

# Route 33 Portsmouth, New Hampshire Skatepark Bid # 39-23

# **ADDENDUM NO. 2**

ТО

# **CONTRACT DOCUMENTS**

March 27, 2023

# NOTICE TO BIDDERS

The attention of all bidders submitting bid proposals for "Portsmouth New Hampshire Skatepark" is called to the following Addenda to the plans. The items set forth herein, whether of omission, addition or substitution are to be included in, and form part of the specifications and plans of the above-named project for bids to be received as advertised.

## PLEASE BE SURE TO ACKNOWLEDGE THIS ADDENDUM ON THE BID FORM

The following clarifications, modifications, deletions and additions are hereby incorporated into and become part of the Contract Documents.

# WRITTEN CHANGES AND CLARIFICATIONS TO THE SPECFICIATIONS

1. **ADD:** Alternation of Terrain Permit No. AoT-2326 to Specification Section 00 31 43-Permits per attachment.

Contractors shall make themselves familiar with all conditions set forth within the permit and adhere to all conditions accordingly. The contractor shall include in their bid pricing any costs to adhere to the conditions within.

2. **FOR CLARIFICATION:** Sheet L141-SUBGRADE ELEVATION PLAN. The 4" perforated collector pipe may be flat (invert 55.50) and atop the geosynthetic as to minimize punctures of pipes through the geosynthetic.

# **QUESTIONS AND CLARIFICATIONS**

1. The utilities plan states we are only installing empty conduits and handholes, do we need to have a licensed electrician install?

**<u>Response</u>**: A licensed electrician is not required to install the conduits and handholes by State of New Hampshire requirements.

2. Are we to install any lights or light pole bases for the project? If so, how many and what size foundation?

**<u>Response:</u>** Light poles or light pole bases are not to be installed under this scope of work. They are Add Alternate No. 2. Light pole foundations at the skatepark are to be designed by Musco. Parking lot light pole foundations shall be per detail below:



3. On the utilities plan it states we are to install any necessary lighting components – please clarify what this includes.

**<u>Response</u>**: For clarification, lighting components shall include conduit and handholes, pull strings, one(1) exterior rated 4 gang GFC outlet with waterproof cover at the skatepark wall

per Detail 2/L5.04 – Electrical Outlet at Skatepark Wall. The general contractor shall coordinate the location with the skatepark contractor and provide the outlet and conduit for installation into the skatepark wall. The electrical system is intended to be installation ready following the completion of this project or an "empty" system.

4. Bid form Item #7 states electrical includes wiring, outlets, electrical bollard and electrical service? I cannot locate an electrical plan with this info? Please clarify base bid scope.

**<u>Response</u>**: For clarification, the base bid scope of work is an "empty" system that is installation ready at a future date. Contractor shall include conduit, pull strings, hand holes and GFC outlet at skatepark wall as indicated in response to question no.5 above.

5. Bid form for alternate #2 also states electrical scope – please forward electrical plans and details.

**<u>Response</u>:** For bidding purposes only, Schematic Electrical Plan, Lighting System Design Plan, and Control System Summary have been included. Final design is contingent on accepted Add Alternate No. 2. Add Alternate No. 2 shall include all labor, materials, equipment, including but not necessarily limited to wires, fixtures, poles and foundations. The contractor shall provide a power-ready system. Transformer and cabinet shall be provided by others. See attachments.

6. Please clarify the base bid shelter – Are we to install a PLE-HC2 as specified or a 16ft x 16ft structure as shown on L504?

**Response:** The base bid shelter to be installed is PLE-HC2 with screen walls as specified. For clarification, the Contractor shall install the shade shelter atop a 11'-9" x 19'-4" reinforced concrete pad and prepared subbase per Detail 4/L5.02 – Cast-In-Place Concrete Pavement and Expansion Joint. Contractor shall DELETE Detail 1/L5.04 – Shade Shelter with Screen Walls

7. Please confirm the size and type of the existing pipe we are installing the Contech Jellyfish unit into.

**<u>Response:</u>** Per plan provided, the Contech Jellyfish will connect into an existing 24-inch HDPE pipe. See attachment of Existing Conditions Plan, Dated October 17, 2016.

8. Please confirm the size and type of granite curb we are to install at the entrance area.

**<u>Response</u>**: Vertical Granite curb shall be 6" width x 18" depth with varying reveal heights from 0" at pedestrian ramps to matching existing curb heights or 7" max. as manufactured by Swenson Granite Works of Concord, NH or approved equal.

9. Does the granite curb need to have a thermal finish top?

**Response:** For clarification, the granite curb does not require a thermal finish top.

10. Please confirm the area of the Type 1 brick pavers at the shelter area – inset and plan differ in square footage on L120. Maybe the scale is off?

**Response:** The area of Type 1 brick pavers is 1,160 s.f.

11. Is the expectation that all existing soils remain onsite?

**Response:** Yes. The expectation is that all existing soils are to remain on site.

12. Please provide label and confirm exact size & type of all drainage structures for the project. L140 says Catch Basins or PVC Area Drains while the detail on AS-14 show Zurn covers. Please clarify.

