THE CITY OF WORCESTER

Request for Bids
Coal Mine Brook
Site Improvements

April 27, 2022

PROJECT SPECIAL CONDITIONS AND SPECIFICATIONS

DEPARTMENT OF PUBLIC WORKS AND PARKS
Parks, Recreation and Cemetery Division

Jay J. Fink, P.E., Commissioner
Robert C. Antonelli, Jr., Assistant Commissioner

TABLE OF CONTENTS

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PROJECT SPECIAL CONDITIONS

ARTICLE 1 - PROJECT SITE

a. All work of this contract is located within the confines of Coal Mine Brook, 616 Plantation St., owned and maintained by the City of Worcester DPW and Parks.

ARTICLE 2 - SUMMARY OF WORK

a. The work to be completed under this contract involves the furnishing of all labor, materials and equipment for the following items of work and all incidentals thereto. All work shall be performed in full accordance with the specifications, other contract documents, obviously implied and necessary or under the direction of the Owner.

b. The plans and specifications are intended to be cooperative, and any item called for in one and not the other shall be as binding as if called for in both. During the bidding period discrepancies should be immediately brought to the attention of the Owner for clarification. If a discrepancy is discovered within the plans and the specifications after the bid period, **the Owner will determine which shall apply.**

c. When Applicable, The City of Worcester DPW and Parks, Parks, Recreation and Cemetery Division is in the process of standardizing appurtenances such as park benches, trash receptacles, irrigation controllers, Area/Street lights, Sports field lighting in the facilities within their jurisdiction and maybe currently installed at this facilities. By standardizing on one manufacturer it provides the Division with a consistent product which through familiarity reduces operator training and maintenance time. Standardization also provides opportunities for maintenance cost saving through interchangeable parts such as but not inclusive to luminaries, ballast, poles, compatibility with current Division maintenance equipment etc.

d. Quality Control: In order to ensure the highest level of quality with respect to the playing surface of this greatly utilized public athletic facility, the General Contractor / Awardee shall have a minimum of five (5) years of successful experience;

   a. as the Prime Contractor constructing (provide verifiable references upon request)
   b. ability to demonstrate constructing (provide verifiable references upon request)
   c. coordinating and supervising (provide verifiable references upon request)

Park Improvements of similar scale/scope and quality of this project as per the standards of the project specifications and construction drawings.

ARTICLE 3 - WORK WITHIN A PUBLIC PROPERTY

a. As a point of information, all of the work to be undertaken is located within the confines of an unsecured public property, and as such is subject to acts of vandalism. The City of Worcester will not pay for any damage to the Contractor's equipment or material. The Contractor shall take all means and measures necessary to protect the public, work in progress, work completed, and all furnishings, materials and equipment stored at the site through the completion of the project. The repair or replacement of work in place or in progress shall be the sole responsibility of the Contractor and shall be accomplished at no cost to the Owner.

ARTICLE 4 - SITE INSPECTION

a. It shall be contingent upon the Contractor to inspect the site as an aid to determining the extent of the work under the various contract items before submission of the bid.

ARTICLE 5 - PRE -BID AND PRE-CONSTRUCTION MEETINGS

a. A pre-bid conference will be held on **May 04, 2022**, 10:00 AM (Eastern Standard Time) at the existing entrance drive located on Plantation St. Interested bidders are encouraged to attend. A mandatory pre-construction meeting will be arranged by the Owner's representative after the award of the contract. Sub-consultants may be asked to attend the pre-construction meeting if determined by the Owner's Representative to be warranted.

ARTICLE 6 - SITE ACCESS

b. Prospective bidders are advised that access to the project sites shall be in accordance with the governing traffic patterns with specific locations into the site to be designated in the field after award of the contract.

c. Regardless of the eventual location of the construction access, the Contractor shall make every provision to ensure the safety of pedestrians and drivers making use of the public property.

ARTICLE 7 - OWNER'S TAX EXEMPTION

a. The Awarding Authority, as a department of a corporate municipality in the Commonwealth is exempt from the taxes listed below. Contractor shall notify all suppliers of the following current certificates.

1. Federal Excise Taxes as applied to articles taxable under Chapter 32 of the Internal Revenue Code of 1954, as amended, City Excise Tax Exemption Certificate is not required.

2. From Sales and Use Tax imposed by the Commonwealth of Massachusetts under Chapter 14, Acts of 1966, the City has been assigned and exemption certificate with respect to leases, rentals, or purchases of "Tangible Personal Property". The Owner at the Contractor's request will furnish the tax-exempt certification number.

ARTICLE 8 - TIME FOR COMPLETION AND SEQUENCE OF WORK

a. The work schedule of this Contract is governed and funded by a Commonwealth of Massachusetts reimbursable grant and shall commence on **July 1, 2022,** or at the time stipulated by the Owner in the Notice to Proceed/Award of Contract and shall be substantially completed for occupancy/use by **May 19, 2023,** except as the work may be interrupted by weather conditions as hereinafter specified. The Contractor shall prosecute the Work with the diligence necessary to ensure its completion within the required time. The Contractor shall provide sufficient labor, materials, and equipment, and shall promptly take such appropriate action to keep the Work on schedule or as directed by the Owner. No additional time shall be provided for Change Orders and liquidated damages apply.

b. The Parks, Recreation and Cemetery Division (Owner) shall be solely responsible for determining when the work shall be interrupted due to unsatisfactory weather conditions. Determination of the period to be included in the Time for Completion shall cease when the City directs that the work stop due to weather and shall commence again on the first working day thereafter that the City may designate for the work to be resumed. Owner reserves the right to limit or halt construction

due to weather or winter condition during the period of December 01 through April 01 with no extension to Time for Completion.

c. The Contractor must completely understand that once the Contractor mobilizes and begins work, the Contractor must be on-site, every day during the normal work week, and must work continuously until substantial completion of the project. The Parks, Recreation, and Cemetery Division will not allow any time gaps of any length of time during the construction due to the Contractor's scheduling of other work not related to this specific Contract.

d. It should be further understood that this project will not be a "fill-in" for the Contractor and that the Contractor does not have the ability to start and stop construction at the Contractor's option. Any unauthorized time gaps will be subject to a flat fee of $500.00 per day. The Owner reserves the right to deduct said fee from the Contractor's periodic application for payment and the Contract Sum.

e. The Contractor shall carry on the Work and adhere to the schedule during all disputes and disagreements with The Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements. The Contractor shall exercise reasonable precautions, efforts and measures to avoid or mitigate situations that would cause delays.

f. Punch list shall be completed within 28 day from date of issue.

g. The Contractor is advised that the **required calendar days** regarding Time for Completion and Punchlist, shall be consecutive.

ARTICLE 9 - LIQUIDATED DAMAGES

a. Prospective Bidders are advised that liquidated damages shall be in effect for this project. The Contractor and his Sureties shall be liable for and shall pay to the Owner the sum of Five Hundred and Dollars ($500.00) as fixed and agreed, as liquidated damages for each calendar day of delay from the date stipulated for completion, or as modified in accordance with the provisions of the Contract.

ARTICLE 10 - CONSTRUCTION SCHEDULES AND PAYMENT ESTIMATES

a. The Contractor must submit a construction schedule to the Owner indicating the general sequence of all work under this Contract. This schedule must be submitted within 7 days of the date of the Notice-to-Proceed and shall be revised if required to the satisfaction of the Owner.

b. The Contractor shall submit a breakdown and monthly cost estimate (schedule of values) for all items of work in categories approved by the Owner.

c. The established breakdown of items, categories and values shall be utilized to prepare the monthly pay requisition forms. It is recommended that the Contractor submit a draft Payment Applications to the Owner for approval, no later than the second week of every month. The Owner shall review and edit this copy to indicate the amount of payment to be approved and return this to the Contractor after field review. Revised/updated payment estimates and construction schedule must be submitted with monthly Payment Applications. The Contractor shall then formally submit three (3) originals of the Payment Applications, conforming to the Owner's approval, for payment.

ARTICLE 11 - CONSTRUCTION REPORTS & WEEKLY PROGRESS MEETINGS

a. The Contractor and Sub-Contractors shall attend a regular weekly meeting with the Owner at the Parks, Recreation and Cemetery Division Headquarters, 50 Officer Manny Familia Way, Worcester, MA in the Capital Projects Division Conference Room at a pre-determined time set by the Owner. The Contractor must be present for these meetings during the course of the Contract and reserves no right to cancel the meeting. If the Contractor fails to attend the mandatory weekly meeting, a flat fee of $500.00 will be charged to the Contractor. The Owner reserves the right to deduct said fee from the Contractor's periodic application for payment and the Contract Sum.

b. The Contractor will be required to take minutes for the weekly scheduled meetings. The Contractor will have three (3) business days from the date of the meeting to submit to the Owner the minutes of the meeting on the Parks, Recreation and Cemetery Division form. The form will be supplied to the respective Contractor when the Notice to Proceed has been issued. Failure to supply the minutes of the meeting in the required timeframe will result in a flat fee of $250.00 to be charged to the Contractor. The Owner reserves the right to deduct said fee from the Contractor's periodic application for payment and the Contract Sum.

c. The Contactor will be required to maintain daily construction reports (DCRs) (format and information required to be reviewed/ approved by Owner). PDF of the DCRs shall be submitted weekly for review and shall be up to date prior to approval of monthly Payment Applications.

d. The Owner may desire other meetings from time to time, and the Contractor shall attend these and such Sub-Contractors as are directed to attend. All of the above mentioned conditions should apply.

ARTICLE 12 - HOURS OF OPERATION

a. Unless otherwise approved by the Owner, hours of operation shall be 7:00 a.m. to 3:30 p.m., Monday through Friday.

ARTICLE 13 - CONTRACT DOCUMENTS

a. The Owner will furnish the Contractor, without charge, four (4) complete copies of the Contract Documents. Additional copies requested by the Contractor will be furnished at cost.

ARTICLE 14 - STORAGE OF MATERIALS AND EQUIPMENT

a. Bidders are advised that the storage of equipment within the confines of the project limit shall be at the Contractors own risk. No material or equipment shall be stored outside the limits of work as defined in the contract documents, designated and agreed to by the Owner.

ARTICLE 15 - USE OF EQUIPMENT/MACHINERY

a. The Contractor shall not use as any part of his operation any skid steered, track driven, or heavy machinery/equipment on adjacent roadways.

ARTICLE 16 - RESPONSIBILITIES OF CONTRACTOR

a. Except as otherwise specifically stated in the Contract Documents and Technical Specifications, the Contractor shall provide and pay for all materials, tools, labor, equipment, water, light, heat, power, transportation, superintendence, temporary construction of every nature, charges, levies, fees or other expenses, permits and back charges and all other services and facilities of every nature whatsoever necessary for the performance of the Contract and to deliver all improvements embraced in this Contract completed in every respect within the specified time.

b. Unless otherwise specified herein all materials, workmanship, methods, and practices shall conform to the current Standards and Ordinances of the appropriate Departments and/or Commissions of the City. The following documents are available online at http://www.ci.worcester.ma.us/dpw/ , a hard copy or CD will be furnished to the Contractor upon request.

i. The City of Worcester DPW and Parks, Engineering Division, Construction Management Section, Standard Specifications and Details - March 2007 or current edition.

ii. Permit Manual – Revised 2004 or current edition.

c. The Contractor shall be responsible for detailed layout; all stakeout and grade control and shall employ a registered Professional Engineer or a registered Land Surveyor for this purpose. The Owner's Representative will verify and approve the layout and locations of improvements prior to excavation or installation.

d. The Contractor shall verify dimensions and utility locations shown on the plans and if any inconsistencies or discrepancies should be noted on the Drawings, or between the Drawings and actual field conditions, or between the Drawings and the specifications he/she shall immediately notify the Owner. The Contractor will be held responsible for any errors resulting from his/her failure to exercise the aforementioned precaution. Such information shall be marked on copies of the "As-Built" drawings and the original "As-Built" drawings are to be reviewed at weekly job meetings.

e. The Contractor shall provide final As-Built Drawings to the Owner. See "Record Drawings – As Built" of this Section.

f. The Contractor shall maintain a full time supervisor or foreman on the construction site, whether the construction forces are employed by his construction company or employed by a Sub-Contractor.

g. As soon as the Contract is executed, the Contractor shall order materials, submit construction schedules as herein after specified and otherwise anticipate the Notice to Proceed. When the Owner gives the Notice to Proceed, the work of construction shall begin at the time stipulated therein and shall be completed within the Time for Completion specified.

h. It is the Contractor's responsibility to make his own investigation and related assumptions, to satisfy her/him as to subsurface conditions and to insure that these are reflected in the bid.

i. In order to verify locations of utilities and varying field conditions, exploratory excavations may be necessary, the cost of which is to be included in the contract bid price.

j. The Contractor's attention is called to the necessity of obtaining permits especially those required by various departments of the City. These permit fees will not be waived by the City and must be paid in full by the Contractor.

k. The Contractor shall furnish and maintain all temporary fences, barriers, enclosures, lights and warning devices necessary to protect his/her work area and to protect the public and his work forces throughout the life of this contract.

ARTICLE 17 - EMERGENCY CONTACT INFORMATION

a. The Contractor will be required to submit within seven (7) business days after the Notice to Proceed a list of all people that will be involved with the completion of this project including all principal(s), president(s), superintendent(s), and project manager(s) of the company. The list shall contain the

following information, including but not limited to: name, title, address, voice mail number, cell phone number, pager number, fax number and email address.

ARTICLE 18 - ON SITE SUPERINTENDENT/PROJECT MANAGER (S/PC)

a. The Contractor must, at all times, maintain an on-site superintendent during the construction and administration of this Contract. The superintendent must be completely familiar with all aspects of the project and capable of following the construction through from start to finish. The Contractor does not have the right to switch, replace, change or otherwise remove the superintendent assigned to this project unless specifically authorized in writing by the Owner. The on-site superintendent must be present a minimum of seven (7) hours per day during construction. If the on-site superintendent fails to meet the above-mentioned requirements, the Contractor will be subject to a flat fee of $500.00 per day. The Owner reserves the right to deduct said fee from the Contractor's periodic application for payment and the Contract Sum.

The Contractor must assign a Project Manager to this Contract that is completely familiar with all aspects of the project and capable of completing the project. The Contractor does not have the right to switch, replace, change or otherwise remove the superintendent or project manager assigned to this project unless specifically authorized in writing by the Owner. It should be further understood that the Owner would discuss all matters in regards to the administration of this Contract with only one (1) Project Manager, regardless of how many the Contractor assigns to the project.

All correspondence, emails, voice mail, faxes, etc. will be handled through the designated Project Manager only. The Parks, Recreation and Cemetery Division reserves the right, in conjunction with the Contractor, to remove the Contractor's assigned Project Manager if the City feels it is the best interest to do. Upon written notification, the Contractor must assign a new Project Manager within three (3) business days.

ARTICLE 19 - PROVISIONS FOR TRAFFIC/POLICE DETAIL (As Applicable)

a. The Contractor shall not close or obstruct any portion of the Right-of-Way or a public road without obtaining the necessary permission from the proper municipal authorities. If any street or private way shall be rendered unsafe by the Contractor's opinion, he shall make such repairs or provide such temporary ways or guards as shall be acceptable to the Owner including the provision of police details required to complete the work.

b. The Contractor at his/her expense shall maintain public roads and sidewalks passable, and the Contractor shall assume full responsibility for the adequacy and safety of provisions made. He shall conduct his construction operations such that interference with the activities of park users will be held to a minimum.

c. The Contractor shall cooperate in every way possible with the municipal authorities in accommodating park activities and events.

ARTICLE 20 - COMMUNICATIONS

a. All notices, demands, requests, instructions, approvals, proposals and claims must be in writing and must be presented in person or by mail to the Owner.

b. Any notice to or demand upon the Contractor shall be considered sufficiently given if delivered at the office or field office of the Contractor stated on the signature page of the Agreement (or at such other office as the Contractor may from time to time designate in writing to the Owner), or if deposited in the United States mail in a sealed, postage prepaid envelope, or delivered with charges prepaid to any telegraph company for transmission, in each case addressed to such office.

c. All papers required to be delivered to the **Owner** shall, unless otherwise specified in writing to the Contractor, be delivered to:

Robert C. Antonelli, Jr., Assistant Commissioner
Department of Public Works and Parks
50 Office Manny Familia Way, Worcester, MA 01605

and any notice to or demand upon the Owner shall be sufficiently given is so delivered, or if deposited in the United States mail in a sealed, postage prepaid envelope, or delivered with charges prepaid to any telegraph company for transmission to said Owner at such address, or to such other representatives of the Owner or to such other address as the Owner may subsequently specify in writing to the Contractor for such purpose.

d. Any such notice shall be deemed to have been given as of the time of actual delivery or (in the case of mailing) when the same should have been received in due course of post, or in the case of telegrams, at the time of actual receipt, as the case may be.

ARTICLE 21 - PARTIAL USE OF SITE IMPROVEMENTS

a. The Owner, at its election, may give notice to the Contractor and place in use those sections of the improvements which have been completed, inspected and can be accepted as complying with the Technical Specifications and if, in its opinion, each such section is reasonably safe, fit and convenient for the use and accommodation for which it was intended, provided:

1. The use of such sections of the improvements shall in no way impede the completion of the remainder of the work by the Contractor.

2. The Contractor shall not be responsible for any damages or maintenance costs due directly to the use of such sections.

3. The use of such sections shall in no way relieve the Contractor of his liability due to having used defective materials or due to poor workmanship.

4. The period of guarantee stipulated in the specifications shall not begin to run until the date of the final acceptance of all work which the Contractor is required to construct under this Contract.

ARTICLE 22 - SAMPLING AND TESTING OF MATERIALS AND COMPACTION

a. Sampling and testing ordered by the Owner to ensure that materials are as specified and that compaction of all materials conforms to the necessary requirements shall be taken and completed by representatives of a Massachusetts certified testing laboratory satisfactory to the Owner, and shall be paid for by the City as described in the technical specifications.

ARTICLE 23 - TEMPORARY FACILITIES

a. Furnish all labor, materials, and services to fulfill the requirements for temporary facilities, at no additional cost to the Owner, and comply with all requirements set forth herein, except where said requirements are in conflict with Federal, State, or Local laws, rules, and regulations, in which case(s) the applicable Federal, State, or Local requirements shall govern.

ARTICLE 24 - SANITARY FACILITIES

a. Provide, place, and maintain in good order from the commencement to final completion of the work, suitable temporary toilet facilities for use by all persons employed under this contract. Toilets shall be rented from and serviced by an approved company, and shall be kept clean and sanitary and secured at all times. The type of toilets proposed for use shall have the approval of the appropriate

City agency, and the number of units shall be as recommended by the Department of Labor. Toilets shall be locked during nonworking hours and placed in a secured (fenced) location, where possible.

ARTICLE 25 - TEMPORARY LIGHT AND POWER

a. Make all necessary arrangements with the local utility company and pay all costs including labor, in operating and maintaining all temporary services for electricity used during the construction, unless specifically noted otherwise.

b. Ensure that temporary wiring, outlets, and lighting are provided in accordance with the requirements of Bulletin No. 12, Division of Industrial Safety, Department of Public Safety, Commonwealth of Massachusetts.

ARTICLE 26 - TEMPORARY WATER

a. Contractor shall be responsible for securing and coordination of all water needs and temporary connections.

ARTICLE 27 - UTILITIES

a. The Contractor shall obtain and pay for all licenses and/or permits, which are required by the City or any other agencies that may be involved; he/she shall comply with all codes, regulations and standards of the City.

b. Contractor shall be responsible for all on-site coordination with utility companies and public agencies and for obtaining all required permits and paying all required permit fees. In accordance with M.G.L., Chapter 82, Section 40, including amendments; Contractor shall notify all utility companies and government agencies in writing prior to such excavation, Contractor shall also call “Dig Safe” at 1-(888) 344-7233 no less than 72 hours (exclusive of Saturdays, Sundays and Holidays.) prior to such excavation. Documentation of requests and numbers provided to Contractor shall be provided to Owner prior to excavation work.

c. Utility Company improvement fees shall be billed and paid directly by the Owner.

ARTICLE 28 - PHOTOGRAPHS & TIME-LAPSE CAMERA(S)

a. The Contractor shall be required to furnish one (1) view of before, during and after photographs of each site conditions. The Contractor is encouraged to submit "during" photographs along with each pay requisition to facilitate approvals. Photographs in electronic format via compact disc (jpeg or tiff) are acceptable.

b. The Contactor shall be required to furnish, install and continuously maintain three (3) industrial-grade, wire-free, battery operated, weather-proof, construction time-lapse cameras. Cameras shall be securely mounted up to 25’-0” above sidewalk grade on existing light poles adjacent to the Project, location and field of view to be reviewed and approved by Owner. Minimum specification for the performance of the cameras shall be Brinno Model BCC200 or approved equal. The cameras’ AVI file (1 frame per 15 minutes (or approved setting) and 30-day maximum duration) shall be submitted with monthly Payment Applications. Cameras shall be operational prior to site mobilization and maintained until substantial completion of the Project. Cameras and appurtenances shall become property of the Owner at the conclusion of the Project.

ARTICLE 29 - CONTRACTOR'S SHOP AND WORKING DRAWINGS

a. Contractor to coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay. Furnish two (2) record hardcopy sets (binder 8.5x 11 format) of all approved shop drawings at end of the Project.

b. All Contractors are directed to the timeliness and critical importance of expediting the submittal process. Any lead times that may impact sequencing should be prioritized to meet the project schedule. The Owner must be notified if any delays arise that impact lead times.

c. The Contractor shall coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals and related activities that requires sequential activity.

d. The Owner reserves the right to withhold action on a submittal requiring coordination with other submittals until all related submittals are received.

e. To avoid the need to delay installation as a result of the time required to process submittals and to allow sufficient time for submittal review, all initial product submittals, shop drawings shall be submitted for processing and within **twenty-eight (28) calendar days** from the date of Notice to Proceed, unless approved otherwise by Owner.

f. The Contractor must allow the Owner **ten (10) calendar days** for initial review to achieve efficient construction sequencing. Allow additional time if the Owner must delay processing to permit coordination with subsequent submittals. If an intermediate submittal is necessary, process the same as the initial submittal. Allow ample time for reprocessing each submittal to achieve efficient construction sequencing.

g. No extension of Contract Time will be authorized because of the Contractor's failure to transmit submittals to the Owner for processing sufficiently in advance of the scheduled Work.

h. Shop drawings, product data and samples submitted for each item will be reviewed no more than two (2) times at the Owner's expense. Submittals failing to comply with the Contract requirements will be reviewed at times convenient to the Owner and the Owner's consultants and at the Contractor's expense, based upon a flat rate of $75.00 per hour not to exceed $600.00 for each subsequent re-submittal. The Owner reserves the right to deduct said reimbursement from the Contractor's periodic application for payment and the Contract Sum.

i. The Owner's review and approval of submittals shall be held to limitations stated in the conditions of the Contract. In no case shall approval or acceptance by the Owner be interpreted as release of Contractor of responsibility to fulfill requirements of Contract Documents. No acceptance or approval of submittals, nor any indication or note marked by the Owner on submittals, shall constitute authorization for increase in Contract Sum. The Owner will stamp each submittal with an action stamp.

j. As the timely submittal of samples, shop drawings, catalogue cuts and other related submittals is of paramount importance to the completion of the project within the stipulated time period, a contract value of 1% will be assigned to this effort. Upon receipt of the complete submittal package the General Contractor will be permitted to submit payment of this item with a value equal to 1% of the base bid contract amount.

k. Show in large-scale any unique fabrication and setting requirements or any other specified areas seen as necessary or as directed by the Owner's Representative.

l. Shop drawings shall indicate specification section and paragraph requiring items submitted.

m. Contractor shall submit to the Owner's Representative a notarized certificate of compliance from the galvanizer with all galvanizing requirements including ASTM number and weight of coatings in ounces per square foot. Certificate of compliance shall also contain the following:

1. Sole Source Responsibility: include statement that galvanizer accepts sole responsibility for coatings under this Article. Galvanizer who does not accept this responsibility is not acceptable and will be rejected.

