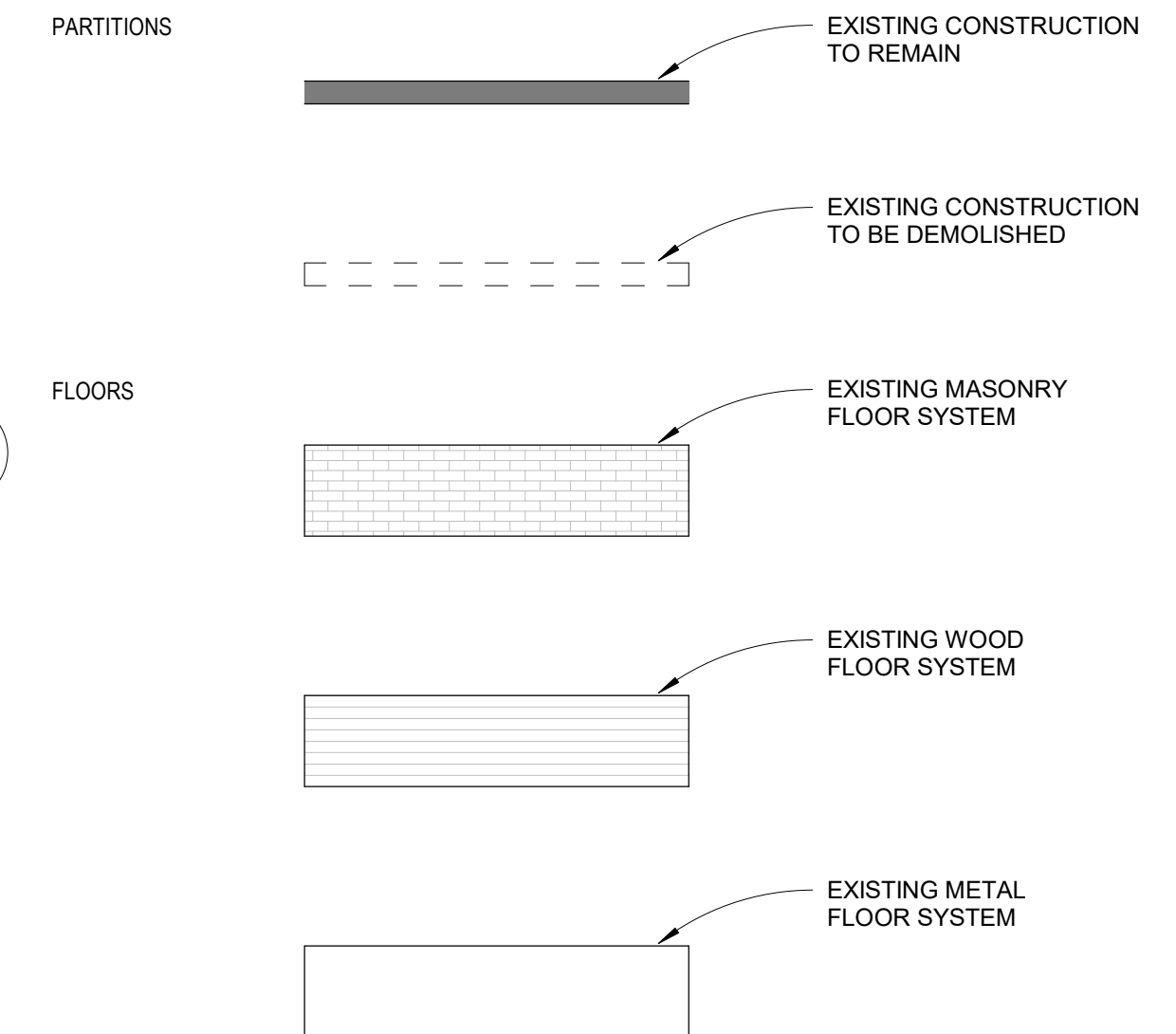


DESIGNED: DC	SUB SHEET NO. D4	TITLE OF SHEET DEMOLITION PLANS	DRAWING NO. 623
CADD: HT			181663
TECH. REVIEW: JW			PMIS/PKG NO. 226858
DATE: 7/7/2023			SHEET 9 OF 59
CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS			

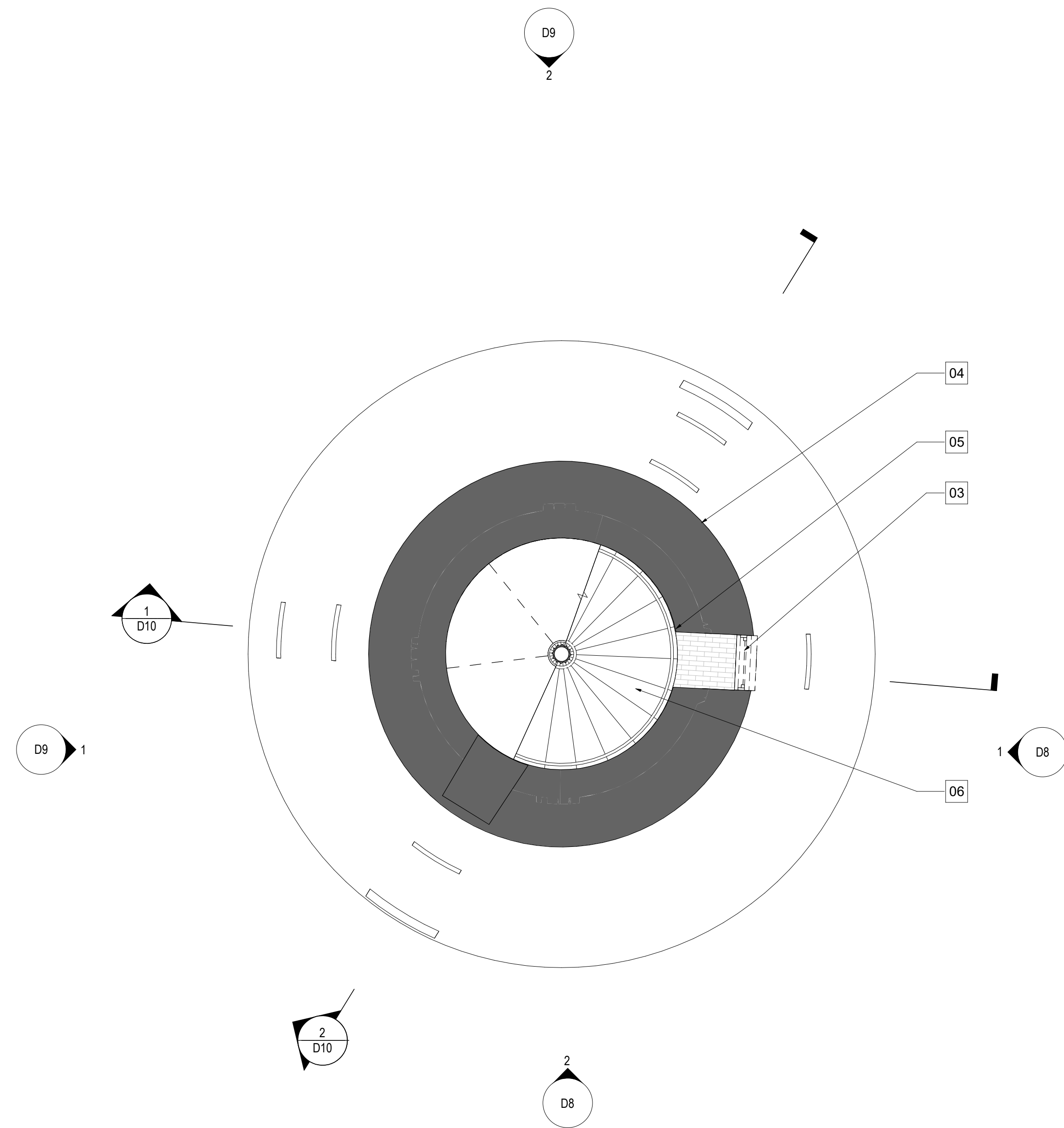
SHEET NOTES

- 01 CONSTRUCTION TO REMAIN
- 02 DOOR AND FRAME TO BE REMOVED. (CLIN 2)
- 03 WOOD WINDOW, SILL AND FRAME TO BE REMOVED. (CLIN 3)
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- 08 TREAD TO BE REMOVED AND AREA PREPPED FOR NEW TREAD. (CLIN 8)

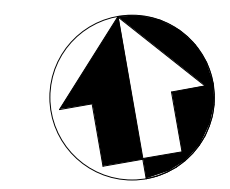
DEMO PLAN LEGEND



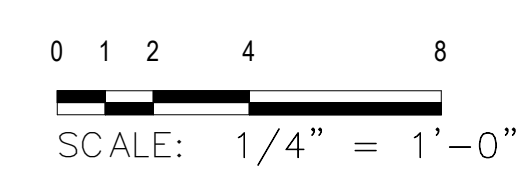
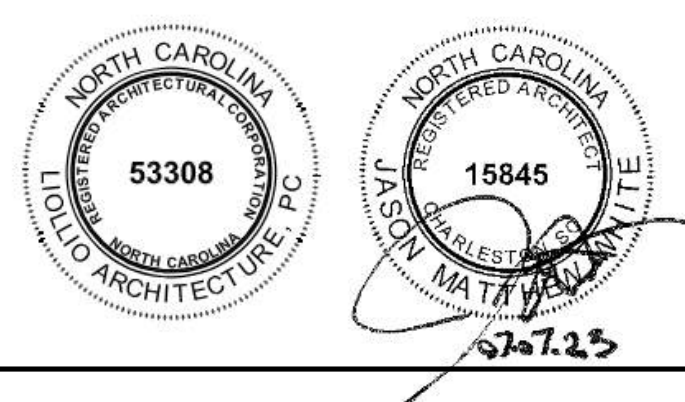
1 DEMO PLAN - (5) FIFTH LANDING
SCALE: 1/4" = 1'-0"



2 DEMO PLAN - (5) FIFTH WINDOW LEVEL
SCALE: 1/4" = 1'-0"



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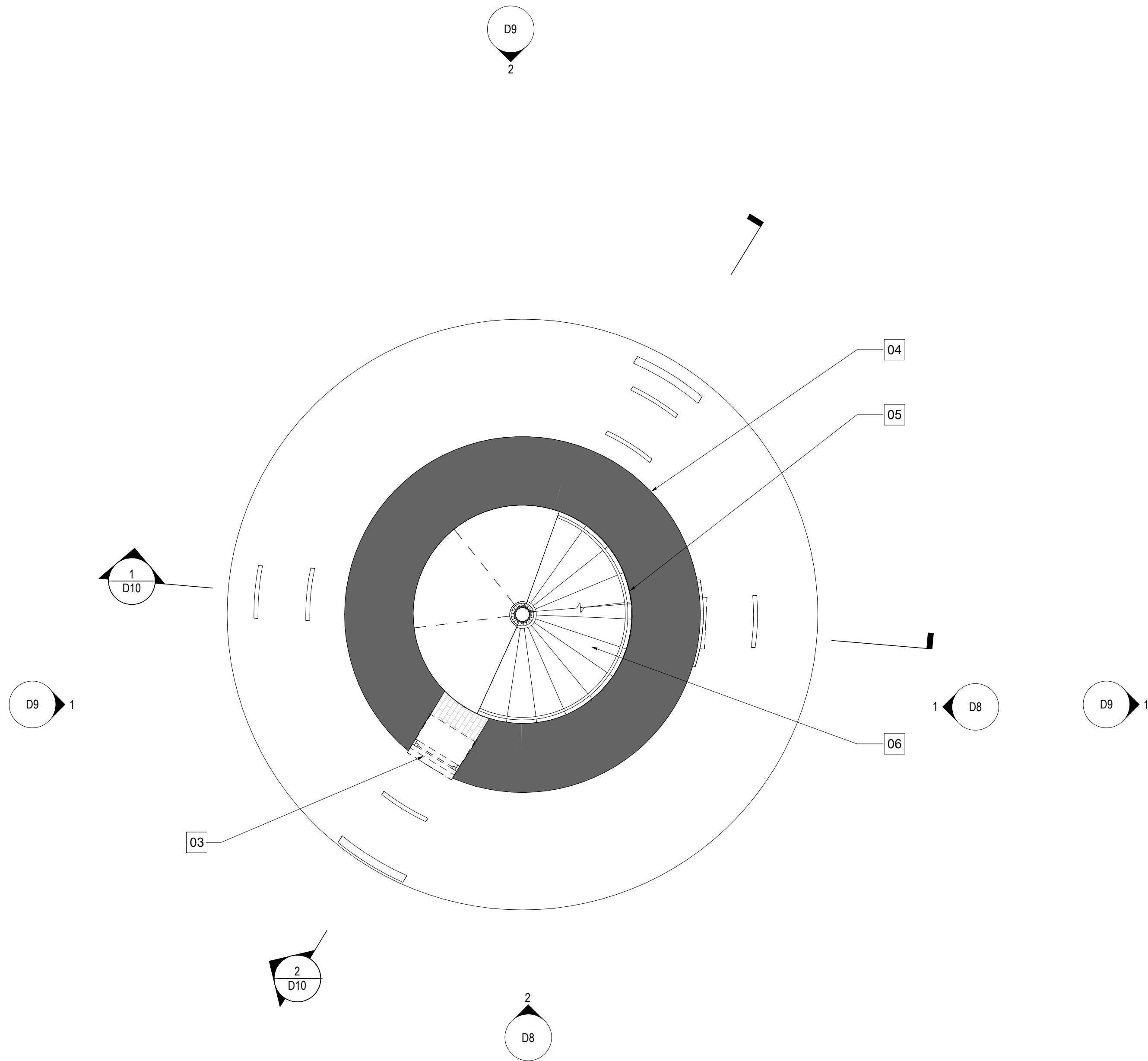
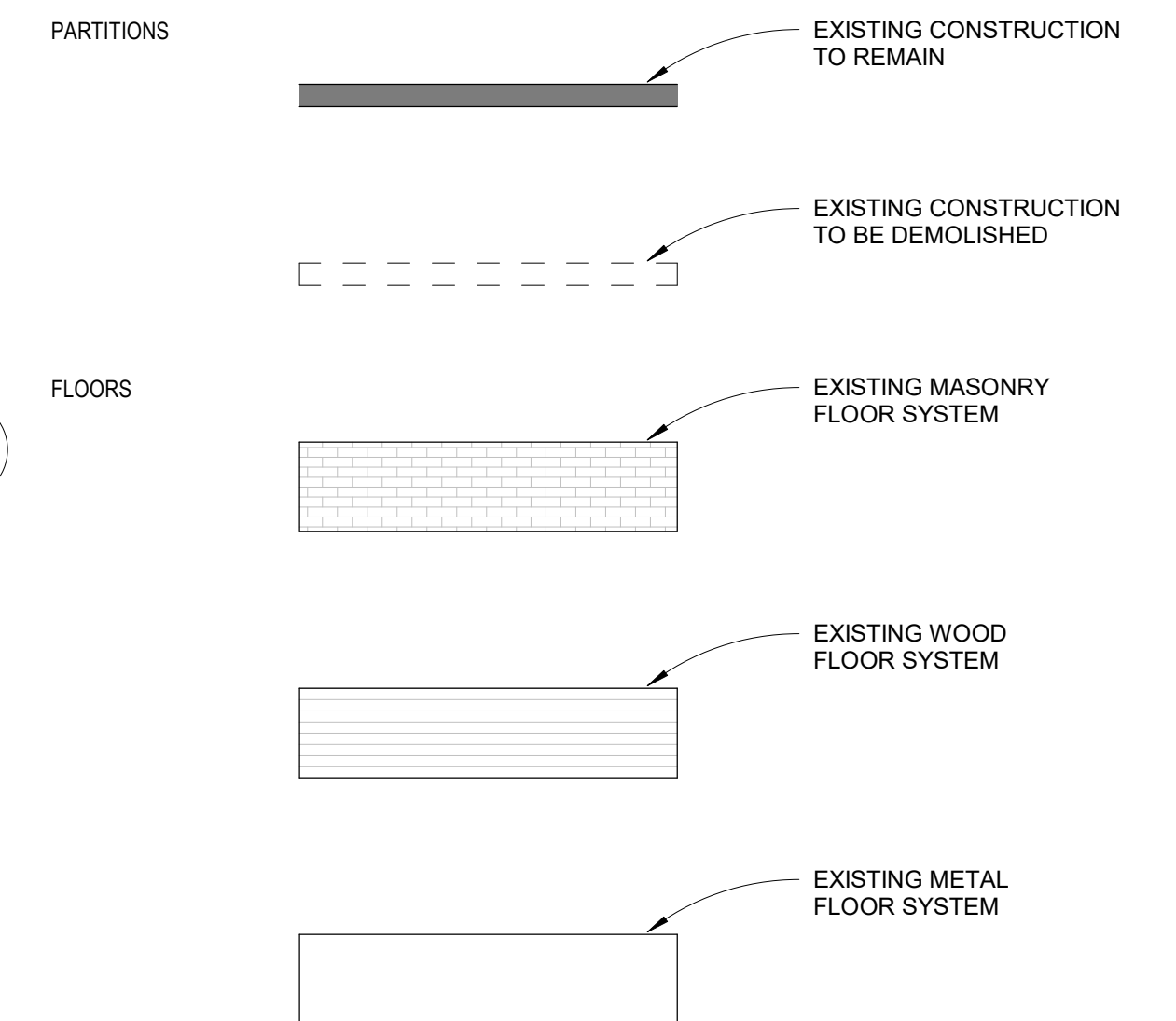
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CADD: HT			181663
TECH. REVIEW: JW			PMIS/PKG NO. 226858
DATE: 7/7/2023			SHEET 10 OF 59
CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS			

7/10/2023 3:15:08 PM Autodesk Docs://22602 NPS CALO Lighthouse/2022 1010 - NPS CALO Lighthouse Repairs R22 DD.rvt

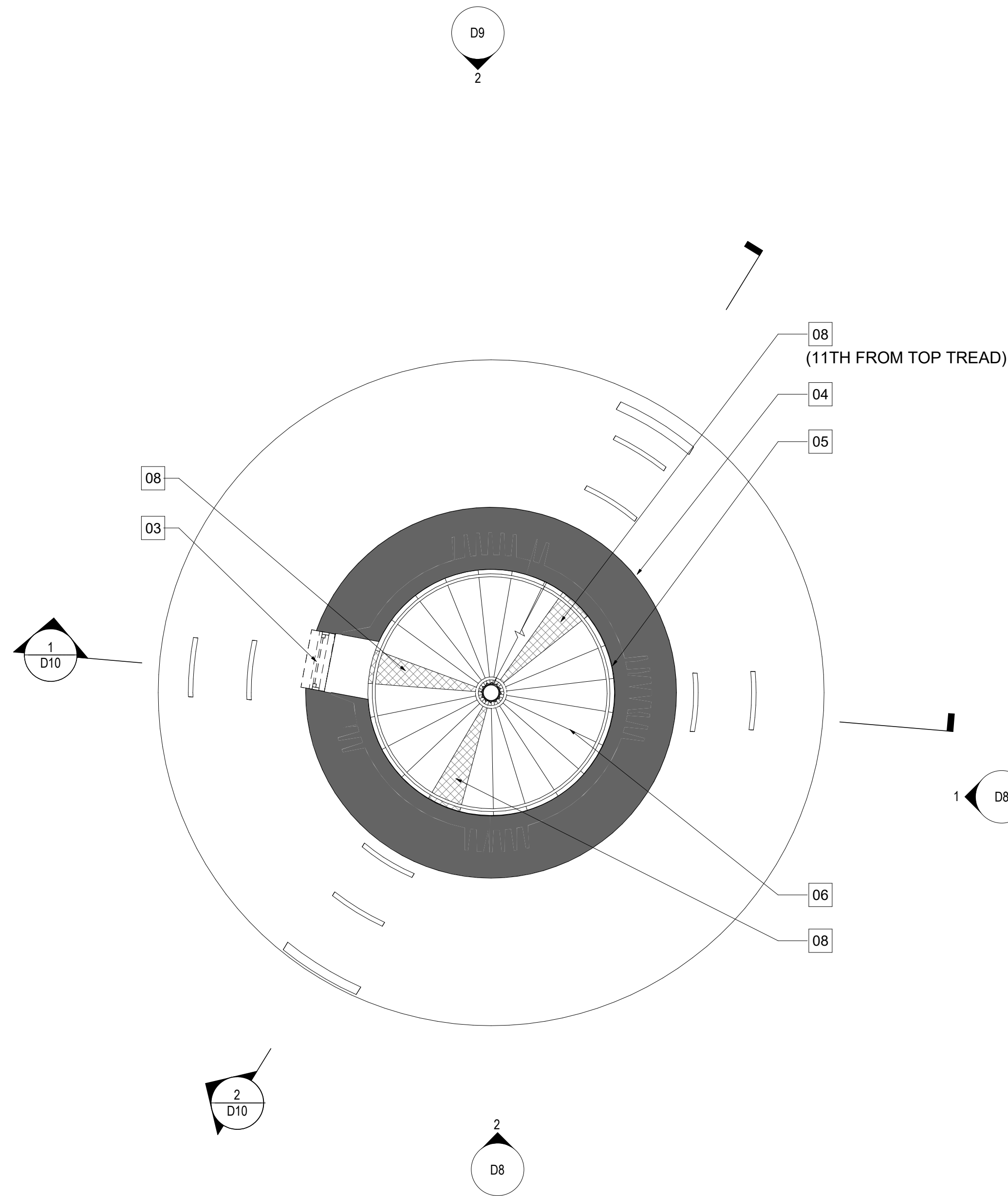
SHEET NOTES

- 01 CONSTRUCTION TO REMAIN
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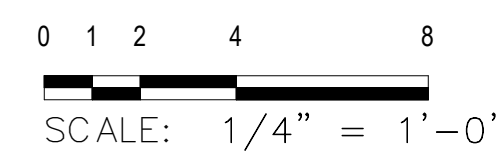
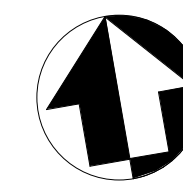
DEMO PLAN LEGEND



1 DEMO PLAN - (6) SIXTH LANDING
SCALE: 1/4" = 1'-0"



2 DEMO PLAN - (6) SIXTH WINDOW LANDING
SCALE: 1/4" = 1'-0"



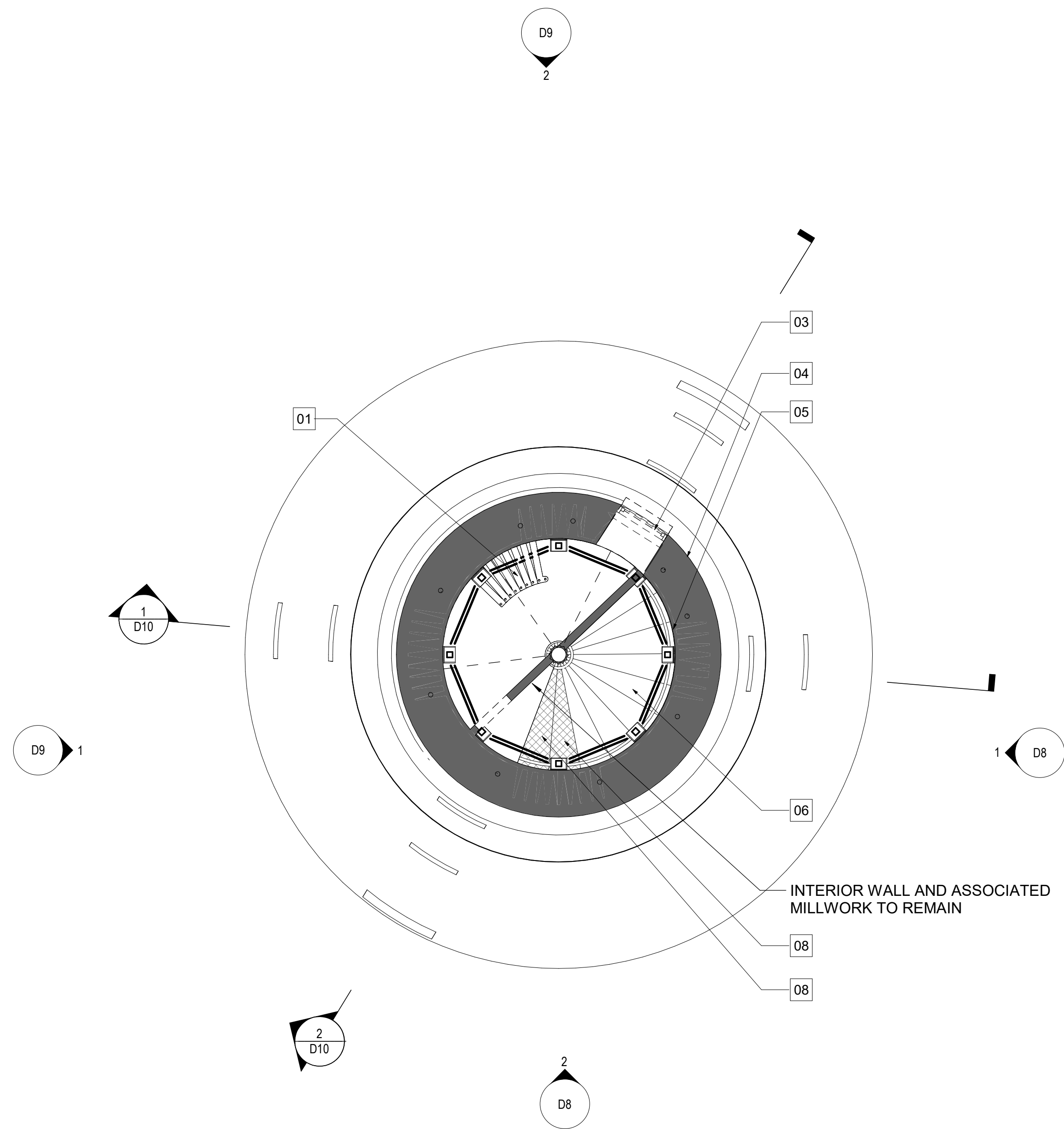
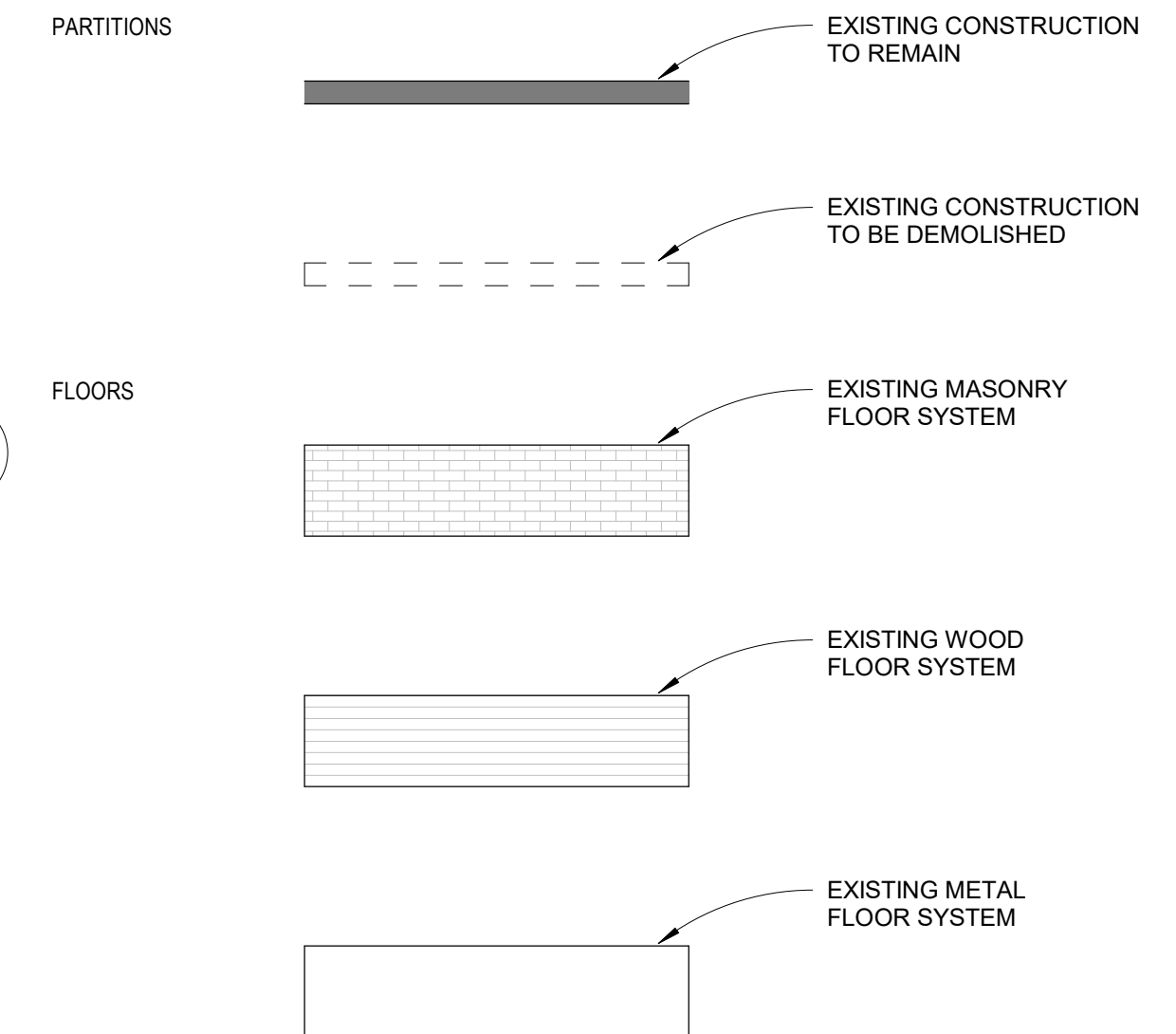
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CADD: HT			181663
TECH. REVIEW: JW			PMIS/PKG NO. 226858
DATE: 7/7/2023			SHEET 11 OF 59

CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS

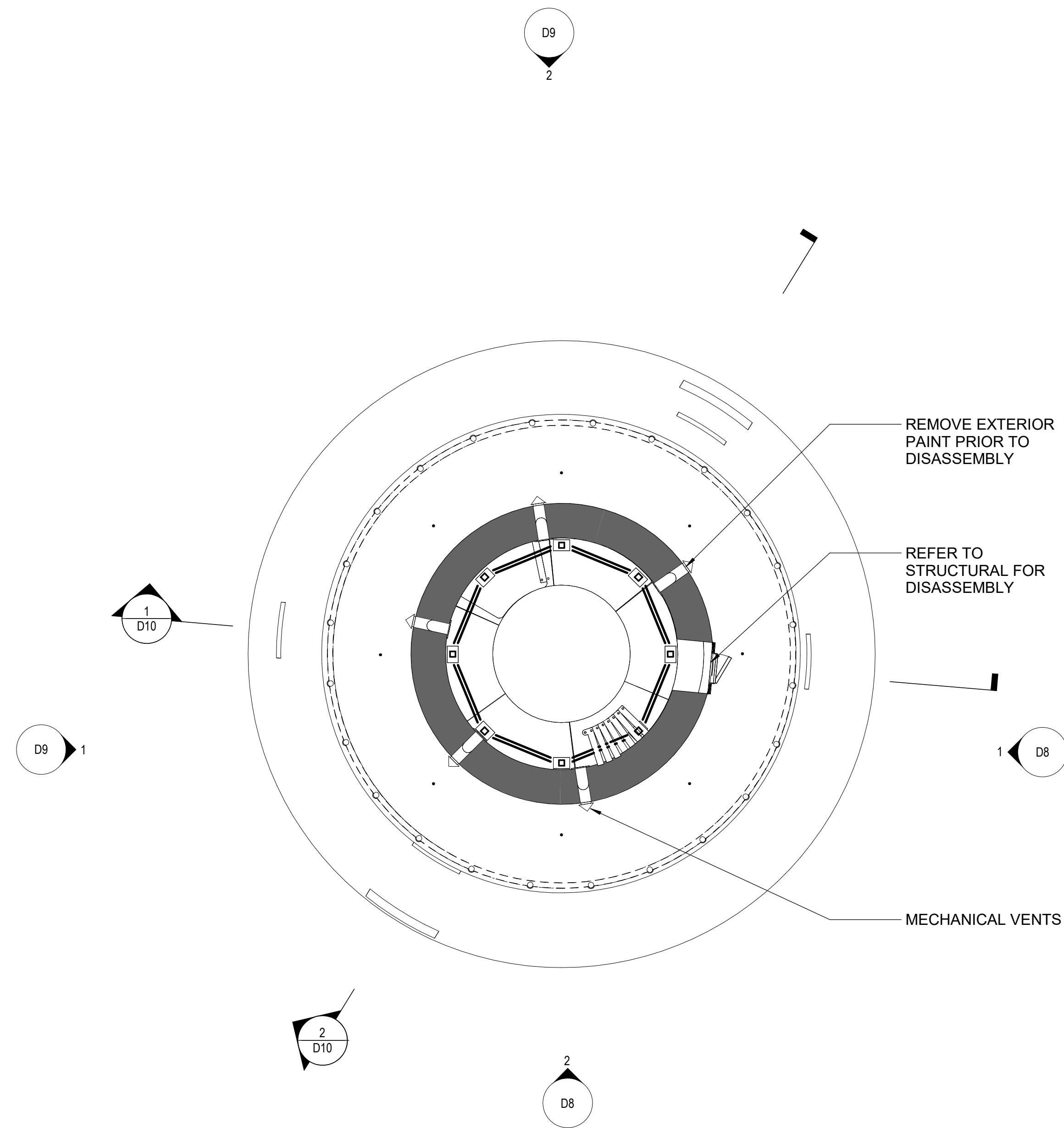
SHEET NOTES

- 01 CONSTRUCTION TO REMAIN
- 02 DOOR AND FRAME TO BE REMOVED. (CLIN 2)
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DEMO PLAN LEGEND

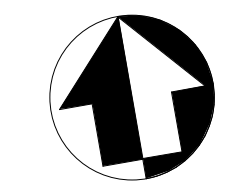


1 DEMO PLAN - (7) SEVENTH LANDING
SCALE: 1/4" = 1'-0"

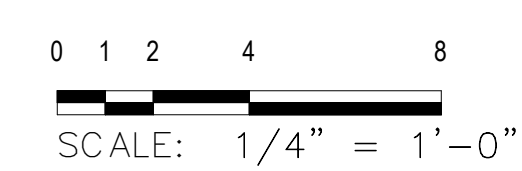
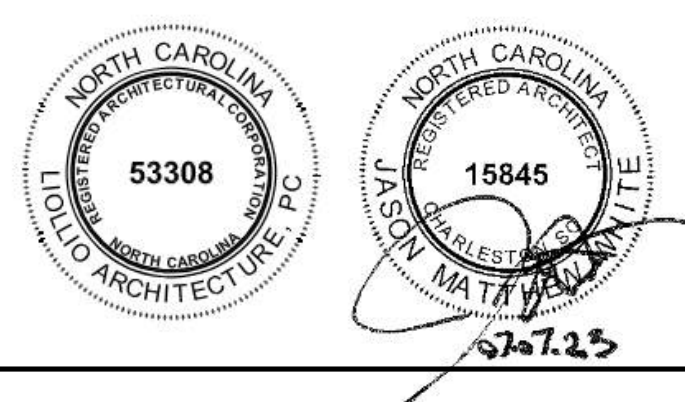


2 DEMO PLAN - (8) EIGHTH LANDING
SCALE: 1/4" = 1'-0"

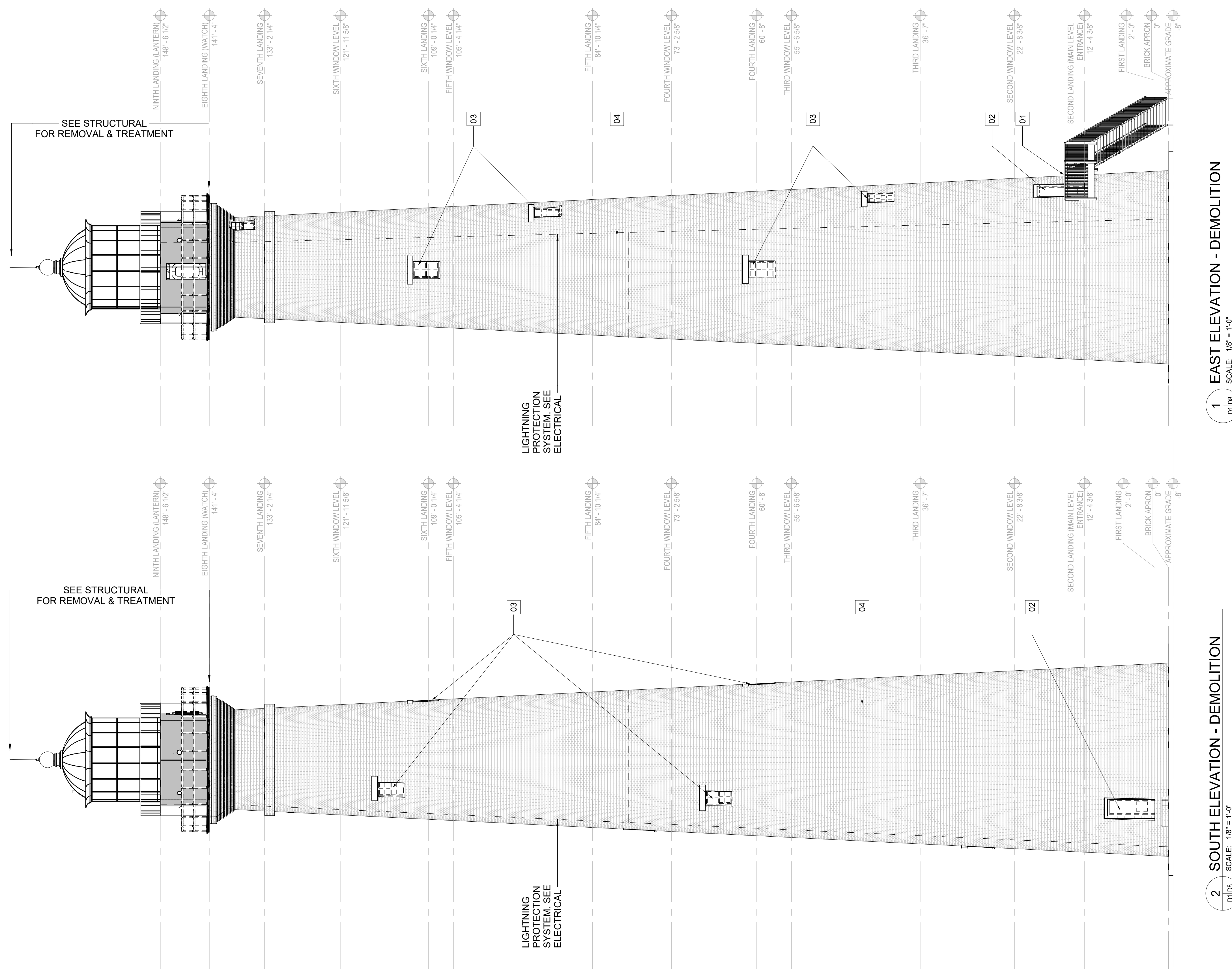
SEE STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.



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DESIGNED: DC	SUB SHEET NO. D7	TITLE OF SHEET DEMOLITION PLANS	DRAWING NO. 181663	
CADD: HT			PMIS/PKG NO. 226858	
TECH. REVIEW: JW			SHEET 12 OF 59	
DATE: 7/7/2023			CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS	

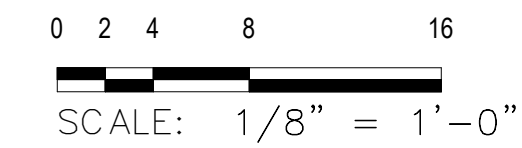


SHEET NOTES

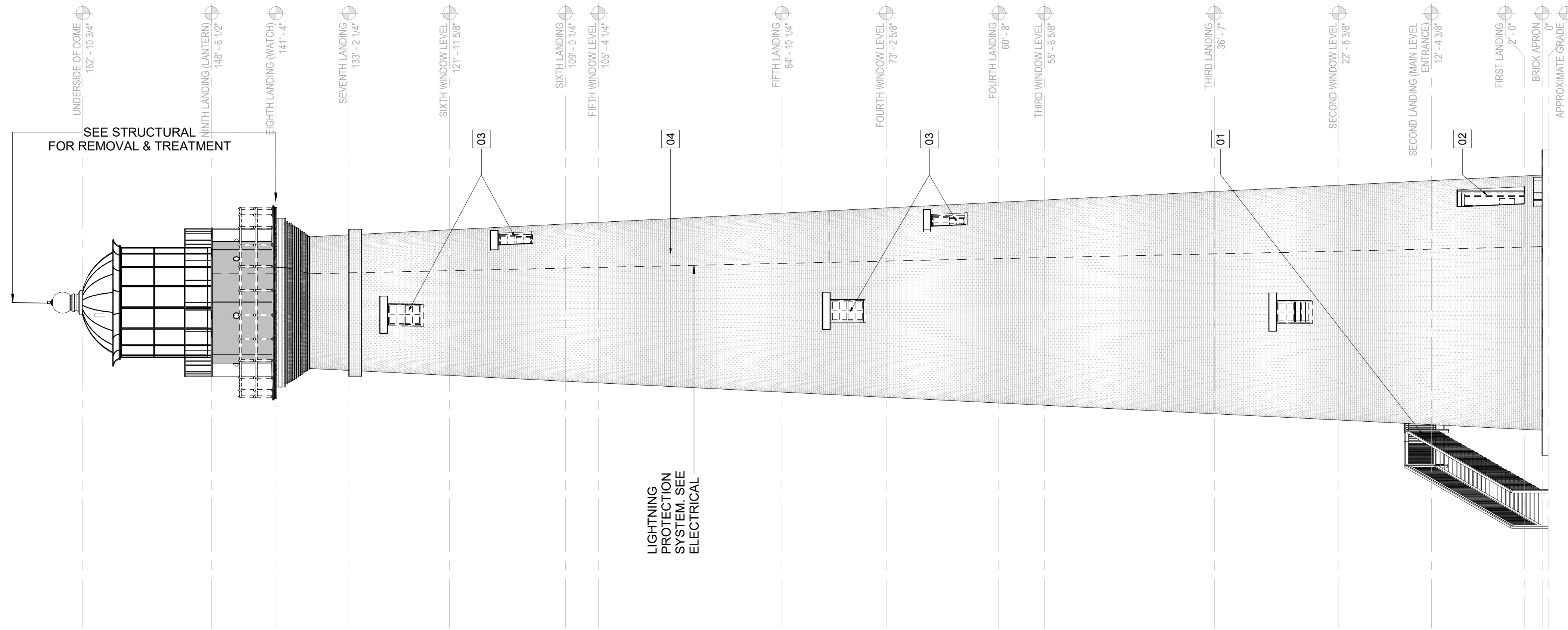
- 01 CONSTRUCTION TO REMAIN
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GENERAL NOTES - DEMO ELEVATION

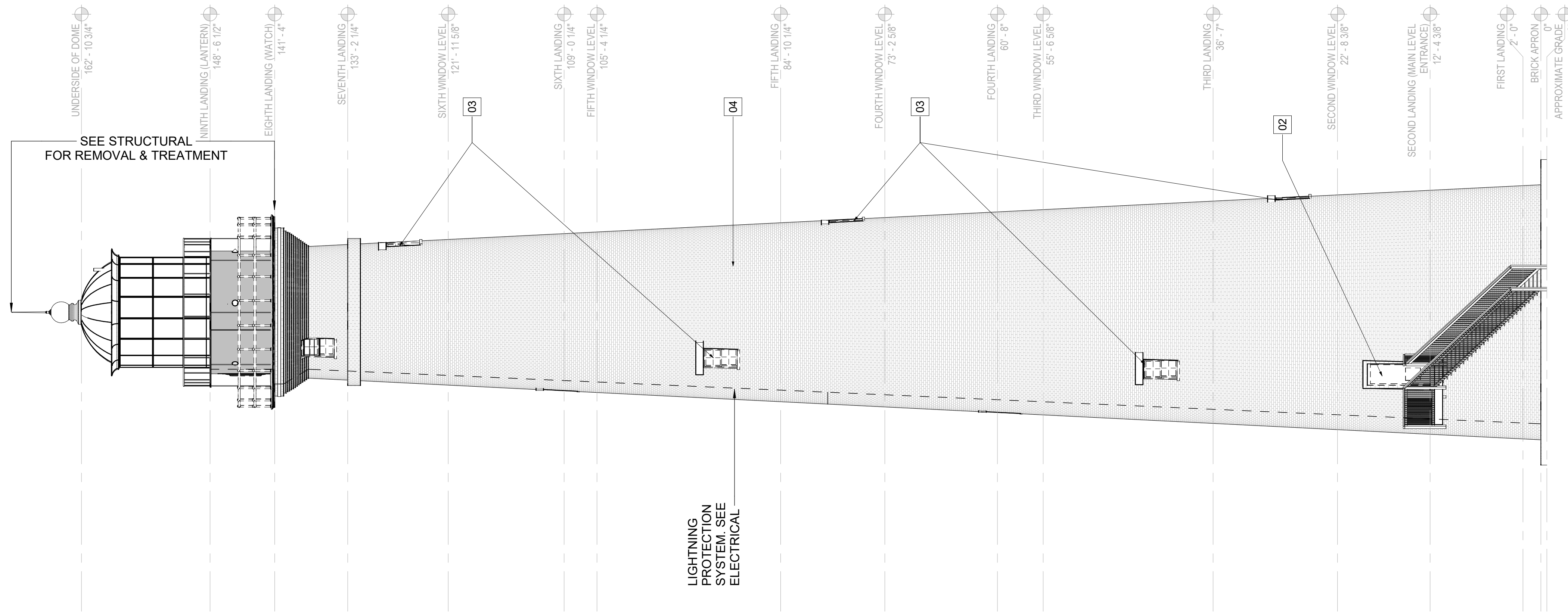
- A COORDINATE REMOVAL OF LANTERN AND 8TH LEVEL MASONRY WITH STRUCTURAL DRAWINGS.



DESIGNED: DC	SUB SHEET NO. D8	TITLE OF SHEET DEMOLITION ELEVATIONS	DRAWING NO. 623	
CADD: HT			PMIS/PKG NO. 226858	
TECH. REVIEW: JW			SHEET 13 OF 59	
DATE: 7/7/2023			CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS	



1 WEST ELEVATION - DEMOLITION
SCALE: 1/8" = 1'-0"



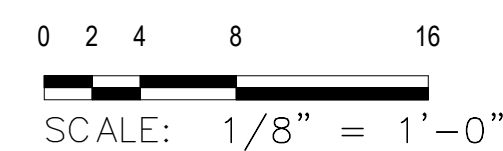
2 NORTH ELEVATION - DEMOLITION
SCALE: 1/8" = 1'-0"

SHEET NOTES

- 01 CONSTRUCTION TO REMAIN
- 02 DOOR AND FRAME TO BE REMOVED. (CLIN 2)
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GENERAL NOTES - DEMO ELEVATION

- A COORDINATE REMOVAL OF LANTERN AND 8TH LEVEL MASONRY WITH STRUCTURAL DRAWINGS.

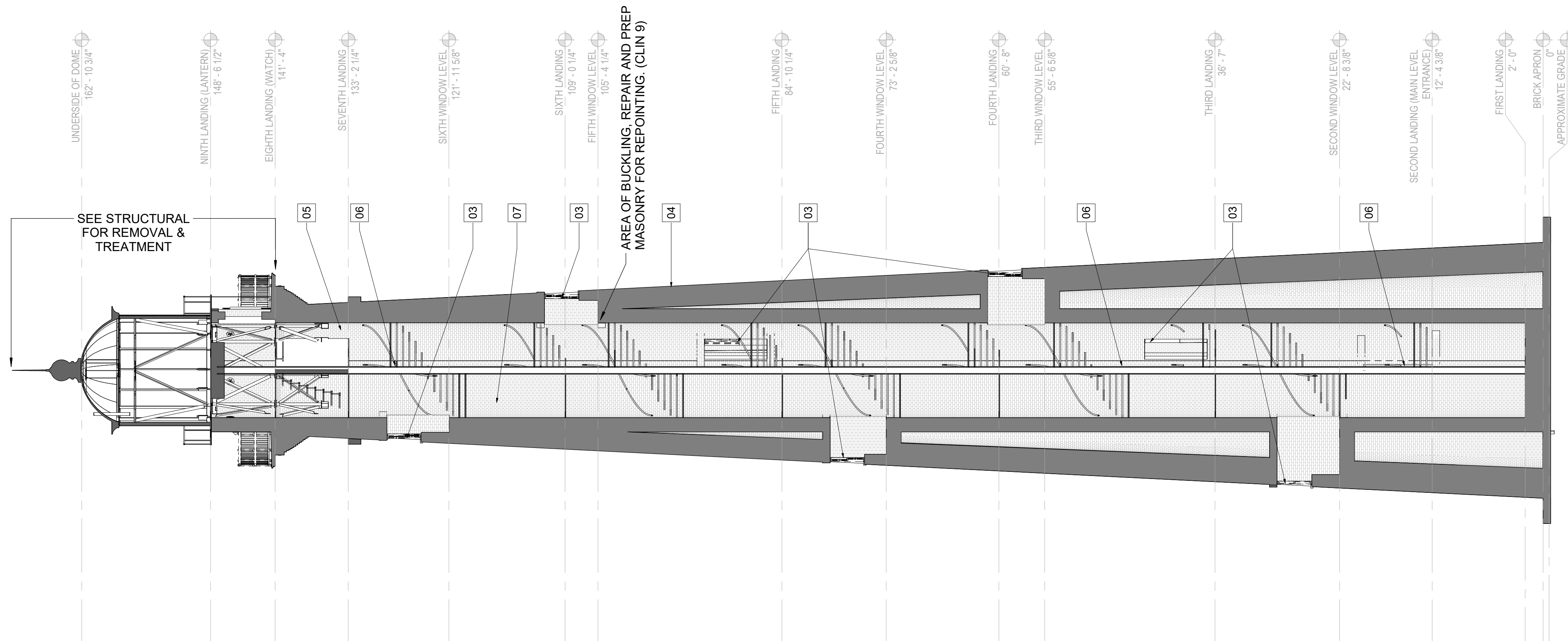


DESIGNED:	DC
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TECH. REVIEW:	JW
DATE:	7/7/2023

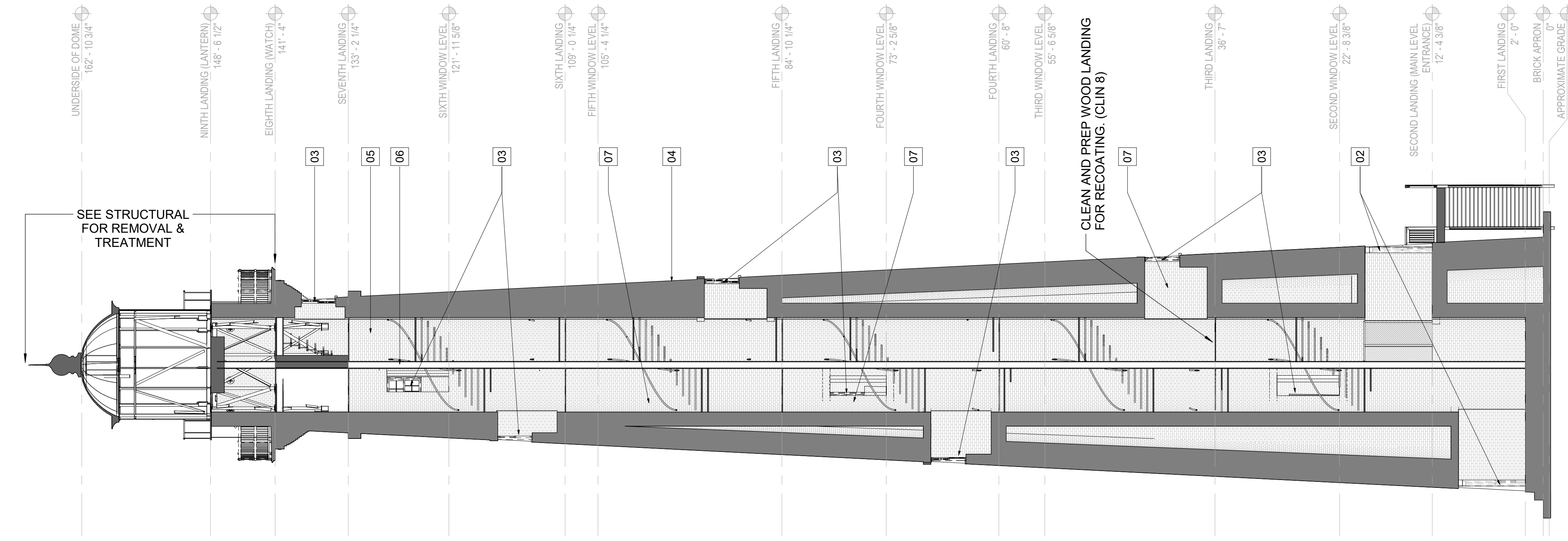
SUB SHEET NO.	D9
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TITLE OF SHEET	DEMOLITION ELEVATIONS
CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS	

DRAWING NO.	623
PMIS/PKG NO.	226858
SHEET	14 OF 59



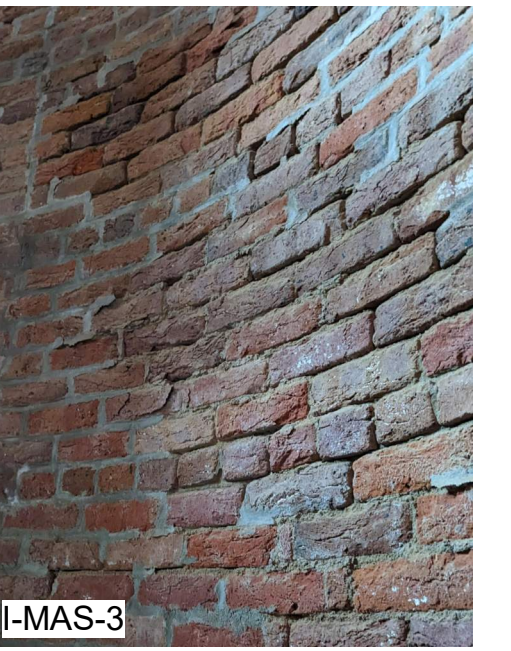
1 DEMO BUILDING SECTION 1
D1/D10 SCALE: 1/8" = 1'-0"



2 DEMO BUILDING SECTION 2
D1/D10 SCALE: 1/8" = 1'-0"

SHEET NOTES

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- 08 TREAD TO BE REMOVED AND AREA PREPPED FOR NEW TREAD. (CLIN 8)



0 2 4 8 16
SCALE: 1/8" = 1'-0"

DESIGNED:	DC
CADD:	HT
TECH. REVIEW:	JW
DATE:	7/7/2023

SUB SHEET NO.	D10
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TITLE OF SHEET	DEMOLITION BUILDING SECTION
CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS	

DRAWING NO.	623
181663	
PMIS/PKG NO.	226858
SHEET	15 OF 59



LOWER LEVEL DOOR - EXISTING CONDITIONS



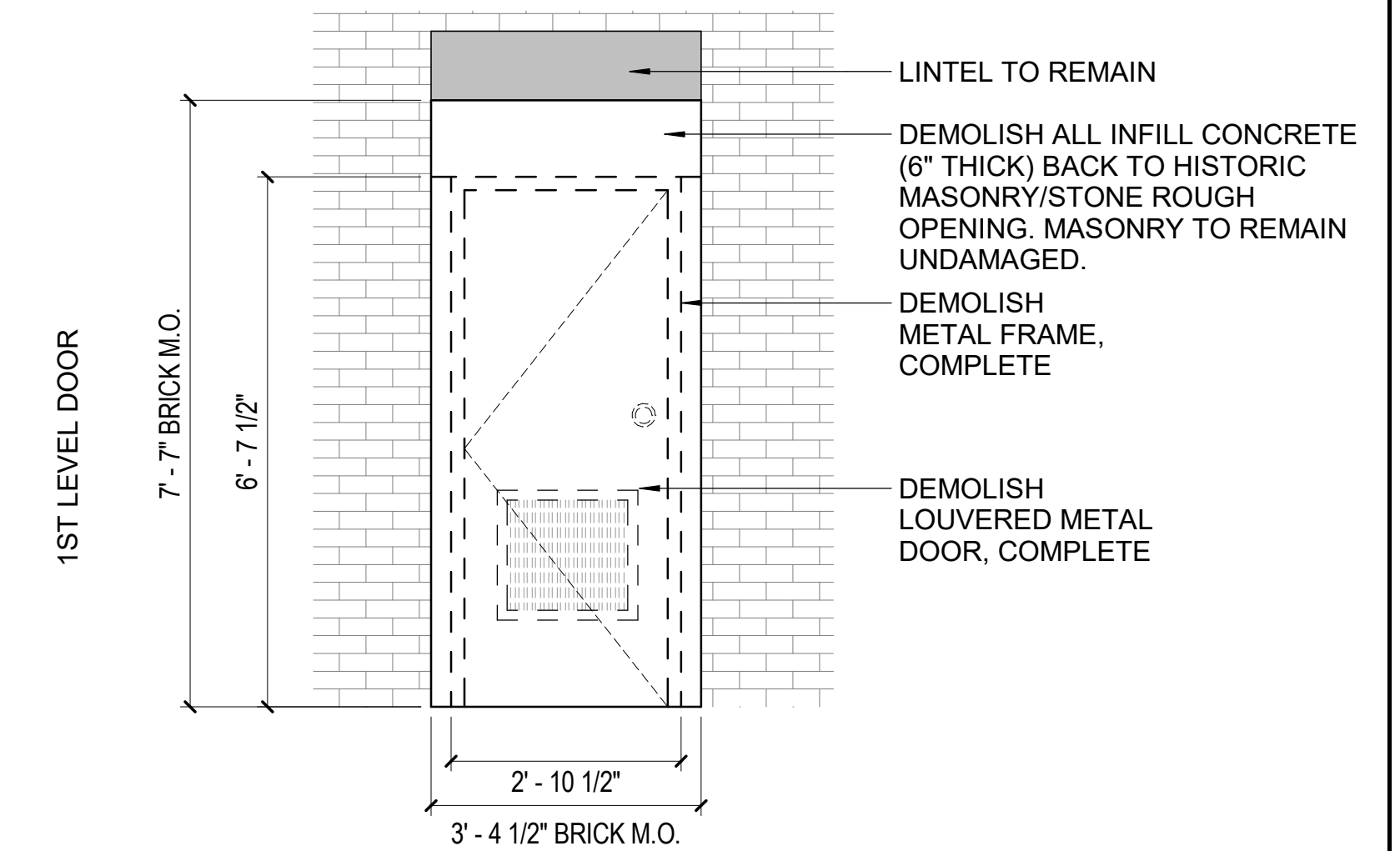
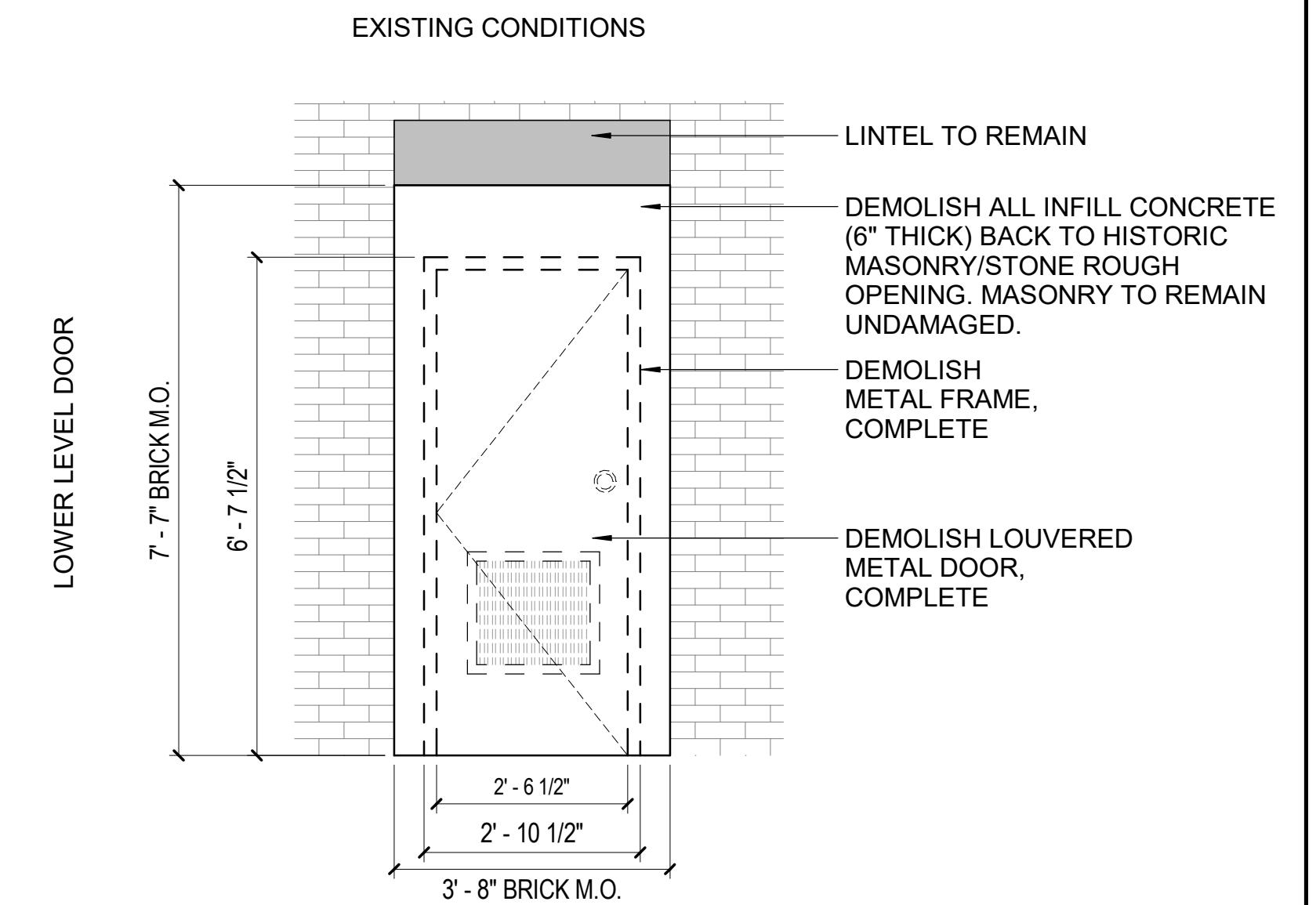
REMOVE CONCRETE INFILL AND PREP ALONG WITH DOOR AND FRAME



1ST LEVEL DOOR - EXISTING CONDITIONS



REMOVE AND PREP ALONG WITH DOOR AND FRAME



1 DOOR ELEVATIONS - DEMO
SCALE: 1/2" = 1'-0"

ALL WORK ON THIS PAGE IS ASSOCIATED WITH CLIN 2 UNLESS OTHERWISE SPECIFIED.

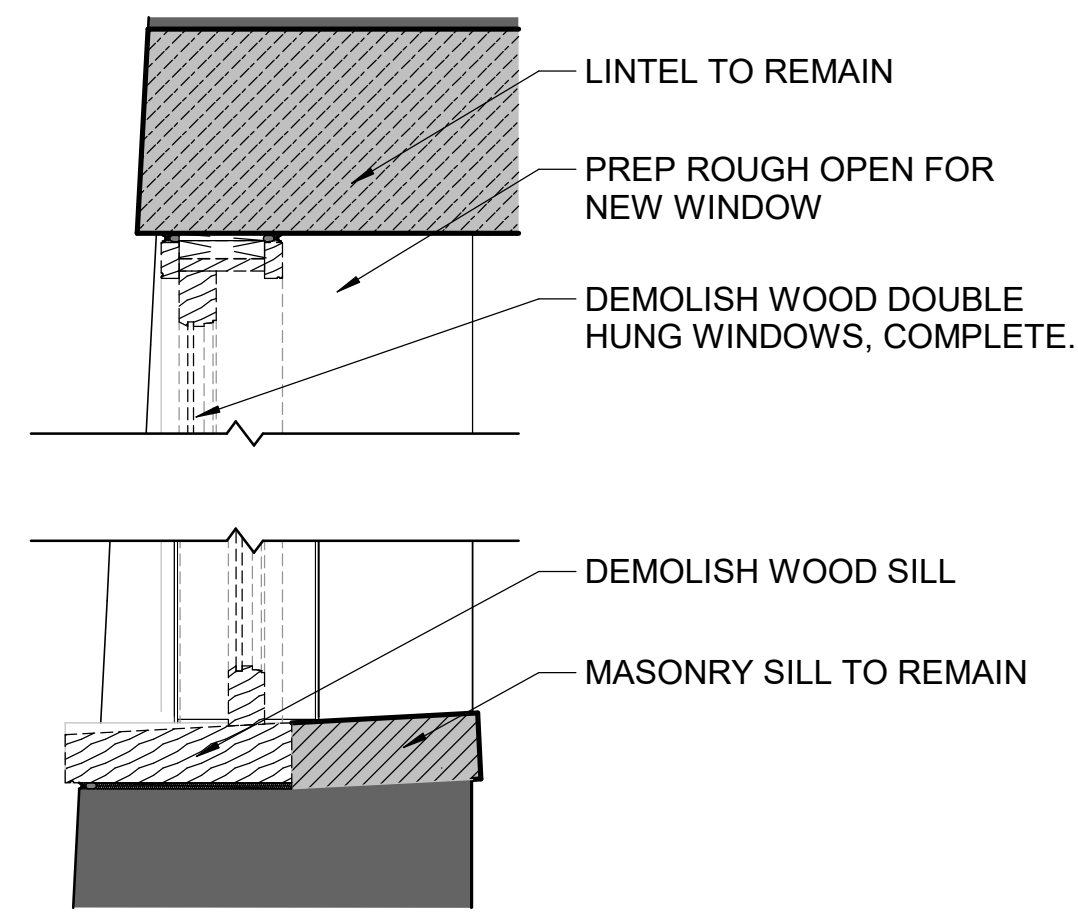
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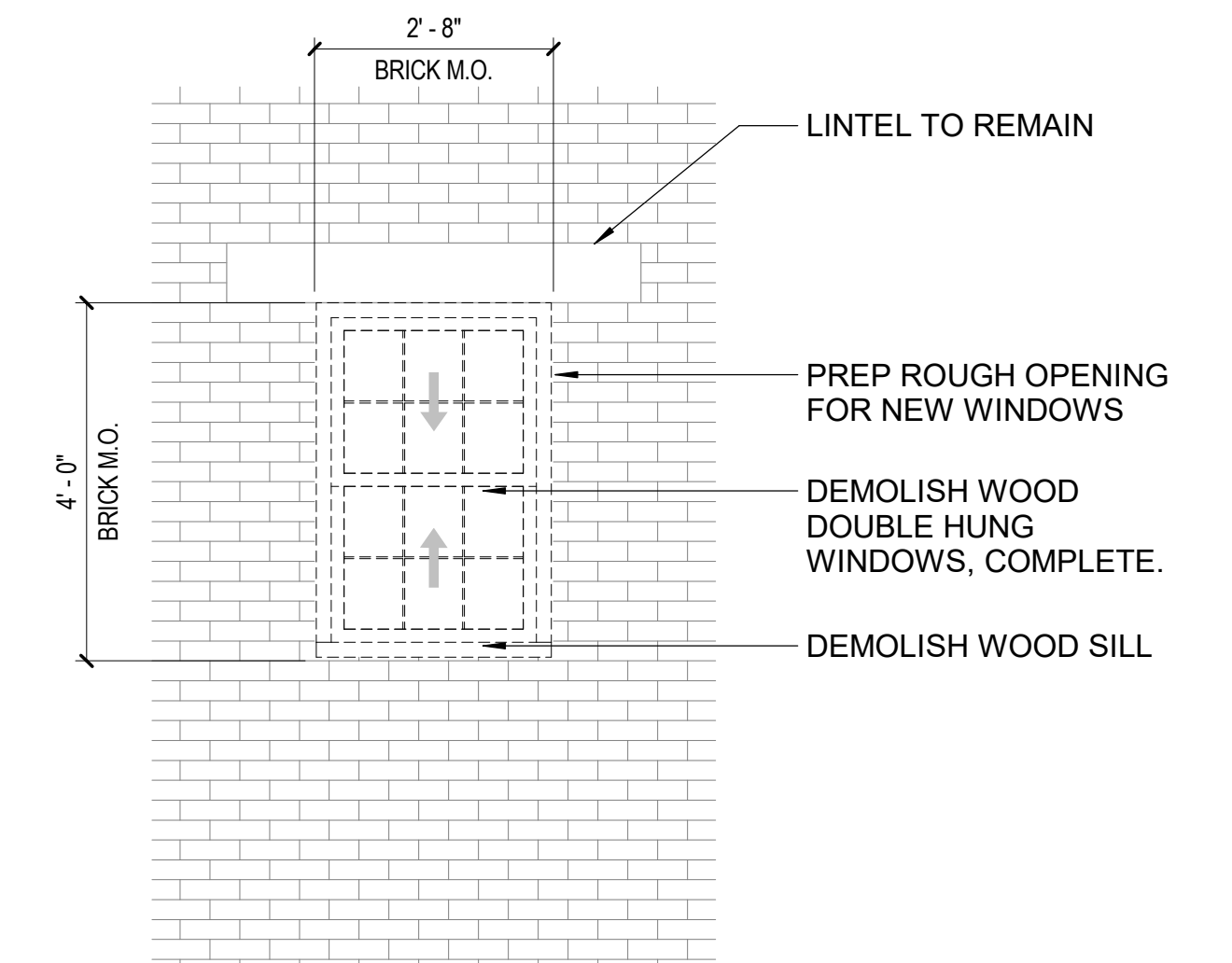
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SCALE: 1/2" = 1'-0"

DESIGNED: DC	SUB SHEET NO. D11	TITLE OF SHEET DOOR DEMO AND TYPES	DRAWING NO. 623
CADD: HT			181663
TECH. REVIEW: JW			PMIS/PKG NO. 226858
DATE: 7/7/2023			SHEET 16 OF 59
			CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS

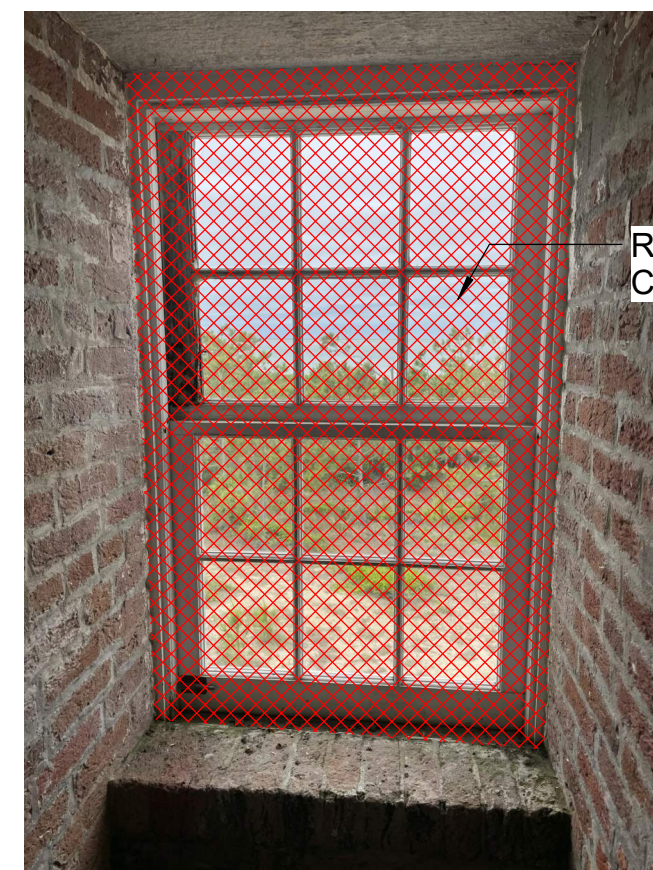
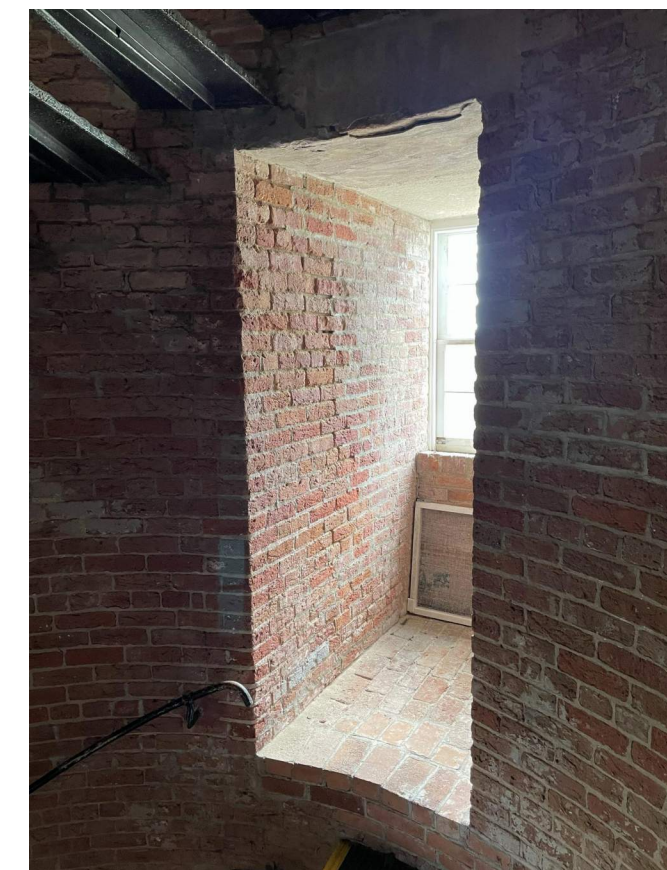
7/10/2023 3:15:42 PM Autodesk Docs://22602 NPS CALO Lighthouse/2022 1010 - NPS CALO Lighthouse Repairs R22 DD.rvt



1 TYP WINDOW SECTION - DEMOLITION
SCALE: 1 1/2" = 1'-0"



2 TYP WINDOW ELEVATION - DEMOLITION
SCALE: 1/2" = 1'-0"



REMOVE WINDOW COMPLETE



AREA TO BE PATCHED TO MATCH EXISTING. (CLIN 9)

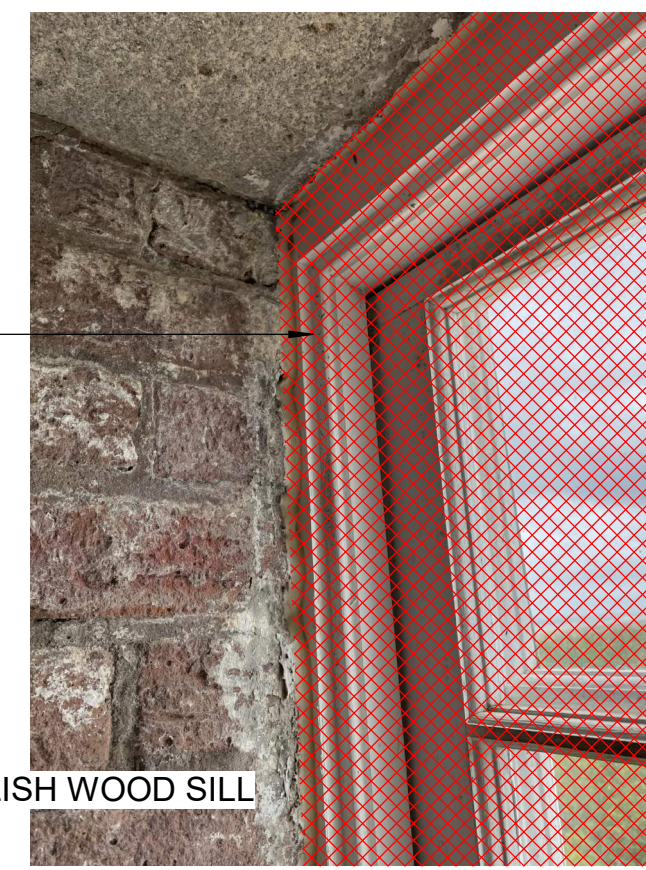


CLEAN AND PREP FOR REPOINTING. (CLIN 9)

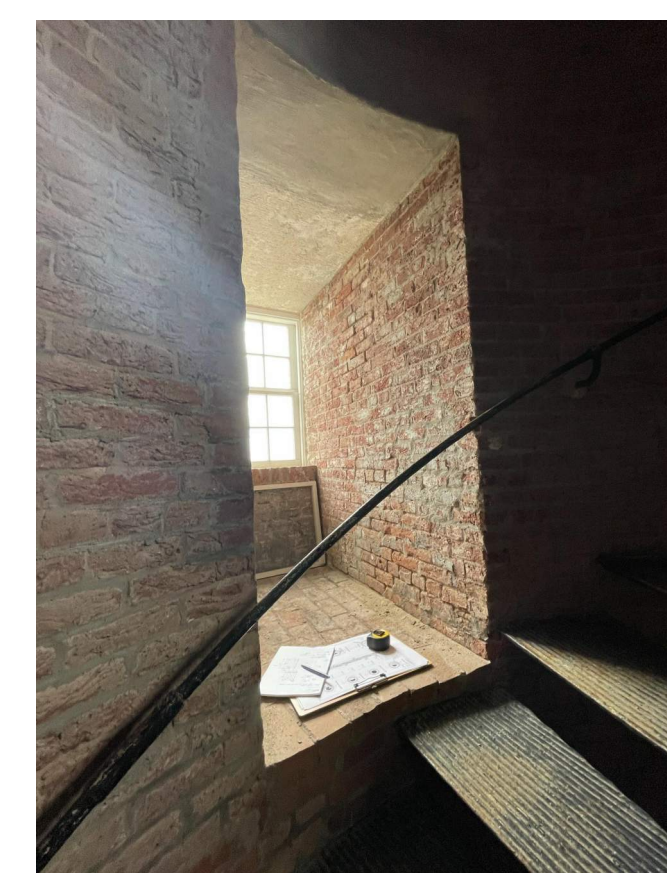


DEMO

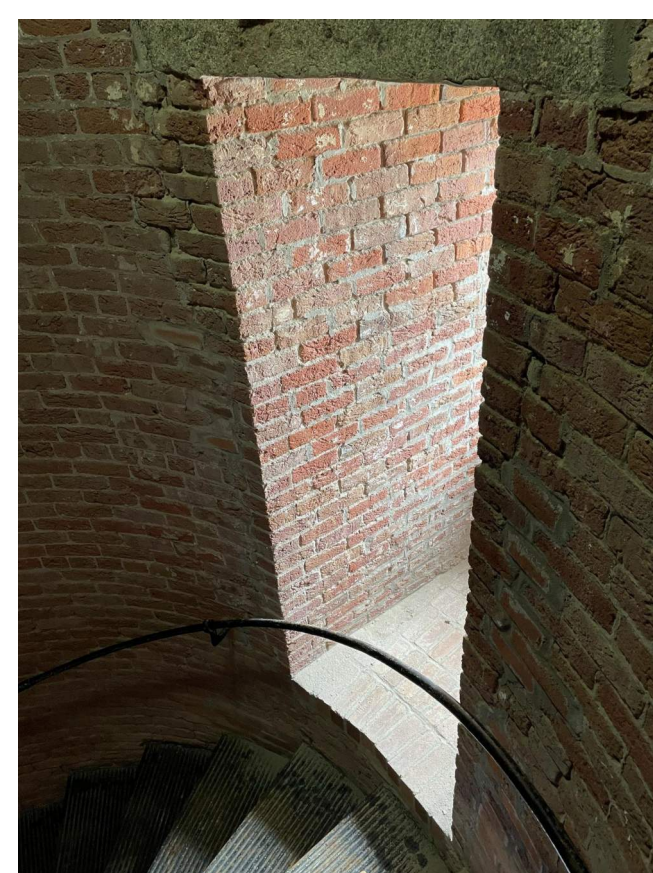
DEMOLISH WOOD SILL



WINDOW TO BE DEMOLISHED.



