NOTICE OF INTENT

Proposed Boston Logan Runway 4R Glide Slope (BOS GS) Engine Generator Shelter Replacement Project

Boston Logan International Airport
Adjacent to Runway 4R
Parcel ID: 0104126000
Boston, Massachusetts

Prepared By:

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Federal Aviation Administration
AJW 2E16E – Environmental and Occupational Safety and Health Center
1200 District Avenue
Burlington, MA 01803
(781) 238 – 7842

August 2021

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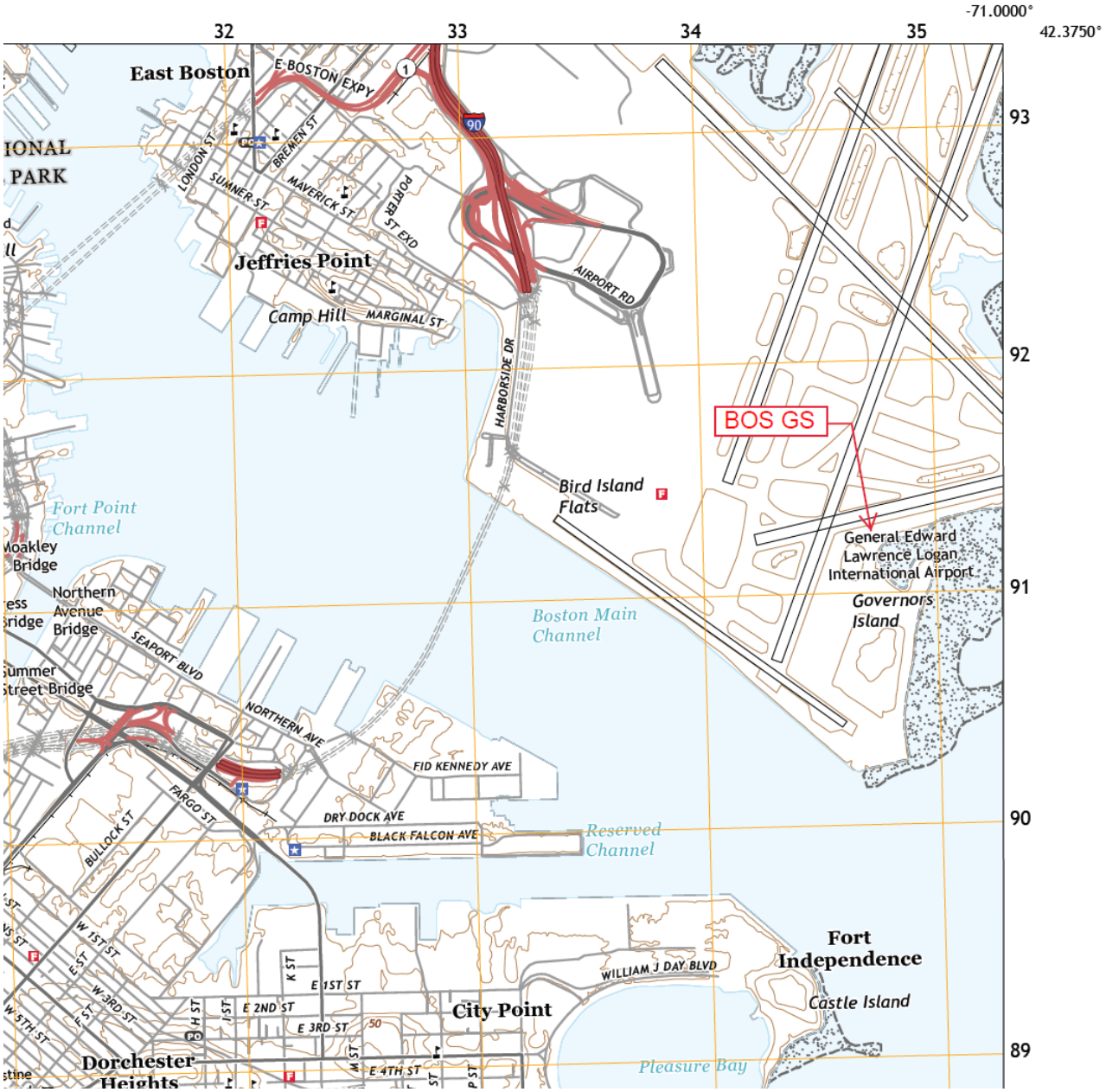
USGS Site Location Map
1 Harborside Drive
Boston, Massachusetts