2. Quality Assurance: include evidence that Galvanizer meets requirements of ANSI Q90.

3. Certificate of Compliance with Current Environmental Regulations: Galvanizer shall certify that coatings proposed for use comply with applicable environmental regulations. Contractor and Galvanizer shall be responsible for penalties assessed by governmental or environmental authorities for coatings that do not comply with current environmental regulations. All coatings shall be

4. Lead-free.

ARTICLE 30 - HISTORICAL, ARCHAEOLOGICAL OR ANTIQUE ITEMS

a. The Contractor during his excavation, site clearance and other operations may come upon, uncover or otherwise discover items of historical, archaeological or antique nature. The Contractor shall immediately stop operations at the particular site of the discovery and notify the Owner so that a proper evaluation may be made of its importance. The Owner shall arrange for the evaluation in a manner that shall not unduly interfere with the Contractor's operation.

c. All such items, if designated by competent authority to be of historical, archaeological or antique nature shall not become the property of the Contractor but shall be placed in the custody of the Owner for disposition.

c. The Contractor shall be required to remove with care or to assist in the removal of any such item or items and to transport the same to a place of safe keeping within the City. The costs for so assisting shall be reimbursed to the Contractor if approved by the Owner.

ARTICLE 31 - PROVISIONS FOR PUBLIC SAFETY AND CONVENIENCE

a. Particular care shall be taken to establish and maintain such methods and procedures as will not create hazards. Access to all park facilities and shall be maintained in a reasonable and safe manner for the duration of the construction period.

b. Every reasonable effort shall be made to reduce to a minimum any interference with or inconveniences to park operations and park patrons due to the construction work. Excavated material shall be trucked away and returned if the Owner deems it necessary and practical as a means for avoiding serious interference with and inconvenience to business concerns and abutters.

c. The Contractor's attention is directed to the fact that the work on this project may /shall be performed within a recreation area and adjacent to park drives and walkways which are utilized by pedestrians, bikers, joggers and vehicles. The Contractor shall be responsible for the installation of adequate precautions and other safety measures and controls deemed necessary by the Owner in order to protect all park users.

d. Any automotive equipment not protected by traffic cones that is operating on a public way under this project shall have one amber flashing warning light mounted on the cab roof or on the highest practical point of the machinery. This light shall be in operation while the equipment is so working.

e. Trenches shall not be opened in park areas until all material and equipment required for the work are on the site and available for immediate use. The work at each trench shall be practically continuous, with the placing of utilities, backfill and patching (where applicable) of the surface closely following each preceding operation. When work is not in progress, trenches in areas subject to use by park patrons shall be covered with steel plates capable of safely sustaining all anticipated loads.

f. The Contractor shall provide traffic signs, warning markers and other construction safety measures as necessary to maintain public safety and optimum traffic flow. Parking of personal vehicles will be prohibited in construction areas as directed.

g. With suspension of construction activities during holidays, weekends and nights, the Contractor shall remove temporary traffic and/or safety control devices, as requested, and return them to their positions when work begins again. Payment for the installation and maintenance of appropriate safety provisions shall be included under the base bid price and no separate payment shall be considered.

h. The Contractor shall without additional compensation be required to maintain access to the project area for fire apparatus and other emergency vehicles at all times.

ARTICLE 32 - PROTECTION OF EXISTING FACILITIES

a. All existing walks, pipes, conduits, poles, fences, stairways, curbing, walls, buildings, trees and other structures which are to remain in place shall be carefully supported and protected from injury by the Contractor without additional compensation and in case of injury they shall be restored by him without compensation therefore to as good condition as that in which they were found. The value of any trees damaged shall be determined in accordance with established practices of the American Association of Nurserymen or a Registered or Certified Arborist selected by the Project Manager. Limits of liability shall not be limited to the replacement with new and immature trees.

b. The Contractor shall, at his own expense, provide suitable and safe bridges and other crossings, where required, for accommodation of travel and to provide access to private property during construction, and shall remove said structures thereafter.

c. The location of prior existing utility systems is not known and therefore may not be shown on the drawings prepared for this project. The existence of utilities shall not be considered as an unusual obstacle, and the Contractor shall not be entitled to extra compensation for maintaining, protecting, or repairing these utilities. The Contractor shall use the exploratory excavation included in his contract price, whenever he/she or the Owner's representatives deem it necessary to verify, or prevent interruption of, existing services.

ARTICLE 33 - RECORD DRAWINGS - AS-BUILT

a. The Contractor shall cooperate with the Project Manager and shall prepare and maintain a set of drawings on which shall be recorded accurately, as the work progresses, the actual "as built" locations and dimensions of all his work, indicating thereon all variations from the Contract Drawings. This record of "as built" conditions shall include the work of all subcontractors and shall be submitted, upon final acceptance of all work, to the Project Manager and shall be reviewed and updated at weekly meetings.

b. Prior to final acceptance of the work, all "as built" data shall be transferred into digital Auto CAD

2005 format files provided to the Owner by the Contractor. This work shall be performed by the Contractor's Registered Land Surveyor with the cooperation of the Contractor as required. After review and approval by the Owner the record drawings will be completed and delivered to the Owner.

1. All geographic data must be submitted in a standard real-world coordinate system. The following coordinate system is required:

Projection:	Massachusetts State-plane Mainland
Datum:	NAD83
Fipszone:	2001
Units:	Feet
Spheroid:	GRS1980

2. All digital data must be delivered in the following format:

   Autodesk AutoCAD dwg. format, and one of the following file formats:

   ESRI Geodatabase
   ESRI Shapefile format
   ESRI Arc/Info Interchange File format (e00)
   Autodesk AutoCAD dxf format

3. All data must be clean of undershooting and overshooting arcs (dangles). Polygons must be snapped closed at nodes and lines must snap to one another at nodes.
4. All data must be thematically organized. There must be separate layers for road edges, road centerlines, buildings, streams, water and sewer mains, hydrants, easements, parcels, water bodies, etc. For example, if a stream is coincident with a parcel boundary that coincident line must appear in both the parcel layer and the stream layer. All data shown on the plan shall be submitted digitally.
5. Features, which contain a third, dimension or elevation data (z value) must have the elevation value within the attribute data. If elevation data is submitted in a CAD format then the value must be part of the feature (polyline).
6. Documentation:
   A. A list of all files being submitted is required.
   B. CAD data shall include metadata for each layer included within the file. This documentation will provide information on the source of the data, feature type (point, line, polygon, etc), source date, and a general description of what is shown on the layer(s).
   C. GIS data submissions (e.g., mdb, shp file, e00 export) must include all items from B above as well as metadata for each of the feature's geographic data attributes. This will include a complete description of each attribute's definition as well as a description of what each of the attribute values mean for each field.
7. Documentation on the method/s used for data collection shall be submitted for all data deliverables.
8. Documentation on the horizontal and vertical accuracy shall be submitted for all data deliverables.
9. Text & Annotation:
   A. For CAD submissions, text must be placed in separate layers. Features must not be erased in order to accommodate the placement of text. Text layers must be thematically

separate, meaning that text associated with hydrography should be placed on a single layer, while text pertaining to a parcel's ID number should be placed on yet another separate layer. For example, should there be text on a map defining a parcel's ID number and another piece of text defining a stream name, the deliverable to the town must include two (2) separate text layers, one for the parcel ID numbers and one for the stream names.

B. Text associated with a GIS formatted data deliverable must be in one of four forms.

1. A label attribute. This would be related to the feature's attribute fields as previously described above in Section 6.
2. Annotation subclass. This would be separate annotation included within a feature data set as a series of text attribute tables (TAT).
3. Annotation coverage (e00 export). This would be an entirely separate feature class containing text or annotation only.
4. Feature linked annotation as prescribed in ArcGIS.

10. Pertaining to CAD formatted deliverables, features, which cross map sheets, must precisely match each other at the join line between the sheets; edge matching must be seamless.
11. All deliverables, data, text and/or documentation, must be submitted on either CD-ROM or DVD.
12. The Owner shall supply the Contractor with electronic files (AutoCAD) for the sole purpose of creating As- Built Drawings.
13. **As-built tasks shall be assigned a monetary value equal to 2 percent (2%) of total construction cost and be included as an item in the approved schedule of values.**
14. **Contractor shall submit the final approved as-built within 28 day of notice of substantial completion or approval of final payment application.**

ARTICLE 34 - RUBBISH REMOVAL

a. The Contractor and each Subcontractor shall remove all rubbish, waste, tools, equipment, and appurtenances caused by and used in the execution of his work; but this shall in no way be construed to relieve the Contractor of his primary responsibility for maintaining the site clean and free of debris, leaving all work in a clean condition. The Contractor shall keep the site free of rubbish and construction debris at all times.

b. The Contractor shall provide sufficient metal barrels or dumpsters into which all refuse and garbage shall be deposited. All containers shall have tight fitting covers. These shall be secured overnight or removed daily.

c. At the end of each workweek, the Contractor shall thoroughly clean premises of rubbish and debris of any nature, and remove such from the premises.

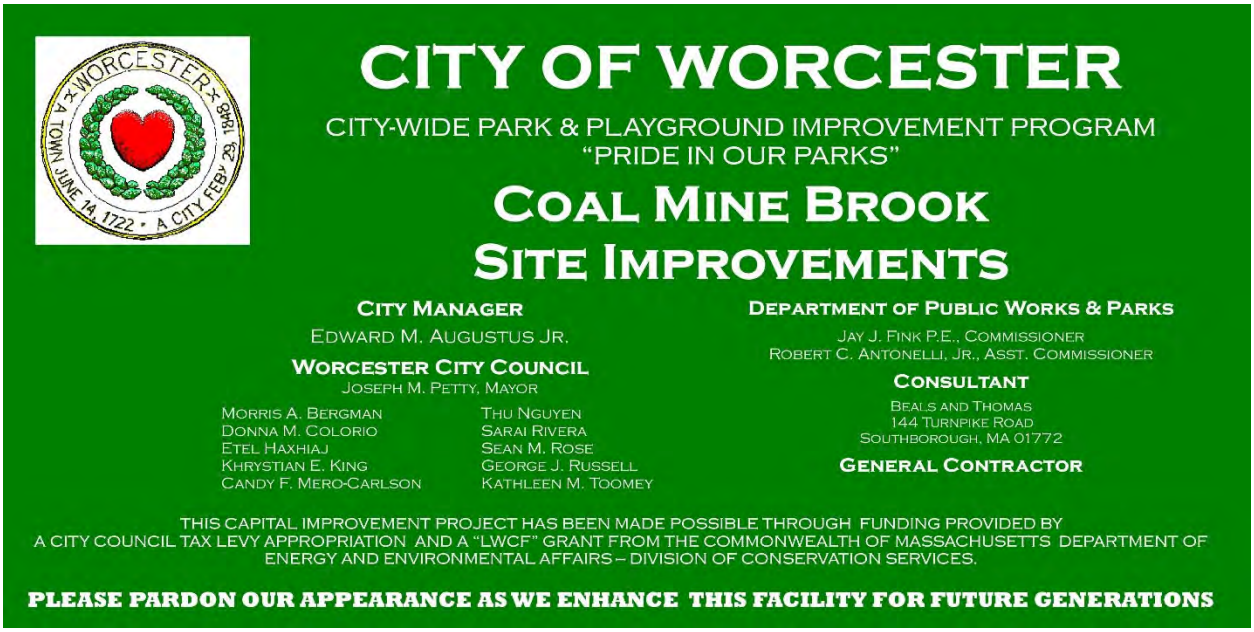
ARTICLE 35 - PROJECT CONSTRUCTION SIGN

a. Contractor will provide and temporarily install one monolithic 48" high X 96" wide X ¾" thick project sign and 2- 4"x 4" posts to identify the Project at a location to be determined in the field by the Owner.

b. The Project sign shall conform exactly to the City of Worcester's DPW and Parks, Parks, Recreation and Cemetery Division's prototype projects sign including but not limited to: size, backer material, font style, size and relief, capitalization, color, weather proofing, fasteners and fastener locations.

c. **Final Graphic and language will be provided by the Owner** (Background color is forest green, text is white). **Sample below is for reference only.**

d. The Contractor shall include the cost of furnishing, post installation and removal of sign and posts in the total project costs



.....PROJECT SPECIAL SPECIFICATIONS

General

1. The following special standard specifications are to be used on contract work awarded by the City of Worcester DPW and Parks; Parks Recreation and Cemetery Division. They are intended to supplement, support and suit this specific Contract.

ARTICLE 36 - DEMOLITION, SITE EXCAVATION AND PREPARATION

a. The work shall consist of excavating, removing and legal disposal of surplus if any, earth, boulders, masonry, existing pavements, building materials, footings, appurtenances and other materials encountered of whatever nature that is unsuitable for the construction and improvements of finished conditions. Excavated to the depth necessary to install according to the specifications, plans and details plans provided in the construction bidding documents.

b. Location of existing utilities shall be verified before excavation commences. The Drawings are based on available utility record drawings and site observation.

c. The excavation shall be carried out to such depths that sufficient materials will be left above the designated grade to allow for compaction to this grade. Should the Contractor, through negligence or other fault, excavate below the designated lines, he shall replace such excavation at his own expense. The Owner shall have complete control over excavation, moving, placing, and disposition of all material. All material determine to be unsuitable shall be disposed offsite at no additional cost to the Owner.

d. The Contractor shall inform and satisfy himself as to the character, quantity, and distribution of all material to be excavated. No payment shall be made for any excavated material, which is used for purposes other than those designated or implied.

e. If it is necessary in the process of the work to interrupt existing surface drainage, sewers, or to pass under drainage, conduits, utilities, or similar underground structures, or parts thereof, the Contractor shall protect it or provide temporary services. The Contractor shall, at his own expense, satisfactorily repair all damage to such facilities or structures that may result from any of his operations or from negligence during the period of the Contract..

f. No excavation shall be started until the Owner has approved the proposed area of construction.

g. Excavation shall be performed at such places as are indicated on the Drawings, to the lines, grades and elevations shown or as directed by the Project Manager, and shall be made in such manner that requirements for the formation of the sub-grade can be followed. Unless directed otherwise any disturbed existing rimmed structures shall be adjusted flush to final adjacent grade.

h. Existing pavements and base courses shall be carefully saw cut or core drilled and removed to the lines indicated and in a manner to obtain sound, vertical edges, and so as not to disturb or damage existing buildings, utilities, pavements, and base coats which are to remain.

i. Unit pavers, such as granite brick and concrete, shall be carefully removed and stockpiled for reuse, if required.

j. All excavations shall be opened using minimum, straight, parallel cuts through pavement and base materials, and other excavations opened using square or rectangular cuts or as directed to minimize removal while permitting regular, straight-line repair and patching.

k. No excavation shall commence in any until the pavement covering the proposed excavation has been marked for cutting.

l. Excavated areas shall be made safe for the residents at the end of each workday.

m. Transport excavated materials, waste materials, trash, and debris and legally dispose of it off city property.

n. Prevent, minimize and control groundwater and/or surface water to accumulate in excavations. Remove water to prevent the undercutting of footings and soil changes detrimental to the stability of sub-grades, foundations and granite, brick or concrete paving.

o. Payment for site excavation and preparation work shall be considered incidental to the individual items installed. No separate payment shall be made for site excavation and preparation work. No separate payment shall be made for all labor, equipment, tools and incidentals necessary to complete the work to the satisfaction of the city, including transportation and disposal of excavated materials.

p. It is the responsibility of the Contractor to verify the accuracy of all survey information provided by the Owner prior to commencing excavations or filling operations. Commencement of these operations constitutes acceptance of the survey information as appropriate to meet the intent of the Contract.

q. Soil testing, if required, for all materials to be reused on-site or removed and disposed of offsite, shall be the responsibility of the contractor. The city reserves the right to obtain its own test results from the same sample as the contractor without penalties to the owner. The contractor is required to obtain a large enough sample to divide with the owner for this proposes.

r. Transport excavated materials, waste materials, trash, and debris and legally dispose of it off city property.

s. Surplus excavated material not needed as specified above shall be hauled away and disposed of by the Contractor at no additional cost to the Owner, at appropriate locations, and in accordance with arrangements made by him. Disposal of all rubble shall be in accordance with all applicable local, state and federal regulations.

t. The Contractor shall comply with Massachusetts regulations (310 CMR 40.0032) that govern the removal and disposal of surplus excavated materials. Materials, including contaminated soils, having concentrations of oil or hazardous materials less than an otherwise Reportable Concentration and that are not a hazardous waste, may not be disposed of at locations where concentrations of oil and/or hazardous material at the receiving site are significantly lower than the levels of those oil and /or hazardous materials present in the soil being disposed or reused.

u. If required: In response to the State/ Federal imposed quarantine regarding the Asian long-horned beetle infestation, the protocol for handling and disposal of wood based materials within the project area by the contractor shall be to:

   i. at a minimum, process all onsite vegetative, wood and cellulose based materials (trees, shrubs, root, stumps, branches, leaves, etc. **twelve inches and under in diameter** and designated for disposal) to a size of less than one inch as measured in two directions by approved mechanical means (wood chipper) prior to disposal/removal offsite. All other existing vegetative, wood and cellulose based products; tree trunks, stumps, branches etc., **greater than twelve inches, in diameter** and designated for removal/disposal shall be delivered to the current transfer station located within the City property limits.

   ii. Contractor shall be responsible to comply with changes to the current quarantine protocols at the time the work is performed.

ARTICLE 37 - CAST IN PLACE CEMENT CONCRETE

a. The scope of work under this article shall consist of furnishing all labor, materials, equipments, transportation, reinforcing, forming, finishing and curing of cast in place concrete for the construction of concrete pads, footings and walls for the structures and site improvements as specified herein and according to the plans and details shown in the construction drawings and the balance of any concrete construction necessary to completion of the project.

b. Unless otherwise specified, all materials shall conform to the relevant provisions of Section 901, **Cement Concrete Masonry,** and Section M4, **Cement and Concrete Materials** of latest edition of The Massachusetts Department of Public Works Standard Specifications for Highways, Bridges and Waterways.

c. At a minimum, concrete to be used shall be Class 4,000 PSI - minimum 28 day compressive strength, and cement content of 610 lbs per cubic yard for ¾" course aggregate. Concrete shall be discharged at site within 90-minutes after batching.

d. All horizontal (pad) concrete construction shall be air entrained which shall be 4.5% to 7%, as determined by ASTM C231.

e. Formwork shall be sufficient enough to resist pressure of the concrete without springing and tight enough to prevent leakage of mortar. Forms shall be staked, braced, or tied together to maintain their position and shape when concrete is compacted in place. Forms shall be clean and shall produce an even finish for exposed surfaces. Forms shall not be removed for at least twenty-four (24) hours after concrete has been placed, or longer if directed by Owner.

f. Preformed expansion joint filler shall be non-extruding and resilient non-bituminous type conforming to AASHTO-M135.

g. Reinforcing as required or pads shall be welded wire fabric, 6" X 6", W1.4 X W1.4 gauge cold-drawn steel wires formed into a mesh and welded together at points of intersection in conformance with ASTM A-185-70. Welded wire fabric shall be furnished in mats and not in rolls.

h. All references to 'processed gravel', 'gravel borrow', or 'gravel' shall conform to Article 39 Gravel Borrow.

i. Curing and protection shall be accomplished by applicable optimum method specified in Section 901, **Cement Concrete Masonry,** and Section M4, **Cement And Concrete Materials** of latest edition of The Massachusetts Department of Public Works Standard Specifications for Highways, Bridges and Waterways.

j. The Contractor is responsible for the quality and strength of the concrete. Inferior concrete, including that damaged by frost action shall be removed and replaced at no additional cost to the Owner.

k. The Contractor shall be responsible to repair or replace any concrete exhibiting deficient materials or workmanship with in one (1) year of final acceptance.

l. Payment for concrete and concrete work shall be considered incidental to the individual item in which the concrete is used. No separate payment shall be made for concrete work.

ARTICLE 38 - GRAVEL BORROW

a. The scope of work under this article shall consist of furnishing all labor, materials, equipment and transportation required for placement and compaction of approved processed gravel according to the plans and details plans and details shown in the construction drawings and the balance of any sub base construction necessary to the completion of the project.

b. All references to 'processed gravel', 'gravel borrow', or 'gravel base' shall conform to this Article.

c. Gravel borrow shall consist of inert material that is hard durable stone and coarse sand, free from loam and clay, surface coatings and deleterious material. Gravel borrow containing recycled concrete material shall not be used in areas of pervious finish grade (i.e. ball fields, skinned, and lawns areas).

d. Gradation requirements for gravel borrow shall be determined by AASHO-T11 and T27 and shall conform to the following:

Sieve	Percent Passing
2"	100
½"	50-85
No. 4	40-75
No. 50	8-28
No. 200	0-10

e. Maximum size of stone in gravel shall be two (2) inches, largest dimension.

f. Gravel shall be spread and compacted in layers not exceeding six (6) inches in depth compacted measurement and all layers shall be compacted to not less than ninety-five percent (95%) of the maximum dry density of the material as determined by the Standard AASHO Test Designation T99 compaction test Method C at optimum moisture content.

ARTICLE 39 - PLAYGROUND & OUTDOOR FITNESS EQUIPMENT

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. The Contractor shall furnish and deliver from the approved **single-source** manufacturer, all labor, materials, equipment and transportation required furnish and install/assemble the equipment as located, described and set forth in the contract plans, specifications and details and in accordance with manufacturer's requirements and recommendations, and as specified herein. Delivery date shall be approved by City Representative and coordinated with contractor responsible for installation of equipment.

1.02 REFERENCE STANDARDS AND SPECIFICATIONS

A. Equipment design, layout, and installation shall comply with the following standards and guidelines as applicable.

1. CPSC - Consumer Product Safety Commission Guidelines for Playground Safety, latest edition.

2. ASTM - American Society for Testing and Materials, Designation: F 1487, Standard Consumer Safety Performance Specification for Playground Equipment for Public Use, latest edition and related sections.