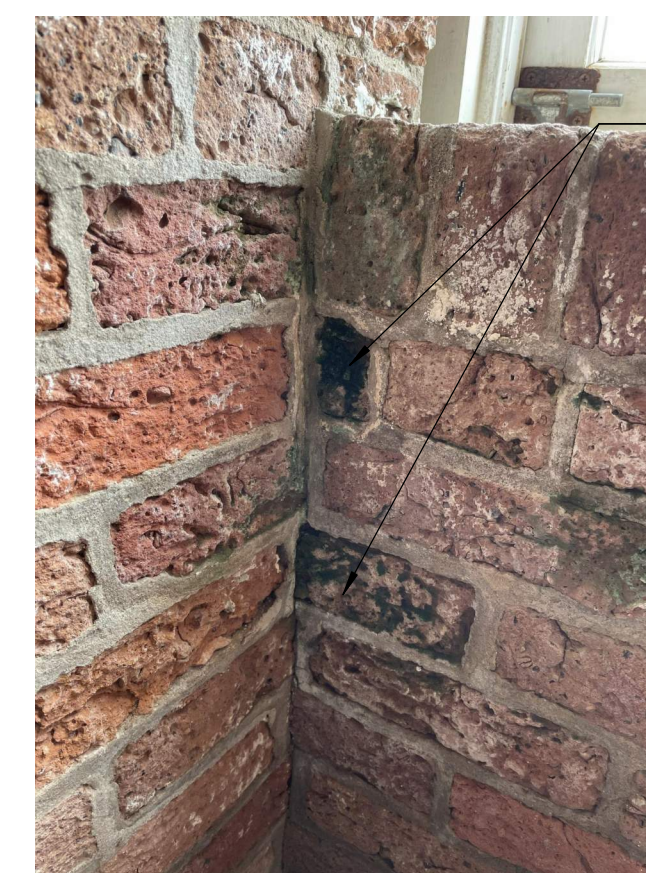
WINDOWS - EXISTING CONDITIONS



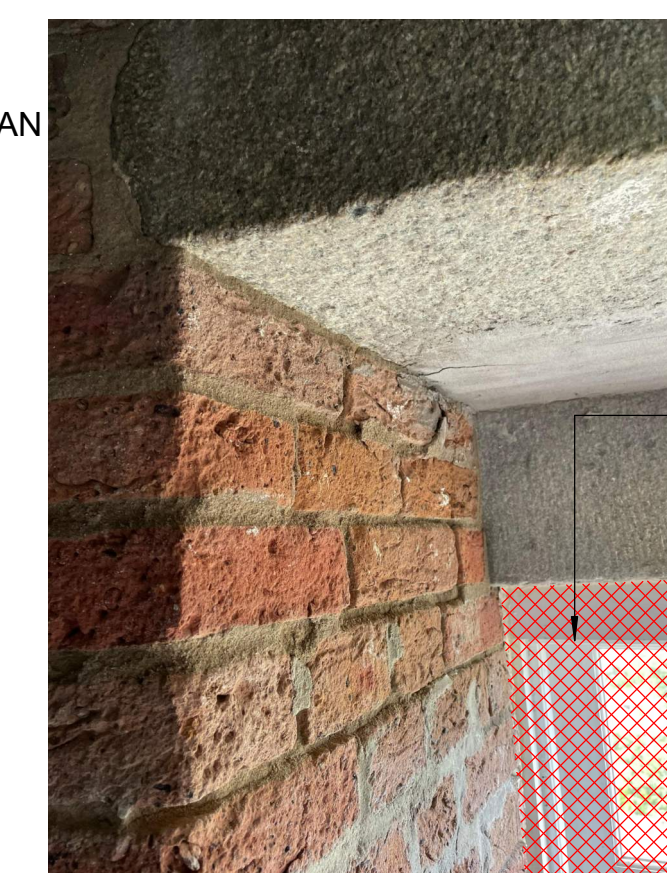
EXAMPLE OF EXISTING CRACK, REMOVE MORTAR AND PREP FOR NEW. (CLIN 9)



MASONRY SILL TO REMAIN, TYP.



CLEAN



DEMO

ALL WORK ON THIS PAGE IS ASSOCIATED WITH CLIN 3 UNLESS OTHERWISE SPECIFIED.



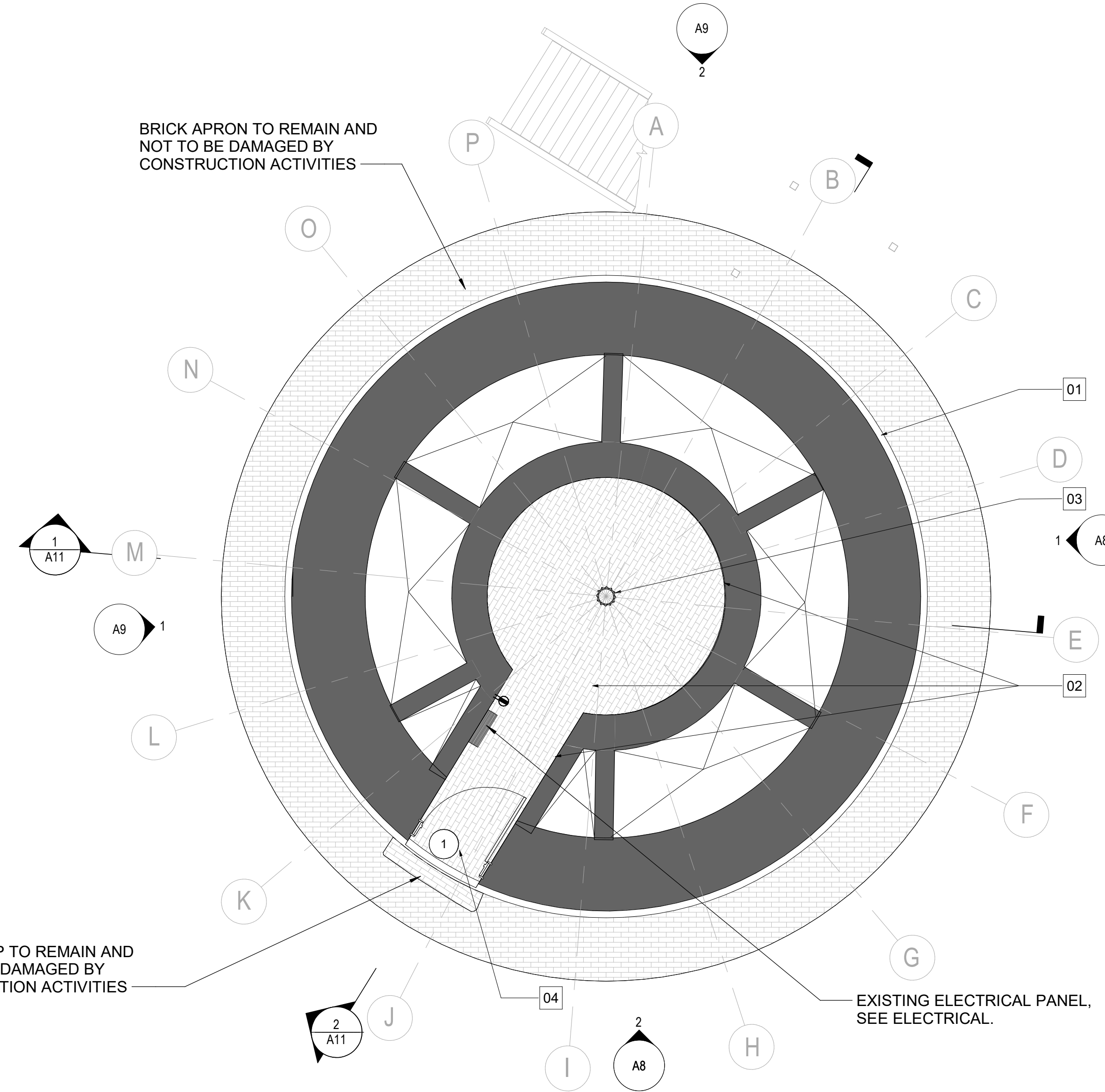
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CADD: HT			181663
TECH. REVIEW: JW			PMIS/PKG NO. 226858
DATE: 7/7/2023			SHEET 17 OF 59
			CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS

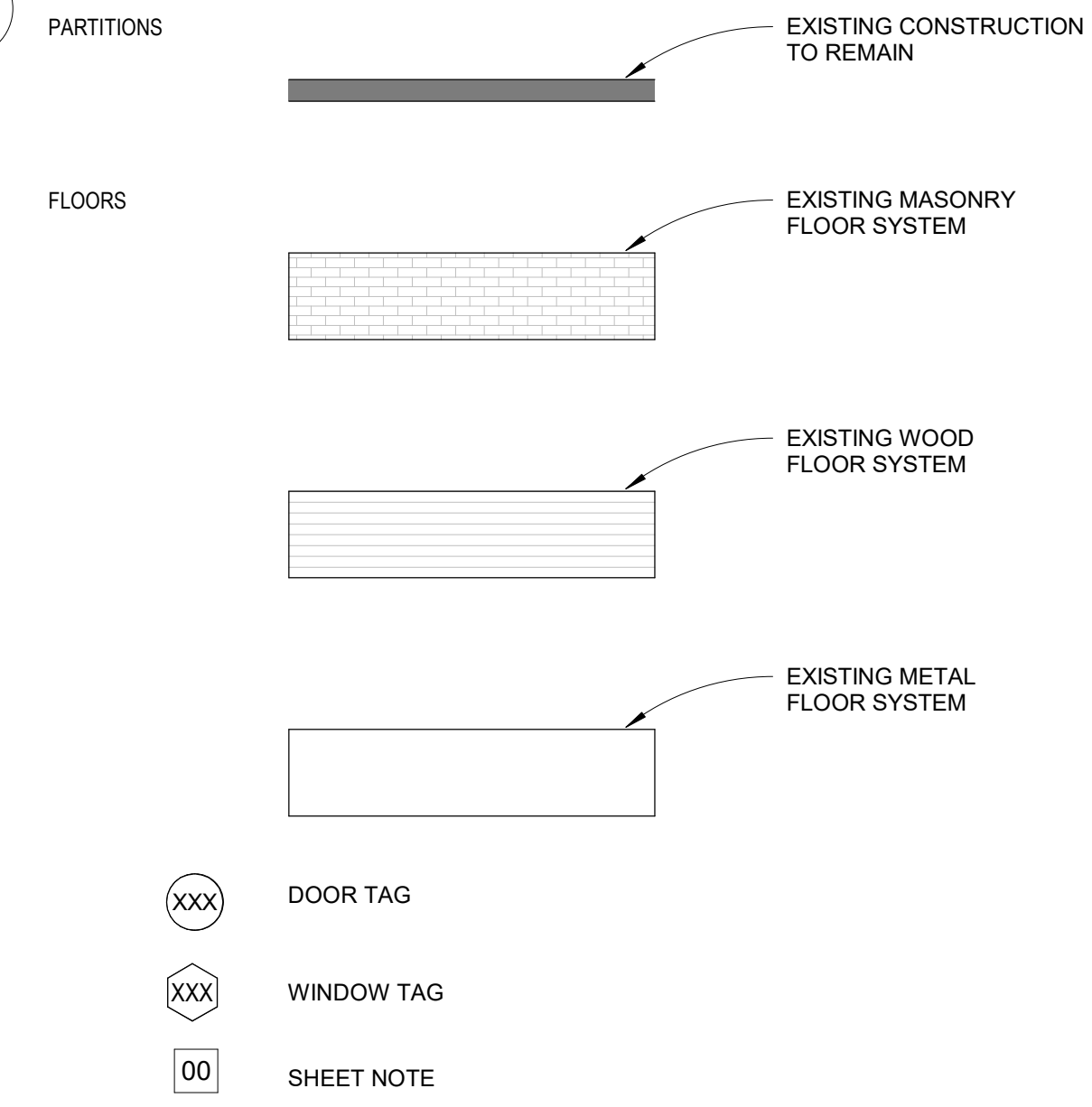
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SHEET NOTES

- 01 EXISTING EXTERIOR MULTI-WYTHE MASONRY WALL. CLEAN, REPOINT AND REPAIR MASONRY, SCOPE TO COVER ALL AREAS VISIBLY DAMAGED WHERE LOSS OF BOND, CRACKING, INCOMPATIBLE PATCHING, OR OTHER SIGNS OF FAILURE ARE EVIDENT. ASSUME 3,000 SF REPOINTING OF EXTERIOR MASONRY. ASSUME 30 SF EXTERIOR INCOMPATIBLE MORTAR REPLACEMENT. ASSUME 60 SF EXTERIOR BRICK MASONRY REPLACEMENT. REPAINT ALL EXTERIOR MASONRY USING SPECIFIED SILICATE MINERAL PAINT SYSTEM. PATTERN TO MATCH EXISTING BLACK AND WHITE DAYMARK. (CLIN 1)
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- 04 INSTALL DOOR PER DOOR DETAILS. (CLIN 2)
- 05 INSTALL WINDOW PER WINDOW DETAIL. (CLIN 3)
- 06 SIGNIFICANT AREA OF REPOINTING (CLIN 9)
- 07 NEW TREAD TO BE COATED TO MATCH HISTORIC RECOATED TREADS (CLIN 8)



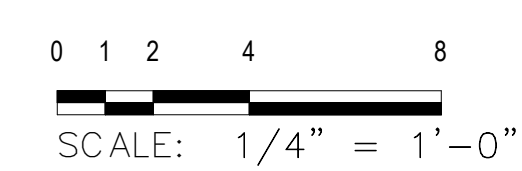
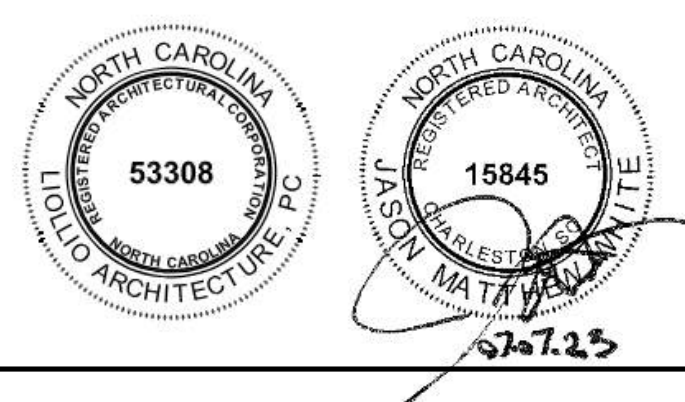
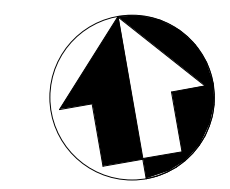
FLOOR PLAN LEGEND



GENERAL NOTES - FLOOR PLAN

- A GC TO FIELD VERIFY ALL BUILDING DIMENSIONS
- B GC TO COORDINATE ALL MECHANICAL & ELECTRICAL DEVICES WITH ARCHITECTURAL AND STRUCTURAL.
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- D MASONRY SALVAGED FROM DEMOLITION PHASE SHALL BE REINSTALLED IN THIS PHASE.

1 FLOOR PLAN - (1) FIRST LANDING
SCALE: 1/4" = 1'-0"



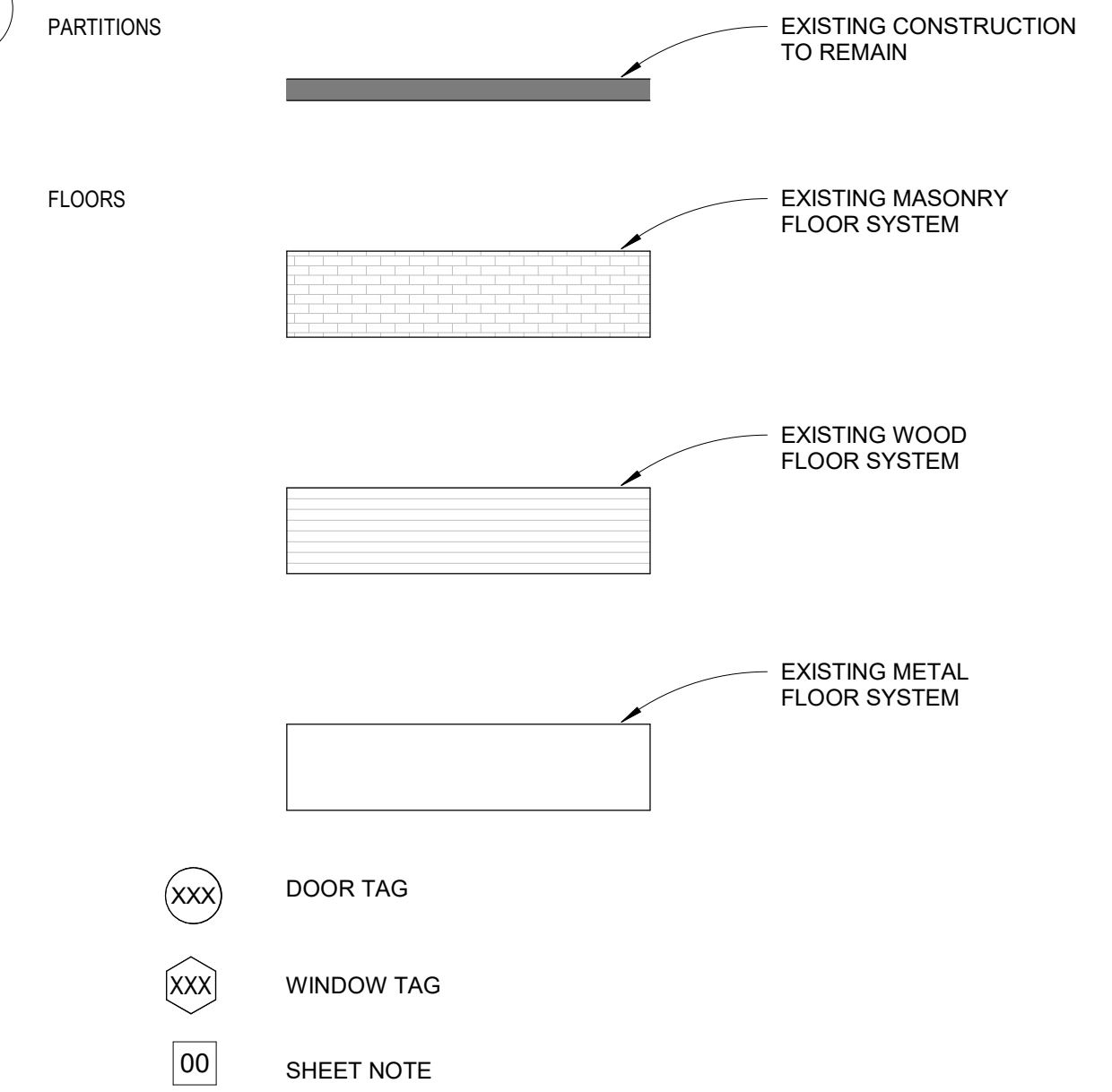
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DATE: 7/7/2023			SHEET 18 OF 59
			CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS

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SHEET NOTES

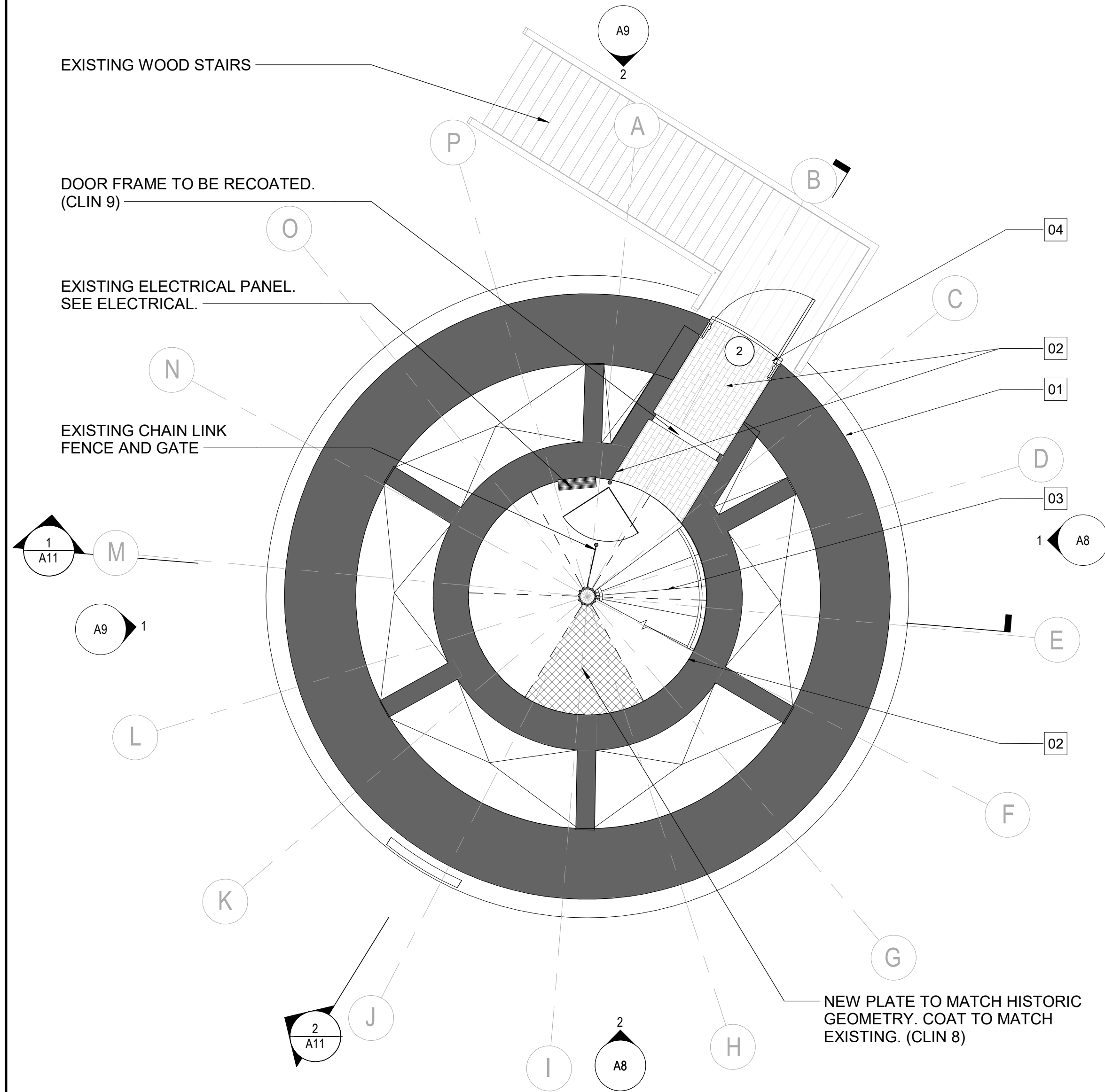
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FLOOR PLAN LEGEND

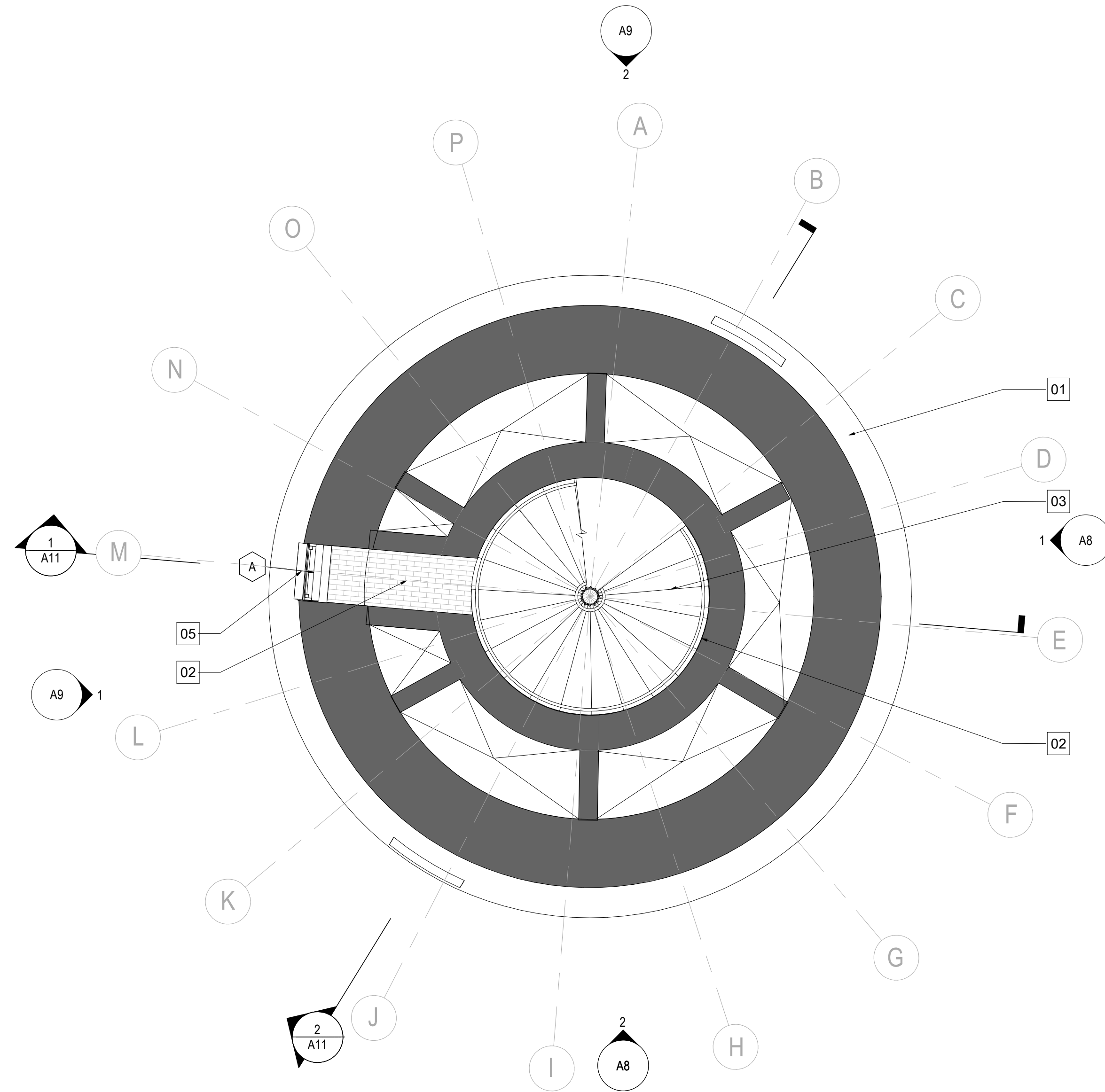


GENERAL NOTES - FLOOR PLAN

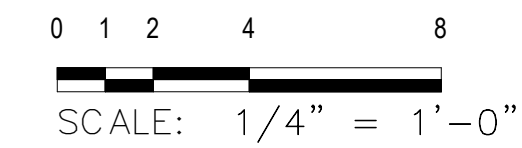
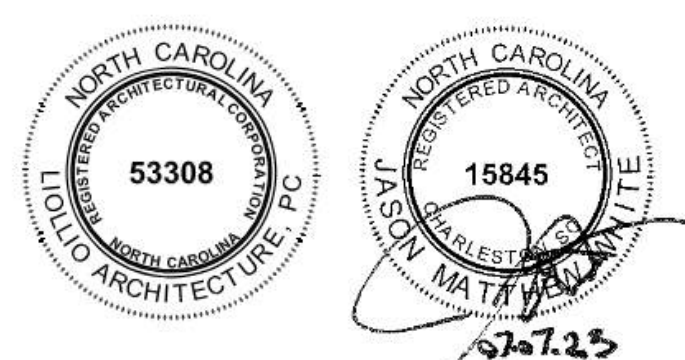
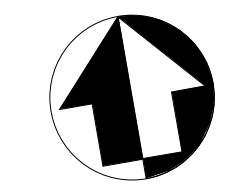
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1 FLOOR PLAN - (2) SECOND LANDING
SCALE: 1/4" = 1'-0"



2 FLOOR PLAN - (2) SECOND WINDOW LEVEL
SCALE: 1/4" = 1'-0"



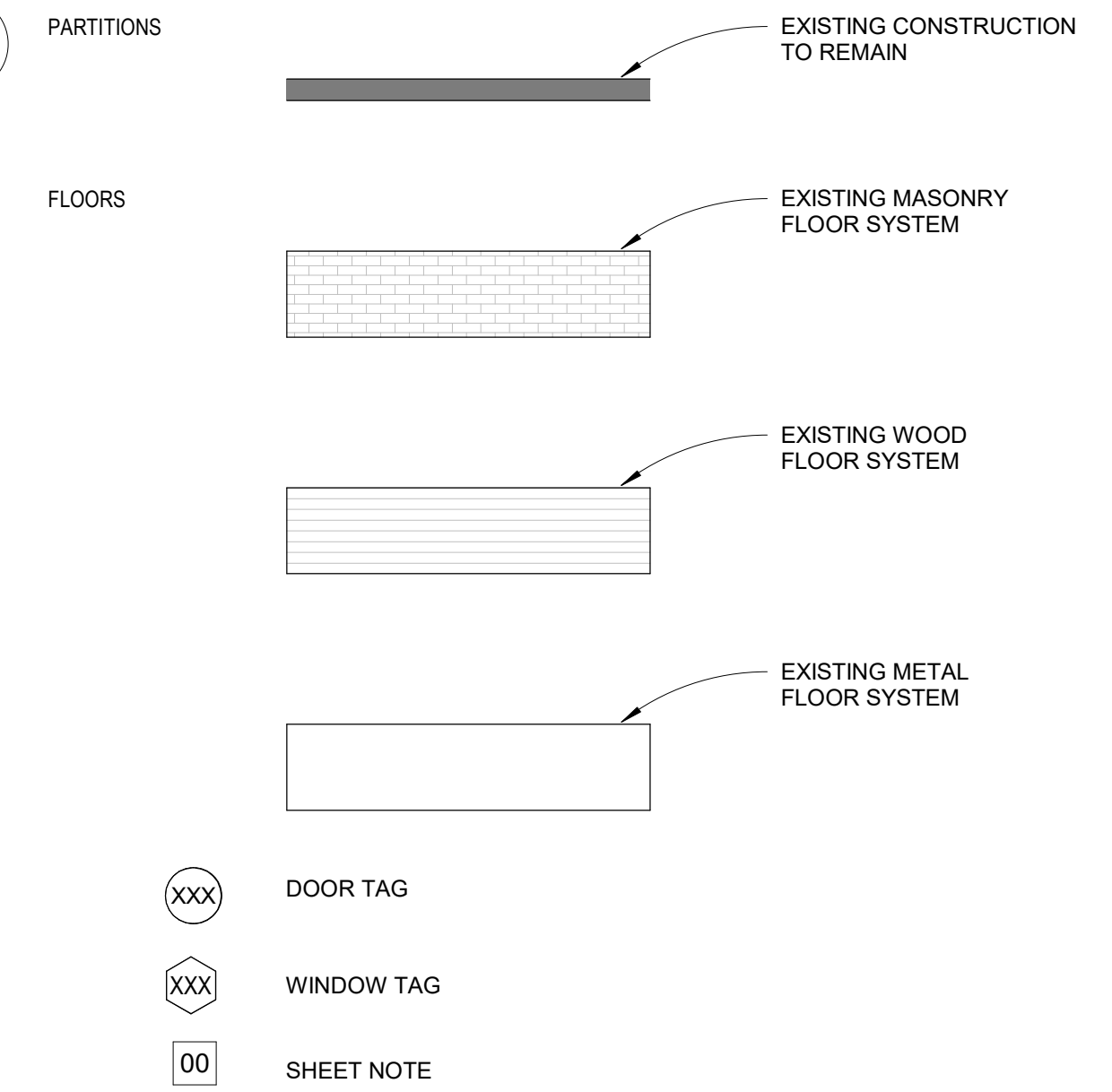
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TECH. REVIEW: JW			PMIS/PKG NO. 226858
DATE: 7/7/2023		CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS	SHEET 19 OF 59

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SHEET NOTES

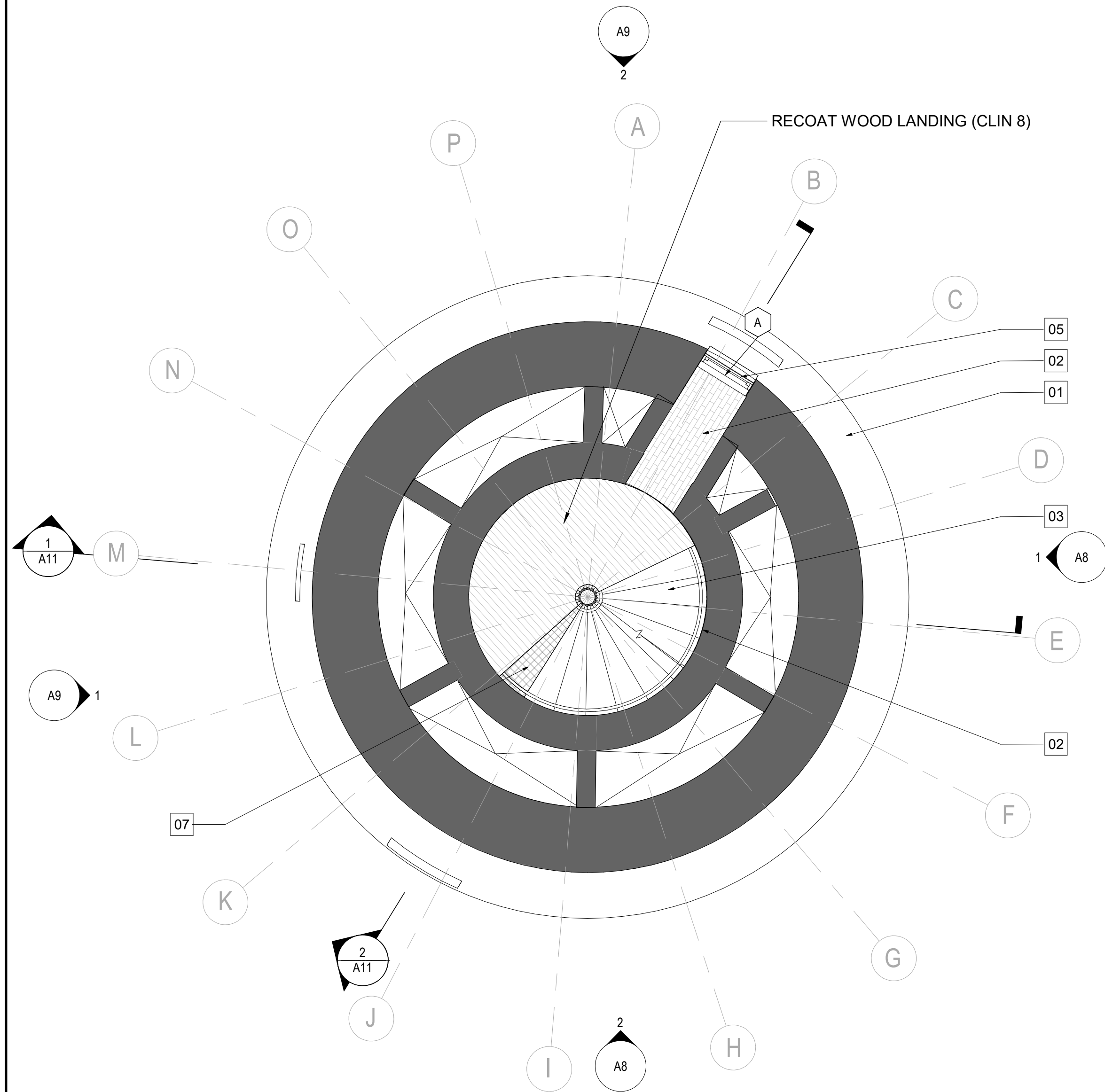
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FLOOR PLAN LEGEND

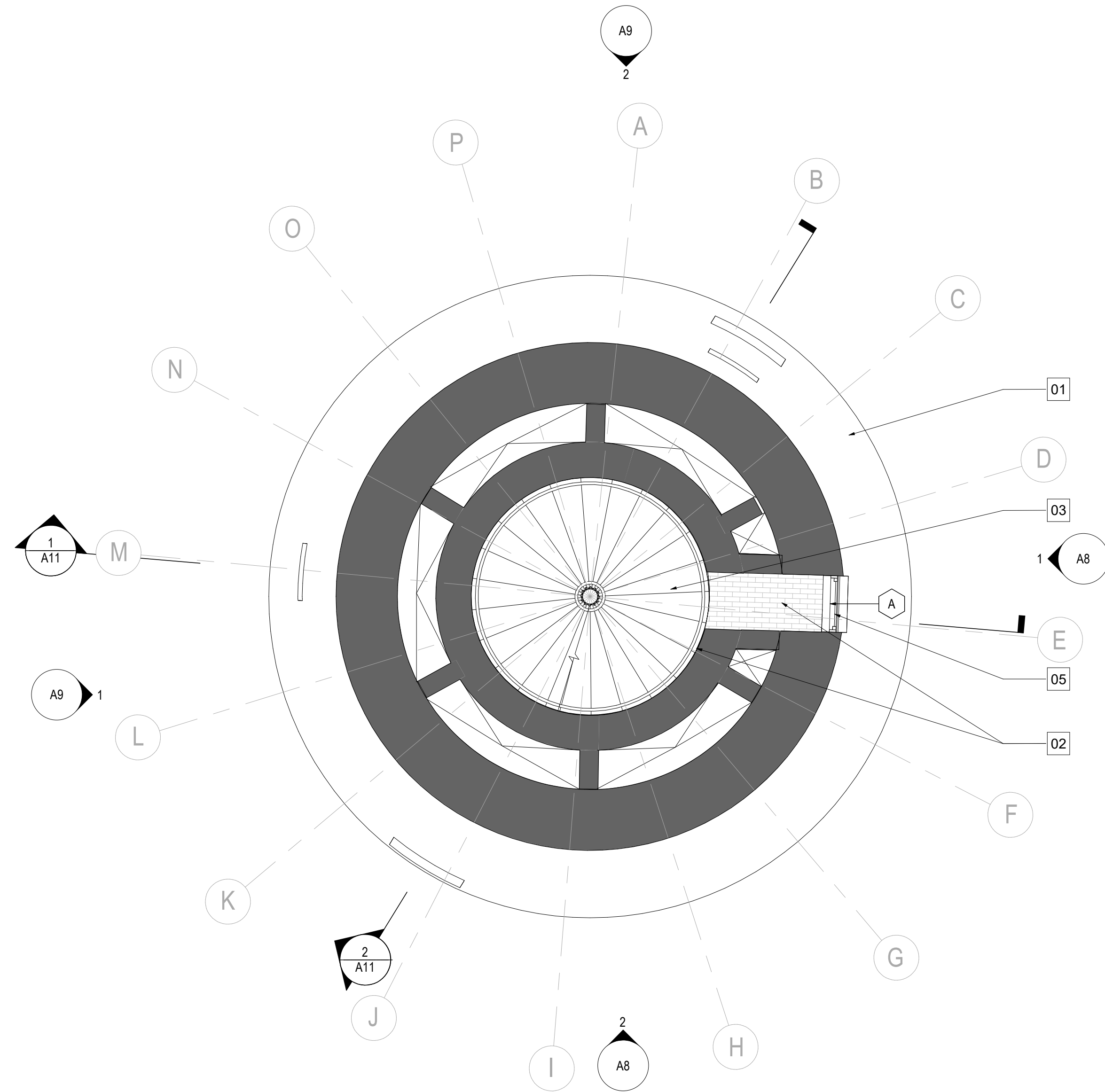


GENERAL NOTES - FLOOR PLAN

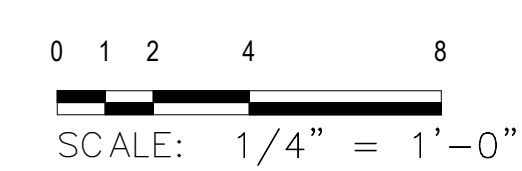
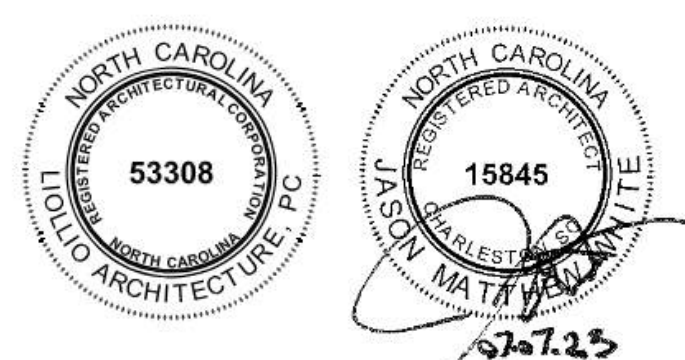
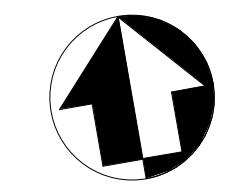
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1 FLOOR PLAN - (3) THIRD LANDING
SCALE: 1/4" = 1'-0"



2 FLOOR PLAN - (3) THIRD WINDOW LEVEL
SCALE: 1/4" = 1'-0"



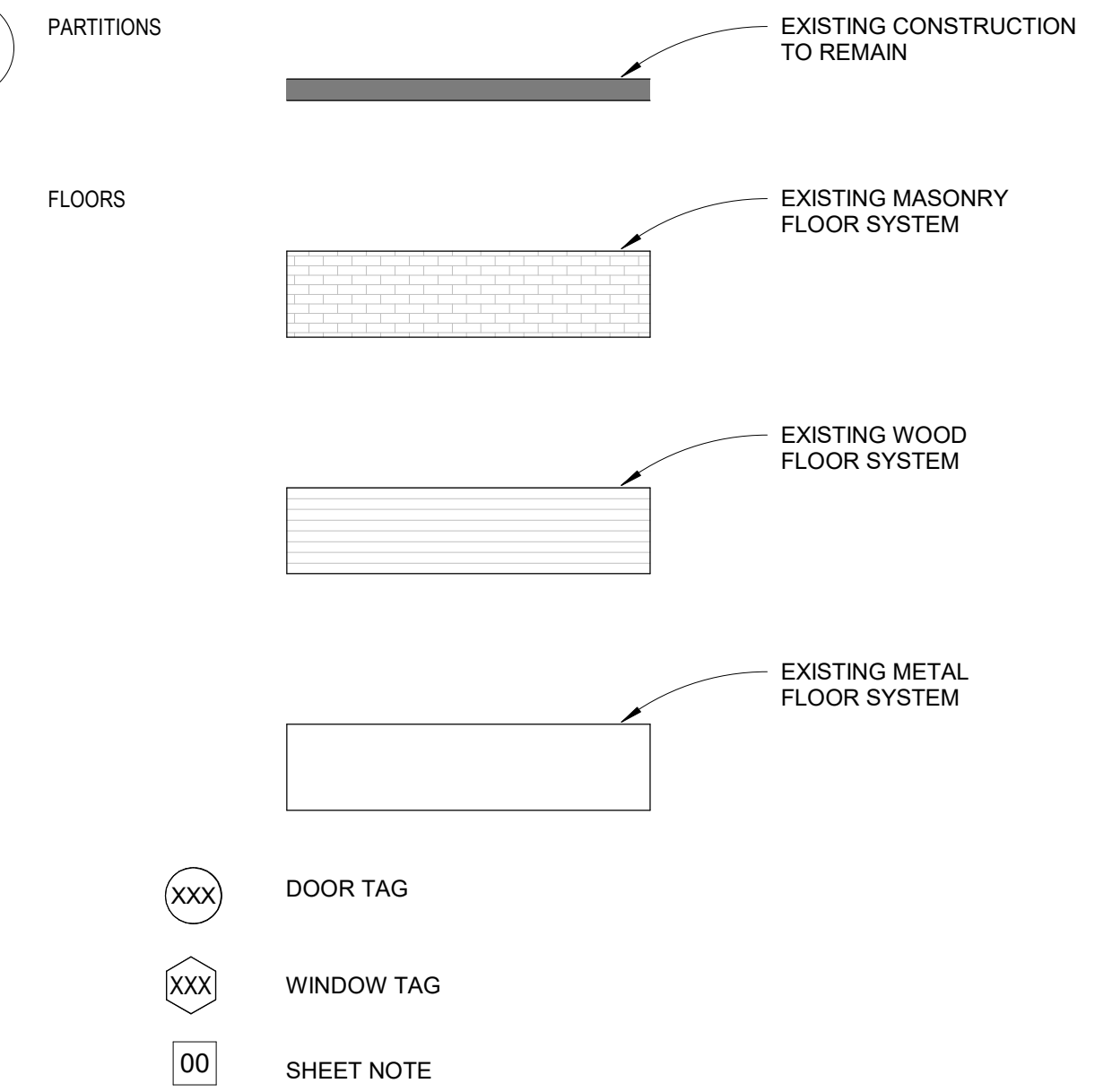
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TECH. REVIEW: JW			PMIS/PKG NO. 226858
DATE: 7/7/2023		CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS	SHEET 20 of 59

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SHEET NOTES

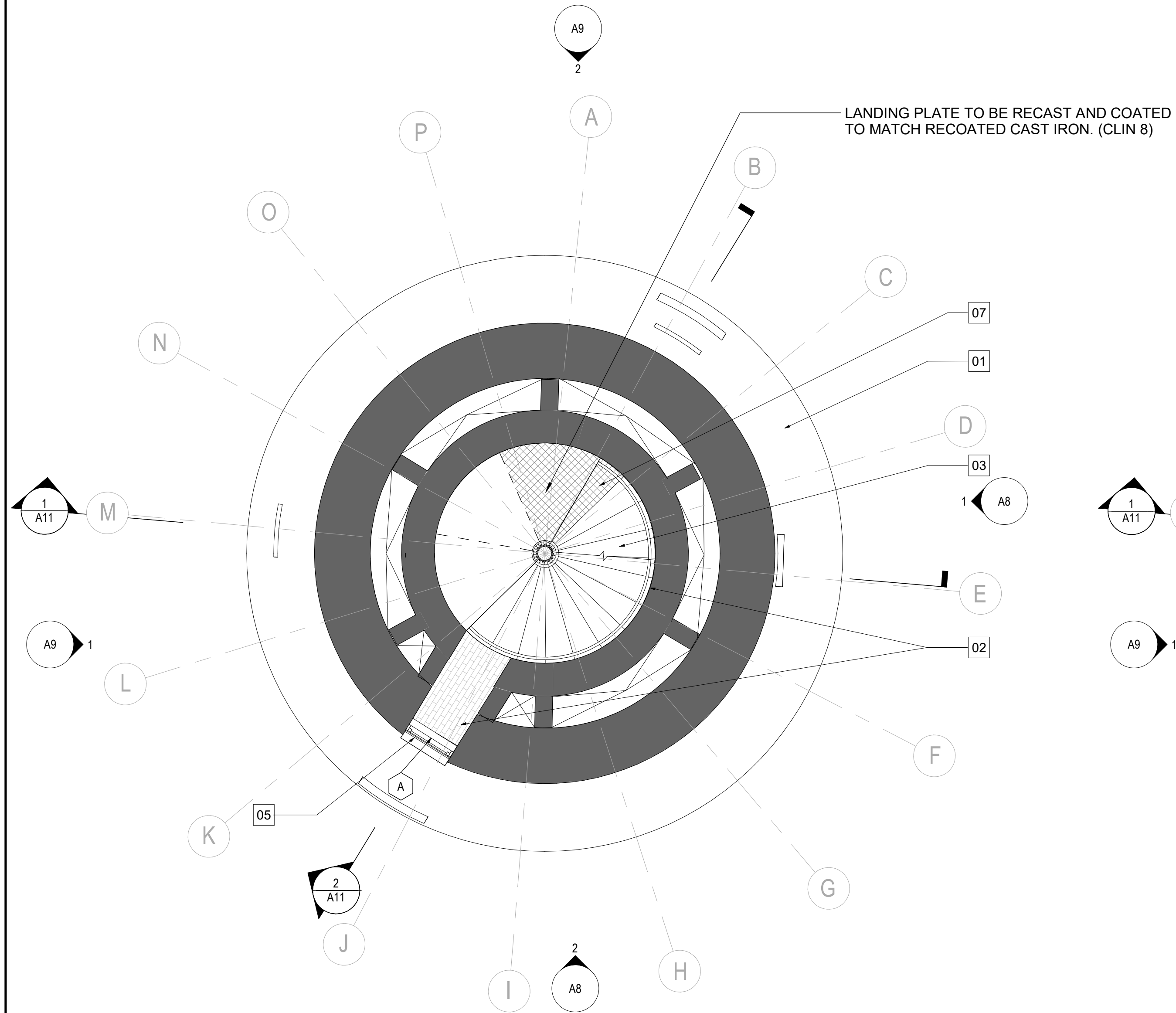
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FLOOR PLAN LEGEND

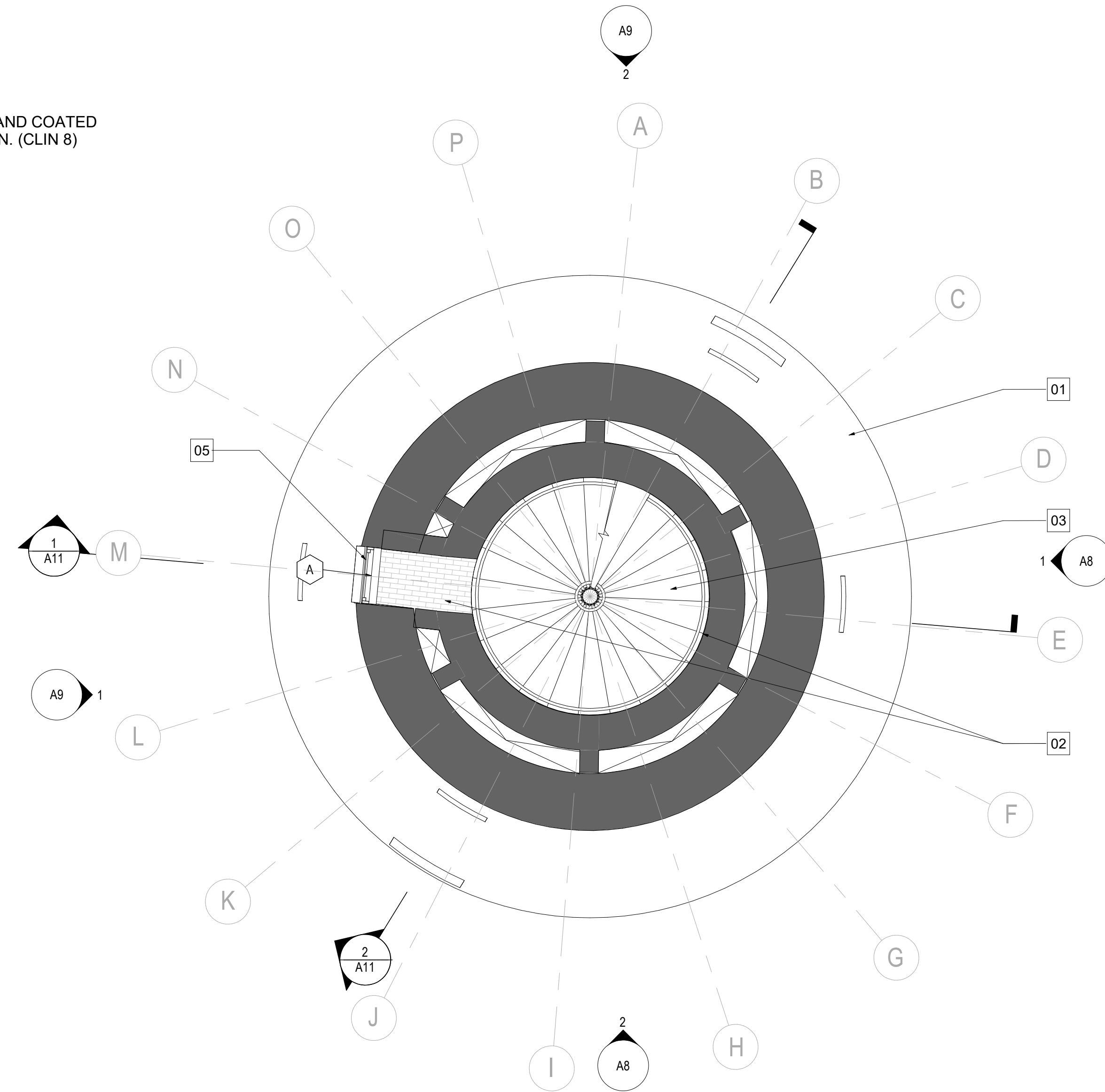


GENERAL NOTES - FLOOR PLAN

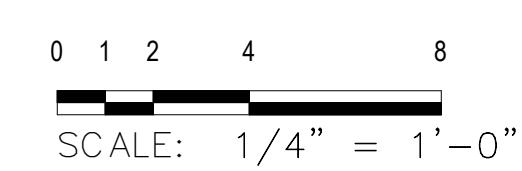
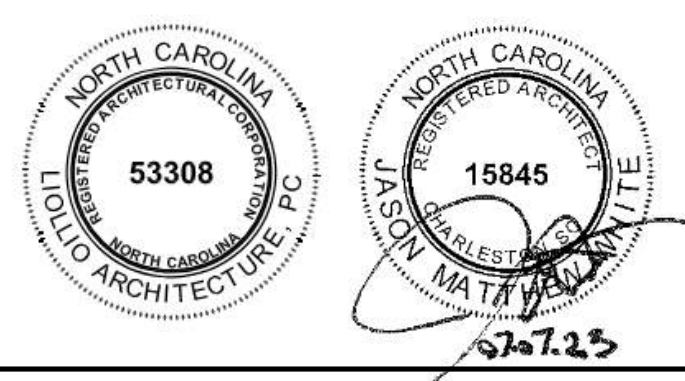
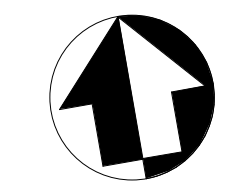
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1 FLOOR PLAN - (4) FOURTH LANDING
SCALE: 1/4" = 1'-0"



2 FLOOR PLAN - (4) FOURTH WINDOW LEVEL
SCALE: 1/4" = 1'-0"



DESIGNED: DC	SUB SHEET NO. A4	TITLE OF SHEET FLOOR PLANS	DRAWING NO. 623
CADD: HT			181663
TECH. REVIEW: JW			PMIS/PKG NO. 226858
DATE: 7/7/2023			SHEET 21 of 59
CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS			

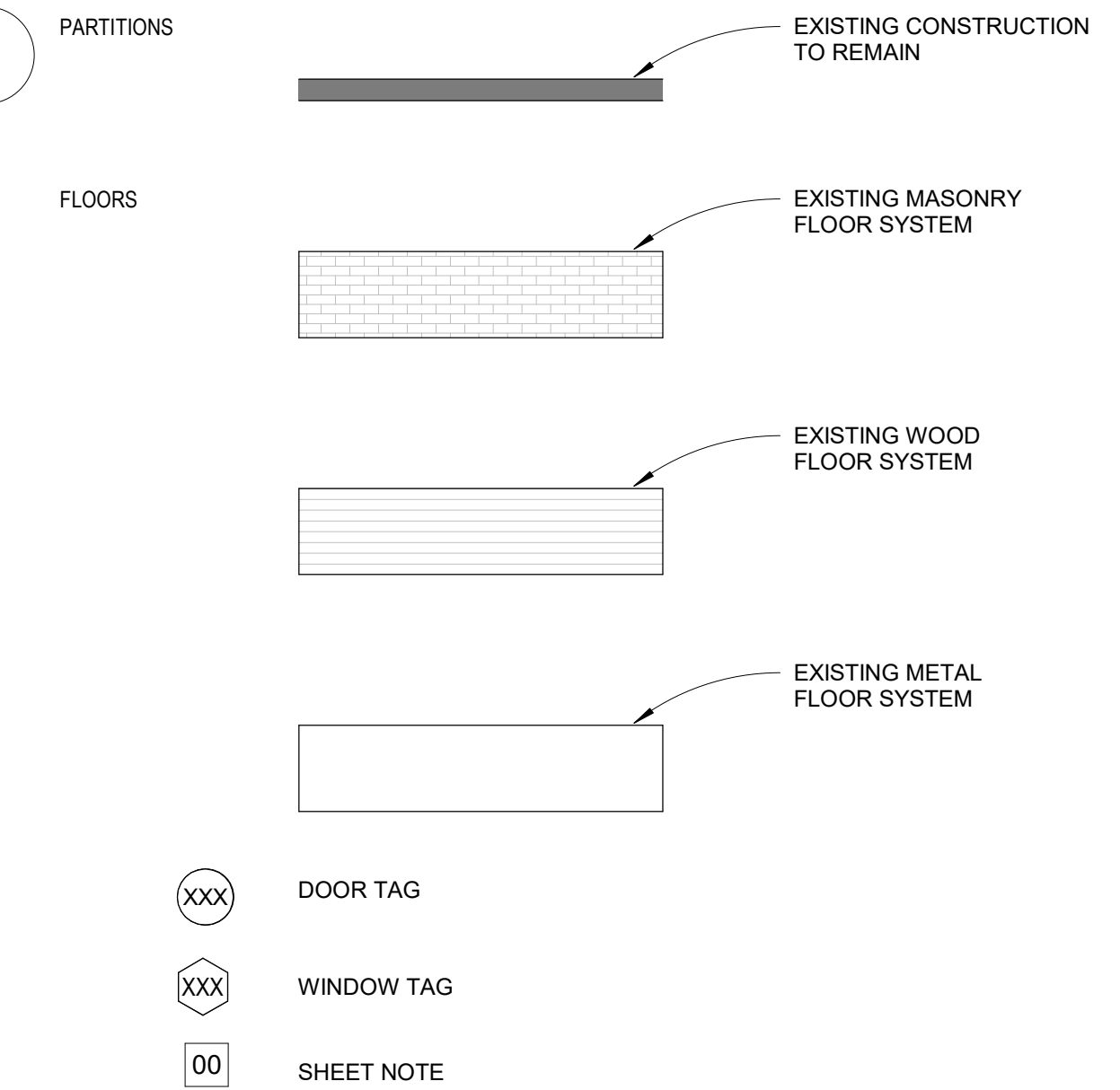
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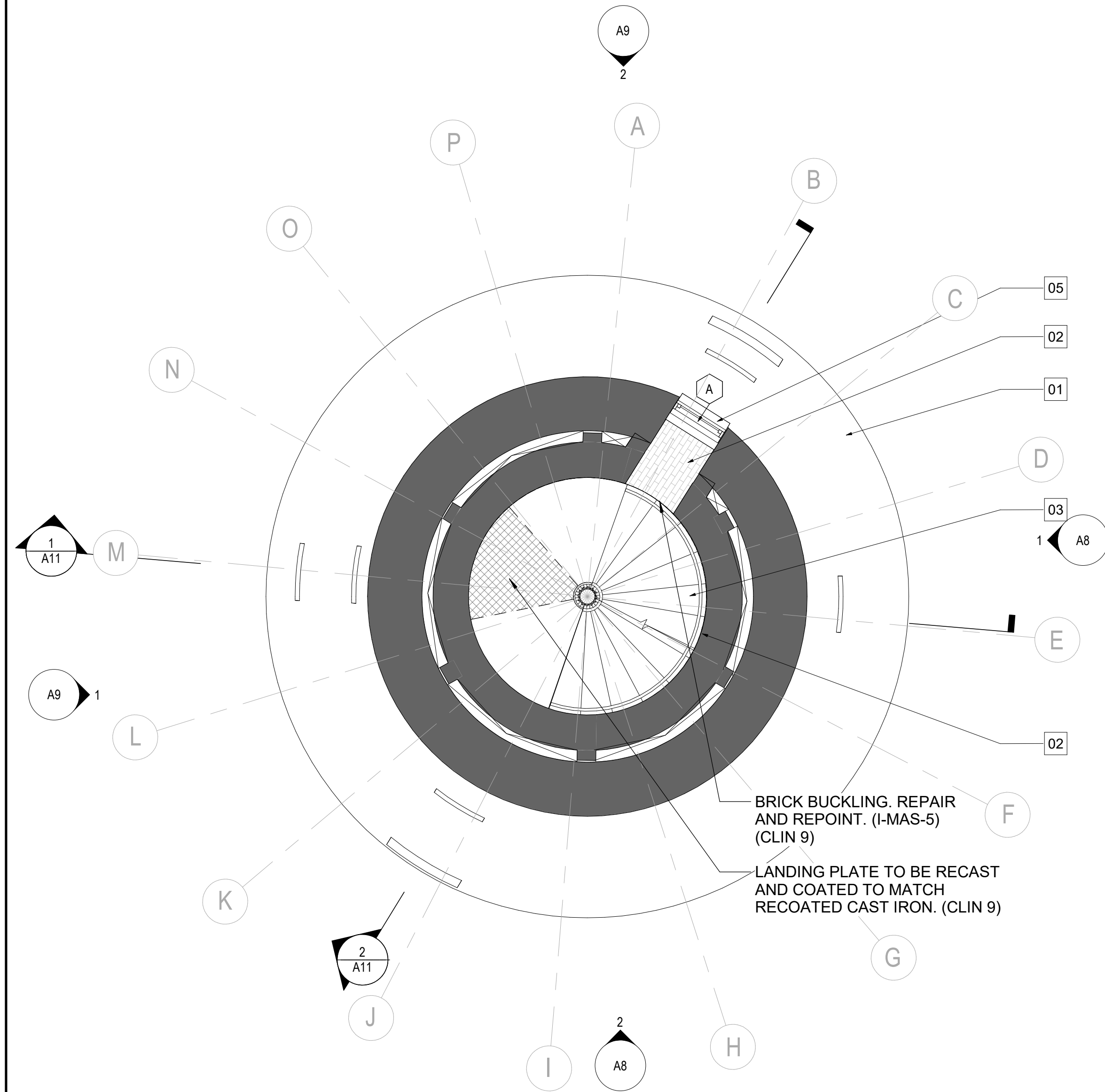
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FLOOR PLAN LEGEND

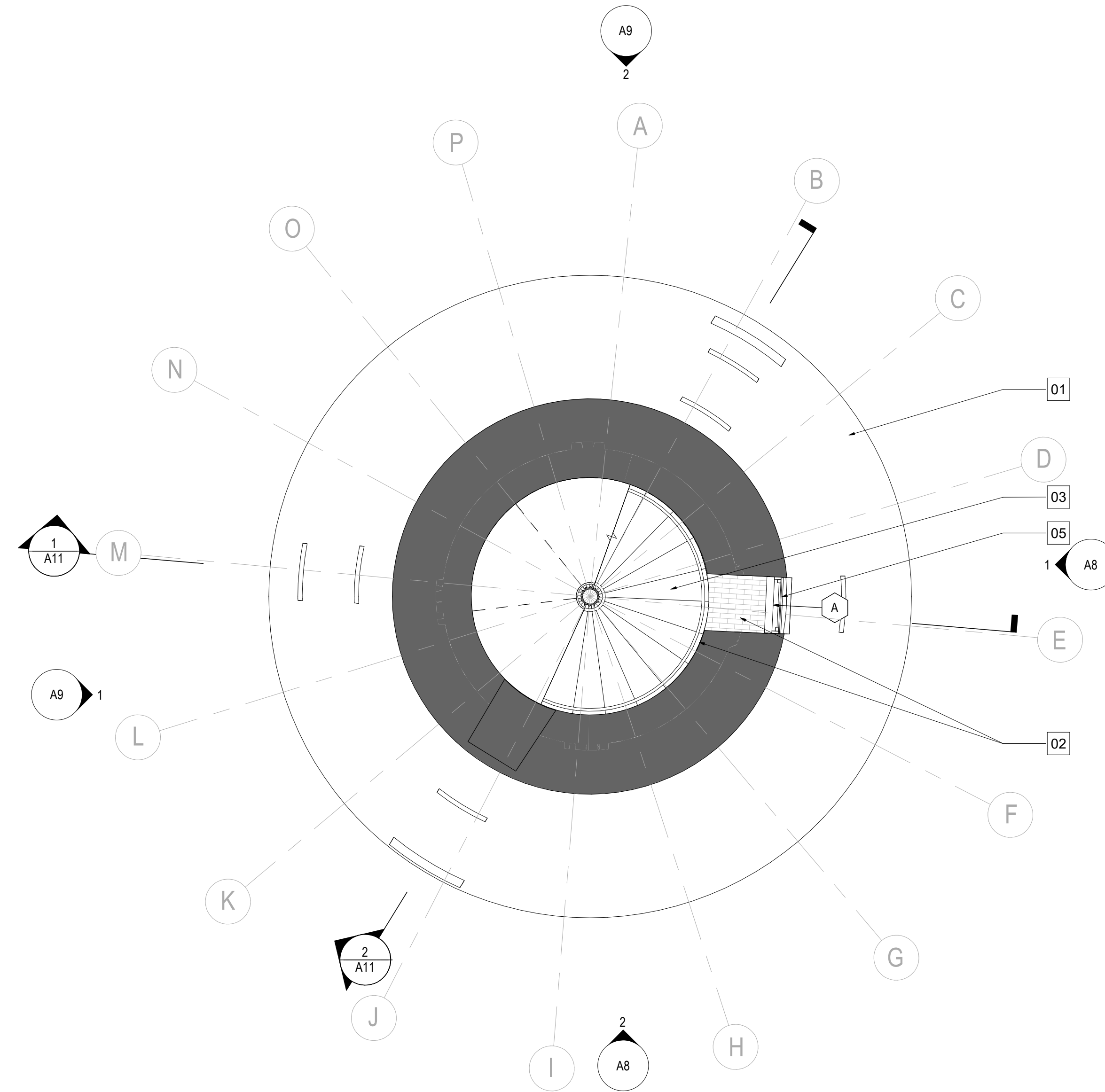


GENERAL NOTES - FLOOR PLAN

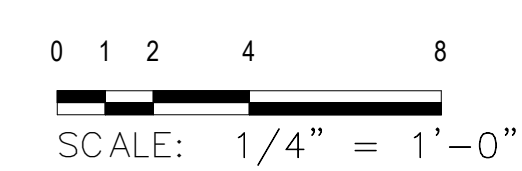
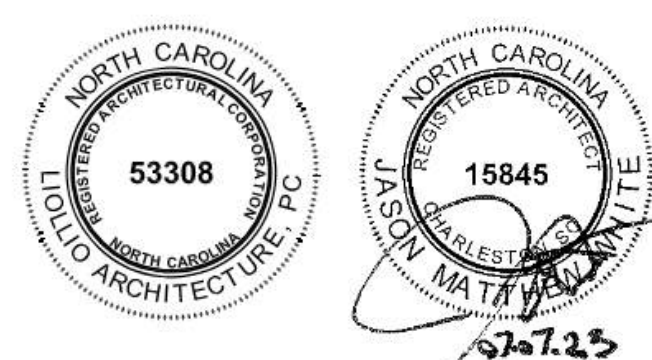
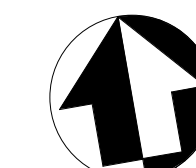
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1 FLOOR PLAN - (5) FIFTH LANDING
SCALE: 1/4" = 1'-0"



2 FLOOR PLAN - (5) FIFTH WINDOW LEVEL
SCALE: 1/4" = 1'-0"



DESIGNED: DC	SUB SHEET NO. A5	TITLE OF SHEET FLOOR PLANS	DRAWING NO. 623
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TECH. REVIEW: JW			PMIS/PKG NO. 226858
DATE: 7/7/2023			SHEET 22 of 59

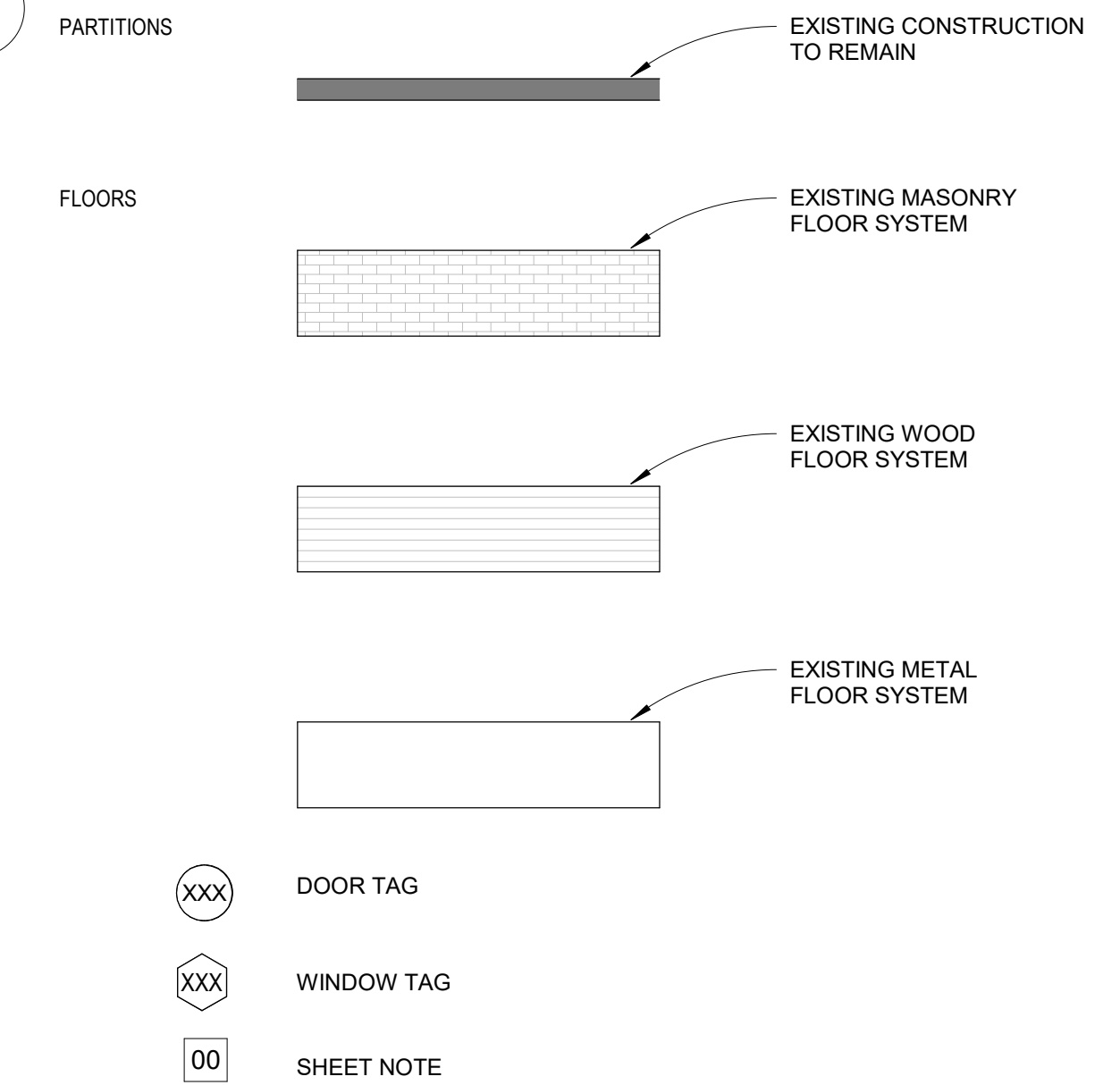
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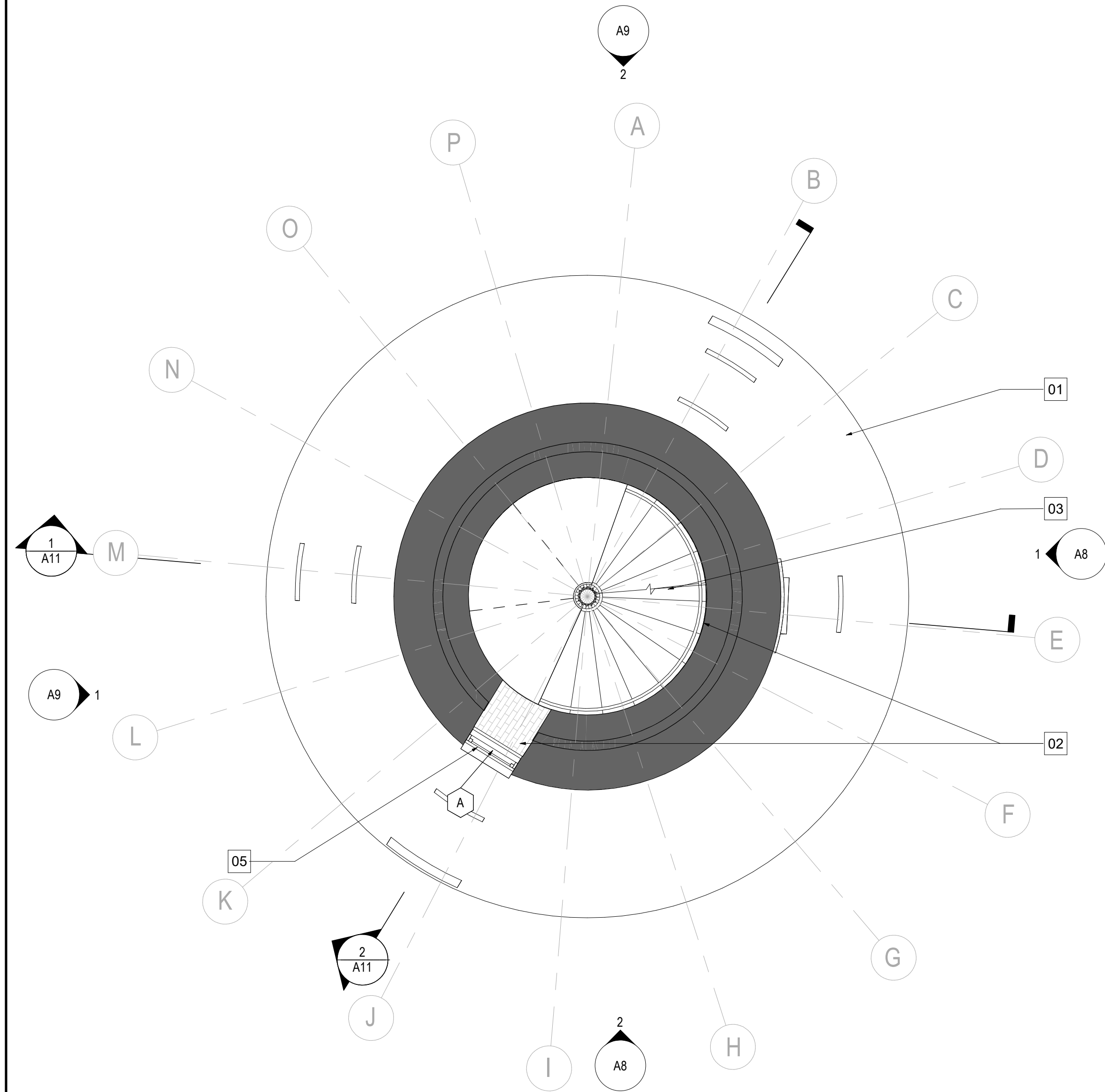
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- 03 EXISTING CAST IRON SPIRAL STAIRCASE. CLEAN AND RECOAT ALL ELEMENTS, INCLUDING BUT NOT LIMITED TO TREADS, LANDINGS AND HANDRAILS. FOR ALL EXISTING CAST IRON OR STEEL THAT IS CURRENTLY PAINTED WHERE DETERIORATION AND RUST IS EVIDENT, CLEAN DOWN TO BRIGHT METAL AND, WITHIN 2 HOURS, COAT WITH A ZINC-RICH THREE PART EPOXY PRIMER. OVERCOAT THIRD AND FOURTH COATS WITH ACRYLIC POLYURETHANE OR TWO-PART POLYSILOXANE. SEE SPECIFICATION. (CLIN 8)
- 04 INSTALL DOOR PER DOOR DETAILS. (CLIN 2)
- 05 INSTALL WINDOW PER WINDOW DETAIL. (CLIN 3)
- 06 SIGNIFICANT AREA OF REPOINTING (CLIN 9)
- 07 NEW TREAD TO BE COATED TO MATCH HISTORIC RECOATED TREADS (CLIN 8)

FLOOR PLAN LEGEND



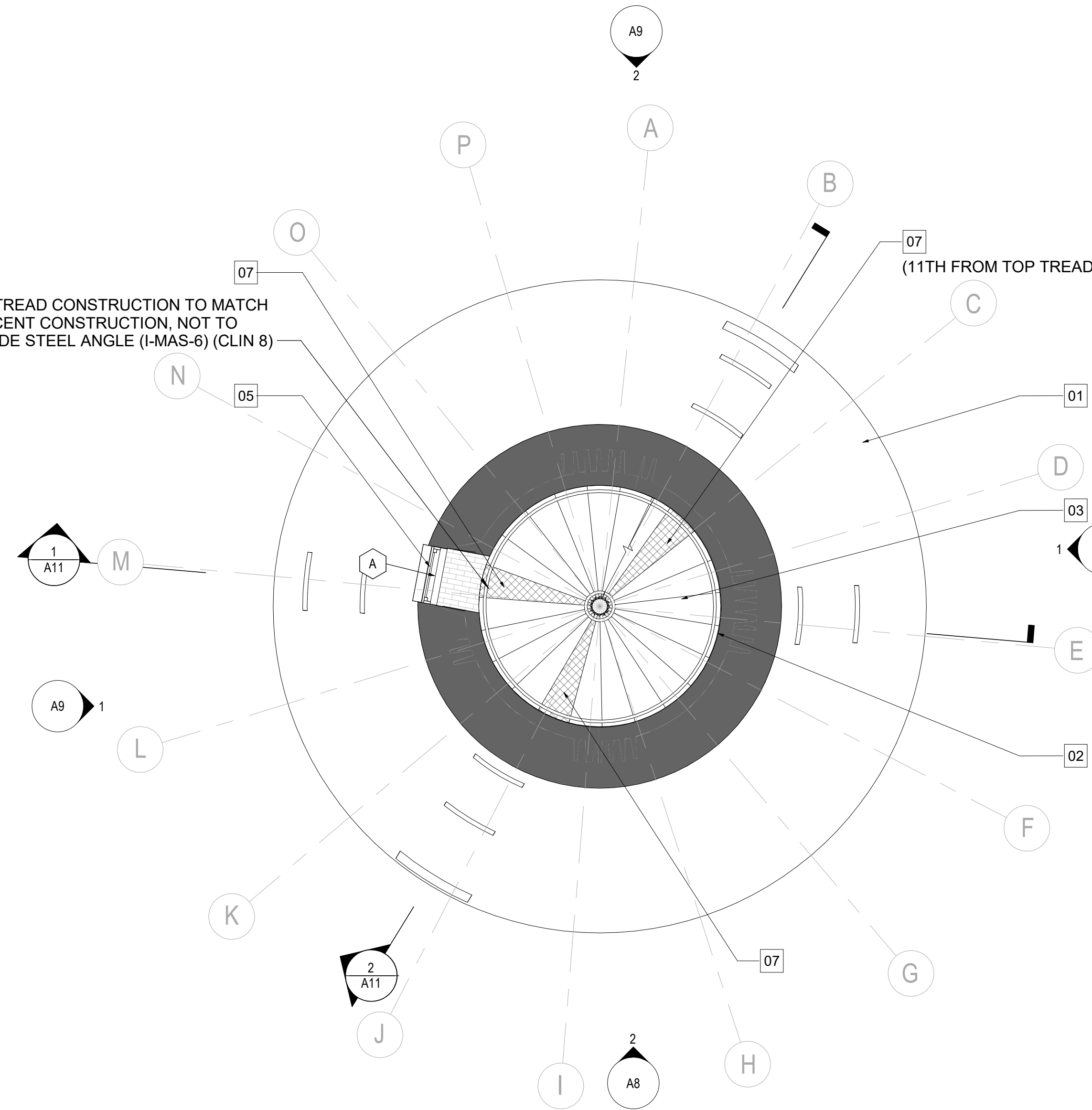
GENERAL NOTES - FLOOR PLAN

- A GC TO FIELD VERIFY ALL BUILDING DIMENSIONS
- B GC TO COORDINATE ALL MECHANICAL & ELECTRICAL DEVICES WITH ARCHITECTURAL AND STRUCTURAL.
- C REFER TO SHEET G2 FOR ADDITIONAL NOTES & SYMBOLS.
- D MASONRY SALVAGED FROM DEMOLITION PHASE SHALL BE REINSTALLED IN THIS PHASE.

