THE CITY OF WALTHAM
MASSACHUSETTS

PURCHASING DEPARTMENT

Construction of the Lazazzero Park and Monsignor McCabe Playground

ADDENDUM NO. 2 December 1, 2011

CHANGES, CORRECTIONS AND CLARIFICATIONS

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

THE NUMBER OF THIS ADDENDUM (**NO. 2**) MUST BE ENTERED IN THE APPROPRIATE SPACE PROVIDED AT THE END OF THE SCHEDULE OF VALUES PAGE.

ITEM NO.: 1 ANSWERS TO POSED QUESTIONS

1. **Question:** The Instructions to Bidders and Summary of Work mention expanded irrigation systems as part of the project. Where is this specified?
   Answer: See number 1 in ITEM 2 - Irrigation.

2. **Question:** The work occurs during the little league baseball season. Is there any phasing of the work to enable use of the fields?
   Answer: The contractor awarded the project shall submit proposed phasing and staging area plans for review and approval. The contractor will be expected to keep the project areas around the play fields clear and allow for unobstructed (with 6' min. wide paths) public access to the fields and related facilities during the little league season. Areas left unsuitable for public occupancy shall be fence off with construction fencing. Work directly related to the play fields, fencing, walls and the like should be completed either before or after the season. Games are generally scheduled after work hours (4:00 PM) and on weekends. The contractor will be notified of any special circumstances regarding the league schedules. At Lazazzero Park public parking will not be permitted on the site during the season. At Monsignor McCabe Playground, the contractor is advised that the site is adjacent to an elementary school. Contractor parking or staging of materials will not be permitted in the school parking lot or on school grounds. The contractor will be allowed access to the site from Charlotte Road.

3. **Question:** Is there any site electrical scope of work?
   Answer: See number 1 in ITEM 2 - Electrical.

4. **Question:** Will CORIs be required of the workers at the site?
   Answer: NO

ITEM NO.: 2 ADD/REPLACE SECTIONS AND OR DRAWINGS

1. **Add** the attached sections to the Technical specifications:
   SECTION 02810 – IRRIGATION
   SECTION 16000 – ELECTRICAL

2. **Add** the attached new detail sheet DT.07

3. **Replace** Sheet L-LM1 with the attached revised Sheet L-LM1

4. **Replace** any reference in the Technical Specifications to "Section 02350" with "Section 02300"

5. **Replace** Section 02882- 3.02 and "Section 2.04" with "Section 02300" and 3.03 replace " Section 9.01" with "Section 03300"

6. **Add** the word "materials" between "necessary labor" & "machinery and equipment" in Section 00310-1 Bid Form-

ITEM NO.: 3 DELETIONS

1. **Delete** paragraphs D,E, & F in Section 02222- Utility Abandonment page 5. There is no gas, telephone or cable related work
2. **Delete** the words "Invasive Species" On Sheet L-SP1, in the legend

ITEM NO.: 4 CLARIFICATIONS, CORRECTIONS AND MODIFICATIONS

1 The Terms Concrete Pavement and Cement Concrete Sidewalk are used interchangeably both refer to detail 8 sheet DT.03 - Concrete Pavement
2 The terms "Concrete Block Seatwall" and "Terraced Seating" both refer to detail 1 and 6, Sheet DT.06
3. All shade canopies shall be installed with footings per manufacturer's specification.
4. Anywhere indicating "Ex tree to be removed" shall include removal & proper disposal of the stump and larger root system.
5. The scale of sheet M-EN1 is 1"= 10' not 1"=30' as indicated on the plan
6. Handicapped symbol shall be painted on all "HC seating" indicated on the plans
7. Invasive species shall be defined as any plant material listed on the Commonwealth of Massachusetts "prohibited plant list".

END OF ADDENDUM 2

SECTION 02810

IRRIGATION

PART 1-GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. The work of this section applies to the expansion of the irrigation system at Monsignor McCabe Playground.

B. Section Includes:

1. Piping.
2. Manual valves.
3. Automatic control valves.
4. Sprinklers.
5. Quick couplers.
6. Boxes for automatic control valves.
7. Wiring and connections.

1.03 DEFINITIONS

A. Circuit Piping: Downstream from control valves to sprinklers, specialties, and drain valves. Piping is under pressure during flow.

B. Drain Piping: Downstream from circuit-piping drain valves. Piping is not under pressure.

C. Main Piping: Downstream from point of connection to water distribution piping to, and including, control valves. Piping is under water-distribution-system pressure.

D. Low Voltage: As defined in NFPA 70 for circuits and equipment operating at less than 50 V or for remote-control, signaling power-limited circuits.

1.04 PERFORMANCE REQUIREMENTS

A. A design-build of a single zone of rotary sprinklers attached to an existing irrigation system. Locate and attach new valve, sprinklers, pipes, wires, and all related items to the existing mainline. Existing controller has an open station. Run new wires from controller to valve.

B. Location of Sprinklers and Specialties: Avoid plantings and obstructions such as signs and light standards. Design 100 percent coverage irrigation system, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.

C. Minimum Working Pressures: The following are minimum pressure requirements for piping, valves, and specialties unless otherwise indicated:

1. Irrigation Main Piping: [**200 psig (1380 kPa)**]
2. Circuit Piping: [**200 psig (1035 kPa)**]

1.05 SUBMITTALS

A. Product Data: For each type of product indicated. Include rated capacities, operating characteristics, and furnished specialties and accessories.

B. Delegated-Design Submittal: For irrigation systems indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

C Coordination Drawings: Irrigation systems, drawn to scale, on which components are shown and coordinated with each other, using input from Installers of the items involved. Also include adjustments necessary to avoid plantings and obstructions such as signs and light standards.

D. Qualification Data: For qualified Installer.

E. Operation and Maintenance Data: For sprinklers controllers and automatic control valves to include in operation and maintenance manuals.

1.06 QUALITY ASSURANCE

A. Installer Qualifications: An employer of workers that include a certified irrigation designer qualified by The Irrigation Association.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver piping with factory-applied end caps. Maintain end caps through shipping, storage, and handling to prevent pipe-end damage and to prevent entrance of dirt, debris, and moisture.

B. Store plastic piping protected from direct sunlight. Support to prevent sagging and bending.

1.08 PROJECT CONDITIONS

A. Interruption of Existing Water Service: Do not interrupt water service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary water service according to requirements indicated:

1. Notify **Construction Manager** no fewer than **two** days in advance of proposed interruption of water service.
2. Do not proceed with interruption of water service without C**onstruction Manager's** written permission.

PART 2 - PRODUCTS

2.01 PIPES, TUBES, AND FITTINGS

A. Comply with requirements in the piping schedule for applications of pipe, tube, and fitting materials, and for joining methods for specific services, service locations, and pipe sizes.

B. PVC Pipe: ASTM D 1785, PVC 1120 compound, SDR 21, Class 200.

1. PVC Socket Fittings: ASTM D 2466, Schedule 40.
2. PVC Threaded Fittings: ASTM D 2464, Schedule 80.
3. PVC Socket Unions: Construction similar to MSS SP-107, except both headpiece and tailpiece shall be PVC with socket ends

2.02 PIPING JOINING MATERIALS

A. Solvent Cements for Joining PVC Piping: ASTM D 2564. Include primer according to ASTM F 656.

B. Plastic, Pipe-Flange Gasket, Bolts, and Nuts: Type and material recommended by piping system manufacturer unless otherwise indicated.