3. ASTM F3101-15 Standard Specification For Unsupervised Public Use Outdoor Fitness Equipment

4. ANSI - American National Standards Institute.

5. AASHTO - American Association of State Highway and Transportation Officials (tests of specifications).

6. MassDOT. - Latest edition of the Standard Specifications for Highways, Bridges and Waterways,

7. MAAB - Massachusetts Architectural Access Board

B. Requirements not specifically set forth herein, but required by the agencies listed in above shall be understood to be a requirement of this contract since these standards of quality and safety are established as the industry standard(s). Any conflicts between the agency standards and the contract documents shall be brought to the attention of the Engineer, and unless otherwise directed in writing, the agency standards shall be the minimum requirement to be followed.

1.03 SHOP DRAWINGS

A. Prior to assembling the equipment as required by the Contract Documents, the following shall be submitted to the Project Representative for review and approval:

1. Shop drawings showing all important details of construction and dimensions showing the equipment, arrangement, footing spacing and lengths. Shop drawings shall stipulate and certify to compliance with all CPSC and ASTM standards and guidelines as applicable. Colors shall be selected by the Owner and indicated on the shop drawings

1.04 QUALIFICATIONS

A. Installer shall have a minimum of five (5) years of experience with a minimum of fifteen (15) playground installations. References will be required. General Contractor shall have direct experience with playground related projects including at least 10,000 s.f. and 50 pieces of play equipment within the last three (3) years.

1.05 APPROVED MANUFACTURER EQUALS

1. Play equipment submitted as an equal substitute must be of the same material quality, appearance, play value, and provide the same warranty and guarantees as the specified product. Substitute play equipment must utilize and work with the same layout and grades provided in the bid documents. Substitute play equipment which requires significant changes to the original intent, to accommodate differences in equipment layout or footprint, as determined by the Owner, shall not be considered an approved equal.

2. Site Specificity of Design:

    a. Equipment selection is based on specific program requirements and physical constraints within the site. Equipment must be a commercially produced product ***(not custom fabricated)*** that is designed for the specific recreational purposes required by DPW & Parks as outlined in these specifications.
    b. Composite play structures and swing sets primary post(s) and concrete footings shall be embedded to a minimum depth of 48-inches below finished grade (top of safety surfacing) and as per manufacturer's diameter. Top of concrete footing shall be flush with base of safety surfacing.
    c. Uniform depth of safety surfacing shall be designed for the maximum fall height of the playground equipment.
    d. Safety surfacing wearing course shall be installed in one application, no cold seams will be permitted.
    e. No roof panels, talk tubes, tube/enclosed slides.
    f. Provide a choice of up to a three premium color combination for composite play equipment.
    g. Vandal Resistance - due to the remote location of the playground, play equipment composed primarily of metal (i.e.: steel, stainless steel, aluminum etc.) is required.
    h. Required Submittals: (CAD drawing of playground layout is available upon request.)
        i. Full Product Specifications.
        ii. Submit 2-D layout and 3-D color rendering with quote.
        iii. Submit guaranteed lead time for delivery and installation.

PART 2 - MATERIALS

2.01 EQUIPMENT

A. As the basis of minimum requirements, all play and outdoor fitness equipment identified in Plans, Specifications and/or Special Conditions are manufactured by **Landscape Structure, Inc.**

A. LANDSCAPE STRUCTURE INC.
O'Brien & Sons, Inc., Medfield, MA 02052, (800) 835-0056, voice (508) 359-4200, fax (508) 359-2817.

B. <u>Or approved (Shop Drawing Review) equal equipment from:</u>

i. **MIRACLE RECREATION EQUIPMENT**
Site Specifics, LLC, PO Box 325, Rochester, MA 02770, (888)-551-3155.

ii. **KOMPAN INC.**
605 W Howard Ln #101, Austin, TX 78753, Direct Rep Summer Berube (860)-705-8970

iii. **BERLINER**
Margie Salt, Park Street Playgrounds LLC, L: 978-664-0239 C: 978-337-6698
http://www.parkstreetplaygrounds.com

B. The equipment shall also comply with the technical specifications included within this Specification section.

C. Contractor shall install Use/Regulations signs as provided by approved equipment manufacturer. Text will be provided by Owner's representative and approved by Owner.

D. Prior to Project Closeout, Contractor shall install safety and regulatory labels on each equipment as provided and directed manufacturer.

2.02 CAST IN PLACE CONCRETE

A. Concrete for the footings will be cast in place cement concrete as specified in the Special Conditions/Specifications. Top of concrete footings shall be twelve (12) inches minimum below finished grade and shall have a pitch outwards from the post.

2.03 MAINTENANCE KIT

A. The Contractor shall provide the Owner with a maintenance kit that is to include twenty (20) replacement hardware covers / caps for each structure, one (1) gallon of graffiti removal / cleaning solutions as recommended by the manufacturer, a manual that includes all installation and maintenance instruction provided by the manufacturer.

B. The Contractor shall provide 10 spare pieces of each type of hardware / fastener used on the structure and the appropriate tools delivered to the Owner's Representative.

<u>PART 3 - EXECUTION</u>

3.01 The Contractor shall assemble the specified equipment under the supervision of an approved Supervisor according to the manufacturer's instructions, the contract drawings and these Specifications.

3.02 The Contractor shall locate the structures to the lines and grades specified in the drawings in these Specifications and according to the specifications of the manufacturer of the equipment. Adjust all equipment to suit site gradients; no sloping platforms, tracks, or members intended to be horizontal

shall be accepted.

3.03 The excavation for the footings shall be done as specified in section of the Specifications and according to the Contract Drawing details.

3.04 The equipment shall be located and brought to the heights as shown in the drawings and as recommended by the manufacturer with vertical and horizontal members set plumb and then braced to be held in place.

3.05 The concrete footings shall be poured around the supporting pieces of the equipment to the elevations specified by each manufacturer. Footings shall be at least 6" BELOW the finished grade of safety surfacing under rubber and 12" below safety surfacing under fiber mulch. The concrete shall be poured and cured according to Article 38 of these Specifications. Slope tops of footings to drain; set bottom of vertical members into gravel base to ensure drainage; do not encase bottom in concrete.

3.06 After the specified cure period of the concrete has passed the bracing may be removed.

3.07 The fills and surfaces shall then be placed and brought to the grades as specified in section of the Specifications and according to the Contract Drawing details.

3.08 The contractor shall refer to Article 43 Attachments, of these Project Special Conditions for additional information on the play and outdoor fitness equipment. **Refer to included detail layout plan. Model layout plan is to indicate at a minimum the play elements and play/use value that is to be included in the structures.**

PART 4 - GUARANTEE AND ACCEPTANCE/LIABILITY

4.01 All operating parts and structural elements of the equipment shall be guaranteed against failure or defect during normal use and operation for the entire warrantee period as established by the Manufacturer.

4.02 Any defective elements shall be replaced in part or whole by the Contractor at no cost to the Owner.

4.03 The Contractor and the manufacturer shall hold the Owner and Engineer harmless from any and all damages or liability resulting from negligent acts and omissions on the part of the Contractor or manufacturer, or resulting from defective parts, or improperly assembled equipment. Contractor shall provide secure storage for all equipment on job site.

4.04 The Contractor is responsible for securing a Certified Playground Safety Inspector to ensure ASTM and CPSC compliance. A certificate of compliance will be issued to the Owner prior to final inspection.

ARTICLE 40 - POURED IN PLACE SAFETY SURFACING

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes: Poured-in-place playground surfacing system.

1.02 REFERENCES

A. American Society for Testing and Materials (ASTM):

1. ASTM D412 Standard Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers-Tension.

2. ASTM D624 Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers.

3. ASTM D2047 Standard Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine.

4. ASTM D2859 Standard Test Method for Flammability of Finished Textile Floor Covering Materials.

5. ASTM E303 Standard Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester.

6. ASTM F1292 Standard Specification for Impact Attenuation of Surface Systems under and Around Playground Equipment.

7. ASTM F1951 Standard Specification for Determination of Accessibility of Surface Systems under and Around Playground Equipment.

1.03 SYSTEM DESCRIPTION

A. Performance Requirements: Provide a 2 layer rubber-polyurethane playground surfacing system which has been designed, manufactured and installed to meet the following criteria:

1. Shock Attenuation (ASTM F1292):

a. Gmax: No to exceed 150.

b. Head Injury Criteria: Not to Exceed 850.

2. Flammability (ASTM D2859): Pass.

3. Tensile Strength (ASTM D412): 60 psi (413 kPa).

4. Tear Resistance (ASTM D624): 140%.

5. Water Permeability: 0.4 gal/yd2/second.

6. Accessibility: Comply with requirements of ASTM F1951.

1.04 SUBMITTALS

A. General: Submit listed submittals in accordance with Conditions of the Contract.

B. Product Data: Submit manufacturer's product data and installation instructions.

C. Verification Samples: Submit manufacturer's standard verification samples of 9" x 9" (229 x 229 mm) minimum.

D. Quality Assurance/Control Submittals: Submit the following:

1. Certificate of qualifications of the playground surfacing installer.

E. Closeout Submittals: Submit the following:

1. Warranty and Testing documents specified herein.

1.05 QUALITY ASSURANCE

A. Qualifications: Utilize an installer approved and trained by the manufacturer of the playground surfacing system, having experience with other projects of the scope and scale of the work described in this section. For installation of the poured-in-place play surface the contractor shall have a minimum of five (5) years of experience. Provide evidence of successful completion of twenty-five (25) like surfaces installed during the past five (5) years with names of clients and phone numbers.

B. Certifications: Certification by manufacturer that installer is an approved applicator of the playground surfacing system.

C. International Play Equipment Manufacturers Association (IPEMA) certified.

D. Testing: Within 35 days following installation of the finished playground surface, the Contractor is required to provide the city with field test results demonstrating that the surface is in compliance with ASTM F1292 for impact attenuation and ASTM F1951 for wheelchair accessibility.

1.06 DELIVERY, STORAGE & HANDLING

A. General: Comply with Division 1 Product Requirement Section.

B. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

C. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at a minimum temperature of 40 degrees F (4 degrees C) and a maximum temperature of 90 degrees F (32 degrees C).

1.07 PROJECT/SITE CONDITIONS

A. Environmental Requirements: Install surfacing system when minimum ambient temperature is 40 degrees F (1 degree C) and maximum ambient temperature is 90 degrees F (32 degrees C). Do not install in steady or heavy rain.

1.08 WARRANTY

A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.

B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under contract documents.

C. Warranty Period: Surfacing shall maintain Impact Performance Criterion as per latest addition of ASTM F1292 and be guaranteed against defects in workmanship and materials for a period of no less than 7 years from date of submission of testing result or acceptance of work/use, whichever is later.

PART 2 PRODUCTS

2.01 POURED-IN-PLACE (PIP) PLAYGROUND SURFACING SYSTEM

A. Poured-in-place playground surfacing system, including the following:

1. Poured-In-Place Primer:

    a. Material: Polyurethane.

2. Poured-in-Place Basemat:

    a. Material: Blend of 100% recycled SBR (styrene butadiene rubber) and polyurethane.

    b. Thickness: meets ASTM F1292 requirements for Impact Attenuation of Surface Systems under and around all equipment or designed maximum critical fall height of 96 inches, whichever is greater.

    c. Formulation Components: Blend of strand and granular material.

3. Poured-In-Place Top Surface:

    a. Material: Blend of recycled EPDM (ethylene propylene diene monomer) and **Aromatic** polyurethane.

    b. Thickness: Nominal 1/2" minimum.

    c. Color: Uniform Custom Combination - 50% Black and 50 % of Manufacturer's one Premium Color. Include contrasting premium color for Playground and Fitness as part of bid.

    d. Dry Static Coefficient of Friction (ASTM D2047): 1.0.

    e. Wet Static Coefficient of Friction (ASTM D2047): 0.9.

    f. Dry Skid Resistance (ASTM E303): 89.

    g. Wet Skid Resistance (ASTM E303): 57.

2.02 PRODUCT SUBSTITUTIONS

A. Substitutions: Approved Equal

2.03 MIXES

A. Required mix proportions by weight:

1. Basemat: 14% polyurethane, 86% rubber.

2. Top Surface: 18% polyurethane, 82% rubber.

PART 3 EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS

A. Comply with the instructions and recommendations of the playground surfacing manufacturer

3.02 EXAMINATION

A. Site Verification of Conditions: Verify that substrate conditions are suitable for installation of the playground surfacing system.

B. Do not proceed with installation until unsuitable conditions are corrected.

3.03 PREPARATION

A. Surface Preparation: Using a brush or short nap roller, apply primer to the substrate perimeter and any adjacent vertical barriers such as playground equipment support legs, curbs or slabs that will contact the surfacing system at the rate of 300 ft2/gal (7.5 m2/L).

3.04 INSTALLATION

A. Do not proceed with safety surfacing installation until all applicable site work, including substrate preparation, fencing, playground equipment installation and other relevant work, has been completed.

B. Basemat Installation:

1. Using screeds and hand trowels, install the basemat at a consistent density of approximately 29 pounds, 1 ounce per cubic foot (466 kg/m3) to the specified thickness.

2. Allow basemat to cure for sufficient time so that indentations are not left in the basemat from applicator foot traffic or equipment.

3. Do not allow foot traffic or use of the basemat surface until it is sufficiently cured.

C. Primer Application: Using a brush or short nap roller, apply primer to the basemat perimeter and any adjacent vertical barriers such as playground equipment support legs, curbs or slabs that will contact the surfacing system at the rate of 300 ft2/gal (7.5 m2/L).

D. Top Surface Installation:

1. Using a hand trowel, install top surface at a consistent density of approximately 58 pounds, 9 ounces per cubic foot (938 kg/m3) to a nominal thickness of 1/2" (12.7 mm).

3. **Single application of each color, no cold seams without prior approval of Owner.**

4. Allow top surface to cure for a minimum of 48 hours.

5. At the end of the minimum curing period, verify that the top surface is sufficiently dry and firm to allow foot traffic and use without damage to the surface.

6. Do not allow foot traffic or use of the surface until it is sufficiently cured.

3.05 PROTECTION

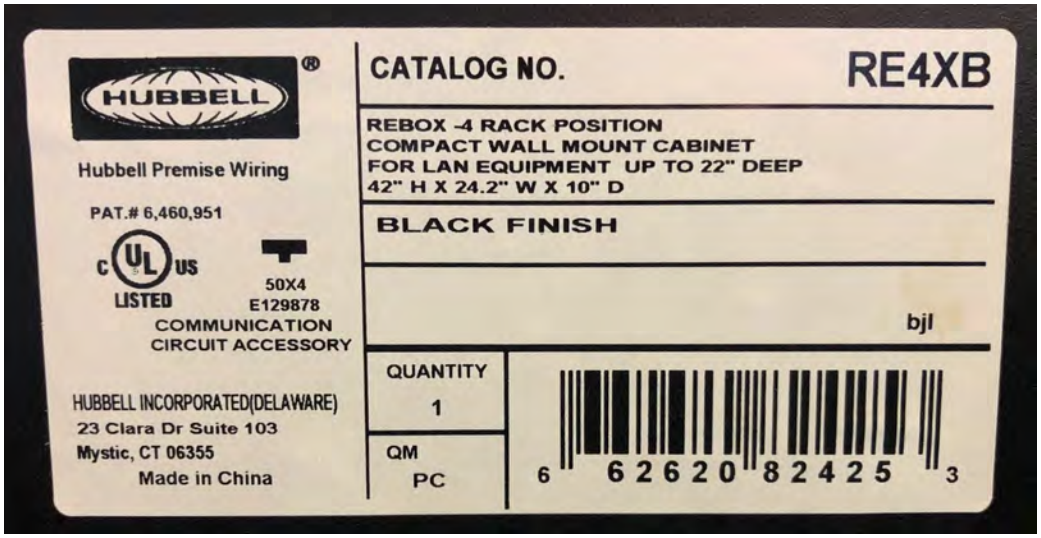
A. Protect the installed safety surfacing from damage resulting from subsequent construction activity on the site.

ARTICLE 41 - SECURITY CAMERA(S) APPURTENANCES

a. ***Include $100,000 in Base Bid for allowance to furnish and install cameras and associated appurtenances. Owner will be responsible to secure specifications and vendor pricing for products, installation labor and connection of security system. Project Contract terms apply.***

b. Include in Base Bid, to furnish, install, splice and test 1000 LF of fiber optic cable, type 12 strand single mode outdoor plant fiber and required connections/appurtenances.

c. Include in Base Bid, to furnish, install, one (1) locking for security equipment cabinet and appurtenances. Model Hubbell Catalog No. RE4XB, as indicated below, or approved equal. Furnish and install one duplex for equipment use. **Security equipment cabinet shall be mounted INSIDE of new properly sized electrical cabinet.**



d. Communications conduits shall be 2-inch type HDPE continuous roll, smooth wall SDR 09 between handholes, communication conduits run into light poles can be Schedule 40 PVC. Electrical and HDPE conduits shall be in separate handhole/pullbox.

e. Include in base bid, to coordinate, furnish and install on each pedestrian light pole with communication handhole, one pole mounted NEMA 3R rated utility cabinet, with stainless steel back panel, include labor and materials to energized duplex outlet for security cameras, security camera appurtenances. Cameras and appurtenances inside pole mounted utility cabinet are not included in Base Bid (see item 'a" of Article 41). Furnish and install manufacturer's standard auxiliary wire exits (2). Mount utility cabinets with pole manufacturer's standard and provided "trac nut" hardware, include fabrication of custom H-bracket for the utility cabinet. Utility cabinet standard shall be Stahlin Part# RJ1614HW-P, Type# 1,3R,4X,6P,12, painted black, or approved equal.

ARTICLE 42 - CHAIN LINK FENCE FRAMEWORK AND FABRIC (For Reference Only)

General

1. This work includes the installation of galvanized, aluminized and polymer coated fence framework and fabric of various heights in accordance with these specifications and in conformity with the details, lines and grades shown on the plans or established.

Construction Requirements

1. Locate and install all posts in concrete (4000 psi at 28 days), with minimum depth of 48 inches below finish grade and minimum diameter of twelve inches or four times the diameter of post, whichever is greater. Typical spacing of post shall be 120 inches max on center. Core spacing/location of post on the precast concrete wall shall be coordinated with shop drawings and adjusted to be located in the middle of top "anchor" block. If applicable, refer to plans for post concrete footing depth and size for batting cage, bullpen, backstop and netting framework. Install plumb and true to line and grade and to the height as indicated within the drawings. All posts shall have continuous horizontal rails at the top, middle (for fence design height 72 inches and greater), and bottom. In addition, all end and corner posts shall be braced to the nearest line post with center brace rails. Outside sleeve type top rail couplings shall be placed a maximum of twelve (12) inches from posts.

2. Chain link fence shall have continuous top and bottom rails. Refer to plans for rail layout for batting cage, bullpen and backstop and netting framework. Top and bottom edge of fence fabric shall have knuckled edges. Fabric shall be stretched uniformly taut and as tight as possible, true to line and grade and complete in all details. Install tension bars at corners.

3. All chain link fence fabric shall be fastened on the outside of the posts unless directed otherwise by the Owner. The fabric shall be properly stretched and securely fastened to the posts and between posts the top and bottom of the fabric shall be fastened to the horizontal braces as specified, herein. The fabric shall be fastened to end and corner posts with tension bars and stretcher bar bands spaced at one (1) foot intervals.

4. Fabric shall be aligned so that top and bottom shall extend one half the height of the "diamond" beyond outer edge of top and bottom of the horizontal rail. The fabric shall also be one (1) inch maximum above finish grade. The fabric shall be tied (as per item 5 below) to all line posts, top, middle and bottom rails every six (6) "diamonds" as measured horizontally or vertically. Overlapping fence fabric sections shall overlap one full height of the "diamond" and be centered on the horizontal rail.

5. All fabric, shall be fastened to all line posts and horizontal rails with 0.020" thickness, 200/300 series stainless steel ½" wide bands, with a minimum breaking strength of 850 lbs., 1/2" band capacity ear-lokt design buckles to be manufactured with 0.050" thick material, 201/301 series stainless steel. Fabric for bleachers shall be attached at each vertical post only, three bands per post. All bands shall be pulled tight and raw ends of steel bands shall be secured in buckle by folding ear tabs around steel bands as per manufacturer's recommended installation procedure. No sharp edges shall protrude from band-it buckles.

Materials

Fabric, posts, gate frames, gate hinges, gate stops, braces, rails, stretcher bars, truss rods, post caps, stretcher bar bands, tension wire shall and other parts shall be of steel, pressed steel or approved equal except that post tops and rail ends may be of aluminum. **No malleable iron, ductile iron materials will be accepted**. The Contractor shall supply a notarized mill certification from manufacturer that all materials used have been tested and fully comply with the specifications specified herein.

1. Fabric: The fabric shall consist of No. 9 gauge (0.148 inch core) wire, 2-inch diamond mesh typical and 1.75-inch diamond mesh for fabric adjacent to tennis courts. All fabric shall be knuckled at both selvages. Public side of fabric shall be installed in accordance with the Owner's direction. The height of the fabric as shown on plans and details shall be typically one piece unless directed otherwise by Owner. Fabric for bleachers will be as per manufacturer's standard.

(a) *Galvanized /Aluminized Coated Fabric:* All materials used shall conform to the requirements of ASTM A392 Class-2, or ASTM A491. Except aluminum alloy items, shall conform to ASTM-B211, B221 and B429.

(b) *Polyvinyl Chloride (PVC) Coated Fabric:* Fence fabric shall be zinc coated in accordance ASTM A392 Class-1 or aluminum-coated in accordance with ASTM A 491(TABLE 3). PVC coating shall be applied in accordance with ASTM F668 Class-2a. The color of the fabric shall be black and in accordance with ASTM F934.

2. Framework: Type II, Group IC round steel pipe (electric resistance welded), cold-formed as per ASTM F1043-00 Standard, with minimum yield strength of 50,000 psi. The external zinc coating shall be Type B, zinc with polymer film, 0.90 oz / sq. ft, minimum zinc coating with a chromate conversion and a verifiable polymer film. The internal coating shall be Type B, zinc 0.90 oz./sq.ft. Minimum or type D, zinc pigmented, 81% nominal coating with 0.30 mils minimum thickness. Gate framework joints shall be welded and coated in accordance with Practice A780, employing zinc-rich paint. Refer to plans for framework sizes for batting cage, bullpen, backstop and netting framework.

(a) End, Corner and Pull Post. Galvanized steel, physical pipe dimension and weights as follows:

(1) Up to 12-foot fabric height: 2.875-inch OD pipe, 4.64-lbs. /lin. ft.
(2) For basketball and tennis courts: 4.000-inch OD pipe, 6.56-lbs. /lin. ft.
(3) For combo batting cage/bullpen and backstop: 4.000-inch OD pipe, 6.56-lbs. /lin. ft.
(4) Maximum Spacing between all posts is 10'- 0" On Center.

