



State of West Virginia
 Department of Administration
 Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

Request for Quotation

RFQ NUMBER
DNRB12003

PAGE
1

ADDRESS CORRESPONDENCE TO ATTENTION OF:
FRANK WHITTAKER 304-558-2316

RFQ COPY
 TYPE NAME/ADDRESS HERE

VENDOR

SHIP TO

DIVISION OF NATURAL RESOURCES
 PARKS & RECREATION SECTION
 324 4TH AVENUE
 SOUTH CHARLESTON, WV
 25303-1228 304-558-3397

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
08/26/2011				

BID OPENING DATE: 09/13/2011 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
***** ADDENDUM NO. 3 *****						
THIS ADDENDUM IS ISSUED TO:						
1) PROVIDE THE ATTACHED MANDATORY PRE-BID MEETING SUMMARY.						
2) PROVIDE THE ATTACHED MANDATORY PRE-BID SIGN IN SHEET						
3) PROVIDE THE ATTACHED TECHNICAL QUESTIONS AND ANSWERS.						
4) PROVIDE THE ATTACHED SECTION 26 2416 PANNELBOARDS SPECIFICATION.						
5) PROVIDE DIAMOND BRITE INFORMATION SHEET.						
BID OPENING DATE REMAINS: 09/13/2011						
BID OPENING TIME REMAINS: 1:30 PM						
***** END ADDENDUM NO. 3 *****						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

GENERAL TERMS & CONDITIONS REQUEST FOR QUOTATION (RFQ) AND REQUEST FOR PROPOSAL (RFP)

1. Awards will be made in the best interest of the State of West Virginia.
2. The State may accept or reject in part, or in whole, any bid.
3. Prior to any award, the apparent successful vendor must be properly registered with the Purchasing Division and have paid the required \$125 fee.
4. All services performed or goods delivered under State Purchase Order/Contracts are to be continued for the term of the Purchase Order/Contracts, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise available for these services or goods this Purchase Order/Contract becomes void and of no effect after June 30.
5. Payment may only be made after the delivery and acceptance of goods or services.
6. Interest may be paid for late payment in accordance with the *West Virginia Code*.
7. Vendor preference will be granted upon written request in accordance with the *West Virginia Code*.
8. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.
9. The Director of Purchasing may cancel any Purchase Order/Contract upon 30 days written notice to the seller.
10. The laws of the State of West Virginia and the *Legislative Rules* of the Purchasing Division shall govern the purchasing process.
11. Any reference to automatic renewal is hereby deleted. The Contract may be renewed only upon mutual written agreement of the parties.
12. **BANKRUPTCY:** In the event the vendor/contractor files for bankruptcy protection, the State may deem this contract null and void, and terminate such contract without further order.
13. **HIPAA BUSINESS ASSOCIATE ADDENDUM:** The West Virginia State Government HIPAA Business Associate Addendum (BAA), approved by the Attorney General, is available online at www.state.wv.us/admin/purchase/vrc/hipaa.htm and is hereby made part of the agreement. Provided that the Agency meets the definition of a Cover Entity (45 CFR §160.103) and will be disclosing Protected Health Information (45 CFR §160.103) to the vendor.
14. **CONFIDENTIALITY:** The vendor agrees that he or she will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the agency's policies, procedures, and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in <http://www.state.wv.us/admin/purchase/privacy/noticeConfidentiality.pdf>.
15. **LICENSING:** Vendors must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, and the West Virginia Insurance Commission. The vendor must provide all necessary releases to obtain information to enable the director or spending unit to verify that the vendor is licensed and in good standing with the above entities.
16. **ANTITRUST:** In submitting a bid to any agency for the State of West Virginia, the bidder offers and agrees that if the bid is accepted the bidder will convey, sell, assign or transfer to the State of West Virginia all rights, title and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the State of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to the bidder.

I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership, or person or entity submitting a bid for the same material, supplies, equipment or services and is in all respects fair and without collusion or fraud. I further certify that I am authorized to sign the certification on behalf of the bidder or this bid.

INSTRUCTIONS TO BIDDERS

1. Use the quotation forms provided by the Purchasing Division. Complete all sections of the quotation form.
2. Items offered must be in compliance with the specifications. Any deviation from the specifications must be clearly indicated by the bidder. Alternates offered by the bidder as **EQUAL** to the specifications must be clearly defined. A bidder offering an alternate should attach complete specifications and literature to the bid. The Purchasing Division may waive minor deviations to specifications.
3. Unit prices shall prevail in case of discrepancy. All quotations are considered F.O.B. destination unless alternate shipping terms are clearly identified in the quotation.
4. All quotations must be delivered by the bidder to the office listed below prior to the date and time of the bid opening. Failure of the bidder to deliver the quotations on time will result in bid disqualifications: Department of Administration, Purchasing Division, 2019 Washington Street East, P.O. Box 50130, Charleston, WV 25305-0130
5. Communication during the solicitation, bid, evaluation or award periods, except through the Purchasing Division, is strictly prohibited (W.Va. C.S.R. §148-1-6.6).

