

SECTION 00 91 13**ADDENDUM NO.3**

NOTICE is hereby given that the **Bidding Documents have been modified and replacement pages issued** herewith. Replacement pages have an **Issue Date of March 10, 2016**, contain reference to “**Addendum 3**” in the footer, and text changes for additions identified by double underline and deletions identified by ~~Strikeout~~.

Specifications: Replacement pages include:

- Section 00 01 10, Table of Contents- Page 3
- Section 00 01 15 List of Drawing Sheet- Page 3
- Section 00 43 22 Unit Price Form Pages 9 and 17
- Section 01 20 25 Measurement and Payment- All Pages

Specifications: Addition sections include:

- Section 26 56 00 Exterior Lighting System
- Section 31 62 16.16 Steel H Piles

Drawings: Addition of sheets include:

- S-102
- S-103
- S-502

Drawings: Replacement sheets include:

- C-302
- C-303
- C-402
- C-403
- C-512
- C-513
- E05.01
- E05.02
- E05.03
- E10.01
- E60.01
- E80.01

NOTICE is hereby given of the following **additional information and clarifications** which do not cause change to the Bidding Documents. The answers below are provided in response to questions and comments submitted by Bidders.

1. *The table of contents in the specifications lists section 26 56 00 "Exterior Lighting System". However, this section is not included in the spec.'s. Please provide.*

Answer: See the issued Addendum # 3 with the Section 26 56 00 Exterior Lighting System for clarification

2. *How tall are poles F1, F2, F3 & F4? How many floodlights are on each?*

Answer: The light fixture schedule on sheet E60.01 indicates the number of lamps per athletic field pole (10 lamps per pole)

3. *Please provide wire size of the following branch circuits: Two field level GFCI receptacles, four media converters, scoreboard, scoreboard audio power, and grinder pump*

Answer: Addendum #1 called out the conductor sizing for the (2) GFCI receptacles, scoreboard, and scoreboard audio power. The Grinder Pump power and control cable will be vendor provided. The conductor sizing for the media converters is included in Addendum #3.

4. *We believe that a hand hole should be located adjacent to poles F1, F2, F3 & F4.*

Answer: See the issued Addendum #3 revised drawing with updated hand hole locations

5. *Video Surveillance spec. section 1.02C states to provide fiber patch panel. Drawing E50.01 SECURITY RISER DIAGRAM calls out "future fiber patch panel". Please clarify if we are to provide patch panel under this contract.*

Answer: Contractor to provide patch panel under this contract per City of Quincy standards and specifications.

6. *Are we responsible for interconnecting conduit & wire between panel MDP and lighting control panel? If so, is the interconnecting conduit installed below slab or exposed in building?*

Answer: Interconnecting conduit to be installed below slab.

7. *Drawing E05.02 keyed note #3 calls for 5' of coiled cable in handhole. Is this power cable only? If for communication, please specify cable.*

Answer Issued Addendum #3 electrical drawings clarifies this as power cable only. Communication cable to be provided by vendor, contractor to coordinate pulling of vendor communication cable.

8. *Please specify the electrical service cable size and extent of wiring to each of the houses.*

Answer Drawing E05.03 keyed notes #1 and #2 indicate the cable size to each house. A riser diagram was added to E10.01 for added clarification in the issued Addendum #1.

Addendum #3 includes Section 01 20 25, Measurement and Payment in its entirety to resolve and provide clarity of Addendum # 1 inserted pages and for resolution of conflicts from unintended omissions or deletions resulting from insertion of replacement pages.

Additional new revisions to Section 01 20 25 Measurement and Payment are made with issuance of Addendum # 3. As a result, Addendum # 3 only shows the text changes made since the issuance of Addendum # 1 in the manner indicated.

Prepared by: Woodard & Curran (Engineer)

DIVISION 05 - METALS

05 52 00 Metal Railings

DIVISION 11 -EQUIPMENT

11 68 33 Athletic Field Equipment

DIVISION 26 - ELECTRICAL

26 05 00 Common Work Results for Electrical
26 05 19 Low-Voltage Electrical Power Conductors and Cables
26 25 23 Control Voltage Electrical Power Cables
26 05 26 Grounding and Bonding Electrical Systems
26 05 33 Raceways Boxes for Electrical Systems
26 05 43 Underground Ducts and Raceways for Electrical Systems
26 21 00 Low-Voltage Electrical Service Entrance
26 22 00 Low-Voltage Dry-Type Transformers
26 24 16 Panel Boards
26 27 26 Wiring Devices
26 28 16 Enclosed Switches and Circuit Breakers
26 56 00 Exterior Lighting System

DIVISION 28 - ELECTRONIC SAFETY AND SECURITY

28 23 00 Video Surveillance

DIVISION 31 - EARTHWORK

31 00 00 Earthwork
31 10 00 Site Clearing
31 32 19.16 Geotextile Soil Stabilization
31 50 00 Excavation Support and Protection
31 62 16.16 Steel H Piles

DIVISION 32 - EXTERIOR IMPROVEMENTS

32 05 23 Cement and Concrete for Exterior Improvements
32 12 16 Asphalt Paving
32 16 14 Granite Curbs
32 17 25 Pavement Markings
32 18 13 Synthetic Grass Surfacing
32 30 00 Site Improvements
32 31 13 Chain Link Fences and Gates
32 32 23.13 Segmental Concrete Unit Masonry Retaining Wall
32 71 00 Constructed Wetlands
32 90 00 Planting and Seeding

DRAWING NUMBER	DRAWING TITLE
Electrical Drawings	
C-515	Lighting Details Plan 1
C-516	Lighting Details Plan 2
E-00.01	Electrical Legend
E-05.01	Electrical Site Plan Overall
E-05.02	Electrical Site Plan Field
E-05.03	Electrical Site Plan Parking Lot & Utility
E-05.04	Electrical Site Plan Utility Tie-In
E-10.01	Electrical One-Line Diagram
E-50.01	Electrical Riser Diagram
E-60.01	Power Panel and Fixture Schedules
E-80.01	Electrical Detail Sheet 1
E-080.02	Electrical Detail Sheet 2
E-080.03	Electrical Details Sheet 3
Structural Drawings	
S-101	Structural Site Plan and General Notes
<u>S-102</u>	<u>Structural Grade Beam on H-Pile Profile 1</u>
<u>S-103</u>	<u>Structural Grade Beam on H-Pile Profile 2</u>
S-501	Structural Sections and Details
<u>S-502</u>	<u>Grade Beam Pile Support Details</u>
Landscape Drawings	
L-101	Overall Landscape Plan (Addendum 1)

Item No.	Item Description with Unit or Lump Sum Price in Written Words	Estimated Quantity & Unit	Unit Bid Price (Figures)	Total Bid Item Price (Figures)
6g	Heavy Duty Electrical Hand Hole (5'-0" x 5'-0") @ _____ _____	4 <u>5</u>		
	Dollars and _____ Cents PER EACH	EA		
6h	Switch Gear Manhole (7'-0'x14'-0") @ _____ _____	1		
	Dollars and _____ Cents PER EACH	EA		
6i	Electrical Hand Holes @ _____ _____	6 <u>10</u>		
	Dollars and _____ Cents PER EACH	EA		
6j	Communication Vault (Comcast) @ _____ _____	3		
	Dollars and _____ Cents PER EACH	EA		
6k	Communication Manhole (Verizon) @ _____ _____	3		
	Dollars and _____ Cents PER EA	EA		
6l	Transformer Pad Area @ _____ _____	1		
	Dollars and _____ Cents LUMP SUM	LS		
6m	Electrical Frame Ring and Cover @ _____ _____	7		
	Dollars and _____ Cents PER EACH	EA		
6n	Communication Frame and Cover @ _____ _____	5		
	Dollars and _____ Cents PER EACH	EA		
6o	NGRID Duct Bank @ _____ _____	1		
	Dollars and _____ Cents LUMP SUM	LS		

Item No.	Item Description with Unit or Lump Sum Price in Written Words	Estimated Quantity & Unit	Unit Bid Price (Figures)	Total Bid Item Price (Figures)
15	Project Signage	1	\$5,000	\$5,000
	@ Five Thousand Dollars and Zero Cents Contingency	Contingency		
16	Traffic Police Details	1	\$75,000	\$75,000
	@ Seventy Five thousand Dollars and Zero Cents Contingency	Contingency		
17	Mobilization and Demobilization	1		
	@ _____ _____ Dollars and _____ Cents PER LUMP SUM	LS		
<u>18</u>	<u>Steel H Piles</u>	<u>19,750</u>		
	@ _____ _____ Dollars and _____ Cents PER LINEAR FOOT	<u>LF</u>		
<u>19</u>	<u>Concrete Grade Beam</u>	<u>1,575</u>		
	@ _____ _____ Dollars and _____ Cents PER VERTICAL LINEAR FOOT	<u>LF</u>		
<u>20</u>	<u>Subsurface Borings Investigation</u>	<u>5</u>		
	@ _____ _____ Dollars and _____ Cents PER DAY	<u>DAY</u>		

END OF SECTION

SECTION 01 20 25

MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This Section describes the measurement and payment for the Work to be completed under each item in Section 00 43 22 Unit Prices and 004322.01 Unit Prices Form for Additional Work.
- B. Payment procedures are in accordance with the Agreement, Article 14 of the Standard General and Supplementary Conditions, the Additional Supplementary Conditions (if any), and the General Requirements.
- C. Measurement: as determined, verified, or approved by Engineer in accordance with Paragraph 11.03 of the Standard General and Supplementary Conditions, the Additional Supplementary Conditions (if any), and the General Requirements, except as otherwise specified.
- D. The Work described in each pay item shall be as described in the as specified and shown on the Drawings and not included in other pay items.
 - 1. Bid Item descriptions are general and may not specifically describe all associated Work or elements thereof, do not constitute as specified, and do not supersede the content of the as specified and Drawings and not included in other Bid items.
 - 2. Review Work associated with each Bid item. Claims for being unfamiliar with these requirements or of the content of the Specifications and Drawings will not be considered.
- E. The following Work is not specifically described or designated as a Bid item, is considered incidental to all Bid items and shall not be measured separately for payment.
 - 1. General Requirements specified in Sections 01 00 10 and 01 15 00 including, but not limited to:
 - a. temporary traffic control and regulation; saw cutting of existing pavements and sidewalks; installation of temporary pavement markings, temporary trench pavement, restoration of pavement markings disturbed by Work; temporary changeable signage, test pits, tree protection, silt sacks, erosion control, abandon pipe, (including installation, relocating, operation,

maintenance, removal and off-Site disposal of erosion control devices); construction dewatering (including compliance with applicable Laws and Regulations), notifications to abutters; and temporary construction projects signs;

- b. Field and laboratory testing and reporting by independent laboratory, including but not limited to compaction of backfill materials; aggregate gradation; and concrete testing.
- c. Labor, materials, and equipment necessary to conduct test pits to verify existing field conditions and the location, size, type, material, and orientation of existing pipes and utilities shown on the Drawings.
- d. No compensation will be provided for restoration of paved and unpaved surfaces disturbed by the Contractor outside the limits of Work.
- e. Construction entrances.
- f. Design, installation and removal of excavation support systems, utility/structure support systems, temporary and permanent utility/structure support systems associated with an item of Work shall be considered incidental to that item.
- g. Temporary bypass operations, pumping and plugging of flows shall be considered incidental to the Work and shall not be measured separately for payment.

1.02 MEASUREMENT AND PAYMENT BASIS FOR EACH BID ITEM

START OF SITE PREPERATION

Item 1a – Bituminous Pavement Demolition, Remove and Dispose	
Item 1b – Concrete Demolition Remove and Dispose	
Measurement	Per square yard measured in place
Payment	Unit price per square yard
Schedule of Payment	Per square yard of concrete or Bituminous pavement demolished, removed and disposed as measured
Includes all labor, materials, handling, transportation and equipment required to saw cut as indicated, demolish, remove and dispose concrete or asphalt paving sidewalk, curb at the locations and limits indicated on the Drawings and all other Work incidental to the satisfactory completion of the Work. Includes all labor, materials, handling, transportation and equipment to demolish, remove and dispose bituminous pavement and subbase at the locations and limits indicated on the Drawings and all other Work incidental to the satisfactory completion of the Work.	

Item 1c – Tree Remove and Dispose	
Measurement	Work completed to date
Payment	Unit price per each tree removed & disposed
Schedule of Payment	Completion of Work - 100%
Includes labor, services, material, tools and equipment necessary to cut existing trees and expose by excavation, remove and/or cut, as required, the tree stumps and root systems for trees removed during project, includes removal of stumps with tree being removed and protection of adjacent surface features where indicated, within limits of Work as shown on the Drawings and as directed. The Work shall also include removal and disposal of tree stumps, roots, organic matter and the other unsuitable materials resulting from the operation. This Item excludes existing buried tree stumps.	

Item 1d- Remove and Dispose Fence	
Measurement	Per linear foot measured in place
Payment	Unit price per linear foot
Schedule of Payment	Completion of Work - 100%
Includes all labor, materials, and equipment to remove, and dispose existing fence, including chain link fence, wooden fence, plastic, posts and post foundations, horizontal bar members, hardware and all appurtenances at the locations and limits indicated on the Drawings and all other Work incidental to the satisfactory completion of the Work.	

Item 1e –Signs Removed and Disposed	
Measurement	Actual sign removed and disposed
Payment	Unit price per each sign removed and disposed
Schedule of Payment	Completion of Work - 100%
Includes all labor, materials, and equipment including dismantling existing signage, removal, disposal, transportation, and other incidentals necessary to complete the Work.	

Item 1f –Signs Post Removed and Disposed	
Measurement	Actual sign post removed and disposed
Payment	Unit price per each sign post removed and disposed
Schedule of Payment	Completion of Work - 100%
Includes all labor, materials, and equipment including removal & disposal of existing posts, transportation, excavation, backfill, compaction, restoration of disturbed surfaces, and other incidentals necessary to complete the Work.	

Item 1g –Remove, Store, Stack and Reset Frame, Grate and Covers	
Measurement	Actual sign post removed and disposed
Payment	Unit price per each sign post removed and disposed
Schedule of Payment	Completion of Work - 100%
Includes all labor, materials, and equipment to remove, store, stack and reset existing frame and covers. including brick & mortar to raise manhole cover to grade, anchors, concrete collars and all related Work. Includes the transportation, excavation, backfill, compaction, restoration of disturbed surfaces, and other incidentals necessary to complete the Work.	

Item 1h –Remove, Stack, and Deliver Granite Retaining Walls	
Measurement	Portion of Work completed and accepted
Payment	Lump Sum
Schedule of Payment	Monthly based on progress
Includes all labor, materials, and equipment including remove, stack and deliver granite retaining walls to a location determined by the Owner, transportation, excavation, backfill, compaction, restoration of disturbed surfaces, and other incidentals necessary to complete the Work.	

Item 1i –Remove, Stack and Deliver Precast Modular Retaining Walls	
Measurement	Portion of Work completed and accepted
Payment	Lump Sum
Schedule of Payment	Monthly based on progress
Includes all labor, transportation of materials, and equipment to remove, stack and deliver the existing precast concrete block retaining wall and provision and for the removal of wall under drain at the locations and limits shown on the Drawings. The Contractor shall coordinate the removal and delivery with the Owner, provide transportation for stacking and unloading of precast blocks at a location determined by the Owner. The Contractor will be responsible for unloading delivered materials and all other Work incidental to the satisfactory completion of the Work.	

Item 1j –Remove and Dispose Hydrants	
Measurement	Actual hydrants removed and disposed
Payment	Unit price per each hydrant
Schedule of Payment	Completion of Work - 100%
Includes all labor, materials, and equipment including removal, stacking and disposal of existing hydrants, transportation, excavation, backfill, compaction, restoration of disturbed surfaces, and other incidentals necessary to complete the Work.	

Item 1k –Remove and Dispose Survey Monitoring Platforms	
Measurement	Actual monitoring platforms removed and disposed
Payment	Unit price per each
Schedule of Payment	Completion of Work - 100%
Includes all labor, materials, and equipment to remove and dispose existing monitoring platforms, transportation, excavation, backfill, compaction, restoration of disturbed surfaces, and other incidentals necessary to complete the Work.	

Item 1l –Remove and Dispose Existing Drain Pipe	
Measurement	Along the horizontal projection of the centerline of the pipe
Payment	Unit price per linear foot
Schedule of Payment	Completion of Work
Includes all labor, materials, handling, transportation and equipment for removal and disposal of existing drain pipe located outside of new drain line trench; removal and off-Site disposal of old drain pipe; removal and disposal of subsurface support slab as required, capping and abandonment of old drain pipe; backfill and compaction of trench, removal and off-Site disposal of materials and excess soils; and other required Work. *Excludes removal and disposal of existing drain pipe in place with new drainage pipe in 3a-3f *	

Item 1m – Existing Overhead Electrical/ Communication Service Removal	
Measurement	Portion of Work completed
Payment	Lump Sum
Schedule of Payment	Completion of Work - 100%
Includes labor, services, material and equipment associated with coordinating with the Engineer and Utility Provider; and removing and disposing the existing electrical service and communications services located overhead and appurtenances including; coordination of removal of utility poles, overhead wires, underground conduit and wires; delivery of street lights to location specified by Owner, unclassified excavation; shoring and bracing; dewatering; backfill; backfill compaction; removal and off-Site disposal; and other required Work.	

Item 1n – Remove and Dispose Existing Drainage Structures	
Measurement	Each structure removed and disposed
Payment	Unit price per each
Schedule of Payment	Completion of Work
Includes all labor, materials, handling, transportation and equipment for removal and disposal of existing drain structures located outside of new drainage structure trench; removal and off-Site disposal of old drainage structure; removal and disposal of subsurface support slab as required and abandonment of old drain structures; backfill and compaction of trench, removal and off-Site disposal of materials and excess soils; and other required Work. *Excludes removal and disposal of existing drainage structures in place with new drainage structures in 3p-3x*	

Item-2-Soil Management and Site Earthworks	
Measurement	Portion of Work completed, tested and accepted
Payment	Lump Sum
Schedule of Payment	Monthly based on progress
<p>The existing Teel Field area is currently under a surcharge condition to consolidate the subsurface soils. The surcharge program soil materials are categorized as Owner furnished, contractor assigned, and shall be utilized for the construction of the Contract work. The contractor will be responsible for:</p> <ol style="list-style-type: none"> 1. Removal of surcharge soils to Contract subgrade elevation. 2. Stockpiling segregated surcharge area soil materials by type within the designated soil management areas indicated on the plans. 3. Utilizing Owner furnished soil materials for earthwork, grading, trench and backfill operations compacted as specified. 4. Contractor shall wash existing Owner furnished stone material specified as washed material prior to installation. 5. Coordination and delivery of surplus surcharge materials not utilized for Contract work a location within the City of Quincy as directed by the Owner. 6. Removal and disposal of unsuitable excavated soil materials generated during the Contract Work. 7. Removal & disposal of existing geotextile fabric. 8. Erosion controls and dust management. <p>Includes labor, services, material and equipment associated with handling, moving, spreading, installing and compacting existing soils. Contractor shall manage material stockpiles, all material management and handling operations are considered incidental and all other required Work.</p>	

END OF SITE PREPERATION

START OF DRAIN ITEMS

Item 3a – 10-inch PVC Pipe Item 3b – 12-inch Class V RCP Pipe Item 3c – 12-inch HDPE Pipe Item 3d – 15-inch Class V RCP Pipe Item 3e – 18-inch Class V RCP Pipe Item 3f – 24-inch Class V RCP Pipe Item 3g – 24-inch Perforated HDPE Pipe Item 3h – 30-inch Class V RCP Pipe Item 3i – 36-inch Class V RCP Pipe	
Measurement	Along the horizontal projection of the centerline of the pipe; measured from inside face of manhole
Payment	Unit price per linear foot
Schedule of Payment	Completion of Work and successfully pass testing - 100%
Includes labor, services, material and equipment associated with furnishing and installing the drain pipe; pipe connections; rubber sleeve connections and mortar sealing of pipe and structure; unclassified excavation; shoring and bracing; dewatering; installation and compaction of Owner furnished backfill and bedding soils; geotextile fabric; material testing; re-connection to existing pipe and or structures (including pipe couplings, coring of new penetrations and plugging abandoned penetrations in existing structures); provision & reconfiguration of brick invert of new & existing manholes, removal and off-Site disposal of old drain pipe; removal and disposal of subsurface support slab as required, capping and abandonment of old drain pipe; removal and off-Site disposal of unsuitable excess soil materials, bituminous concrete pavement, concrete and other required Work.	

Item 3j– 12-inch RCP Flared End Section Item 3k – 30-inch RCP Flared End Section	
Measurement	Actual reinforced concrete flared end section furnished and installed
Payment	Unit price per each
Schedule of Payment	Completion of Work - 100%
Includes labor, services, material and equipment associated with furnishing and installing the reinforced concrete flared end section; rip-rap material; unclassified excavation; shoring and bracing; dewatering; installation and compaction of Owner furnished backfill and bedding soils; removal and off-Site disposal of unsuitable excess soil materials and other required Work.	

Item 3l – Sub-surface Stormwater Basin 1	
Measurement	Portion of Work completed and accepted
Payment	Lump Sum
Schedule of Payment	Monthly based on progress
Includes labor, services, material and equipment associated with furnishing and installing the sub-surface stormwater mitigation facility drainage chambers, drain pipe; pipe connections and fittings; cleanout/ inspection port riser pipes, frame and covers; concrete collars; geotextile trench stabilization fabric; unclassified excavation; shoring and bracing; dewatering; installation and compaction of Owner furnished backfill and bedding soils; washed crushed stone; compaction and material testing; removal and off-Site disposal of unsuitable excess soils; and other required Work.	

Item 3m – Sub-surface Recharge Area	
Measurement	Portion of Work completed and accepted
Payment	Lump Sum
Schedule of Payment	Monthly based on progress
Includes labor, services, material and equipment associated with furnishing and installing the sub-surface stormwater mitigation facility drainage chambers, drain pipe; pipe connections and fittings; cleanout/ inspection port riser pipes, frame and covers; concrete collars; geotextile trench stabilization fabric; unclassified excavation; shoring and bracing; dewatering; installation and compaction of Owner furnished backfill and bedding soils; washed crushed stone; compaction and material testing; removal and off-Site disposal of unsuitable excess soils; and other required Work.	

Item 3n –Surface Stormwater Basin 2	
Measurement	Portion of Work completed and accepted
Payment	Lump Sum
Schedule of Payment	Monthly based on progress
Includes labor, services, material and equipment associated with, but not limited to: protection of indicated trees and fencing, clearing & grubbing including tree removal and disposal; strip, stockpile, screen, and reuse of existing topsoil materials up to one foot in depth; unclassified excavation; grading, scarification of pond bottom surface, backfill compaction and material testing; removal and off-Site disposal of excess soils; seeding of basin and slopes with New England wetland seed mixture, erosion measures indicated and other required Work to limits as shown on the drawings. “Excludes loam material. Loam material paid separately through item 9j”	

Item 3o –Stormwater Constructed Wetland Basin	
Measurement	Portion of Work completed and accepted
Payment	Lump Sum
Schedule of Payment	Monthly based on progress
Includes labor, services, material and equipment associated with, but not limited to: protection of indicated trees and fencing, clearing & grubbing including tree removal and disposal; strip, stockpile, screen; unclassified excavation; grading, scarification of basin bottom surface, gravel access path, backfill compaction and material testing; removal and off-Site disposal of excess soils; seeding of basin, planting of basin and slopes with New England wetland seed mixture, rip rap materials, erosion measures indicated and other required Work. “Excludes loam material. Loam material paid separately through item 9j”	

Item 3p – 4-ft Diameter Catch Basin Item 3q – 5-ft Double Catch Basin Item 3r – 6-ft Square Double Catch Basin Outlet Control Structure Item 3s – 5-ft Square Outlet Control Structure	
Measurement	Actual catch basin furnished and installed
Payment	Unit price per each
Schedule of Payment	Completion of Work - 100%
Includes labor, services, material and equipment associated with furnishing and installing the structures regardless of depth including; anti-floatation slab; pipe connections; joint sealant; trash racks, excavation; flap gates, shoring and bracing; dewatering; backfill; material testing; removal and off-Site disposal of old catch basins and pipe; removal and off-Site disposal of bituminous concrete pavement, installation and compaction of Owner furnished backfill and bedding soils; removal and off-Site disposal of unsuitable excess soil materials and other required Work	

Item 3t –4-ft Diameter Drainage Manhole Item 3u –4-ft Diameter Doghouse Drainage Manhole Item 3v –5-ft Diameter Drainage Manhole 3w-6 ft Diameter Drainage Manhole Item 3x – 6-ft Diameter Doghouse Drainage Manhole	
Measurement	Actual drain manhole furnished and installed
Payment	Unit price per each
Schedule of Payment	Completion of Work - 100%
Includes labor, services, material and equipment associated with furnishing and installing the manholes regardless of depth including; anti-floatation slab; pipe connections; joint sealant; unclassified excavation; shoring and bracing; dewatering; backfill, material testing; removal and off-Site disposal or abandonment of old drain manholes and pipe; removal and off-Site disposal of bituminous concrete pavement, installation and compaction of Owner furnished backfill and bedding soils; removal and off-Site disposal of unsuitable excess soil materials and other required Work.	