**Response:** For clarification, the general contractor shall install all pipe to locations within the skate park and stub up pipe for skatepark contractor to tie into. Drainage structures within the skatepark are to be installed by the skatepark contractor. The general contractor shall coordinate skatepark structure size with skatepark contractor and as indicated on the skatepark plans.

13. Do the (2) 5" conduits crossing the entry need to be encased in concrete?

**<u>Response</u>**: Yes. The (2) 5" conduits crossing the entrance drive shall be encased in concrete per detail below:



14. We are assuming the remainder of the conduit is for future secondary wiring and only needs sand backfill. Please confirm.

**<u>Response</u>**: Correct, the remainder of the conduit is for the future secondary wiring and only needs sand backfill per detail below:



15. Will water be accessible for the project at the site?

**<u>Response:</u>** There is a hydrant in the sidewalk on the east side of the site entrance. Portsmouth DPW will provide a water meter to the successful bidder for the duration of the project. At the end of the project the city will collect the meter and charge the successful bidder based on the end reading.

16. Is Artisan Skateparks Bonded?

**<u>Response</u>**: Artisan has included Bonding in their price shown in the stipulated price carried in the bid form in the amount of \$33,782.16. It should be noted that such bonding shall be between the successful bidder and the specialty subcontractor and not the responsibility of the owner.

17. Rough Grading will be completed by others prior to the successful bidder beginning work at the site. What is the grading tolerance and will the party performing rough grade share as-built grades with the successful bidder?

**<u>Response</u>**: The grading tolerance to be within 1/10 of specified layout grade per design. The contractor currently occupying the site who is responsible for rough grade will provide the as-built's to the successful bidder in a timely manner.

18. Are bidding contractors required to be pre-qualified by the New Hampshire Department of Transportation for site or road work as noted in Invitation to Bid on sheet #3?

**<u>Response:</u>** Provision per DOT requirement in Invitation to Bid on sheet #3 is not required for this project. Please see attached revised Invitation to Bid Sheet #3.

# **ATTACHMENTS:**

Invitation to Bid Sheet #3 Permit No. AoT-2326 Existing Conditions Plan, Dated October 17, 2016 SK-E100 – Schematic Electrical Plan Lighting System Design Plan Control System Summary

\

#### **END OF ADDENDUM NO. 2**

City of Portsmouth Portsmouth, New Hampshire Department of Public Works

# **Portsmouth Skate Park**

## **INVITATION TO BID**

<u>Sealed</u> bid proposals, <u>plainly marked</u>, Bid #39-23 Portsmouth NH Skate Park, <u>on the outside of the mailing</u> <u>envelope as well as the sealed bid envelope</u>, addressed to the Finance/Purchasing Department, City Hall, 1 Junkins Avenue, Portsmouth, New Hampshire, 03801, will be accepted until March 31, 2023 at 10:30 a.m. at which time all bids will be publicly opened and read aloud.

This project consists of partnering with a prechosen skateboard park constructor to complete all necessary ancillary tasks and to function as the general contractor for the project.

There will be a **non-mandatory** pre bid meeting on **March 15<sup>th</sup>**, **2023 at 8:30 a.m.** at the Public Works Building at 680 Peverly Hill Road.

Specifications may be obtained from the City's web site: http://www.cityofportsmouth.com/finance/purchasing under the project heading. Addenda to this bid document, if any, including written answers to questions, will be posted on the City of Portsmouth website at http://www.cityofportsmouth.com/finance/purchasing.htm under the project heading. Addenda and updates will NOT be sent directly to vendors. Questions may be addressed to the Purchasing Coordinator at purchasing@cityofportsmouth.com.

Work may begin on or after April 15, 2023. All sections of the work shall be completed within eight months of receiving notice to proceed. Liquidated damages shall be assessed at \$500.00 per day.

Bidders must determine the quantities of work required and the conditions under which the work will be performed.

The City reserves the right, after bid opening and prior to award of the contract, to modify the amount of the work in the event that bids exceed budgeted amounts. The City of Portsmouth further reserves the right to reject any or all bids, to waive technical or legal deficiencies, to re-bid, and to accept any bid that it may deem to be in the best interest of the City.

Each Bidder shall furnish a bid security in the amount of ten percent (10%) of the bid. The Bid Security may be in the form of a certified check drawn upon a bank within the State of New Hampshire or a bid bond executed by a surety company authorized to do business in the State of New Hampshire, made payable to the City of Portsmouth, N.H.

Any subcontractor working on the project will be pre-approved by the City prior to the start of construction.



The State of New Hampshire
Department of Environmental Services

**Robert R. Scott, Commissioner** 



March 17, 2023

Mr. Peter Rice City of Portsmouth 680 Peverly Hill Road Portsmouth, NH 03801 (sent via email to: phrice@cityofportsmouth.com)

Permit: AoT-2326

Re: Route 33 Skate Park Tax Map 241, Lots 18 – Portsmouth, NH

Dear Mr. Rice:

Based upon the plans and application, approved on March 17, 2023, we are hereby issuing RSA 485-A:17 Alteration of Terrain Permit AoT-2326. As part of the processing of this application, DES waived specific requirements of Env-Wq 1504.09(b)(3)(b). Granting this waiver will not have an adverse impact on the environment, public health, public safety, or abutting properties, and granting the request is consistent with the intent and purpose of the rules waived. Additional documentation relative to the waiver is contained within the file. The permit is subject to the following conditions:

#### **PROJECT SPECIFIC CONDITIONS:**

**1.** The plans titled "Route 33 Skate Park" by Weston & Sampson, last revision date March 3, 2023, are a part of this approval. The project must be constructed as shown on the project plans.