Greenbrier State Forest/Bluestone State Park

Swimming Pool Renovations

DNRB12003

Pre-Bid Meeting Summary

The prebid meeting was held at Cabin No.13 at Greenbrier SF and the Shelter near the site on August the 9th, 2011. The following attended the meeting:

Brian D. Carney, PE (WVDNR)

Craig Miller (Miller Engineering)

Brett McMillion, Park Superintendant

Jeff Layfield, Park Superintendant

5 Contractors- See attached Sign In Sheet

The following was noted:

The meeting started at 10:30am at Greenbrier SF and continued at 2:00pm at Bluestone SP after an intermission of about 1 and ½ hours.

Brian Carney went over the administrative requirements for the contract:

1. Mandatory Pre-Bid Meeting
2. 5% Bid Bond and 100% performance Bond Required.
3. For official interpretations of the Insurance and Bond Requirements contact the State Purchasing Division.
4. Bid due date as stated on the RFQ
5. Project to be Substantially Complete by 4/15/12
6. All technical questions shall be submitted to WV Purchasing Division and answers will be issued as an addendum.
7. Plans and specifications may be purchased from Miller Engineering, Inc.

Craig Miller, PE with Miller Engineering, Inc. went over the scope of work for the project.

After the meeting everyone had a chance to see the sites of the project.

The meeting concluded around 3:00pm.

PRE-BID CONFERENCE
SIGN IN SHEET

Request for Quotation Number: DNRB12003 Date: 9 Aug 11 Park: Crestbrook Park Whitings

PLEASE PRINT LEGIBLY. THIS INFORMATION IS ESSENTIAL TO CONTACT THE ATTENDEE IN A TIMELY MANNER. FAILURE TO DO SO MAY RESULT IN DELAYS IN YOUR COMPANY GETTING IMPORTANT BID INFORMATION.

<p>Firm Name: <u>RBS INC</u> Firm Address: <u>Box 490</u> <u>White Sulphur Spgs WV</u></p> <p>Representative Attending: Phone Number: <u>304 497 3800</u> Fax Number: <u>304 497 3802</u> Email Address: <u>unionconnect@frontiernet.net</u></p>	<p>Firm Name: <u>WVDNR</u> Firm Address: <u>Box 6000</u> <u>150 State St</u> <u>Jeffersville</u></p> <p>Representative Attending: Phone Number: <u>304-536-1944</u> Fax Number: Email Address:</p>
<p>Firm Name: <u>Dawhill Const. Co.</u> Firm Address: <u>P.O. Box 685</u> <u>Gawley Bridge, W.Va</u> <u>25085</u></p> <p>Representative Attending: Phone Number: <u>304-632-1600</u> Fax Number: <u>304-632-1601</u> Email Address: <u>rdawhill@hotmail.com</u></p>	<p>Firm Name: <u>Net and Pools of Roanoke</u> Firm Address: <u>312 Melrose Ave</u> <u>Roanoke VA 24011</u></p> <p>Representative Attending: Phone Number: <u>Jason Vaughan Austin Vaughan</u> <u>540-346-7665</u> Fax Number: <u>540-343-5240</u> Email Address: <u>jason@netandpools.com</u></p>
<p>Firm Name: <u>Aquatic Designs Inc</u> Firm Address: <u>6328 Monnett Rd</u> <u>Climax NC 27233</u></p> <p>Representative Attending: Phone Number: <u>Mark Voigt</u> <u>336-674-9665</u> Fax Number: <u>"</u> <u>MSI</u> Email Address: <u>MVOIGT@ADIPPOOL.NC.SI</u></p>	<p>Firm Name: <u>AQUA POOL, INC.</u> Firm Address: <u>1435 Electric Ave.</u> <u>East Pittsburgh, Pa. 15112</u></p> <p>Representative Attending: Phone Number: <u>RANDALL R. KOLSAW</u> <u>412-812-2549</u> Fax Number: <u>412-824-0910</u> Email Address: <u>Randy@aquapoolinc.com</u></p>



PRE-BID CONFERENCE
SIGN IN SHEET

Request for Quotation Number _____

Date 9 Aug 11

Park Bluestone

PLEASE PRINT LEGIBLY. THIS INFORMATION IS ESSENTIAL TO CONTACT THE ATTENDEE IN A TIMELY MANNER. FAILURE TO DO SO MAY RESULT IN DELAYS IN YOUR COMPANY GETTING IMPORTANT BID INFORMATION.