U.S. Department of Transportation
Federal Aviation Administration

U.S. Department of the Interior
U.S. Geological Survey
Boston South Quadrangle

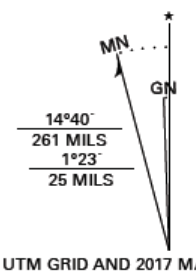
7.5-Minute Series
Contour Interval 10 Feet
North American Vertical Datum of 1988

Boston South, MA
2018

Project:
BOS GS Engine Generator Shelter Replacement

FAA JCN:
1508292

Date: June 7, 2021



UTM GRID AND 2017 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

PROJECT DESCRIPTION

INTRODUCTION

This Notice of Intent is being filed pursuant to Massachusetts General Laws, Chapter 131, Section 40: The Wetlands Protection Act and its implementing regulations 310 CMR 10.00 due to the proposed activities taking place within land subject to flooding (FEMA Special Flood Hazard Area, Zone AE).

The Federal Aviation Administration (FAA) has two separate but related proposed projects to replace the Engine Generator (EG) (FAA Power Services Group Project) and EG Shelter (FAA Unstaffed Infrastructure Sustainment Project) currently serving the General Edward Lawrence Logan International Airport, Runway 4R Glide Slope (BOS GS) facility. The BOS GS is an FAA navigational aid for Runway 4R which encompasses an approximately 2,600 square foot parcel located between RWY 4R, RWY 9 and the airport perimeter road. The parcel is owned by the Massachusetts Port Authority (Massport) and "leased" to the FAA under Memorandum of Agreement DTFANE-08-L-00022.

The existing 20KW Kohler Model 20ROZJ diesel EG is located within an 8'x20' pre-fabricated metal EG shelter and is supplied by an adjacent 600-gallon diesel underground storage tank (UST). The existing EG is at the end of its lifecycle and is intended to be replaced with a 20KW Kohler Model 20REOZK EG with a 120-gallon subbase fuel tank. The new EG and subbase fuel tank will not fit inside the existing shelter while maintaining the proper National Electric Code (NEC) space requirements so a new shelter must first be established. The new Dupont 12'x20' fiberglass EG shelter will be installed approximately 60' east of the existing EG shelter and placed on a raised concrete foundation bringing the shelter finished floor above the design flood elevation of 13.7' as detailed in the 2015 Massport Floodproofing Design Guide. Additional shelter work will include the installation of metal stairs/platforms, lightning protection, facility grounding, facility power cabling, and crushed stone dressing. Upon successful cutover to the new EG, the former EG, EG shelter, and 600-gallon UST will all be removed and properly disposed of.

COASTAL RESOURCE AREAS (FEMA SPECIAL FLOOD HAZARD AREA, ZONE AE)

The BOS GS site (including the proposed new EG shelter location) is entirely located in an area of Land Subject to Coastal Storm Flowage, identified as Special Flood Hazard Area, Zone AE, with Base Flood Elevation (BFE) of 12 feet on the latest FEMA Flood Insurance Rate Map which is included in Appendix A of this NOI. The BOS GS facility is not located within the Velocity Zone, Coastal High Hazard Area, or Regulatory Floodway based on the Flood Insurance Rate Map. The proposed project would disturb approximately 2,058 square feet of Zone AE flood plain area of which 1,315 square feet would be newly disturbed ground and 743 square feet would be disturbed due to the removal of the existing EG shelter and UST.

The BOS GS is a navigational aid that serves runway 4R and its location is fixed by function. As such, there was no opportunity to re-locate the facility EG shelter outside of the Flood Hazard Area. The project was designed to be compliant with the 2015 Massport Floodproofing Design Guide which was developed by Massport's Resiliency Program to help make its infrastructure and operations more resilient to flooding hazards caused by extreme storms and rising sea levels as a result of climate change. To be compliant with the design guide, the FAA intends to elevate the shelter finished floor above their design flood elevation (DFE) of 13.7 feet which is 1.7 feet above the BFE. Massport has conditionally approved the Tenant Alteration Application (TAA) for this project, of which the

Floodproofing Design Submittal Form (See Appendix D) is a part. The TAA cannot be fully approved until the pre-construction meeting which is held immediately prior to construction at which time the FAA expects Massport will sign the attached Floodproofing Design Submittal Form.