(b) Line Posts. Galvanized steel, physical pipe dimension and weights as follows:

(1) Up to 12-foot fabric height: 2.375-inch OD steel pipe, 3.12-lbs. /lin. ft.
(2) For basketball and tennis courts: 2.875-inch OD pipe, 4.64-lbs. /lin. ft.
(3) For combo batting cage/bullpen and backstop: 4.000-inch OD pipe, 6.56-lbs. /lin. ft.
(4) Maximum Spacing between all posts is 10'- 0" On Center.

(c) Gate Posts. Galvanized steel, single gate widths, physical pipe dimension and weights as follows:

(1) Up to 6-feet: 2.875-inch OD pipe, 4.64-lbs./linear ft.
(2) Over 6-feet to 13 feet: 4.0 inch OD pipe, 6.56-lbs./ linear ft.
(3) Gate frames as per ASTM F 900-94.

(d) Rails (Top, middle and bottom rails): Galvanized steel, manufacturer's longest lengths joined by six-inch (6") long sleeves, rail shall run continuously along top of fence. Bottom rail shall be joined at line posts with boulevard clamps. Minimum pipe sizes and weights as follows:

(1) 1.660-inch OD pipe, 1.82-lbs. /lin. ft. minimum.
(2) Top, Bottom and <u>MIDDLE</u> rails are required for fencing adjacent to the soccer field and top of wall OR any fence designated to be six (6) feet and taller.

(e) Couplings: Expansion types, approximately 6-inch long, install one sleeve for each 500 foot run. Standard couplings are installed at each rail end to form one continuous top rail.

(f) Attaching Devices: Provide fittings for attaching top rail securely to each gate corner pull and end post.

(g) Sleeves: Galvanized steel pipe not less than 6 inches long and with inside diameter not less than 1/2-inch greater than outside diameter of the post pipe. Provide steel plate closure welded to bottom of sleeve of width and length not less than 1-inch greater than outside diameter of sleeve.

(h) Post Brace Assembly: Manufacturer's standard adjustable braces at end of gateposts and at both sides of corner and pull posts. Provide horizontal brace located at mid-height of fabric. Use same material as top rail for brace, and truss to line posts with 3/8-inch diameter galvanized steel truss rods and adjustable tightener.

(i) Post Tops: Galvanized steel, weather-tight closure cap for each tubular post. Furnish caps with openings to permit passage of top rail.

(j) Tension Bars: Galvanized steel, one piece lengths equal to full height of fabric, with minimum cross-section of 3/16 inch x 3/4 inch. Provide tension bar for each gate and end post, and two for each corner and pull post. Stretcher Bar Bands will be manufacturer's standard.

(k) Gate Cross-Bracing: 3/8-inch diameter galvanized steel truss rods and adjustable tightener.

(l) Non-Shrink, Non-Metallic Grout: Premixed, factory-packaged, non-corrosive, non-staining, non-gaseous, exterior grout approved by the Engineer.

(m) Single and Double Swinging Gate and Hardware: Swing gates and hardware shall be manufactured to meet the requirements of ASTM F900. Unless indicate otherwise, and to meet ADA requirements, the minimum clear opening for all single gates (as measure with gate perpendicular to framework) shall be 36 inches.

(1) Hinges. Industrial butt hinges, size and material as required for the gate size. Non-lift-off type, offset to permit 180 degree gate opening. Provide one pair of hinges for each leaf, gates eight feet and taller in nominal height shall have three hinges per leaf. Spot-weld to post and paint (non polymer coated), to prevent rotational movement.

(2) Latch (for both single and double gates). Pressed steel, industrial series gate latch, straight fork type, provide latch catch for double gates, designed to permit operation from either side of gate, with padlock eye as integral part of latch catch. Provide two latch and catch for double gates. All gates shall be equipped with one gate stop.

(n) Sleeves if required for fence shall be galvanized steel pipe conforming to ASTM F1043 sizing as required to accommodate posts.

Polymer Coated Framework

Shall meet the above-mentioned specification for materials. The framework shall be subjected to a complete thermal stratification coating process (multi-stage, high-temperature, multi-layer) including, as a minimum, a six-stage pretreatment/wash (with zinc phosphate), an electrostatic spray application of an epoxy base, and a separate electrostatic spray application of a polyester finish. The material used for the base coat shall be a zinc-rich (gray

color) thermosetting epoxy; the minimum thickness of the base coat shall be two (2) mils. The material used for the finish coat shall be a thermosetting "no-mar" TGIC polyester powder; the minimum thickness of the finish coat shall be two (2) mils. The stratification-coated pipe shall demonstrate the ability to endure a salt-spray resistance test in accordance with ASTM B117 without loss of adhesion for a minimum exposure time of 3,500 hours. Additionally, the coated pipe shall demonstrate the ability to withstand exposure in a weather-ometer apparatus for 1,000 hours without failure in accordance with ASTM D1499 and to show satisfactory adhesion when subjected to the crosshatch test, Method B, in ASTM D3359. The polyester finish coat shall not crack, blister or split under normal use. Painted framework and accessories are not acceptable, welded joints shall be top-coated to match frame color. Color of the polymer coated framework and accessories shall be black and in accordance with ASTM F934.

ARTICLE 43 - ATTACHMENTS

Order of Conditions (22 pages)
D-1 (not used)
D-2, Chain Link Fence Framework and Fabric – For Reference Only (1 page)
Landscape Structures Playground and Outdoor Fitness Equipment Specifications (31 pages)

End of Special Conditions and Specifications

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
349-1313
MassDEP File #

eDEP Transaction #

Worcester
City/Town

A. General Information

Please note: this form has been modified with added space to accommodate the Registry of Deeds Requirements

1. From: City of Worcester
Conservation Commission

2. This issuance is for (check one): a. ☒ Order of Conditions b. ☐ Amended Order of Conditions

3. To: Applicant:

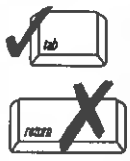
a. First Name | b. Last Name

City of Worcester Department of Public Works & Parks
c. Organization

50 Skyline Drive
d. Mailing Address

Worcester | MA | 01605
e. City/Town | f. State | g. Zip Code

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



4. Property Owner (if different from applicant):

a. First Name | b. Last Name

c. Organization

d. Mailing Address

e. City/Town | f. State | g. Zip Code

5. Project Location:

616 Plantation Street
a. Street Address

Worcester
b. City/Town

46-044
c. Assessors Map/Plat Number

-00001
d. Parcel/Lot Number

Latitude and Longitude, if known: 42d 17m 26.14s N (d. Latitude) | 71d 45m 35.54s W (e. Longitude)

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
349-1313
MassDEP File #

eDEP Transaction #

Worcester
City/Town

A. General Information (cont.)

6. Property recorded at the Registry of Deeds for (attach additional information if more than one parcel):

Worcester
a. County

b. Certificate Number (if registered land)

4675
c. Book

539
d. Page

7. Dates: 01/05/2022 (a. Date Notice of Intent Filed) 03/07/222 (b. Date Public Hearing Closed) 03/29/2022 (c. Date of Issuance)

8. Final Approved Plans and Other Documents (attach additional plan or document references as needed):

Coal Mine Brook 616 Plantation Street Worcester Massachusetts
a. Plan Title

Beals & Thomas, Inc.
b. Prepared By

David J. Lapointe, P.E.
c. Signed and Stamped by

01/05/2022
d. Final Revision Date

1"=20'
e. Scale

NOI Application Materials
Stormwater Report

1/5/2022;
1/5/2022

B. Findings

1. Findings pursuant to the Massachusetts Wetlands Protection Act:

Following the review of the above-referenced Notice of Intent and based on the information provided in this application and presented at the public hearing, this Commission finds that the areas in which work is proposed is significant to the following interests of the Wetlands Protection Act (the Act). Check all that apply:

a. ☒ Public Water Supply
b. ☐ Land Containing Shellfish
c. ☒ Prevention of Pollution
d. ☒ Private Water Supply
e. ☒ Fisheries
f. ☒ Protection of Wildlife Habitat
g. ☒ Groundwater Supply
h. ☒ Storm Damage Prevention
i. ☒ Flood Control

2. This Commission hereby finds the project, as proposed, is: (check one of the following boxes)

Approved subject to:

a. ☒ the following conditions which are necessary in accordance with the performance standards set forth in the wetlands regulations. This Commission orders that all work shall be performed in accordance with the Notice of Intent referenced above, the following General Conditions, and any other special conditions attached to this Order. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, these conditions shall control.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP: 349-1313 MassDEP File #

eDEP Transaction #

Worcester City/Town

B. Findings (cont.)

Denied because:

b. ☐ the proposed work cannot be conditioned to meet the performance standards set forth in the wetland regulations. Therefore, work on this project may not go forward unless and until a new Notice of Intent is submitted which provides measures which are adequate to protect the interests of the Act, and a final Order of Conditions is issued. **A description of the performance standards which the proposed work cannot meet is attached to this Order.**

c. ☐ the information submitted by the applicant is not sufficient to describe the site, the work, or the effect of the work on the interests identified in the Wetlands Protection Act. Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides sufficient information and includes measures which are adequate to protect the Act's interests, and a final Order of Conditions is issued. **A description of the specific information which is lacking and why it is necessary is attached to this Order as per 310 CMR 10.05(6)(c).**

3. ☒ **Buffer Zone Impacts:** Shortest distance between limit of project disturbance and the wetland resource area specified in 310 CMR 10.02(1)(a) — 15 a. linear feet

Inland Resource Area Impacts: Check all that apply below. (For Approvals Only)

Resource Area	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
4. ☐ Bank	a. linear feet	b. linear feet	c. linear feet	d. linear feet
5. ☐ Bordering Vegetated Wetland	a. square feet	b. square feet	c. square feet	d. square feet
6. ☐ Land Under Waterbodies and Waterways	a. square feet	b. square feet	c. square feet	d. square feet
	e. c/y dredged	f. c/y dredged		
7. ☐ Bordering Land Subject to Flooding	a. square feet	b. square feet	c. square feet	d. square feet
Cubic Feet Flood Storage	e. cubic feet	f. cubic feet	g. cubic feet	h. cubic feet
8. ☐ Isolated Land Subject to Flooding	a. square feet	b. square feet		
Cubic Feet Flood Storage	c. cubic feet	d. cubic feet	e. cubic feet	f. cubic feet
9. ☒ Riverfront Area	325 a. total sq. feet	325 b. total sq. feet		
Sq ft within 100 ft	325 c. square feet	325 d. square feet	e. square feet	f. square feet
Sq ft between 100-200 ft	g. square feet	h. square feet	i. square feet	j. square feet

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
349-1313
MassDEP File #

eDEP Transaction #

Worcester
City/Town

B. Findings (cont.)

Coastal Resource Area Impacts: Check all that apply below. (For Approvals Only)

	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
10. ☐ Designated Port Areas	Indicate size under Land Under the Ocean, below			
11. ☐ Land Under the Ocean	a. square feet	b. square feet		
	c. c/y dredged	d. c/y dredged		
12. ☐ Barrier Beaches	Indicate size under Coastal Beaches and/or Coastal Dunes below			
13. ☐ Coastal Beaches	a. square feet	b. square feet	c. nourishment (cu yd)	d. nourishment (cu yd)
14. ☐ Coastal Dunes	a. square feet	b. square feet	c. nourishment (cu yd)	d. nourishment (cu yd)
15. ☐ Coastal Banks	a. linear feet	b. linear feet		
16. ☐ Rocky Intertidal Shores	a. square feet	b. square feet		
17. ☐ Salt Marshes	a. square feet	b. square feet	c. square feet	d. square feet
18. ☐ Land Under Salt Ponds	a. square feet	b. square feet		
	c. c/y dredged	d. c/y dredged		
19. ☐ Land Containing Shellfish	a. square feet	b. square feet	c. square feet	d. square feet
20. ☐ Fish Runs	Indicate size under Coastal Banks, Inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above			
	a. c/y dredged	b. c/y dredged		
21. ☐ Land Subject to Coastal Storm Flowage	a. square feet	b. square feet		
22. ☐ Riverfront Area	a. total sq. feet	b. total sq. feet		
Sq ft within 100 ft	c. square feet	d. square feet	e. square feet	f. square feet
Sq ft between 100-200 ft	g. square feet	h. square feet	i. square feet	j. square feet

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
349-1313
MassDEP File #

eDEP Transaction #

Worcester
City/Town

B. Findings (cont.)

* #23. If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.5.c (BVW) or B.17.c (Salt Marsh) above, please enter the additional amount here.

23. ☐ Restoration/Enhancement *:

a. square feet of BVW | b. square feet of salt marsh

24. ☐ Stream Crossing(s):

a. number of new stream crossings | b. number of replacement stream crossings

C. General Conditions Under Massachusetts Wetlands Protection Act

The following conditions are only applicable to Approved projects.

1. Failure to comply with all conditions stated herein, and with all related statutes and other regulatory measures, shall be deemed cause to revoke or modify this Order.
2. The Order does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of private rights.
3. This Order does not relieve the permittee or any other person of the necessity of complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.
4. The work authorized hereunder shall be completed within three years from the date of this Order unless either of the following apply:
   a. The work is a maintenance dredging project as provided for in the Act; or
   b. The time for completion has been extended to a specified date more than three years, but less than five years, from the date of issuance. If this Order is intended to be valid for more than three years, the extension date and the special circumstances warranting the extended time period are set forth as a special condition in this Order.
   c. If the work is for a Test Project, this Order of Conditions shall be valid for no more than one year.
5. This Order may be extended by the issuing authority for one or more periods of up to three years each upon application to the issuing authority at least 30 days prior to the expiration date of the Order. An Order of Conditions for a Test Project may be extended for one additional year only upon written application by the applicant, subject to the provisions of 310 CMR 10.05(11)(f).
6. If this Order constitutes an Amended Order of Conditions, this Amended Order of Conditions does not extend the issuance date of the original Final Order of Conditions and the Order will expire on _____ unless extended in writing by the Department.
7. Any fill used in connection with this project shall be clean fill. Any fill shall contain no trash, refuse, rubbish, or debris, including but not limited to lumber, bricks, plaster, wire, lath, paper, cardboard, pipe, tires, ashes, refrigerators, motor vehicles, or parts of any of the foregoing.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
349-1313
MassDEP File #

eDEP Transaction #

Worcester
City/Town

C. General Conditions Under Massachusetts Wetlands Protection Act

8. This Order is not final until all administrative appeal periods from this Order have elapsed, or if such an appeal has been taken, until all proceedings before the Department have been completed.

9. No work shall be undertaken until the Order has become final and then has been recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the proposed work is to be done. In the case of the registered land, the Final Order shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is done. The recording information shall be submitted to the Conservation Commission on the form at the end of this Order, which form must be stamped by the Registry of Deeds, prior to the commencement of work.

10. A sign shall be displayed at the site not less then two square feet or more than three square feet in size bearing the words,

"Massachusetts Department of Environmental Protection" [or, "MassDEP"]

"File Number 349-1313 "

11. Where the Department of Environmental Protection is requested to issue a Superseding Order, the Conservation Commission shall be a party to all agency proceedings and hearings before MassDEP.

12. Upon completion of the work described herein, the applicant shall submit a Request for Certificate of Compliance (WPA Form 8A) to the Conservation Commission.

13. The work shall conform to the plans and special conditions referenced in this order.

14. Any change to the plans identified in Condition #13 above shall require the applicant to inquire of the Conservation Commission in writing whether the change is significant enough to require the filing of a new Notice of Intent.

15. The Agent or members of the Conservation Commission and the Department of Environmental Protection shall have the right to enter and inspect the area subject to this Order at reasonable hours to evaluate compliance with the conditions stated in this Order, and may require the submittal of any data deemed necessary by the Conservation Commission or Department for that evaluation.

16. This Order of Conditions shall apply to any successor in interest or successor in control of the property subject to this Order and to any contractor or other person performing work conditioned by this Order.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
349-1313
MassDEP File #

eDEP Transaction #

Worcester
City/Town

C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

17. Prior to the start of work, and if the project involves work adjacent to a Bordering Vegetated Wetland, the boundary of the wetland in the vicinity of the proposed work area shall be marked by wooden stakes or flagging. Once in place, the wetland boundary markers shall be maintained until a Certificate of Compliance has been issued by the Conservation Commission.

18. All sedimentation barriers shall be maintained in good repair until all disturbed areas have been fully stabilized with vegetation or other means. At no time shall sediments be deposited in a wetland or water body. During construction, the applicant or his/her designee shall inspect the erosion controls on a daily basis and shall remove accumulated sediments as needed. The applicant shall immediately control any erosion problems that occur at the site and shall also immediately notify the Conservation Commission, which reserves the right to require additional erosion and/or damage prevention controls it may deem necessary. Sedimentation barriers shall serve as the limit of work unless another limit of work line has been approved by this Order.

19. The work associated with this Order (the "Project")
    (1) ☒ is subject to the Massachusetts Stormwater Standards
    (2) ☐ is NOT subject to the Massachusetts Stormwater Standards

    If the work is subject to the Stormwater Standards, then the project is subject to the following conditions:

    a) All work, including site preparation, land disturbance, construction and redevelopment, shall be implemented in accordance with the construction period pollution prevention and erosion and sedimentation control plan and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Construction General Permit as required by Stormwater Condition 8. Construction period erosion, sedimentation and pollution control measures and best management practices (BMPs) shall remain in place until the site is fully stabilized.

    b) No stormwater runoff may be discharged to the post-construction stormwater BMPs unless and until a Registered Professional Engineer provides a Certification that:

    i. all construction period BMPs have been removed or will be removed by a date certain specified in the Certification. For any construction period BMPs intended to be converted to post construction operation for stormwater attenuation, recharge, and/or treatment, the conversion is allowed by the MassDEP Stormwater Handbook BMP specifications and that the BMP has been properly cleaned or prepared for post construction operation, including removal of all construction period sediment trapped in inlet and outlet control structures;

    ii. as-built final construction BMP plans are included, signed and stamped by a Registered Professional Engineer, certifying the site is fully stabilized;

    iii. any illicit discharges to the stormwater management system have been removed, as per the requirements of Stormwater Standard 10;

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
349-1313
MassDEP File #

eDEP Transaction #

Worcester
City/Town

C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

iv. all post-construction stormwater BMPs are installed in accordance with the plans (including all planting plans) approved by the issuing authority, and have been inspected to ensure that they are not damaged and that they are in proper working condition;

v. any vegetation associated with post-construction BMPs is suitably established to withstand erosion.

c) The landowner is responsible for BMP maintenance until the issuing authority is notified that another party has legally assumed responsibility for BMP maintenance. Prior to requesting a Certificate of Compliance, or Partial Certificate of Compliance, the responsible party (defined in General Condition 18(e)) shall execute and submit to the issuing authority an Operation and Maintenance Compliance Statement ("O&M Statement) for the Stormwater BMPs identifying the party responsible for implementing the stormwater BMP Operation and Maintenance Plan ("O&M Plan") and certifying the following:

i.) the O&M Plan is complete and will be implemented upon receipt of the Certificate of Compliance, and

ii.) the future responsible parties shall be notified in writing of their ongoing legal responsibility to operate and maintain the stormwater management BMPs and implement the Stormwater Pollution Prevention Plan.

d) Post-construction pollution prevention and source control shall be implemented in accordance with the long-term pollution prevention plan section of the approved Stormwater Report and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Multi-Sector General Permit.

e) Unless and until another party accepts responsibility, the landowner, or owner of any drainage easement, assumes responsibility for maintaining each BMP. To overcome this presumption, the landowner of the property must submit to the issuing authority a legally binding agreement of record, acceptable to the issuing authority, evidencing that another entity has accepted responsibility for maintaining the BMP, and that the proposed responsible party shall be treated as a permittee for purposes of implementing the requirements of Conditions 18(f) through 18(k) with respect to that BMP. Any failure of the proposed responsible party to implement the requirements of Conditions 18(f) through 18(k) with respect to that BMP shall be a violation of the Order of Conditions or Certificate of Compliance. In the case of stormwater BMPs that are serving more than one lot, the legally binding agreement shall also identify the lots that will be serviced by the stormwater BMPs. A plan and easement deed that grants the responsible party access to perform the required operation and maintenance must be submitted along with the legally binding agreement.

f) The responsible party shall operate and maintain all stormwater BMPs in accordance with the design plans, the O&M Plan, and the requirements of the Massachusetts Stormwater Handbook.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
349-1313
MassDEP File #

eDEP Transaction #

Worcester
City/Town

C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

g) The responsible party shall:
1. Maintain an operation and maintenance log for the last three (3) consecutive calendar years of inspections, repairs, maintenance and/or replacement of the stormwater management system or any part thereof, and disposal (for disposal the log shall indicate the type of material and the disposal location);
2. Make the maintenance log available to MassDEP and the Conservation Commission ("Commission") upon request; and
3. Allow members and agents of the MassDEP and the Commission to enter and inspect the site to evaluate and ensure that the responsible party is in compliance with the requirements for each BMP established in the O&M Plan approved by the issuing authority.

h) All sediment or other contaminants removed from stormwater BMPs shall be disposed of in accordance with all applicable federal, state, and local laws and regulations.

i) Illicit discharges to the stormwater management system as defined in 310 CMR 10.04 are prohibited.

j) The stormwater management system approved in the Order of Conditions shall not be changed without the prior written approval of the issuing authority.

k) Areas designated as qualifying pervious areas for the purpose of the Low Impact Site Design Credit (as defined in the MassDEP Stormwater Handbook, Volume 3, Chapter 1, Low Impact Development Site Design Credits) shall not be altered without the prior written approval of the issuing authority.

l) Access for maintenance, repair, and/or replacement of BMPs shall not be withheld. Any fencing constructed around stormwater BMPs shall include access gates and shall be at least six inches above grade to allow for wildlife passage.

Special Conditions (if you need more space for additional conditions, please attach a text document):

See Attachment A.

20. For Test Projects subject to 310 CMR 10.05(11), the applicant shall also implement the monitoring plan and the restoration plan submitted with the Notice of Intent. If the conservation commission or Department determines that the Test Project threatens the public health, safety or the environment, the applicant shall implement the removal plan submitted with the Notice of Intent or modify the project as directed by the conservation commission or the Department.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
349-1313
MassDEP File #

eDEP Transaction #

Worcester
City/Town

D. Findings Under Municipal Wetlands Bylaw or Ordinance

1. Is a municipal wetlands bylaw or ordinance applicable? ☒ Yes ☐ No

2. The City of Worcester Conservation Commission hereby finds (check one that applies):

   a. ☐ that the proposed work cannot be conditioned to meet the standards set forth in a municipal ordinance or bylaw, specifically:
   City of Worcester Wetlands Protection Ordinance & Regulations (1. Municipal Ordinance or Bylaw)
   COW GRO Part 1. Ch. 6. (2. Citation)

   Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides measures which are adequate to meet these standards, and a final Order of Conditions is issued.

   b. ☒ that the following additional conditions are necessary to comply with a municipal ordinance or bylaw:
   City of Worcester Wetlands Protection Ordinance & Regulations (1. Municipal Ordinance or Bylaw)
   COW GRO Part 1. Ch. 6. (2 Citation)

3. The Commission orders that all work shall be performed in accordance with the following conditions and with the Notice of Intent referenced above. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, the conditions shall control.
   The special conditions relating to municipal ordinance or bylaw are as follows (if you need more space for additional conditions, attach a text document):
   See Attachment A.