<p>Firm Name: <u>3 Aquatic Designs Inc</u></p> <p>Firm Address: _____</p> <p>Representative Attending: <u>Mark Vokat</u></p> <p>Phone Number: _____</p> <p>Fax Number: _____</p> <p>Email Address: _____</p>	<p>Firm Name: <u>RBS INC</u></p> <p>Firm Address: _____</p> <p>Representative Attending: <u>JK ROSE</u></p> <p>Phone Number: _____</p> <p>Fax Number: _____</p> <p>Email Address: _____</p>
<p>Firm Name: <u>Danhill Const. Co.</u></p> <p>Firm Address: _____</p> <p>Representative Attending: <u>Dan Hill</u></p> <p>Phone Number: _____</p> <p>Fax Number: _____</p> <p>Email Address: _____</p>	<p>Firm Name: <u>AQUA POOL, INC.</u></p> <p>Firm Address: _____</p> <p>Representative Attending: <u>RANDALL P. ROLSON</u></p> <p>Phone Number: _____</p> <p>Fax Number: _____</p> <p>Email Address: _____</p>
<p>Firm Name: <u>National Pools of Booneville, IN</u></p> <p>Firm Address: _____</p> <p>Representative Attending: <u>Austin Vaughan</u></p> <p>Phone Number: _____</p> <p>Fax Number: _____</p> <p>Email Address: _____</p>	<p>Firm Name: <u>LAUDNR</u></p> <p>Firm Address: <u>Brian Carnoy</u></p> <p>Representative Attending: <u>Brian Carnoy</u></p> <p>Phone Number: _____</p> <p>Fax Number: _____</p> <p>Email Address: _____</p>



ADDENDUM
Bluestone SP and Greenbrier SF Pool Replacement
DNRB12003

BIDDING / ADMINISTRATIVE:

The Prebid attendance sheets and Pre-bid Meeting Summary are attached.

Bonds: Please make sure the requirements of WV Purchasing for bonds are exactly followed. If bonding agencies have any questions, please have them contact Frank Whittaker for clarifications.

Clarification: The Project Engineer and the Owner's representative, Brian Carney, are the only people who may give directions related to the completion of work or change orders. No changes to project scope may be made during the project by anyone but the Project Engineer with the Approval of the Owner. A change order must be issued before any changes are performed. Should the contractor perform work that was not pre-authorized by the Engineer/Owner, such work will be at the sole expense of the contractor.

QUESTIONS:

1) Is this the pool slide the Architect is looking for? (See attachment.)

ANSWER: The slides in ALT#1 are different, which was not clearly stated at the pre-bid. For Greenbrier, the Summit 6-203 is the correct slide. The slide for Bluestone is a modified 6-203 (delete one slide, straighten the other). Summit indicated no other model number is required for bidding purposes. We spoke with Kay Loveall and Leo Lin (phone (360) 751 8819) at Summit concerning these slides.

2) Can we mechanically fasten the grounding in areas where cad-welding is not possible?

ANSWER: CAD WELDS will be used wherever something to be bonded does not have a factory lug. Stainless steel specialties are to incorporate tabs for cadwelding.

3) Paddock Industries, Paddock Construction and Neptune Benson do not have a West Virginia Contractors License. (Isn't having a West Virginia Contractors License a requirement?) If so, is there any other Stainless Steel Gutter Companies & S.S. Main Drains that are approved by the Architect to perform this work. Stainless Steel Gutters & S.S Main Drains in order to hold their warranty must be fabricated and installed by the Manufacturer recommended installer or their own installers.

ANSWER:

All contractors performing work in WV are required to be licensed by the State of WV.

- 4) Is Paddock Industries an "or equal" to Paragon Aquatics in regards to supplying pool ladders, life guard chairs, ropes, buoys, deck equipment, items on General Notes Page Such as: Pool Accessories, Pool Area Safety Signage, Depth and No Diving Markers, Pool Railings, and Ladders and Steps.

ANSWER: Yes, but material types, thicknesses, etc must be equal in submittal review. Clarifying that ladders must be braced ladders.