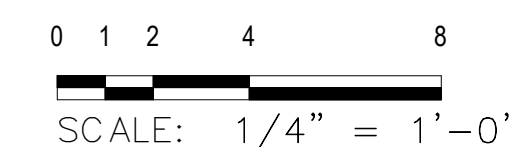
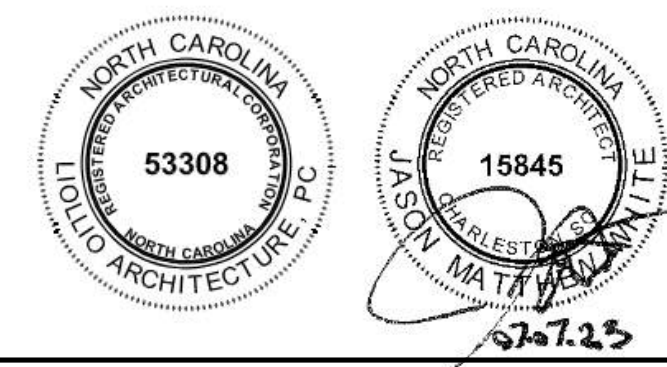
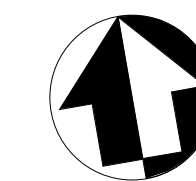


1 FLOOR PLAN - (6) SIXTH LANDING
SCALE: 1/4" = 1'-0"

NEW TREAD CONSTRUCTION TO MATCH ADJACENT CONSTRUCTION. NOT TO INCLUDE STEEL ANGLE (I-MAS-6) (CLIN 8)



2 FLOOR PLAN - (6) SIXTH WINDOW LEVEL
SCALE: 1/4" = 1'-0"



DESIGNED: DC	SUB SHEET NO. A6	TITLE OF SHEET FLOOR PLANS	DRAWING NO. 623
CADD: HT			181663
TECH. REVIEW: JW			PMIS/PKG NO. 226858
DATE: 7/7/2023			SHEET 23 OF 59
CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS			

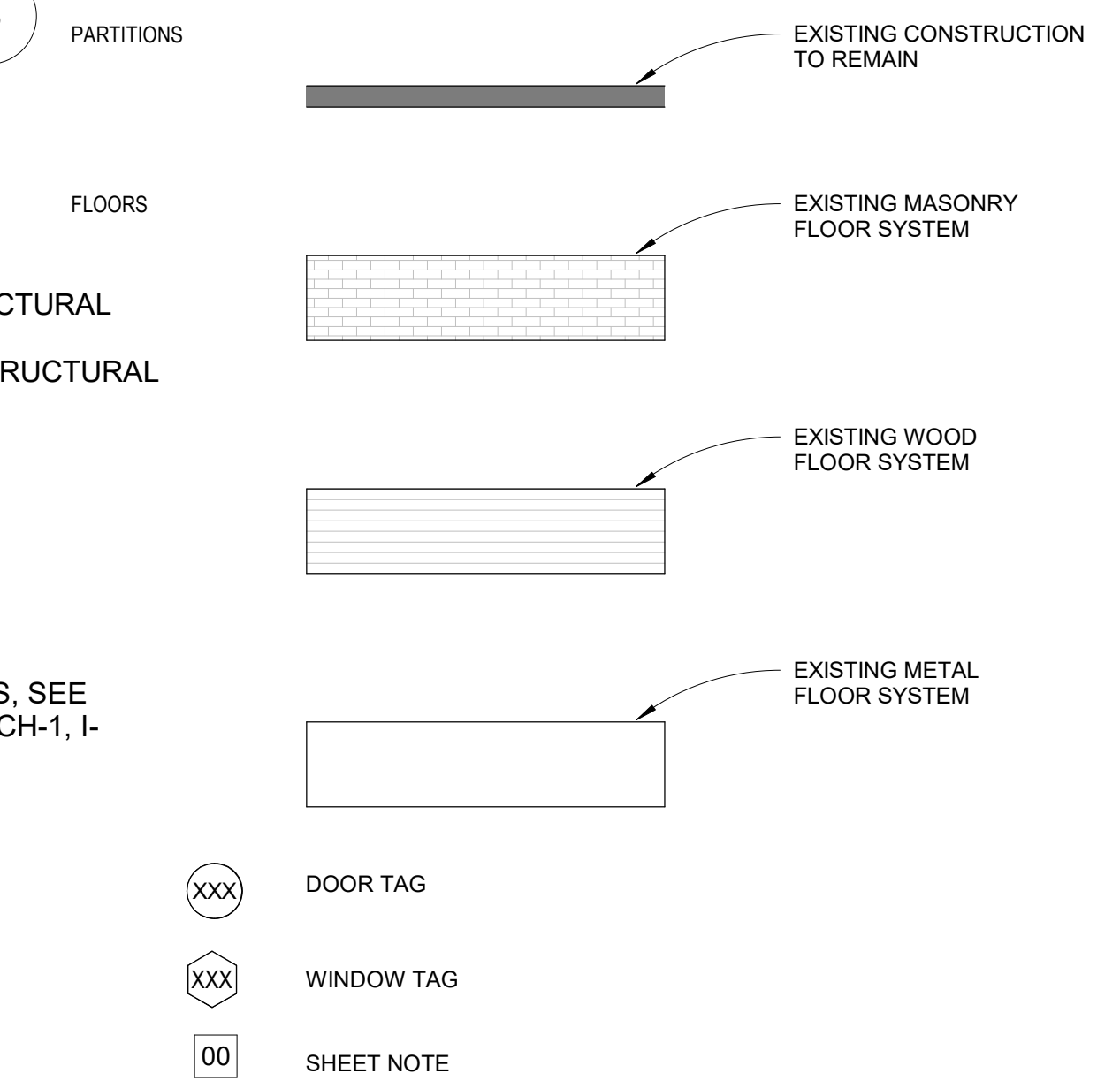
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SHEET NOTES

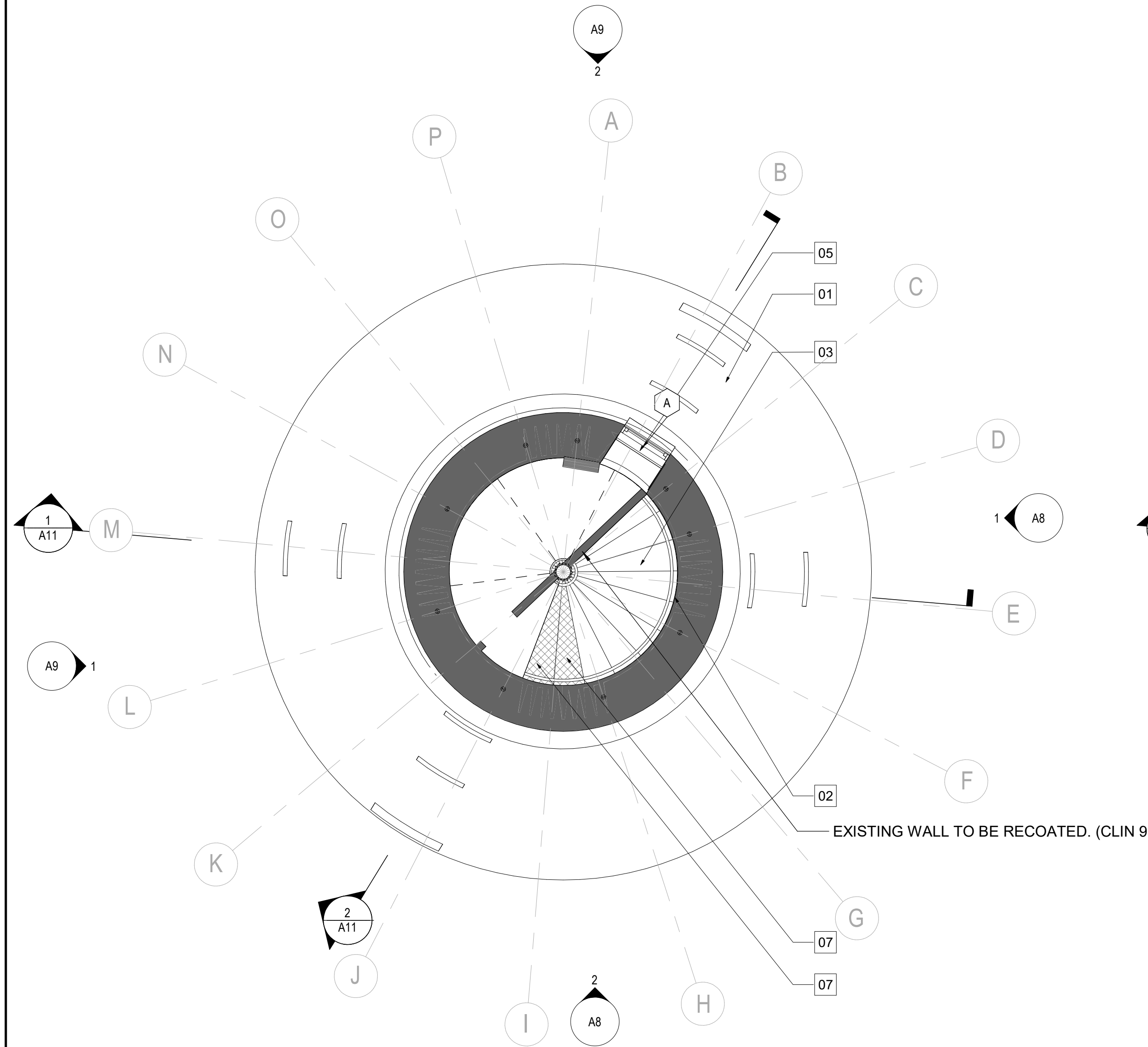
- 01 EXISTING EXTERIOR MULTI-WYTHE MASONRY WALL. CLEAN, REPOINT AND REPAIR MASONRY, SCOPE TO COVER ALL AREAS VISIBLY DAMAGED WHERE LOSS OF BOND, CRACKING, INCOMPATIBLE PATCHING, OR OTHER SIGNS OF FAILURE ARE EVIDENT. ASSUME 3,000 SF REPOINTING OF EXTERIOR MASONRY. ASSUME 30 SF EXTERIOR INCOMPATIBLE MORTAR REPLACEMENT. ASSUME 60 SF EXTERIOR BRICK MASONRY REPLACEMENT. REPAINT ALL EXTERIOR MASONRY USING SPECIFIED SILICATE MINERAL PAINT SYSTEM. PATTERN TO MATCH EXISTING BLACK AND WHITE DAYMARK. (CLIN 1)
- 02 EXISTING INTERIOR MULTI-WYTHE BRICK MASONRY. CLEAN, REPOINT AND REPAIR. SCOPE TO COVER ALL AREAS VISIBLY DAMAGED WHERE LOSS OF BOND, CRACKING, INCOMPATIBLE PATCHING, OR OTHER SIGNS OF FAILURE ARE EVIDENT. ASSUME 2,850 SF OF INTERIOR BRICK REPOINTING. ASSUME 1,000 SF OF INCOMPATIBLE MORTAR, REMOVE AND PREP FOR REPOINTING WITH CORRECT MATERIAL. ASSUME 100 SF OF INTERIOR BRICK MASONRY REPLACEMENT. ASSUME SEE I-MAS-3 FOR AN EXAMPLE OF INCOMPATIBLE MORTAR. (CLIN 9)
- 03 EXISTING CAST IRON SPIRAL STAIRCASE. CLEAN AND RECOAT ALL ELEMENTS, INCLUDING BUT NOT LIMITED TO TREADS, LANDINGS AND HANDRAILS. FOR ALL EXISTING CAST IRON OR STEEL THAT IS CURRENTLY PAINTED WHERE DETERIORATION AND RUST IS EVIDENT, CLEAN DOWN TO BRIGHT METAL AND, WITHIN 2 HOURS, COAT WITH A ZINC-RICH THREE PART EPOXY PRIMER. OVERCOAT THIRD AND FOURTH COATS WITH ACRYLIC POLYURETHANE OR TWO-PART POLYSILOXANE. SEE SPECIFICATION. (CLIN 8)
- 04 INSTALL DOOR PER DOOR DETAILS. (CLIN 2)
- 05 INSTALL WINDOW PER WINDOW DETAIL. (CLIN 3)
- 06 SIGNIFICANT AREA OF REPOINTING (CLIN 9)
- 07 NEW TREAD TO BE COATED TO MATCH HISTORIC RECOATED TREADS (CLIN 8)

FLOOR PLAN LEGEND

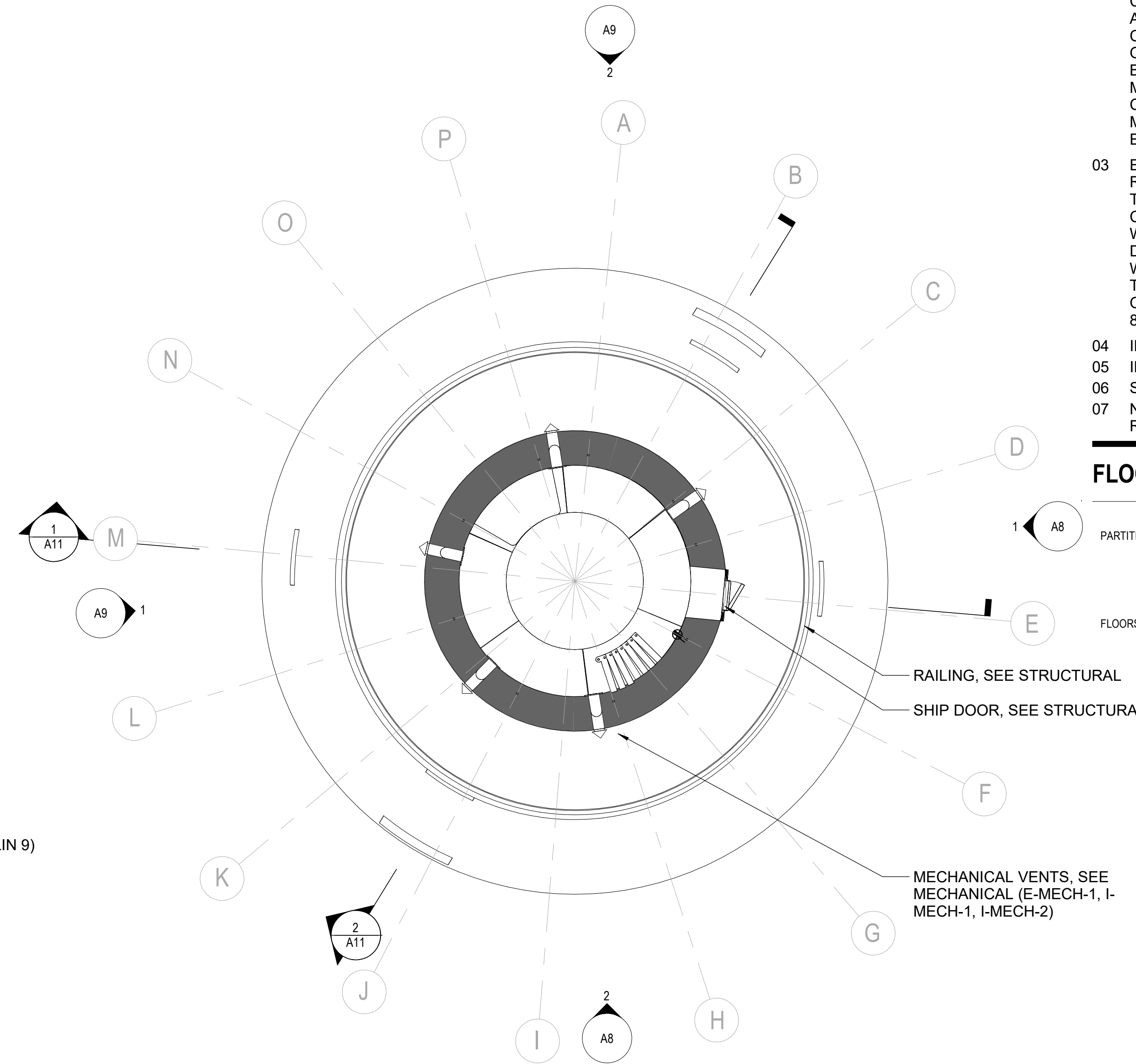


GENERAL NOTES - FLOOR PLAN

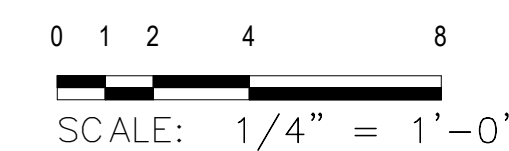
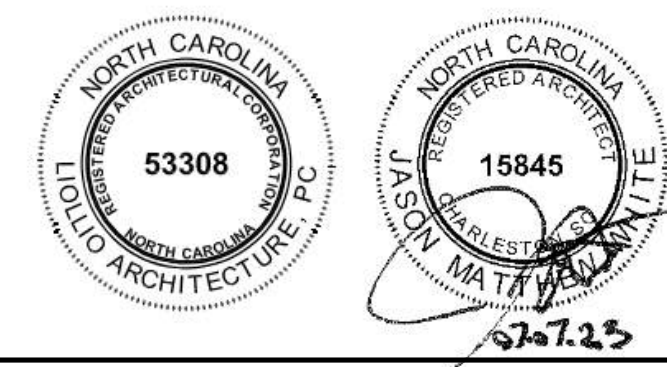
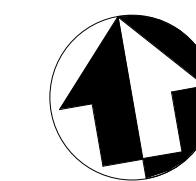
- A GC TO FIELD VERIFY ALL BUILDING DIMENSIONS
- B GC TO COORDINATE ALL MECHANICAL & ELECTRICAL DEVICES WITH ARCHITECTURAL AND STRUCTURAL.
- C REFER TO SHEET G2 FOR ADDITIONAL NOTES & SYMBOLS.
- D MASONRY SALVAGED FROM DEMOLITION PHASE SHALL BE REINSTALLED IN THIS PHASE.



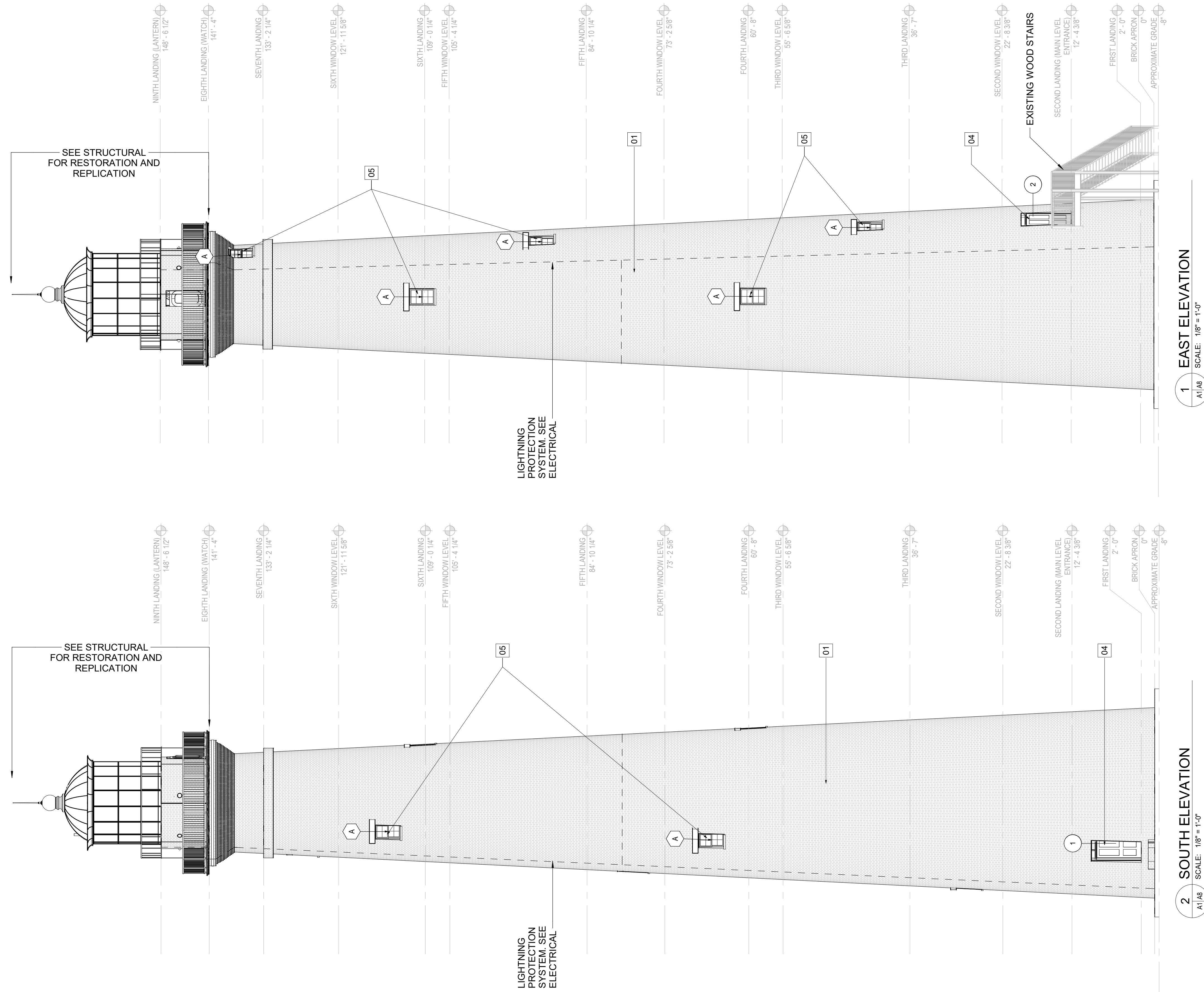
1 FLOOR PLAN - (7) SEVENTH LANDING
SCALE: 1/4" = 1'-0"



2 FLOOR PLAN - (8) EIGHT LANDING
SCALE: 1/4" = 1'-0"



DESIGNED: DC	SUB SHEET NO. A7	TITLE OF SHEET FLOOR PLANS	DRAWING NO. 623
CADD: HT			181663
TECH. REVIEW: JW			PMIS/PKG NO. 226858
DATE: 7/7/2023			SHEET 24 OF 59
CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS			



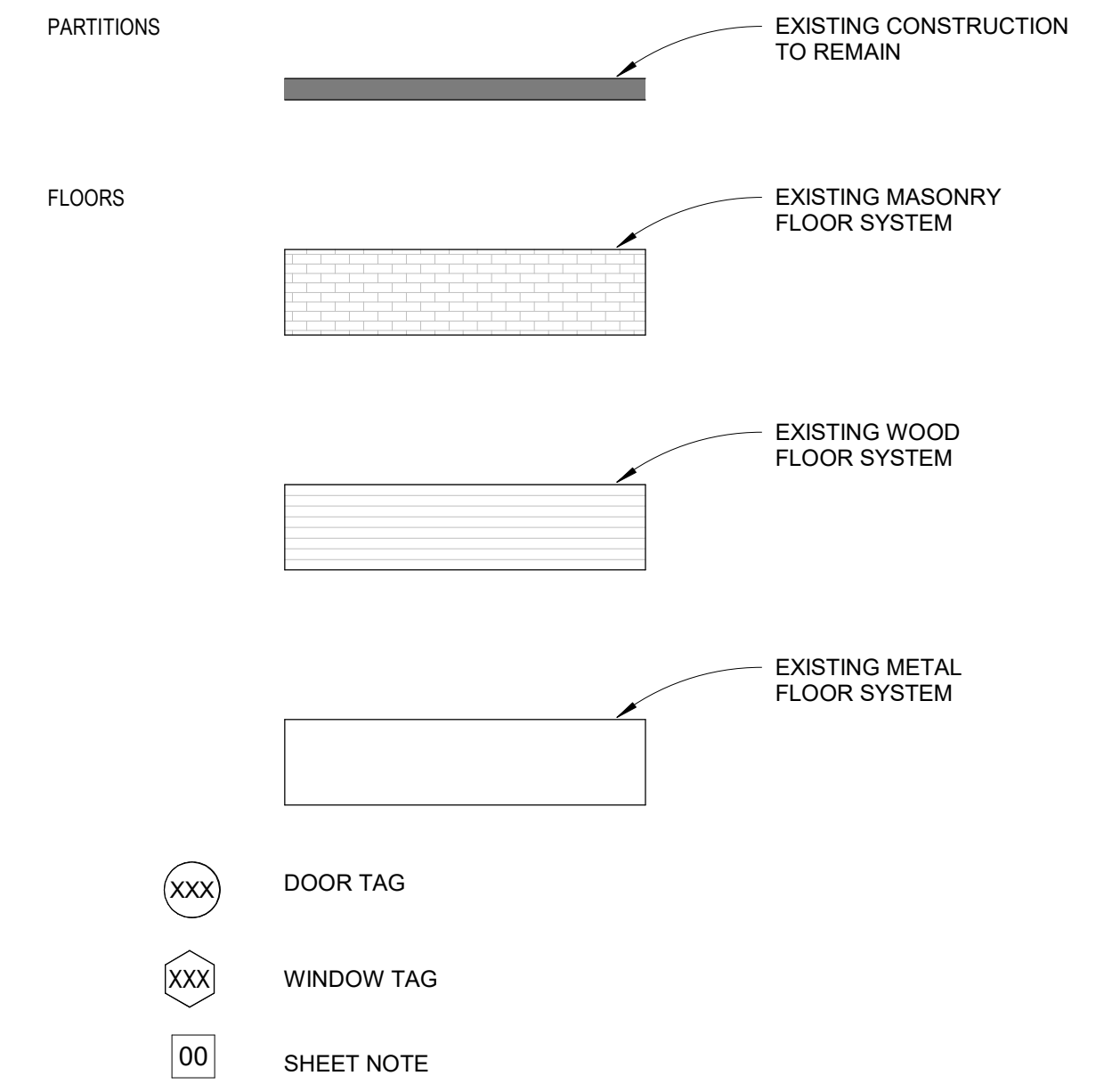
1 EAST ELEVATION
SCALE: 1/8" = 1'-0"

2 SOUTH ELEVATION
SCALE: 1/8" = 1'-0"

SHEET NOTES

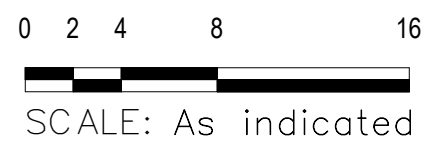
- 01 EXISTING EXTERIOR MULTI-WYTHE MASONRY WALL. CLEAN, REPOINT AND REPAIR MASONRY, SCOPE TO COVER ALL AREAS VISIBLY DAMAGED WHERE LOSS OF BOND, CRACKING, INCOMPATIBLE PATCHING, OR OTHER SIGNS OF FAILURE ARE EVIDENT. ASSUME 3,000 SF REPOINTING OF EXTERIOR MASONRY. ASSUME 30 SF EXTERIOR INCOMPATIBLE MORTAR REPLACEMENT. ASSUME 60 SF EXTERIOR BRICK MASONRY REPLACEMENT. REPAINT ALL EXTERIOR MASONRY USING SPECIFIED SILICATE MINERAL PAINT SYSTEM. PATTERN TO MATCH EXISTING BLACK AND WHITE DAYMARK. (CLIN 1)
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- 05 INSTALL WINDOW PER WINDOW DETAIL. (CLIN 3)
- 06 SIGNIFICANT AREA OF REPOINTING (CLIN 9)
- 07 NEW TREAD TO BE COATED TO MATCH HISTORIC RECOATED TREADS (CLIN 8)

FLOOR PLAN LEGEND

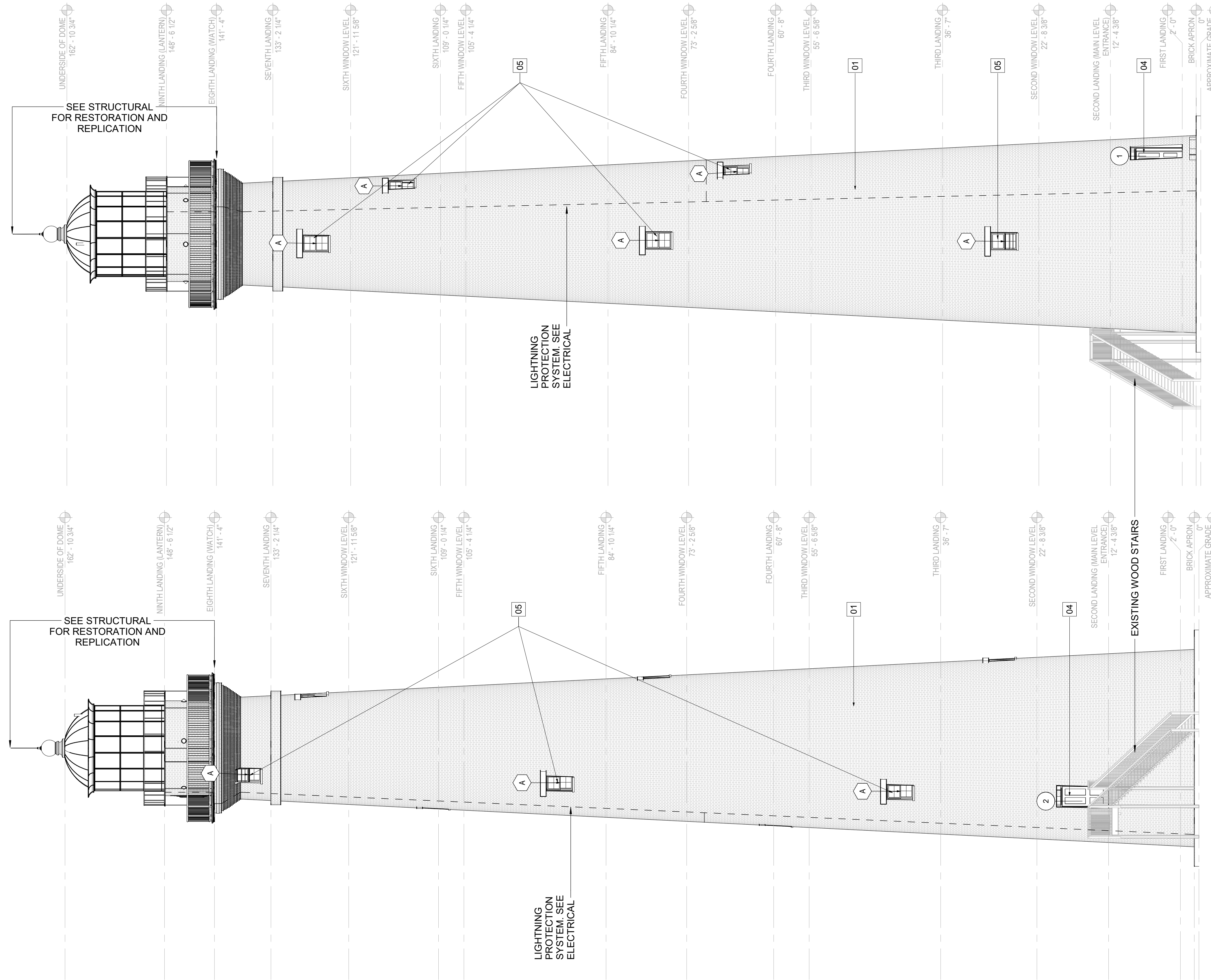


GENERAL NOTES - FLOOR PLAN

- A GC TO FIELD VERIFY ALL BUILDING DIMENSIONS
- B GC TO COORDINATE ALL MECHANICAL & ELECTRICAL DEVICES WITH ARCHITECTURAL AND STRUCTURAL.
- C REFER TO SHEET G2 FOR ADDITIONAL NOTES & SYMBOLS.
- D MASONRY SALVAGED FROM DEMOLITION PHASE SHALL BE REINSTALLED IN THIS PHASE.



DESIGNED: DC	SUB SHEET NO. A8	TITLE OF SHEET BUILDING ELEVATIONS	DRAWING NO. 623
CADD: HT			181663
TECH. REVIEW: JW			PMIS/PKG NO. 226858
DATE: 7/7/2023			SHEET 25 OF 59
			CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS



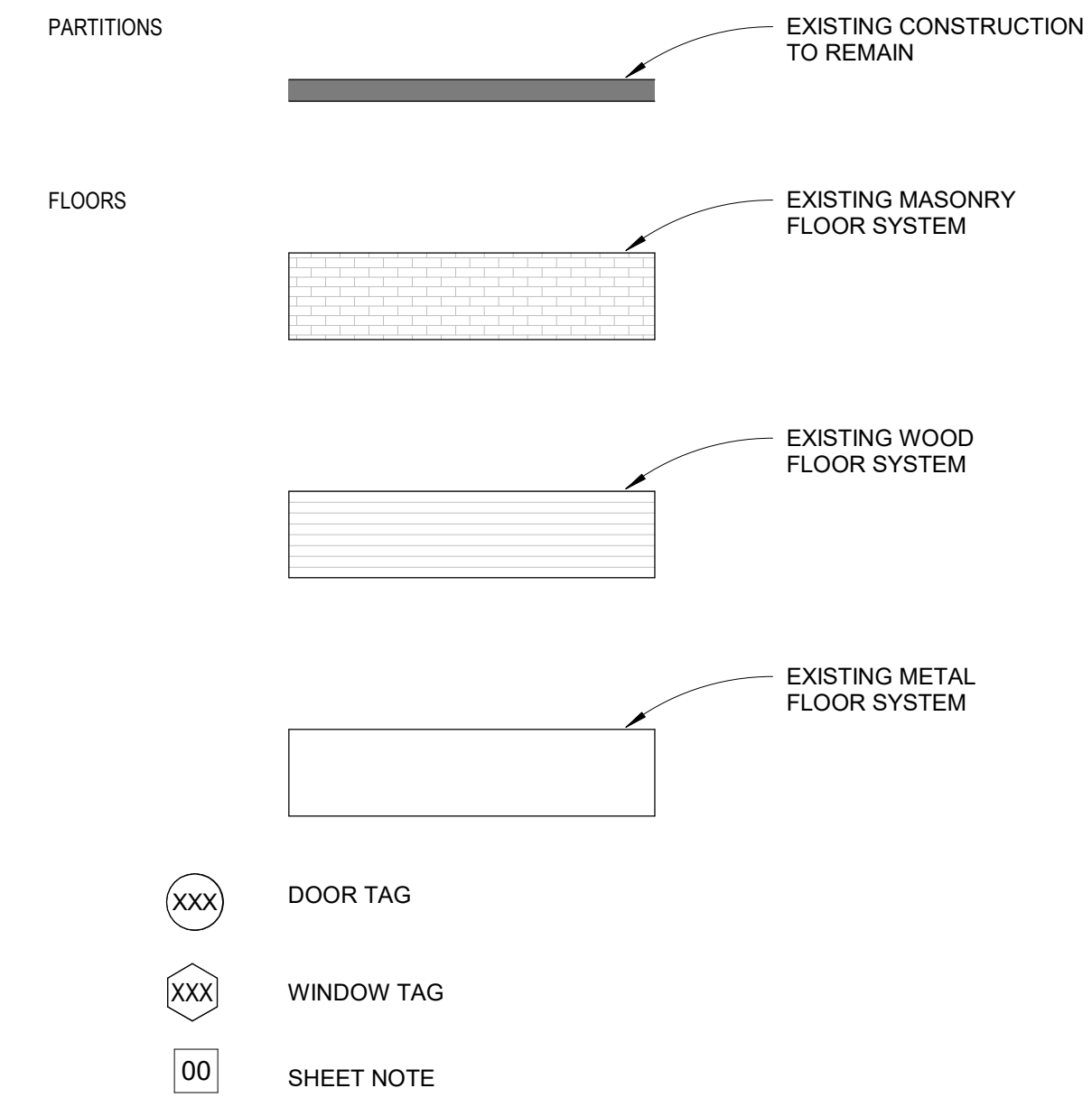
1 WEST ELEVATION
SCALE: 1/8" = 1'-0"

2 NORTH ELEVATION
SCALE: 1/8" = 1'-0"

SHEET NOTES

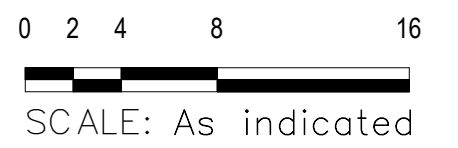
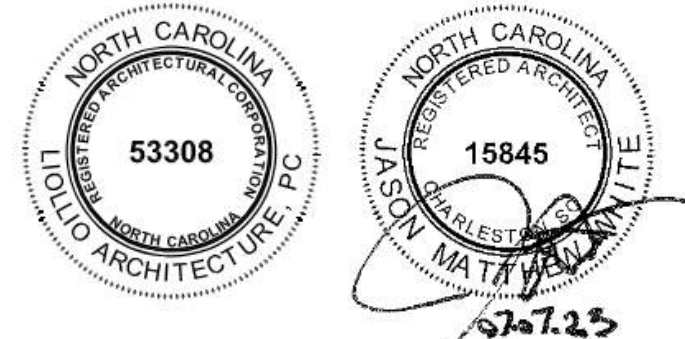
- 01 EXISTING EXTERIOR MULTI-WYTHE MASONRY WALL. CLEAN, REPOINT AND REPAIR MASONRY, SCOPE TO COVER ALL AREAS VISIBLY DAMAGED WHERE LOSS OF BOND, CRACKING, INCOMPATIBLE PATCHING, OR OTHER SIGNS OF FAILURE ARE EVIDENT. ASSUME 3,000 SF REPOINTING OF EXTERIOR MASONRY. ASSUME 30 SF EXTERIOR INCOMPATIBLE MORTAR REPLACEMENT. ASSUME 60 SF EXTERIOR BRICK MASONRY REPLACEMENT. REPAINT ALL EXTERIOR MASONRY USING SPECIFIED SILICATE MINERAL PAINT SYSTEM. PATTERN TO MATCH EXISTING BLACK AND WHITE DAYMARK. (CLIN 1)
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- 07 NEW TREAD TO BE COATED TO MATCH HISTORIC RECOATED TREADS (CLIN 8)

FLOOR PLAN LEGEND

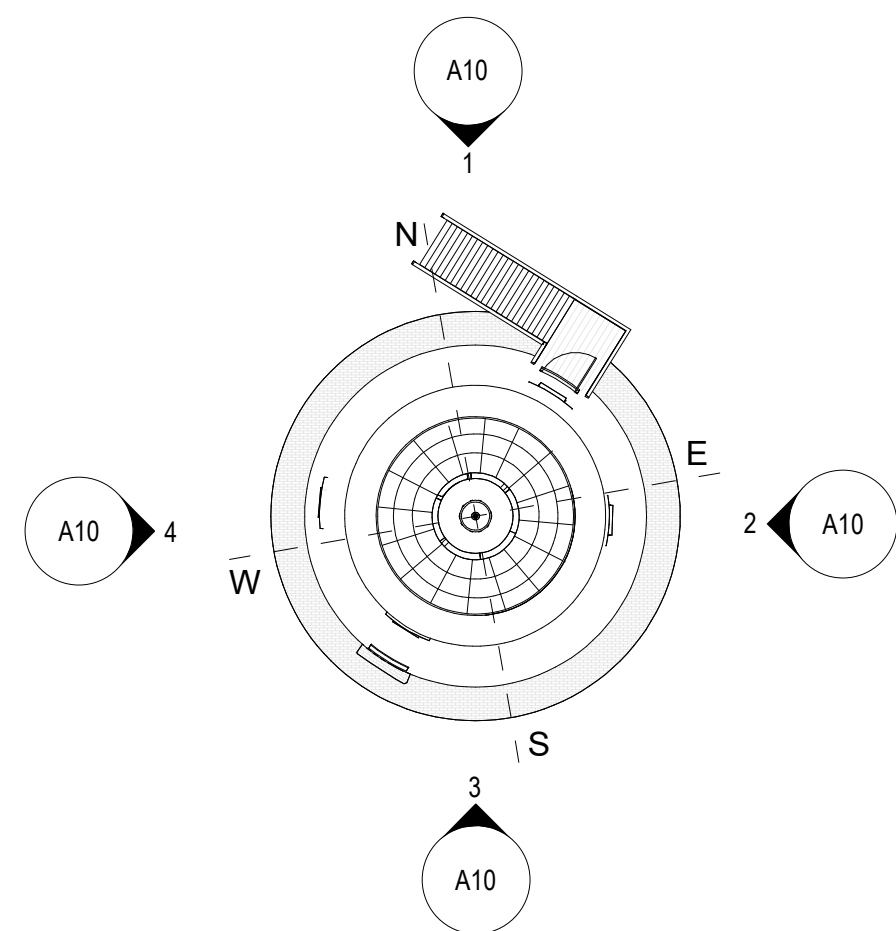


GENERAL NOTES - FLOOR PLAN

- A GC TO FIELD VERIFY ALL BUILDING DIMENSIONS
- B GC TO COORDINATE ALL MECHANICAL & ELECTRICAL DEVICES WITH ARCHITECTURAL AND STRUCTURAL.
- C REFER TO SHEET G2 FOR ADDITIONAL NOTES & SYMBOLS.
- D MASONRY SALVAGED FROM DEMOLITION PHASE SHALL BE REINSTALLED IN THIS PHASE.



DESIGNED: DC	SUB SHEET NO. A9	TITLE OF SHEET BUILDING ELEVATIONS	DRAWING NO. 623
CADD: HT		CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS	181663
TECH. REVIEW: JW			PMIS/PKG NO. 226858
DATE: 7/7/2023			SHEET 26 OF 59

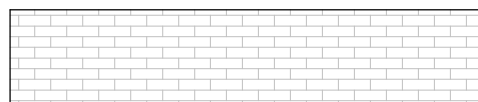
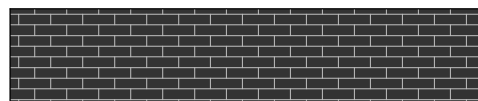


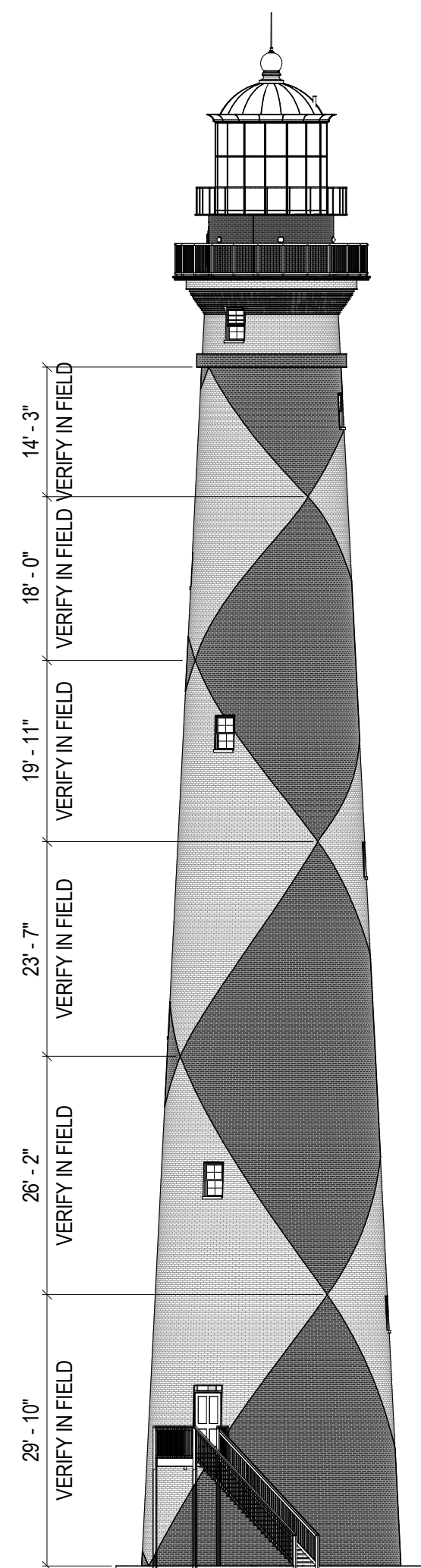
5 DAYMARK KEY PLAN
SCALE: 1/16" = 1'-0"

GENERAL NOTES - DAYMARK

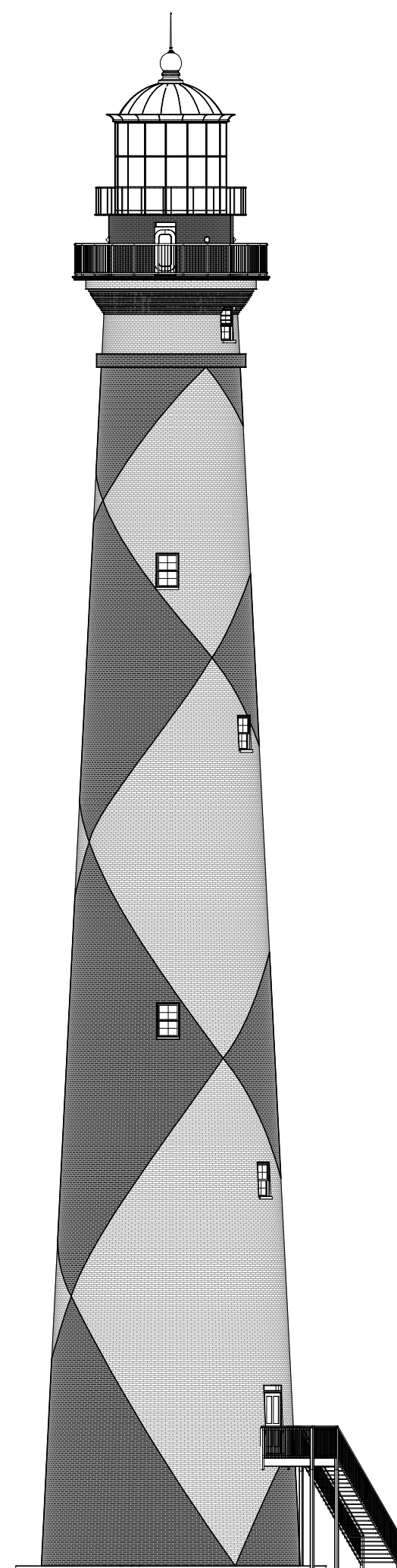
- A DAYMARK DIAGRAMS ARE FOR REFERENCE ONLY. GC TO FIELD VERIFY EXISTING DAYMARK, PAINT TYPE AND LOCATION PRIOR TO COATING REMOVAL.
- B WINDOWS TO BE PAINTED WHITE. SEE SPECIFICATIONS FOR COATING TYPE.
- C 1ST LEVEL DOOR TO BE PAINTED BLACK. 2ND LEVEL DOOR TO BE PAINTED WHITE. SEE SPECIFICATIONS FOR COATING TYPE.

DAYMARK LEGEND

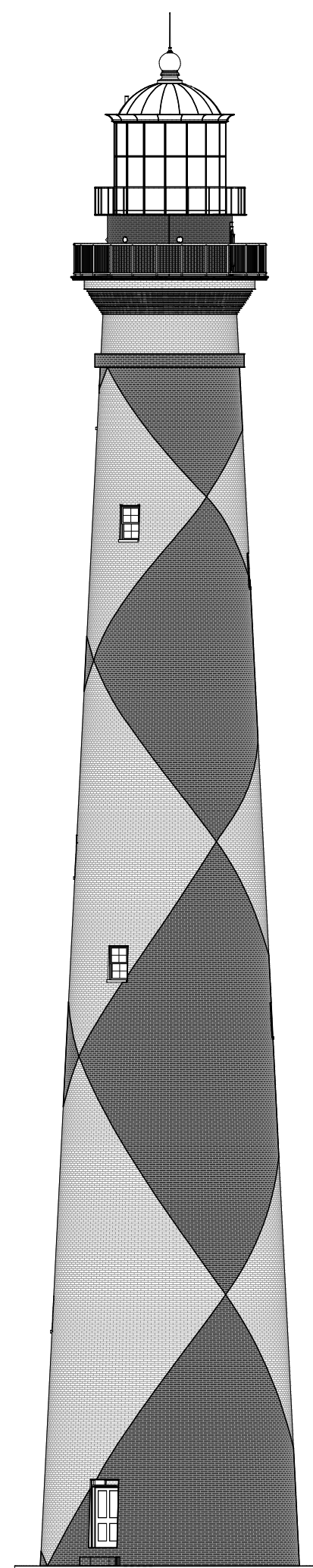
-  MASONRY TO BE COATED IN WHITE. SEE SPECIFICATIONS FOR COATING
-  MASONRY TO BE COATED IN BLACK. SEE SPECIFICATIONS FOR COATING



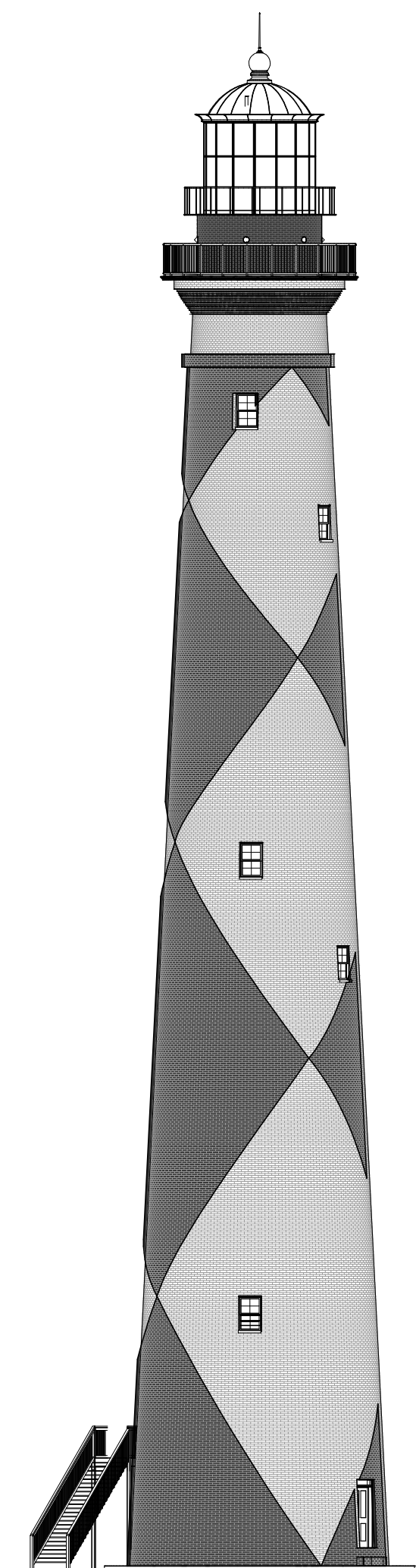
1 DAYMARK ELEVATION
SCALE: 1/16" = 1'-0"



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



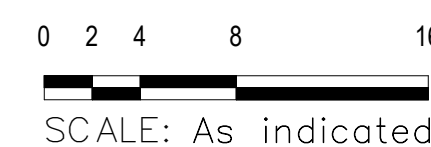
3 DAYMARK ELEVATION
SCALE: 1/16" = 1'-0"

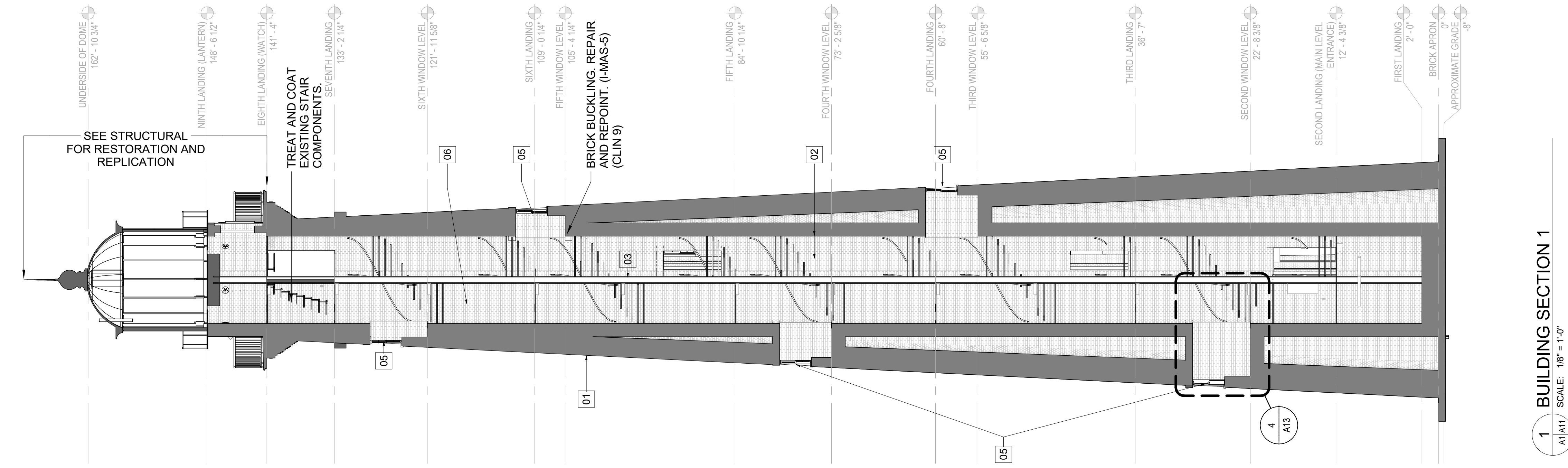
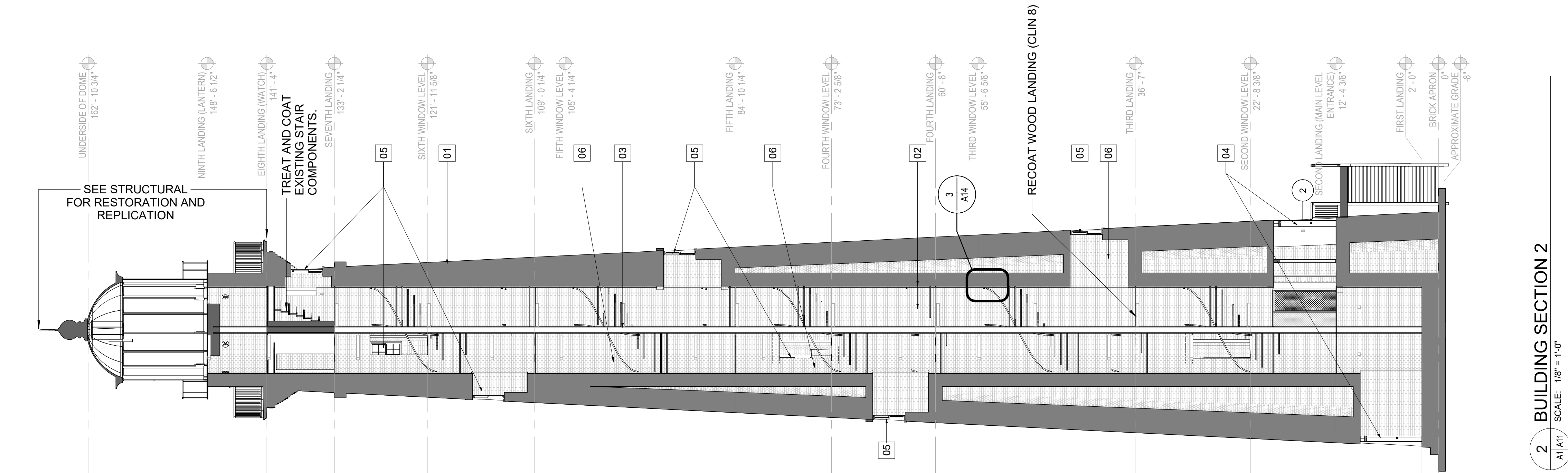


4 DAYMARK ELEVATION
SCALE: 1/16" = 1'-0"

ALL WORK ON THIS PAGE IS ASSOCIATED WITH CLIN 1 UNLESS OTHERWISE SPECIFIED.

DESIGNED: DC	SUB SHEET NO. A10	TITLE OF SHEET BUILDING ELEVATIONS DAYMARKS	DRAWING NO. 623
CADD: HT			181663
TECH. REVIEW: JW			PMIS/PKG NO. 226858
DATE: 7/7/2023			SHEET 27 OF 59





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

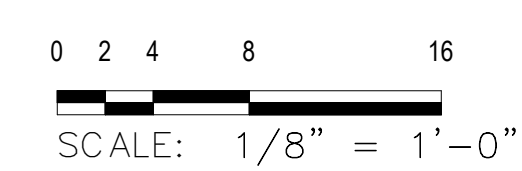
1 BUILDING SECTION 1
SCALE: 1/8" = 1'-0"

SHEET NOTES

- 01 EXISTING EXTERIOR MULTI-WYTHE MASONRY WALL. CLEAN, REPOINT AND REPAIR MASONRY. SCOPE TO COVER ALL AREAS VISIBLY DAMAGED WHERE LOSS OF BOND, CRACKING, INCOMPATIBLE PATCHING, OR OTHER SIGNS OF FAILURE ARE EVIDENT. ASSUME 3,000 SF REPOINTING OF EXTERIOR MASONRY. ASSUME 30 SF EXTERIOR INCOMPATIBLE MORTAR REPLACEMENT. ASSUME 60 SF EXTERIOR BRICK MASONRY REPLACEMENT. REPAINT ALL EXTERIOR MASONRY USING SPECIFIED SILICATE MINERAL PAINT SYSTEM. PATTERN TO MATCH EXISTING BLACK AND WHITE DAYMARK. (CLIN 1)
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- 04 INSTALL DOOR PER DOOR DETAILS. (CLIN 2)
- 05 INSTALL WINDOW PER WINDOW DETAIL. (CLIN 3)
- 06 SIGNIFICANT AREA OF REPOINTING (CLIN 9)
- 07 NEW TREAD TO BE COATED TO MATCH HISTORIC RECOATED TREADS (CLIN 8)

GENERAL NOTES - SECTION

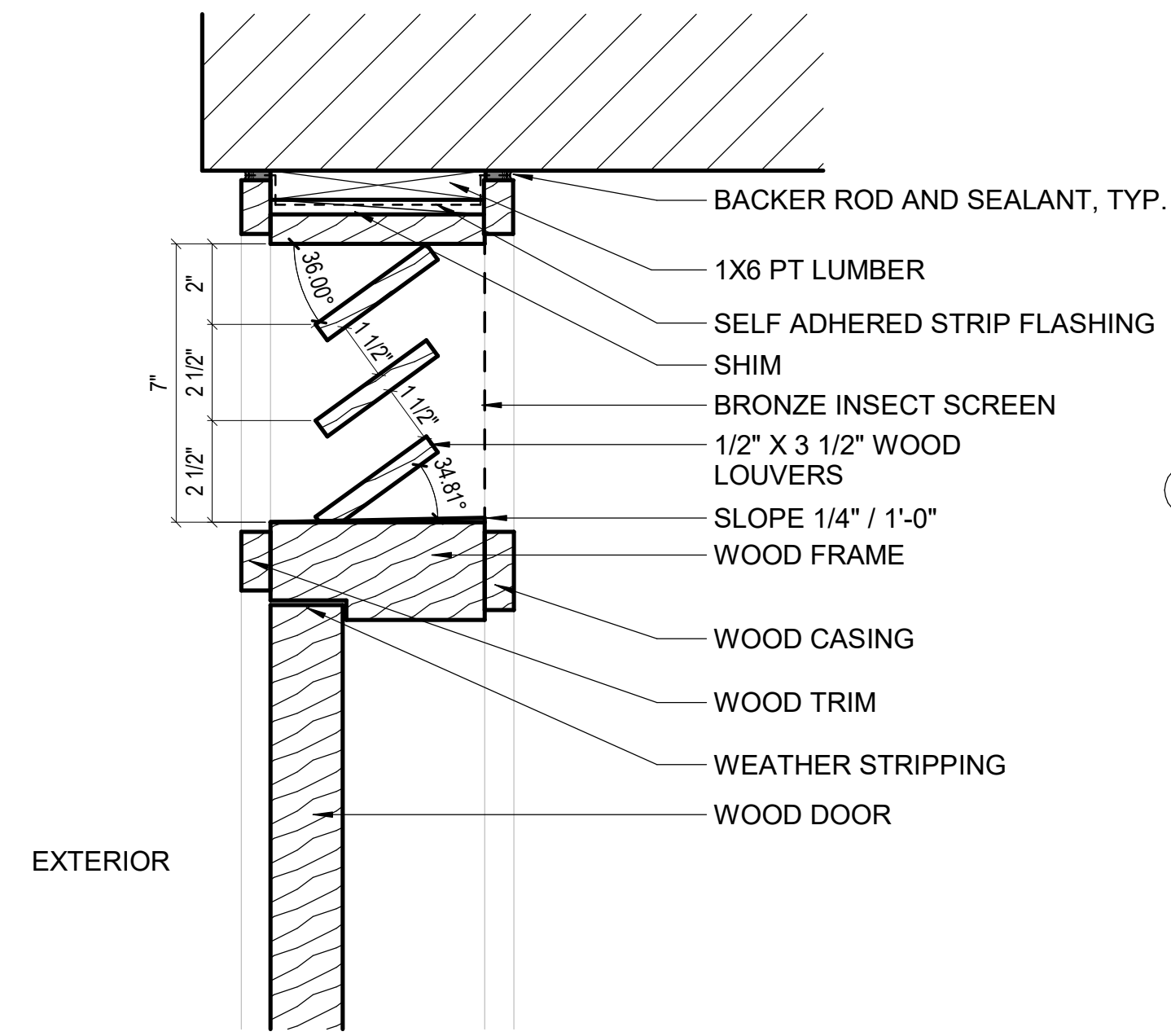
- A REFER TO SHEET G2 FOR ADDITIONAL NOTES & SYMBOLS.
- B MASONRY SALVAGED FROM DEMOLITION PHASE SHALL BE REINSTALLED IN THIS PHASE.



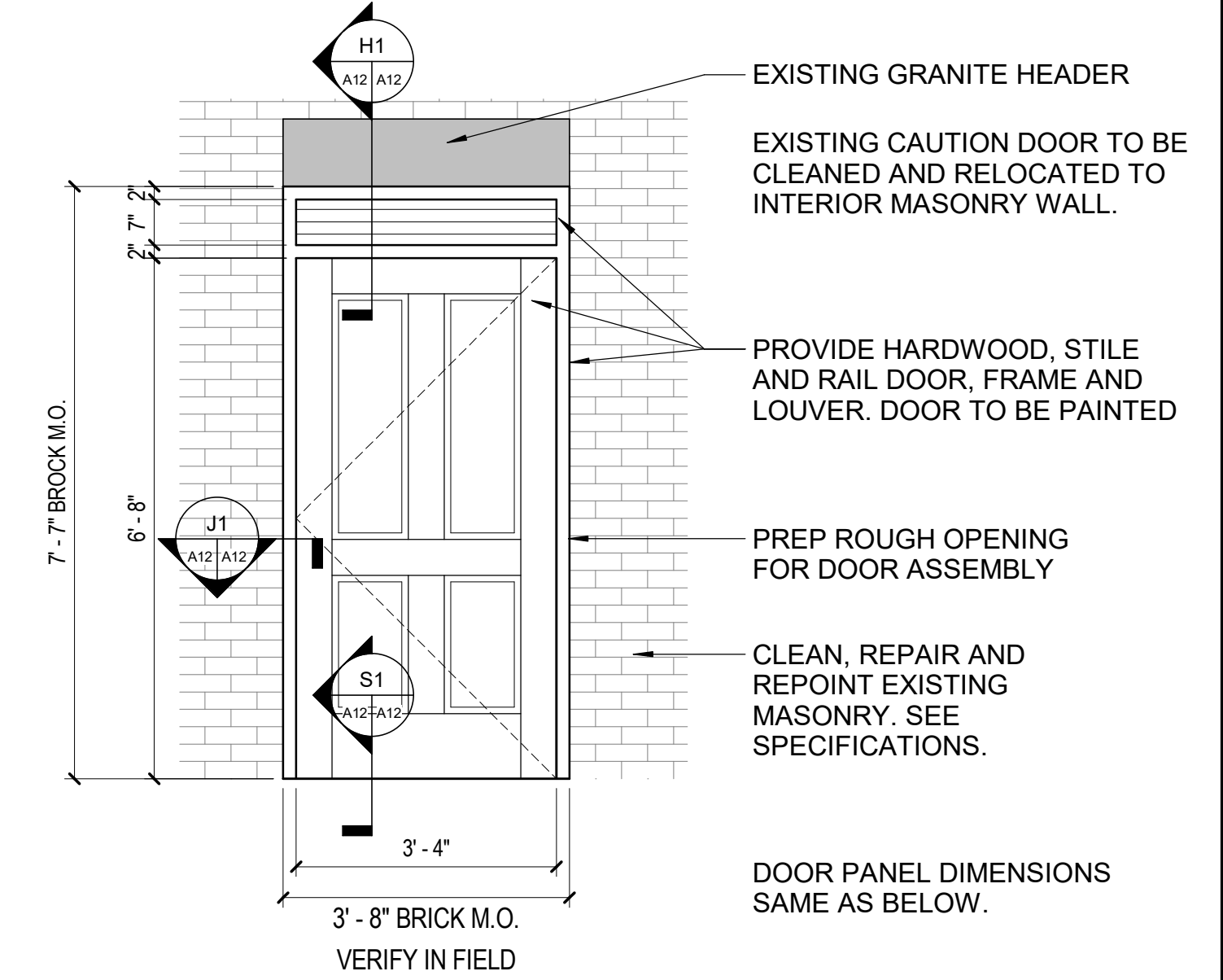
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CADD: HT			181663
TECH. REVIEW: JW			PMIS/PKG NO. 226858
DATE: 7/7/2023			SHEET 28 OF 59

CAPE LOOKOUT NATIONAL SEASHORE
LIGHTHOUSE REPAIRS

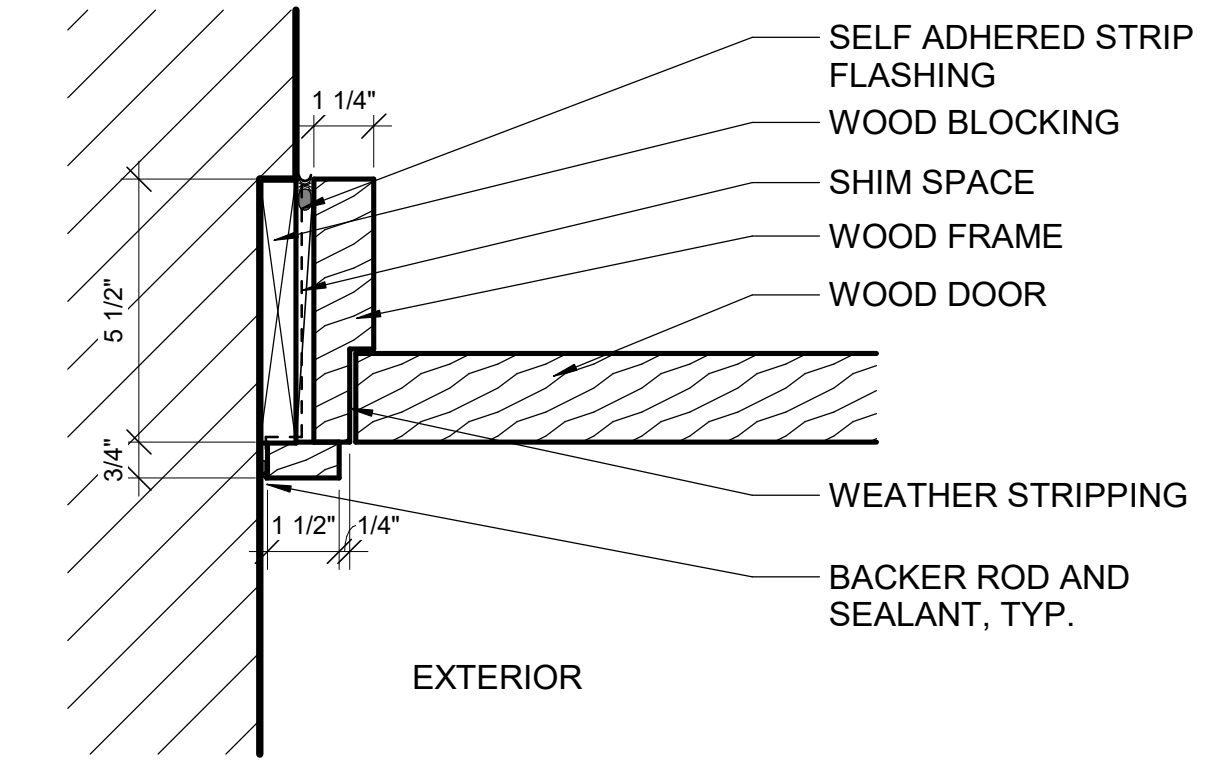
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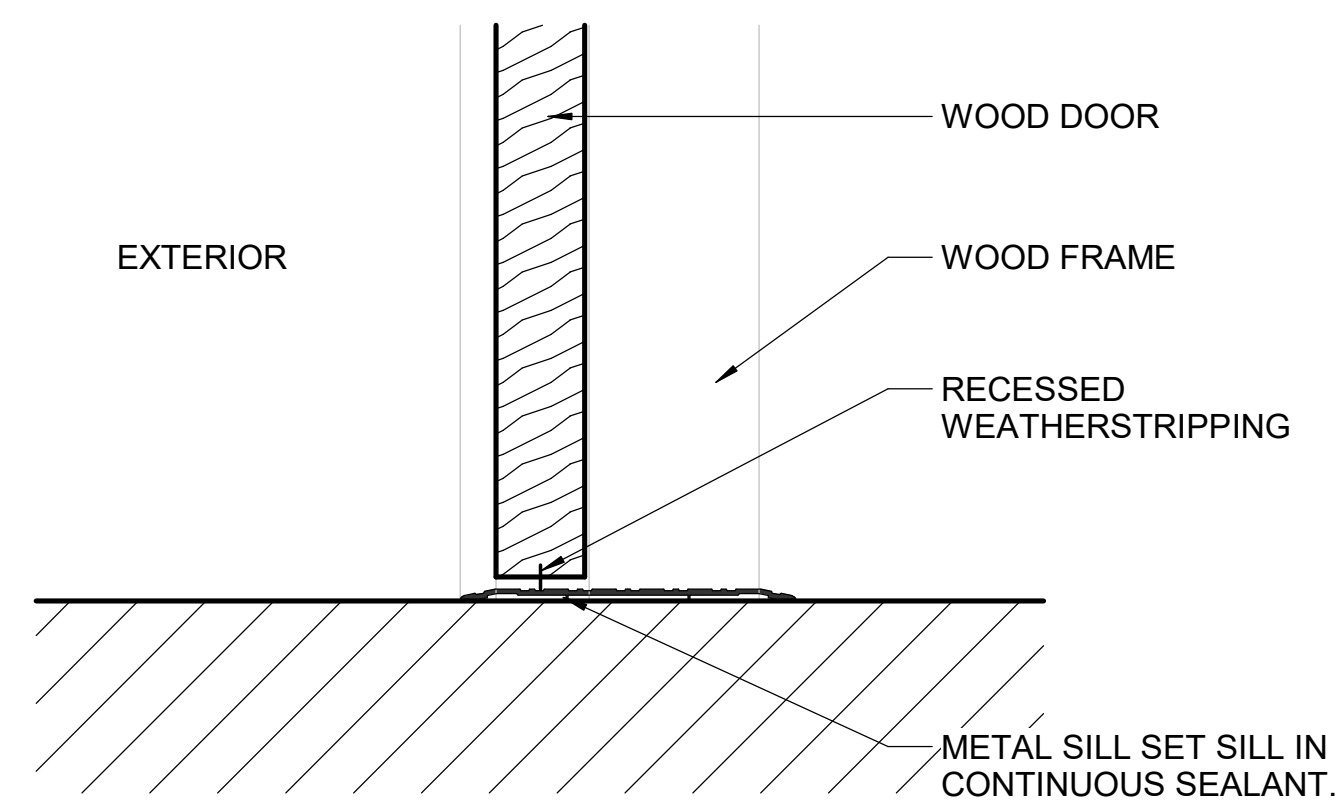
2
2ND LEVEL DOOR



H1
DOOR - HEAD
SCALE: 3" = 1'-0"

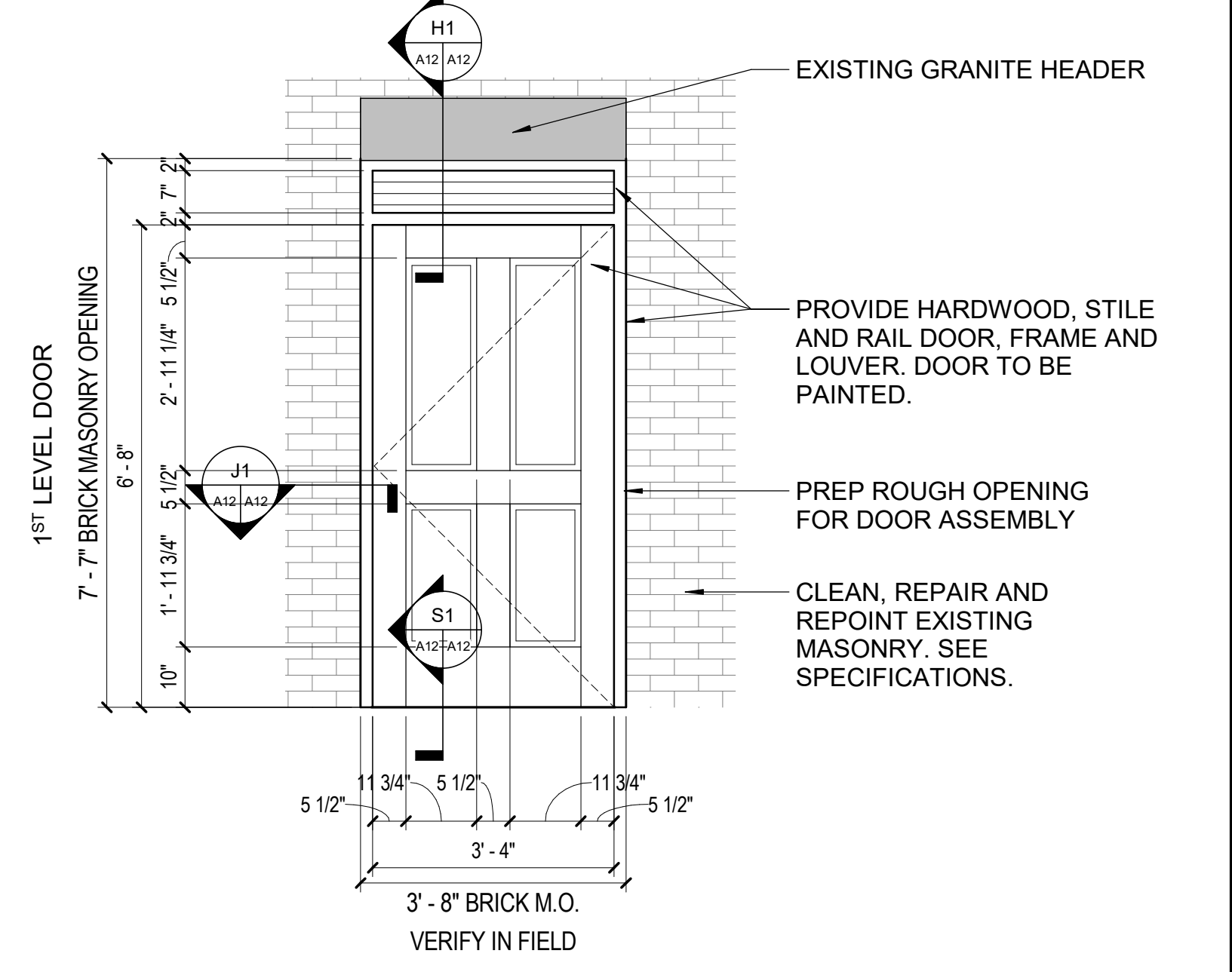


J1
DOOR - JAMB
SCALE: 3" = 1'-0"



S1
DOOR - SILL
SCALE: 3" = 1'-0"

1
1ST LEVEL DOOR



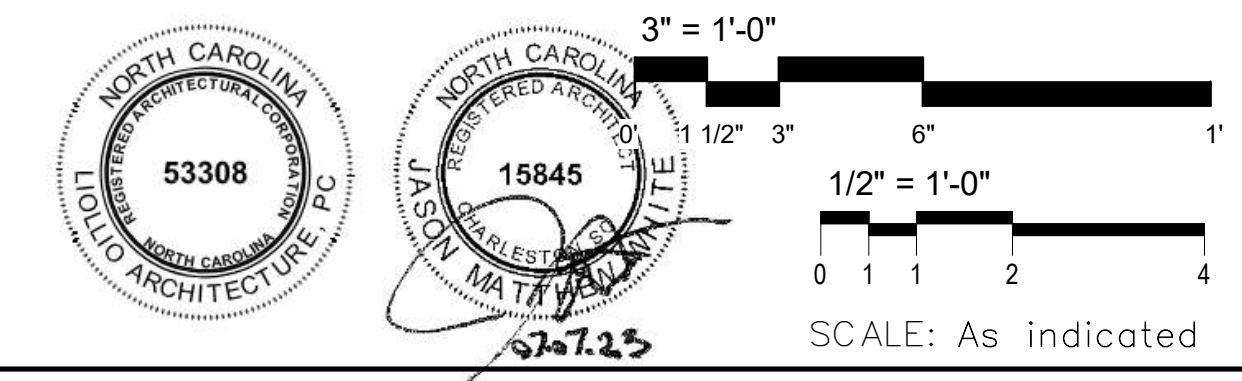
1
DOOR ELEVATIONS - NEW
SCALE: 1/2" = 1'-0"



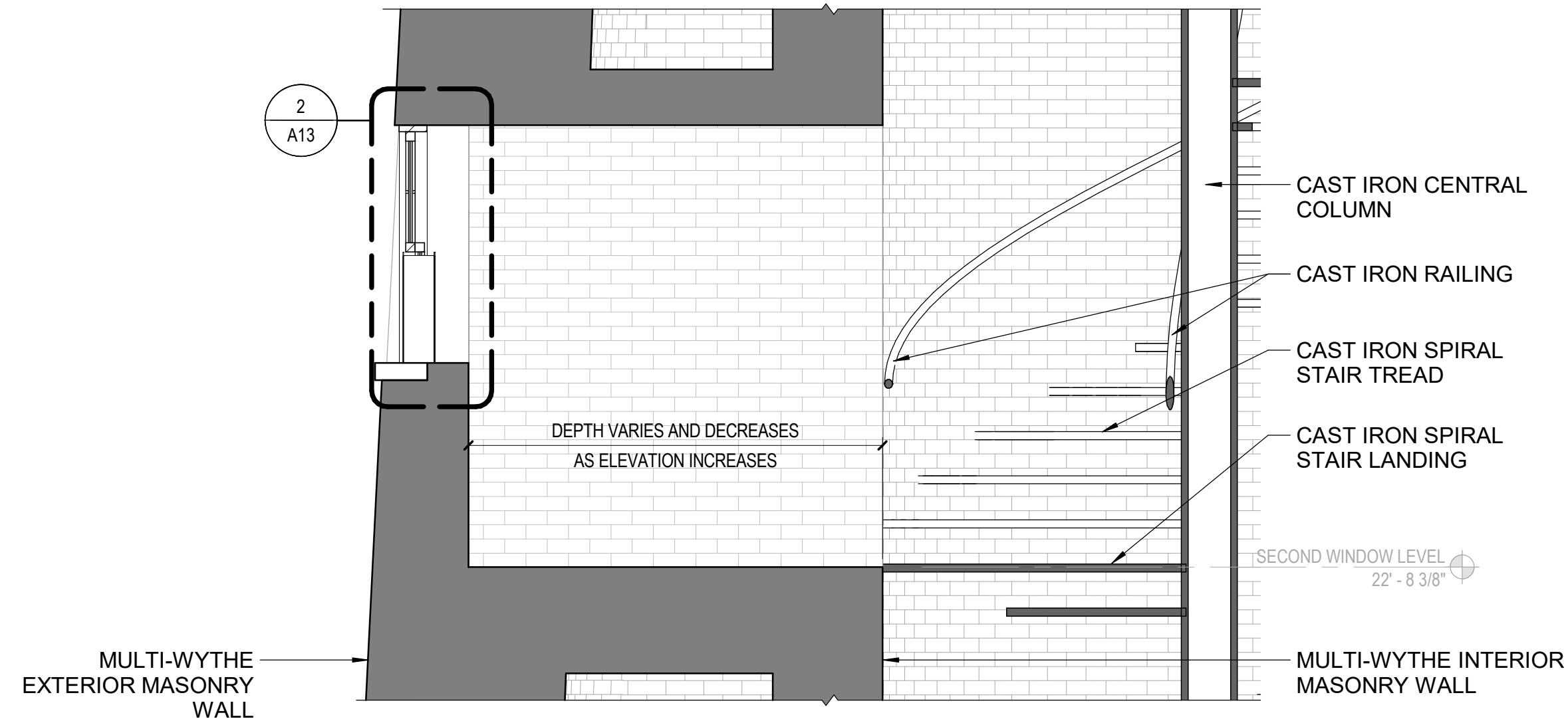
DOOR HARWARE TO MATCH KEEPERS QUARTER.

