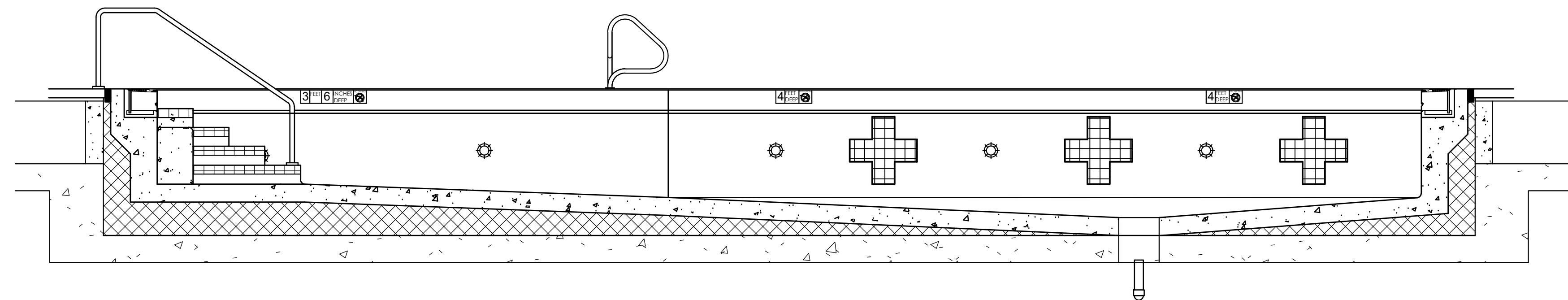


111 Hempstead Turnpike, West Hempstead, NY 11552
Proposed Outdoor Swimming Pool
November 29, 2023



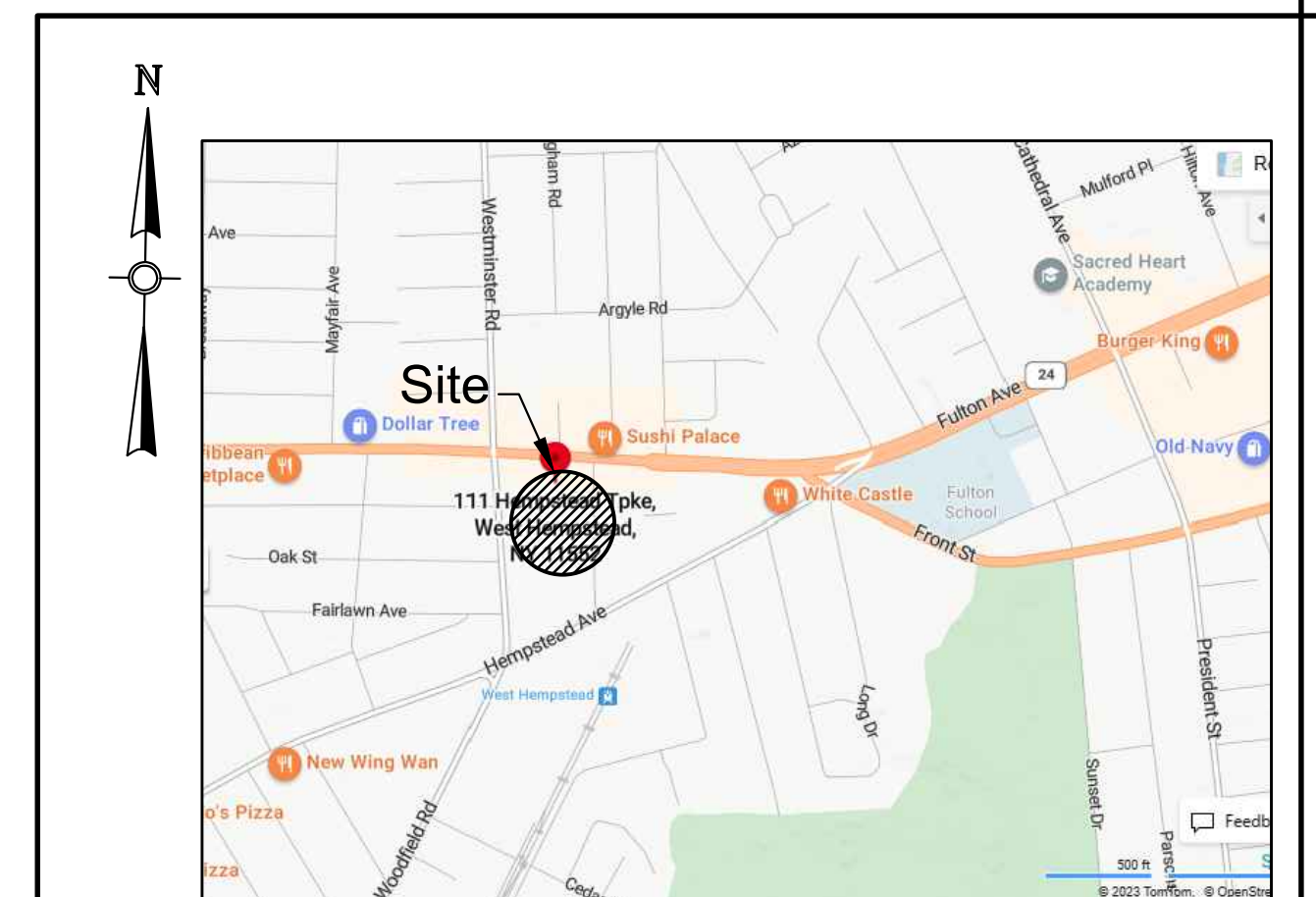
Cover Sheet

- Owner

58 Vanderbilt Motor Parkway - Suite 100
Commack, New York 11725
631-981-2727

R & W / Engineers, P.C.

Facility Contact
Ms. Christine Linsalato
Heatherwood Communities
Senior Director of Development
CLinsalato@Heatherwood.com
631-775-2265

