

ADDENDUM NO. 2

to

CONTRACT DOCUMENTS

for

PLYMOUTH MUNICIPAL AIRPORT NEW ADMINISTRATION BUILDING

FMA PROJECT NO: 1098-05

MASSDOT PROJECT NO: 2018-FMA-15-SAAB

Issued: April 3, 2018

ADDENDUM NUMBER 02

The attention of Bidders for **PLYMOUTH MUNICIPAL AIRPORT – NEW ADMINISTRATION BUILDING** is called to the following changes to the Bidding Documents dated April 3, 2018 as prepared by Fennick | McCredie Architecture, Ltd. The items set forth therein below, whether of revision, omission, addition, substitution or clarification are all to be included as changes to Bidding Requirements, Specifications and Drawings of the Contract.

The number of this Addendum (**No.2**) and date issued (**4/3/18**) must be entered in the appropriate spaces provided on the Form for General Bid, and Form for Sub-Bid.

CHANGES TO THE PROJECT MANUAL

Document 26 05 43 UNDERGROUND DUCTS AND RACEWAYS FOR ELECTRICAL SYSTEMS

Item 1.1 Delete Part 3, Section 3.4 in its entirety:

~~3.4 DUCT INSTALLATION~~

- ~~A. Install ducts according to NEMA TCB 2.~~
- ~~B. Slope: Pitch ducts a minimum slope of 1:300 down toward manholes and handholes and away from buildings and equipment. Slope ducts from a high point in runs between two manholes, to drain in both directions.~~
- ~~C. Curves and Bends: Use 5-degree angle couplings for small changes in direction. Use manufactured long sweep bends with a minimum radius of 48 inches (1200 mm), both horizontally and vertically, at other locations unless otherwise indicated.~~
- ~~D. Joints: Use solvent-cemented joints in ducts and fittings and make watertight according to manufacturer's written instructions. Stagger couplings so those of adjacent ducts do not lie in same plane.~~
- ~~E. Installation Adjacent to High-Temperature Steam Lines: Where duct banks are installed parallel to underground steam lines, perform calculations showing the duct bank will not be subject to environmental temperatures above 40 deg C. Where environmental temperatures are calculated to rise above 40 deg C, and anywhere the duct bank crosses above an underground steam line, install insulation blankets listed for direct burial to isolate the duct bank from the steam line.~~
- ~~F. Duct Entrances to Manholes and Concrete and Polymer Concrete Handholes: Use end bells, spaced approximately 10 inches (250 mm) o.c. for 5-inch (125 mm) ducts, and vary proportionately for other duct sizes.
 - ~~1. Begin change from regular spacing to end-bell spacing 10 feet (3 m) from the end bell without reducing duct line slope and without forming a trap in the line.~~
 - ~~2. Direct-Buried Duct Banks: Install an expansion and deflection fitting in each conduit in the area of disturbed earth adjacent to manhole or handhole. Install an expansion fitting near the center of all straight line direct-buried duct banks with calculated expansion of more than 3/4 inch (19 mm).~~
 - ~~3. Grout end bells into structure walls from both sides to provide watertight entrances.~~~~
- ~~G. Building Wall Penetrations: Make a transition from underground duct to rigid steel conduit at least 10 feet (3 m) outside the building wall, without reducing duct line slope away from the building, and without forming a trap in the line. Use fittings manufactured~~

