

Corporal Arthur Nelson Play Lot Renovation Project (Fuller Street Park)  
Project Number: DPW-26-58

**ADDENDUM NO. 1**

February 3, 2026

**CHANGES, CORRECTIONS AND CLARIFICATIONS**

The attention of bidders submitting proposals for the above subject project is called to the following addendum to the specifications. The items set forth herein, whether of omission, addition, substitution or clarification are all to be included in and form a part of the proposal submitted.

The number of this addendum (No. 1) must be acknowledged in the General Bid Form.

**Note: As indicated in the specifications, the bid deadline is Thursday, February 5<sup>th</sup> 2026, at 2pm.**

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**CHANGES:**

1. Bid Form: The Allowance language has been revised to clarify the scope of work it is intended to cover. The granite park sign is now part of the Base Bid. The Park signage Detail SK-1 has been included in this package.
2. Updated Shade Structure. See attached details.
3. Contractor shall install City of Everett water meter in an oversized splash pad control cabinet Model No. EC20 as manufactured by Vortex, or approved equal. Contractor is responsible for all materials, testing, and coordination with the City to provide a fully functioning system. See attachments for more information.
4. Changes to Specifications:
  - a. Reference: Section 31 10 10 – Site Clearing, Page 31 10 10 - 3, Article 3.02 Tree Protection, Paragraph C, Item C.3 is hereby revised as follows: Cut tree limbs and roots should not be coated or painted with any material.
  - b. Reference: Section 32 90 00 – Planting, Pages 32 90 00 – 7 and 8, Article 1.10 Plant Material Acceptance and Guarantee, Paragraph B (Guarantee Period and Replacements), Items B.1 and B.3 are hereby revised as follows:
    - 1.10.B.1: The Guarantee Period shall be two (2) years from the date of Provisional Acceptance. During the Guarantee Period the Owner shall maintain the plant materials and it shall be the Contractor's obligation to inspect the plant materials to confirm that they are receiving proper maintenance and care.
    - 1.10.B.3: Remove and replace trees, shrubs and other plants found to be dead or unhealthy during the Guarantee Period. Remove dead plants immediately. Make replacements during the normal planting season. The replacement plant material shall be guaranteed for an additional period of two (2) years.

**ITEM 1: ANSWERS TO QUESTIONS**

- Q1. Are approved equals being accepted for the benches, table sets, trash receptacles, and bike racks?  
A1. Yes. Approved equals may be submitted for consideration. Proposed equals must meet or exceed the specified characteristics (materials, dimensions, finish, durability, and warranty).
- Q2. Please confirm the required park sign language and naming to be reflected on the plans.  
A2. Refer to Detail SK-1 (Granite Park Sign) issued with this addendum.
- Q3. Is the park going to have a portable toilet permanently installed? If so, where?  
A3. Yes. The town will provide one (1) portable toilet (ADA-accessible) after the park is completed. The designated location, access, and minimum clearances are shown on the updated, attached plans. Please note the Contractor is responsible for the pad per the drawings. The Contractor will be responsible for providing a portable toilet during the construction process.

**ITEM 2: ATTACHMENTS**

- Attachment 1 – Updated bid form with Allowance clarification.  
Attachment 2 – Updated C4, C5, C6, and C7 Drawings.  
Attachment 3 – Updated Granite Sign Detail SK-1.  
Attachment 4 – Updated Shade Structure (or Approved Equal).  
Attachment 5 – Splashpad Information: Controller, Cabinet Size, and Connections provided.

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End of Addendum No. 1

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**CITY OF EVERETT, MASSACHUSETTS**

**Project Number: DPW-26-58**

**CORPORAL ARTHUR NELSON PLAY LOT RENOVATION PROJECT**  
**(FULLER STREET PARK)**

**GENERAL CONTRACTOR SERVICES**

**BID FORM**

Firm Name: \_\_\_\_\_

(A) The Undersigned, as Bidder, proposes to furnish to the City of Everett, Massachusetts (the "Owner" or the "City") all labor, materials, equipment, supervision, tools and services required for the \_\_\_\_\_ Project at \_\_\_\_\_, in accordance with the accompanying plans and specifications prepared by NESRA Engineering, and entitled Corporal Arthur Nelson Play Lot Renovation Project, dated 12/12/2025, for the fixed contract price specified below, subject to additions and deductions according to the terms of the Contract.

(B) This Bid includes addenda numbered \_\_\_\_\_

(C) The Proposed Fixed Contract Price is \_\_\_\_\_ dollars\*  
(\$ \_\_\_\_\_)\*

*\* Bond Price is to be included in the "The Proposed Fixed Contract Price" line (C) and includes lump sum with allowance price (E).*

(D) ALTERNATES (REFER TO SECTION 01 23 00 ALTERNATES FOR DETAILS)

For Alternate No.1 - Deduct \$ \_\_\_\_\_

For Alternate No.2 - Deduct \$ \_\_\_\_\_

For Alternate No.3 - Deduct \$ \_\_\_\_\_

For Alternate No.4 - Deduct \$ \_\_\_\_\_

(E) ALLOWANCES

The Bidder agrees that the Lump Sum Base Bid includes the following allowances, which will be incorporated into the Contract. All allowance work shall include complete in-place labor, materials, and workmanship, and shall conform strictly to the Drawings and Specifications. Any unused allowance funds shall be credited to the Owner.



1. **Allowance No. 1: Misc. Items, including but not limited to plantings, lighting, additional concrete and form work – The contractor shall include \$20,000. Details to be specified by Owner and Engineer during construction phase.**

Item: **\$20,000 (Twenty Thousand Dollars)**. The allowance may be utilized for the following:

- a. Plantings
- b. Uplighting
- c. Additional formwork/concrete installation
- d. Funds not utilized within the allowance shall be credited back to the Owner

(F) **UNIT PRICES**

Unit Prices for potential Change Orders as specified in the General Conditions and Section \_\_\_\_\_(UNIT PRICES). Prices shall include materials, labor, overhead, profit, insurance and bonding.

Description of Work	Unit	Amount to ADD	Amount to DEDUCT

(G) **Contract Execution.** The undersigned agrees that, if selected as general contractor, general contractor will within five (5) days, Saturdays, Sundays and legal holidays excluded, after presentation thereof by the City, execute a contract in accordance with the terms of this Bid and furnish a performance bond and also a labor and materials payment bond, each of a surety company qualified to do business under the laws of the Commonwealth and satisfactory to the City and each in the sum of the contract price, the premiums for which are to be paid by the general contractor and are included in the contract price.

(H) **Withdrawal of Bids.** As provided in the Instructions to Bidders, the Bidder hereby agrees that he will not withdraw this Bid within thirty (30) consecutive calendar days after the actual date of the opening of Bids. Should the Bidder fail to fulfill any of his agreements as hereinabove set forth, the Owner shall have the right to retain as liquidated damages the amount of the bid security which shall become the Owner's property. If a bid bond was given, it is agreed that the amount thereof shall be paid as liquidated damages to the Owner by the Surety.

(I) **Certification Regarding Labor Harmony.** The undersigned hereby certifies that he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work and that he will comply fully with all laws and regulations applicable to awards made subject to section forty-four A.



(J) **Certification Regarding Contract Requirements.** Contractor certifies that he has carefully examined the site of the proposed work and fully informed and satisfied himself as to the conditions there existing, the character and requirements of the proposed work, the difficulties attendant upon its execution and the accuracy of all estimated quantities stated in this Bid, and he has carefully read and examined the drawings, specifications, and other Contract Documents therein referred to and knows and understands the terms and provisions thereof.

(K) **Information Regarding Subsurface Conditions.** Contractor understands that information, if any, relative to subsurface and other conditions, natural phenomena, existing pipes and other structures (surface and/or subsurface) has been furnished only for his information and convenience without any warranty or guarantee, expressed or implied, that the subsurface and/or other conditions, natural phenomena, existing pipes and other structures (surface and/or subsurface) actually encountered will be the same as those shown on the drawings or in any of the other Contract Documents and he agrees that he shall not use or be entitled to use any such information made available to him through the Contract Documents or otherwise or obtained by him in his own examination of the site, as a basis of or ground for any claim against the Owner or the Engineer arising from or by reason of any variance which may exist between the aforesaid information made available to or acquired by him and the subsurface and/or other conditions, natural phenomena, existing pipes and other structures.

(L) **Certification Regarding Quantities.** Contractor certifies that he understands that the quantities of work tabulated in this Bid or indicated on the Drawings or in the Specifications or other Contract Documents are only approximate and are subject to increase or decrease as deemed necessary by the Architect.

(M) **Certification Regarding Labor:** The undersigned hereby certifies under penalties of perjury that: (i) that all employees to be employed in the work included in this bid have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least ten (10) hours in duration; and (ii) any employee found on worksite subject to this bid without documentation of successful completion of a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least ten (10) hours in duration shall be subject to immediate removal.

(N) **Certification Regarding Financial Position/Business Organization:** The undersigned further certifies under penalty of perjury that the said undersigned is not presently debarred from doing public construction work in the commonwealth under the provisions of section twenty-nine F of chapter twenty-nine, or any other applicable debarment provisions of any other chapter of the General Laws or any rule or regulation promulgated thereunder.

(O) **Certification Regarding Tax Compliance:** The undersigned further certifies under penalty of perjury that the said undersigned has complied with all laws of the Commonwealth relating to taxes, reporting of employees and contractors, and withholding and remitting of child support pursuant to the provisions of M.G.L. c. 62C, §49A(b).



CORPORAL ARTHUR NELSON PLAY LOT  
RENOVATION PROJECT  
EVERETT, MASSACHUSETTS  
CITY PROJECT # DPW-26-58

(P) **Certification of Compliance of Secretary of State Requirements:** The undersigned further certifies under penalty of perjury that the Bidder has filed with the Secretary of State for the Commonwealth of Massachusetts all certificates and annual reports required by Chapter 156B, Section 109 (business corporation), by Chapter 181, Section 4 (foreign corporation), or Chapter 180, Section 26A (non-profit corporation) of the Massachusetts General Laws.

(Q) **Certification Regarding Non-Collusion:** The undersigned further certifies under penalty of perjury that this bid has been made and submitted in good faith and without collusion or fraud with any other person. As used in this certification, the word “person” shall mean any natural person, business, partnership, corporation, union, committee, club, or other organization, entity, or group of individuals.

(R) **Certification Regarding Prevailing Wage Compliance:** The undersigned further certifies under penalty of perjury that the said undersigned shall comply with the provisions of sections 26 and 27D of chapter one hundred and forty-nine of the General Laws governing the payment of prevailing wages.

\_\_\_\_\_  
Name of Contractor

Date: \_\_\_\_\_

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Name & Title of Person Signing Bid

\_\_\_\_\_  
Business Address

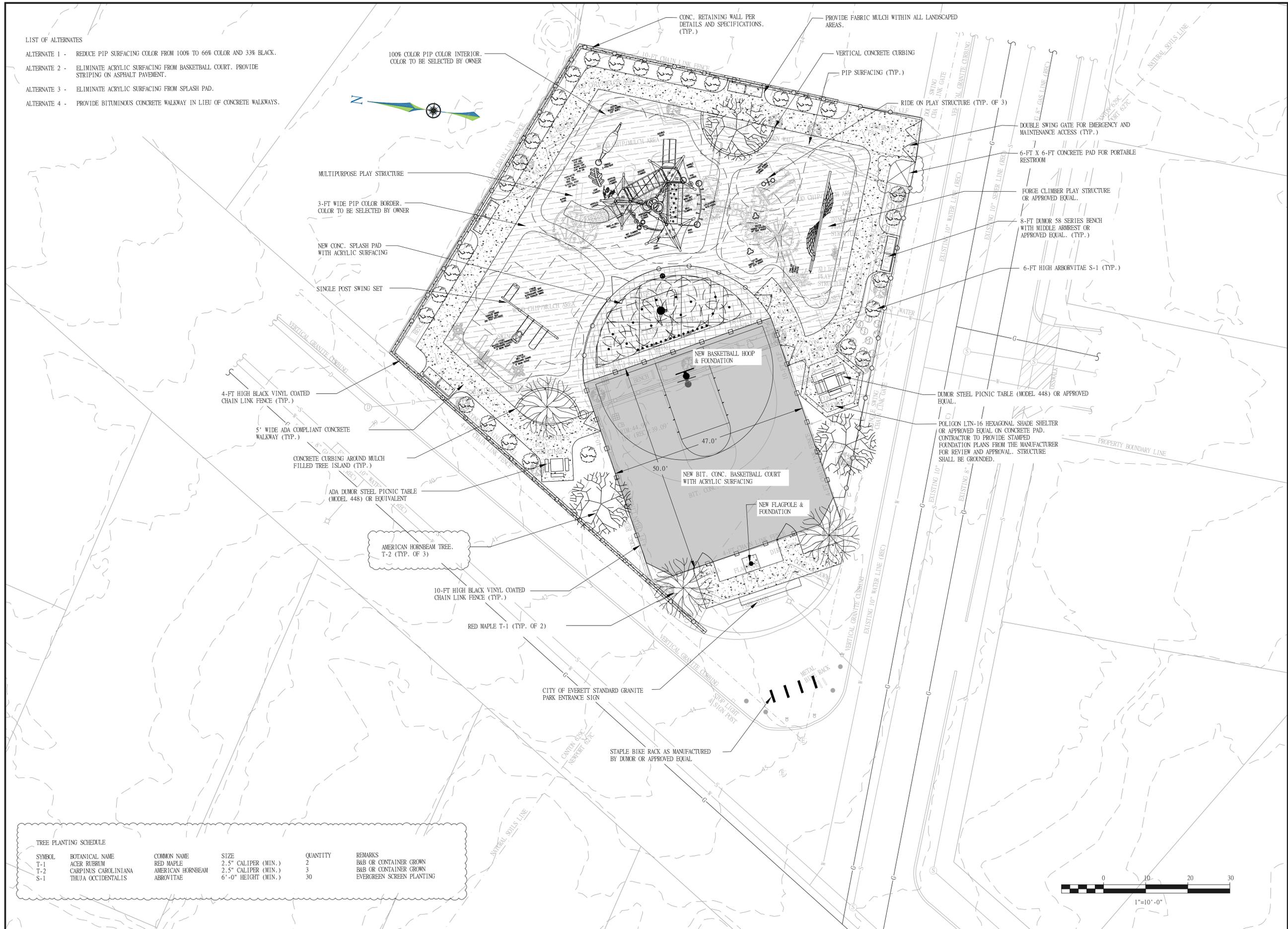
\_\_\_\_\_  
Telephone/Fax/Email

\_\_\_\_\_  
Facsimile

Attach: Bid Security (five percent of Contract Sum)  
Proposed Construction Schedule



- LIST OF ALTERNATES
- ALTERNATE 1 - REDUCE PIP SURFACING COLOR FROM 100% TO 66% COLOR AND 33% BLACK.
  - ALTERNATE 2 - ELIMINATE ACRYLIC SURFACING FROM BASKETBALL COURT. PROVIDE STRIPING ON ASPHALT PAVEMENT.
  - ALTERNATE 3 - ELIMINATE ACRYLIC SURFACING FROM SPLASH PAD.
  - ALTERNATE 4 - PROVIDE BITUMINOUS CONCRETE WALKWAY IN LIEU OF CONCRETE WALKWAYS.