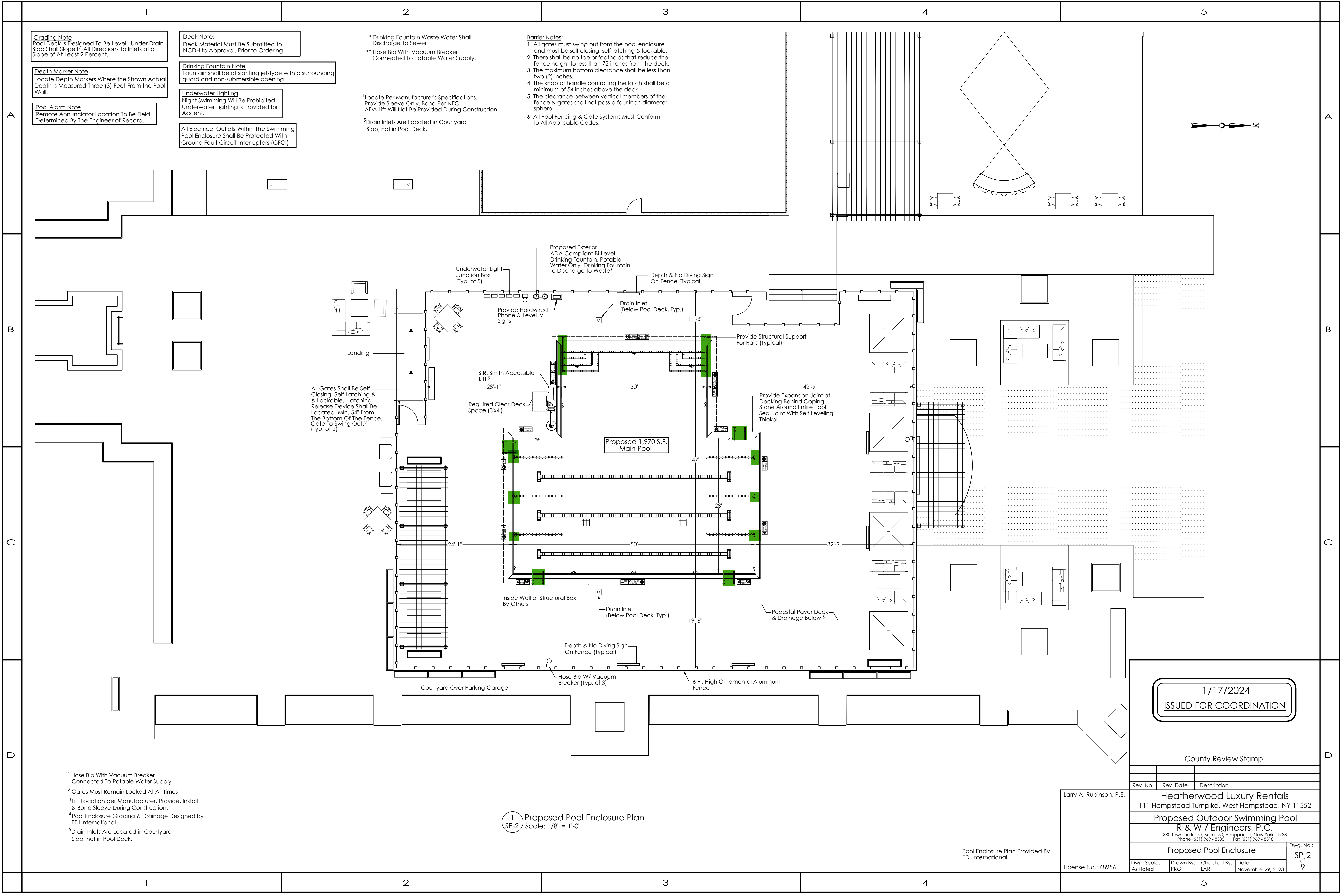


Location Map

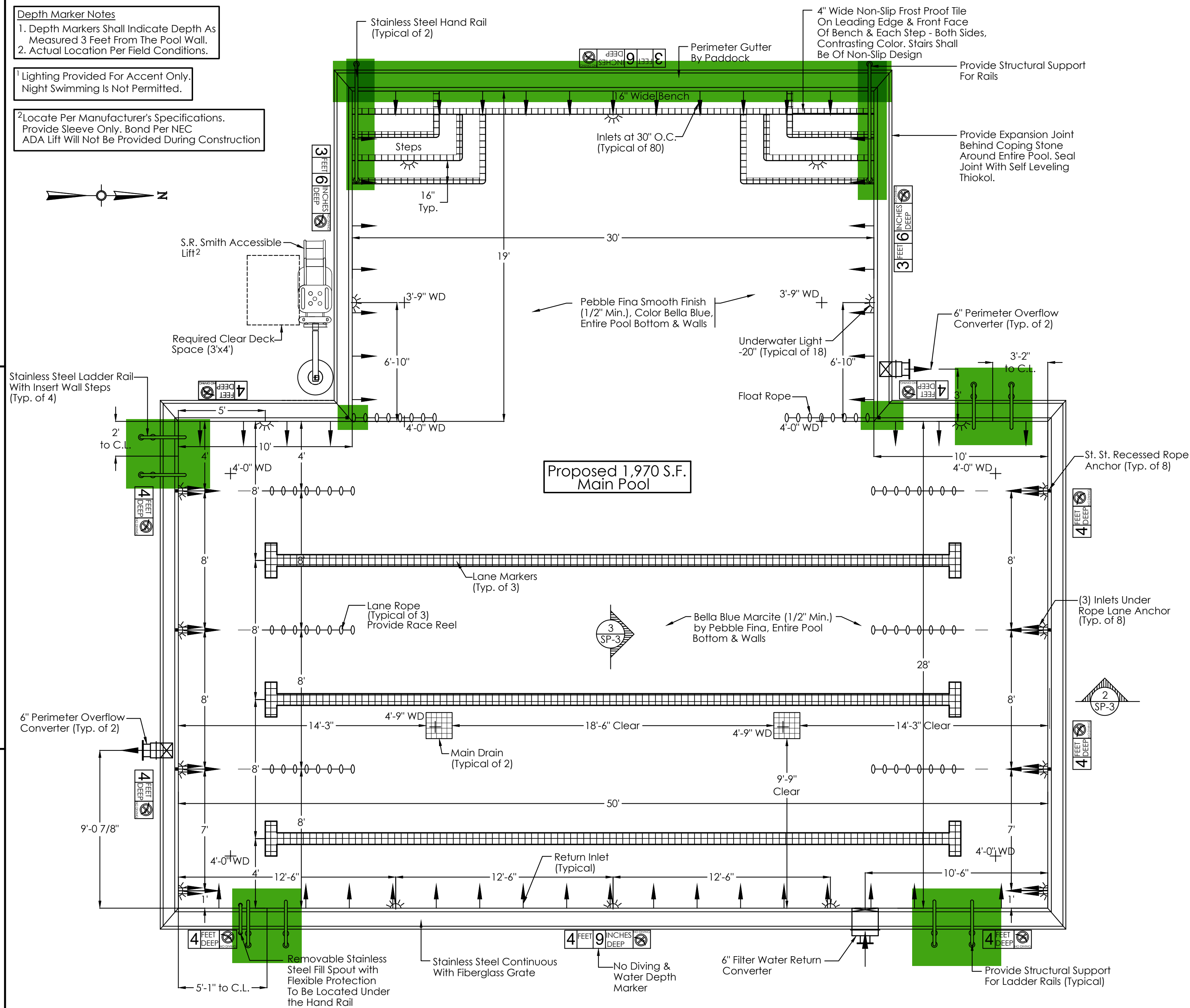
1/17/2024

ISSUED FOR COORDINATION

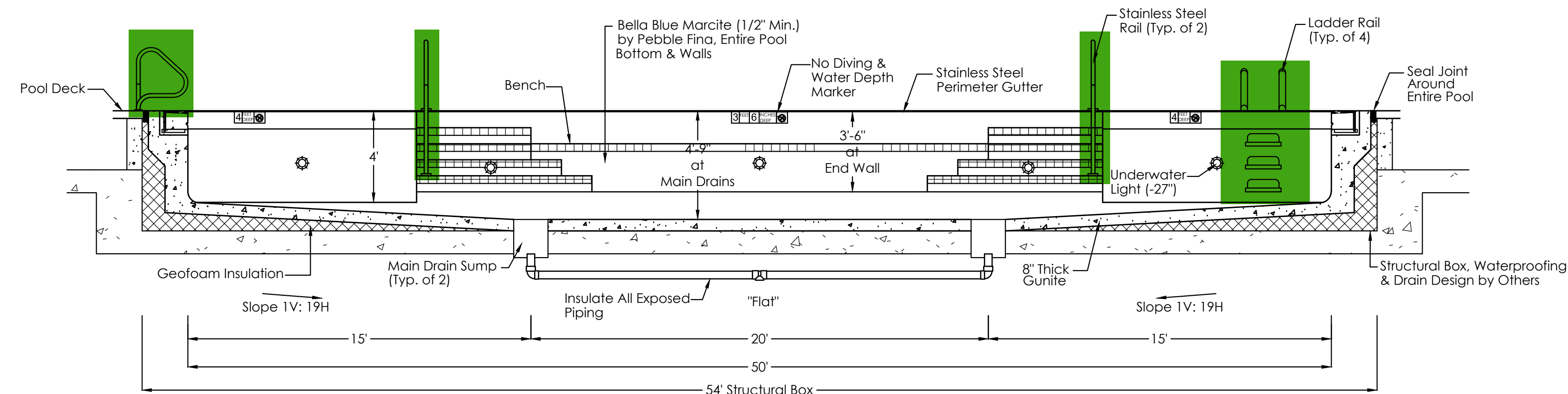
County Review Stamp



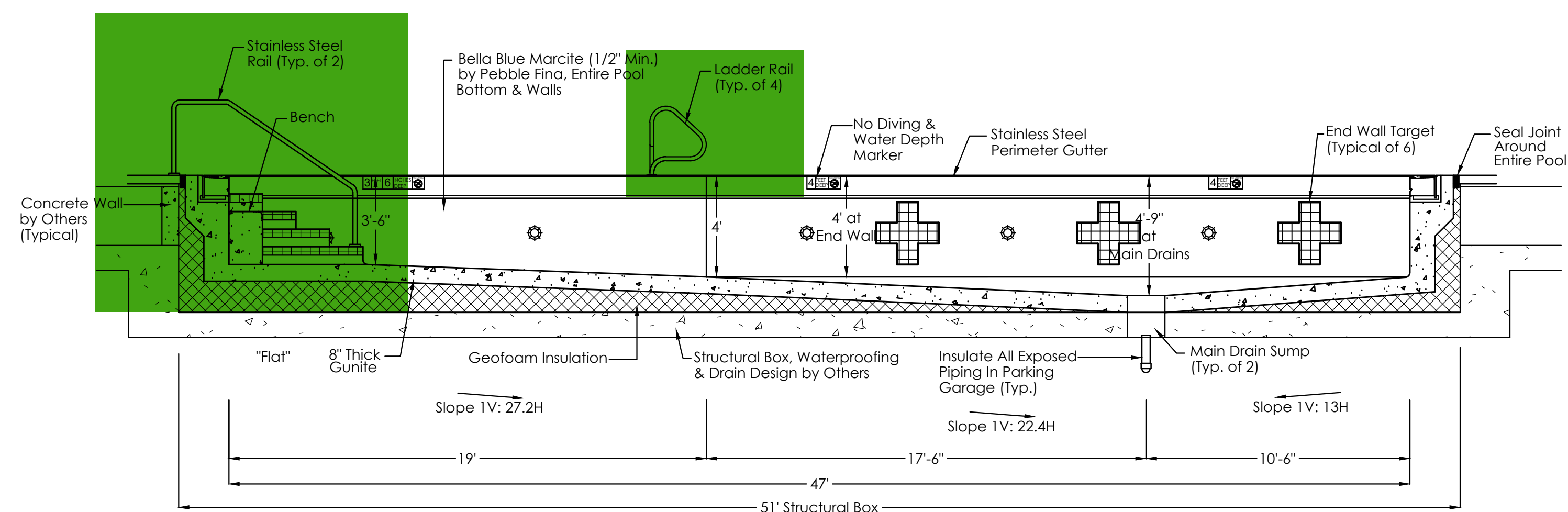
Stainless Steel Ladder Rail
With Insert Wall Steps
(Typ. of 4)



1 Proposed Pool Appurtenance Plan
SP-3 Scale: 1/4" = 1'-0"



2 Pool Longitudinal Section
SP-3 Scale: 1/4" = 1'-0"



2 Pool Longitudinal Section
SP-3 Scale: 1/4" = 1'-0"

1/17/2024
ISSUED FOR COORDINATION

County Review Stamp

Rev. No.	Rev. Date	Description	
<p>E. Heatherwood Luxury Rentals 111 Hempstead Turnpike, West Hempstead, NY 11552</p>			