NOTE: ALL DOORS, FRAMES AND TRIM TO BE CUSTOM FABRICATED. FIELD VERIFY ALL EXISTING ROUGH OPENINGS AS CONDITIONS MAY VARY.

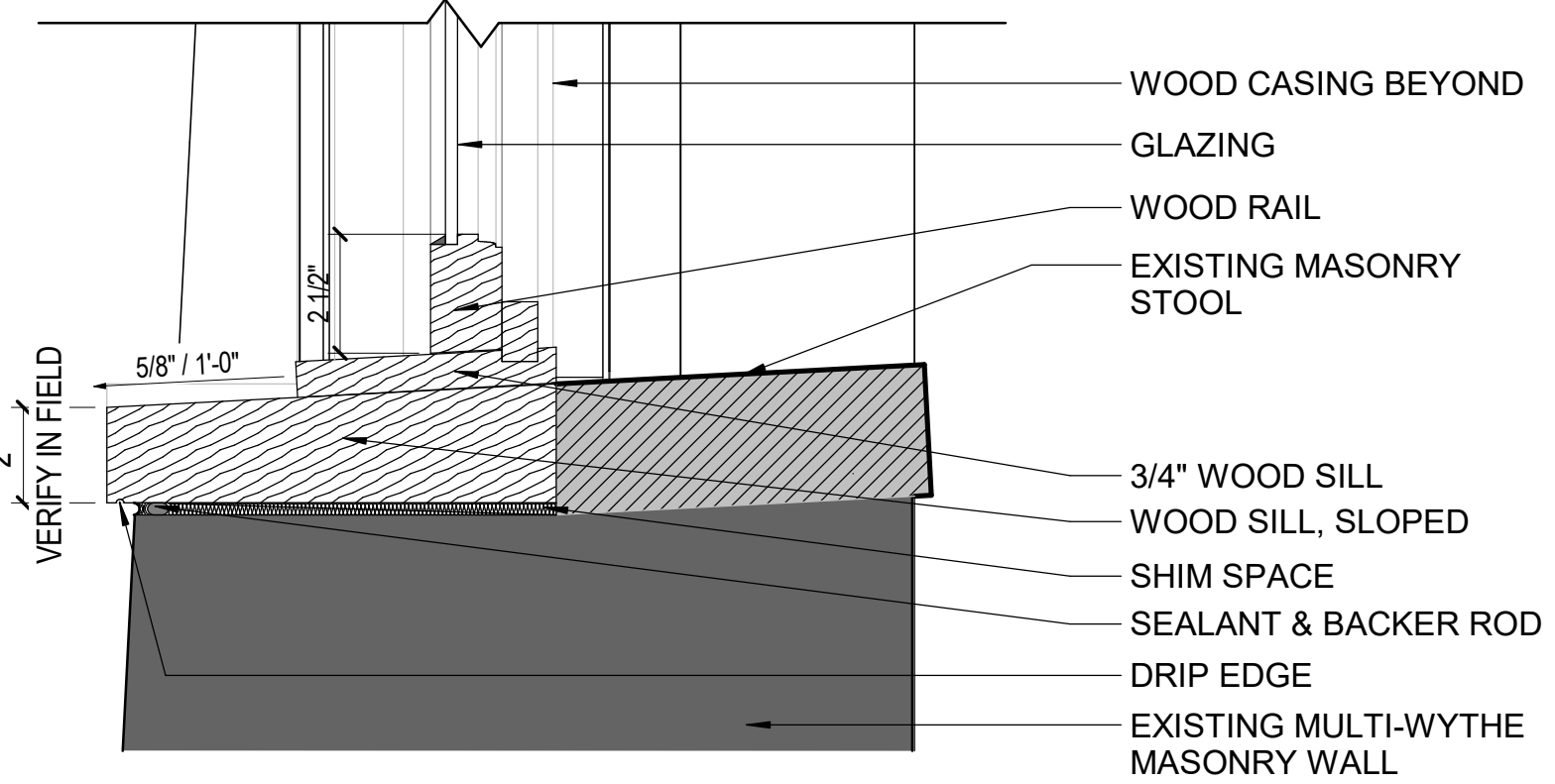
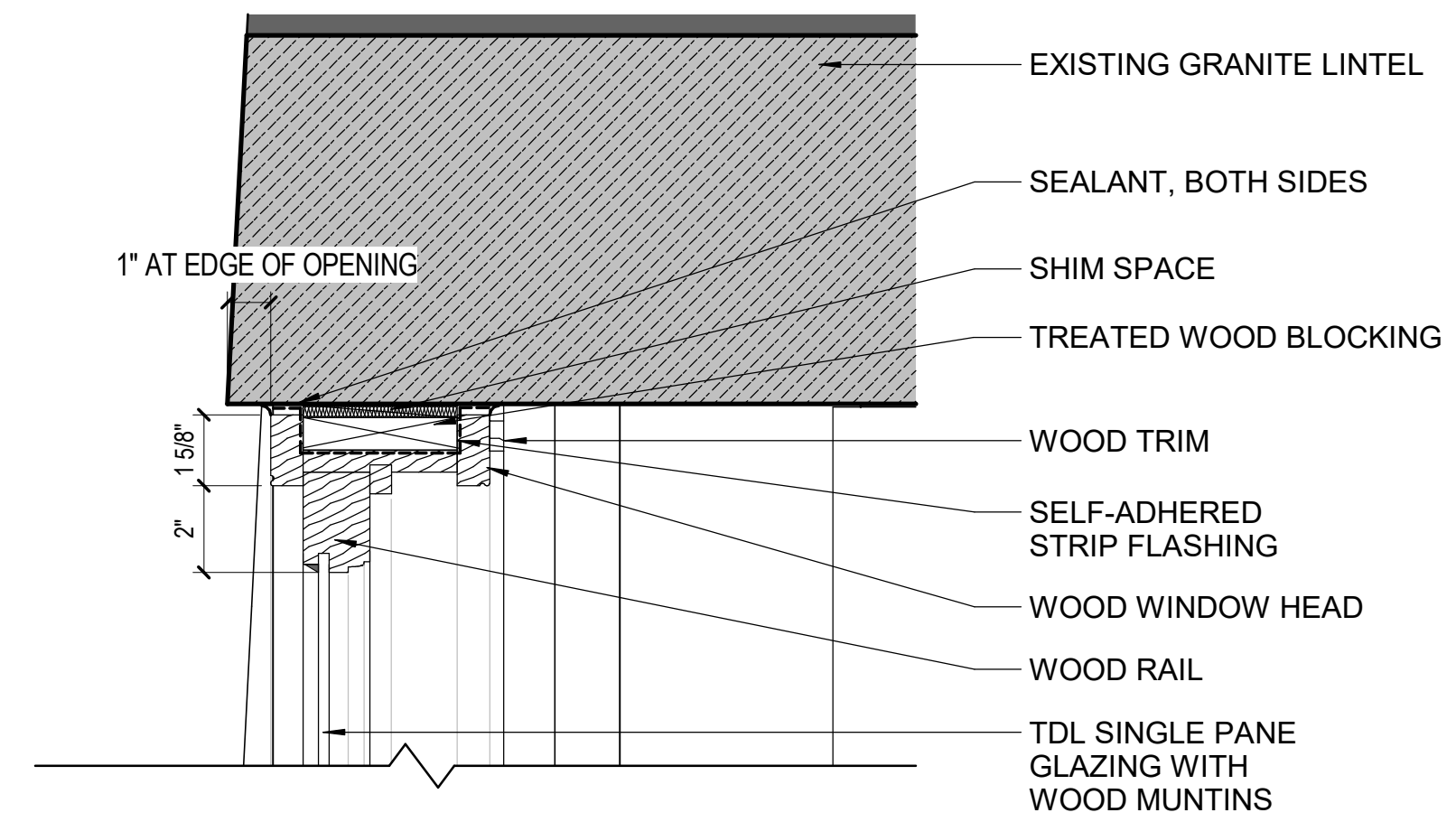
ALL WORK ON THIS PAGE IS ASSOCIATED WITH CLIN 2 UNLESS OTHERWISE SPECIFIED.



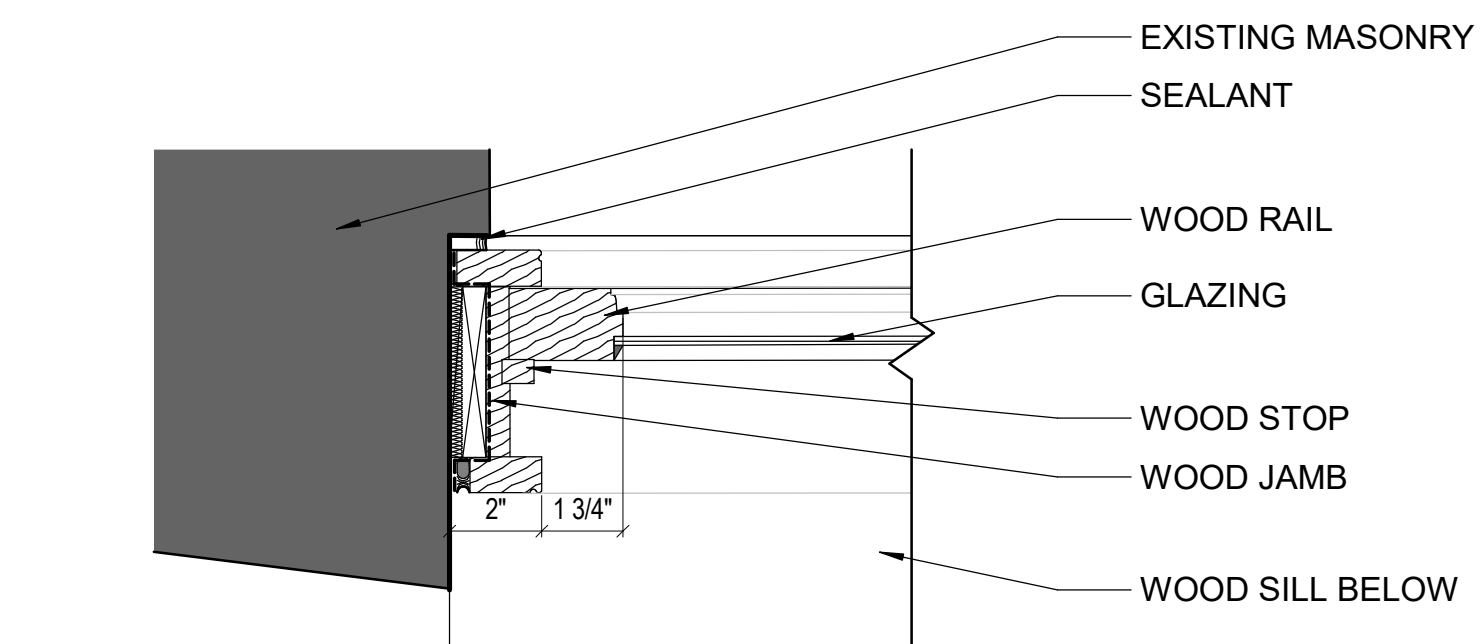
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CADD: HT			181663
TECH. REVIEW: JW			PMIS/PKG NO. 226858
DATE: 7/7/2023			SHEET 29 OF 59



4 ENLARGED SECTION @ TYPICAL WINDOW
SCALE: 1/2" = 1'-0"

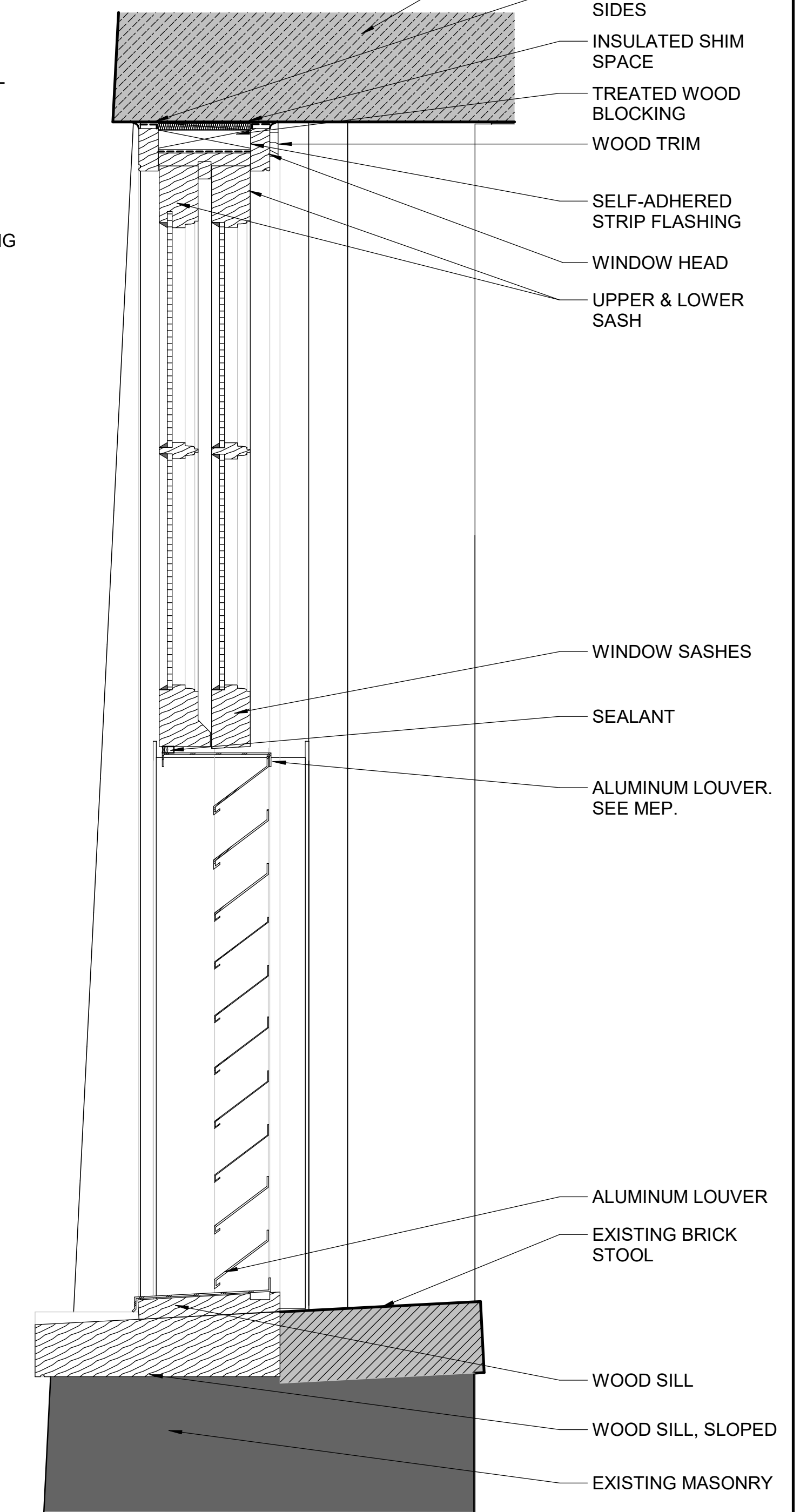


2 TYP WINDOW HEAD & SILL
SCALE: 3" = 1'-0"

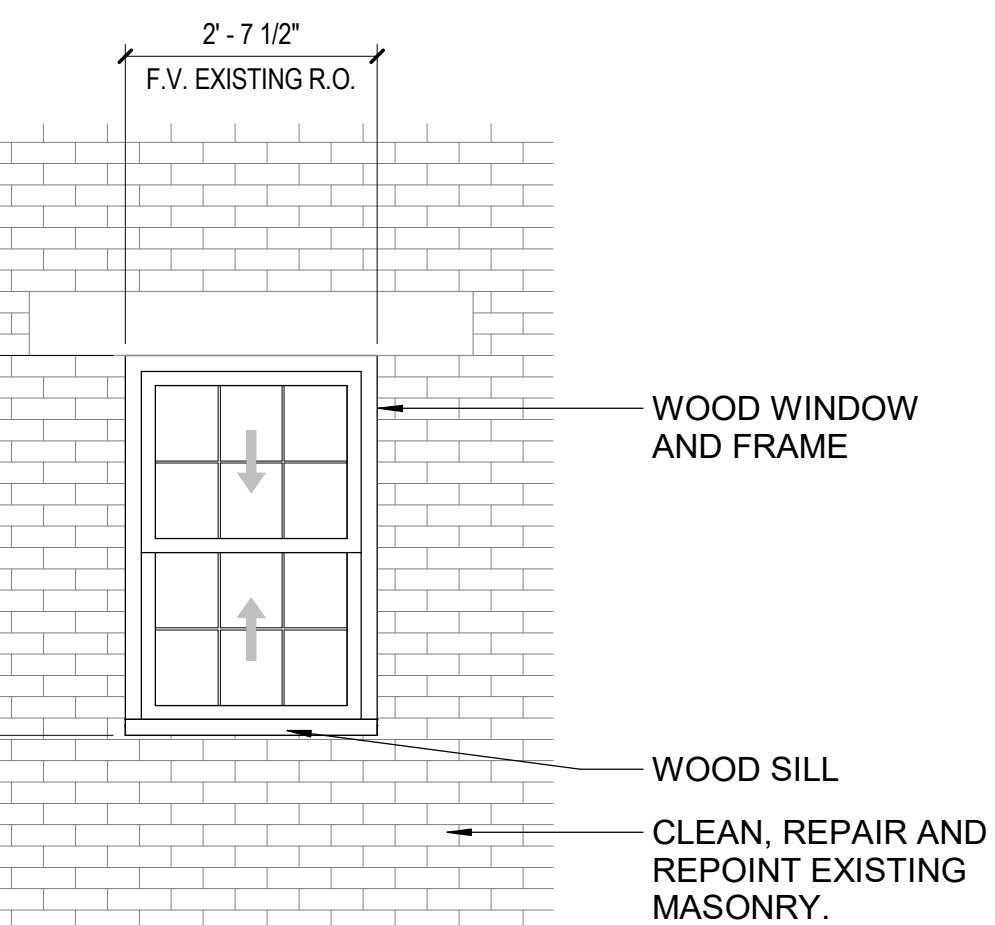
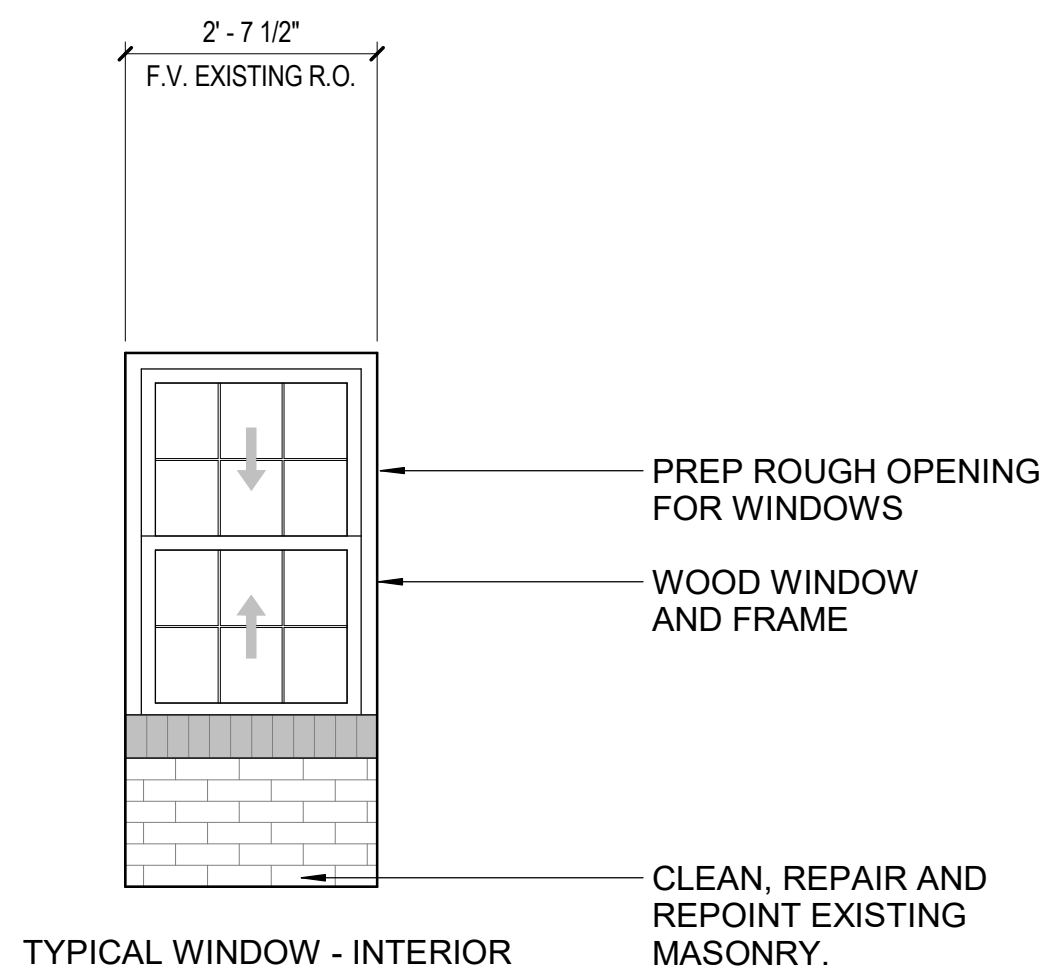


3 TYP WINDOW JAMB
SCALE: 3" = 1'-0"

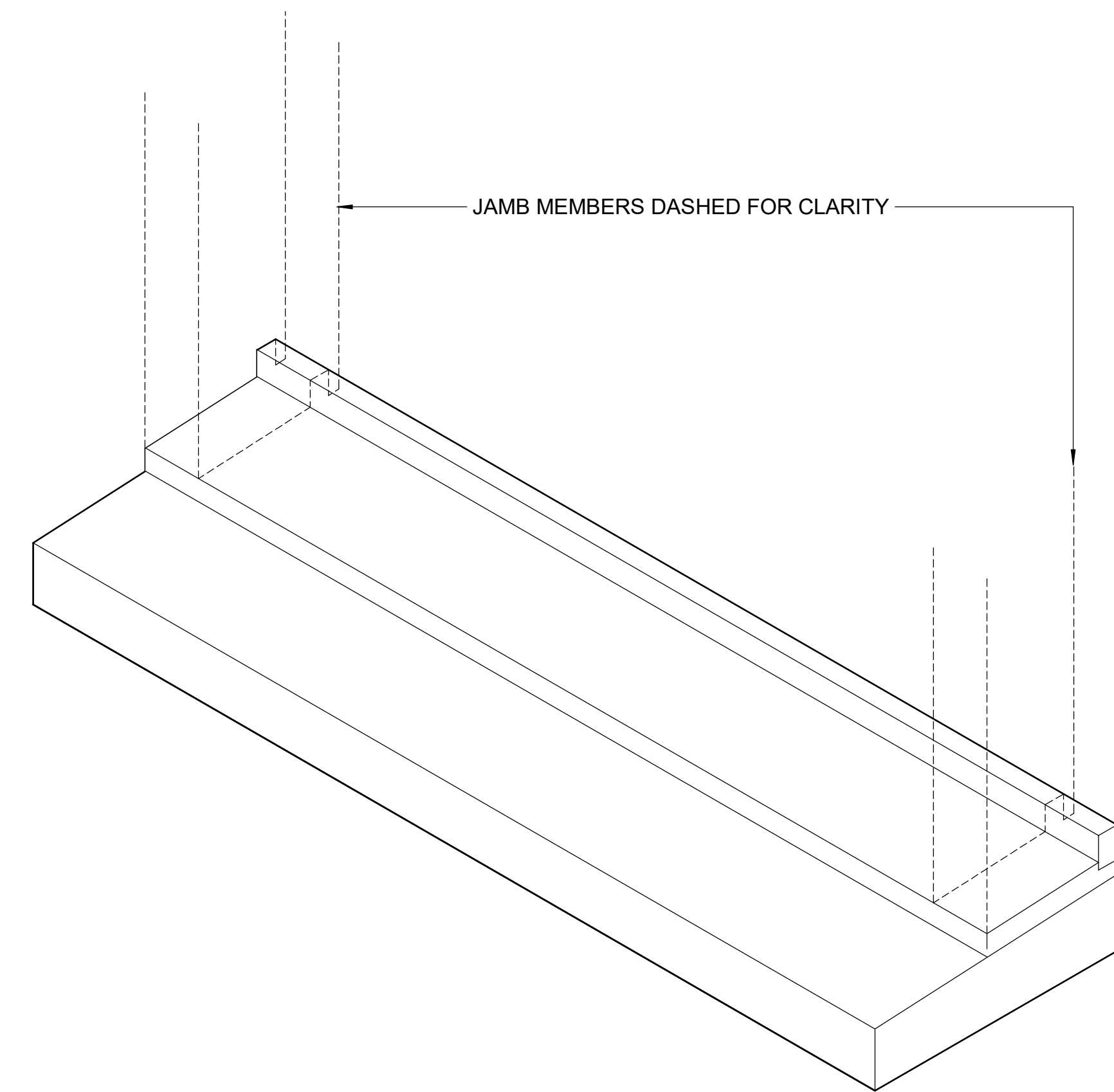
BELOW DETAIL IS REQUIRED AT SECOND WINDOW LEVEL & SEVENTH LEVEL WINDOWS. LOUVERS TO BE INSTALLED ONCE CAP OF LIGHTHOUSE HAS BEEN REMOVED. LOUVERS TO BE REMOVED AFTER NEW EXHAUST FANS ARE OPERATIONAL.



1 TEMPORARY LOUVER IN WINDOW
SCALE: 3" = 1'-0"



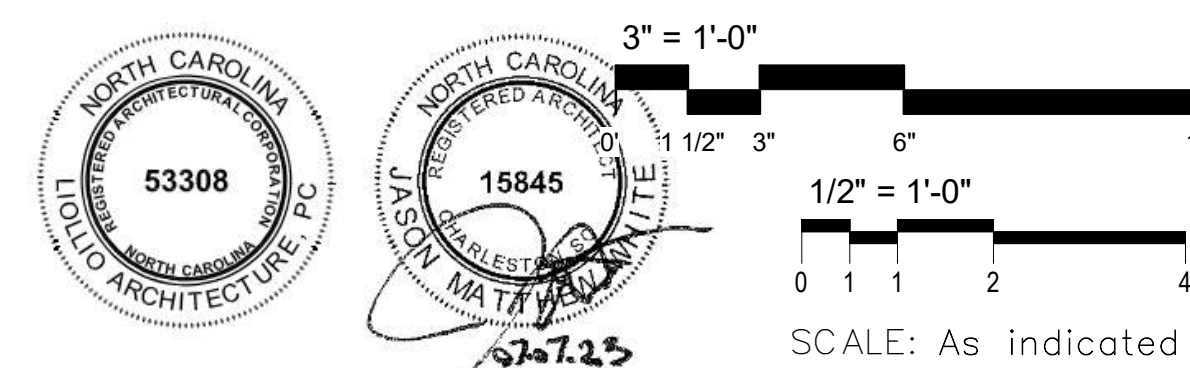
6 AXON - WINDOW SILL
SCALE: 3" = 1'-0"



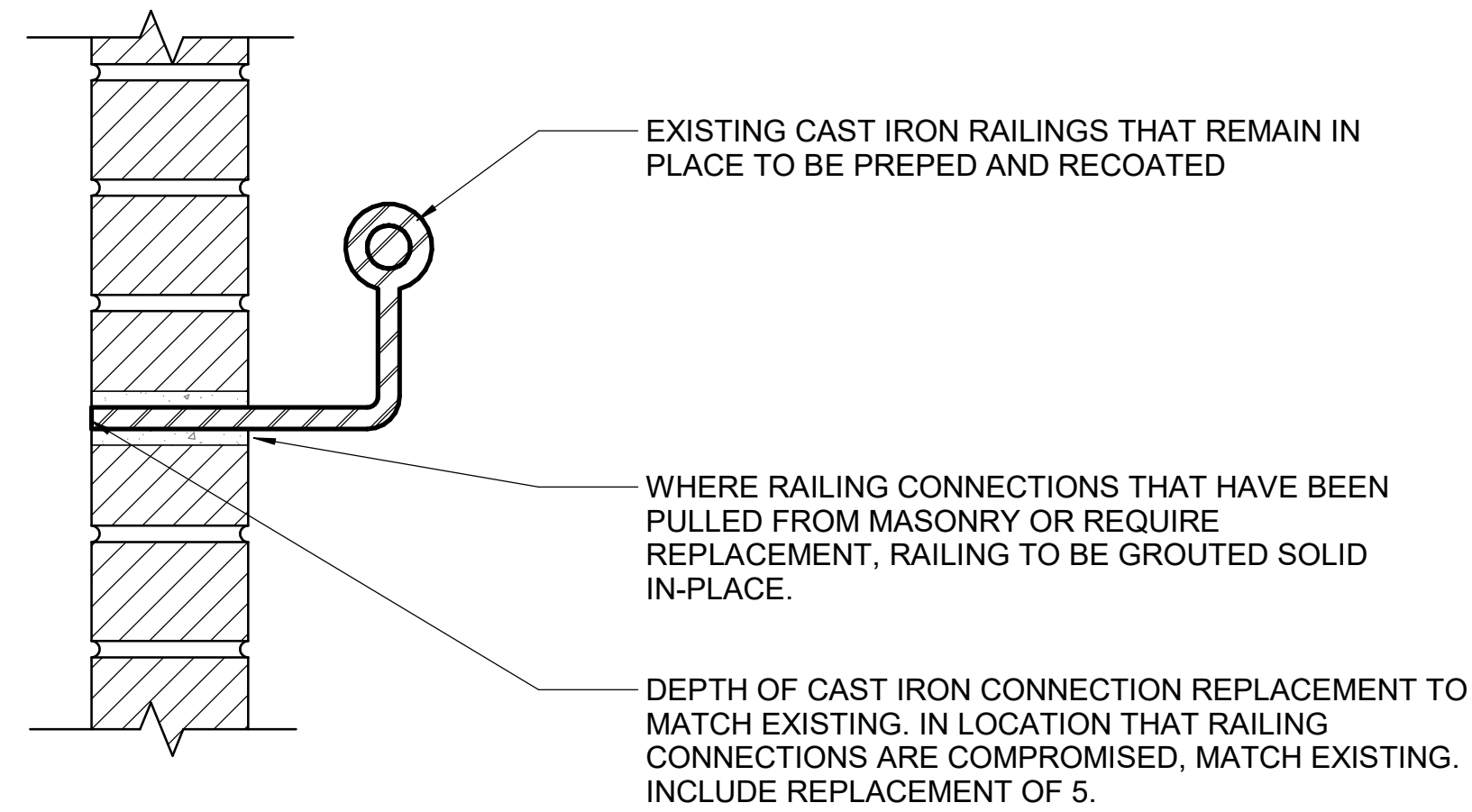
5 TYP WINDOW ELEVATIONS
SCALE: 1/2" = 1'-0"

NOTE: ALL WINDOWS, FRAMES AND TRIM TO BE CUSTOM FABRICATED. FIELD VERIFY ALL EXISTING ROUGH OPENINGS AS CONDITIONS MAY VARY.
ALL WINDOWS TO BE INSTALLED PLUMB & PARALLEL TO WINDOW OPENING.
ALL WORK ON THIS PAGE IS ASSOCIATED WITH CLIN 3 UNLESS OTHERWISE SPECIFIED.

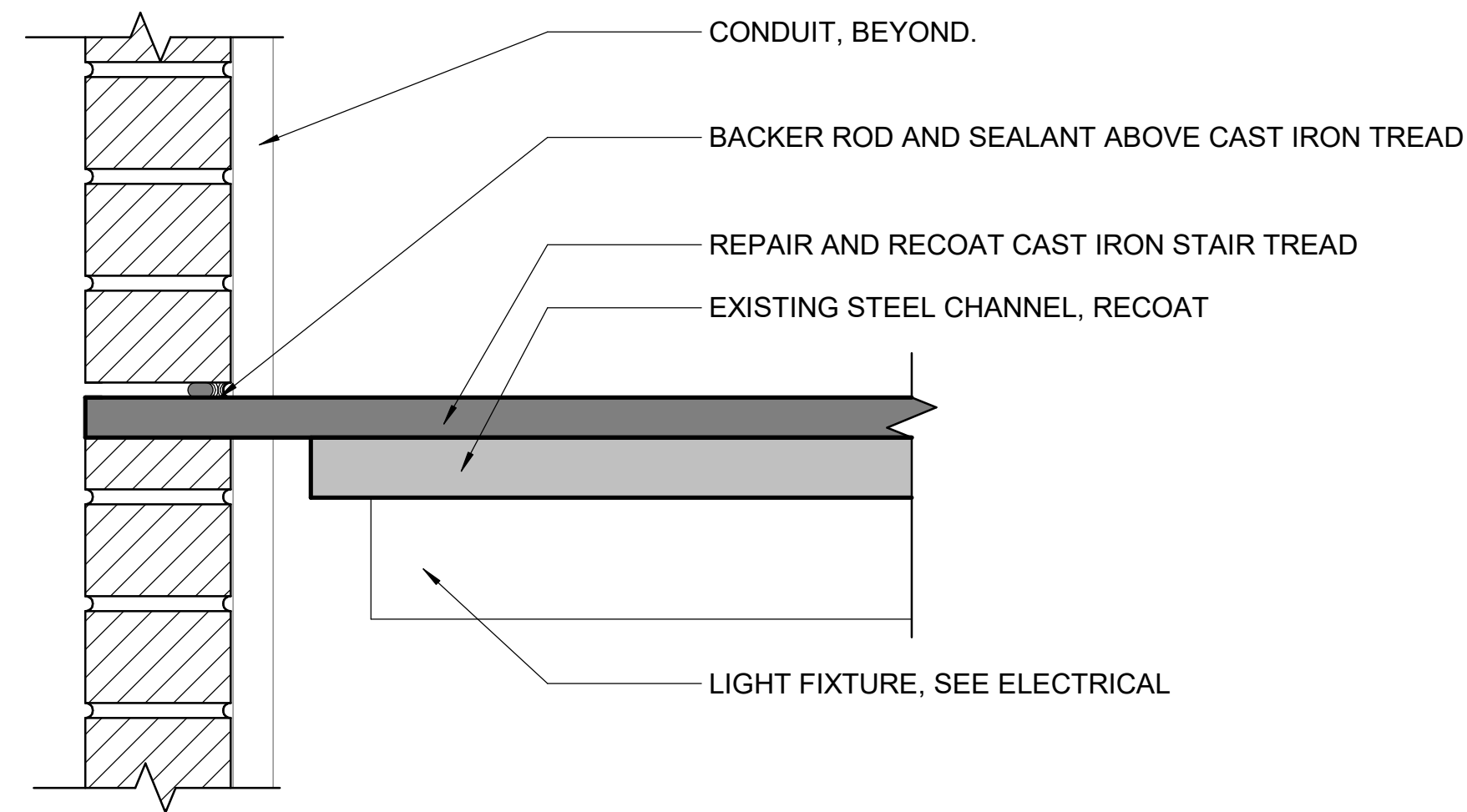
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CADD: HT			181663
TECH. REVIEW: JW			PMIS/PKG NO. 226858
DATE: 7/7/2023		CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS	SHEET 30 OF 59



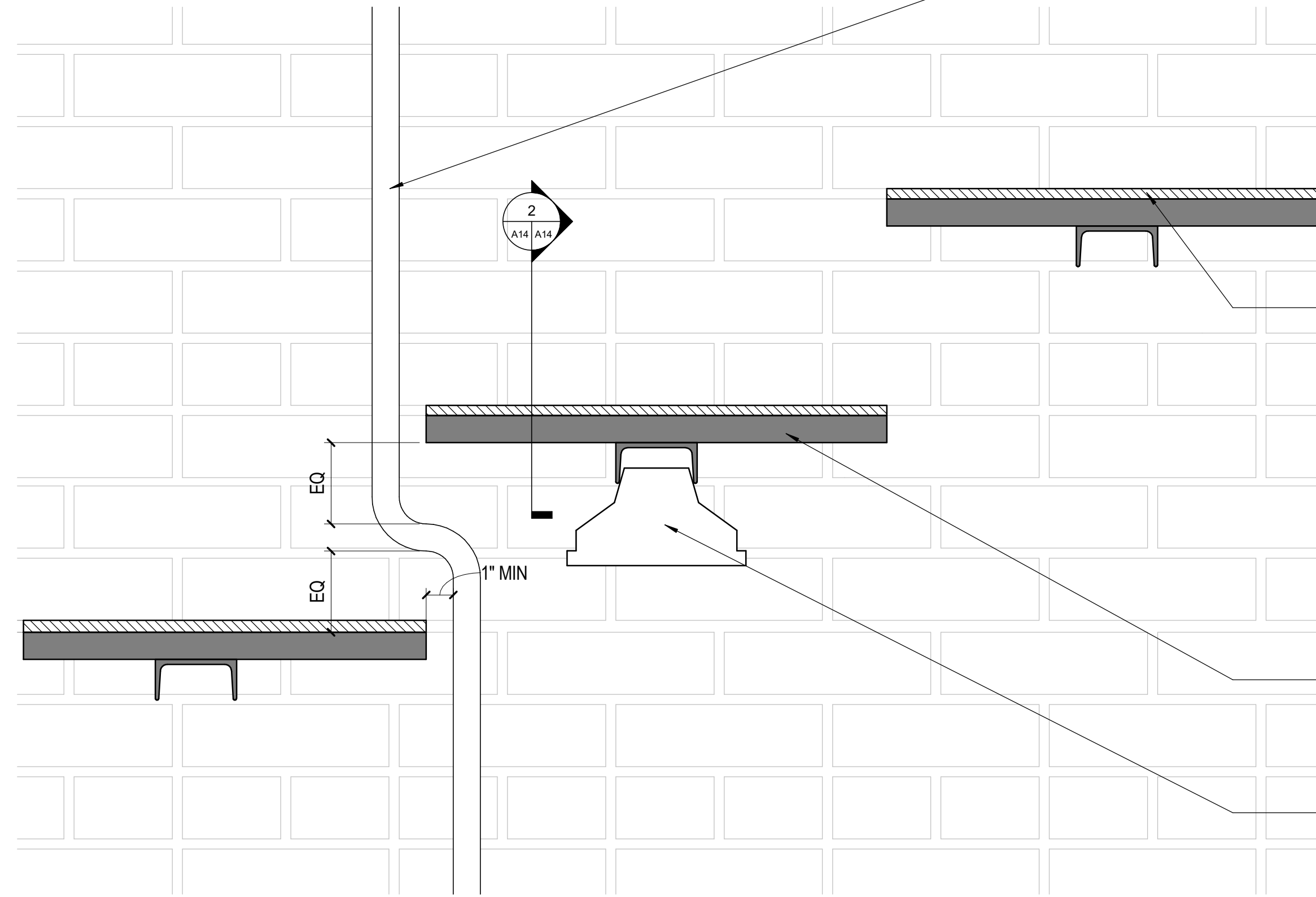
7/10/2023 3:14:57 PM Autodesk Docs://22602 NPS CALO Lighthouse/2022 1010 - NPS CALO Lighthouse Repairs R22 DD.rvt



3 HANDRAIL WALL CONNECTION DETAIL
A11 | A14 SCALE: 3" = 1'-0"

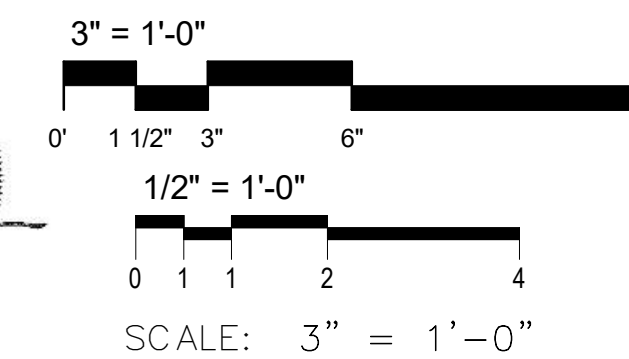


2 STAIR TREAD EXPANSION JOINT DETAIL
A14 | A14 SCALE: 3" = 1'-0"



1 STAIR TREAD DETAIL
A14 SCALE: 3" = 1'-0"

ALL WORK ON THIS PAGE IS ASSOCIATED WITH CLIN 8 UNLESS OTHERWISE SPECIFIED.



DESIGNED: DC
CADD: HT
TECH. REVIEW: JW
DATE: 7/7/2023

SUB SHEET NO.
A14

TITLE OF SHEET
SPECIAL CONSTRUCTION DETAILS

CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS

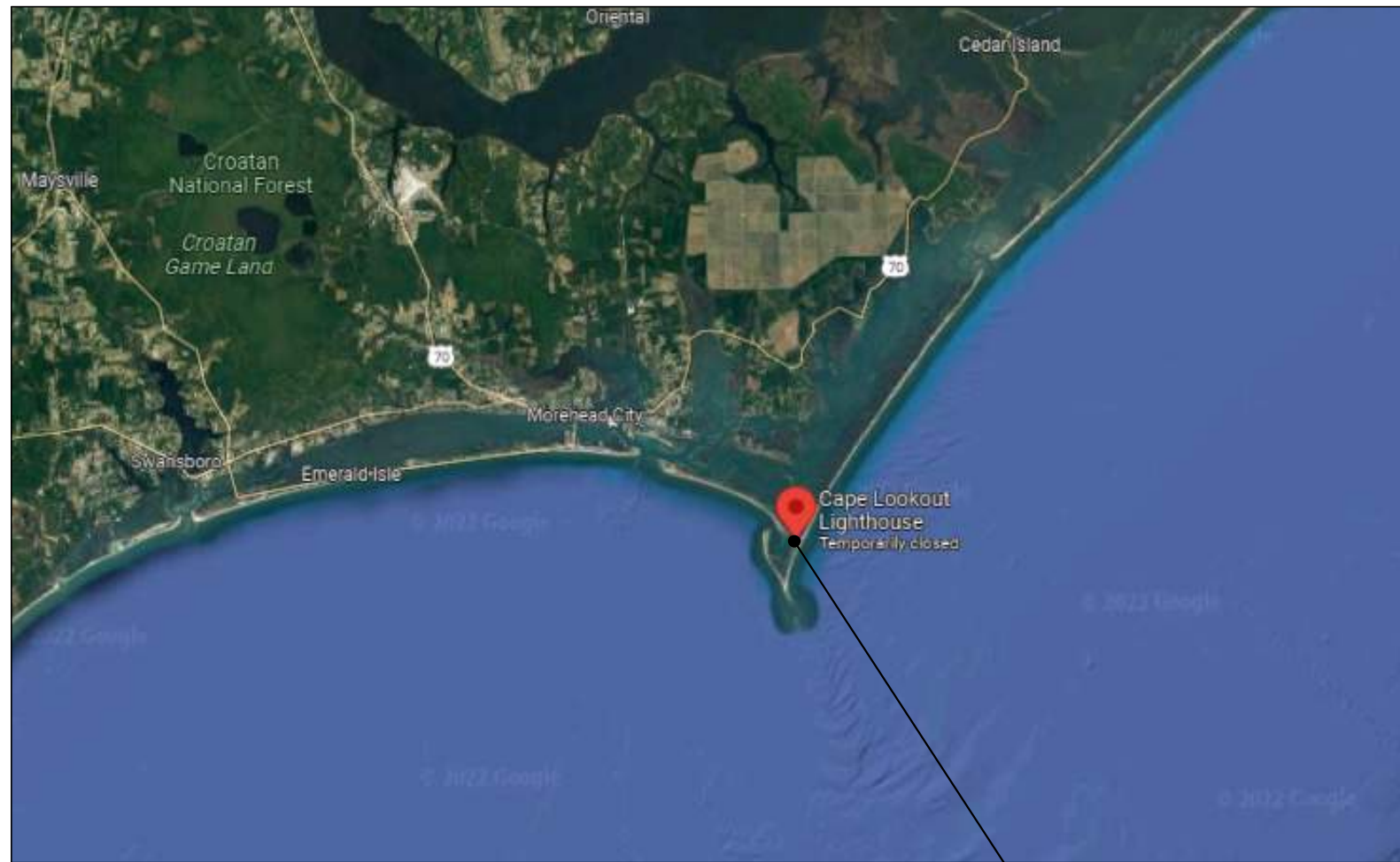
DRAWING NO.
623

181663

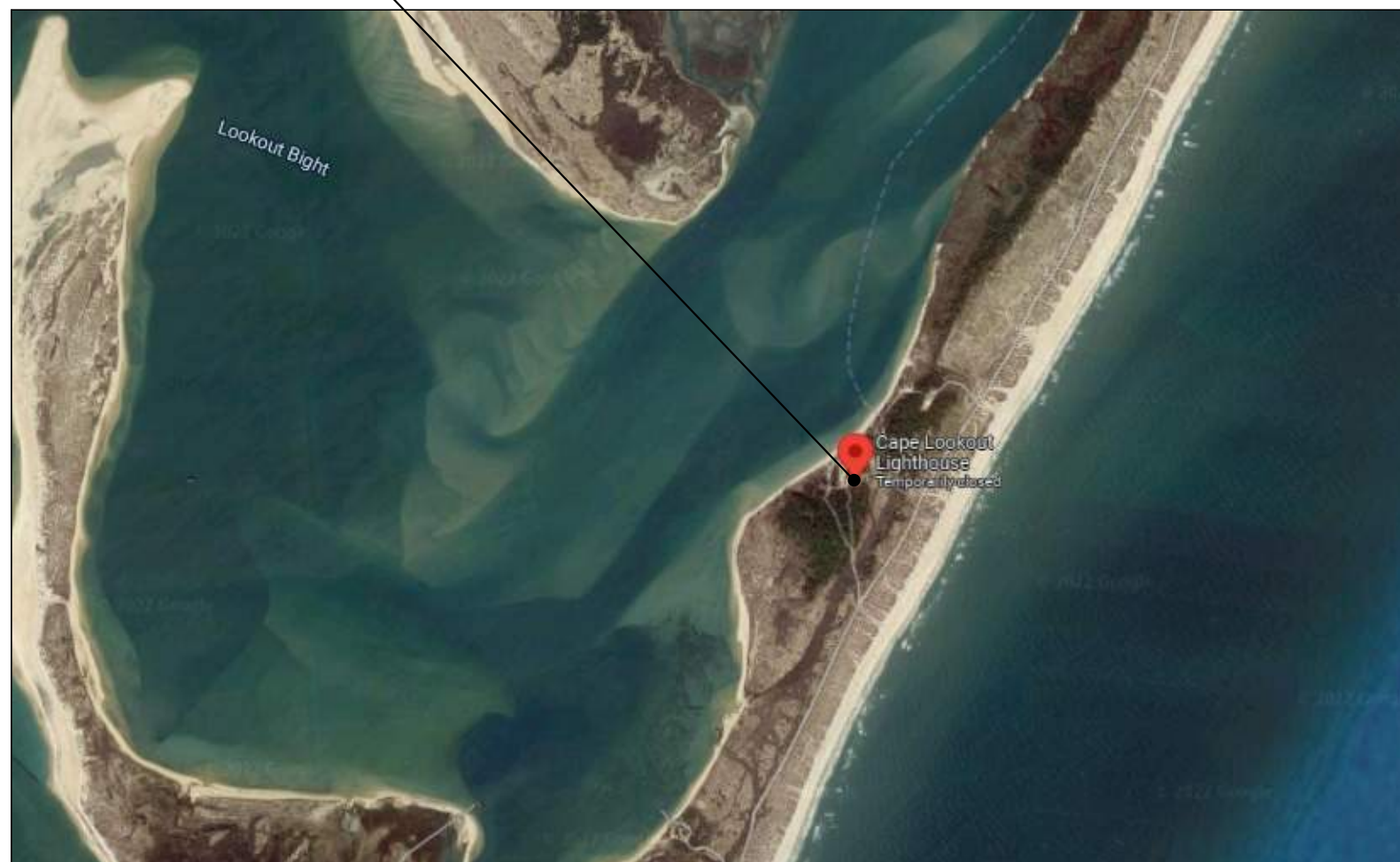
PMIS/PKG NO.
226858

SHEET
31 OF 59

CAPE LOOKOUT LIGHTHOUSE



131 Charles Street, Harkers Island, NC 28531



1 Location Plan

Scale: None

HATCH LEGEND	
	STUCCO OR MORTAR
	CONCRETE
	MASONRY

SYMBOLS LEGEND	
	DETAIL NUMBER
	SHEET DRAWN
	DIRECTION OF VIEW
	DETAIL NUMBER SHEET DRAWN
	View Name
	Scale: 1/4" = 1'-0"

ABBREVIATIONS LEGEND	
&	AND
@	AT
ALT	ALTERNATE
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
CL	CENTER LINE
CMU	CONCRETE MASONRY UNIT
CO	CONTRACTING OFFICER
DIAM	DIAMETER
EOR	ENGINEER OF RECORD
FV	FIELD VERIFY
FTG	FOOTING
HDG	HOT DIP GALVANIZED
MPII	MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS
NTS	NOT TO SCALE
OC	ON CENTER
PT	PRESSURE TREATED
PL	PLATE
SPECS	SPECIFICATIONS
SQ	SQUARE
SQ FT	SQUARE FEET
SS	STAINLESS STEEL
TEMP	TEMPORARY
TYP	TYPICAL

GENERAL NOTES:

1.0 SCOPE OF WORK

- 1.1 THE WORK OF THIS PROJECT INCLUDES, BUT IS NOT LIMITED TO:
- DOCUMENTING GEOMETRY, CONNECTIONS, AND DETAILS OF IRON ELEMENTS, GLASS ELEMENTS, AND MASONRY AT THE LANTERN AND WATCH LEVELS.
 - DISASSEMBLING THE LANTERN AND WATCH LEVELS, BOTH INTERIOR AND EXTERIOR, DOWN TO THE WATCH LEVEL LANDING.
 - REPAIRING AND/OR REPLICATING AND REPLACING IRON AND METAL COMPONENTS FROM THE LANTERN AND WATCH LEVELS IN-KIND.
 - RECONSTRUCTING THE MASONRY AT THE WATCH LEVEL.
 - RECONSTRUCTING AND REINSTALLING THE IRON, METAL, AND GLASS COMPONENTS AT THE WATCH AND LANTERN LEVELS.

2.0 GENERAL

2.1 WORK ON THIS HISTORIC STRUCTURE REQUIRES EXTRAORDINARY CARE. DURING ALL PHASES OF STRUCTURAL WORK, PRESERVE AND PROTECT ALL OF THE ELEMENTS OF THE STRUCTURE NOT SPECIFICALLY CALLED OUT FOR REMOVAL. THE STRUCTURE ELEMENTS INCLUDE, BUT ARE NOT LIMITED TO, EXISTING MILLWORK, STRUCTURAL WOOD, MASONRY, GLASS, IRONWORK, AND DECORATIVE FINISHES.

2.2 STRUCTURAL WORK MAY REQUIRE DISASSEMBLY OF ADDITIONAL STRUCTURE ELEMENTS INCLUDING BUT NOT LIMITED TO MECHANICAL SYSTEMS, ELECTRICAL SYSTEMS, MASONRY, MILLWORK, ETC. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE WHAT MUST BE REMOVED OR TEMPORARILY RELOCATED AND WHAT MUST BE MAINTAINED IN SERVICE. IT IS ALSO THE RESPONSIBILITY OF THE CONTRACTOR TO RESTORE THESE SYSTEMS OR STRUCTURE ELEMENTS AS PART OF THIS PROJECT.

2.3 NOTE THAT ALL SLOPES AND ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL VERIFY ALL DIMENSIONS, SLOPES, AND ELEVATIONS PRIOR TO ANY FABRICATION. NOTE THAT THE UNDERLAY DRAWING OF THE EXISTING STRUCTURE IS BASED ON SCANS CAPTURED IN 2022 AND THAT THE ACCURACY OF THESE SCANS/DRAWINGS IS NOT GUARANTEED. THE CURRENT SCOPE OF WORK IS NOTED IN BOLD BLACK.

2.4 THE CONTRACTOR IS REQUIRED TO HAVE A FULL SET OF CONSTRUCTION DOCUMENTS ON SITE AND READILY AVAILABLE AT ALL TIMES (BOTH DRAWINGS AND SPECIFICATIONS).

2.5 IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO THOROUGHLY CLEAN ALL ELEMENTS OF THE STRUCTURE UPON COMPLETION OF THE WORK OF THIS PROJECT. CLEAN AND RETURN TO ORIGINAL CONDITION ALL AREAS USED FOR LAY DOWN, STORAGE, AND CONSTRUCTION OPERATIONS DURING THE STRUCTURAL WORK. SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR SPECIFIC REQUIREMENTS.

2.6 SEE ARCHITECTURAL SPECIFICATIONS FOR HAZARDOUS MATERIAL TESTING AND ABATEMENT REQUIREMENTS.

2.7 ALL PAINT IS TO BE TREATED WITH THE ASSUMPTION THAT IT CONTAINS LEAD UNLESS TESTING SHOWS OTHERWISE. THE CONTRACTOR SHALL PROPERLY DISPOSE OF ALL HAZARDOUS MATERIALS WHICH BECOME EXPOSED DURING ANY ASPECT OF CONSTRUCTION, COMPLYING WITH ALL APPLICABLE REGULATIONS AND LAWS.

2.8 REQUIRED SUBMITTALS
THE FOLLOWING SUBMITTALS ARE REQUIRED BY THE CONTRACTING OFFICER FOR INPUT FROM ENGINEER-OF-RECORD:

- SHORING AND SHORING SEQUENCE. (SEALED BY A PE REGISTERED IN NC).
- SHOP DRAWINGS.
- ALL MATERIAL SUBMITTALS.
- SEE SPECIFICATIONS FOR ADDITIONAL SUBMITTAL REQUIREMENTS.

3.0 DELEGATED DESIGN

3.1 THE FOLLOWING DELEGATED DESIGN ITEMS SHALL BE PERFORMED BY OR UNDER THE DIRECT SUPERVISION OF AN ENGINEER REGISTERED IN THE PROJECT STATE. DRAWINGS MUST BE SUBMITTED WITH SUPPORTING CALCULATIONS AND CARRY THE SEAL AND SIGNATURE OF THE REGISTERED ENGINEER.

- SCAFFOLDING BRACING AND SHORING (SEE NOTE 4.1)
- TEMPORARY LIGHTNING PROTECT SYSTEM AND RECONNECTION OF PERMANENT LIGHTNING PROTECTION SYSTEM

3.2 ALL POST-INSTALLED ATTACHMENTS, ANCHORS, AND ADHESIVES MUST BE DESIGNED, INSTALLED AND INSPECTED IN ACCORDANCE WITH THE APPROPRIATE ICC-ES REPORT IN COMPLIANCE WITH IBC 2015. REFERENCE TO SPECIFIC ICC-ES REPORT MUST BE INDICATED ON DRAWINGS AND SUPPORTING CALCULATIONS.

3.3 THE DELEGATED DESIGN ITEMS, INCLUDING DRAWINGS AND CALCULATIONS, SHALL BE TREATED AS DESIGN DOCUMENTS AND INCLUDED WITH AS-BUILT PACKAGES, ISSUED FOR CONSTRUCTION PACKAGES, AND SUBMITTED TO NPS FOR RECORD-KEEPING WITH THE DESIGNERS SEAL AND SIGNATURE. THE SHOP DRAWINGS REVIEW STAMP OF THE STRUCTURAL ENGINEER OF RECORD, THE ARCHITECT OF RECORD, OTHER RELEVANT DESIGN PROFESSIONALS, THE CONTRACTOR, AND BEARING ANY REVIEW COMMENTS.

4.0 CODE ANALYSIS / STRUCTURAL DESIGN LOADS

4.1 CODE ANALYSIS
2018 NORTH CAROLINA STATE BUILDING CODE: EXISTING BUILDING CODE (BASED ON THE 2015 INTERNATIONAL EXISTING BUILDING CODE) INTERNATIONAL BUILDING CODE 2015/ ASCE 7-10

4.2 THIS IS A HISTORIC STRUCTURE. IN ITS EXISTING STATE, VERY LITTLE MEETS TODAY'S BUILDING CODES FOR NEW CONSTRUCTION. BUT AS AN EXISTING STRUCTURE, THE WORK ON THIS STRUCTURE IS DONE UNDER THE INTERNATIONAL EXISTING BUILDING CODE, WHERE STRUCTURAL ELEMENTS THAT ARE NOT TOUCHED, ARE ALLOWED TO EXIST. BUT BUILDING ELEMENTS THAT ARE STRENGTHENED ARE STRENGTHENED TO MEET THE REQUIREMENTS OF NEW CONSTRUCTION.

4.3 LIVE LOADS (NO REDUCTIONS TAKEN):
STAIRS100 PSF
ROOF 20 PSF

4.4 LATERAL LOADS:

WIND.....ULTIMATE DESIGN WIND SPEED: 145 MPH
.....NOMINAL DESIGN WIND SPEED: 112 MPH
.....RISK CATEGORY: II
.....EXPOSURE: D (COASTAL)
.....APPLICABLE PRESSURE COEFFICIENT:
.....EXTERNAL: +0.80, -0.5, -0.70
.....INTERNAL: +/- 0.18 (ENCLOSED)
.....GUST: 0.85

SEISMIC.....RISK CATEGORY: II
.....SEISMIC IMPORTANCE FACTOR: 1.0
.....Ss: 0.108
.....S1: 0.057
.....SITE CLASS: D
.....SDs: 0.115
.....SD1: 0.091
.....SEISMIC DESIGN CATEGORY: B
.....BASIC SEISMIC FORCE RESISTING SYSTEM:
BEARING WALL SYSTEMS ORDINARY PLAIN
MASONRY SHEAR WALLS
.....DESIGN BASE SHEAR: N/A
.....Cs: 0.0767
.....R: 1.5
.....ANALYSIS PROCEDURE USED:
EQUIVALENT LATERAL FORCE PROCEDURE

4.5 SNOW LOAD CRITERIA:
GROUND SNOW LOAD.....10 PSF

5.0 SCAFFOLDING BRACING AND SHORING

5.1 CONTRACTOR IS SOLELY RESPONSIBLE FOR THE DESIGN ADEQUACY AND SAFETY OF ERECTION BRACING, SHORING, SCAFFOLDING, AND TEMPORARY SUPPORTS, ETC.

5.2 CONTRACTOR IS REQUIRED TO HIRE A BRACING AND SHORING ENGINEER TO DESIGN ALL SCAFFOLDING, BRACING, AND SHORING FOR THIS PROJECT. DESIGN CALCULATIONS AND WORKING DRAWINGS OF ALL PROPOSED SHORING OF THE STRUCTURE SHALL BE PREPARED, STAMPED, AND SIGNED BY A PE REGISTERED IN NORTH CAROLINA. THE ENGINEER OF RECORD SHALL OBSERVE ALL BRACING AND SHORING AND APPROVE PRIOR TO ANY SELECTIVE DEMOLITION OR CONSTRUCTION. SEE SPECIFICATION SECTION 021500 "BRACING AND SHORING" FOR ADDITIONAL REQUIREMENTS.

6.0 MASONRY

6.1 SEE SPECIFICATION SECTION 040322 "HISTORIC BRICK UNIT MASONRY REPAIR" AND SECTION 040323 "HISTORIC BRICK UNIT MASONRY REPOINTING" FOR ALL HISTORIC MASONRY WORK REQUIRED TO COMPLETE STRUCTURAL REPAIRS AS INDICATED.

6.2 STAINLESS STEEL LADDER MASONRY JOINT REINFORCEMENT AS SHOWN ON DRAWINGS. SEE SPECIFICATIONS.

7.0 CONCRETE

7.1 ALL CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF ACI 301 AND ACI 117. WATER REDUCING ADMIXTURES ARE PERMITTED WITH APPROVAL BUT NOT REQUIRED. APPROPRIATE HOT AND COLD WEATHER CONCRETE PROCEDURES MUST BE FOLLOWED, WHEN APPLICABLE.

7.2 SEE SPECIFICATION SECTION 033000 CAST-IN-PLACE CONCRETE FOR ADDITIONAL REQUIREMENTS, FIELD QUALITY CONTROL REQUIREMENTS, AND SPECIAL INSPECTION REQUIREMENTS.

8.0 STEEL

8.1 ALL NEW TEMPORARY STRUCTURAL STEEL, UNLESS OTHERWISE NOTED, SHALL COMPLY WITH THE REQUIREMENTS OF ASTM SPECIFICATION A36 OR A572, GRADE 50, AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION, COMPLYING WITH ASTM A123/A123M AND TOUCHED UP AFTER INSTALLATION. ALL WORK MUST COMPLY WITH THE REQUIREMENTS OF THE AISC MANUAL OF STEEL CONSTRUCTION, 14TH EDITION, AND WITH AWS D1.1.

8.2 ALL NEW PERMANENT STEEL SHALL BE STAINLESS STEEL TYPE 316 OR 316L, UNLESS OTHERWISE INDICATED.

8.3 ALL NEW CAST IRON SHALL COMPLY WITH THE REQUIREMENTS OF ASTM A48 AND SHALL BE COATED ON ALL SURFACES. SEE SPECIFICATIONS.

8.4 AT ANY LOCATION WHERE HOT DIP GALVANIZED STEEL IS IN CONTACT WITH STAINLESS STEEL, CAST IRON, OR ANY OTHER DISSIMILAR METAL, METALS MUST BE ELECTRICALLY ISOLATED WITH A TEFLON PAD OR SIMILAR.

8.5 BOLTS, NUTS, AND WASHERS FOR PERMANENT CONNECTIONS SHALL BE 316 STAINLESS STEEL.

8.6 SEE SPECIFICATION SECTIONS 055000 "METAL FABRICATIONS", 050374 "HISTORIC DECORATIVE METAL REPLICATION", AND 050383 "HISTORIC CAST IRON REPAIR" FOR ADDITIONAL REQUIREMENTS, INCLUDING STANDARDS, FIELD QUALITY CONTROL REQUIREMENTS, AND SURFACE PREPARATION. SEE ALSO SPECIFICATION SECTION 099600 "HIGH PERFORMANCE COATINGS" FOR COATING SYSTEM REQUIRED ON ALL STEEL AND CAST IRON.

8.7 WELDING SHALL COMPLY WITH AWS CODE D1.1 AND SHALL BE PERFORMED BY CERTIFIED WELDERS. NO FIELD WELDING OR CUTTING SHALL BE PERMITTED WITHIN THE LIGHTHOUSE OR WITHIN 50 FEET OF EXISTING STRUCTURES.

8.8 CONFIRM ALL ROD AND PLATE LOCATIONS WITH CONTRACTING OFFICER FOR INPUT FROM ENGINEER-OF-RECORD BEFORE DOING ANY CONNECTING OR MASONRY DRILLING, REMOVAL, OR DAMAGE.

9.0 WOOD

9.1 ALL TEMPORARY STRUCTURAL WOOD MEMBERS SHALL BE PRESSURE TREATED. SHALL MEET THE REQUIREMENTS OF SP1B NO. 2 SOUTHERN PINE OR BETTER, OR SHALL BE PRESSURE TREATED LVL, UNLESS OTHERWISE IDENTIFIED.

9.2 ALL WOOD FASTENINGS SHALL BE PER IBC TABLE 2304.9.1 "FASTENING SCHEDULE" UNLESS OTHERWISE NOTED.

9.3 SEE SPECIFICATION SECTION 061000 "ROUGH CARPENTRY" FOR ADDITIONAL REQUIREMENTS FOR FASTENERS IN WOOD.

10.0 METAL COATINGS

10.1 COATINGS ARE REQUIRED FOR ALL CAST IRON AND ALL STEEL, NEW AND EXISTING. ALL ITEMS MUST BE COATED ON ALL SIDES. SEE SPECIFICATION SECTION 099600 "HIGH PERFORMANCE COATINGS" FOR REQUIREMENTS. SEE ALSO FINISH SYSTEM SHEET NOTES.

11.0 FINISHES

11.1 SCOPE OF EXTERIOR AND INTERIOR MASONRY COATINGS: SEE ARCHITECTURAL.

12.0 SPECIAL INSPECTIONS

12.1 SEE SPECIAL INSPECTION REQUIREMENTS IN THE PROJECT MANUAL.

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NORTH CAROLINA
PROFESSIONAL
SEAL
041869
CRAIG M. BENNETT, P.E.
ENGINEER
CAPE LOOKOUT LIGHTHOUSE
Bennett Preservation Engineering PC
11 REGISTERED AS NORTH CAROLINA
FIRM C-4115

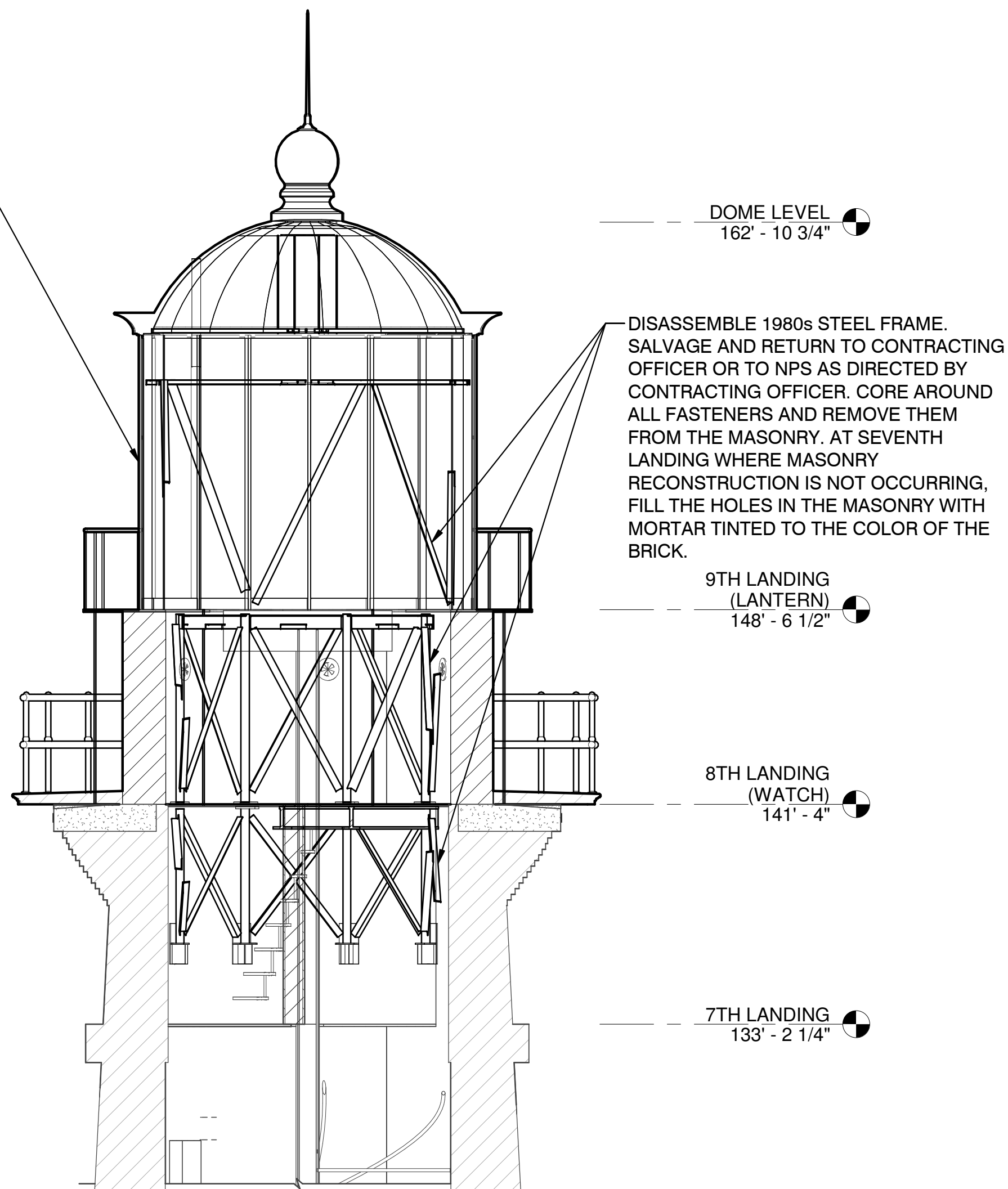
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7/7/2023			

DOCUMENT, CATALOG, DISASSEMBLE, AND STORE ALL ELEMENTS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING, FOR REINSTALLATION OR REPLICATION

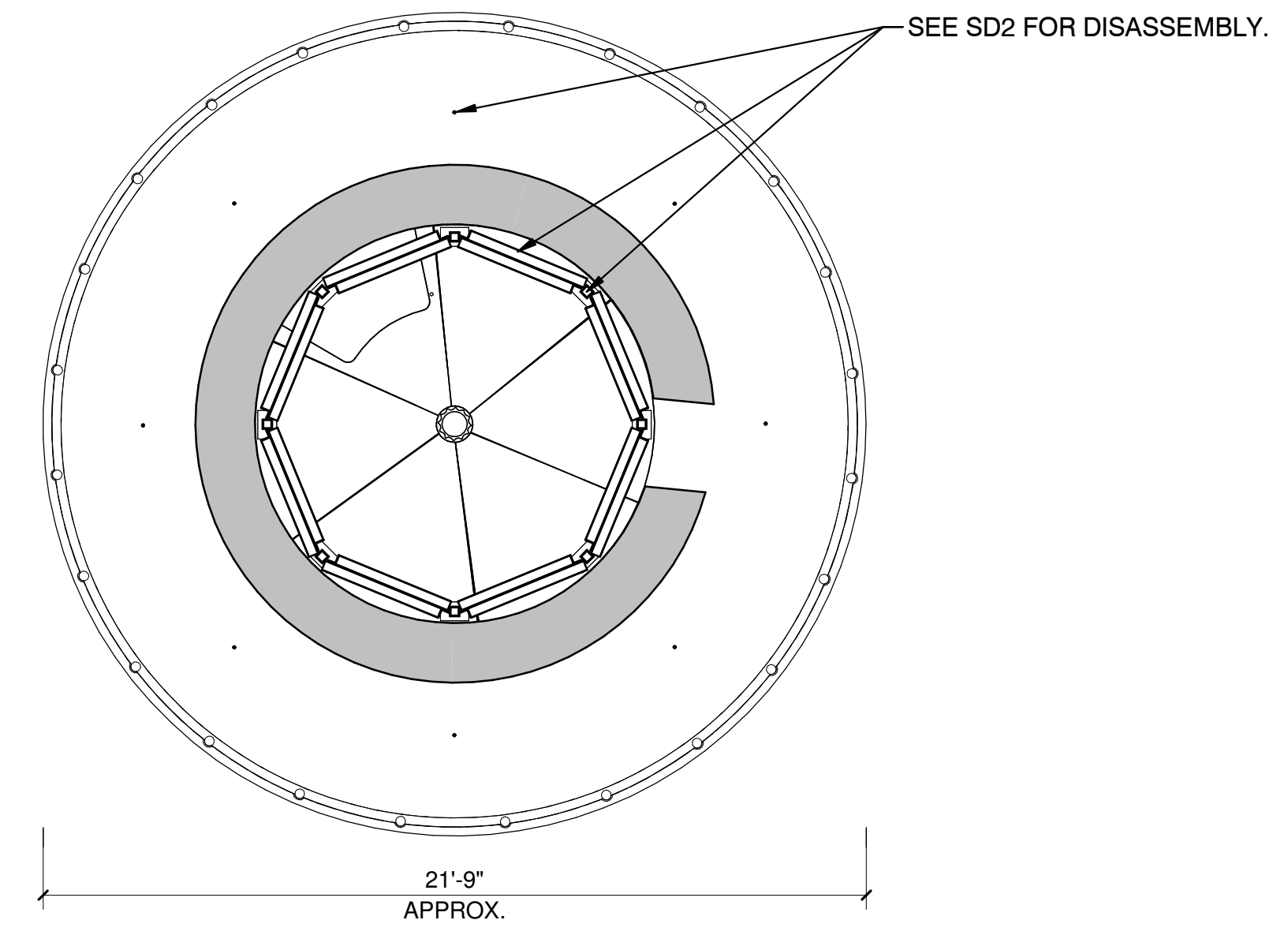
- ROOF:**
- LIGHTNING ROD,
 - LIGHTNING PROTECTION SYSTEM DOWN TO THE SEVENTH LEVEL,
 - CHIMNEY SYSTEM,
 - ROOF,
 - FASCIA AND GUTTER SYSTEM,
 - CEILING,
 - ROOF FRAMING,
- LANERN LEVEL:**
- GLASS AND FRAMING,
 - CONDENSATE TROUGHS,
 - GLASS DOOR AND FRAME,
 - HANDRAILS,
 - INTERIOR AND EXTERIOR DECK PLATES,
 - TURN TABLE AND CORRESPONDING ELEMENTS, AND
 - SUPPORTING FLOOR FRAMING.