2.03 MANUAL VALVES

C. Bronze Gate Valves:

1. Manufacturers: Subject to compliance with requirements.
2. Basis-of-Design Product: Subject to compliance with requirements, provide or comparable product by one of the following:

a. American Valve, Inc.
b. NIBCO INC.
c. Aqua Valve Co.

3. Description:

a. Standard: MSS SP-80, Type 2.
b. Class: 125.
c. CWP Rating: 200 psig (1380 kPa).
d. Body Material: ASTM B 62 bronze with integral seat and screw-in bonnet.
e. Ends: Threaded or solder joint.
f. Stem: Bronze, nonrising.
g. Disc: Solid wedge; bronze.
h. Packing: Asbestos free.
i. Handwheel: Malleable iron, bronze, or aluminum.

D. Operating Wrenches for Iron Gate Valve Casings: Furnish one (1) steel, tee-handle operating wrench (es) with one pointed end, stem of length to operate deepest buried valve, and socket matching valve operating nut for Project.

2.04 AUTOMATIC CONTROL VALVES

A. Plastic, Automatic Control Valves:

1. Manufacturers: Subject to compliance with requirements.
2. Basis-of-Design Product: Subject to compliance with requirements, provide or comparable product by one of the following:
a. Hunter Industries Incorporated.
b. Irritrol Systems.
c. Rain Bird Corporation.
d. Toro Company (The); Irrigation Division.

3. Description: Molded-plastic body, normally closed, diaphragm type with manual-flow adjustment, and operated by 24-V ac solenoid.

2.05 SPRINKLERS

A. General Requirements: Designed for uniform coverage over entire spray area indicated at available water pressure.

B. Medium Rotary Sprinklers:

1. Manufacturers: Subject to compliance with requirements.
2. Basis-of-Design Product: Subject to compliance with requirements, provide or comparable product by one of the following:
    a. Hunter Industries Incorporated.
    b. Irritrol Systems.
    c. Rain Bird Corporation.
    d. Toro Company (The); Irrigation Division.

3. Description:

    a. Body Material: ABS.
    b. Nozzle: Plastic
    c. Retraction Spring: Stainless steel.
    d. Internal Parts: Corrosion resistant.

4. Capacities and Characteristics:

    a. Flow: 1.12 to 9.8 GPM
    b. Pop-up Height: 4” aboveground to nozzle.
    c. Arc: 0 to 360 degrees.
    d. Radius: 29’ to 46’
    e. Inlet: 3/4” IPS

2.06 QUICK COUPLERS

A. Manufacturers: Subject to compliance with requirements.

B. Basis-of-Design Product: Subject to compliance with requirements, provide or comparable product by one of the following:

1. Buckner; a division of Storm Manufacturing Group Inc.
2. Hunter Industries Incorporated.
3. Rain Bird Corporation.
4. Toro Company (The); Irrigation Division.

C. Description: Factory-fabricated, bronze or brass, two-piece assembly. Include coupler water-seal valve; removable upper body with spring-loaded or weighted, rubber-covered cap; hose swivel with ASME B1.20.7, 3/4-11.5NH threads for garden hose on outlet; and operating key.

1. Locking-Top Option: Vandal-resistant locking feature. Include **two** matching key(s).

2.07 BOXES FOR AUTOMATIC CONTROL VALVES

A. Plastic Boxes:

1. Manufacturers: Subject to compliance with requirements.

    a. Armorcast Products Company.

b. Carson Industries LLC.
c. Orbit Irrigation Products, Inc.
d. Dura Plastics.

2. Description: Box and cover, with open bottom and openings for piping; designed for installing flush with grade.

a. Size: As required for valves and service.
b. Shape: Rectangular
c. Sidewall Material: PE.
d. Cover Material: PE.

1) Lettering: Valve Box or Irrigation

PART 3 - EXECUTION

3.01 EARTHWORK

A. Excavating, trenching, and backfilling are specified in Division 2 Section "Earthwork."

B. Install warning tape directly above pressure piping, **12 inches b**elow finished grades, except 6 inches below subgrade under pavement and slabs.

C. Provide minimum cover over top of underground piping according to the following:

1. Irrigation Main Piping: Minimum depth of 18 to 24 **inches** below finished grade, or not less than **18 inches**.
2. Circuit Piping: **12 inches**

3.02 PREPARATION

A. Set stakes to identify locations of proposed irrigation system. Obtain Architect's approval before excavation.

3.03 PIPING INSTALLATION

A. Location and Arrangement: Drawings indicate location and arrangement of piping systems. Install piping as indicated unless deviations are approved on Coordination Drawings.

B. Install piping at minimum uniform slope of 0.5 percent down toward drain valves.

C. Install piping free of sags and bends.

D. Install groups of pipes parallel to each other, spaced to permit valve servicing.

E. Install fittings for changes in direction and branch connections.

F. Install flanges adjacent to valves and to final connections to other components with NPS 2-1/2 (DN 65) or larger pipe connection.

G. Install underground thermoplastic piping according to ASTM D 2774[**and ASTM F 690**].

H. Install expansion loops in control-valve boxes for plastic piping.

I. Lay piping on solid subbase, uniformly sloped without humps or depressions.

J. Install PVC piping in dry weather when temperature is above 40 deg F (5 deg C). Allow joints to cure at least 24 hours at temperatures above 40 deg F (5 deg C) before testing.

K. Install transition fittings for plastic-to-metal pipe connections according to the following:

1. Underground Piping:

   a. NPS 1-1/2 (DN 40) and Smaller: Plastic-to-metal transition fittings.
   b. NPS 2 (DN 50) and Larger: AWWA transition couplings.

2. Aboveground Piping:

   a. NPS 2 (DN 50) and Smaller: Plastic-to-metal transition [**fittings**] [**unions**].
   b. NPS 2 (DN 50) and Larger: Use dielectric flange kits with one plastic flange.

L. Install dielectric fittings for dissimilar-metal pipe connections according to the following:

1. Underground Piping:

   a. NPS 2 (DN 50) and Smaller: Dielectric coupling or dielectric nipple.
   b. NPS 2-1/2 (DN 65) and Larger: Prohibited except in control-valve box.

2. Aboveground Piping:

   a. NPS 2 (DN 50) and Smaller: Dielectric union.
   b. NPS 2-1/2 to NPS 4 (DN 65 to DN 100): Dielectric flange.
   c. NPS 5 (DN 125) and Larger: Dielectric flange kit.

3. Piping in Control-Valve Boxes:

   a. NPS 2 (DN 50) and Smaller: Dielectric union.
   b. NPS 2-1/2 to NPS 4 (DN 65 to DN 100): Dielectric flange.
   c. NPS 5 (DN 125) and Larger: Dielectric flange kit.

3.04 JOINT CONSTRUCTION

A. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.

B. Remove scale, slag, dirt, and debris from inside and outside of pipe and fittings before assembly.

C. Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Join pipe fittings and valves as follows:

1. Apply appropriate tape or thread compound to external pipe threads unless dry seal threading is specified.
2. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged. Do not use pipe sections that have cracked or open welds.

D. PVC Piping Solvent-Cemented Joints: Clean and dry joining surfaces. Join pipe and fittings according to the following:

1. Comply with ASTM F 402 for safe-handling practice of cleaners, primers, and solvent cements.
2. PVC Pressure Piping: Join schedule number, ASTM D 1785, PVC pipe and PVC socket fittings according to ASTM D 2672. Join other-than-schedule-number PVC pipe and socket fittings according to ASTM D 2855.
3. PVC Nonpressure Piping: Join according to ASTM D 2855.