47. Spill Prevention* -
    a) No fuel, oil, or other pollutants shall be stored in any resource area or the buffer zone thereto, unless specified in this Order;
    b) No refueling shall take place within resource areas or 100-ft to a resource area;
    c) The applicant shall take all necessary precautions to prevent discharge or spillage of fuel, oil or other pollutants onto any part of the site;
    d) A spill kit shall be present on site at all times.

48. Fertilizers – For any portion of the lot located in the buffer zone, the Commission will allow the use of fertilizers without phosphorus only during the construction phase in order to establish vegetation in order to stabilize slopes as quickly as possible.

V. Conditions to Meet at Completion of Project

49. Site Stabilization* - All disturbed areas shall be properly stabilized with well-established perennial vegetation or other approved methods before the project is considered complete.
50. Erosion and Sediment Controls* - Erosion and sediment controls shall not be removed from the site until all disturbed areas have been stabilized with final vegetative cover and approval has been received from the Commission or its Agents to do so. The controls must then be removed within two weeks of receipt of that certification.
51. Certificate of Compliance* - Upon completion of the project, the applicant shall request in writing a Certificate of Compliance from the Commission. If the project has been completed in accordance with plans stamped by a registered professional engineer, architect, landscape architect, or land surveyor, certification must include a written statement by such professional certifying the same.
    a) If the project required compliance with the Massachusetts Stormwater Standards and/or work was conducted within Riverfront Area or Bordering Land Subject to Flooding, a certified as-built plan-of-land shall be provided showing final grades, resource areas, and all constructed improvements;
    b) If permanent markers were required, the certified as-built plan-of-land shall depict their location.
52. Pesticides, Etc. – No pesticides, herbicides, or fertilizers, with the exception of lime, shall be used on lawn(s) within the buffer zone to bordering vegetated wetland or bank after completion of the project.
53. Sand/Salt – The use of sand and salt on paved surfaces shall be kept to an absolute minimum during the winter months.
54. Snow Storage – At no time shall snow be stored or stockpiled within 30' of a bordering vegetated wetland or bank, a stormwater basin, or compensatory storage area.
55. Deed Condition – Conditions numbered **36, 52, 53, 54** shall extend beyond the Certificate of Compliance, in perpetuity, and shall be referred to in all future deeds to this property.

VI. General Conditions

56. Change in Ownership* - If a change in ownership takes place while this Order is still in effect, it is the responsibility of the new owner to notify the Commission of the change and to provide the name of the person responsible for compliance with the Order.

57. Conservation Agent's Power to Act* - With respect to all conditions, except _____, the Conservation Commission designates the Conservation Agent, as its Agent with full powers to act on its behalf in administering and enforcing this Order, unless the Agent determines approval from the Commission is appropriate.

58. Right to Inspect* - A member of the Conservation Commission or its Agent may enter and inspect the property and the activity that are the subjects of this Order at all reasonable times, with or without probable cause or prior notice, and until a Certificate of Compliance is issued, for the purpose of evaluating compliance with this Order (and other applicable laws and regulations).

59. Changes to the Plan or Errors & Omissions* -

    (a) If any plan, calculation, or other data presented to the Office of the Commission is in error or have omissions, and are deemed significant by the Commissioners or their Agents, all work will stop at the discretion of the Commission, until the discrepancies have been rectified to the Commission's satisfaction.

    (b) The applicant must notify the Commission in writing of any changes in the plans or implementation of the proposed activity where mandated by any local, state, or federal agencies having jurisdiction over the proposed activity. If, in the opinion of the Commission, any changes in the plans or implementation of the proposed activity so require, then the Commission may modify, amend or rescind this Order in a way consistent with:

    - M.G.L. Chapter 131, Section 40,
    - 310 CMR 10.00, *Wetlands Protection*,
    - the City of Worcester's *Wetlands Protection Ordinance*, and
    - the Commission's *Wetlands Protection Regulations*

    If any provisions of any conditions, or application thereof is held to be invalid, such invalidity shall not affect any other provisions of this Order. If the Commission deems that a proposed change is major or substantial, a new hearing may be required.

60. Liability* - The applicant shall indemnify and save harmless the Commonwealth, the City of Worcester, the Conservation Commission, and its Agents against all sites, claims or liabilities of every name and nature arising at any time out of or in consequence of the acts of the Commission or its Agents in the performance of the work covered by this Order and/or failure to comply with the terms and conditions or this Order whether by itself or its employees or subcontractors.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
349-1313
MassDEP File #

eDEP Transaction #

Worcester
City/Town

E. Signatures

03/29/2022
1. Date of Issuance

4
2. Number of Signers

This Order is valid for three years, unless otherwise specified as a special condition pursuant to General Conditions #4, from the date of issuance.

Please indicate the number of members who will sign this form.
This Order must be signed by a majority of the Conservation Commission.

The Order must be mailed by certified mail (return receipt requested) or hand delivered to the applicant. A copy also must be mailed or hand delivered at the same time to the appropriate Department of Environmental Protection Regional Office, if not filing electronically, and the property owner, if different from applicant.

The names typed below represent the intent to sign the foregoing document in accordance with MGL Chapter 110G §9
Duly authorized by Ch.110G and recorded at Worcester Registry of Deeds in Book 62537 Page 329.

Signatures:

DocuSigned by:
59FC5C358872476...

DocuSigned by:
F683C367C17D49E...

DocuSigned by:
E7B903CABD19425...

DocuSigned by:
B818D6233187461...

☐ by hand delivery on

Date

☒ by certified mail, return receipt requested, on 03/29/2022

Date

F. Appeals

The applicant, the owner, any person aggrieved by this Order, any owner of land abutting the land subject to this Order, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate MassDEP Regional Office to issue a Superseding Order of Conditions. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and a completed Request for Departmental Action Fee Transmittal Form, as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Order. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.

Any appellants seeking to appeal the Department's Superseding Order associated with this appeal will be required to demonstrate prior participation in the review of this project. Previous participation in the permit proceeding means the submission of written information to the Conservation Commission prior to the close of the public hearing, requesting a Superseding Order, or providing written information to the Department prior to issuance of a Superseding Order.

The request shall state clearly and concisely the objections to the Order which is being appealed and how the Order does not contribute to the protection of the interests identified in

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
349-1313
MassDEP File #

eDEP Transaction #

Worcester
City/Town

the Massachusetts Wetlands Protection Act (M.G.L. c. 131, § 40), and is inconsistent with the wetlands regulations (310 CMR 10.00). To the extent that the Order is based on a municipal ordinance or bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.

G. Recording Information

Prior to commencement of work, this Order of Conditions must be recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land subject to the Order. In the case of registered land, this Order shall also be noted on the Land Court Certificate of Title of the owner of the land subject to the Order of Conditions. The recording information on this page shall be submitted to the Conservation Commission listed below.

Conservation Commission

Detach on dotted line, have stamped by the Registry of Deeds and submit to the Conservation Commission.

To:

Conservation Commission

Please be advised that the Order of Conditions for the Project at:

Project Location | MassDEP File Number

Has been recorded at the Registry of Deeds of:

County | Book | Page

for: Property Owner

and has been noted in the chain of title of the affected property in:

Book | Page

In accordance with the Order of Conditions issued on:

Date

If recorded land, the instrument number identifying this transaction is:

Instrument Number

If registered land, the document number identifying this transaction is:

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 5 – Order of Conditions

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
349-1313
MassDEP File #

eDEP Transaction #

Worcester
City/Town

Document Number

Signature of Applicant

CC-2022-003

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

Request for Departmental Action Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

DEP File Number:

Provided by DEP

A. Request Information

1. Location of Project

a. Street Address

b. City/Town, Zip

c. Check number

d. Fee amount

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.

2. Person or party making request (if appropriate, name the citizen group's representative):

Name

Mailing Address

City/Town

State

Zip Code

Phone Number

Fax Number (if applicable)

3. Applicant (as shown on Determination of Applicability (Form 2), Order of Resource Area Delineation (Form 4B), Order of Conditions (Form 5), Restoration Order of Conditions (Form 5A), or Notice of Non-Significance (Form 6)):

Name

Mailing Address

City/Town

State

Zip Code

Phone Number

Fax Number (if applicable)

4. DEP File Number:

B. Instructions

1. When the Departmental action request is for (check one):

☐ Superseding Order of Conditions – Fee: $120.00 (single family house projects) or $245 (all other projects)

☐ Superseding Determination of Applicability – Fee: $120

☐ Superseding Order of Resource Area Delineation – Fee: $120

CC-2022-003

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

Request for Departmental Action Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

DEP File Number:

Provided by DEP

B. Instructions (cont.)

Send this form and check or money order, payable to the *Commonwealth of Massachusetts*, to:

Department of Environmental Protection
Box 4062
Boston, MA 02211

2. On a separate sheet attached to this form, state clearly and concisely the objections to the Determination or Order which is being appealed. To the extent that the Determination or Order is based on a municipal bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.

3. Send a **copy** of this form and a **copy** of the check or money order with the Request for a Superseding Determination or Order by certified mail or hand delivery to the appropriate DEP Regional Office (see http://www.mass.gov/eea/agencies/massdep/about/contacts/).

4. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.

ATTACHMENT A

Worcester Conservation Commission

Special Order of Conditions

City of Worcester Wetlands Protection Ordinance & City of Worcester Wetlands Protection Regulations

(City of Worcester Revised Ordinance Part I, Chapter 6)

And

Massachusetts General Laws, Chapter 131, §40 - Massachusetts Wetlands Protection Act

616 Plantation Street (CC-2022-003; DEP 349-1313)

Project Description: Construction of open space and recreation improvements to the existing park, involving the construction of a parking lot, walkways, two observation decks, a playground, stormwater management system; vista pruning, selective dead tree removal, and other associated site work. A portion of the work falls within the 100' buffer to the bank of Coal Mine Brook, and the land under water body of Lake Quinsigamond.

Waivers Granted: City of Worcester Wetlands Protection Regulations 4.2.4.to allow work within the 15' buffer and to allow structure (pervious paving, signage and lighting) within the 30' buffer.

Table of Contents:

Notes:

- **Office of the Commission** is located at the Division of Planning and Regulatory Services (455 Main Street 4th floor, Worcester, MA), which can be contacted by e-mailing planning@worcesterma.gov or calling 508-799-1400 ext. 31440.
- **Asterisked (*) conditions** are standard conditions of approval for all projects.

I. Conditions to Meet Prior to and During Construction

21. Person Responsible for Compliance with the Order of Conditions* – A person shall be designated to be responsible to monitor compliance with the Order of Conditions. Their name and contact information (24/7) shall be provided to the Office of the Commission prior to start of any activity. This person shall conduct:
    a) periodic inspections to assure the adequacy and continued effectiveness of erosion and sediment controls;
    b) inspections of said controls following 0.5-inch or greater rain events, or after a heavy snow melt.
22. Contract* - This Order of Conditions and all approved plans shall be included as part of any contract and subcontract and shall be posted in a prominently displayed location in the supervisory office on site during all phases of construction.
23. Notification* - The applicant shall notify the Office of the Commission a minimum of 48 hours prior to the start of any activity.
24. Wetland and Bank Flagging – Prior to construction, wetland and bank flags shall be installed along the wetland andr bank boundary, and shall remain in place during and after construction until approved for removal through the issuance of Certificate of Compliance for the entire project.

II. Conditions to Meet Before the Start of Any Activity

25. Revised Plans – That one (1) to-scale digital copy of revised plans shall be provided to the Office of the Commission, prior to commencement of work, showing the below changes. These plans shall be considered the final revised plans approved for the project -
    a) Any trees with a diameter at breast height of 8 inches or more, whether alive or dead, to be felled or removed, located within the 100 foot buffer zone, shall be depicted on the revised site plan. All other vista pruning, dead tree removal, and vegetative management is to be coordinated in the field with the Commission or an agent of the Commission.
    b) A note shall be added to the plan reflecting that a minimum of two rows of sedimentation control barriers shall be installed at the limit of work on the north side of the site.
    c) An improved detail shall be provided for the outfalls from the underground stormwater detention basins providing sizing calculations for scour protection to ensure velocity is attenuated noting that upon install these shall be inspected for scour.
    d) An improved detail shall be provided for the synthetic turf material to be installed in the parking lot island for an alternate pervious surface treatment.
    e) Provide a detail for the pervious pavement.
    f) Trash receptacles or signage shall be placed at the overlooks, and depicted on the plan, as a deterrent for littering within the buffer zone to the brook.
    g) An operation plan shall be provided showing the locations for temporary sedimentation basins designed to fully mitigate a 3.12 inch 24-hour rain event (2-year storm). Provide calculations for the ground area proposed to be opened to be approved by the Commission or Staff. Protocols for drawdown or dewatering of temporary basins between rain-events shall be included as well as any proposed phasing.
26. Stormwater Management System Maintenance – Prior to the start of any activity, the applicant must submit in writing the name, address and telephone number of the party responsible for ongoing maintenance of the stormwater management system components.

27. Stormwater Pollution Prevention Plan (SWPPP)* – That one (1) copy of the SWPPP submitted to the EPA in compliance with the NPDES permit requirements, if applicable, shall be provided to the Office of the Commission prior to commencement of work.
28. Tree Cutting* – Tree cutting is allowed following installation of erosion and sediment controls; otherwise, it may be allowed, prior to such installation, with the explicit permission of the Commission or its Agents.
29. Trees To Remain* – All trees to remain post construction shall be marked on site as shown on the approved plan so that the Commission or its representative can verify them before any clearing takes place.
30. Pre-Construction Conference* -
    a) Upon selection of a contractor the revised plans, including any proposals for phasing, and the operations plan shall be transmitted to the Commission for review in compliance with the order and of proposed means and methods at a regularly scheduled meeting.
    b) The property owner / applicant and any person performing work that is subject to this Order are responsible for understanding and complying with the requirements of this Order, the Wetlands Protection Act, 310 CMR 10.00 and City of Worcester Wetlands Protection Ordinance and Regulations. Said persons shall acknowledge such in writing prior to commencement of activities.
31. Inspections Prior to Site Preparation and Site Work* - Erosion and sediment controls shall be installed and verified, in compliance with final approved plans, by the Commission or its Agents prior to the commencement of any excavation, grubbing and/or stumping of vegetation, grading, construction, or other site preparation.
32. Construction Schedule* - Submit a Construction Schedule consistent with Work Sequencing plans provided to the Office of the Commission prior to the start of any activities.
33. Demarcation of Limit of Work – For areas of work within the 100 foot buffer to a bordering vegetated wetland/bank, prior to construction, the contractor shall stake out the 15 foot Worcester Wetlands Protection Ordinance no-disturb buffer or limit of work, whichever is further from the bank, using an orange snow/construction fence to demarcate the no-disturbance zone during construction in order to prevent encroachments beyond the approved limit of work and prevent resource area impacts.

III. Stormwater Management System

34. Catch Basins* –
    a) The paved roadways and parking lots shall be bermed and shall be installed with standard City of Worcester catch basins.
    b) Prior to start of activity on site that causes soil erosion and sedimentation, catch basin filter traps shall be installed in the existing and new catch basins.
    c) Catch basins shall be cleaned as warranted during construction to keep them clear of sediment, and minimum twice a year thereafter.
35. Construction Timing –
    a) *Temporary Sedimentation Basins* shall be created prior to any other construction related activity on site in accordance with the operation plan detailed in Condition #24(f) once reviewed and approved by the Commission or Staff.
    b) *Permanent Stormwater Management* and all associated drainage piping, inverts, and outlets as proposed in the project plans shall be constructed and be operating as designed prior to paving on the site.

36. Stormwater Management System Maintenance* – The stormwater management system shall be maintained in accordance with the approved design plans and Operation and Maintenance Plan on file with the Office of the Commission. The system shall be maintained in good hydraulic condition (e.g. any accumulated silt/sediment shall be removed; the system shall be kept free of any litter, refuse, or other extraneous matter, etc.). **This condition shall extend in perpetuity beyond the issuance of the Certificate of Compliance.**

IV. Conditions to Meet During Construction

37. Limit of Work* – No removal, filling, dredging or altering of jurisdictional areas shall take place outside the approved work under this Order of Condition.

38. Work Sequencing* – Activities shall take place in accordance with all phasing and sequencing shown on the plan and/or provided in the application materials on file with the Office of the Commission and shall follow any lot opening restrictions otherwise provided herein.

39. Infiltration Unit Inspection - Prior to back-filling, the applicant shall request and have conducted an inspection by the Commission or its Agents in order to verify the installation of the infiltration unit was conducted in a manner consistent with that provided on the approved plans.

40. Erosion Stabilization -

a) *Erosion and Sediment Controls** - All erosion and sediment controls shall be monitored, maintained, and adjusted for the duration of the project to prevent adverse impacts to jurisdictional areas. Additional erosion and sediment controls may be utilized on site as needed.

b) *Off Site Impacts** - There shall be no off-site erosion, flooding, ponding, or flood-related damage from runoff caused by the project activities.

c) *Unanticipated Drainage or Erosion** - The applicant shall control any unanticipated drainage and/or erosion conditions that may cause damage to jurisdictional areas and/or abutting or downstream properties. Said control measures shall be implemented immediately upon need. The Office of the Conservation Commission shall be notified if such conditions arise and of the measures utilized.

d) *Soil Stabilization due to Delay in Work** - If there is an interruption of more than 10, but less than 60 days between completion of grading and revegetation, the applicant shall sow all disturbed areas with annual rye grass to prevent erosion. If soils are to be exposed for longer than 60 days, a temporary cover of rye or other grass should be established following US Soil Conservation Services procedures, as recently amended, to prevent erosion and sedimentation. Once final grading is complete, loaming and seeding of final cover should be completed promptly.

e) *Grading of Slopes**-

i. >40% Slope – Slopes shall not exceed those specified in the plans approved by the Conservation Commission. Any slope equal to or greater than 40% (1 vertical to 2 1/2 horizontal) shall be stabilized with erosion control matting.

ii. <40% Slope – Final grades of vegetated areas shall not exceed a slope of 1 vertical to 2 1/2 horizontal (40%) and shall be stabilized to prevent erosion, particularly during the construction period.

f) *Stockpile Maintenance** - Any stockpiling of loose materials shall be properly stabilized to prevent erosion into and sedimentation of jurisdictional areas. Preventative controls such as strawbales or erosion control matting shall be implemented to prevent such an occurrence.

g) *Stockpile Location* – In no case shall any soil or excavated material be stockpiled within 50 feet of any wetland, floodplain, or storm drain inlet.

h) *Site Stabilization Prior to Winter** - Prior to winter, exposed soils shall be stabilized (e.g. with demonstrated vegetative growth, impermeable barriers, erosion control blankets, etc.).

41. Invasive Insects* -

a) *Plantings* – No trees to be planted shall be species susceptible to the Asian Longhorned Beetle or Emerald Ash Borer.

b) *Wood Removal* – All tree, brush & wood removal shall adhere to the most recently amended requirements set forth by the Massachusetts Department of Conservation & Recreation for any project located in the Asian Longhorned Beetle Quarantine Zone.

42. Invasive Vegetation – The goal of this condition is to keep jurisdictional areas (bufferzone and resource areas) free of all invasive, likely invasive, and potentially invasive species as identified in *The Evaluation of Non-native Plant Species for Invasiveness in Massachusetts,* published by the MA Invasive Plant Advisory Group in April 1, 2005. This condition is intended to prevent the introduction and spread of non-native and invasive species which are known to result in resource area alterations and have impacts on wildlife habitat, etc.

a) *Material Introduction* – All imported materials, such as compost, topsoil, etc. shall be inspected for evidence of invasive vegetation prior to use within jurisdictional areas at the site in order to prevent introduction and/or the spread of invasive vegetation. No materials with evidence of invasive vegetation shall be used in jurisdictional areas.

b) *On-going Management* - A weeding program must be implemented within all jurisdictional areas that are disturbed as part of the project. The weeding program shall begin within one month of when final grades are reached and shall continue, at a minimum of, twice per growing season until a Certificate of Compliance is issued for the project.

43. Dust Control* - Provisions for dust control shall be provided during all construction and demolition activities. Such provisions shall be conducted in compliance with all City of Worcester Water Use Restrictions, if in effect, during such activities.

44. Dewatering* – If dewatering is required,

a) Notice of such activities shall be given to the Office of the Commission within 24 hours of commencement;

b) There shall be no discharge of untreated dewatered stormwater or groundwater to jurisdictional areas either by direct or indirect discharge to existing drainage systems;

c) Any discharge to surface waters or drainage structures must be visibly free of sediment;

d) To the maximum extent practicable, proposed dewatering activities should be located outside of the 100' buffer. If such activities must be located within the 100' buffer, they shall be monitored at all times when the pumps are running;

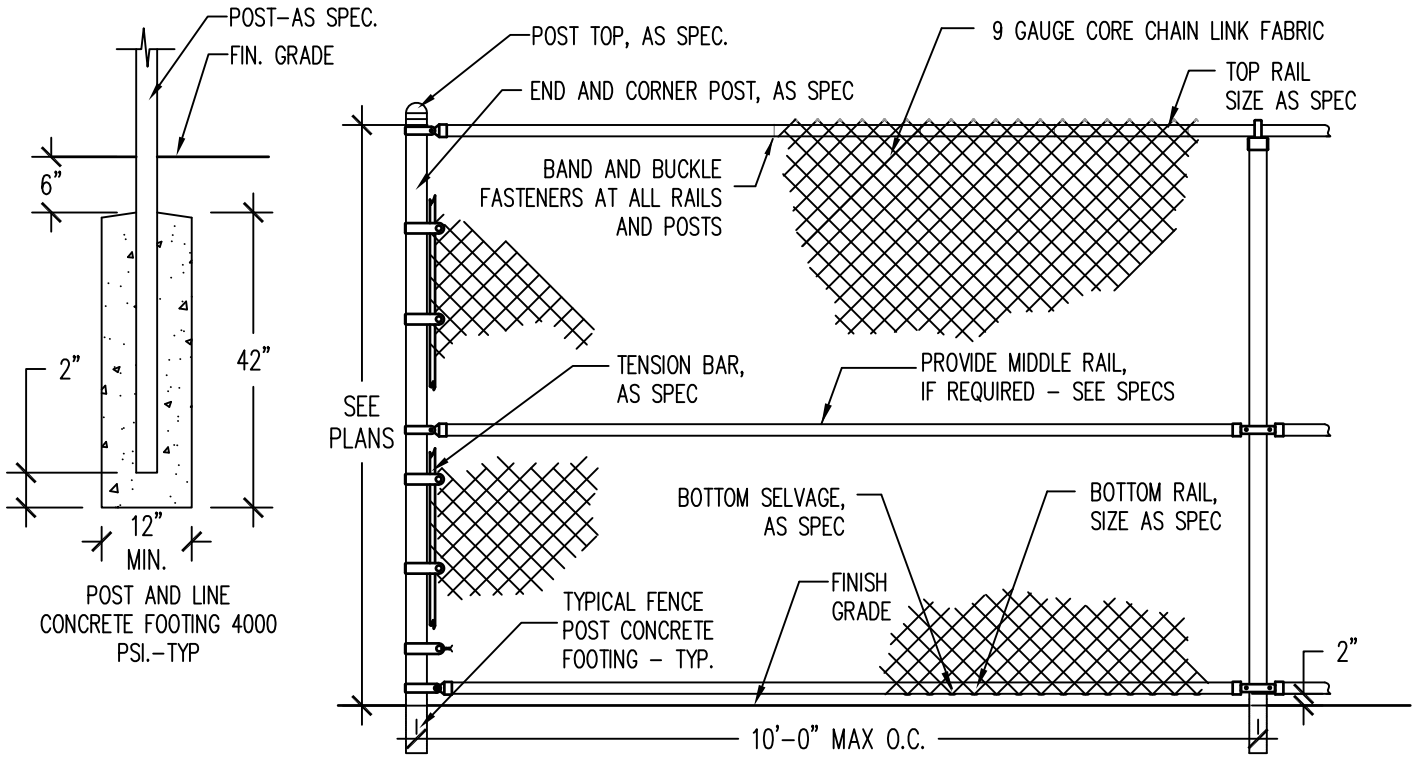
e) Dewatering activities shall be confined within an area of secondary containment at all times.

