

GENERAL NOTES

1.

ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE, NATIONAL ELECTRIC SAFETY CODE, N.F.P.A., O.S.H.A. REGULATIONS AND ALL OTHER EXISTING CODES AND REGULATIONS OF AUTHORITIES WHICH HAVE JURISDICTION.
2.

THE CONTRACT DRAWINGS ARE DIAGRAMMATIC IN NATURE AND NOT EVERY DETAIL OR CONDUIT IS SHOWN. EXISTING CONDITIONS AND DIMENSIONS SHALL BE VERIFIED IN THE FIELD BEFORE COMMENCING ANY FABRICATION, ORDERING ANY MATERIAL, OR PERFORMING ANY WORK. ANY DEPARTURE FROM CONCEPT SHOWN ON THE CONTRACT DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. ALL ELECTRICAL EQUIPMENT SHOWN ON THE DRAWINGS AND/OR REQUIRED FOR THE FULL INTEGRITY OF THE CONTRACT SHALL BE FURNISHED, INSTALLED AND CONNECTED BY THE CONTRACTOR, EXCEPT WHERE EQUIPMENT SHOWN IS IDENTIFIED AS "EXISTING" OR OTHERWISE NOTED ON THE DRAWINGS.
3.

UNLESS OTHERWISE NOTED, EQUIPMENT AND MATERIALS TO BE PROVIDED SHALL BEAR LISTING AND LABELING BY A NATIONALLY RECOGNIZED TESTING AGENCY WHERE SUCH STANDARD HAD BEEN ESTABLISHED FOR THAT TYPE OF EQUIPMENT/MATERIAL.
4.

THE CONTRACTOR SHALL SUBMIT DETAILED EQUIPMENT LAYOUT PLANS, SECTIONS, AND MOUNTING DETAILS SHOWING PROPOSED LOCATION OF ALL EQUIPMENT AND REQUIRED WORKING/SERVICE CLEARANCES PRIOR TO INSTALLATION.
5.

CONTRACTOR SHALL VISIT THE PROJECT SITE AND EXAMINE AND CONFIRM EXISTING CONDITIONS. ALL CHANGES SHALL BE PRESENTED DURING SHOP DRAWING SUBMITTALS FOR ENGINEER'S APPROVAL.
6.

CONDUITS SHALL CONTAIN AN INSULATED GROUND WIRE BONDED TO ENCLOSURES AND SIZED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NEC, IF SIZE IS NOT SHOWN ON THE CONTRACT DRAWINGS.
7.

THE CONTRACTOR SHALL PROVIDE CONDUIT FITTINGS, CONNECTORS, CLAMPS, HARDWARE, HANGERS, AND SUPPORTS AS NECESSARY FOR A COMPLETE INSTALLATION.
8.

THE CONTRACTOR SHALL PROVIDE TAGS FOR EQUIPMENT, CONDUITS, AND CABLES THAT ARE INSTALLED UNDER THIS CONTRACT. TAG IDENTIFICATIONS SHALL BE IN ACCORDANCE WITH CONTRACT DRAWINGS. TAGS FOR CONDUITS SHALL BE AS DESCRIBED IN SPECIFICATIONS.
9.

UNUSED OPENINGS IN CONDUITS, BOXES, DISCONNECT SWITCHES, CABINETS, AND PANEL BOARDS SHALL BE CAPPED OR PLUGGED.
10.

UPDATE EXISTING PANELBOARD DIRECTORIES TO REFLECT THE CIRCUITING IN EXISTING PANELBOARDS AFFECTED BY THIS ALTERATION.
11.

CONTRACTOR SHALL PROVIDE THE NECESSARY MATERIALS, LABOR AND ATTENDANCE FOR THE OPERATION OF TEMPORARY LIGHT AND CONSTRUCTION POWER AS REQUIRED DURING WORKING HOURS FOR THE ENTIRE CONSTRUCTION PERIOD.
12.

CONTRACTOR SHALL MAINTAIN CONTINUITY OF ANY EXISTING CIRCUITS AFFECTED BY THIS ALTERATION. RECONNECT ALL ALTERED OR REROUTED WORK TO ITS FULLY FUNCTIONAL STATE PRIOR TO ALTERATION.
13.

PROVIDE ALL NECESSARY TEMPORARY WIRING TO MAINTAIN EXISTING INSTALLATIONS WHICH MUST REMAIN IN SERVICE DURING CONSTRUCTION PERIOD.
14.