3.05 VALVE INSTALLATION

A. Install in underground piping in boxes for automatic control valves. Install a gate valve before each control valve. Install a DBY splice kits at each automatic control valve. Fittings and nipples as required.

3.06 SPRINKLER INSTALLATION

A. Install sprinklers after hydrostatic test is completed.

B. Install sprinklers at manufacturer's recommended heights. Install on (2) el flexible swing joints.

C. Locate part-circle sprinklers to maintain a minimum distance of 4 inches (100 mm) from walls and 2 inches (50 mm) from other boundaries unless otherwise indicated.

3.07 CONNECTIONS

A. Install piping adjacent to equipment, valves, and devices to allow service and maintenance.

B. Connect wiring between controllers and automatic control valves.

3.08 IDENTIFICATION

A. Identify system components. Comply with requirements for identification specified in Division 22 Section "Identification for Plumbing Piping and Equipment."

B. Warning Tapes: Arrange for installation of continuous, underground, detectable warning tapes over underground piping during backfilling of trenches. See Division 31 Section "Earth Moving" for warning tapes.

3.09 FIELD QUALITY CONTROL

A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections.

B. Perform tests and inspections.
   1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.

C. Tests and Inspections:

   1. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
   2. Operational Test: After electrical circuitry has been energized, operate controllers and automatic control valves to confirm proper system operation.
   3. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

D. Any irrigation product will be considered defective if it does not pass tests and inspections.

E. Prepare test and inspection reports.

3.10 STARTUP SERVICE

A. Startup service shall be the responsibility of the irrigation installer.

   1. Complete installation and startup checks according to manufacturer's written instructions.
   2. Verify that controllers are installed and connected according to the Contract Documents.
   3. Verify that electrical wiring installation complies with manufacturer's submittal.

3.11 ADJUSTING

A. Adjust settings of controllers.

B. Adjust automatic control valves to provide flow rate at rated operating pressure required for each sprinkler circuit.

C. Adjust sprinklers and devices, except those intended to be mounted aboveground, so they will be flush with finish grade.

3.12 CLEANING

A. Flush dirt and debris from piping before installing sprinklers and other devices.

3.13 DEMONSTRATION

A. Train the Owner's maintenance personnel to adjust, operate, and maintain automatic control valves and controllers.

END OF SECTION

SECTION 16000

ELECTRICAL

PART I – GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to work of this section.

B. The Contractor must be familiar will all other Sections of this specifications and the associated Drawings, which affect the scope of work. The General Conditions, all Supplementary and Special Conditions, and all other sections of this specification shall be adhered to, as they apply to this Section. Where paragraphs of this Section conflict with similar paragraphs elsewhere, the more stringent requirements shall prevail.

1.02 DESCRIPTION OF WORK

A. The Contractor shall furnish a complete finished product, which meets all applicable codes and standards, and the intent and specific requirements of the Drawings and specifications for this project. It is the intent of these specifications that the electrical system shall be suitable in every way for the service (and use) required. All materials and all work, which may be reasonably implied as being incidental to the work of this Section, shall be furnished at no extra cost to the Owner.

B. As used in this Section, "*provide*" means "furnish and install", "*furnish*" means "to purchase and deliver to the project site complete with every necessary appurtenance and support", and "*install*" means "to unload at the delivery point at the site and perform every operation necessary to establish secure mounting and correct operation at the proper location in the project".

C. Perform work and provide (furnish and install) material and equipment as shown on Drawings and as specified, or indicated, in this Section of the specifications. Completely coordinate work of this Section with work of other trades and provide a complete and fully functional installation. Drawings and specifications form complimentary requirements; provide work specified and not shown, and work shown and not specified as though explicitly required by both. Although work is not specifically shown or specified, provide supplementary or miscellaneous items, appurtenances, devices and materials obviously necessary for a sound, secure and complete installation.

D. Remove all debris caused by Contractors' work.

E. Provide demolition and relocation of existing electrical items as shown on the drawings.

F. The work under this section shall require that the Contractor provide all labor, materials, equipment, tools, supplies and transportation involved in the installation of electrical equipment as specified.

G. The work to be done under this contract generally includes, but is not limited to the following:

Electrical Demolition at Lazazzero

1. Remove, protect and store existing one (1) basketball court, fixtures, poles and accessories.

2. Remove and dispose of one (1) existing concrete light pole foundations for existing Basketball Court lighting. Disconnect and abandon existing Basketball Court wiring.

New Basketball Court Lighting at Lazazzero

1. Provide new precast light pole foundations for one (1) Basketball Court light. Foundations to match existing bolt pattern and existing foundations in size and construction dimensions.

2. Provide new circuit breaker(s) in existing panelboard (Concession Building) for Basketball Court lighting. Provide new time clock to power Basketball Court lighting, to be installed adjacent to existing electrical panel. Time clock to be 365 day astronomical unit. Feed to be 240V, 2P, 60A for a total of 10-1000W fixtures. Rewire or replace ballasts for 240V feed.

3. Provide underground conduit and handhole system from existing Concession Building panelboard to new Basketball Court lighting locations. Provide 240V wiring for lighting to each pole base and up to each fixture. Replace existing lighting ballasts (10 fixtures total) with 240V units of the same type if existing ballasts are not multi-tap or cannot accept 240V input.

4. Provide underground XHHW-2, 600V cable from new circuit breakers in existing panelboard to Basketball Court Lighting Pole fixtures, in sizes as shown on Panel Schedule. All conduits to be sand-encased with compacted backfill per the details shown. Provide electrical handholes in sizes and locations as shown. Install all necessary conduits, cables, handholes, accessories, etc. for a complete system

5. Provide all services necessary for relocation and installation of one (1) Basketball Court lights.

Security Lighting at Lazazzero

1. Provide three (3) new outdoor wall-pack floodlights on outside of Concessions Building, in locations as shown. Lights to be 120V, 100W, HPS wall-paks. Mount lights on outside of building as high as possible, or as directed by Owner and Architect.

Security Lighting at McCabe Playground

1. Provide two (2) new outdoor floodlights on existing Tennis Court light poles in locations as shown. Lights to be per 2.11A Floodlights. Mount lights on existing Tennis Court light poles as high as possible, or as directed by Owner and Architect.

2. Repair or replace time clock to good working order.

3. Provide new outdoor GFCI duplex receptacle, three (3) mounted on back of backstops and outfield fence, with in-use wet-location cover, in location as directed by Owner and Architect. Provide new 20A/1P circuit with 2W#10AWG w/GND in new RGS circuit from existing panelboard. Mount receptacle 24-inches above grade, or as directed by Owner and Architect.

Electrical Systems

1. Provide all necessary grounding, including one ground rod at electrical cabinet location, one (1) ground rod at each Basketball Court lighting pole location and at service entrance to building as required by utility company and NEC.

2. Provide startup services for new lighting systems.

3. Provide other associated electrical equipment necessary for a complete system, shown, or implied in these Specifications and on Contract Drawings.

4. Coordinate with the local electric utility (NStar Electric) for new underground service to site, installation of new conduit, secondary service, pole removal and metering requirements. Coordinate with Verizon for underground relocation of telephone cable and pole removal.