- for duct-to-conduit transition. Install conduit penetrations of building walls as specified in Section 260544 "Sleeves and Sleeve Seals for Electrical Raceways and Cabling."
- H. ~~Sealing: Provide temporary closure at terminations of ducts that have cables pulled. Seal spare ducts at terminations. Use sealing compound and plugs to withstand at least 15-psig (1.03-MPa) hydrostatic pressure.~~
- I. ~~Pulling Cord: Install 100-lbf (445-N) test nylon cord in empty ducts.~~
- J. ~~Concrete Encased Ducts: Support ducts on duct separators.~~
- ~~1. Excavate trench bottom to provide firm and uniform support for duct bank. Prepare trench bottoms as specified in Section 312000 "Earth Moving" for pipes less than 6 inches (150 mm) in nominal diameter.~~
 - ~~2. Width: Excavate trench 3 inches (75 mm) wider than duct bank on each side.~~
 - ~~3. Depth: Install top of duct bank at least 24 inches (600 mm) below finished grade in areas not subject to deliberate traffic, and at least 30 inches (750 mm) below finished grade in deliberate traffic paths for vehicles unless otherwise indicated.~~
 - ~~4. Support ducts on duct separators coordinated with duct size, duct spacing, and outdoor temperature.~~
 - ~~5. Separator Installation: Space separators close enough to prevent sagging and deforming of ducts, with not less than four spacers per 20 feet (6 m) of duct. Secure separators to earth and to ducts to prevent floating during concreting. Stagger separators approximately 6 inches (150 mm) between tiers. Tie entire assembly together using fabric straps; do not use tie wires or reinforcing steel that may form conductive or magnetic loops around ducts or duct groups.~~
 - ~~6. Elbows: Use manufactured duct elbows for stub-ups at poles and equipment, at building entrances through floor, and at changes of direction in duct run unless otherwise indicated. Extend concrete encasement throughout length of elbow.~~
 - ~~7. Reinforcement: Reinforce concrete encased duct banks where they cross disturbed earth and where indicated. Arrange reinforcing rods and ties without forming conductive or magnetic loops around ducts or duct groups.~~
 - ~~8. Forms: Use walls of trench to form side walls of duct bank where soil is self-supporting and concrete envelope can be poured without soil inclusions; otherwise, use forms.~~
 - ~~9. Concrete Cover: Install a minimum of 3 inches (75 mm) of concrete cover at top and bottom, and a minimum of 2 inches (50 mm) on each side of duct bank.~~
 - ~~10. Concreting Sequence: Pour each run of envelope between manholes or other terminations in one continuous operation.~~
 - ~~a. Start at one end and finish at the other, allowing for expansion and contraction of ducts as their temperature changes during and after the pour. Use expansion fittings installed according to manufacturer's written recommendations, or use other specific measures to prevent expansion-contraction damage.~~
 - ~~b. If more than one pour is necessary, terminate each pour in a vertical plane and install 3/4-inch (15-mm) reinforcing rod dowels extending a minimum of 18 inches (450 mm) into concrete on both sides of joint near corners of envelope.~~
 - ~~11. Pouring Concrete: Comply with requirements in "Concrete Placement" Article in Section 033000 "Cast-in-Place Concrete." Place concrete carefully during pours to prevent voids under and between conduits and at exterior surface of envelope. Do not allow a heavy mass of concrete to fall directly onto ducts. Allow concrete to flow to center of bank and rise up in middle, uniformly filling all open spaces. Do not use powerdriven agitating equipment unless specifically designed for duct bank application.~~
- K. ~~Direct Buried Duct Banks:~~
-

- ~~1. Excavate trench bottom to provide firm and uniform support for duct bank. Comply with requirements in Section 312000 "Earth Moving" for preparation of trench bottoms for pipes less than 6 inches (150 mm) in nominal diameter.~~
 - ~~2. Support ducts on duct separators coordinated with duct size, duct spacing, and outdoor temperature.~~
 - ~~3. Space separators close enough to prevent sagging and deforming of ducts, with not less than four spacers per 20 feet (6 m) of duct. Secure separators to earth and to ducts to prevent displacement during backfill and yet permit linear duct movement due to expansion and contraction as temperature changes. Stagger spacers approximately 6 inches (150 mm) between tiers.~~
 - ~~4. Depth: Install top of duct bank at least 36 inches (900 mm) below finished grade unless otherwise indicated.~~
 - ~~5. Set elevation of bottom of duct bank below frost line.~~
 - ~~6. Elbows: Install manufactured duct elbows for stub-ups at poles and equipment, at building entrances through floor, and at changes of direction in duct run unless otherwise indicated. Encase elbows for stub-up ducts throughout length of elbow.~~
 - ~~7. After installing first tier of ducts, backfill and compact. Start at tie-in point and work toward end of duct run, leaving ducts at end of run free to move with expansion and contraction as temperature changes during this process. Repeat procedure after placing each tier. After placing last tier, hand place backfill to 4 inches (100 mm) over ducts and hand tamp. Firmly tamp backfill around ducts to provide maximum supporting strength. Use hand tamper only. After placing controlled backfill over final tier, make final duct connections at end of run and complete backfilling with normal compaction. Comply with requirements in Section 312000 "Earth Moving" for installation of backfill materials.~~
- ~~L. Warning Tape: Bury warning tape approximately 12 inches (300 mm) above all concrete encased ducts and duct banks. Align tape parallel to and within 3 inches (75 mm) of centerline of duct bank. Provide an additional warning tape for each 12-inch (300 mm) increment of ductbank width over a nominal 18 inches (450 mm). Space additional tapes 12 inches (300 mm) apart, horizontally.~~

CHANGES TO THE DRAWINGS

- Item 1.2 REVISSED DRAWINGS: Delete in their entirety the drawings listed below and replace them with revised drawings dated April 3, 2018, which are included as part of this Addendum.