**2. This permit expires on March 17, 2028.** No earth moving activities shall occur on the project after this expiration date unless the permit has been extended by the Department. If an extension is required, the request must be received by the department <u>before the permit expires</u>. The amendment request form is available <u>here</u>.

3. Pursuant to Env-Wq 1504.18, the Permittee shall comply with wildlife protection notes that are incorporated into the project plans, and, if applicable, all recommendations by the New Hampshire Fish and Game Department related to state or federally listed threatened or endangered species that are incorporated into the project plans.

4. The permittee or their successors or assigns shall employ a New Hampshire Certified Green SnowPro Salt Applicator for winter snow and ice management activities.

#### **GENERAL CONDITIONS:**

1. Activities shall not cause or contribute to any violations of the surface water quality standards established in Administrative Rule Env-Wq 1700.

2. You must submit revised plans for permit amendment prior to any changes in construction details or sequences. You must notify the Department in writing within ten days of a change in ownership.

Alteration of Terrain Permit: AoT-2326 Route 33 Skate Park Tax Map R241, Lot 18 – Portsmouth, NH Page 2 of 2

3. You must notify the Department in writing prior to the start of construction and upon completion of construction. Forms can be submitted electronically or by paper. Both formats are available <u>here.</u>

4. All stormwater practices shall be inspected and maintained in accordance with Env-Wq 1507.07 and the project Inspection and Maintenance (I&M) Manual. All record keeping required by the I&M Manual shall be maintained by the identified responsible party and be made available to the department upon request.

5. This permit does not relieve the applicant from the obligation to obtain other local, state or federal permits that may be required (e.g., from US EPA, US Army Corps of Engineers, etc.). <u>Projects disturbing over 1 acre may require a federal stormwater permit from EPA</u>. Information regarding this permitting process can be obtained at: <u>https://www.epa.gov/npdes/epas-2017-construction-general-permit-cgp-and-related-documents</u>.

6. In accordance with Env-Wq 1503.21 (c)(1), a written notice signed by the permit holder and a qualified engineer shall be submitted to DES stating that the project was completed in accordance with the approved plans and specifications. If deviations were made, the permit holder shall review the requirements in Env-Wq 1503.21(c)(2) and submit revised plans or an application to amend the permit as necessary.

7. No activity shall occur in wetland areas until a Wetlands Permit is obtained from the Department. Issuance of this permit does not obligate the Department to approve a Wetlands Permit for this project.

8. This project has been screened for potential impact to known occurrences of protected species and exemplary natural communities in the immediate area. Since many areas have never been surveyed, or have not been surveyed in detail, unidentified sensitive species or communities may be present. This permit does not absolve the permittee from due diligence in regard to state, local or federal laws regarding such communities or species. This permit does not authorize in any way the take of threatened or endangered species, as defined by RSA 212-A:2, or of any protected species or exemplary natural communities, as defined in RSA 217-A:3.

Sincerely,

Mahl 41-

Michael Hansen, P.E. Alteration of Terrain Bureau

ec: Portsmouth Planning Board Brandon Kunkel, Weston & Sampson Amy Renzi, NHDES Hazardous Waste-Remediation Andrew Koff, NHDES Drinking-Water-And-Groundwater





STREET WITH

- œ.7
- LOTS AND BULLINGS IN THE MUNICIPAL DISTRICT ARE EXEMPT FROM ALL DMENSIONAL AND NUTRISTIF REGULATIONS OF PORTSMOUTH ZONING ORDINANCE. SEE SECTION 10.560 OF THE CITY OF PORTSMOUTH ZONING ORDINANCE. VERTICAL DATUM IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NANDER), CONTOUR INTERVAL IS Z. HORIZAFLA, DATUM IS NORTH AMERICAN DATUM OF 1983 (NADES), THE UNDERFOOND SYSTEM SJOWN HERECM WAS NOT TED LOCATED LOCATION TAKEN FROM "ORDING FLAW ROUTE 33 RECREATION AREA" BY UNDERFOOD SURGHERES, DATED 12/17/2013. THIS LOCATION SHOWN HEREON IS APPROXIMATE ONLY.

# PLAN REFERENCES:

- TOT LINE ADJUSTMENT ISLINGTON STREET & GREENLAND ROAD, PORTSMOUTH, NEW HAMPSHIER DO, CITY OF PORTSMOUTH, BY JAMES VERA AND ASSOCIAES, NO. DATE ISL OF PORTSMOUTH, BY JAMES VERA AND PROMOVANDER ROAD, PORTSMOUTH, VEW HAMPSHIER PREPARED BY VIAASSE HANGEN BRUSTIN, INC. DATED SEPTEMBER 28, 2007, REVISED APRIL 28, 2008.
   "AS BULT PLAN OF A PORTION OF NH ROUTE 33, PORTSMOUTH, NEW HAMPSHIE BY AND TE ROHRENRO, INC. DATED JAUSIST 2010, REVISED 9/21/10, PLAN NOT RECORDED.
   "EXTENDE FAULTION DATED APRIL 24, 1017 18 PROPERTY OF CONTY OF ROCKINGAWA BY MSC CONL ENGINEES & LAND SURVEYORS, DATED MOVABER 2, 2012 WITH REVISION 1 DATED 11/05/2012. PLAN IS NOT RECORDED.