1.03 SITE VISIT

A. Each bidder shall visit the site of the proposed work and fully acquaint himself with the conditions there relating to construction and labor, and should fully inform himself as to the facilities involved, and the difficulties and restrictions attending the performance of the Contract. The Bidder should thoroughly examine and familiarize himself with Drawings, Technical Specifications and all other Bid and Contract Documents. The Contractor, by the execution of the Contract, shall in no way be relieved of any obligation under it due to his failure to receive or examine any form or legal document or to visit the site and acquaint himself with the conditions there existing and the Owner will be justified in rejecting any claim thereof.

1.04 AS-BUILT DRAWINGS:

A. After completion of the electrical installation, the Contractor shall furnish an "as-built" drawings showing all conduits, cables, cabinets, transformers, light poles, etc. to scale with dimensions where required. Instruction sheets and parts lists covering all operating equipment will be bound into a folder and furnished to the Owner in duplicate.

1.05 INSTRUCTIONS:

A. Within 10 days, after completion and testing of the system, the Contractor will instruct the Owner's personnel in the proper operations and maintenance of the system, in a 2 hour training session.

1.06 GUARANTEE

A. Guarantee work of this Section in writing for one year from date of Owner's acceptance. Repair or replace defective materials, equipment, workmanship and installation that develop within this period, promptly and to Owner's satisfaction and correct damage caused in making necessary repairs or replacements under guarantee with no extra cost to Owner. Contractor shall transfer all equipment warrantees for lighting and other systems to Owner.

1.07 REFERENCE STANDARDS AND SPECIFICATIONS

A. Perform work strictly as required by rules, regulations, standards, codes, ordinances, and laws of local, state, and federal government, and other authorities that have lawful jurisdiction.

B. All materials and installations shall be in accordance with the latest edition of the Massachusetts Electrical Code, and all applicable local codes and ordinances. Materials and equipment shall be listed by Underwriters Laboratories (UL). Special Attention shall be paid to the latest edition of the following standards:

American National Standards Institute	ANSI
American Society for Testing & Materials	ASTM
Illuminating Engineering Society	IES
Institute of Electrical & Electronics Engineers	IEEE
Insulated Cable Engineers' Association	ICEA
National Electrical Code	NEC
National Electrical Manufacturer's Association	NEMA
National Electrical Safety Code	NESC
InterNational Electrical Testing Association	NETA
National Fire Protection Association	NFPA
Occupational Safety & Health Administration	OSHA
Underwriter's Laboratories, Inc.	UL

C. The above listed codes and standards are referenced to establish minimum requirements and wherever this Section requires higher grades of materials and workmanship than required by the listed codes and standards, this Section shall apply. In the event a conflict occurs between the above listed codes and standards and this Section, the more stringent requirement shall govern.

1.08 SUBMITTALS

A. Within 10 days after Award of General Contract, submit shop drawings and product data on below listed items for approval. Submit copies as requested.

B. Check, stamp and mark with project name shop drawings and product data before submitting for approval. Specifically indicate on shop drawing transmittal form, or by separate letter any deviations from Contract Documents because of standard shop practice or other reason. Rectify with no extra cost to Owner, deviations which escape Engineer's scrutiny and have not been indicated on shop drawings.

C. List of materials and equipment requiring shop drawings shall include, but not limited to:

1. Conduits and Wiring
2. Time Clocks
3. Circuit Breakers
4. Concrete Products and Light Bases
5. Handholes & Manholes
6. Outlets

D. The Engineer's review shall be only for conformance with the design concept of the project and compliance with the specifications and Drawings. The responsibility of, and the necessity of, furnishing materials and workmanship required by the specifications and Drawings which may not be indicated on the shop drawings is included under the work of this Section.

E. The Contractor shall furnish at least two (2) complete sets of operating and instruction manuals for the equipment provided under this Contract. These manuals shall detail the operation, testing, and maintenance of the electrical equipment and systems. Manuals shall be provided upon Engineer's request or upon project completion, whichever comes first.

1.09 INSPECTIONS AND FEES

A. Obtain all necessary permits and licenses, file necessary plans and pay all fees for permits and inspections. Permit fees are the responsibility of the Contractor as part of his bid, as is all coordination with the local utility NStar Electric. Contractor is responsible for coordinating Work Order process with local utility and obtaining all utility approvals. Contractor is also responsible for obtaining any site-specific utility requirements for this project prior to the start of construction and notifying local utility for all inspections prior to backfilling, etc.

1.10 INTERPRETATION OF DRAWINGS

A. Drawings are diagrammatic and indicate general arrangement of systems and work included in Contract. Drawings are not intended to specify or show every offset, fitting or component; however, Contract Documents require components and materials whether or not indicated or specified as necessary to make installation complete and operational.

B. Any work installed contrary to, or without review by, the Engineer shall be subject to change as directed by the Engineer, and no extra compensation will be allowed for making these changes.

C. Circuit layouts are not intended to show the number of fittings, or other installation details. Additional circuits shall be installed wherever needed to conform to the specific requirements of the equipment or local codes.

D. As work progresses and for duration of Contract, maintain complete and separate set of prints of Contract Drawings at job site at all times. Record work completed and all changes from original Contract Drawings clearly and accurately, including work installed as a modification or addition to the original design.

1.11 ELECTRIC UTILITY

A. The Electric Utility for this project is NStar Electric. All coordination with the Electric Utility is the responsibility of the Contractor. All work and materials for the electric service shall be in accordance with the requirements of the Electric Utility, and are to be met under this Section and included in the bid price of the Contractor.

1.12 TELEPHONE UTILITY

B. The Telephone Utility for this project is Verizon. All coordination with the Telephone Utility is the responsibility of the Contractor. All work and materials for the electric service shall be in accordance with the requirements of the Telephone Utility, and are to be met under this Section and included in the bid price of the Contractor.

PART II – MATERIALS & PRODUCTS

2.01 GENERAL

A. Materials and products furnished shall be designed for the intended use, shall meet all requirements of the latest edition of the National Electric Code (NEC), and all local codes.

B. Materials shall be manufactured in accordance with the standards indicated in this Section, and typical industry standards and codes for the products specified. Materials and equipment shall be Underwriter's Laboratory (UL) listed.

C. The materials used shall be new, unused, and of the best quality for the intended use. All equipment shall have the manufacturer's name, address, model or type designation, serial number and all applicable ratings clearly marked thereon in a location which can be readily observed after installation. The required information should be marked on durable nameplates that are permanently fastened to the equipment.

D. Electrical equipment shall at all times during construction be adequately protected against mechanical injury or damage by water. Electrical equipment shall not be stored outside exposed to the elements. If any equipment or apparatus is damaged, such damage shall be repaired at no additional cost, or replaced at no additional cost as directed by the Engineer.

2.02 RACEWAYS

A. Rigid Metallic Conduit: UL6 and ANSI C80.1.

B. Flexible Metallic Conduit: UL1. Liquidtight flexible metal conduit shall be used in wet locations.

C. Polyvinyl Chloride (PVC) Conduit, electrical, gray, Schedule 40 or Schedule 80 as specified, meeting the requirements of UL 651 and NEMA TC-2. If concrete encasement is required, a minimum of 3,000 psi concrete shall be used. All conduits placed under roadways, and subject to vehicular traffic, shall be concrete-encased Schedule 40 (or Schedule 80 as approved).