<i>Number</i>	<i>Description of Changes</i>
ELECTRICAL	
E-011	Delete scope of intercepting and extending existing telephone service near existing hangar to telecom room. Delete scope of providing handhole to intercept and extend existing power and control wiring for gas pump. Add note to intercept existing generator feed outside of existing hangar to clarify scope. Add handhole outside of existing hangar.

RESPONSES TO QUESTIONS

Item 1.3 **QUESTION:** Section 011000-10 notes that telephone/data, fiber, communications, and security systems are furnished and installed by the owner. Plan E-000 notes to provide a wall mounted rack and E-701 notes rack by others. Division 27 specs and plan E-000 seems like the electrical contractor has to install a complete tel-data system. Can you please confirm if the tel-data and fiber systems are furnished and installed by the owner's vendor?

ANSWER: Telephone, data and electrical service is brought to the building by others. Electrical Contractor is responsible for telephone, data, and electrical service within the building and within 10' of the building per Detail 2 on E-011. Airport security and communications equipment scope is described on drawing A-692 and E-701. The wall-mounted rack described on E-000 is different then the IT rack shown in detail 2 on E-701.

Item 1.4 **QUESTION:** On drawing E-011, new Electrical Manhole EMC-1 indicates (2) 4" conduits for Fiber/telcom...(this manhole is also indicated for the primary electrical service) Please advise / clarify.

ANSWER: The existing condition has the primary electrical service and fiber optic service in separate conduit, but sharing the same duct bank.

Item 1.5 **QUESTION:** On drawing E-011, the new Electrical Manhole EMC-1 indicates connection to existing duct bank for the electrical service. Who is responsible to cut into the existing duct bank which appears to be for the primary electrical service.

ANSWER: Connection to existing duct bank by General Contractor. Refer to detail 2 on E-011 and revised specification section 26 05 43.

Item 1.6 **QUESTION:** Drawing E-011 indicates a new handhole to intercept and extend telephone service. New conduit & wire shall match existing. Please state what the existing conduit & wire is.

ANSWER: Work deleted from scope, refer to revised E-011.

Item 1.7 **QUESTION:** Drawing E-011 indicates a new handhole to intercept and extend power and control wiring for gas pump. New conduit & wire shall match existing. Please state wiring is required.

ANSWER: Work deleted from scope, refer to revised E-011.

Item 1.8 **QUESTION:** Drawing E-011 shows an existing Generator is located inside the existing hanger. Please provide the current location within the hanger. Please advise / clarify who is responsible for the sawcutting and concrete removal within the existing hanger for the associated generator work.

ANSWER: General Contractor to intercept existing generator duct bank outside of Hangar building, refer to C-9.

Item 1.9 **QUESTION:** The Finish Schedule in the Specs lists 2 Ceramic Wall Tile products but the elevations only show CT-1. Please clarify which product to carry for wall tile.

ANSWER: Provide CT-1 for all of the ceramic tile based on Section 09 99 99 – SCHEDULE OF FINISHES.

Item 1.10 **QUESTION:** Please clarify the type of Base to be carried in the Lobby & Corridors at Floor Tile?

ANSWER: Provide MDF base at the Floor Tile in the Lobby & Corridors per A-407, A-412, and detail 1/A-571.

Item 1.11 **QUESTION:** Specification 260500 (page 5) 1.7 A 23. Provide all excavation and back-fill required for Work of this Division. Is that correct? Electrical contractor performs all site excavation and back-fill?

ANSWER: Responsibilities for each trade shown on E-011 is correct. General contractor will be responsible for excavation and backfill. Specification 26 05 00 (1.7)(A)(23) and 26 05 43 (3.3) were revised as part of Addendum 01.