Civil Engineers Structural Engineers Traffic Engineers Land Surveyors Autoord Trakena Inc. Scientists Civil Engineers Land Surveyors Scientists Civil Engineers Portsmouth, NH 03801 Portsmouth, NH 03801 Phone (603) 431–2222 Fox (603) 431–0910	SCALE: 1" = 40' (22"x34") 1" = 80' (11"x17") OCTOBER 17, 2016	305 GREENLAND ROAD PORTSMOUTH, NEW HAMPSHIRE COUNTY OF ROCKINGHAM OWNED BY CITY OF PORTSMOUTH	TAX MAP 241 LOT 18 EXISTING CONDITIONS PLAN	

E 47179.01

웃 묽

2

# NOTES ECTRICAL Ш GENERAL

DIAGRAMMATIC ONLY. THE <u>EXACT LOCATION</u>, MOUNTING HEIGHTS, SIZE AND ROUTING OF RACEWAYS SHALL BE COORDINATED AND DETERMINED

CONFORM TO THE NEW HAMPSHIRE ELECTRICAL CODE AND NEW UILDING CODE AND REQUIREMENTS OF LOCAL AUTHORITIES HAVING

' AS USED IN THE "ELECTRICAL WORK" SHALL MEAN THE TOR.

WIRING, RACEWAYS, LIGHTIN WIRING, TRANSFORMERS AND DR SHALL PAY FOR ALL PERMITS, INSURANCE AND TESTS, AND SHALL BOR AND MATERIAL TO COMPLETE THE ELECTRICAL WORK SHOWN. OTHERWISE NOTED, THE ADD ALTERNATE No. 2 ELECTRICAL WORK SHOWN. NELBOARDS, CIRCUIT BREAKERS, FEEDERS, WIRING, RACEWAYS, LIGHTIN DEVICES, SAFETY SWITCHES, MOUNTING AND WIRING, TRANSFORMERS ANI MS NECESSARY TO OPERATE ALL EQUIPMENT.

AND
AND E D N

ONE YEAR FROM DATE OF WORK SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OI MORK SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OI EM IS PUT INTO SERVICE UNLESS OTHERWISE SPECIFIED. BE GROUNDED IN ACCORDANCE WITH CODE REQUIREMENTS. COMPLETE INSULATED GREEN WIRE) GROUNDING SYSTEM SHALL BE INSTALLED. BE TYPE "THHN/THWN" INSULATED FOR 600 VOLTS, MINIMUM SIZE #12 AWG ESS SPECIFICALLY NOTED OTHERWISE.

ETHODS: KTERIOR BELOW GRADE DIRECT BURIED WIRING SHALL BE IN SCHEDULE 80 Ċ

SCHEDUL SHALL BE IN RETE ENCASED WIRING Ő ERIOR BELOW GRADE ю

C

о О

PANELS IN DC LOAD SER AIN.

EXACT ARE DIAGRAMMATIC ONLY; OMPLETION OF THE PROJECT LOCATIUN PROVIDE 20. 21

 $\bigvee$ 

∷∃TAG

НРРКОУЕD ВҮ:

REVIEWED BY::

I:YA NWAAD

# SYMBOL LIST ELECTRICAL

# RECEPTACLES

INTERGR WITH DUPLEX RECEPTACLE (BASE BID)

GFIC

# RACEWAY AND WIRING

REE PHAS IN EACH INCLUDE TED BUT Ъg 22 HOMERUN TO PANELBOARD SHALL INCLU UNLESS NOTED OTHERWISE. - GREEN GR SHALL BE INCLUDED IN EACH RACEWAY OTHERWISE. -HOMERUNS TO PANELBOAF CONDUCTORS (ONE PER PHASE) PLUS NE CONDUIT.

# EQUIPMENT DISTRIBUTION POWER

HAND HOLE (BA

Ξ

# LIGHTING

SPORTS LIGHT POLE (ALTERNATE NO. 2.)