<p>Proposed Outdoor Swimming Pool</p>			
<p>R & W / Engineers, P.C. 380 Townline Road, Suite 150, Hauppauge, New York 11788 Phone (631) 969-8535 Fax (631) 969-8518</p>			
<p>Swimming Pool Layout & Cross Sections</p>			<p>Dwg. No.: SP-3 of 9</p>
Dwg. Scale: As Noted	Drawn By: PRG	Checked By: LAR	Date: November 29, 2023

Larry A. Robinson, P.E.

License No.: 68956

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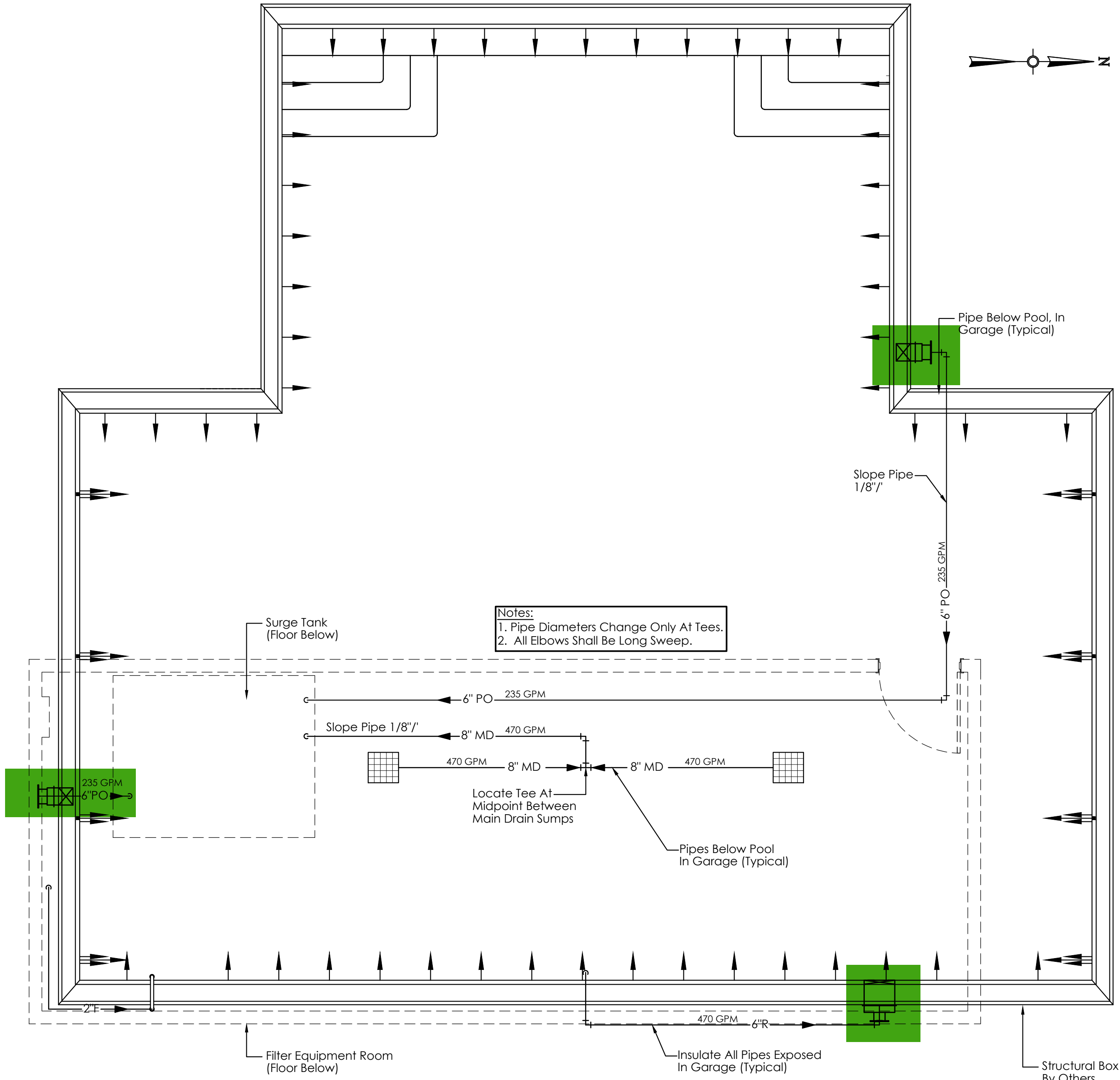
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Main Pool Piping Legend	
MD	Main Drain
PO	Perimeter Overflow
PR	Return
F	Pool Fill
STPO	Surge Tank Pool Overflow
STPS	Surge Tank Pool Suction