TREE PLANTING SCHEDULE					
SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	QUANTITY	REMARKS
T-1	ACER RUBRUM	RED MAPLE	2.5" CALIPER (MIN.)	2	B&B OR CONTAINER GROWN
T-2	CARPINUS CAROLINIANA	AMERICAN HORNBEAM	2.5" CALIPER (MIN.)	3	B&B OR CONTAINER GROWN
S-1	THUJA OCCIDENTALIS	ARBORVITAE	6'-0" HEIGHT (MIN.)	30	EVERGREEN SCREEN PLANTING

WWW.NESRAENG.COM  
 607-506-3772  
**NESRA ENGINEERING**  
 829 SOUTH WASHINGTON STREET  
 NORTH ATTLEBORO  
 MASSACHUSETTS 02760



**PROJECT**  
 CORPORAL ARTHUR NELSON  
 PLAY LOT RENOVATION  
 PROJECT  
 FULLER STREET  
 EVERETT, MA 02738

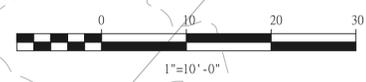
**CLIENT**  
 CITY OF EVERETT  
 484 BROADWAY  
 EVERETT, MA 02738

DESIGNED BY	JEFF B.	
REVIEWED BY	ARSEN H.	
1.	UPDATED TO SHOW PORTABLE RESTROOM LOCATION, PROVIDED PLANTING SCHEDULE AND FENCE CLARIFICATION	2/2/26
NO.	REVISION	DATE

SCALE - AS NOTED  
 DATE - 12/12/25

LAYOUT & MATERIALS PLAN

C-5



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 607-506-3772  
**NESRA ENGINEERING**  
 829 SOUTH WASHINGTON STREET  
 NORTH ATTLEBORO  
 MASSACHUSETTS 02760



**PROJECT**  
 CORPORAL ARTHUR NELSON  
 PLAY LOT RENOVATION  
 PROJECT  
 FULLER STREET  
 EVERETT, MA 02738

**CLIENT**  
 CITY OF EVERETT  
 484 BROADWAY  
 EVERETT, MA 02738

DESIGNED BY	JEFF B.
REVIEWED BY	ARSEN H.

NO.	REVISION	DATE
1.	UPDATED TO SHOW PORTABLE RESTROOM LOCATION	2/2/26

SCALE - AS NOTED  
 DATE - 12/12/25

**GRADING PLAN**

**C-6**



DMH  
RIM: 44.69'  
INV. A: 41.31'  
INV. B: 41.38'  
INV. OUT: 36.24'

CONTRACTOR SHALL COORDINATE THE LOCATION AND SCREENING OF THE ELECTRICAL ENCLOSURE WITH THE OWNER AND ENGINEER.

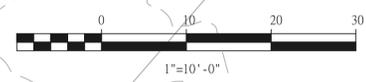
PROVIDE NEW ELECTRICAL SERVICE, ELECTRICAL ENCLOSURE AND SUFFICIENT POWER FOR SPLASH PAD CONTROLS. SEE ELECTRICAL PLANS AND TECHNICAL SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

NEW 4" WATER MAIN. PROVIDE CITY OF EVERETT APPROVED TAPPING SLEEVE AND VALVE. SEE SPECIFICATIONS FOR WATER REQUIREMENTS.

PROVIDE NEW STAINLESS STEEL WATER CABINET.

PROVIDE UP LIGHTING AND ELECTRICAL SERVICE IN ACCORDANCE WITH THE ELECTRICAL PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OTHER ELECTRICAL REQUIREMENTS AS DETAILED IN THE ELECTRICAL PLANS AND SPECIFICATIONS.

NOTE:  
CONTRACTOR SHALL PROVIDE WATER AND ELECTRICAL SERVICE FOR SPLASH PAD IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND REQUIREMENTS.




  
 WWW.NESRAENG.COM  
 607-506-3772  
**ENGINEERING**  
 829 SOUTH WASHINGTON STREET  
 NORTH ATTLEBORO  
 MASSACHUSETTS 02760



**PROJECT**  
 CORPORAL ARTHUR NELSON  
 PLAY LOT RENOVATION  
 PROJECT  
 FULLER STREET  
 EVERETT, MA 02738  
**CLIENT**  
 CITY OF EVERETT  
 484 BROADWAY  
 EVERETT, MA 02738

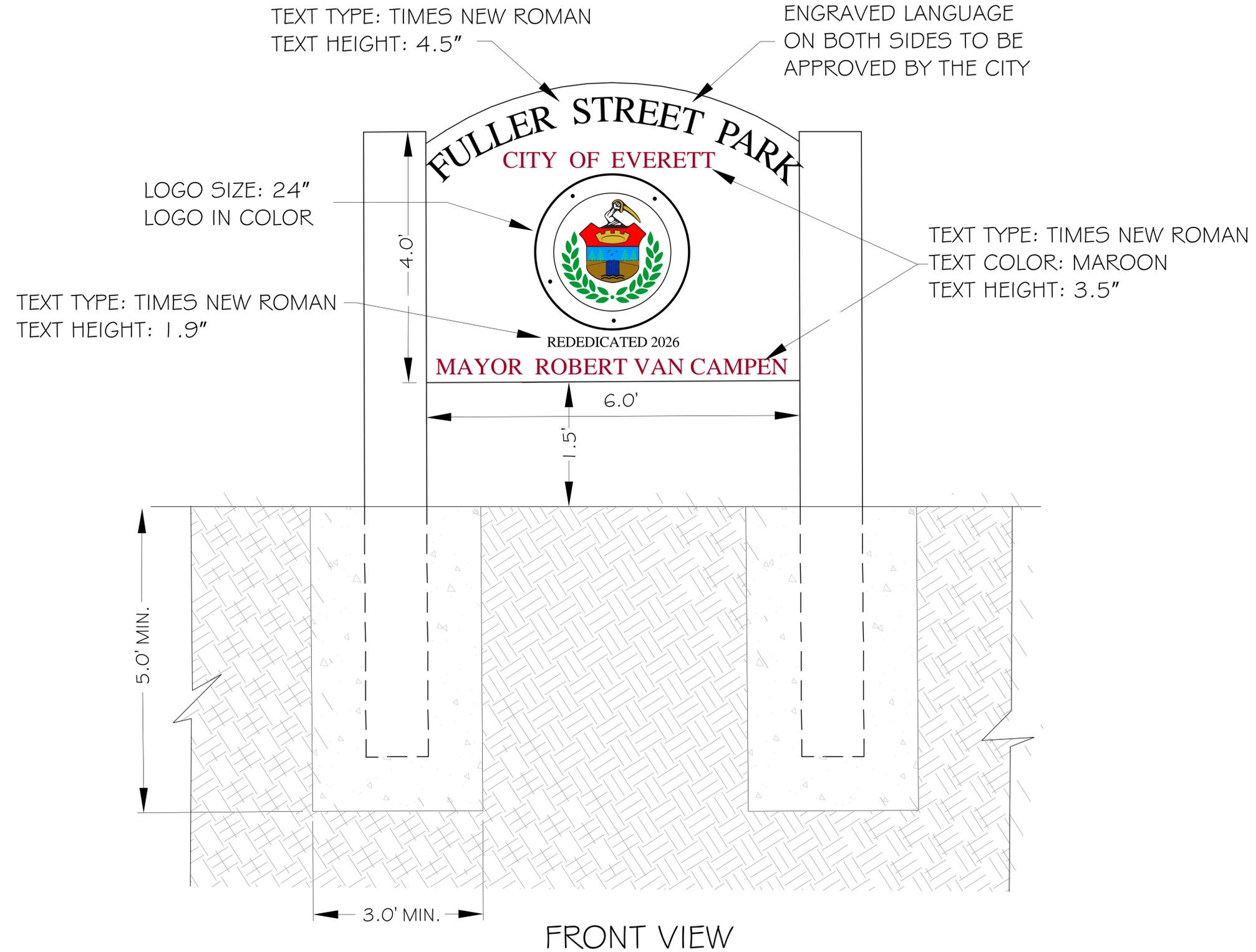
DESIGNED BY	JEFF B.
REVIEWED BY	ARSEN H.

NO.	REVISION	DATE
1.	UPDATED TO SHOW DRAINAGE INFRASTRUCTURE.	2/2/26

SCALE - AS NOTED  
DATE - 12/12/25

**DRAINAGE & UTILITY PLAN**

**C-7**



**GRANITE PARK SIGN**  
N.T.S.

WWW.NESRAENG.COM  
607-506-3772

**NESRA** ENGINEERING

111 WASHINGTON STREET  
PLAINVILLE  
MA 01150  
MASSACHUSETTS 02762



Project

CORPORAL ARTHUR  
NELSON PLAY LOT  
"FULLER STREET PARK"  
EVERETT, MA 02738

Client

CITY OF EVERETT  
484 BROADWAY  
EVERETT, MA 02738

No.	Revision	Date

Scale: N.T.S.  
Date: 1/27/26  
Professional Seal

DETAILS

**SK-1**

**OR APPROVED EQUAL**

SPECIFICATIONS:

HIP BEAMS AND PURLINS

**MATERIAL AND QUALITY ASSURANCE.** Structural glue laminated timber shall be in conformance with AITC Standard (latest edition).  
 Species: Laminating lumber shall be kiln-dried, architectural grade, sealed and wrapped. The roof system for wood structures and buildings are designed to withstand 30 PSF live load and 90 MPH wind load. Please check local codes. For heavier load requirements, please consult with Cedar Forest Products Company. The roof slope shall be 4/12.

LAMINATED SUPPORT COLUMNS

**MATERIAL AND QUALITY ASSURANCE.** Structural glue laminated timber shall be in conformance with AITC (latest edition). Species: Laminating lumber shall be kiln-dried Port Orford Cedar, architectural appearance grade. Laminated columns shall be sized to suit loading requirements. Manufacturers shall furnish connection steel and hardware for joining structural glue laminated timber members to their supports, exclusive of anchorage and embedment in masonry or concrete (anchor bolts are not furnished).

CONNECTOR PLATES

Plates shall be fabricated from structural steel ASTM-A-36. Plates to be Powder Coated Black. Hardware: A-325 zinc plated machine bolts and nuts.

ROOF DECKING

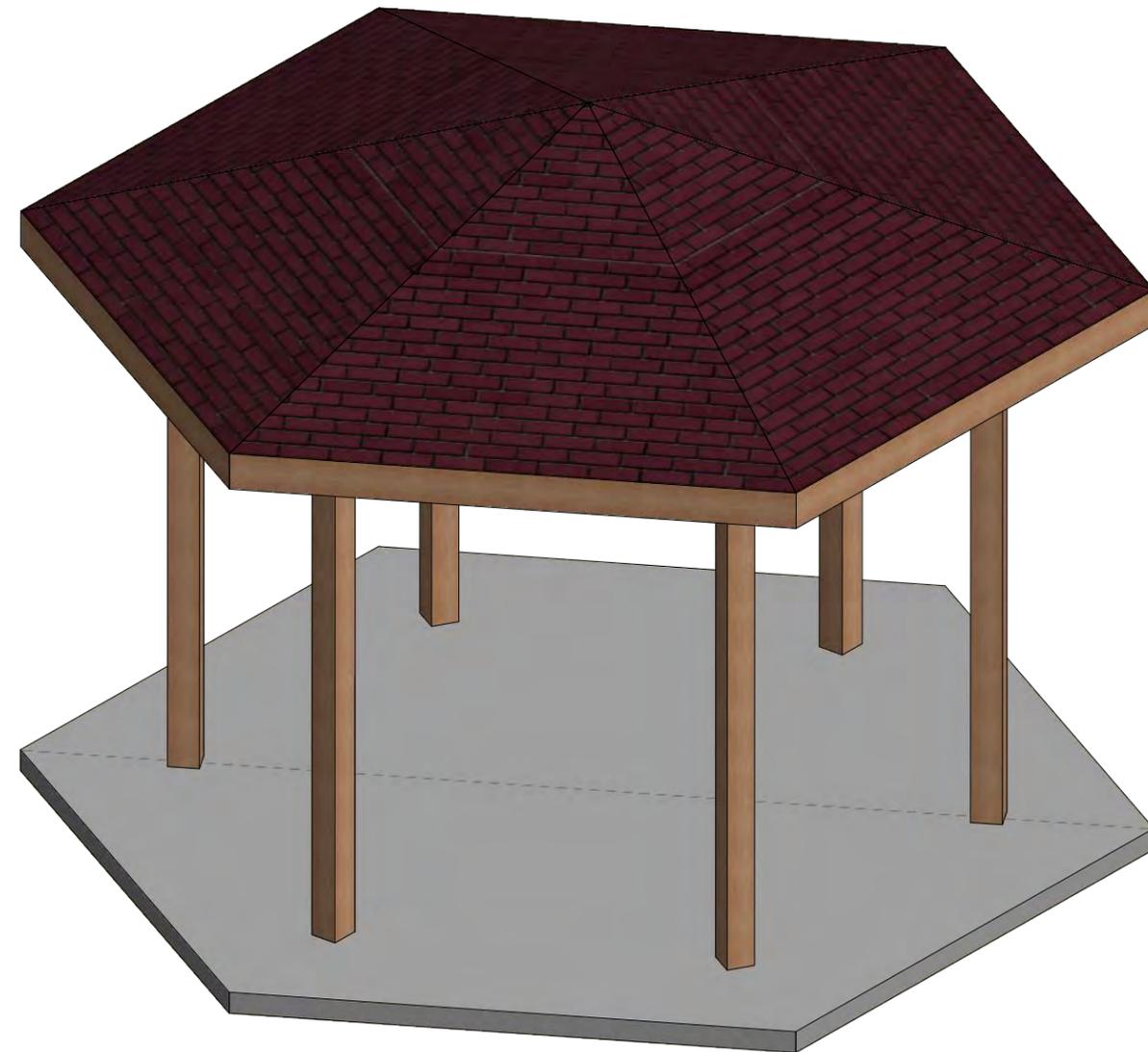
2" x 6" (nominal), #1 grade, single tongue and groove with V-joint on bottom face, kiln dried southern yellow pine, maximum moisture content shall be 19% or less selected for decking. Specified lengths, with all joints over supports.

SHINGLES

Class "A" fire rated, architectural grade, laminated fiberglass shingle with a 30 year limited warranty. To be installed, over 30 lb. felt. Roof application as per manufacturer's specifications. Color to be approved by owner/design professional.

FASCIA

2x8nom Cedar, "D"/ Better Grade, kiln-dried, Surfaced on Four Sides.