- 5) Is Natare Industries an "or equal" to Paragon Aquatics in regards to supplying pool ladders, life guard chairs, ropes, buoys, deck equipment, items on General Note Page such as: Pool Accessories, Pool Area Safety Signage, Depth and No Diving Markers, Pool Railings, and Ladders and Steps. Stainless Steel Gutter, Stainless Steel Main Drains.

ANSWER: NO

- 6) Is a flip up arm a requirement for the ADA Pool Lift?

ANSWER: YES

- 7) Is a seat belt a requirement for the ADA Pool Lift?

ANSWER: YES

- 8) Is a head rest a requirement for the ADA Pool Lift?

ANSWER: NO

- 9) Is the design for the ADA Lift rated for 400 IB at 55-65 psi water pressure?

ANSWER: YES

- 10) Can you provide a detail as of how this product (ADA Lift) will be plumbed and powered?

ANSWER: Connect to nearest hose bib by commercial heavy duty water hose. Provide PRV and gauge on hose inlet with hose connectors.

- 11) Prime Contractors or a Sub-Contractors to the Prime Contractor must have a West Virginia Contractors License. According to the Specifications the approved Manufactures specified for Swimming Pool (Shotcrete) is Paddock Industries and Neptune Benson. Neither being shotcrete providers, neither holding a West Virginia Contractors License.

A.) Were these two companies mistakenly added to the Swimming Pool (Shotcrete) Specification?

B.) The trowel plastering of the Diamond Brite Quartz Finish System is another trade of its own not to be confused with shotcreting. Do you have a Specification for Plastering?

ANSWER:

See SPECIFICATIONS Section Below

The Owner understands and realizes that plastering may be a separate specialty. The experience requirements for years of expertise and project experience for shotcrete apply to the Diamond Brite installer. The Diamond Brite is listed in the shotcrete section as detailed coordination between the two is required for a successful project. Follow Manufacturers Instructions and best industry practices for installation of plaster. See attached SGM info sheet for general reference on the Diamond Brite Product.

For best industry practices follow the requirements and recommendations of the current edition of the National Pool and Spa Institute (NPSI) Builders Manual; a copy of which will remain on site throughout the construction of the pools.

- 12) The stainless steel swimming pool gutter systems specifications do not mention any manufactures. Is the specification open to all manufacturers and approved based on quality assurance through the submittal process?

ANSWER:

See SPECIFICATIONS Sections Below

Also, note that no carbon steel will be permitted to be used for any bracing or anchoring related to the stainless steel gutter. The entire gutter assembly will be 316L stainless.

- 13) During the pre-bid it was mentioned that the concrete spoils could be used to fill in the pool area that is required to be filled. Are we sure we want to do that? Wouldn't we want to engineer that fill from the bottom of the pool, to the final finish sub-grade in preparation for a new gravel dry-bed and concrete pool deck?

ANSWER: The use of the concrete for fill is wholly at the contractors discretion. The demo concrete may be used but it will not be installed as fill in large slabs with voids. The fill must be installed in lifts of 6 – 8 inches maximum. The maximum stone/ concrete debris particle size is 6 inches and must be mixed with other suitable fill material to ensure no voids, etc, with modified a Proctor of 95 or a standard Proctor of 98; at +/- 2% of optimum moisture content.

- 14) Detail 3 on Sheet P304 shows a continuous pour for the pool walls and pool floor.

Can a water stop be installed in order to independently apply shotcrete or gunite walls and independently install cast in place the concrete floors? Typical on both Projects. There is not way to shotcrete the entire pool in way day and cold joints would take place and the expansion joint areas identified on the drawings.

ANSWER: POOL "pour" will be monolithic, no cold joints.

- 15) The drawings indicate several types of rebar. Stainless steel, galvanized and standard rebar. The specifications call out for Grade 40 unfinished

bars. (Please Clarify)

ANSWER: Install rebar according to notes, details, and sections on drawings using the material indicated. Spec is for standard steel rebar. Galvanized is required where shown, when cut galvanized bar will be cold galvanized in field; stainless is a limited specialty where shown and will be 316L stainless.

16) The Quality Assurance 1.05 A. Designer Qualifications: Design pool tank structural components under direct supervision of a Professional Structural Engineer experienced in design of this type of work and licensed in WV.

A.) Does this mean I have to hire the Structural Engineering Firm to design the criteria for the wall, floor and embedded items for both pools and both project sites?

ANSWER: Structural requirement is for general review of reinforcing. Some contractors use installation methods involving equivalent strengths of different bar size/ spacing configurations. As such, the reinforcing will be reviewed and signed off on by a WV PE structural Engineer prior to installation. Owner/ Engineer will review this sign off as a submittal.

B.) Do they have to be on site the entire time this structural work is in progress?