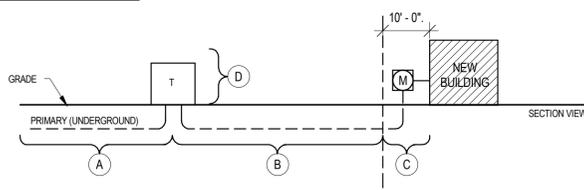
Item 1.12 **QUESTION:** Electrical Riser diagram on E-301 states to provide a L5-60R device (fed from 60amp double throw manual transfer switch) located on the outside of the building. Exact location to be confirmed by architect. For Bidding purposes please provide location.

ANSWER: The outlet can be located on CMU utility wall at the Mechanical pad adjacent to Utility Meters for bidding purposes.

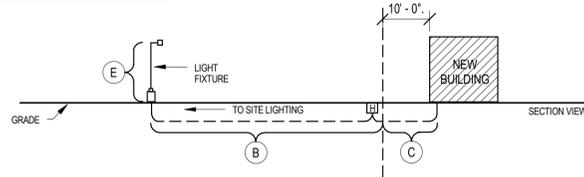
Item 1.13 **QUESTION:** Addendum 1 added Section 01 23 00 – Alternates. There is no place on the Form for Sub-Bid to list the price change. Will you be issuing a revised Form for Sub-Bid or should we manually type Alternate #1 on the existing form?

ANSWER: The filed sub-bids are not affected by the alternate, therefore, the Form for Filed Sub-Bid was not changed.

1. SITE ELECTRICAL SERVICE



2. SITE ELECTRICAL DISTRIBUTION:



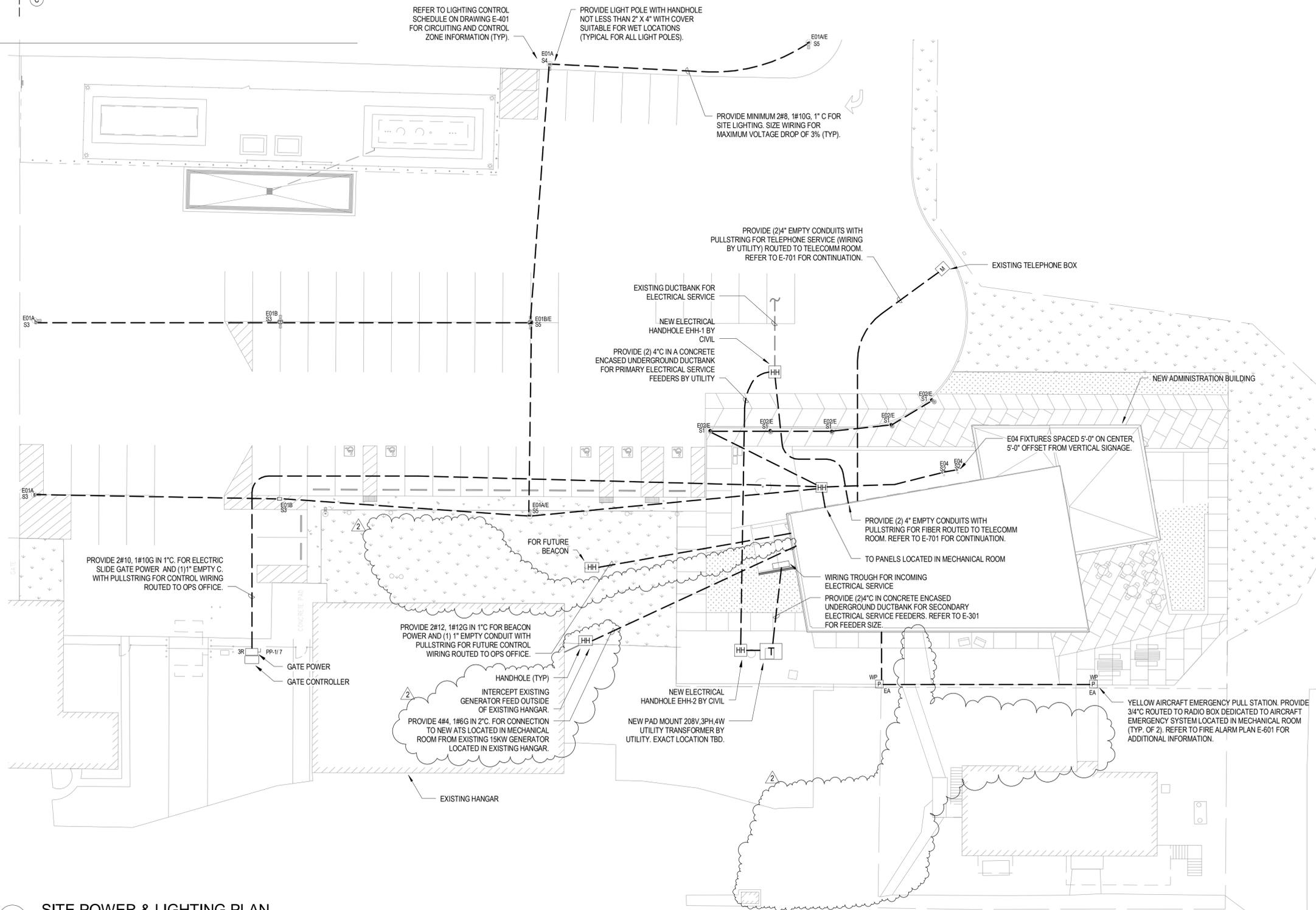
SCOPE	PROVIDED BY
(A) UG PRIMARY TRANSFORMER	BY UTILITY BY UTILITY
(B) CONDUIT TRENCHBACKFILL CONC. DUCTBANK FEEDERS HANDHOLE STRUCTURES	ELECTRICAL CIVIL ELECTRICAL ELECTRICAL
(C) CONDUIT RISER FEEDERS TRENCHBACKFILL METER	ELECTRICAL ELECTRICAL CIVIL BY UTILITY
(D) CONDUIT FEEDERS	ELECTRICAL ELECTRICAL
(E) LIGHT FIXTURES CONCRETE BASE CONDUIT & WIRING TRENCHING, EXCAVATION & BACKFILL	ELECTRICAL CIVIL ELECTRICAL CIVIL