D. Minimum size of conduit shall be 3/4". Unless indicated on Drawings, conduit sizes can be sized in accordance with National Electric Code (NEC). Conduit bends shall not have kinks or flats, and shall not be less than standard radii.

E. Rigid Galvanized Steel (RGS) conduit shall be used for all power, control signal, and instrumentation wiring, except where noted. Conduit shall be fully threaded at both ends and each length shall be furnished with one threaded coupling. All 90 degree conduit sweeps shall be RGS for all entry and exit into concrete pads and at riser poles, with ground bushings connected to new grounding with minimum #4Awg ground wire for conduit grounding bushings.

F. Conduits shall be made electrically continuous at coupling and connections to boxes and cabinets by means of joining fasteners or copper bond wires. Conduit shall be connected to grounded structural steel or the ground network. After assembly all conduit locknuts, all EMT coupling fittings, and all bond wire screws shall be set up tight before installation of wiring. Insulated metallic bushings shall be used on all conduits entering panel cabinets, pull-boxes, and wiring gutters, except on branch lighting circuits.

G. Expansion fittings shall be provided on all conduits as required by the 2008 National Electrical Code, and as required by local and state codes. This includes, but is not limited to, vertical conduit risers coming from below-grade.

2.03 WIRE AND CABLE

A. Unless otherwise noted, conductors for power, lighting, and grounding *above grade* shall be No. 12 through No. 8 AWG, NEC type THWN/THHN, meeting the requirements of UL 83. Conductors for power and lighting shall be no smaller than No. 12 AWG.

B. Conductors for power, lighting, grounding, and control *below grade* (and in wet locations) shall be No. 2 AWG and larger, NEC type XHHW (or XHHW-2), meeting the requirements of NEMA WC7 and ICEA S-66-524.

C. All conductors shall be annealed copper, 98% conductivity, Class B stranded, except conductors used for power and lighting circuits No. 10 AWG and smaller which may be solid. All conductors should be rated for 600 volts or less, with a thermal rating of 90° C.

D. The outside covering of all wiring for power, lighting, grounding, and control uses shall be color coded to identify polarity as follows:

	208Y/120 V. 3 Phase	240D/120 V 3 Phase	480Y/277 V 3 Phase
Phase A	Black	Black	Brown
Phase B	Red	Red	Orange
Phase C	Blue	Orange	Yellow
Neutral	White	White	Gray

Ground	Green	Green	Green

2.04 WIRE AND CABLE CONNECTORS AND DEVICES

A. Wire and cable connectors and devices shall meet the requirements of UL 486. Connectors, including miscellaneous nuts, bolts, and washers shall be silicon bronze. Ferrous materials shall not be used.

2.05 BOXES

A. Outlet and Switch Boxes: NEMA OS 1.

B. Pull Boxes, Junction Boxes, and Equipment Enclosures: NEMA ICS 6.

C. Pull boxes, junction boxes, and equipment enclosures shall be of NEMA Type 1 construction for indoor use, and NEMA Type 3R construction for outdoor or wet location use, unless otherwise noted.

D. Box sizes shall not be less than that required by the Massachusetts Electrical Code.

2.06 WIRING DEVICES

A. Wiring Devices: NEMA WD 1.

B. Wiring devices for shall be specification grade, 20 ampere, ivory with Type 302 stainless steel plates. Ground fault current interrupting (GFCI) devices shall be provided where specified and/or required by applicable codes.

2.07 PANELBOARD CIRCUIT BREAKERSS

A. Panelboard circuit breakers are to match existing type, in new sizes as indicated on Contract Drawings.

2.08 WARNING TAPE

A. Warning tape shall be six (6) inches wide, polyethylene not less than 3.5 mil thick with a minimum strength of 1,500 psi. Install 8 inches below final grade. Tape shall be red for electric conduit, and red or yellow for communication conduit. Tape shall have black lettering on two lines as indicated below:

B. For Electric conduit:

CAUTION CAUTION CAUTION
BURIED ELECTRIC LINE BELOW

C. For Telephone, Fire Alarm and Communication conduit:

CAUTION CAUTION CAUTION
BURIED COMMUNICATION LINE BELOW

2.09 ELECTRIC HANDHOLES

A. Electric Handholes are to be strong, lightweight, and non-conductive, and provided in the dimensions as shown on the Contract Drawings. Electric Handholes shall be Ultraviolet (UV) resistant, along with being unaffected by moisture, freezing temperatures, soil, and sub-soil chemicals. Electric Handholes to be fiberglass composite, as approved by Engineer. Minimum handhole size is 24”W x 36”L x 22”D.

B. Handholes shall be provided with skid-resistant surface covers, with an “Electric” logo. Handholes and Covers shall be design for street-rated, heavy duty applications, meeting the requirements of the either: AASHTO HS-20 or ANSI/SCTE 77-220 Tier 15 loading, with a minimum design load of 22,500 lbs for both the handhole box and cover. . Covers shall include recessed stainless steel captive bolts of a penta-head design. The nuts for the bolts shall be self-centering and corrosion resistant. Handholes shall meet the requirements of the latest edition of the National Electric Code (2008 or later) with regards to structural integrity, installation methods, grounding of the cover and metallic parts, etc. Handholes shall be UL listed for the intended use.

C. Color of electric handholes and covers to be green in grass areas and gray in sidewalk areas, as approved by Engineer. Handholes to be installed flush with final grade. A layer of 6-inches of crushed rock shall be installed in the bottom of each handhole to assist with drainage, and this compacted gravel base material shall extend out beyond the sidewalls of the handhole. Conduits shall sweep up and be at least 4-inches above top of crushed rock layer.

2.10 FOUNDATIONS FOR BASKETBALL COURT LIGHTING POLES

A. Provide approved precast foundations, and other devices as necessary and as required.

B. Foundations for Basketball Court light poles shall be as shown on Contract Drawings, including number, type and location of anchor bolts. Foundations shall be made of minimum 5,000 psi concrete (at 28 days) and have steel reinforcement meeting ASTM A-615, grade 60 (cover to steel, 1” minimum). Foundations shall have 2” PVC conduits for lighting circuits, 180 degrees apart. Foundations to be installed with the top of the concrete approximately 3-6” inches above final grade, with mowing apron. Include provisions for security camera spare conduit system.

2.11 FLOODLIGHTS

A. Provide outdoor, weatherproof pole mounted floodlights, in two (2) locations as shown on Drawings. Lights to be high efficiency HPS floodlights, controlled by internal or twistlock photocells. Lights to be 120V, 100 watt each.

2.12 TIME CLOCKS

A. Time Clocks are to be provided for control of relocated basketball court lights. Time clock to be installed in existing Concessions Building, adjacent to existing panelboard.

B. Each Time Clock shall be 2-pole 240V, 60A per pole (minimum), SPDT and Intermatic (or approved equal). Time Clock to be astronomical type, with 365 day calendar. A separate lighting contactor (2P/60A) and time clock may be provided.

PART III – EXECUTION

3.01 GENERAL

A. This Section covers the requirements for installation of materials, proper workmanship, testing, cleaning, grounding, and work methods to be followed by the Contractor. This Section also includes specific instructions and to be used in conjunction with the contract Drawings. Any discrepancies noted between the specification, Drawings, and actual installation shall be reported immediately to the Owner, Engineer, and Architect. Failure on the part of the Contractor to report discrepancies immediately will be considered negligent and Contractor will be responsible for correcting actions at no cost to Owner.