ALL BRANCH CIRCUITS OVER 75 FEET IN LENGTH SHALL BE RUN WITH #10 CONDUCTOR, UNLESS OTHERWISE NOTED.
15.

SCHEDULE ALL DISCONNECTION AND INTERRUPTIONS OF ELECTRICAL SERVICE, COMMUNICATIONS AND SUPERVISORY SYSTEMS WITH THE OWNER AND ENGINEER.
16.

CONTRACTORS SHALL FOLLOW ALL OWNER SITE SAFETY WORK PROCESSES AND PROCEDURES. FOR EXAMPLE, WORK PERMITS, SAFETY TASK ANALYSIES, LOCKOUT TAGOUT (LOTO), LOCK, TAG AND TRY, AND RED TAG, ETC.
17.

CONTRACTORS SHALL COORDINATE ALL WORK ACTIVITIES WITH OPERATIONS, MAINTENANCE, AND OTHER CONTRACTORS.
18.

UNLESS SPECIFICALLY NOTED, ALL ELECTRICAL EQUIPMENT (GENERATORS, AUTOMATIC TRANSFER SWITCHES, PANELBOARDS, MOTOR CONTROLLERS, WIRE, PANELBOARDS, SWITCHBOARDS, DISCONNECTS, LIGHTING, INSTRUMENTS, CONTROL PANELS, MOTOR, ETC) THAT MAY BE SHOWN AS TO BE REMOVED ARE THE PROPERTY OF THE OWNER AND SHALL BE RETURNED TO THE OWNER.