Item 3y– Drainage Manhole Frame and Cover	
Measurement	Sets installed
Payment	Unit price per set
Schedule of Payment	Work completed for each set - 100%
Includes labor, services, material and equipment associated with furnishing and installing the drain manhole frame and cover, including brick & mortar to raise manhole cover to grade, anchors, concrete collars and all related Work.	

Item 3z –Catch Basin Frame and Grate Item 3aa – Double Catch Basin Frame and Grate	
Measurement	Sets installed
Payment	Unit price per set
Schedule of Payment	Work completed for each set - 100%
Includes labor, services, material and equipment associated with furnishing and installing the catch basin frame and grate, including brick & mortar to raise catch basin grate to grade, concrete collars and all related Work.	

Item 3bb – Replace Existing Catch Basin Frame & Grate with Manhole Frame & Cover and Adjust to Grade	
Measurement	Sets installed
Payment	Unit price per set
Schedule of Payment	Work completed for each set - 100%
Includes labor, services, material and equipment associated with replacing the existing catch basin frame and grate with a frame and cover to make the structure a manhole, including brick & mortar to raise the manhole cover to grade, concrete collars and all related Work.	

END OF DRAIN ITEMS

START OF SEWER ITEMS

Item 4a – 1 ½”-inch PVC Sewer Pipe Item 4b – 4-inch PVC Sewer Pipe Item 4c – 6-inch PVC Sewer Pipe Item 4d – 15-inch PVC Sewer Pipe	
Measurement	Along the horizontal projection of the centerline of the pipe, measured from either (1) inside face of manhole to center of coupling to existing pipe or (2) center of coupling to center of coupling
Payment	Unit price per linear foot
Schedule of Payment	Monthly based on quantity installed, tested and accepted
Material and equipment, services, installation, construction and testing inherent to the Work for furnishing and installing the sewer pipe, pipe connections, rubber sleeve connections, wye connections, coring of pipe, pipe fittings, concrete and brick collars, mortar sealing of pipe and structure, flow barriers, backfill, material testing, re-connection to existing pipe (including pipe couplings, shop and field coring of new penetrations and plugging abandoned penetrations), provision & reconfiguration of brick invert of new & existing manholes, removal and off-Site disposal of old sewer pipe, capping and abandonment of old sewer pipe, removal and off-Site disposal of bituminous concrete pavement and concrete, installation and compaction of Owner furnished backfill and bedding soils; removal and off-Site disposal of unsuitable excess soil materials and other required Work.	

Item 4e – 4-ft Diameter Sewer Manhole	
Measurement	Actual manhole furnished and installed
Payment	Unit price per each
Schedule of Payment	Monthly based on quantity installed, tested and accepted
Includes labor, services, material and equipment associated with furnishing and installing the manholes regardless of depth including; anti-floatation slab; pipe connections; joint sealant; unclassified excavation; shoring and bracing; dewatering; backfill, material testing; removal and off-Site disposal or abandonment of old manholes and pipe; removal and off-Site disposal of bituminous concrete pavement, installation and compaction of Owner furnished backfill and bedding soils; removal and off-Site disposal of unsuitable excess soil materials and other required Work. *Excludes frame and cover included in Item 4f*	

Item 4f – Sewer Manhole Frame and Cover	
Measurement	Set installed
Payment	Unit price per set
Schedule of Payment	Monthly based on quantity installed, tested and accepted
Material and equipment, services, installation, construction and testing inherent to the Work for furnishing and installing the sewer manhole frame and cover, including brick & mortar to raise manhole cover to grade, or concrete grade rings, concrete collars and other incidental Work, as shown on the Drawings and as specified.	

Item 4g – Packaged Sewerage Grinder Pump	
Measurement	Actual grinder pump furnished and installed
Payment	Unit price per each
Schedule of Payment	Monthly based on quantity installed, tested and accepted
Material and equipment, services, installation, construction and testing inherent to the Work for furnishing and installing the grinder pumps regardless of depth including pipe connections, electrical connection, excavation, pump start-up, pump cover, joint sealant, unclassified excavation, shoring and bracing, bedding, dewatering, backfill, material testing, installation and compaction of Owner furnished backfill and bedding soils; removal and off-Site disposal of unsuitable excess soil materials and other incidental Work, as shown on the Drawings and as specified.	

Item 4h – Sewer Grease Trap	
Measurement	Actual grease trap furnished and installed
Payment	Unit price per each
Schedule of Payment	Monthly based on quantity installed, tested and accepted
Material and equipment, services, installation, construction and testing inherent to the Work for furnishing and installing the precast concrete grease trap regardless of depth including pipe connections, excavation, joint sealant, unclassified excavation, shoring and bracing, dewatering, backfill, material testing, installation and compaction of Owner furnished backfill and bedding soils; removal and off-Site disposal of unsuitable excess soil materials and other required incidental Work, as shown on the Drawings and as specified.	

END OF SEWER ITEMS

START WATER ITEMS

Item 5a – 6-inch Cement Lined Ductile Iron Water Pipe Item 5b – 8-inch Cement Lined Ductile Iron Water Pipe	
Measurement	As measured along the horizontal projection of the centerline of the pipe, measured from and to face of water pipe fittings and valves
Payment	Unit price per linear foot of pipe installed, complete in place
Schedule of Payment	Monthly based on quantity installed, tested and accepted
Material and equipment, services, installation, construction and testing inherent to the Work to furnish and install cement lined ductile iron pipe including clearing and grubbing, saw cutting, excavation, removing and disposing of excess material, removing and disposing of existing concrete encasement, shoring/bracing, dewatering, removing and disposing existing pipe, valves and appurtenances, capping existing water mains abandoned in place, support of existing utilities, restraining thrust with rods and/or concrete, joint restraints, mega-lug fittings, blanket and backfill, gravel roadway base, geotextile fabric, connecting to existing water mains (as applicable), compaction & testing, crossing utilities, support of existing utilities, bypass & water services, installation and compaction of Owner furnished backfill and bedding soils; removal and off-Site disposal of unsuitable excess soil materials and other required incidental Work, as shown on the Drawings and as specified. or required by field conditions. *Excludes cement lined ductile iron fittings, fittings paid through Item 51”	

Item 5c – 6-inch Gate Valve and Box Item 5d – 8-inch Gate Valve and Box	
Measurement	Units installed complete in place
Payment	Unit price each
Schedule of Payment	Monthly based on quantity installed, tested and accepted
<p>Material and equipment, services, installation, construction and testing inherent to the Work to furnish and install valves and valve boxes, cutting valves into existing mains where required, verifying outside diameter of existing pipe, clearing and grubbing, saw cutting, excavation, removing and disposing of excess materials, shoring/bracing, dewatering, cutting valves in to existing pipe, removing and disposing existing pipe, valves and appurtenances, plugging and capping existing water mains abandoned in place, valve installation, restraining thrust with rods, mega-lug fittings or concrete thrust blocks, blocking for support of valve, bedding, backfill and compaction, gravel roadway base, geotextile fabric, crossing of underground utilities, support of existing utilities, installation and compaction of Owner furnished backfill and bedding soils; removal and off-Site disposal of unsuitable excess soil materials and other required incidental Work, as shown on the Drawings and as specified or required by field conditions.</p>	

Item 5e – Hydrant Assembly	
Measurement	Each installed, complete in place, set in true horizontal and vertical alignment and with bury line at finish grade
Payment	Unit price per each
Schedule of Payment	Monthly based on quantity installed, tested and accepted
<p>Material and equipment, services, installation, construction and testing inherent to the Work to furnish and install hydrants, coordinate with City Water Department, clearing and grubbing, saw cutting, excavation, shoring/bracing, removing and disposing existing pipe, valves, fittings and hydrants, plugging and capping existing water mains abandoned in place, restraining thrust with rods and/or concrete, restrained joint fittings, mega-lug fittings, connecting existing water mains (as applicable), ductile iron pipe for hydrant assembly, crushed stone dry well, roofing felt, bearing stone, installation of off-sets and extensions to set bury line to finished grade, thrust blocks, geotextile fabric, drainage sump setting true in vertical and horizontal plane, setting bury line at finish grade, backfill and compaction, gravel roadway base, crossing of underground utilities, support of existing utilities, replacement of existing pipe bollards, painting hydrant, installation and compaction of Owner furnished backfill and bedding soils; removal and off-Site disposal of unsuitable excess soil materials and other required incidental Work, as shown on the Drawings and as specified. or required by field conditions. *Excludes time delays for work by City Water Department*</p>	

Item 5f -3/4"-inch Polyethylene Tubing Item 5g- 1-inch Type K Copper Tubing	
Measurement	As measured along the centerline of the pipe, from outside face of corporation stop outside face of curb stop.
Payment	Unit price per linear foot installed
Schedule of Payment	Monthly based on quantity installed, tested and accepted
<p>All labor, tools, equipment and materials to furnish and install copper tubing, saw cutting, excavation, shoring/bracing, disposing of existing service piping, sand bedding and blanket, backfill, compaction crossing of underground utilities, support of existing utilities as specified, loam and seed, tree trimming, removing and replacing signs, fences, and mailboxes, and all other incidentals necessary to furnish and install water service fittings, complete in place, as specified, shown on the Drawings or required by field conditions.</p>	

Item 5h – 1-inch Corporation Stop Item 5i - 1-inch Curb Stop and Box Item 5j – 3/4-inch Hose Bib Item 5k –Hose Reel Coupler Box	
Measurement	Units installed complete in place
Payment	Unit price each
Schedule of Payment	Monthly based on quantity installed, tested and accepted
<p>All labor, equipment, tools, and materials to furnish and install corporation stop and saddles, curb stops and boxes, coupler valves boxes, couplings, unions, clearing and grubbing, saw cutting, excavation, shoring/bracing, removing and disposing of excess material, tapping pipe, connecting to existing service, crossing of underground utilities, support of existing utilities as specified in the bid documents, sand bedding and blanket, backfill, compaction, loam and seed, tree trimming, and all other incidentals necessary to furnish and install water service fittings, complete in place, as specified, shown on the Drawings or required by field conditions.</p>	

Item 51 – Cement Lined Ductile Iron Fittings	
Measurement	Ductile iron fittings (tees, bends, crosses, reducers, couplings, off-sets and solid sleeves) complete in place shall be measured by the pound based on tabular weights obtained from current ANSI as specified. The weight of the fittings shall not include the weight of any glands, megalugs, bolts, nuts, gaskets and/or accessories. Glands, megalugs, bolts, nuts, gaskets and/or accessories shall be considered incidental to the fitting.
Payment	Unit price per pound
Schedule of Payment	Monthly based on quantity installed
<p>Material and equipment, services, installation, construction and testing inherent to the Work to furnish and install fittings on new and existing water mains, clearing and grubbing, saw cutting, excavation, removing and disposing of excess materials, removing and disposing of concrete encasement shown on Drawings, removing and disposing of existing thrust restraints, shoring/bracing, dewatering, removing and disposing existing pipe, valves and appurtenances, plugging and capping existing water mains abandoned in place, restraining thrust with rods, mega-lug fittings, bedding and backfill, geotextile fabric, connecting existing water mains (as applicable), compaction, crossing of underground utilities, loam and seed, support of existing utilities, and other incidental Work, as shown on the Drawings and as specified or as required by field conditions.</p>	

Item 5m– Disinfection, Pressure and Bacteria Testing of Water Mains	
Measurement	Percent of total installed water main length tested and passed
Payment	Lump Sum
Schedule of Payment	Monthly based on quantity installed, tested and accepted
<p>Material and equipment, services, installation, construction and testing inherent to the Work to disinfect, pressure test and bacteria test water mains, including furnishing and installing temporary blow-off/sample lines, flushing, introducing chlorine, hydrostatic testing, neutralizing flushed chlorinated water, sampling, delivery of samples for water quality analysis, analysis by qualified laboratory, providing results to Engineer and Owner, and removing blow off/sample line to corporation. Also includes pumps, injectors, gauges, neutralizing chlorine residual, and incidentals necessary to flush, chlorinate, perform hydrostatic testing, neutralize chlorine residual, sample and obtain satisfactory water quality test results, and other incidental Work, as shown on the Drawings and as specified. Excludes Work associated with disinfection, hydrostatic tests and water quality tests that fail to produce satisfactory results and hydrostatic tests performed by Contractor for convenience. Flushing, chlorinating, hydrostatic testing, neutralizing chlorine, sampling and water quality testing that produce unsatisfactory results are considered incidental to the Work.</p>	

END OF WATER ITEMS

START OF ELECTRICAL AND COMMUNICATION ITEMS

Item 6a – Parking Lot Light and Bases	
Measurement	Parking lot light system installed, tested, and passed
Payment	Unit price per each system installed
Schedule of Payment	Completion of Work - 100%
<p>Includes all labor and equipment to install the Owner furnished, contractor assigned, parking lot lighting system. Contractor and provision and installation of the parking lot lighting concrete pier footings and foundations at the location and limits shown on the Drawings. Owner furnished materials for installation by the contractor include:</p> <ol style="list-style-type: none"> 1. Light pole base; 2. Light pole; 3. Light fixture; 4. Luminaire. <p>Owner assignment of product to the contractor shall require the contractor to coordinate directly with the manufacturer for schedule and delivery of the product that aligns to the construction schedule installation of the item to ensure no project delays. The Contractor shall inspect product with Owner at time of delivery, assist in unloading, stack store & protect through installation and be responsible for product until final project completion signoff. Work includes, but is not limited to, furnishing and installing applicable mounting hardware, excavation, backfill, compaction, testing and all other Work incidental to the satisfactory completion of the Work.</p>	

Item 6b- Security Camera System	
Measurement	Security system installed, tested, and passed
Payment	Lump Sum
Schedule of Payment	Completion of Work - 100%
Includes labor, services, material and equipment associated with furnishing and installing the security system. Work includes, but is not limited to, furnishing and installing applicable mounting hardware and all other Work incidental to the satisfactory completion of the Work.	

Item 6c – Field Lighting and Bases	
Measurement	Field lighting system installed, tested, and passed
Payment	Unit price per each
Schedule of Payment	Completion of Work - 100%
Includes all labor, services, materials and equipment to install the Owner furnished, contractor assigned, field lighting system and provision and installation of the parking lot lighting concrete pier footings and foundations at the location and limits shown on the Drawings. Owner furnished materials for installation by the contractor include: <ol style="list-style-type: none"> 1. Light pole base; 2. Light pole; 3. Light fixture; 4. Luminaire. Owner assignment of product to the contractor shall require the contractor to coordinate directly with the manufacturer for schedule and delivery of the product that aligns to the construction schedule installation of the item to ensure no project delays. The Contractor shall inspect product with Owner at time of delivery, assist in unloading, stack store & protect through installation and be responsible for product until final project completion signoff.	
Work includes, but is not limited to, furnishing and installing applicable mounting hardware, excavation, backfill, compaction, testing and all other Work incidental to the satisfactory completion of the Work.	

Item 6d – Street Lighting and Bases	
Measurement	Street lighting system installed tested and passed
Payment	Unit price per each
Schedule of Payment	Completion of Work - 100%
Includes all labor and equipment to provide and install the street lighting system at the location and limits shown on the Drawings. Work includes, but not limited to, pavement saw cutting, pavement removal & disposal, temporary pavement, excavation, backfill, compaction, foundations, installing applicable mounting hardware, installation of owner furnished structural fill material, electrical connections by licensed electrician in compliance with all codes, restoration of disturbed surfaces and all other Work incidental to the satisfactory completion of the Work.	

Item 6e – Scoreboard, Sound System and Base	
Measurement	Actual score board and sound system installed tested and passed
Payment	Unit price per each
Schedule of Payment	Completion of Work - 100%
<p>Includes all labor and equipment to install the Owner furnished, contractor assigned, scoreboard and sound system at the location and limits shown on the Drawings. Contractor to provide and install the scoreboard support and foundation system. Foundation location to be over excavated per geotechnical report recommendation, backfilled and compacted with Owner furnished structural fill material from surcharge program.</p> <p>Owner assignment of product to the contractor shall require the contractor to coordinate directly with the manufacturer for schedule and delivery of the product that aligns to the construction schedule installation of the item to ensure no project delays. The Contractor shall inspect product with Owner at time of delivery, assist in unloading, stack store & protect through installation and be responsible for product until final project completion signoff.</p> <p>Work includes installation of scoreboard, sound system, filler panels, controls, beams/posts, and any other structural and access components, furnishing and installing applicable mounting hardware, excavation, backfill, compaction, testing, restoration of disturbed surfaces, and all other Work incidental to the satisfactory completion of the Work.</p>	

Item 6f – 4 Way Electric Manhole Item 6g-Heavy Duty Electrical Hand Hole (5'-0" x 5'-0") Item 6h-Switch Gear Manhole (7'-0"x14'-0") Item 6i- Electrical Hand Holes Item 6j – Communication Vault (Comcast) Item 6k – Communication Manhole (Verizon)	
Measurement	Actual structure furnished and installed
Payment	Unit price per each
Schedule of Payment	Completion of Work - 100%
<p>Includes labor, services, material and equipment associated with furnishing and installing the structures regardless of depth including; anti-floatation slab; conduit connections, purchase of products at an approved NGRID precast vendor joint sealant; excavation; installation and placement of bollards, shoring and bracing; bedding; dewatering; backfill; gravel roadway base; backfill compaction and material testing; removal and off-Site disposal of old structures; removal other required Work.</p>	

Item 6l- Transformer Pad Area	
Measurement	Actual structure features furnished and installed
Payment	Lump Sum
Schedule of Payment	Completion of Work - 100%
Includes labor, services, material and equipment associated with furnishing and installing the transformer site features structures regardless of depth including; conduit connections; oil containment, crushed rock, compacted gravel, sand, concrete walls, concrete pad, geotextile, grounding rods, fabric, rebar, bollards, joint sealant; excavation; shoring and bracing; bedding; dewatering; backfill; and other required Work. *Excludes transformer provided by NGRID*	

Item 6m- Electrical Frame Ring and Cover	
Measurement	Sets installed
Payment	Unit price per set
Schedule of Payment	Work completed for each set - 100%
Includes labor, services, material and equipment associated with furnishing and installing the electrical frame and cover, switchgear frame, ring and cover, including brick & mortar to raise manhole and handhold cover to grade, concrete collars and all related Work.	

Item 6n- Communication Frame and Cover	
Measurement	Sets installed
Payment	Unit price per set
Schedule of Payment	Work completed for each set - 100%
Includes labor, services, material and equipment associated with furnishing and installing the communication frame and cover, including brick & mortar to raise manhole, concrete collars and all related Work.	

Item 6o- NGRID Duct Bank	
Measurement	Work measured, accepted and completed in place
Payment	Lump Sum
Schedule of Payment	Monthly based on progress
Includes all labor, services, material and equipment associated with furnishing and installing NGRID compliant underground duct bank systems in the configurations and locations shown on the Drawings. Work includes, but not limited to, pavement saw cutting, pavement removal & disposal, temporary pavement, excavation, backfill, compaction, conduit, conduit spacers, ground wire, concrete encasement, reinforcement, warning tape, installation of owner furnished crushed stone base material, connection to structures and all other Work incidental to the satisfactory completion of the Work.	

Item 6p– Telecommunication Duct Bank	
Measurement	Work measured, accepted and completed in place
Payment	Lump Sum
Schedule of Payment	Monthly based on progress
<p>Includes all labor, services, material and equipment associated with furnishing and installing Verizon and Comcast compliant underground duct bank systems in the configurations and locations shown on the Drawings.</p> <p>Work includes, but not limited to, pavement saw cutting, pavement removal & disposal, temporary pavement, excavation, backfill, compaction, conduit, conduit spacers, ground wire, concrete encasement, reinforcement, warning tape, installation of owner furnished crushed stone base material, connection to structures and all other Work incidental to the satisfactory completion of the Work.</p>	

Item 6q– Secondary Electrical Service Connections	
Measurement	Work measured, accepted and completed in place
Payment	Lump Sum
Schedule of Payment	Monthly based on progress
<p>Includes all labor, services, material and equipment associated with furnishing and installing compliant wired secondary service connections from the transformers to the service panels including residential services, within underground duct bank systems in the configurations and locations shown on the Drawings.</p> <p>Work includes, but not limited to, pavement saw cutting, pavement removal & disposal, temporary pavement, excavation, backfill, compaction, restoration, conduit, conduit spacers, all wire, concrete encasement, reinforcement, warning tape, installation of owner furnished structural fill material, electrical connections by licensed electrician implemented utilizing all applicable national codes and all other Work incidental to the satisfactory completion of the Work.</p>	

Item 6r– Branch Electrical & Communication Service Connections	
Measurement	Work measured, accepted and completed in place
Payment	Lump Sum
Schedule of Payment	Monthly based on progress
<p>Includes all labor, services, material and equipment associated with furnishing and installing compliant wired branch service connections from the power source to the apparatus within underground duct bank systems in the configurations and locations shown on the Drawings.</p> <p>Work includes, but not limited to, pavement saw cutting, pavement removal & disposal, temporary pavement, excavation, backfill, compaction, conduit, conduit spacers, all wire, concrete encasement, reinforcement, warning tape, installation of owner furnished structural fill material, electrical connections by licensed electrician implemented utilizing all applicable national codes and all other Work incidental to the satisfactory completion of the Work.</p>	

END OF ELECTRICAL AND COMMUNICATION ITEMS

START OF ATHLETIC FIELD ITEMS

Item 7a – Synthetic Turf System	
Measurement	Work completed, tested and accepted
Payment	Lump sum price
Schedule of Payment	Completion of Work – 100%
<p>Includes labor, services, and equipment associated with the construction of the athletic field at the location and limits shown on the Drawings. Contractor base bid athletic field system construction includes the installation of an owner furnished, contractor assigned, synthetic turf carpet and field infill products.</p> <p>Base Bid Athletic field system construction includes Contractor provision & installation of:</p> <ol style="list-style-type: none"> 1. field sub-grade preparation; 2. non-woven geotextile fabric on the field subgrade; 3. 12” flat drains at locations indicated on the drawings; 4. leveling course materials; 5. recycled plastic nailer board; 6. concrete field curb; 7. all associated testing; 8. field striping inlays. <p>Owner furnished materials for installation by the contractor include:</p> <ol style="list-style-type: none"> 5. synthetic turf carpet and field infill products; 6. placement and compaction of ¾” stone from previous surcharge program that contractor has stockpiled in soil management area. <p>Owner assignment of product to the contractor shall require the contractor to coordinate directly with the manufacturer for schedule and delivery of the product that aligns to the construction schedule installation of the item to ensure no project delays. The Contractor shall inspect product with Owner at time of delivery, assist in unloading, stack store & protect through installation and be responsible for product until final project completion signoff. Additional Work includes, but is not limited to, excavation, backfill, compaction, testing and all other Work incidental to the satisfactory completion of the Work.</p>	

Item CPM#1-Synthetic Turf System	
Measurement	Work completed, tested and accepted
Payment	Lump sum price
Schedule of Payment	Completion of Work – 100%
<p>Includes all items identified as Item 7a –Synthetic Turf System. In addition Item CPM#1 includes the following additional scope of work:</p> <p>Contractor provision & installation of:</p> <ol style="list-style-type: none"> 1. non-woven geotextile fabric located between the shock pad and leveling course materials. <p>Owner furnished, contractor assigned, materials for installation by the contractor include:</p> <ol style="list-style-type: none"> 1. shock pad. <p>Owner assignment of product to the contractor shall require the contractor to coordinate directly with the manufacturer for schedule and delivery of the product that aligns to the construction schedule installation of the item to ensure no project delays. The Contractor shall inspect product with Owner at time of delivery, assist in unloading, stack store & protect through installation and be responsible for product until final project completion signoff.</p>	