B. Contractor is responsible for coordinating work with other trades, Owner, and Architect's schedule. Work will be coordinated such that systems can be properly located, and conflicts and delays are avoided. Contractor shall consider commencement of work acceptance of existing conditions.

3.02 MATERIALS AND WORKMANSHIP

A. Work shall be executed in workmanlike manner and shall present neat, rectilinear and mechanical appearance when completed. Do not run raceway exposed unless shown exposed on Drawings. Material and equipment shall be new and installed according to manufacturer's recommended best practice so that complete installation shall operate safely and efficiently.

3.03 CONTINUITY OF SERVICES

A. Do not interrupt existing services without Owner's, Utilities, Engineer's and Architect's approvals.

3.04 TESTING, INSPECTION AND CLEANING

A. Test wiring and connections for continuity and grounds before fixtures are connected; demonstrate insulation resistance by megger test as required at not less than 500 volts. Insulation resistance between conductors and grounds for secondary distribution systems shall meet National Electrical Code (NEC) and interNational Electrical Testing Association (NETA) requirements.

B. Verify and correct as necessary: voltages, tap settings, trip settings and phasing on equipment from secondary distribution system to point of use. Test secondary voltages at transformers, bus in panelboards, and at other locations on distribution systems as necessary. Test secondary voltages under no-load and full-load conditions.

C. Test lighting fixtures with specified lamps in place for 100 hours. Replace lamps that fail within 90 days after acceptance by Owner at no extra cost to Owner (no exceptions).

D. Provide necessary testing equipment and testing services.

E. Failures or defects in workmanship or materials revealed by tests or inspection shall be corrected promptly and retested. Replace defective material.

F. Clean panels and other equipment. Panelboard interiors shall be cleaned and vacuumed. Equipment with damage to painted finish shall be repaired to Engineer's or Architect's satisfaction. After completion of project, clean exterior surfaces of electrical equipment.

3.05 WIRING METHODS

A. Install wire and cables in approved raceways as specified and as approved by authorities that have jurisdiction.

B. Follow homerun circuit numbers and/or notes as shown on Drawings to connect circuits to panelboards. Where homerun circuit numbers are not shown on Drawings, divide similar types of connected loads among phase buses so that currents are approximately equal in normal usage.

C. Run concealed conduit in as direct lines as possible with a minimum number of bends of longest possible radius. Run exposed conduit parallel to or at right angles to building/field lines. Bends shall be free from dents or flattening. The exact locations and routing of conduit shall be determined by the Contractor subject to the approval of the Owner and Engineer.

D. Polarity of all electrical connections shall be observed in order to preserve phase relationship in all feeders and equipment.

E. Splices shall be made in neat, workmanlike manner using approved mechanical connectors. After splicing, insulation equal to that on the spliced wires shall be applied at each splice. Splices are permitted only in junction boxes, outlet boxes, or other permanently accessible locations. Splices installed in electric handholes shall be weather and waterproof, pre-molded polymer splices. Hand taping of splices below-grade is not acceptable.

3.06 GROUNDING

A. Bond and ground equipment and systems connected under this Section in accordance with standards of the NEC and other applicable regulations and codes.

B. Conduit system shall be electrically continuous throughout, grounded at service entrance. Equipment frames, enclosures, boxes, etc. shall be grounded by use of green-jacketed (or bare copper) ground, sized as per Table 250-95 of the NEC.

C. Green bonding jumper shall be installed in flexible conduits.

D. Copper fittings for ground connections shall conform to the requirements of ASTM B 30. All bolts, u-bolts, cap screws, nuts, and lock washers for copper fitting shall be of approved corrosion-resisting material. Compression connectors required for all below-grade grounding

connections. Exothermic (cad-weld) connectors are also acceptable for use below grade. The use of bolted grounding and ground rod connectors below grade is not acceptable.

E. Ground Rods shall be 5/8" diameter and 8' in length, copperweld as required by applicable codes (NEC, NESC). Bonding connections to ground rods shall be permanent, welded or crimped, with copper connectors. All wire used for grounding shall be no smaller than #4 Awg copper, stranded conductor. Contractor shall bond all meter enclosure cabinets, meter sockets, safety disconnects, conduit grounding bushes, etc. .

3.07 INSTALLATION OF LIGHTING FIXTURES

A. Verify construction of light pole foundations is suitable, and provide fixtures, poles, hardware, and other accessories suitable for construction encountered.

B. Install Basketball Court Lighting System, as specified elsewhere in this Specification.

C. Install one (1) 5/8" x 8'-0" long copper weld ground rod at each light pole installation, and connect a length of bare copper #1/0 Awg stranded conductor to equipment ground stub within base each light pole. Ground rods for lighting poles shall be installed in compacted soil, and not in concrete backfill. Compression connectors required for all below-grade grounding connections.

D. Coordinate installation of fixtures with installation of surrounding materials and landscaping (if applicable). Investigate lighting fixture locations and foundation supports to ensure that no interference exists between lighting fixtures, supports, and other equipment including that provided by other trades. Report any possible interference's to the Architect.

3.08 EXECUTION – INSTALLATION OF ELECTRICAL EQUIPMENT

A. Contractor to furnish and install the following major electrical components, and all necessary minor and expected accessories.

B. Contractor to meet with local wiring inspector prior to the start of any work and obtain any local site requirements and restrictions, which must be followed. Contractor shall also meet with local utility, any other Town/City officials, as directed by Owner and wire inspector, prior to the start of work, or ordering of materials. Failure to meet with the local officials and utility prior to ordering materials and start of construction will be considered negligent and all necessary corrections resulting form this failure will be at no cost to Owner.

C. Provide, furnish and install all products and work outlined in Paragraph 1.02.G of this Specification Section.

D. Provide all grounding of electrical cabinet installations and Basketball Court lighting. Grounding to be installed per installation details and National Electrical Code.

E. Balance the lighting, receptacle and electrical load evenly on all circuits and on all phases of each circuit.

F. Provide new handholes and conduit system for lighting and electrical and irrigation work, in locations as shown on Contract Drawings.