- WATCH LEVEL:**
- MASONRY DOWN TO THE WATCH LEVEL LANDING,
 - EMBEDDED STAIRS FROM WATCH TO LANERN LEVEL,
 - TURN TABLE AND CORRESPONDING ELEMENTS,
 - VERTICAL POSTS AND FRAMING SUPPORTING THE LANERN LEVEL EXTERIOR DECK,
 - HANDRAIL SYSTEM,
 - EXTERIOR DECK DOWN TO THE BRICK CORBELING (INCLUDING CONCRETE, REINFORCEMENT, AND MISC. STEEL),
 - MILLWORK AND FURNITURE,
 - DOOR, FRAME, AND JAMB, AND
 - FLOOR PLATES AND SUPPORTING FRAMING (INCLUDING WATCH LEVEL FLOOR BEAMS).
 - LANERN LEVEL RAILING POST EXTENSIONS (8).
 - AIR VENTS, INTERIOR VENT COVER, AND EXTERIOR VENT CAPS.

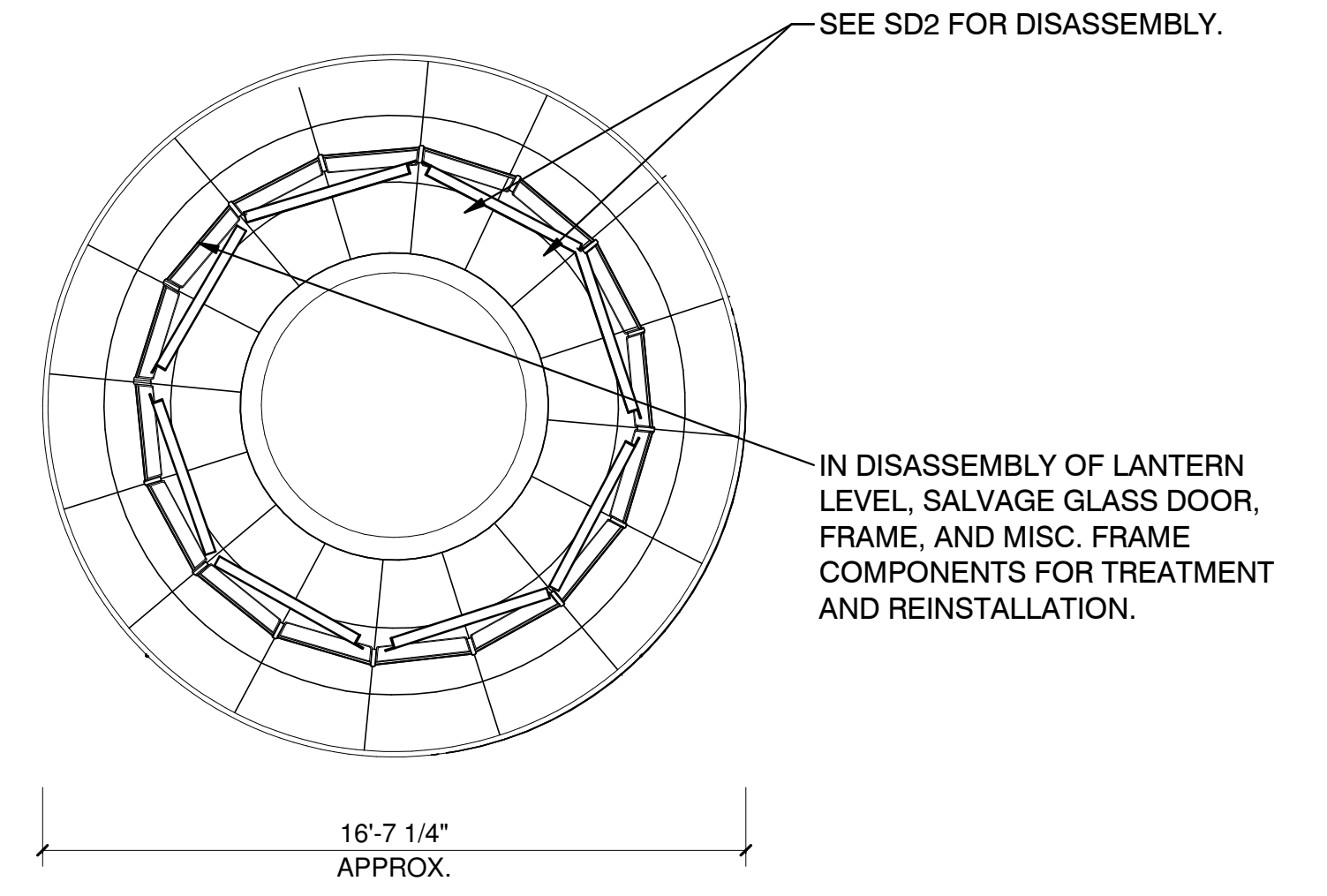
SEE STRUCTURAL DRAWINGS AND SPECIFICATIONS FOR TREATMENT REQUIREMENTS BEFORE STORAGE, REPLICATION, OR REINSTALLATION. SEE SD2.



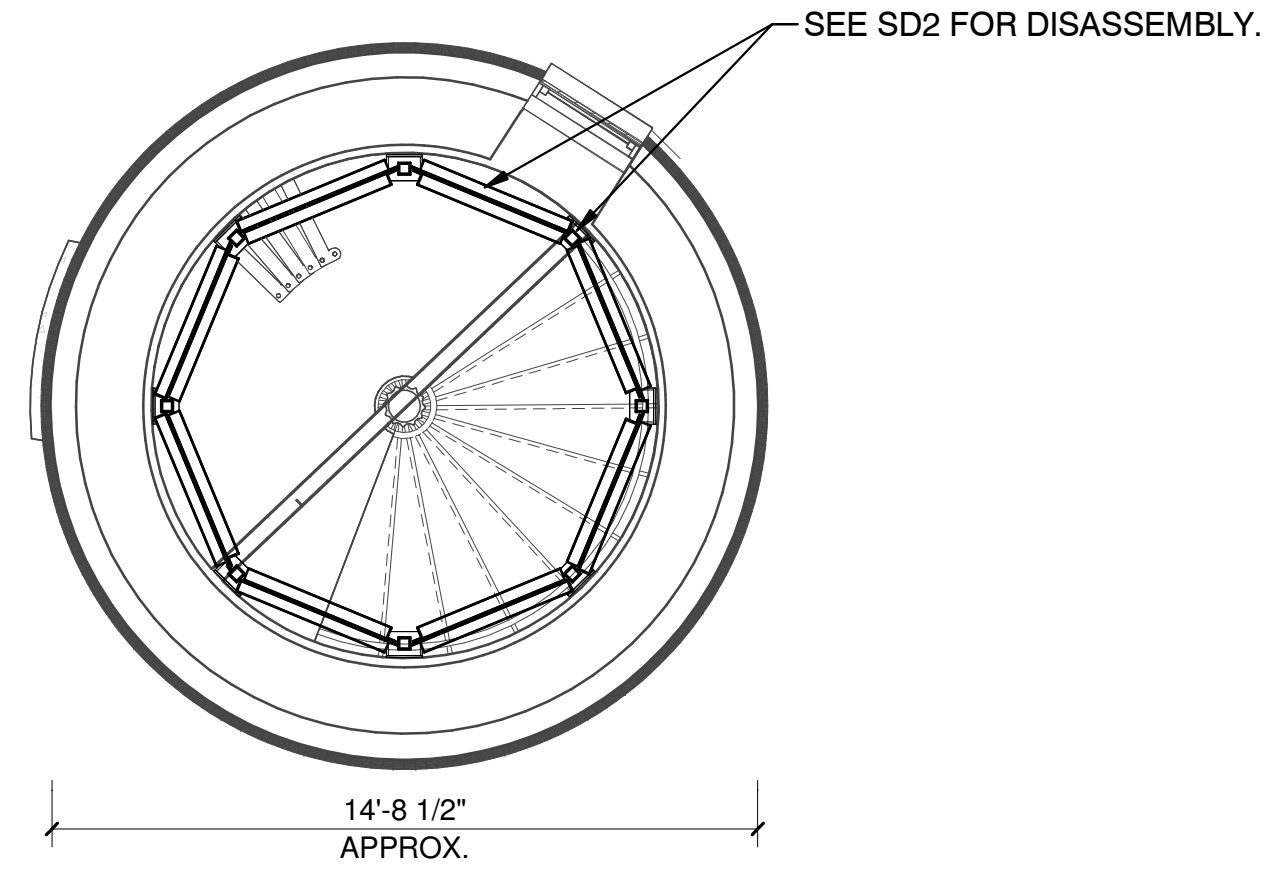
1 DISASSEMBLY SECTION LOOKING NORTH
SD1 SCALE: 1/4" = 1'-0"



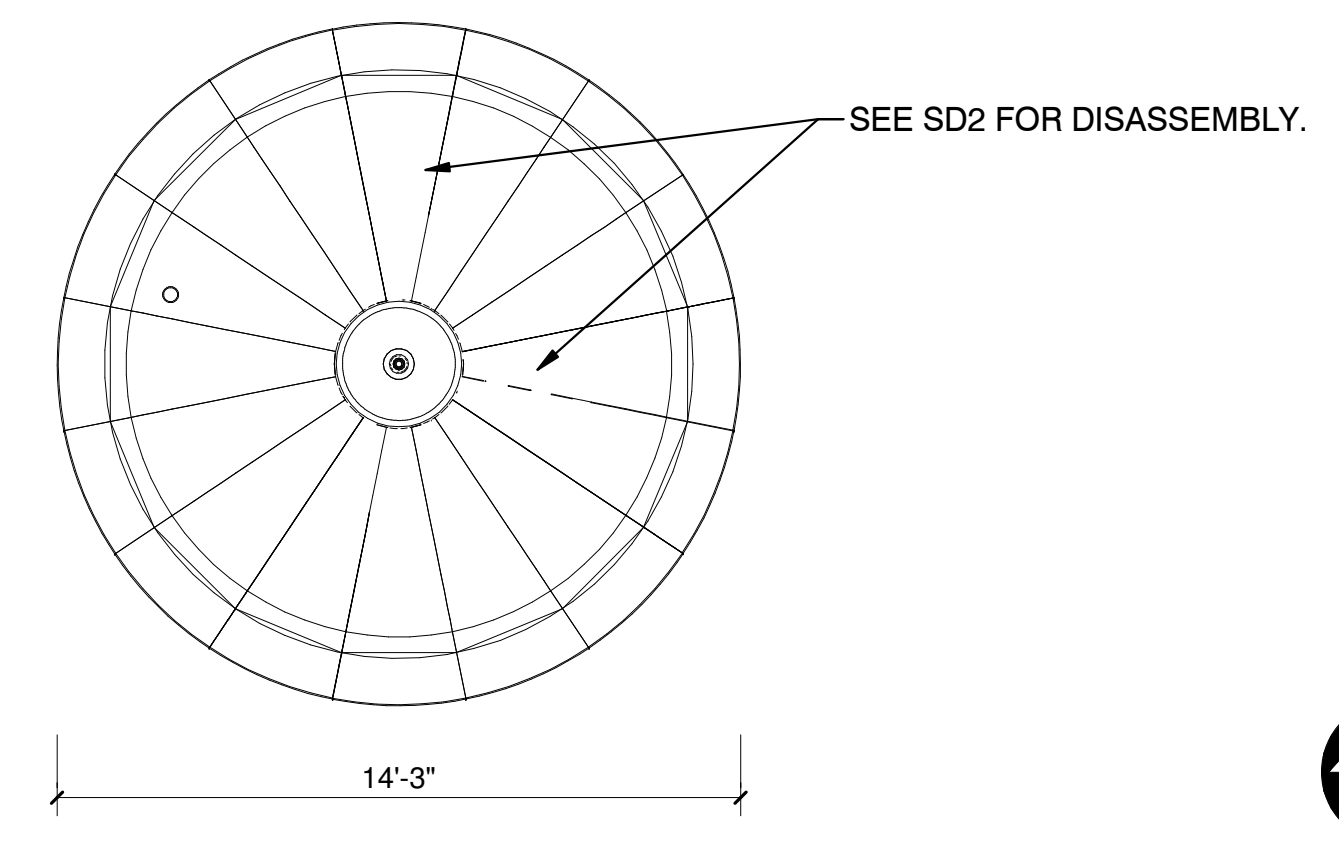
3 WATCH LEVEL DISASSEMBLY PLAN
SD1 SCALE: 1/4" = 1'-0"



4 LANERN LEVEL DISASSEMBLY PLAN
SD1 SCALE: 1/4" = 1'-0"



2 7TH LANDING DISASSEMBLY PLAN
SD1 SCALE: 1/4" = 1'-0"

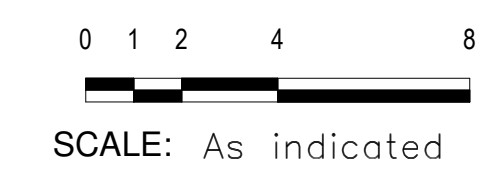
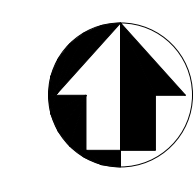


5 DOME LEVEL PARTIAL DISASSEMBLY PLAN
SD1 SCALE: 1/4" = 1'-0"

SHEET NOTES

1. PRIOR TO THE DISASSEMBLY OF ANY PORTIONS OF THE LIGHTHOUSE, DEVELOP AND EXECUTE A WRITTEN ARCHITECTURAL AND STRUCTURAL COMPONENT DOCUMENTATION PROGRAM. SEE SPECIFICATIONS. WATCH LEVEL, LANERN LEVEL, AND ROOF ELEMENTS WILL BE RECONSTRUCTED USING THE ARCHITECTURAL AND STRUCTURAL COMPONENT DOCUMENTATION PROGRAM.
2. DOCUMENT ALL INDIVIDUAL IRONWORK ELEMENTS OF THE LIGHTHOUSE, BOTH AT THE INTERIOR AND EXTERIOR OF THE STRUCTURE, NOTING THEIR SPECIFIC GEOMETRY, CONNECTIONS AND LOCATION, ENSURING THAT ENOUGH INFORMATION IS CAPTURED TO RECONSTRUCT THE UPPER PORTION OF THE LIGHTHOUSE ACCURATELY AND WITH SENSITIVITY TO THE HISTORIC CONDITION.
3. DOCUMENT THE OVERALL GEOMETRY AND DETAILS OF THE BRICK MASONRY PRIOR TO THE DISASSEMBLY OF THE UPPER PORTION OF THE LIGHTHOUSE. SALVAGE, CLEAN, AND STORE BRICK MASONRY FOR RECONSTRUCTION AND REINSTALLATION. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS AND STANDARDS FOR SALVAGING BRICK MASONRY.
4. DEVELOP A NUMBERING SYSTEM TO ENSURE COMPREHENSIVE CATALOGING OF METAL AND WOOD ITEMS TO BE REPAIRED AND SALVAGED. TAG ALL ELEMENTS WITH NUMBERED TAGS, WHICH WILL SURVIVE TREATMENT AND POSSIBLE MULTI-YEAR CONSTRUCTION.
5. MARK EXACT LOCATIONS OF WINDOW FRAME POSTS ON LANERN DECK. EXTEND THAT LINE RADIALLY OUTWARD FROM THE CENTER TO THE INSIDE EDGE OF THE DECK THEN STRAIGHT DOWN TO THE MASONRY DIRECTLY BELOW THE POSTS. EXTEND THE LINE DOWN THE MASONRY TO A POINT 1 FOOT BELOW THE WATCH LEVEL FLOOR (8TH LANDING) AND CUT A 1/8 INCH DEEP BY 1/8 INCH WIDE BY 1 INCH HIGH VERTICAL SLOT IN THE FACE OF ONE BRICK, WHICH WILL SURVIVE CONSTRUCTION, AT EACH LOCATION.
6. AS SOON AS ELEMENTS ARE DISASSEMBLED, AND BEFORE STORAGE, IMMEDIATELY TREAT ALL METAL ELEMENTS WITH CORROSION INHIBITOR, PER MANUFACTURER'S RECOMMENDATIONS. ACCEPTABLE PRODUCTS ARE:
A. CORROSIONPRO LUBE, WEST MARINE
B. CRC HEAVY-DUTY CORROSION INHIBITOR, CRC INDUSTRIES
C. LPS 3, LPS LABORATORIES

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FIRM C-4115



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DATE 7/7/2023		CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS	SHEET 33 OF 59

SHEET NOTES

1. PRIOR TO THE DISASSEMBLY OF ANY PORTIONS OF THE LIGHTHOUSE, DEVELOP AND EXECUTE A WRITTEN ARCHITECTURAL AND STRUCTURAL COMPONENT DOCUMENTATION PROGRAM. SEE SPECIFICATIONS. WATCH LEVEL, LANTERN LEVEL, AND ROOF ELEMENTS WILL BE RECONSTRUCTED USING THE ARCHITECTURAL AND STRUCTURAL COMPONENT DOCUMENTATION PROGRAM.
2. DOCUMENT ALL INDIVIDUAL IRONWORK ELEMENTS OF THE LIGHTHOUSE, BOTH AT THE INTERIOR AND EXTERIOR OF THE STRUCTURE, NOTING THEIR SPECIFIC GEOMETRY, CONNECTIONS AND LOCATION, ENSURING THAT ENOUGH INFORMATION IS CAPTURED TO RECONSTRUCT THE UPPER PORTION OF THE LIGHTHOUSE ACCURATELY AND WITH SENSITIVITY TO THE HISTORIC CONDITION.
3. DOCUMENT THE OVERALL GEOMETRY AND DETAILS OF THE BRICK MASONRY PRIOR TO THE DISASSEMBLY OF THE UPPER PORTION OF THE LIGHTHOUSE. SALVAGE, CLEAN, AND STORE BRICK MASONRY FOR RECONSTRUCTION AND REINSTALLATION. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS AND STANDARDS FOR SALVAGING BRICK MASONRY.
4. DEVELOP A NUMBERING SYSTEM TO ENSURE COMPREHENSIVE CATALOGING OF METAL AND WOOD ITEMS TO BE REPAIRED AND SALVAGED. TAG ALL ELEMENTS WITH NUMBERED TAGS, WHICH WILL SURVIVE TREATMENT AND POSSIBLE MULTI-YEAR CONSTRUCTION.
5. MARK EXACT LOCATIONS OF WINDOW FRAME POSTS ON LANTERN DECK. EXTEND THAT LINE RADIALLY OUTWARD FROM THE CENTER TO THE INSIDE EDGE OF THE DECK THEN STRAIGHT DOWN TO THE MASONRY DIRECTLY BELOW THE POSTS. EXTEND THE LINE DOWN THE MASONRY TO A POINT 1 FOOT BELOW THE WATCH LEVEL FLOOR (8TH LANDING) AND CUT A 1/8 INCH DEEP BY 1/8 INCH WIDE BY 1 INCH HIGH VERTICAL SLOT IN THE FACE OF ONE BRICK, WHICH WILL SURVIVE CONSTRUCTION, AT EACH LOCATION.
6. AS SOON AS ELEMENTS ARE DISASSEMBLED, AND BEFORE STORAGE, IMMEDIATELY TREAT ALL METAL ELEMENTS WITH CORROSION INHIBITOR, PER MANUFACTURER'S RECOMMENDATIONS. ACCEPTABLE PRODUCTS ARE:
 A. CORROSIONPRO LUBE, WEST MARINE
 B. CRC HEAVY-DUTY CORROSION INHIBITOR, CRC INDUSTRIES
 C. LPS 3, LPS LABORATORIES

DOCUMENT, CATALOG, DISASSEMBLE, AND STORE ALL ELEMENTS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING, FOR REINSTALLATION OR REPLICATION

ROOF:

- LIGHTNING ROD,
- LIGHTNING PROTECTION SYSTEM DOWN TO THE SEVENTH LEVEL,
- CHIMNEY SYSTEM,
- ROOF,
- FASCIA AND GUTTER SYSTEM,
- CEILING,
- ROOF FRAMING,

LANTERN LEVEL:

- GLASS AND FRAMING,
- CONDENSATE TROUGH,
- GLASS DOOR AND FRAME,
- HANDRAILS,
- INTERIOR AND EXTERIOR DECK PLATES,
- TURN TABLE AND CORRESPONDING ELEMENTS, AND
- SUPPORTING FLOOR FRAMING.

SEE STRUCTURAL DRAWINGS AND SPECIFICATIONS FOR TREATMENT REQUIREMENTS BEFORE STORAGE, REPLICATION, OR REINSTALLATION.

DOCUMENT, CATALOG, DISASSEMBLE, AND STORE ALL ELEMENTS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING, FOR REINSTALLATION OR REPLICATION

WATCH LEVEL:

- MASONRY DOWN TO THE WATCH LEVEL LANDING,
- EMBEDDED STAIRS FROM WATCH TO LANTERN LEVEL,
- TURN TABLE AND CORRESPONDING ELEMENTS,
- VERTICAL POSTS AND FRAMING SUPPORTING THE LANTERN LEVEL EXTERIOR DECK,
- HANDRAIL SYSTEM,
- EXTERIOR DECK DOWN TO THE BRICK CORBELING (INCLUDING CONCRETE, REINFORCEMENT, AND MISC. STEEL),
- MILLWORK AND FURNITURE,
- DOOR, FRAME, AND JAMB, AND
- FLOOR PLATES AND SUPPORTING FRAMING (INCLUDING WATCH LEVEL FLOOR BEAMS),
- LANTERN LEVEL RAILING POST EXTENSIONS (8).
- AIR VENTS, INTERIOR VENT COVER, AND EXTERIOR VENT CAPS.

SEE STRUCTURAL DRAWINGS AND SPECIFICATIONS FOR TREATMENT REQUIREMENTS BEFORE STORAGE, REPLICATION, OR REINSTALLATION.

----- DOME LEVEL
162' - 10 3/4"

EXISTING WINDOW FRAME POST. SEE SHEET NOTE 5.

----- 9TH LANDING (LANTERN)
148' - 6 1/2"

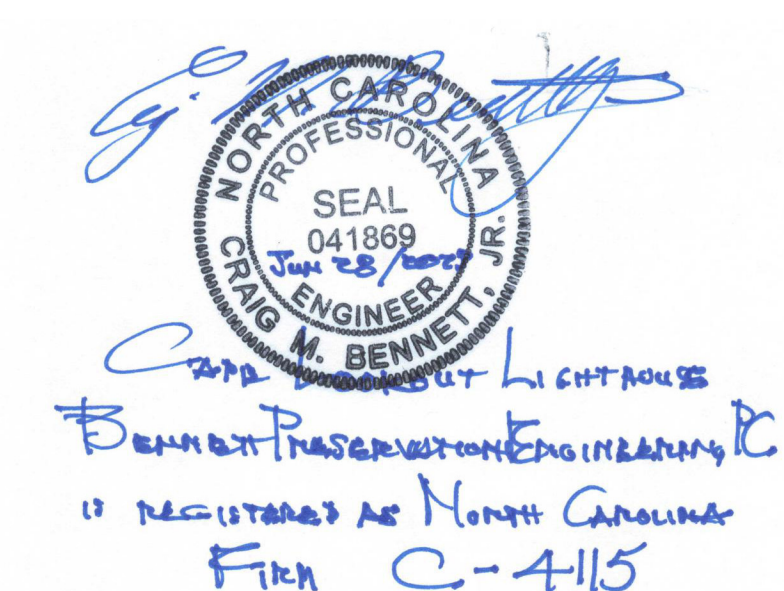
DISASSEMBLE 1980s STEEL FRAME. SALVAGE AND RETURN TO CONTRACTING OFFICER OR TO NPS AS DIRECTED BY CONTRACTING OFFICER. CORE AROUND ALL FASTENERS AND REMOVE THEM FROM THE MASONRY. AT SEVENTH LANDING WHERE MASONRY RECONSTRUCTION IS NOT OCCURRING, FILL THE HOLES IN THE MASONRY WITH MORTAR TINTED TO THE COLOR OF THE BRICK.

----- 8TH LANDING (WATCH)
141' - 4"

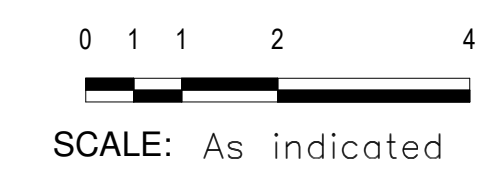
WRAP TOP OF CORBEL WITH 1/4 X 4 INCH HOT DIP GALVANIZED STEEL CIRCUMFERENTIAL STRAP BEFORE ANY DISASSEMBLY ABOVE. ATTACH STRAP TO CORBEL WITH 1/2 X 8 INCH ANCHORS EVERY 45 DEGREES. WELD OR OTHERWISE CONNECT ENDS OF STRAP TOGETHER TO DEVELOP FULL CAPACITY OF STRAP IN TENSION. MAINTAIN STRAP IN PLACE UNTIL ALL STRUCTURAL WORK AND REINSTALLATION OF WATCH LEVEL, LANTERN LEVEL, AND ROOF ABOVE HAS BEEN COMPLETED. REMOVE STRAP AFTER COMPLETION AND FILL 8 HOLES IN MASONRY CORBEL WITH MORTAR TINTED TO THE COLOR OF THE MASONRY.

----- 7TH LANDING
133' - 2 1/4"

ALL WORK ON THIS PAGE IS ASSOCIATED WITH CLIN 4 UNLESS OTHERWISE SPECIFIED



1 DISASSEMBLY SECTION LOOKING NORTH
SCALE: 1/2" = 1'-0"



DESIGNED:	CMB
CADD:	ACW
TECH. REVIEW:	CMB
DATE:	7/7/2023

SUB SHEET NO.	SD2
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TITLE OF SHEET	DISASSEMBLY
CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS	

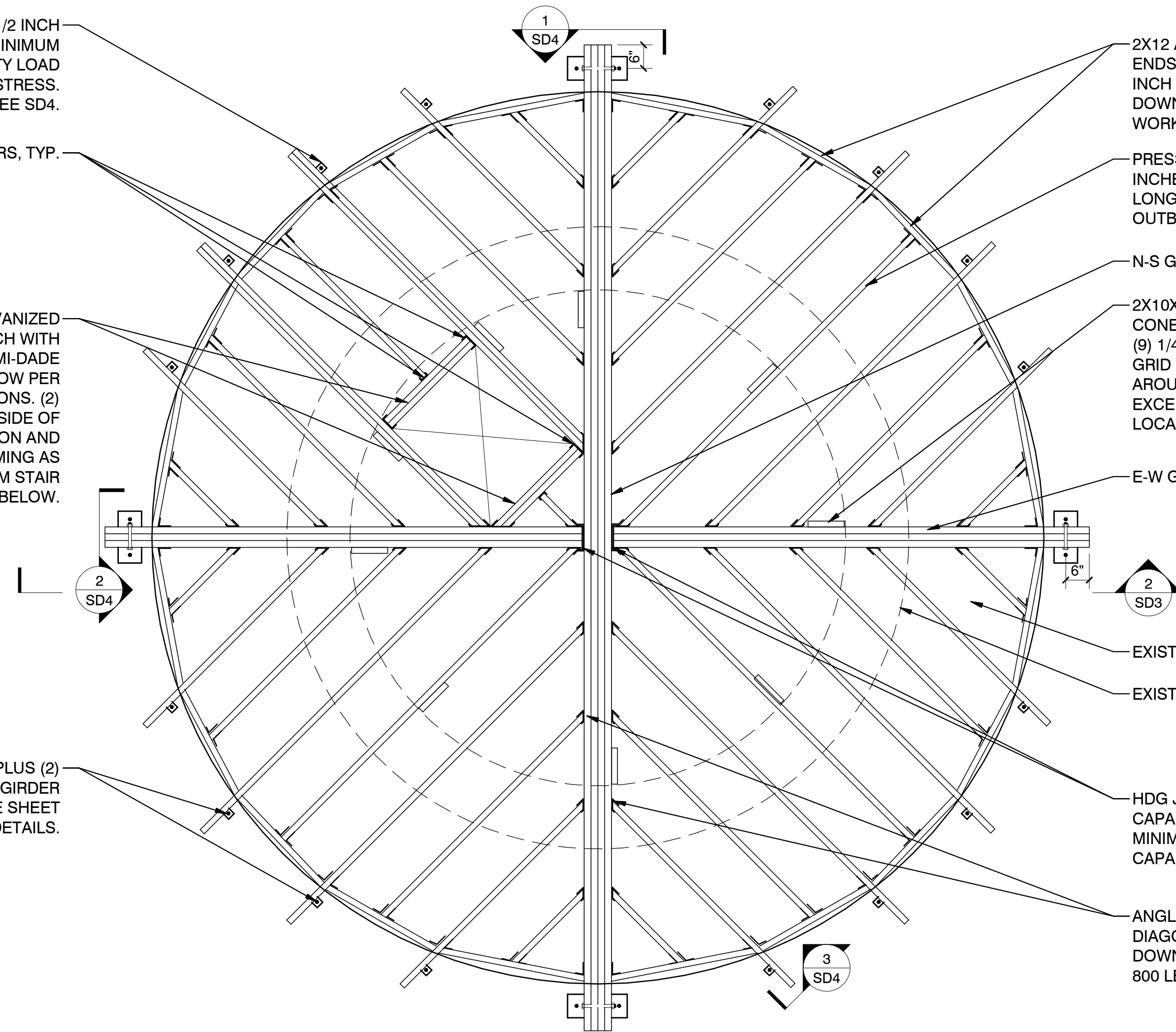
DRAWING NO.	623
181663	
PMIS/PKG NO.	226858
SHEET	34 OF 59

HDG DECK TENSION TIES FOR 1/2 INCH DIAMETER ANCHOR ROD. MINIMUM UPLIFT OR DOWNWARD GRAVITY LOAD CAPACITY 800 LBS WORKING STRESS. SEE SD4.

HDG JOIST HANGERS, TYP.

3'-0" X 2'-6" PRE-ENGINEERED GALVANIZED STEEL LADDER ACCESS ROOF HATCH WITH GAS LIFTER AND LOCK, MIAMI-DADE APPROVED. SECURE TO FRAMING BELOW PER MANUFACTURERS RECOMMENDATIONS. (2) PRESSURE TREATED 2X12 EACH SIDE OF HATCH. ROTATE HATCH LOCATION AND ASSOCIATED DOUBLE FRAMING AS NECESSARY TO ALLOW ACCESS FROM STAIR BELOW.

(16) 1/2 INCH DIAM. RODS PLUS (2) ADDITIONAL RODS AT EACH GIRDER END, TYP. SEE SECTION. SEE SHEET NOTE. SEE DETAILS.



2X12 AT END OF JOIST AS SHOWN. ATTACH TO ENDS OF EVERY OTHER JOIST WITH (2) HDG 2 X 3 INCH ANGLE CLIPS. MINIMUM UPLIFT OR DOWNWARD GRAVITY LOAD CAPACITY 400 LBS WORKING STRESS PER SIDE.

PRESSURE TREATED 2X12 JOISTS AT 16 INCHES O.C. TYP. JOISTS ON 2X8 BY 12 INCH LONG PRESSURE TREATED BLOCKING AT OUTBOARD END.

N-S GIRDER: (4) PRESSURE TREATED 1.75X14 LVLs.

2X10X2'-0" INSTALLED VERTICAL AGAINST MASONRY CONE AND SECURED TO JOISTS OR GIRDERS WITH (9) 1/4X3 INCH STRUCTURAL SCREWS IN 4X4 INCH GRID PATTERN. INSTALL EVERY 45 DEGREES AROUND TEMPORARY ROOF AS SHOWN. NOTE EXCEPTION AT ROOF HATCH (ONE ADDITIONAL LOCATION).

E-W GIRDER: (3) PRESSURE TREATED 1.75X14 LVLs.

EXISTING MASONRY CORBEL BELOW.

EXISTING MASONRY CONE BELOW.

HDG JOIST HANGER. MINIMUM UPLIFT CAPACITY 4800 LBS WORKING STRESS. MINIMUM DOWNWARD GRAVITY LOAD CAPACITY 1100 LBS WORKING STRESS.

ANGLED HDG JOIST HANGERS AT DIAGONALS, TYP. MINIMUM UPLIFT OR DOWNWARD GRAVITY LOAD CAPACITY 800 LBS WORKING STRESS.

SHEET NOTES

TEMPORARY ROOF NOTES:

1. ALL HARDWARE, INCLUDING ALL JOIST HANGERS AND ALL FASTENERS, SHALL BE HOT DIP GALVANIZED (HDG).
2. COVER FRAMING IN NOMINAL 1/2 INCH STRUCTURAL I PLYWOOD (15/32), BLOCKED UNDER ALL EDGES, AND SCREWED AT 4 INCHES O.C. PERIMETER AND 4 INCHES O.C. INTERIOR WITH (2) 1/2 X 8 INCH SCREWS.
3. COVER PLYWOOD WITH FULLY ADHERED PVC ROOFING MEMBRANE. SEE SPECIFICATIONS.
4. TIE DOWN TEMPORARY ROOF TO MASONRY AT THE SEVENTH LEVEL WITH RODS AROUND THE PERIMETER ON THIS LEVEL AT EVERY OTHER JOIST END, WITH TWO RODS AT EACH GIRDER END. FASTEN TO MASONRY AS SHOWN ON 4/SD4. AFTER REMOVAL OF TEMPORARY ROOF, CORE OUT AND FILL ANCHOR HOLES WITH MORTAR.
5. INSTALL TEMPORARY AIR TERMINALS AND RECONNECT EXISTING LIGHTNING PROTECTION SYSTEM TO TEMPORARY AIR TERMINALS. SEE GENERAL NOTES FOR DELEGATED DESIGN REQUIREMENTS.

1 TEMPORARY ROOF AT 8TH LANDING
SD3 SCALE: 1/2" = 1'-0"

SEE PLAN. SEE SHEET NOTES.

8TH LANDING (WATCH)
141' - 4"

WRAP EXTERIOR WITH 2X12s AT END OF EVERY OTHER JOIST. SEE PLAN. CONNECT (24) RODS TO PLYWOOD WITH HDG CLIPS/PLATES. TAKE RODS 10 FEET DOWN AND CONNECT INTO MASONRY CONE WITH HDG CLIPS.

7TH LANDING
133' - 2 1/4"

4 SD4

SLOPE TEMPORARY ROOF 1/4" PER FOOT MINIMUM. NORTH-SOUTH GIRDER IS A RIDGE LINE OF UNIFORM HEIGHT. SLOPE DOWN EAST AND WEST.

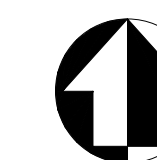
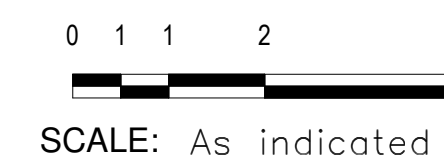
INSTALL 2 1/2 INCH BLOCKING UNDER GIRDER RUNNING NORTH-SOUTH TO FORM RIDGE AT TEMPORARY ROOF.

WRAP TOP OF CORBEL. SEE SD2.

HDG BRACKET. SEE SD4.

10'-0" APPROX.

2 TEMPORARY SECTION LOOKING NORTH
SD3 SCALE: 1/2" = 1'-0"



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Bennett Preservation Engineering, PC
11 REGISTERED AS NORTH CAROLINA
FIRM C-4115

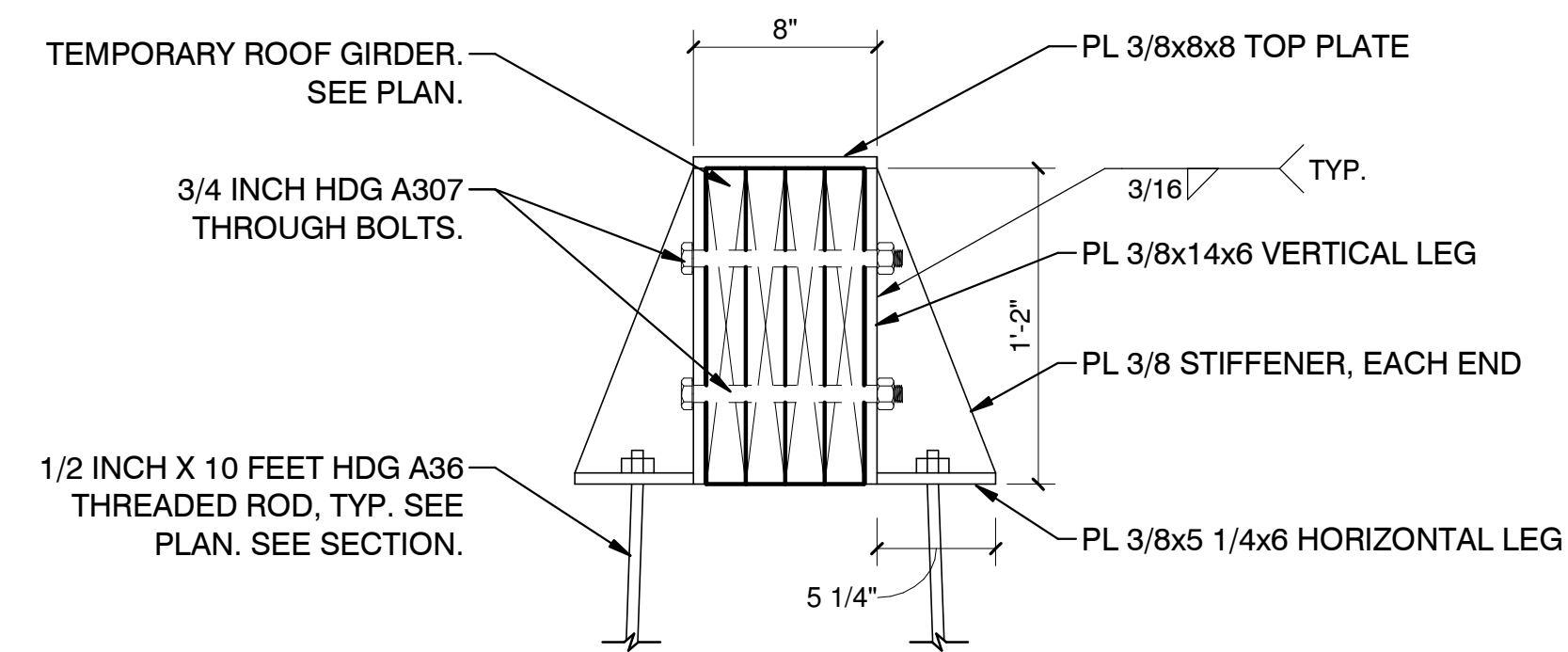
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CADD: ACW			181663
TECH. REVIEW: CMB			PMS/PKG NO. 226858
DATE 7/7/2023		CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS	SHEET 35 OF 59

SHEET NOTES

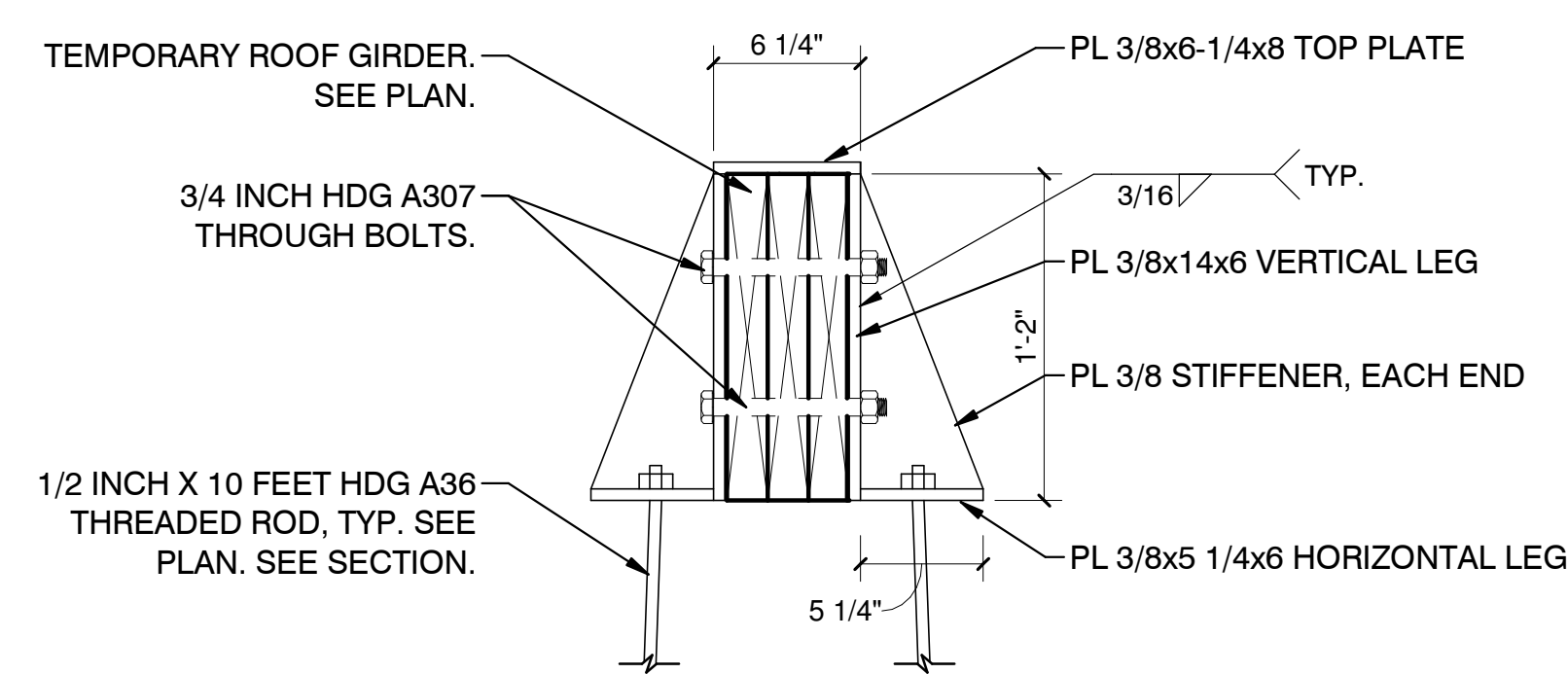
TEMPORARY ROOF NOTES:

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2. COVER FRAMING IN NOMINAL 1/2 INCH STRUCTURAL I PLYWOOD (15/32), BLOCKED UNDER ALL EDGES, AND SCREWED AT 4 INCHES O.C. PERIMETER AND 4 INCHES O.C. INTERIOR WITH (2) 1/2 X 8 INCH SCREWS.
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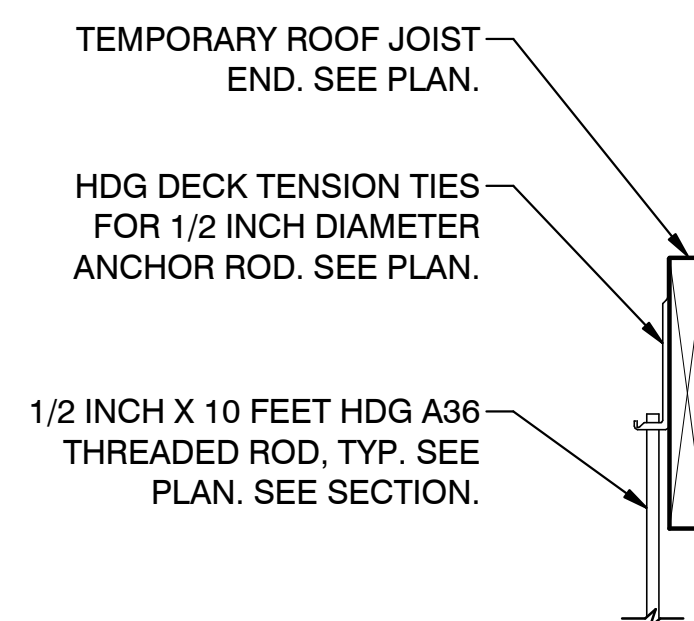
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1 GIRDER END DETAIL
SD4 SCALE: 1 1/2" = 1'-0"

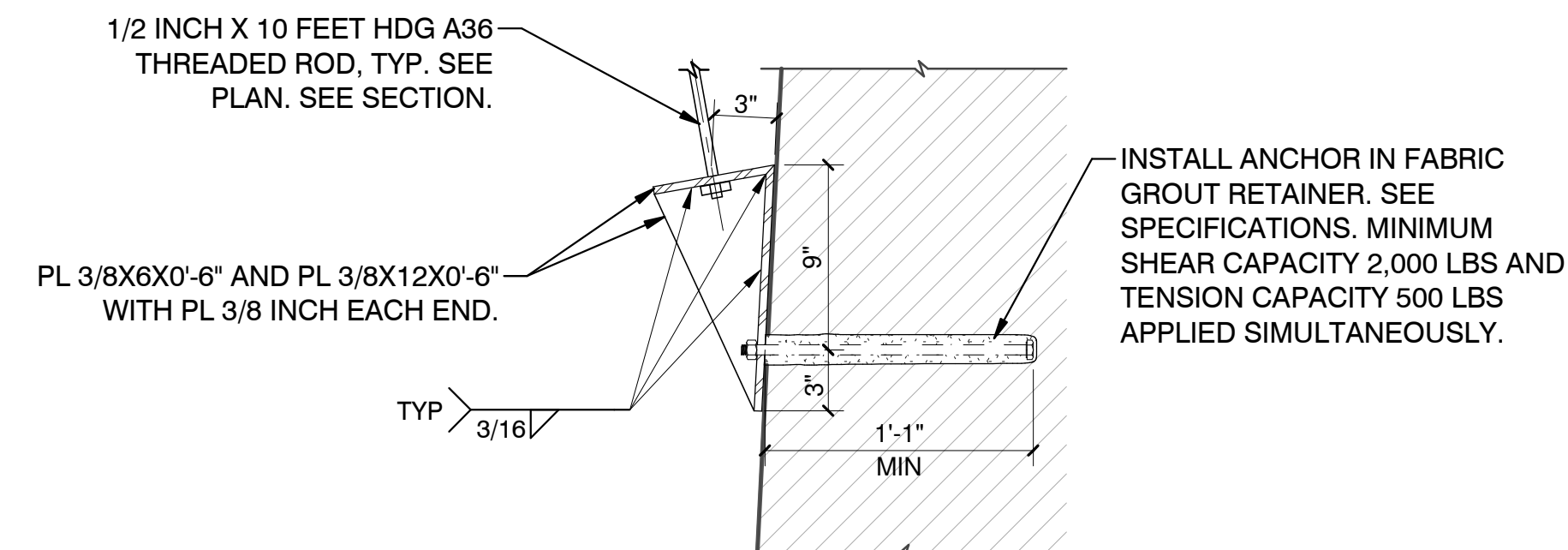


NOTE: HOT DIP GALV. ENTIRE BRACKET ASSEMBLY AFTER FABRICATION.

2 GIRDER END DETAIL
SD4 SCALE: 1 1/2" = 1'-0"



3 JOIST END DETAIL
SD4 SCALE: 1 1/2" = 1'-0"



NOTE: HOT DIP GALV. ENTIRE BRACKET ASSEMBLY AFTER FABRICATION.

4 TYPICAL TEMPORARY ROOF CONNECTION
SD4 SCALE: 1 1/2" = 1'-0"

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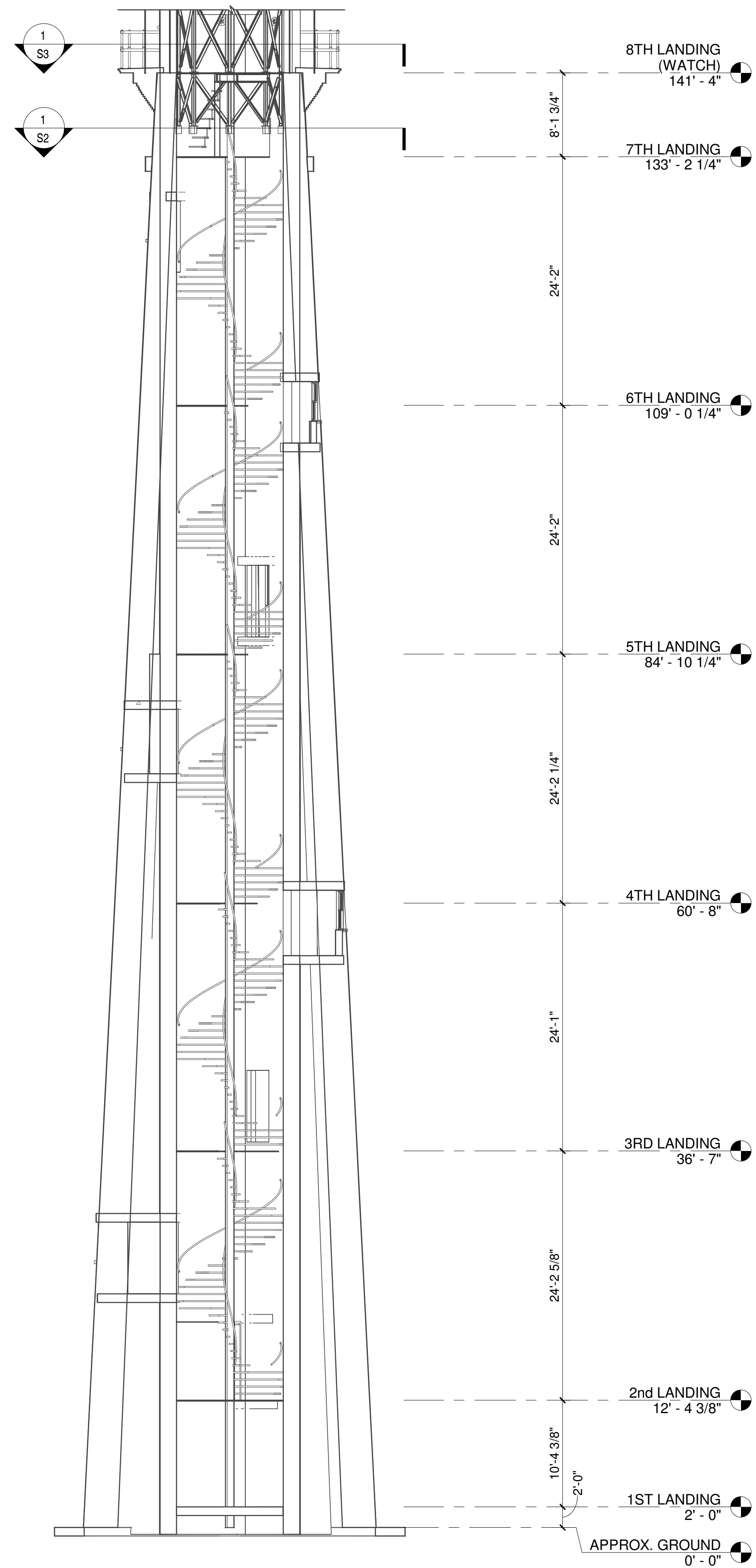
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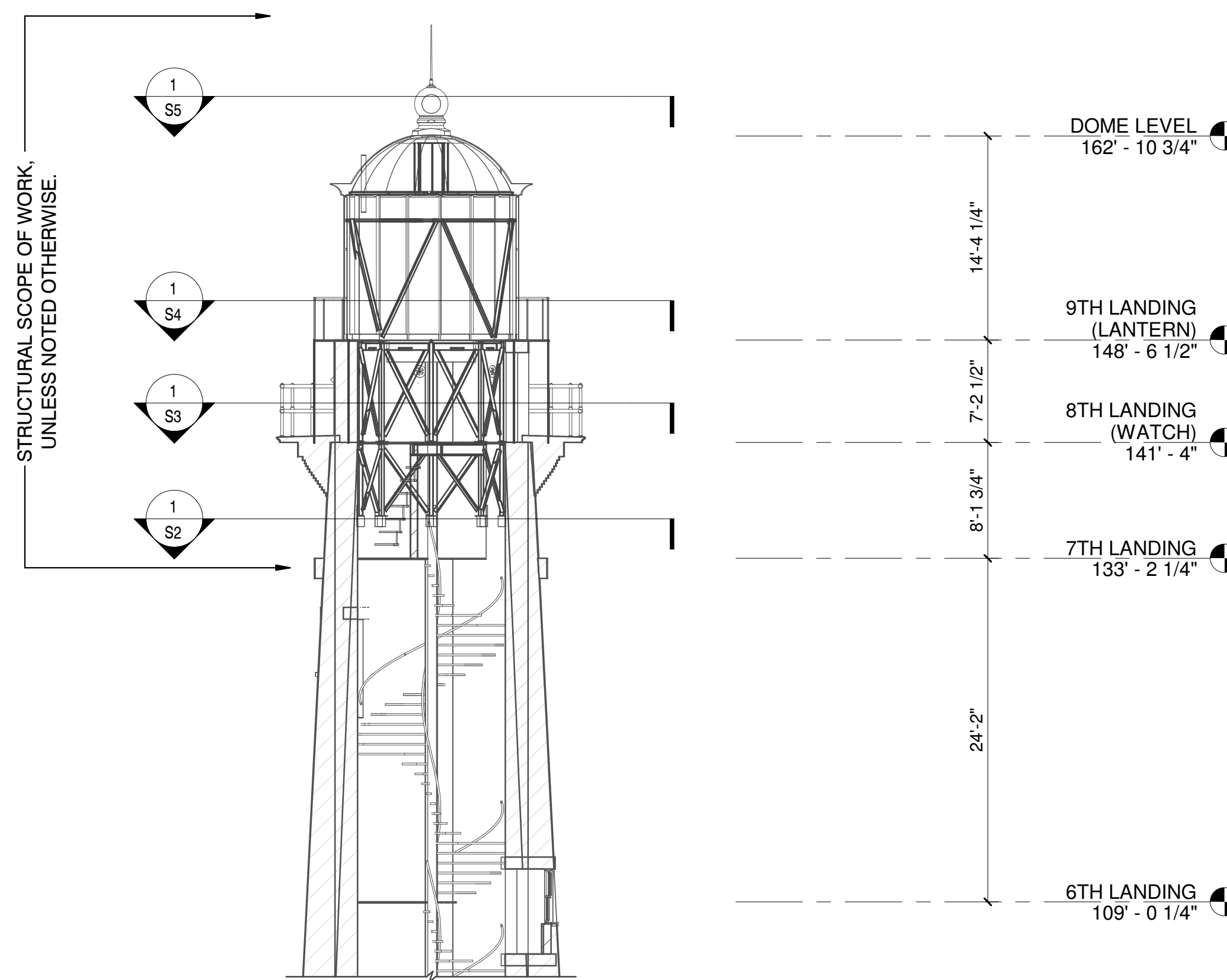
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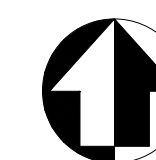
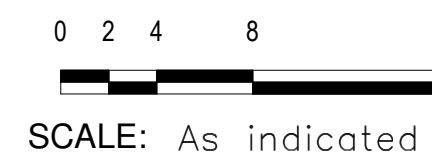
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1 SECTION LOOKING NORTH
SCALE: 1/8" = 1'-0"



2 SECTION LOOKING NORTH
SCALE: 1/8" = 1'-0"



SHEET NOTES

1. PRIOR TO THE DISASSEMBLY OF ANY PORTIONS OF THE LIGHTHOUSE, DEVELOP AND EXECUTE A WRITTEN ARCHITECTURAL AND STRUCTURAL COMPONENT DOCUMENTATION PROGRAM. SEE SD1 AND SD2.
2. REPLICATE ALL FRACTURED METALS OR ALL METALS DETERIORATED MORE THAN 10% (10% CROSS SECTION LOSS AT ANY GIVEN CROSS SECTION). ONLY METALS WITH LESS THAN 10% DETERIORATION OR SECTION LOSS SHALL BE REUSED.

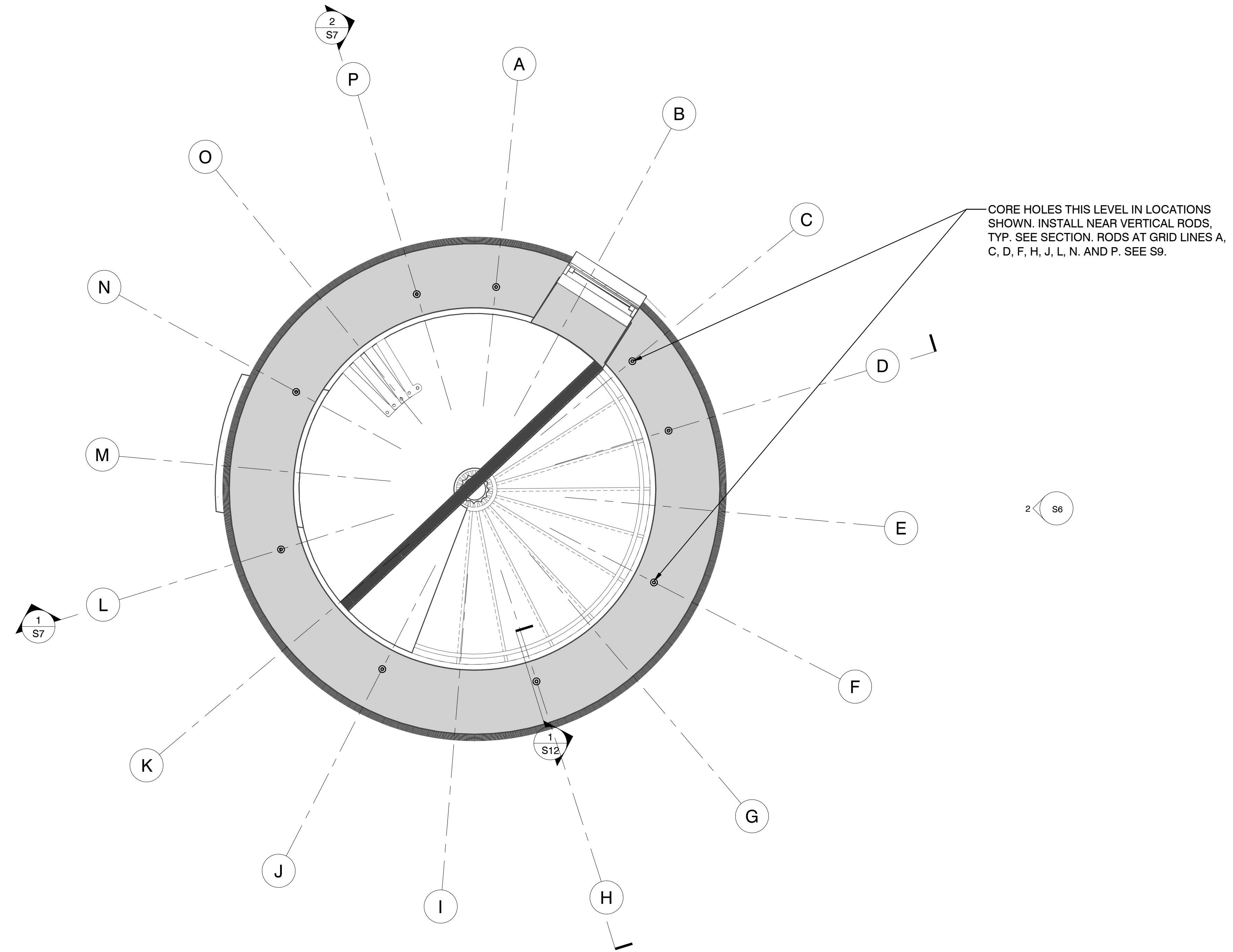
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 Bennett Preservation Engineering PC
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 FIRM C-415

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TECH. REVIEW: CMB			PMIS/PKG NO. 226858
DATE 7/7/2023			SHEET 37 OF 59

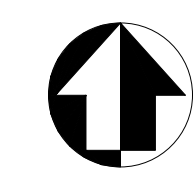
SHEET NOTES

- COORDINATE WORK WITH MECHANICAL AND ELECTRICAL DRAWINGS AND WITH UNITED STATES COAST GUARD.
- GRID LINES ARE ALIGNED WITH ORIGINAL LOCATION OF LANTERN LEVEL WINDOW FRAME POSTS ABOVE. GRID LINES ARE APPROXIMATELY 22.5 DEGREES APART. ORIGINAL LOCATIONS OF WINDOW FRAME POSTS ON LANTERN LEVEL WILL HAVE BEEN MARKED BY GC AS PART OF THE WORK SHOWN ON SD1 AND SD2.



CORE HOLES THIS LEVEL IN LOCATIONS SHOWN. INSTALL NEAR VERTICAL RODS, TYP. SEE SECTION. RODS AT GRID LINES A, C, D, F, H, J, L, N. AND P. SEE S9.

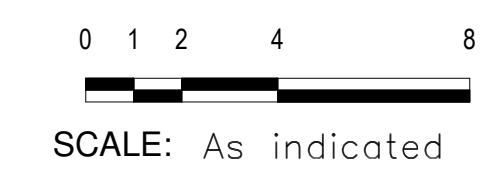
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S2 7TH LANDING PARTIAL PLAN
SCALE: 1/2" = 1'-0"



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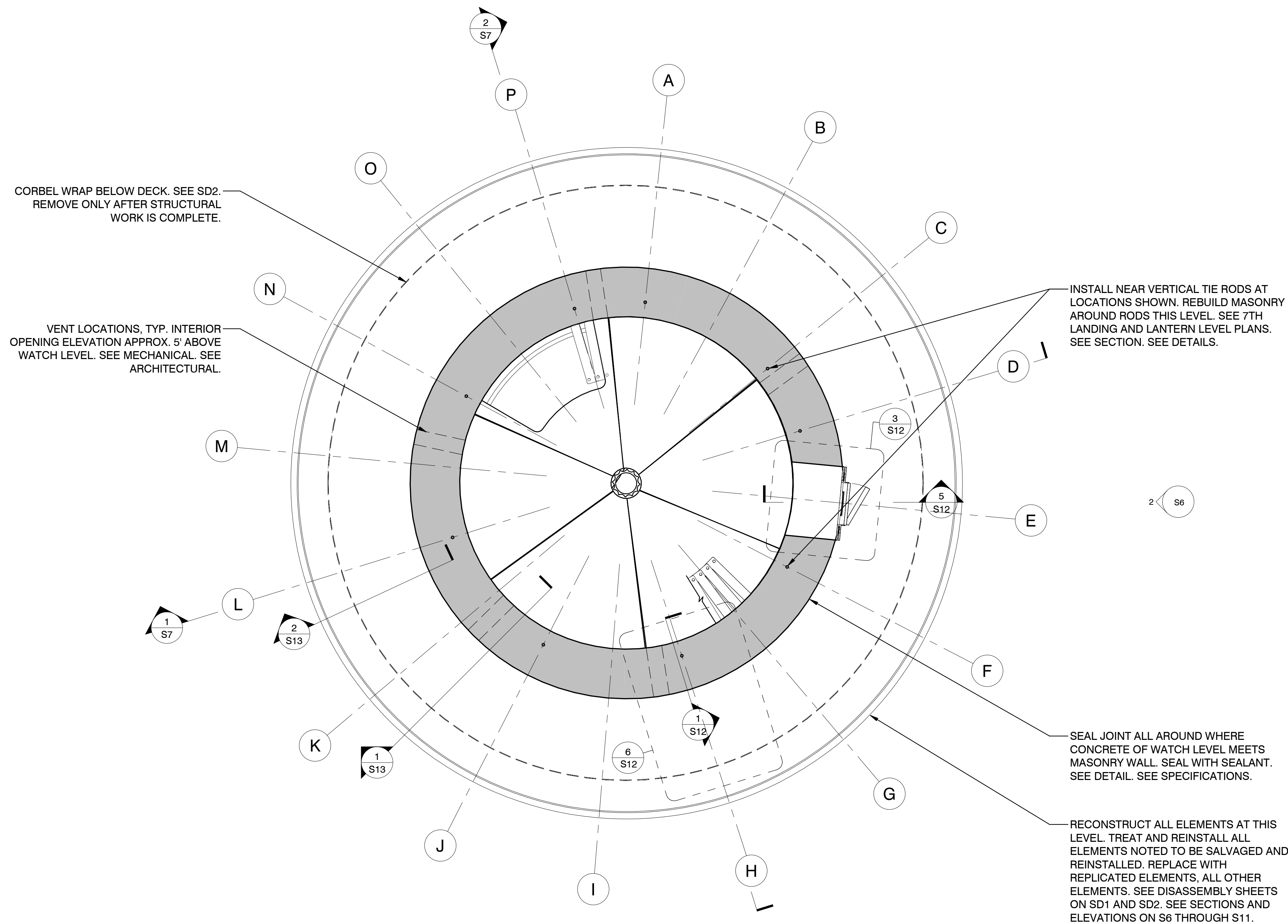
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DATE 7/7/2023			SHEET 38 OF 59
			CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS

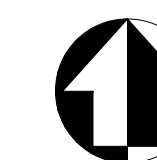


SHEET NOTES

- COORDINATE WORK WITH MECHANICAL AND ELECTRICAL DRAWINGS AND WITH UNITED STATES COAST GUARD.
- GRID LINES ARE ALIGNED WITH ORIGINAL LOCATION OF LANTERN LEVEL WINDOW FRAME POSTS ABOVE. GRID LINES ARE APPROXIMATELY 22.5 DEGREES APART. ORIGINAL LOCATIONS OF WINDOW FRAME POSTS ON LANTERN LEVEL WILL HAVE BEEN MARKED BY GC AS PART OF THE WORK SHOWN ON SD1 AND SD2.



1
S3 **8TH LANDING (WATCH ROOM) PARTIAL PLAN**
SCALE: 1/2" = 1'-0"



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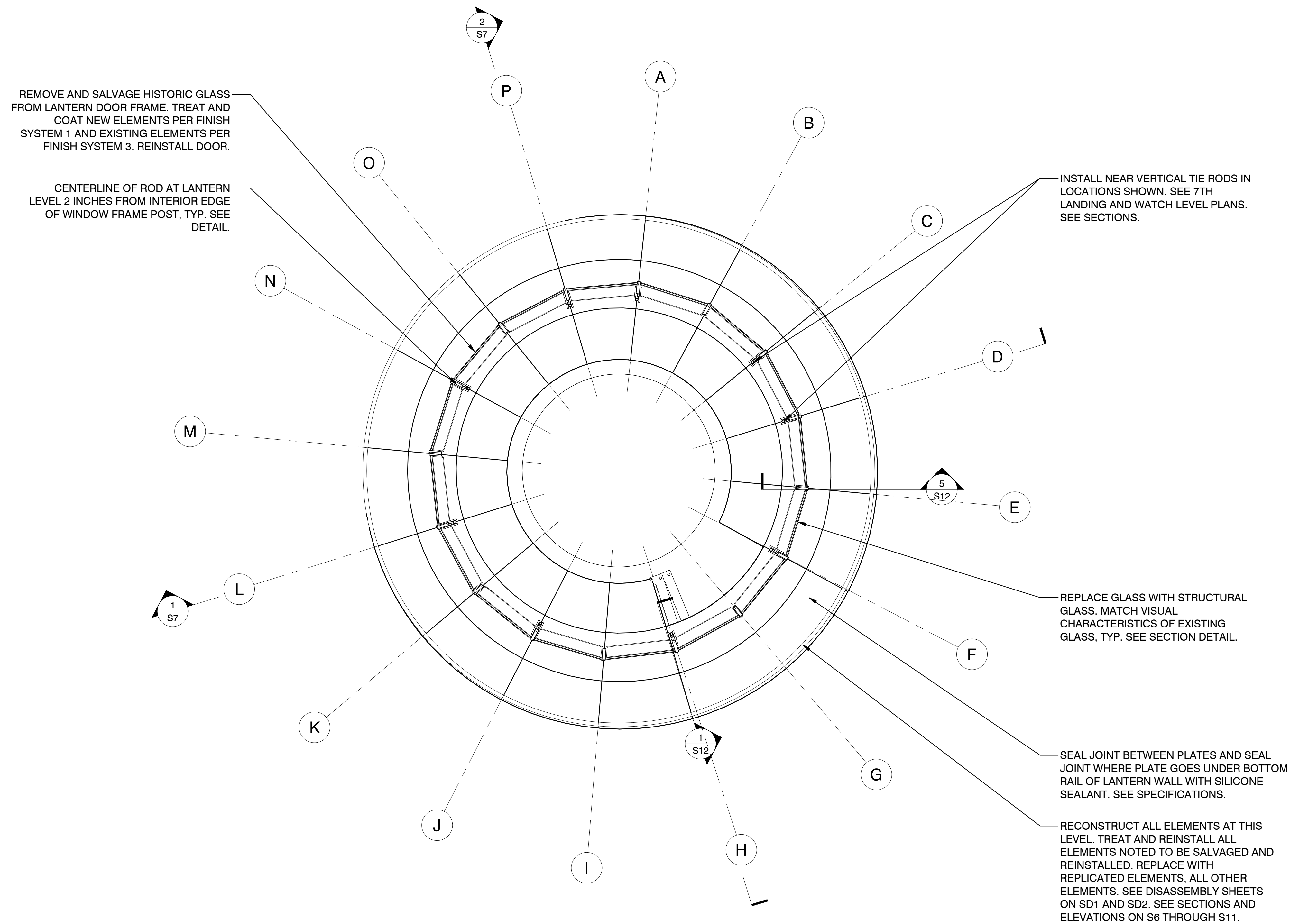
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DATE 7/7/2023			SHEET 39 OF 59
			CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS

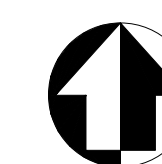


SHEET NOTES

- COORDINATE WORK WITH MECHANICAL AND ELECTRICAL DRAWINGS AND WITH UNITED STATES COAST GUARD.
- GRID LINES ARE ALIGNED WITH ORIGINAL LOCATION OF LANTERN LEVEL WINDOW FRAME POSTS ABOVE. GRID LINES ARE APPROXIMATELY 22.5 DEGREES APART. ORIGINAL LOCATIONS OF WINDOW FRAME POSTS ON LANTERN LEVEL WILL HAVE BEEN MARKED BY GC AS PART OF THE WORK SHOWN ON SD1 AND SD2.



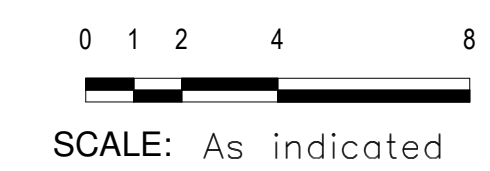
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S4 **LANTERN ROOM PARTIAL PLAN**
SCALE: 1/2" = 1'-0"



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 BENNETT PRESERVATION ENGINEERING PC
 IS REGISTERED AS NORTH CAROLINA
 FIRM C-4115

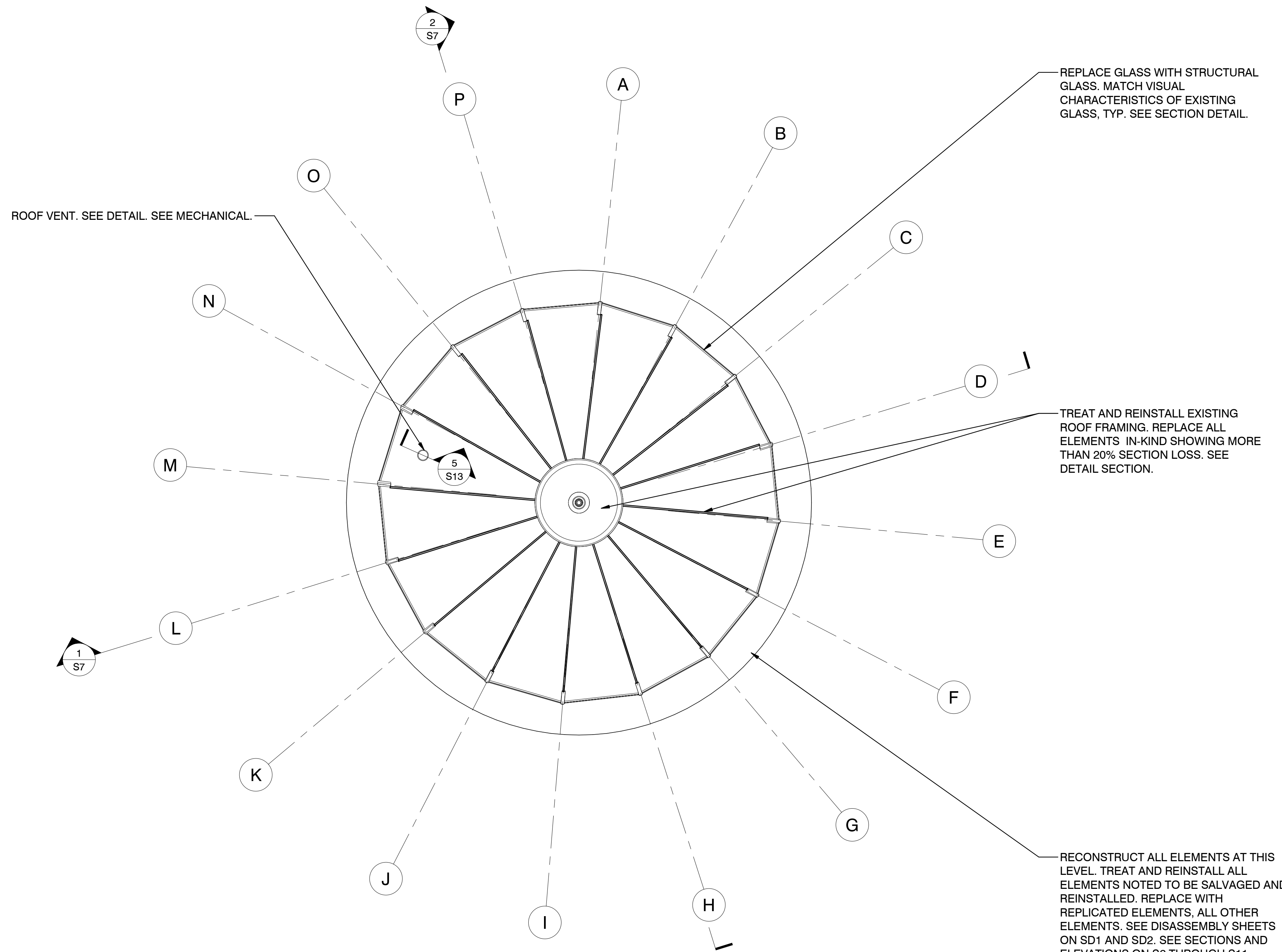
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TECH. REVIEW: CMB			PMS/PKG NO. 226858
DATE 7/7/2023			SHEET 40 OF 59

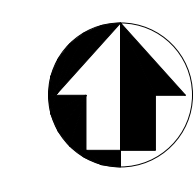


SHEET NOTES

- COORDINATE WORK WITH MECHANICAL AND ELECTRICAL DRAWINGS AND WITH UNITED STATES COAST GUARD.
- GRID LINES ARE ALIGNED WITH ORIGINAL LOCATION OF LANTERN LEVEL WINDOW FRAME POSTS ABOVE. GRID LINES ARE APPROXIMATELY 22.5 DEGREES APART. ORIGINAL LOCATIONS OF WINDOW FRAME POSTS ON LANTERN LEVEL WILL HAVE BEEN MARKED BY GC AS PART OF THE WORK SHOWN ON SD1 AND SD2.

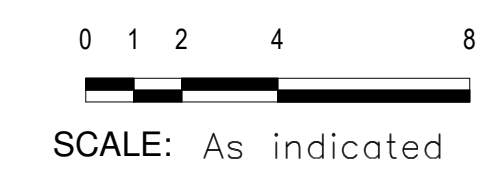


1 DOME LEVEL PARTIAL PLAN
S5 SCALE: 1/2" = 1'-0"



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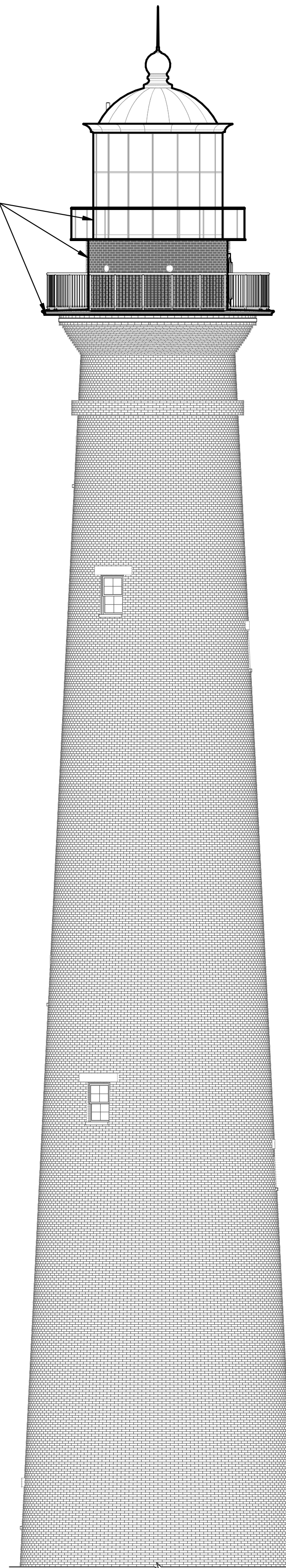


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TECH. REVIEW: CMB			PMS/PKG NO. 226858
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			CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS

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FOR ALL METAL ELEMENTS THAT CAN BE REUSED, TREAT AND REINSTALL PER SHEETS S7 THROUGH S11. FOR ALL METAL ELEMENTS WHICH CAN NOT BE REUSED, REPLICATE IN CAST IRON UNLESS NOTED OTHERWISE AND INSTALL. SEE SPECIFICATIONS

FOR ALL MASONRY ELEMENTS, REINSTALL SALVAGED ELEMENTS, SUPPLEMENTING WITH NEW BRICK ONLY AS NECESSARY. SEE SPECIFICATIONS.