Item 7b– Goal Post	
Measurement	Goal post installed
Payment	Unit price each
Schedule of Payment	Completion of Work – 100%
<p>Includes all labor, services, material and equipment associated with providing and installing goal post in accordance with the manufacturer requirements including applicable mounting hardware, base plates, foundation footing, anchors excavation, backfill, compaction, restoration of disturbed surfaces, and all other Work incidental to the satisfactory completion of the Work.</p>	

Item 7c – Team Benches	
Measurement	Team Bench installed
Payment	Unit price each
Schedule of Payment	Completion of Work – 100%
<p>Includes all labor, services, material and equipment associated with providing and installing team benches in accordance with the manufacturer requirements including applicable mounting hardware and all other Work incidental to the satisfactory completion</p>	

Item 7d – Soccer Net	
Measurement	Soccer Net installed
Payment	Unit price each
Schedule of Payment	Completion of Work – 100%
Includes all labor, services, material and equipment associated with providing and installing soccer net(s) in accordance with the manufacturer requirements including applicable mounting hardware, nets, poles, and all other Work incidental to the satisfactory completion	

Item 7e – Lacrosse Net	
Measurement	Lacrosse Net installed
Payment	Unit price each
Schedule of Payment	Completion of Work – 100%
Includes all labor, services, material and equipment associated with providing and installing lacrosse nets in accordance with the manufacturer requirements including applicable mounting hardware, nets, poles, and all other Work incidental to the satisfactory completion	

Item 7f – Bleacher System	
Measurement	Work completed, tested and accepted
Payment	Lump sum price
Schedule of Payment	Completion of Work – 100%
<p>Includes all labor, services and equipment associated with the installation of an owner furnished, contractor assigned, product. Contractor to install the bleachers, foundation system and concrete slab at the location and limits shown on the Drawings.</p> <p>Work includes Contractor provision & installation of:</p> <ol style="list-style-type: none"> 1. support foundations; 2. concrete slabs. <p>Owner furnished materials for installation by the contractor include:</p> <ol style="list-style-type: none"> 1. bleacher system products; 2. placement and compaction of subgrade materials from previous surcharge program that contractor has stockpiled in soil management area. <p>Owner assignment of product to the contractor shall require the contractor to coordinate directly with the manufacturer for schedule and delivery of the product that aligns to the construction schedule installation of the item to ensure no project delays. The Contractor shall inspect product with Owner at time of delivery, assist in unloading, stack store & protect through installation and be responsible for product until final project completion signoff.</p> <p>Additional Work includes, but is not limited to, furnishing and installing applicable mounting hardware, material testing, reinforcement in accordance the manufacturers recommendation, excavation, backfill, compaction, restoration of disturbed surfaces, installation and compaction of Owner furnished backfill and bedding soils; removal and off-Site disposal of unsuitable excess soil materials and other required Work.</p>	

END OF ATHLETIC FIELD ITEMS

START OF STRUCTURAL ITEMS

Item 8a –Concrete Stairs and Handrails	
Measurement	Work completed to date
Payment	Lump Sum
Schedule of Payment	Completion of Work - 100%
<p>Includes labor, services, material and equipment associated with the construction of TWO exterior concrete stairways and hand rails indicated on the plans including, but not limited to, select demolition, furnishing and installing handrails rails, furnishing and installing applicable mounting hardware, abrasive noising, excavation, gravel, backfill, compaction, concrete, restoration of disturbed surfaces, and other incidentals necessary to complete the Work. Lump Sum includes installation of two complete stair & hand rail systems.</p>	

Item 8b –Concession Stand Building Foundation	
Measurement	Portion of Work completed and accepted
Payment	Lump Sum
Schedule of Payment	Monthly based on progress
<p>Includes labor, services, material and equipment associated with the installation of the concession stand building foundation, building provided by others under separate contract, at location indicated on the plans. Foundation location to be over excavated per geotechnical report recommendation, backfilled and compacted with Owner furnished structural fill material from surcharge program.</p> <p>Work includes, but not limited to, select demolition, furnishing and installing applicable mounting hardware, excavation, gravel, backfill, over excavation and replacement of unsuitable materials, compaction, testing, concrete, reinforcement, restoration of disturbed surfaces, and other incidentals necessary to complete the Work.</p>	

Item 8c–Dumpster Concrete Slab	
Measurement	Portion of Work completed and accepted
Payment	Lump Sum
Schedule of Payment	Monthly based on progress
<p>Includes labor, services, material and equipment associated with the installation of the dumpster foundation as indicated on the plans including, but not limited to, select demolition, furnishing and installing applicable mounting hardware, excavation, gravel, backfill, over excavation and replacement of unsuitable materials, compaction, concrete, reinforcement, restoration of disturbed surfaces, and other incidentals necessary to complete the Work.</p>	

END OF STRUCTURAL ITEMS

START OF SITE IMPROVEMENT ITEMS

Item 9a – Remove, Relocate and Reset Granite Curb Item 9b –New Granite Curbing	
Measurement	Linear foot of curbing
Payment	Unit price per linear foot
Schedule of Payment	Completion of Work – 100%
<p>Includes all labor, services, material and equipment associated with either:</p> <ul style="list-style-type: none"> • removing existing vertical granite curbs & storing in a secure location during excavation, resetting granite curb or • installation of new vertical granite curb, <p>Work includes, but not limited to, saw cutting of the existing pavement where indicated or directed, the removal of the existing pavement, excavation, all handling, cutting ends square, trimming exposed and hidden faces, cleaning all sections as necessary prior to installation, installation and compaction of Owner furnished backfill and bedding soils; removal and off-Site disposal of unsuitable excess soil materials, grading, provision and placement of concrete base, pavement materials between the reset curb and the existing or proposed pavement, replacement and compaction of sidewalk subgrade, resetting of original curbing to match pre-construction conditions, and all other required Work. Any surplus (excess) curbing shall become property of the Owner and delivered to 55 Sea Street at no additional cost.</p>	

Item 9c – Remove and Reset Granite Curb Returns	
Measurement	Actual curb return installed
Payment	Unit price each
Schedule of Payment	Monthly based on quantity installed, tested and accepted
<p>Material and equipment, services, installation, construction and testing inherent to the Work for removing existing granite curb returns, storing existing curb, saw cutting of the existing pavement where indicated or directed, removal of the existing pavement, excavation, removal & resetting of granite curb, handling, cutting ends square, trimming exposed and hidden faces, cleaning sections to be reset, gravel borrow, including grading and compacting and/or placement of concrete base, pavement materials between the reset curb and existing or proposed pavement, delivery of surplus (excess) curbing in good condition to Owner at the City DPW yard, and other incidental Work, as shown on the Drawings and as specified.</p>	

Item 9d –Concrete Sidewalk	
Measurement	Square yard of concrete sidewalk installed
Payment	Unit price per square yard
Schedule of Payment	Completion of Work - 100%
<p>Includes labor, services, material and equipment associated with installation of new concrete sidewalks, installation and compaction of Owner furnished backfill and bedding soils; removal and off-Site disposal of unsuitable excess soil materials, matching of new concrete sidewalk to adjacent existing concrete materials as necessary to meet and match pre-construction conditions, feather sidewalk grade to meet surrounding sidewalk elevation, and ensure smooth transition, provision and construction of expansion and control joints, surface finishing, and other required Work.</p>	

Item 9e– Accessible Curb Ramps	
Measurement	Actual accessible curb ramp and installed
Payment	Unit price per each
Schedule of Payment	Completion of Work - 100%
<p>Includes labor, services, material and equipment associated with installation of all components associated with new accessible curb ramps from the limits of the ramp tie-in to the adjacent surface(s) including, but not limited to: provision of granite transition curbs, flush granite curbs, tactile warnings, saw cutting of the existing pavement where indicated or directed, the removal of the existing concrete and/or pavement, excavation, curb installation, all handling, cutting curb ends square, trimming exposed and hidden faces, cleaning all sections to be set, installation and compaction of Owner furnished backfill and bedding soils; removal and off-Site disposal of unsuitable excess soil materials, grading, concrete, materials as necessary to meet and match adjacent surfaces to ensure smooth transition to proposed or pre-construction conditions, feather sidewalk grade to meet surrounding sidewalk elevation, and, provision and construction of expansion and control joints, surface finishing, and other required Work.</p>	

9f-Concrete Driveway Apron	
Measurement	Actual concrete driveway apron installed
Payment	Unit price per each
Schedule of Payment	Completion of Work - 100%
<p>Includes labor, services, material and equipment associated with installation of new concrete driveway apron, driveway subgrade; installation and compaction of Owner furnished backfill and bedding soils; removal and off-Site disposal of unsuitable excess soil materials, matching of new concrete driveway to adjacent existing materials as necessary to meet and match pre-construction conditions, feather driveway grade to meet surrounding sidewalk elevation, and ensure smooth transition, provision and construction of expansion and control joints, surface finishing, and other required Work.</p>	

Item 9g –Asphalt Sidewalk/ Driveway	
Measurement	Square yard of asphalt installed
Payment	Unit price per square yard
Schedule of Payment	Completion of Work - 100%
<p>Includes labor, services, material and equipment associated with installation of new asphalt sidewalks, preparation of subgrade; installation and compaction of Owner furnished backfill and bedding soils; removal and off-Site disposal of unsuitable excess soil materials, matching of new asphalt sidewalk to adjacent existing concrete materials as necessary to meet and match pre-construction conditions, feather sidewalk grade to meet surrounding sidewalk elevation, and ensure smooth transition, provision and construction of expansion and control joints, surface finishing, and other required Work.</p>	

Item 9h – Full Depth Pavement Section: Hot Mix Asphalt Base Course Item 9i – Full Depth Pavement Section: Hot Mix Asphalt Surface Course- Standard Top Item 9gg – Parking Lot Pavement Section: Hot Mix Asphalt Base Course Item 9hh – Parking Lot Pavement Section: Hot Mix Asphalt Surface Course- Standard Top	
Measurement	Square yard of asphalt installed
Payment	Unit price per square yard
Schedule of Payment	Completion of Work - 100%
<p>Includes labor, services, material, equipment and tools associated with furnishing and installing the asphalt regardless of placement method, subgrade grading and compaction; match pre-construction conditions, feather grade to meet surrounding elevation, and ensure smooth transition, raising existing frames, covers, gates to grade, including brick & mortar, concrete collars, compaction and material testing, and all other required Work. Hot Mix Asphalt for miscellaneous use will not be measured separately for payment but measured under this item.</p>	

Item 9j – Loam Borrow	
Measurement	Per square yard measured in place
Payment	Unit price per square yard
Schedule of Payment	Completion of Work - 100%
<p>Includes all labor, materials, and equipment including furnishing and installing, placement/spreading and rolling/tamping of the materials, excavation and preparation of areas and locations for installation of plant materials and all other Work incidental to the satisfactory completion of the Work.</p>	

Item 9k – Seeding	
Measurement	Per square yard measured in place
Payment	Unit price per square yard
Schedule of Payment	Completion of Work - 100%
Includes all labor, materials, and equipment including seed spraying, limestone, fertilizers, fine grading, rolling the seeded areas, watering, clearing the weed and all else incidental thereto and necessary for healthy grass areas without any bare spots or areas.	

Item 9l – Mulch	
Measurement	Per square yard measured in place
Payment	Unit price per square yard
Schedule of Payment	Completion of Work - 100%
Includes all labor, materials, and equipment required to spread mulch an 8 inch thick layer of mulch within the curbed parking lot landscape islands, installation of geotextile fabric below mulch, mulch color to be determined by Owner and all else incidental there to and necessary to obtain adequate coverage of mulch in the parking lot islands as specified by the Drawings.	

Item 9m- Chain Link Fence 48 Inches in Height Item 9n- Chain Link Fence 72 Inches in Height Item 9o- Chain Link Fence 96 Inches in Height	
Measurement	Per linear foot measured in place
Payment	Unit price per linear foot
Schedule of Payment	Completion of Work - 100%
Includes all labor, materials, and equipment to provide and install chain link fence at the locations and limits indicated on the Drawings. Provide posts (with exception of post 20' in height to be paid under separate line item), post foundations, top, bottom and intermittent crossing and support bars, hardware and appurtenances and all other Work incidental to the satisfactory completion of the Work.	

Item 9p- 1-5 Foot Wide Chain-link Fence Swing Gate 96 Inches in Height Item 9q- 2-5 Foot Wide Chain-link Fence Swing Gate 48 Inches in Height Item 9r- 2-6 Foot Wide Chain-link Fence Swing Gate 48 Inches in Height Item 9s- 2-10 Foot Wide Chain-link Fence Swing Gate 48 Inches in Height Item 9t- 2-5 Foot Wide Chain-link Fence Swing Gate 96 Inches in Height Item 9u- 2-10 Foot Wide Chain-link Fence Swing Gate 96 Inches in Height Item 9v- 20 Foot Wide Chain-link Fence Slide Gate 96 Inches in Height Item 9w- 1-5 Foot Wide Chain-link Fence Swing Gate 48 Inches in Height	
Measurement	Work completed to date
Payment	Unit price per each gate
Schedule of Payment	Completion of Work - 100%
Includes all labor, materials, and equipment to provide and install chain link fence lockable swing gates and slide gates at the locations and limits indicated on the Drawings. Provide posts, post foundations, top, bottom and intermittent crossing and support bars, hardware and appurtenances and all other Work incidental to the satisfactory completion of the Work.	

Item 9x- Athletic Field Netting with Post 20' in Height	
Measurement	Per linear foot measured in place
Payment	Unit price per linear foot
Schedule of Payment	Completion of Work - 100%
Includes all labor, materials, and equipment to provide and install athletic field netting and post 20' in height and hardware at the locations indicated on the Drawings. Provide posts, post foundations, includes 8 foot chain link fence between post, concrete, concrete forms, hardware and appurtenances to hoist and secure netting and all other Work incidental to the satisfactory completion of the Work.	

Item 9y- 3 Foot High Wooden Split Rail Fence	
Measurement	Per linear foot measured in place
Payment	Unit price per linear foot
Schedule of Payment	Completion of Work - 100%
Includes all labor, materials, and equipment to provide and install wooden split rail at the locations and limits indicated on the Drawings. Provide posts, post foundations, rails, hardware and appurtenances and all other Work incidental to the satisfactory completion of the Work.	

Item 9z- 6 inch Bollards	
Measurement	Per post installed, measured in place
Payment	Unit price per each bollard and associated hardware installed
Schedule of Payment	Completion of Work - 100%
Includes all labor, materials, and equipment to provide and install 6" bollards and hardware at the locations indicated on the Drawings. Provide bollards, bollard foundations, hardware and appurtenances to install each bollard and all other Work incidental to the satisfactory completion of the Work.	

Item 9aa –Imprinted Crosswalks	
Measurement	Per square yard measured in place
Payment	Unit price per square yard
Schedule of Payment	Completion of Work - 100%
Includes labor, services, material, equipment and tools associated with furnishing and installing imprinted crosswalks to the OWNERs pattern choose at the locations and limits indicated on the Drawings.	

Item 9bb –Regulatory Signs	
Measurement	Actual sign installed
Payment	Unit price per each sign installed
Schedule of Payment	Completion of Work - 100%
Includes all labor, materials, and equipment including installation of signage on post, post paid for separately, transportation, storage and protection, furnishing and installing applicable mounting hardware and other incidentals necessary to complete the Work. *Excludes sign post paid through Item 9bb*	

Item 9cc – Signs Posts	
Measurement	Actual sign post installed
Payment	Unit price per each sign post installed
Schedule of Payment	Completion of Work - 100%
Includes all labor, materials, and equipment including transportation, storage and protection, furnishing and installing the new posts, furnishing and installing applicable mounting hardware, excavation, gravel, backfill, compaction, concrete base where required, restoration of disturbed surfaces, and other incidentals necessary to complete the Work.	

Item 9dd- Flag Poles	
Measurement	Per post installed, measured in place
Payment	Unit price per each pole and associated hardware installed
Schedule of Payment	Completion of Work - 100%
Includes all labor, materials, and equipment to provide and install flag poles and hardware at the locations indicated on the Drawings. Provide poles, pole foundations, hardware and appurtenances to hoist and secure flag poles and all other Work incidental to the satisfactory completion of the Work.	

Item 9ee –Pavement Markings	
Measurement	Portion of Work completed and accepted
Payment	Lump Sum
Schedule of Payment	Monthly based on progress
Includes labor, services, material and equipment associated with, but not limited to, the removal of pavement markings and the provision of pavement markings indicated on the plans; surface cleaning and preparation, symbols, lines & words per the Manual on Uniform Traffic Control Devices (latest edition) and other incidentals necessary to complete the Work.	

Item 9ff – Precast Concrete Big Block Retaining Wall and Wall Under Drain	
Measurement	Portion of Work completed and accepted
Payment	Lump Sum
Schedule of Payment	Monthly based on progress
Includes all labor, transportation of materials, and equipment to provide and install all Project precast concrete big block retaining walls, wall under drains and fall foundation systems at the locations and limits shown on the Drawings. Contractor to coordinate and supply wall manufacturer design drawings stamped by a Massachusetts licensed structural engineer for wall and foundation support system aligned to geotechnical report recommendations. Work includes installation of walls, provision & installation of wall foundation systems, provision & installation of wall drains, installation and compaction of Owner furnished backfill; removal and off-Site disposal of unsuitable excess soil materials and other incidental to the satisfactory completion of the Work.	

END OF SITE IMPROVEMENT ITEMS

Item 10 – Control Density Fill	
Measurement	Per cubic yard delivered & placed based on plant slips
Payment	Unit price per cubic yard
Schedule of Payment	Monthly based on quantity installed, tested and accepted
Material and equipment, services, installation, construction and testing inherent to the Work for placing Control Density Fill, for preventative trench settlement or shallow cover pipe installations and other incidental Work, as shown on the Drawings and as specified or as required by field conditions or as directed.	

Item 11 – Trench Excavation Below Normal Grade	
Measurement	Per cubic yard measured in place
Payment	Unit price per cubic yard
Schedule of Payment	Per cubic yard of soil removed and replaced as measured
Includes excavation and replacement of materials determined as unsuitable for pipe subgrade, including all required testing, documentation, and legal disposal of spoils not containing oil or hazardous materials (OHM). *Excludes Work in areas otherwise described as requiring over excavation as a component of Work”	

Item 12 – Rock Boulder Excavation	
Measurement	Per cubic yard measured in place prior to excavation within pay limits.
Payment	Unit price per cubic yard
Schedule of Payment	Completion of Work - 100%
Includes all labor, tools, equipment and materials to remove “rock” from its original bed by drilling, barring or wedging (blasting shall not be permitted) specifically ledge or bed rock and boulders larger than one cubic yard in volume, excavation, removal, and disposal of the rock and replacement as necessary with suitable backfill material as directed by Engineer and all incidentals necessary to complete the Work.	

Item 13 - Additional Hours of Work Fee (Deduction)	
Measurement	Each hour worked outside the allowable Work hours approved by Owner
Payment	Deduction of \$150 per each hour
Schedule of Payment	Deduction on each Application for Payment containing hours worked outside the allowable Work hours approved by Owner
The Contract Price shall be reduced by \$150 for each approved hour worked outside the specified allowable Work hours to cover additional engineering costs incurred by the Owner for services of the Resident Project Representative. Any Work conducted by the Contractor outside of the specified allowable Work hours must be approved by the Owner.	

- Item 14a-3.5 inch-4.5 inch Caliper Red Maple Item 14b- 5 Gallon Bottlebrush Buckeye Item 14c- 5 Gallon Border Forsythia Item 14d- 7 Gallon Rainbow Fetterbush Item 14e- 8-10 Foot Red Cedar Item 14f- 10-12 Foot Austrian Pine Item 14g- 3 Gallon Carolina Rose Item 14h- 5 Gallon Knockout Rose Item 14i- 5 Gallon Pjm Rhododendron Item 14j- 7 Gallon Pussy Willow Item 14k- 10 Gallon Dappled Willow Item 14l- 5 Gallon Densifomis Yew Item 14m- 4.5 inch -5 inch Caliper Accolade Elm	
Measurement	Actual planting installed
Payment	Unit price each
Schedule Payment	of Completion of Work - 100%
Includes labor, services, material, tools and equipment necessary to provide and install each tree/shrub/ planting as shown on the drawings, soil admixtures, planting soil, tree mulch surrounding tree and under the direction of a Massachusetts licensed arborist.	

Item 15 – Owner’s Contingency Allowance for Project Signage	
Measurement	Portion of Owner’s contingency allowance amount authorized per Paragraph 11.02 of the of the General Conditions
Payment	Percent of not to exceed contingency amount
Schedule Payment	of Completion of Work - 100%
For furnishing and installing Owner or Engineer requested project signage as directed by the Owner. *	

Item 15-16 – Traffic Police Details	
Measurement	Actual wages and fringes paid to police officers based upon invoices and/or payroll records excluding overtime and Contractor markup and/or administration fees
Payment	Percent of not to exceed contingency amount based upon direct costs incurred for Police Details after confirmation of Police Department payment
Schedule of Payment	Based on actual hours worked and invoices paid including standard administrative charges levied by the Police Department and excluding mark-up. Monthly based on progress
<p>Direct cost of Police Details and Contractor markup and/or administration fees. Contractor shall not receive payment for any unused portion of the contingency allowance.</p> <p>Excluded: Charges for Police Details not canceled in accordance with Police Department policies and procedures.</p>	

Item 1617: Mobilization/Demobilization	
Measurement	At Project commencement and at Project completion
Payment	Lump sum price, operations and expenses in connection with mobilization and demobilization shall not exceed five percent (5%) of the Contract Price.
Schedule of Payment	50% Project Commencement 50% Final Completion
<p>Includes delivery to and removal of equipment from the Project Site, temporary utilities, facilities and controls, obtaining necessary permits including associated fees, insurance and bond costs, signage, development of pre-construction schedules and plans required by the General Conditions, Supplementary Conditions and General Requirements; necessary pre-construction investigations, verifying existing field conditions and documentation, coordination, preparation of Work and operations, movement of men, equipment and all other Work and operations which must be performed from the time prior to the start of the Work to the final acceptance of the Work by the City..</p>	

<u>Item 18 – Steel H Piles</u>	
<u>Measurement</u>	<u>Effective length of pile in place to proposed cut off elevation</u>
<u>Payment</u>	<u>Unit price per vertical foot of pile in place</u>
<u>Schedule of Payment</u>	<u>Completion of Work - 100%</u>
<p><u>Includes all labor, materials, transportation, and equipment to provide and install steel H piles to support of the concrete grade beam for the indicated drain, sewer and precast structures at the locations and limits shown on the Drawings. Work includes installation of steel H piles as specified; capacity verified by dynamic load testing; pile cutting/ welding as necessary upon achievement of minimum required bearing, shoring and bracing, dewatering, removal and off-site disposal of unsuitable excess soil materials and all other Work incidental to the satisfactory completion of the Work.</u></p>	

<u>Item 19 – Concrete Grade Beam</u>	
<u>Measurement</u>	<u>Per linear foot installed</u>
<u>Payment</u>	<u>Unit price per linear foot of grade beam in place</u>
<u>Schedule of Payment</u>	<u>Completion of Work - 100%</u>
<p><u>Includes all labor, materials, transportation, and equipment to provide and install the concrete reinforced grade beam at the location and limits shown on the Drawings. Work includes installation of Owner furnished soils to provide bedding for grade beam, pipes & structures; shoring and bracing, dewatering, excavation, backfill, compaction, testing, restoration of disturbed surfaces; concrete reinforcement, concrete placement and all other Work incidental to the satisfactory completion of the Work.</u></p>	

<u>Item 20 – Subsurface Borings Investigation</u>	
<u>Measurement</u>	<u>Per 8 hour day of borings performed</u>
<u>Payment</u>	<u>Unit price per day</u>
<u>Schedule of Payment</u>	<u>Completion of Work - 100%</u>
<p><u>Includes all labor, materials, transportation, and equipment to provide approximately 15 subsurface soil test borings by a qualified boring contractor at locations provided and observed by the engineer. Borings shall extend a minimum of 30 feet into medium dense to dense natural soils beneath compressible organic soils, or to refusal whichever occurs first. Refusal conditions shall be cored a minimum of 5 feet in at least two locations to verify that the refusal is caused by bedrock. Soil samples shall be taken as directed by the engineer for testing furnished by Owner. Work includes permits, utility mark outs, surveyor located boring layout, borings, traffic management, restoration of disturbed surfaces; and all other Work incidental to the satisfactory completion of the Work.</u></p>	

226640.02

Issue Date: March 4¹⁰, 2016

North Quincy High School Public Works Improvement Project
Quincy, Massachusetts

PART 2 - PRODUCTS (not used)

PART 3 – EXECUTION (not used)

END OF SECTION

SECTION 26 56 00
EXTERIOR LIGHTING

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Luminaires
 - 2. Lamps
 - 3. Drivers
 - 4. Photocell controls
 - 5. Poles and brackets

- B. Related Documents:
 - 1. Division 26, Section 26 05 00, Common Work Results for Electrical.