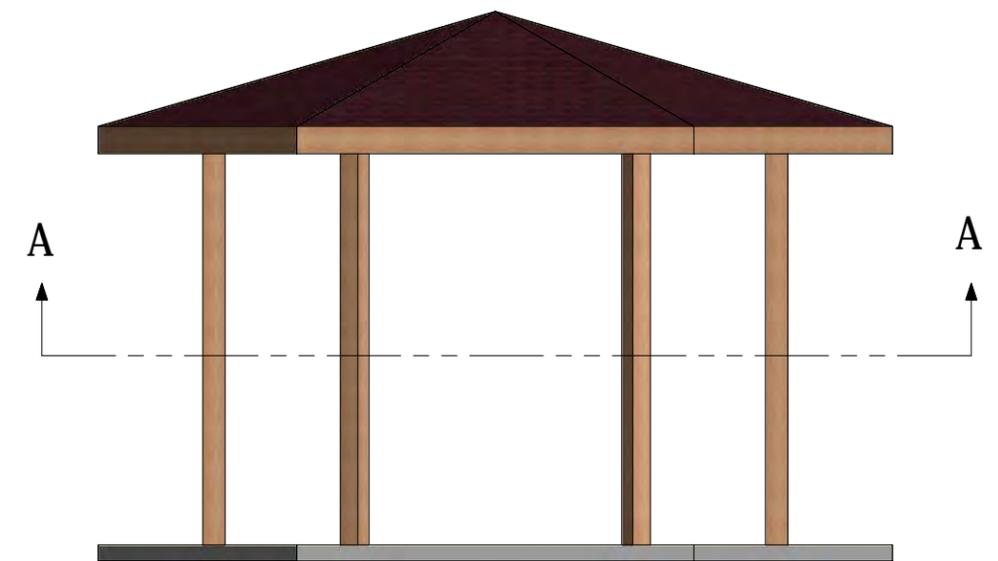
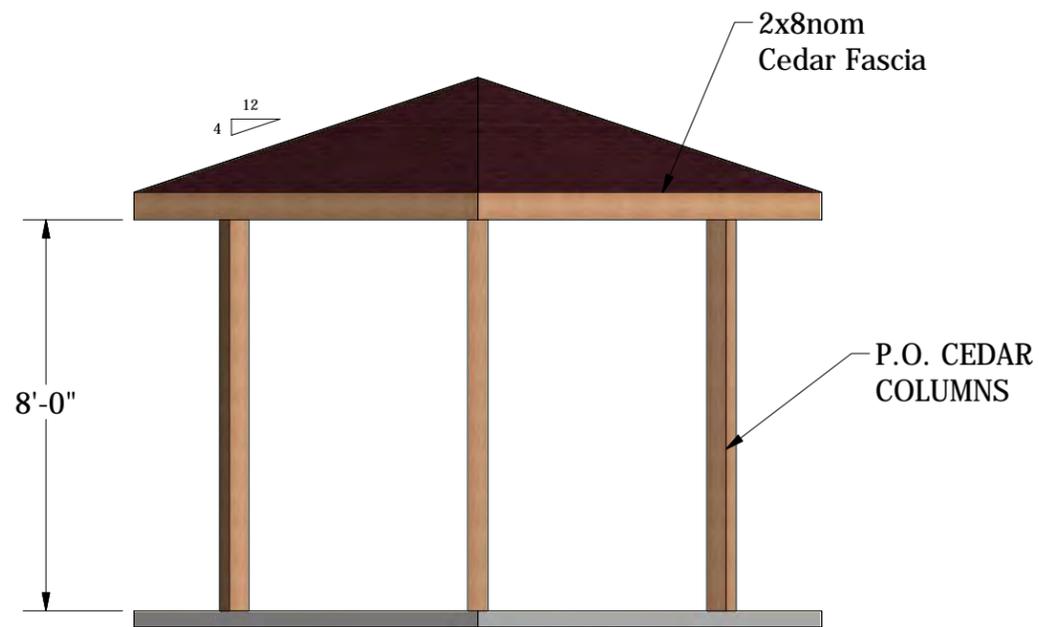
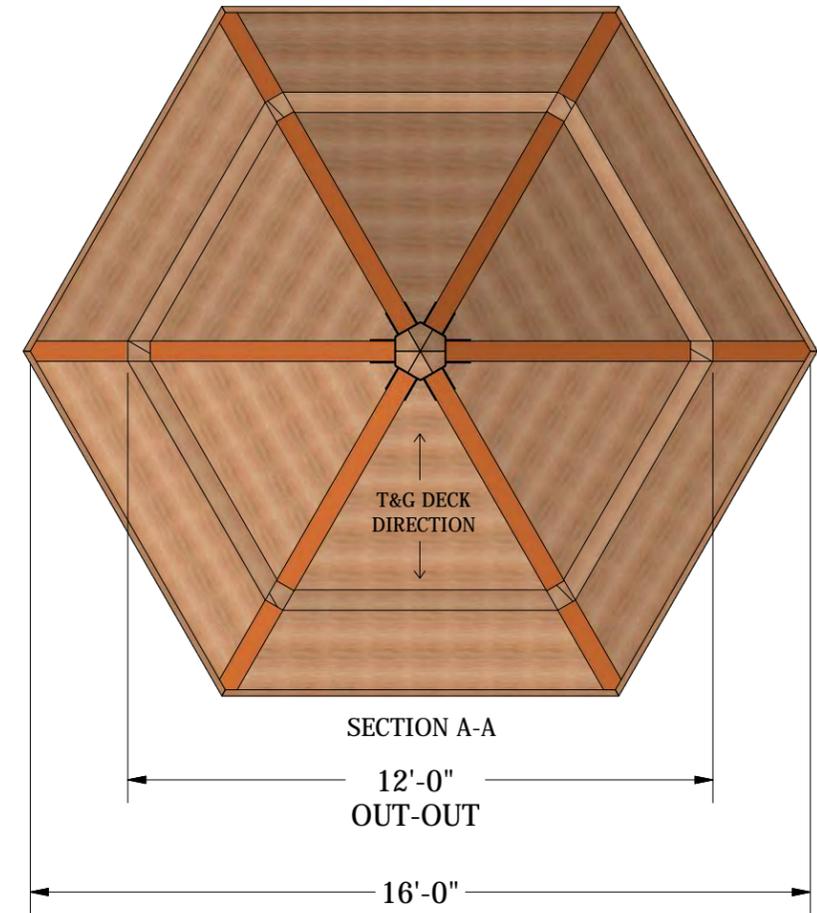
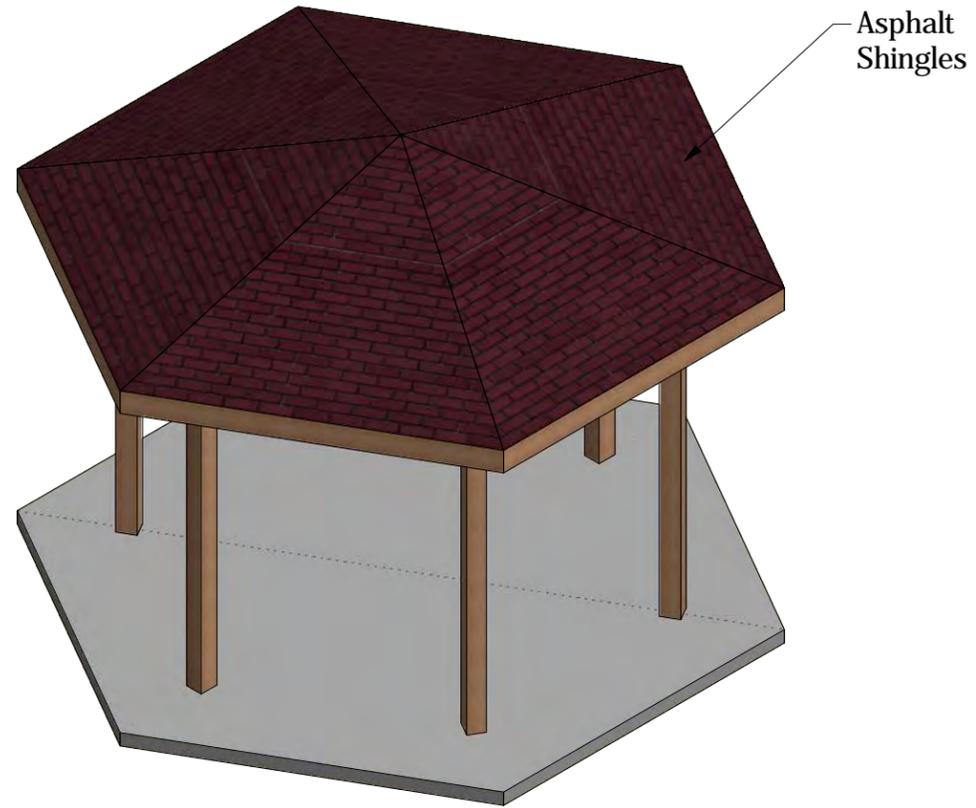


**PRELIMINARY LAYOUT**  
 NOT FOR CONSTRUCTION



P.O. BOX 145  
 WEST OLIVE, MI 49460  
 800-552-9495  
 WWW.CEDARFORESTPRODUCTS.COM

DESCRIPTION:	MODEL #:	DATE:	JES DESIGN #:	REV:
16' Hexagon Post & Beam	HPB16	3/25/2019	HPB-STNRD	0

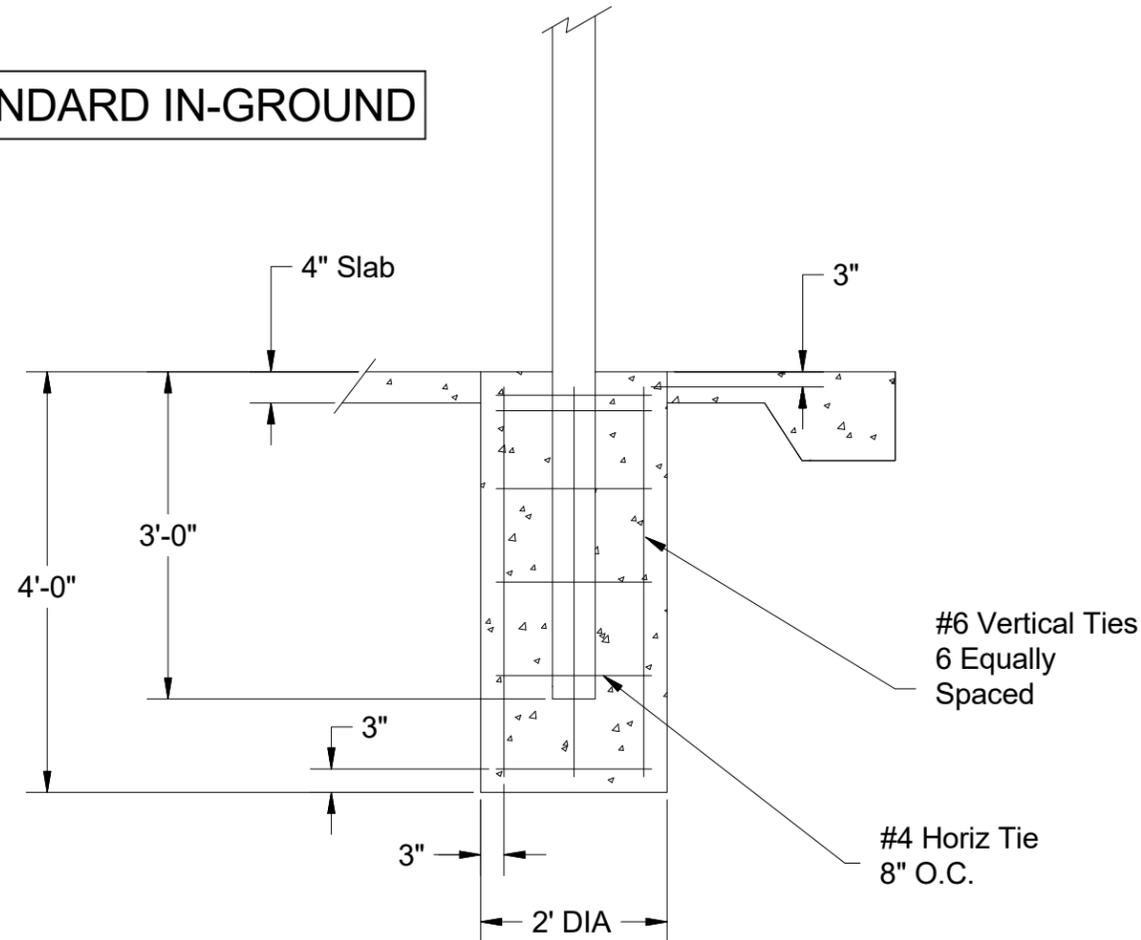


**PRELIMINARY LAYOUT**  
NOT FOR CONSTRUCTION

DESCRIPTION: 16' Hexagon Post & Beam	MODEL #: HPB16	DATE: 3/25/2019	JES DESIGN #: HPB-STNRD	REV: 0
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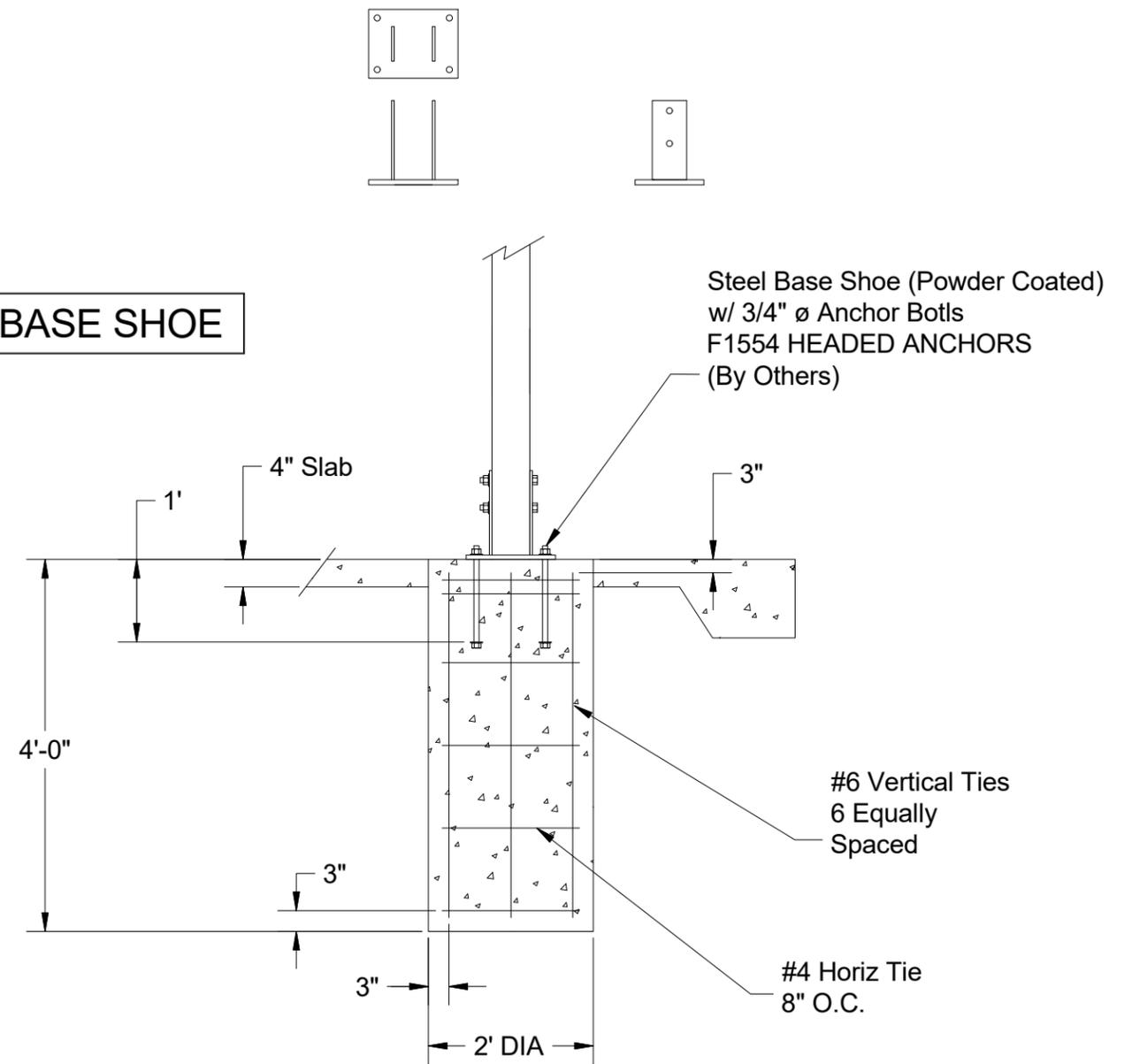
**CONTRACTOR TO HAVE FOOTINGS TO BE STAMPED BY STRUCTURAL ENGINEER PRIOR TO INSTALLATION.**