The BOS GS is not located within an Area of Critical Environmental Concern (ACEC) and a review of Natural Heritage Endangered Species Program (NHESP) online data indicates that the site is not located within any natural communities, estimated habitats of rare wildlife, or vernal pools. However, the site is located within NHESP Priority Habitat of Rare Species 136. On April 30, 2021 the FAA received a determination from MASSWILDLIFE that the project, as currently proposed, must be conditioned in order to prevent the Take of state-listed species. The FAA intends to comply with the conditions outlined in the determination letter (NHESP File No: 21-40108) (See Appendix E).

The BOS GS EG shelter replacement project has been designed to minimize changes to resource areas to the extent practicable while still meeting FAA siting and design requirements. The FAA will utilize best management practices to minimize adverse construction impacts.

STORMWATER MANAGEMENT

The proposed project was designed in keeping with the Department of Environmental Protection Stormwater Standards as listed at 310 CMR 10.05 (6)(k). Due to the limited project scope, as well as the small area of disturbance, the FAA feels that a description of how the project will comply with the Stormwater Standards would be more appropriate than providing the Checklist for Stormwater Report and an associated Stormwater Report. A description of how the project complies with MassDEP Stormwater Standards is below:

Standard #1: No new Stormwater Conveyances with Untreated Discharges
The proposed project does not involve the installation, replacement or maintenance of any stormwater conveyances. Site grading will remain consistent with the pre-construction grades so that drainage patterns into the existing Massport drainage system would remain relatively unchanged.

Standard #2: Pre/Post Development Peak Rates
The proposed project does not involve the installation, replacement, removal, or maintenance of a stormwater management system. The proposed project is anticipated to have a net gain of approximately 66 square feet of impervious surfaces which would have a negligible effect on peak runoff rates flowing into the existing Massport drainage system. Additionally, the GS site is located in an area of land subject to coastal storm flowage.

Standard #3: Annual Recharge
Per the standard, at a minimum, the annual recharge from the post-development site shall approximate the annual recharge from the pre-development conditions based on soil type. While there is an anticipated net gain of approximately 66 square feet of impervious surfaces there are no stormwater conveyances that direct precipitation off of these surfaces. Additionally, the impervious surfaces, which consist of the shelter and platform foundations, are surrounded by crushed stone over geotextile fabric which promotes infiltration. As such, post-development recharge will approximate pre-development conditions.

Standard #4: Total Suspended Solids (TSS)

The proposed project does not involve the installation, replacement, removal, or maintenance of a stormwater management system. However, the site is within the area of four existing catch basins that are part of the Logan Airport closed drainage system. Based on Figure 1 – Locus Map, Logan International Airport Drainage Areas, which is included as supplemental information to Massport's 2007 NPDES Permit No. MA0000787, the BOS GS is located within stormwater discharge Drainage Area A-40 which discharges into Boston Harbor. Given that this is predominantly a one-for-one shelter replacement project, the post-development site would not be expected to negatively affect TSS. Erosion and sedimentation controls, which are provided in more detail later in this document, will ensure that TSS is not negatively impacted during construction and until grass has re-established.

Standard #5: Land Uses with Higher Potential Pollutant Loads

The proposed project does not involve a land use with a higher potential pollutant load. The land use will remain unchanged as the proposed project involves replacing an existing EG and EG shelter with newer, similar, equipment and facilities. The post-development site will result in the removal of a UST from a Flood Hazard Area which will remove a potential pollutant hazard.

Standard #6: Critical Areas

Not applicable for this proposed project.

Standard #7: Redevelopment Projects

The proposed project could potentially meet the definition of a redevelopment as described in 310 CMR 10.04. However, the BOS GS is not a typical developed site as it is more a collection of FAA equipment and minor structures in a specific airfield location that serves to function as a navigational aid for aircraft. The new EG shelter was intentionally designed to not be constructed in the same location as the existing shelter so that it could be installed in parallel allowing the existing EG to remain operational and provide backup power while the new EG shelter is being constructed. Once the new EG is installed, tested and made operational, backup power will be cutover from the old to the new EG thus significantly limiting the amount of time the GS would be unavailable to a primary runway. This design choice required a modification to the existing site layout and is therefore being considered as a redevelopment project. The applicable stormwater standards for redevelopment projects have been met to the greatest extent practicable.

Standard #8: Construction Period Erosion, Sedimentation, and Pollution Prevention Plan

The proposed project will provide construction period erosion and sedimentation controls in the form of catch basin inserts for the four Massport catch basins in the project location. The inserts will prevent any debris, oils, and sediment from entering the Massport closed drainage system. Additionally, filter socks will be placed along the perimeter of the concrete catch basin inlets. This will prevent excess material from entering the catch basin inserts. These controls will be left in place until the grassland restoration, as recommended by MASSWILDLIFE, has had a chance to grow and take root. As the area of ground disturbance is relatively small the FAA does not intend to install a silt fence around the project area because it could easily be dislodged by high winds and create foreign object debris which is of serious concern to aircraft.