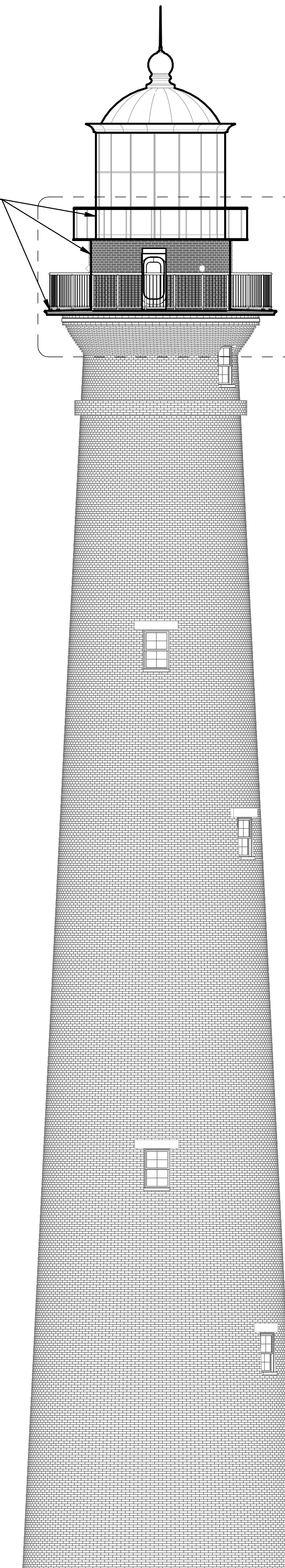


- DOME LEVEL 162' - 10 3/4" ⬤
- 9TH LANDING (LANTERN) 148' - 6 1/2" ⬤
- 8TH LANDING (WATCH) 141' - 4" ⬤
- 7TH LANDING 133' - 2 1/4" ⬤
- 6TH LANDING 109' - 0 1/4" ⬤
- 5TH LANDING 84' - 10 1/4" ⬤
- 4TH LANDING 60' - 8" ⬤
- 3RD LANDING 36' - 7" ⬤

1 SOUTH ELEVATION
SCALE: 1/8" = 1'-0"

FOR ALL METAL ELEMENTS THAT CAN BE REUSED, TREAT AND REINSTALL PER SHEETS S7 THROUGH S11. FOR ALL METAL ELEMENTS WHICH CAN NOT BE REUSED, REPLICATE IN CAST IRON UNLESS NOTED OTHERWISE AND INSTALL. SEE SPECIFICATIONS

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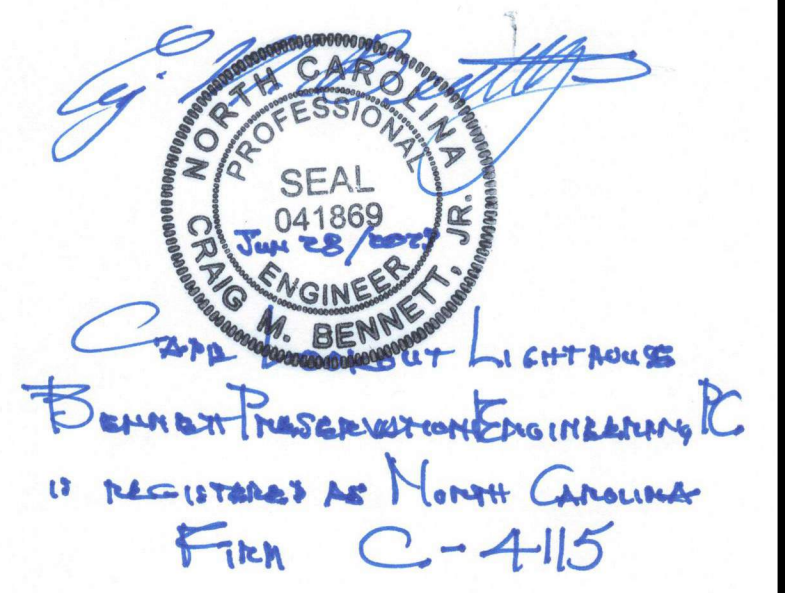
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- 4TH LANDING 60' - 8" ⬤
- 3RD LANDING 36' - 7" ⬤

2 EAST ELEVATION
SCALE: 1/8" = 1'-0"

0 2 4 8 16
SCALE: As indicated

SHEET NOTES

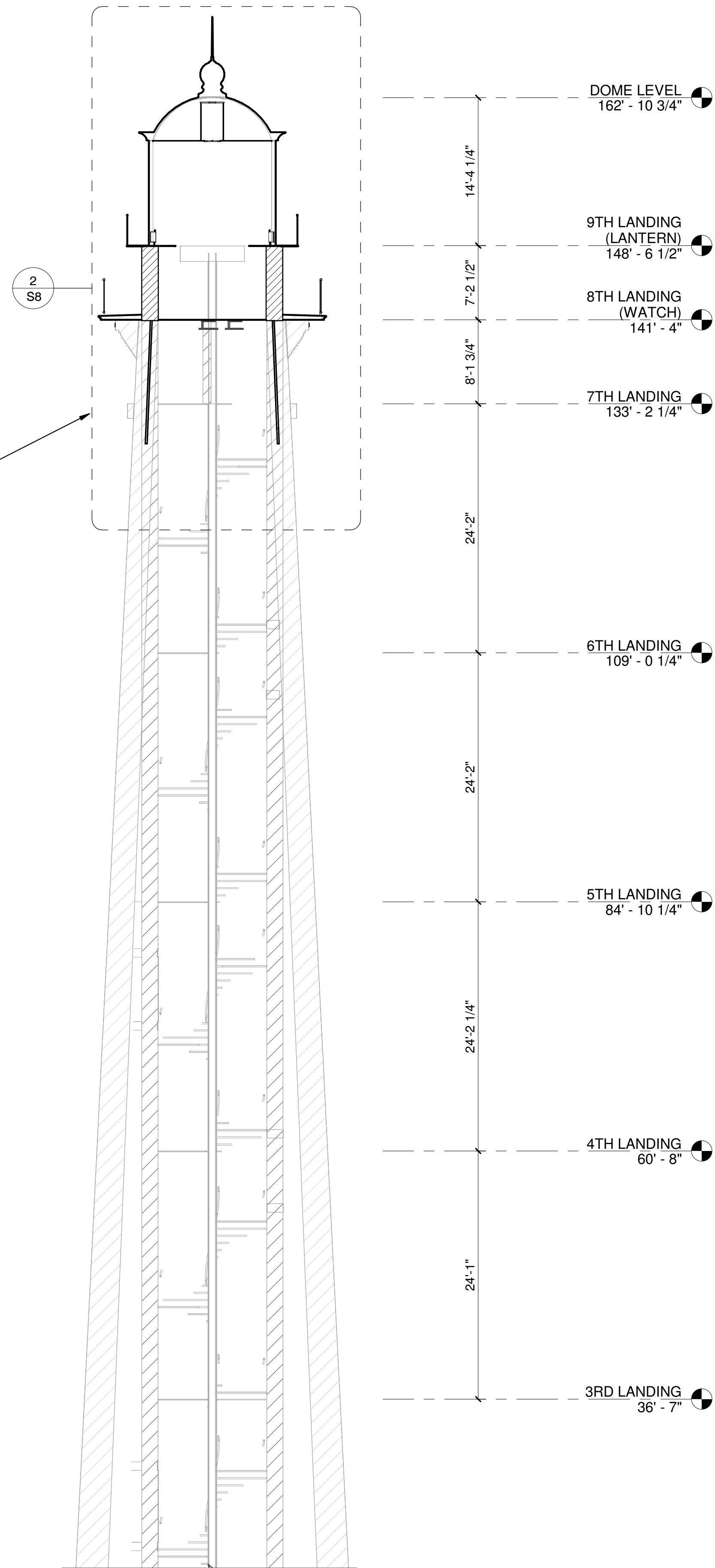
1. PRIOR TO THE DISASSEMBLY OF ANY PORTIONS OF THE LIGHTHOUSE, DEVELOP AND EXECUTE A WRITTEN ARCHITECTURAL AND STRUCTURAL COMPONENT DOCUMENTATION PROGRAM. SEE SD1 AND SD2.
2. REPLICATE ALL FRACTURED METALS OR ALL METALS DETERIORATED MORE THAN 10% (10% CROSS SECTION LOSS AT ANY GIVEN CROSS SECTION). ONLY METALS WITH LESS THAN 10% DETERIORATION OR SECTION LOSS SHALL BE REUSED.



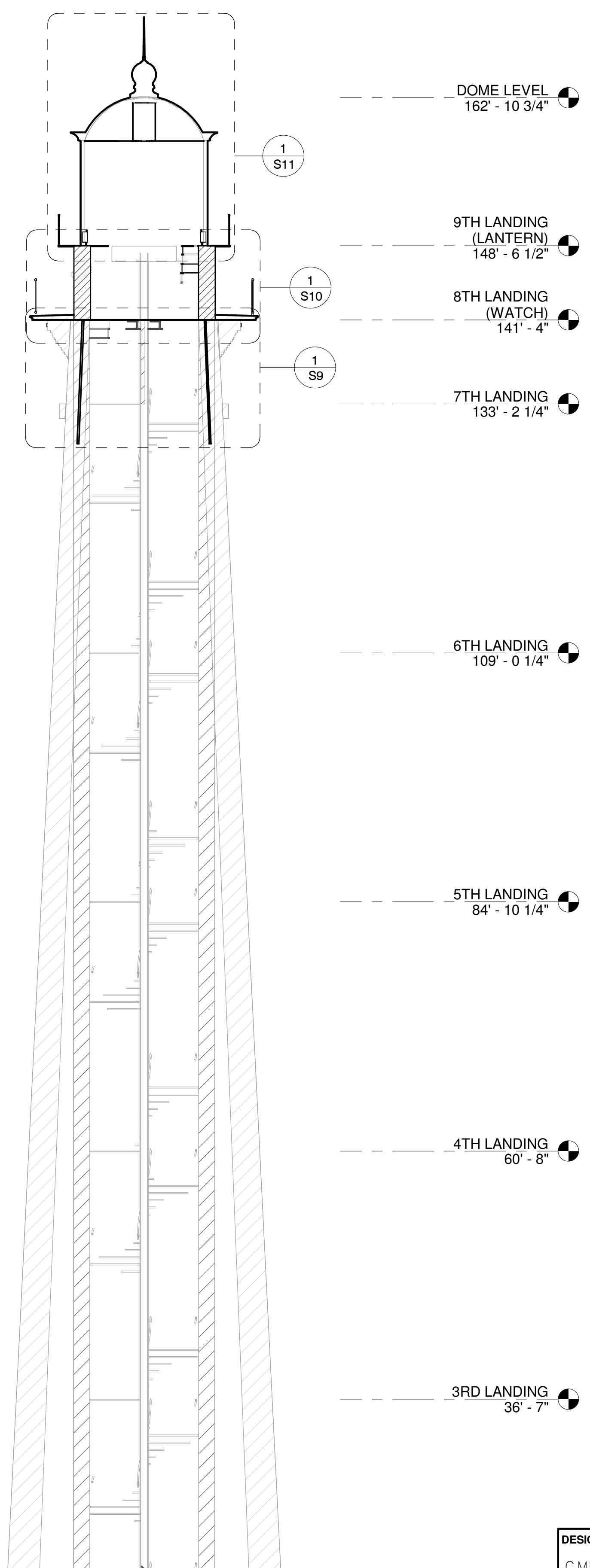
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DESIGNED: CMB	SUB SHEET NO. S6	TITLE OF SHEET ELEVATIONS	DRAWING NO. 623
CADD: ACW			181663
TECH. REVIEW: CMB			PMIS/PKG NO. 226858
DATE 7/7/2023		CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS	SHEET 42 OF 59

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1 SECTION LOOKING NORTH
S7 SCALE: 1/8" = 1'-0"

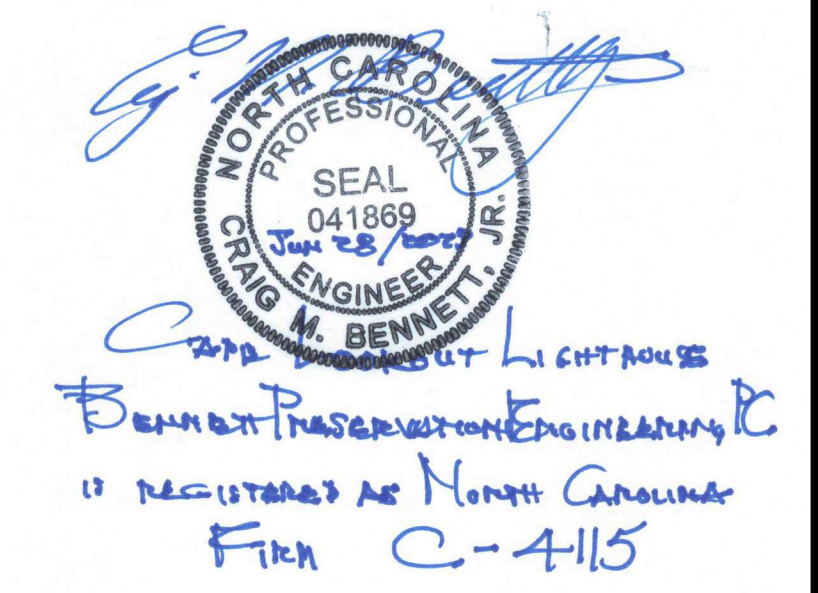


2 SECTION LOOKING EAST
S7 SCALE: 1/8" = 1'-0"



SHEET NOTES

1. PRIOR TO THE DISASSEMBLY OF ANY PORTIONS OF THE LIGHTHOUSE, DEVELOP AND EXECUTE A WRITTEN ARCHITECTURAL AND STRUCTURAL COMPONENT DOCUMENTATION PROGRAM. SEE SD1 AND SD2.
2. REPLICATE ALL FRACTURED METALS OR ALL METALS DETERIORATED MORE THAN 10% (10% CROSS SECTION LOSS AT ANY GIVEN CROSS SECTION). ONLY METALS WITH LESS THAN 10% DETERIORATION OR SECTION LOSS SHALL BE REUSED.

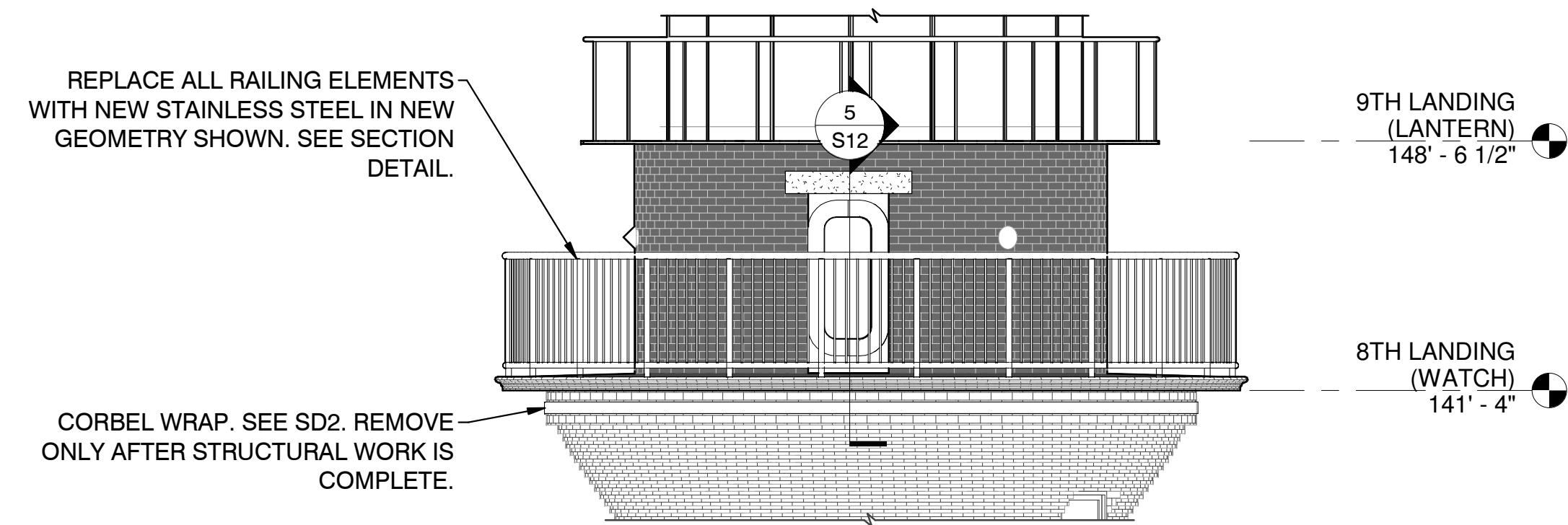


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DESIGNED: CMB	SUB SHEET NO. S7	TITLE OF SHEET SECTIONS	DRAWING NO. 623
CADD: ACW			181663
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DATE 7/7/2023			SHEET 43 OF 59
CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS			

SHEET NOTES

1. PRIOR TO THE DISASSEMBLY OF ANY PORTIONS OF THE LIGHTHOUSE, DEVELOP AND EXECUTE A WRITTEN ARCHITECTURAL AND STRUCTURAL COMPONENT DOCUMENTATION PROGRAM. SEE SD1 AND SD2.
2. REPLICATE ALL FRACTURED METALS OR ALL METALS DETERIORATED MORE THAN 10% (10% CROSS SECTION LOSS AT ANY GIVEN CROSS SECTION). ONLY METALS WITH LESS THAN 10% DETERIORATION OR SECTION LOSS SHALL BE REUSED.



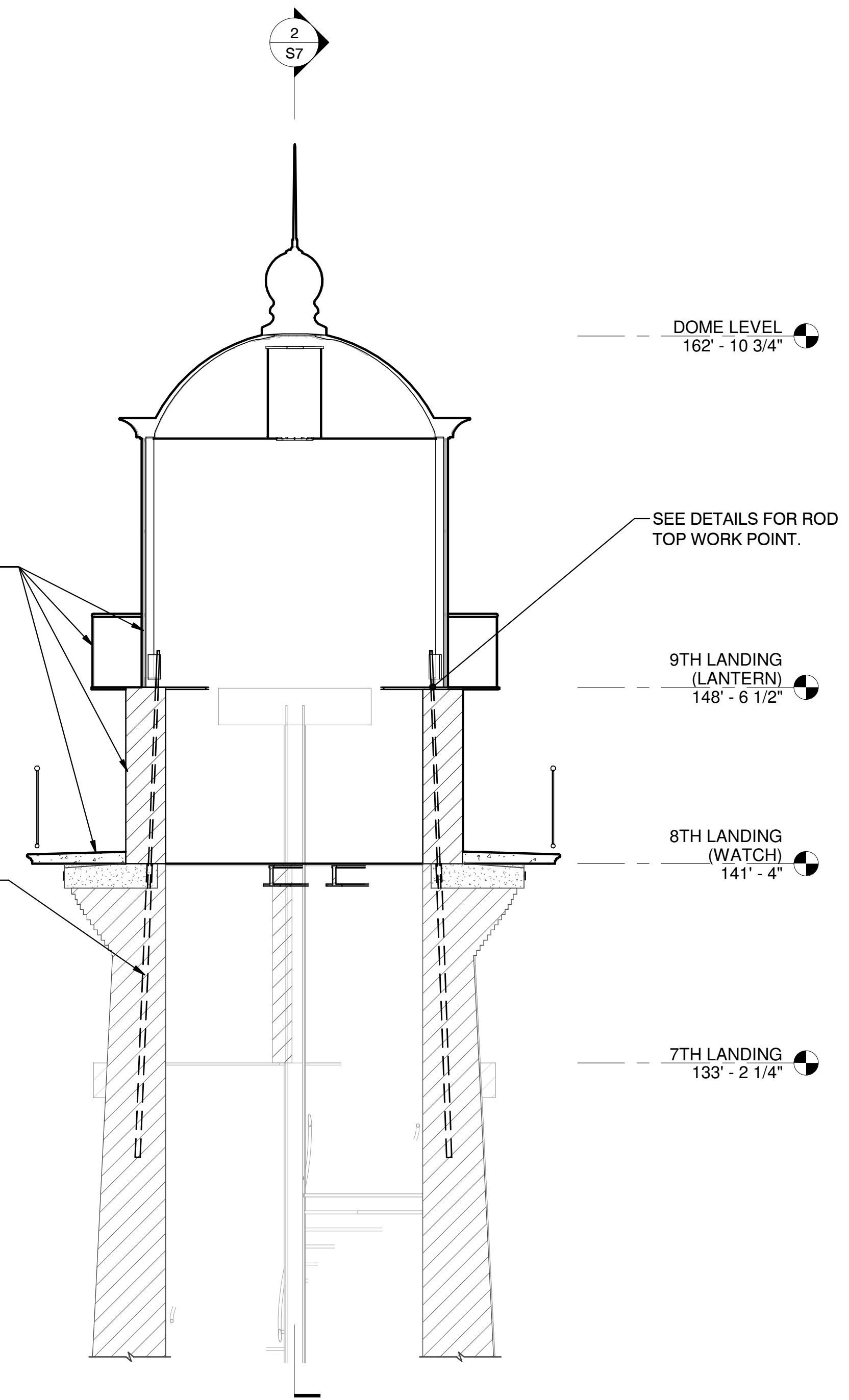
1 PARTIAL EAST ELEVATION AT WATCH LEVEL
SCALE: 1/4" = 1'-0"

FOR ALL METAL ELEMENTS THAT CAN BE REUSED, TREAT AND REINSTALL PER SHEETS S7 THROUGH S11. FOR ALL METAL ELEMENTS WHICH CAN NOT BE REUSED, REPLICATE IN CAST IRON UNLESS NOTED OTHERWISE AND INSTALL. SEE SPECIFICATIONS. MATCH EXISTING MATERIAL UNLESS NOTED OTHERWISE.

FOR ALL MASONRY ELEMENTS, REINSTALL SALVAGED MASONRY, SUPPLEMENTING WITH NEW ONLY AS NECESSARY. SEE SPECIFICATIONS.

CORE HOLES IN LOCATIONS SHOWN FOR NEAR VERTICAL RODS AT LEVEL 7, TYP. REBUILD MASONRY AROUND NEAR VERTICAL RODS ABOVE. SEE DETAILS.

- ASSUMED QUANTITIES FOR BIDDING:**
- ASSUME THAT ALL CAST IRON AND WROUGHT IRON ABOVE THE WATCH LEVEL WILL REQUIRE REPLICATION.
 - ASSUME THAT THE SPHERICAL CHIMNEY AND LIGHTNING ROD WILL BE TREATED AND REUSED.
 - ASSUME THAT ALL BRONZE EVAPORATION TRAYS WILL BE TREATED AND REUSED.
 - ASSUME THAT ALL TURNABLE ELEMENTS WILL BE TREATED AND REUSED.
- SEE S9 THROUGH S11

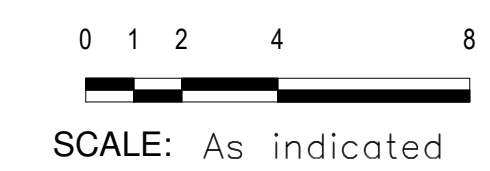


2 SECTION LOOKING NORTH
SCALE: 1/4" = 1'-0"

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ENGINEER
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REGISTERED AS NORTH CAROLINA
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CADD: ACW			181663
TECH. REVIEW: CMB			PMS/PKG NO. 226858
DATE 7/7/2023			SHEET 44 OF 59
			CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS



SHEET NOTES

FINISHING SYSTEM SCHEDULE:

- FOR NEW STEEL AND CAST IRON THAT CAN BE INSTALLED WITHOUT WELDING, CLEAN TO BRIGHT METAL, HOT DIP GALVANIZE WITHIN 2 HOURS, LIGHTLY BRUSH BLAST THE GALVANIZING, PRIME WITH TWO-PART ALIPHATIC EPOXY PRIMER, INTERMEDIATE COAT WITH HIGH BUILD EPOXY, AND OVERCOAT WITH TWO COATS OF POLYURETHANE. SEE SPECIFICATIONS.
- FOR ALL NEW STEEL AND CAST IRON THAT MUST BE WELDED, HOT DIP GALVANIZE AND COAT AS ABOVE. WHERE WELDS OCCUR, CLEAN TO BRIGHT METAL FOR THE WELDING. AFTER WELDING, WITHIN 2 HOURS, COAT THE AREA THAT HAS BEEN CLEANED FOR WELDING WITH A ZINC-RICH THREE PART EPOXY PRIMER. INTERMEDIATE COAT WITH HIGH BUILD EPOXY. OVERCOAT WITH A SECOND COAT OF THE SAME. OVERCOAT THIRD AND FOURTH COATS WITH ACRYLIC POLYURETHANE. SEE SPECIFICATIONS.
- FOR ALL EXISTING CAST IRON OR STEEL THAT IS CURRENTLY PAINTED, CLEAN DOWN TO BRIGHT METAL AND, WITHIN 2 HOURS, COAT WITH A ZINC-RICH THREE PART EPOXY PRIMER. INTERMEDIATE COAT WITH HIGH BUILD EPOXY. OVERCOAT THIRD AND FOURTH COATS WITH ACRYLIC POLYURETHANE. SEE SPECIFICATIONS.
- AT ALL EXTERIOR SURFACES OF THE LIGHTHOUSE, AT ALL EDGES OF ALL PLATES WHERE THE PLATES JOIN ANOTHER PLATE, CLEAN DOWN TO BRIGHT METAL AND, WITHIN 2 HOURS, COAT WITH A ZINC RICH THREE PART EPOXY PRIMER. SEAL ALL JOINTS WITH A SILICONE SEALANT. INTERMEDIATE COAT WITH HIGH BUILD EPOXY. APPLY THIRD AND FOURTH COATS OF ACRYLIC POLYURETHANE. SEE SPECIFICATIONS.
- FOR NEW STAINLESS STEEL, PRIME ANTI-CORROSIVE EPOXY PRIMER. INTERMEDIATE COAT WITH HIGH BUILD EPOXY. OVERCOAT WITH TWO FINISH COATS OF POLYURETHANE. SEE SPECIFICATIONS.
- UNLESS NOTED OTHERWISE, MATCH NEW PAINT COLOR TO EXISTING PAINT COLOR.

ASSUMED QUANTITIES FOR BIDDING:

- ASSUME THAT ALL CAST IRON AND WROUGHT IRON ABOVE THE WATCH LEVEL WILL REQUIRE REPLICATION.
 - ASSUME THAT THE SPHERICAL CHIMNEY AND LIGHTNING ROD WILL BE TREATED AND REUSED.
 - ASSUME THAT ALL BRONZE EVAPORATION TRAYS WILL BE TREATED AND REUSED.
 - ASSUME THAT ALL TURNABLE ELEMENTS WILL BE TREATED AND REUSED.
- SEE S8

IN LOCATION SHOWN IN PLANS AT TOP OF MASONRY AT THE WATCH LEVEL DECK, CORE 2 1/2 INCH DIAM. HOLE 12 FEET DOWN INTO MASONRY OF CONE OF LIGHTHOUSE. ALIGN CORE HOLES WITH FINAL LOCATION OF ALTERNATING WINDOW FRAME POSTS, USING 1/8 X 1/8 X 2 INCH CUTS IN MASONRY MADE BEFORE DISASSEMBLY. ALIGN CORE HOLES PER WATCH LEVEL AND LANTERN LEVEL PLANS.

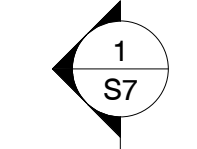
INSTALL (9) NEW 1 INCH DIAM. 316 STAINLESS STEEL THREADED RODS (ANCHORS) IN FABRIC GROUT RETAINER IN CORE HOLES. RODS EXTEND FROM 12 FEET BELOW WATCH LEVEL DECK TO APPROXIMATELY 1'-6" ABOVE LANTERN LEVEL DECK. FINISH BOTTOM OF ROD WITH 1/4 INCH THICK STAINLESS STEEL WASHER OF MAXIMUM DIAMETER TO FIT IN CORE HOLE (APPROX. 2 1/2 INCH OUTER DIAM.).

SUBMIT ENGINEERING CALCULATIONS SHOWING ROD CAPACITY. ENGINEER MUST BE REGISTERED IN NORTH CAROLINA. MINIMUM WORKING UPLIFT FORCE: 7.5 KIPS. ROD SIZES SHOWN ABOVE ARE MINIMUMS. CORE HOLE DIAMETER LARGER THAN THAT SHOWN REQUIRES APPROVAL BY EOR THOUGH CO.

8TH LANDING (WATCH)
141' - 4"

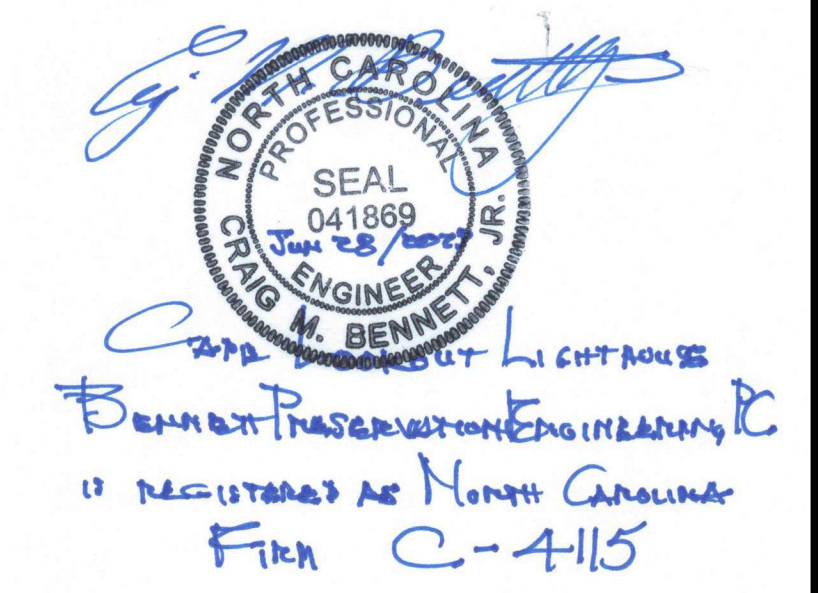
7TH LANDING
133' - 2 1/4"

LOCATE BOTTOM OF ROD AT MID-DEPTH OF MASONRY WALL. SEE 1/S12.



APPROX. 12'-0"

1 SECTION LOOKING EAST - 7TH LANDING
SCALE: 3/4" = 1'-0"



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DATE 7/7/2023			SHEET 45 OF 59
			CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS



ASSUMED QUANTITIES FOR BIDDING:

- ASSUME THAT ALL CAST IRON AND WROUGHT IRON ABOVE THE WATCH LEVEL WILL REQUIRE REPLICATION.
 - ASSUME THAT THE SPHERICAL CHIMNEY AND LIGHTNING ROD WILL BE TREATED AND REUSED.
 - ASSUME THAT ALL BRONZE EVAPORATION TRAYS WILL BE TREATED AND REUSED.
 - ASSUME THAT ALL TURNTABLE ELEMENTS WILL BE TREATED AND REUSED.
- SEE S8

REINSTALL EXISTING STAIR FROM WATCH LEVEL TO LANTERN LEVEL, REPLACING ALL FASTENERS WITH NEW. TREAT AND COAT EXISTING STAIR COMPONENTS PER FINISH SYSTEM 3. TREAT AND COAT NEW FASTENERS PER FINISH SYSTEM 1.

DURING RECONSTRUCTION OF THE MASONRY, INSTALL NEW STEEL PLATE MATCHING DIMENSIONS OF FORMER PLATE OF DOOR BEYOND. TREAT AND COAT NEW STEEL PLATE PER FINISH SYSTEM 2 (WELDED). REINSTALL WATCH LEVEL DOOR FRAME AND DOOR IN NEW STEEL PLATE. TREAT AND COAT EXISTING PER FINISH SYSTEM 3.

REINSTALL COPPER VENTS DURING RECONSTRUCTION OF MASONRY WALL. SEE PLAN FOR LOCATIONS. SEE MECHANICAL. SEE ARCHITECTURAL.

REINSTALL EXISTING TURNTABLE AND PEDESTAL, REPLACING ALL FASTENERS WITH NEW. TREAT AND COAT EXISTING TURNTABLE AND COMPONENTS PER FINISH SYSTEM 3. TREAT AND COAT NEW FASTENERS PER FINISH SYSTEM 1.

REINSTALL ALL MILLWORK AND FURNITURE AT THIS LEVEL. PREP PER PAINT MANUFACTURERS RECOMMENDATIONS AND COAT WITH (1) COAT SLOW DRYING ALKYD ENAMEL PRIMER AND (1) FINISH COAT OF EXTERIOR LATEX WITH MILDEWICIDE.

SEALANT AND BACKER ROD. SEE DETAIL.

CORBEL WRAP. SEE SD2. REMOVE ONLY AFTER STRUCTURAL WORK IS COMPLETE.

STONE BALCONY. VERIFY INTERIOR EDGE OF STONE IN FIELD DURING DISASSEMBLY.

TREAT AND REINSTALL WATCH LEVEL BEAMS. TREAT AND COAT PER FINISH SYSTEM 3.

RECONSTRUCT WATCH LEVEL BRICK MASONRY WALLS. REBUILD WALLS IN ENGLISH BOND, 5 WYTHES THICK. ALLOW 4 INCH SQUARE VOID AROUND NEW RODS AND FILL VOID WITH ASTM C270 TYPE M MORTAR AS WALL IS LAID UP. MIX THIS PARTICULAR MORTAR USED TO FILL THIS VOID WITH MORTAR OF 3 PARTS ASTM C150 WHITE PORTLAND CEMENT, 1 PART ASTM C207 TYPE S HYDRATED LIME, AND 9 TO 12 PARTS ASTM C144 SAND. BEDDING MORTAR FOR RECONSTRUCTED WALLS SHALL BE MADE FROM NATURAL CEMENT. SEE SPECIFICATIONS FOR ADDITIONAL MASONRY REQUIREMENTS AND MORTAR MIXES.

REINFORCE WALLS HORIZONTALLY WITH LADDER TYPE STAINLESS STEEL JOINT REINFORCING SPACED EVERY 3 COURSES VERTICALLY. SEE DETAILS. SEE SPECIFICATIONS. REINSTALL COPPER VENTILATES.

REPLACE ALL RAILING ELEMENTS WITH NEW STAINLESS STEEL IN GEOMETRY SHOWN. SEE DETAILS. BOLT BASE OF RAILINGS THROUGH NEW CONCRETE DECK AND FASTEN WITH 316 STAINLESS STEEL BOLTS AND MATCHING PLATES ON UNDERSIDE OF CONCRETE DECK. TREAT AND COAT PER FINISH SYSTEM 5.

REPLACE CONCRETE DECK WITH NEW 4,000 PSI CONCRETE REINFORCED WITH #4 FIBER GLASS REBAR AT 6 INCHES O.C. RADIALLY AND 6 INCHES O.C. TANGENTIALLY. FIELD FIT FIBER GLASS REBAR TO APPROPRIATE RADIUS. LAP 48 INCHES AND TIE EVERY 12 INCHES WITH STAINLESS STEEL TIE WIRE. NEW DECK THICKNESS AT OUTSIDE EDGE IS 5 INCHES AND TOP OF DECK SLOPES UP AT 3% SLOPE. CONTINUE CAST IRON DECK 4 INCHES UNDER NEW BRICK MASONRY WALL AT WATCH LEVEL DECK. SEE DETAILS. SEE SPECIFICATIONS.

REINSTALL ALL INTERIOR PLATES. TREAT AND COAT PER FINISH SYSTEM 3. CONDITION OF THE EMBEDDED METAL IS UNKNOWN. DOCUMENT DURING DISASSEMBLY AND SUBMIT DOCUMENTATION TO EOR THROUGH CO.

IF THE PLATE IS FRACTURED OR IF THERE IS A 10% OR GREATER CROSS SECTION LOSS AT ANY GIVEN CROSS SECTION OF EMBEDDED PORTION OF PLATE, REPLICATED AND REPLACE IN NEW CAST IRON, MATCHING ORIGINAL GEOMETRY. TREAT AND COAT PER FINISH SYSTEM 1.

SHEET NOTES

FINISHING SYSTEM SCHEDULE:

1. FOR NEW STEEL AND CAST IRON THAT CAN BE INSTALLED WITHOUT WELDING, CLEAN TO BRIGHT METAL, HOT DIP GALVANIZE WITHIN 2 HOURS, LIGHTLY BRUSH BLAST THE GALVANIZING, PRIME WITH TWO-PART ALIPHATIC EPOXY PRIMER, INTERMEDIATE COAT WITH HIGH BUILD EPOXY, AND OVERCOAT WITH TWO COATS OF POLYURETHANE. SEE SPECIFICATIONS.
2. FOR ALL NEW STEEL AND CAST IRON THAT MUST BE WELDED, HOT DIP GALVANIZE AND COAT AS ABOVE. WHERE WELDS OCCUR, CLEAN TO BRIGHT METAL FOR THE WELDING. AFTER WELDING, WITHIN 2 HOURS, COAT THE AREA THAT HAS BEEN CLEANED FOR WELDING WITH A ZINC-RICH THREE PART EPOXY PRIMER. INTERMEDIATE COAT WITH HIGH BUILD EPOXY. OVERCOAT WITH A SECOND COAT OF THE SAME. OVERCOAT THIRD AND FOURTH COATS WITH ACRYLIC POLYURETHANE. SEE SPECIFICATIONS.
3. FOR ALL EXISTING CAST IRON OR STEEL THAT IS CURRENTLY PAINTED, CLEAN DOWN TO BRIGHT METAL AND, WITHIN 2 HOURS, COAT WITH A ZINC-RICH THREE PART EPOXY PRIMER. INTERMEDIATE COAT WITH HIGH BUILD EPOXY. OVERCOAT THIRD AND FOURTH COATS WITH ACRYLIC POLYURETHANE. SEE SPECIFICATIONS.
4. AT ALL EXTERIOR SURFACES OF THE LIGHTHOUSE, AT ALL EDGES OF ALL PLATES WHERE THE PLATES JOIN ANOTHER PLATE, CLEAN DOWN TO BRIGHT METAL AND, WITHIN 2 HOURS, COAT WITH A ZINC RICH THREE PART EPOXY PRIMER. SEAL ALL JOINTS WITH A SILICONE SEALANT. INTERMEDIATE COAT WITH HIGH BUILD EPOXY. APPLY THIRD AND FOURTH COATS OF ACRYLIC POLYURETHANE. SEE SPECIFICATIONS.
5. FOR NEW STAINLESS STEEL, PRIME ANTI-CORROSIVE EPOXY PRIMER. INTERMEDIATE COAT WITH HIGH BUILD EPOXY. OVERCOAT WITH TWO FINISH COATS OF POLYURETHANE. SEE SPECIFICATIONS.
6. UNLESS NOTED OTHERWISE, MATCH NEW PAINT COLOR TO EXISTING PAINT COLOR.

1 SECTION LOOKING EAST - 8TH LANDING
SCALE: 3/4" = 1'-0"

9TH LANDING (LANTERN)
148' - 6 1/2"

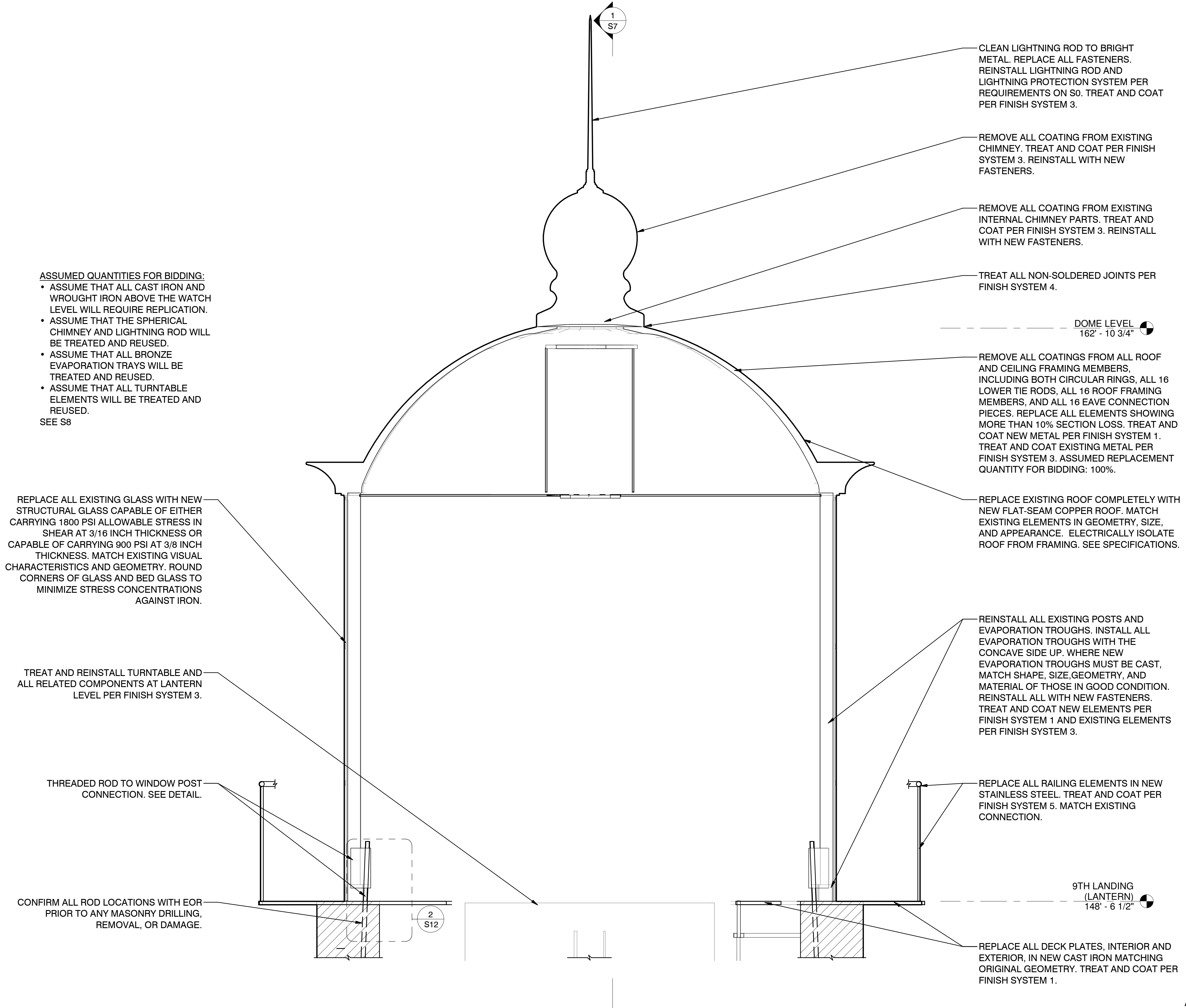
8TH LANDING (WATCH)
141' - 4"



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DATE 7/7/2023		CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS	SHEET 46 OF 59

Craig M. Bennett
NORTH CAROLINA PROFESSIONAL ENGINEER
SEAL 041869
Craig M. Bennett, Inc.
Bennett Preservation Engineering PC
11 REGISTERED AS NORTH CAROLINA
FIRM C-4115

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ASSUMED QUANTITIES FOR BIDDING:

- ASSUME THAT ALL CAST IRON AND WROUGHT IRON ABOVE THE WATCH LEVEL WILL REQUIRE REPLICATION.
- ASSUME THAT THE SPHERICAL CHIMNEY AND LIGHTNING ROD WILL BE TREATED AND REUSED.
- ASSUME THAT ALL BRONZE EVAPORATION TRAYS WILL BE TREATED AND REUSED.
- ASSUME THAT ALL TURNABLE ELEMENTS WILL BE TREATED AND REUSED.

SEE S8

REPLACE ALL EXISTING GLASS WITH NEW STRUCTURAL GLASS CAPABLE OF EITHER CARRYING 1800 PSI ALLOWABLE STRESS IN SHEAR AT 3/16 INCH THICKNESS OR CAPABLE OF CARRYING 900 PSI AT 3/8 INCH THICKNESS. MATCH EXISTING VISUAL CHARACTERISTICS AND GEOMETRY. ROUND CORNERS OF GLASS AND BED GLASS TO MINIMIZE STRESS CONCENTRATIONS AGAINST IRON.

TREAT AND REINSTALL TURNABLE AND ALL RELATED COMPONENTS AT LANTERN LEVEL PER FINISH SYSTEM 3.

THREADED ROD TO WINDOW POST CONNECTION. SEE DETAIL.

CONFIRM ALL ROD LOCATIONS WITH EOR PRIOR TO ANY MASONRY DRILLING, REMOVAL, OR DAMAGE.

CLEAN LIGHTNING ROD TO BRIGHT METAL. REPLACE ALL FASTENERS. REINSTALL LIGHTNING ROD AND LIGHTNING PROTECTION SYSTEM PER REQUIREMENTS ON S0. TREAT AND COAT PER FINISH SYSTEM 3.

REMOVE ALL COATING FROM EXISTING CHIMNEY. TREAT AND COAT PER FINISH SYSTEM 3. REINSTALL WITH NEW FASTENERS.

REMOVE ALL COATING FROM EXISTING INTERNAL CHIMNEY PARTS. TREAT AND COAT PER FINISH SYSTEM 3. REINSTALL WITH NEW FASTENERS.

TREAT ALL NON-SOLDERED JOINTS PER FINISH SYSTEM 4.

--- DOME LEVEL ---
162' - 10 3/4"

REMOVE ALL COATINGS FROM ALL ROOF AND CEILING FRAMING MEMBERS, INCLUDING BOTH CIRCULAR RINGS, ALL 16 LOWER TIE RODS, ALL 16 ROOF FRAMING MEMBERS, AND ALL 16 EAVE CONNECTION PIECES. REPLACE ALL ELEMENTS SHOWING MORE THAN 10% SECTION LOSS. TREAT AND COAT NEW METAL PER FINISH SYSTEM 1. TREAT AND COAT EXISTING METAL PER FINISH SYSTEM 3. ASSUMED REPLACEMENT QUANTITY FOR BIDDING: 100%.

REPLACE EXISTING ROOF COMPLETELY WITH NEW FLAT-SEAM COPPER ROOF. MATCH EXISTING ELEMENTS IN GEOMETRY, SIZE, AND APPEARANCE. ELECTRICALLY ISOLATE ROOF FROM FRAMING. SEE SPECIFICATIONS.

REINSTALL ALL EXISTING POSTS AND EVAPORATION TROUGHS. INSTALL ALL EVAPORATION TROUGHS WITH THE CONCAVE SIDE UP. WHERE NEW EVAPORATION TROUGHS MUST BE CAST, MATCH SHAPE, SIZE, GEOMETRY, AND MATERIAL OF THOSE IN GOOD CONDITION. REINSTALL ALL WITH NEW FASTENERS. TREAT AND COAT NEW ELEMENTS PER FINISH SYSTEM 1 AND EXISTING ELEMENTS PER FINISH SYSTEM 3.

REPLACE ALL RAILING ELEMENTS IN NEW STAINLESS STEEL. TREAT AND COAT PER FINISH SYSTEM 5. MATCH EXISTING CONNECTION.

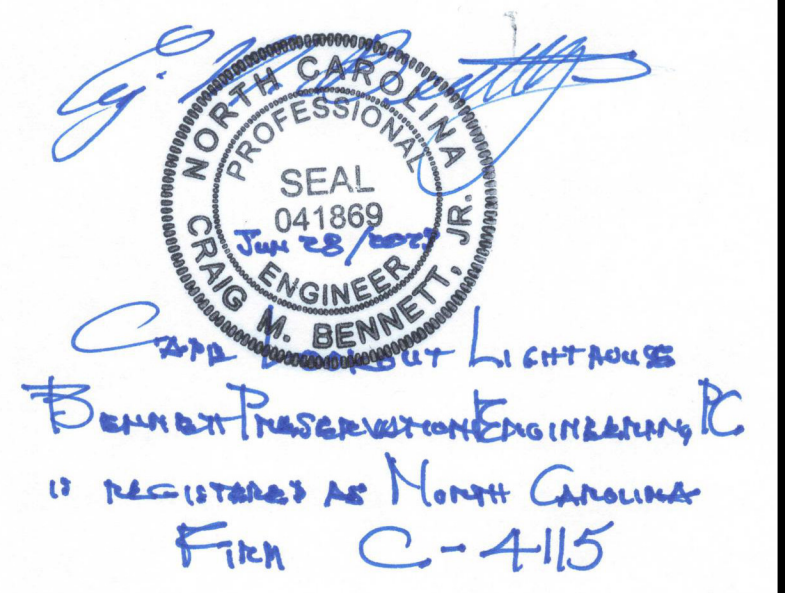
--- 9TH LANDING (LANTERN) ---
148' - 6 1/2"

REPLACE ALL DECK PLATES, INTERIOR AND EXTERIOR, IN NEW CAST IRON MATCHING ORIGINAL GEOMETRY. TREAT AND COAT PER FINISH SYSTEM 1.

SHEET NOTES

FINISHING SYSTEM SCHEDULE:

1. FOR NEW STEEL AND CAST IRON THAT CAN BE INSTALLED WITHOUT WELDING, CLEAN TO BRIGHT METAL, HOT DIP GALVANIZE WITHIN 2 HOURS, LIGHTLY BRUSH BLAST THE GALVANIZING, PRIME WITH TWO-PART ALIPHATIC EPOXY PRIMER, INTERMEDIATE COAT WITH HIGH BUILD EPOXY, AND OVERCOAT WITH TWO COATS OF POLYURETHANE. SEE SPECIFICATIONS.
2. FOR ALL NEW STEEL AND CAST IRON THAT MUST BE WELDED, HOT DIP GALVANIZE AND COAT AS ABOVE. WHERE WELDS OCCUR, CLEAN TO BRIGHT METAL FOR THE WELDING. AFTER WELDING, WITHIN 2 HOURS, COAT THE AREA THAT HAS BEEN CLEANED FOR WELDING WITH A ZINC-RICH THREE PART EPOXY PRIMER. INTERMEDIATE COAT WITH HIGH BUILD EPOXY. OVERCOAT WITH A SECOND COAT OF THE SAME. OVERCOAT THIRD AND FOURTH COATS WITH ACRYLIC POLYURETHANE. SEE SPECIFICATIONS.
3. FOR ALL EXISTING CAST IRON OR STEEL THAT IS CURRENTLY PAINTED, CLEAN DOWN TO BRIGHT METAL AND, WITHIN 2 HOURS, COAT WITH A ZINC-RICH THREE PART EPOXY PRIMER. INTERMEDIATE COAT WITH HIGH BUILD EPOXY. OVERCOAT THIRD AND FOURTH COATS WITH ACRYLIC POLYURETHANE. SEE SPECIFICATIONS.
4. AT ALL EXTERIOR SURFACES OF THE LIGHTHOUSE, AT ALL EDGES OF ALL PLATES WHERE THE PLATES JOIN ANOTHER PLATE, CLEAN DOWN TO BRIGHT METAL AND, WITHIN 2 HOURS, COAT WITH A ZINC RICH THREE PART EPOXY PRIMER. SEAL ALL JOINTS WITH A SILICONE SEALANT. INTERMEDIATE COAT WITH HIGH BUILD EPOXY. APPLY THIRD AND FOURTH COATS OF ACRYLIC POLYURETHANE. SEE SPECIFICATIONS.
5. FOR NEW STAINLESS STEEL, PRIME ANTI-CORROSIVE EPOXY PRIMER. INTERMEDIATE COAT WITH HIGH BUILD EPOXY. OVERCOAT WITH TWO FINISH COATS OF POLYURETHANE. SEE SPECIFICATIONS.
6. UNLESS NOTED OTHERWISE, MATCH NEW PAINT COLOR TO EXISTING PAINT COLOR.

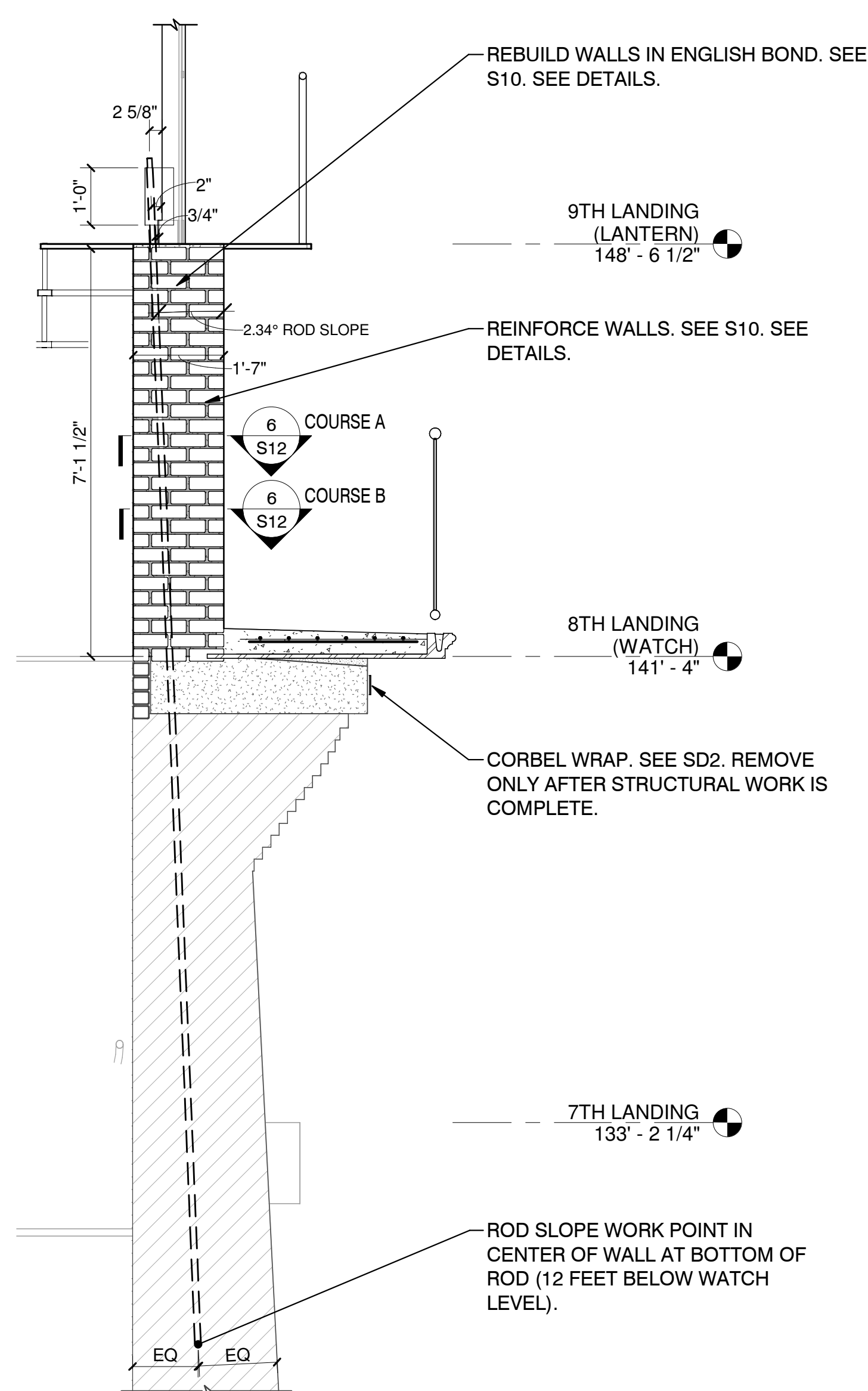


1 SECTION LOOKING EAST - 9TH LANDING
SCALE: 3/4" = 1'-0"

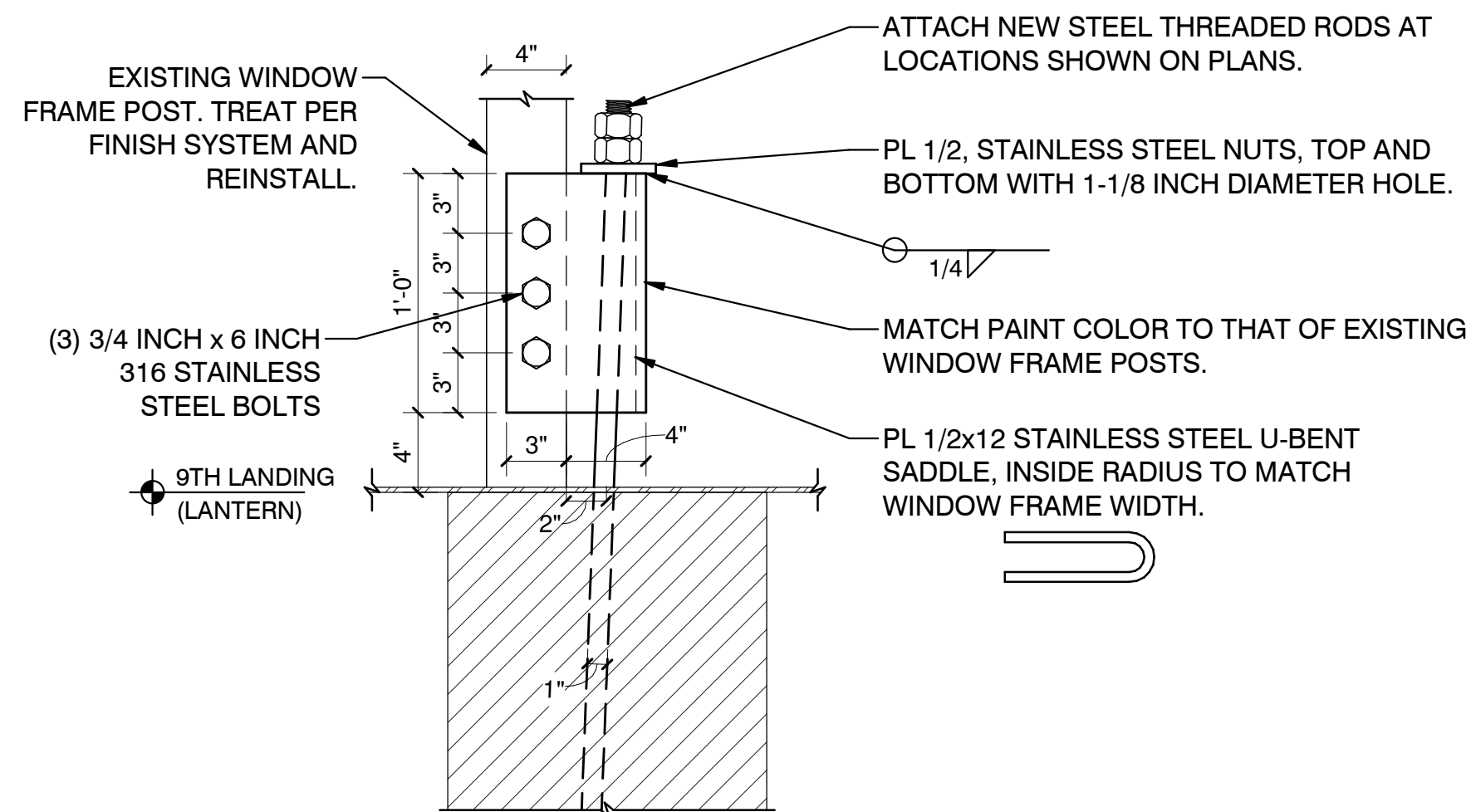


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CADD: ACW	
TECH. REVIEW: CMB	
DATE 7/7/2023	

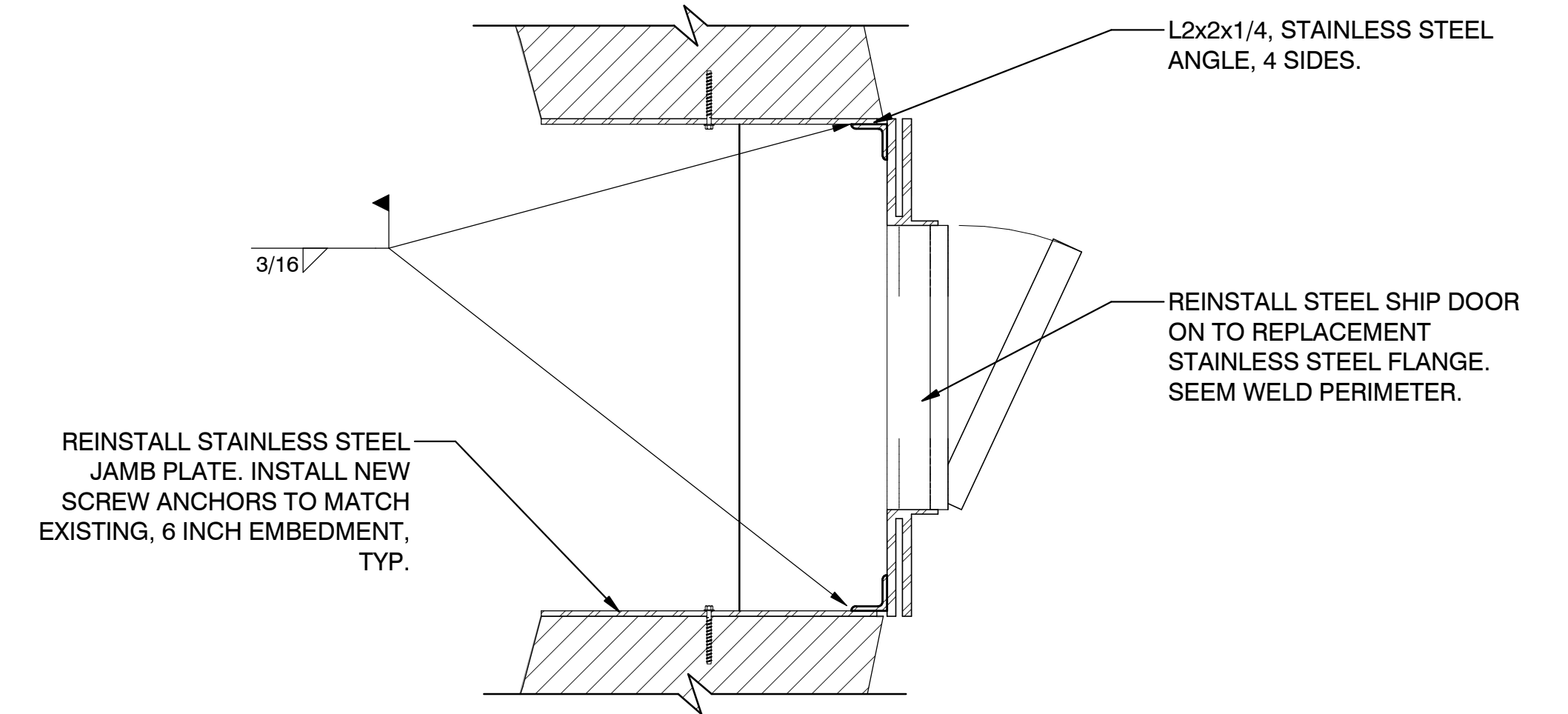
ALL WORK ON THIS PAGE IS ASSOCIATED WITH CLIN 10 UNLESS OTHERWISE SPECIFIED	
TITLE OF SHEET SECTION DETAIL	DRAWING NO. 623
CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS	181663
	PMS/PKG NO. 226858
	SHEET 47 OF 59



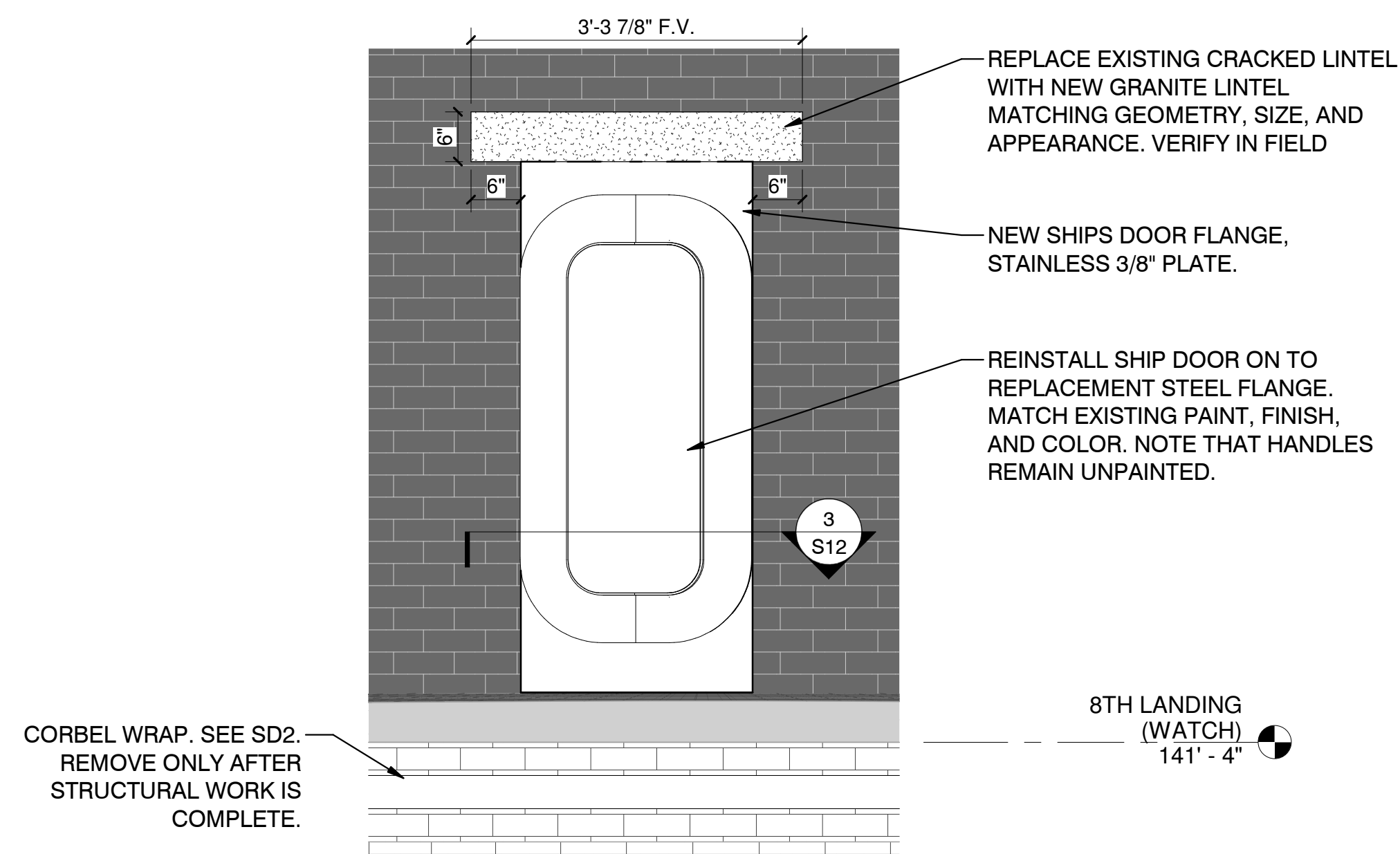
1 TYPICAL SECTION AT ROD
S12 SCALE: 1/2" = 1'-0"



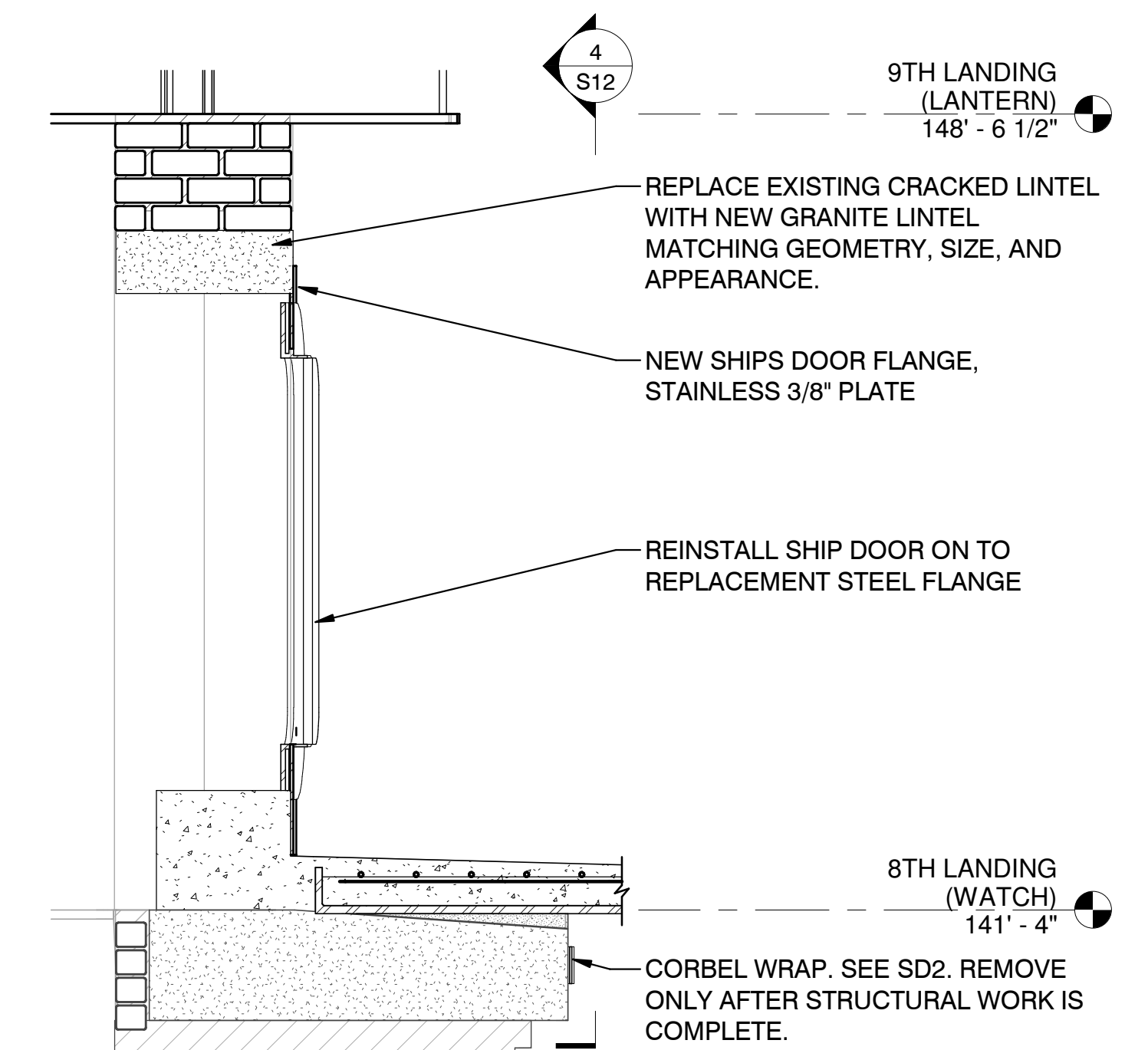
2 TYPICAL TIE ROD DETAIL
S12 SCALE: 1 1/2" = 1'-0"



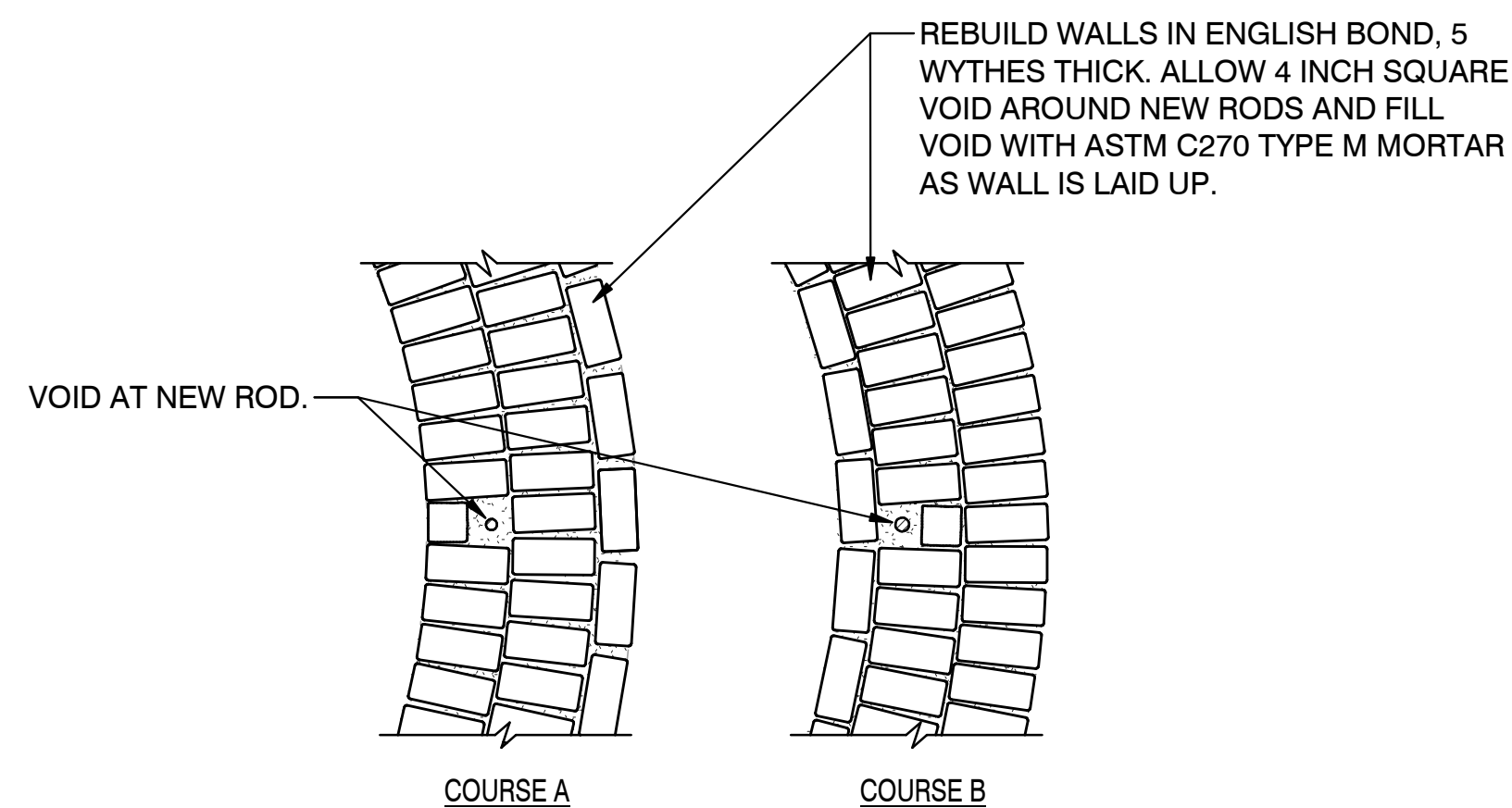
3 WATCH LEVEL DOOR JAMB
S12 SCALE: 1 1/2" = 1'-0"



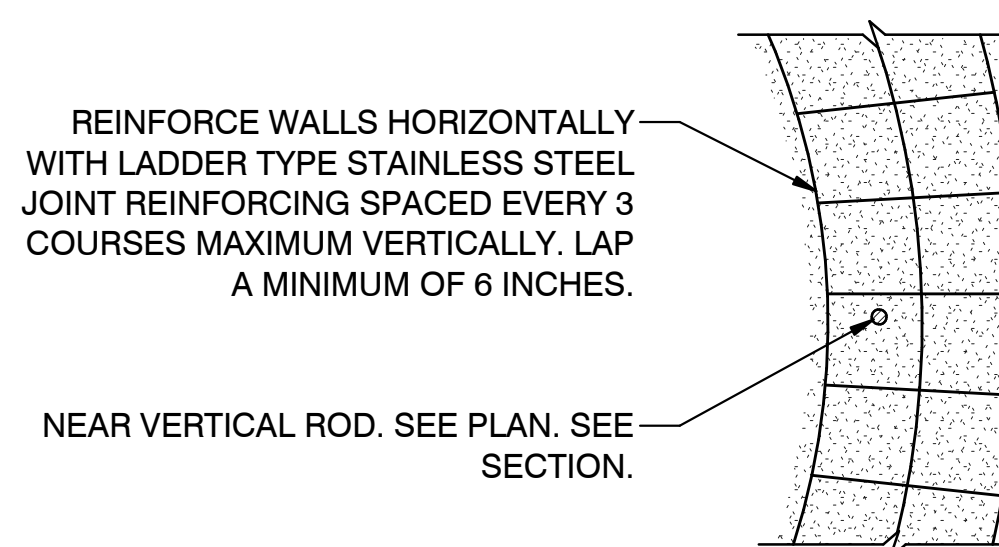
4 WATCH LEVEL DOOR ELEVATION
S12 SCALE: 3/4" = 1'-0"



5 WATCH LEVEL DOOR SECTION DETAIL
S12 SCALE: 3/4" = 1'-0"



6 TYPICAL COURSE PLAN DETAIL
S12 SCALE: 3/4" = 1'-0"

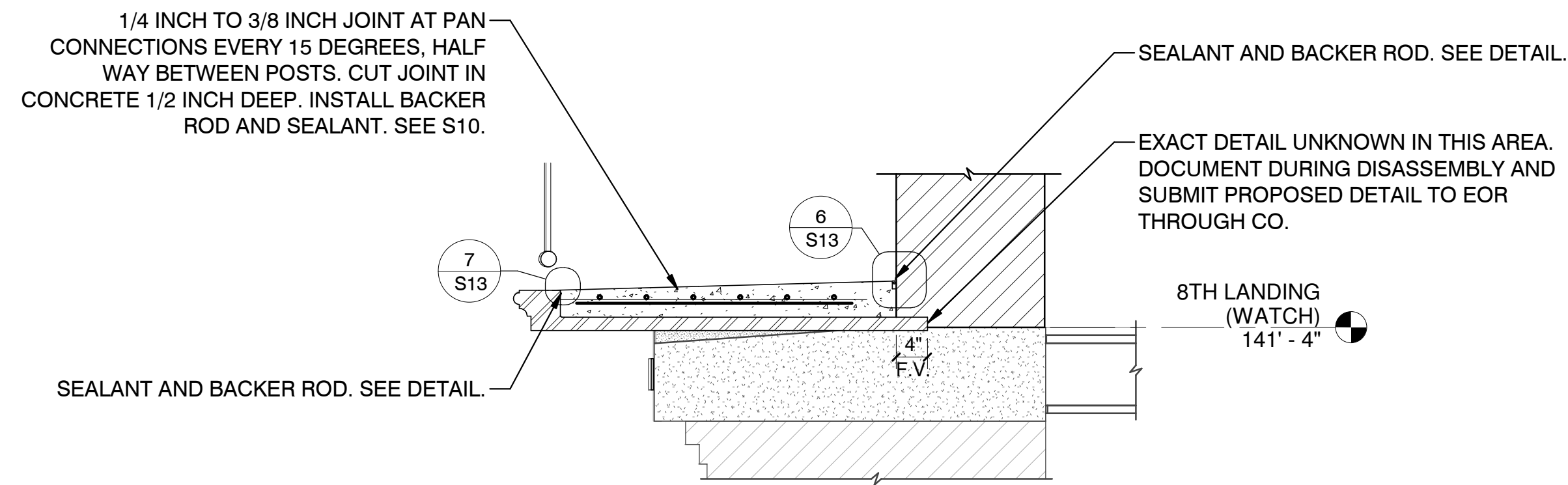


7 NEW WALL REINFORCING PLAN
S12 SCALE: 3/4" = 1'-0"

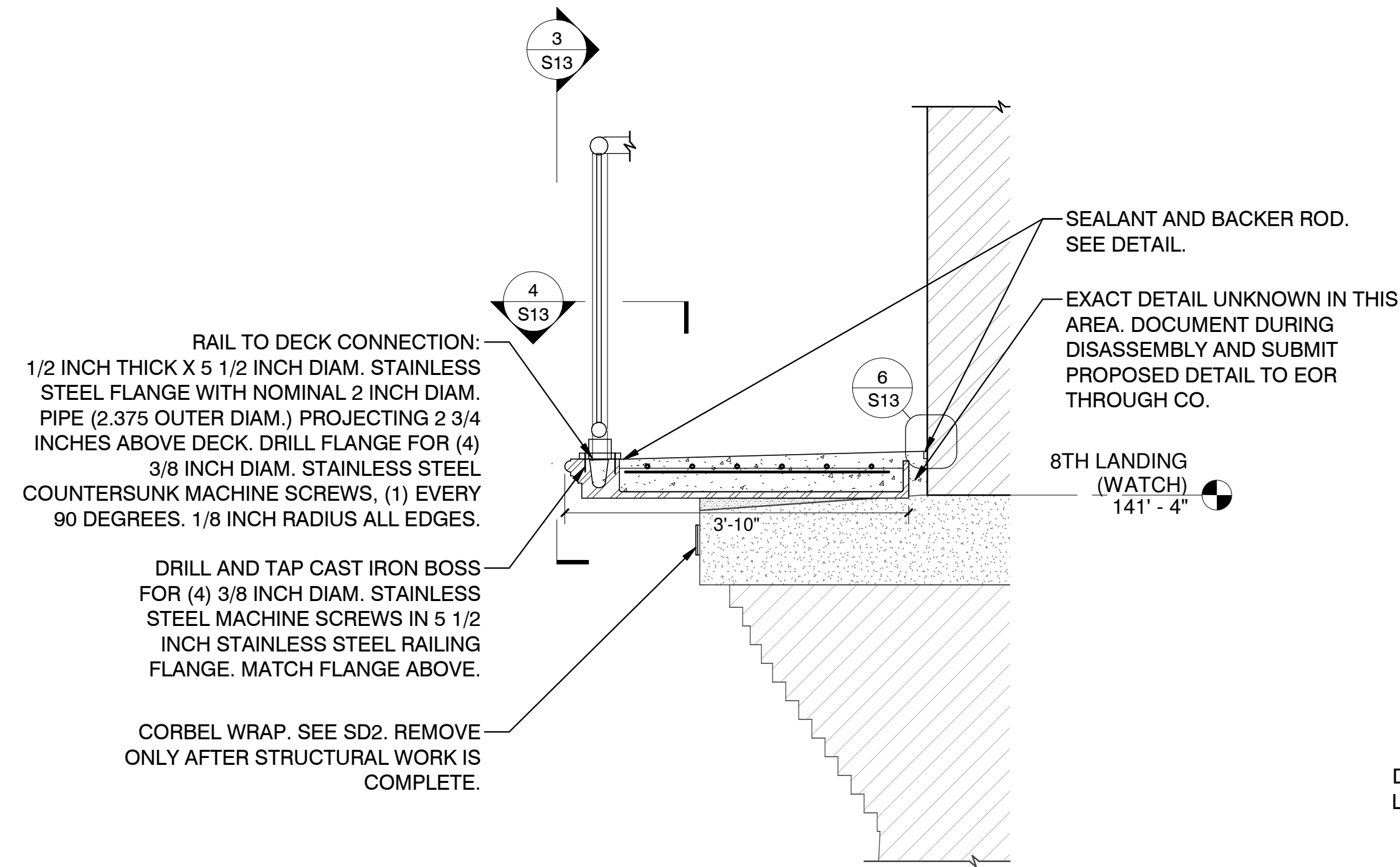


DESIGNED: CMB	SUB SHEET NO. S12	TITLE OF SHEET DETAILS	DRAWING NO. 623
CADD: ACW			181663
TECH. REVIEW: CMB			PMIS/PKG NO. 226858
DATE 7/7/2023		CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS	SHEET 48 OF 59

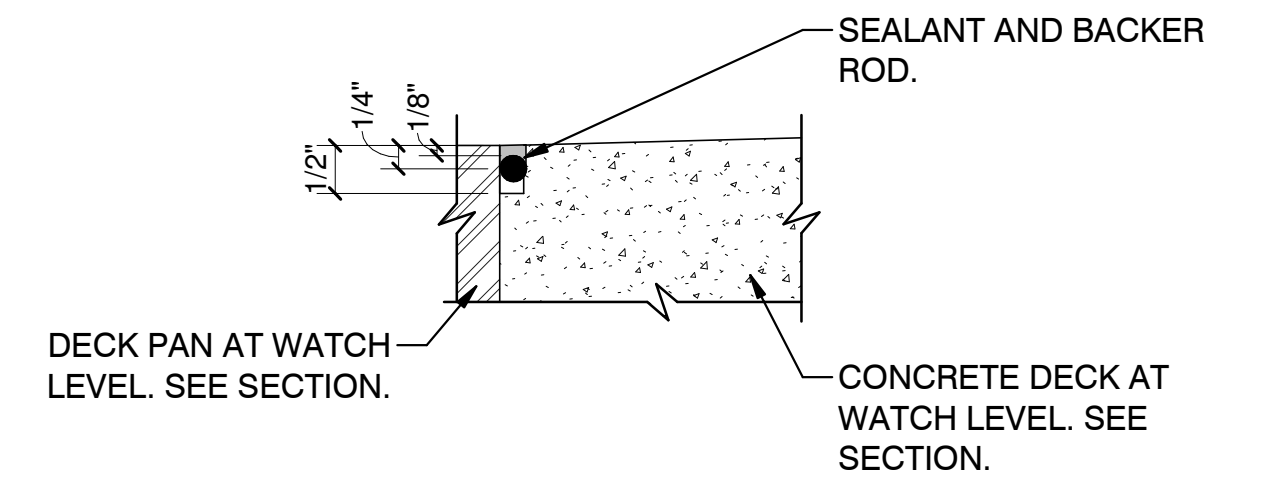
Professional Engineer Seal for Craig M. Bennett, State of North Carolina, License No. 041889. Includes handwritten notes: "CAPE LOOKOUT LIGHTHOUSE", "Bennett Preservation Engineering PC", "REGISTERED AS NORTH CAROLINA FIRM C-4115".