**STANDARD IN-GROUND**



Column/Footing Detail  
Final Size TBD  
Concrete Pier By Others

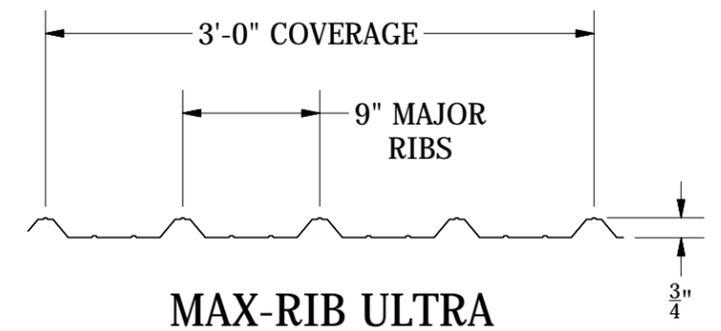
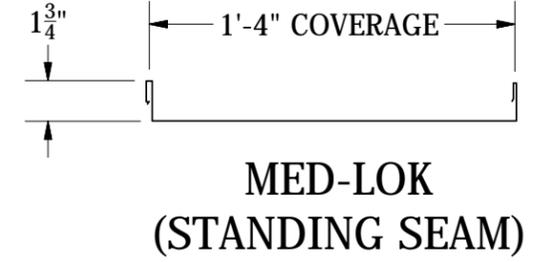
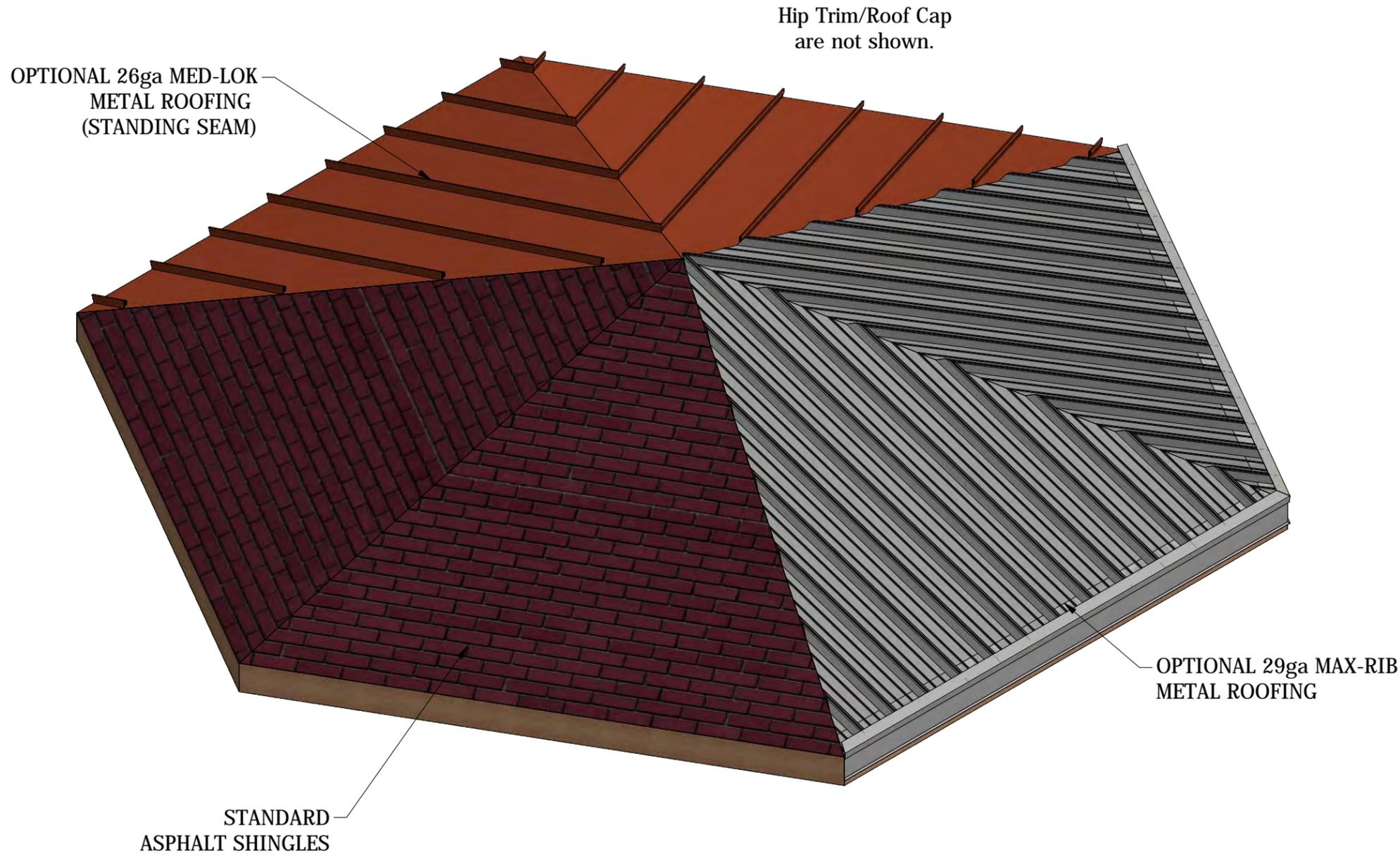
**OPTIONAL BASE SHOE**



Column/Footing Detail  
Final Size TBD  
Concrete Pier By Others

**PRELIMINARY LAYOUT**  
NOT FOR CONSTRUCTION

DESCRIPTION:	MODEL #:	DATE:	JES DESIGN #:	REV:
16' Hexagon Post & Beam	HPB16	3/25/2019	HPB-STNRD	0



MODEL #: OPTIONS  
 HPB(SIZE) = With Standard Asphalt Shingles  
 HPB(SIZE)-MR = With Max-Rib Metal Roof  
 HPB(SIZE)-SS = With Med-Lok Standing Seam Metal Roof

**PRELIMINARY LAYOUT**  
 NOT FOR CONSTRUCTION

DESCRIPTION:	MODEL #:	DATE:	JES DESIGN #:	REV:
16' Hexagon Post & Beam	HPB16	3/25/2019	HPB-STNRD	0

SPECIFICATIONS FOR CONSTRUCTION

1 GENERAL NOTES

- 1.1 THESE DESIGN DOCUMENTS WERE PREPARED BY 'VORTEX AQUATIC STRUCTURES INTERNATIONAL' FOR THE USE OF THEIR CLIENT ONLY. THE MATERIAL USED AND IDENTIFIED IN THEM REFLECTS VORTEX AQUATIC STRUCTURES INTERNATIONAL'S BEST JUDGMENT IN LIGHT OF THE INFORMATION AVAILABLE AT THE TIME OF PREPARATION. FOR THE PURPOSE OF THESE DESIGN DOCUMENTS, 'VORTEX AQUATIC STRUCTURES INTERNATIONAL' IS SYNONYMOUS WITH 'VORTEX'.
- 1.2 VORTEX ACCEPTS NO RESPONSIBILITY FOR DAMAGES, IF ANY, SUFFERED BY ANY THIRD PARTY AS A RESULT OF DECISIONS MADE OR ACTIONS BASED ON THESE DESIGN DOCUMENTS WITHOUT THE PREVIOUS CONSULTATION TO VORTEX.
- 1.3 ALL WORK, MATERIALS AND THEIR ASSEMBLIES SHALL CONFORM TO THE STANDARDS, REGULATIONS AND CODES CURRENTLY IN FORCE FOR ALL TRADES, AISC, ACNOR, EN, OR IBC.
- 1.4 THESE DESIGN DOCUMENTS DO NOT INDICATE THE METHOD OR MEANS OF CONSTRUCTION. WHEN APPLICABLE, THE CONTRACTORS SHALL SUPERVISE AND DIRECT ALL THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, PROCEDURES AND SEQUENCES AS PER STANDARD BEST PRACTICES.
- 1.5 DO NOT SCALE DRAWINGS.
- 1.6 USE ONLY THOSE MARKED "ISSUED FOR CONSTRUCTION".
- 1.7 THE CONTRACTOR SHALL REVIEW THESE DESIGN DOCUMENTS AND REPORT ANY CONFLICTS OR OMISSIONS TO THE VORTEX IMMEDIATELY.
- 1.8 TEMPORARY SUPPORTS, WHICH WILL BE REQUIRED DURING CONSTRUCTION, SUCH AS FORMWORK, BRACING, SHORING, ETC. ARE NOT SHOWN ON THESE DRAWINGS AND ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT ALL SAFE CONSTRUCTION PROCEDURES ARE FOLLOWED.
- 1.9 THE FOLLOWING SPECIFICATIONS ARE VORTEX'S MINIMUM RECOMMENDATIONS TO OBTAIN A QUALITY PRODUCT. THE CONTRACTOR SHALL FOLLOW THE LOCAL CODES IF MORE RESTRICTIVE.
- 1.10 ALL SEEFLOW COMPONENTS TO BE SNUG-TIGHT ONLY. USING POWER TOOLS OR TIGHTEN HARDWARE FULLY-TENSIONED CAN PRODUCE CRACKING ON THE PLASTIC.

2 EXCAVATION

- 2.1 ANY SHORING OR TEMPORARY SHORING NOT SHOWN ON DRAWINGS WILL BE EXECUTED, IN A SAFE MANNER, BY THE GENERAL CONTRACTOR.
- 2.2 IT IS THE RESPONSIBILITY OF OTHERS TO VERIFY THE EXISTENCE OF ANY UNDERGROUND SERVICES ETC.
- 2.3 IF AVAILABLE, REFER TO SOIL REPORT FOR BACKFILL REQUIREMENTS. ALL BACKFILL (FOR SLAB ON GRADE, ETC.) MUST BE DONE IN ACCORDANCE WITH THE RECOMMENDATIONS OF A QUALIFIED PROFESSIONAL. USE ONLY FREE DRAINING, GRANULAR, MINERAL, INERT AND NON- REACTIVE FILL.

3 FOUNDATIONS

- 3.1 REFER TO SOIL REPORT FOR RECOMMENDATIONS.
- 3.2 ALL FOOTINGS SHALL REST ON A HOMOGENEOUS LAYER OF UNDISTURBED SOIL OR ENGINEERED BACKFILL WITH A MINIMUM ALLOWABLE BEARING CAPACITY OF 100KPA (2000 PSF) AND MAXIMUM DIFFERENTIAL SETTLEMENT OF 19 MM (0.75"). ALL ORGANIC MATERIAL SHALL BE REMOVED.
- 3.3 IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE SOIL AT ALL FOOTING LOCATIONS BE VERIFIED BY A QUALIFIED SOILS EXPERT BEFORE POURING FOOTINGS TO ENSURE FOOTINGS REST ON APPROPRIATE STRATA.
- 3.4 WHEN APPLICABLE, FOLLOW GEOTECHNICAL EXPERT RECOMMENDATIONS FOR ALL EXTERIOR FOOTINGS TO ENSURE FROST PROTECTION.
- 4 CONCRETE
  - 4.1 ALL CONCRETE MATERIALS, PROCEDURES, TOLERANCES & WORKMANSHIP SHALL CONFORM TO THE LATEST ISSUES OF ACT-318 AND ACT 317 OR ACNOR CAN3-A23.1 & A23.2, DEPENDING ON PROJECT LOCATION.
  - 4.2 CONCRETE THAT HAS BEEN IN THE TRUCKS LONGER THAN 2 HOURS SHALL BE REJECTED. DO NOT ADD WATER TO THE CONCRETE IN THE TRUCKS OR ON THE SITE UNDER ANY CIRCUMSTANCES.
  - 4.3 USE MAXIMUM 76mm (3") SLUMP, 19mm (3/4") AGGREGATE, UNLESS OTHERWISE-NOTED. USE 5-7% AIR ENTRAINMENT FOR CONCRETE EXPOSED TO WEATHER ONLY.
  - 4.4 ALL GROUT SHALL BE NON-SHRINK TYPE WITH A MINIMUM 28 DAYS STRENGTH OF 35.0 MPA (5000 PSI). USE 25 MM (1") GROUT UNDER ALL STEEL COLUMN BASE PLATES.
  - 4.5 CONCRETE STRENGTH @ 28 DAYS TO BE:
    - 4.5.1 FOUNDATIONS (FOOTINGS): 25.0 MPA (3500 PSI), UNLESS OTHERWISE NOTED.
    - 4.5.2 INTERIOR SLAB ON GRADE: 25.0 Mpa (3500 PSI), UNLESS OTHERWISE NOTED.
    - 4.5.3 EXTERIOR SLAB ON GRADE: 32.0 Mpa (4500 PSI), UNLESS OTHERWISE NOTED.

4.6 MINIMAL RE-BAR COVER:

- 4.6.1 CONCRETE POURED ON-GRADE = 76mm (3") COVER
- 4.6.2 CONCRETE POURED INTO FORMWORK BUT EXPOSED TO SOIL AND WEATHER FOR REBAR 15m (#4) AND UNDER = 50mm (2") COVER

5 REINFORCING STEEL

- 5.1 DEPENDING ON PROJECT LOCATION, ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 (BARS 15m (#4) TO BE GRADE 60 WITH SUPPLEMENTARY REQUIREMENTS ON S1. BARS SMALLER THAN 15m (#4), TO BE GRADE 40); OR TO ACNOR GRADE G30.12 [FY = 400MPa (60,000 PSI), UNLESS OTHERWISE NOTED].
  - 5.2 USE CONCRETE, PLASTIC OR STEEL SUPPORT BARS, AS PER ACI (MANUAL OF STANDARD PRACTICE FOR DETAILING CONCRETE STRUCTURES). THE RE-BAR PLACER MUST REMAIN ON-SITE DURING POURS TO VERIFY CORRECT POSITIONING OF RE-BARS. SLANT UPPER REINFORCING STEEL IN LINE WITH THE SLOPE OF THE SLAB, IF APPLICABLE.
  - 5.3 BARS SHALL BE SECURELY WIRED PER LATEST EDITION OF CRSI (RECOMMENDED PRACTICE FOR PLACING REINFORCING BARS).
  - 5.4 ALL REINFORCING STEEL IS TO BE KEPT CLEAN AND FREE OF MUD, SNOW, ICE, AND ANY CONTAMINANTS.
  - 5.5 VERTICAL AND CONTINUOUS REBAR SHALL BE LAPPED TO DEVELOP FULL TENSILE CAPACITY OF THE BAR. FOR 15M (#4) BARS MINIMUM LAP OF 610mm (24").
- 6 EXTERIOR / INTERIOR SLAB ON GRADE
- 6.1 FOLLOW THE GEOTECHNICAL EXPERT RECOMMENDATIONS FOR PREPARATION OF SOIL BEFORE POURING THE CONCRETE. ALL GRANULAR MATERIAL SHALL BE MOISTENED IMMEDIATELY BEFORE POURING THE CONCRETE. WATER AS NEEDED. DO NOT USE A VAPOR BARRIER.
  - 6.2 NO TRUCKS ARE PERMITTED ON THE CONSTRUCTION SITE (OF THE SLAB) AFTER THE FINAL COMPACTION, EITHER BEFORE OR DURING, THE POUR.
  - 6.3 SLAB TO BE MINIMUM 6" THICK, REINFORCED WITH 10m (#3) @ 300mm (12") C/C REBAR PLACED IN BOTH DIRECTIONS AT MID-HEIGHT OF THE SLAB, UNLESS OTHERWISE NOTED ON PLANS.
  - 6.4 REFER TO CONCRETE SECTION FOR MINIMUM COMPRESSIVE STRENGTH AND AIR-ENTRAINMENT REQUIREMENTS.

