

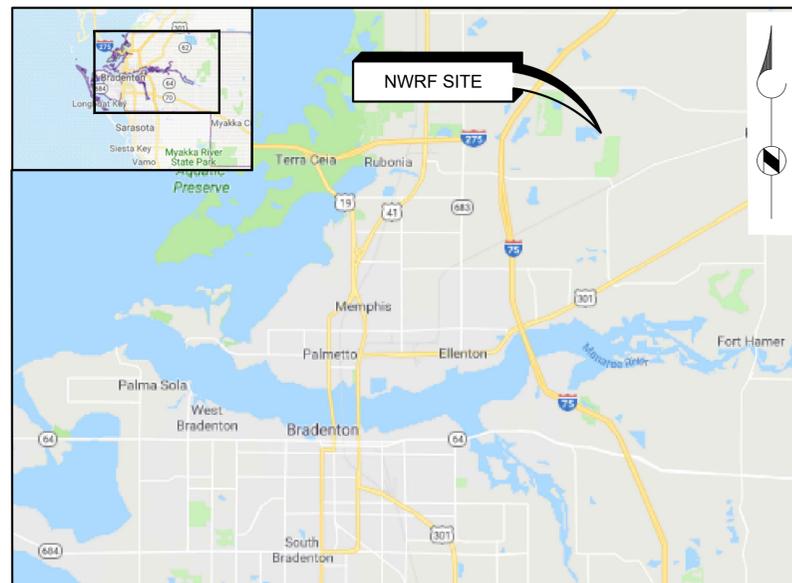


# NWRF MAINTENANCE BUILDING

## BID READY DESIGN

MARCH 2023

PROJECT NO. 6110880



VICINITY MAP  
MANATEE COUNTY



VICINITY MAP  
NWRF SITE  
8500 69TH STREET EAST, PALMETTO, FL

### COUNTY BOARD

COUNTY ADMINISTRATOR: LEE WASHINGTON

- COMMISSIONERS:
- DISTRICT 1 - JAMES SATCHER
  - DISTRICT 2 - AMANDA BALLARD
  - DISTRICT 3 - KEVIN VAN OSTENBRIDGE
  - DISTRICT 4 - MIKE RAHN
  - DISTRICT 5 - VANESSA BAUGH
  - DISTRICT 6 AT LARGE - JASON BEARDEN
  - DISTRICT 7 AT LARGE - GEORGE KRUSE

**Brown AND Caldwell**

CERTIFICATE OF AUTHORIZATION NO. 2602  
6151 LAKE OSPREY DRIVE, 3RD FLOOR  
SARASOTA, FL 34240

DWG Number	Sheet Number	Drawing Title
GENERAL		
1	G-00-001	COVER
2	G-00-002	INDEX OF DRAWINGS
3	G-00-004	ABBREVIATIONS
4	G-00-005	SYMBOLS AND LEGENDS 1
5	G-00-081	NWRF CONSTRUCTION LAYDOWN, ACCESS, AND CONTRACTOR FACILITIES
CIVIL		
6	C-00-001	CIVIL SYMBOLS, LEGENDS AND NOTES
7	C-01-00	CIVIL SITE PLAN
8	C-09-11	EROSION AND SEDIMENT CONTROL PLAN
9	C-09-51	EROSION AND SEDIMENT CONTROL DETAILS
ARCHITECTURAL		
10	A-00-001	GENERAL NOTES, SYMBOLS, AND ABBREVIATIONS
11	A-00-002	CODE ANALYSIS
12	A-00-101	NWRF MAINTENANCE STORAGE BUILDING FLOOR PLAN
13	A-00-102	NWRF MAINTENANCE STORAGE BUILDING ROOF PLAN
14	A-00-201	NWRF MAINTENANCE STORAGE BUILDING ROOF ELEVATIONS
15	A-00-202	NWRF MAINTENANCE STORAGE BUILDING ROOF ELEVATIONS II
16	A-00-301	NWRF MAINTENANCE STORAGE BUILDING AND WALL SECTIONS
17	A-00-501	TYPICAL DETAILS I
18	A-00-601	SCHEDULES AND TYPES
BUILDING MECHANICAL		
19	H-00-101	NWRF MAINTENANCE STORAGE BUILDING HVAC PLAN AND SCHEDULES
ELECTRICAL		
20	E-00-001	LEGEND, ABBREVIATIONS AND GENERAL NOTES
21	E-00-002	ELECTRICAL SPECIFICATIONS
22	E-00-101	NWRF MAINTENANCE BUILDING ELECTRICAL PLAN AND RISER
23	E-00-102	ELECTRICAL SITE PLAN



Certificate of Authorization No. 2602  
6151 Lake Osprey Drive, 3rd Floor  
Sarasota, FL 34240

BID READY DESIGN



NWRF  
MAINTENANCE  
BUILDING

REVISIONS

REV	DATE	DESCRIPTION

LINE IS 2 INCHES  
AT FULL SIZE

DESIGNED: A. MODY

DRAWN: J. WATTS

CHECKED: T. BOSSO

CHECKED:

APPROVED: A. MODY

FILENAME

158118-G-00-002.DWG

BC PROJECT NUMBER

158118

CLIENT PROJECT NUMBER

6010881

GENERAL

INDEX OF  
DRAWINGS

DRAWING NUMBER

G-00-002

SHEET NUMBER

2 OF 23



Path: C:\BPC\DWG\273475 FILENAME: 158118-G-00-005.DWG PLOT DATE: 3/16/2023 3:05 PM CAD USER: JABARI WATTS

PIPE FITTING SYMBOLS	SHEET NUMBERING STRATEGY	EQUIPMENT CALL OUT SYSTEM	PIPE VALVE SYMBOLS																																																																																																																																				
<p><b>SINGLE LINE</b></p> <p>EXISTING PIPE</p> <p>EXISTING PIPING TO BE ABANDONED OR REMOVED UNDER THIS CONTRACT. ABANDONED WHEN NOT IN CONFLICT WITH NEW CONSTRUCTION WORK.</p> <p>NEW PIPE</p> <p>BLIND FLANGE</p> <p>CAP OR PLUG</p> <p>TEE</p> <p>TEE CROSS</p> <p>TEE UP</p> <p>TEE DOWN</p> <p>ELBOW DOWN OR UP AT 45°</p> <p>ELBOW CONTINUATION</p> <p>ELBOW UP</p> <p>ELBOW DOWN</p> <p>ELBOW CONTINUATION</p> <p>22.5° ELBOW</p> <p>45° ELBOW</p> <p>90° ELBOW</p> <p>CONCENTRIC</p> <p>(NOTE THAT ON I SHEETS THE CONCENTRIC REDUCER SYMBOL IS USED GENERICALLY FOR ALL REDUCERS. THE M SHEETS AND THE SPECIFICATIONS DELINEATE WHETHER THE REDUCER SHALL BE CONCENTRIC, ECCENTRIC - FLAT BOTTOM OR ECCENTRIC FLAT TOP.)</p>	<p><b>SHEET NUMBERING STRATEGY</b></p> <p>X - XX - XX            SHEET NUMBER DESIGNATION            AREA DESIGNATION            DISCIPLINE DESIGNATION</p> <p>DISCIPLINE DESIGNATION (SINGLE CHARACTER)            G - GENERAL            C - CIVIL            CD - CIVIL DEMOLITION            S - STRUCTURAL            A - ARCHITECTURAL            E - ELECTRICAL</p> <p>AREA DESIGNATION            90 - MAINTENANCE BUILDING</p> <p>CIVIL DESIGNATIONS            00 - GENERAL INFORMATION, NOTES, ABBREVIATIONS, SYMBOLS, LEGENDS, AND STANDARD DETAILS            01 - SITE            08 - PAVING AND GRADING            09 - EROSION AND CONTROL</p> <p>G, C, M, A, S, H, P SHEET NUMBER DESIGNATORS            0X - GENERAL NOTES, ABBREVIATIONS, SYMBOLS            0X - PLANS - EXISTING AND DEMOLITION            1X - PLANS - NEW            2X - PARTIAL AND ENLARGED PLANS            3X - SECTIONS, ELEVATIONS AND PROFILES            4X - SCHEMATICS, ISOMETRICS AND SCHEDULES            5X - DETAILS</p> <p>PLAN SHEET DESIGNATORS            EXISTING      NEW            00              10      SUBSURFACE AND FOUNDATION PLANS            01              11      LOWER, 1ST FLOOR AND FLOOR PLANS            02              12      UPPER, TOP AND 2ND FLOOR PLANS            03              13      ROOF PLAN</p> <p>ELECTRICAL DESIGNATORS            00 - GENERAL INFORMATION, NOTES, ABBREVIATIONS, SYMBOLS, LEGENDS, AND STANDARD DETAILS            01 - SITE            02 - SCHEMATICS AND SCHEDULES</p> <p><b>PIPE CALL OUT SYSTEM</b></p> <p>X" - XXX - XXX            PIPE TYPE            FLOW STREAM            PIPE SIZE</p> <p>REFERENCE SHEET G-00-04 FOR FLOW STREAM AND PIPE TYPE ABBREVIATIONS</p> <p><b>SECTION CUT SYMBOLS</b></p> <p>FOR CUTTING PLANES UP TO 3 INCHES, MAKE LINE CONTINUOUS</p> <p>FOR SMALLER OR CROWDED AREAS, USE ARROWHEAD ON ONE END</p> <p>WHEN CUTTING PLANE LINE IS OVER 3 INCHES USE ABOUT A 1 INCH LINE AT EACH END</p> <p>SECTION CUTTING PLANE WITH BUBBLE AT EACH END</p> <p><b>DETAIL CALL OUT SYMBOLS</b></p> <p>DETAIL LETTER            SHEET WHERE DETAIL IS            ARROWHEAD FOR LEADER (OPTIONAL)</p>	<p><b>EQUIPMENT CALL OUT SYSTEM</b></p> <p>XXX-XXXX            SEQUENTIAL NUMBER            AREA RELATED NUMBER (ALSO DIRECTLY RELATED TO EXACT I SHEET)            EQUIPMENT ABBREVIATION</p> <p>HEX-8201            SEQUENTIAL NUMBER            AREA 82            ABBREVIATION FOR HEAT EXCHANGER</p> <p><b>LINETYPE LEGEND</b></p> <p>NEW            DEMOLITION            EXISTING            ROAD RECONSTRUCTION            RELOCATE OR REMOVE AND KEEP            LAYDOWN AREA</p> <p><b>PIPE JOINTS AND COUPLINGS</b></p> <table border="1" style="width: 100%; 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SEE SPECIFICATIONS FOR MATERIALS AND FITTINGS TO BE USED.</li> <li>ALL PIPING LESS THAN 4 INCHES IS DEPICTED WITH A SINGLE LINE ON DRAWINGS HAVING A SCALE OF 1/4"=1'-0". FOR PIPING DRAWN AT OTHER SCALES WITH A SINGLE LINE, REFER TO THE TABLE:</li> </ol> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>SCALE</th> <th>PIPE SIZE</th> </tr> </thead> <tbody> <tr><td>1/8" = 1'-0"</td><td>LESS THAN 8"</td></tr> <tr><td>3/16" = 1'-0"</td><td>" " 6"</td></tr> <tr><td>1/4" = 1'-0"</td><td>" " 4"</td></tr> <tr><td>3/8" = 1'-0"</td><td>" " 3"</td></tr> <tr><td>1/2" = 1'-0"</td><td>" " 2"</td></tr> <tr><td>3/4" = 1'-0"</td><td>" " 1 1/2"</td></tr> <tr><td>1" = 1'-0"</td><td>" " 1"</td></tr> </tbody> </table>			DOUBLE LINE	3D SYMBOLS	SINGLE LINE					THREE WAY VALVE				GATE VALVE (FLANGED)				GATE VALVE (THREADED)				PLUG VALVE (GEAR OPERATOR)				PLUG VALVE (LEVER HANDLE)				BALL VALVE (THREADED)				BALL VALVE (FLANGED)				BUTTERFLY VALVE (LUGGED/WAFER)				BUTTERFLY VALVE (AWWA W/ HANDWHEEL ACTUATOR)				GLOBE VALVE (FLANGED)				GLOBE VALVE (THREADED)				DIAPHRAGM VALVE (FLANGED)				DIAPHRAGM VALVE (THREADED)				CHECK VALVE				TRIPLE DUTY VALVE				DOUBLE LEAF CHECK VALVE				BALL CHECK VALVE				KNIFE GATE VALVE				SPECTACLE FLANGE	SCALE	PIPE SIZE	1/8" = 1'-0"	LESS THAN 8"	3/16" = 1'-0"	" " 6"	1/4" = 1'-0"	" " 4"	3/8" = 1'-0"	" " 3"	1/2" = 1'-0"	" " 2"	3/4" = 1'-0"	" " 1 1/2"	1" = 1'-0"	" " 1"
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 Sarasota, FL 34240



**NWRF MAINTENANCE BUILDING**

REVISIONS

REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE

DESIGNED: A. MODY  
 DRAWN: J. WATTS  
 CHECKED: T. BOSSO  
 APPROVED: A. MOODY

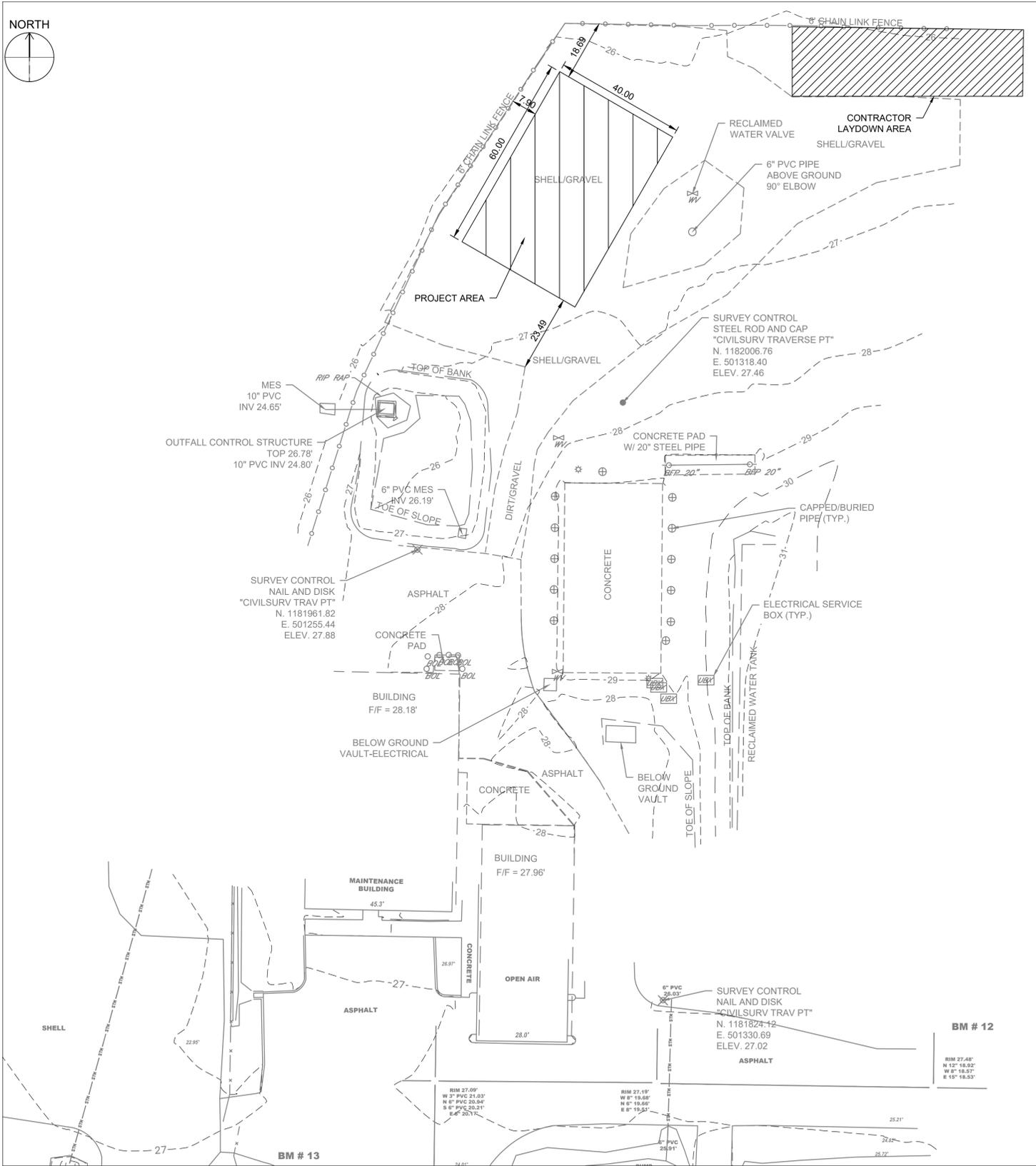
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 6110880

GENERAL

**SYMBOLS AND LEGENDS 1**

DRAWING NUMBER  
**G-00-005**

4 SHEET NUMBER OF 23



**NWRF - CONSTRUCTION LAYDOWN, ACCESS AND CONTRACTOR FACILITIES**  
SCALE: 1" = 20'



- NOTE:**
1. SURVEY OBTAINED FROM HYATT SURVEY SERVICES AND CIVILSURV, DATED 08/2019, 05/2022 AND 11/2022.
  2. BACKGROUND PLAN OBTAINED FROM NORTH SUBREG WWF IMPROVEMENTS-PROJECT NUMBER 1402 AND NWWTP MAINTENANCE BUILDING-PROJECT NUMBER 4987.001.