ANSWER: NO

C.) What if there is a conflict between the Architectural Design and the Structural Design. Who takes preference and who pays for the additional cost that may take place due to added Structural Requirements other than what is identified on the existing drawings?

ANSWER: BIDDER/ CONTRACTOR is responsible for any cost related to such changes.

17) Shotcreting pools in West Virginia has not been accomplished much in the Commercial Industry where the monitoring of West Virginia Contractors License will be enforced. This limits the amount of Sub-Contractors that can bid the shotcreting with the Quality Assurance as extensive as noted on 1.05 Quality Assurance B., C., & D.

Shotcreting is used for many other methods as well. Can the Quality Assurance for shotcreting be viewed with a little more conditionals than just swimming pools.

ANSWER: Requirements for shotcrete work will stand as written.

18) Is Marco Concrete a Approved Installer for Shotcreting? Note: They hold a West Virginia Contractor License.

ANSWER: Contractor must meet written requirements as stated.

19) Is Gunite Construction Company a approved installer for shotcreting?

Note: They installed the gunite at Tomlinson Run State Park and hold a West Virginia Contractors License.

ANSWER: Contractor must meet written requirements as stated.

20) Does the structural steel need to be grounded and bonded in the concrete pours. The floor & walls will be covered with several inches of concrete.
 ANSWER: YES, per the bonding plan which exceeds the requirements of the NFPA 70. The tails shown route to every metal device within the pool or within the pool fence. Where multiple tails are shown, they will be installed. Leads tailing to the pool interior will attach to both wall and floor rebar.

21) Is there an engineered fill specification for the void within the pool at Bluestone State Park that the Contractor will be filling? Is there a borrow site near by to fill the void?

ANSWER: No specification beyond modified Proctor of 95; maximum stone/concrete debris size of 1 square foot and must be mixed with other suitable fill material to ensure no voids, etc..

ANSWER: No borrow site is available at this time. Excess stone or concrete debris material must be disposed of offsite; conversely any needed material must be obtained offsite. If excess soil needs removed it may be spread out beyond the lake side of the pool fence, rocks removed, and seeded. Use Penn State grass mix.

22) Sheet P103, pool grounding what are the resistance requirements.
 ANSWER: P103 is predominantly a pool BONDING requirement, not grounding, to ensure zero potential exists between all metal associated with the pool. CAD welding ensures the resistance in the bonding system is minimized. Bonding system and grounding system will be connected in at the filter pump filter rooms using removable connection. Note: the electrical system ground rod connections will be cad welded.

23) Sheet P601, filter room electrical requirements, is there a spec on panel DPLN-1 and DPLN@ and what size breaker will be required.
 ANSWER: See spec section 26 2416 Panelboards. Panels will be provided with spare single pole 20A breakers except for 10 future slots in each panel. 30 breaker spaces will contain either an active or spare breaker.

24) Is there a spec on the wading pool pump motor starter?
 ANSWER: See Attached Spec Section 26 2913 Enclosed Motor Controllers. This is to be added to the project specification book.

25) Is there a spec on the wading pool heater disconnect.
 ANSWER: NEMA 3R, Non Fused service disconnect, ANSI Gray, 60 Amp min.

26) Is the new service to the 320Amp socket disconnect overhead or underground?
 ANSWER: Underground, coordinate with utility and meet all service entrance requirements. Service conduit, risers, ropes, meters, etc to be installed by contractor as directed by utility. Contractor is responsible for service inspection.

SPECIFICATIONS:

Under 13 1100 Swimming Pools (Shotcrete), PART 2 PRODUCTS

Replace:

"2.01 MANUFACTURERS

- A. Swimming Pool:
1. Paddock Industries, Inc www.paddockpool.com.
 2. Neptune Benson
 3. Substitutions: See Section 01 6000 - Product Requirements."

With

"2.01 MANUFACTURERS

- A. Not Applicable"

AND

Under 13 1110 STAINLESS STEEL SWIMMING POOL GUTTER SYSTEMS

Replace:

ADD

"2.00 MANUFACTURERS

- A. Swimming Pool:
1. Paddock Industries, Inc www.paddockpool.com.
 2. Neptune Benson
 3. Substitutions: See Section 01 6000 - Product Requirements."

STANDARDS:

Please be aware that ANSI APSP-16, a successor standard to ASME A112.19.8, goes into effect in September of 2011. The requirements of this new standard will apply to all suction inlets on the Project.