1.02 REFERENCES

- A. Furnish products listed by Underwriters Laboratories, Inc., ETL Testing Laboratories, or other testing firm acceptable to the Owner.

- B. Conform to requirements of ANSI/NFPA 70.

- C. Conform to requirements of NFPA 101.

1.03 SUBMITTALS

- A. Submit shop drawings, product data, test data, warranties, and other information as appropriate for the following:
 - 1. Luminaires
 - 2. Drivers
 - 3. Time switch
 - 4. Photocell controls
 - 5. Poles
 - 6. Pole bases

- B. Shop Drawings: Indicate construction details for products which are not manufacturer's standard, when product data does not adequately describe fixture physical characteristics, or upon request by Engineer.

- C. Product Data: Provide product data for each luminaire and lighting unit.

- D. Submit luminaire shop drawings in booklet form with a separate sheet for each luminaire type. Indicate clearly on each sheet the proposed luminaire "type" designation, manufacturer, luminaire lamp, and ballast designation.
- E. Submittals shall indicate materials, finishes, metal gauges, overall and detail dimensions, sizes of electrical and mechanical connections, fasteners, welds, joints, end conditions, provisions for the work of others and similar information.
- F. A photometric test report showing photometric candlepower distribution, brightness, coefficients of utilization, and paint reflectance shall be included for all fixtures. Photometric reports shall be prepared for actual fixture, lamp, lens, and ballast combination. Certify data as that taken under National Bureau of Standards calibrated test conditions according to standards of the Illuminating Engineering Society; upon request, submit photometric test of proposed fixture prepared by an independent testing laboratory such as ETL.
- G. The submittals shall state whether or not the fixture, as an assembly, has been UL tested and approved.
- H. Upon request, submit sample products for inspection. Provide luminaires identical with approved samples; retain approved samples at site for comparison until after all other luminaires have been shipped to site and installed. Transportation charges for samples shall be paid by Contractor. Unapproved samples will be returned at Contractor's expense. Upon notification of disapproval, immediately submit new samples that meet contract requirements.
- I. Upon request by Engineer, provide computerized illumination calculation data for specified interior or exterior areas in digital or isofootcandle format and in such detail as requested.
- J. Operating and Maintenance Instructions: Provide maintenance and operating instructions for battery powered lighting units. Include technical data sheets and parts ordering information for components used in all luminaires.

1.04 QUALITY ASSURANCE

- A. Warranty all lighting and components for one year after acceptance of the work and at no additional cost to the Owner, promptly provide and install replacements for luminaires or components which are defective in materials or workmanship; or repair installed equipment at the job site as necessary to restore first class operating condition. For any time during the warranty period that luminaires are not fully functional due to defects in materials or workmanship, provide, install, and remove suitable temporary lighting. Warrant replacement luminaires in a similar manner for a period of one year following replacement including replacement of defective replacements.
- B. Warrant ballasts, batteries, and occupancy sensors as further specified herein.

- C. Provide products of firms regularly engaged in the manufacture of interior luminaires or components of similar types and ratings to those required. Such products shall have been in satisfactory use in similar applications for not less than two years.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Deliver luminaires and their components to job site, factory assembled and wired to the greatest extent practical, in strict accordance with approved shop drawings, samples, certificates and catalog cuts.
- B. Protect exposed finishes during manufacture, transport, storage and handling; replace damaged materials.
- C. Luminaires shall be stored under cover, above the ground, in clean, dry areas, and be tagged and/or marked as to type and site destination.

PART 2 - PRODUCTS

2.01 GENERAL

- A. Provide lighting fixtures as listed on the Fixture Schedule on the drawings and as specified herein that meet the performance and quality standard for that fixture. Substitutes shall be equal in all respects including mechanical, electrical, physical, performance, photometric, and quality characteristics except minor variances in construction details which do not affect overall quality or performance are permitted.
- B. Accessories: Provide required accessories for mounting and operation of each luminaire as indicated.

2.02 LED LUMINAIRE HOUSING

- A. Exterior Housing: 360 low-copper die-cast aluminum alloy with five stage polyester powder paint finish, electrical components solidly heat-sink mounted to housing, type as described on the drawings.
 - 1. Thermoset polyester powder coat applied after five-stage conversion cleaning process and bonded by heat fusion thermosetting. Laboratory tested for weatherability and fade resistance in accordance with ASTM B117 specifications.
 - 2. Optics: minimum photometric performance in accordance with fixtures listed on Lighting Fixture Schedule.

2.03 LED LUMINAIRE

- A. LED Luminaires provided shall match existing or be approved by the engineer as an equal.

- B. Provide type and color indicated on the Lighting, Lamping, and Fixture Schedule.
- C. 60-75 Watt LED Module.
 - 1. ANSI Specification Number M59.
 - 2. Initial rated lumen output shall be at least 4,600 lumens.
 - 3. Average rated lamp life shall be at least 90,000 hours when operated at ten (10) hours per start.
 - 4. LED optics chamber and driver to be IP66 rated.
 - 5. Provide fixture in Gloss Black, Epoxy Prime finish with (2) coats of polyester modified acrylic polyurethane.
 - 6. Globe shall be a Stippled Acrylic
 - 7. B-U-G Rating of 1-3-1
 - 8. Provide luminaires with shielded optics. Upward lumen utilization not to exceed 3.3%
- D. Driver shall withstand line transients as defined in ANSI/C62.41.
- E. Driver shall not contain polychlorinated biphenyls (PCBs) and shall be labeled "NO PCBs."
- F. Driver shall have a warranty of five (5) years and a replacement labor allowance of \$10.

2.04 POLES

- A. Poles provided shall match existing characteristics as indicated or be approved by the engineer as an equal.
- B. Provide poles designed for wind loading of 100 miles per hour determined in accordance with AASHTO LTS-2 while supporting luminaires having effective projected areas for fixtures indicated. Poles shall be anchor base type designed for use with underground supply conductors. Anchor bolts shall be steel rod having minimum yield strength of 50,000 psi; the top 12 inches of the rod shall be galvanized per ASTM A 153.
 - 1. Height: 16'-3" +/-
 - 2. Light Center: 20'-0" +/-
 - 3. Base: 20" +/- Diameter Cast Iron
 - 4. Finish: Epoxy Primer w/(2) coats polyester modified acrylic polyurethane
 - 5. Color: Gloss Black
 - 6. Access: Located in Base to coincide with handhole in steel shaft
 - 7. Plaque Boss: Cast iron mounting frame for future 6" wide by 8" tall dedication plaque.
- C. Steel Poles: AASHTO LTS-2. Provide steel poles having minimum 7-gage steel with minimum yield/strength of 48,000 psi and primed and painted factory finish, color as indicated on the drawings. Provide a pole grounding connection designed to prevent electrolysis when used with copper ground wire.
- D. Banner Arms:

1. Style: Clamp-on 1" SCH 80 Aluminum Pipe with rubber lined formed aluminum clamps with removable ball finial
2. Length: 34"
3. Finish: Polyester Powder Coat – Gloss Black
4. Hardware: 1/2" – 13 HD Galvanized Steel hex bolts, nuts, flat and lock washers.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Luminaire Pole Bases: Construct as indicated on drawings. Furnish pole bases to site contractor for installation under Division 2, coordinate installation. Install poles centered, with no base overlap, on bases plumb; provide for adjustment.
- B. Provide anchor bases with galvanized steel anchor bolts, threaded at the top end and bent 90 degrees at the bottom end. Provide galvanized nuts, washers, and ornamental covers for anchor bolts. Concrete for anchor bases, polyvinyl chloride (PVC) conduit cells, and ground rods shall be as specified in Section 26 05 26.
- C. Thoroughly compact backfill with compacting arranged to prevent any pressure between conductor, jacket, or sheath and the end of conduit ells. Adjust poles as necessary to provide a permanent vertical position with the bracket arm in proper position for luminaire location.
- D. Grounding: Ground noncurrent-carrying parts of equipment, including metal poles. Where the copper grounding conductor is connected to a metal other than copper, provide specially treated or lined connectors suitable for this purpose.
- E. Insulation Resistance Test: Perform before and after connection of fixtures and equipment.
- F. Ground Resistance Tests: Perform ground continuity test.
- G. Field Tests: Upon completion of installation, conduct an operating test to show that the equipment operates in accordance with the requirements of this specification section.

3.02 ADJUSTING AND CLEANING

- A. Clean lenses and diffusers at completion of work.
- B. Aim adjustable luminaires as indicated or as directed.
- C. Clean paint splatters, dirt, and debris from installed luminaires.
- D. Touch up luminaire and pole finish at completion of work.

226640.02
Issue Date: March 10, 2016

North Quincy High School Public Works Improvement Project
Quincy, Massachusetts

END OF SECTION

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SECTION 31 62 16.16

STEEL H PILES

PART 1 – GENERAL

1.01 SUMMARY

- A. Section Includes
 - 1. Provide steel H piles accordance with this Section, the Drawings, and applicable reference standards listed in Article 1.03.

1.02 PRICE AND PAYMENT PROCEDURES

- A. Measurement and payment requirements: per Division 01 General Requirements.

1.03 REFERENCES

- A. Reference Standards
 - 1. ASTM International (ASTM)
 - a. ASTM A27 Standard Specification for Steel Castings, Carbon, for General Application
 - b. ASTM E329 Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection
 - c. ASTM 548 Standard Guide for General Criteria Used for Evaluating Laboratory Competence
 - d. ASTM 572 Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel
 - 2. American Welding Services
 - a. AWS D1.1, Structural Welding Code – Steel
 - b. AWS D1.4, Structural Welding Code – Reinforcing Steel

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination, Sequencing, and Scheduling: per Division 01 General Requirements.

1.05 SUBMITTALS

- A. Submit in accordance with Division 01 General Requirements.
- B. Product Data

- C. Shop Drawings: fabrication and installation details for piles, including driving points, splices and field cut holes. Indicate welds by standard AWS symbol, distinguishing between shop and field welds, and show size, length and type of each weld
- D. Certificates of welding qualifications
- E. Design Data/Submittals
- F. Source and Field Quality Control Submittals
- G. Qualification Statements for Installer, surveyor, and Testing agency, and professional engineer.
- H. Proposed pile driving system information and driving criteria including proposed pile hammer and two wave equation analyses of the proposed driving system to evaluate driving stresses. Base soil properties for analysis on \soil borings with thickest and thinnest layers of peat contained in the Project geotechnical and subsurface information.
- I. Closeout and Maintenance Material Submittals: per Division 01 General Requirements.
 - 1. Wave equation analyses

1.06 QUALITY ASSURANCE

- A. Provide in accordance with Division 01 General Requirements.
- B. Qualifications: per Division 01 General Requirements and as follows.
 - 1. Installer: experienced in installing driven piles similar in material, design and extent specified, whose work has resulted in construction with a successful in-service performance. Installer's responsibility includes providing a qualified professional engineer to prepare pile driving records.
 - 2. Surveyor: licensed in the state where Project is located.
 - 3. Welding: qualify procedures and personnel according to AWS Standards.
 - 4. Testing Agency: qualified according to ASTM E 329.
 - 5. Professional engineer licensed in the state where Project is located.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Provide in accordance with Division 01 General Requirements.

1. Deliver piles to Project Site in such quantities and at such times to ensure continuity of installation.
2. Handle and store piles at Project Site to prevent physical damage.
3. Support piles with webs in vertical position.

1.08 SITE CONDITIONS

- A. Existing Conditions: per Division 01 General Requirements.
 1. Refer to geotechnical and subsurface information.

PART 2 – PRODUCTS

2.01 PILES

- A. Steel H piles: ASTM 572 Grade 50 rolled sections HP8X36.
- B. Allowable pile capacity: 100 kips including down drag forces.
- C. Driven pile lengths: anticipated to be approximately 60 to 120 feet below underside of utility grade beam.

2.02 PILE DRIVING ACCESSORIES

- A. Driving Points: manufacturer's standard one piece driving point, fabricated from carbon steel castings conforming to ASTM A27 to provide full bearing of web and flange of pile tip.
- B. Cast driving point with integral tapered cutting edges and with top alignment curbs to encase web and flanges of piles.

2.03 SOURCE QUALITY CONTROL

- A. Provide in accordance with Division 01 General Requirements.
- B. Tests and Inspections
 1. Qualified testing agency to perform material evaluation tests as documented according to ASTM E 548.

PART 3 – EXECUTION

3.01 PREPARATION

- A. Require pile driver to review existing access including driving equipment size and positioning, and overhead clearance in order to evaluate pile driving capabilities.

- B. Provide that licensed land surveyor performs surveys, layouts, and measurements for steel H piles.
- C. Layout each steel H pile to lines and levels required prior to excavating.
- D. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, vibration, and other hazards created by driving steel H piles.
- E. Utilize pile driving equipment capable of installing piles to the specified geotechnical capacity without damaging piles and achieving the desired pile axial capacity. Provide pile driving equipment submittals prior to equipment mobilization.

3.02 INSTALLATION

- A. Pre-excavation, jetting, augering or vibratory hammer installation are anticipated for the Project.
- B. Limit driving stresses to a maximum compressive stress of 45 kips per square inch for steel H piles. Provide cast steel points to limit pile damage during driving.
- C. Drive piles to a minimum ultimate capacity of 200 kips with a single or double acting air or steam hammer, or a drop hammer. The minimum rated energy of the hammer must be sufficient to achieve the minimum ultimate pile capacity while not overstressing the pile during driving.
- D. Install piles in a continuous manner using the same equipment and to approximately the same penetration resistance using approved driving criteria.
- E. Drive piles in designated locations and do not deviate from the planned location by more than 3 inches in any direction. Out of plumb piles: if inclination is greater than 1 inch in 10 feet of single piles.
- F. Contact Engineer immediately if conflicts arise with locations.
- G. Record actual measurements of each steel H pile's location, bottom and top elevations, deviations from specified tolerances, and other specified data.
- H. Maintain accurate driving records for each pile, including the following data, compiled and attested to by qualified professional engineer.
 - Project name and number
 - Name of pile driver
 - Pile location and designation
 - Sequence of driving in pile group
 - Pile dimensions
 - Ground elevations

- Elevations of tips after driving
- Final tip and cut off elevations of piles after driving
- Records of re-driving
- Elevation of splices
- Type, make, model and rated energy of hammer
- Weight and stroke of hammer
- Type of pile driving cap used
- Cushion material and thickness
- Actual stroke and blow rate of hammer
- Number of blows for each 12 inches of penetration and number of blows per 1 inch for the last 6 inches of driving
- Pile deviations from location and plumb

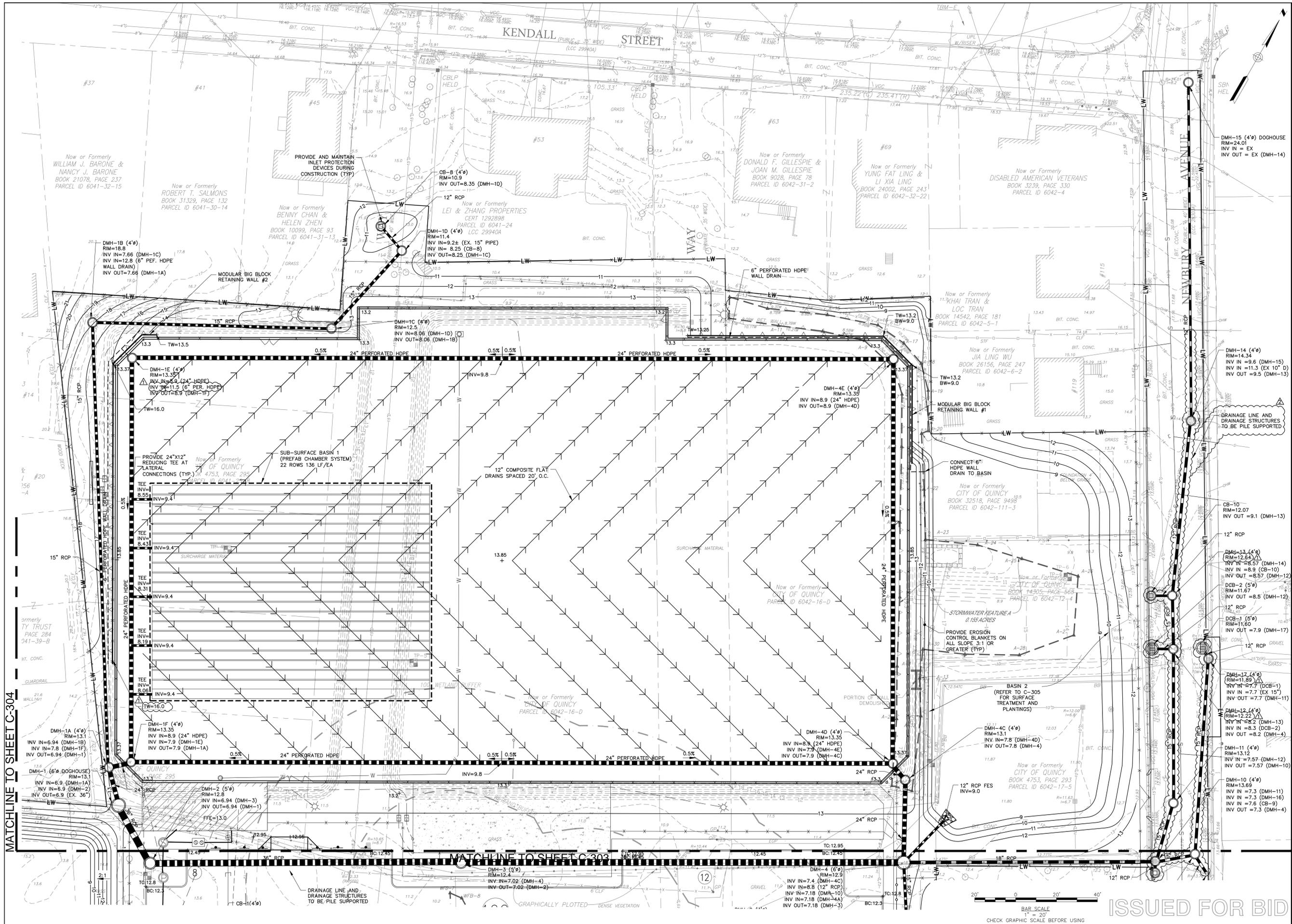
3.03 FIELD QUALITY CONTROL

- A. Provide in accordance with Division 01 General Requirements.
- B. Owner will engage a qualified independent testing and inspecting agency to perform field quality control testing.

3.04 CLOSEOUT ACTIVITIES

- A. Provide in accordance with Division 01 General Requirements.
- B. Remove surplus excavated material and legally dispose of off Site.

END OF SECTION



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NO.	ADDITION #	DESCRIPTION	DATE
1	ADDITION #1		13/10/2016
2	ADDITION #2		03/04/2016

DESIGNED BY: PHM
 CHECKED BY: RJD/DAW
 DRAWN BY: HCP/KCS
 28866 CDM/IMG

GRADING AND DRAINAGE PLAN 1

CITY OF QUINCY, MASSACHUSETTS
 DEPARTMENT OF PARK & FORESTRY
 1 MERRIMONT PARKWAY
 NORTH QUINCY HIGH SCHOOL
 PUBLIC WORKS IMPROVEMENT PROJECT
 QUINCY, MA 02169

JOB NO.: 226640
 DATE: FEBRUARY 2016
 SCALE: 1" = 20'
 SHEET: 19 OF 57

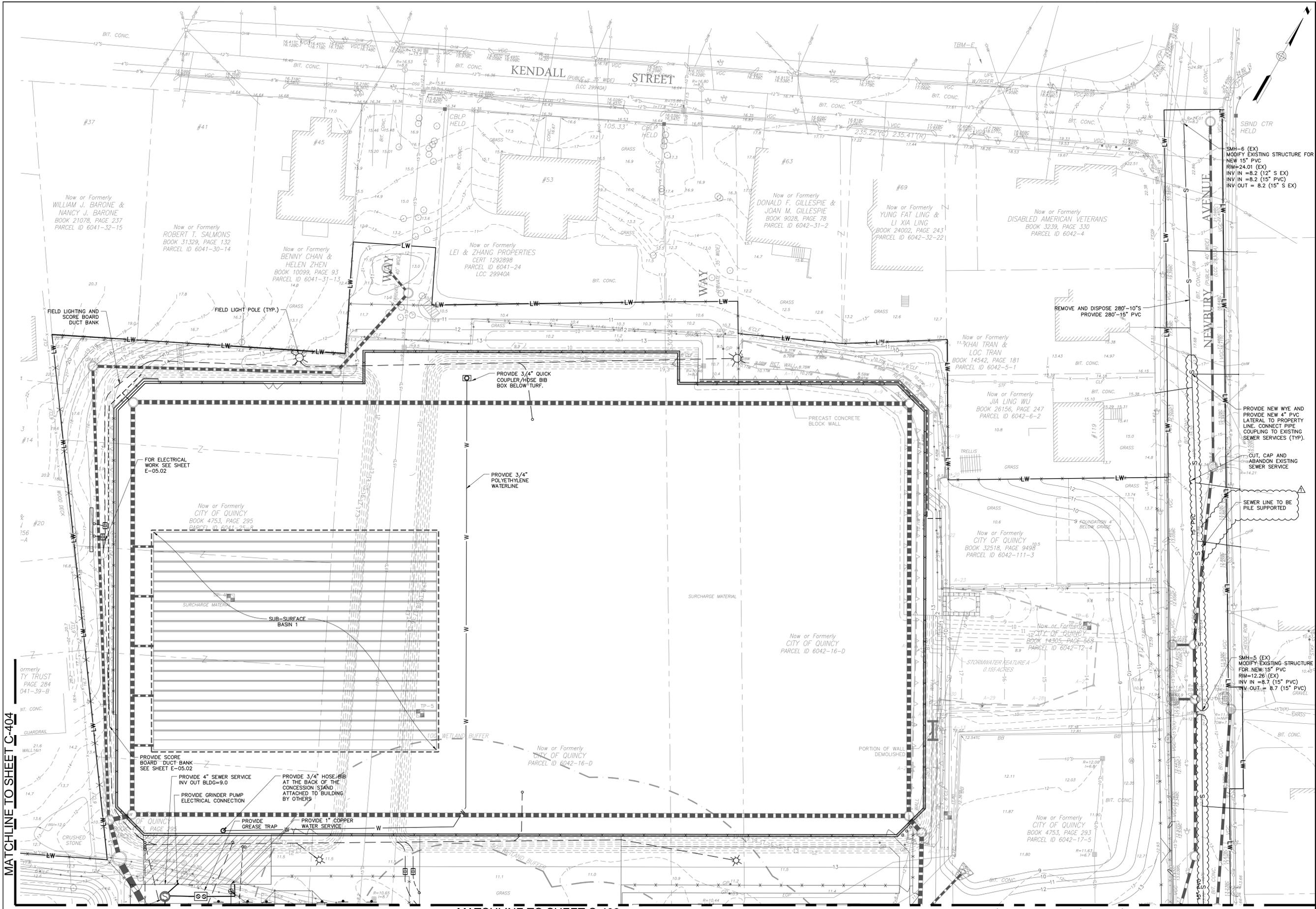
C-302

ISSUED FOR BID

MATCHLINE TO SHEET C-304

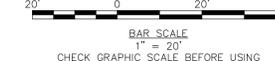
MATCHLINE TO SHEET C-303

BAR SCALE
 1" = 20'
 CHECK GRAPHIC SCALE BEFORE USING



MATCHLINE TO SHEET C-404

MATCHLINE TO SHEET C-403



ISSUED FOR BID

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NO.	REVISION	DATE
1	ADDENDUM # 3	3/07/16