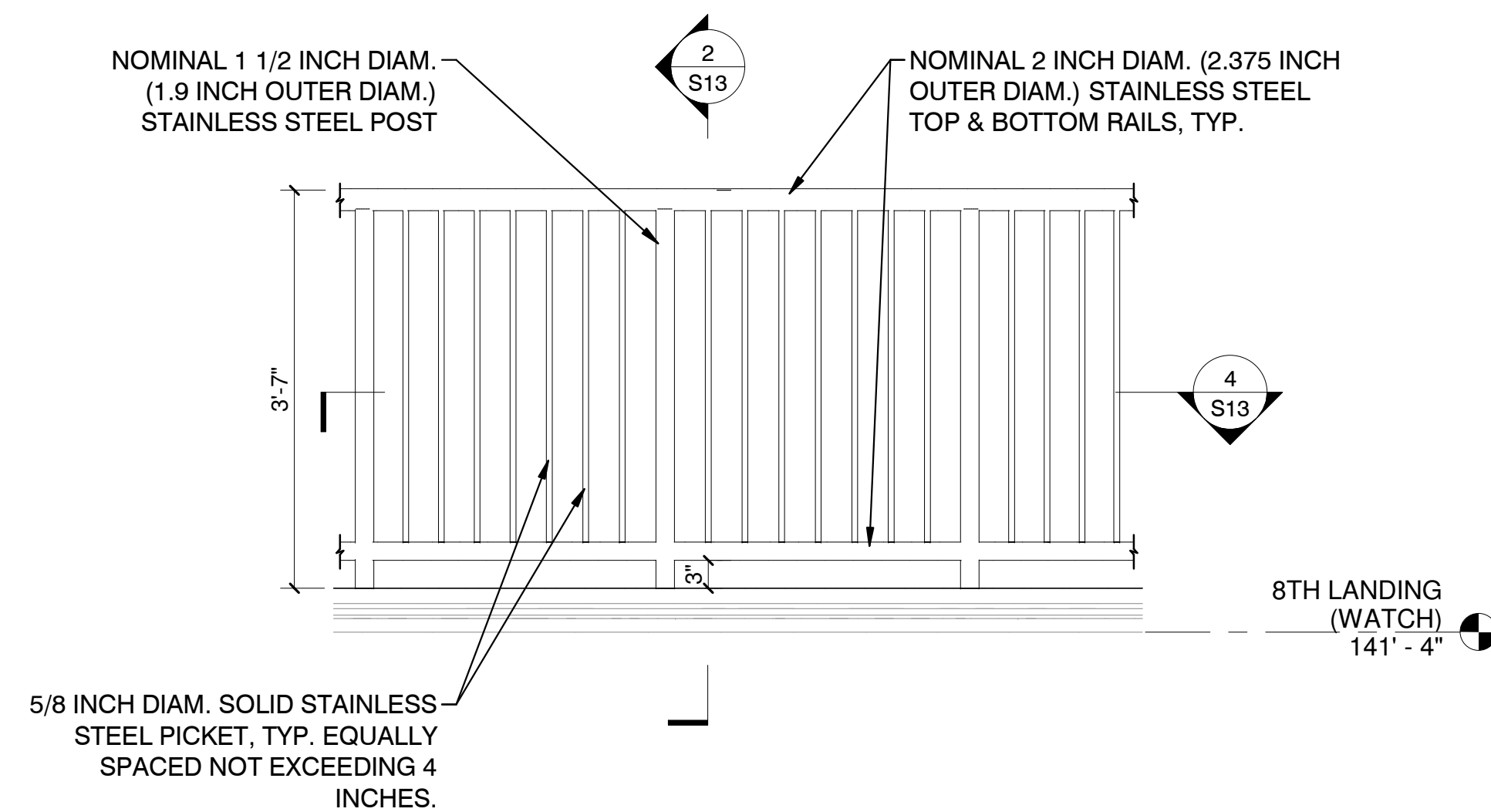
1 TYPICAL WATCH LEVEL DECK DETAIL
S13 SCALE: 3/4" = 1'-0"



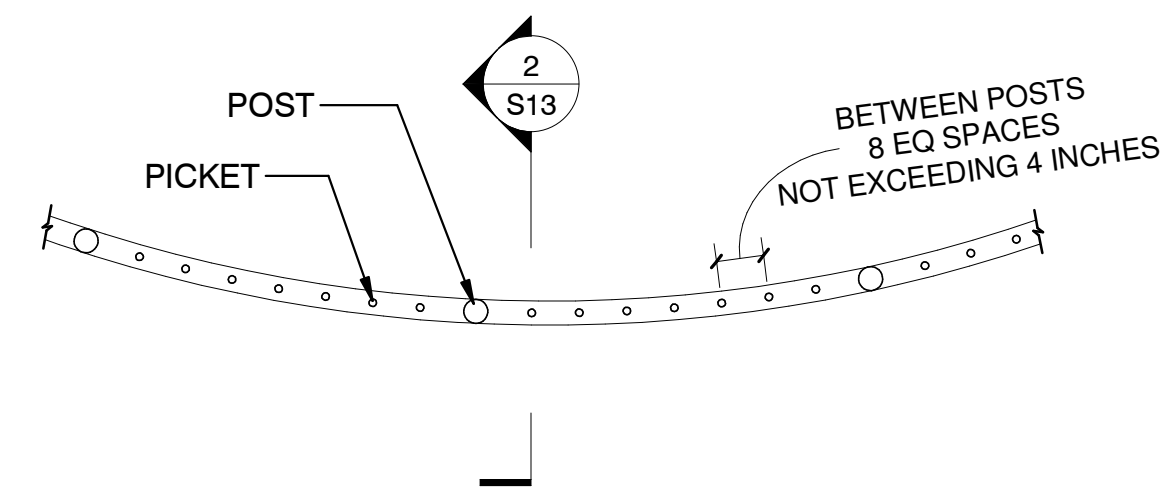
2 TYPICAL WATCH LEVEL RAIL CONNECTION
S13 SCALE: 3/4" = 1'-0"



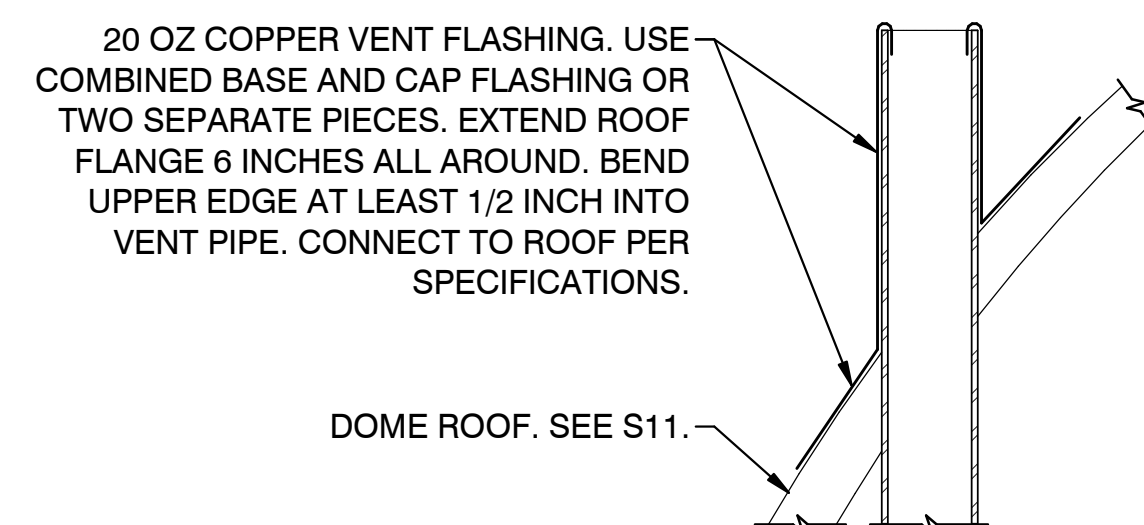
7 SEALANT DETAIL AT EDGE
S13 SCALE: 6" = 1'-0"



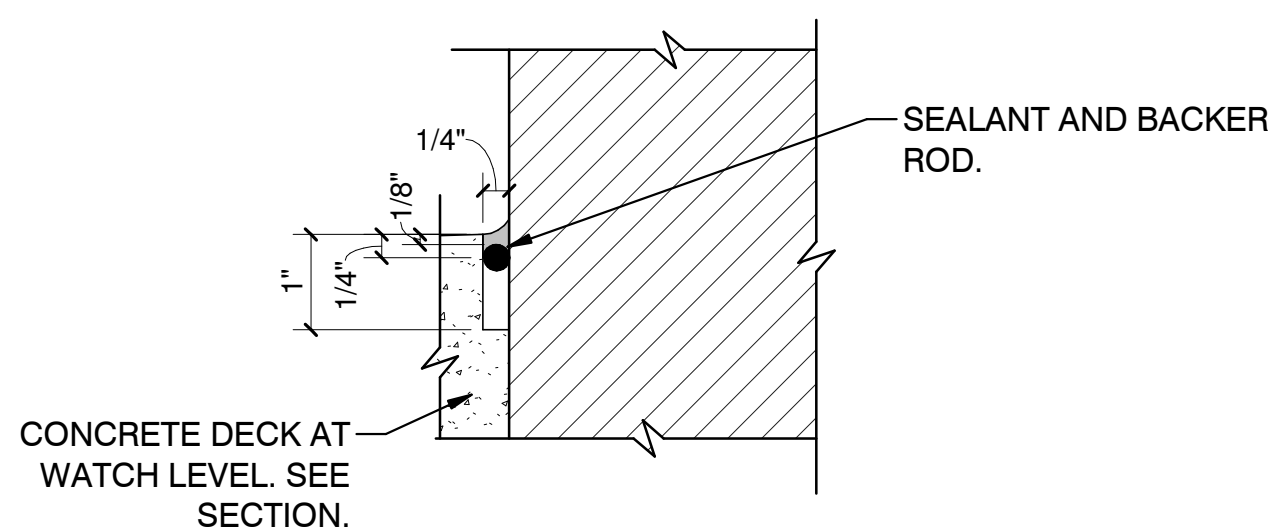
3 TYPICAL WATCH LEVEL NEW RAIL DETAIL
S13 SCALE: 3/4" = 1'-0"



4 TYPICAL WATCH LEVEL NEW RAIL PLAN DETAIL
S13 SCALE: 3/4" = 1'-0"



5 FLASHING DETAIL
S13 SCALE: 1 1/2" = 1'-0"



6 SEALANT DETAIL AT WALL
S13 SCALE: 6" = 1'-0"

Craig M. Bennett
NORTH CAROLINA PROFESSIONAL ENGINEER
SEAL 041869
CRAIG M. BENNETT, P.E.
CAPE LOOKOUT LIGHTHOUSE
BENNETT PRESERVATION ENGINEERING, PC
REGISTERED AS NORTH CAROLINA
FIRM C-4115

ALL WORK ON THIS PAGE IS ASSOCIATED WITH CLIN 10 UNLESS OTHERWISE SPECIFIED

DESIGNED: CMB	SUB SHEET NO. S13	TITLE OF SHEET DETAILS	DRAWING NO. 623
CADD: ACW			181663
TECH. REVIEW: CMB			PMS/PKG NO. 226858
DATE 7/7/2023		CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS	SHEET 49 OF 59

SCALE: As indicated

ELECTRICAL SYSTEMS SEISMIC REQUIREMENTS PER IBC-2015/ASCE 7-16

- A. PER THE 2015 INTERNATIONAL BUILDING CODE, MECHANICAL, PLUMBING AND ELECTRICAL EQUIPMENT AND COMPONENTS, INCLUDING THEIR SUPPORTS AND ATTACHMENTS, SHALL BE DESIGNED FOR SEISMIC FORCES IN ACCORDANCE WITH CHAPTER 13 OF ASCE 7-16.
- B. EXTERIOR EQUIPMENT (INCLUDING ROOF CURBS, RAILS, SUPPORTS) EXPOSED TO WIND SHALL BE DESIGNED AND INSTALLED TO RESIST THE WIND PRESSURES DETERMINED IN ACCORDANCE WITH CHAPTER 26 TO 29 OF ASCE 7-16.
- C. WHERE DESIGN FOR SEISMIC AND WIND LOADS IS REQUIRED, THE MORE DEMANDING FORCE MUST BE USED.
- D. REFERENCE THE STRUCTURAL DRAWINGS FOR SITE SPECIFIC INFORMATION ON SEISMIC DESIGN CATEGORY, WIND SPEEDS, ETC.
- E. USE THE TABLE BELOW TO DETERMINE SEISMIC RESTRAINT REQUIREMENTS FOR EACH COMPONENT.
- F. FOR ALL COMPONENTS REQUIRING SEISMIC RESTRAINT, THE COMPONENT SUPPORTS AND ATTACHMENTS SHALL BE DESIGNED BY A REGISTERED DESIGN PROFESSIONAL REGISTERED IN THE STATE THE JOB IS LOCATED. SUBMITTALS MUST INCLUDE STAMPED AND SIGNED DRAWINGS AND CALCULATIONS.
- G. WHERE SEISMIC RESTRAINT IS REQUIRED, HOUSEKEEPING PADS NEEDED FOR THE INSTALLATION OF EQUIPMENT UNDER THIS CONTRACT MUST BE DESIGNED BY THE SEISMIC ENGINEER. DO NOT POUR ANY HOUSEKEEPING PADS PRIOR TO THE RECEIPT OF THE APPROVED SEISMIC SUBMITTAL.
- H. SEISMIC RESTRAINTS FOR PIPING AND CONDUIT MUST BE SHOWN ON LAYOUT DRAWINGS SHOWING SPECIFIC RESTRAINT LOCATIONS ALONG WITH ACCOMPANYING DETAILS AND CALCULATIONS.

ELECTRICAL COMPONENT IMPORTANCE FACTOR (Ip) DESIGNATION

Ip = 1.0

Ip = 1.5

- ALL ASSOCIATED ELECTRICAL WORK UNLESS NOTED OTHERWISE
- EMERGENCY LIGHTS

SEISMIC DESIGN CATEGORIES D,E,F

COMPONENT IMPORTANCE FACTOR (Ip)

1.0

1.5

COMPONENT IDENTIFICATION	SEISMIC RESTRAINT REQUIREMENT	NOTES	SEISMIC RESTRAINT REQUIREMENT		NOTES
			1.0	1.5	
FLOOR MOUNTED	RESTRAIN ALL	1,2	RESTRAIN ALL	-	
WALL MOUNTED	RESTRAIN ALL	1,2	RESTRAIN ALL	-	
COMPONENT SUPPORTS	RESTRAIN ALL	1	RESTRAIN ALL	-	
SUSPENDED EQUIPMENT	RESTRAIN ALL	1	RESTRAIN ALL	-	
SINGLE CONDUIT	RESTRAIN IF ≥ 2.5"	3	RESTRAIN IF ≥ 2.5"	3	
COMPONENT CERTIFICATION	NOT REQUIRED	-	REQUIRED	4	

NOTES:

- EQUIPMENT 20 LBS. OR LESS IS EXEMPT IF THE COMPONENT IS POSITIVELY ATTACHED TO THE STRUCTURE AND FLEXIBLE CONNECTIONS ARE PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING AND CONDUIT.
- RESTRAINTS ARE NOT REQUIRED IF THE COMPONENT WEIGHS 400 LBS. OR LESS, IS MOUNTED WITH THE CENTER MASS AT 4' OR LESS ABOVE A FLOOR, IS POSITIVELY ATTACHED TO THE STRUCTURE, AND HAS FLEXIBLE CONNECTIONS BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING AND CONDUIT.
- RESTRAINT IS NOT REQUIRED IF THE CONDUIT IS SUPPORTED BY HANGERS AND EACH HANGER IN THE RUN IS 12" IN. OR LESS IN LENGTH FROM THE TOP OF THE PIPE TO THE SUPPORTING STRUCTURE. WHERE PIPES ARE SUPPORTED ON A TRAPEZE, THE TRAPEZE SHALL BE SUPPORTED BY HANGERS HAVING A LENGTH OF 12" IN. OR LESS. WHERE ROD HANGERS ARE USED, THEY SHALL BE EQUIPPED WITH SWIVELS, EYE NUTS OR OTHER DEVICES TO PREVENT BENDING IN THE ROD.
- COMPONENT CERTIFICATION MUST BE SUPPLIED BY THE EQUIPMENT MANUFACTURER AT TIME OF SUBMITTAL FOR REVIEW BY CONTRACTING OFFICER.

GENERAL EXISTING CONDITION NOTES

- AREAS OF WORK EXIST FOR THIS PROJECT WHICH WERE NOT ACCESSIBLE OR HAD LIMITED ACCESS DURING DESIGN. AS SUCH, CONTRACTOR SHALL VERIFY ALL UTILITIES IN AREA OF WORK BEFORE DEMOLITION OF ANY SERVICE. ANY ELECTRICAL COMPONENTS NOT SHOWN SHALL BE IDENTIFIED AND THE CONTRACTING OFFICER SHALL BE NOTIFIED AS SOON AS POSSIBLE. NO ELECTRICAL REWORK SHALL BE COMMENCED WITHOUT COORDINATION OF CONTRACTING OFFICER. WHERE INFORMATION SHOWN ON THESE DRAWINGS CONFLICTS WITH VERIFIED FIELD CONDITIONS, IT SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTING OFFICER.
- REMOVE ALL ABANDONED CONDUIT, WIRE AND CABLES ABOVE THE CEILING IN THE CONSTRUCTION AREA.
- PROVIDE JUNCTION BOX COVERS ON ALL EXISTING JUNCTION BOXES ABOVE THE CEILING IN THE CONSTRUCTION AREA.

GENERAL DEMOLITION NOTES

- ALL PROJECT DEMOLISHED MATERIALS SHALL BE PROPERLY DISPOSED OF BY THE CONTRACTOR.

GENERAL ELECTRICAL NOTES

- BRANCH CIRCUIT WIRING FOR 20A CIRCUITS SHALL BE SIZED PER WIRE SIZING CHART. WHERE CONDUCTOR AND RACEWAY SIZE ARE SHOWN AT HOMERUN, SUCH SIZE SHALL BE USED FOR THE ENTIRE CIRCUIT. EXCEPTION: FINAL CONNECTION TO DEVICES IN OUTLET BOXES IS NOT REQUIRED TO BE LARGER THAN #12.
- PRIOR TO ROUGH-IN, COORDINATE THE LOCATION AND MOUNTING HEIGHT OF ALL WALL MOUNTED DEVICES. IN THE EVENT OF A CONFLICT, NOTIFY THE CONTRACTING OFFICER. MINOR ADJUSTMENTS IN DEVICE LOCATION, SUCH AS 5'-0" IN ANY DIRECTION, SHALL BE DONE AT NO ADDITIONAL COST TO THE OWNER.
- BRANCH CIRCUIT ROUTING SHALL COMPLY WITH DETAILS ON DRAWINGS AND SHALL BE COORDINATED WITH THE WORK OF OTHER TRADES BEFORE AND DURING CONSTRUCTION. COORDINATE THE ROUTING OF UNDERGROUND CONDUCTORS/CONDUITS WITH STRUCTURAL FOOTINGS OF BUILDING. BRANCH CIRCUITS SHALL BE ROUTED OVERHEAD UNLESS PRIOR APPROVAL HAS BEEN GRANTED BY THE CONTRACTING OFFICER.
- THE USE OF MC CABLE IS NOT ALLOWED, UNLESS NOTED OTHERWISE.
- PROVIDE A LISTED EXPANSION/DEFLECTION FITTING FOR ALL CONDUIT CROSSING EXPANSION JOINTS PER NEC 300.4.H. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF EXPANSION JOINTS.
- WHEREVER THE WORD "PROVIDE" IS USED ON THE ELECTRICAL DRAWINGS, IT SHALL BE INFERRED TO MEAN "FURNISH AND INSTALL", UNLESS NOTED OTHERWISE.
- OUTLET BOXES FOR GFCI DEVICES SHALL BE DEEP BOXES (2-1/8" MINIMUM). ALL OTHER OUTLET BOXES SHALL BE STANDARD DEPTH (1-1/2" MINIMUM), UNLESS NOTED OTHERWISE.
- THE ARRANGEMENT, GROUPING, AND ROUTING OF BRANCH CIRCUITS SHALL BE PROVIDED AT THE CONTRACTOR'S DISCRETION IN ACCORDANCE WITH GENERALLY ACCEPTED PRACTICE FOR ELECTRICAL WORK, THE NATIONAL ELECTRICAL CODE REQUIREMENTS, LOCAL ORDINANCES, AND THE FOLLOWING: 1 - A COMMON NEUTRAL MAY BE INSTALLED IN A HOMERUN FOR 2 OR 3 BRANCH CIRCUITS ONLY IF A MEANS TO SIMULTANEOUSLY DISCONNECT ALL UNGROUNDED CONDUCTORS AT THE POINT OF ORIGIN IS PROVIDED PER NEC 210.4.B. 2 - MULTIPLE SINGLE-POLE BRANCH CIRCUITS (UP TO 3 HOTS, 3 NEUTRALS AND 1 GROUND) RATED FOR 30A OR LESS MAY BE PULLED INTO A SINGLE RACEWAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SIZING THE RACEWAYS AND DE-RATING CONDUCTORS PER NEC 310.15. 3 - A GROUND CONDUCTOR SHALL BE PROVIDED IN ALL RACEWAYS UNLESS NOTED OTHERWISE.
- REFER TO THE ARCHITECTURAL DRAWINGS FOR PROJECT PHASING.
- ALL ELECTRICAL EQUIPMENT, DEVICES, AND CONDUIT SHALL BE MOUNTED EXCLUSIVELY TO THE MOTAR BETWEEN BRICKS. FASTENERS & SUPPORTS SHALL NOT BE MOUNTED TO MASONRY.

GENERAL LIGHTNING PROTECTION NOTES

- EXISTING LIGHTNING PROTECTION SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION AS MUCH AS POSSIBLE. KEEP THE EXISTING LIGHTNING PROTECTION DURING THE MODIFICATION AND DECONSTRUCTION OF THE LANTERN. AFTER LANTERN DECONSTRUCTION PROVIDE A NEW U.L. LISTED LIGHTNING PROTECTION SYSTEM. UTILIZING EXISTING LIGHTNING PROTECTION EQUIPMENT IS ALLOWED AS LONG AS THE SYSTEM IS RECERTIFIED AFTER CONSTRUCTION.

GENERAL LIGHTING NOTES

- EXACT LOCATIONS OF LIGHTING FIXTURES SHALL BE DETERMINED IN THE FIELD. DO NOT SUPPORT FIXTURES FROM PIPING. PROVIDE CHAIN OR TRAPEZE-TYPE HANGERS WHERE FIXTURES CANNOT BE MOUNTED DIRECTLY TO CEILING.
- LIGHTING FIXTURE CATALOG NUMBERS ARE INDICATIVE OF THE STYLE OF FIXTURE REQUIRED. CONTRACTOR SHALL PROVIDE FIXTURES WITH THE PROPER TRIM, VOLTAGE AND OPTIONS NECESSARY FOR INSTALLATION. FIXTURES LISTED IN LIGHTING FIXTURE SCHEDULE ARE THE BASIS OF DESIGN, AND IF AN ALTERNATE FIXTURE IS SELECTED FOR THE PROJECT, THE EC SHALL STILL PROVIDE ALL MATERIALS AND LABOR FOR PROPER INSTALLATION OF THE ALTERNATE FIXTURE.
- REGARDLESS OF CATALOG NUMBER INDICATED IN SCHEDULE, PROVIDE BATTERY BACK-UP FOR ALL FIXTURES INDICATED ON THE DRAWINGS TO BE EMERGENCY TYPE.
- REGARDLESS OF HOW NOTED ON PLANS, ALL EMERGENCY LIGHTING FIXTURES INDICATED SHALL BE WIRED SO AS TO BE SWITCHED "ON/OFF" WITHOUT OPERATING THE EMERGENCY BATTERY BACK-UP. EMERGENCY BATTERY BACK-UP SHALL NOT BE ACTIVATED UNLESS A LOSS OF NORMAL BUILDING POWER OCCURS.

ALTERNATE BID PRICING NOTES

- PROVIDE PRICING FOR AN INTRUSION DETECTION SYSTEM. SECURITY CONTACTS FOR LIGHT HOUSE BOTTOM LEVEL DOORS, AND A CAMERA SYSTEM AT BOTTOM LEVEL INTERIOR OF LIGHTHOUSE DOORS. INCLUDE CARD READERS AND ELECTRIC DOOR LATCHES.
- PROVIDE PRICING FOR PROVIDING A HORN AND STROBE FIRE ALARM SYSTEM FOR THE ENTIRETY OF THE LIGHTHOUSE. FIRE ALARM CONTROL PANEL LOCATED ON BOTTOM FLOOR WITH A SMOKE DETECTOR LOCATED ABOVE THE PANEL. PROVIDE ADEQUATE FIRE ALARM HORN AND VISUAL DEVICES RUNNING UP THE INTERIOR LIGHTHOUSE. FIRE ALARM SYSTEM TO HAVE CELLULAR CALLOUT AND ANOTHER FORM OF CALLOUT. ALL FIRE ALARM WIRING TO BE IN CONDUIT.

ELECTRICAL CODES AND STANDARDS (WITH ALL NORTH CAROLINA MODIFICATIONS)

CODE	DESCRIPTION
IBC (2015)	INTERNATIONAL BUILDING CODE
IECC (2015)	INTERNATIONAL ENERGY CONSERVATION CODE
NFPA 70 (2020)	NATIONAL ELECTRICAL CODE

LIGHTING SYMBOL LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
☐	LIGHT FIXTURE (TYPICAL ALL DIMENSIONS)	⌘	LIGHT SWITCH, SINGLE POLE
☐	LIGHT FIXTURE (SHADING INDICATES EMERGENCY, TYPICAL ALL LIGHTING SYMBOLS)	⌘ ^x	LIGHT SWITCH, "X" INDICATES SWITCH TYPE
—○—	STRIP LIGHT FIXTURE	⌘ ^a	LIGHT SWITCH, LOWERCASE LETTER INDICATES SWITCHLEG
☐	LIGHT FIXTURE (TYPICAL ALL DIMENSIONS)	⌘	LIGHTING CONTROL SCHEME CALLOUT (SEE SCHEDULE)

POWER AND TELECOMMUNICATIONS SYMBOL LEGEND

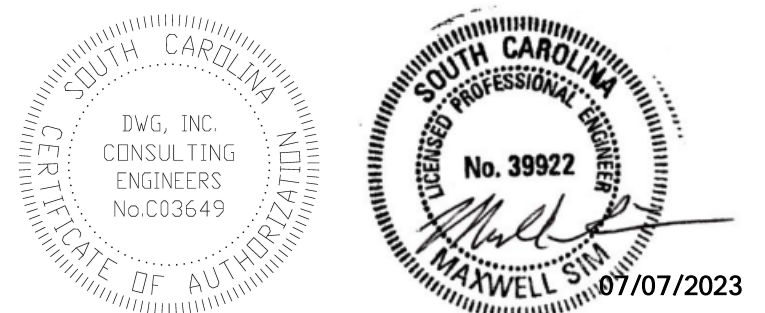
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
⌘ x	GFCI SIMPLEX RECEPTACLE "X" INDICATES RECEPTACLE TYPE	Ⓣ	THERMOSTAT (WALL MOUNTED, ROUGH-IN ONLY)
⌘ x	GFCI DUPLEX RECEPTACLE "X" INDICATES RECEPTACLE TYPE	Ⓜ	HUMIDISTAT (WALL MOUNTED, ROUGH-IN ONLY)
⌘ x	JUNCTION BOX (WALL MOUNTED) "X" INDICATES JUNCTION BOX TYPE	SPD	SURGE PROTECTION DEVICE
⌘ ^x	CONTROL SWITCH, "X" INDICATES SWITCH TYPE	☐	DISCONNECT SWITCH (FUSIBLE OR NON-FUSIBLE)
Ⓜ	MOTOR CONNECTION (AS NOTED)	■	PANELBOARD - BRANCH, SURFACE MOUNTED
■	PANELBOARD - DISTRIBUTION, SURFACE MOUNTED		

ELECTRICAL ABBREVIATIONS

ABBR	DESCRIPTION
(E)	EXISTING
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
BFG	BELOW FINISHED GRADE
BOD	BOTTOM OF DEVICE
EF	EXHAUST FAN
FDS	FUSED DISCONNECT SWITCH
GFCI	GROUND-FAULT CIRCUIT-INTERRUPTING
GF	GROUND-FAULT INTERRUPTING
GP	GENERAL PURPOSE
J-BOX	JUNCTION BOX
KW	KILOWATTS
NEC	NATIONAL ELECTRICAL CODE
NFDS	NON-FUSED DISCONNECT SWITCH
OC	ON CENTER
SPD	SURGE PROTECTION DEVICE
UNO	UNLESS NOTED OTHERWISE
W/	WITH
WP	WEATHERPROOF
RECEPTACLE	DESCRIPTION
WP	WEATHERPROOF

WIRE SIZING CHART 20 AMP BRANCH CIRCUITS

DISTANCE, 120V	MINIMUM WIRE SIZE
0 - 90 FEET	#12 AWG
90 - 230 FEET	#10 AWG
230 - 446 FEET	#8 AWG



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DESIGNED: WDB	SUB SHEET NO. E1	TITLE OF SHEET ELECTRICAL NOTES AND LEGENDS	DRAWING NO. 623
CADD: WDB			181663
TECH. REVIEW: MHS			PMIS/PKG NO. 226858
DATE: 7/7/2023		CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS	SHEET 50 OF 59

LIGHT FIXTURE SCHEDULE

FIXTURE SPECIFICATIONS				LAMPING			ELECTRICAL		FIXTURE MOUNTING
TYPE	FIXTURE DESCRIPTION	MANUFACTURER	CAT. #	LAMP TYPE	TOTAL LUMENS	COLOR TEMP.	LOAD (VA)	VOLTS	
J1	4' BLACK LED STRIP	ILLUMINA	BS100LED 4 HT VLO WT40 120/277 BLK	LED	4000	4000 K	30	120 V	SURFACE
J1E	4' BLACK LED STRIP W/ BATTERY BACKUP	ILLUMINA	BS100LED 4 SA VLO WT40 120/277 BLK	LED	4000	4000 K	30	120 V	SURFACE
J2E	2' BLACK LED STRIP W/ BATTERY BACKUP	ILLUMINA	BS100LED 2 SA LO WT40 120/277 BLK	LED	3000	4000 K	30	120 V	SURFACE

LIGHT FIXTURE SCHEDULE NOTES:

1. FIXTURES SHALL BE BLACK
2. FIXTURES SHALL BE IP66 RATED FOR WET AND DAMP LOCATIONS.

EQUIPMENT CONNECTION SCHEDULE

UNIT I.D.	VOLTS	# OF POLES	LOAD (VA)	BRANCH CIRCUIT WIRING	DISCONNECT / STARTER	NOTES
EXHAUST FANS						
EF-1	120 V	1	37	2 # 12 & 1 # 12 G IN 3/4" CONDUIT	THERMOSTAT AND CONTACTOR CONTROLLED GFCI SIMPLEX RECEPTACLE	CLIN 12
EF-2	120 V	1	37	2 # 12 & 1 # 12 G IN 3/4" CONDUIT	THERMOSTAT AND CONTACTOR CONTROLLED GFCI SIMPLEX RECEPTACLE	CLIN 12
EF-3	120 V	1	37	2 # 12 & 1 # 12 G IN 3/4" CONDUIT	THERMOSTAT AND CONTACTOR CONTROLLED GFCI SIMPLEX RECEPTACLE	CLIN 12
EF-4	120 V	1	37	2 # 12 & 1 # 12 G IN 3/4" CONDUIT	THERMOSTAT AND CONTACTOR CONTROLLED GFCI SIMPLEX RECEPTACLE	CLIN 12
EF-5	120 V	1	37	2 # 12 & 1 # 12 G IN 3/4" CONDUIT	THERMOSTAT AND CONTACTOR CONTROLLED GFCI SIMPLEX RECEPTACLE	CLIN 12
EF-6	120 V	1	264	2 # 12 & 1 # 12 G IN 3/4" CONDUIT	DISCONNECT PROVIDED WITH UNIT	CLIN 12

ELECTRICAL LOAD SUMMARY:

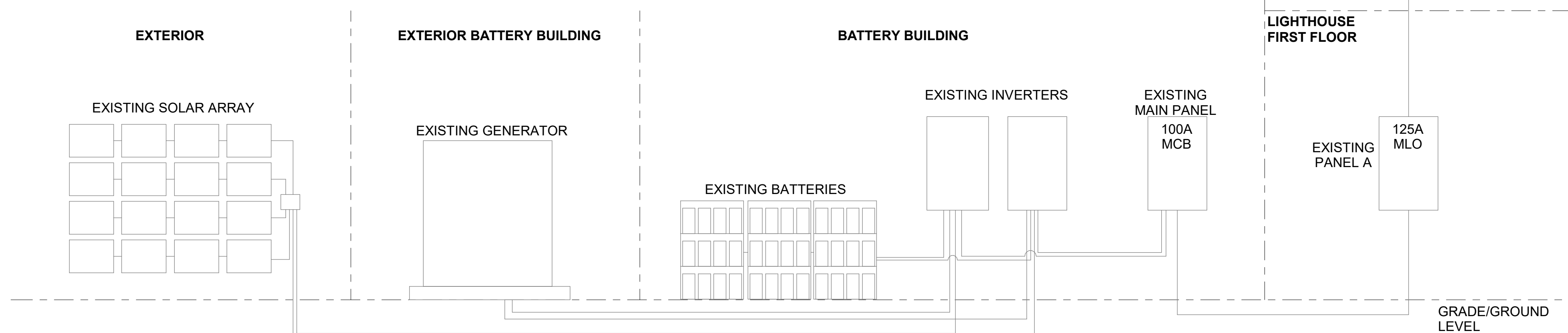
NEW LOAD ADDED TO THE LIGHTHOUSE:
 NEW LIGHTING: 810VA
 NEW FANS: 222+264VA

REMOVED LOAD DURING DEMOLITION
 DEMOLISHED LIGHTING: ~200VA

NET CHANGE IN LOAD
 1096VA OR LESS THAN 10 AMPS AT 120V
 OR LESS THAN 5 AMPS ON THE 240V
 FEEDER TO THE LIGHTHOUSE.

ELECTRICAL SERVICE GENERAL NOTES:

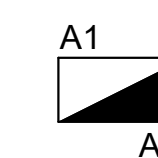
1. ELECTRICAL DISTRIBUTION SYSTEM IS EXISTING TO REMAIN. RISER DIAGRAM SHOWN FOR REFERENCE ONLY. NO NEW WORK TO ELECTRICAL DISTRIBUTION. SCOPE OF WORK ONLY COVERS BRANCH CIRCUITS.



1
E2 EXISTING RISER DIAGRAM
NOT TO SCALE

LIGHT FIXTURE PLAN KEY

SHADING INDICATES EMERGENCY FIXTURE [POWERED BY GENERATOR] [SUPPLIED WITH EMERGENCY BATTERY BACKUP].



A1 = UPPERCASE LETTER / NUMBER INDICATE FIXTURE TYPE
 d = LOWERCASE LETTER INDICATES SWITCH IDENTIFICATION
 A:2 = DESIGNATES PANEL NAME: CIRCUIT NUMBER

ALL EMERGENCY FIXTURES INDICATED ON PLAN CONTAIN EMERGENCY BATTERY BACKUP. ALL EMERGENCY BACKUP FIXTURES REQUIRE AN EXTRA CONSTANT POWER CONDUCTOR TO BE CONNECTED TO THE EMERGENCY BACKUP FOR CHARGING. THIS CONDUCTOR MUST NOT BE CONTROLLED BY ANY LIGHTING SYSTEM OR HAVE POWER INTERRUPTED AT ANY TIME.

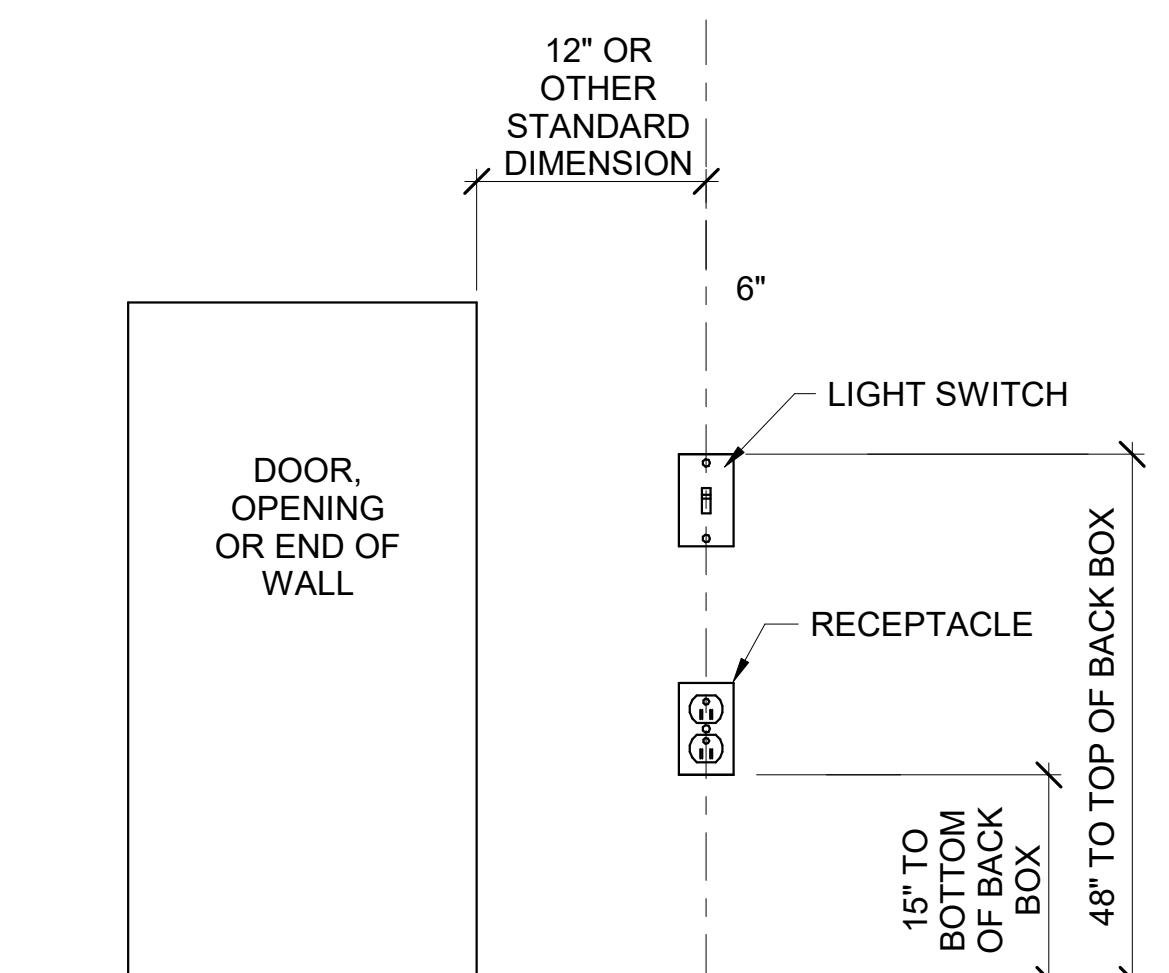
LIGHT CONTROL SCHEME

LIGHTING CONTROL SYMBOL CORRELATES WITH DESIRED CONTROL SCHEME AS INDICATED IN THE LIGHTING CONTROL SCHEME SCHEDULE.



LIGHTING CONTROL SCHEME SCHEDULE

CONTROL SCHEME	CONTROL TYPE DESCRIPTION
1	MANUAL ON/OFF BY WALL MOUNTED SWITCH.



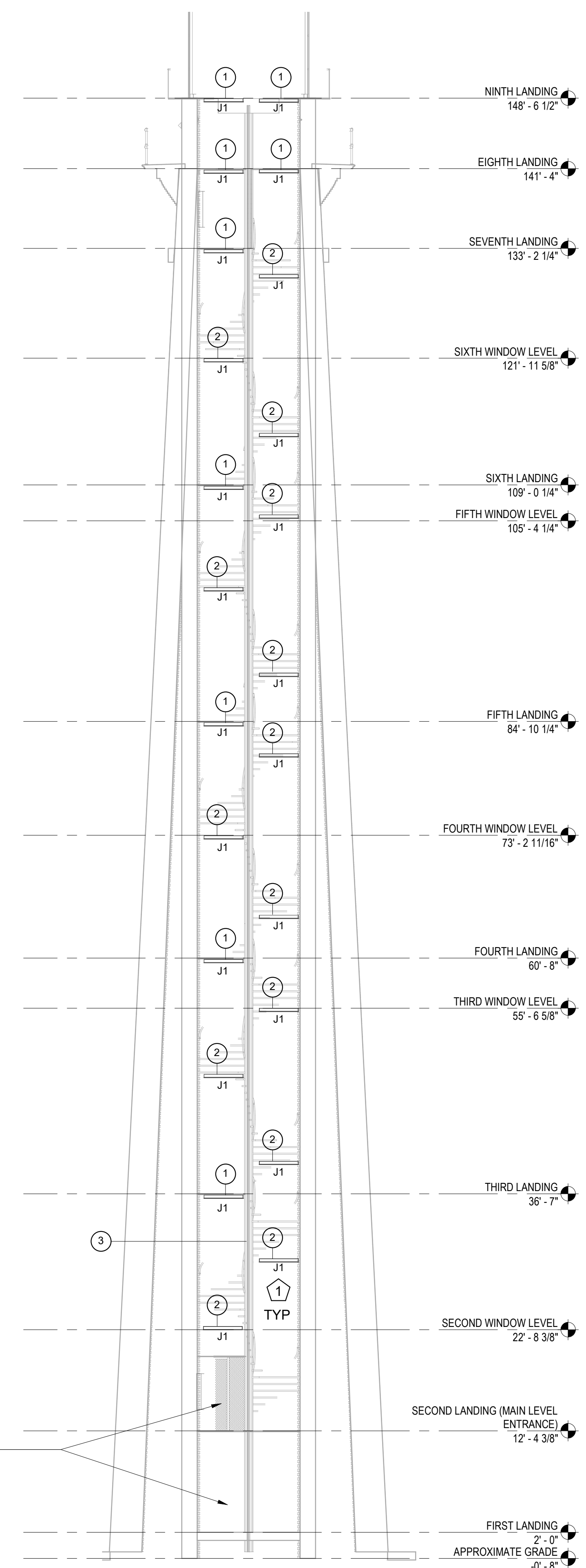
2
E2 DEVICE ALIGNMENT DETAIL
NOT TO SCALE



ALL ELECTRICAL WORK IS ASSOCIATED WITH CLIN 11 UNLESS OTHERWISE SPECIFIED

DESIGNED: WDB	SUB SHEET NO. E2	TITLE OF SHEET ELECTRICAL RISER DIAGRAM AND SCHEDULES	DRAWING NO. 623
CADD: WDB			181663
TECH. REVIEW: MHS			PMIS/PKG NO. 226858
DATE: 7/7/2023		CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS	SHEET 51 OF 59

7/7/2023 9:33:27 AM Autodesk Docs://22602 NPS CALO Lighthouse/21015-00 NPS Cape Lookout Lighthouse MEP_2023.rvt



SEE FIRST AND SECOND FLOOR PLANS FOR ADDITIONAL LIGHT FIXTURES THAT ARE NOT SHOWN IN SECTION

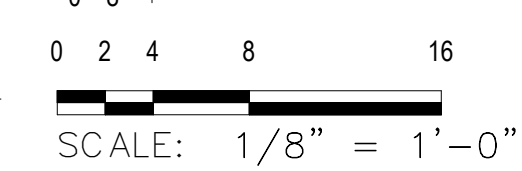
GENERAL NOTES:

1. EXISTING INTERIOR LIGHT FIXTURES, BRANCH CIRCUIT AND LIGHTING CONDUIT SHALL BE DEMOLISHED AND REPLACED IN FULL.
2. NEW CONDUIT SHALL BE ROUTED VERTICALLY AND EFFICIENTLY ALONG INTERIOR MASONRY.
3. NEW CONDUIT SHALL BE PVC. HARDWARE SHALL BE STAINLESS STEEL.

KEY NOTES:

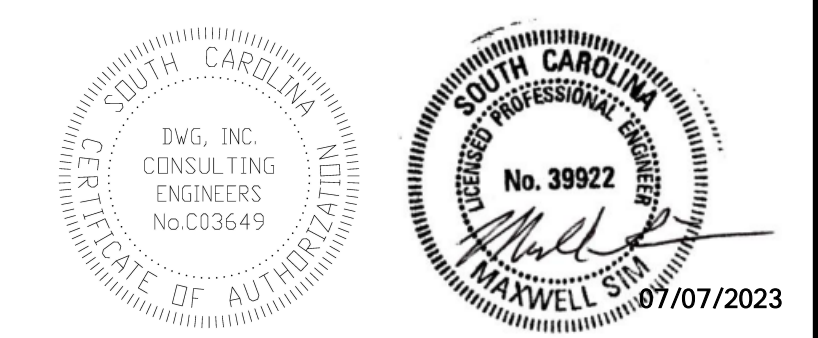
- ① LIGHT FIXTURE MOUNTED TO UNDERSIDE OF LANDING.
- ② LIGHT FIXTURE MOUNTED TO UNDERSIDE OF STAIR FOR EVERY HALF ROTATION OF THE SPIRAL STAIR.
- ③ SCOPE OF WORK IS ONLY IN STAIRWELL AREA. CENTER COLUMN CABLES TO THE BEACON ARE NOT IN SCOPE AND SHALL BE EXISTING TO REMAIN.

1
E3 ELECTRICAL LIGHTING SECTION
SCALE: 1/8" = 1'-0"

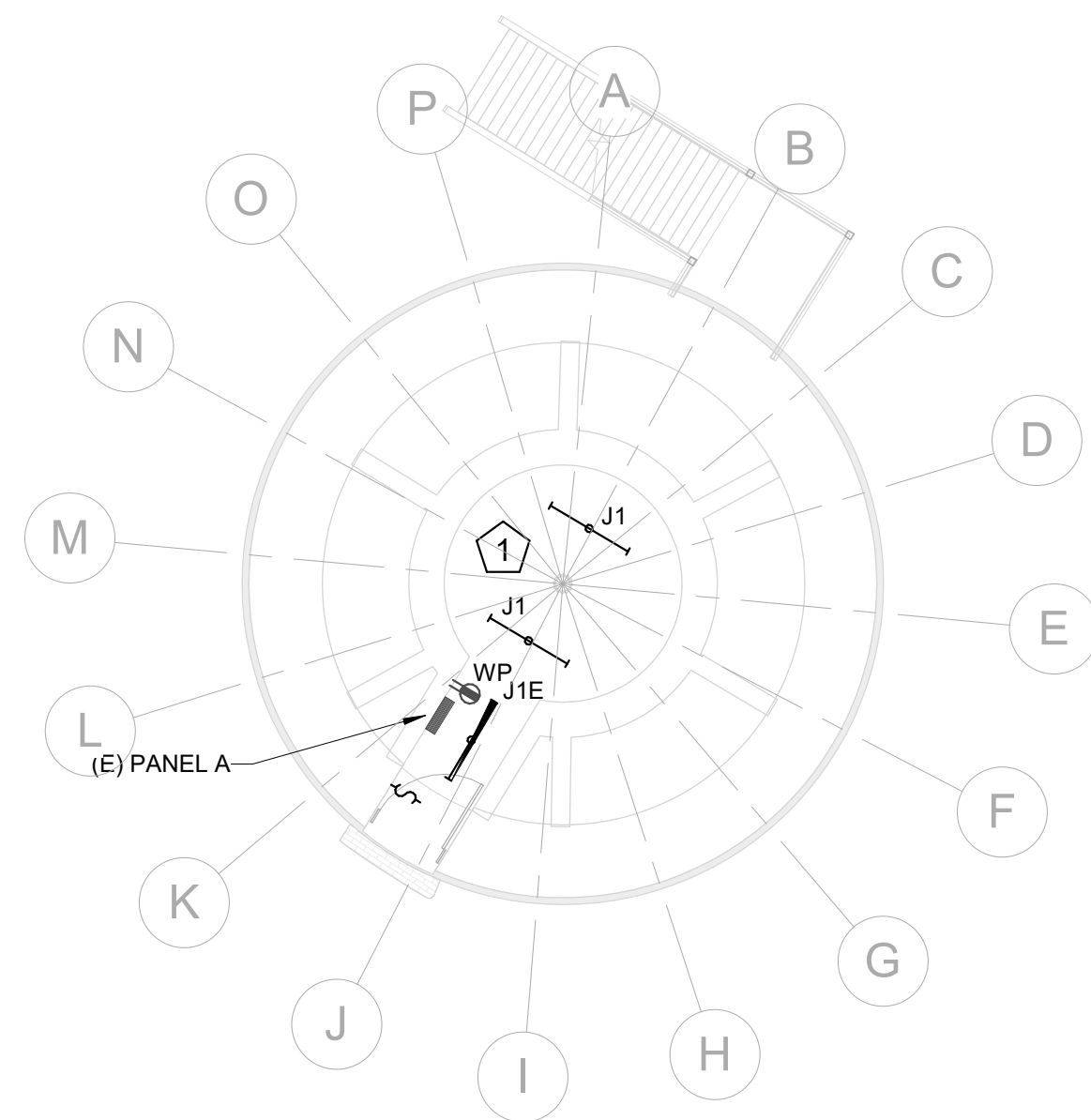


ALL ELECTRICAL WORK IS ASSOCIATED WITH CLIN 11 UNLESS OTHERWISE SPECIFIED

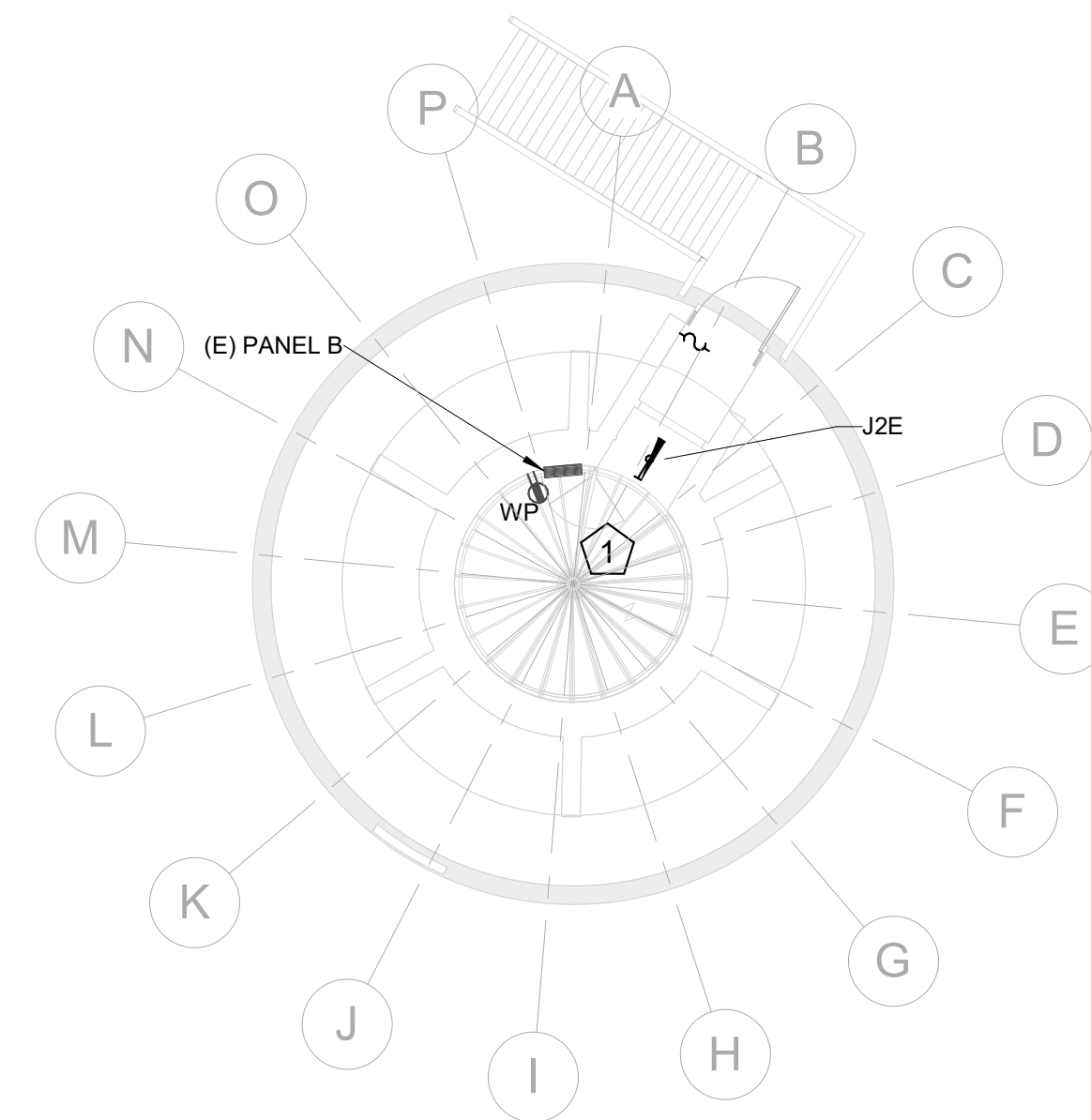
DESIGNED: WDB	SUB SHEET NO. E3	TITLE OF SHEET ELECTRICAL LIGHTING SECTION	DRAWING NO. 623
CADD: WDB			181663
TECH. REVIEW: MHS			PMIS/PKG NO. 226858
DATE: 7/7/2023		CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS	SHEET 52 OF 59



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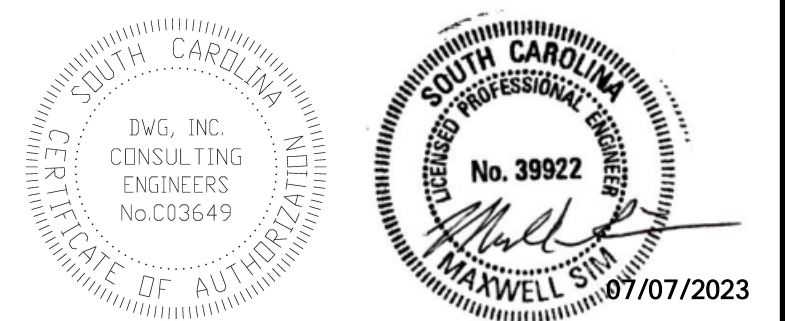
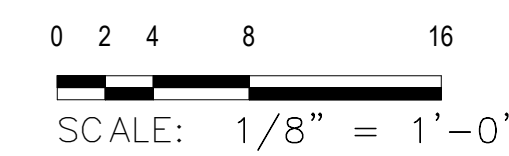
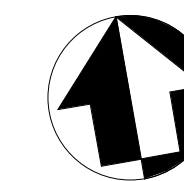
1 FIRST LANDING ELECTRICAL PLAN
E4 SCALE: 1/8" = 1'-0"



2 SECOND LANDING ELECTRICAL PLAN
E4 SCALE: 1/8" = 1'-0"

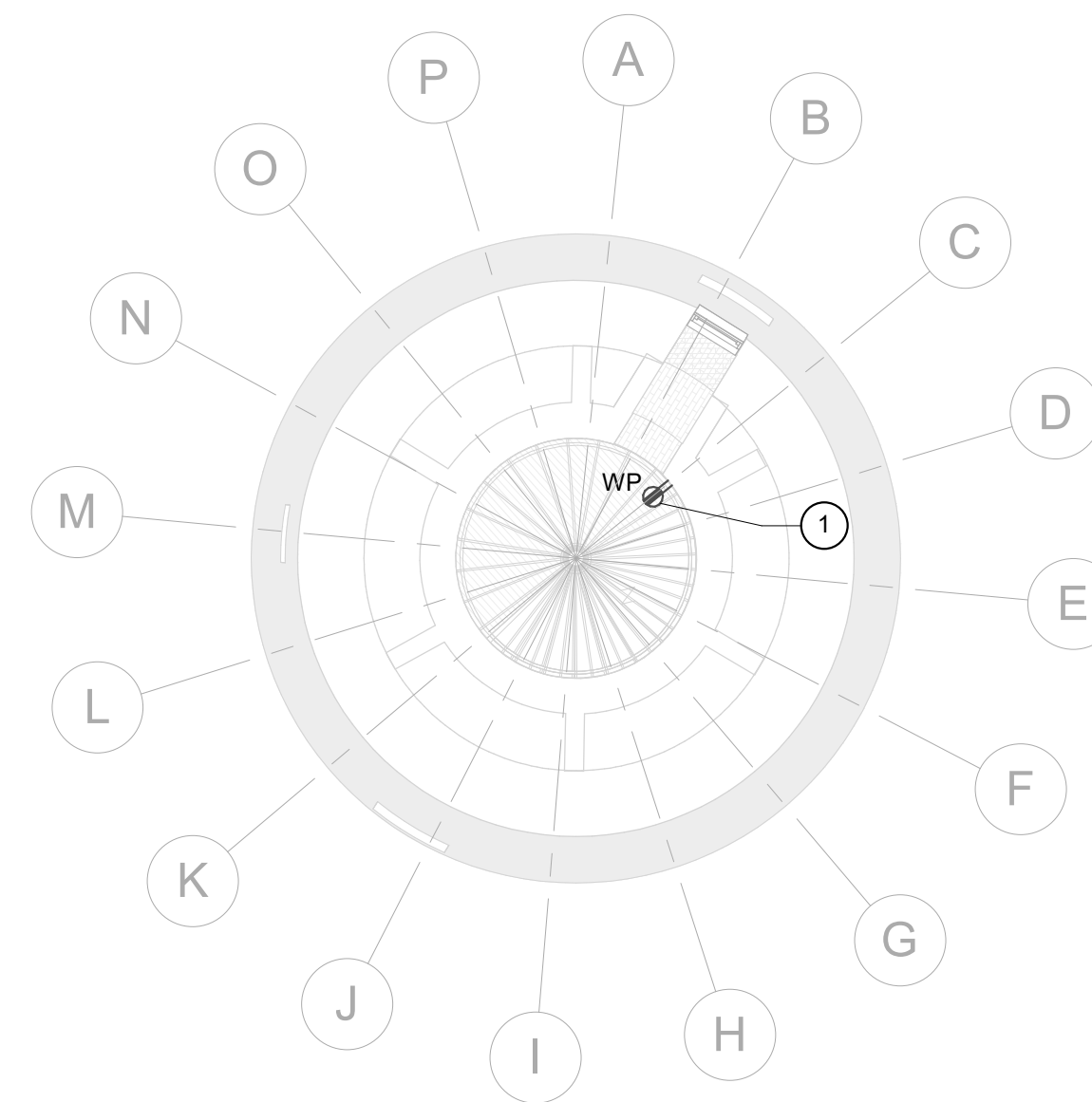
GENERAL NOTES:

1. EXISTING BRANCH CIRCUIT AND LIGHTING CONDUIT SHALL BE DEMOLISHED AND REPLACED IN FULL.
2. NEW CONDUIT SHALL BE ROUTED VERTICALLY AND EFFICIENTLY ALONG INTERIOR MASONRY.
3. NEW CONDUIT SHALL BE PVC. HARDWARE SHALL BE STAINLESS STEEL.



ALL ELECTRICAL WORK IS ASSOCIATED WITH CLIN 11 UNLESS OTHERWISE SPECIFIED

DESIGNED: WDB	SUB SHEET NO. E4	TITLE OF SHEET FIRST & SECOND FLOOR ELECTRICAL PLAN	DRAWING NO. 623
CADD: WDB		CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS	181663
TECH. REVIEW: MHS			PMIS/PKG NO. 226858
DATE: 7/7/2023			SHEET 53 OF 59



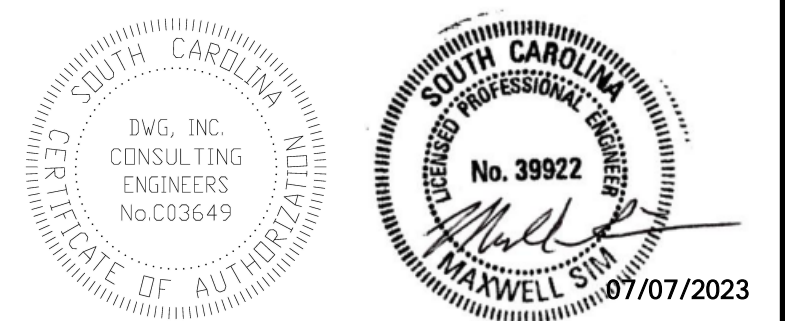
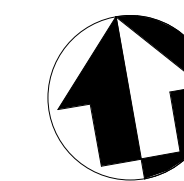
GENERAL NOTES:

1. EXISTING BRANCH CIRCUIT AND LIGHTING CONDUIT SHALL BE DEMOLISHED AND REPLACED IN FULL.
2. NEW CONDUIT SHALL BE ROUTED VERTICALLY AND EFFICIENTLY ALONG INTERIOR MASONRY.
3. CONVENIENCE RECEPTACLES SHALL BE MOUNTED TO UNDERSIDE OF STAIR STRUCTURE, ACCESSIBLE OVERHEAD.
4. NEW CONDUIT SHALL BE PVC. HARDWARE SHALL BE STAINLESS STEEL.
5. SEE ELECTRICAL SECTION THROUGH LIGHTHOUSE FOR LIGHT FIXTURE LOCATIONS ON THESE FLOORS.

KEY NOTES:

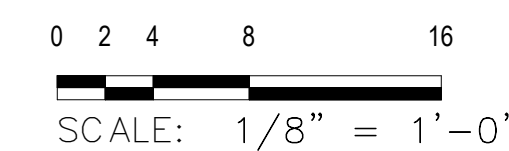
- ① WIRE TO CIRCUIT PREVIOUSLY SERVING GENERAL RECEPTACLES PRIOR TO DEMOLITION

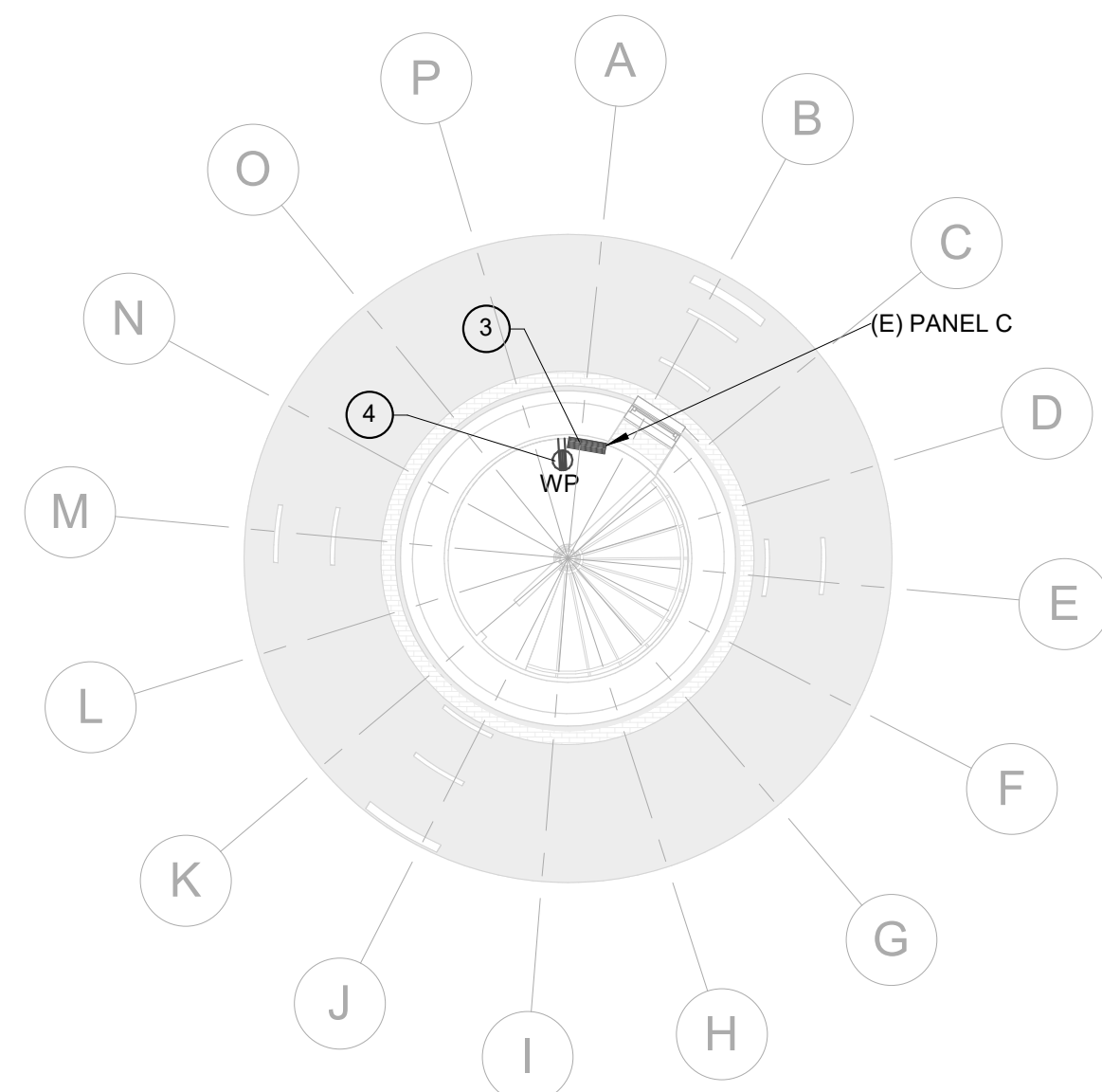
① TYPICAL THIRD THROUGH SIXTH FLOOR ELECTRICAL PLAN
E5 SCALE: 1/8" = 1'-0"



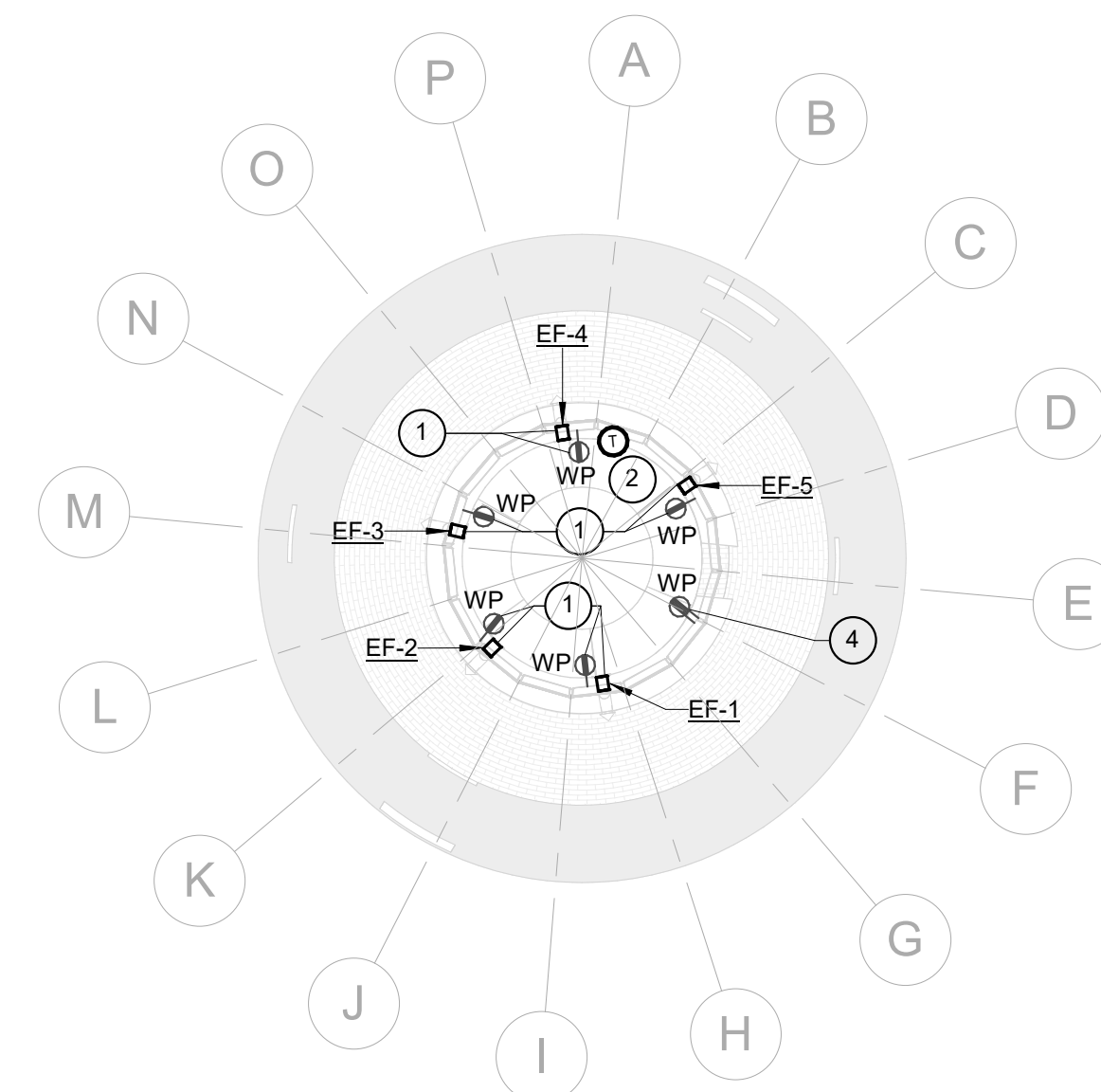
ALL ELECTRICAL WORK IS ASSOCIATED WITH CLIN 11 UNLESS OTHERWISE SPECIFIED

DESIGNED: WDB	SUB SHEET NO. E5	TITLE OF SHEET TYPICAL THIRD THROUGH SIXTH FLOOR ELECTRICAL PLAN	DRAWING NO. 623
CADD: WDB		CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS	181663
TECH. REVIEW: MHS			PMIS/PKG NO. 226858
DATE: 7/7/2023			SHEET
			54 OF 59

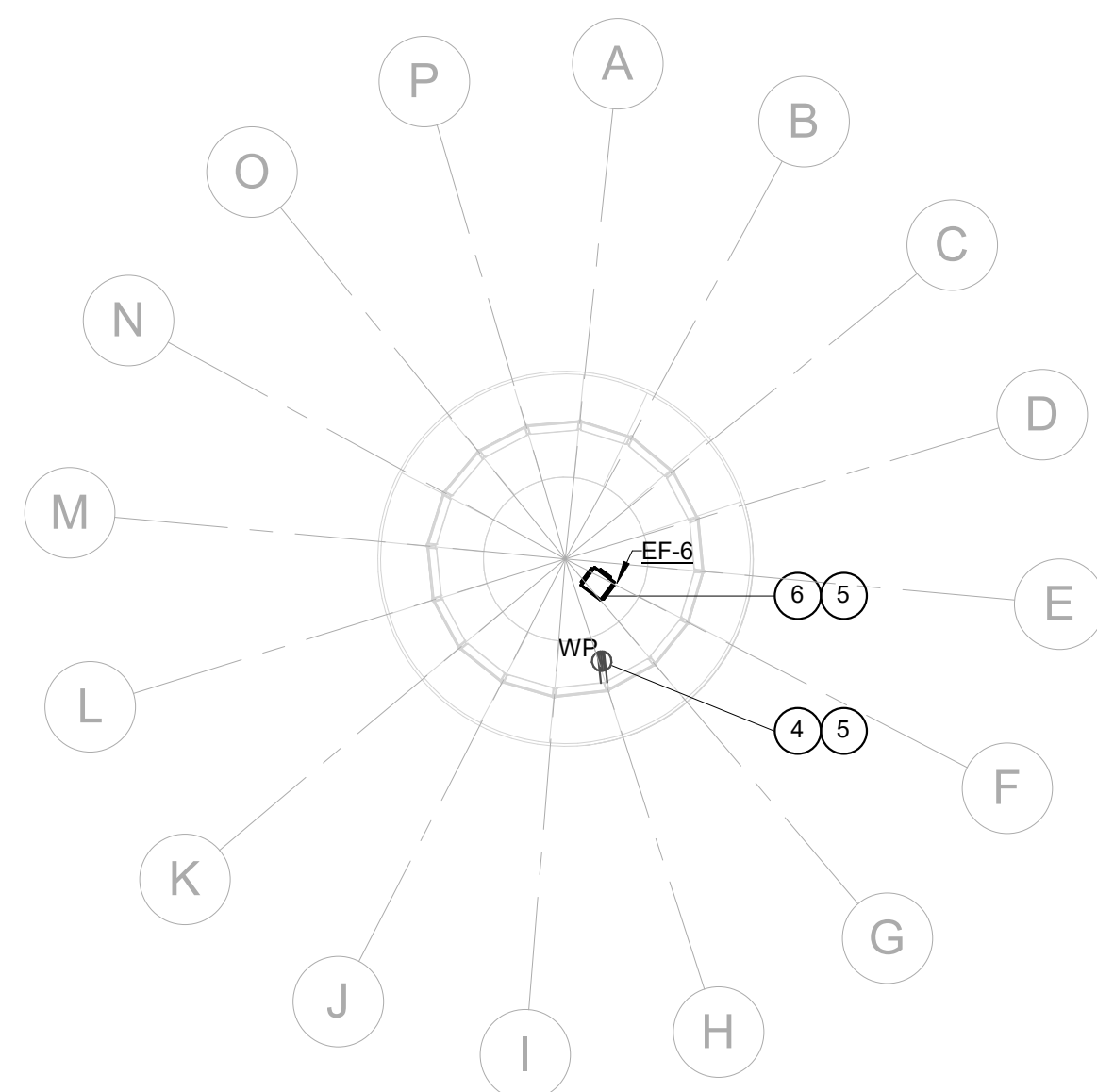




1 SEVENTH LANDING ELECTRICAL PLAN
E6 SCALE: 1/8" = 1'-0"



2 EIGHTH LANDING ELECTRICAL PLAN
E6 SCALE: 1/8" = 1'-0"



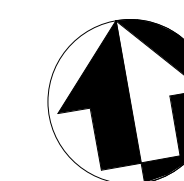
3 NINTH LANDING ELECTRICAL PLAN
E6 SCALE: 1/8" = 1'-0"

KEY NOTES:

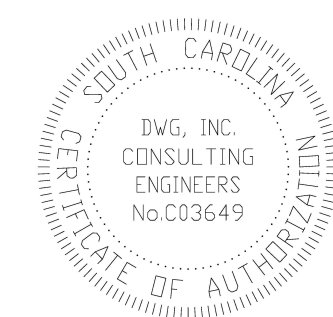
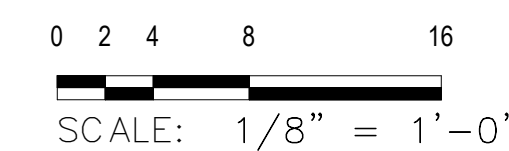
- ① GFCI SIMPLEX RECEPTACLE WITH WEATHERPROOF WHILE IN USE COVER FOR EXHAUST FAN. LOCATE AT SAME HEIGHT AS PORT OPENING THAT THE EXHAUST FAN IS LOCATED IN. LOCATE RECEPTACLE 6" HORIZONTALLY FROM THE PORT OPENING. RECEPTACLE CIRCUIT TO BE CONTROLLED VIA LINE VOLTAGE THERMOSTAT. CLIN 12.
- ② PROVIDE A LINE VOLTAGE THERMOSTAT TO CONTROL THE SIMPLEX RECEPTACLES SERVING THE EXHAUST FANS. CLIN 12.
- ③ PROVIDE NEW 20A-1P SQUARE D QO CIRCUIT BREAKER FOR EXISTING LOAD CENTER. UTILIZE NEW BREAKER FOR EXHAUST FAN CIRCUITS.
- ④ WIRE TO CIRCUIT PREVIOUSLY SERVING GENERAL RECEPTACLES PRIOR TO DEMOLITION.
- ⑤ CONDUIT AND CABLING LOCATED AT OR ABOVE THE NINTH LANDING SHALL BE RUN IN A CLEAN LINE, FOLLOWING THE MULLIONS TO CONCEAL THE CONDUIT AS MUCH AS POSSIBLE. CONDUIT TO BE PAINTED TO MATCH THE MULLION.
- ⑥ PROVIDE FINAL CONNECTION TO EXHAUST FAN. WIRE TO LINE VOLTAGE THERMOSTAT CONTROLLED CIRCUIT SERVING ALL THE EXHAUST FANS.