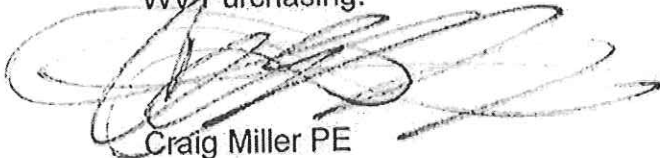
BID DATE:

The bid date, time, and location remain unchanged.

ACKNOWLEDGEMENT:

The questions, answers, and comments detailed herein are part of the project documents for this project and are to be acknowledged on the bid form

Submitted this 26th day of August, 2011, by Miller Engineering for distribution by WY Purchasing.



Craig Miller PE
 President
 Miller Engineering, Inc
 Cc: Project file

SECTION 26 2416

PANELBOARDS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Power distribution panelboards.
- B. Lighting and appliance panelboards.
- C. Load centers.
- D. Overcurrent protective devices for panelboards.

1.02 REFERENCE STANDARDS

- A. FS W-C-375 - Circuit Breakers, Molded Case; Branch Circuit and Service; Federal Specification; Revision D, 2006.
- B. NECA 1 - Standard for Good Workmanship in Electrical Construction; National Electrical Contractors Association; 2010.
- C. NECA 407 - Standard for Installing and Maintaining Panelboards; National Electrical Contractors Association; 2009.
- D. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); 2008.
- E. NEMA KS 1 - Enclosed and Miscellaneous Distribution Equipment Switches (600 Volts Maximum); National Electrical Manufacturers Association; 2001 (R2006).
- F. NEMA PB 1 - Panelboards; National Electrical Manufacturers Association; 2006.
- G. NEMA PB 1.1 - General Instructions for Proper Installation, Operation and Maintenance of Panelboards Rated 600 Volts or Less; National Electrical Manufacturers Association; 2007.
- H. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- I. UL 50 - Enclosures for Electrical Equipment, Non-Environmental Considerations; Current Edition, Including All Revisions.
- J. UL 50E - Enclosures for Electrical Equipment, Environmental Considerations; Current Edition, Including All Revisions.
- K. UL 67 - Panelboards; Current Edition, Including All Revisions.
- L. UL 489 - Molded-Case Circuit Breakers, Molded-Case Switches and Circuit Breaker Enclosures; Current Edition, Including All Revisions.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate outline and support point dimensions, voltage, main bus ampacity, overcurrent protective device arrangement and sizes, short circuit current ratings, conduit entry locations, conductor terminal information, and installed features and accessories.

1.04 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum ten years experience.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Eaton Corporation; Cutler-Hammer Products: www.eaton.com.
- B. General Electric Company: www.geindustrial.com.
- C. Schneider Electric; Square D Products: www.schneider-electric.us.

2.02 ALL PANELBOARDS

- A. Provide products listed and labeled by Underwriters Laboratories Inc. as suitable for the purpose indicated.
- B. Unless otherwise indicated, provide products suitable for continuous operation under the following service conditions:
 - 1. Altitude: Less than 6,600 feet.
 - 2. Ambient Temperature:
 - a. Panelboards Containing Circuit Breakers: Between 23 degrees F and 104 degrees F.
- C. Short Circuit Current Rating:
- D. Mains: Configure for top or bottom incoming feed as indicated or as required for the installation.
- E. Branch Overcurrent Protective Devices: Replaceable without disturbing adjacent devices.
- F. Bussing: Sized in accordance with UL 67 temperature rise requirements.
 - 1. Provide solidly bonded equipment ground bus in each panelboard, with a suitable lug for each feeder and branch circuit equipment grounding conductor.
- G. Conductor Terminations: Suitable for use with the conductors to be installed.
- H. Enclosures: Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E.
 - 1. Environment Type per NEMA 250: Unless otherwise indicated, as specified for the following installation locations:
 - 2. Boxes: Galvanized steel unless otherwise indicated.
 - a. Provide wiring gutters sized to accommodate the conductors to be installed.
 - 3. Fronts:
 - a. Fronts for Surface-Mounted Enclosures: Same dimensions as boxes.
 - b. Fronts for Flush-Mounted Enclosures: Overlap boxes on all sides to conceal rough opening.
 - 4. Lockable Doors: All locks keyed alike unless otherwise indicated.
- I. Future Provisions: Prepare all unused spaces for future installation of devices including bussing, connectors, mounting hardware and all other required provisions.