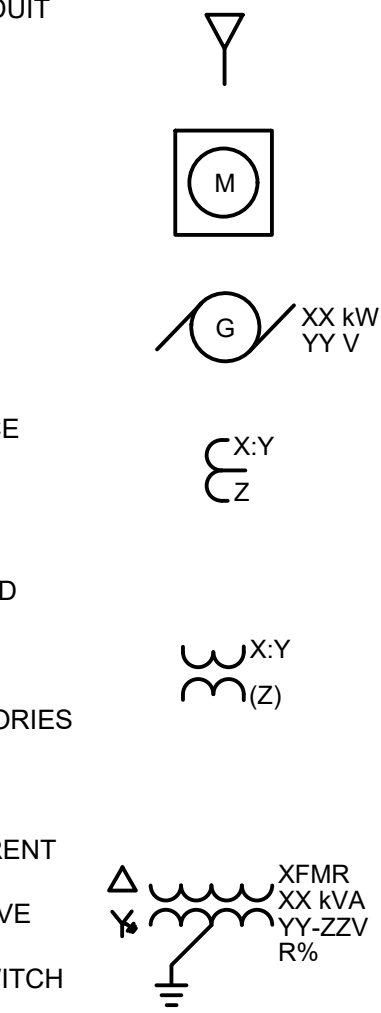
ABBREVIATIONS

A OR AMP	AMPERES
ACT	ABOVE COUNTER TOP (6")
AF	AMP FRAME
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AIC	AMPERE INTERRUPTING CAPACITY
AM	AMMETER
APPROX	APPROXIMATELY
AS	AMMETER SELECTION SWITCH
ASYM	ASYMMETRICAL
AT	AMP TRIP
ATC	AUTOMATIC TRANSFER CONTROLLER
ATS	AUTOMATIC TRANSFER SWITCH
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE
BC	BARE COPPER
BLDG	BUILDING
C	CONDUIT
C, CDT	CONDUIT
C, /C	CONDUCTOR
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CLF	CURRENT LIMITING FUSE
CO	COMPANY
COL	COLUMN
CNTL	CONTROL
CSLD	CONTINUOUS STATISTICAL LEAK DETECTION
CT	CURRENT TRANSFORMER
Cu	CABLE
D	DEPTH
DIA	DIAMETER
DS OR DISC	DISCONNECT SWITCH
DWG(S)	DRAWING(S)
ELEC	ELECTRIC, ELECTRICAL
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
ESTOP	EMERGENCY STOP
EX, EXIST.	EXISTING
EXP	EXPLOSION PROOF
EF	EXHAUST FAN
EG	EQUIPMENT GROUND
EGC	EQUIPMENT GROUND CONDUCTOR
ETC	ET CETERA
EXIST	EXISTING
F	FUSE
FCR	FLOAT CONTROL RELAY
FL, FLR	FLOOR
FT	FEET
G OR GND	GROUND
GA	GAUGE
GALV	GALVANIZED
GEC	GROUNDING ELECTRODE CONDUCTOR
GEN	GENERATOR
GF	GROUND FAULT
GFCI	GROUND FAULT CIRCUIT INTERRUPT
GFI	GROUND FAULT INTERRUPTING
H-O-A	HAND-OFF-AUTOMATIC
HP	HORSEPOWER
HVAC	HEATING, VENTILATION & AIR
IG	ISOLATED GROUND
ISBR	INTRINSICALLY SAFE BARRIER RELAY
IMC	INTERMEDIATE METAL CONDUIT
IN	INCH
IR	INFRARED
ISCA	INSTANTANEOUS SHORT CIRCUIT AVAILABLE
JB OR J	JUNCTION BOX
kVA	KILOVOLT - AMPS
kW	KILOWATTS
kWH	KILOWATT-HOUR
L	LENGTH
LA	LIGHTNING ARRESTOR
LFMC	LIQUIDTIGHT FLEXIBLE METAL CONDUIT
LTG	LIGHTING
MAX	MAXIMUM
MCB OR MB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MECH	MECHANICAL
MER	MECHANICAL EQUIPMENT ROOM
MFR	MANUFACTURER
MH OR MTG	MOUNTING HEIGHT
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MTD	MOUNTED
N	NEUTRAL
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MFRS ASSOCIATION
NF	NON-FUSIBLE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
No.	NUMBER
NO	NORMALLY OPEN
NTS	NOT TO SCALE
O.C.	ON CENTER
OCPD	OVERCURRENT PROTECTIVE DEVICE
O/F	OVERFILL
OHE	OVERHEAD ELECTRICAL
OSHA	OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION
P	POLE
PERM	PERMANENT
PFC	POWER FACTOR CAPACITOR
PH, Ø	PHASE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PNL	PANEL
PR	PAIR

ABBREVIATIONS

PVC	POLYVINYLCHLORIDE CONDUIT
PWR	POWER
R&R	REMOVE AND RELOCATE
R	RELOCATE
RE	RELOCATED
RECEPT	RECEPTACLE
REF	REFERENCE
RGS	RIGID GALVANIZED STEEL
RMS	ROOT MEAN SQUARE
SE	SERVICE ENTRANCE
SF	SEAL FITTING
SH	SHIELDED
SS	STAINLESS STEEL
SPD	SURGE PROTECTION DEVICE
SW	SWITCH
SWBD	SWITCHBOARD
SYM	SYMMETRICAL
TEL	TELEPHONE
TWIS	TWISTED INDIVIDUAL SHIELD
TWOS	TWISTED OUTER SHIELD
TYP	TYPICAL
UG	UNDERGROUND
UL	UNDERWRITER'S LABORATORIES
UV	ULTRAVIOLET
V	VOLTS
VA	VOLT AMPS
VAC	VOLTS ALTERNATING CURRENT
VDC	VOLTS DIRECT CURRENT
VFD	VARIABLE FREQUENCY DRIVE
VM	VOLTMETER
VMS	VOLTMETER SELECTOR SWITCH
W	WATT
W/	WITH
W/O	WITHOUT
WM	WATTMETER
WP	WEATHER PROOF
XFMR	TRANSFORMER

ONE-LINE DIAGRAM



CONNECTION TO ELECTRICAL UTILITY. VOLTAGE, PHASES AS INDICATED

UTILITY METER

GENERATOR
- 'XX' DESIGNATES POWER RATING
- 'YY' DESIGNATES VOLTAGE

CURRENT TRANSFORMER (CT).
'X:Y' INDICATES RATIO
'Z' INDICATES QUANTITY (1 PER PHASE UNLESS OTHERWISE INDICATED)

POTENTIAL TRANSFORMER (PT).
'X:Y' INDICATES RATIO
'Z' INDICATES QUANTITY (1 PER PHASE UNLESS OTHERWISE INDICATED)

TWO WINDING TRANSFORMER, PHASES AS DETERMINED BY OCPD
'Z' INDICATES % IMPEDANCE ANSI STANDARD IF NOT SPECIFIED
- 'WW' INDICATES STRUCTURE DESIGNATION
- 'XX' INDICATES POWER RATING
- 'YY' INDICATES PRIMARY VOLTAGE
- 'QQ' INDICATES SECONDARY VOLTAGE WINDINGS AS INDICATED
- 'Δ' INDICATES DELTA CONNECTION
- 'Y' INDICATES WYE CONNECTION WITH GROUNDED NEUTRAL