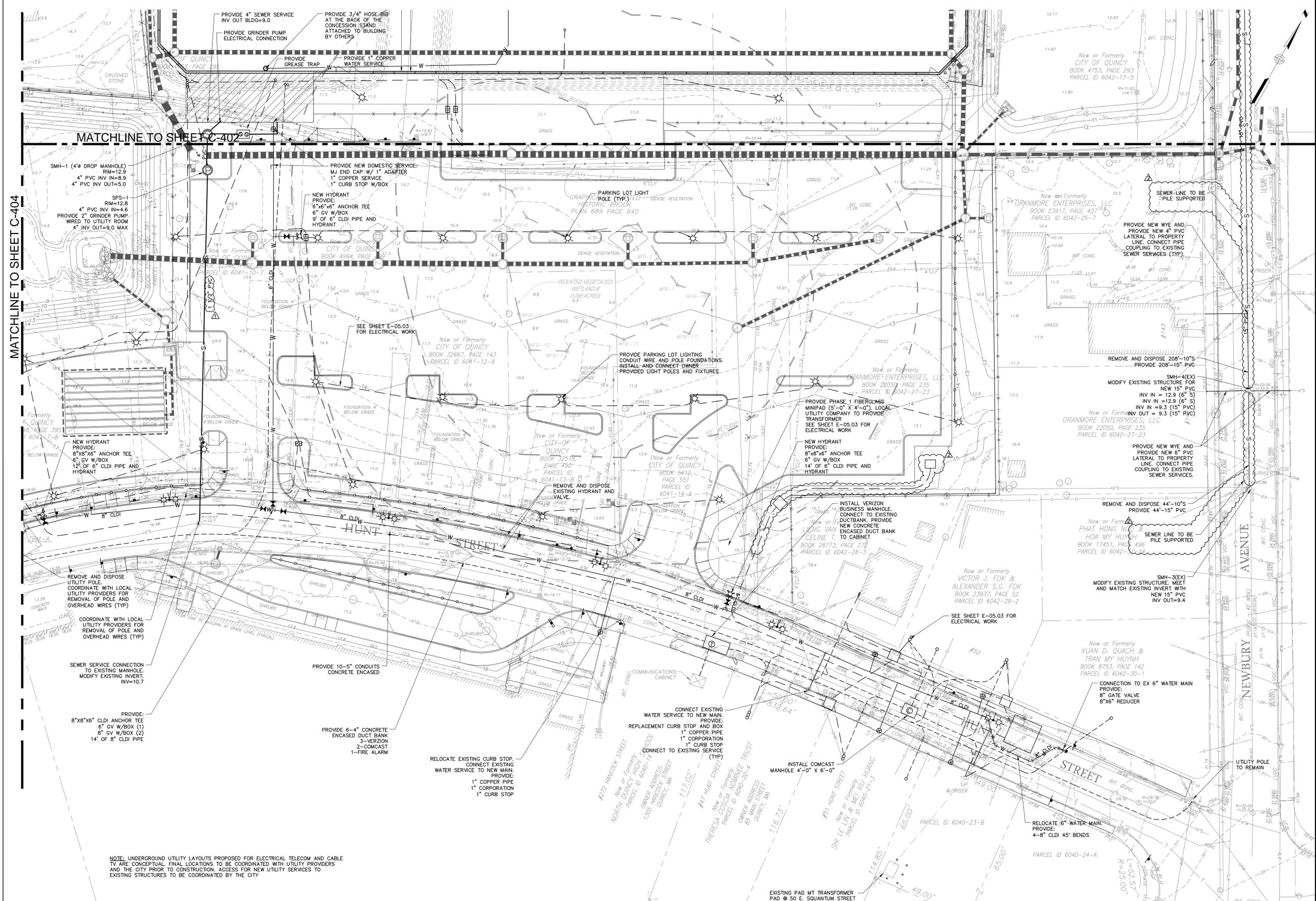
CHECKED BY: RJD/DAW
 DRAWN BY: HCP/KCS

UTILITY PLAN 1

CITY OF QUINCY, MASSACHUSETTS
 DEPARTMENT OF PARK & FORESTRY
 1 MERRIMOUNT PARKWAY
 NORTH QUINCY HIGH SCHOOL
 PUBLIC WORKS IMPROVEMENT
 QUINCY, MA 02169

JOB NO.: 226640
 DATE: FEBRUARY 2016
 SCALE: 1" = 20'
 SHEET: 24 OF 57

C-402



MATCHLINE TO SHEET C-404

MATCHLINE TO SHEET C-402

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NO.	ADDITION #	ADDITION #	DESCRIPTION	CHECKED BY: RJD/DAW
1	1	1	13/10/2016	03/04/2016
2	2	2		

DESIGNED BY: PHM
DRAWN BY: HCP/JCS
CHECKED BY: RJD/DAW
DATE: 03/04/2016

UTILITY PLAN 2

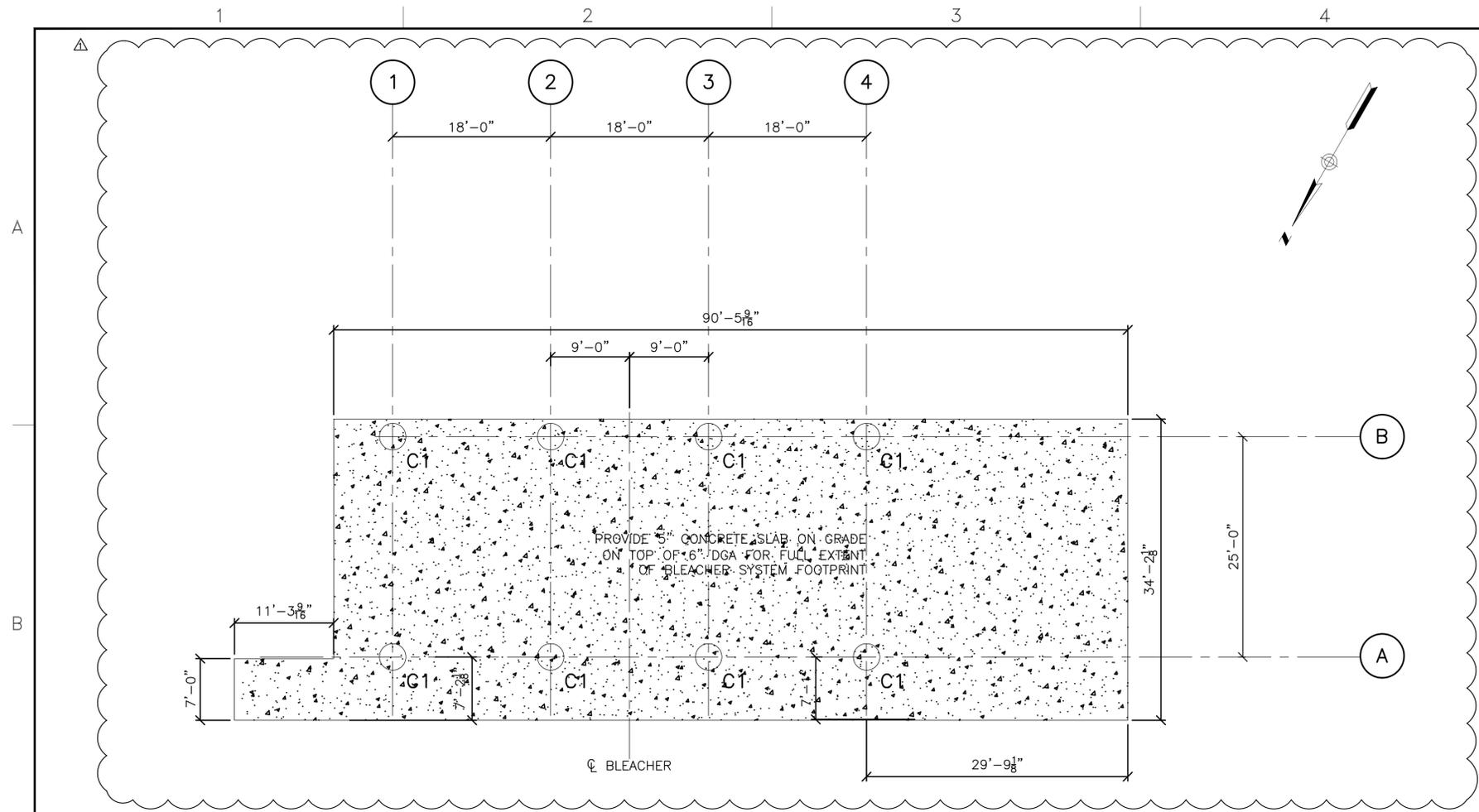
CITY OF QUINCY, MASSACHUSETTS
DEPARTMENT OF PARK & FORESTRY
1 MERRIMOUNT PARKWAY
NORTH QUINCY HIGH SCHOOL
PUBLIC WORKS IMPROVEMENT
QUINCY, MA 02169

JOB NO.: 226640
DATE: FEBRUARY 2016
SCALE: 1" = 20'
SHEET: 25 OF 57



ISSUED FOR BID

C-403

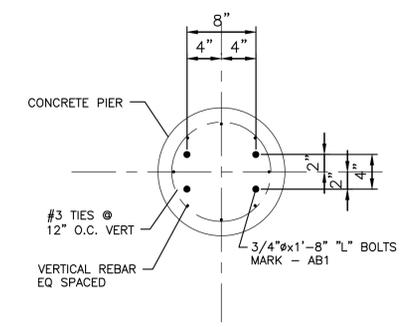


BLEACHER FOUNDATION PLAN
NOT TO SCALE

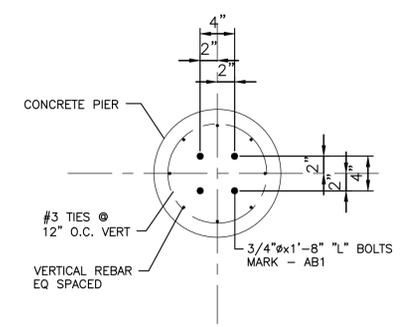
CONCRETE DRILLED PIER SCHEDULE						
MARK	SIZE	"D"	REINFORCING	# OF ANCHORS	SIZE OF ANCHORS	ANCHOR BOLT TEMPLATE NO.
C1	36"Ø	38'-0"	9 #7 BARS	4	3/4" x 1'-8" w/ 3" HOOK	0039245

END BEARING CAPACITY - 1000PSF

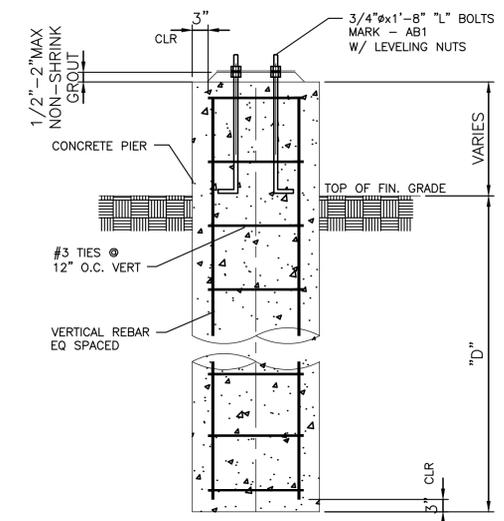
- NOTES:
1. THE ELEVATION OF THE TOP OF THE CONCRETE PIER IS DESIGNED TO BE 1 1/2" BELOW THE STEEL BEARING ELEVATION. TOLERANCES FOR THE TOP OF CONCRETE PIER SHALL BE +/- 1/8". THE CONCRETE INSTALLER IS RESPONSIBLE FOR NON-SHRINK GROUTING.
 2. THE TOP OF CONCRETE MAY BE RAISED TO MATCH THE STEEL BEARING ELEVATION AT THE INSTALLER'S DISCRETION. INSTALLER IS THEN RESPONSIBLE FOR ANY ADJUSTMENTS.
 3. ALL COLUMN ANCHOR BOLTS MUST HAVE A 4" PROJECTION (+/- 1/8") ABOVE THE TOP OF PIER ELEVATION.
 4. MAXIMUM HORIZONTAL TOLERANCE OF ANCHOR BOLT PLACEMENT SHALL BE 1/8".
 5. ALL UNDERGROUND UTILITIES ARE TO BE LOCATED AND MARKED DURING REVIEW PROCESS PRIOR TO FOUNDATION EXCAVATION. DANT CORP. SHALL NOT BE RESPONSIBLE FOR DAMAGE TO UNDERGROUND UTILITIES.
 6. MINIMUM FOOTING DEPTH IS DETERMINED BY STATE AND LOCAL BUILDING CODES.
 7. SOIL BEARING PRESSURE IS TO BE DETERMINED BY SOILS ENGINEER.
 8. BLEACHER FOUNDATION PLANS INCLUDED HEREIN HAVE BEEN PROVIDED FOR BIDDING PURPOSES ONLY. PROVIDE A FINAL DESIGN SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE COMMONWEALTH OF MASSACHUSETTS DURING THE SUBMITTAL AND SHOP DRAWING REVIEW PROCESS FOR USE AS CONSTRUCTION DOCUMENTS.



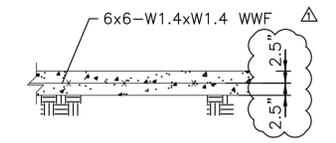
ANCHOR BOLT LAYOUT PLAN OF DRILLED PIER
NOT TO SCALE



ANCHOR BOLT LAYOUT PLAN OF DRILLED PIER (C1)
NOT TO SCALE



SECTION OF DRILLED PIER
NOT TO SCALE



SECTION OF SLAB ON GRADE
NOT TO SCALE

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REV	ADDITION #	DESCRIPTION	DATE	DESIGNED BY: MD/JS	CHECKED BY: RJD/DW
1			03/10/2016		

DRAWN BY: MD/ACS
ZBRK7.00006

ATHLETIC FIELD DETAILS PLAN 3

CITY OF QUINCY, MASSACHUSETTS
DEPARTMENT OF PARK & FORESTRY, PERRYMOUNT PARKWAY
1 MERRYMOUNT PARKWAY
NORTH QUINCY HIGH SCHOOL PUBLIC WORKS IMPROVEMENT PROJECT
QUINCY, MA 02169

JOB NO: 226640
DATE: FEBRUARY 2016
SCALE: AS NOTED
SHEET: 38 OF 57

C-512

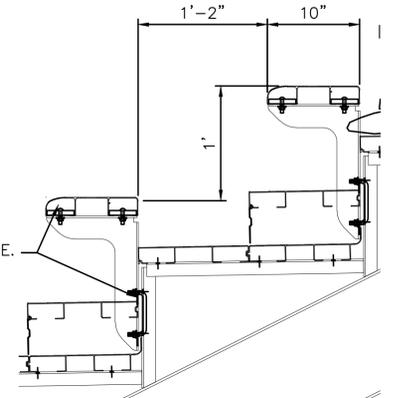
ISSUED FOR BID

C:\Users\kairreva\AppData\Local\Temp\Temp_Publish_5816\226640_C50X.dwg, Mar 10, 2016 - 1:15pm

NOTE:
1. BLEACHER MATERIALS PROVIDED BY OWNER FOR INSTALLATION BY CONTRACTOR.

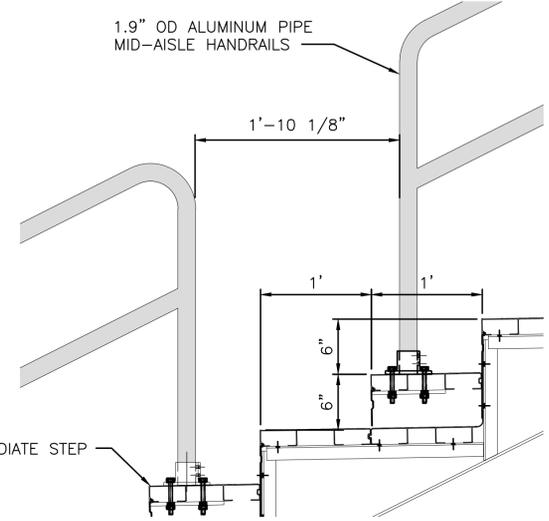
ROWS 10 ELEVATION 70"
RISE 12 RUN 24
DECK SYSTEM - WELDED
DECK FINISH - SSRD
BENCH SEATING CAPACITY 328
CHAIR SEATING CAPACITY 0
WHEELCHAIR SEATING CAPACITY 6
COMPANION SEATING CAPACITY 6
TOTAL SEATING CAPACITY 340

2x10 ALUMINUM SEATBOARD
FASTENED WITH CLIPS TO
RISER-MOUNTED BRACKET
FASTENED TO UNDERSTRUCTURE.

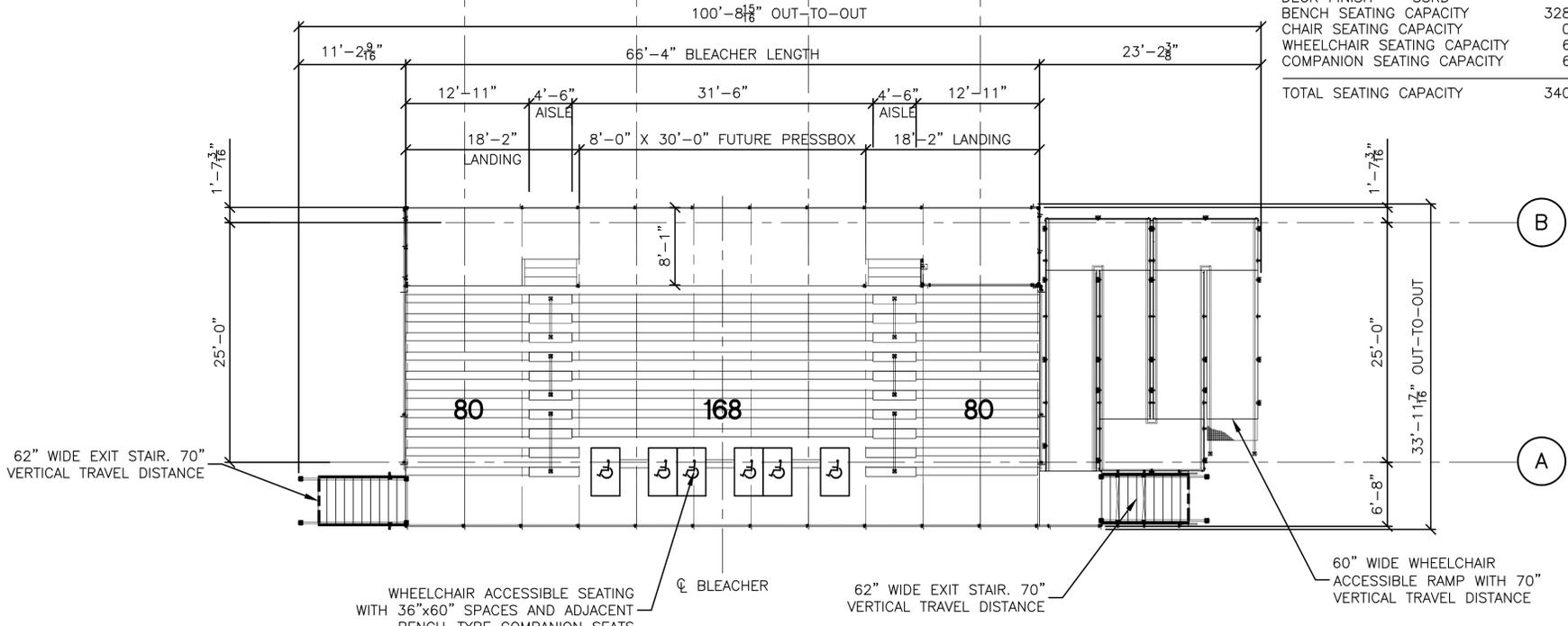


BLEACHER ROW
NOT TO SCALE

1.9" OD ALUMINUM PIPE
MID-AISLE HANDRAILS



BLEACHER AISLE
NOT TO SCALE



BLEACHER LAYOUT PLAN
NOT TO SCALE

WHEELCHAIR ACCESSIBLE SEATING
WITH 36"x60" SPACES AND ADJACENT
BENCH-TYPE COMPANION SEATS

62" WIDE EXIT STAIR, 70"
VERTICAL TRAVEL DISTANCE

60" WIDE WHEELCHAIR
ACCESSIBLE RAMP WITH 70"
VERTICAL TRAVEL DISTANCE

SIDELINE

42" CHAIN LINK FENCE
TYP. AT FRONT OF STAND

TOP OF WALKWAY
EL. 105'-10"

TOP OF FINISH GRADE
EL. 100'-0"

6'-2" WALKWAY

W12x19 WALKWAY BEAM

W12 SUPPORT BEAM

W12 STRINGER BEAM

W12 SUPPORT BEAM

W6 COLUMN

L2x2x1/4" ANGLE
CROSS BRACING
BETWEEN COLUMNS

CONCRETE PIER
w/FOOTING

BLEACHER ELEVATION
NOT TO SCALE

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REV	DESCRIPTION	DATE
1	ADDITION #3	03/10/2016

CHECKED BY: RJD/DAW
DRAWN BY: MD/ACS
ZBRAD COORING

ATHLETIC FIELD DETAILS PLAN 4

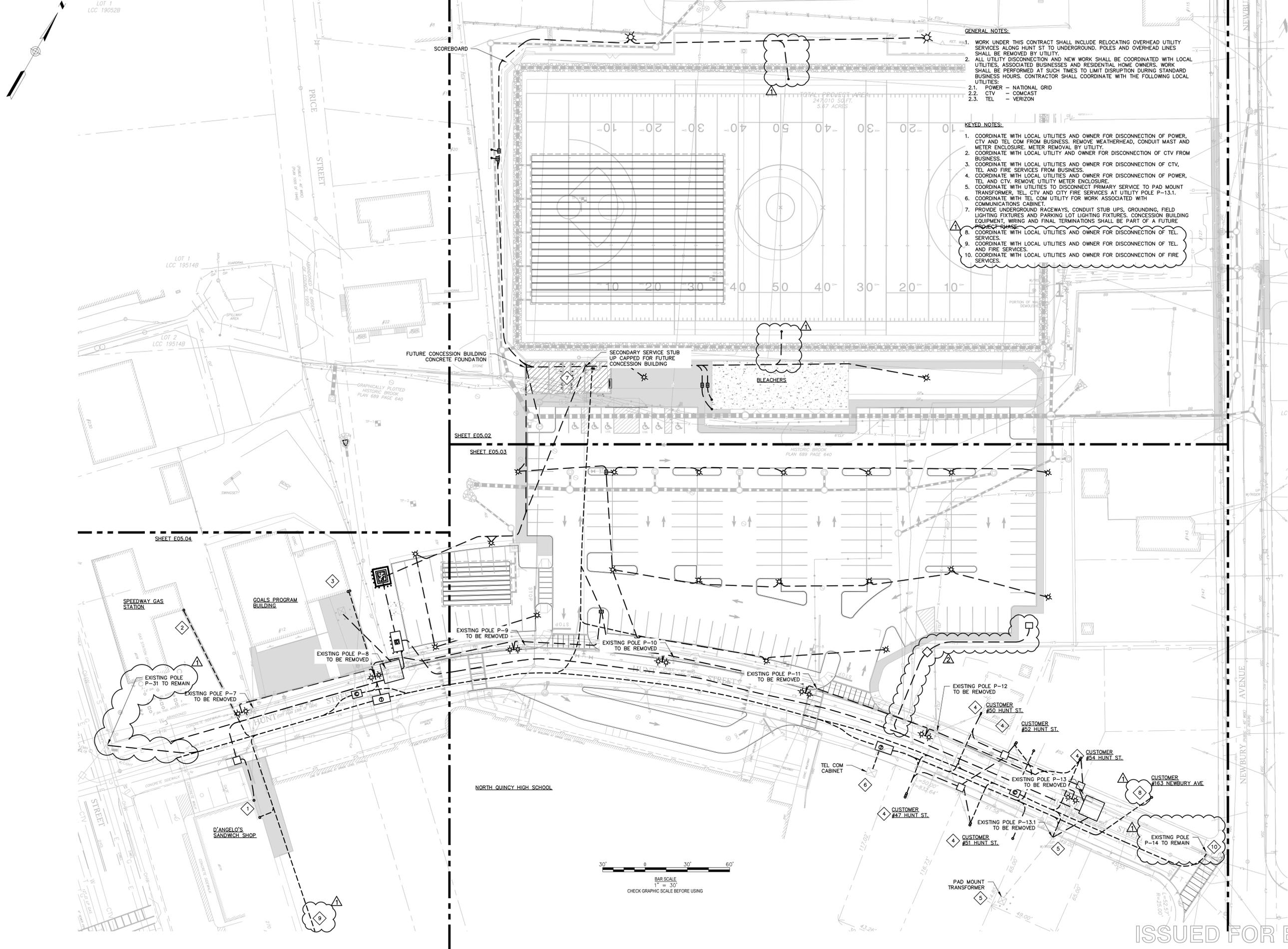
CITY OF QUINCY, MASSACHUSETTS
DEPARTMENT OF PARK &
FORESTRY, MERRYMOUNT PARKWAY
NORTH QUINCY HIGH SCHOOL
PUBLIC WORKS IMPROVEMENT
PROJECT
QUINCY, MA 02169