2.03 POWER DISTRIBUTION PANELBOARDS

- A. Description: Panelboards complying with NEMA PB 1, power and feeder distribution type, circuit breaker type, and listed and labeled as complying with UL 67; ratings, configurations and features as indicated on the drawings.
- B. Conductor Terminations:

1. Main and Neutral Lug Material: Aluminum, suitable for terminating aluminum or copper conductors.
 2. Main and Neutral Lug Type: Mechanical.
- C. Bussing:
1. Phase and Neutral Bus Material: Aluminum.
 2. Ground Bus Material: Aluminum.
- D. Circuit Breakers:
1. Provide bolt-on type or plug-in type secured with locking mechanical restraints.
- E. Enclosures:
1. Provide surface-mounted enclosures unless otherwise indicated.
- F. Description: NEMA PB 1, circuit breaker type.
- G. Panelboard Bus: Copper, ratings as indicated. Provide copper ground bus in each panelboard.
- H. Minimum integrated short circuit rating:
1. 208 Volt Panelboards: 10,000 amperes rms symmetrical.
- I. Molded Case Circuit Breakers: With integral thermal and instantaneous magnetic trip in each pole; UL listed. For air conditioning equipment branch circuits provide circuit breakers UL listed as Type HACR.
- J. Enclosure: NEMA PB 1, Type 1, 10 inches deep, 36 inches wide, cabinet box.
- K. Cabinet Front: Surface type, fastened with concealed trim clamps, hinged door with flush lock, metal directory frame, finished in manufacturer's standard gray enamel.

2.04 LIGHTING AND APPLIANCE PANELBOARDS

- A. Description: Panelboards complying with NEMA PB 1, lighting and appliance branch circuit type, circuit breaker type, and listed and labeled as complying with UL 67; ratings, configurations and features as indicated on the drawings.
- B. Conductor Terminations:
1. Main and Neutral Lug Material: Aluminum, suitable for terminating aluminum or copper conductors.
 2. Main and Neutral Lug Type: Mechanical.
- C. Bussing:
1. Phase Bus Connections: Arranged for sequential phasing of overcurrent protective devices.
 2. Phase and Neutral Bus Material: Aluminum.
 3. Ground Bus Material: Aluminum.
- D. Circuit Breakers: Thermal magnetic bolt-on type unless otherwise indicated.
- E. Enclosures:
1. Provide surface-mounted or flush-mounted enclosures as indicated.
 2. Provide clear plastic circuit directory holder mounted on inside of door.
- F. Description: NEMA PB1, circuit breaker type, lighting and appliance branch circuit panelboard.
- G. Panelboard Bus: Copper, ratings as indicated. Provide copper ground bus in each panelboard.
- H. Minimum Integrated Short Circuit Rating:
1. 220 volt single & three phase panelboards: 10,000 amperes rms symmetrical.

- I. Molded Case Circuit Breakers: Thermal magnetic trip circuit breakers, bolt-on type, with common trip handle for all poles; UL listed.
- J. Enclosure: NEMA PB 1, Type 1.
- K. Cabinet Box: 6 inches deep, 20 inches wide for 240 volt and less panelboards, 20 inches wide for 480 volt panelboards.
- L. Cabinet Front: Flush cabinet front with concealed trim clamps, concealed hinge, metal directory frame, and flush lock all keyed alike. Finish in manufacturer's standard gray enamel.

2.05 LOAD CENTERS

- A. Description: Circuit breaker type load centers listed and labeled as complying with UL 67; ratings, configurations, and features as indicated on the drawings.
- B. Bussing:
 - 1. Phase Bus Connections: Arranged for sequential phasing of overcurrent protective devices.
 - 2. Bus Material: Aluminum or copper.
- C. Circuit Breakers: Thermal magnetic plug-in type.
- D. Enclosures:
 - 1. Provide flush-mounted enclosures unless otherwise indicated.
 - 2. Provide circuit directory label on inside of door or individual circuit labels adjacent to circuit breakers.

2.06 OVERCURRENT PROTECTIVE DEVICES

- A. Molded Case Circuit Breakers:
 - 1. Description: Quick-make, quick-break, over center toggle, trip-free, trip-indicating circuit breakers listed and labeled as complying with UL 489, and complying with FS W-C-375 where applicable; ratings, configurations, and features as indicated on the drawings.
 - 2. Interrupting Capacity:
 - a. Provide circuit breakers with interrupting capacity as required to provide the short circuit current rating indicated, but not less than:
 - b. Fully Rated Systems: Provide circuit breakers with interrupting capacity not less than the short circuit current rating indicated.
 - 3. Conductor Terminations:
 - a. Lug Material: Aluminum, suitable for terminating aluminum or copper conductors.
 - 4. Thermal Magnetic Circuit Breakers: For each pole, furnish thermal inverse time tripping element for overload protection and magnetic instantaneous tripping element for short circuit protection.
 - 5. Multi-Pole Circuit Breakers: Furnish with common trip for all poles.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install panelboards securely, in a neat and workmanlike manner in accordance with NECA 1 (general workmanship), NECA 407 (panelboards), and NEMA PB 1.1.
- C. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.
- D. Provide required supports in accordance with Section 26 0529.