**FACILITY ADDRESS:**  
8500 69TH STREET EAST, PALMETTO, FL

- GENERAL NOTES:**
1. CONTRACTOR SHALL PROVIDE CONTINUOUS ACCESS TO COUNTY FOR TYPICAL FACILITY OPERATIONS AND MAINTENANCE AT ALL TIMES.
  2. CONTRACTOR SHALL COORDINATE WITH THE COUNTY ON A WEEKLY BASIS TO PLAN FOR DELIVERY AND HAULING SCHEDULES.
  3. CONTRACTOR SHALL FIELD LOCATE POTENTIAL HAZARDS AND PROTECT EXISTING FACILITIES AND INFRASTRUCTURE PRIOR TO USE OF LAY DOWN AREA.
  4. CONSTRUCTION LAY DOWN AREA INCLUDES SPACE ALLOCATED FOR STAGING, STORAGE DELIVERY, HAULING, AND FIELD OFFICE.
  5. AFTER CONSTRUCTION, CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RESTORATION REQUIRED FROM USE OF LAY DOWN AREA. AREA SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN PRE-EXISTING CONDITIONS.
  6. CONTRACTOR SHALL FIELD VERIFY CONDITION SHOWN PRIOR TO BID.
- KEYNOTES:**
1. MAINTENANCE STORAGE SITE LOCATION

- SURVEYOR'S NOTES:**
1. THIS IS A TOPOGRAPHIC SURVEY OF A LIMITED AREA OF THE SUBJECT PARCEL AND DOES NOT DEPICT MATTERS OF TITLE (BOUNDARIES, EASEMENTS, OWNERSHIP, RIGHTS OF WAY, ETC.) OR JURISDICTIONAL INFORMATION (ZONING, WETLANDS, SOILS, ETC.) EXCEPT AS MAY BE NOTED ABOVE AND OTHER FEATURES AND IMPROVEMENTS, BOTH ABOVE GROUND AND UNDERGROUND, MAY EXIST AND ARE NOT SHOWN HEREON.
  2. NORTH AND THE COORDINATES SHOWN HEREON ARE REFERENCED TO GRID NORTH, WEST ZONE OF THE FLORIDA STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM OF 1983, ADJUSTMENT OF 2011 UTILIZING CHC M7 GNSS RTK RECEIVERS AND A NETWORK SOLUTION PROVIDED BY THE FLORIDA DEPARTMENT OF TRANSPORTATION FLORIDA PERMANENT REFERENCE NETWORK (FPRN). THE COORDINATES LISTED HEREON ARE GRID VALUES AND ARE LISTED IN FEET. NATIONAL GEODETIC SURVEY CONTROL STATIONS "M 062" (PID: AG9167) & "M008" (PID: AG9113) WERE UTILIZED AS CONTROL FOR THIS SURVEY.
  3. ELEVATIONS SHOWN ARE RELATIVE TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) AND ARE BASED ON NATIONAL GEODETIC SURVEY BENCHMARKS "TURN POINT" (PID: D02889) (PUBLISHED ELEVATION 25.53') AND "TRANSIT" (PID: D02888) (PUBLISHED ELEVATION 34.83'). ONSITE CONTROL WAS DERIVED USING GNSS OBSERVATIONS & COMPARED TO THE ABOVE MENTIONED CONTROL POINTS. ADD 0.96' TO THE PUBLISHED NAVD 1988 ELEVATIONS TO CONVERT TO NFVD 1929. THIS CONVERSION WAS DETERMINED BY USING THE NATIONAL GEODETIC SURVEY PROGRAM VERTCON.
  4. AN ABSTRACT OF TITLE WAS NOT PERFORMED BY OR NOR FURNISHED TO CIVILSURV DESIGN GROUP, INC. ANY EASEMENTS OR ENCUMBRANCES THAT MAY APPEAR AS A RESULT OF SAID ABSTRACT IS NOT CERTIFIED HEREON.
  5. THIS ELECTRONIC DRAWING FILE IS NOT COMPLETE WITHOUT THE ACCOMPANYING SURVEYOR'S REPORT.
  6. THE INTENDED DISPLAY SCALE OF THIS DRAWING IS 1" = 20'.
  7. ABBREVIATIONS SHOWN HEREON ARE FROM MANATEE COUNTY.
  8. BASED UPON A GRAPHIC DETERMINATION THIS PROPERTY IS LOCATED IN FLOOD ZONE "A" ACCORDING TO FEDERAL EMERGENCY MANAGEMENT AGENCY'S (FEMA) FLOOD INSURANCE RATE MAP (FIRM) FOR MANATEE COUNTY FLORIDA; MAP NUMBER 12081C0178E, WITH AN EFFECTIVE DATE OF 03/17/2014. THE ABOVE STATEMENT AND THE GRAPHICAL REPRESENTATION OF THE ZONE(S) (IF SHOWN) ARE FOR INFORMATION PURPOSES ONLY, AND THE UNDERSIGNED ASSUMES NO LIABILITY FOR THE CORRECTNESS OF THE CITED MAP. ADDITIONALLY THE ABOVE STATEMENT DOES NOT REPRESENT THE OPINION OF THE UNDERSIGNED AS TO THE PROBABILITY OF FLOODING.
- REVISIONS:  
9/21/2022 10:18AM ADD ADDITIONAL TOPO



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Sarasota, FL 34240

**BID READY DESIGN**



**NWRF MAINTENANCE BUILDING**

**REVISIONS**

REV	DATE	DESCRIPTION

DESIGNED: A. MOODY  
DRAWN: J. WATTS  
CHECKED: T. BOSSO  
APPROVED: A. MOODY

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**GENERAL**  
**NWRF CONSTRUCTION LAYDOWN, ACCESS AND CONTRACTOR FACILITIES**

DRAWING NUMBER  
**G-00-081**

SHEET NUMBER  
**5** OF **23**

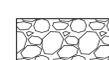


**KEY PLAN**  
**NWRF FACILITY LAYOUT**

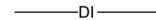
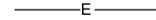
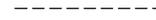
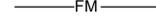
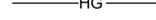
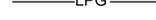
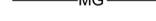
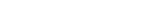
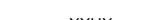
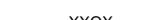
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**CIVIL SYMBOLS AND LEGEND**

	EXISTING FACILITIES		BOLLARD / GUARD POST
	EXISTING FACILITIES TO BE REHABILITATED		CATCH BASIN
	EXISTING FACILITIES TO BE PARTIALLY DEMOLISHED AND RECONSTRUCTED.		CLEANOUT
	EXISTING FACILITIES TO BE COMPLETELY DEMOLISHED AND RECONSTRUCTED		MONITORING WELL
	NEW FACILITIES		DOUBLE LIGHT POLE
	REHABILITATED FACILITY		SINGLE LIGHT POLE
	RECONSTRUCTED FACILITY		STORM DRAINAGE MANHOLE
	STAGING AREA		WATER METER
	LIMITS OF PROPOSED RECONSTRUCTED ROADWAY		SANITARY SEWER VALVE
	PAVEMENT (BY OTHERS)		WATER VALVE
	GRAVEL APRON AT STRUCTURES SEE DETAIL F/C-00-03		ELECTRIC WIRE PULL BOX
	CONCRETE SIDEWALK		FIRE HYDRANT
	AREAS TO BE SODDED		FITTING (TEE)
	TRAFFIC PATTERN FLOW ARROW		FITTING (ELBOW)
	INLET PROTECTION		UTILITY POLE
	FILTER FABRIC PROTECTED INLET REFER TO SPEC 02270		SANITARY SEWER MANHOLE
	EXISTING SPOT ELEVATIONS		DRAINAGE CATCH BASIN
	STORMWATER FLOW		STORM DRAIN MANHOLE
			COMMUNICATION MANHOLE
			ELECTRICAL MANHOLE

**LINE AND UTILITY DESIGNATIONS**

	DRAIN
	DUCTILE IRON PIPE
	ELECTRIC (DUCTBANK)
	ELECTRIC (CONDUIT)
	FORCEMAIN
	GAS (NATURAL)
	HIGH PRESSURE GAS
	LOW PRESSURE GAS
	MEDIUM PRESSURE GAS
	POTABLE WATER
	PROPERTY LINE
	REINFORCED CONCRETE PIPE
	ROW
	SANITARY SEWER
	SILT FENCE
	STORM DRAIN
	WATER
	UNDERGROUND ELECTRIC (TYP)
	OVERHEAD ELECTRIC (TYP)

**GENERAL NOTES**

1. THE INFORMATION PROVIDED IN THESE DRAWINGS IS SOLELY TO ASSIST THE CONTRACTOR IN ASSESSING THE NATURE AND EXTENT OF CONDITIONS WHICH MAY BE ENCOUNTERED DURING THE COURSE OF THE WORK. THE CONTRACTORS ARE DIRECTED, PRIOR TO BIDDING, TO CONDUCT WHATEVER INVESTIGATIONS THEY DEEM NECESSARY TO ARRIVE AT THEIR OWN CONCLUSIONS REGARDING THE ACTUAL CONDITIONS THAT WILL BE ENCOUNTERED, AND UPON WHICH BIDS WILL BE BASED.
2. ELEVATIONS REFERENCED IN THE DRAWINGS ARE BASED ON MANATEE COUNTY DATUM. BENCHMARKS AND/OR STRUCTURE ELEVATIONS FROM EXISTING SURVEYS OR REFERENCE DRAWINGS MAY RESULT IN VARIANCES WITH ELEVATIONS INDICATED ON THE DRAWINGS FOR EXISTING FACILITIES.
3. THE WATER TABLE MAY VARY DEPENDING ON RAINS AND THE SEASON. THE CONTRACTOR SHALL ACCOUNT FOR THESE SEASONAL VARIATIONS IN THEIR BID.
4. ALL GRADES SHOWN IN PLAN ARE FINISHED GRADES.
5. ANY CONSTRUCTION SHALL BE IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF MANATEE COUNTY AND ANY OTHER LOCAL, STATE OR FEDERAL AGENCY WITH JURISDICTION. IT IS THE INTENT OF THESE PLANS TO BE IN ACCORDANCE WITH APPLICABLE CODES AND AUTHORITIES HAVING JURISDICTION. ANY DISCREPANCIES BETWEEN THESE PLANS AND APPLICABLE CODES SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
6. THE CONTRACTOR IS TO USE CAUTION WHEN WORKING IN OR AROUND AREAS OF OVERHEAD AND UNDERGROUND UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING SUBSURFACE UTILITY INVESTIGATIONS AND VISUAL VERIFICATION OF IDENTIFIED UTILITIES PRIOR TO EXCAVATION.
7. MANATEE COUNTY REQUIRES THAT THE ACCESS TO ALL WATER AND SEWER VALVES, SANITARY MANHOLES, AND OTHER CONTROL MECHANISM BE MAINTAINED THROUGHOUT CONSTRUCTION IN THE EVENT OF AN EMERGENCY. COVERING VALVE BOXES OR MANHOLES CAN BE CONSIDERED OBSTRUCTION AND TAMPERING WITH DEPARTMENT UTILITIES.
8. ALL GRASS AREAS AFFECTED SHALL BE RE-SODDED WITH BAHIA.
9. THE CONTRACTOR SHALL RESTRICT PERSONNEL, THE USE OF EQUIPMENT, AND THE STORAGE OF MATERIALS TO AREAS WITHIN THE LIMITS OF CONSTRUCTION AND DESIGNATED STAGING AREAS, SHOWN ON G-00-081.
10. ALL EXCESS MATERIAL, AS DESIGNATED BY THE ENGINEER, IS TO BE DISPOSED BY THE CONTRACTOR WITHIN 72 HOURS OF BEING DEPOSITED IN THE CONSTRUCTION AREA AND AT THE CONTRACTOR'S EXPENSE.
11. ALL DISPOSAL OF MATERIALS, RUBBISH AND DEBRIS SHALL BE MADE AT A LEGAL DISPOSAL SITE OR BY OTHER PRIOR APPROVED MANNER. MATERIAL CLEARED FROM THE SITE AND DEPOSITED ON ADJACENT AREAS WILL NOT BE CONSIDERED AS HAVING BEEN DISPOSED PROPERLY. OWNERSHIP OF DEMOLISHED MATERIAL SHALL BE SPECIFIED AND A CHAIN OF CUSTODY PROVIDED TO THE OWNER.
12. ANY KNOWN OR SUSPECTED HAZARDOUS MATERIAL FOUND IN OR ON THE PROJECT BY THE CONTRACTOR SHALL BE IMMEDIATELY REPORTED TO THE COUNTY, WHO SHALL DIRECT THE CONTRACTOR TO PROTECT THE AREA OF KNOWN OR SUSPECTED CONTAMINATION FROM FURTHER ACCESS. THE COUNTY WILL ARRANGE FOR INVESTIGATION, IDENTIFICATION, AND REMEDIATION OF THE HAZARDOUS MATERIAL. THE CONTRACTOR WILL NOT RETURN TO THE AREA OF CONTAMINATION UNTIL APPROVAL IS PROVIDED BY THE COUNTY.
13. EXISTING ABOVE GROUND FEATURES ARE SHOWN ACCORDING TO THE BEST AVAILABLE DATA AND MAY NOT BE ACCURATELY REFLECT PRESENT CONDITIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING THEMSELVES WITH CURRENT CONDITIONS, AND SHALL REPORT DISCREPANCIES TO THE ENGINEER PRIOR TO STARTING WORK.
14. CONTRACTOR IS TO VERIFY THE EXACT LOCATION OF ALL EXISTING TREES, STRUCTURES, AND UTILITIES SHOWN AND NOT SHOWN ON THE PLANS. ANY STRUCTURE, PAVEMENT, TREES OR OTHER EXISTING IMPROVEMENT NOT SPECIFIED FOR REMOVAL WHICH IS DAMAGED, EXPOSED OR ANY WAY DISTURBED SHALL BE REPAIRED, PATCHED, OR REPLACED AT NO ADDITIONAL COST TO THE OWNER.
15. CONTRACTOR SHALL AVOID THE REMOVAL AND ANY DAMAGE TO ANY EXISTING TREES UNLESS OTHERWISE DIRECTED BY THE CONTRACT DOCUMENTS.

**BURIED UTILITY NOTES**

1. EXISTING UTILITIES ARE CONSIDERED TO BE SHOWN IN THE HORIZONTAL PLAN WITH REASONABLE ACCURACY. HOWEVER, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE WHATEVER FURTHER INVESTIGATIONS ARE NECESSARY TO ESTABLISH THE EXACT LOCATION OF THE EXISTING UTILITY AND ADJUST ROUTING OF NEW UTILITY FACILITIES PRIOR TO LAYING THE NEW UTILITIES TO MEET THE INTENT OF THE DESIGN.
2. THE ENGINEER DOES NOT ASSUME RESPONSIBILITY THAT DURING CONSTRUCTION UNDERGROUND PIPING AND UTILITIES OTHER THAN THAT SHOWN MAY BE ENCOUNTERED. ANY DAMAGE TO EXISTING PIPING AND UTILITIES MUST BE REPAIRED IMMEDIATELY AT THE EXPENSE OF THE CONTRACTOR.

**EROSION AND SEDIMENT CONTROL GENERAL NOTES**

1. CONTRACTOR IS RESPONSIBLE FOR EROSION AND SEDIMENT CONTROL ON THIS PROJECT. CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION AND SEDIMENT CONTROL ACCORDING TO SECTION 02270 TO PREVENT RUNOFF, TRACKING, OR LOSS OF SEDIMENT FROM DISTURBED AREAS. ADDITIONAL EROSION AND SEDIMENT CONTROL SHALL BE INSTALLED AT NO ADDITIONAL COST TO OWNER IF DEEMED NECESSARY BY ENGINEER.
2. EROSION AND SEDIMENT CONTROL SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES, EXCEPT THOSE NEEDED TO INSTALL SUCH CONTROL.
3. PROTECT MATERIAL STOCKPILES FROM CONTRIBUTING TO SEDIMENT RUNOFF.
4. CONTRACTOR SHALL INSTALL AN EROSION MAT/SLOPE BLANKET ON ALL PERMANENT SLOPES STEEPER THAN 3:1. EROSION MAT/SLOPE BLANKET SHALL BE ORGANIC MATERIAL FIBER AND BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
5. ANY SOIL, MUD, OR DEBRIS WASHED, TRACKED, OR DEPOSITED ONTO PAVED SURFACES SHALL BE REMOVED PRIOR TO END OF EACH WORK DAY.
6. CONSTRUCTION ENTRANCE SHALL BE REMOVED AND AREA RESTORED PRIOR TO END OF PROJECT.
7. CONTRACTOR SHALL MAINTAIN EROSION AND SEDIMENT CONTROL UNTIL SITE IS STABILIZED.



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Sarasota, FL 34240

**BID READY DESIGN**



**NWRF  
MAINTENANCE  
BUILDING**

**REVISIONS**

REV	DATE	DESCRIPTION

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AT FULL SIZE

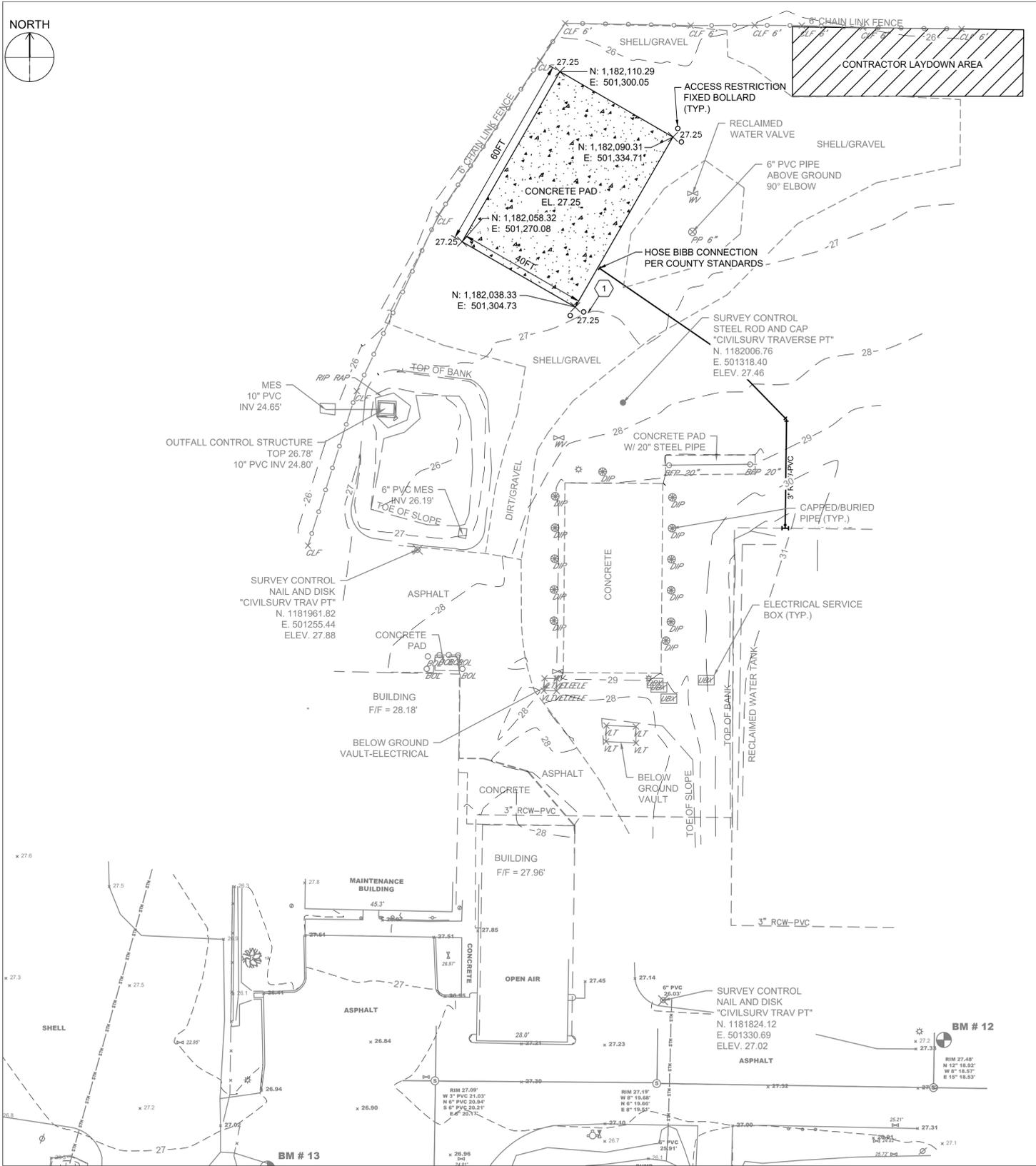
DESIGNED: A. MODY  
DRAWN: J. WATTS  
CHECKED: T. BOSSO  
CHECKED: T.  
APPROVED: A. MOODY

FILENAME  
158118-C-00-001.DWG  
BC PROJECT NUMBER  
158118  
CLIENT PROJECT NUMBER  
6110880

CIVIL  
**CIVIL SYMBOLS,  
LEGENDS AND  
NOTES**

DRAWING NUMBER  
**C-00-001**  
SHEET NUMBER  
6 OF 23

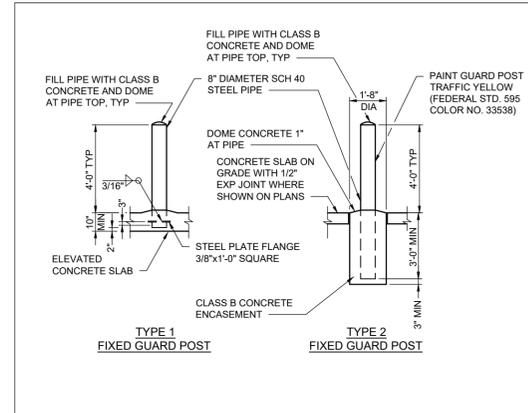
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**NWRF - CIVIL SITE PLAN**  
SCALE: 1" = 20'