- 6.5 FINISHING WILL BE MEDIUM BROOM.
- 6.6 CONTROL JOINTS (SAW-CUTS) TO BE LOCATED IN EACH DIRECTION, AT REGULAR INTERVALS, WITH A MAXIMUM DISTANCE OF 3 METERS (10 FEET). SHALL BE MINIMUM 3 MM (1/8") WIDE AND SHALL PENETRATE THE SLAB TO A MINIMUM DEPTH OF 1/3 OF THE THICKNESS OF THE SLAB. CONTROL JOINTS SHOULD BE DONE AS SOON AS POSSIBLE WITHOUT DAMAGING THE CONCRETE, BUT NO LATER THAN 18 HOURS AFTER POURING.
- 6.7 WHEN POSSIBLE AND TO AVOID SHRINKAGE CRACKING, HUMIDITY SHALL BE MAINTAINED FOR 7 DAYS DURING THE CURING PERIOD OF THE SLAB. WATER AND USE POLYETHYLENE CLOTH OR BAG. THE CONCRETE MUST DRY UNIFORMLY.
- 7 CONCRETE WORK IN COLD OR HOT WEATHER (MINIMUM REQUIREMENTS)
  - 7.1 COLD WEATHER REQUIREMENTS APPLY WHEN THE MEAN AIR IS LESS THAN 5 DEGREES CELSIUS (40 DEGREES FAHRENHEIT).
  - 7.2 GENERAL REQUIREMENTS FOR COLD WEATHER CONCRETE WORK SHALL BE AS PER ACI 306R-88; OR AS PER THE NBC'S LATEST REQUIREMENTS INCLUDING THE LATEST ISSUE OF CSA STANDARD CAN3-A23.1.
  - 7.3 ALL SNOW AND ICE SHALL BE REMOVED FROM FORMS AND REBAR WITH STEAM AND COMPRESSED AIR BEFORE POURING. DO NOT USE DE-ICING SALT (CALCIUM CHLORIDE) OR ANY OTHER SALTS UNDER ANY CIRCUMSTANCES.
  - 7.4 CONCRETE SHALL HAVE A MINIMUM TEMPERATURE OF 20 DEGREES CELSIUS AND A MAXIMUM TEMPERATURE OF 25 DEGREES CELSIUS WHILE POURING. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THESE REQUIREMENTS ARE SATISFIED. ANY CONCRETE THAT DOES NOT CONFORM MUST BE REJECTED.
  - 7.5 THE SURFACE OF POURED CONCRETE SHALL BE PROTECTED BY MEANS OF SUITABLE COVERINGS AND INSULATION (TO BE DETERMINED BY TEMPERATURE) DURING THE CURING PROCESS.
  - 7.6 GENERAL REQUIREMENTS FOR HOT WEATHER CONCRETE WORK SHALL BE AS PER ACI 305R-99; OR AS PER LOCAL CODE REQUIREMENTS.

8 PIPING

- 8.1 WDS CONFIGURATION ARE SCHEMATIC AND MAY BE MOVED OR ADJUSTED ON SITE BY VORTEX CERTIFIED INSTALLER TO ADJUST FOR SITE CONDITIONS
- 8.2 ANY REQUIRED BACKFLOW PREVENTER, PRESSURE REGULATOR AND WATER METER ON THE CITY WATER MAIN SHALL BE PROVIDED BY OTHER.
- 8.3 ALL PIPE LINES TO FEATURES TO HAVE A 1% MINIMUM RECOMMENDED SLOPE FOR PROPER WINTERIZATION.
- 8.4 ALL LINE SIZING (FEATURE CONNECTION TABLE) ASSUMES A MAXIMUM DISTANCE OF 100 FEET BETWEEN THE WATER DISTRIBUTION MANIFOLD AND THE FURTHEST PLAY PRODUCT. DISTANCES ABOVE 100 FEET MAY REQUIRE AN INCREASE IN LINE SIZING. PLEASE CONTACT VORTEX.
- 8.5 QUANTITY AND LOCATION OF DRAINS BASED ON MAXIMUM FLOW FOR THE INDICATED PIPE DIAMETER AT 1% SLOPE. MODIFICATIONS MAY BE REQUIRED DUE TO SPECIFIC SITE CONDITIONS AND LOCAL CODE.
- 8.6 PRESSURE LINES ARE RECOMMENDED TO BE SCHEDULE 80 PVC OR PEX, AND NON-PRESSURE LINES TO BE SCHEDULE 40, UNLESS OTHERWISE REQUESTED BY LOCAL CODE.
- 8.7 DRAINAGE LINES ARE RECOMMENDED TO BE SDR 35, UNLESS OTHERWISE REQUESTED BY LOCAL CODE.
- 8.8 PIPING SHOULD BE INSPECTED AFTER TRANSPORTATION FOR CUTS, SCRATCHES, GOUGES OR SPLITS; DAMAGED SECTIONS MUST BE DISCARDED OR CUT OUT.
- 8.9 PIPE SHALL BE INSTALLED BELOW THE FROST LEVEL NOT LESS THAN 12" (ASTM F-645) UNLESS OTHERWISE REQUESTED BY LOCAL CODE.
- 8.10 PIPE INSTALLATION MINIMUM COVER SHOULD BE EVALUATED ACCORDING TO ASTM D-2774, UNLESS OTHERWISE REQUESTED BY LOCAL CODE.
- 8.11 SPECIAL CONSIDERATIONS SHOULD BE TAKEN FOR THERMAL CONDITIONS, EXPANSION AND CONTRACTIONS DUE TO TEMPERATURE SHOULD BE EVALUATED BEFORE THE INSTALLATION BY THE CONTRACTOR.
- 8.12 VALVE NUMBER 1 IS LOCATED TO THE LEFT OF THE MANIFOLD FACING THE SOLENOID.
- 8.13 MINIMUM 50 PSI REQUIRED AT THE INLET OF THE BACKFLOW PREVENTER AND PRESSURE REGULATING DEVICE.
- 8.14 MAXIMUM FLOW CAPACITY OF MANIFOLD IS 72 GPM.
- 8.15 TOTAL FLOW OF FEATURE IS 72 GPM.
- 8.16 FACTORY MAXIMUM SEQUENCING FLOW IS 50 GPM ACTUAL FLOW MAY VARY DUE TO SITE CONDITIONS.

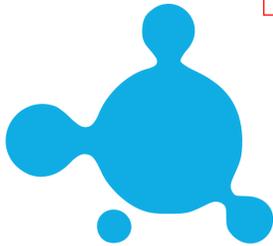
9 ELECTRICAL

- 9.1 EQUIPMENT BONDING; FEATURES SHALL BE CONNECTED TO AN EQUIPOTENTIAL BONDING GRID WITH A SOLID RIGID COPPER CONDUCTOR, THE MINIMUM SIZE OF BONDING CONDUCTORS NOT BE SMALLER THAN #6 AMERICAN WIRE GAUGE (AWG) (13.3mm<sup>2</sup>) COPPER. BOND TO ALL METALLIC PARTS LOCATED IN THE SPLASHPAD/POOL AND TO THE REBAR, TO RUN CONTINUOUS TO THE WATER PUMP AND ELECTRICAL SUPPLY PANELS.
- 9.2 GRID STRUCTURE; THE EQUIPOTENTIAL BONDING GRID SHALL COVER THE CONTOUR OF THE WATER BODY AREA AND ANY DECK EXTENDING 3FT (1m), HORIZONTALLY FROM THE INSIDE WALLS OF THE SPLASHPAD/WATER BODY. THE EQUIPOTENTIAL BONDING GRID SHALL BE ARRANGED IN A 12 IN (300mm). BY 12 IN (300mm). NETWORK OF CONDUCTORS IN A UNIFORMLY SPACED PERPENDICULAR GRID PATTERN WITH TOLERANCE OF 4 IN (100mm). A J-JUNCTION BOND CLAMP (DIRECT BURIAL CERTIFIED) CLAMPED TO A REBAR WITH WIRE LOOPED THROUGH CONNECTOR AND CLAMPED TO STEEL AND TO THE SPLASHPAD/POOL PUMP WATER.
- 9.3 ALL ELECTRICAL EQUIPMENT SHALL BE GROUNDED; THE FOLLOWING EQUIPMENT SHALL BE GROUNDED. ALL ELECTRICAL EQUIPMENT LOCATED WITHIN 5FT (1.5 m) OF THE INSIDE WALL OF THE SPECIFIED BODY OF WATER." THIS EQUIPMENT ALSO INCLUDES (BUT NOT LIMITED TO): FEATURES, ELEVATIONS, DRAIN, REBAR, WATER INLET, SKIMMER, LADDER, SLIDES, DIVING STRUCTURE, UNDERWATER LIGHTING, JUNCTION BOXES, AND WATER CIRCULATING/HEATING EQUIPMENT. ALL BONDING AND GROUNDING MUST COMPLY WITH NEC, CEC, AND LOCAL CODES.

- 9.4 ALTERNATE MEANS; WHERE STRUCTURAL REINFORCING STEEL IS NOT AVAILABLE OR IS ENCAPSULATED IN A NONCONDUCTIVE COMPOUND, A COPPER CONDUCTOR(S) SHALL BE UTILIZED WHERE THE FOLLOWING REQUIREMENTS ARE MET: (1) AT LEAST ONE MINIMUM 6 AWG BARE SOLID COPPER CONDUCTOR SHALL BE PROVIDED. (2) THE CONDUCTORS SHALL FOLLOW THE CONTOUR OF THE PERIMETER SURFACE. (3) ONLY LISTED SPLICES SHALL BE PERMITTED. (4) THE REQUIRED CONDUCTOR SHALL BE 18 IN TO 24 IN (450mm TO 600mm) FROM THE INSIDE WALLS OF THE POOL. (5) THE REQUIRED CONDUCTOR SHALL BE SECURED WITHIN OR UNDER THE PERIMETER SURFACE (4 IN TO 6 IN (100mm TO 150mm). BELOW THE SUBGRADE.
- 9.5 SPLASHPAD/POOL WATER; WHERE NONE OF THE BONDED PARTS IS IN DIRECT CONNECTION WITH THE POOL WATER, THE POOL WATER SHALL BE IN DIRECT CONTACT WITH AN APPROVED CORROSION-RESISTANT CONDUCTIVE SURFACE THAT EXPOSED NOT LESS THAN 9 IN.2 (5800mm<sup>2</sup>) OF SURFACE AREA TO THE POOL WATER AT ALL TIMES. THE CONDUCTIVE SURFACE SHALL BE LOCATED WHERE IT IS NOT EXPOSED TO PHYSICAL DAMAGE OR DISLODEMENT DURING USUAL POOL ACTIVITIES, AND IT SHALL BE BONDED IN ACCORDANCE WITH NEC, CEC, AND LOCAL CODES.

- 9.6 WIRING FROM THE CONTROLLER TO EACH ACTIVATOR SHALL BE #22 AWG. A TOTAL OF TWO (2) CONDUCTORS PER ACTIVATOR.CABLE LENGTH UP TO 300' (100m), PROVIDED BY OTHER.
- 9.7 ALL CONNECTIONS TO THE CONTROLLER AND OTHER VORTEX ELECTRICAL PANEL SHALL BE PERFORMED USING AN APPROVED NEMA 4X CONNECTOR.
- 9.8 WIRE FROM MAIN POWER TO VORTEX PANEL TO BE DETERMINED BY OTHERS RESPECTING THE LOCAL CODE.
- 9.9 MAINTAIN A MINIMUM CLEARANCE ZONE OF 36" IN FRONT OF ELECTRICAL PANEL, UNLESS OTHERWISE REQUESTED BY LOCAL CODE.
- 9.10 AS PER ELECTRICAL CONSTRUCTION AND SAFETY CODES: CONTROLLER AND ANY OTHER ELECTRICAL ENCLOSURES MUST BE HARD-WIRED TO A GROUND FAULT CIRCUIT INTERRUPTER (GFCI) FROM THE INPUT POWER SOURCE.
- 9.11 ALL ELECTRICAL WORK SHOULD BE PERFORMED BY A LICENCE ELECTRICIAN IN ACCORDANCE TO LOCAL ELECTRICAL CONSTRUCTION AND SAFETY CODES.
- 9.12 THE MAESTROPRO CONTROL PANEL IS POWERED THROUGH A MAESTROPRO POWER BOX.
- 9.13 THE POWER CABLE TO MAESTROPRO POWER BOX IS SUPPLIED BY OTHER.
- 9.14 THE MAESTROPRO CONTROL PANEL INTEGRATES 24 DIGITAL OUTPUTS WITH 24 VAC AND 12 DIGITAL INPUTS.
- 9.15 FOR REMOTE ACCESS ABILITY, A HARD CONNECTION TO AN EXISTING NETWORK IS REQUIRED USING A CAT 5 CABLE OR A CELLULAR NANO-SIM CARD WITH DATA-PLAN.
- 9.16 IT IS THE CUSTOMER/INSTALLER RESPONSIBILITY TO MAKE THE FIELD INSTALLATION NEMA 4X COMPLIANT - THE INSTALLATION MUST COMPLY WITH LOCAL ELECTRICAL CODE REQUIREMENTS AND BE APPROVED BY LOCAL ELECTRICAL INSPECTION AUTHORITIES. CONTROLLER AND/OR CONTROL PANEL NOT TO BE INSTALLED IN DIRECT SUNLIGHT.

Or Approved Equal



VORTEX

FULLER ST. PARK  
SPLASHPAD

FOR APPROVAL

CLIENT HAS REVIEWED ELECTRICAL, WATER AND DRAINING REQUIREMENTS PROVIDED IN THIS DRAWING. CLIENT TO HIGHLIGHT ANY DISCREPANCIES OR CHANGES REQUIRED.

O APPROVED AS SHOWN  
O APPROVED AS NOTED.  
O REVISE AND RESUBMIT AS NOTED.

PLEASE NOTE THAT THE DRAWING IS ASSUMED APPROVED BY CLIENT IF NO COMMENTS ARE MADE WITHIN 2 WEEKS OF RECEIPT OF THIS DRAWING.