- E. Install panelboards plumb.
- F. Install flush-mounted panelboards so that trims fit completely flush to wall with no gaps and rough opening completely covered.
- G. Mount panelboards such that the highest position of any operating handle for circuit breakers or switches does not exceed 79 inches above the floor or working platform.
- H. Provide minimum of six spare 1 inch trade size conduits out of each flush-mounted panelboard stubbed into accessible space above ceiling and below floor.
- I. Provide grounding and bonding in accordance with Section 26 0526.
- J. Install all field-installed branch devices, components, and accessories.
- K. Install panelboards in accordance with NEMA PB 1.1 and NECA 1.
- L. Install panelboards plumb. Install recessed panelboards flush with wall finishes.
- M. Provide filler plates to cover unused spaces in panelboards.
- N. Provide computer-generated circuit directory for each lighting and appliance panelboard, and each power distribution panelboard provided with a door, clearly and specifically indicating the loads served. Identify spares and spaces.
- O. Neatly fill in circuit labels for each load center, clearly and specifically indicating the loads served. Identify spares and spaces.
- P. Provide typed or neatly handwritten circuit directory for each branch circuit panelboard. Revise directory to reflect circuiting changes required to balance phase loads.
- Q. Provide identification nameplate for each panelboard in accordance with Section 26 0553.
- R. Provide arc flash warning labels in accordance with NFPA 70.
- S. Ground and bond panelboard enclosure according to Section 26 0526.

END OF SECTION

DIAMOND BRITE®

EXPOSED AGGREGATE POOL FINISH

DESCRIPTION:

Diamond Brite Finishes are blends of selected quartz aggregates and fortified white portland cement ideal for new or re-finished swimming pools. Available in a variety of colors and textures, Diamond Brite finishes are factory blended to provide the pool owner with an extremely durable and attractive alternative to traditional pool coatings.

ADVANTAGES:

- Superior Bonding
- High strength and rapid curing
- Extremely etch resistant
- Ease of application
- Aggregate exposure easily controlled
- Pumpable

SURFACE PREPARATION:

New Pools: Pool surface must be free of dirt, oil grease or other foreign materials.

Re-finished pools should be undercut 2" below the tile line and a minimum of 1/2" around main drains. Light fixtures, and return lines. SGM Bond Kote is an excellent surface preparation for re-finishing. Lightly moisten walls and floors prior to application of Diamond Brite.

MIXING:

Thoroughly mix Diamond Brite to a homogeneous lump-free consistency using 1-1/2-2gallons of portable water per 80 lb. bag.

APPLICATION:

Diamond Brite should be applied to a uniform thickness of 3/8" to 1/2" over the entire surface. The walls may be scratch coated followed by a finish coat or single coated. Material applied to the floor after the walls have been applied, may be accelerated with Accelerator 100 to assure uniform setting time throughout the pool surface.

AGGREGATE EXPOSURE:

Diamond Brite aggregates may be exposed by a variety of techniques. Light water washing followed by a cleaning solution is generally used. Contact your SGM representative for more information on these methods.

COVERAGE:

Each 80 lb. bag will cover approximately 22 sq. ft. , to a thickness of 3/8". Surface roughness affects coverage rates.

PACKAGING:

4 ply heavy duty poly-lined bag, net wt. 80 lb.

CAUTION:

WARNING - EYE IRRITANT CONTAINS PORTLAND CEMENT

Product is alkaline on contact with water. Avoid splashing into eyes or contact with skin. During mixing or application avoid contact with eyes. In case of such contact, flood eyes repeatedly with water and call physician. Wash thoroughly after handling and before smoking or eating. Do not take internally. Contains free Silica. Avoid breathing dust. Prolonged exposure to dust may cause delayed lung disease (Silicosis). Wear NIOSH approved mask for Silica dust. KEEP OUT OF REACH OF CHILDREN.

SHELF LIFE:

One year in unopened properly stored container.

LIMITED WARRANTY:

S.G.M., Inc., will replace any material proved defective with the maximum shelf life on unused material of up to one (1) year. If our products are not found to conform to our high standard, notify S.G.M., Inc., immediately in writing. There is no other obligation expressed or implied and we assume no liabilities for damages of any kind. Suitability of the product for an intended use shall be solely up to the user.

SGM

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