1 Proposed Pool Piping Plan
Scale: 1/4" = 1'-0"

Main Pool Proposed Manufacturer Equipment Schedule				
Desig.	Description	Vendor	Model No.	Remarks
A	Horizontal Sand Filter	Nephtune Benson	42120SHFFG (6" Ø)	NSF Approved - 38.1 S.F.
B	Pump - Self Priming	Pentair	CSPHM3	15 H.P. - 3 Phase
C	Hair & Lin Strainer	Mermade	FO Series	Provide Spare Basket
D	Paddlewheel Flow Meter	Signet	2537	For 6" Ø (Return Line)
DI	Magnetic Flow Sensor	Signet	2551	Magnetic Flow Meter 6" Ø
E	Chlorine Feeder	Rola-Chem	RC-307	0.75-77 GPD
F	Acid Feeder	Rola-Chem	RC-305	0.38-38 GPD
G	Acid Crock**	Chem-Tainer	TC2435DC	50 Gal. Double Wall Tank
H	Chlorine Crock**	Chem-Tainer	TC3539DC	100 Gal. Double Wall Tank
I	Chemical Controller	Pentair	IntelliChem	---
J	S.S. Continuous Gutter	Paddock	R-300 System	---
K	Gutter Converter	Paddock	6	---
KL	Return Converter	Paddock	4	---
L	Main Drain Box	A.S.A. MFG. INC.	FPK-50-818-24-8	18"x18"x24"
M	Main Drain Grate	Lawson Aquatics	MLD-FGD-1818WT	18"x18" - 183.06 SI O.A./Ea.
N	Vacuum Gauge	Weksler	AA442CC4LW	Compound Type
O	Variable Frequency Drive	Pentair	Acu Drive XS	15 HP, 3 Ph. Out, Match In
P	Pressure Gauge	Weksler	AA442PE4LW	0-60 psi
Q	Separation Tank	Pentair	Sep Tank 100	100 Sq. Ft.
R	Ladder Rail	Paddock	California Style	---
R'	17.5" Recessed Step	Paddock	---	Textured Stepping Surface
S	Hand Rail	Paddock	Three Bend	Field Measure
T	Balance Tank	Paddock	---	81.25" H.F. x 8 Ft. Deep, Stainless Steel Tank
X	Underwater Lights	Pentair	GloBrite LED	300 Watt Equiv. - W/ IntelliTouch Controller
X'	Light Controller	Pentair	400054	IntelliBrite Controller
Y	Flow Switch	ITT McDonnell	FS-250 Series	For 6" Ø Pipe
Z	Pool Alarm	Poolguard	PGRM-2	W/ Remote Annunciator*
ES	Eye Wash Station	Bradley	S19-220B8F	Provide Sign
	DPD Water Test Kit	La Motte	Pro 250 Plus	Code: 7002-NJ
	First Aid Kit	Recreonics	12-013	24 Unit Red Cross
	Float Rope	Recreonics	---	30 Ft. Long
	Lane Rope	Recreonics	---	50 Ft. Long
	ADA Accessible Lift	S. R. Smith	---	Provide Sleeve Only
	Rescue Tubes	Recreonics	12-303	---
	Reaching Life Pole	Recreonics	12-237	16' Long
	Child Resuscitator	Recreonics	12-469	Disposable Type
	Adult Resuscitator	Recreonics	12-468	Disposable Type
	Spine Board	Recreonics	12-335	6' Long - C/J Rescue Pckg.
	Extraction Collar	Recreonics	12-287	Head Immobilizer

*Permanently mount alarm annunciator and transformer in labeled lockable boxes.
Note: Revise And Provide Deck Safety Equipment Based On Level Of Supervision Per Owner.

Portable Vacuum Requirements
Provide the Following:
1. Hayward 1 HP portable vacuum system
Model PROVACCART (Bell Aqua).
2. One (1) Hayward 19 inch Flexible vacuum.
3. One (1) aluminum handle compatible with vacuum head.
4. 50 feet of hose.

Cover Requirements
Provide the Following:
1. One (1) Loop-Loc mesh cover.
2. Provide & install brass cover anchors.
3. Provide solar cover.

Spare Parts
Provide the Following:
1 Pump Strainer Basket

1/17/2024
ISSUED FOR COORDINATION

County Review Stamp

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Heatherwood Luxury Rentals 111 Hempstead Turnpike, West Hempstead, NY 11552		
Proposed Outdoor Swimming Pool R & W / Engineers, P.C. 380 Townline Road, Suite 150, Hauppauge, New York 11788 Phone (631) 969-8535 Fax (631) 969-8518		
Pool Piping Plan		
Dwg. Scale: As Noted	Drawn By: PRG	Checked By: LAR
Date: November 29, 2023		Dwg. No.: SP-4 of 9

Larry A. Robinson, P.E.

License No.: 68956

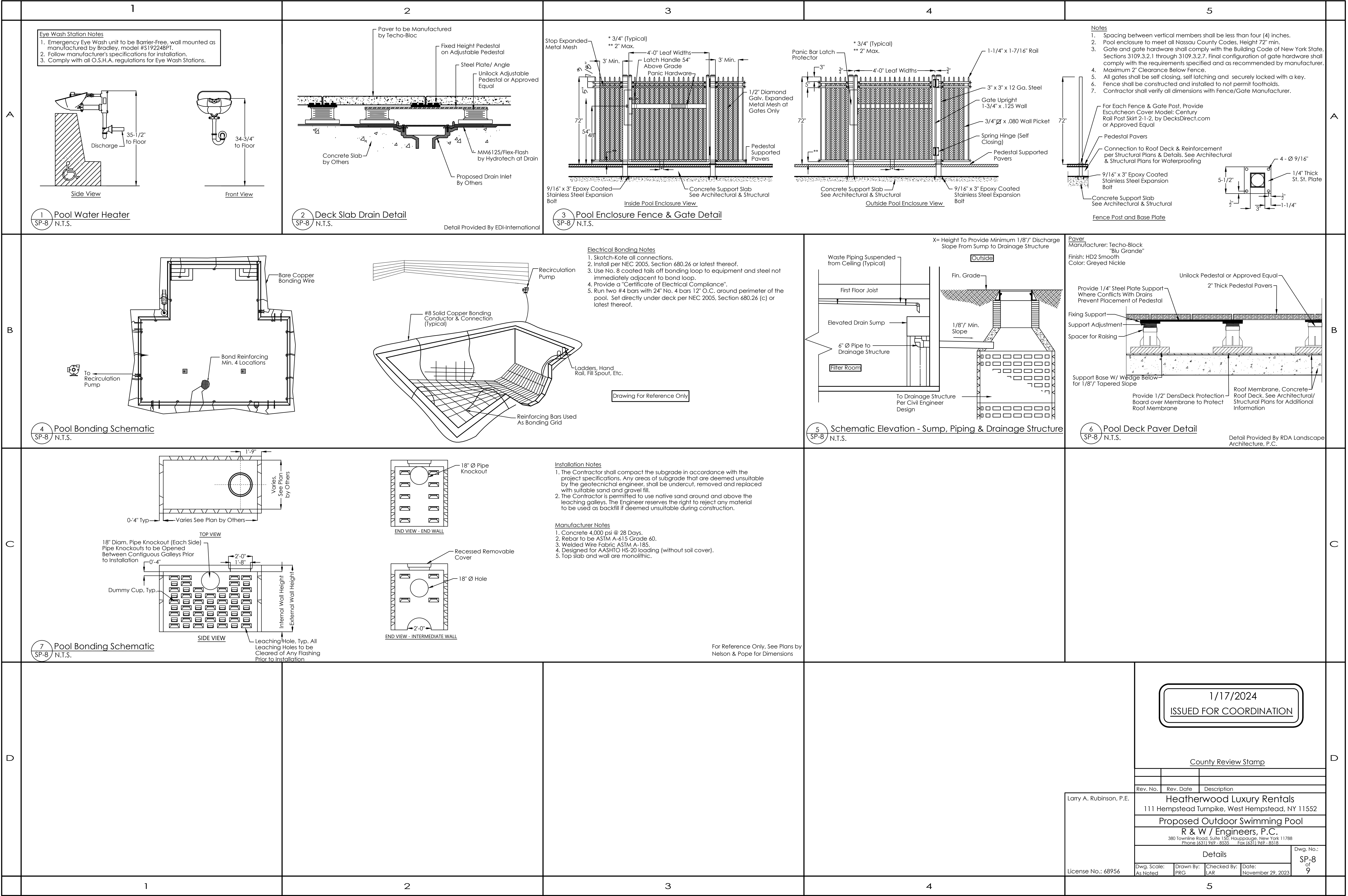
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Standard Notes

1. R & W / Engineers, P.C. (RWE) includes its owners, employees and sub-consultants whenever referenced.

2. All plans and project documents are copy written. All rights are reserved and violations will be prosecuted to the fullest extent of the law. This plan is the work of RWE and shall not be reproduced, copied or otherwise used without written permission of RWE.