**KEYNOTES:**  
1. MATCH EXISTING GRADE



**ACCESS RESTRICTION FIXED BOLLARD**

**DETAIL C**  
C-01-00  
SCALE: NONE



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**BID READY DESIGN**



**NWRF MAINTENANCE BUILDING**

**REVISIONS**

REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE

DESIGNED: A. MODY  
DRAWN: J. WATTS  
CHECKED: T. BOSSO  
APPROVED: A. MOODY

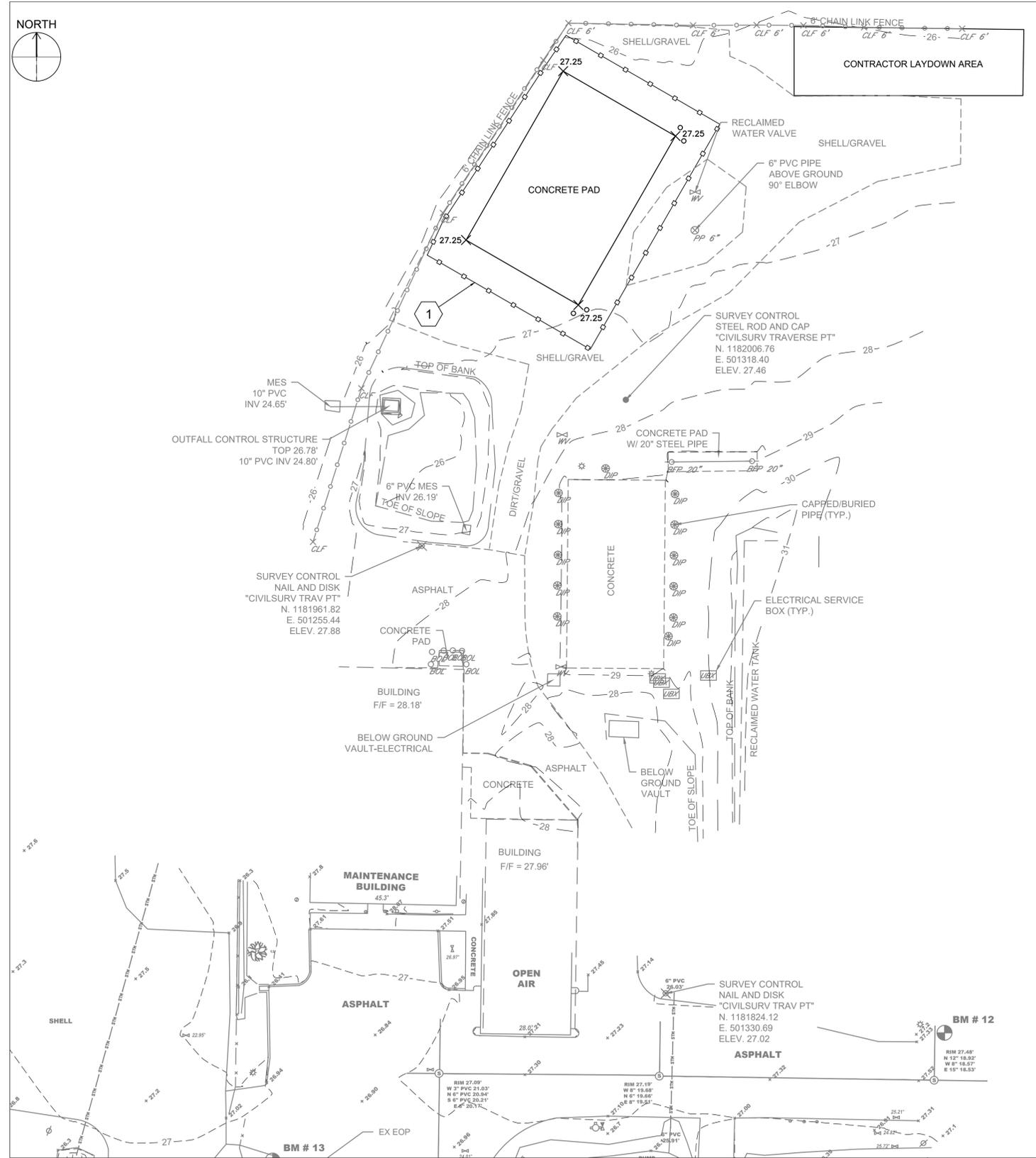
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BC PROJECT NUMBER: 158118  
CLIENT PROJECT NUMBER: 6110880

CIVIL

**CIVIL SITE PLAN**

DRAWING NUMBER: **C-01-00**  
SHEET NUMBER OF: **7** OF **23**

Path: C:\BPC\DWG\2731451 FILENAME: 158118-C-09-11.DWG PLOT DATE: 3/20/2023 2:54 PM CAD USER: JABARI WATTS



**NWRF - EROSION CONTROL AND SEDIMENT CONTROL PLAN**  
SCALE: 1" = 20'



**LEGEND:**

- SILT FENCE  
SEE DETAILS E, F & G ON C-09-51

**KEYNOTES:**

1. SILT FENCE SHALL BE PLACED AS SHOWN.



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**BID READY DESIGN**



**NWRF  
MAINTENANCE  
BUILDING**

**REVISIONS**

REV	DATE	DESCRIPTION

LINE IS 2 INCHES  
AT FULL SIZE

DESIGNED: A. MODY  
DRAWN: J. WATTS  
CHECKED: T. BOSSO  
APPROVED: A. MOODY

FILENAME  
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BC PROJECT NUMBER  
158118  
CLIENT PROJECT NUMBER  
6110880  
CIVIL

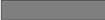
**EROSION AND  
SEDIMENTATION  
CONTROL PLAN**

DRAWING NUMBER  
**C-09-11**  
SHEET NUMBER OF  
**8** OF **23**





**LEGEND**

PROPOSED   
 EXISTING 

**GENERAL CODE CRITERIA**

BUILDING CODE	2020 FLORIDA BUILDING CODE 7TH EDITION
FIRE CODE	FLORIDA FIRE PREVENTION CODE, 7TH EDITION: NFPA 1 & 101 2018
PLUMBING CODE	2020 FLORIDA BUILDING CODE - PLUMBING 7TH EDITION
MECHANICAL CODE	2020 FLORIDA BUILDING CODE - MECHANICAL 7TH EDITION
ELECTRICAL CODE	2020 FLORIDA BUILDING CODE - ELECTRICAL 7TH EDITION
ENERGY CODE	2020 FLORIDA BUILDING CODE - ENERGY CONSERVATION 7TH EDITION

**BUILDING CODE CHART - 2020 FLORIDA BUILDING CODE**

MAINTENANCE STORAGE BUILDING		
OCCUPANCY OF BUILDING	U	
ROOM SEPARATION	N/A	
CONSTRUCTION TYPE	II B	
NUMBER OF STORIES	ALLOWABLE 2	ACTUAL 1
BUILDING HEIGHT (FT)	ALLOWABLE 75	ACTUAL 16'-8"
ALLOWABLE FLOOR AREA (SF)	ALLOWABLE 8,500	ACTUAL 2363
SEPARATION RATINGS		
FIRE SEPARATION DISTANCE	REQUIRED	PROVIDED
DISTANCE LESS THAN 5'	2 HR	N/A
DISTANCE BETWEEN 5' & 10'	1 HR	N/A
DISTANCE BETWEEN 10' & 30'	0 HR	N/A
DISTANCE MORE THAN 30'	0 HR	0HR
FIRE RESISTANCE RATINGS		
	REQUIRED	PROVIDED
STRUCTURAL FRAME	0 HR	0HR
BEARING WALLS - EXTERIOR	0 HR	0HR
BEARING WALLS - INTERIOR	0 HR	0HR
NON BEARING WALLS AND PARTITIONS - INTERIOR	0 HR	0 HR
FLOOR CONSTRUCTION	0 HR	0HR
ROOF CONSTRUCTION	0 HR	0HR
INTERIOR FINISHES		
	REQUIRED	PROVIDED
VERTICAL EXITS AND EXIT PASSAGeways	CLASS B	CLASS B
EXIT ACCESS CORRIDORS AND OTHER EXIT WAYS	CLASS C	CLASS C
ROOMS AND ENCLOSED SPACES	CLASS C	CLASS C
FIRE PROTECTION SYSTEMS		
	REQUIRED	PROVIDED
AUTOMATIC SPRINKLERS	NO	NO
ALT. AUTOMATIC FIRE EXTINGUISHING SYSTEMS	NO	NO
STANDPIPE SYSTEM	NO	NO
PORTABLE FIRE EXTINGUISHERS	YES	YES
FIRE ALARM AND DETECTION SYSTEMS	NO	NO
MEANS OF EGRESS		
	REQUIRED	PROVIDED
OCCUPANT LOAD FACTORS (SF / PERSON)	MECHANICAL SPACE 300	
OCCUPANT LOAD CHART	REFERENCE CODE COMPLIANCE PLAN	
EGRESS WIDTH PER OCCUPANT	36" MIN.	36"
SPACES WITH ONE MEANS OF EGRESS	NOT ALLOWED	N/A
MAX. EXIT ACCESS TRAVEL DISTANCE	300ft.	
EXIT ACCESS TRAVEL DISTANCE	REFERENCE CODE COMPLIANCE PLAN	
CORRIDOR FIRE RESISTANCE RATING	0 HR	N/A
BUILDINGS WITH ONE EXIT	NOT ALLOWED	N/A
ACCESSIBILITY		
CONSTRUCTION SITES	--	
EQUIPMENT SPACES	SEE NOTE 1	
ACCESSIBILITY ROUTE/ENTRY	SEE NOTE 1	
PARKING	N/A	
SIGNAGE	N/A	

NOTES:  
 1. THE MAINTENANCE STORAGE BUILDING DOES NOT CONTAIN CONDITIONED SPACE ; AS SUCH, THE BUILDING IS INCLUDED AS AN EXEMPT SPACE UNDER SECTION C101.4.2.4 , "BUILDINGS DESIGNED FOR PURPOSES OTHER THAN GENERAL SPACE COMFORT AND CONDITIONING" OF THE 2020 FL BUILDING CODE ENERGY CONSERVATION.



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**Sarasota, FL 34240**

**BID READY DESIGN**



**NWRF  
 MAINTENANCE  
 BUILDING**

**REVISIONS**

REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE

DESIGNED: H. BYRNES  
 DRAWN: H. BYRNES  
 CHECKED: D. WALDROP  
 CHECKED:

APPROVED: D. WALDROP

FILENAME

BC PROJECT NUMBER  
 158118  
 CLIENT PROJECT NUMBER

ARCHITECTURAL

**CODE ANALYSIS**

DRAWING NUMBER  
**A-00-002**

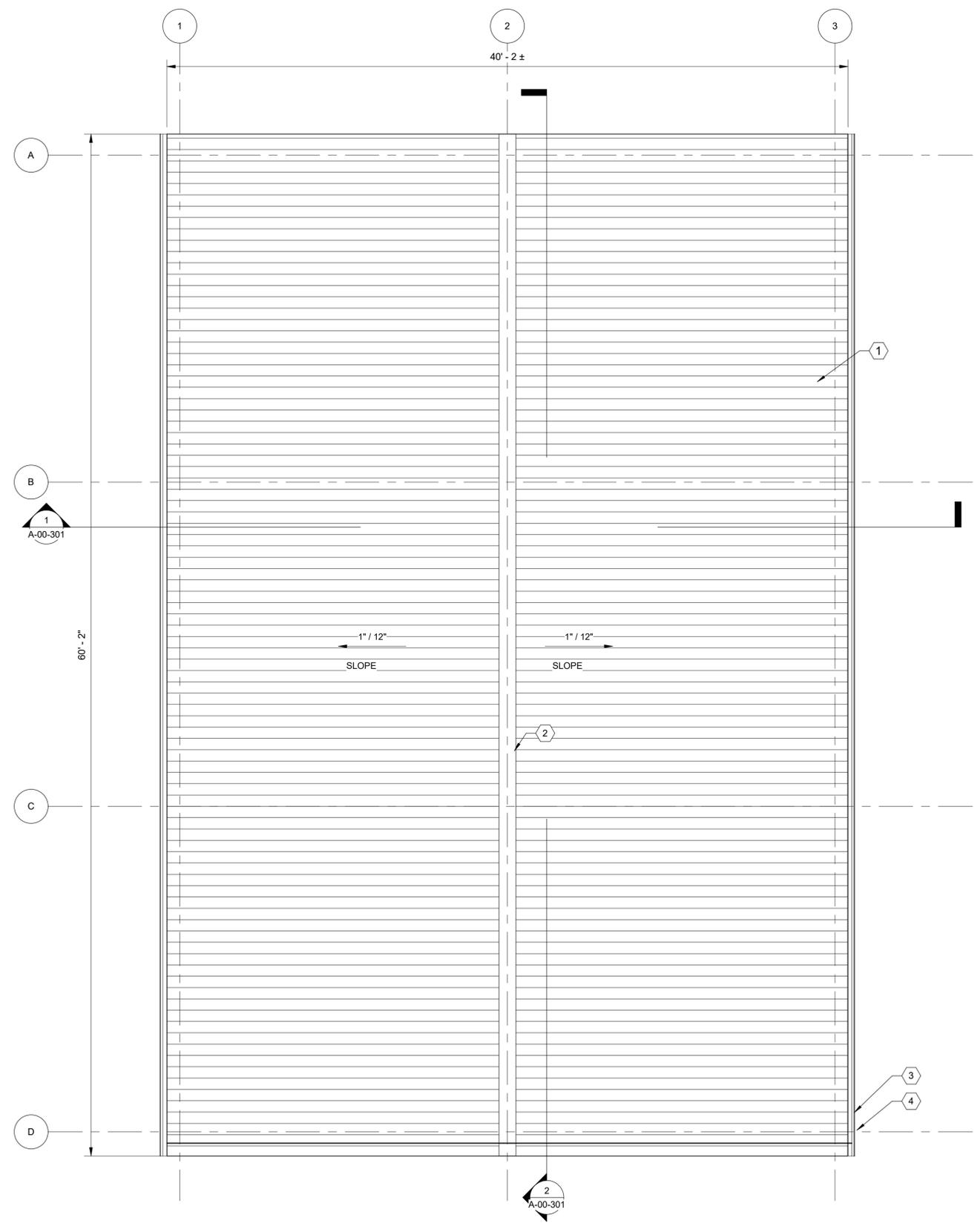
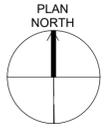
85 SHEET NUMBER OF 94

**ARCHITECTURAL SITE PLAN**

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

Plot Date: 3/17/2023 12:20:15 PM Path: T:\0273\4481\58118\_A-V21.rvt





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

**ROOF NOTES**

1. CONTRACTOR SHALL COORDINATE WITH "M", "D", AND "S" DRAWINGS FOR ALL ROOF PENETRATIONS.
2. ALL CURB AND ROOF OPENING SIZES SHALL BE COORDINATED WITH ACTUAL EQUIPMENT FURNISHED.

**ROOF LEGEND:**

→ INDICATES SLOPE DIRECTION OF ROOF SYSTEM

**KEYNOTES:**

1. STANDING SEAM METAL ROOFING SYSTEM
2. RIDGE CAP
3. 6" X 6" ALUMINUM GUTTER
4. 4" X 5" ALUMINUM DOWNSPOUT



BID READY DESIGN



**NWRF  
MAINTENANCE  
BUILDING**

**REVISIONS**

REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE

DESIGNED: H. BYRNES  
DRAWN: H. BYRNES  
CHECKED: D. WALDROP  
APPROVED: D. WALDROP

FILENAME  
BC PROJECT NUMBER 158118  
CLIENT PROJECT NUMBER

ARCHITECTURAL  
**NWRF  
MAINTENANCE  
STORAGE BUILDING  
ROOF PLAN**

DRAWING NUMBER  
**A-00-102**  
87 SHEET NUMBER OF 94

Plot Date: 4/6/2023 1:16:37 PM Path: T:\0273\4481\58118\_A-V21.rvt

1

2

3

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KEYNOTES:

- 1 METAL WALL PANEL
- 2 STANDING SEAM METAL ROOFING SYSTEM
- 3 4" X 5" ALUMINUM DOWNSPOUT
- 4 6" X 6" ALUMINUM GUTTER
- 5 8" X 8" CONCRETE CURB
- 6 CONCRETE SPLASH BLOCK
- 7 CONCRETE BOLLARD
- 8 APPROXIMATE GRADE



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BID READY DESIGN



NWRF  
MAINTENANCE  
BUILDING

REVISIONS

REV	DATE	DESCRIPTION

LINE IS 2 INCHES  
AT FULL SIZE

DESIGNED: H. BYRNES  
DRAWN: H. BYRNES  
CHECKED: D. WALDROP  
CHECKED:

APPROVED: D. WALDROP

FILENAME

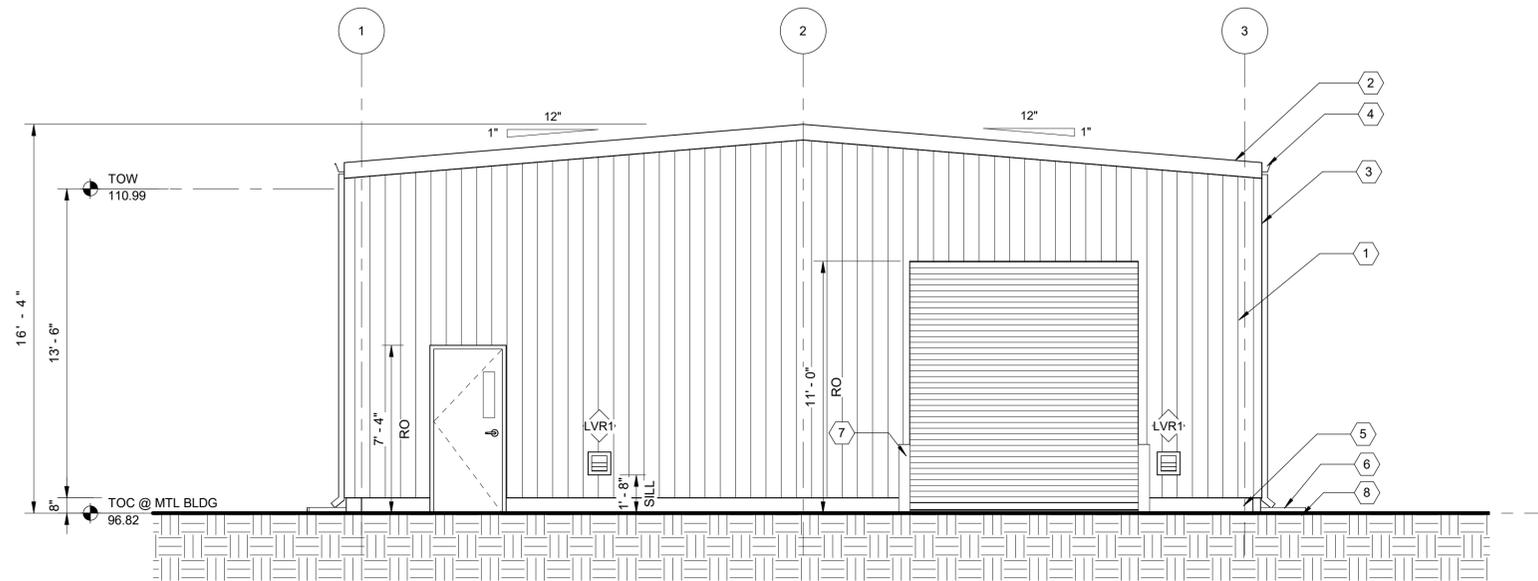
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CLIENT PROJECT NUMBER

ARCHITECTURAL  
NWRF  
MAINTENANCE  
STORAGE BUILDING  
ELEVATIONS

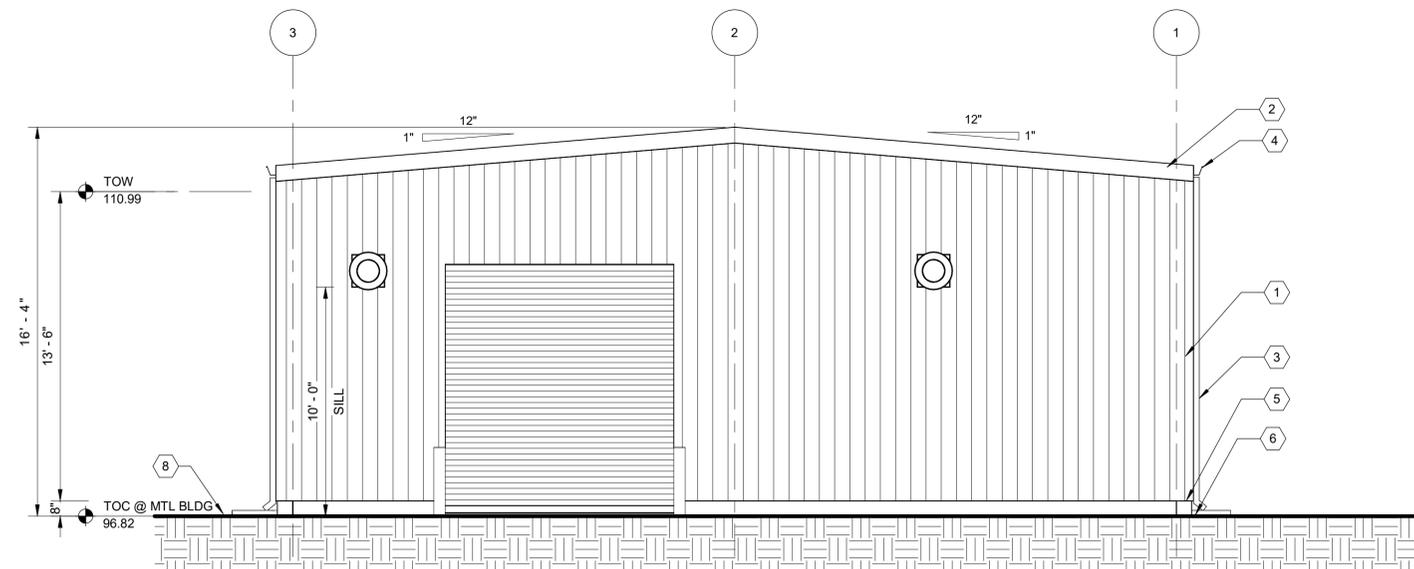
DRAWING NUMBER

A-00-201

88 SHEET NUMBER  
OF 94



1 SOUTH ELEVATION  
A-00-101 SCALE: 1/4" = 1'-0"



2 NORTH ELEVATION  
A-00-101 SCALE: 1/4" = 1'-0"

Path: T:\0273\4481\58118\_A-V21.rvt

Plot Date: 4/6/2023 2:18:39 PM

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KEYNOTES:

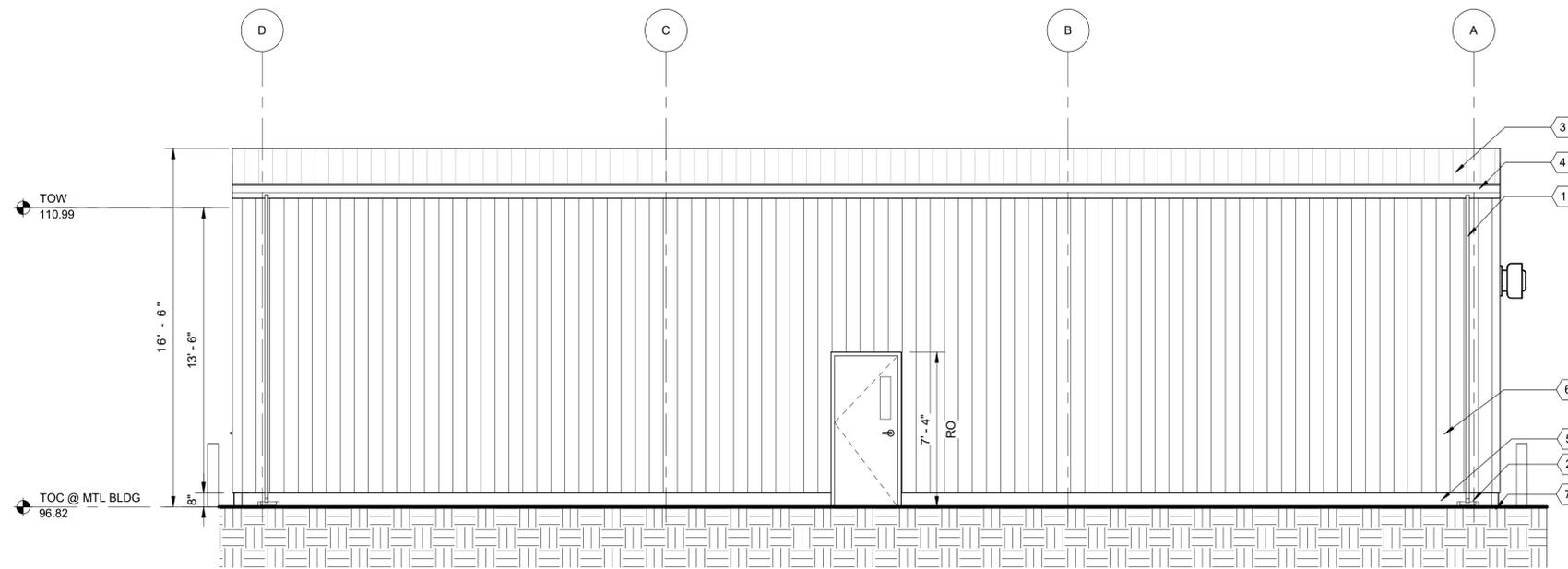
- 1 4" X 5" ALUMINUM DOWNSPOUT
- 2 CONCRETE SPLASH BLOCK
- 3 STANDING SEAM METAL ROOFING SYSTEM
- 4 6" X 6" ALUMINUM GUTTER
- 5 8" X 8" CONCRETE CURB.
- 6 METAL WALL PANEL
- 7 APPROXIMATE GRADE.
- 8 HOLLOW METAL DOOR AND FRAME.



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D

D



1 EAST ELEVATION  
A-00-101 SCALE: 1/4" = 1'-0"

C

C

BID READY DESIGN



B

B

NWRF  
MAINTENANCE  
BUILDING

REVISIONS

REV	DATE	DESCRIPTION

LINE IS 2 INCHES  
AT FULL SIZE

DESIGNED: H. BYRNES  
 DRAWN: H. BYRNES  
 CHECKED: D. WALDROP  
 CHECKED:  
 APPROVED: D. WALDROP

FILENAME

BC PROJECT NUMBER  
158118  
 CLIENT PROJECT NUMBER

ARCHITECTURAL

NWRF  
MAINTENANCE  
STORAGE BUILDING  
ELEVATIONS II

DRAWING NUMBER  
**A-00-202**

SHEET NUMBER  
OF 94

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2

3

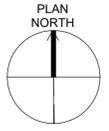
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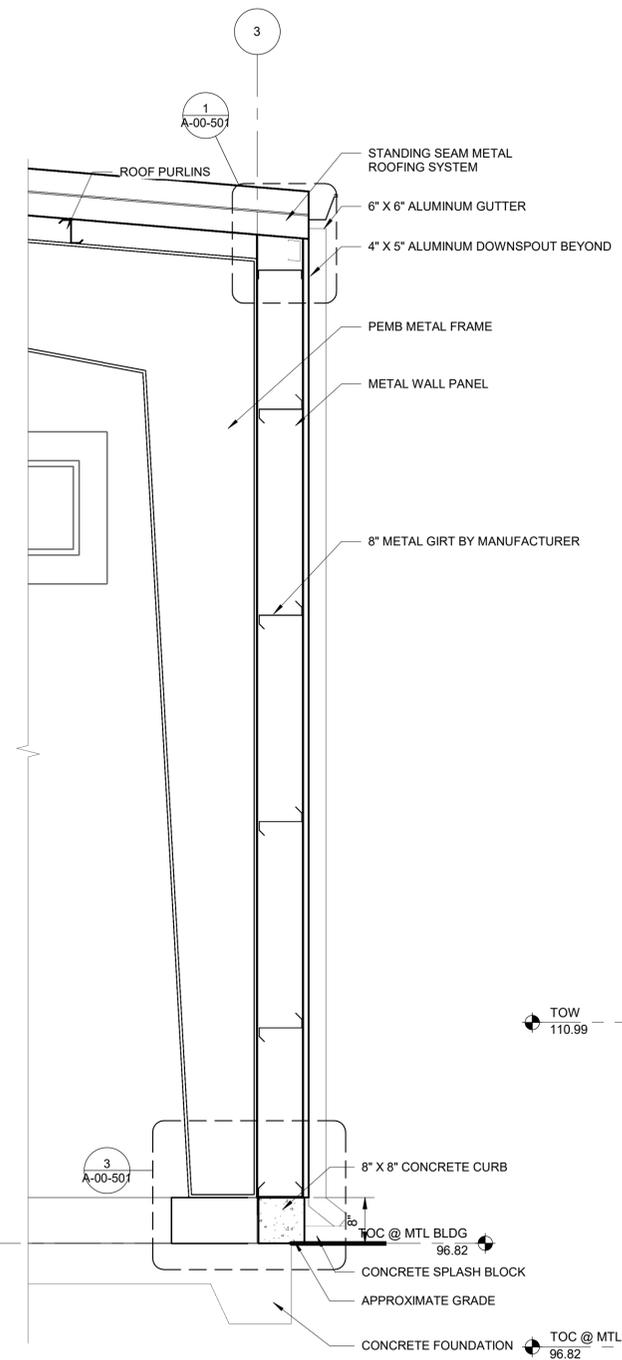
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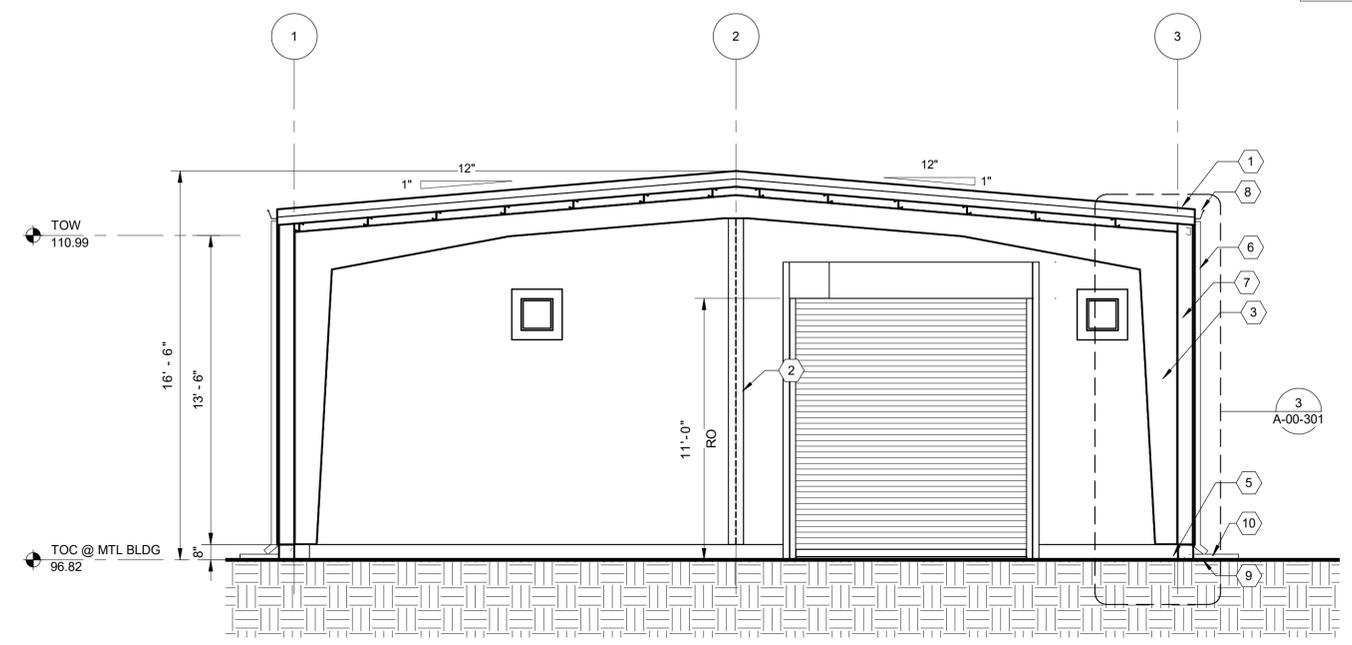


- KEYNOTES:**
- 1 STANDING SEAM METAL ROOFING SYSTEM
  - 2 PRE-ENGINEERED METAL BUILDING ENDWALL COLUMN.
  - 3 PRE-ENGINEERED METAL BUILDING FRAME
  - 4 HOLLOW METAL DOOR AND FRAME.
  - 5 8" x 8" CONCRETE CURB.
  - 6 4" X 5" ALUMINUM DOWNSPOUT
  - 7 GIRTS AND METAL WALL PANEL
  - 8 6" X 6" ALUMINUM GUTTER
  - 9 APPROXIMATE GRADE.
  - 10 CONCRETE SPLASH BLOCK

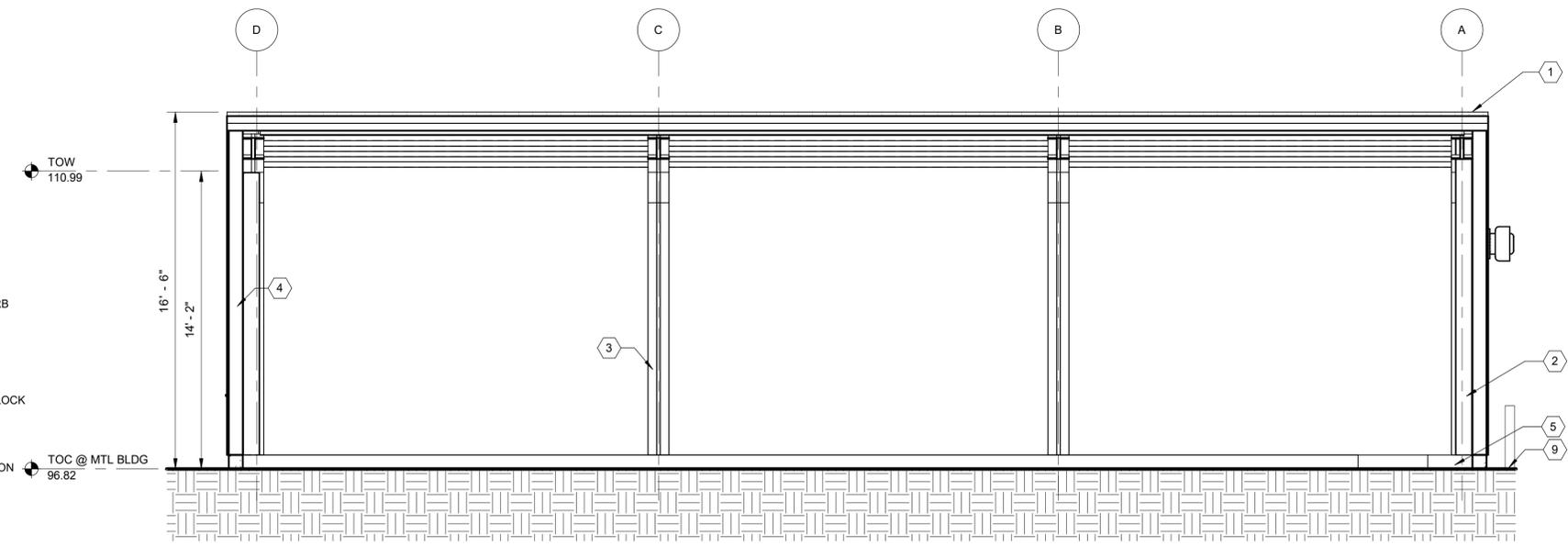
**Brown AND Caldwell**  
 Certificate of Authorization No. 2602  
 6151 Lake Osprey Drive, 3rd Floor  
**Sarasota, FL 34240**



**3 WALL SECTION**  
 A-00-301 SCALE: 3/4" = 1'-0"



**1 BUILDING SECTION 1**  
 A-00-101



**2 BUILDING SECTION 2**  
 A-00-101 SCALE: 1/4" = 1'-0"

BID READY DESIGN



**NWRF MAINTENANCE BUILDING**

**REVISIONS**

REV	DATE	DESCRIPTION

DESIGNED: H. BYRNES  
 DRAWN: H. BYRNES  
 CHECKED: D. WALDROP  
 CHECKED:  
 APPROVED: D. WALDROP

FILENAME  
 BC PROJECT NUMBER 158118  
 CLIENT PROJECT NUMBER

**ARCHITECTURAL**

**NWRF MAINTENANCE STORAGE BUILDING AND WALL SECTIONS**

DRAWING NUMBER  
**A-00-301**  
 SHEET NUMBER OF 89 OF 94

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 Plot Date: 4/6/2023 2:19:22 PM



### ROOM FINISH SCHEDULE

BUILDING	ROOM NUMBER	ROOM NAME	FLOOR MATERIAL	BASE MATERIAL	WALLS												CEILING				NOTES
					N			S			E			W			MAT'L BY MFR	FIN	CLR	HEIGHT	
					MAT'L	FIN	CLR														
MAINTENANCE STORAGE BUILDING	101	MAINTENANCE STORAGE	CONC-H	CONC-C	MWP/G	1	2	MAT'L BY MFR	1	2	VARIES										

### MATERIAL KEY

CMU	CONCRETE BLOCK
CONC C	CONCRETE CURB
CONC-H	CONCRETE HARDENER
E	EPOXY SYSTEM EXTENDED 8" VERTICALLY
EF	EPOXY FLOOR SYSTEM
G	GIRTS / PURLINS
MWP	METAL WALL PANEL
RS	UNDERSIDE OF ROOF STRUCTURE

### COLOR KEY

1	FINISH BY MANUFACTURER
2	COORDINATE FINAL COLOR WITH OWNER

### DOOR SCHEDULE

BUILDING	DOOR							FRAME		DETAILS			FIRE RATING LABEL	REMARKS
	DOOR NUMBER	WIDTH	HEIGHT	TYPE	MAT'L	GLAZING	WIDTH	HEIGHT	MAT'L	JAMB	HEAD	THRESHOLD		
MAINTENANCE STORAGE BUILDING	A101	3' - 0"	7' - 2"	A	HM	VP	3' - 4"	7' - 4"	HM	9/A-00-501A	8/A-00-501	10/A-00-501	NONE	
MAINTENANCE STORAGE BUILDING	A102	10' - 0"	11'-0"	B	AL	NONE	10' - 0"	13'-0"	AL	5/A-00-501	4/A-00-501	6/A-00-501	NONE	MANUALLY OPERATED
MAINTENANCE STORAGE BUILDING	A103	3' - 0"	7' - 2"	A	HM	VP	3' - 4"	7' - 4"	HM	9/A-00-501A	8/A-00-501	10/A-00-501	NONE	
MAINTENANCE STORAGE BUILDING	A105	10' - 0"	11'-0"	B	AL	NONE	10' - 0"	13'-0"	AL	5/A-00-501	4/A-00-501	6/A-00-501	NONE	MANUALLY OPERATED

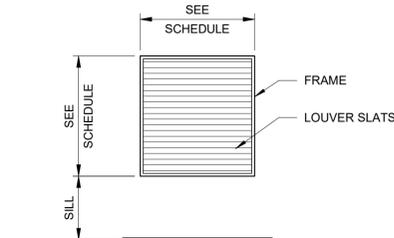
- GENERAL DOOR NOTES:  
 1. FOR DOOR HAND REFERENCE ARCHITECTURAL PLAN SHEETS.  
 2. PROVIDE ALL DOORS WITH CLEAR, TEMPERED, INSULATION FLOAT GLASS UNITS 1" THICK, UNLESS OTHERWISE NOTED.  
 3. ALL DOORS TO BE INSULATED TO PROVIDE SWINGING DOOR U.70 AND NON SWINGING U-0.50 RATINGS.  
 4. COORDINATE FINAL COLOR SELECTION WITH OWNER.