JOB NO.: 226640
DATE: FEBRUARY 2016
SCALE: AS NOTED
SHEET: 39 OF 57

ISSUED FOR BID

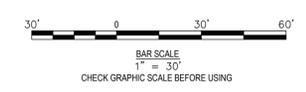
C-513

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- GENERAL NOTES:**
1. WORK UNDER THIS CONTRACT SHALL INCLUDE RELOCATING OVERHEAD UTILITY SERVICES ALONG HUNT ST TO UNDERGROUND. POLES AND OVERHEAD LINES SHALL BE REMOVED BY UTILITY.
 2. ALL UTILITY DISCONNECTION AND NEW WORK SHALL BE COORDINATED WITH LOCAL UTILITIES, ASSOCIATED BUSINESSES AND RESIDENTIAL HOME OWNERS. WORK SHALL BE PERFORMED AT SUCH TIMES TO LIMIT DISRUPTION DURING STANDARD BUSINESS HOURS. CONTRACTOR SHALL COORDINATE WITH THE FOLLOWING LOCAL UTILITIES:
 - 2.1. POWER - NATIONAL GRID
 - 2.2. CTV - COMCAST
 - 2.3. TEL - VERIZON

- KEYED NOTES:**
1. COORDINATE WITH LOCAL UTILITIES AND OWNER FOR DISCONNECTION OF POWER, CTV AND TEL COM FROM BUSINESS. REMOVE WEATHERHEAD, CONDUIT MAST AND METER ENCLOSURE. METER REMOVAL BY UTILITY.
 2. COORDINATE WITH LOCAL UTILITY AND OWNER FOR DISCONNECTION OF CTV FROM BUSINESS.
 3. COORDINATE WITH LOCAL UTILITIES AND OWNER FOR DISCONNECTION OF CTV, TEL AND FIRE SERVICES FROM BUSINESS.
 4. COORDINATE WITH LOCAL UTILITIES AND OWNER FOR DISCONNECTION OF POWER, TEL AND CTV. REMOVE UTILITY METER ENCLOSURE.
 5. COORDINATE WITH UTILITIES TO DISCONNECT PRIMARY SERVICE TO PAD MOUNT TRANSFORMER, TEL, CTV AND CITY FIRE SERVICES AT UTILITY POLE P-13.1.
 6. COORDINATE WITH TEL COM UTILITY FOR WORK ASSOCIATED WITH COMMUNICATIONS CABINET.
 7. PROVIDE UNDERGROUND RACEWAYS, CONDUIT STUB UPS, GROUNDING, FIELD LIGHTING FIXTURES AND PARKING LOT LIGHTING FIXTURES. CONCESSION BUILDING EQUIPMENT, WIRING AND FINAL TERMINATIONS SHALL BE PART OF A FUTURE PROJECT RISE.
 8. COORDINATE WITH LOCAL UTILITIES AND OWNER FOR DISCONNECTION OF TEL SERVICES.
 9. COORDINATE WITH LOCAL UTILITIES AND OWNER FOR DISCONNECTION OF TEL AND FIRE SERVICES.
 10. COORDINATE WITH LOCAL UTILITIES AND OWNER FOR DISCONNECTION OF FIRE SERVICES.



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REV	ADDITION #	DATE	DESCRIPTION	CHECKED BY: A.F.
1	ADDITION #1	03/04/2016		
2	ADDITION #2	03/10/2016		

DESIGNED BY: PPH/ALH
 DRAWN BY: SAA
 CHECKED BY: A.F.
 DRAWN BY: SAA

**ELECTRICAL SITE PLAN
 OVERALL**

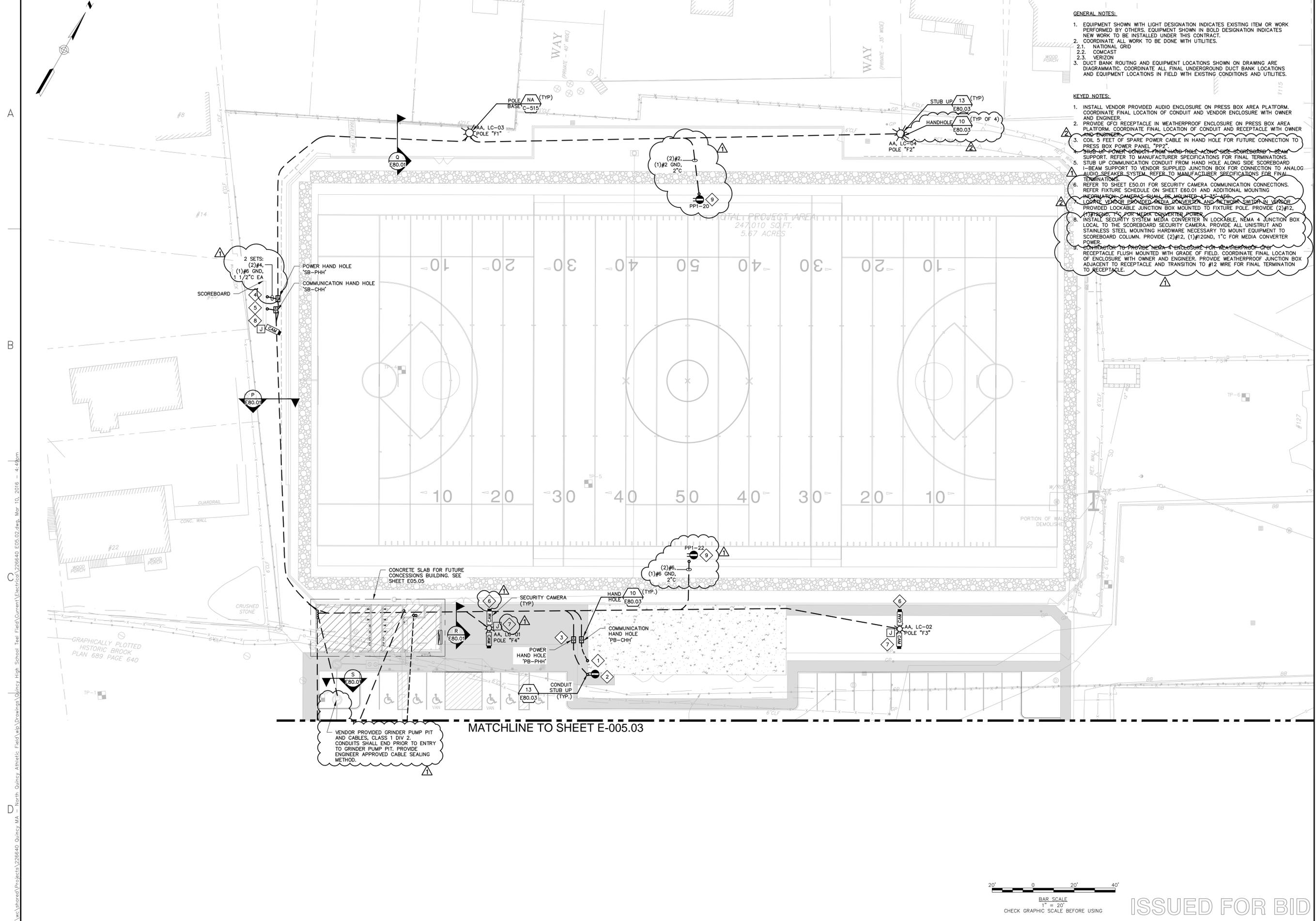
CITY OF QUINCY, MASSACHUSETTS
 DEPARTMENT OF PARK &
 FORESTRY, PARKWAY
 1 MERRYMOUNT PARKWAY
 NORTH QUINCY HIGH SCHOOL
 PUBLIC WORKS IMPROVEMENT
 PROJECT
 QUINCY, MA 02169

JOB NO: 226640
 DATE: FEBRUARY 2016
 SCALE: AS NOTED
 SHEET: 44 OF 57

E05.01

ISSUED FOR BID

\\wehahered\Projects\226640_Quincy, MA - North Quincy Athletic Field\Drawings\Quincy High School_Teal_Field\Current\Electrical\226640_E05.01.dwg, Mar. 10, 2016 - 4:48pm



- GENERAL NOTES:**
- EQUIPMENT SHOWN WITH LIGHT DESIGNATION INDICATES EXISTING ITEM OR WORK PERFORMED BY OTHERS. EQUIPMENT SHOWN IN BOLD DESIGNATION INDICATES NEW WORK TO BE INSTALLED UNDER THIS CONTRACT.
 - COORDINATE ALL WORK TO BE DONE WITH UTILITIES.
- KEYED NOTES:**
- INSTALL VENDOR PROVIDED AUDIO ENCLOSURE ON PRESS BOX AREA PLATFORM. COORDINATE FINAL LOCATION OF CONDUIT AND VENDOR ENCLOSURE WITH OWNER AND ENGINEER.
 - PROVIDE GFCI RECEPTACLE IN WEATHERPROOF ENCLOSURE ON PRESS BOX AREA PLATFORM. COORDINATE FINAL LOCATION OF CONDUIT AND RECEPTACLE WITH OWNER AND ENGINEER.
 - COIL 5 FEET OF SPARE POWER CABLE IN HAND HOLE FOR FUTURE CONNECTION TO PRESS BOX POWER PANEL "PP2".
 - STUB UP POWER CONDUIT FROM HAND HOLE ALONG SIDE SCOREBOARD TO BEAM SUPPORT. REFER TO MANUFACTURER SPECIFICATIONS FOR FINAL TERMINATIONS.
 - STUB UP COMMUNICATION CONDUIT FROM HAND HOLE ALONG SIDE SCOREBOARD I-BEAM SUPPORT TO VENDOR SUPPLIED JUNCTION BOX FOR CONNECTION TO ANALOG AUDIO SPEAKER SYSTEM. REFER TO MANUFACTURER SPECIFICATIONS FOR FINAL TERMINATIONS.
 - REFER TO SHEET E50.01 FOR SECURITY CAMERA COMMUNICATION CONNECTIONS. REFER FUTURE SCHEDULE ON SHEET E50.01 AND ADDITIONAL MOUNTING INFORMATION. CAMERA SHALL BE MOUNTED AT 35' AEG.
 - LOCATE VENDOR PROVIDED MEDIA CONVERTER AND NETWORK SWITCH IN VENDOR PROVIDED LOCKABLE JUNCTION BOX MOUNTED TO FIXTURE POLE. PROVIDE (2) #12, (1) #6 GND, 1\"/>

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REV	ADDITIONAL #	ADDITIONAL #3	DATE	DESCRIPTION	CHECKED BY: AAF
2			03/10/2016		
1			03/04/2016		

DESIGNED BY: PPH/AJF
 DRAWN BY: SAA

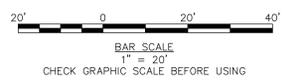
ELECTRICAL SITE PLAN FIELD

CITY OF QUINCY, MASSACHUSETTS
 DEPARTMENT OF PARK &
 FORESTRY, PARKWAY
 1 MERRYMOUNT PARKWAY
 NORTH QUINCY HIGH SCHOOL
 PUBLIC WORKS IMPROVEMENT
 PROJECT
 QUINCY, MA 02169

JOB NO.: 226640
 DATE: FEBRUARY 2016
 SCALE: VALUE
 SHEET: 45 OF 57

E05.02

\\we\ahored\Projects\226640_Quincy MA - North Quincy Athletic Field\p\Drawings\Quincy High School Teal Field\Current\Electrical\226640 E05.02.dwg, Mar 10, 2016 - 4:43pm



ISSUED FOR BID

GENERAL NOTES:

- EQUIPMENT SHOWN WITH LIGHT DESIGNATION INDICATES EXISTING ITEM OR WORK PERFORMED BY OTHERS. EQUIPMENT SHOWN IN BOLD DESIGNATION INDICATES NEW WORK TO BE INSTALLED UNDER THIS CONTRACT.
- COORDINATE ALL WORK TO BE DONE WITH UTILITIES.
- NATIONAL GRID
- COMCAST
- VERIZON
- DUCT BANK ROUTING AND EQUIPMENT LOCATIONS SHOWN ON DRAWING ARE DIAGRAMMATIC. COORDINATE ALL FINAL UNDERGROUND DUCT BANK LOCATIONS AND EQUIPMENT LOCATIONS IN FIELD WITH EXISTING CONDITIONS AND UTILITIES.
- FIELD VERIFY AND COORDINATE ALL FINAL CONDUIT STUB UP LOCATIONS WITH EACH LOCAL BUSINESS OWNER, RESIDENT AND ENGINEER.

KEYED NOTES:

- PROVIDE NEW UNDERGROUND SINGLE UTILITY METER ENCLOSURE FOR EACH RESIDENTIAL CUSTOMER PER UTILITY SPECIFICATIONS. PROVIDE (3) #2 XHHW CONDUCTORS FROM POWER HAND HOLE "P-HH3-2" OR "P-HH3-1". TERMINATION SPLICES IN HAND HOLE BY UTILITY.
- PROVIDE 4-POSITION UNDERGROUND UTILITY METER ENCLOSURE PER UTILITY SPECIFICATIONS. PROVIDE 1 SET OF (3) 3/0 XHHW CONDUCTORS FROM POWER HAND HOLE "P-HH3-3" TO RESIDENTIAL CUSTOMER. TERMINATION SPLICES IN HAND HOLE BY UTILITY.
- SECURITY CAMERAS SHALL BE MOUNTED ON LIGHTING FIXTURE POLES AT 20' AFG. REFER TO FIXTURE SCHEDULE ON SHEET E80.01 FOR ADDITIONAL INFORMATION. REFER TO SHEET E50.01 FOR COMMUNICATION CONNECTIONS. LOCATE VENDOR PROVIDED MEDIA CONVERTER AND NETWORK SWITCH IN VENDOR PROVIDED, POLE MOUNTED, ELECTRICAL ENCLOSURE FOR CONNECTION TO SECURITY CAMERAS. PROVIDE (2) #12, (1) #12GND, 1" FOR MEDIA CONVERTER POWER.
- POWER AND LIGHT FIXTURE SERVICE CONDUITS SHALL BE BROUGHT TO POLE 13 AND COUPLED TO EXISTING CONDUITS UNDERGROUND. COORDINATE REMOVAL AND RE-CONNECTION OF SERVICE WITH ASSOCIATED UTILITIES AND CUSTOMERS.
- NEW TEL MANHOLE SHALL BE INSTALLED AS A 2-PIECE MANHOLE AND ENCAPSULATE THE EXISTING COMMUNICATION CONDUITS ROUTED TO THE COMMUNICATION CABINET FROM E. SQUANTUM STREET.

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REV	DESCRIPTION	DATE
1	ADDITION #1	03/04/2016
2	ADDITION #2	03/10/2016

DESIGNED BY: PPH/AJH
 CHECKED BY: AAF
 DRAWN BY: SAA
 Z8848183.0306

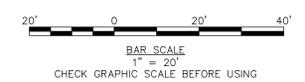
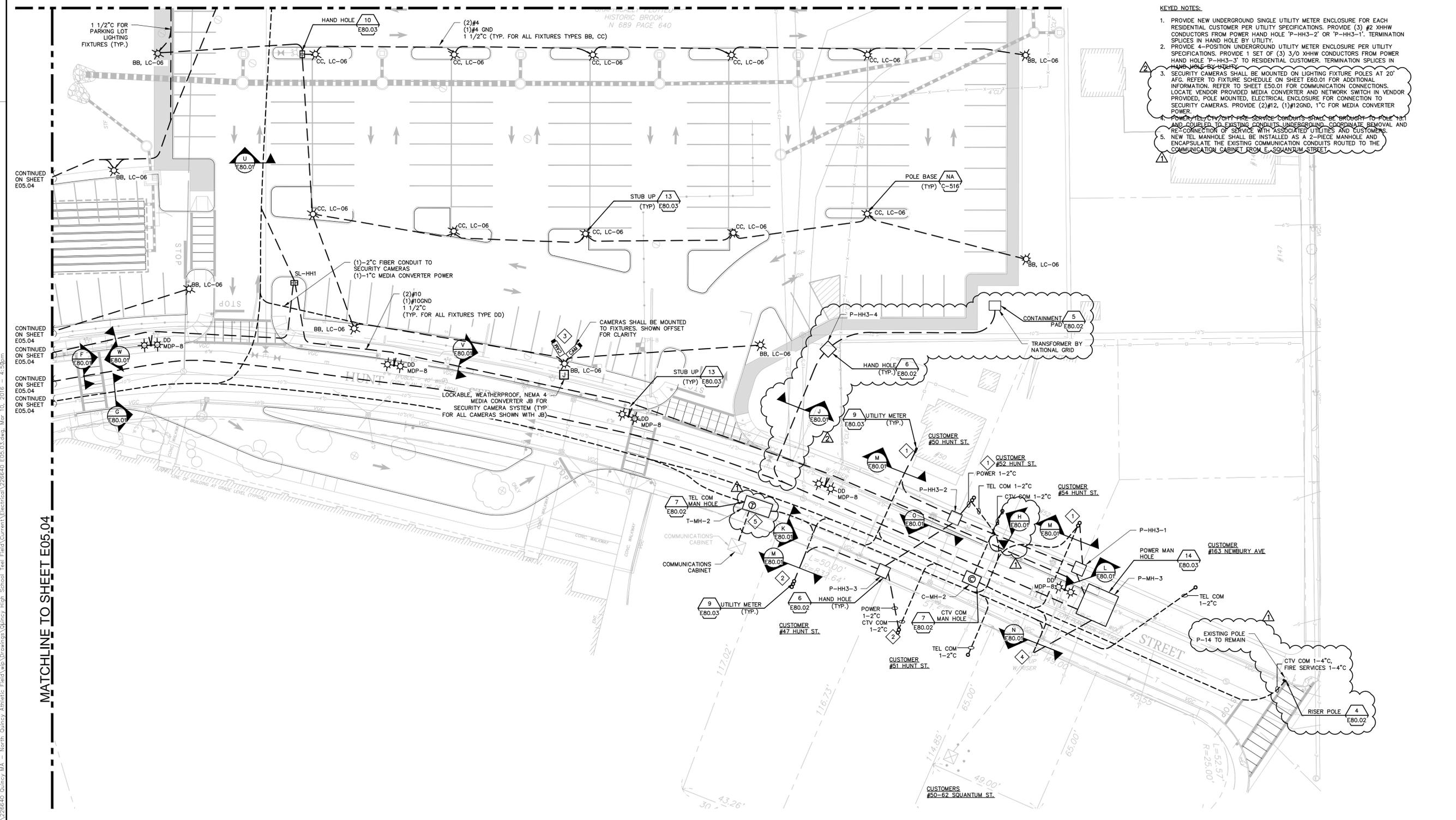
**ELECTRICAL SITE PLAN
 PARKING LOT AND UTILITY**

CITY OF QUINCY, MASSACHUSETTS
 DEPARTMENT OF PARK &
 FORESTRY,
 1 MERRYMOUNT PARKWAY
 NORTH QUINCY HIGH SCHOOL
 PUBLIC WORKS IMPROVEMENT
 PROJECT
 QUINCY, MA 02169

JOB NO.: 226640
 DATE: FEBRUARY 2016
 SCALE: AS NOTED
 SHEET: 46 OF 57

E05.03

MATCHLINE TO SHEET E05.02



ISSUED FOR BID

\\we\ahorez\Projects\226640_Quincy_MA - North Quincy Athletic Field\p\Drawings\Quincy High School_Teal_Field_Current\Electrical\226640_E05.03.dwg, Mar 10, 2016 - 4:53pm
 MATCHLINE TO SHEET E05.04
 CONTINUED ON SHEET E05.04
 CONTINUED ON SHEET E05.04
 CONTINUED ON SHEET E05.04
 CONTINUED ON SHEET E05.04

- GENERAL NOTES:**
- EQUIPMENT SHOWN WITH LIGHT DESIGNATION INDICATES FUTURE WORK.
 - EQUIPMENT SHOWN WITH BOLD DESIGNATION INDICATES NEW WORK TO BE INSTALLED UNDER THIS CONTRACT.
- KEYED NOTES:**
- CAP AND SEAL CONDUCTORS IN HANDHOLE "PP-HH" INDICATED ON SHEET E05.02 FOR EXTENSION TO FUTURE PANEL "PB1".
 - VENDOR PROVIDED LIGHTING BALLAST.