SIGNATURE :  
DATE:



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Drawing #	Drawing Name	Rev#
A-002	Site Layout	00
PE-001	Plumbing & Electrical Layout	00
E-003	Bonding Layout	00

Abbreviations	
A	Architectural
C	Civil Work
P	Plumbing Layout
PD	Plumbing Details
E	Electrical Layout
ED	Electrical Details
FT	Feature Drawings



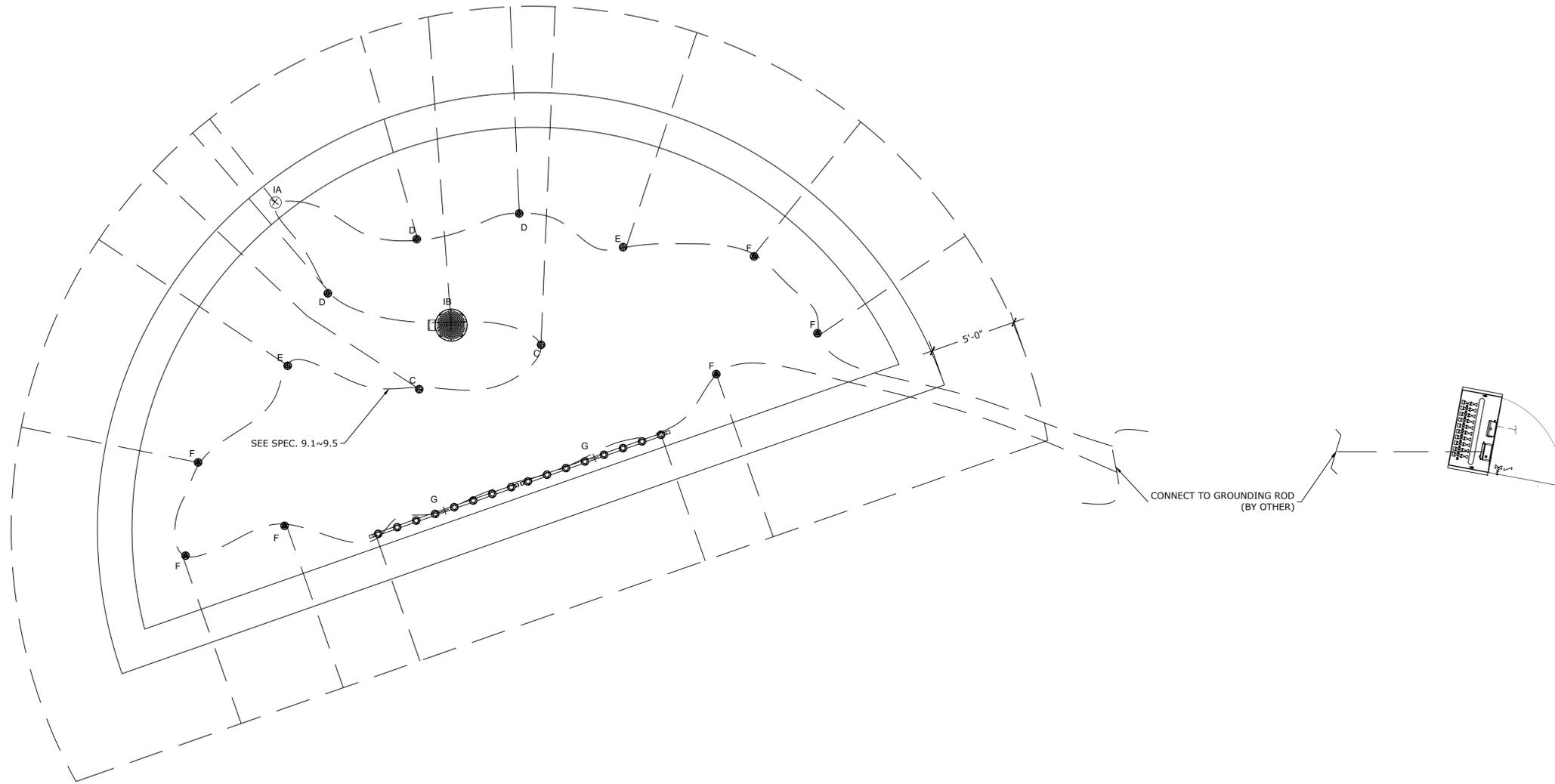


REF	PRODUCT	QTY
IA	Activator N°4 VOR 0622	1
IB	Playsafe Drain N°4 VOR 1004	1
C	Spraylink Jet N°1 VOR 3000	2
D	Spraylink Geysier VOR 3005	3
E	Spraylink Fountain VOR 3007	2
F	Spraylink Podspray VOR 3009	6
G	Spraylink Tunnel N°2 VOR 3055	2



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# Fuller St. Park Splashpad

Project Location

MA

Project Number

41005

Version

VB

Date	Revision Description	No.	By
29/Jan/2026	Issued for Approval	00	BR

Drawing Title

Bonding Layout

Drawn by

BR

Verified by

MAB

Scale

1/4"=1'-0"

Date

29/Jan/2026

Page #

E-003

## 1 BONDING LAYOUT

**E-003**

- REFER TO SPECS ON COVER PAGE
- COORDINATE THIS DRAWING WITH ARCHITECTURAL, CIVIL, PLUMBING & ELECTRICAL.

BONDING WIRE - - - - -

# EC10 EC20 EQUIPMENT CABINETS

## 1.0 SMARTFLOW™ EQUIPMENT CABINETS :

The Equipment Cabinet, as described below. It consists of an enclosure, door access, a manifold, a pressure regulator and solenoid valves.

This above grade equipment cabinet with up to twenty (20) valves shall be a pre-fabricated water distribution system containing piping, valves and electrical wiring. They shall be factory assembled, water pressure tested and delivered from the Splashpad equipment manufacturers facilities. They shall be equipped with threaded connections for the water inlet and slip-on for water outlets. The solenoid valves shall be pre-wired to the controller or to a junction box when the controller is placed in a remote location. The installer shall provide the plumbing equipment required from the water source to the water inlet or backflow preventer device and pressure regulator if so configured.

The installer shall provide the plumbing equipment required from the water outlets to the Splashpad Play Products, as well as adequate drainage ball valves at the low point of each of the Play Product's water distribution lines when required. Should the controller be located remotely, the installer shall supply the electrical equipment required from the power switch with branch circuit protection.

## 2.0 GENERAL MATERIALS SPECIFICATIONS :

- 2.1. Enclosure shall be constructed of aluminum powder coat painted finish with no sharp edges, buffed weldings and tamper proof hardware. Main lockable door on hinges.
- 2.2. Chassis shall be constructed of pre-galvanized steel U channel with no sharp edges,
- 2.3. Manifold shall be constructed of 3 ½" outside diameter Stainless Steel 304/304L pipes powder coat painted finish with no sharp edges and buffed weldings. Each water distribution port shall be a 1" NPT connection. The manifold shall be equipped with a pressure gauge. All welded joints shall be watertight and pressure tested to 150 psi.
- 2.4. Piping and fitting shall be constructed of SCH 40 PVC, 150 PSI pressure tested

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July 2021, Version 1.00



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- 2.5. Solenoids valves (different possible combinations of sizes) shall be constructed of PVC or Brass with or without ball valve, all with water resistant solenoid, all rated up to 150 PSI. There shall be one (1) solenoid valve installed on each of the water distribution ports for the Play Products. They shall be a normally closed 24 VAC 50/60 cycle solenoid actuated globe/angle pattern design. The valve body and bonnet shall be constructed of PVC with stainless steel fasteners. The valve shall have a manual override capability (manual open/close control). It shall house a fully encapsulated, one-piece solenoid. Each Solenoid valve shall have in integrated flow control adjustment valve stem for fine tuning of spray effects.
- 2.6. Gate & ball valves (different possible combinations of sizes) shall be constructed of PVC rated up to 150 PSI
- 2.7. Inlets (different possible combinations of sizes) shall be constructed of PVC or PVC and Brass unions, all rated up to 150 PSI
- 2.8. Electrical Enclosures, Conduit, Wiring and Connections: All electrical wiring shall be # 18 AWG with a 600V rating. All electrical connections, enclosures, and conduit shall be Nema 4x watertight.
- 2.9. Controllers: see controllers specification sheet for detailed information
- 2.10. Tamper Proof Hardware shall be constructed of Stainless Steel 304

### 3.0 INSTALLATION CHARACTERISTICS :

- 3.1. Electrical Connections: All main power electrical connections to the Splashpad Controller are to be performed per local codes.
- 3.2. Drawings and Instructions: Product drawings and installation manuals shall be supplied by the manufacturer for ease of installation.
- 3.3. The installer shall provide the concrete base to anchor the equipment cabinet in place.

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*\*The product shown in the image may differ from the actual product sold.*

VORTEX CABINET, OR APPROVED EQUAL

EC10, EC20

EQUIPMENT CABINETS





*\*The product shown in the image may differ from the actual product sold.*

## EC10, EC20 EQUIPMENT CABINETS

The Smartflow™ self-enclosed Command Center is the versatile control solution for Splashpads® with flow-through systems.

Suited for both indoor and outdoor facilities, this equipment cabinet ensures every component is within arm's reach.



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## PRODUCT HIGHLIGHTS

- Self-enclosed system featuring up to 20 valves
- Front access door(s) for easy adjustments
- Angled roof for natural water drainage and prevent snow accumulation
- Strong welded door hinges and lock holders
- Door mounted controllers and power boxes
- 1" lines stainless steel manifold with pre-assembled valves
- Easy ball valves maintenance with union connections
- Pressure regulator included
- Drain access point for line winterization
- Meets ASTM F2461 and CSA Z614-98 regulations for public playgrounds
- Back flow preventor and additional power pack are optional and will fit within enclosure

## SPECIFICATIONS

### Material

Aluminum enclosure  
Stainless steel manifold  
PVC piping

### Color choices

Enclosure Grey RAL 7035  
Manifold Vortex Blue RAL 5017

## MODELS

### EC10: Up to 10 valves

#### H./W./L.

49.8 / 29.4 / 53.3 in  
126.5 / 74.7 / 135.4 cm



### EC20: Up to 20 valves

#### H./W./L.

49.8 / 29.4 / 106.4 in  
126.5 / 74.7 / 270.3 cm



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- Pressure regulator included
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- Meets ASTM F2461 and CSA Z614-98 regulations for public playgrounds
- Back flow preventor and additional power pack are optional and will fit within enclosure

## MODELS

### EC10: Up to 10 valves

#### H./W./L.

49.8 / 29.4 / 53.3 in  
126.5 / 74.7 / 135.4 cm



**LEFT SECTION TO BE LEFT OPEN AND HAVE ENOUGH ROOM FOR CITY OF EVERETT WATER METER INSTALLATION.**

### EC20: Up to 20 valves

#### H./W./L.

49.8 / 29.4 / 106.4 in  
126.5 / 74.7 / 270.3 cm



**TO BE INSTALLED ON RIGHT SIDE OF EC20 CABINET, OR APPROVED EQUAL.**



**CONTRACTOR TO INSTALL QUICK DISCONNECT VALVE FOR HOSE CONNECTION.**

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**MaestroPro™**  
by **VORTEX**

# Intelligent Splashpad® Controllers

MaestroPro™ is the core control system that operates all of Vortex's management systems, and is an essential part of creating a sustainable aquatic solution.

MaestroPro™ gives operators full control of multiple water functions; using a simple and intuitive user interface, site operators can activate products, orchestrate lighting, and synchronize water features. On-demand activation and real-time flow control allow for efficient energy and water usage, reducing onsite maintenance visits. These controllers are designed with the user in mind.

[vortex-intl.com](http://vortex-intl.com)



## Product Highlights

- **Large color touchscreen**  
Easy-to-use interface and visuals
- **Remote connectivity**  
Operators can connect by computer or mobile device to effectively manage multiple Splashpads
- **Modify spray sequences**  
Operators have the flexibility to change and create their own custom water play choreography on-site by orchestrating water patterns, lighting color and timing
- **Flow management**  
Set up to maximum water flow to control water consumption and peak demands
- **Operational time management**  
Set up operating times for each day of the week

# MaestroPro™

by  VORTEX



## MaestroPro™ Collection

### MaestroPro™ SF

(Paired with SmartFlow™ systems)

The MaestroPro™ SF is at the heart of each Vortex command center, providing easy operation and management of a Splashpad® using a single-pass water management system. Water use is optimized to maximize the fun while minimizing consumption. MaestroPro™ SF controls and integrates with:

- ✓ Rain diverter valve control
- ✓ Digital Multiplax (DMX) LED light control
- ✓ Rain sensor connection
- ✓ Wind sensor connection
- ✓ Automatic restart in event of a power failure

### MaestroPro™ RC

(Paired with Recirculation systems)

Vortex's water quality management systems are powered by MaestroPro™ RC to provide seamless and centralized control for the smooth operation of Splashpads. MaestroPro™ RC is compatible with non-Vortex water management systems. MaestroPro™ RC controls and integrates with:

- ✓ Filtration and distribution pumps
- ✓ Variable speed drives for pumps
- ✓ Chemical controller
- ✓ Rain diverter valve control
- ✓ UV disinfection system
- ✓ Digital Multiplax (DMX) LED light control
- ✓ Rain sensor connection
- ✓ Wind sensor connection
- ✓ Automatic restart in event of a power failure

## Remote access

MaestroPro™ controllers use network connectivity (Wi-Fi, data or ethernet cable) to allow operators to verify the status of each Splashpad®, in real time, without travelling to the site. Tasks such as verifying system alarms, changing operational hours, and opening or shutting down the system, can all be performed remotely.

## Technical Features

Features	MaestroPro™ SF	MaestroPro™ RC
Tactile interface screen	•	•
Remote access	•	•
Wi-Fi connectivity	•	•
Cellular connectivity	•	•
Digital output options	24, 48 and 72	24, 48 and 72
Digital inputs for sensors	12, 24 and 36	12, 24 and 36
Analog inputs for sensors	8	8
Analog output options	4	4
Pulse input for sensors	4	4
Enclosure rating	Nema 4X	Nema 4X
Temperature resistant	55°C /131°F	55°C /131°F
Primary power options	120VAC & 240VAC	120VAC & 240VAC
Rain diverter valve control	•	•
DMX LED light control	•	•
Pump control		•
UV control		•
VFD control		•
Solenoid valve control	•	•
Fast-acting valve control	•	•
Save up to 10 sequences	•	•

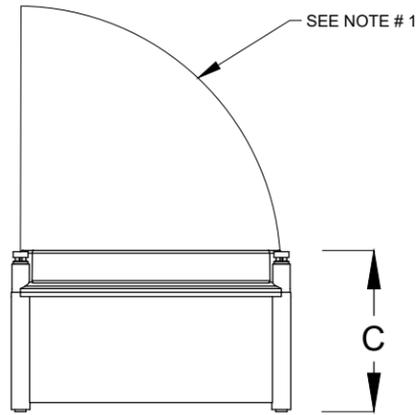


# INSTALLATION DRAWING - DIMENSIONS FOR MAESTROPRO ENCLOSURES 33907.XXBX

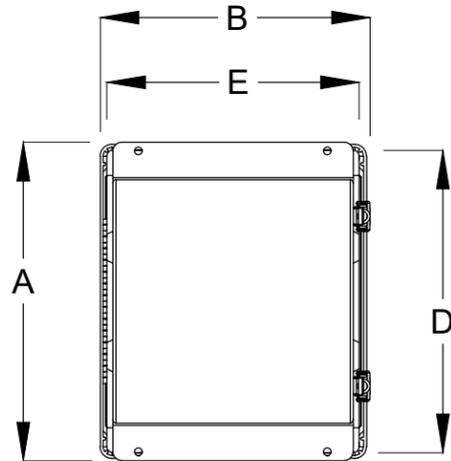
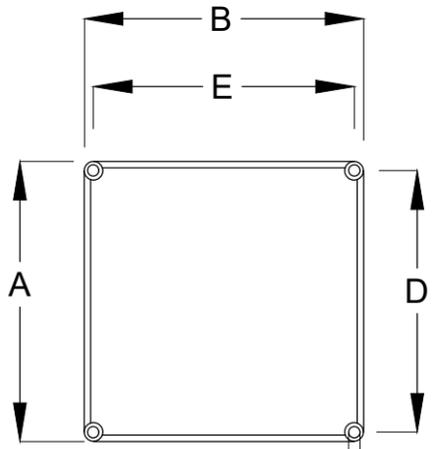
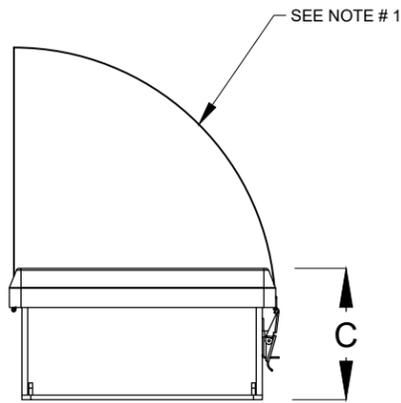
**NOTE:**

1 - ENSURE ENOUGH CLEARANCE FOR THE DOOR OPENING

**MAESTROPRO CONTROL ENCLOSURE**



**MAESTROPRO POWER BOX ENCLOSURE**



USE M5 SCREW (#10) TYP.