Ы





moo.nosqmesbnsnoisew.www NOS9MAS.008 0844.514.718 3rd Floor, Boston, MM 02109 Meston (&) Sampsoi

82/22/20 63/01/23 BK KC

SKATE PARK BID DOCUMENTS SKATE PARK PORTSMOUTH, NEW HAMPSHIRE PORTSMOUTH, NEW HAMPSHIRE PORTSMOUTH, NEW HAMPSHIRE PORTSMOUTH, NEW HAMPSHIRE PORTSMOUTH, NEW HAMPSHIRE







вкозеста





SHEET

09

-E: 1" = 20'





![](_page_10_Picture_42.jpeg)

# Portsmouth Skate Park

Portsmouth, NH

# Lighting System

Pole / Fixture Summary											
Pole ID	Pole Height	Mtg Height	Fixture Qty	Luminaire Type	Load	Circuit					
P1-P5	50'	50'	2	TLC-LED-550	1.08 kW	A					
P6	50'	50'	4	TLC-LED-550	2.16 kW	A					
6			14		7.56 kW						

Circuit Summary								
Circuit	Description	Load	Fixture Qty					
A	Skate Park	7.56 kW	14					

Fixture Type Summary								
Туре	Source	Wattage	Lumens	L90	L80	L70	Quantity	
TLC-LED-550	LED 5700K - 75 CRI	540W	67,000	>120,000	>120,000	>120,000	14	

# Single Luminaire Amperage Draw Chart

				- Ang	ciugo		······ai	
Single Ph	ase Voltage	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	480 (60
TLC-L	ED-550	3.2	3.0	2.8	2.4	1.9	-	1.4

# Light Level Summary

Calculation Grid Summary									
Grid Name	Calculation Matric				Circuite	Eixture Oty			
	Calculation Metric	Ave	Min	Max	Max/Min	Ave/Min	Circuits	Tixture Qty	
Skate Park	Horizontal	25.4	11	36	3.30	2.30	А	14	
Zero Grid	Horizontal Illuminance	4.98	0	36	0.00		A	14	

![](_page_11_Picture_11.jpeg)

# From Hometown to Professional

![](_page_11_Picture_13.jpeg)

Not to be reproduced in whole or part without the written consent of Musco Sports Lighting, LLC. ©1981, 2023 Musco Sports Lighting, LLC.

PROJECT SUMMARY

EQ	EQUIPMENT LIST FOR AREAS SHOWN										
	Р	Luminaires									
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS			
2	P1-P2	50'	3'	53'	TLC-LED-550	2	2	0			
1	P3	50'	2'	52'	TLC-LED-550	2	2	0			
1	P4	50'	5'	55'	TLC-LED-550	2	2	0			
1	P5	50'	6'	56'	TLC-LED-550	2	2	0			
1	P6	50'	-	50'	TLC-LED-550	2/2*	4	0			
6	TOTALS							0			

\*This structure utilizes a back-to-back mounting configuration

![](_page_12_Figure_2.jpeg)

SCALE IN FEET 1:30

30'

ENGINEERED DESIGN By: · File #225486A · 16-Feb-23

Pole location(s)  $\oplus$  dimensions are relative to 0,0 reference point(s)  $\otimes$ 

# **Portsmouth Skate Park** Portsmouth, NH

<b>GRID SUMMARY</b>	
Name:	Skate Park
Size:	1' x 1'
Spacing:	10.0' x 10.0'
Height:	3.0' above grade
IIIIIMINATION S	IMMARY
WAINTAINED HORIZONTA	Entine Crid
	Entire Grid
Scan Average:	25.35
Maximum:	36
Minimum:	11
Avg / Min:	2.32
Max / Min:	3.30
UG (adjacent pts):	1.37
CU:	0.56
No. of Points:	195
LUMINAIRE INFORMATIO	N
Applied Circuits:	A
No. of Luminaires:	14
Total Load:	7.56 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

![](_page_12_Picture_13.jpeg)

Not to be reproduced in whole or part without the written consent of Musco Sports Lighting, LLC. ©1981, 2023 Musco Sports Lighting, LLC.

EQ	EQUIPMENT LIST FOR AREAS SHOWN										
	Р	ole			Luminaires						
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS			
2	P1-P2	50'	3'	53'	TLC-LED-550	2	2	0			
1	P3	50'	2'	52'	TLC-LED-550	2	2	0			
1	P4	50'	5'	55'	TLC-LED-550	2	2	0			
1	P5	50'	6'	56'	TLC-LED-550	2	2	0			
1	P6	50'	05'	50'	TLC-LED-550	2/2*	4	0			
6	TOTALS							0			