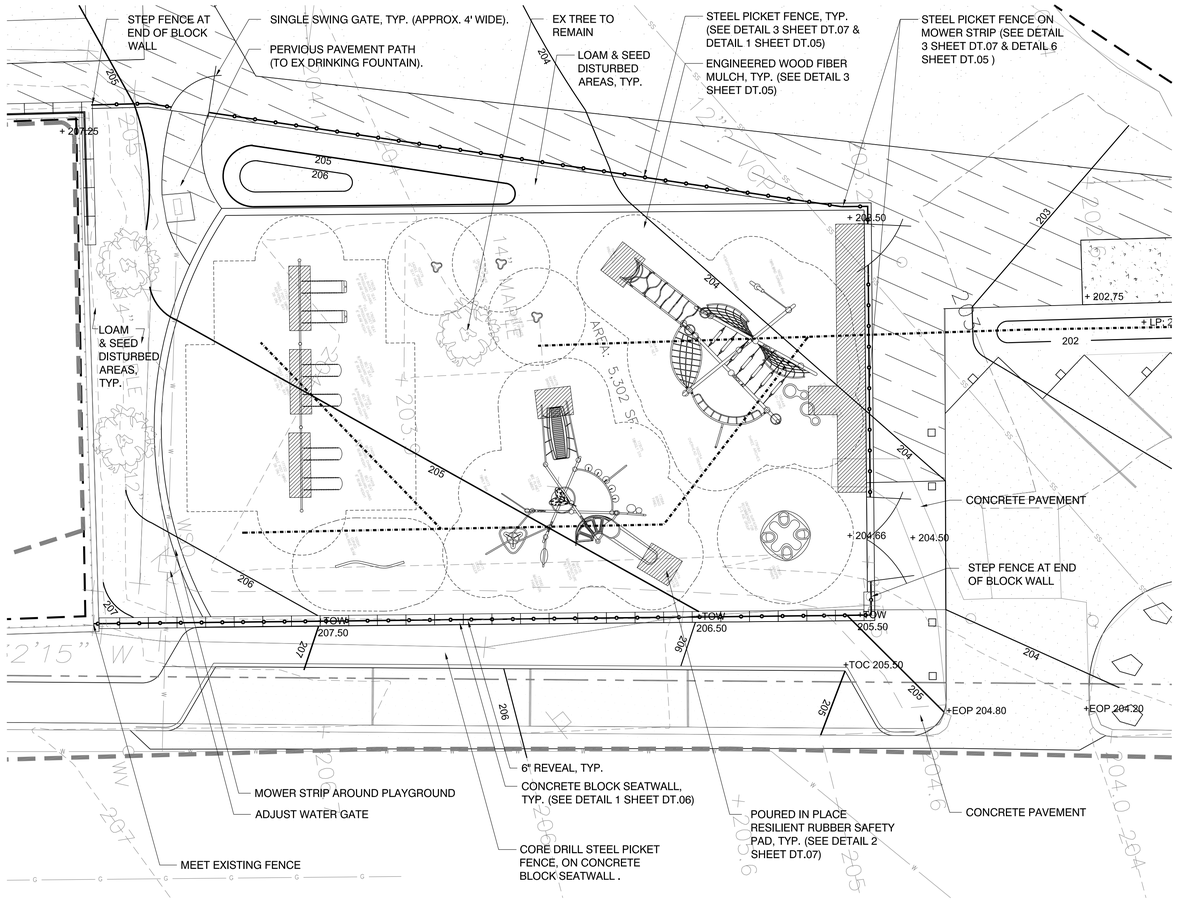
G. Install all equipment in locations as shown on Contract Drawings. All deviations must be approved, in advance by Town/City, Architect and Engineer.

H. Install all equipment per manufacturer's instructions.

I. Clean-up excavated areas, and restore with new loam & seed, as directed by Architect.

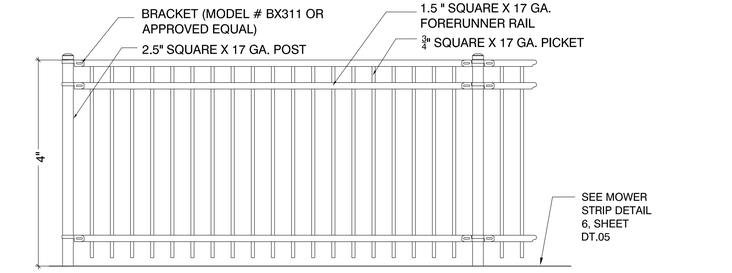
J. Provide complete "As-Built" drawings to Engineer & Owner.

END OF SECTION



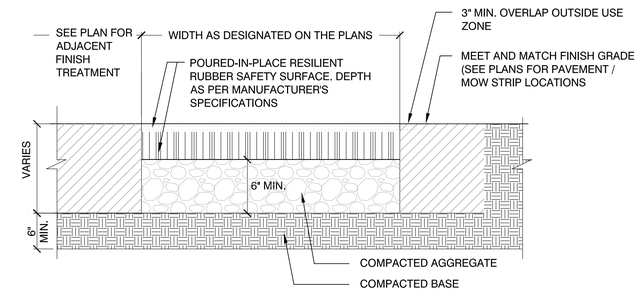
1 PLAYGROUND ENLARGEMENT PLAN (AT LAZAZZERO PARK)

SCALE: N.T.S.



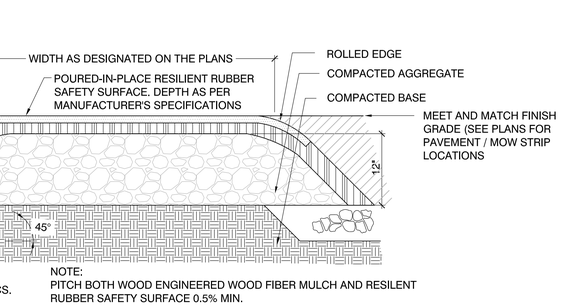
3 STEEL PICKET FENCE

SCALE: N.T.S.



4 POURED-IN-PLACE RESILIENT RUBBER SAFETY SURFACING

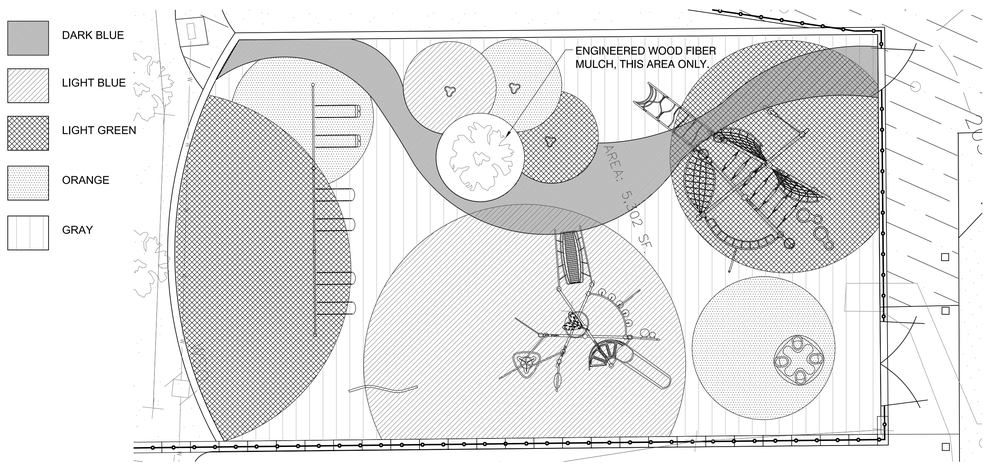
SCALE: N.T.S.



2 POURED IN PLACE RESILIENT RUBBER SAFETY PAD

SCALE: N.T.S.

NOTE: FOR ADD ALTERNATE #1 PROVIDE POURED-IN-PLACE SAFETY SURFACE FOR ENTIRE PLAYGROUND, PATTERN AS INDICATED BELOW.



5 ADD ALTERNATE #1 POURED-IN-PLACE RESILIENT RUBBER SAFETY SURFACING (LAZAZZERO PARK)

SCALE: N.T.S.