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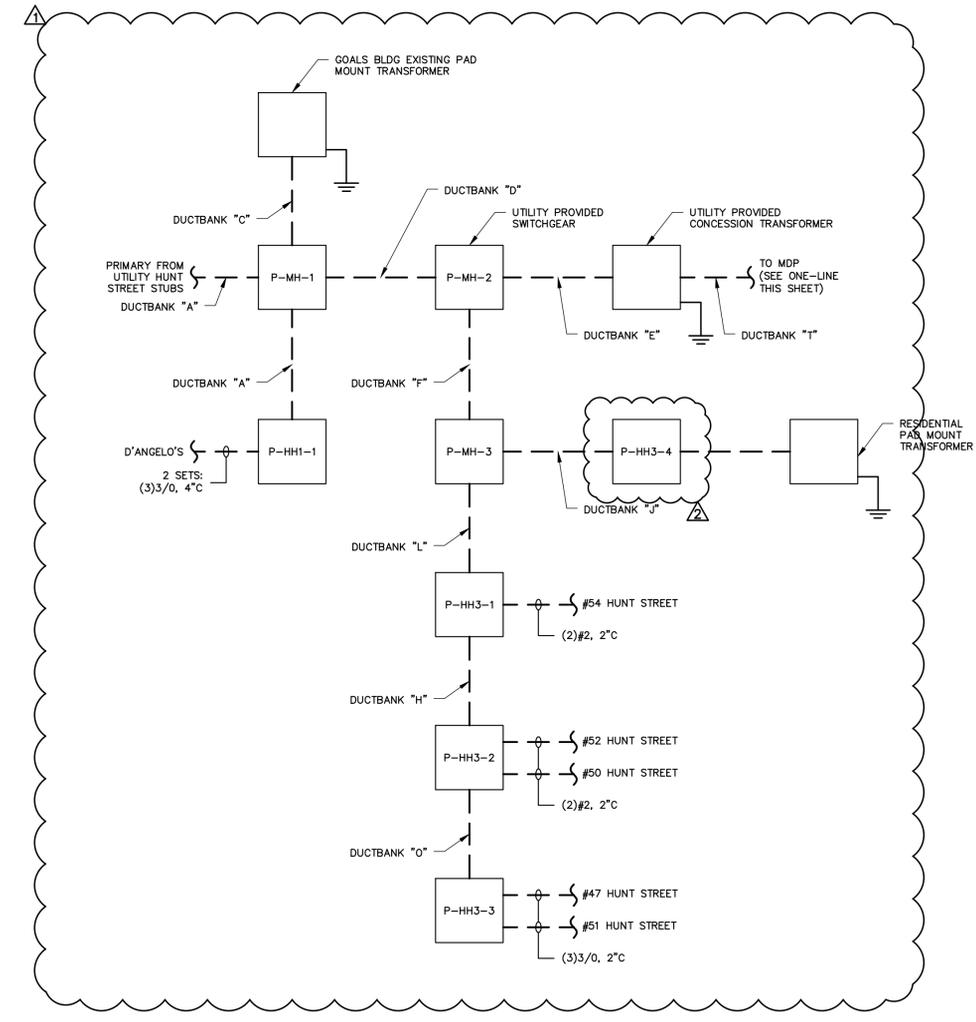
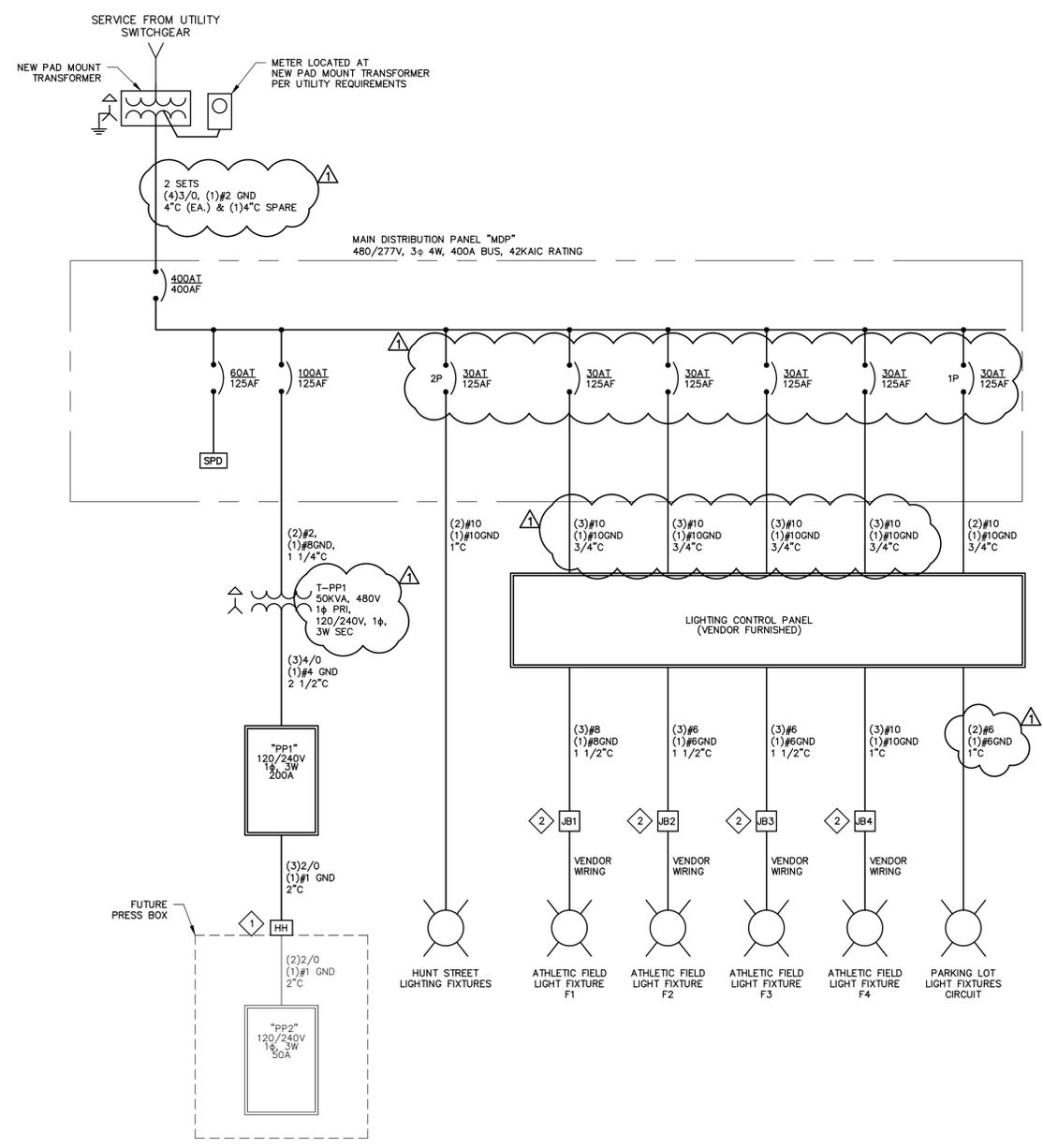
DESIGNED BY: PPH/ALH	DATE: 03/04/2016
CHECKED BY: AAF	DATE: 03/04/2016
DRAWN BY: SAA	DATE: 03/04/2016
REV	DESCRIPTION
1	ADDITION #1
2	ADDITION #3

ELECTRICAL ONE-LINE AND RISER DIAGRAMS

CITY OF QUINCY, MASSACHUSETTS
 DEPARTMENT OF PARK & FORESTRY, PARKWAY
 1 MERRYMOUNT PARKWAY
 NORTH QUINCY HIGH SCHOOL
 PUBLIC WORKS IMPROVEMENT PROJECT
 QUINCY, MA 02169

JOB NO.: 226640
DATE: FEBRUARY 2016
SCALE: VALUE
SHEET: 49 OF 57

E10.01



ISSUED FOR BID

A
 B
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 D

1
 2
 3
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6

GENERAL NOTES:
 1. EQUIPMENT SHOWN WITH LIGHT DESIGNATION INDICATES WORK TO BE INSTALLED UNDER FUTURE CONTRACT.
 2. EQUIPMENT SHOWN WITH BOLD DESIGNATION INDICATES NEW WORK TO BE INSTALLED UNDER THIS CONTRACT.

DIRECTORY	BRKR	POLE	CKT #	KVA LOADS		KVA	CKT #	POLE	BRKR	DIRECTORY
				A	B					
HEAT PUMP MINI SPLIT SYSTEM	50	2	1	4.80	8.40	3.60	2	2	50	FUTURE PRESS BOX "PB1"
			3	4.80	8.40	3.60	4			
ELECTRIC WATER HEATER	40	2	5	4.75	5.25	0.60	6	1	20	PRESS BOX GFCI
			7	4.75	6.25	1.60	8	1	20	SCOREBOARD POWER
			9	2.88	4.38	1.60	10	1	20	SCOREBOARD AUDIO
GRINDER PUMP ALARM PANEL	30	2	11	2.88	2.98	0.10	12	1	15	MEDIA CONVERTER SB AND LOW VOLTAGE TRANSFORMER
HAND DRYER MENS	20	1	13	1.63	1.73	0.10	14	1	15	MEDIA CONVERTER PL AND LOW VOLTAGE TRANSFORMER
HAND DRYER WOMENS	20	1	15	1.63	1.73	0.10	16	1	15	MEDIA CONVERTER F1 AND LOW VOLTAGE TRANSFORMER
INTERIOR BUILDING LIGHTING	20	1	17	0.51	0.61	0.10	18	1	15	MEDIA CONVERTER F2 AND LOW VOLTAGE TRANSFORMER
EXTERIOR BUILDING LIGHTING	20	1	19	0.30	0.48	0.18	20	1	20	FIELD LEVEL GFCI NORTH
SPARE	20	1	21	0.00	0.18	0.18	22	1	20	FIELD LEVEL GFCI SOUTH
SPARE	20	1	23	0.00	0.00	0.00	24	1	20	SPARE
SPARE	20	1	25	0.00	0.00	0.00	26	1	20	SPARE
SPARE	20	1	27	0.00	0.00	0.00	28	1	20	SPARE
SPARE	20	1	29	0.00	0.00	0.00	30	1	20	SPARE
SPACE			31		0.00		32			SPACE
SPACE			33		0.00		34			SPACE
SPACE			35		0.00		36			SPACE
SPACE			37		0.00		38			SPACE
SPACE			39		0.00		40			SPACE
SPACE			41		0.00		42			SPACE
SPACE			43		0.00		44			SPACE
SPACE			45		0.00		46			SPACE
SPACE			47		0.00		48			SPACE
SPACE			49		0.00		50			SPACE
SPACE			51		0.00		52			SPACE
SPACE			53		0.00		54			SPACE
SUBTOTAL				20.65	19.84	SUBTOTAL				
VOLTAGE:	120/240	TOTAL KVA		40.39		PANEL NAME:		PP1		
MAIN BREAKER:	200	TOTAL AMPS		168		LOCATION:		ELECTRICAL ROOM		
BUSES:	225					MOUNTING:		SURFACE		
PH & WIRES:	1PH 3W					AIC RATING:		22 kAIC		
NOTES:										

"PP1" PANEL SCHEDULE

FIXTURE SCHEDULE										
ALL FIXTURES SHALL BE FURNISHED COMPLETE WITH ALL HARDWARE, LAMPS, HANGERS, FITTINGS, ETC., FOR A COMPLETE AND PROPER INSTALLATION.										
TYPE	MANUFACTURER	CATALOG NUMBER	LAMP TYPE	LAMP WATT	LAMP NO.	VOLTAGE	MTG.	BALLAST FACTOR	REMARKS/RECOMMENDATIONS	
AA	MUSCO LIGHTING (OR EQUAL)	MUSCO ATHLETIC FIELD AREA FIXTURE	MH	1500W	10	480V	POLE MAST	0.9	LIGHTING FIXTURE, POLE, AND POLE BASE TO BE FURNISHED BY MUSCO LIGHTING AND INSTALLED BY CONTRACTOR. POLES ARE TO BE 70' AFS.	
BB	MUSCO LIGHTING (OR EQUAL)	MUSCO PARKING LOT AREA FIXTURE	LED	88W	N/A	277V	POLE MOUNTED	N/A	LIGHTING FIXTURE, POLE, AND POLE BASE TO BE FURNISHED BY MUSCO LIGHTING AND INSTALLED BY CONTRACTOR.	
CC	MUSCO LIGHTING (OR EQUAL)	MUSCO PARKING LOT AREA FIXTURE	LED	176W	N/A	277V	POLE MOUNTED	N/A	LIGHTING FIXTURE, POLE, AND POLE BASE TO BE FURNISHED BY MUSCO LIGHTING AND INSTALLED BY CONTRACTOR.	
DD	KING LUMINAIRE (OR EQUAL)	FIXTURE: K1180AARH1100SL480PE3KCRBK POLE: MADISON KM71EC-18 BASE: DMWDS-20-DB	LED	100W	N/A	480V	POLE MOUNTED	N/A	FIXTURE AND POLE FINISH SHALL BE SMOOTH HIGH GLOSS BLACK.	
CAM	HD 1080P PTZ SECURITY CAMERA QUASAR	CP-4221-301	N/A	N/A	N/A	POE	POLE MOUNTED	N/A	PROVIDE D/VIEL POLE/WIDE BOX MOUNTING ACCESSORY FOR LIGHT POLE INSTALLATION. PROVIDE D/VIEL POLE/WIDE DIRECT MOUNTING ACCESSORY FOR SCOREBOARD INSTALLATION. PROVIDE INTEGRAL HEATING UNIT FOR CAMERA.	

FIXTURE SCHEDULE

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REV	1	ADDITION #1	03/04/2016	DATE
REV	2	ADDITION #2	03/10/2016	DATE

DESIGNED BY: PPH/JLH
 CHECKED BY: AJP
 DRAWN BY: SAA
 Z2642 B2016E

POWER PANEL AND FIXTURE SCHEDULES

CITY OF QUINCY, MASSACHUSETTS
 DEPARTMENT OF PARK & FORESTRY
 1 MERRYMOUNT PARKWAY
 NORTH QUINCY HIGH SCHOOL PUBLIC WORKS IMPROVEMENT PROJECT
 QUINCY, MA 02169

JOB NO.: 226640
 DATE: FEBRUARY 2016
 SCALE: AS NOTED
 SHEET: 51 OF 57

ISSUED FOR BID

E60.01

\\sahered\Projects\226640_Quincy_MA - North Quincy Athletic Field\p\Drawings\Quincy High School_Teal_Field\Curren\Electrical\226640_E60.01.dwg, Mar. 10, 2016, 4:53pm

DUCTBANK SCHEDULE					
DUCTBANK	TYPE (ID#)	SIZE (IN)	FROM	TO	DESCRIPTION
A	A1	5	NATIONAL GRID CONDUIT STUBS	P-MH-1	POWER - NATIONAL GRID UTILITY RACEWAYS
	A2				
	A3				
	A4				
	A5				
	A6				
	A7				
	A8				
	A9				
	A10				
B	B1	4	COMCAST CONDUIT STUB	C-MH-1	CTV - COMCAST UTILITY RACEWAY
	B2		CITY FIBER STUB		CITY FIBER SERVICE
	B3		SPEEDWAY GAS STATION		CTV - CABLE SERVICE TO SPEEDWAY
	B4	2	HIGH SCHOOL	T-MH-1	CTV - CABLE SERVICE TO HIGH SCHOOL
	B5		D'ANGELOS		CTV - CABLE SERVICE TO D'ANGELOS
	B6	4	VERIZON CONDUIT STUB	T-MH-1	TEL COMM - VERIZON UTILITY RACEWAYS
	B7				
	B8				
	B9				
	B10				
	B11	2	EXISTING UTILITY POLE 31		
C	C1	4	GOALS BUILDING PAD MOUNT TRANSFORMER SECONDARY	P-MH-1	POWER - SECONDARY SERVICE TO D'ANGELOS
	C2				
	C3				
	C4				
	C5				
D	D1	5	P-MH-1	P-MH-2 NATIONAL GRID SWITCHGEAR	POWER - NATIONAL GRID UTILITY RACEWAYS
	D2				
	D3				
	D4				
	D5				
	D6				
	D7				
	D8				
	D9				
	D10				
E	E1	4	P-MH-2 NATIONAL GRID SWITCHGEAR	PAD MOUNT TRANSFORMER	POWER - PRIMARY SERVICE TO ATHLETIC FIELD TRANSFORMER
	E2				
	E3				
	E4				
F	F1	5	P-MH-2 NATIONAL GRID SWITCHGEAR	P-MH-3	POWER - NATIONAL GRID UTILITY RACEWAYS
	F2				
	F3				
	F4				
	F5				
	F6				
	F7				
	F8				
	F9				
	F10				
G	G1	4	C-MH-1	CONCESSIONS BUILDING	CTV-COMCAST UTILITY RACEWAYS
	G2				CITY FIBER SERVICE
	G3				CTV - COMCAST UTILITY RACEWAYS
	G4	2	T-MH-1	CONCESSIONS BUILDING	TEL COMM - VERIZON UTILITY RACEWAYS
	G5				CITY FIRE LOOP
	G6				TEL COMM - VERIZON UTILITY RACEWAYS
	G7	4	T-MH-2	CONCESSIONS BUILDING	CITY FIRE LOOP
	G8				TEL COMM - VERIZON UTILITY RACEWAYS
	G9				CITY FIRE LOOP
H	H1	4	P-HH3-1	P-HH3-2	POWER - SECONDARY SERVICE TO RESIDENTIAL CUSTOMERS
	H2				
	H3				
	H4				
J	J1	4	P-MH-3	RESIDENTIAL PAD MOUNT TRANSFORMER VIA P-HH3-4	POWER - PRIMARY SERVICE TO TRANSFORMER
	J2				POWER - SECONDARY SERVICE FROM TRANSFORMER
	J3				
	J4				
	J5				
	J6				
K	K1	2	T-MH-2	CUSTOMER #47 HUNT ST CUSTOMER #51 HUNT ST CUSTOMER #50 HUNT ST CUSTOMER #52 HUNT ST CUSTOMER #54 HUNT ST CUSTOMERS #50-62 SQUANTUM ST 163 NEWBURY AVE UTILITY POLE 13.1	TEL COMM - VERIZON UTILITY RACEWAYS
	K2				
	K3				
	K4				
	K5				
	K6				
	K7				
	K8				
L	L1	4	P-MH-3	P-HH3-1	POWER - SECONDARY SERVICE TO RESIDENTIAL CUSTOMERS
	L2				
M (TYP. OF 3)	M1	2	P-HH3-#	RESIDENTIAL CUSTOMERS	POWER - SECONDARY SERVICE TO RESIDENTIAL CUSTOMERS
	M2				CTV - COMCAST UTILITY RACEWAYS
	M3				TEL COMM - VERIZON UTILITY RACEWAYS
N	N1	4	P-MH-3	UTILITY POLE 13.1	POWER - PRIMARY SERVICE TO PAD MOUNT TRANSFORMER
	N2				CTV - COMCAST UTILITY RACEWAY
	N3	2	C-MH-2	UTILITY POLE 13.1	TEL COMM - VERIZON UTILITY RACEWAYS
	N4				CITY FIRE LOOP
	N5				CITY FIRE LOOP
O	O1	4	P-HH3-2	P-HH3-3	POWER - SECONDARY SERVICE TO RESIDENTIAL CUSTOMERS
	O2				

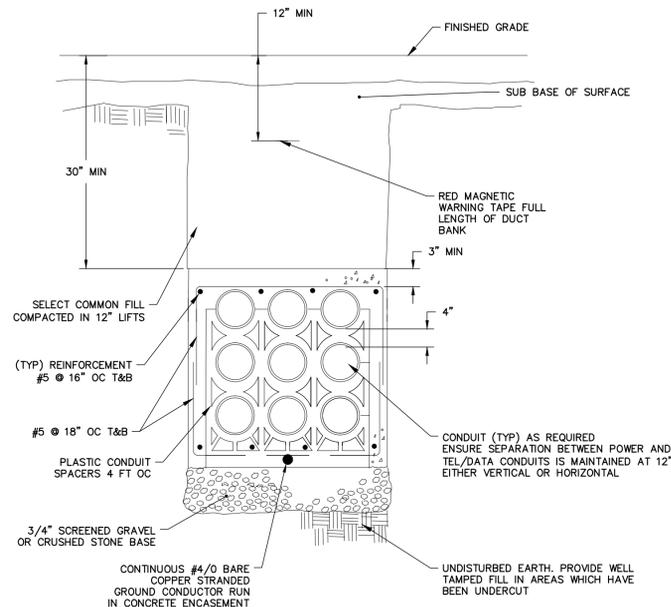
DUCTBANK SCHEDULE

DUCTBANK SCHEDULE (CONTINUED)						
DUCTBANK	TYPE (ID#)	SIZE (IN)	FROM	TO	DESCRIPTION	
P	P1	1 1/2	FUTURE PANEL "PP1"	SCOREBOARD POWER HANDHOLE "SB-PHH"	POWER - SCOREBOARD AND AUDIO AMPLIFIER	
	P2					
	P3					
	P4					
	P5					
	P6					
	P7					
	P8					
Q	Q1	1 1/2	FUTURE LIGHTING CONTROL PANEL	LIGHTING FIXTURE "F1"	POWER - ATHLETIC FIELD LIGHTING FIXTURE "F1"	
	Q2				LIGHTING FIXTURE "F2"	POWER - ATHLETIC FIELD LIGHTING FIXTURE "F2"
	Q3				GFCI RECEPTACLE	POWER - GFCI RECEPTACLE ON NORTH SIDE OF FIELD
R	R1	1	FUTURE LIGHTING CONTROL PANEL	LIGHTING FIXTURE "F4"	POWER - ATHLETIC FIELD LIGHTING FIXTURE "F4"	
	R2				LIGHTING FIXTURE "F3"	POWER - ATHLETIC FIELD LIGHTING FIXTURE "F3"
	R3	1	FUTURE PANEL "PP1"	LIGHTING FIXTURE "F4" MEDIA CONVERTER	POWER FOR SECURITY CAMERA MEDIA CONVERTER	
	R4					LIGHTING FIXTURE "F3" MEDIA CONVERTER
	R5	2	FUTURE RBER PATCH PANEL	LIGHTING FIXTURE "F4" MEDIA CONVERTER	COMMUNICATION FOR SECURITY CAMERA MEDIA CONVERTER	
	R6					LIGHTING FIXTURE "F3" MEDIA CONVERTER
	R7	1	FUTURE PANEL "PP1"	PRESS BOX POWER HANDHOLE "PB-PHH"	POWER - GFCI RECEPTACLE ON PRESS BOX PLATFORM	
	R8					POWER - WIRES FOR FUTURE PRESS BOX PANEL "PP2"
	R9					1 1/2
	S	S1	1 1/2	FUTURE PANEL "PP1"	GFCI RECEPTACLE	POWER - GFCI RECEPTACLE ON SOUTH SIDE OF FIELD
S2		GRINDER ALARM PANEL				GRINDER PROTECTIVE CABLE SHROUD
T	T1	4	CONCESSION PAD MOUNT TRANSFORMER	CONCESSIONS BUILDING	POWER - CONCESSIONS BUILDING	
	T2					
	T3					
	T4					
U	U1	2	FUTURE RBER PATCH PANEL	PARKING LOT FIXTURE MEDIA CONVERTER	COMMUNICATION FOR SECURITY CAMERA MEDIA CONVERTER	
	U2					
	U3					
	U4					
	U5					
	U6					
V	V1	1	HANDHOLE "SL-HH1"	HUNT STREET LIGHTING FIXTURES	POWER FOR HUNT STREET LIGHTING FIXTURES	
	V2					
W	W1	1	HANDHOLE "SL-HH1"	HUNT STREET LIGHTING FIXTURES	POWER FOR HUNT STREET LIGHTING FIXTURES	
	W2					

DUCTBANK SCHEDULE (CONTINUED)

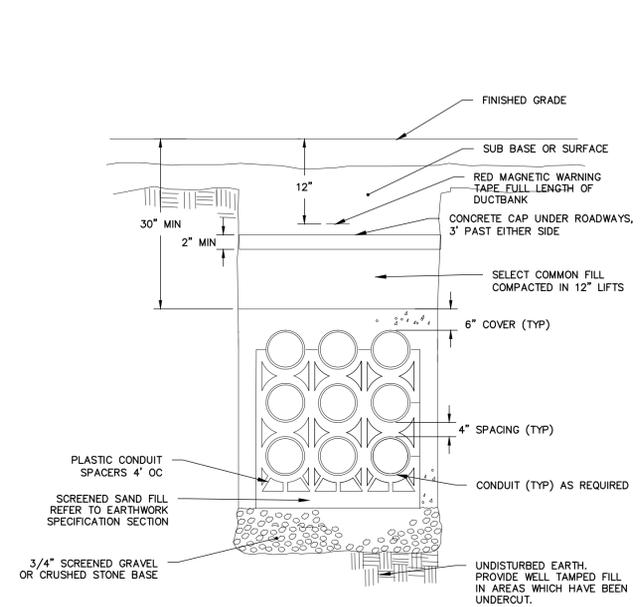
GENERAL NOTES:

- SEE TYPICAL DUCTBANK SECTION DETAIL BELOW FOR DUCTBANK REQUIREMENTS. ALL UNDERGROUND DUCTBANKS SHALL COMPLY WITH LOCAL UTILITY REQUIREMENTS. IF DISCREPANCIES EXIST LOCAL UTILITY REQUIREMENTS SHALL TAKE PRECEDENT.
- PROVIDE MINIMUM 1'-0" SPACING WITHIN DUCTBANK BETWEEN POWER AND CONTROL/COMMUNICATIONS CONDUITS.
- QUANTITY OF DUCTS SHOWN IN DETAILS ARE SHOWN DIAGRAMMATICALLY ONLY TO IDENTIFY GENERAL CONSTRUCTION AND SPACING REQUIREMENTS. QUANTITY AND SIZE OF CONDUITS SHALL BE AS IDENTIFIED IN THE DUCTBANK SCHEDULE.
- PROVIDE CONCRETE DUCT ENCASEMENT FOR ALL LOCATIONS WITHIN ROADWAYS. PROVIDE SAND ENCASED DUCTBANK FOR ALL AREAS LOCATED WITHIN ATHLETIC FIELD.



TYPICAL REINFORCED CONCRETE ENCASED UNDERGROUND DUCT BANK DETAIL

SCALE: N.T.S.



TYPICAL SAND ENCASED/ CONCRETE CAPPED UNDERGROUND DUCT BANK DETAIL

SCALE: N.T.S.