\* This structure utilizes a back-to-back mounting configuration

0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.2 0.3 0.5 0.7 0.9 0.9 0.8 0.7 0.5 0.3 0.2 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.2 0.3 0.6 0.9 1.5 1.7 1.7 1.6 1.4 1.1 0.8 0.5 0.3 0.2 0.2 0.1 0.1 0.1 0.1 0.3 0.5 0.8 1.2 1.7 2.6 2.9 2.9 2.7 2.3 1.8 1.2 0.8 0.5 0.3 0.2 0.2 0.1 0.1 0.1 0.0 0.0 0.0 0 00 00 00 00 01 03 06 11 17 23 29 39 45 46 44 37 29 20 12 08 05 04 03 02 02 01 01 01 00 00 00 00 00 00 00 00 0.3 0.7 1.3 21 33 42 46 53 65 68 66 56 45 31 19 12 08 05 04 0.3 0.3 0.2 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0 00 00 0 0.1 0.1 0.3 0.6 1.3 2.4 3.9 5.9 7.1 7.1 7.5 8.8 9.8 9.4 8.1 6.5 4.5 2.9 1.8 1.1 0.8 0.6 0.5 0.4 0.3 0.2 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 1 00 00 00 00 10 10 10 20 40 30 00 21 41 31 01 02 82 64 73 6<mark>0.211.31</mark>3.717.813.310.810.418.418.6119.41 0.0 0.0 0.0 0.1 0.1 0.3 0.7 1.3 2.5 44 8 11,4147,455,6017,21422.9218,91458,2995 66 44 32 26 23 20 1.5 1.1 0.6 0.3 0.2 0.1 0.0 0.0 0.0 0.0 0. 0.1 0.2 0.5 1.1 20 3.2 4.9 7.3 11114316.178521.925.526.526.123.520.5.7<del>7.8.13834</del> P2 5.5 4.4 3.8 3.1 2.3 1.5 0.9 0.5 0.2 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.2 0.4 0.8 1.5 2.7 4.2 5.8 8.2 11615 18922 \$25628028.829427.3 24623.1.190.1 5. 7.2 9.3 7.4 6.1 4.4 3.3 2.2 1.4 0.6 0.3 0.1 0.1 0.0 0.0 0. 0.2 0.4 0.8 1.6 2.8 4.5 6.7 9.7 14.2.19 123.2257 27.5 28.629.7 30.5 29.4 27.2 28.5 24.021.5 17 2.14.6.11.5 8.7 6.3 4.5 3.1 1.6 0.8 0.3 0.2 0.1 0.0 0.0 0. 02 04 0.9 16 28 44 6.7 9.7 14419322925828229329329129228528528528528528528528.120216112088 6.1 3.6 2.0 1.0 0.5 0.2 0.1 0.1 0.0 0.0 ( 0.0 0.1 0.1 0.0 0.1 0.1 0.2 0.4 0.8 1.5 2.5 3.8 5.7 8.3 12.3 16.4 19.9 23.4 26 5 27 4 27 3 27 4 27 7 29 2 29 9 32 0 32 2 29 7 24 6 19 7 15.1 11.0 7.4 4.7 2.5 1.2 0.6 0.2 0.1 0.1 0.0 0.0 0 0.0 0.1 0.1 0.2 0.4 0.7 1.2 1.9 3.0 4.5 6.6 97 12815819.222023 0 2 2 3 0 8 2 2 7 5 2 9 6 8 2 2 3 2 7 3 4 6 3 5 1.3 2 6 2 8 0 2 3 3 19 6 1 5 0 10 0 5 9 3.1 1.4 0.6 0.3 0.2 0.1 0.1 0.0 0 04 06 0.9 1.5 2.2 3.5 5.2 7.6 10.3 12.8 14.8 16.7 20.1 23.1 27.6 31.8 39.3 4.2 34.7 35.9 34 30.1 26.5 24.5 20.8 14.4.7.9 3.4 1.3 0.6 0.4 0.2 0.1 0.1 0.0 0 0.2 0.3 0.4 0.7 1.1 1.8 2.8 4.2 6.2 8.4 10.4.12.1.13.7.16.0; P62d + 3.9 0.0 33.2.32.9.34.638.629827.1283≥3.9<sup>2</sup>9.4 3.3 1.2 0.8 0.5 0.3 0.2 0.1 0.1 0.1 0.2 0.3 0.6 0.9 1.5 2.3 3.6 5.3 7.4 9.6 11.0.12.6.15.1.20 1298 34.3 35.6.32.1 3 33.2.32.7 29.7.27.4.28.4.290 17.3.9.5 3.5 1.5 1.0 0.6 0.3 0.2 0.1 0.1 0.1 0.2 0.3 0.4 0.7 1.2 2.0 3.2 4.9 7.1 9.6 11.5.13.3.170 9. \$28.2.3.1 33.5.32 0.31.7330.32.5 29.5 27.3 28 4.21.6 5 8.90 4.4 2.1 1.1 0.7 0.4 0.2 0.1 0.1 0.1 0.1 0.2 0.4 0.6 1.0 1.8 3.0 4.7 7.1 9.8 125,15.519.925 294 30.3 29.8 30 2 30.9 32 7 32 6 30 6 26 4 23 0.18 1,12 8.8.3 5.0 2.7 1.4 0.8 0.4 0.2 0.1 0.1 0.1 0.1 0.2 0.3 0.5 1.0 1.7 2.9 4.6 7.1 10.213.818.222.827.129.428.628.629.620.731731.830.0260.22,216.211.47.8 4.9 2.9 1.5 0.8 0.4 0.2 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.1 0.2 0.4 0.8 1.6 2.7 4.4 6.8 10.2.14 1/8.8.24.7 29.6 51.3.30.6 29.0.29.3 29.3 30.0 29.8 28.4 25 27 6.164.11.67.8 5.0 2.9 1.6 0.9 0.4 0.2 0.1 0.0 1 0.0 0.0 0.0 0.0 0.0 0.1 0.1 0.3 0.6 1.2 2.1 3.7 6.2 9.4 14 19 23 5 7.3 30 30 1 9 0.28 0 28 1 27.7 27. 26 7 23 2 19 5 15 7 11 4 7.8 5.0 2.8 1.5 0.7 0.3 0.1 0.1 0.0 0 0.0 0.1 0.2 0.4 0.9 1.8 3.1 5.9 10.015.0 19.022.724.326627.927.326926.525.724.823.421.2,18.9.16.1,11.5.7.6 4.5 2.1 1.1 0.5 0.2 0.1 0.0 0. 0.3 0.7 1.4 2.7 5.6 10 166217 22.121.922.724.724023.923.523.322.620.620.520 5.18.0.13.17.9 4.0 1.9 0.9 0.4 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.1 0.2 0.9 3.1 5.1 6.3 6.4 6.6 7.4 7.9 8.1 8.4 8.1 7.7 7.4 7.9 7.7 5.5 3.2 0.5 0.2 0.1 0.1 0.0 0.0 0.0 0.1 0.2 0.5 0.8 1.2 1.8 2.1 2.4 2.6 2.5 2.4 2.0 1.6 1.2 0.9 0.4 0.1 0.1 00 00 00 00 00 00 00 01 01 02 04 05 07 08 08 08 08 06 04 03 02 01 00 00 00 00 00 00 00 00 00 00 01 01 02 03 04 04 04 04 04 03 02 01 01 00 00 0.0 0.0 0.0 