REFER TO THE PIPING AND ELECTRICAL SHEET FOR THE CONTROLLER NUMBER

MAESTROPRO ENCLOSURES DIMENSIONS

REFERENCE No.	DESCRIPTION	DIM "A"	DIM "B"	DIM "C"	DIM "D"	DIM "E"
33907.12B2	MAESTROPRO CTRL 24OUT/12IN 120VAC/240HZ	11.88"	11.88"	6.85"	11.08"	11.08"
33907.22B2	MAESTROPRO CTRL EXP 24OUT/12IN 120VAC/240HZ	11.88"	11.88"	6.85"	11.08"	11.08"
33907.13B0	MAESTROPRO POWERBOX 24OUT/12IN 120VAC/60HZ	12.308"	10.215"	5.57"	12.058"	9.965"
33907.13B1	MAESTROPRO POWERBOX 24OUT/12IN 240VAC/50HZ	12.308"	10.215"	5.57"	12.058"	9.965"

PRODUCT NAME: INSTALLATION DRAWING - DIMENSIONS FOR MAESTROPRO ENCLOSURES 33907.XXBX

PRODUCT NUMBER: 33907.XXBX

DATE: 04/06/20

SHEET NO: 1/3

11"x17" SHEET SIZE

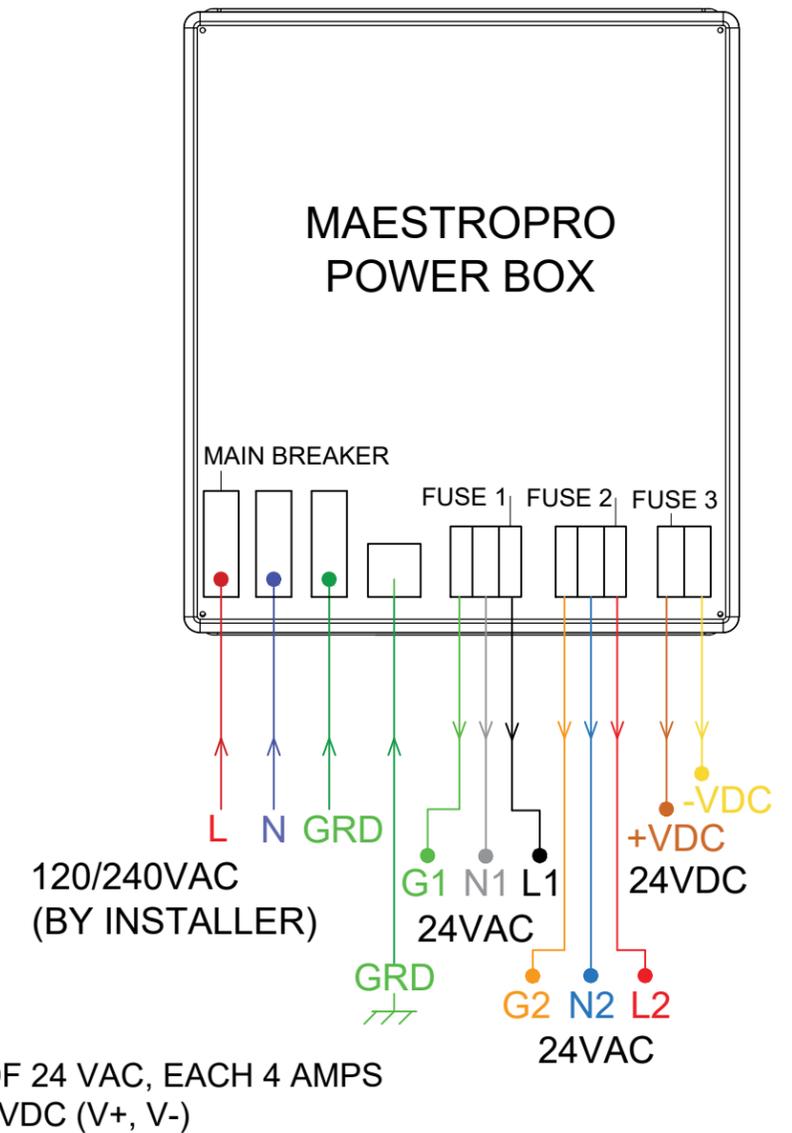
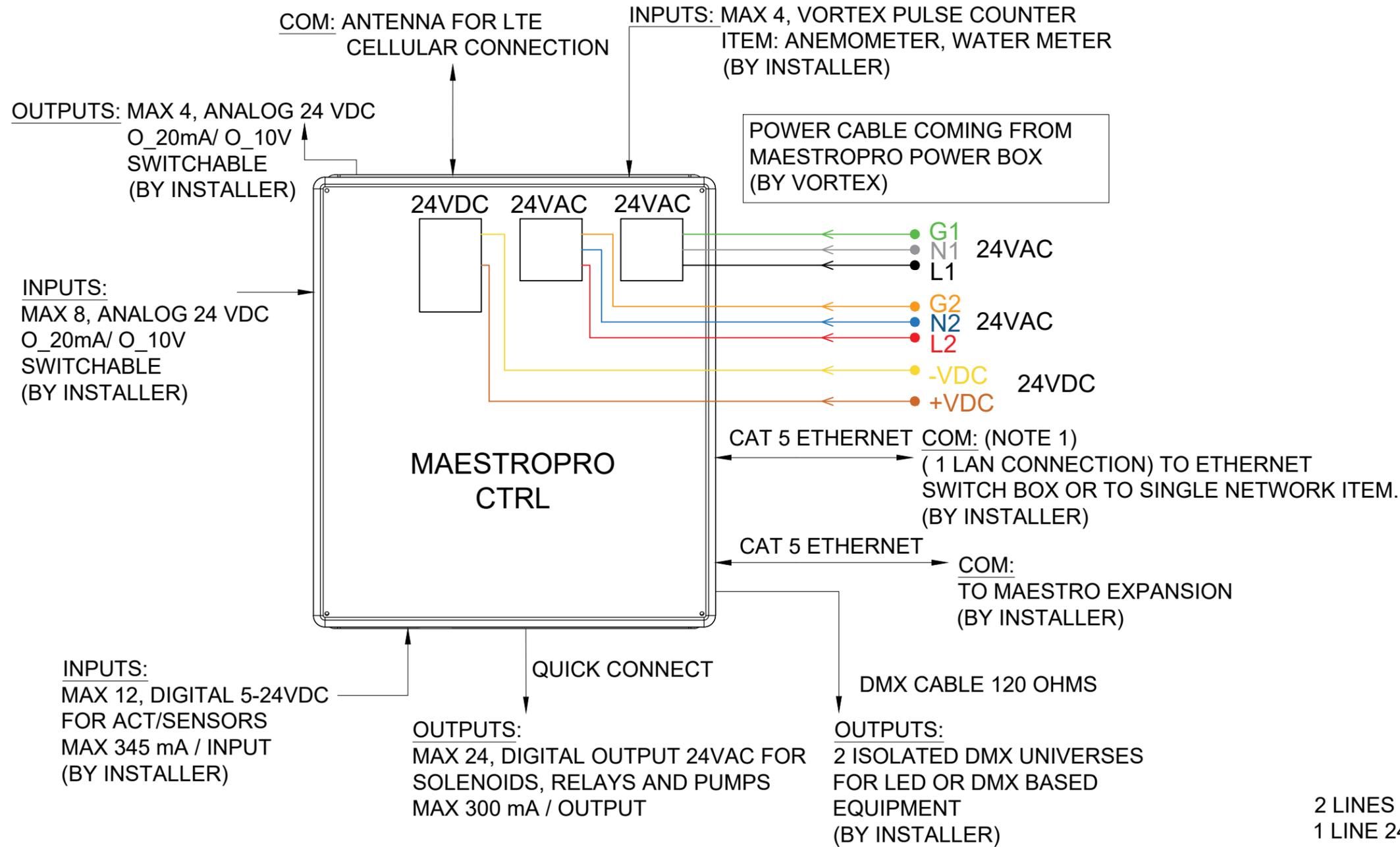


# INSTALLATION DRAWING - MAESTROPRO CTRL 33907.12B2 AND MAESTROPRO POWER BOX 33907.13BX CONNECTIONS

**NOTE:**

- 1 - A MAXIMUM OF 1 ETHERNET CAT 5 CONNECTIONS IS AVAILABLE PER MAESTROPRO. IF MORE ETHERNET LAN CONNECTIONS ARE NEEDED, THEN IT REQUIRES AN ETHERNET SWITCH BOX ( SOLD SEPARATELY ).
- 2 - FOR DIGITAL INPUT, 5-24 VDC SUPPLIED BY MAESTROPRO. REFER TO THE CORRESPONDING SCHEMATIC DRAWING MANUAL FOR WIRING DETAILS.
- 3 - MAESTROPRO IS DHCP ADDRESSED BY CONNECTED LAN DEVICE.
- 4- WHEN USED WITH EXPANSION UNITS, AN ETHERNET CAT 5 CABLE IS REQUIRED BETWEEN EACH UNIT.
- 5- WATER TIGHT CONNECTIONS WITH MAESTROPRO DONE BY INSTALLER.
- 6- ALL WIRES AND CABLES ELECTRICAL CALCULATION ARE BY INSTALLER AND SHALL BE APPROVED ACCORDING TO LOCAL CODE AND BRAND NEW.

CIRCUIT BREAKER & FUSE	AMPS MAX	CIRCUIT
MAIN BREAKER; 3 AMPS	4 MAX	PRIMARY 120/240 VAC
FUSE 1; 5 AMPS	5 MAX	SECONDARY 24 VAC
FUSE 2; 5 AMPS	5 MAX	SECONDARY 24 VAC
FUSE 3; 5 AMPS	5 MAX	POWER SUPPLY 24 VDC



2 LINES OF 24 VAC, EACH 4 AMPS  
1 LINE 24 VDC (V+, V-)



PRODUCT NAME: INSTALLATION DRAWING - MAESTROPRO CTRL 33907.X2BX AND MAESTROPRO POWER BOX 33907.13BX CONNECTIONS

PRODUCT NUMBER: 33907.XXBX

DATE: 05/04/20

SHEET NO: 2/3

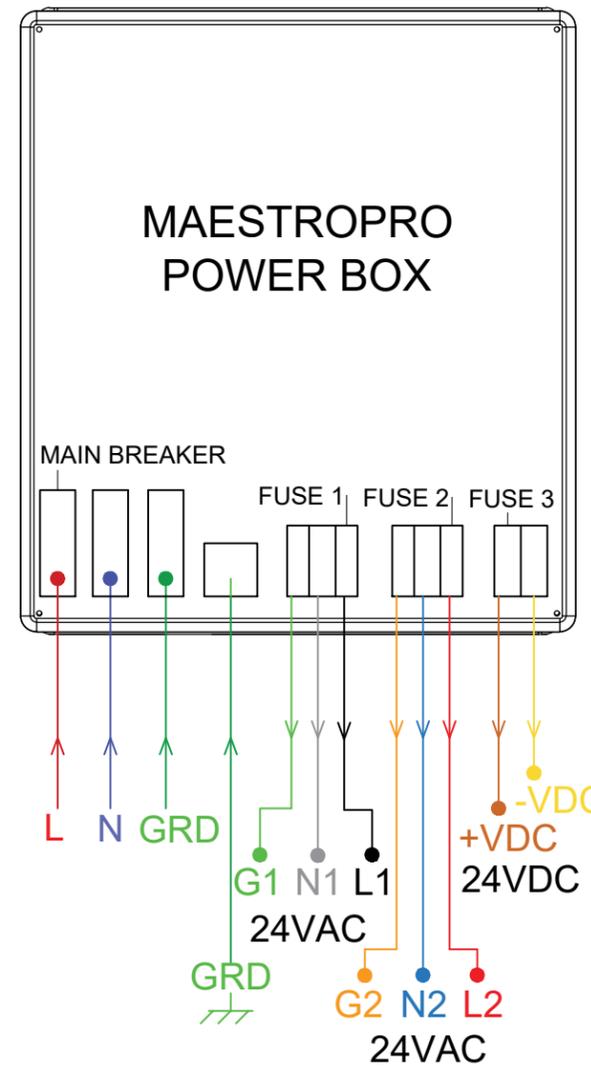
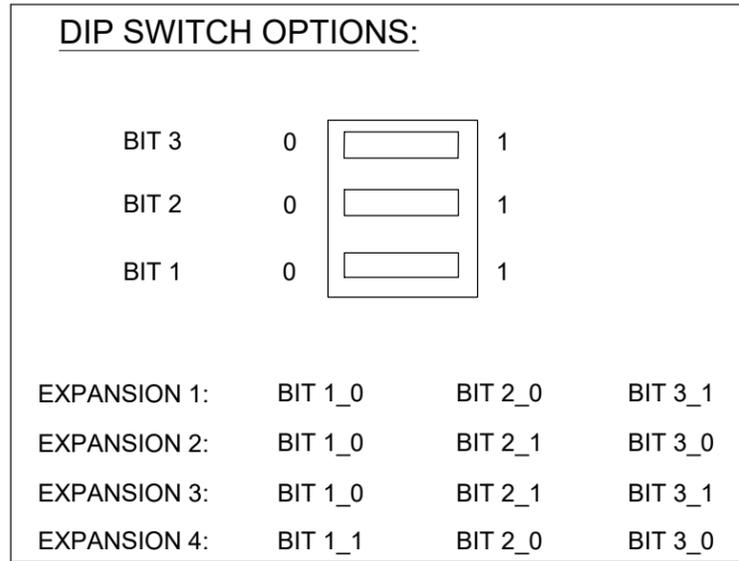
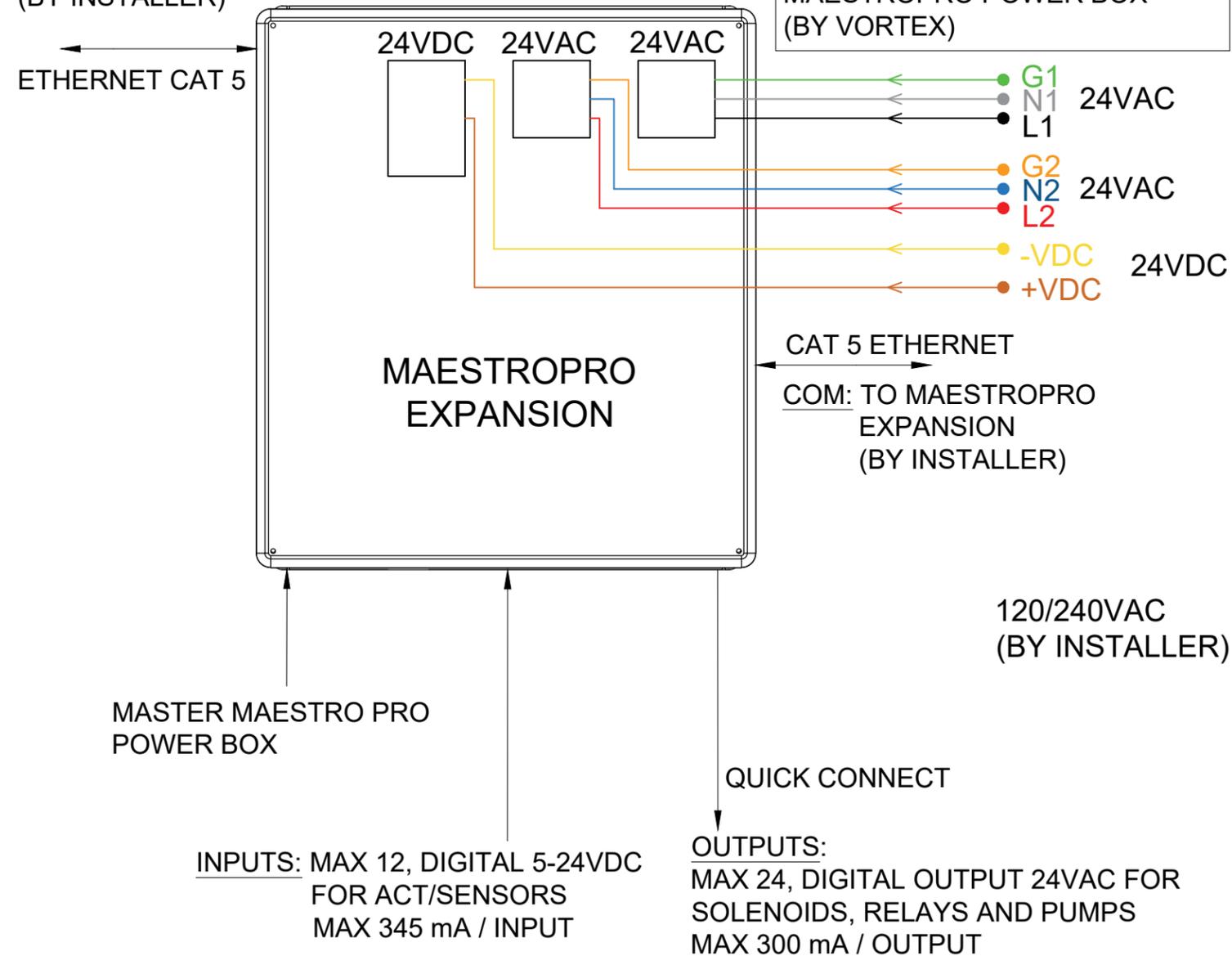
11"x17" SHEET SIZE