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NO.	REVISION	DATE
1	ADDITION #3	03/10/2016
2	ADDITION #1	03/04/2016

DESIGNED BY: PPH/ALH
CHECKED BY: AAF
DRAWN BY: SAA

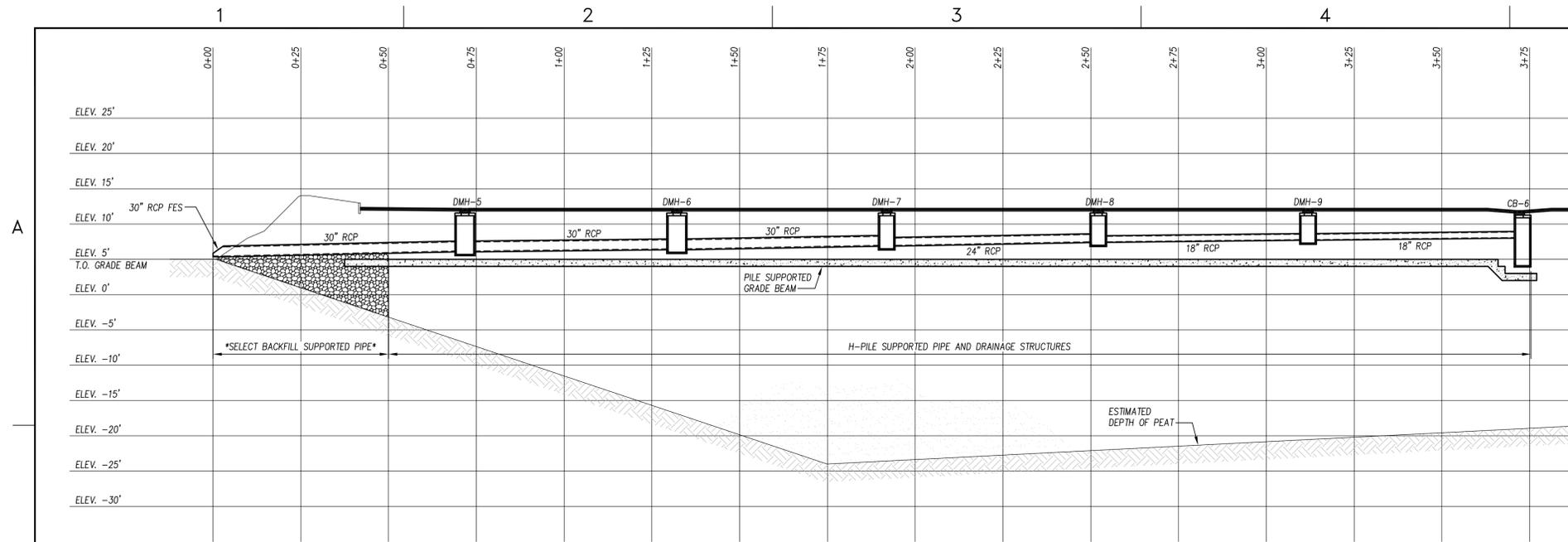
ELECTRICAL DETAILS 1

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DEPARTMENT OF PARK & FORESTRY
1 MERRYLOVE PARKWAY
NORTH QUINCY HIGH SCHOOL
PUBLIC WORKS IMPROVEMENT PROJECT
QUINCY, MA 02169

JOB NO.: 226640
DATE: FEBRUARY 2016
SCALE: AS NOTED
SHEET: 52 OF 57

E80.01

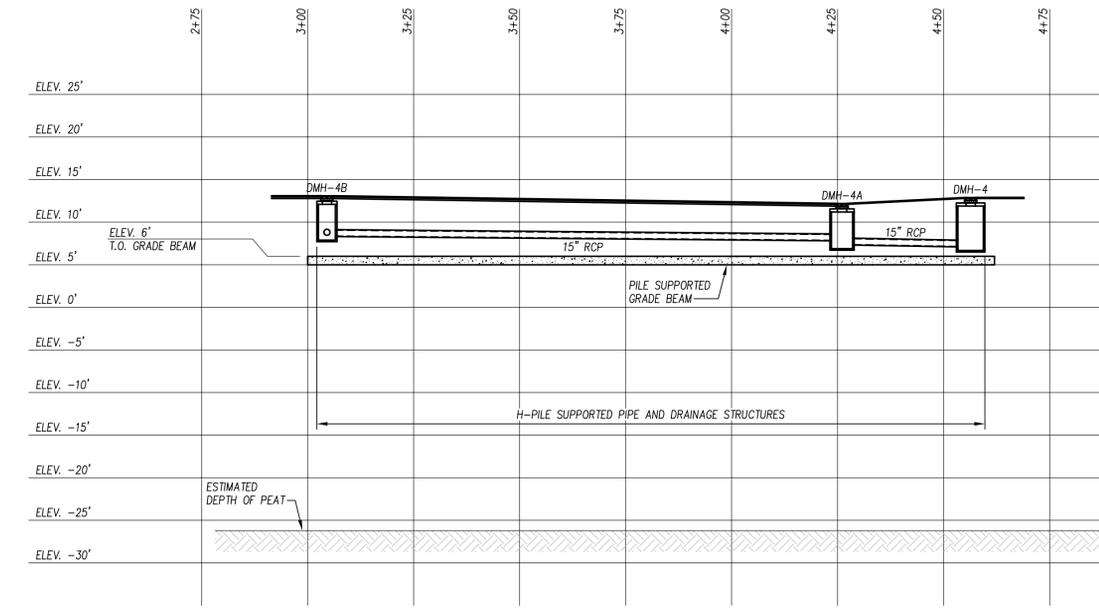
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* EXCAVATE REMOVE AND DISPOSE UNSUITABLE SOILS DOWN TO SAND/GRAVEL SOILS. BACKFILL AND COMPACT WITH OWNER FURNISHED 1-1/2" DENSE GRADED CRUSHED STONE.

PARKING LOT STORM WATER DRAINAGE PROFILE (LOOKING NORTH)

SCALE: H = 1" = 20'-0"
V = 1" = 10'-0"



PARKING LOT STORM WATER DRAINAGE PROFILE (LOOKING NORTH)

SCALE: H = 1" = 20'-0"
V = 1" = 10'-0"

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REV	ADENDUM #	ADENDUM #	ADENDUM #	DATE	DESCRIPTION	CHECKED BY:
3	ADENDUM #3	3/10/16				
2	ADENDUM #2	3/9/16				
1	ADENDUM #1	3/4/16				

DESIGNED BY: RAM
DRAWN BY: SOR

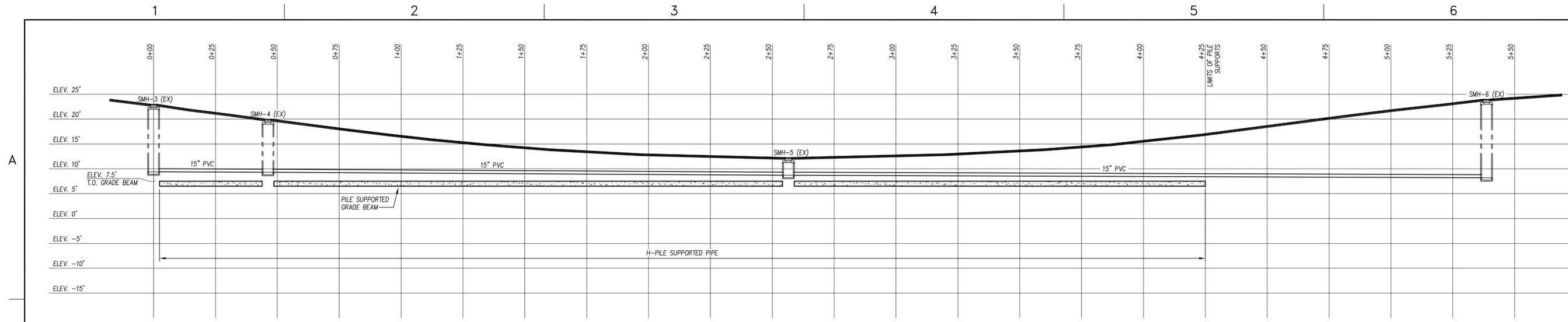
**STRUCTURAL GRADE BEAM
ON H-PILE PROFILE 1**

CITY OF QUINCY, MASSACHUSETTS
DEPARTMENT OF PARK &
FORESTRY, PARKWAY
1 MERRYMOUNT PARKWAY
NORTH QUINCY HIGH SCHOOL
PUBLIC WORKS IMPROVEMENT
PROJECT
QUINCY, MA 02169

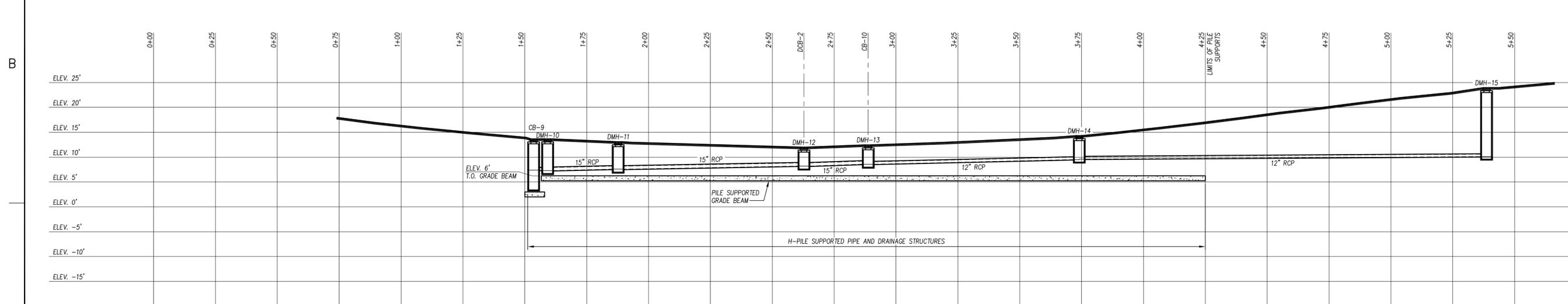
JOB NO.: 226640
DATE: FEBRUARY 2016
SCALE: AS NOTED
SHEET: 56 OF 59

S-102

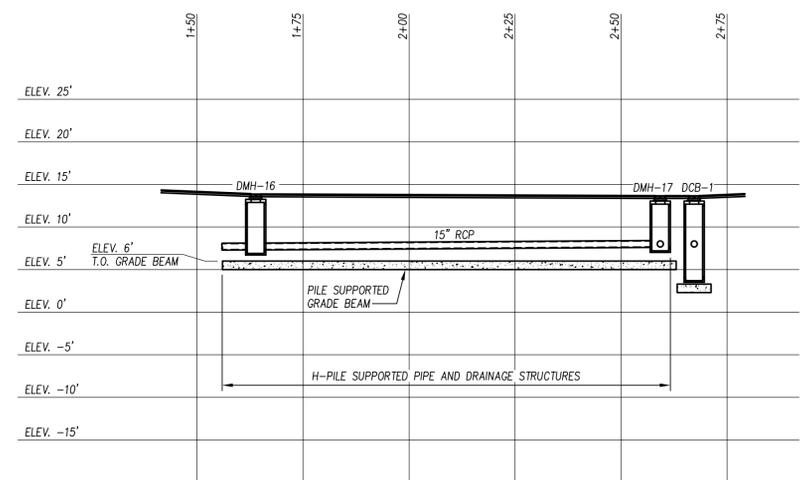
NOTE: FOR STRUCTURAL NOTES SEE DRAWING S-101



NEWBURY AVE. SANITARY SEWER LINE REPLACEMENT PROFILE (LOOKING WEST)
 SCALE: H = 1" = 20'-0"
 V = 1" = 10'-0"



NEWBURY AVE. STORM WATER DRAINAGE PROFILE (LOOKING WEST)
 SCALE: H = 1" = 20'-0"
 V = 1" = 10'-0"



NEWBURY AVE. STORM WATER DRAINAGE PROFILE (LOOKING WEST)
 SCALE: H = 1" = 20'-0"
 V = 1" = 10'-0"

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2	ADDENDUM #2	3/9/16	
1	ADDENDUM #1	3/4/16	

DESIGNED BY: RAM
 DRAWN BY: SOR

**STRUCTURAL GRADE BEAM
 ON H-PILE PROFILE 2**

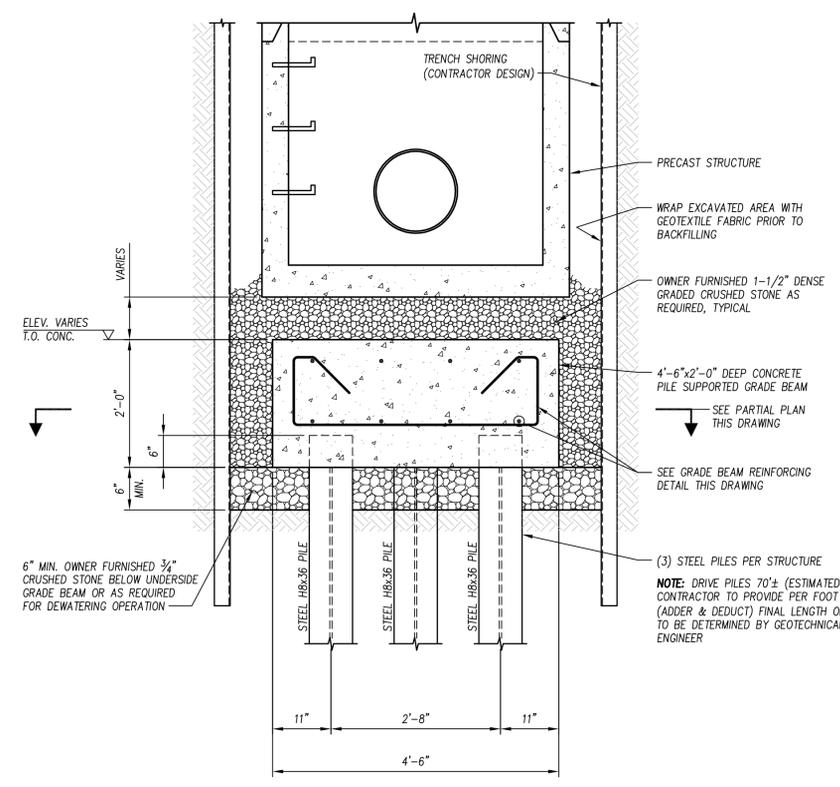
CITY OF QUINCY, MASSACHUSETTS
 DEPARTMENT OF PARK &
 FORESTRY,
 1 MERRYMOUNT PARKWAY
 NORTH QUINCY HIGH SCHOOL
 PUBLIC WORKS IMPROVEMENT
 PROJECT
 QUINCY, MA 02169

JOB NO.: 226640
 DATE: FEBRUARY 2016
 SCALE: AS NOTED
 SHEET: 57 OF 59

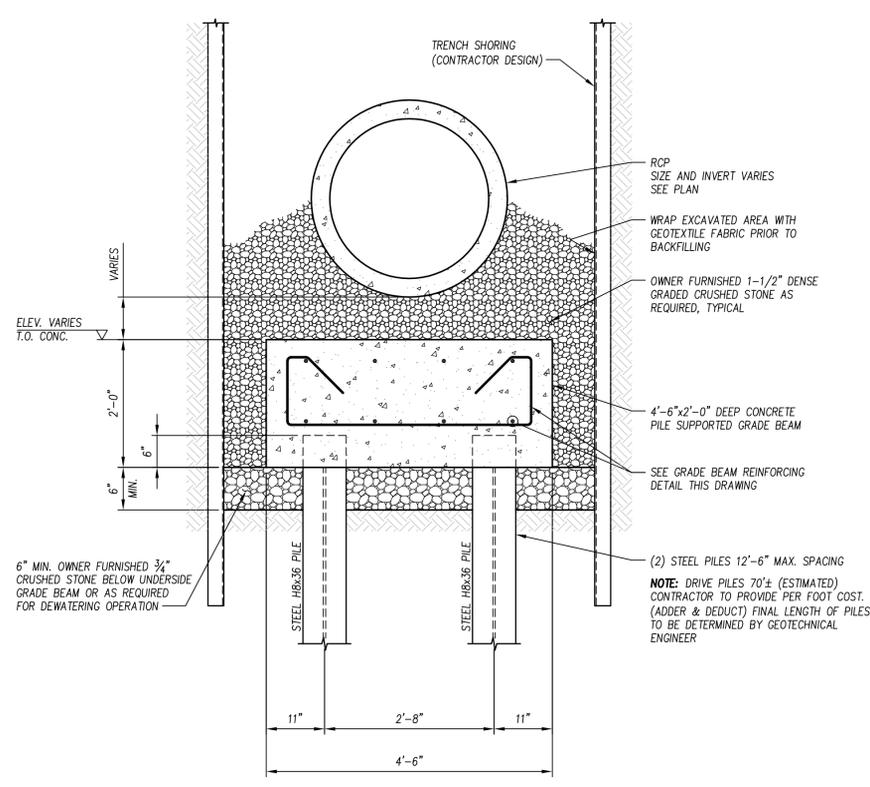
NOTE:
 FOR STRUCTURAL NOTES SEE DRAWING S-101

A

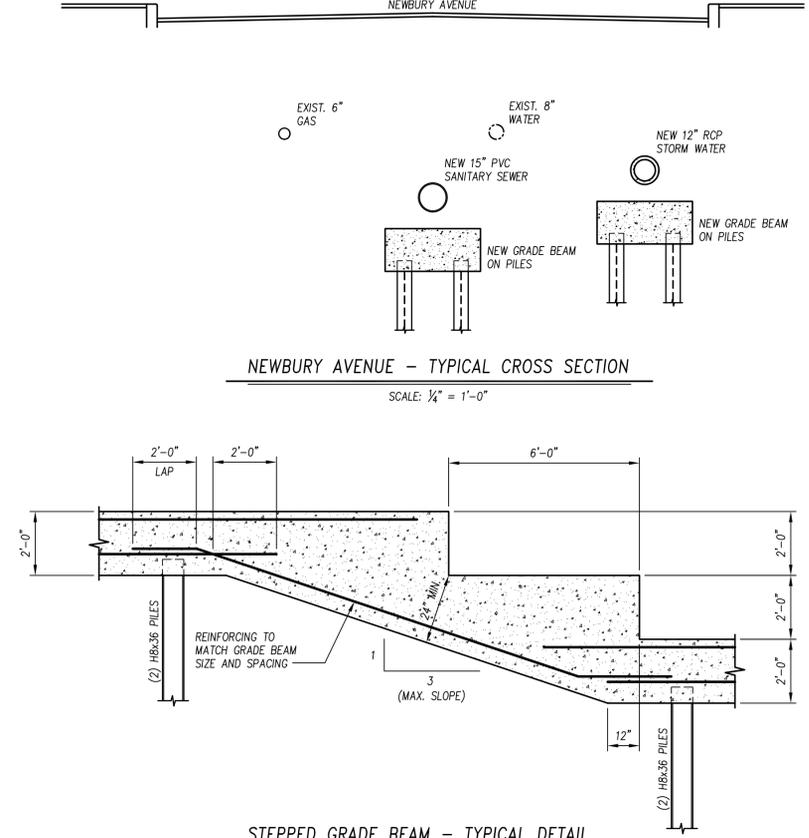
B



PRECAST STRUCTURE ON PILE SUPPORTED GRADE BEAM - TYPICAL DETAIL
SCALE: 3/4" = 1'-0"



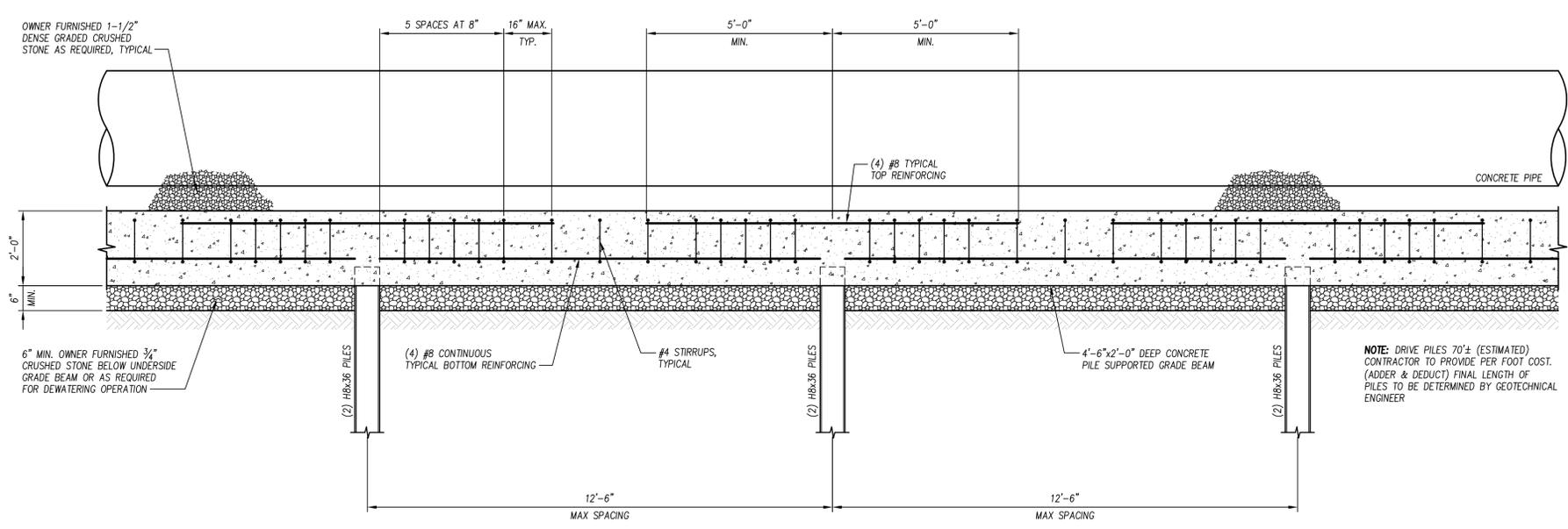
DRAINAGE PIPE ON PILE SUPPORTED GRADE BEAM - TYPICAL DETAIL
SCALE: 3/4" = 1'-0"



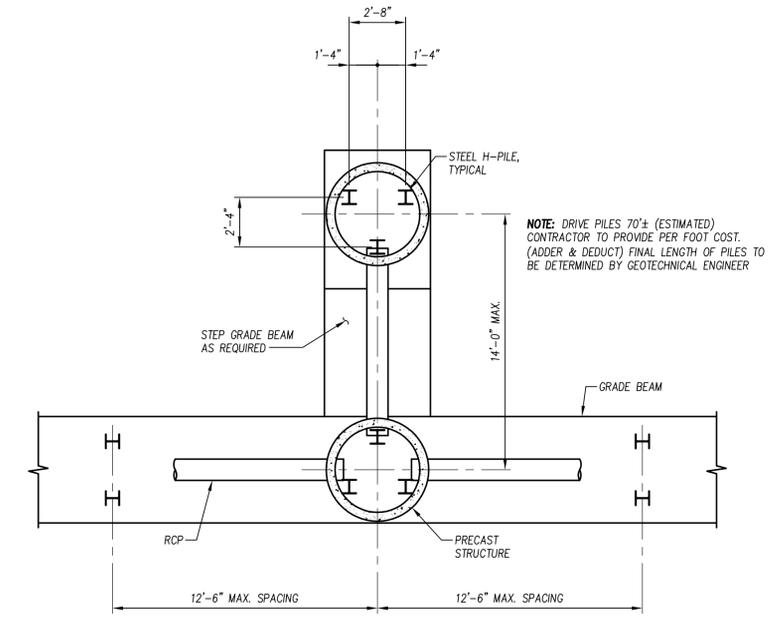
STEPPED GRADE BEAM - TYPICAL DETAIL
SCALE: 3/8" = 1'-0"

C

D



GRADE BEAM REINFORCING - TYPICAL DETAIL
SCALE: 1/2" = 1'-0"



GRADE BEAM AT PRECAST STRUCTURE - PARTIAL PLAN
SCALE: 3/4" = 1'-0"

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2	ADDENDUM #2	3/9/16	
1	ADDENDUM #1	3/4/16	

DESIGNED BY: RAM
DRAWN BY: SOR

GRADE BEAM PILE SUPPORT DETAILS

CITY OF QUINCY, MASSACHUSETTS
DEPARTMENT OF PARK & FORESTRY,
1 MERRYMOUNT PARKWAY
NORTH QUINCY HIGH SCHOOL
PUBLIC WORKS IMPROVEMENT PROJECT
QUINCY, MA 02169

JOB NO.: 226640
DATE: FEBRUARY 2016
SCALE: AS NOTED
SHEET: 59 OF 59

S-502

NOTE: FOR STRUCTURAL NOTES SEE DRAWING S-101