THREE WINDING TRANSFORMER
- 'W' INDICATES STRUCTURE DESIGNATION
- 'XX' INDICATES POWER RATING (BY WINDING)
- 'YY' INDICATES VOLTAGE RATING (BY WINDING)
- 'Z' INDICATES IMPEDANCE (BY WINDING)
- 'Δ' INDICATES DELTA CONNECTION
- 'Y' INDICATES WYE CONNECTION WITH GROUNDED NEUTRAL

TRANSFER SWITCH
- 'W' INDICATES
A: AUTOMATIC
M: MANUAL
D: DOUBLE THROW
- 'XX' INDICATES RATING IN AMPS
- 'Y' INDICATES NUMBER OF POLES

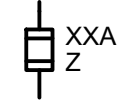
BYPASS ISOLATION TRANSFER SWITCH
- 'XX' INDICATES AMPERE RATING
- 'Y' INDICATES NUMBER OF POLES

SWITCH
- 'XX' INDICATES AMPERE RATING
- 'Y' INDICATES NUMBER OF POLES

MEDIUM & HIGH VOLTAGE CIRCUIT BREAKER
- 'XX' INDICATES TRIP RATING IN AMPS
- 'YY' INDICATES FRAME RATING

LOW VOLTAGE MOLDED CASE CIRCUIT BREAKER.
- 'XX' INDICATES TRIP RATING IN AMPS (IF TRIP INTEGRAL)
- 'YY' INDICATES FRAME RATING, ID SPECIFIED
- 'W' INDICATES NUMBER OF POLES (3 UNLESS OTHERWISE NOTED)
- 'Z' DESIGNATES TYPE:
BLANK: THERMAL MAGNETIC
LSI: ELECTRONIC TRIP
MCP: MOTOR CIRCUIT PROTECTOR
GFI: GROUND FAULT INTERRUPTING

ONE-LINE DIAGRAM



FUSE
- 'XX' INDICATES TRIP RATING IN AMPS
- 'Z' INDICATES CLASSIFICATION (IF SPECIFIED)



ANGLED BRACKETS INDICATE DRAWOUT DEVICE

PROTECTIVE RELAY, METERING, OR INTERLOCKING DEVICE.

'XX' DESIGNATIONS:
A: AMMETER
V: VOLTMETER
PF: POWER FACTOR
K: KIRK KEY INTERLOCK
I: ELECTRICAL INTERLOCK
25: SYNCHRONISM CHECK
27: UNDER VOLTAGE
46: CURRENT UNBALANCE
47: PHASE-SEQUENCE VOLTAGE
50: INSTANTANEOUS OVERCURRENT
51: TIME OVERCURRENT
52: AC CIRCUIT BREAKER
55: POWER FACTOR
59: OVER VOLTAGE
64: GROUND PROTECTIVE RELAY
81: FREQUENCY
86: LOCKING OUT RELAY
* SPECIFIC MINIMUM FUNCTIONS TO BE LISTED BY ANSI/IEEE DEVICE NUMBERS



FULL VOLTAGE NON REVERSING CONTACTOR
'X' DESIGNATES NEMA SIZE OR:
BC: BYPASS CONTACTOR
OC: OUTPUT ISOLATION CONTACTOR
IC: INPUT ISOLATION CONTACTOR



LIGHTING CONTACTOR
- 'XX' DESIGNATES AMPERE RATING
- 'Y' DESIGNATES NUMBER OF POLES



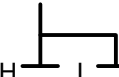
LIGHTING CONTACTOR
- 'XX' DESIGNATES AMPERE RATING
- 'Y' DESIGNATES NUMBER OF POLES



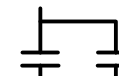
MOTOR OVERLOAD.
RATED FOR DEVICE PROTECTING.
CLASS 20 UNLESS OTHERWISE INDICATED.
- 'X' DESIGNATES TYPE:
T-THERMAL
E-ELECTRONIC.



FULL VOLTAGE REVERSING CONTACTOR
- 'X' DESIGNATES NEMA SIZE.
- 'F' INDICATES FORWARD CONTACTOR.
- 'R' INDICATES REVERSING CONTACTOR.