3. The ideas, concepts, sketches, designs, details, specifications and notes contained on these drawings are the sole exclusive property of RWE.

4. Nothing contained within these documents shall be used or disclosed to any person, firm or corporation for any purpose without the express written consent of RWE.

5. RWE accepts no responsibility for interpretations or restrictions that may be imposed by the Owner. All layout, design, material, material placement, material specifications or other items within the Owner's jurisdiction has been dictated solely by the Owner.

6. RWE is not responsible for errors of implementation by the Contractor or for changes, deletions, substitutions or additions to the Plans, Specifications or the Project by others.

7. RWE makes no representation that the design meets or includes all applicable building codes and/or standards of the authorities having jurisdiction. Prior to using these documents the Owner and Contractor represent and warrant that they have examined the local building codes and acknowledge that by using these construction documents they are jointly and severally responsible to comply with any and all applicable local codes and clearances.

8. RWE does not consult on safety, security and environmental concerns related to actual construction means, methods or procedures. The Owner and Contractor shall seek advice from professionals skilled in these disciplines if necessary.

9. Any and all materials, means, methods and procedures not depicted in these construction documents shall be the sole responsibility of the Owner and Contractor.

10. The Contractor shall be solely responsible for temporary bracing and shoring of items including, but not limited to, excavations, trenches, forms and erected structures. The construction documents represent the finished work and not the means, methods and procedures to perform the work.

11. The Contractor shall be solely responsible for all site conditions including, but not limited to, safety, security and environmental concerns. This requirement is not limited to employees, sub-contractors, working hours or the physical extents of the work.

12. The Owner and Contractor shall defend, indemnify and hold harmless RWE from all liability in connection with the performance of their work.

13. The Owner and Contractor acknowledge that these construction documents include concepts that are subject to the site conditions. The site conditions may require modifications to the actual construction of the project to satisfy the intent of the concepts.

14. These documents are not approved for construction without a stamp and signature of the Engineer of Record and the permit issuing agency on each sheet.

15. Anchor bolts, embeds and inserts for equipment shall be designed by a qualified engineer with shop drawings submitted to RWE for review.

16. If changes are requested by the Contractor or the Owner, new construction documents may be required for construction and submitted to authorities having jurisdiction.

17. By the use of these plans the user acknowledges that they have read and understand all of the information included herein.

18. All Standards, Codes, Ordinances, Regulations and Amendments by the authorities having jurisdiction shall be the latest edition.

19. The Contractor shall immediately notify the Engineer of all errors, omissions and/or conflicts between standards, codes, ordinances, regulations, amendments by the authorities having jurisdiction, drawings, specifications, construction documents and/or contract documents. The contractor shall not proceed with any work affected by the issue(s) until they are resolved by the Engineer.

20. The Contractor shall verify all dimensions, elevations and site conditions and shall immediately notify the Engineer of all discrepancies prior to starting the work.

21. If a specific detail or specification is not provided then construction shall be the same as for similar work. The Contractor shall clarify omissions with the Engineer.

22. Written dimensions shall take precedence over calculated dimensions that shall take precedence over scaled dimensions.

Reinforcing Steel Notes

1. Reinforcing steel shall conform to ASTM A-615, Grade 60.

2. Welded wire fabric shall conform to ASTM A-185 with a minimum ultimate strength of 60,000 psi.

3. Reinforcing bars shall be spliced a minimum of 45 bar diameters or 24" whichever is greater, unless noted otherwise. Lap top bars at midspan and bottom bars at supports.

4. Development length, L_d, shall be 35 bar diameters or 18", whichever is greater, unless note otherwise.

5. Minimum embedment for standard hooks shall be 16 bar diameters, unless note otherwise. The 90° and hook shall have a minimum length of 12 bar diameters.

Gunite Notes

1. Gunite is a trade name used to designate a mixture of Portland cement and sand thoroughly mixed dry, passed through a cement gun and conveyed by air through a flexible tube, hydrated at a nozzle at the end of the flexible tube and deposited by air pressure in its place of final repose.

2. Unless otherwise specified, all gunite shall be mixed in the proportions of 1 part cement to 4 parts sand base on dry loose volume.

3. Only Portland cements of American manufacturer's complying with the most recent edition of, "Standard Specifications for Portland Cement" ASTM C-150-47 shall be used. Type I or II Portland cement shall be used unless noted otherwise.

4. Fine aggregate (sand) shall consist of washed sand and shall be hard, dense, durable, clean, sharp and graded evenly from fine to coarse in accordance with the "Standard Specifications for Concrete Aggregates," ASTM C 33-47. Sand shall be free from organic matter and shall not contain more than 5% by weight of deleterious substances.

Limits of Fine Aggregates Grading

Sieve Size	Percent by Weight	Sieve Size	Percent by Weight
Passing 3/8"	100	Passing No. 30	30-50
Passing No. 4	95-100	Passing No. 50	10-22
Passing No. 8	65-90	Passing No. 100	2-8
Passing No. 16	45-75		

Gunite sand shall contain between 3% and 6% moisture by weight. Sand and cement proportions may be correct to provide for bulking due to sand-moisture content.

5. Water used for hydration at the nozzle shall be fit for drinking and shall be maintained at a uniform pressure which shall be at least 15 psi above the air pressure at the nozzle.

6. Adequate ground wires, to be used as screeds, shall be installed to establish the thickness and surface planes of the gunite work. Ground wires shall be placed so that they are tight and true to line and in such a manner that they may be easily tightened. They shall be located at intervals sufficient to ensure proper thickness throughout and shall be maintained tight.

7. When enclosing reinforcing steel, the nozzle shall be held so as to direct the material around the bars. A nozzleman's helper equipped with an air jet shall attend the nozzleman and blow out all rebound, sand, etc., which may be logged on the forms, steel or gunite. Gunite material shall emerge from the nozzle in a steady, uninterrupted flow. When flow becomes intermittent for any cause, the nozzle shall be diverted from the work until the flow becomes constant. Hydration shall be thorough and uniform without the use of excessive water. In shooting walls and beams, application shall begin at the bottom and shall completely embed the reinforcement. The limit of the thickness and height has been exceeded when the material begins to sag. In shooting beams, the nozzle shall be held at right angles, to the surface of application. Wherever possible, slabs shall be completed in one operation.

8. Reinforcement shall be cleaned of any previously deposited gunite which might prevent proper bond to reinforcement. Sufficient time shall be allowed between layers for the material to set. Before set has taken place, and before placing any succeeding layer, laitance shall be removed by brooming. Any laitance which has set shall be removed by sandblasting. Surfaces shall be damp at all times.

9. Rebound pockets, sags or other defects shall be carefully cut out and replaced with new gunite or hand patched in a manner satisfactory to the Engineer.