45. Cement Truck Washing - Cement trucks shall not discharge washout effluent directly to any resource area, the 30' buffer thereto, or into any drainage system. Designated washout areas shall be located out of the 100 buffer zone to any wetland.

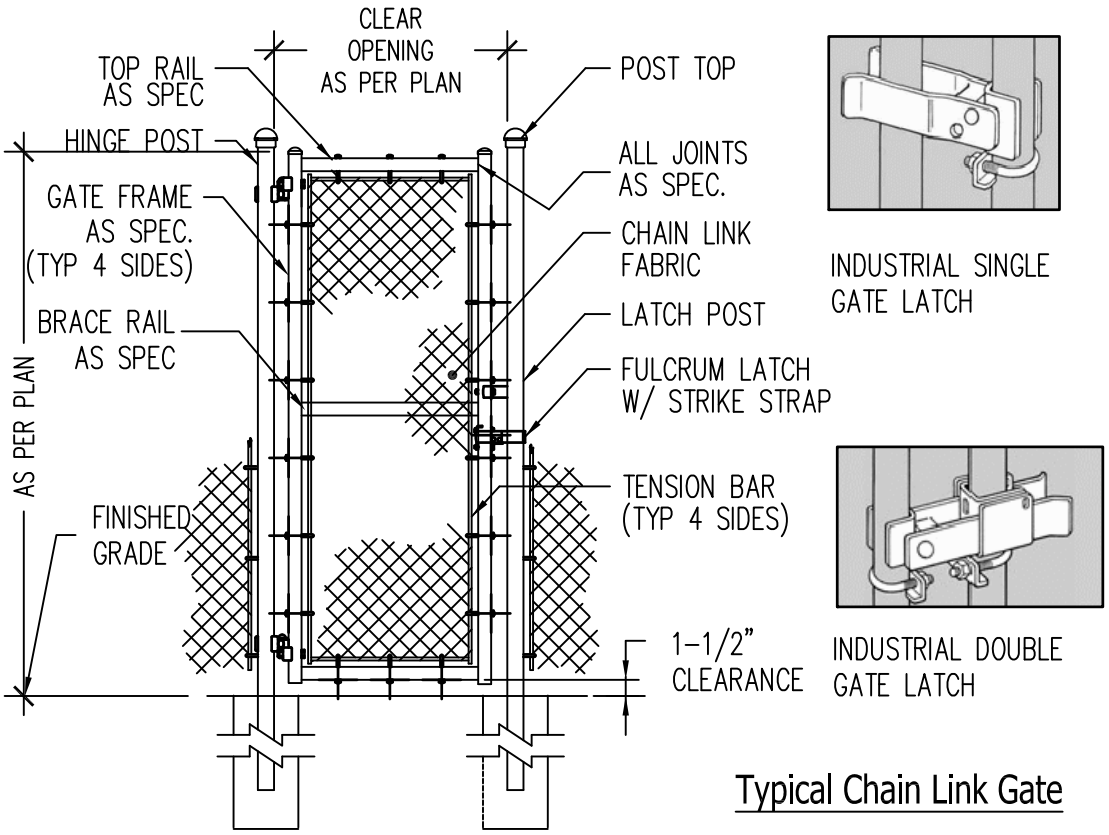
46. SWPPP Monitoring Construction Reports – Written construction reports or copy of SWPPP reports, shall be submitted to the Office of the Commission during all earthwork and drainage construction. Reports shall be submitted monthly or after each precipitation event (rain or snow melt) of 0.5 inches or greater, whichever is more frequent, and shall include:

a) an evaluation, during such events, of all existing erosion and sedimentation controls, as well as stormwater management system/s performance; and

b) solutions employed and/or recommendations to fix areas found to be deficient, if any.



Typical Chain Link Fence And Footing



INDUSTRIAL SINGLE
GATE LATCH

INDUSTRIAL DOUBLE
GATE LATCH

Typical Chain Link Gate

Dept. Of Public Works & Parks
Capital Projects Division
ROBERT C. ANTONELLI, JR.
Assistant Commissioner

Parks, Recreation & Cemetery Division Standard Details - Chain Link Fence Framework and Fabric

Not To Scale

D-2

2022 Playsystem Specifications

Evos®, Weevos®, PlayBooster® and PlayShaper®

All the materials used in the manufacturing of Evos®, Weevos®, PlayBooster® and PlayShaper® playstructures have a proven track record of durability and are widely used in the playground industry. All play components have been certified and validated to be in conformance with the ASTM F1487 Standard unless otherwise noted. Play components displaying the CSA and TUV logos are certified to those standards. To the best of our knowledge they also conform to the U.S. Consumer Products Safety Commission (CPSC) Guidelines.

Unless otherwise noted, all playstructures are considered accessible according to the 2010 ADA Standard for Accessible Design.

General Specifications

Material: All materials shall be structurally sound and suitable for safe play. Durability shall be ensured on all steel parts by the use of time-tested coatings such as zinc plating, galvanizing, ProShield® finish, TenderTuff™ coating, etc. Colors shall be specified.

Fasteners: Primary fasteners shall be socketed and pinned tamperproof in design, stainless-steel (SST) per ASTM F 879 unless otherwise indicated (see specific product installation/specifications). All primary fasteners shall include a locking patch type material that will meet the minimum torque requirements of IFI-125. Manufacturer to provide special tools for pinned tamperproof fasteners.

TenderTuff Coating: Metal components to be TenderTuff-coated shall be thoroughly cleaned in a hot phospatising wash system, then primed with a water-based thermosetting solution. Primed parts shall be preheated prior to dipping in UV stabilized, liquid polyvinyl chloride (PVC), then salt cured at approximately 400 degrees. The finished coating shall be approximately .080" thick at an 85 durometer with a minimum tensile strength of 1700 psi and a minimum tear strength of 250 lbs/inch. Standard colors are available, all with a matte finish.

ProShield Finish: All metal components with ProShield finish shall be thoroughly cleaned and pretreated through a multi-stage wash system. Parts are then thoroughly dried, preheated and processed through a set of powder spray guns where a minimum .002" of epoxy primer is applied. A minimum .004" of architectural-grade Super Durable polyester TGIC powder is applied. The average ProShield film thickness is .006".

ProShield is formulated and tested per the following ASTM standards. Each color must meet or exceed the ratings listed below:

- Hardness (D3363) rating 2H
- Flexibility (D522) pass 1/8" mandrel
- Impact (D2794) rating minimum 80 inch-pounds
- Salt Fog Resistance (B117 and D1654) 4,000 hours and rating 6 or greater
- UV Exposure (G154, 340 bulb) 3,000 hours, rating delta E of 2, and 90 percent gloss retention*
- Adhesion (D3359, Method B) rating 5B

The Paint Line shall employ a “checkered” adhesion test daily.

Standard colors are available.

** Certain colors may exceed delta E of 2. Contact Landscape Structures for exceptions.*

Hot Dipped Galvanized (HDG) Steel: Steel components to be Hot Dipped Galvanized shall be thoroughly cleaned of organic compounds and dirt through complete immersion in a hot alkali solution. Cleaned parts shall undergo acid pickling to remove rust or scale. All parts shall then be fluxed to eliminate surface oxides and promote intermetallic development. Prepped parts shall then be submerged in a bath of molten zinc until the part reaches 840° F and the zinc reacts to form zinc/iron intermetallic layers on all surfaces inside and out. Hot Dipped Galvanized Parts shall be manufactured and inspected according to ASTM A123.

Decks: All decks shall be of modular design and have 5/16" diameter holes on the standing surface. There shall be a minimum of (4) slots in each face to accommodate face mounting of components. Decks shall be manufactured from a single piece of low carbon 12 GA (.105") sheet steel conforming to ASTM specification A-1011. The sheet shall be perforated with a return flange on the perimeter to provide the reinforcement necessary to ensure structural integrity. There shall be no unsupported area larger than 3.5 square feet. The unit shall then be TenderTuff-coated brown or gray only. Decks shall be designed so that all sides are flush with the outside edge of the supporting posts. Not applicable for Evos or Weevos.

Concrete Products: Two processes are used to produce concrete products. *(See specific product installation/specification documents.)*

1. Glass Fiber Reinforced Concrete (GFRC) Products: Glass fiber is alkali-resistant (AR) with high tensile properties formulated for concrete. GFRC nominal product thickness is 1" with a unit weight of about
12 lbs per square foot and an average ultimate flexural strength of 2,100 psi per ASTM C947. Finish: Exterior latex paint suited for concrete applications.
2. Precast Concrete Products: Wet-cast solid, molded concrete with an average compressive strength of 5,000 psi per ASTM C39. Unit weight range of about 115-145 lbs per cubic foot. Finish: Exterior latex paint suited for concrete applications.

Rotationally Molded Polyethylene Parts: These parts shall be molded using prime natural linear low-density polyethylene having a tensile strength of 2400 psi per ASTM D638.

Rotational molding resin is compounded with color and UV-stabilizing additives with a nominal wall thickness typically 1/4" with some variation depending upon product type.

Standard colors are available.

Recycled Permalene Parts: These parts shall be manufactured from 3/4" high-density polyethylene that has been specially formulated for optimum UV stability and color retention. Products shall meet or exceed density of .960 G/cc per ASTM D1505, tensile strength of 2400 PSI per ASTM D638. Available in a three-layer product with (2) .100" thick colored exterior layers over a .550" thick recycled Black interior core. Standard colors are available.

Footings: Unless otherwise specified, the bury on all footings shall be 34" below Finished Grade (FG) on all in-ground play events/posts. Other types of anchoring are available upon request.

Hardware Packages: All shipments shall include individual component-specific hardware packages. Each hardware package shall be labeled with the part number, description, a component diagram showing the appropriate component, package weight, a bar code linking the hardware package to the job number, assembler's name, date and time the package was assembled, work center number and work order number.

Installation Documentation: All shipments shall
include a notebook or packet of order-specific, step-by-step instructions for assembly of each component, including equipment assembly diagrams, estimated hours for assembly, footing dimensions, concrete quantity for direct bury components, fall height information, area required information and detailed material specifications.

Packing List: All shipments shall include a packing list for each skid/container, specifying the part numbers and quantities on each skid or within each container.

Packaging: All components shall be individually wrapped or bulk wrapped and placed on skids (pallets) then shrink-wrapped to provide protection during shipment. Small parts and hardware packages will be placed in crates for shipment. Other components shall be individually wrapped or bulk wrapped to provide protection during shipment.

Maintenance Kit: An order-specific maintenance kit shall be provided for each structure order. The kit will include a notebook or packet with a second set of installation documents and order-specific maintenance documentation with recommendations on how often to inspect, what to look for and what to do to keep the equipment in like-new condition. The kit also includes touch-up primer, appropriate color touch-up paint, sandpaper, appropriate color
touch-up PVC and additional installation tools for the tamperproof fasteners.

Evos® General Specifications

5" Arches: All steel arches are ProShield finished and manufactured from 5" O.D. galvanized tubing with a wall thickness of .120".

Steel Arch Mechanical Properties:

- Yield Strength (min): 50,000 PSI
- Tensile Strength (min): 55,000 PSI
- Elongation: 25% in 2 inches

- Modulus of Elasticity: 29.5 x 10^6 PSI

5" Clamps: All clamps are ProShield finished and, unless otherwise noted, shall be sand cast using a 356-T6 aluminum alloy and having the following mechanical properties:

- Ultimate Tensile: 35,000 PSI
- Yield Strength: 18,000 PSI
- Elongation: 8% in 2 inches

Steel-reinforced cables: Made of tightly woven, polyester-wrapped, six-stranded galvanized steel cable. These abrasion-resistant, color-stable cables are extremely durable and vandal resistant. Standard colors are available.

Weevos® General Specifications

3-1/2" Arches: All steel arches are ProShield finished and manufactured from 3-1/2" O.D. galvanized tubing with a wall thickness of .120".

Steel Arch Mechanical Properties:

- Yield Strength (min): 50,000 PSI
- Tensile Strength (min): 55,000 PSI
- Elongation: 25% in 2 inches
- Modulus of Elasticity: 29.5 x 10^6 PSI

3-1/2" Clamps: All clamps are ProShield finished and, unless otherwise noted, shall be sand cast using a 356-T6 aluminum alloy and having the following mechanical properties:

- Ultimate Tensile: 35,000 PSI
- Yield Strength: 18,000 PSI
- Elongation: 8% in 2 inches

Steel-reinforced cables: Made of tightly woven, polyester-wrapped, six-stranded galvanized steel cable. These abrasion-resistant, color-stable cables are extremely durable and vandal resistant. Standard colors are available.

PlayBooster® General Specifications

Posts: Post length shall vary depending upon the intended use and shall be a minimum of 42" above the deck height. All posts shall be ProShield finished to specified color. All posts shall have a "finished grade marker" positioned on the post identifying the 34" bury line required for correct installation and the top of the loose fill protective surfacing. Top caps for posts shall be aluminum die cast from 369.1 alloy and ProShield finished to match the post color. All caps shall be factory installed and secured in place with interference fit. A molded low-density polyethylene cap, with drain holes, shall be pressed onto the bottom end of the post to increase the footing area.

Steel Posts: All steel PlayBooster posts are manufactured from 5" O.D. tubing with a wall thickness of .120" and shall be galvanized after rolling and shall have both the I.D. and the cut ends sprayed with a corrosion resistant coating.

Steel Post Mechanical Properties:

- Yield Strength (min): 50,000 PSI
- Tensile Strength (min): 55,000 PSI
- Elongation: 25% in 2 inches
- Modulus of Elasticity: 29.5 x 10^6 PSI

Aluminum Posts: All aluminum PlayBooster posts are manufactured from 6005-T5 extruded tubing conforming to ASTM B-221. Posts shall have a 5" outside diameter with a .125" wall thickness.

Aluminum Post Mechanical Properties:

- Yield Strength (min): 35,000 PSI
- Tensile Strength (min): 38,000 PSI
- Elongation: 10% in 2 inches
- Modulus of Elasticity: 10 x 10^6 PSI

Arch Posts: Aluminum arch posts shall be manufactured from 6005-T5 alloy. The arch shall be formed to a 21" center line radius to complement the 42" center-to-center module. The arch shall be of one continuous piece construction. There shall be no welds or additional pieces mechanically fastened to manufacture the arch. Each arch shall be designed to provide a minimum of 90 1/2" clear span from the deck to the inside of the arch at the radius peak. Arches shall be ProShield finished to a specified color.

Clamps: All clamps are ProShield finished and, unless otherwise noted, shall be die cast using a 369.1 aluminum alloy and have the following mechanical properties:

- Ultimate Tensile: 47,000 PSI
- Yield Strength: 28,000 PSI
- Elongation: 7% in 2 inches
- Shear Strength: 29,000 PSI
- Endurance Limit: 20,000 PSI

Each functional clamp assembly shall have an appropriate number of half clamps and shall be fastened to mating parts with (2) 3/8" x 1 1/8" pinned button head cap screws (SST) and (2) stainless-steel (SST) recessed "T" nuts. A 1/4" aluminum drive rivet with stainless steel pin is used to ensure a secure fit to the post.

PlayBooster® clamps have three functional applications and shall be named as follows:

1. Offset hanger clamp assembly
2. Deck hanger clamp assembly
3. Hanger clamp assembly

Netplex Clamps: All clamps are ProShield finished and, unless otherwise noted, shall be die cast using a 369.1 aluminum alloy and have the following mechanical properties:

- Ultimate Tensile: 47,000 PSI
- Yield Strength: 28,000 PSI
- Elongation: 7% in 2 inches
- Shear Strength: 29,000 PSI
- Endurance Limit: 20,000 PSI

Each functional clamp assembly shall have an appropriate number of rope clamps and back clamps and shall be fastened to each other with (2) 5/8" x 1 1/2" pinned button head cap screws (SST) and (2) stainless-steel (SST) recessed "T" nuts. Either a face clamp shall be fastened to rope clamp with (2) 3/8" by 1-3/8" pinned button head cap screws or a single tab casting plate shall be fastened to rope clamp with (4) 3/8" by 1-3/8" pinned button head cap screws with 3/8" SAE flat washers. A 1/4" x 5/8" aluminum drive rivet with stainless steel pin is used to ensure a secure fit to the post.

Geoplex Clamps: All clamps are ProShield finished and, unless otherwise noted, shall be fabricated from 7GA using .179" (4,54 mm) T316 stainless steel.

- Ultimate Tensile: 84,000 PSI
- Yield Strength: 25,000 PSI

Each functional clamp assembly shall have an appropriate number of locking clamps and shall be fastened to mating parts with (2) 3/8" x 7/8" pinned button head cap screws (SST) with (2) 3/8" SAE flat washers. A 1/4" aluminum drive rivet with stainless steel pin is used to ensure a secure fit to the post.

Steel-reinforced cables: Made of tightly woven, polyester-wrapped, six-stranded galvanized steel cable. These abrasion-resistant, color-stable cables are extremely durable and vandal resistant. Standard colors are available. Some products available in Black only.

PlayOdyssey® Structural Frame: Post length of the double ladder/central column shall vary depending upon the deck height and shall be flush with the bottom of a deck infill or a minimum of 46" above the deck height. All posts shall be ProShield finished to specified color. All posts shall have a "finished grade marker" positioned on the post identifying the 60" bury line required for correct installation and the top of the loose fill protective surfacing. Post caps shall be aluminum die cast from 369.1 alloy and ProShield finished to match the post color. All caps shall be factory installed and secured in place with (3) self sealing rivets. A molded low-density polyethylene cap, with drain holes, shall be pressed onto the bottom end of the ladder posts to increase the footing area. Ladders are bolted together below grade to act as a single column for installation purposes. The deck support weldments/arms are comprised of 5/16" (.313") steel conforming to 1010 steel per ASTM A635 and welded to a 52" steel post. Arms are secured to each ladder post with (4) 5/8" x 1 1/2" pinned button head cap screws through (2) 1/4" flanges.

PlayOdyssey Optional Aluminum Roof Posts: All formed aluminum PlayOdyssey roof posts are manufactured from 6005-T5 extruded tubing conforming to ASTM B-221. Posts shall have a 5" outside diameter with a .125" wall thickness. Post sleeve shall have 4.675" outside diameter with a .150" wall thickness. Post cap shall be aluminum die cast from 369.1 alloy and ProShield finished to match the post color. All caps shall be factory installed and secured in place with (3) self-sealing rivets.

Vibe® Handholds: Rotomolded shell, with 7 GA (.179") HRPO steel sheet insert that is zinc plated then ProShield finished. Standard colors are available.

Vibe Roof: Rotomolded shell, with 12 GA (.105") HRPO steel sheet insert that is zinc plated then ProShield finished. Standard colors are available.

Vibe Enclosures: Rotomolded shell, with 7 GA (.179") HRPO steel sheet insert that is zinc plated then ProShield finished. Standard colors are available. Option of 10 activity panels available in standard Permalene® colors. Also available bubble or window panel made of 1/4" clear polycarbonate.

PlayShaper® General Specifications

Posts: 2 3/8" square aluminum posts shall have a minimum wall thickness of .125" and be extruded of 6005-T5 aluminum alloy and have rounded corners and ribbed faces for maximum safety. A cast aluminum top cap shall be installed at the factory with stainless steel knurled spacers and aluminum drive rivets. Flanges for panels and deck supports shall be extruded of 6061-T6 aluminum alloy and slide into slots extruded in posts. Flanges and deck supports shall be attached in the

factory with stainless steel knurled spacers and aluminum drive rivets. All direct bury posts shall have a “finished grade marker” positioned on the post identifying the 34" bury line and the top of the required surfacing. A molded low-density polyethylene cap, with drain holes, shall be pressed onto the bottom end of the post to increase the footing area. Posts shall have a post number sticker for installation purposes. All surface mount posts shall be continuously welded to a 1/4" x 6" square 6061-T6 aluminum surface mount plate and allow for
2" of protective surfacing. Posts shall be ProShield finished to a specified color.

Aluminum Post Mechanical Properties:

- Yield Strength (min): 35,000 PSI
- Tensile Strength (min): 38,000 PSI
- Elongation: 10% in 2 inches
- Modulus of Elasticity: 10×10^6 PSI

Arch Posts: Arch posts shall have the same shape as the posts and be extruded from 6063-T4 aluminum alloy. Roof support flanges shall be of the same shape and material as the panel flanges. Arch shall be formed in a 180 degree arc on a 21" center line radius. Arches shall be secured to standard length posts with solid aluminum sleeves that are tapped to receive (16) 3/8" x 5/8" pinned button head cap screws per arch. Arch posts shall be ProShield finished to a specified color.

SECTION 11 68 00
PLAY STRUCTURES

- GENERAL
- SECTION INCLUDES
- Play structures including the following: please note that all materials and descriptions included within the install instructions are to be considered inclusive to this spec even if not specifically mentioned within this body of the document.
- PlayBooster Play System.
- PlayShaper Play System.
- Smart Play Play System.
- Play Structures Climbers.
- Swings.
- Sensory Play - Musical Instruments.
- Multiple Users Motion Events.
- RELATED SECTIONS
- Section 02 20 00 - Assessment.
- REFERENCES
- ASTM International (ASTM):
- ASTM A123 - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel

Products.