Standard #9: Long-Term Operation and Maintenance Plan

The proposed project does not include a stormwater management system so an operation and maintenance plan was not produced.

Standard #10: Illicit Discharges

The Resident Engineer, who is the FAA's on-site construction representative, will ensure that no illicit discharges to the stormwater management system occurs.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

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

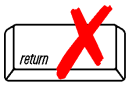
Provided by MassDEP:

MassDEP File Number

Document Transaction Number

City/Town

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



Note: Before completing this form consult your local Conservation Commission regarding any municipal bylaw or ordinance.

A. General Information

1. Project Location (**Note:** electronic filers will click on button to locate project site):

1 Harborside Drive	East Boston	02128
a. Street Address	b. City/Town	c. Zip Code

Latitude and Longitude: 42.356107 (d. Latitude) -71.006321 (e. Longitude)

Property ID: 0104126000 (g. Parcel /Lot Number)

f. Assessors Map/Plat Number

2. Applicant:

Kevin	Grant
a. First Name	b. Last Name

Federal Aviation Administration, AJW-2E16E
c. Organization

1200 District Avenue
d. Street Address

Burlington	MA	01803
e. City/Town	f. State	g. Zip Code

781 - 238 - 7842	781 - 238 - 7458	Kevin.Grant@faa.gov
h. Phone Number	i. Fax Number	j. Email Address

3. Property owner (required if different from applicant): ☐ Check if more than one owner

Peter	DeBruin
a. First Name	b. Last Name

Massachusetts Port Authority (Massport)
c. Organization

1 Harborside Drive, Suite 200S
d. Street Address

East Boston	MA	02128
e. City/Town	f. State	g. Zip Code

617 - 593 - 0026		pdebruin@massport.com
h. Phone Number	i. Fax Number	j. Email address

4. Representative (if any):

a. First Name	b. Last Name

c. Company

d. Street Address

e.	f. State	g. Zip Code

h. Phone Number	i. Fax Number	j. Email address

5. Total WPA Fee Paid (from NOI Wetland Fee Transmittal Form):

$2012.50 **	$512.50	$1500.00 **
a. Total Fee Paid	b. State Fee Paid	c. City/Town Fee Paid

** Boston Conservation Commission fee of $1,500 paid instead of municipal share of fee as pursuant to City of Boston Title 14, Section 450

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A. General Information (continued)

6. General Project Description:

Replace the existing 8'x20' RWY 4R Glide Slope (GS) engine generator (EG) shelter with a new 12'x20' pre-fabricated fiberglass EG shelter with 20KW EG and associated 120-gallon subbase fuel tank.

7a. Project Type Checklist: (Limited Project Types see Section A. 7b.)

1. ☐ Single Family Home
2. ☐ Residential Subdivision
3. ☐ Commercial/Industrial
4. ☐ Dock/Pier
5. ☐ Utilities
6. ☐ Coastal engineering Structure
7. ☐ Agriculture (e.g., cranberries, forestry)
8. ☒ Transportation
9. ☐ Other

7b. Is any portion of the proposed activity eligible to be treated as a limited project (including Ecological Restoration Limited Project) subject to 310 CMR 10.24 (coastal) or 310 CMR 10.53 (inland)?

1. ☐ Yes ☒ No

If yes, describe which limited project applies to this project. (See 310 CMR 10.24 and 10.53 for a complete list and description of limited project types)

2. Limited Project Type

If the proposed activity is eligible to be treated as an Ecological Restoration Limited Project (310 CMR10.24(8), 310 CMR 10.53(4)), complete and attach Appendix A: Ecological Restoration Limited Project Checklist and Signed Certification.

8. Property recorded at the Registry of Deeds for:

a. County	b. Certificate # (if registered land)
Suffolk	
c. Book	d. Page Number
29055	333

B. Buffer Zone & Resource Area Impacts (temporary & permanent)

1. ☐ Buffer Zone Only – Check if the project is located only in the Buffer Zone of a Bordering Vegetated Wetland, Inland Bank, or Coastal Resource Area.
2. ☐ Inland Resource Areas (see 310 CMR 10.54-10.58; if not applicable, go to Section B.3, Coastal Resource Areas).