SCALE IN FEET 1:60

ENGINEERED DESIGN By: · File #225486A · 16-Feb-23

Pole location(s)  $\oplus$  dimensions are relative to 0,0 reference point(s)  $\otimes$ 

#### **Portsmouth Skate Park** Portsmouth, NH

<b>GRID SUMMARY</b>	
Name:	Zero Grid
Size:	400' x 440'
Spacing:	10.0' x 10.0'
Height:	3.0' above grade
ILLUMINATION S	UMMARY
MAINTAINED HORIZONTA	L FOOTCANDLES
	Entire Grid
Scan Average:	4.98
Maximum:	36
Minimum:	0
Avg / Min:	-
Max / Min:	-
UG (adjacent pts):	48.12
CU:	1.00
No. of Points:	1760
LUMINAIRE INFORMATIO	N
Applied Circuits:	Α
No. of Luminaires:	14
Total Load:	7.56 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

![](_page_13_Picture_12.jpeg)

Not to be reproduced in whole or part without the written consent of Musco Sports Lighting, LLC. ©1981, 2023 Musco Sports Lighting, LLC.

![](_page_14_Figure_0.jpeg)

SCALE IN FEET 1:60 120' 60' **ENGINEERED DESIGN** By: · File #225486A · 16-Feb-23

Pole location(s)  $\Phi$  dimensions are relative to 0,0 reference point(s)  $\otimes$ 

# Portsmouth Skate Park Portsmouth, NH

#### EQUIPMENT LAYOUT

- INCLUDES: · Skate Park · Zero Grid

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

# EQUIPMENT LIST FOR AREAS SHOWN

	F							
	P	ole		Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE		
2	P1-P2	50'	3'	53'	TLC-LED-550	2		
1	P3	50'	2'	52'	TLC-LED-550	2		
1	P4	50'	5'	55'	TLC-LED-550	2		
1	P5	50'	6'	56'	TLC-LED-550	2		
1	P6	50'	-	50'	TLC-LED-550	2/2*		
6			TOTAL	S		14		

\* This structure utilizes a back-to-back mounting configuration

## SINGLE LUMINAIRE AMPERAGE DRAW CHART

Driver (.90 min power factor)	Line Amperage Per Luminaire (max draw)						5
Single Phase Voltage	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	480 (60)
TLC-LED-550	3.2	3.0	2.8	2.4	1.9	-	1.4

![](_page_14_Picture_15.jpeg)

Not to be reproduced in whole or part without the written consent of Musco Sports Lighting, LLC. ©1981, 2023 Musco Sports Lighting, LLC.

![](_page_15_Picture_0.jpeg)

# **Project Information**

# **Project Specific Notes:**

The skate park zone will have a pushbutton strobe

# **Materials Checklist**

## Contractor/Customer Supplied:

- □ A dedicated control circuit must be supplied per distribution panel location If the control voltage is NOT available,
  - a control transformer is required
- Electrical distribution panel to provide overcurrent protection for circuits
  - HID rated or D-curve circuit breaker sized per full load amps on Circuit Summary by Zone Chart
- □ Wiring
  - See chart on page 2 for wiring requirements
  - Equipment grounding conductor and splices must be insulated (per circuit)
  - Lightning ground protection (per pole), if not Musco supplied
- Electrical conduit wireway system
  - Entrance hubs rated NEMA 4, must be die-cast zinc, PVC, or copper-free die-cast aluminum
- Mounting hardware for cabinets
- Breaker lock-on device to prevent unauthorized power interruption to control power and powerline connection (if present)
- Anti-corrosion compound to apply to ends of wire, if necessary

Call Control-Link Central<sup>™</sup> operations center at 877/347-3319 to schedule activation of the control system upon completion of the installation.

Note: Activation may take up to 1 1/2 hours.