### DOOR LEGEND

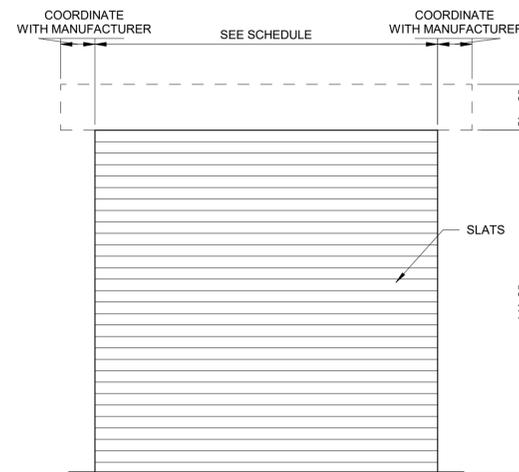
VP	VISION PANEL
OCD	OVERHEAD COILING DOOR
AL	ALUMINUM
HM	HOLLOW METAL DOOR AND FRAME
HL	HALF-LIGHT

### LOUVER SCHEDULE

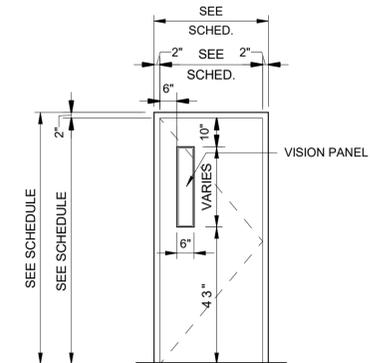
BUILDING	NUMBER	TYPE	QUANTITY	FRAME		DETAILS		
				HEIGHT	WIDTH	JAMB	HEAD	SILL
MAINTENANCE BUILDING	LVR1	A	2	1'-0"	1'-0"	12/A-00-501	11/A-00-501	13/A-00-501



3 LOUVER TYPE A  
N.T.S.



2 DOOR TYPE B  
N.T.S.



1 DOOR TYPE A  
N.T.S.



BID READY DESIGN



NWRF  
MAINTENANCE  
BUILDING

### REVISIONS

REV	DATE	DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE

DESIGNED: H. BYRNES  
 DRAWN: H. BYRNES  
 CHECKED: D. WALDROP  
 CHECKED:  
 APPROVED: D. WALDROP

FILENAME  
 BC PROJECT NUMBER 158118  
 CLIENT PROJECT NUMBER

ARCHITECTURAL

SCHEDULES AND TYPES

DRAWING NUMBER  
**A-00-601**

91 SHEET NUMBER OF 94

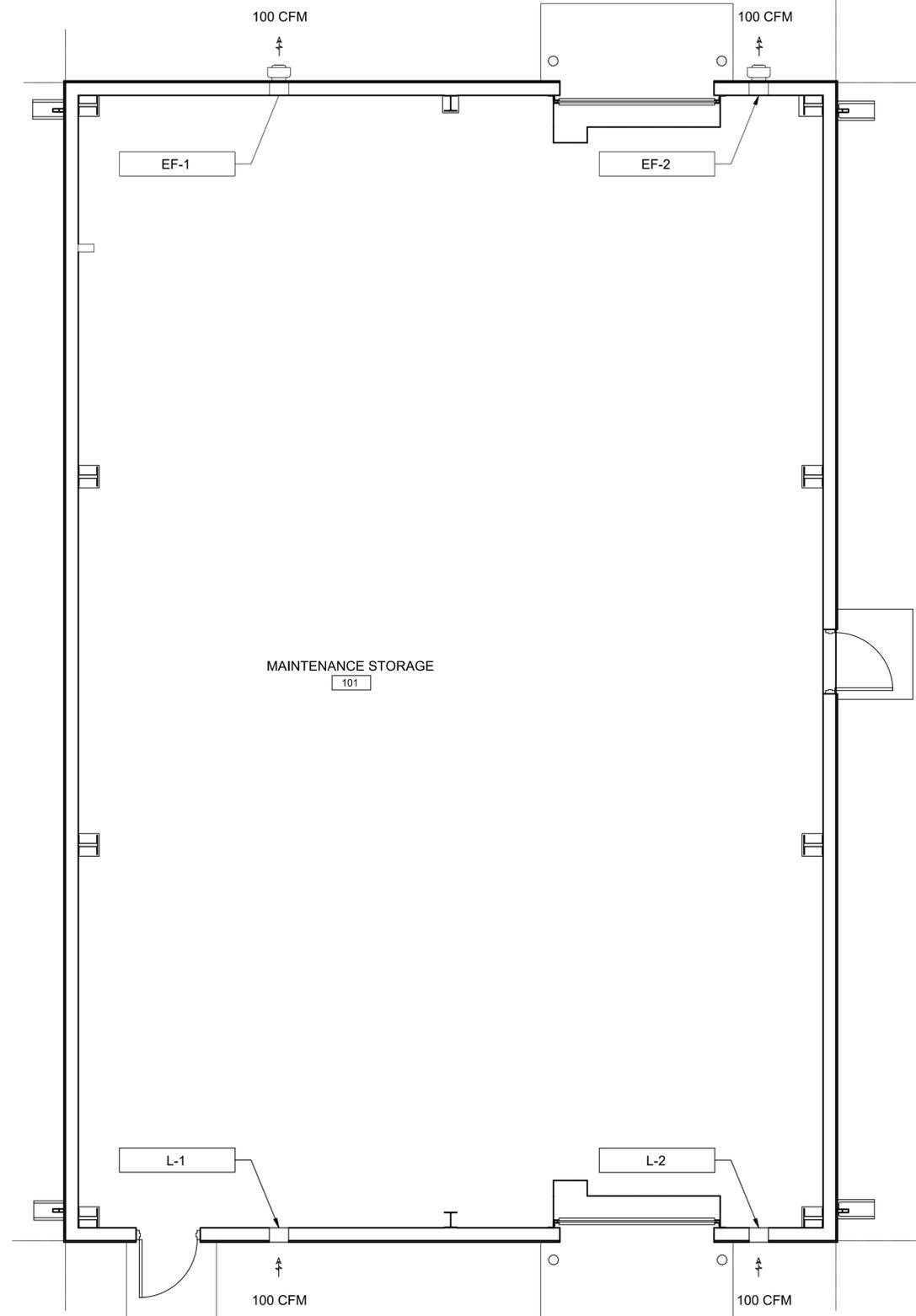


**HVAC STANDARD ABBREVIATIONS**

- AFF ABOVE FINISHED FLOOR
- CFM CUBIC FEET PER MINUTE
- ESP EXTERNAL STATIC PRESSURE
- HVAC HEATING, VENTILATING AND AIR CONDITIONING

**GENERAL NOTES**

1. GENERAL HVAC NOTES APPLY TO ALL HVAC DRAWINGS, EQUIPMENT AND APPURTENANCES. IN CASE OF CONFLICT BETWEEN THE DRAWINGS, THE MOST STRINGENT REQUIREMENTS SHALL GOVERN UNLESS SPECIFICALLY APPROVED OTHERWISE.
2. FURNISH AND INSTALL HEATING, VENTILATING AND AIR CONDITIONING EQUIPMENT, DUCTWORK AND APPURTENANCES TO AVOID INTERFERENCES WITH STRUCTURE, PIPING, EQUIPMENT, CONDUIT, LIGHTING, ETC. DUCTWORK AND ASSOCIATED ACCESSORIES MAY REQUIRE REROUTING TO FACILITATE INSTALLATION. CONTRACTOR SHALL SUBMIT THE PLAN AND DETAIL FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
3. DRAWINGS SHALL BE CONSIDERED DIAGRAMMATIC ONLY. CONTRACTOR SHALL
  - A. FIELD VERIFY EXACT LOCATIONS, SIZES AND ELEVATIONS OF ALL ITEMS SHOWN AS EXISTING PRIOR TO DEMOLITION OR THE INSTALLATION OF ANY NEW WORK.
  - B. COORDINATE WITH ALL INVOLVED DISCIPLINES THE FINAL LOCATION OF EQUIPMENT AND PIPING
  - C. WHEN PLACING NEW HVAC EQUIPMENT, CONTRACTOR SHALL VERIFY LOCATIONS OF EXHAUSTS AND VENTS. ALL EXHAUSTS AND VENTS SHALL BE A MINIMUM 10 FEET AWAY FROM HVAC UNITS OUTDOOR AIR INTAKES. CONTRACTOR SHALL FIELD VERIFY PRIOR TO BID WHERE THE INTERFERENCES ARE AND PRICE ACCORDINGLY OR MAKE ALLOWANCES IN BID.
  - D. REVIEW THE CONTRACT DRAWINGS, THE MANUFACTURER'S LAYOUT DRAWINGS, INSTALLATION REQUIREMENTS, MANUFACTURER'S OPERATING AND MAINTENANCE REQUIREMENTS, AND CODE REQUIRED CLEARANCES.
4. NOT ALL THE ITEMS ARE SHOWN IN PLANS, SECTIONS, DETAILS, AND SCHEMATICS DRAWINGS. THE CONTRACTOR SHALL PROVIDE ALL ITEMS EVEN IF THEY ARE SHOWN AT ONLY ONE LOCATION ON THE DRAWINGS. IN ADDITION, THE CONTRACTOR SHALL PROVIDE ALL ITEMS REQUIRED PER SPECIFICATION WHETHER THEY ARE SHOWN ON THE DRAWINGS OR NOT.
5. THE DRAWINGS ARE NOT INTENDED TO SHOW EVERY OFFSET OR FITTING OR EVERY STRUCTURAL DIFFICULTY THAT MAY BE ENCOUNTERED DURING INSTALLATION OF THE WORK. LOCATION OF ALL ITEMS NOT DEFINITELY FIXED BY DIMENSIONS ARE APPROXIMATE ONLY. EXACT LOCATIONS NECESSARY TO SECURE BEST CONDITIONS AND RESULTS MUST BE DETERMINED AT THE JOB SITE AND SHALL HAVE THE APPROVAL OF THE ARCHITECT OR ENGINEER OF RECORD BEFORE BEING INSTALLED.
6. INSTALL ALL WORK TO CLEAR ARCHITECTURAL, STRUCTURAL MEMBERS AND MECHANICAL SYSTEMS. ADJUST PIPING AS NECESSARY. NO ITEM SUCH AS PIPE, ETC., SHALL BE IN CONTACT WITH ANY EQUIPMENT. INSTALL ALL PIPING AS HIGH AS POSSIBLE OR AS SPECIFIED ON DRAWINGS TO MAINTAIN MAXIMUM ACCESSIBILITY.
7. CLOSELY COORDINATE ALL WORK WITH OTHER TRADES PRIOR TO TRENCHING, DEMOLITION OR INSTALLATION OF NEW. IDENTIFY SIZE AND LOCATIONS OF ALL PENETRATIONS THROUGH FOUNDATIONS, WALLS OR ROOFS PRIOR TO FABRICATION OF ANY SYSTEM OR ORDERING MATERIALS AFFECTED BY POSSIBLE COORDINATION CONFLICTS.
8. CONTRACTOR SHALL REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR CUTTING THRU STRUCTURAL SYSTEM. CONTRACTOR SHALL RECEIVE WRITTEN APPROVAL FROM THE ARCHITECT, STRUCTURAL ENGINEER, OR ENGINEER OF RECORD BEFORE MAKING PENETRATIONS THAT ARE NOT DETAILED ON THE CONSTRUCTION DOCUMENTS.
9. USE CAUTION WHEN SAW-CUTTING THROUGH EXISTING CONCRETE FLOOR OR WALL. CONSTRUCTION FOR THE INSTALLATION OF MECHANICAL/PLUMBING SYSTEMS TO AVOID CUTTING EXISTING REBAR AT EDGE OF OPENING. LEAVE SUFFICIENT REBAR EXPOSED TO TIE NEW REINFORCING FOR REPLACEMENT CONCRETE AND OR OTHER STRUCTURAL ATTACHMENTS FOR NEW CONSTRUCTION.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REVISIONS, TRANSITIONS, OFFSETS, ETC TO AVOID EQUIPMENT, PIPING EQUIPMENT, OR STRUCTURE AND TO MAKE A COMPLETE AND FUNCTIONING SYSTEM. PIPE AND DUCT SUPPORTS AND EXPANSION CONTROL ARE THE RESPONSIBILITY OF THE CONTRACTOR.
11. ADD DRAINS WITH 1/4" BALL VALVES AT THE LOW POINTS OF ALL HYDRONIC PIPING.
12. APPLY HERESITE P-413 PHENOLIC COATING OR EQUAL ON ALL LOUVERS, CASINGS, COILS, AND FANS.



FAN SCHEDULE													
TAG	MANUFACTURER	MODEL	LOCATION	SERVICE AREA DESCRIPTION	TYPE	AIRFLOW REQUIREMENTS			ELECTRICAL REQUIREMENTS				NOTES
						AIRFLOW	ESP (IN W.G.)	FRPM	MOTOR SIZE (W)	VOLTS/ PHASE	MOTOR ENCLOSURE	DRIVE TYPE	
EF-1	GREENHECK	CUE-060	STORAGE BUILDING	STORAGE BUILDING	WALL MOUNTED CENTRIFUGAL EXHAUST FAN	100	0.10	1095	50	115/1	TENV	DIRECT	1,2
EF-2	GREENHECK	CUE-060	STORAGE BUILDING	STORAGE BUILDING	WALL MOUNTED CENTRIFUGAL EXHAUST FAN	100	0.10	1095	50	115/1	TENV	DIRECT	1,2

1. PROVIDE BACKDRAFT DAMPERS ON FAN.
2. PROVIDE BIRD SCREEN ON FAN OUTLET.

LOUVER SCHEDULE									
TAG	MANUFACTURER	MODEL	LOCATION	HEIGHT (IN)	WIDTH (IN)	AREA (SQ FT)	FREE AREA (SQ FT)	NOTES	
L-1	RUSKIN	ELF375DX	STORAGE BUILDING	12	12	1	0.26	1	
L-2	RUSKIN	ELF375DX	STORAGE BUILDING	12	12	1	0.26	1	

1. PROVIDE BIRD SCREEN ON LOUVER.

① STORAGE BUILDING HVAC PLAN  
1/4" = 1'-0"



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6151 Lake Osprey Drive, 3rd Floor  
Sarasota, FL 34240

BID READY DESIGN



NWRF  
MAINTENANCE  
BUILDING

REVISIONS

REV	DATE	DESCRIPTION

LINE IS 2 INCHES  
AT FULL SIZE

DESIGNED: J. BUTLER  
DRAWN: J. BUTLER  
CHECKED: D. STEWART  
CHECKED:

APPROVED: D. STEWART

FILENAME

BC PROJECT NUMBER  
158118  
CLIENT PROJECT NUMBER

BUILDING MECHANICAL

NWRF  
MAINTENANCE  
STORAGE BUILDING  
HVAC PLAN AND  
SCHEDULES

DRAWING NUMBER

**H-00-101**

SHEET NUMBER  
OF

Path: C:\BPC\W\02731460 FILENAME: E-00-001.DWG PLOT DATE: 3/19/2023 4:04 PM CAD USER: STEPHEN CREAVALLE

RACEWAYS

SINGLE LINE DIAGRAMS

PLAN DRAWINGS

LIGHTING

GENERAL NOTES



Certificate of Authorization No. 2602  
6151 Lake Osprey Drive, 3rd Floor  
Sarasota, FL 34240

BID READY DESIGN



NWRF  
MAINTENANCE  
BUILDING

REVISIONS

REV	DATE	DESCRIPTION
#		#
#		#
#		#
#		#
#		#
#		#
#		#
#		#
#		#
#		#

LINE IS 2 INCHES AT FULL SIZE

DESIGNED: S. CREAVALLE  
 DRAWN: S. CREAVALLE  
 CHECKED: G. NANA  
 APPROVED:

FILENAME: E-00-001.DWG  
 BC PROJECT NUMBER: 158118  
 CLIENT PROJECT NUMBER: 6110880  
 ELECTRICAL

LEGEND ABBREVIATIONS AND GENERAL NOTES

DRAWING NUMBER: E-00-001  
 SHEET NUMBER OF: 21 OF 24

- THIS DRAWING IS GENERAL IN NATURE. SOME SYMBOLS SHOWN HEREON MAY NOT BE USED ON THE CONTRACT DRAWINGS.
- IDENTIFICATIONS (ID), SIZES, RATINGS, LOCATIONS AND SIMILAR INFORMATION SHOWN ASSOCIATED WITH SYMBOLS ARE OPTIONAL; EXAMPLES OF SUCH INFORMATION ARE SHOWN WITH SOME SYMBOLS FOR CLARITY.
- THE ELECTRICAL DRAWINGS USE THE SINGLE LINE IN CONJUNCTION WITH SHOWING THE LOCATION OF THE ELECTRICAL/ INSTRUMENTATION SOURCES AND LOADS/DEVICES SHOWN ON THE PLAN DRAWINGS TO DEPICT THE WORK. THE CONTRACTOR SHALL USE THESE DOCUMENTS TO DETERMINE AND PROVIDE THE NECESSARY RACEWAY AND WIRING SYSTEM FOR EACH CIRCUIT. ALL INDOOR RACEWAY SHALL BE RUN EXPOSED, AND ROUTED BY THE CONTRACTOR, UNLESS OTHERWISE NOTED. THE TYPE OF RACEWAY AND WIRE USED SHALL BE AS SPECIFIED.
- IF EQUIPMENT SUPPLIED BY MANUFACTURER HAS A LARGER LOAD THAN INDICATED ON THE SINGLE LINE DIAGRAM, THE ELECTRICAL ENGINEER SHALL BE NOTIFIED. THE CABLE, CONDUIT AND ELECTRICAL EQUIPMENT SHALL BE SIZED AS REQUIRED, TO ACCOMMODATE THE HIGHER VALUE.
- IN AREAS WHERE THERE ARE OVERHEAD BRIDGE CRANES, HOISTS, ETC., OR WHERE EQUIPMENT IS LIFTED AND MOVED FOR MAINTENANCE OR REPLACEMENT, NO CONDUITS SHALL BE RUN OVERHEAD THAT WILL INTERFERE WITH THE OPERATION OF THE EQUIPMENT OR ACCESS TO EQUIPMENT.
- ALL EQUIPMENT SHALL BE LABELED WITH NAMEPLATES. PROVIDE A DESCRIPTION OF THE EQUIPMENT AND THE EQUIPMENT NUMBER ON NAMEPLATES.
- THE ELECTRICAL INSTALLATION SHALL COMPLY WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE ADOPTED IN THE STATE; INCLUDING ANY ADDENDA AND/OR REVISIONS BY THE STATE OR LOCAL AHJ. INSTALLATION SHALL MEET THE REQUIREMENTS ALL STATE AND LOCAL APPLICABLE CODES.
- ALL ELECTRICAL MATERIALS AND EQUIPMENT SHALL BE UL LISTED, NEW MATERIALS. INSTALLED IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.

**LIGHTING**

LIGHT FIXTURE IDENTIFICATION  
 FW TYPE PER FIXTURE SCHEDULE

3/35 QTY OF LAMPS PER FIXTURE / LAMP WATTAGE

6 QTY OF THE INDICATED TYPE OF LAMP ON THE DRAWING

P MOUNTING STYLE:  
 P PENDANT  
 R RECESSED  
 W WALL  
 L POLE  
 S SURFACE

8' MOUNTING HEIGHT (BOTTOM OF FIXTURE)

FIXTURE CIRCUITING AND SWITCHING  
 3 PANELBOARD CIRCUIT FEEDING THE FIXTURE, TYPICAL OF ALL FIXTURES

a IDENTIFIER FOR THE SWITCH CONTROLLING THE FIXTURE (FIXTURE IS UNSWITCHED OR SELF-SWITCHED IF OMITTED), TYPICAL OF ALL FIXTURES

LED LIGHTING FIXTURE

EMERGENCY EGRESS LED LIGHTING FIXTURE WITH BATTERY BACKUP

WALL MOUNTED FIXTURE

POLE-MOUNTED FIXTURE

EMERGENCY LIGHTING UNIT, SELF CONTAINED

ILLUMINATED EXIT SIGN, DARKENED QUADRANTS INDICATE ILLUMINATED FACES, DIRECTIONAL ARROWS INDICATE DIRECTIONAL ARROWS BE PROVIDED ON THE ILLUMINATED FACE

TOGGLE SWITCH  
 a UNIQUE SWITCH IDENTIFICATION

3 TYPE:  
 2 DOUBLE POLE  
 3 3-WAY  
 4 4-WAY  
 K KEY OPERATED  
 MC MOMENTARY CONTACT, 3 POSITION  
 MS MANUAL (MOTOR) STARTER

DUPLEX RECEPTACLE  
 3 PANELBOARD CIRCUIT FEEDING THE RECEPTACLE

GF TYPE:  
 GF GFI GROUND FAULT  
 WP WEATHERPROOF

**PLAN DRAWINGS**

CV151 EQUIPMENT TAG

PIT 4120A FIELD INSTRUMENT TAG

M MOTOR

CV CONTROL VALVE

DISCONNECT SWITCH

COMBINATION MOTOR STARTER, NOT LOCATED IN AN MCC

LOCAL CONTROL STATION

FIELD MOUNTED INSTRUMENT OR DEVICE

JUNCTION (PULL) BOX

THERMOSTAT

HORN

**GROUNDING**

GROUND ROD

GROUND ROD WITH GROUND WELL

GROUND CONNECTION, BOLTED TYPE

GROUND CONNECTION, EXOTHERMIC TYPE

G GROUNDING CONDUCTOR

**AREA CLASSIFICATIONS**

CI-D1 HAZARDOUS AREA CLASSIFICATION CLASS 1, DIVISION 1

CI-D2 HAZARDOUS AREA CLASSIFICATION CLASS 1, DIVISION 2

UNCLASSIFIED UNCLASSIFIED AREA

**ABBREVIATIONS**

ABBREVIATIONS:  
 THIS LIST APPLIES TO THE ELECTRICAL DRAWINGS AND MAY NOT INCLUDE ALL OF THE ABBREVIATIONS USED. OTHER ABBREVIATIONS ARE PER ANSI OR IEEE STANDARDS, OR COMMON USAGE.