10. Upon reaching the thickness and planes outlined by forms and ground wires, the surface shall be rodded to true lines. Upon completion of rodding, ground wires may be removed. If possible, the finish coat shall be applied so that gunite is not shot over the finished work. All exposed surfaces shall be finished to straight and true lines.

Marble Dust (Marcite) Finish Notes

1. After installing all new water line, step and interior tile, install marble dust interior surface. The new marble coating shall be a minimum of 1/2 inch thick, and is intended to provide a smooth, uniform surface.

2. Prior to the application of the marble dust finish and after proper preparation of the pool shell, a bond coat shall be placed to the entire interior shell surface. Bond coat shall be comprised of a bonding agent, Acryl 60 or equal, sand and Portland cement. Cure bond coat a minimum of 36 hours. The mixture shall be in the following proportion

2-1/2 Gallons of Acryl 60

94 lbs of Portland Cement

100 lbs of Sand

Water as required to provide a mixture having a consistency of heavy paint.

3. The marble dust coating shall consist of 1/2 inch thick layer of marble plaster aggregate mixed two (2) parts marble to one (1) part white cement. Finish shall be trowelled to a smooth, dense, impervious surface. Extreme care shall be used to avoid stains.

4. Pool finish shall be applied by mechanics having at least three (3) years experience in the installation of this material. Written proof of this experience shall be supplied to the Engineer prior to commencement of the work.

5. Pool finish shall be cured in accordance with industry standards.

General Notes

1. This entire swimming pool facility shall be designed, constructed and maintained in strict accordance with the New York State Sanitary Code, Chapter 1, Part 6 and Sub-Part 6-1 of the New York State Department of Health.

2. Following items shall become part of the architectural specifications for construction of the sanitary facilities.

A. Walls, partitions and ceilings shall have a finish that is impervious to moisture.

B. Floors shall be non-slip, impervious to moisture, free from cracks and joints and sloped to the floor drains a minimum of 1/4 inch per foot.

C. The juncture between the walls, partitions and floors shall be coved.

D. Water closets, urinals, lavatories and showers shall be per code. The seat for the water closet shall have a spill front.

E. Shower curtains shall be of plastic or plastic coated.

F. Showers shall be equipped with hot water between 90 to 100 degrees Fahrenheit with automatic mixing valves to prevent scalding and with a minimum of three gallons per minute per shower head.

G. Wall mounted liquid soap dispensers shall be installed at the showers and lavatories. The use of bar soap is strictly forbidden.

H. Waste receptacles shall be provided in each toilet room. Suitable sanitary napkin receptacles shall be provided in the female toilet rooms.

I. The swimming pool shall be totally enclosed by a minimum 72 inch fence with a self closing and positive self latching gate as noted on the plans.

3. The Following Applies to the Swimming Pool and Surrounding Deck Area.

A. All walks and decks shall be smooth, non-slip, impervious to moisture and sloped away from the back of the pool to deck drains or seeded areas at 1/4 inch per foot, minimum. No asphalt or terrazzo surfaces are permitted. Carpeting of any type is prohibited.

B. Provide 3/4 inch hose bibs with approved type vacuum breakers so located that all parts of the pool deck can be reached and cleaned with a fifty foot hose.

C. No refreshments of any kind (food or drink) shall be served or eaten in the pool area.

D. A prominently mounted sign shall be posted indicating the following information.

THE MAXIMUM NUMBER OF BATHERS IN THE POOL AT ANY GIVEN TIME - (See Schedule)

THE MAXIMUM NUMBER OF PERSONS PERMITTED WITHIN THE POOL ENCLOSURE - (See Schedule)

E. The following signs shall be prominently posted at the shower and/or pool areas

"LIFEGUARD AT POOLSIDE"; "ALL PERSONS MUST SHOWER BEFORE ENTERING THE POOL"; "PERSONS WITH INFLAMED EYES, NASAL OR EAR DISCHARGE, BACK OR OTHER EVIDENT SKIN OR BODILY INFECTIONS SHALL BE EXCLUDED FROM THE POOLS"; "NO ONE IS PERMITTED IN THE POOL WHEN THE LIFEGUARD IS NOT ON DUTY AT THE POOL SIDE"; "NO PETS OF ANY TYPE ARE PERMITTED IN POOL ENCLOSURE".

F. The following signs shall be prominently posted at the pool area

"POLLUTION OF SWIMMING POOL WATER IS PROHIBITED. URINATING, DISCHARGE OF FECAL MATTER, EXPECTORATIONS OR BLOWING THE NOSE IN ANY SWIMMING POOL IS PROHIBITED."

G. The pool bottom shall have a non-slip surface finish and shall pitch a maximum of one inch in twelve inches by the swimming area to a depth of 4'-11". The pool interior shall be finished with a white marble dust plaster, unless otherwise noted on the plans.

H. Providing permanent type depth markers approximately every twenty five (25) feet or as otherwise noted on the plans, marking the pool depths on the pool deck and pool walls. The depth markers shall be a minimum of four (4) inches in height and of a color contrasting with the background. Prominent "NO DIVING" markers shall be installed between depth markers.

I. Safety handholes shall be provided in the form of a bull nose coping not more than nine (9) inches above the normal water line.

J. A four (4) inch wide stripe of contrasting color shall be located along the top and front leading tread edge of all projecting pool steps.

K. Unless otherwise noted on the plans, six inch by six inch frostproof mosaic type tile band shall be installed on the pool walls directly under the cast stone coping.

L. The space between the back of the coping and the pool deck shall be sealed with Thiokol, or equal, type sealant to prevent entry of any moisture or water.

4. The Following Applies to the Swimming Pool Hydraulics:

A. The piping is shown partially diagrammatic and is intended to guide the Contractor in installing the piping in the field. The arrangement and piping of equipment shall be as shown on the plans and as required to provide the proper operating and maintenance space and with adequate headroom (at least seven feet of head).

B. All pressure lines shall be hydro-statically tested at 1-1/2 times the working pressure for a minimum period of two hours. Gravity lines shall be given a gravity pressure test. All lines must be repaired and the entire system tested for an additional two hours.

C. Color coding of all exposed piping within the filter room shall be in accordance with the Color Code Schedule on this drawing.

D. All valves shall be properly supported and tagged in accordance with the valve schedule. The valve tags shall be two inch diameter, brass or cycloic plastic and attached to the valves with brass 'S' hooks or plastic tie straps.

E. All piping, unless otherwise noted, shall be rigid schedule 40 polyvinyl chloride pipe except that all piping under the pool shell shall be rigid schedule 80 pvc. Any metallic piping used below grade shall be given a minimum of two coats of bitumastic paint. All piping shall be supported continuously or at sufficiently close intervals to prevent sagging. All supply and return pipelines to the pool shall be provided with insertable plugs or valves to allow piping to be drained completely.

F. The fittings for the pvc piping shall be schedule 40 pvc or schedule 80 pvc when specified or under the pool and shall be solvent cemented.

G. All valves 2-1/4 inch and larger shall be of the butterfly type. All valves two inches and smaller shall be gate valves, ball type valves or butterfly type valves.

H. The bottom suction drain grate shall have a free area opening in the drain grating equal to four times the area of the drain pipe suction line. Openings in the top of the grate shall be less than 1/2 inch wide.

I. Water return inlets shall be a minimum of 12 inches below the water line or as noted on the plans. The return inlets shall be both adjustable and directional.

J. The domestic water fill line supply shall be separated from the top of the coping by an approved type 6 inch air break.

K. The piping shall pitch a minimum of one inch in 30 feet and equipped with low point accessible valves for draining when required and when shown on the plans.

L. A piping schematic behind glass or encapsulated in a clear plastic laminate shall be mounted on the filter room wall in a prominent place showing each valve, its function, number and approximate location.

M. The pool contractor shall provide a comprehensive set of operating instructions and service instructions for all equipment and for all pool functions designed to meet the capabilities of a young lifeguard.