- ASTM A500 - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.
- ASTM A635 - Standard Specification for Steel, Sheet and Strip, Heavy-Thickness Coils, Hot-Rolled, Alloy, Carbon, Structural, High-Strength Low-Alloy, and High-Strength Low-Alloy with Improved Formability, General Requirements for.
- ASTM A1011 - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength.
- ASTM B117 - Standard Practice for Operating Salt Spray (Fog) Apparatus.
- ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
- ASTM C39 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
- ASTM C947 - Standard Test Method for Flexural Properties of Thin-Section Glass-Fiber-Reinforced Concrete (Using Simple Beam with Third-Point Loading).
- ASTM D522 - Standard Test Methods for Mandrel Bend Test of Attached Organic Coatings.
- ASTM D638 - Standard Test Method for Tensile Properties of Plastics,
- ASTM D1505 - Standard Test Method for Density of Plastics by the Density-Gradient Technique.
- ASTM D1654 - Standard Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments.
- ASTM D2794 - Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).
- ASTM D3359 - Standard Test Methods for Rating Adhesion by Tape Test.
- ASTM D3363 - Standard Test Method for Film Hardness by Pencil Test.
- ASTM F879 - Standard Specification for Stainless Steel Socket Button and Flat Countersunk Head Cap Screws.
- ASTM F1487 - Standard Consumer Safety Performance Specification for Playground Equipment for Public Use.
- ASTM G154 - Standard Practice for Operating Fluorescent Ultraviolet (UV) Lamp Apparatus for Exposure of Nonmetallic Materials.

- Industrial Fasteners Institute (IFI): IFI 125 - Test Procedure for the Performance of Chemical Coated Prevailing-Torque Screws.

- Canadian Standards Association (CSA standard).

- European Standards (EN Standard).

- ADA Standard for Accessible Design.

- SUBMITTALS

- Submit under provisions of Section 01 30 00 - Administrative Requirements.

- Product Data: Manufacturer's data sheets on each product to be used, including:
- Preparation instructions and recommendations.
- Storage and handling requirements and recommendations.
- Installation methods.

- Shop Drawings:

- Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.

- Installation Documentation: All shipments shall include a packet of order-specific, step-by-step

instructions for assembly of each component, including equipment assembly diagrams, estimated hours for assembly, footing dimensions, concrete quantity for direct bury components, fall height information, and area required information.

- QUALITY ASSURANCE

- Manufacturer Qualifications: Minimum 5 year experience manufacturing similar products.

- Installer Qualifications: Minimum 2 year experience installing similar products.

- All play structures shall be certified and validated to be in conformance with the ASTM F1487 Standard.

- To the best of manufacturer's belief and knowledge play structures conform to the U.S. Consumer Products Safety Commission (CPSC) Guidelines.

- Unless otherwise noted, all play structures are considered accessible according to the 2010 ADA Standard for Accessible Design. (See the play components listing for each structure to determine the number of additional play components required to meet the guidelines.)
- Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines for Buildings and Facilities and ICC A117.1 for playground equipment designated as accessible.

- Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
- Finish areas designated by Architect.
- Do not proceed with remaining work until workmanship is approved by Architect.
- Refinish mock-up area as required to produce acceptable work.

- PRE-INSTALLATION MEETINGS

- Convene minimum two weeks prior to starting work of this section.

- DELIVERY, STORAGE, AND HANDLING

- Deliver and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification until ready for installation.

- Packaging: Components shall be individually wrapped or bulk wrapped to provide protection during shipment. Small parts and hardware packages will be placed in crates for shipment. The components and crates are then shrink-wrapped to skids (pallets) to ensure secure shipping.

- Handling: Handle materials to avoid damage.

- PROJECT CONDITIONS

- Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

- SEQUENCING

- Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

- Hardware Packages: Each hardware package shall be labeled with the part number, description, package weight, a bar code linking the hardware package to the job number, assembler's name, date

and time the package was assembled, work center number, and work order number.

- WARRANTY

- Landscape Structures Inc. ("Manufacturer") warrants that all play structures and/or equipment sold will conform in kind and in quality to the specifications manual for the products identified in the Acknowledgment of Order and will be free of defects in manufacturing and material. Manufacturer further warrants:
- 100-Year Limited Warranty: On all PlayBooster and PlayShaper and PlaySense aluminum posts, stainless steel fasteners, clamps, beams and caps against structural failure due to corrosion/natural deterioration or manufacturing defects, and on PlayBooster steel posts against structural failure due to material or manufacturing defects.
- 15-Year Limited Warranty: On all Evos and Weevos steel arches, all plastic components (including TuffTimbers edging), all aluminum and steel components not covered above, Mobius climbers, Rhapsody Outdoor Musical Instruments, decks and TenderTuff coatings (except Wiggle Ladders, Chain Ladders and Swing Chain) against structural failure due to material or manufacturing defects.
- 10-Year Limited Warranty: On concrete products against structural failure due to natural deterioration or manufacturing defects. Does not cover minor chips, hairline cracks or efflorescence.
- 5-Year Limited Warranty: On Rhapsody cables and mallets against defects in materials or manufacturing defects.
- 3-Year Limited Warranty: On all other parts, i.e.: Pulse products, all swing seats and hangers, Mobius climber handholds, Wiggle Ladders, Chain Ladders and ProGuard Swing Chain, Track Ride trolleys and bumpers, all rocking equipment including Sway Fun gliders, belting material, HealthBeat resistance mechanism, Seesaws, etc., against failure due to corrosion/natural deterioration or manufacturing defects.
- The environment near a saltwater coast can be extremely corrosive. Some corrosion and/or deterioration is considered "normal wear" in this environment. Product installed within 500 yards (457 meters) of a saltwater shoreline will only be covered for half the period of the standard product warranty, up to a maximum of five years, for defects caused by corrosion. Products installed in direct contact with saltwater or that are subjected to salt spray are not covered by the standard warranty for any defects caused by corrosion.
- This warranty does not include any cosmetic issues or wear and tear from normal use. It is valid only if the playstructures and/or equipment are erected to conform with Landscape Structures' installation instructions and maintained according to the maintenance procedures furnished by Landscape Structures Inc.

- EXTRA MATERIALS

- Maintenance Kit: A maintenance kit shall be provided for each Play Structure design ordered. The kit will include a maintenance document with recommendations on how often to inspect, what to look for and what to do to keep the equipment in like-new condition. The kit also includes appropriate color touch-up paint and additional installation tools for the tamperproof fasteners.

- PRODUCTS

- MANUFACTURERS

- Acceptable Manufacturer: Landscape Structures Inc., which is located at: 601 S. 7th St.; Delano, MN 55328-0198; Toll Free Tel: 888-438-6574; Tel: 763-972-5200; Fax: 763-972-3185; Email:Andrew_Kimball@obrienandsons.com Web:www.obrienandsons.com

- Substitutions: Per City Standards

- Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

- MATERIAL

- Material: All materials shall be structurally sound and suitable for safe play.

- Fasteners: Primary fasteners shall be socketed and pinned, tamperproof in design, stainless steel (SST) per ASTM F879 unless otherwise indicated. All primary fasteners shall include a locking patch-type material that will meet the minimum torque requirements of IFI-125. Manufacturer shall provide special tools for pinned tamperproof fasteners.

- TenderTuff Coating: Metal components to be TenderTuff coated shall be thoroughly cleaned in a hot phosphatising wash system, then primed with a water-based thermosetting solution. Primed parts shall be preheated prior to dipping in UV stabilized, liquid polyvinyl chloride (PVC), and then salt cured at approximately 400 degrees F (204 degrees C). The finished coating shall be approximately .080 inch (2 mm) thick at an 85 durometer with a minimum tensile strength of 1700 psi and a minimum tear strength of 250lbs/inch. (Colors: Handhold/Leg Lifts, Grab Bars and D-Rings available in Brown only. Decks in Brown or Gray. Wiggle Ladders, Loop Ladders and Steering Wheels available in standard colors).

- ProShield Finish: All metal components with ProShield finish shall be thoroughly cleaned and pretreated through a multi-stage wash system. Parts are then thoroughly dried, preheated and processed through a set of powder spray guns where a minimum .002 inch (.05 mm) of epoxy primer is applied. A minimum .004 inch (0.10 mm) of architectural-grade Super Durable polyester TGIC powder is applied. The average ProShield film thickness is .006 inch (0.15 mm).
- ProShield is formulated and tested per the following ASTM standards. Each color must meet or exceed the ratings listed below:
- Hardness (D3363) rating 2H.
- Flexibility (D522) pass 1/8 inch (3 mm) mandrel.
- Impact (D2794) rating minimum 80 inch-pounds.
- Salt Fog Resistance (B117 and D1654) 4,000 hours and rating 6 or greater.
- UV Exposure (G154, 340 bulb) 3,000 hours, rating delta E of 2, and 90 percent gloss retention. Certain colors may exceed delta E of 2. Contact manufacturer for exceptions.
- Adhesion (D3359, Method B) rating 5B.
- The Paint Line shall employ a "checkered" adhesion test daily.
- Standard colors are available.

- Decks: Decks shall be of modular design and have 5/16 inch (7.9 mm) diameter holes on the standing surface. There shall be a minimum of four slots in each face to accommodate face mounting of components. Decks shall be manufactured from a single piece of low carbon 12 Ga. (.105 inch (2.7 mm)) sheet steel conforming to ASTM specification A1011. The sheet shall be perforated with a return flange formed on the perimeter to provide the reinforcement necessary to ensure structural integrity. There shall be no unsupported area larger than 3.5 square feet (.33 square meters). The unit shall then be TenderTuff coated in brown or gray only.
- Play System Decks shall be designed so that all sides are flush with the outside edge of the supporting posts.

- Concrete Products: Two processes are used to produce concrete products.
- Glass Fiber Reinforced Concrete (GFRC) Products: Glass fiber is alkali-resistant (AR) with high tensile properties formulated for concrete. GFRC nominal product thickness is 1 inch (25 mm) with a unit weight of about 12 lbs per square foot and an average ultimate flexural strength of 2,100 psi per ASTM C947. Finish: Exterior latex paint suited for concrete applications.
- Precast Concrete Products: Wet-cast solid, molded concrete with an average compressive strength of 5,000 psi per ASTM C39. Unit weight range of about 115 to 145 lbs per cubic foot. Finish: Exterior latex paint suited for concrete applications.

- Rotationally Molded Polyethylene Parts: These parts shall be molded using prime natural linear low-density polyethylene with a tensile strength of 2400 psi per ASTM D638. Rotational molding resin is

compounded with color and UV-stabilizing additives with a nominal wall thickness typically 1/4 inch (6 mm) with some variation depending upon product type. Standard colors are available.

- Recycled Permalene Parts: These parts shall be manufactured from 3/4 inch (19 mm) high-density polyethylene that has been specially formulated for optimum UV stability and color retention. Products shall meet or exceed density of .960 G/cc per ASTM D1505, tensile strength of 2400 PSI per ASTM D638. Available in a three-layer product with (2) .100 inch (2.5 mm) thick colored exterior layers over a .550 inch (14mm) thick recycled Black interior core. Standard colors are available.

- Footings: Unless otherwise specified, the depth on all footings shall be 34 inches (864 mm) below Finished Grade (FG) on all in-ground play events/posts.

- PlayBooster PLAY SYSTEM

- Description:
- Ages 5 to 12 Years.
- The PlayBooster playground structure, the original post-and-clamp system, combines exciting ground-level components with climbing events and overhead activities for kids ages 5 to 12. The PlayBooster family includes the interconnected cables of Netplex, the contemporary Vibe, the nature-inspired Tree House, the double-decker PlayOdyssey Tower and the GeoPlex climbing panels.
- U.S. Patent number 9,375,609 and other patents pending.

- Material:
- Posts: Post length shall vary depending upon the intended use and shall be a minimum of 42 inches (1067 mm) above the deck height. All posts shall be ProShield finished to specified color. All posts shall have a "finished grade marker" positioned on the post identifying the 34 inches (864 mm) bury line required for correct installation and the top of the loose fill protective surfacing. Top caps for posts shall be aluminum die cast from 369.1 alloy and ProShield finished to match the post color. All caps shall be factory installed and secured in place with self-sealing rivets. A molded low-density polyethylene cap, with drain holes, shall be pressed onto the bottom end of the post to increase the footing area.
- Steel Posts: All steel PlayBooster posts are manufactured from 5 inches (127 mm) O.D. tubing with a wall thickness of .120 inches (3.0 mm) and shall be galvanized after rolling and shall have both the I.D. and the cut ends sprayed with a corrosion resistant coating.
- Steel Post Mechanical Properties:
- Yield Strength (min): 50,000 PSI.
- Tensile Strength (min): 55,000 PSI.
- Elongation: 25% in 2 inches (51 mm).
- Modulus of Elasticity: 29.5 x 1,000,000 PSI.
- Aluminum Posts: All aluminum PlayBooster posts are manufactured from 6005-T5 extruded tubing conforming to ASTM B-221. Posts shall have a 5 inches (127 mm) outside diameter with a .125 inches (3.2 mm) wall thickness.
- Aluminum Post Mechanical Properties:
- Yield Strength (min): 35,000 PSI.
- Tensile Strength (min): 38,000 PSI.
- Elongation: 10% in 2 inches.
- Modulus of Elasticity: 10 x 1,000,000 PSI.
- Arch Posts: Aluminum arch posts shall be manufactured from 6005-T5 alloy. The arch shall be formed to a 21 inches (533 mm) center line radius to complement the 42 inches (1067 mm) center-to-center module. The arch shall be of one continuous piece construction. There shall be no welds or additional pieces mechanically fastened to manufacture the arch. Each arch shall be designed to provide a minimum of 90-1/2 inches (2300 mm) clear span from the deck to the inside of the arch at the radius peak. Arches shall be ProShield finished to a specified color.
- Clamps: All clamps are ProShield finished and, unless otherwise noted, shall be die cast using a 369.1 aluminum alloy and have the following mechanical properties:

- Ultimate Tensile: 47,000 PSI.
- Yield Strength: 28,000 PSI.
- Elongation: 7% in 2 inches (51 mm).
- Shear Strength: 29,000 PSI.
- Endurance Limit: 20,000 PSI.
- Clamps: Each functional clamp assembly shall have an appropriate number of half clamps and shall be fastened to mating parts with (2) 3/8 inch x 1-1/8 inches (9.5mm x 28.6 mm) pinned button head cap screws (SST) and (2) stainless-steel (SST) recessed "T" nuts. A 1/4 inch (6 mm) aluminum drive rivet with stainless steel pin is used to ensure a secure fit to the post.
- PlayBooster clamps have three functional applications and shall be named as follows:
- Offset hanger clamp assembly.
- Deck hanger clamp assembly.
- Hanger clamp assembly.
- Netplex Clamps: All clamps are ProShield finished and, unless otherwise noted, shall be die cast using a 369.1 aluminum alloy and have the following mechanical properties:
- Ultimate Tensile: 47,000 PSI.
- Yield Strength: 28,000 PSI.
- Elongation: 7% in 2 inches (51 mm).
- Shear Strength: 29,000 PSI.
- Endurance Limit: 20,000 PSI.
- Netplex Clamps: Each functional clamp assembly shall have an appropriate number of rope clamps and back clamps and shall be fastened to each other with (2) 5/8 inch x 1-1/2 inches (16 mm x 38 mm) pinned button head cap screws (SST) and (2) stainless-steel (SST) recessed "T" nuts. Either a face clamp shall be fastened to rope clamp with (2) 3/8 inch by 1-3/8 inches (9.5 mm x 35 mm) pinned button head cap screws or a single tab casting plate shall be fastened to rope clamp with (4) 3/8 inch by 1-3/8 inches (9.5 mm x 35 mm) pinned button head cap screws with 3/8 inch (9.5 mm) SAE flat washers. A 1/4 inch x 5/8 inch (6 mm x 16 mm) aluminum drive rivet with stainless steel pin is used to ensure a secure fit to the post.
- GeoPlex Clamps: All clamps are ProShield finished and, unless otherwise noted, shall be fabricated from 7GA using (4.54 mm) T316 stainless steel.
- Ultimate Tensile: 84,000 PSI.
- Yield Strength: 25,000 PSI.
- GeoPlex Clamps: Each functional clamp assembly shall have an appropriate number of locking clamps and shall be fastened to mating parts with (2) 3/8 inch x 7/8 inch (9.5 mm x 22 mm) pinned button head cap screws (SST) with (2) 3/8 inch (9.5 mm) SAE flat washers. A 1/4 inch (6 mm) aluminum drive rivet with stainless steel pin is used to ensure a secure fit to the post.
- Steel-reinforced cables: Made of tightly woven, polyester-wrapped, six-stranded galvanized steel cable. These abrasion-resistant, color-stable cables are extremely durable and vandal resistant. Available in Black or Red. Some products available in Black only or Red only.
- PlayOdyssey Structural Frame: Post length of the double ladder/central column shall vary depending upon the deck height and shall be flush with the bottom of a deck infill or a minimum of 46 inches (1168 mm) above the deck height. All posts shall be ProShield finished to specified color. All posts shall have a "finished grade marker" positioned on the post identifying the 60 inches (1524 mm) bury line required for correct installation and the top of the loose fill protective surfacing. Post caps shall be aluminum die cast from 369.1 alloy and ProShield finished to match the post color. All caps shall be factory installed and secured in place with (3) self-sealing rivets. A molded low-density polyethylene cap, with drain holes, shall be pressed onto the bottom end of the ladder posts to increase the footing area. Ladders are bolted together below grade to act as a single column for installation purposes. The deck support weldments/arms are comprised of 5/16 inch (7.9 mm) steel conforming to 1010 steel per ASTM A635 and welded to a 52 inches (1321 mm) steel post. Arms are secured to each ladder post with (4) 5/8 inch x 1-1/2 inches (16 mm x 38 mm) pinned button head cap screws through (2) 1/4 inch (6 mm) flanges.
- PlayOdyssey Aluminum Roof Posts: All formed aluminum PlayOdyssey roof posts are manufactured from 6005-T5 extruded tubing conforming to ASTM B-221. Posts shall have a 5 inches (127 mm)

outside diameter with a .125 inches (3.2 mm) wall thickness. Post sleeve shall have 4.675 inches (118.7 mm) outside diameter with a .150 inch (3.8 mm) wall thickness. Post cap shall be aluminum die cast from 369.1 alloy and ProShield finished to match the post color. All caps shall be factory installed and secured in place with three self-sealing rivets.

- Vibe Handholds: Rotomolded shell, with 7 GA (.179 inch (4.5 mm)) HRPO steel sheet insert that is zinc plated then ProShield finish. Standard colors are available.
- Vibe Roof: Rotomolded shell, with 12 GA (.105 inch (2.67 mm)) HRPO steel sheet insert that is zinc plated then ProShield finish. Standard colors are available.
- Vibe Enclosures: Rotomolded shell, with 7 GA (.179 inch (4.55 mm)) HRPO steel sheet insert that is zinc plated then ProShield finish. Standard colors are available.
- Activity panels available in standard Permalene colors.
- Bubble or window panel made of 1/4 inch (6 mm) clear polycarbonate. Refer to ** NOTE TO SPECIFIER ** Delete if not required.

- SmartPlay PLAY SYSTEM

- Description:
- Ages 6 to 23 Months, 2 to 5 years and 5 to 12 years.
- Smart Play not only provides smart design to help create smart kids, but it's manufactured with a smart use of materials-focused on getting as many components as possible out of the smallest amount of material. Smart Play structures are preconfigured and designed with just your choice of color. All at a smart price.

- PLAY STRUCTURES CLIMBERS

- Net Climber:
- Product: Crooked Net Custom: follows playbooster system posts, clamps, connections, and the below rope assembly. Requires 4 custom digifuse panel post toppers
- Digifuse spec:

DigiFuse Barrier Panel: Made from 1/4" (6.35 mm) thick aluminum sheet. Dye sublimation printed digital artwork is fused onto the powdercoated substrate.

- Description:
- Age Ranges: 5 to 12 years.
- This climber not only promotes upper body strength, balance and coordination, but also brings geometry and spacial perception to life
- Material: refer to playbooster for post specifications and clamp specification, post tops to be angled not rounded
- Net: Made of tightly woven, polyester-wrapped, six stranded galvanized-steel cable with a PVC wrapped steel core. 18 mm, steel-core interior rope and 20 mm, steel-core perimeter rope, tan in color
- Hardware: Stainless steel.

- Group Swing:
- Product: Oodle Swing.
- Model 173592.
- Description:
- Age Ranges: 5 to 12 years.
- Comfortably seats four to six children at once.
- Includes swing frame, swing cables, swing seat and fasteners.
- Rope connections use universal joints to prevent cables from twisting or tangling.

- Swing seat contains two rubber-encapsulated bumpers.
- Transfer point from wheelchair or walker.
- Direct bury only.
- Material:
- Swing Seat: Rotationally molded from U.V. stabilized linear low density polyethylene, color specified.
- Swing Seat Bracket: Weldment comprised of 1.66 inches (42,16 mm) O.D. RS20 (.085 inch to .095 inch) (2,16 mm to 2,41 mm) wall galvanized steel tube, 1.000 inch (25,4 mm) O.D. x .750 inch (19,05 mm) I.D. 1018 steel tube and 7GA (.179 inch) (4,55 mm) HRPO steel sheet. Finish: ProShield, color specified.
- Rope Tab Swivel: Made from 6061-T6 aluminum.
- Cable: Made of tightly woven polyester-wrapped, six-stranded galvanized-steel cable with a polypropylene core. (Cable Connectors) 6061-T6 aluminum.
- Bumper: Molded from U.V. stabilized black EPDM rubber encapsulating 11 GA (.120 inch) (3.0 mm) HRPO steel sheet.
- Swing Arch: Weldment comprised of 3.500 inches (89 mm) O.D. RS20 (.080 inch to .090 inch wall) (2.0 mm to 2.3 mm) galvanized steel tube and 1/2 inch (13 mm) thick stainless steel tabs. Finish: ProShield, color specified.
- Swing Leg: 3.500 inches (89 mm) O.D. RS20 (.080 inch to .090 inch wall) (2.0 mm to 2.3 mm) galvanized steel tube. Finish: ProShield, color specified.
- Swing Hanger:
- Assembly: Assembly comprised of 300 series stainless steel knuckle and yoke, stainless steel swing pin, stainless steel spring pin and oilite bushings.
- Fasteners: Primary fasteners shall be socketed and pinned tamperproof in design, stainless steel (SST) per ASTM F 879 unless otherwise indicated.