AFF ABOVE FINISHED FLOOR	(E), EXIST EXISTING	MCC MOTOR CONTROL CENTER	RECEPT REQ'D RECEPTACLE REQUIRED
(K)AIC (1000) AMPERE INTERRUPTING RATING	GRS GALVANIZED RIGID STEEL CONDUIT	MCP MOTOR CIRCUIT PROTECTOR	RVSS REDUCED VOLTAGE SOLID STATE STARTER
BC BARE COPPER	HH,MH HANDHOLE, MANHOLE	NEC NATIONAL ELECTRICAL CODE	SWBD SWITCHBOARD
CB CIRCUIT BREAKER	HID HIGH INTENSITY DISCHARGE	NP NAME PLATE	TB TERMINAL BOX TYPICAL
CONT CONTINUED	HBV HOWELL-BUNGER VALVE	OCPD OVERCURRENT PROTECTION DEVICE	VC VENDOR CABLE VARIABLE (ADJUSTABLE) FREQUENCY DRIVE
CMD COMMAND	LCS LOCAL CONTROL STATION	PB PULLBOX	VFD
CPT CONTROL POWER TRANSFORMER	LFS LIQUIDTIGHT FLEXIBLE STEEL CONDUIT	PBD PANELBOARD	
DWG DRAWING	KWH KILOWATT-HOUR	PLC PROGRAMMABLE LOGIC CONTROLLER	
		PNL PANEL	

**SINGLE LINE DIAGRAMS**

BUS CONNECTION OR CONNECTED WIRES

480V 15VA TRANSFORMER 120V

AMPS DISCONNECT

AMPS CIRCUIT BREAKER

COMBINATION MOTOR STARTER MCP AND THERMAL OVERLOAD SIZED BY MANUFACTURER BASED ON SUBMITTED AND APPROVED MOTOR

MCP n XX

n NEMA SIZE

XX TYPE:  
 BLANK FULL VOLTAGE, NON-REVERSING  
 FVR FULL VOLTAGE, REVERSING  
 2S2W FULL VOLTAGE, 2 SPEED, 2 WINDING

INSTRUMENT OR DEVICE

SPD SURGE PROTECTIVE DEVICE

MOTOR CONTROLLER XX TYPE:  
 VFD VARIABLE FREQUENCY DRIVE  
 RVSS REDUCED VOLTAGE SOLID STATE

5 MOTOR, HORSEPOWER SHOWN

n KW, KVA KW OR KVA RATED EQUIPMENT n=LOAD VALUE IN KW OR KVA

EXAMPLES: CABLE AND RACEWAY IDENTIFICATION

P101A UNIQUE CIRCUIT IDENTIFIER (CABLE AND RACEWAY), LETTER PREFIX INDICATES TYPE:  
 P POWER, 120V OR HIGHER  
 C CONTROL, 120V  
 S SIGNAL, LESS THAN 120V  
 X SPARE  
 H HIGH VOLTAGE, OVER 600V  
 N AIR OR MISC

A. SINGLE CONDUCTOR #12 SIZE OF CONDUCTOR OR GROUND IN AWG OR KCMIL

B. MULTI-CONDUCTOR #12 SIZE OF CONDUCTOR OR GROUND IN AWG OR KCMIL

C. PAIRS (OR TR FOR TRIADS) 1" C SIZE OF RACEWAY IN INCHES 2x = 2 SETS

VARIABLE FREQUENCY DRIVE, (VFD) VARIABLE TORQUE (V.T.) UON.

**RACEWAYS**

HH23 MANHOLE (MH) OR HANDHOLE (HH),

15-JB-XXXX JUNCTION BOX. OPTIONAL IDENTIFIER.

15-TB-1301 TERMINAL BOX. OPTIONAL IDENTIFIER.

HOME RUN EXPOSED - SEE PANELBOARD, SWITCHBOARD, OR MCC SCHEDULE FOR CIRCUIT INFORMATION.  
 EXAMPLE: HOME TO PANELBOARD PBD-1900, CIRCUITS 1, 3, AND 5.

HOME RUN CONCEALED - SEE PANELBOARD, SWITCHBOARD, OR MCC SCHEDULE FOR CIRCUIT INFORMATION.  
 EXAMPLE: HOME TO PANELBOARD PBD-1900, CIRCUITS 1, 3, AND 5.

CABLE TRAY MODIFIERS:  
 CTS - 24VDC OR LESS  
 CTC - 120V CONTROL CONDUCTORS  
 CTP - 600V POWER CONDUCTORS

CABLE 4/0 AND LARGER SHALL NOT BE STACKED VERTICALLY.

WHEN TWO TRAY MODIFIERS IDENTIFY A SINGLE TRAY, THE CONTRACTOR MAY USE DIVIDER OR INSTALL SEPARATE TRAYS (CTC/CTS).

CABLE TRAY WITH COVER MODIFIER, AS ABOVE

P 05P1100 RACEWAY IDENTIFIER

RACEWAY EXPOSED MODIFIERS FOR RACEWAY TYPE:  
 H - POWER (ABOVE 600V)  
 P - POWER  
 C - CONTROL  
 S - SIGNAL  
 D - DATA  
 F - OPTICAL FIBER  
 PC - POWER AND CONTROL

RACEWAY CONCEALED

RACEWAY TURNED TOWARD THE VIEWER.

RACEWAY TURNED DOWN

CONDUIT CAPPED

DB 05P1100 DUCT BANK IDENTIFIER (OPTIONAL)

DB DIRECT BURIED DUCT BANK

CDB CONCRETE ENCASED DUCT BANK

RC REINFORCED CONCRETE DUCTBANK

OHE OVERHEAD POWER LINE

GENERAL

- 1.1 SCOPE OF WORK
A. FOR PURPOSE OF LEGIBILITY, DRAWINGS ARE DIAGRAMMATIC AND ALTHOUGH LOCATION OF EQUIPMENT IS SHOWN TO SCALE, THE CONTRACTOR SHALL VERIFY ALL INFORMATION AT THE SITE BEFORE BIDDING THE JOB.
B. WHEN DRAWINGS, NOTES AND THESE REQUIREMENTS ARE IN CONFLICT, THE MOST STRINGENT CONDITION SHALL APPLY UNLESS OTHERWISE APPROVED BY THE ENGINEER.
C. THE WORK CONSISTS OF ALL SUPERVISION, LABOR, MATERIALS, EQUIPMENT AND INSTALLATION REQUIRED FOR THE COMPLETE ELECTRICAL SYSTEMS AS SHOWN ON THE DRAWINGS OR CALLED FOR IN THESE REQUIREMENTS.

1.2. CODES AND STANDARDS - PERFORM WORK AND FURNISH EQUIPMENT COMPLYING WITH THE FOLLOWING CODES:

- A. NATIONAL ELECTRICAL CODE (NEC)
B. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
C. UNDERWRITERS' LABORATORIES (UL)
D. NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)
E. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
F. INSULATED POWER CABLE ENGINEERS ASSOCIATION (IPCEA)
G. FLORIDA BUILDING CODE (FL) STATE BUILDING CODE
H. INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE)

1.3 AS-BUILT/RECORD DRAWINGS

- A. AFTER FINAL INSPECTION, FURNISH A PDF SET OF REPRODUCIBLE "AS BUILT DRAWINGS" SHOWING DEPTHS AND ROUTING OF CONCEALED ELECTRICAL BELOW GRADE INSTALLATIONS AND ALL VARIATIONS BETWEEN THE ACTUAL WORK AND AS IT WAS SHOWN ON THE CONTRACT DRAWINGS.

1.4 INSTALLATION AND COORDINATION

- A. INSTALL EQUIPMENT AT THE LOCATIONS SHOWN ON THE DRAWINGS FOLLOWING THE MANUFACTURER'S INSTALLATION RECOMMENDATIONS.
B. COORDINATE INSTALLATION OF UNDERGROUND DUCTS AND CONDUITS WITH EXISTING UNDERGROUND UTILITIES. FIELD VERIFY ROUTING AND BURIAL DEPTH. DRAIN DUCTS AWAY FROM BUILDINGS TOWARD MANHOLES. LOW POINTS IN DUCT BANK RUNS ARE NOT ACCEPTABLE.
C. INSTALL FLOOR MOUNTED SELF SUPPORTED EQUIPMENT ON 4-INCHES HIGH CONCRETE PADS WITH STEEL REINFORCING. USE REQUIRED BOLTS, ANCHORS, INSERTS AND CONDUIT SLEEVES.
D. MAKE OPENINGS THROUGH WALLS, CEILINGS, ROADWAYS, FLOOR SLABS, ETC. REQUIRED FOR THE INSTALLATION OF ELECTRICAL EQUIPMENT, BUT CUTTING, WELDING, OR OTHER WEAKENING OF BUILDING STRUCTURE TO SIMPLIFY ELECTRICAL EQUIPMENT AND MATERIALS' INSTALLATION ARE NOT BE PERMITTED. WHERE EXISTING WALLS, CEILINGS OR FLOOR SLABS HAVE TO BE CUT, THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER BEFORE MAKING SUCH CUTS. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY DAMAGE DONE WHILE PROVIDING SUCH OPENINGS AND SHALL PATCH THE SURFACE TO MATCH ADJACENT MATERIALS AND FINISHES.
E. NO CONDUITS, SLEEVES, PIPES OR ANY OTHER ITEM SHALL BE EMBEDDED IN CONCRETE ALONG OR THROUGH ANY BEAM, COLUMN, FOOTING, GRADE BEAM, SLAB, WALL OR ANY OTHER STRUCTURAL MEMBER WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.
F. ALL ELECTRICAL MATERIALS AND EQUIPMENT FURNISHED ON THIS PROJECT SHALL COMPLY WITH THE REQUIREMENTS OF APPLICABLE STANDARD OR CODE FOR APPROVAL OF ELECTRICAL INSTALLATIONS
1. ALL PARTS, COMPONENTS, EQUIPMENT AND MATERIALS SHALL BE LISTED AND LABELED BY UL, ETL OR INDEPENDENT TESTING AGENCY AS RECOGNIZED BY THE APPROPRIATE BOARD.
2. SHOP DRAWING SUBMITTALS SHALL INCLUDE EVIDENCE

1.5 SUBMITTALS

- A. THE FOLLOWING INFORMATION SHALL BE PROVIDED FOR ALL ELECTRICAL EQUIPMENT AND MATERIALS ACCORDANCE WITH SECTION 01300.
1. CATALOG CUTS OF EQUIPMENT DEVICES, AND MATERIALS REQUESTED BY THE INDIVIDUAL SPECIFICATION SECTIONS.
• CATALOG INFORMATION WITH TECHNICAL SPECIFICATIONS AND APPLICATION INFORMATION INCLUDING RATINGS, RANGE, WEIGHT, ACCURACY, AND OTHER PERTINENT PRODUCT INFORMATION.
• EDIT CATALOG CUTS TO SHOW ONLY THE ITEMS, MODEL NUMBERS, AND INFORMATION THAT APPLY.
• ASSEMBLE CATALOG CUTS ON A DVD OR OTHER SECURE ELECTRONIC MEDIA.
2. ARRANGE, LAYOUT, AND OUTLINE DRAWINGS WITH DIMENSIONS AND WEIGHT, AS APPROPRIATE.
3. CONTROL SCHEMATICS AND INTERCONNECTION WIRING DIAGRAMS DEPICTING INTERNAL AND EXTERNAL WIRE AND CABLE TERMINATIONS. DRAWING CROSS-REFERENCE TO SPECIFICATION AND CONTRACT DOCUMENT DRAWINGS.
4. SUBMITTAL WILL CLEARLY INDICATE ANY SUBSTITUTIONS OR DEVIATIONS.

1.6 ENVIRONMENTAL CONDITIONS -

- A. REFER TO SECTION 01560 FOR ENVIRONMENTAL CONDITIONS

1.7 SITE CONDITIONS

Table with 3 columns: Location (Indoor Non-Corrosive, Outdoor, Underground, Non-Hazardous), Condition (Exposed, Power Directly Buried, Final Connection to Equipment), and Material (RMC-Steel, RNC40).

MATERIAL

2.1 IDENTIFICATION

- A. IDENTIFY ELECTRICAL EQUIPMENT WITH PERMANENTLY ATTACHED PHENOLIC PLATES WITH 1/4" WHITE OR BLACK ENGRAVED LETTERING ON THE FACE OF EACH, ATTACHED WITH TWO SCREWS.
B. INCLUDE THE FOLLOWING INFORMATION ON EQUIPMENT IDENTIFICATION PLATES FOR ENCLOSED SWITCHES, CIRCUIT BREAKERS, AND MOTOR CONTROLLERS (INCLUDING VARIABLE FREQUENCY MOTOR CONTROLLERS):
1. VOLTAGE AND PHASE
2. POWER SOURCE AND CIRCUIT NUMBER, INCLUDE LOCATION
3. LOAD(S) SERVED. INCLUDE LOCATION WHEN NOT WITHIN SIGHT OF EQUIPMENT.
C. USE WIRE AND CABLE MARKERS TO IDENTIFY CIRCUIT NUMBER OR OTHER DESIGNATION INDICATED FOR POWER, CONTROL, AND INSTRUMENTATION CONDUCTORS
1. AT EACH SOURCE AND LOAD CONNECTION
2. WITHIN BOXES WHEN MORE THAN ONE CIRCUIT IS PRESENT
3. WITHIN EQUIPMENT ENCLOSURES WHEN CONDUCTORS AND CABLE ENTER OR LEAVE THE ENCLOSURE.
D. USE WRAP-AROUND SELF-ADHESIVE VINYL CLOTH, HEAT-SHRINK SLEEVE, OR PLASTIC SLEEVE TYPE MARKERS FOR THE CONDUCTOR OR CABLE TO BE IDENTIFIED.

2.2 WIRE/CABLE

- A. CONDUCTORS SHALL BE SOFT DRAWN COPPER, WITH XHHW-2 600V INSULATION EXCEPT WHERE OTHERWISE SPECIFIED OR INDICATED. WIRE SHALL BE 12 AWG MINIMUM EXCEPT LOW-VOLTAGE CONTROL WIRE MAY BE #14 XHHW COPPER STRANDED. INSTRUMENTATION CONDUCTORS TO BE BELDON TWISTED, STRANDED, SHIELDED #14 GAUGE THROUGH #18 GAUGE OR EQUAL. FOR CONDUCTORS ROUTED IN CABLE TRAY, PROVIDE TYPE -C CABLE.
B. CONDUCTORS SHALL BE THE PRODUCT OF AN APPROVED MANUFACTURER SUCH AS CABELCO, GENERAL, COBLE, HATFIELD, OKONITE, ROME, OR SOUTHWIRE. COLOR-CODED WITH MAKE, TYPE AND SIZE LEGIBLY AND DURABLY MARKED ON COVERING AT FREQUENT INTERVALS.

2.3 CONDUITS

- A. ALL WIRES (EXCEPT LOW VOLTAGE CONTROL CABLE) SHALL BE RUN IN CONDUIT.
B. PVC CONDUIT MAY BE USED FOR UNDERGROUND SECTIONS OF ELECTRICAL RACEWAYS TO THE POINT OF ABOVE GRADE TRANSITION.
C. PVC CONDUIT MAY BE USED FOR UNDERGROUND SECTIONS OF ELECTRICAL RACEWAYS TO THE POINT OF ABOVE GRADE TRANSITION.
D. PVC COATED RIGID GALVANIZED STEEL CONDUIT (PVC-RGSC) SHALL BE USED FOR ABOVE-GROUND INSTALLATION AND FOR TRANSITION TO ABOVE GRADE OR WHERE SUBJECT TO DAMAGE. TOP OF UNDERGROUND CONDUITS SHALL NOT BE LESS THAN 24".
E. EMT AND FLEXIBLE STEEL CONDUIT IS PERMITTED IN CONCEALED, IN-WALL CONSTRUCTION.
F. ALL CONDUIT SHALL BE RIGIDLY SUPPORTED WITH STAINLESS STEEL OR PVC COATED STEEL, DURABLE STRAPS AND HANGERS AT INTERVALS NOT TO EXCEED SIX FEET. COUPLINGS, CONNECTORS, AND LOCKNUTS SHALL BE TIGHTLY SECURED TO PROVIDE ELECTRICAL CONTINUITY OF GROUNDING.
G. PROVIDE WARNING TAPE FOR DIRECT BURIED CONDUIT. AT LEAST 12" ABOVE THE UNDERGROUND INSTALLATION.

2.4 GROUNDING

- A. INSTALL GROUNDING ELECTRODE CONDUCTORS IN RACEWAY WHERE EXPOSED TO PHYSICAL DAMAGE. BOND GROUNDING ELECTRODE CONDUCTOR TO METALLIC RACEWAYS AT EACH END WITH BONDING JUMPER. PROVIDE ADDITIONAL GROUND ELECTRODE(S) AS REQUIRED TO ACHIEVE SPECIFIED GROUNDING ELECTRODE SYSTEM RESISTANCE.
B. PROVIDE BONDING FOR EQUIPMENT GROUNDING CONDUCTORS, EQUIPMENT GROUND BUSES, METALLIC EQUIPMENT ENCLOSURES, METALLIC RACEWAYS AND BOXES, DEVICE GROUNDING TERMINALS, AND OTHER NORMALLY NON-CURRENT-CARRYING CONDUCTIVE MATERIALS ENCLOSING ELECTRICAL CONDUCTORS/EQUIPMENT OR LIKELY TO BECOME ENERGIZED.
C. WHERE CIRCUIT CONDUCTOR SIZES ARE INCREASED FOR VOLTAGE DROP, INCREASE SIZE OF EQUIPMENT GROUNDING CONDUCTOR PROPORTIONALLY

2.5 ENCLOSURES/BOXES

- A. PROVIDE GROUNDING TERMINALS WITHIN BOXES WHERE EQUIPMENT GROUNDING CONDUCTORS TERMINATE. GROUND BOX IN ACCORDANCE WITH GROUNDING SPECIFICATION.
B. USE SHEET-STEEL BOXES FOR DRY LOCATIONS UNLESS OTHERWISE
C. USE CAST IRON BOXES OR CAST ALUMINUM BOXES FOR DAMP OR WET LOCATIONS UNLESS OTHERWISE INDICATED OR REQUIRED; FURNISH WITH COMPATIBLE WEATHERPROOF GASKETED COVERS.
D. BOXES FOR GANGED DEVICES. USE MULTI-GANG BOXES OF SINGLE-PIECE CONSTRUCTION. DO NOT USE FIELD-CONNECTED GANGABLE BOXES.
E. ACCEPTABLE MANUFACTURERS
1. COOPER-CROUSE-HINDS
2. HUBBELL
3. OZ-GEDNEY
4. THOMAS & BETTS
F. LOCATE BOXES TO BE ACCESSIBLE. INSTALL PLUMB AND LEVEL TO PRESERVE INSULATION INTEGRITY WITH NO GAPS OR OPEN SPACES GREATER THAN 1/8 INCH AT THE EDGE OF THE BOX.
G. SECURE AND SUPPORT BOXES USING SUITABLE SUPPORTS AND METHODS.
H. PROVIDE INDEPENDENT SUPPORT FROM BUILDING STRUCTURE. DO NOT PROVIDE SUPPORT FROM PIPING, DUCTWORK, OR OTHER SYSTEMS. EXCEPTION: CAST METAL BOXES (OTHER THAN BOXES USED FOR FIXTURE SUPPORT) SUPPORTED BY THREADED CONDUIT CONNECTIONS.
I. INSTALL PERMANENT BARRIER BETWEEN GANGED WIRING DEVICES WHEN VOLTAGE BETWEEN ADJACENT DEVICES EXCEEDS 300 V.
J. INSTALL FIRESTOPPING TO PRESERVE FIRE RESISTANCE RATING OF PARTITIONS AND OTHER ELEMENTS, USING MATERIALS AND FOR THAT PURPOSE.