GENERAL NOTES:

1. EXISTING BRANCH CIRCUIT AND LIGHTING CONDUIT SHALL BE DEMOLISHED AND REPLACED IN FULL.
2. NEW CONDUIT SHALL BE ROUTED VERTICALLY AND EFFICIENTLY ALONG INTERIOR MASONRY.
3. CONVENIENCE RECEPTACLES SHALL BE MOUNTED TO UNDERSIDE OF STAIR STRUCTURE, ACCESSIBLE OVERHEAD.
4. NEW CONDUIT SHALL BE PVC. HARDWARE SHALL BE STAINLESS STEEL.
5. SEE ELECTRICAL SECTION THROUGH LIGHTHOUSE FOR LIGHT FIXTURE LOCATIONS ON THESE FLOORS.



ALL ELECTRICAL WORK IS ASSOCIATED WITH CLIN 11 UNLESS OTHERWISE SPECIFIED



DESIGNED: WDB	SUB SHEET NO. E6	TITLE OF SHEET SEVENTH THROUGH NINTH FLOORS ELECTRICAL PLAN	DRAWING NO. 623
CADD: WDB			181663
TECH. REVIEW: MHS			PMIS/PKG NO. 226858
DATE: 7/7/2023		CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS	SHEET 55 OF 59

**MECHANICAL SYSTEMS
SEISMIC AND WIND REQUIREMENTS**

PER IBC-2015/ASCE 7-16

- A. PER THE 2015 INTERNATIONAL BUILDING CODE, MECHANICAL, PLUMBING AND ELECTRICAL EQUIPMENT AND COMPONENTS, INCLUDING THEIR SUPPORTS AND ATTACHMENTS, SHALL BE DESIGNED FOR SEISMIC FORCES IN ACCORDANCE WITH CHAPTER 13 OF ASCE 7-16.
- B. EXTERIOR EQUIPMENT (INCLUDING ROOF CURBS, RAILS, SUPPORTS) EXPOSED TO WIND SHALL BE DESIGNED AND INSTALLED TO RESIST THE WIND PRESSURES DETERMINED IN ACCORDANCE WITH CHAPTER 26 TO 29 OF ASCE 7-16.
- C. WHERE DESIGN FOR SEISMIC AND WIND LOADS IS REQUIRED, THE MORE DEMANDING FORCE MUST BE USED.
- D. REFERENCE THE STRUCTURAL DRAWINGS FOR SITE SPECIFIC INFORMATION ON SEISMIC DESIGN CATEGORY, WIND SPEEDS, ETC.
- E. USE THE TABLE BELOW TO DETERMINE SEISMIC RESTRAINT REQUIREMENTS FOR EACH COMPONENT.
- F. FOR ALL COMPONENTS REQUIRING SEISMIC RESTRAINT, THE COMPONENT SUPPORTS AND ATTACHMENTS SHALL BE DESIGNED BY A REGISTERED DESIGN PROFESSIONAL REGISTERED IN THE STATE THE JOB IS LOCATED. SUBMITTALS MUST INCLUDE STAMPED AND SIGNED DRAWINGS AND CALCULATIONS.
- G. WHERE SEISMIC RESTRAINT IS REQUIRED, HOUSEKEEPING PADS NEEDED FOR THE INSTALLATION OF EQUIPMENT UNDER THIS CONTRACT MUST BE DESIGNED BY THE SEISMIC ENGINEER. DO NOT POUR ANY HOUSEKEEPING PADS PRIOR TO THE RECEIPT OF THE APPROVED SEISMIC SUBMITTAL.
- H. SEISMIC RESTRAINTS FOR DUCTWORK, PIPING, CONDUIT, CABLE TRAYS AND BUS DUCT MUST BE SHOWN ON LAYOUT DRAWINGS SHOWING SPECIFIC RESTRAINT LOCATIONS ALONG WITH ACCOMPANYING DETAILS AND CALCULATIONS.

MECHANICAL COMPONENT IMPORTANCE FACTOR (Ip) DESIGNATION

Ip = 1.0 Ip = 1.5

- ALL HVAC COMPONENTS EXCEPT AS NOTED IN Ip=1.5

SEISMIC DESIGN CATEGORIES D,E,F

COMPONENT IMPORTANCE FACTOR (Ip)

COMPONENT IDENTIFICATION	1.0		1.5	
	SEISMIC RESTRAINT REQUIREMENT	NOTES	SEISMIC RESTRAINT REQUIREMENT	NOTES
ROOF MOUNTED	RESTRAIN ALL	1	RESTRAIN ALL	-
FLOOR MOUNTED	RESTRAIN ALL	1, 2	RESTRAIN ALL	-
WALL MOUNTED	RESTRAIN ALL	1, 2	RESTRAIN ALL	-
COMPONENT SUPPORTS	RESTRAIN ALL	1	RESTRAIN ALL	-
SUSPENDED EQUIPMENT	INLINE W/ DUCT	RESTRAIN IF >75 LBS PROVIDE FLEX. CONN.	RESTRAIN IF >75 LBS PROVIDE FLEX. CONN.	3
	NOT INLINE W/ DUCT/PIPE	RESTRAIN ALL	RESTRAIN ALL	-
SUSPENDED DUCTILE PIPING (STEEL, ALUMINUM, COPPER, ETC.)	>3"	4	>1"	4
SUSPENDED NON DUCTILE PIPING (CAST IRON, PLASTIC, CERAMIC)	RESTRAIN ALL	4	RESTRAIN ALL	4
SUSPENDED PIPE ON TRAPEZE	RESTRAIN IF ANY PIPE ON TRAPEZE > 3" RESTRAIN IF TOTAL WEIGHT OF PIPES ON TRAPEZE >	4	RESTRAIN IF ANY PIPE ON TRAPEZE > 1" RESTRAIN IF TOTAL WEIGHT OF PIPES ON TRAPEZE > 10	4
DUCTWORK	6 SQ.FT. AND LARGER AND >17 LBS/FT	4,5	6 SQ.FT. AND LARGER AND > 17 LBS/FT	4,5
MULTIPLE DUCTS ON TRAPEZE	RESTRAIN IF TOTAL WEIGHT OF DUCTS ON TRAPEZE > 10 LBS/FT	4,5	RESTRAIN IF TOTAL WEIGHT OF DUCTS ON TRAPEZE > 10 LBS/FT	4,3
COMPONENT CERTIFICATION	NOT REQUIRED	-	REQUIRED	6

NOTES:

- EQUIPMENT 20 LBS. OR LESS IS EXEMPT IF THE COMPONENT IS POSITIVELY ATTACHED TO THE STRUCTURE AND FLEXIBLE CONNECTIONS ARE PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT.
- RESTRAINTS ARE NOT REQUIRED IF THE COMPONENT WEIGHS 400 LBS. OR LESS, IS MOUNTED WITH THE CENTER OF MASS LOCATED AT 4 FT. OR LESS ABOVE A FLOOR, IS POSITIVELY ATTACHED TO THE STRUCTURE AND HAS FLEXIBLE CONNECTIONS BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT.
- FLEXIBLE CONNECTIONS REQUIRED FOR PIPE CONNECTIONS ONLY.
- RESTRAINT IS NOT REQUIRED IF THE PIPING / DUCTWORK IS SUPPORTED BY HANGERS AND EACH HANGER IN THE PIPING RUN IS 12 IN. OR LESS IN LENGTH FROM THE TOP OF THE PIPE TO THE SUPPORTING STRUCTURE. WHERE PIPES ARE SUPPORTED ON A TRAPEZE, THE TRAPEZE SHALL BE SUPPORTED BY HANGERS HAVING A LENGTH OF 12 IN. OR LESS. WHERE ROD HANGERS ARE USED, THEY SHALL BE EQUIPPED WITH SWIVELS, EYE NUTS OR OTHER DEVICES TO PREVENT BENDING IN THE ROD.
- ALL DUCTWORK, REGARDLESS OF SIZE, DESIGNED TO CARRY TOXIC, HIGHLY TOXIC, OR EXPLOSIVE GASES OR USED FOR SMOKE CONTROL MUST BE RESTRAINED.
- COMPONENT CERTIFICATION MUST BE SUPPLIED BY THE EQUIPMENT MANUFACTURER AT TIME OF SUBMITTAL FOR REVIEW BY CONTRACTING OFFICER.

GENERAL HVAC NOTES

- THE DRAWINGS SHOW THE GENERAL ARRANGEMENT AND LOCATION OF EQUIPMENT, ETC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE MECHANICAL INSTALLATION W/ THE STRUCTURE AND OTHER TRADES AND SHALL PROVIDE ADDITIONAL OFFSETS AND FITTINGS AS NECESSARY.
- THE VENTILATING AND AIR CONDITIONING SYSTEMS SHALL COMPLY WITH THE CODES LISTED ON THIS SHEET AS WELL AS ALL LOCAL CODE OFFICIAL REQUIREMENTS. IN THE EVENT OF A CONFLICT BETWEEN CODES, THE MOST STRINGENT SHALL ALWAYS GOVERN.
- THE CONTRACTOR SHALL CHECK AND VERIFY ALL CLEARANCES PRIOR TO FABRICATION OR INSTALLATION OF EQUIPMENT AND SYSTEMS. WHERE CONDITIONS REQUIRE A CHANGE IN EQUIPMENT OR SYSTEM LOCATION, NOTIFY THE CONTRACTING OFFICER FOR AN ACCEPTABLE ALTERNATIVE METHOD. AVOID CONFLICTS WITH LIGHT FIXTURES, AND OTHER CEILING MTD. DEVICES. LOCATE ALL MECHANICAL EQUIPMENT SO THAT COMPONENTS REQUIRING ACCESS (SERVICE AND MAINTENANCE) ARE FULLY ACCESSIBLE.
- INSTALL ALL DUCT MOUNTED DEVICES (DAMPERS, ACCESS DOORS, ETC.) IN EASILY ACCESSIBLE LOCATIONS. ADVISE THE CONTRACTING OFFICER IN ADVANCE OF INSTALLATION IF ACCESS WILL BE HINDERED SO AN ALTERNATE LOCATION CAN BE SELECTED.
- ALL MECHANICAL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS WITH PRESCRIBED CLEARANCES FOR SERVICE AND MAINTENANCE. THE CONTRACTOR SHALL NOTIFY THE CONTRACTING OFFICER IF RECOMMENDED CLEARANCES ARE NOT POSSIBLE BEFORE INSTALLING EQUIPMENT.
- SEISMIC PROTECTION OF EQUIPMENT, AND UTILITIES SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 16 OF THE INTERNATIONAL BUILDING CODE, 2015 EDITION. ALL SEISMIC RESTRAINT AND BRACING SHALL BE SUBSTANTIATED BY MANUFACTURER'S SUBMITTALS PER THE SPECIFICATIONS. FOR ADDITIONAL INFORMATION, SEE 'MECHANICAL SYSTEMS SEISMIC AND WIND REQUIREMENTS' ON THIS SHEET. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING INSTALLATION OF SEISMIC BRACING DEVICES WITH THE OWNER'S SEISMIC SPECIAL INSPECTOR. PROVIDE A MINIMUM OF SEVEN DAYS ADVANCE NOTICE OF INSTALLATION.
- BALANCE ALL AIR DISTRIBUTION DEVICES, EXHAUST FANS, AND OUTSIDE AIR QUANTITIES AS SCHEDULED OR SHOWN ON THE DRAWINGS. PROVIDE FINAL TEST AND BALANCE REPORT ALONG W/ SCHEMATIC DRAWINGS SHOWING EQUIPMENT LOCATION W/ DESIGN AND ACTUAL CFM. THE TAGS ON THE DRAWINGS SHALL CORRESPOND TO THE TAGS ON THE REPORT. THIS REPORT SHALL BE SUBMITTED BEFORE THE FINAL INSPECTION IS PERFORMED. SEE SPECIFICATIONS FOR FURTHER INFORMATION.
- ALL CONTROL WIRING AND CONTROLS ACCESSORIES NECESSARY TO IMPLEMENT THE OUTLINED SEQUENCES OF OPERATION SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR. CONDUIT SHALL BE PROVIDED BY ELECTRICAL, COORDINATED BY THE CONTRACTOR(S).
- WIND LOAD PROTECTION OF ROOF MOUNTED EQUIPMENT AND DUCTWORK SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 16 OF THE INTERNATIONAL BUILDING CODE, 2015 EDITION. ALL WIND LOAD RESTRAINT AND BRACING SHALL BE SUBSTANTIATED BY MANUFACTURER'S SUBMITTALS PER THE SPECIFICATIONS.
- ALL EXPOSED DUCTWORK SHALL BE PAINTED. COORDINATE W/ ARCHITECTURAL PLANS/SPECIFICATIONS FOR EXPOSED LOCATIONS AND PAINTING REQUIREMENTS.
- SEE ARCHITECTURAL DOCUMENTS FOR ROOF PENETRATION AND FLASHING REQUIREMENTS.
- WHERE "APPROXIMATELY" IS USED TO DEFINE INSTALLATION LOCATIONS, CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES TO VERIFY THERE ARE NO CONFLICTS PRIOR TO INSTALLATION AT DIMENSION LISTED.

MECHANICAL ABBREVIATIONS	
ABBR	DESCRIPTION
(E)	EXISTING
BOD	BASIS OF DESIGN
CFM	CUBIC FEET PER MINUTE
DB	DECIBELS
EA	EXHAUST AIR
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
ESP	EXTERNAL STATIC PRESSURE
FT	FEET
IN	INCHES
MC	MECHANICAL CONTRACTOR
PD	PRESSURE DROP
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VNT	VENT
W/	WITH
WMS	WIRE MESH SCREEN
°F	DEGREES FAHRENHEIT

HVAC SYMBOL LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	AIR TERMINAL TAG, X=TYPE MARK, Y=CFM		THERMOSTAT
	LOUVER		EQUIPMENT CLEARANCE

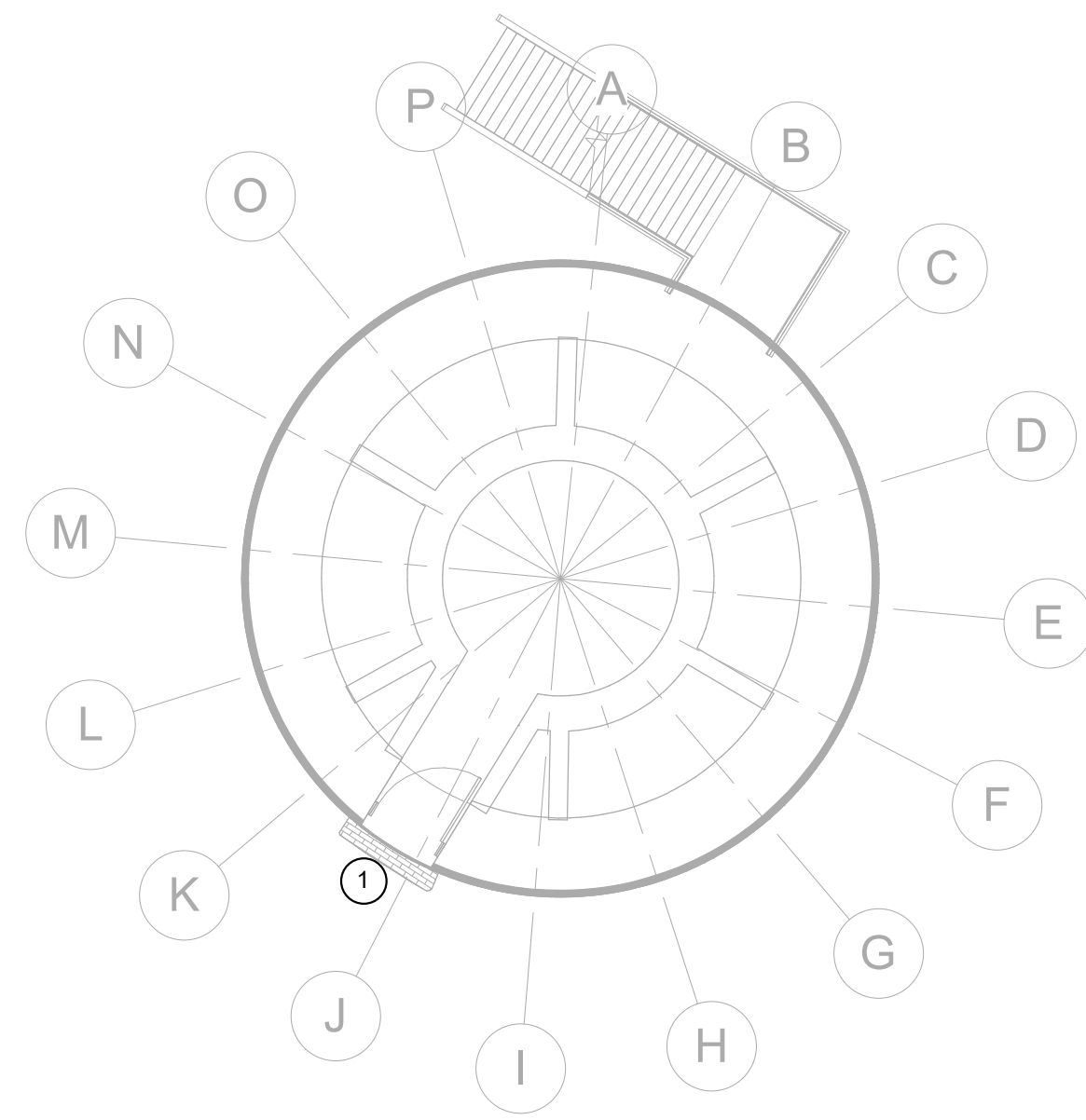
**MECHANICAL CODES AND STANDARDS
(WITH ALL NORTH CAROLINA
MODIFICATIONS)**

CODE	DESCRIPTION
IBC (2015)	INTERNATIONAL BUILDING CODE
IECC (2015)	INTERNATIONAL ENERGY CONSERVATION CODE
IMC (2015)	INTERNATIONAL MECHANICAL CODE
NFPA 90A (2018)	STANDARD FOR THE INSTALLATION AIR-CONDITIONING & VENTILATING SYSTEMS
SMACNA (2005)	HVAC DUCT CONSTRUCTION STANDARDS MANUAL, THIRD EDITION

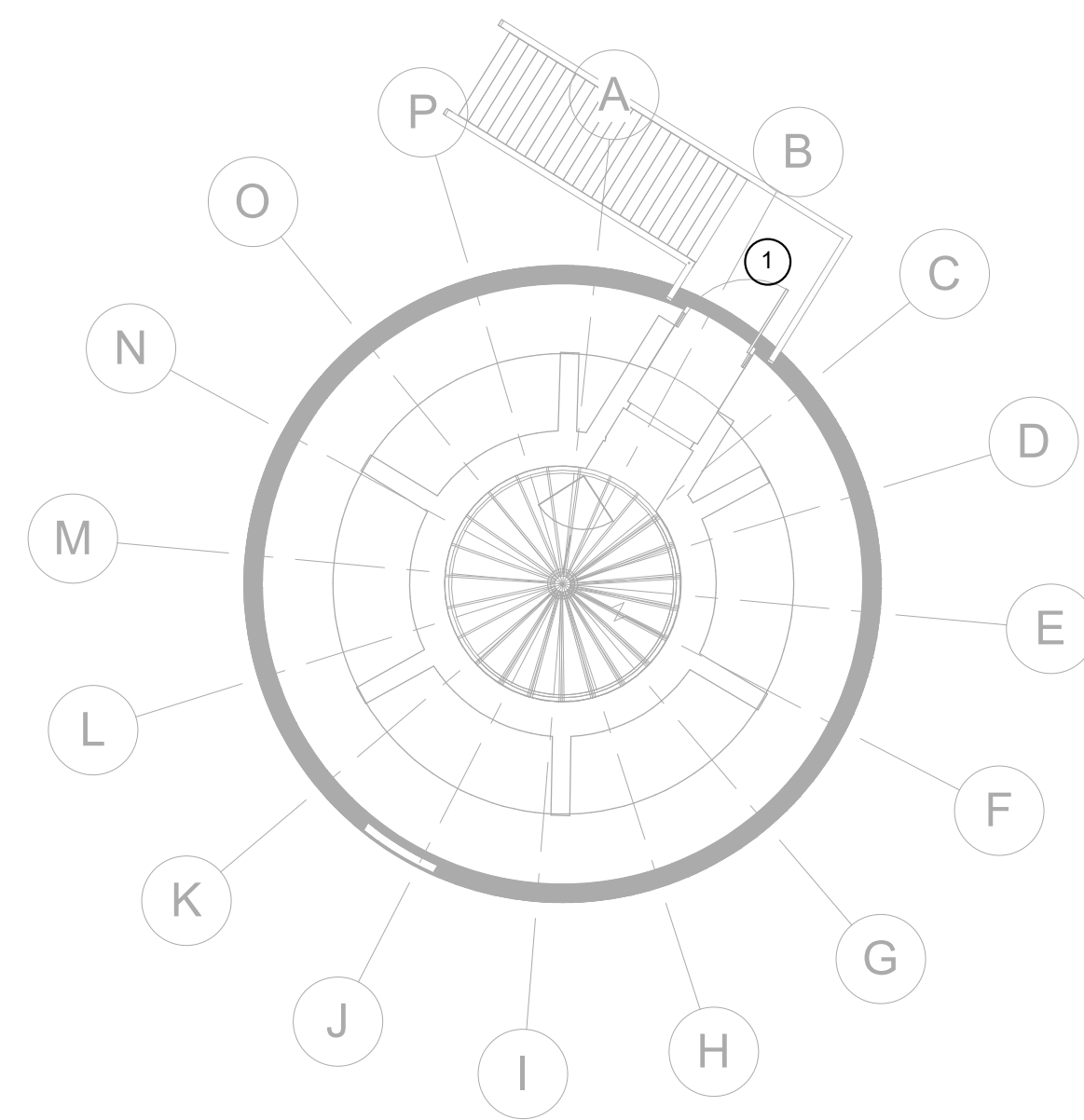
ALL MECHANICAL WORK IS ASSOCIATED WITH CLIN 12 UNLESS OTHERWISE SPECIFIED

	DESIGNED:	FMS	SUB SHEET NO. M1	TITLE OF SHEET	HVAC NOTES & LEGENDS CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS	DRAWING NO.	623
	CADD:	WDB		PMIS/PKG NO.		226858	
	TECH. REVIEW:	WDB		SHEET		56 OF 59	
	DATE:	7/7/2023					

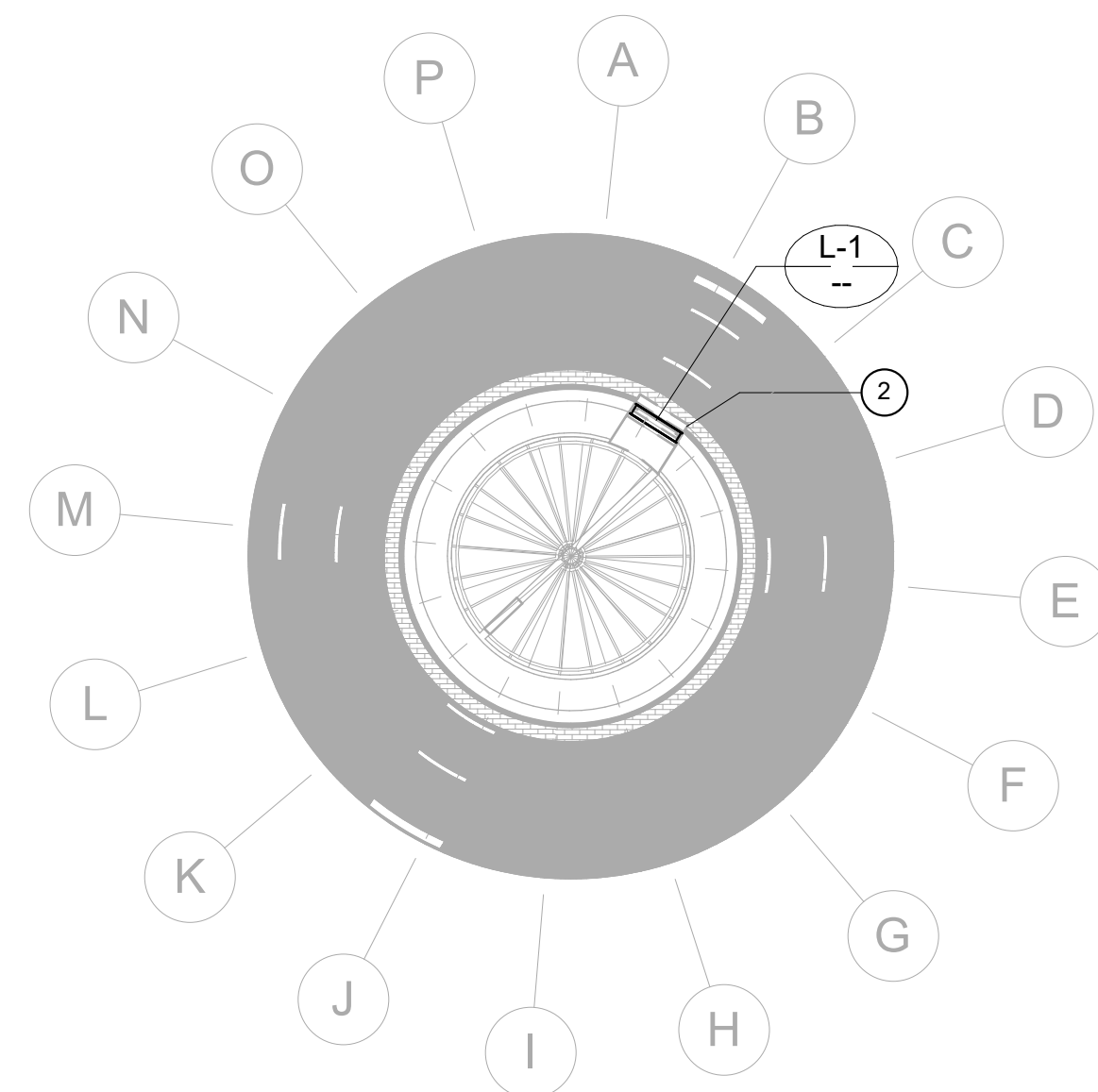
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1 FIRST LANDING MECHANICAL PLAN
M2 SCALE: 1/8" = 1'-0"



2 SECOND LANDING MECHANICAL PLAN
M2 SCALE: 1/8" = 1'-0"



3 SEVENTH LANDING MECHANICAL PLAN
M2 SCALE: 1/8" = 1'-0"

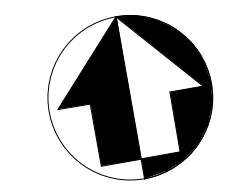
KEY NOTES:

- ① PROVIDE ARCHITECTURAL AIR INTAKE LOUVER IN TRANSOM ABOVE DOORS. SEE ARCHITECTURAL PLANS, DOOR DETAILS.
- ② CLIN 4: INSTALL NEW TEMPORARY LOUVER L-1 IN 7TH LEVEL WINDOW ONCE CAP OF LIGHTHOUSE HAS BEEN REMOVED. SEE ARCHITECTURAL PLANS, WINDOW DETAILS. TEMPORARY LOUVER L-1 TO BE REMOVED AFTER NEW EXHAUST FANS ARE OPERATIONAL.

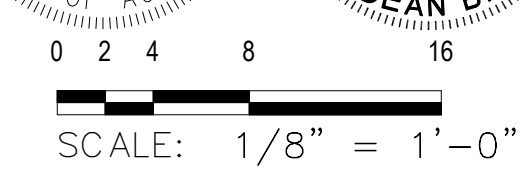
GENERAL NOTES:

- 1. INSTALL LOUVERS PER MANUFACTURER RECOMMENDATION AND SEE ARCHITECTURAL FOR LOUVER DETAIL(S).

LOUVER SCHEDULE						
MARK	AIR PRESSURE DROP	DIMENSION FREE AREA	DIMENSION WIDTH	DIMENSION HEIGHT	BASIS OF DESIGN	MODEL
L-1	0.01 in-wg	1.24 SF	27.5"	21"	CUSTOM	---
1. EXTRUDED ALUMINUM, MILL FINISH, FLATTENED EXPANDED ALUMINUM BIRDSCREEN (MOUNTED ON INSIDE REAR OF LOUVER), EXTENDED SILL, LOUVER COLOR TO BE SELECTED BY CONTRACTING OFFICER.						

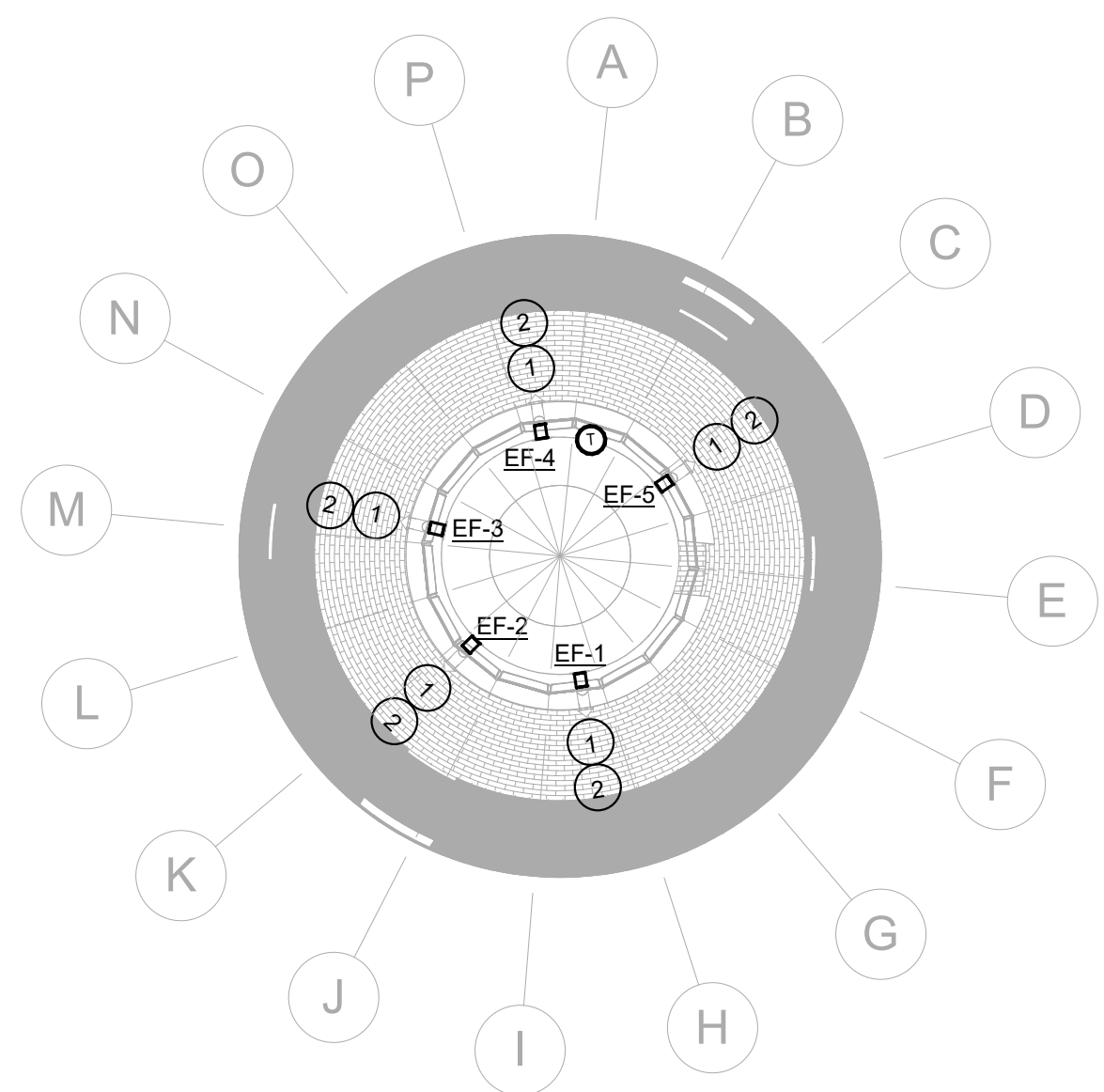


DWG, INC. CONSULTING ENGINEERS No. CO3649

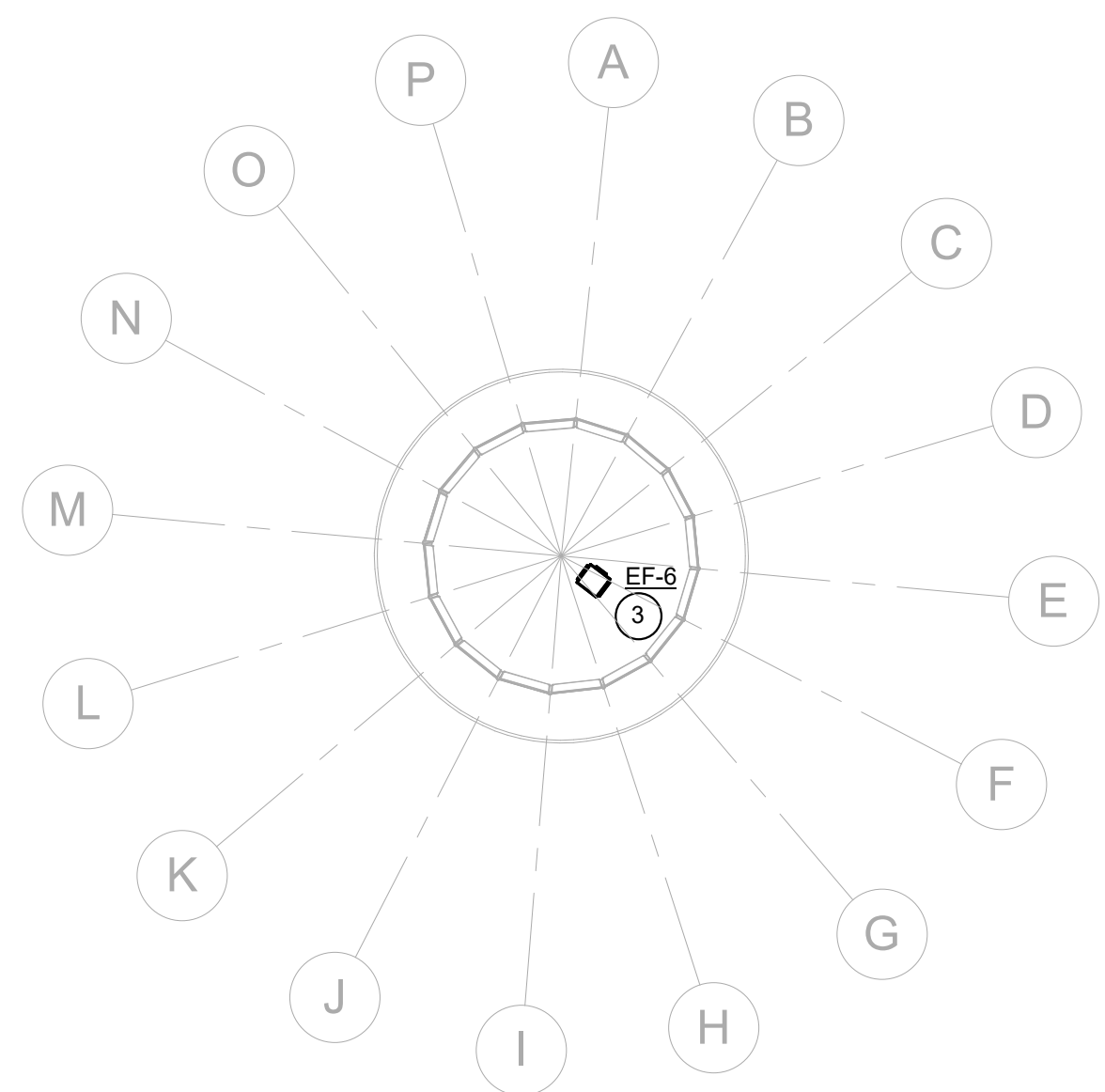


ALL MECHANICAL WORK IS ASSOCIATED WITH CLIN 12 UNLESS OTHERWISE SPECIFIED

DESIGNED: FMS	SUB SHEET NO. M2	TITLE OF SHEET FIRST & SECOND FLOOR MECHANICAL PLAN	DRAWING NO. 623
CADD: WDB			PMIS/PKG NO. 226858
TECH. REVIEW: WDB			SHEET
DATE: 7/7/2023			57 OF 59
CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS			



1 EIGHTH LANDING MECHANICAL PLAN
 M3 SCALE: 1/8" = 1'-0"

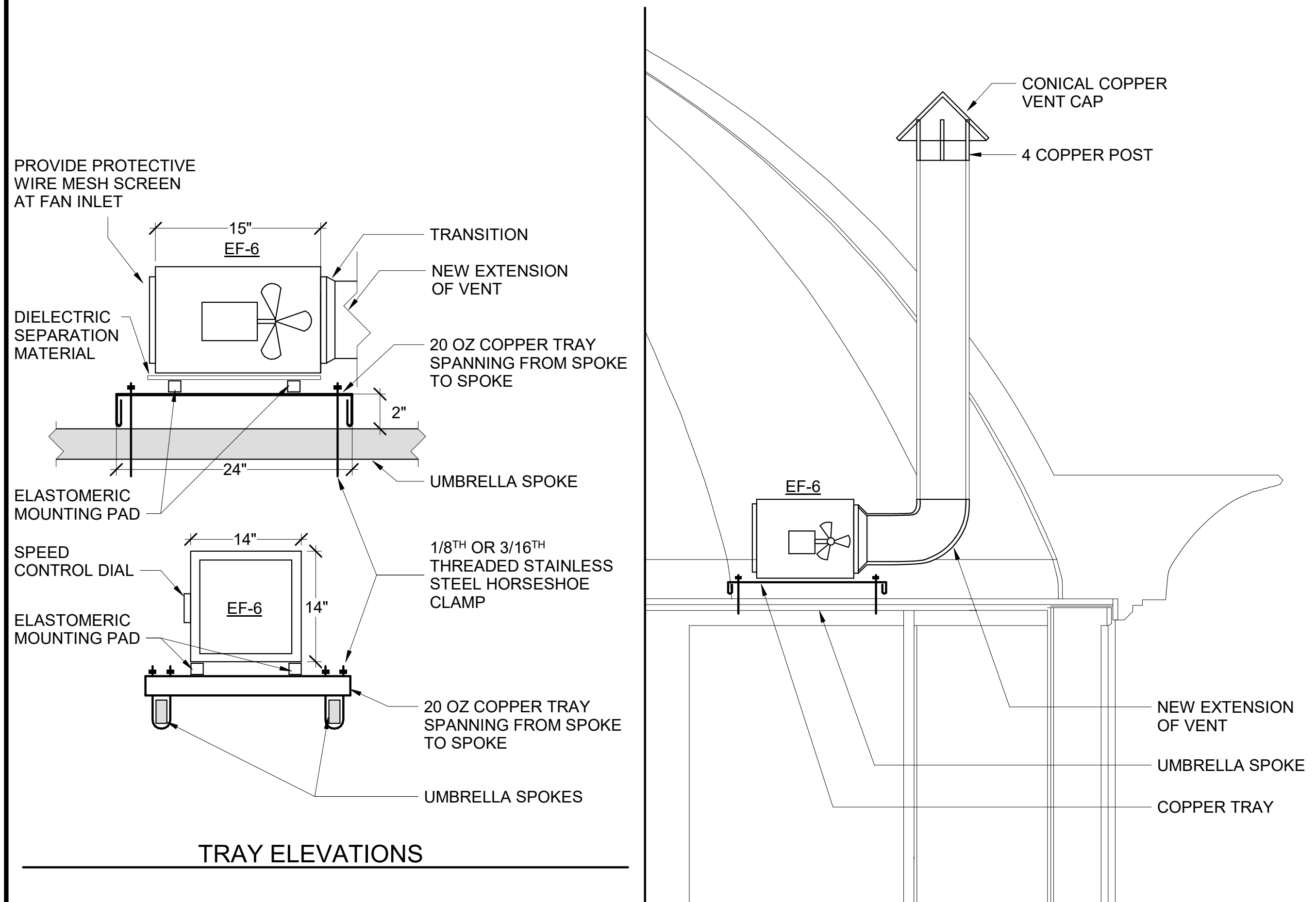


2 NINTH LANDING MECHANICAL PLAN
 M3 SCALE: 1/8" = 1'-0"

- KEY NOTES:**
- (5) EXISTING SIDEWALL COPPER PIPE PORTALS SHALL BE CLEANED AND RE-CONDITIONED. (6) EXTERIOR CAPS AND INTERIOR VENTS SHALL BE SECURED IN PLACE. DAMAGED VENT CAPS/COPPER PIPE PORTHOLES WHICH ARE NOT SUITABLE FOR REUSE/REINSTALLATION SHOULD BE FABRICATED IN-KIND TO EXISTING WITH SAME FINISH AND MATERIAL.
 - INLINE EXHAUST FAN SHALL BE MOUNTED INSIDE PORTAL WITH DIELECTRIC SEPARATION BETWEEN STEEL FAN HOUSING AND COPPER PORTAL. FANS SHALL BE SIMILAR TO TERRABLOOM 6" INLINE BOOSTER FAN. FANS SHALL BE THERMOSTATICALLY CONTROLLED, COORDINATE CONDUIT, THERMOSTAT, AND BREAKERS WITH EC AND ELECTRICAL PLANS.
 - INLINE EXHAUST FAN SHALL BE MOUNTED ON COPPER TRAY WITH DIELECTRIC SEPARATION BETWEEN STEEL FAN HOUSING AND COPPER TRAY. COPPER TRAY SHALL BE LOCATED DIRECTLY ABOVE/SECURED TO INTERIOR UMBRELLA SPOKES. VENT SHALL BE EXTENDED AND ATTACHED TO EXHAUST FAN OUTLET. SEE DETAIL 3/M3. FANS SHALL BE SIMILAR TO TERRABLOOM 6" INLINE BOOSTER FAN. FAN SHALL BE THERMOSTATICALLY CONTROLLED, COORDINATE CONDUIT, THERMOSTAT, AND BREAKERS WITH EC AND ELECTRICAL PLANS.

EXHAUST FAN SCHEDULE							
UNIT I.D.	PRIMARY INLET (INCHES)	MAX CFM	ESP	POWER (W)	DISCHARGE VALVE NOISE CRITERIA (dBA)	BASIS OF DESIGN	MODEL
EF-1	6"	240	---	37	37	TERRABLOOM	6" INLINE FAN
EF-2	6"	240	---	37	37	TERRABLOOM	6" INLINE FAN
EF-3	6"	240	---	37	37	TERRABLOOM	6" INLINE FAN
EF-4	6"	240	---	37	37	TERRABLOOM	6" INLINE FAN
EF-5	6"	240	---	37	37	TERRABLOOM	6" INLINE FAN
EF-6	---	60	0.25 in-wg	15	40	GREENHECK	SQ-70

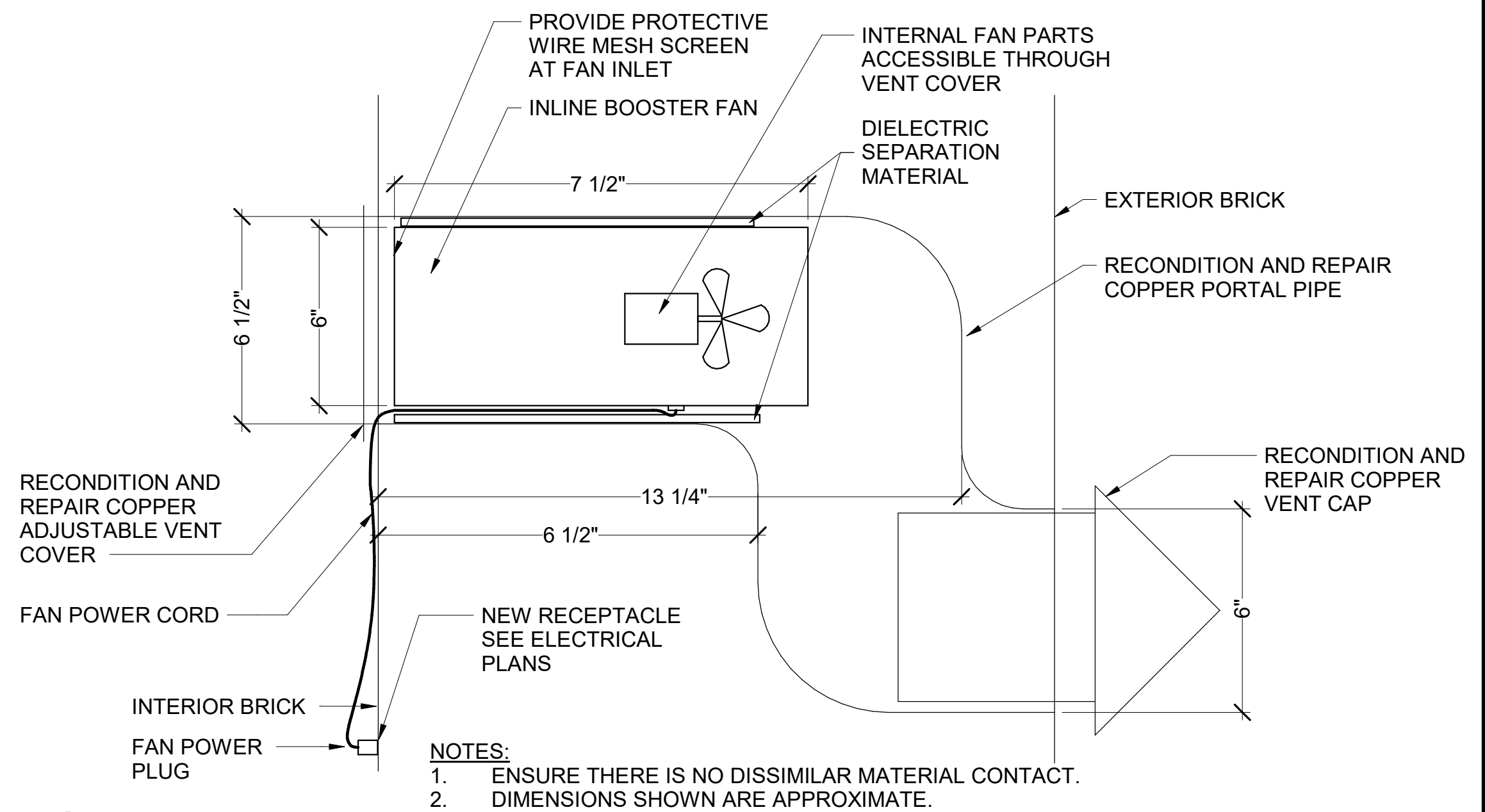
- REFER TO ELECTRICAL DRAWINGS FOR MORE INFORMATION.
- EF-6 SHALL BE PROVIDED WITH SPEED CONTROLLER AND SINGLE POINT POWER CONNECTION WITH INTEGRAL DISCONNECT.



TRAY ELEVATIONS

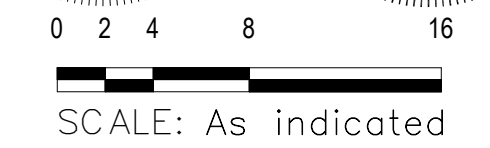
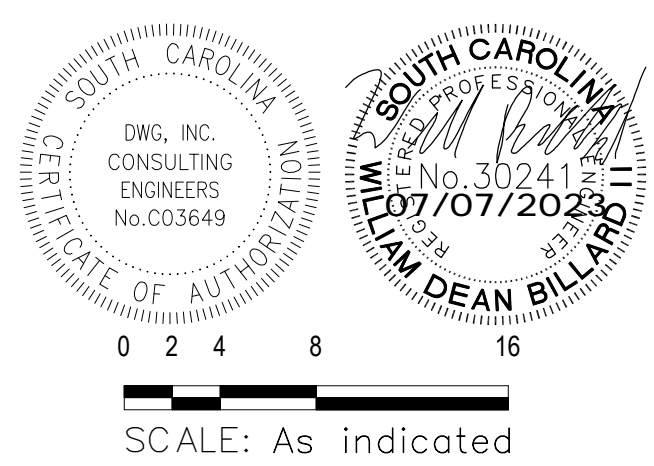
- NOTES:**
- REFER TO STRUCTURAL FOR COPPER FLASHING AND FINISHING SCHEDULE.
 - ENSURE THERE IS NO DISSIMILAR MATERIAL CONTACT.

3 EXHAUST VENT DETAIL
 M3 SCALE: NOT TO SCALE



4 EXHAUST PORTHOLE DETAIL
 M3 NOT TO SCALE

- NOTES:**
- ENSURE THERE IS NO DISSIMILAR MATERIAL CONTACT.
 - DIMENSIONS SHOWN ARE APPROXIMATE.



DESIGNED: FMS	SUB SHEET NO. M3	TITLE OF SHEET EIGHTH & NINTH FLOOR MECHANICAL PLAN	DRAWING NO. 623
CADD: WDB			181663
TECH. REVIEW: WDB			PMIS/PKG NO. 226858
DATE: 7/7/2023		CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS	SHEET 58 OF 59

Autodesk Docs: // 22602 NPS CALO Lighthouse/21015-00 NPS Cape Lookout Lighthouse MEP_2023.rvt 7/7/2023 9:15:23 AM

SHEET NOTES

GENERAL NOTES

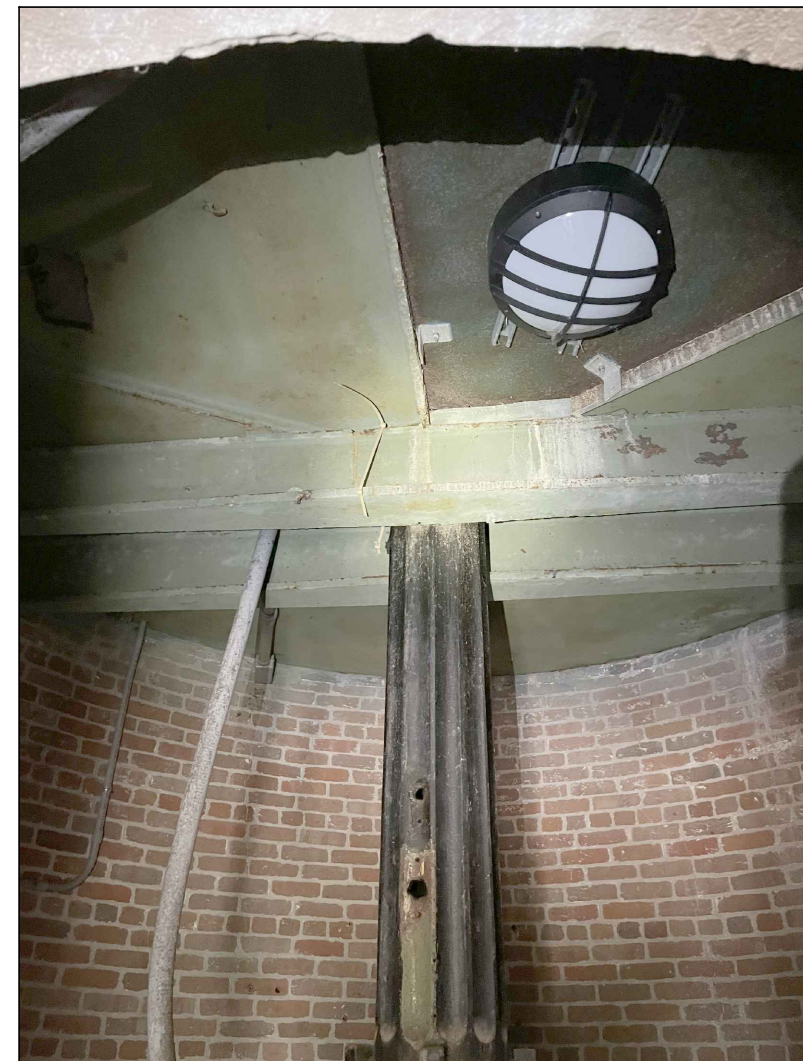
- VERIFY FIELD CONDITIONS, DIMENSIONS, QUANTITIES, AND ASSOCIATED DETAILS. SUBMISSION OF THE BID ACKNOWLEDGES EXISTING CONDITIONS.
- SUBMIT A WASTE HANDLING AND DISPOSAL PLAN FOR HAZARDOUS MATERIALS PRIOR TO THE START OF HAZARDOUS MATERIAL ACTIVITIES OR DEMOLITION. DECLARE SOURCES FOR RECYCLING AND DISPOSAL.
- PERFORM WORK AND PROVIDE SUBMITTALS PER CONTRACT REQUIREMENTS AND SECTIONS 028233, 028333, AND 028400.

ASBESTOS

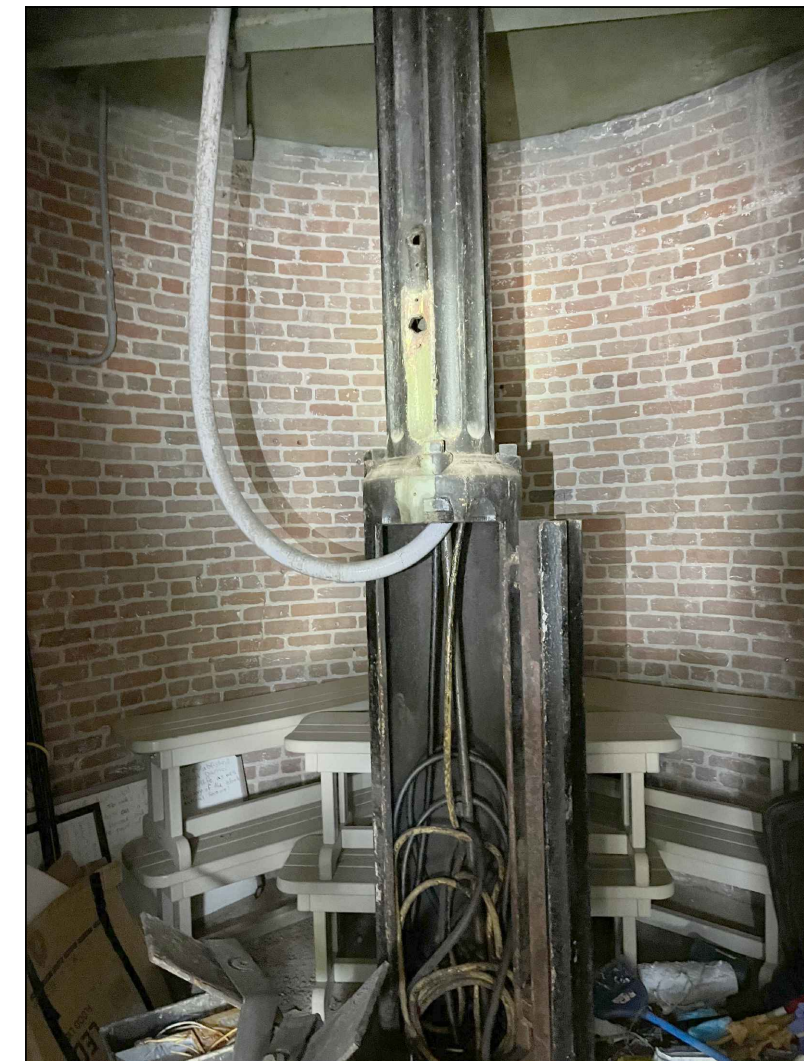
- PERFORM ASBESTOS WORK IN ACCORDANCE WITH 40 CFR 61, OSHA SUBPART M, 29 CFR 1926.1101, AND NC REQUIREMENTS.
- REMOVE AND DISPOSE APPROXIMATELY 600 LINEAR FEET OF ASSUMED ASBESTOS CONTAINING WINDOW GLAZING LOCATED ON THE EXTERIOR OF THE LAMP LEVEL (9TH LEVEL) WINDOWS.
- EXTRACT A CONFIRMATORY SAMPLE OF THE WINDOW GLAZING AND ANALYZE FOR ASBESTOS CONTENT PRIOR TO PERMITTING OR REMOVAL OF THE GLAZING.
- REMOVE GLAZING IN-PLACE OR SECURE GLAZING TO THE WINDOW AND REMOVE WINDOW AS A COMPONENT TO REMOVE GLAZING AT GROUND LEVEL OR OFF-SITE.
- REMOVAL OF THE GLAZING EXTERIOR SHALL BE CONDUCTED OUTDOORS AND REQUIRES A DESIGNATED CONTROL ZONE WITH BARRIER TAPE AND SIGNAGE PER OSHA.
- PROTECT GROUND AND ADJACENT SURFACES WITH POLYETHYLENE SHEETING.
- WET METHODS SHALL BE USED DURING REMOVAL AND BAGGING OF WASTE.
- ONSITE AIR MONITORING SHALL BE PERFORMED DURING ABATEMENT OF THE GLAZING AND IS THE RESPONSIBILITY OF THE CONTRACTOR. AIR MONITORING SHALL BE PERFORMED IN ACCORDANCE WITH STATE AND FEDERAL REQUIREMENTS.
- CONTAIN ASBESTOS WASTE IN DOUBLE LAYERED 6-MIL POLYETHYLENE SHEETING OR BAGS AND STORE IN A FULLY ENCLOSED LOCKED WASTE CONTAINER PRIOR TO TRANSPORT TO THE APPROVED LANDFILL.

LEAD-BASED PAINT

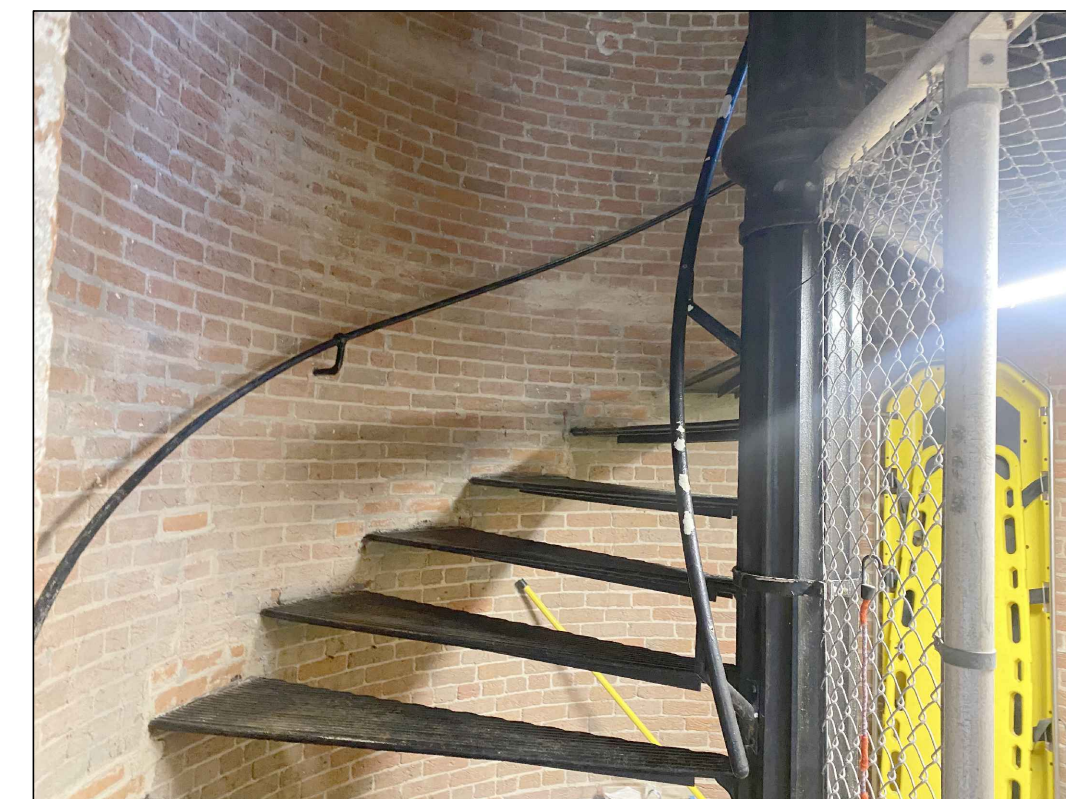
- DISTURBANCES TO SURFACES IDENTIFIED WITH LEAD-BASED PAINT SHALL BE PERFORMED IN COMPLIANCE WITH OSHA 29 CFR 1926.62 (OSHA LEAD IN CONSTRUCTION) AND EPA 40 CFR 745 (RRP FOR LEAD).
 - REMOVAL OF LEAD-BASED PAINT SHALL NOT DAMAGE OR COMPROMISE THE SUBSTRATE.
 - ABATE LEAD-BASED PAINT ON THE FOLLOWING SURFACES AND ASSOCIATED COMPONENTS:
 - INTERIOR STAIRS AND HANDRAILS (BLACK PAINT ON METAL) - DETERIORATED CONDITION
 - CENTER STAIRWAY SUPPORTS/CONDUITS (BLACK PAINT ON METAL) - DETERIORATED CONDITION
 - STRUCTURAL STEEL AND CEILING ON FIRST LANDING (GREEN PAINT ON METAL) - NON-DETERIORATED CONDITION
 - STRUCTURAL STEEL AND COMPONENTS ON LANTERN LEVEL (9TH LANDING) - WHITE PAINT ON METAL - NON-DETERIORATED.
 - REMOVE AND PREPARE FOR REPAINTING THOSE LEAD-BASED PAINTS WHICH ARE LOOSE, FLAKING, EXHIBIT RUST OR ARE OTHERWISE COMPROMISED. LEAD-BASED PAINT WHICH IS ADHERED, IN GOOD CONDITION, AND EXHIBITS NO OTHERWISE COMPROMISING FEATURES SHALL REMAIN AND BE PREPARED FOR REPAINTING PER PROJECT REQUIREMENTS.
 - REMOVE LEAD-BASED PAINT TO BRIGHT METAL ON THOSE COMPONENTS SCHEDULED TO BE PHYSICALLY REMOVED FROM THE LANTERN LEVEL (LEVEL 9). THE LEAD-BASED PAINT WILL BE REMOVED ONCE TRANSFERRED TO AN OFF-SITE LOCATION AND PRIOR TO REPAIR AND REPAINTING.
 - PERFORM TEST PATCHES REPRESENTATIVE OF SELECTED ABATEMENT TECHNIQUES TO CONFIRM THE EFFECTIVENESS AND SUITABILITY OF THE PRODUCTS AND PROCESSES.
 - PROTECT SURFACES WITHIN AND OUTSIDE THE WORK ZONE FROM CONTAMINATION OF LEAD DUST AND DEBRIS. IMMEDIATELY CLEAN CONTAMINATED SURFACES OR DISPOSE AS LEAD CONTAMINATED WASTE. APPLY ENGINEERING CONTROLS AS NECESSARY.
 - PERFORM SOIL OR WIPE TESTING OF SURFACES IN THE WORK AREA PRIOR TO ABATEMENT ACTIVITIES AND ANALYZE FOR LEAD CONTENT. REPLICATE TESTING AFTER ABATEMENT TO ENSURE AND ACHIEVE LEVELS OF LEAD AT OR BELOW PRE-ABATEMENT LEAD LEVELS.
 - SEGREGATE AND CONTAIN LEAD-BASED PAINT WASTE AND LEAD CONTAMINATED WASTE STREAMS AND STORE IN DOT APPROVED 55-GALLON DRUMS.
 - TEST EACH WASTE STREAM BY TCLP AND PRESENT THE DETERMINED WASTE CLASSIFICATIONS TO THE OWNER FOR APPROVAL PRIOR TO TRANSPORT OR DISPOSAL.
- ### ADDITIONAL HAZARDOUS MATERIALS
- REMOVE AND RECYCLE FLUORESCENT LAMPS AND BULBS (MERCURY VAPOR SOURCE). RECYCLE THE SUBJECT LAMPS IN ACCORDANCE WITH EPA'S UNIVERSAL WASTE REQUIREMENTS.
 - REMOVE ELECTRONIC BALLASTS NOT LABELED "NO PCBs" AND PLACE IN APPROPRIATE CONTAINERS. MANAGE, TREAT, OR DISPOSE AS PCB UNIVERSAL WASTE.



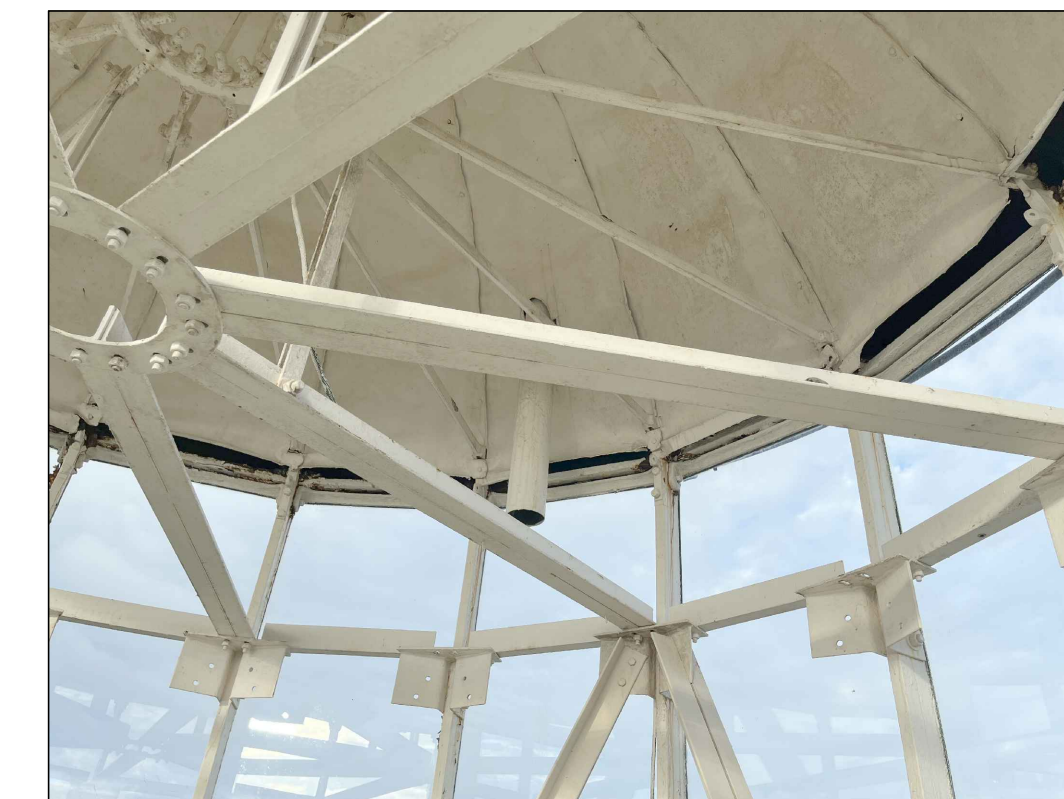
LEAD-BASED PAINT
CEILING AND STRUCTURAL STEEL ON FIRST LANDING
(GREEN PAINT ON METAL)



LEAD-BASED PAINT
CENTER STAIRWAY SUPPORT/CONDUITS - THROUGHOUT
INTERIOR
(BLACK PAINT ON METAL)

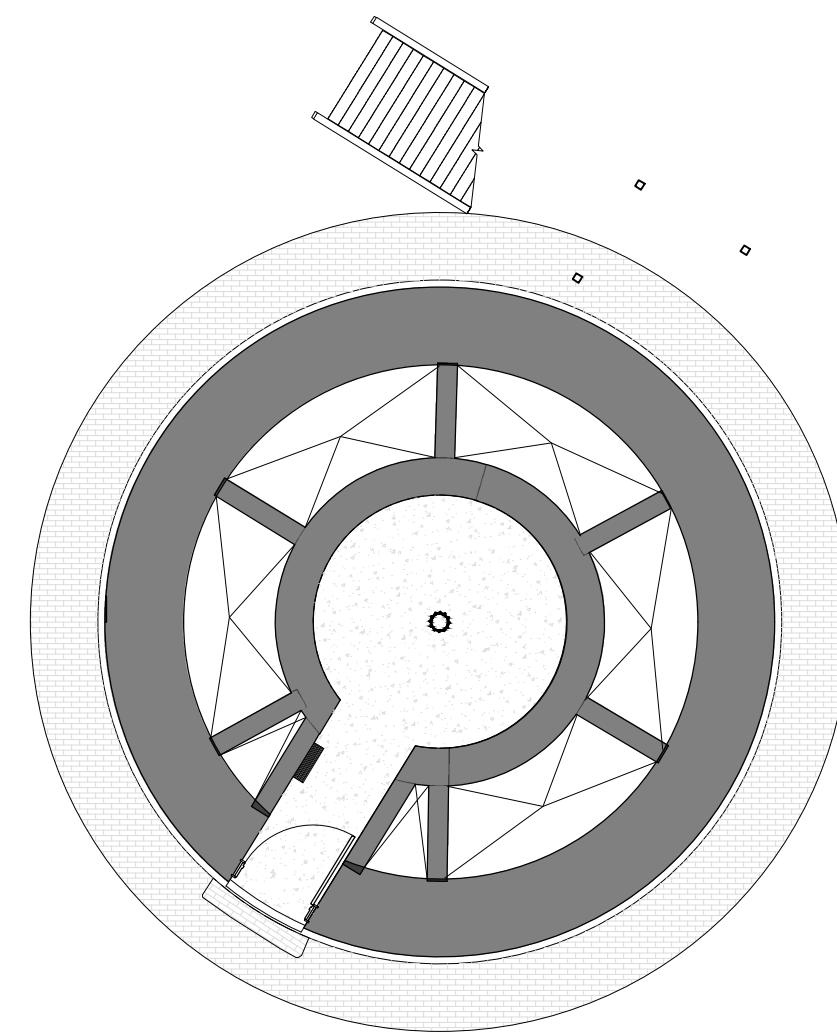


LEAD-BASED PAINT
STAIRS AND HANDRAILS - THROUGHOUT INTERIOR
(BLACK PAINT ON METAL)

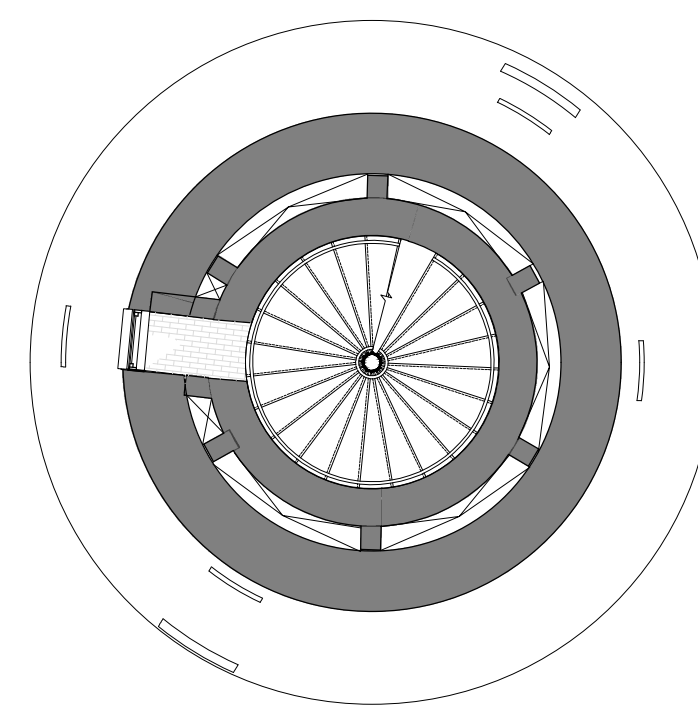


LEAD-BASED PAINT
STRUCTURAL STEEL AND ASSOCIATED COMPONENTS - 9TH
LANDING (LANTERN LEVEL)
(WHITE PAINT ON METAL)

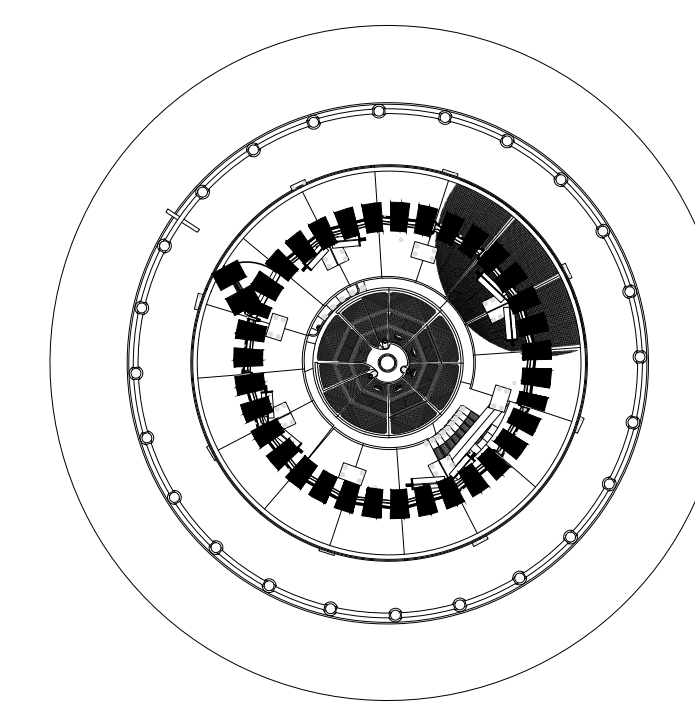
ASBESTOS CONTAINING WINDOW GLAZING (ASSUMED)
EXTERIOR OF WINDOWS



FIRST LANDING PLAN



TYPICAL LEVEL PLAN



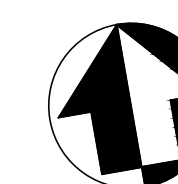
NINTH LANDING PLAN

LEAD-BASED PAINT (≥0.5 WT)

- BLACK PAINT ON CENTER SUPPORT/CONDUIT OF STAIRS THROUGHOUT INTERIOR
- GREEN PAINT ON STRUCTURAL STEEL AND CEILING OF FIRST LANDING LEVEL
- BLACK PAINT ON METAL STAIRS AND HANDRAILS ON INTERIOR STAIRS THROUGHOUT
- WHITE PAINT ON METAL ON NINTH LANDING LEVEL

PRESUMED ASBESTOS CONTAINING MATERIALS

- ■ ■ ■ ■ EXTERIOR WINDOW GLAZING OF NINTH LANDING (LANTERN LEVEL)
APPROXIMATELY 600 LINEAR FEET



SCALE: NOT TO SCALE

DESIGNED: JLK	SUB SHEET NO. H1	TITLE OF SHEET ABATEMENT OF HAZARDOUS MATERIALS CAPE LOOKOUT NATIONAL SEASHORE LIGHTHOUSE REPAIRS	DRAWING NO. 623
GADD: LAJ			181663
TECH. REVIEW: JLK			PMS/PKG NO. 226858
DATE: 03/17/2023			SHEET 59 OF 59