SHEET NOTES:

1. EC SHALL PROVIDE POWER AND CONTROL WIRING FOR ALL SITE LIGHTING.
2. ALL EMPTY CONDUITS SHALL BE PROVIDED WITH PULL STRING.
3. ALL PENETRATIONS THROUGH STRUCTURE SHALL BE LOCATED VERTICALLY ABOVE THE TOP OF FOOTING AND AT LEAST 2'-0" BELOW THE TOP OF SLAB. LOCATE PENETRATIONS HORIZONTALLY BETWEEN COLUMN FOOTING EXTENTS. FOR MULTIPLE PENETRATIONS, REFER TO STRUCTURAL CONCRETE TYPICAL DETAILS FOR MINIMUM SPACING REQUIREMENTS.
4. ALL EXTERIOR LIGHTING CIRCUITS SHALL BE HOMERUN TO PP-1. UON.
5. BRANCH CONDUCTORS SHALL BE SIZED AND INSTALLED FOR A MAXIMUM VOLTAGE DROP OF 3%.
6. EC SHALL REFER TO CIVIL AND LANDSCAPE PLANS FOR EXACT LOCATIONS FOR ALL SITE WORK.
7. EC SHALL COORDINATE ALL SITE WORK WITH CIVIL, LANDSCAPE AND GENERAL CONTRACTOR.
8. SITE LIGHTING TO BE COORDINATED WITH LANDSCAPE DRAWINGS.

2 SITE ELECTRICAL DETAIL

NTS



1 SITE POWER & LIGHTING PLAN

1" = 20'-0"

Project:
Plymouth Municipal Airport,
New Administration Building
246 South Meadow Road
Plymouth, MA 02360

Owner:
The Town of Plymouth
11 Lincoln Street
Plymouth, MA 02360



MassDOT-AD Job No.:
2016-FMA-15-SAAB

Architect:
FENNICK | McCREDIE
architecture inc
70 Franklin Street
Boston, MA 02110
t. 617.350.7900
f. 617.350.0051

Civil Engineer:
Airport Solutions Group, LLC
39 Winn Street
Burlington, MA 01803
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f. 781.491.0360

Structural/MEP/FP Engineer:
Arup USA, Inc.
60 State Street, 10th Floor
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Geotechnical Engineer:
GZA GeoEnvironmental, Inc.
249 Vanderbilt Avenue
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112 Shawmut Avenue, Studio 6B
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Survey Engineer:
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No.	Date	Revision
2	2018.04.03	Addenda 02

Job No.: 1098-05
Drawn By: DK
Checked By: MC
Scale: 1"=20'
Date: 21 March 2018
Issued For: Bid Documents

Drawing Title:
ELECTRICAL SITE
POWER & LIGHTING
PLAN

Drawing No.:
E-011