2.6 SWITCHES AND RECEPTACLES

- A. RECEPTACLES
1. STANDARD CONVENIENCE RECEPTACLES: INDUSTRIAL SPECIFICATION GRADE, 20A, 125V, NEMA 5-20R; SINGLE OR DUPLEX AS INDICATED ON THE DRAWINGS.
2. WEATHER RESISTANT GFI RECEPTACLES: INDUSTRIAL SPECIFICATION GRADE, DUPLEX, 20A, 125V, NEMA 5-20R, RECTANGULAR DECORATOR STYLE, LISTED AND LABELED AS WEATHER RESISTANT TYPE COMPLYING WITH UL 498 SUPPLEMENT SE SUITABLE FOR INSTALLATION IN DAMP OR WET LOCATIONS.
3. PROVIDE WIRING DEVICES SUITABLE FOR INTENDED USE AND WITH RATINGS ADEQUATE FOR LOAD SERVED.
4. ACCEPTABLE MANUFACTURERS
a. HUBBELL
b. LEVITON
c. PASS & SEYMOUR
5. FOR SINGLE RECEPTACLES INSTALLED ON AN INDIVIDUAL BRANCH CIRCUIT, PROVIDE A RECEPTACLE WITH AN AMPERE RATING NOT LESS THAN THAT OF THE BRANCH CIRCUIT. PROVIDE WEATHER RESISTANT GFI RECEPTACLES WITH WHILE-IN-USE, HEAVY DUTY, WEATHERPROOF COVERS FOR THE RECEPTACLES INSTALLED OUTDOORS OR IN DAMP OR WET LOCATIONS.

B. WALL SWITCHES

- 1. ACCEPTABLE MANUFACTURERS
a. HUBBELL
b. LEVITON
c. PASS & SEYMOUR
d. LUTRON
C. STANDARD WALL SWITCHES: INDUSTRIAL SPECIFICATION GRADE, 20A, 120/277 V WITH STANDARD TOGGLE TYPE SWITCH ACTUATOR MAINTAINED CONTACTS: SINGLE POLE THROW, DOUBLE POLE SINGLE THROW, THREE WAY, OR FOUR WAY AS INDICATED ON THE DRAWINGS

EQUIPMENT

3.1 PANELBOARDS

- A. PANELBOARDS SHALL BE BOLT-ON TYPE, WITH THERMAL MAGNETIC, QUICK-BREAK, QUICK-MAKE, FULL SIZE BREAKERS AND SPARES AS INDICATED ON THE DRAWINGS, EQUIVALENT TO SQUARE D, TYPE NOOD OR NF. COVERS SHALL BE DOOR-IN-DOOR TYPE. FRONTS OF CABINETS SHALL BE SLUSH OR SURFACE MOUNTED AS SHOWN ON DRAWINGS WITH A DIRECTORY CARD NEATLY TYPED OR PRINTED WHICH IDENTIFIES THE LOADS SERVED. EXTERIOR PANELS SHALL HAVE RAIN-TIGHT ENCLOSURES EQUIPPED WITH LOCK.
B. MANUFACTURERS SHALL BE SQUARE D, GENERAL ELECTRIC, CUTLER-HAMMER, SIEMENS.

3.2 TRANSFORMERS

- A. FURNISH DRY TYPE, THREE OR SINGLE PHASE TRANSFORMERS OF SIZE AND VOLTAGE INDICATED ON THE DRAWINGS, WITH FOUR (TWO ABOVE AND TWO BELOW) 2-1/2 PROF ENCLOSURE WITH FRONT WIRING COMPARTMENT AND CONFORMING TO THE APPLICABLE REQUIREMENTS OF ANSI, IEEE AND NEMA STANDARDS.
B. CORE AND COIL ASSEMBLY TO BE VACUUM IMPREGNATED WITH CLASS H INSULATION. TEMPERATURE RISE NOT TO EXCEED 115 DEGREE C.
C. TRANSFORMERS SOUND LEVEL NOT TO EXCEED FOLLOWING VALUES: 0 TO 9 KVA, 36 DB; 10 TO 45 KVA, 42 DB; 50 TO 100 KVA, 45 DB.
D. BOLT FLOOR MOUNTED TRANSFORMERS TO FLOOR. WHEN WALL MOUNTED, PROVIDE STEEL BRACKET ANGLES AND BOLT TRANSFORMER TO BRACKET. USE NEOPRENE ISOLATION PADS TO ISOLATE VIBRATIONS.
E. ADJUST PRIMARY TAPS TO PROVIDE A SECONDARY VOLTAGE WITHIN + 5% OF NOMINAL VOLTAGE.

3.3 MCC REPLACEMENT BUCKETS

- A. MATCH EXISTING MANUFACTURER AND MCC MODEL.

EXECUTION

4.1 CONSTRUCTION

- A. PERFORM THE WORK SPECIFIED BY CONTRACT DOCUMENTS IN ACCORDANCE WITH THESE SPECIFICATIONS.
B. COORDINATE THE LOCATION OF ELECTRICAL MATERIAL OR EQUIPMENT WITH THE WORK AND ADJUST CONDUIT LOCATION TO ACCOMMODATE EQUIPMENT IN ACCORDANCE WITH THE ACCEPTED SUBMITTAL DRAWINGS FROM THE MANUFACTURER

4.2 HOUSEKEEPING

- A. PROTECT ELECTRICAL EQUIPMENT TEMPORARILY EXPOSED TO WEATHER, DEBRIS, LIQUIDS, OR DAMAGE DURING CONSTRUCTION AS SPECIFIED IN SHIPMENT, PROTECTION, AND STORAGE SECTION. TOUCH UP SCRATCHES ON EQUIPMENT AS SPECIFIED IN COATING SYSTEMS SECTION BEFORE FINAL ACCEPTANCE.
B. WIPE CLEAN AND VACUUM EQUIPMENT ON THE INSIDE PRIOR TO ACCEPTANCE TESTING AND ENERGIZATION AND AGAIN PRIOR TO DETAILED INSPECTION AND ACCEPTANCE OF THE WORK.

4.3 INSTALLATION

- A. PERFORM THE INSTALLATION WORK SPECIFIED IN ACCORDANCE WITH THESE SPECIFICATIONS.
1. SPLICES ARE NOT ALLOWED EXCEPT BY PERMISSION. SUBMIT PROPOSED SPLICE LOCATIONS TO THE ENGINEER AND CONSTRUCTION MANAGER FOR REVIEW PRIOR TO INSTALLATION. SPLICES AND TERMINATIONS ARE SUBJECT TO INSPECTION PRIOR TO AND AFTER INSULATING AND MAY REQUIRE RE\_TERMINATION AFTER INSPECTION. UNDERGROUND SPLICES WILL NOT BE ALLOWED.
2. LIGHTING AND RECEPTACLE CIRCUITS MAY BE IN THE SAME CONDUIT IN ACCORDANCE WITH DERATING REQUIREMENTS OF THE NEC. LIGHTING AND RECEPTACLE CIRCUITS IN CONDUITS WITH POWER OR CONTROL CONDUCTORS IS PROHIBITED.
3. ADHERE TO THE NEC RACEWAY FILL LIMITATIONS. PROVIDE SEPARATE CONDUITS FOR SIGNAL AND INSTRUMENT CONDUCTORS AND CABLES.
4. INSTALL POWER CONDUCTORS DERIVED FROM UNINTERRUPTIBLE POWER SUPPLY SYSTEMS IN SEPARATE RACEWAYS.
5. PROVIDE TERMINATIONS AT 460-VOLT MOTORS BY BOLT-CONNECTING THE LUGGED CONNECTORS AND INSULATION. ALTERNATELY, PROVIDE TYCO ELECTRONICS GELCOP MOTOR CONNECTION KIT BY RAYCHEM.
6. INSTALL PRE-APPROVED IN-LINE SPLICES AND TEES WITH TUBULAR COMPRESSION CONNECTORS AND INSULATE. SPLICES AND TEES IN UNDERGROUND HANDHOLES OR PULL BOXES SHALL BE INSULATED USING SCOTCH-CAST EPOXY RESIN SPLICING KITS.
7. ADJUST MOTOR CIRCUIT PROTECTORS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND NEC REQUIREMENT.
8. ADJUST MOTOR CIRCUIT OVERLOAD DEVICE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND NEC REQUIREMENTS.

4.4 CONDUCTORS, WIRE, AND CABLE INSTALLATION

- A. IDENTIFY CONDUCTORS AT EACH CONNECTION TERMINAL AND AT SPLICE POINTS WITH THE IDENTIFICATION MARKING SYSTEM SPECIFIED.
B. INSTALL WIRE AND CABLE INTO RACEWAYS, CONDUIT, CABLE TRAYS, OR WIREWAYS WITHOUT DAMAGING OR PUTTING UNDUE STRESS ON THE INSULATION OR JACKET. PROVIDE MANUFACTURE'S RECOMMENDED AND UL LISTED PULLING COMPOUNDS LUBRICANTS FOR PULLING WIRE AND CABLE. GREASE IS PROHIBITED.
C. RACEWAY CONSTRUCTION SHALL BE COMPLETE, CLEANED, AND PROTECTED FROM THE WEATHER BEFORE CABLE IS INSTALLED. PROVIDE WIRE OR CABLE SUPPORT WHERE WIRE OR CABLE EXITS A RACEWAY. PROVIDE REUSABLE STAINLESS STEEL KELLUMS GRIPS OR EQUAL PRODUCT WHERE CABLE SUPPORT IS REQUIRED AND WHERE LOADS ARE REMOVABLE.
D. SCRATCH-BRUSH THE CONTACT AREAS AND TINPLATE THE CONNECTION WHERE FLAT BUS BAR CONNECTIONS ARE MADE WITH TINPLATED OR UNPLATED FLAT BUS BAR. PROVIDE NON-OXIDE MATERIAL APPROVED FOR THE FUNCTION. TORQUE BOLTS TO THE BUS MANUFACTURER'S RECOMMENDATIONS.
E. PROVIDE ADDITIONAL PULLBOXES
F. INSTALL WIRE AND CABLE INTO RACEWAYS, CONDUIT, CABLE TRAYS, OR WIREWAYS WITHOUT DAMAGING OR PUTTING UNDUE STRESS ON THE INSULATION OR JACKET. PROVIDE MANUFACTURE'S RECOMMENDED AND UL LISTED PULLING COMPOUNDS LUBRICANTS FOR PULLING WIRE AND CABLE. GREASE IS PROHIBITED.
G. RACEWAY CONSTRUCTION SHALL BE COMPLETE, CLEANED, AND PROTECTED FROM THE WEATHER BEFORE CABLE IS INSTALLED. PROVIDE WIRE OR CABLE SUPPORT WHERE WIRE OR CABLE EXITS A RACEWAY. PROVIDE REUSABLE STAINLESS STEEL KELLUMS GRIPS OR EQUAL PRODUCT WHERE CABLE SUPPORT IS REQUIRED AND WHERE LOADS ARE REMOVABLE.
H. SCRATCH-BRUSH THE CONTACT AREAS AND TINPLATE THE CONNECTION WHERE FLAT BUS BAR CONNECTIONS ARE MADE WITH TINPLATED OR UNPLATED FLAT BUS BAR. PROVIDE NON-OXIDE MATERIAL APPROVED FOR THE FUNCTION. TORQUE BOLTS TO THE BUS MANUFACTURER'S RECOMMENDATIONS.
I. ADHERE TO RACEWAY FILL LIMITATIONS DEFINED BY NEC AND THE FOLLOWING: LIGHTING AND RECEPTACLE CIRCUITS MAY BE IN THE SAME CONDUIT IN ACCORDANCE WITH DE-RATING REQUIREMENTS OF THE NEC. LIGHTING AND RECEPTACLE CIRCUITS SHALL NOT BE IN CONDUITS WITH POWER OR CONTROL CONDUCTORS. SIGNAL CONDUCTORS SHALL BE IN SEPARATE CONDUITS.
J. INSTALL PRE-APPROVED IN-LINE SPLICES AND TEES MADE WITH TUBULAR COMPRESSION CONNECTORS AND INSULATED AS SPECIFIED FOR TERMINATIONS AND FOR MOTOR TERMINATIONS. SPLICES AND TEES IN UNDERGROUND HANDHOLES OR PULL BOXES SHALL BE INSULATED USING SCOTCH-CAST EPOXY RESIN OR EQUAL SPLICING KITS.
K. CONDUCTORS IN ALL HANDHOLES AND MANHOLES SHALL HAVE ADEQUATE SLACK TO BE TIED UP AROUND THE PERIMETER OF THE VAULT AND WILL BE SUSPENDED BY INSULATORS AROUND THE VAULT'S PERIMETER AS NEEDED TO SUPPORT THE CABLE.

4.5 RACEWAY INSTALLATION

- A. PROVIDE ADDITIONAL PULLBOXES FOR CONDUIT RUNS WITH GREATER THAN 360 DEGREES IN ANY RUN BETWEEN PULL BOXES. LIMIT MAXIMUM CONDUIT RUNS WITHOUT ADDITIONAL PULLBOXES TO 400 FEET, LESS 100 FEET FOR EVERY 90 DEGREES FOR THE CONDUIT RUN CHANGE IN DIRECTION.
B. DETERMINE CONDUIT ROUTING THAT CONFORMS TO THE INSTALLATION REQUIREMENTS SET FORTH HEREIN AND IN ACCORDANCE WITH THE NEC REQUIREMENTS FOR SIZE AND NUMBER OF PULLBOXES.
1. INSTALL EXPOSED CONDUIT EITHER PARALLEL OR PERPENDICULAR TO STRUCTURAL MEMBERS AND SURFACES
2. ROUTE TWO OR MORE EXPOSED CONDUITS IN THE SAME GENERAL ROUTING PARALLEL WITH SYMMETRICAL BENDS.
3. INSTALL EXPOSED CONDUIT ON SUPPORTS SPACED NOT MORE THAN 10 FEET APART.
4. INSTALL CONDUITS OUT FROM THE WALL USING FRAMING CHANNEL WHERE THREE OR MORE CONDUITS ARE LOCATED IN PARALLEL RUN.
5. INSTALL CONDUITS BETWEEN THE REINFORCING STEEL IN WALLS OR SLABS THAT HAVE REINFORCING IN BOTH FACES. VERIFY INSTALLATION METHOD FOR CONDUITS LARGER THAN 2-INCH WITH CONSTRUCTION MANAGER PRIOR TO INSTALLATION.
6. INSTALL CONDUIT IN SLABS THAT HAVE ONLY A SINGLE LAYER OF REINFORCING STEEL, UNDER THE REINFORCEMENT.
7. INSTALL CONDUITS WITH LARGE RADII UNDER THE SLAB IN A ONE-SACK CONCRETE SLURRY.
8. ROUTE CONDUIT CLEAR OF STRUCTURAL OPENINGS AND SHOWN FUTURE OPENINGS.
9. PROVIDE CONDUIT ROOFS OR WALL PENETRATIONS WITH FLASHING SEALED WATER TIGHT AND FIRE-STOP, AS REQUIRED TO MAINTAIN THE STRUCTURAL RATING.
10. GROUT CONDUIT INTO ANY OPENINGS CUT INTO CONCRETE AND MASONRY STRUCTURES.
11. CAP CONDUITS DURING CONSTRUCTION TO PREVENT ENTRANCE OF DIRT, TRASH, AND WATER.
12. TERMINATE EXPOSED CONDUIT STUBS FOR FUTURE USE WITH PIPE-CAPS AND PROVIDE COUPLINGS AND PIPE-PLUGS WHERE FLUSH WITH THE SLAB.
13. DETERMINE CONCEALED CONDUIT STUB-UP LOCATIONS FROM THE MANUFACTURER'S SHOP DRAWINGS.
14. TERMINATE CONDUIT IN EQUIPMENT WITH CONDUIT COUPLINGS WITH PIPE-PLUGS FLUSH WITH STRUCTURAL SURFACES FOR EMPTY CONDUIT.
15. INSTALL CONDUIT HORIZONTALLY WITH AT LEAST 7-FEET HEADROOM CLEARANCE.
16. TERMINATE CONDUIT WITH FITTINGS THAT ENSURE THAT THE NEMA RATING OF THE ENCLOSURE AND PROVIDE CONDUIT HUBS, AS REQUIRED HERETOFORE.
17. CONNECT UNDERGROUND METALLIC OR NONMETALLIC CONDUIT THAT TURNS OUT OF CONCRETE, MASONRY, OR EARTH TO A 90-DEGREE ELBOW OF PVC-COATED RIGID STEEL CONDUIT BEFORE EMERGENCE. TAPED OR PAINTED RMC-STEEL OR RNC IS PROHIBITED.
18. PROVIDE CONDUIT CROSSING STRUCTURAL JOINTS WITH STRUCTURAL MOVEMENT WITH O-Z "TYPE DX" OR CROUSE-HINDS "TYPE XIG-SA," ALUMINUM, BONDED, WEATHER-TIGHT EXPANSION FITTING OF THE SAME SIZE AND TYPE AS THE CONDUIT.
19. SEAL CONDUITS IN CORROSIVE AREAS USING REMOVABLE MASTIC MATERIAL.

4.6 UNDERGROUND RACEWAY INSTALLATION

- A. ADHERE TO THE POWER UTILITY UNDERGROUND SERVICE ENTRANCE REQUIREMENT FOR EXCAVATION, RACEWAYS INSTALLATION AND TERMINATION, PADS AND REINFORCEMENT, BACKFILLING, AND LOCATION CRITERIA. PROVIDE EXCAVATION, BACKFILLING, AND CONCRETE WORK AS SPECIFIED AND SHOWN.
B. ADHERE TO THE POWER UTILITY UNDERGROUND SERVICE ENTRANCE REQUIREMENT FOR EXCAVATION, RACEWAYS INSTALLATION AND TERMINATION, PADS AND REINFORCEMENT, BACKFILLING, AND LOCATION CRITERIA. PROVIDE EXCAVATION, BACKFILLING, AND CONCRETE WORK AS SPECIFIED AND SHOWN.
1. PROVIDE UNDERGROUND CONDUIT INSTALLATIONS THAT CONFORM TO THE FOLLOWING REQUIREMENTS:
2. DIRECT BURY UNDERGROUND CONDUITS THAT ARE NOT SHOWN TO BE INSTALLED IN AN ELECTRICAL DUCTBANK.
3. PVC COATED RMC-STEEL ELBOWS FOR UNDERGROUND TO ABOVE GROUND TRANSITIONS.
4. UNDERGROUND CONDUIT BEND RADIUS: NOT LESS THAN 2 FEET MINIMUM AT VERTICAL RISERS NOR LESS THAN 3 FEET ELSEWHERE FOR UP TO 2-INCH DIAMETER CONDUIT.
5. DETERMINE CONDUIT MANUFACTURER'S BENDING RADIUS REQUIREMENT FOR 3-INCH AND LARGER DIAMETER CONDUIT AND USE FACTORY "LONG RADIUS" ELS.
6. UNDERGROUND DUCTBANKS AND DIRECT-BURIED CONDUITS: 2-FEET MINIMUM EARTH COVER, EXCEPT WHERE SHOWN OTHERWISE.