N. All pressure and vacuum gauges shall be set at the same elevation.

5. The Following Items Apply to the Swimming Pool Electrical Systems:

A. The chemical feed equipment, chlorinator and acid feeder shall be electrically interlocked with its respective filtration pump motor.

B. All electrical motors, underwater lights, above grade lighting and all other electrical equipment shall be equipped with ground fault interrupters in accordance with the latest edition of the National Board of Fire Underwriters, the National Electric Code, and the Underwriters Label of Certification.

C. All wiring and grounding of all deck equipment shall be in accordance with the latest edition of The National Electric Code, The National Board of Fire Underwriters and all local electrical codes having jurisdiction.

D. No overhead electrical wiring of any type shall be permitted within 20 feet of the pools measured horizontally from the water line.

6. The swimming pool facility shall not be utilized until such time that an operating permit has been issued by the County.

7. All work indicated on the plans and in these General Notes shall be completed in strict accordance with these provisions, The New York State Sanitary Code, all local codes having jurisdiction, and all local ordinances having jurisdiction.

Certification Requirements

1. The Engineer of Record must certify that the construction conforms to the approved plans. As such, certain inspections will be required. The inspections shall include the following:

A. Main drain piping (joint inspection with County)

B. Shell steel reinforcing (joint inspection with County)

C. Buried piping prior to backfill (joint inspection with County)

D. Completion of all enclosure items and operation of all equipment (joint inspection with County)

2. The contractor shall provide a mechanic capable of performing corrective work at each inspection.

3. Follow up inspections may be required for corrective work that cannot be performed during the inspection.

4. The Contractor shall provide a valid Electrical Approval Certificate at the final inspection.

5. The Contractor shall notify the Engineer of Record at least 48 hours in advance of any inspection.

Water Chemistry Balance

1. Prior to filling the pool, Contractor shall obtain a sample of the fill-make-up water and shall have it tested for the following: Total Alkalinity, Calcium Hardness, pH, Copper, Manganese, Iron, Total Dissolved Solids

2. Upon completion of pool filling and prior to the addition of adjustment or sanitizing chemicals, an appropriate sequestering agent shall be added to the pool water as required to prevent and minimize metal precipitant. Pool shall be allowed 24 hours to circulate before any additional adjustment or sanitizing chemicals are added.

3. Upon completion of pool filling, pool contractor shall provide a one time adjustment of pool water chemistry to the following parameters

Total Alkalinity: 100-125 ppm Calcium Hardness: 150-250 ppm pH: 7.4-7.8

4. All chemicals required to perform adjustments shall be provided by the Contractor.

Special Requirements

1. Submittals

a. Shop Drawings

1. Shop drawing submittals shall consist of one original and five photocopies.

2. Submit shop drawings of the following:

1) Panel Boards

2) Safety Switches

3) Motor Starters and Controls

4) Wiring Devices

5) Relays

6) Conduit, boxes and fittings

7) Name plates and legends.

3. As-Built Drawings

1) Upon completion of the work, furnish to the Owner in Autocad electronic file format and pdf format, "As-Built" drawings on a flash drive and one set of paper copies. Drawings shall include all field changes and dimensions to accurately locate all outlets, devices, equipment and such.

4. Service Manuals

1) Provide three complete sets of instructions for all electrical equipment installed.

5. Cutting and Patching

1) Provide all cutting, drilling, rough and finish patching required for the work.

2) Provide all drilling and patching for expansion bolts, hangers and other supports for proper and safe installation of the work.

Phase Rotation Tests

1) Properly test the phase rotation of feeder and branch circuits, and make such changes and alterations necessary to ensure the correct rotation of all motor driven equipment throughout the new installation.

7. Electrical Service Characteristics

1) The characteristics of the secondary electrical service and distribution system are 120/208 volts, three phase, four wire plus ground.

8. Tests, Inspections and Approval

1) Inspect all equipment, components and materials installed or connected to ensure

a. Proper conditions

b. Components are in place, aligned and secure.

c. Proper internal connections

2) The complete electrical system shall be free of grounds and short circuits.

Raceways

a. All wiring shall be installed in conduit systems in accordance with the following:

1. Filter room wiring shall be installed in rigid schedule 40 pvc conduit with solvent welded fittings.

2. All work installed in the filter room shall be run exposed. Conduit shall not be embedded in slabs.

3. Minimum size conduit shall be 3/4 inch trade size unless otherwise indicated.

4. Final connectors to motors and vibrating equipment shall be installed in liquid-tight flexible metal conduit. Minimum length shall be 12 inches.

5. The routing of conduits indicated on the drawings is diagrammatic. Before installing any work examine the working layouts and shop drawings of the other trades to determine the exact locations and clearance.

6. Conduit fittings, connectors, couplings, ells, nipples and such shall be of material and construction suitable for the conduit system used.

Wires and Cables

1. Wire and cable shall be 600 volt, copper with THHN/THWN-2 90 degrees C insulation except as noted or otherwise specified herein.

2. Wire for power and lighting shall be not less than No. 12 AWG. Wire No. 8 and larger shall be stranded except as noted.

3. Wires shall be color coded as follows:

208 Volt Systems - Black, Red and Blue

Neutral - White

Equipment Ground - Green

Provide a green insulated ground conductor with all feeders and branch circuits.

Outlet Boxes

1. Boxes for wiring devices, junction points, switching relays, and such in the filter room shall be of proper size and type as required by the room conditions and shall be fabricated of fiberglass reinforced polyester or PVC with stainless steel screws and shall be UL listed.

2. Conduit fittings, connectors, couplings and such in the filter room shall be of material and construction suitable for the conduit system uses.

Wiring Devices

1. Switches

a. Local switches shall be toggle type, 120-277 volt, AC rated 20 amperes, quiet-type with silent operating mechanism, totally enclosed in a molded composition base.

1. Switches shall be Arrow Hart No. 1991, single pole or equal by Hubbell.

2. Receptacles

a. Receptacles shall be termination type duplex ground fault circuit interrupter. Receptacle device rated 20 ampere, 125 volts, Arrow Hart No. GF8300 or approved equal.

Device Plates

1. In general, plates for all wiring devices, except as specified otherwise, shall be 0.040 inch satin finish stainless steel. A common plate shall cover all devices which are indicated at the same location.

2. On the inside of each device plate, write the panel board designation and circuit number of the circuit serving the device.

3. Device plates shall be secured with stainless steel screws.

Motor Starters and Controls

1. Motor starters, auxiliary contacts, interlock wiring, selector switches, pilot lights, push buttons, control relays, and other control devices, provided under this project, shall be in accordance with the drawings and as specified herein, to provide a complete operating system.

2. Starters for motors shall be of the combination magnetic type and size as required, non-reversing, full voltage, as required for the motor served. Starters shall be furnished with the following:

a. Front operated non-fused switch mechanically-interlocked with the starter enclosure cover to prevent opening the starter unless the switch is in the closed position, and lockable in the open position.

b. Magnetic, across-the-line contactor with overload protection and under-voltage protection or release.

c. Control transformer, minimum 100 VA extra capacity, fused secondary, for 120 volt control.

d. Control stations shall be of the momentary contact Start-Stop push button and shall be door mounted. Provide manufacturer's standard legend.

e. Running pilot lights of the oil-tight push-to-test neon-type with lamp and red lens shall be door mounted. Provide manufacturer's standard legend.

f. Starters shall be wall or stand mounted in NEMA 4X enclosures unless otherwise indicated. Enclosures shall be constructed of fiberglass reinforced polyester or PVC per NEMA and UL standards and shall bear UL listing.

3. Motor starters and controls shall be manufactured by the following

a. Eaton

b. Square D

c. General Electric

Panel Boards

1. Panels shall consist of an assembly of circuit breakers installed in one gauge stainless steel cabinets, surface mounted.