	•
Project #:	225486
Project Name:	Portsmouth Skate Park
Date:	02/16/23
Project Engineer:	Tanner Lanphier
Sales Representative:	Alan Grady
Control System Type:	Control-Link <sup>™</sup> Control and Monitoring System
Communication Type:	PowerLine-ST
Scan:	225486A
Document ID:	225486P1V1-0216155802
<b>Distribution Panel Loca</b>	ation or ID: Service 1
Total # of Distribution F	Panel Locations for Project: 1
Design Voltage/Hertz/F	Phase: 480/60/3
Control Voltage:	120

# **Equipment Listing**

DESCRIPTION	APPROXIMATE SIZE
1.Control and Monitoring Cabinet	24 X 48
	·······
14)mælikenskerer	QTY SIZE (AMPS)
Total Contactors	6 30 AMP
Total Off/On/Auto Switches	and the second state of th

Total Off/On/Auto Switches: kanfirm sil []

S of distribution panels.

# **IMPORTANT NOTES**

- 1. Please confirm that the design voltage listed above is accurate for this facility. Design voltage/phase is defined as the voltage/phase being connected and utilized at each lighting pole's electrical components enclosure disconnect. Inaccurate design voltage/phase can result in additional costs and delays. Contact your Musco sales representative to confirm this item.
- 2. In a 3 phase design, all 3 phases are to be run to each pole. When a 3 phase design is used Musco's single phase luminaires come pre-wired to utilize all 3 phases across the entire facility.
- 3. One contactor is required for each pole. When a pole has multiple circuits, one contactor is required for each circuit. All contactors are 100% rated for the published continuous load. All contactors are 3 pole.
- 4. If the lighting system will be fed from more than one distribution location, additional equipment may be required. Contact your Musco sales representative.
- 5. A single control circuit must be supplied per control system.
- 6. Size overcurrent devices using the full load amps column of the Circuit Summary By Zone chart- Minimum power factor is 0.9.

NOTE: Refer to Installation Instructions for more details on equipment information and the installation requirements.

![](_page_16_Picture_0.jpeg)

# **Control System Summary**

Portsmouth Skate Park / 225486 - 225486A Service 1 - Page 2 of 4

# Control-Link. Control and Monitoring System

![](_page_16_Figure_4.jpeg)

	Conduit ID	Description	# of Wires	Wire (AWG)	Conduit (in)	Max. Wire Length (ft)	MUSCO Supplied	Notes
1	Line p	ower to contactors, and equipment grounding conductor	*A	<b>^</b> B	°C	N/A	No	A-E
2	Load j	power to lighting circuits, and equipment grounding conductor	^A	*B	*C	N/A	No	A-E
3	Солтг	ol power (dedicated, 20A)	3	12	*C	N/A	No	C,E

\* Notes:

A. See voltage and phasing per the notes on cover page.

B. Calculate per load and voltage drop.

C. All conduit diameters should be per code unless otherwise specified to allow for connector size.

D. Equipment grounding conductor and any splices must be insulated.

E. Refer to control and monitoring system installation instructions for more details on equipment information and the installation requirements.

IMPORTANT: Control wires (3) must be in separate conduit from line and load power wires (1, 2).

T:\225\225486P1V1-0216155802.pdf

R60-100-00\_8

![](_page_17_Picture_0.jpeg)

# **Control System Summary**

Portsmouth Skate Park / 225486 - 225486A Service 1 - Page 3 of 4

# SWITCHING SCHEDULE

Field/Zone	Description
Skate Park	

Zones 1

CONTROL POWER CONSUMPTION						
120V Single Phase						
VA loading	INRUSH: 1470.0					
Supplied SEALED: 156.0						
Equipment						

CIRCUIT SUMMARY BY ZONE							
POLE	CIRCUIT DESCRIPTION	# OF FIXTURES	# OF DRIVERS	*FULL LOAD AMPS	CONTACTOR SIZE (AMPS)	CONTACTOR ID	ZONE
P1	Skate Park	2	2	2.4	30	C1	1
P2	Skate Park	2	2	2.4	30	C2	1
P3	Skate Park	2	2	2.4	30	C3	1
P4	Skate Park	2	2	2.4	30	C4	1
P5	Skate Park	2	2	2.4	30	C5	1
P6	Skate Park	4	4	3.6	30	C6	1

\*Full Load Amps based on amps per driver.

![](_page_18_Picture_0.jpeg)

# **Control System Summary**

# Portsmouth Skate Park / 225486 - 225486A Service 1 - Page 4 of 4

	PANEL SUMMARY						
CABINET #	CONTROL MODULE LOCATION	CONTACTOR ID	CIRCUIT DESCRIPTION	FULL LOAD AMPS	DISTRIBUTION PANEL ID (BY OTHERS)	CIRCUIT BREAKER POSITION (BY OTHERS)	
1	1	C1	Pole P1	2.41			
1	1	C2	Pole P2	2.41			
1	1	C3	Pole P3	2.41			
1	1	C4	Pole P4	2.41			
1	1	C5	Pole P5	2.41			
1	1	C6	Pole P6	3.61			

ZONE SCHEDULE						
CIRCUIT DESCRIPTIO						
ZONE	SELECTOR SWITCH	ZONE DESCRIPTION	POLE ID	CONTACTOR ID		
Zone 1	1	Skate Park	P1	C1		
			P2	C2		
			P3	C3		
			P4	C4		
			P5	C5		
			P6	C6		