11-22-2011 CONSTRUCTION DOCUMENTS

Project:

CITY OF WALTHAM

Lazazzero Park
7 Shore Road
Waltham, MA

Monsignor McCabe
Playground - Phase 2
Charlotte Road
Waltham, MA

Weston&Sampson

100 Foxborough Blvd., S.250 Foxborough, MA
(508) 698-3034 (800) Sampson
www.westonandsampson.com

Consultants:

Revisions:

Rev	Date	Description
1	11/29/2011	NO PLAN CHANGES
2	12/01/2011	ADDITIONAL SHEET

Seal:

CONSTRUCTION DOCUMENTS

Date:	11.22.2011
Scale:	AS SHOWN
Drawn By:	MMM
Reviewed By:	MSM
Checked By:	LFK
Approved By:	ERB

Drawing Title:

SITE CONSTRUCTION DETAILS

Sheet Number:

DT.07

HARDY'S POND

APPROX. EXIST. EDGE OF WATER
EDGE OF DELINEATED WETLAND
PR WETLAND REPLICATION AREA, TYP. (TOTAL 1081 SF) (SEE PLANTING PLAN)
FISHING PIER (ALL S.01)
BENCH, TYP. (SEE SPEC)
INTERPRETIVE SIGNAGE, TYP. (5) REQUIRED
PICNIC TABLE ON CONCRETE PAD, TYP.
(ALL S.02) BOAT RAMP
WETLAND AREA TO MITIGATE (714 SF) (SEE PLANTING PLAN)
EX INFORMAL TRAILS
WOODLANDS TRAILS, TYP. (4 DT.03)
EX TREES TO REMAIN, TYP.
REPAIR FENCE AS NEEDED, TYP.
CEMENT CONCRETE PAVEMENT, TYP. (6 DT.03)
PERVIOUS ASPHALT, TYP. (7 DT.03)
EXIST. BATTING CAGE
PR LOAM & SEED ALL DISTURBED LAWN AREAS, TYP. (3 DT.03)
RENOVATED EX BLEACHER NO. 1 ON NEW CONC. PAD WITH SHADE CANOPY, TYP. (6 DT.04)
EX TURF TO REMAIN, TYP.
EX DUGOUT TO REMAIN, TYP.
EX BLDG TO REMAIN, TYP.
NEW 6' HT BVCL FENCE W/GATE (2 DT.05)
CONCRETE BLOCK WALL (1 DT.06)
END WOOD GUARDRAIL
EX DUGOUT TO REMAIN, TYP.
INSTALL NEW FENCE FABRIC ON EXISTING FENCE POSTS AND FRAME, (SEE DETAIL AND SPECS)
INSTALL LIGHT POLE FROM STOCKPILE. PROVIDE 1 1/2" PVC CONDUIT AND WIRES TO SUPPLY RELOCATED LIGHT
CONCRETE BLOCK SEATWALL (1 DT.06)
EX 60' DIAMOND
CEM CONC. STAIRS, TYP.
RESET BLEACHER NO. 2 ON NEW CONC. PAD WITH SHADE CANOPY, TYP. (6 DT.04)
BENCH ON CONCRETE PAD, TYP.
HC PICNIC TABLE ON CONCRETE PAD
CONCRETE BLOCK SEATWALL (1 DT.06)
EX 60' DIAMOND
FENCE SHALL BE PAINTED BLACK WITH NEW BLACK VINYL CLAD CHAIN LINK FABRIC. (SEE SPECS AND DETAILS)
CURB
EX. LIGHT POLE TO REMAIN
HAND HOLE
(8 DT.03) CONCRETE PAVEMENT
(1 DT.06) TERRACED SEATING
(1 DT.06) POURED IN PLACE TERRACED SEATING, TYP.
(1 DT.06) POURED IN PLACE TERRACED SEATING
(1 DT.06) TERRACED SEATING
(1 DT.06) POURED IN PLACE TERRACED SEATING, TYP.
(4 DT.05) WOOD GUARDRAIL (APPROX. 360 LF)
BEGIN NEW WOOD GUARDRAIL
EDGE OF COLOR SEALCOAT
(1 DT.06) CONCRETE BLOCK SEATWALL
GRAY COLOR SEALCOAT AT BASKETBALL OUT OF BOUNDS AREA.
(4 DT.04) BASKETBALL COURT
(8 DT.03) CEMENT CONCRETE SIDEWALK
EX SPLASH PAD TO REMAIN
(7 DT.03) PERVIOUS ASPHALT, TYP.
ENGINEERED WOOD FIBER MULCH SURFACE WITH CONC. MOWER STRIP., TYP.
(5 DT.05) FOUL POLE
(5 DT.05) FOUL POLE (RELOCATED) IN FENCE
(10 DT.03) BITUMINOUS PAVEMENT
PR PARALLEL PARKING (4 SPACES)
(3 DT.05) ENGINEERED WOOD FIBER MULCH PLAY SURFACE WITH POURED IN PLACE RUBBER SAFETY SURFACING AT TRANSITION ZONES AND HIGH USE AREAS,TYP.
(1 DT.07) PLAYGROUND ENLARGEMENT PLAN
(6 DT.05) DOUBLE SWING GATE (MINIMUM 12' WIDE)
(6 DT.05) SINGLE SWING GATE (APPROX 4' WIDE)
PI: 2+22.54
EP: 2+60.36
(6 DT.01) WOOD BOLLARD, TYP.
NEW ALUMINUM BLEACHER NO. 3 ON NEW CONC. PAD.
(7 DT.03) PR PERVIOUS ASPHALT PVT. (POROUS ASPHALT)
EX DUGOUTS ON CONC. PADS TO REMAIN IN PLACE, TYP.
PARKING STALL DIMENSIONS, TYP.
PARKING LOT (18 SPACES) BITUMINOUS ASPHALT
RENOVATED EXISTING BLEACHER NO. 4 FROM STOCKPILE ON NEW CONC. PAD, WITH SHADE CANOPY
EX TREE TO REMAIN, TYP.
(6 DT.01) RELOCATED BOULDERS,TYP.
(6 DT.04) 2 HC (VAN) SPACES
BASELINE A BP: 0+00.00
BASELINE B BP: 0+00.00 Station=0+45.82 Offset=0.000
714 SF
571SF
510 SF
L.O.W.
L.O.D.
LANDS N/F JOHN F. CONNORS Bk. 13833 Pg. 367
LANDS N/F JOSEPH W. Bk. 22742 Pg. 2

LAYOUT & MATERIALS LEGEND

- EX — EXISTING
- PR — PROPOSED
- PVT. — PAVEMENT
- WETLAND DELINEATION
- 100' WETLAND BUFFER
- SILT FENCE
- BENCH
- PICNIC TABLES
- SEATWALLS
- RETAINING WALLS
- FENCE
- NEW TREELINE, TYP.
- EX TREE TO REMAIN, TYP.
- PROPOSED PERVIOUS PAVEMENT
- PROPOSED BITUMINOUS CONCRETE PAVEMENT
- PROPOSED CONCRETE PAD
- PROPOSED BOAT RAMP
- PROPOSED LOAM & SEED

0 30 60 90

11-22-2011 CONSTRUCTION DOCUMENTS

Project:

CITY OF WALTHAM

Lazazzero Park
7 Shore Road
Waltham, MA

Monsignor McCabe
Playground - Phase 2
Charlotte Road
Waltham, MA

Weston&Sampson
100 Foxborough Blvd., S.250 Foxborough, MA
(508) 698-3034 (800) Sampson
www.westonandsampson.com

Consultants:

Revisions:

Rev	Date	Description
1	11/29/2011	NO PLAN CHANGES
2	12/01/2011	CLARIFICATIONS

Seal:

CONSTRUCTION DOCUMENTS

Date:	11.22.2011
Scale:	AS SHOWN
Drawn By:	MMM
Reviewed By:	MSM
Checked By:	LFK
Approved By:	ERB

Drawing Title:

LAZAZZERO PARK LAYOUT & MATERIALS PLAN

Sheet Number:

L-LM1