# INSTALLATION DRAWING - MAESTROPRO EXPANSION UNIT 33907.22B2 AND MAESTROPRO POWER BOX 33907.13BX CONNECTIONS

**NOTE:**

1 - ALL COMMENTS ARE THE SAME AS PAGE 2

FROM MAESTRO PRO MASTER  
OR PREVIOUS EXPANSION UNIT  
(BY INSTALLER)



2 LINES OF 24 VAC, EACH 4 AMPS  
1 LINE 24 VDC (V+, V-)

CIRCUIT BREAKER & FUSE	AMPS MAX	CIRCUIT
MAIN BREAKER; 3 AMPS	4 MAX	PRIMARY 120/240 VAC
FUSE 1; 5 AMPS	5 MAX	SECONDARY 24 VAC
FUSE 2; 5 AMPS	5 MAX	SECONDARY 24 VAC
FUSE 3; 5 AMPS	5 MAX	POWER SUPPLY 24 VDC



PRODUCT NAME: INSTALLATION DRAWING - MAESTROPRO EXPANSION UNIT 33907.X2BX AND MAESTROPRO POWER BOX 33907.13BX CONNECTIONS

PRODUCT NUMBER: 33907.XXBX

DATE: 05/04/20

SHEET NO: 3/3

11"x17" SHEET SIZE



# VOR 33907.32XX

## MAESTROPRO™

### 1.0 GENERAL MATERIALS SPECIFICATIONS :

#### 1.1. Equipment Enclosures :

Shall be made from corrosion resistant hot compression moulded fiberglass reinforced polyester which does not contain halogens. Enclosures shall be UL listed per UL Standard 508A, NEMA 4X; CSA Certified per Standard C22.2-0, 0.4, 0.7, 0.6, 94 Type 3, 3R, 4, 4X, 12 and 13.

#### 1.2. Operating temperature :

MaestroPRO™ shall be operating in an ambient temperature range of 32°F (0°C) to 131°F (55°C).

### 2.0 MAESTROPRO™ CONTROLLER MAIN – 33907.12B2 :

- 2.1. The MaestroPRO™ control panel shall be made from corrosion resistant hot compression moulded fiberglass reinforced polyester which does not contain haloge.
- 2.2. The MaestroPRO™ control panel is a Water Playground Controller cULus and FCC Certified and Marked product. MaestroPRO™ Controller is designed in a compliance to the CE Standards requirements.
- 2.3. The MaestroPRO™ control panel shall be supplied with a 10.4” touch screen user interface with controls for each output, activation device(s), and operation hours. These selector settings allow the user to select the operational mode of the components (i.e. Manual, Off and Automatic).
- 2.4. The MaestroPRO™ control panel shall be supplied by power through a MaestroPRO™ Power Box : providing power through two 100VA transformers 120 VAC primary / 24 VAC secondary OR 240 VAC primary / 24 VAC secondary, depending on MaestroPRO™ Power Box associated, with built- in electrostatic shield protection, and by a power supply 120/240 VAC primary to 24 VDC secondary and 100 VA.

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- 2.5. The MaestroPRO™ control panel shall integrate 24 digital outputs with 24 VAC (per output : max 1.6 Amp inrush, max 0.3 Amp nominal) and 12 digital inputs with selectable 5 or 24 VDC (1A max over all inputs).
- 2.6. The MaestroPRO™ control panel shall surge at any time a maximum of 4 Amp over each of its two “12 digital outputs” sets.
- 2.7. The MaestroPRO™ control panel shall have the capacity to receive digital signals from activation devices or sensors, operating on 5 or 24VDC. (Activator, Rain Sensor,...)
- 2.8. The MaestroPRO™ control panel shall have the ability to provide a 24VAC auxiliary signal. This signal can be used to trigger a relay for Pumps, Chemical, UV system, or any other item following electrical specification. All outputs are electrically protected against over consumption with resettable fuses.
- 2.9. The MaestroPRO™ control panel shall have the capacity to operate a Rain Diverter Valve with a 24V AC max 1.6 Amp signal to prevent rain water to go into the sewer network when the Splashpad® is not in function. That requires 2 outputs from MaestroPRO™ control panel.
- 2.10. The MaestroPRO™ main control panel shall have the ability to control Fast Acting Valves supplied by 24 VAC max 1.6 Amp inrush each.
- 2.11. MaestroPRO™ control panel shall have the capacity to receive pulse signal from items compatible with 24 VDC (Paddle wheel water meter, Anemometer,..).
- 2.12. The MaestroPRO™ control panel shall have capability to be interconnected with any MaestroPRO™ Expansion (33907.22B2) using a dedicated RJ45 connector (located on I/O board).
- 2.13. The MaestroPRO™ control panel shall have capability to be interconnected with max 1 Ethernet based item like the Maestro Light Controller (33908.0xxx) by using an Ethernet RJ45 Cat5 cable. If more than 1 Ethernet based items need to be connected, an Ethernet switch junction box (44900.0011) must be used.
- 2.14. MaestroPRO™ control panel shall have removable terminal blocks for easy wiring.
- 2.15. The MaestroPRO™ firmware shall be factory programmed with spray and light sequences designed according to the requirements of the project. Users shall have the flexibility to modify sequence duration specifically to each operation schedule directly through the interface. New sequences (created by Vortex) shall be added into the program using either a transportable USB Key or with an internet connection. A 24hr/7day user programmable Agenda, which shall allow the user to set the operational hours of the facility. Sequence quantity is not limited. For any further details about user interface, please refer to the MaestroPRO™ Manual provided by Vortex.
- 2.16. Operation schedule shall be set by week day or by specific date (month and day number). For both cases, schedule is set by hours in the day (start/end time). Operation schedule quantity is not limited, and all different schedules will be displayed in a paginated style.
- 2.17. The MaestroPRO™ firmware operates in English, French and Spanish.

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- 2.18.** The MaestroPRO™ firmware shall have the ability to soft start ramp up the Splashpad® to minimize potential water hammer.
- 2.19.** The MaestroPRO™ firmware shall have the ability to automatically purge all water lines based on the user selected time and duration (i.e. every day at 5 am). It shall also, be configured to purge all lines after a user defined period of inactivity (i.e. after 4 hours of inactivity).
- 2.20.** The MaestroPRO™ firmware in the interface lets the user modify easily the water consumption while keeping the sequence capability.
- 2.21.** The MaestroPRO™ firmware shall have the ability to handle automatic Backwash process once connected to a multi positions valves.

### **3.0 MAESTROPRO™ CONTROLLER EXPANSION – 33907.22B2 :**

- 3.1.** The MaestroPRO™ control panel is TYPE 1, housed in a fiberglass corrosion resistant NEMA 4X Enclosure.
- 3.2.** The MaestroPRO™ Expansion control panel shall be physically connected to the MaestroPRO™ main (33907.12B2) or to another MaestroPRO™ Expansion (33907.22B2). All MaestroPRO™ control panels are connected together following a daisy-chain pattern. Cat 5 Ethernet cable with RJ-45 connector must be used.
- 3.3.** The MaestroPRO™ Expansion control panel shall be supplied by two 100VA transformers 120V AC primary / 24 VAC secondary or 240 VAC primary / 24 VAC secondary, depending on MaestroPRO™ Power Box associated, with built- in electrostatic shield protection, and by a power supply 120/240 VAC primary to 24 VDC secondary and 100 VA.
- 3.4.** The MaestroPRO™ Expansion control panel shall integrate 24 digital outputs with 24VAC (per output : max 1.6A inrush, max 0.3A nominal) and 12 digital inputs with selectable 5 or 24 VDC (1A max over all inputs).
- 3.5.** The MaestroPRO™ Expansion control panel shall have the capacity to receive digital signals from activation devices or sensors, operating on 5 or 24 VDC.
- 3.6.** The MaestroPRO™ Expansion control panel shall have the ability to provide a 24VAC auxiliary signal. This signal can be used to trigger a relay for Pumps, Chemical, UV system, or any other item following electrical specification. All outputs are electrically protected against over consumption with resettable fuses.
- 3.7.** The MaestroPRO™ Expansion control panel shall have the ability to control Fast Acting Valves supplied by 24V AC max 1.6Amp (inrush) each.
- 3.8.** The MaestroPRO™ Expansion control panel shall have removable terminal blocks for easy wiring.
- 3.9.** In case of emergency, pushing the Red Emergency Button will power down the entire controller.

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## 4.0 MAESTROPRO™ POWER BOX – 33907.13BX :

- 4.1. The MaestroPRO™ Power Box shall be housed in a fiberglass corrosion resistant NEMA 4X rated enclosure.
- 4.2. Power consumption : Maximum power fully loaded forced manually is 200W. Power while in standard sequence in operation hours shall be approx. 100W, Power while in idle mode shall be approx. 10W – i.e. out of operation hours or without sequence running.
- 4.3. MaestroPRO™ control panel shall be protected by fuses sized according to voltage and transformer size.
- 4.4. In case of emergency, pushing the Red Emergency Button will power down the associated controller.
- 4.5. The MaestroPRO™ Power Box shall be powered using whether a 120VAC 60Hz or 240VAC 50Hz power input with a maximum of 5Amps.

## 5.0 REMOTE CONNECTION :

If remote connection ability is required, the operating system shall be connected to internet.

- 5.1. A hard connection to an existing network can be set. MaestroPRO™ control panel integrates a LAN port set by default as DHCP client with RJ45 physical connector.
- 5.2. MaestroPRO™ control panel shall include a built-in LTE/4G cellular module. In order to connect to internet, a NANO-SIM card previously activated by carrier must be inserted into the control panel on the Main board.

## 6.0 VOR-33923.XXXX SAFEGUARD MODULE (APPLICABLE IF WR OR WQMS) :

- 6.1. The contractor shall provide and install the following Water Quality Management System Module as manufactured by VORTEX, 7800 Trans-Canada Hwy, Pointe-Claire, Quebec H9R 1C6, (514) 694-3868.
- 6.2. The Water Quality Management System Module shall be factory assembled and water pressure tested before delivery.

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- 6.3. The Water Quality Management System Module shall be fully serviceable and accessible for ease of maintenance and use.
- 6.4. All electrical equipment, including flow switches, shall be tested before delivery.
- 6.5. All equipment shall be mounted directly onto a galvanized steel base using galvanized steel hardware prior to delivery.
- 6.6. Controller shall control electrical solenoid valves for play features and bypass with a 24V AC max 1.6Amp signal with a total of 10Amp over all 24 outputs with the included 200VA transformer.
- 6.7. The chemical controller shall have an alarm system that shall close all valves to the aquatic play features in case of a loss of proper water chemistry. The 120V AC from the chemical controller will switch a relay connected to the controller.
- 6.8. The chemical controller shall be wired to the Safeguard Module on site.
- 6.9. Controller shall control UV system (part of the UV module) with a 24V AC max 250mA signal and will be wired on site.
- 6.10. A flow switch shall be present on the feature pump to monitor flow and shut down the feature system in the event of no flow. It shall be wired to the Safeguard Module on site.
- 6.11. A flow switch shall be present on the flow cell located on the filter loop module to monitor flow and shut down the filter pump in the event of no flow. All valves to the aquatic play features will be closed until the filter no flow event is cleared.

Note : Modular WQMS has to be installed inside a closed room protected from the elements.

## 7.0 INSTALLATION CHARACTERISTICS :

### 7.1. Electrical Connections :

All main power electrical connections to the Splashpad Controller are to be performed per local codes.

### 7.2. Drawings and Instructions :

Product drawings and installation manuals shall be supplied by the manufacturer for ease of installation.

### 7.3. As per Electrical Construction and Safety Codes:

Controller and/or LED power panels and/or any other electrical equipment must be hard-wired to a ground fault circuit interrupter (GFCI) from the input power source. All electrical work should be performed by a licence electrician in accordance to local electrical construction and safety codes.

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