4.7 ELECTRICAL EQUIPMENT LABELING - ARC FLASH

- A. ELECTRICAL EQUIPMENT SHALL HAVE FIELD MARKED SIGNS AND LABELING TO WARN QUALIFIED PERSONS OF THE POTENTIAL ELECTRIC ARC FLASH HAZARDS PER NEC ARTICLE 110.16 FLASH PROTECTION. THESE LABELS WILL BE PROVIDED BY THE [CONTRACTOR] [OWNER/ENGINEER]



Certificate of Authorization No. 2602
6151 Lake Osprey Drive, 3rd Floor
Sarasota, FL 34240

BID READY DESIGN



NWRF
MAINTENANCE
BUILDING

REVISIONS

Table with 3 columns: REV, DATE, DESCRIPTION

LINE IS 2 INCHES AT FULL SIZE

DESIGNED: S. CREAVALLE
DRAWN: S. CREAVALLE
CHECKED: G. NANA
APPROVED: A. MODY

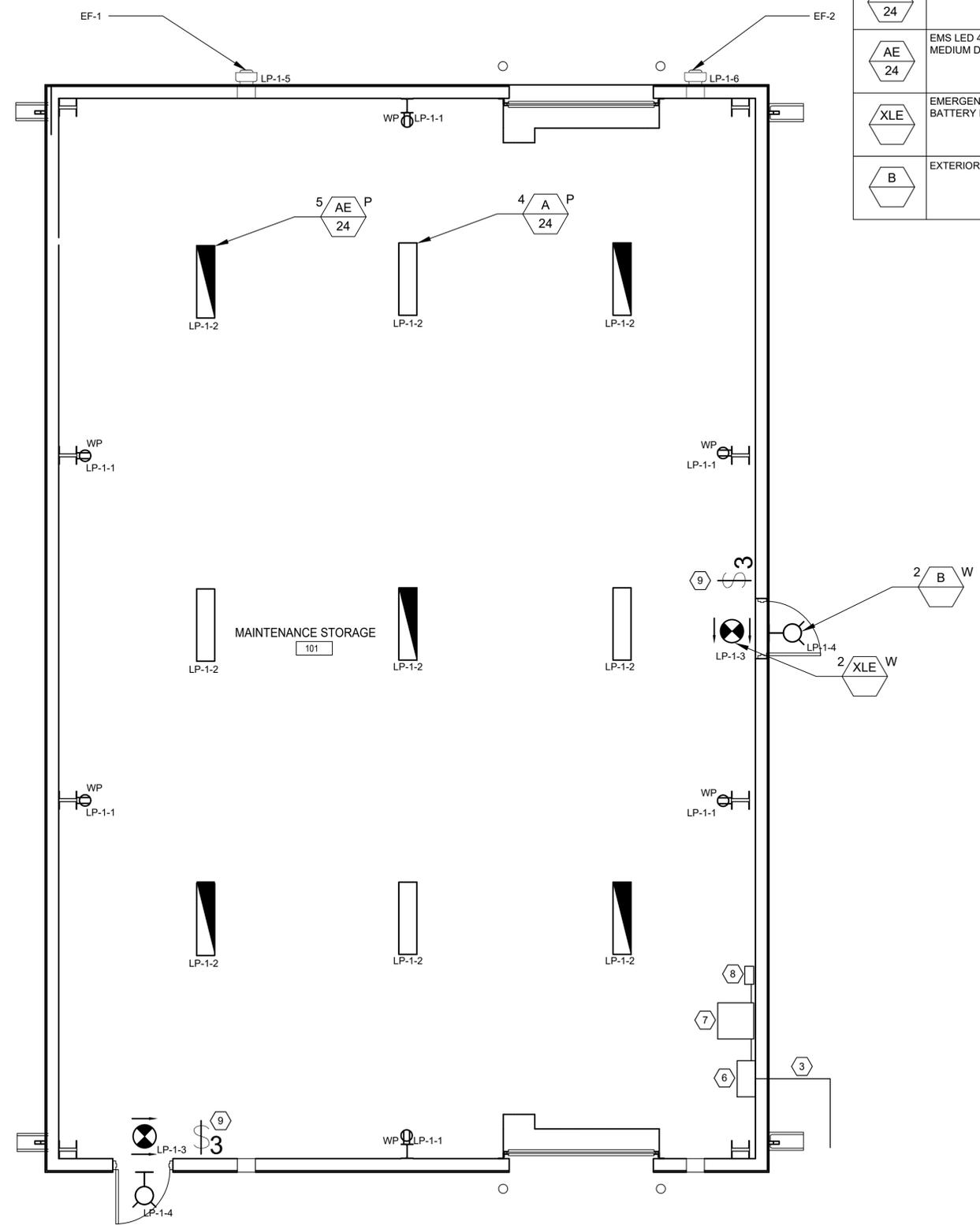
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ELECTRICAL

ELECTRICAL
SPECIFICATION 1

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E-00-002
22 SHEET NUMBER OF 24

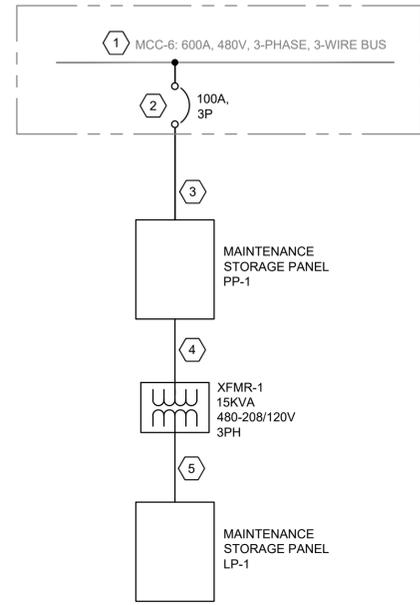
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**MAINTENANCE STORAGE ELECTRICAL PLAN**  
SCALE: 3"=10"

LIGHT FIXTURE SCHEDULE		
TYPE	DESCRIPTION	MODEL #
A 24	EMS LED 48", 4000 LUMENS, ACRYLIC, LINEAL RIBBED FROSTED LENS, MEDIUM DISTRIBUTION, 80 CRI, 4000K, W/ANGLE BRACKET	HOLOPHANE - EMS L48 4000LM IMAFL MD MVOLT GZ10 40K 80CRI ANGBKT STSL
AE 24	EMS LED 48", 4000 LUMENS, ACRYLIC, LINEAL RIBBED FROSTED LENS, MEDIUM DISTRIBUTION, 80 CRI, 4000K, EMERGENCY BATTERY BACKUP	HOLOPHANE - EMS L48 4000LM IMAFL MD MVOLT GZ10 40K 80CRI ANGBKT STSL E10WMCP
XLE	EMERGENCY OPERATION EXIT SIGN WITH RED LETTERS WITH BATTERY BACKUP	HOLOPHANE - QM LED R 120V
B	EXTERIOR WALLPACK LED	HOLOPHANE - W4GLEED 120V

- GENERAL NOTES:**
- EXISTING MCC-6 LOCATED IN CONTROL ROOM AT DEWATERING BUILDING.
  - NEW CIRCUIT BREAKER SHALL BE COMPATIBLE WITH EXISTING MCC-6 MAKE/MODEL.
  - #2, #8G, IN 2" C. SEE E-00-102 FOR CONDUIT ROUTING TO EXISTING MCC-6 IN DEWATERING BUILDING CONTROL ROOM.
  - 3#10, #10G, 3/4" C.
  - 4#8, #10G, 1-1/4" C.
  - MAINTENANCE STORAGE PANEL PP-1.
  - TRANSFORMER XFMR-1.
  - MAINTENANCE STORAGE PANEL LP-1.
  - TOGGLE SWITCH WITH WATERPROOF COVER.



**MAINTENANCE STORAGE RISER DIAGRAM**  
SCALE: NTS

PP-1												
PANEL:		PP-1 MAINTENANCE STORAGE BUILDING				SCCR:		65 KA		BUS		100A
LOCATION:		WALL				MAINS:		100A MCB		VOLTS:		480, 3Ø, 3W
MOUNTING:		WALL				NOTE:		MANUFACTURER TO PROVIDE BREAKER FOR INTEGRAL SPD				
TRIP / POLE	LOAD DESCRIPTION	CONDUIT AND CABLE	LOAD KVA	PHASE			LOAD KVA	CONDUIT AND CABLE	LOAD DESCRIPTION	TRIP / POLE	CKT	
3Ø/3	TRANSFORMER XFMR-1	3#10, #10G, 3/4" C	5.00	A	B	C	0.00		SPARE	2Ø/3	2	
			5.00				0.00					
			0.00				0.00					
2Ø/3	SPACE		0.00				0.00		SPARE	2Ø/3	4	
			0.00				0.00					
			0.00				0.00					
2Ø/3	SPACE		0.00				0.00		SPARE	2Ø/3	6	
			0.00				0.00					
			0.00				0.00					
			0.00				0.00		SPACE		8	
			0.00				0.00					
			0.00				0.00					
<b>TOTALS</b>			<b>KVA</b>	5	5	5						
<b>CONNECTED LOAD:</b>			<b>TOTALS</b>									
<b>DEMAND LOAD:</b>			<b>AMPS</b>	6.0	6.0	6.0						
				= 14.44 A								
										FED FROM: MCC-6		

**PP-1 PANEL SCHEDULE**  
SCALE: NTS

LP-1												
PANEL:		LP-1 MAINTENANCE STORAGE BUILDING				SCCR:		10 KA		BUS		100A
LOCATION:		Surface				MAINS:		60A MCB		VOLTS:		120 / 208V, 3 Ø, 4 W
MOUNTING:		Surface				NOTE:		MANUFACTURER TO PROVIDE BREAKER FOR INTEGRAL SPD				
TRIP / POLE	LOAD DESCRIPTION	CONDUIT AND CABLE	LOAD KVA	PHASE			LOAD KVA	CONDUIT AND CABLE	LOAD DESCRIPTION	TRIP / POLE	CKT	
2Ø/1	RECEPTACLE	2#12, #12G, 3/4" C	1.00	A	B	C	1.00	2#12, #12G, 3/4" C	LIGHTING	2Ø/1	2	
2Ø/1	EXIT SIGNS	2#12, #12G, 3/4" C	1.00				1.00	2#12, #12G, 3/4" C	EXTERIOR LIGHTING	2Ø/1	4	
2Ø/1	EF-1	2#12, #12G, 3/4" C	1.00				1.00	2#12, #12G, 3/4" C	EF-2	2Ø/1	6	
2Ø/1	SPACE		0.00				1.00		2#10, 12G, 1" C	STREET LIGHTING	2Ø/2	8
2Ø/1	SPACE		0.00				1.00				10	
2Ø/1	SPACE		0.00				0.00		SPACE	2Ø/1	12	
<b>TOTALS</b>			<b>KVA</b>	3.00	3.00	1						
<b>CONNECTED LOAD:</b>			<b>TOTALS</b>									
<b>DEMAND LOAD:</b>			<b>AMPS</b>	8.3	8.3	2.8						
				= 16.67 A								
										FED FROM: XFMR-1		

**LP-1 PANEL SCHEDULE**  
SCALE: NTS



Certificate of Authorization No. 2602  
6151 Lake Osprey Drive, 3rd Floor  
Sarasota, FL 34240

BID READY DESIGN



NWRF MAINTENANCE BUILDING

REVISIONS		
REV	DATE	DESCRIPTION
#	#	#
#	#	#
#	#	#
#	#	#
#	#	#
#	#	#
#	#	#
#	#	#
#	#	#
#	#	#

LINE IS 2 INCHES AT FULL SIZE

DESIGNED: S. CREAVALLE  
DRAWN: S. CREAVALLE  
CHECKED: G. NANA  
APPROVED: A. MOODY

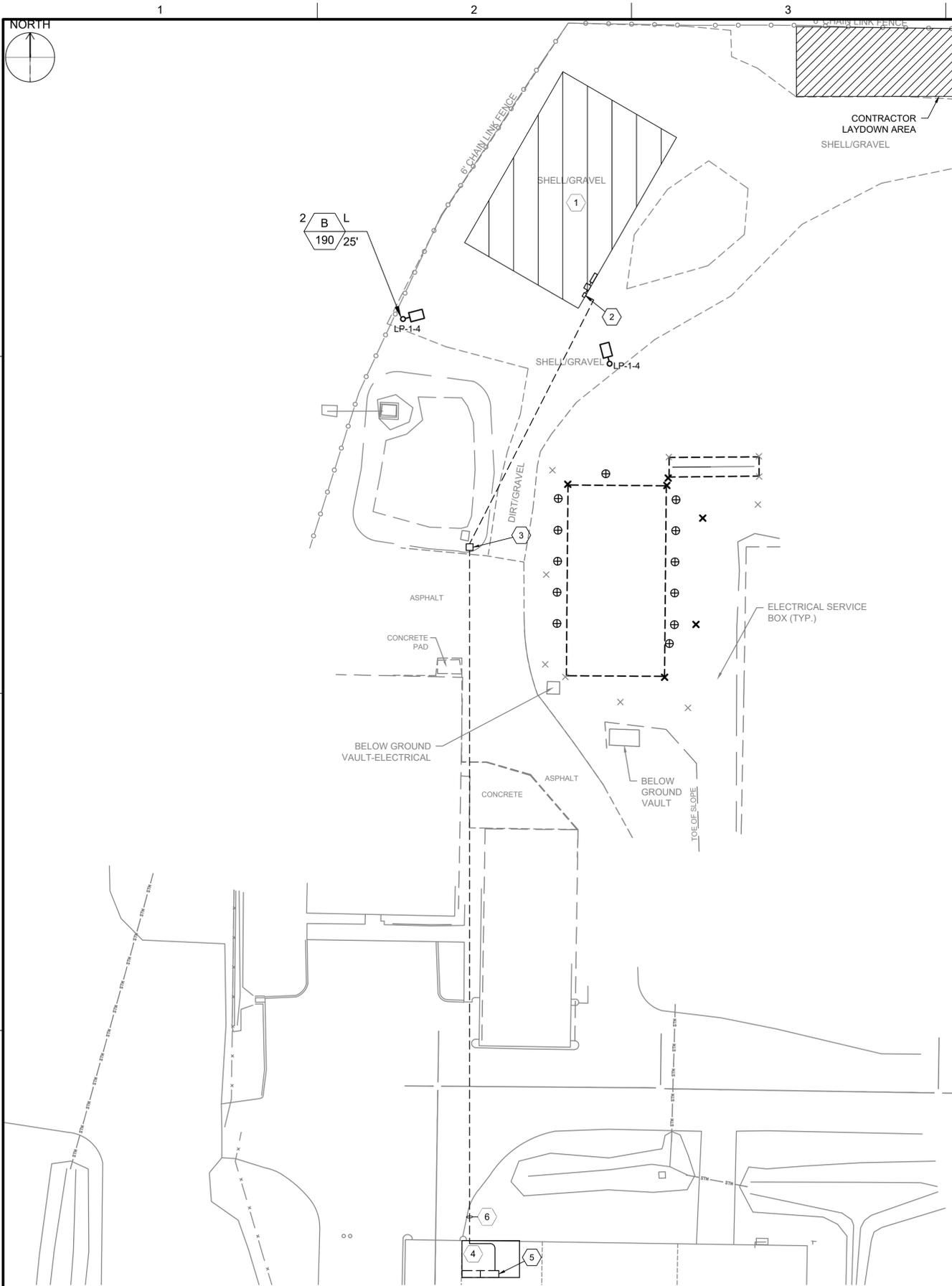
FILENAME: E-00-101.DWG  
BC PROJECT NUMBER: 158118  
CLIENT PROJECT NUMBER: 6110880

ELECTRICAL

NWRF MAINTENANCE BUILDING ELECTRICAL PLAN AND RISER

DRAWING NUMBER: E-00-101

23 SHEET NUMBER OF 24

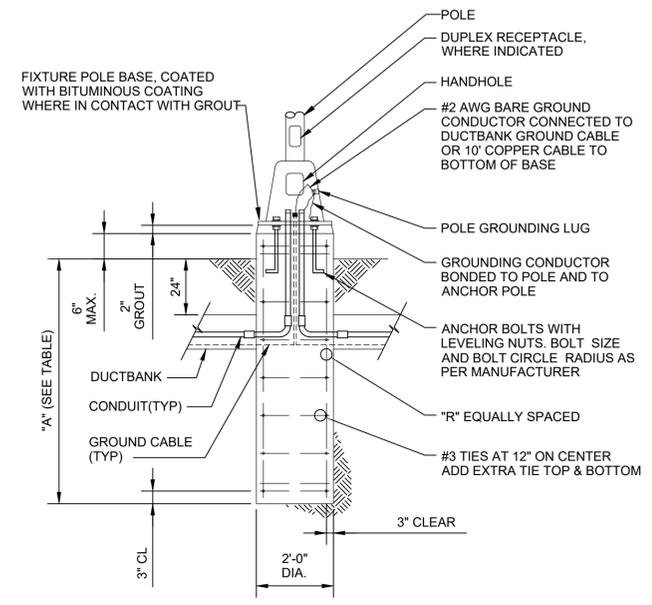


NWRF  
ELECTRICAL SITE PLAN  
SCALE: 1" = 20'

FACILITY ADDRESS:  
8500 69TH STREET EAST, PALMETTO, FL

LIGHT FIXTURE SCHEDULE		
TYPE	DESCRIPTION	MODEL #
B 190	LED AREA LIGHTING WITH PHOTOCELL. POLE TYPE ROUND TAPERED ALUMINUM WITH NATURAL FINISH WITH 150MPH WIND LOADING.	LITHONIA ESX1 LED P2 40K R3 208V UPA BLS DDBXD M2

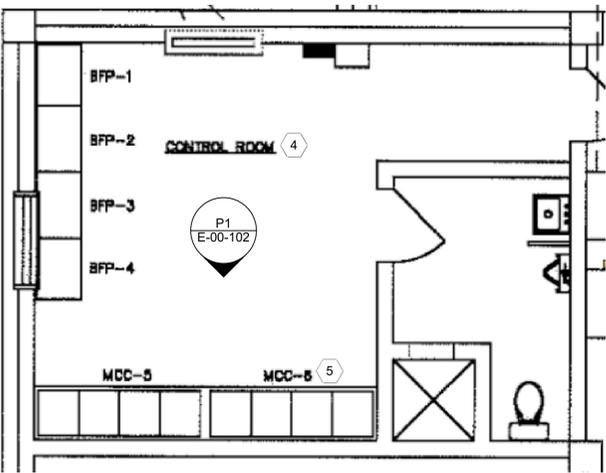
- GENERAL NOTES:**
- CONTRACTOR TO COORDINATE CONDUIT SITE ROUTING WITH FIELD CONDITIONS.
- KEYNOTES:**
- MAINTENANCE BUILDING.
  - MAINTENANCE BUILDING PANEL: PP-1
  - STANDARD 11"x17" HANDHOLE WITH TRAFFIC RATED COVER.
  - CONTROL ROOM AT DEWATERING BUILDING.
  - CONNECT TO NEW CIRCUIT BREAKER IN MCC-6
  - CONTRACTOR SHALL USE PVC SCHEDULE 80 DIRECT BURIED WITH MINIMUM COVER OF 24" AND WITH TRACEABLE IDENTIFICATION TAPE BY BRADY PLACED 12" BELOW FINISH GRADE.



NOTE:  
1. FOUNDATION SHALL BEAR AGAINST ORIGINAL SOIL OR 90% COMPACTED BACKFILL OF APPROVED TYPE

POLE HEIGHT	"A" MINIMUM	"R" LONGITUDINAL REINF.
10'-0"	4'-3"	(4) #4
20'-0"	5'-6"	(4) #5
30'-0"	6'-8"	(6) #5
40'-0"	7'-6"	(6) #6

E73001 LUMINAIRE MOUNTING POLE BASE  
NTS



NWRF DEWATERING BUILDING CONTROL ROOM  
ENLARGED RECORD DRAWING  
SCALE: NONE



EXISTING MCC-6 IN  
NWRF DEWATERING BUILDING CONTROL ROOM  
P1  
E-00-102  
PHOTO 1

**Brown AND Caldwell**

Certificate of Authorization No. 2602  
6151 Lake Osprey Drive, 3rd Floor  
Sarasota, FL 34240

BID READY DESIGN



NWRF  
MAINTENANCE  
BUILDING

REVISIONS

REV	DATE	DESCRIPTION

DESIGNED: S. CREAVALLE  
DRAWN: S. CREAVALLE  
CHECKED: R. ABORDO  
APPROVED: R. ABORDO

FILENAME  
E-00-102A.DWG  
BC PROJECT NUMBER  
BID SET  
CLIENT PROJECT NUMBER  
6110880  
ELECTRICAL

ELECTRICAL SITE  
PLAN

DRAWING NUMBER  
**E-00-102**  
SHEET NUMBER  
5 OF 24

Path: C:\BPC\W\2731460 FILENAME: E-00-102A.DWG PLOT DATE: 3/17/2023 12:38 AM CAD USER: STEPHEN CREAVALLE