TWO SPEED STARTER
- 'X' DESIGNATES NEMA SIZE.
- 'H' INDICATES HIGH SPEED CONTACTOR.
- 'L' INDICATES LOW SPEED CONTACTOR.



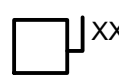
REDUCED VOLTAGE AUTOTRANSFORMER
- 'X' DESIGNATES NEMA SIZE.
- 'Y' INDICATES TAP PERCENTAGE.



VARIABLE FREQUENCY DRIVE.
- 'XX' INDICATES MINIMUM AMP RATING (IF NOT SPECIFIED, VFD TO MATCH HORSEPOWER RATING OF MOTOR SUPPLIED).



REDUCED VOLTAGE SOFT START.
- 'XX' INDICATES MINIMUM AMP RATING (IF NOT SPECIFIED, RVSS TO MATCH HORSEPOWER RATING OF MOTOR SUPPLIED).



NON-FUSED DISCONNECT SWITCH
- 'XX' DESIGNATES AMPERE RATING OF DISCONNECT.
- 'Y' DESIGNATES NUMBER OF POLES



FUSED DISCONNECT SWITCH
- 'XX' DESIGNATES AMPERE RATING OF FUSE.
DISCONNECT AMPERE RATING TO BE EQUAL TO FUSE RATING OR THE NEXT LARGEST TRADE SIZE.
- 'Y' DESIGNATES NUMBER OF POLES

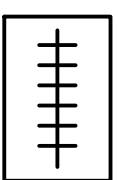
ONE-LINE DIAGRAM



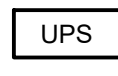
INDUCTION MOTOR
- 'WW' INDICATES EQUIPMENT DESIGNATION.
- 'XX' INDICATES HORSEPOWER RATING.



SYNCHRONOUS MOTOR
- 'WW' INDICATES EQUIPMENT DESIGNATION.
- 'XX' INDICATES HORSEPOWER RATING.



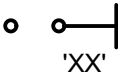
PANELBOARD
- 'X' INDICATES STRUCTURE DESIGNATION.



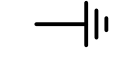
UNINTERRUPTIBLE POWER SUPPLY.



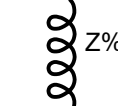
SURGE SUPPRESSION DEVICE.



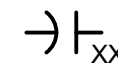
LIGHTNING ARRESTORS
- 'XX' INDICATES
IC: INTERMEDIATE CLASS
DC: DISTRIBUTION CLASS
SC: STATION CLASS



EARTH GROUND



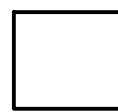
LINE OR LOAD REACTOR.
'Z' DESIGNATES % IMPEDANCE.



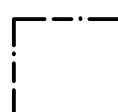
CAPACITOR
- 'XX' INDICATES KVAR RATING



RESISTOR
- 'ZZ' INDICATES IMPEDANCE IN OHMS



MISCELLANEOUS ELECTRICAL EQUIPMENT, SUCH AS PANEL, ETC. EQUIPMENT TYPE AND RATINGS TO BE INDICATED.



ELECTRICAL EQUIPMENT BOUNDARY.
INDICATES MULTIPLE DEVICES ENCLOSED WITHIN BORDER ARE LOCATED WITHIN THE SAME ENCLOSURE, OR MOUNTED TO SAME PANEL RACK.



PORTABLE POWER CONNECTION
- 'XX' INDICATES AMPERE RATING
- 'Y' DESIGNATES TYPE:
3: 3 WIRE + GROUND
4: 4 WIRE + GROUND

M

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GRAPHIC SCALE

Digitally signed by Andrew K Gibbs
Date: 2026.02.17 08:02:04-06'00'

PROJECT ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER

SEAL 041677

ANDREW K. GIBBS

ANDREW K. GIBBS, P.E.
NC LICENSE: 041677

Designed By	RICHARD FERREIRA	County	DARE COUNTY		
Entered By	RICHARD FERREIRA	Division	FERRY DIVISION		
Project Engineer	ANDREW GIBBS	Plan Date	1-14-2026		
Project Manager	ALLISON THORBURN				
Rev.	Date	Drawn	Description	Ch'k'd	App'd

NCDOT PASSENGER FERRY DOCK REPLACEMENT - HATTERAS ISLAND

E-001 ELECTRICAL LEGEND AND NOTES 1