- MULTIPLE USERS MOTION EVENTS

- See-saw:
- Product: We-Saw.
- Model 186490.
- Description:
- Age Ranges: 2 to 5 Years, 5 to 12 years.
- 4 seats with center platform for additional participants.
- Center platform made of GripX, a UV stabilized HDPE (high density polyethylene) marine-grade material. Specially designed slip resistant texture enhances traction and appearance. Platform is trimmed with a choice of colorful Permalene.
- Spring mechanism and in-ground bumpers for controlled motion.
- In-ground bumpers protect surfacing from impact and extend the life of the product.
- Rubber stops on hand and foot-holds ensure a firm grip.
- Walk-in seating ensures easy access or transfer into seat.
- Seats made of durable, color fast, vibrant polyethylene.
- Material:
- We-saw Assembly: (Arm Assembly) Weldment comprised of 3.500 inches (88,9 mm) O.D. x 8 GA. (.162 inch) (4,11 mm) wall galvanized steel tubing, 2.375 inches (60,33 mm) O.D. RS40 (.130 inch to .140 inch) (3,30 mm to 3,56 mm) wall galvanized steel tubing, 1.900 inches (48,26 mm) O.D. RS40 (.120 inch to .130 inch) (3,05 mm to 3,30 mm) wall galvanized steel tubing, .375 inch (9,52 mm) thick HRPO steel plate and .250 inch (6,35 mm) HRPO steel plate. Finish: Proshield, specify color. (Rocker Assembly) Weldment comprised .250 inch (6,35 mm) HRPO steel plate and 2 inches (50 mm) x 5/16 inch (7,93 mm) wall steel tubing. Finish: ProShield, black in color. (Base) Weldment comprised .375 inch (9,53 mm) HRPO steel plate and 2.500 inches (63,50 mm) O.D. x 1.150 inches (29,21 mm) I.D. stainless steel tubing. Finish: ProShield, black in color. (Base Plate) Fabricated from .250 inch (6,35 mm) HRPO steel plate. Finish: ProShield, black in color. (Spring) 5-5/8 inches (142,87 mm) diameter 13/16 inch (20,62 mm) tempered alloy steel coil. Finish: ProShield, black in color. (Spring Wedge) Cast from ductile iron alloy. Finish: ProShield, black in color. (Bearings) 1.145 inches (29,08 mm) I.D.

oilite bronze. (Shaft) 1.14 inches (28,96 mm) O.D. stainless steel. (Cylinder) Chrome plated steel.
- Filler Plate: Fabricated from 12 Ga. (105 inch) (2,66 mm) HRPO steel sheet. Finish: ProShield, color specified.
- GripX Insert: 3/4 inch (19,05 mm) Thick Permalene, black in color.
- Teeter Pad & Edges: Permalene, color specified.
- Platform Handhold: Weldment comprised of 1.315 inches (33,4 mm) O.D. RS20 (.080 inch to .090 inch) (2,03 mm to 2,28 mm) wall galvanized steel tubing, 10 GA (.135 inch) (3, 42 mm) HRPO steel sheet and 7 GA. (.179 inch) (4,54 mm) HRPO steel sheet. Finish: Proshield, color specified.
- Anchor Cage: Weldment comprised of 1.029 inches (26,13 mm) O.D. RS20 (.070 inch to.080 inch) (1,77 mm to 2,03 mm) wall galvanized steel tubing with 203 or 303 stainless steel welded inserts with 5/8 inch (16 mm) internal threads and 7 GA. (.179 inch) (4,54 mm) HRPO steel sheet. Finish: Proshield, black in color.
- Rung Cap: Molded from U.V. stabilized black EPDM rubber encapsulating .250 inch (6,35 mm) thick aluminum sheet and .125 inch (3,18 mm) thick aluminum plate.
- Center Pad: Fabricated from .250 inch (6,35 mm) thick HRPO steel sheet plate. Finish: Proshield, black in color.
- Bumper Footer: Weldment comprised of 1.315 inches (33,40 mm) O.D. RS20 (.080 inch to .090 inch) (2,03 mm to 2,29 mm) wall galvanized steel tubing with 203 or 303 stainless steel welded inserts with 5/8 inch (16 mm) internal threads and .250 inch (6,35 mm) thick HRPO steel plate. Finish: Proshield, color specified.
- Seat: Rotationally molded from U.V. stabilized linear low density polyethylene, color specified.
- Fasteners: Primary fasteners shall be socketed and pinned tamperproof in design, stainless steel (SST) per ASTM F 879 unless otherwise indicated.

- Glider:
- Product: Sway Fun Customized Boat Structure with Theme
- Model 177140.
- Description:
- Age Ranges: 2 to 5 Years, 5 to 12 years.
- 12 inches (305 mm) high w/ramp, guardrails & curbs.
- Double-wall construction for durability.
- Play table with cup holders and wheelchair handholds.
- Room for two wheelchairs, plus two large benches for other passengers.
- Steel deck for durability.
- Material:
- Bench: Rotationally molded from U.V. stabilized linear low density polyethylene, color specified.
- Table Panel: Solid color Permalene table measures 50-3/8 inches (1279,52 mm) wide x 22-15/16 inches (582,60 mm) deep, color specified.
- Table Post: Weldment comprised of 3.500 inches (88,9 mm) O.D. RS-20 (.125 inch) (3,18 mm) galvanized steel tubing, 11 GA. (.120) (3,05 mm) HRPO ASTM A1011 sheet steel and 1/4 (6,35 mm) HRS flat steel. Finish: ProShield, color specified.
- Side Panels: Permalene, color specified.
- Spacer: Permalene, black in color.
- Side Panel Frame: Weldment comprised of 11 GA (.120 inch) (3,05 mm) sheet steel conforming to ASTM A1011. Finish: ProShield, color specified.
- Deck: Flange formed from 11 GA (.120 inch) (3,05 mm) sheet steel conforming to ASTM A1011. Standing surface is perforated with 5/16 inch (7,93 mm) diameter holes. Finish: TenderTuff, color specified.
- Deck Extension: Flange formed from 11 GA (.120 inch) (3,05 mm) sheet steel conforming to ASTM A1011. Finish: TenderTuff, color specified.
- Deck Extension Support: Formed from 11 GA (.120 inch) (3,05 mm) sheet steel conforming to ASTM A1011. Finish: ProShield, color specified.
- Panel Guard: Permalene, color specified.
- Footing Panels: Solid color Permalene, gray in color.

- Arm Assembly: Machined from 6061-T6 aluminum.
- Axle: Weldment comprised of 304 stainless steel.
- Base Frame: Weldment comprised of 3 inches x 5 inches (76 mm x 127 mm) structural steel C channel, 1/4 inch (6,35 mm) HRS flat steel, 1/2 inch (12,7 mm) HRS flat steel and 1/2 inch (12,7 mm) HRPO flat steel. Finish: Hot dip galvanized per ASTM A123.
- Upper Shock Mount Bracket: Weldment comprised of 7 Ga. (.180 inch) (4,57 mm) sheet steel conforming to ASTM A1011. Finish: Hot dip galvanized per ASTM A123.
- Deck Mount Frame: Weldment comprised of 11 GA (.120 inch) (3,05 mm) sheet steel, 7 Ga. (.180 inch) (4,57 mm) HRPO flat steel and 1/4 inch (.250 inch) (6,35 mm) HRPO flat steel. Finish: Hot dip galvanized per ASTM A123.
- Fasteners: Primary fasteners shall be socketed and pinned tamperproof in design, stainless steel (SST) per ASTM F 879 unless otherwise indicated.

- EXECUTION

- EXAMINATION

- Do not begin installation until substrates have been properly prepared. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

- PREPARATION

- Clean surfaces thoroughly prior to installation. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

- INSTALLATION

- Install in accordance with manufacturer's instructions, approved submittals and in proper relationship with adjacent construction.

- PROTECTION

- Protect installed products until completion of project.

- Touch-up, repair or replace damaged products before Substantial Completion.

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- Material Specifications:
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- 111345A
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- Bridge/Ramp Transition Bracket
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- Fasteners: Primary fasteners shall be socketed and pinned tamperproof in design, stainless steel (SST) per ASTM F 879 unless otherwise indicated (see specific product installation/specifications).
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- Transition Bracket: Fabricated and formed from 11 GA (.120") (3,04 mm) HRPO low carbon sheet steel. Finish: TenderTuff, color specified.
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- Deck Hanger Clamp Assembly: Cast aluminum. Finish: ProShield, color specified.
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- 111346B
- Ramp Exit Plate DB
- Support: Weldment comprised of 2.375" (60,33 mm) O.D. RS-20 (.095" - .105") (2,41 mm-2,66 mm) galvanized steel tubing and 1/4" x 3" (6,35 mm x 76 mm) zinc plated HRS plate. Finish: ProShield, color specified.
- Ramp Exit Plate: Fabricated from 10 GA (.135") (3,43 mm) HRPO steel plate with 3/8" x 1" stainless steel mounting stud. Finish: TenderTuff, color specified.
- Fasteners: Primary fasteners shall be socketed and pinned tamperproof in design, stainless steel (SST) per ASTM F 879 unless otherwise indicated (see specific product installation/specifications).
- Deck Hanger Clamp Assembly: Cast aluminum. Finish: ProShield, color specified.
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- 171539A
- Ramp Deck Extension DB 12"Dk
- Curb Panel: Permalene, color specified.
- Clamps: Cast aluminum. Finish: ProShield, color specified.
- Fasteners: Primary fasteners shall be socketed and pinned tamperproof in design, stainless steel (SST) per ASTM F 879 unless otherwise indicated (see specific product installation/specifications).
- Deck Ext. Support: Weldment comprised of 1.660" (42,16 mm) O.D. RS20 (.085"-.095") (2,16 mm-2,41 mm) wall galvanized steel tubing and 1 3/4" x 1 3/4" x 1/8" (44,45 mm x 44,45 mm x 3,17 mm) HR angle. Finish: ProShield, color specified.
- Deck Ramp Ext.: Flange formed from 11 GA (.120") (3,04 mm) sheet steel conforming to ASTM A1011. Standing surface is perforated with 5/16" (7,92 mm) diameter holes. Deck face has (4) slotted holes for face mounting components. The finished size measures 2 5/8" x 15 3/4" x 47" (66,68 mm x 400,05 mm x 1194 mm). Finish: TenderTuff, color specified.
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- 174815A
- 12' Ramp w/Guardrails and Curbs
- Curb Panel: Permalene, color specified.
- Clamps: Cast aluminum. Finish: ProShield, color specified.
- Fasteners: Primary fasteners shall be socketed and pinned tamperproof in design, stainless steel (SST) per ASTM F 879 unless otherwise indicated (see specific product installation/specifications).
- Bridge/Ramp: Weldment comprised of 12 GA (.105") (2,66 mm) sheet HRPO steel conforming to

ASTM A1011 and 3/16" (4,75 mm) HR flat steel. Standing surface is perforated with 5/16" (7,92 mm) diameter holes. Finish: TenderTuff, color specified.

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- Guardrail: Weldment comprised of 1.315" (33,40 mm) O.D. RS20 (.080"-.090") (2,03 mm-2,29 mm) wall galvanized steel tube, 1.900" (48,26 mm) O.D. RS20 (.085" - .095") (2,16 mm-2,41 mm) wall galvanized steel tube, 3/16" (4,75 mm) HRPO flat steel, 1/4" (6,35 mm) HRPO flat steel and 1/4" (6,35 mm) HRPO flat steel. Finish: ProShield, color specified.
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- 218172B
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- DigiFuse Barrier Panel w/Medallions Ground Level
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- DigiFuse Panel: Made from 1/4" (6,35 mm) thick aluminum sheet. Dye sublimation printed digital artwork is fused onto the powdercoated substrate.
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- Medallion Plate: Made from .063” (1,60 mm) thick aluminum plate, 4” (101 mm) in diameter. Finish: ProShield®, white in color with a clear coat finish.
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- Fasteners: Primary fasteners shall be socketed and pinned tamperproof in design, stainless steel (SST) per ASTM F 879 unless otherwise indicated (see specific product installation/specifications).
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- Clamps: Cast aluminum. Finish: ProShield, color specified.
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- 247179A
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- Curva Spinner DB Only
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- Fasteners: Primary fasteners shall be socketed and pinned tamperproof in design, stainless steel (SST) per ASTM F 879 unless otherwise indicated (see specific product installation/specifications).
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- Rubber Plug: Made from .315" think mini rough top 3-ply rubber belting with polyester fabric plys, black in color
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- Rubber Gasket: Made from 50 durometer neoprene.
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- Spinner Post: Weldment comprised of 1.315" O.D. RS20 (.075"-.091") galvanized steel tubing, 6" O.D. Sphere (.135" wall) and 4" O.D. STC Ball (.135"wall). 3/8" HRPO flat steel. Finish" ProSshield®, color specified.
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- Spinner Permalene: Recycled permalene, black in color.
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- Standing Post Assembly: Spinner Post - Weldment comprised of 3.5" O.D. 8GA (.149"-.187" wall) galvanized steel tubing, 2" O.D. steel shaft, 12 GA. (.105") HR flat steel, and 1144 steel collar. Finish: ProShield®, color specified.
- Sleeve/Plate - Weldment comprised of 3/8" sheet HRPO steel and 3.5" O.D. schedule 80 steel tubing. Finish; ProShield®, color specified.
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- 249558A
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- We-Go-Round w/Nature DigiFuse Panels 2 Seats DB Only
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- Fasteners: Primary fasteners shall be socketed and pinned tamperproof in design, stainless steel (SST) per ASTM F 879 unless otherwise indicated (see specific product installation/specifications).
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- GripX Tread: 3/4" (19,05 mm) Thick Permalene®, black in color.
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- Brake Cover: Recycled Permalene, black in color.
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- Bottom Mount: Weldment comprised of 7.000” (177 mm) O.D. x .188” (4,77 mm) wall stainless steel tube and 1/4” (6,35 mm) thick HRPO steel plate. Finish: ProShield, black in color.
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- Base Bushing: Oil-Filled UHMW PE.
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- Center Post: 6.000” (152 mm) O.D. (.250”)(6,35 mm) wall HR Black D.O.M. Steel Tube. Finish: ProShield®, color specified.
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- Shock: 70 Series.
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- Rib: Weldment comprised of 1.5” (38,1 mm) x 3.0” (76,2 mm) x .180” (4,57 mm) wall HRPO steel tube, 3/8” (9,52 mm) thick stainless steel tab, 3/8” (9,52 mm) O.D. stainless steel pin, 3/8” (9,52 mm) thick HRPO steel plate and 1/4” (6,35 mm) thick HRPO steel plate. Finish: ProShield®, color specified.
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- Mounting Hub Assembly: Comprised of 1/2" (12,7 mm) thick stainless steel plate, 11 GA (.120") (3,05 mm) stainless steel sheet, steel bearing shaft.
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- Seat Frame: Comprised of 7GA (.179") (4,54 mm) thick HRPO steel plate. Fisnish: ProShield, specify color
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- Seat Permalene Panel: 3/4" thick Recycled Permalene®, color specified.
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- Spinner Top: Rotationally molded from U.V. stabilized linear low-density polyethylene, color specified.
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- Bottom Rib: 7GA. (.179") (4,54 mm) thick HRPO steel sheet. Finish: ProShield, Black in color.
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- DigiFuse Panel: Made from .120" thick aluminum sheet. Dye sublimation printed digital artwork is fused onto the powdercoated substrate.
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- Drain Pipe: Comprised of 4" x 25' polypropylene perforated pipe.
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- Weldment comprised of 2.375" (60,32 mm) O.D. RS20 (.095" - .105") (2,41 mm-2,66 mm) wall galvanized steel tubing, 1/4" (6,35 mm) thick HRPO steel plate and 3/8" (9,52 mm) stainless steel tab. Finish: ProShield, color specified.
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- 111404J
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- 76"Alum Post DB
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- Post: See PlayBooster (PB) General Specifications.
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- 111404I
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- 84"Alum Post DB
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- Post: See PlayBooster (PB) General Specifications.
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- 111404H
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- 92"Alum Post DB
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- Post: See PlayBooster (PB) General Specifications.
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- 182503A
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- Welcome Sign (LSI Provided) Ages 2-5 years Direct Bury
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- Border: Permalene, black in color.
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- Fasteners: Primary fasteners shall be socketed and pinned tamperproof in design, stainless steel (SST) per ASTM F 879 unless otherwise indicated (see specific product installation/specifications).
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- Post: Weldment comprised 2.375" (60,33 mm) O.D. RS20 (.095-.105) (2,41 mm-2,67 mm) wall galvanized tube, 1/4" (6,35 mm) HRPO steel sheet and aluminum post cap. Finish: ProShield, color specified.
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- Sign Panel: Panel is fabricated from 1/8" (.125")(3,17 mm) aluminum plate. Finish: ProShield®, gray in color. (Sign) Digital image is transfered to a 1/8" (.125")(3,17 mm) ProShield coated aluminum plate, then infused into the ProShield.
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- 123340A
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- S/S 18"Wide Slide 40"Dk DB
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- Rail Spacer: Fabricated from 1.312" (33,32 mm) O.D. x 16 Ga. (.065") (1,65 mm) steel tubing. Finish: ProShield, color specified.
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- Fasteners: Primary fasteners shall be socketed and pinned tamperproof in design, stainless steel (SST) per ASTM F 879 unless otherwise indicated (see specific product installation/specifications).
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- Hood: Rotationally molded from U.V. stabilized linear low-density polyethylene, color specified.

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- Spacer Plate: Fabricated from 3/16" (4,75 mm) HRS flat steel. Finish: ProShield, brown in color.
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- Spacer Block: Black Permalene®.
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- Slide Bedway: Weldment comprised of 16 GA (.060") (1.52 mm) 304 stainless steel sheet with 2B finish, 12 GA (.105") (2.67 mm) 304 stainless steel sheet and 1" (25,4 mm) O.D. stainless steel top rail. Finish: #7 Broken glass bead blast.
-
- Support: Fabricated from 1.660 (42,16 mm) O.D. RS-20 (.085" - .095") (2,16 mm-2,41 mm) galvanized steel tubing. Finish: ProShield, color specified.
-
- Offset Hanger Clamp Assembly: Cast aluminum. Finish: ProShield, color specified.
-
- Rail: 1 1/8" (28,58 mm) O.D. 6061-T6 aluminum extrusion with 5/16" (7,92 mm) walls. Finish: ProShield, color specified.
-
- Bolt Caps: Made from injection molded polypropylene, U.V. stabilized, white in color.
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- ----------
-
- 182503C
-
- Welcome Sign (LSI Provided) Ages 5-12 years Direct Bury
-
- Fasteners: Primary fasteners shall be socketed and pinned tamperproof in design, stainless steel (SST) per ASTM F 879 unless otherwise indicated (see specific product installation/specifications).
-
- Post: Weldment comprised 2.375" (60,33 mm) O.D. RS20 (.095-.105) (2,41 mm-2,67 mm) wall galvanized tube, 1/4" (6,35 mm) HRPO steel sheet and aluminum post cap. Finish: ProShield, color specified.
-
- Sign Panel: Panel is fabricated from 1/8" (.125")(3,17 mm) aluminum plate. Finish: ProShield®, gray in color. (Sign) Digital image is transfered to a 1/8" (.125")(3,17 mm) ProShield coated aluminum plate, then infused into the ProShield.

END OF SECTION

landscape structures

INTERNATIONAL PLAY EQUIPMENT MANUFACTURERS ASSOCIATION
IPEMA CERTIFIED to ASTM F1487

The play components identified on this plan are IPEMA certified. (Unless model number is preceded with *) The use and layout of these components conform to the requirements of ASTM F1487. To verify product certification, visit www.ipema.org

THIS LAYOUT INCLUDES FITNESS EQUIPMENT FOR USERS AGES 13 AND OLDER. IT IS THE MANUFACTURERS OPINION AND INTENT THAT THE USE AND LAYOUT OF THESE COMPONENTS CONFORM WITH THE AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) STANDARD, ASTM F3101.

THIS PLAY AREA & PLAY EQUIPMENT IS DESIGNED FOR AGES 2–12 YEARS UNLESS OTHERWISE NOTED ON PLAN.

IT IS THE MANUFACTURERS OPINION THAT THIS PLAY AREA DOES CONFORM TO THE A.D.A. ACCESSIBILITY STANDARDS, ASSUMING AN ACCESSIBLE PROTECTIVE SURFACING IS PROVIDED, AS INDICATED, OR WITHIN THE ENTIRE USE ZONE.

THIS CONCEPTUAL PLAN WAS BASED ON INFORMATION AVAILABLE TO US. PRIOR TO CONSTRUCTION, DETAILED SITE INFORMATION INCLUDING SITE DIMENSIONS, TOPOGRAPHY EXISTING UTILITIES, SOIL CONDITIONS, AND DRAINAGE SOLUTIONS SHOULD BE OBTAINED, EVALUATED, & UTILIZED IN THE FINAL DESIGN. PLEASE VERIFY ALL DIMENSIONS OF PLAY AREA, SIZE, ORIENTATION, AND LOCATION OF ALL EXISTING UTILITIES, EQUIPMENT, AND SITE FURNISHINGS PRIOR TO ORDERING. SLIDES SHOULD NOT FACE THE HOT AFTERNOON SUN.

CHOOSE A PROTECTIVE SURFACING MATERIAL THAT HAS A CRITICAL HEIGHT VALUE TO MEET THE MAXIMUM FALL HEIGHT FOR THE EQUIPMENT (REF. ASTM F1487 STANDARD CONSUMER SAFETY PERFORMANCE SPECIFICATION FOR PLAYGROUND EQUIPMENT FOR PUBLIC USE, SECTION 8 CURRENT REVISION). THE SUBSURFACE MUST BE WELL DRAINED. IF THE SOIL DOES NOT DRAIN NATURALLY IT MUST BE TILED OR SLOPED 1/8" TO 1/4" PER FOOT TO A STORM SEWER OR A "FRENCH DRAIN".

AREA OF ACCESSIBLE/PROTECTIVE SURFACING (POURED-IN-PLACE SUGGESTED)

IT IS THE MANUFACTURER'S OPINION AND INTENT THAT THE LAYOUT OF THESE COMPONENTS CONFORM WITH THE U.S. CONSUMER PRODUCT SAFETY COMMISSION'S (CPSC) "HANDBOOK FOR PUBLIC PLAYGROUND SAFETY".

DESIGNED BY:
CLB

601 7th STREET SOUTH – P.O. BOX 198
DELANO, MINNESOTA 55328
PH: 1-800-328-0035 FAX: 1-763-972-6091

Date	Previous Drawing #	Initials

2-5 AREA

TOTAL ELEVATED PLAY COMPONENTS	7		
TOTAL ELEVATED COMPONENTS ACCESSIBLE BY RAMP	0	REQUIRED	0
TOTAL ELEVATED COMPONENTS ACCESSIBLE BY TRANSFER	7	REQUIRED	4
TOTAL ACCESSIBLE GROUND LEVEL COMPONENTS SHOWN	3	REQUIRED	2
TOTAL DIFFERENT TYPES OF GROUND LEVEL COMPONENTS	3	REQUIRED	3

5-12 AREA

TOTAL ELEVATED PLAY COMPONENTS	10		
TOTAL ELEVATED COMPONENTS ACCESSIBLE BY RAMP	0	REQUIRED	0
TOTAL ELEVATED COMPONENTS ACCESSIBLE BY TRANSFER	5	REQUIRED	5
TOTAL ACCESSIBLE GROUND LEVEL COMPONENTS SHOWN	14	REQUIRED	3
TOTAL DIFFERENT TYPES OF GROUND LEVEL COMPONENTS	14	REQUIRED	14

*NOTE: STAINLESS STEEL SLIDES TO BE INSTALLED WHERE POLY SLIDES ARE SHOWN.

Coal Mine Brook

Worcester, MA

M.E. O'Brien & Sons, Inc
Andrew Kimball

SYSTEM TYPE:
Playbooster

DRAWING #:
1156764-01-02

ISO 14001:2015 CERTIFIED

ISO 9001:2015 Certified

landscape structures

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