2. The panel sections shall be mounted away from the back of the cabinet trim and framed.

a. The gutter space on sides, top and bottom shall be of sufficient size to prevent overcrowding of wires and capable and overheating of the circuit breakers.

b. Cabinets shall be complete with door in door, hinged doors with cylinder lock, directory frame and neatly typed directory charts.

c. Provide an angle piece on the inside of the bottom of each trim for ease of installation.

3. The branch circuit breakers, in general, shall be molded case, bolt on type, thermal magnetic trip, single, two or three pole.

a. Multiple pole breakers shall be single handle, common trip.

b. Where breakers of larger capacity are required, they shall have circuit characteristics as required by manufacturer specifications.

c. Breakers shall be 22,000 A.I.R. for 120/208 volt service, unless otherwise specified.

d. Main buswork shall be high conductivity copper and shall, as a minimum, be designed to carry the full rating of the feeder breaker or switch supplying the panel without perceptible heating.

e. Branch circuit breakers shall be arranged so that each breaker is readily removable from the panel without disturbing adjacent breakers.

f. Phase legs shall be alternately bussed to each circuit breaker in a manner to effect balancing the branch circuit connections as nearly as possible over each phase.

4. Panels by Square D, Siemens, Eaton, and General Electric meeting these specifications shall be acceptable.

Identification and Tagging

1. Panels, cabinets, etc., shall be properly identified with permanent nameplates securely fastened with screws to the front of equipment. "Stick-On" type letters or plates shall not be used.

a. Identify equipment and key equipment components with nameplates of black laminated phenolic material.

b. Coordinate nameplates with actual equipment installed.

c. Submit a cut sheet with nameplates for approval prior to purchase and installation.

d. Minimum size nameplates shall be three (3) inches long with 1/4 inch lettering.

2. Conductors in troughs, pullboxes, gutters, etc, shall be identified by means of tags indicating both terminating points.

Grounding and Bonding

1. General

a. Provide all grounding and bonding conductors and connections as indicated, and in accordance with the requirements of the NEC and all local authorities having jurisdiction.

b. All major parts not carrying current, including the following items, shall be properly grounded with a green insulated grounding conductor.

i. Metallic junction boxes and disconnect switches

ii. All metallic raceways, conduits and outlet boxes

iii. Motor and equipment housings and metallic control panels

c. Provide a "green" wire grounding conductor for all equipment and as indicated on the drawings.

2. Products

a. Conductors and Connections

i. Hard-drawn, stranded (ASTM B8) copper

ii. Accessible grounding conductors shall be annealed copper with 600 volt, green, type THW insulation. Conductors shall be stranded except pool bonding conductors which shall be solid.

iii. Accessible connections shall be made with multiple bolt silicon bronze connectors specifically designed and approved for the connection to be made. Grounding connectors shall be individually selected to each application, as recommended by the conductor manufacturer.

iv. Where connections involve dissimilar metals contributing to corrosion, interpose a third, compatible conductive material. Exothermic welds of copper to steel are acceptable.

v. Inaccessible connections shall be made with exothermic welds (Cadweld or equal)

b. Grounding connections shall be manufactured by

i. Burndy Corp.

ii. Dossert Corp.

iii. Oz/Gedney Co.

3. Execution

a. Neutral connections to room steel or other ground sources shall be made and sized so that ground fault currents do not result in damage to materials or connections.

b. Panel boards and feeder pull boxes shall be grounded by means of insulated grounding bushings on all incoming and outgoing conduits 1-1/4 inches and larger.

c. Bushings shall be connected together and to the switchgear, panel or pull box ground lug with a grounding conductor.

d. Wherever plastic or flexible conduit is without internal ground conductor is used for part of a conduit run, a grounding conductor shall be provided in or external to the conduit and connected to grounding connectors at each end of run.

d. The resistance to ground of any part or system specified to be grounded shall not exceed 25 Ohms. Contractor shall test ground resistance with a megger ohmmeter and submit results in report for to the Engineer for review.

e. Contractor shall megger the bonded equipment and submit results in report format to the engineer for review.

Electrical Notes:

1. Electrical work shall include all labor, materials, equipment plant services & administrative tasks required to complete and make operable the work shown on the drawings and specified herein, including but not limited to the following:

A. Prepare and submit shop drawings, diagrams and illustrations.

B. Procure required permits and approvals and pay required fees and charges in connection with the work.

C. Protect, test, balance, clean, adjust and guarantee all work to safely, properly and continuously operate.

D. Submit as-built drawings, operation and maintenance instructions and manuals.

E. Provide identification labels, tags, charts and diagrams.

F. Perform all cutting, drilling rough and finish patching of existing and newly installed construction.

G. Excavating and backfilling.

H. Provide and install hangers, supports, foundations, structural framing supports and bases for conduit and equipment.

I. Provide counter-flashing, sleeves and seals for roof, floor and wall penetrations.

J. Temporary light and power for construction.

K. Main distribution panels and motor controllers.

L. Complete wiring for lights and power installations, branch circuits to equipment, motor controllers and power centers.

M. Control wiring and relays.

N. Branch circuits extending to all equipment.

O. Receptacles, local switches and miscellaneous wiring devices.

P. Grounding of electrical systems and equipment per Articles 250 and 680 of the National Electric Code.

Q. Balance all loads on panel boards.

General Requirements

1. General

a. After carefully examing the plans and before submitting a proposal or starting the work, the contractor shall visit the site to ascertain the conditions of the site, and the nature and exact quantity of work to be performed. No extras will be entertained by the Owner for failure to notify the Owner in writing of any electrical inadequacies in existing conditions.

b. Verify all dimensions at the site and be responsible for the correctness of same.

2. Codes, Regulations and Standards

a. Work shall comply with the requirements of the following codes

1. Federal, State and Local codes having jurisdiction.

2. National Fire Protection Association.

3. New York State Energy Conservation Conctruction Code.

4. New York State Health Code.

5. National Electric Code.

3. Fees

a. Include in price the cost of all required permits, fees, inspections, tests and certificates of approval.

4. Quality, Workmanship, Materials and Safety

a. Work shall be first class in every respect and shall be neatly performed in a practical and workmanlike manner by sufficient electricians skilled in the work they are to perform using the best practices of their trade, and under continuous, competent supervision. The work shall be organized in advance of the operation and carried out efficiently without delays which would impede progress or quality of the work of other trades and the work as a whole.

b. Materials and equipment provided shall be new and approved for the application and shall conform with the specified codes and standards. Defective or damaged materials shall be replaced or repaired in a manner approved by the Owner.

c. Equipment shall bear the UL label and shall meet or exceed NEMA standards.

5. Guarantee

a. Furnish, in writing, a complete guarantee against defective materials and improper workmanship, satisfactory to the Owner, for all parts, components and operaton for a period of one year from the date of acceptance of the complete installation by the Owner.

b. Guarantee shall include complete maintenance of the system, including replacement parts, all labor and materials to maintain the system in proper operating condition for the guarantee period.

6. Cleaning

a. Remove all construction debris resulting from the work.

b. Clean equipment and systems following the detailed procedures specified herein, or as directed.

7. Coordination and Supervision

a. The work shall be carefully laid out in advance to avoid unnecessary cutting, channeling, chasing or drilling of the floor, walls, partitions, ceilings or other surfaces. Where such work is necessary, however, the work shall be patched and/or repaired in an approved manner by skilled mechanics at no additional cost to the Owner.

County Review Stamp

1/17/2024

ISSUED FOR COORDINATION

Rev. No.

Rev. Date

Description

Larry A. Robinson, P.E.

Heatherwood Luxury Rentals

111 Hempstead Turnpike, West Hempstead, NY 11552

Proposed Outdoor Swimming Pool

R & W / Engineers, P.C.

380 Townline Road, Suite 152, Hempstead, New York 11788

Phone (631) 969 - 8535 Fax (631) 969 - 8518

Notes & Specifications

Dwg. Scale: As Noted Drawn By: PRG Checked By: Date: November 29, 2023

License No.: 68956

Dwg. No.: SP-9 of 9

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