Check all that apply below. Attach narrative and any supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

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B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

For all projects affecting other Resource Areas, please attach a narrative explaining how the resource area was delineated.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Bank	1. linear feet	2. linear feet
b. ☐ Bordering Vegetated Wetland	1. square feet	2. square feet
c. ☐ Land Under Waterbodies and Waterways	1. square feet 3. cubic yards dredged	2. square feet

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. ☐ Bordering Land Subject to Flooding	1. square feet 3. cubic feet of flood storage lost	2. square feet 4. cubic feet replaced
e. ☐ Isolated Land Subject to Flooding	1. square feet 2. cubic feet of flood storage lost	3. cubic feet replaced
f. ☐ Riverfront Area	1. Name of Waterway (if available) - **specify coastal or inland**	

2. Width of Riverfront Area (check one):

☐ 25 ft. - Designated Densely Developed Areas only

☐ 100 ft. - New agricultural projects only

☐ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: _____ square feet

4. Proposed alteration of the Riverfront Area:

a. total square feet _____ b. square feet within 100 ft. _____ c. square feet between 100 ft. and 200 ft. _____

5. Has an alternatives analysis been done and is it attached to this NOI? ☐ Yes ☐ No

6. Was the lot where the activity is proposed created prior to August 1, 1996? ☐ Yes ☐ No

3. ☒ Coastal Resource Areas: (See 310 CMR 10.25-10.35)

Note: for coastal riverfront areas, please complete **Section B.2.f**. above.

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B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

Check all that apply below. Attach narrative and supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Designated Port Areas	Indicate size under Land Under the Ocean, below	
b. ☐ Land Under the Ocean	1. square feet 2. cubic yards dredged	
c. ☐ Barrier Beach	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. ☐ Coastal Beaches	1. square feet	2. cubic yards beach nourishment
e. ☐ Coastal Dunes	1. square feet	2. cubic yards dune nourishment

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
f. ☐ Coastal Banks	1. linear feet	
g. ☐ Rocky Intertidal Shores	1. square feet	
h. ☐ Salt Marshes	1. square feet	2. sq ft restoration, rehab., creation
i. ☐ Land Under Salt Ponds	1. square feet 2. cubic yards dredged	
j. ☐ Land Containing Shellfish	1. square feet	
k. ☐ Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above 1. cubic yards dredged	
l. ☒ Land Subject to Coastal Storm Flowage	2,058 1. square feet	

4. ☐ Restoration/Enhancement

If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.2.b or B.3.h above, please enter the additional amount here.

a. square feet of BVW

b. square feet of Salt Marsh

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings

b. number of replacement stream crossings

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C. Other Applicable Standards and Requirements

☐ This is a proposal for an Ecological Restoration Limited Project. Skip Section C and complete Appendix A: Ecological Restoration Limited Project Checklists – Required Actions (310 CMR 10.11).

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

1. Is any portion of the proposed project located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP)? To view habitat maps, see the *Massachusetts Natural Heritage Atlas* or go to http://maps.massgis.state.ma.us/PRI_EST_HAB/viewer.htm.

a. ☒ Yes ☐ No

If yes, include proof of mailing or hand delivery of NOI to:

Natural Heritage and Endangered Species Program
Division of Fisheries and Wildlife
1 Rabbit Hill Road
Westborough, MA 01581

03/04/2020
b. Date of map

If *yes*, the project is also subject to Massachusetts Endangered Species Act (MESA) review (321 CMR 10.18). To qualify for a streamlined, 30-day, MESA/Wetlands Protection Act review, please complete Section C.1.c, and include requested materials with this Notice of Intent (NOI); *OR* complete Section C.2.f, if applicable. *If MESA supplemental information is not included with the NOI, by completing Section 1 of this form, the NHESP will require a separate MESA filing which may take up to 90 days to review (unless noted exceptions in Section 2 apply, see below).*

c. Submit Supplemental Information for Endangered Species Review*

1. ☐ Percentage/acreage of property to be altered:

(a) within wetland Resource Area _____ percentage/acreage

(b) outside Resource Area _____ percentage/acreage

2. ☐ Assessor's Map or right-of-way plan of site

2. ☐ Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work **

(a) ☐ Project description (including description of impacts outside of wetland resource area & buffer zone)

(b) ☐ Photographs representative of the site

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see https://www.mass.gov/ma-endangered-species-act-mesa-regulatory-review).
Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.

** MESA projects may not be segmented (321 CMR 10.16). The applicant must disclose full development plans even if such plans are not required as part of the Notice of Intent process.

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C. Other Applicable Standards and Requirements (cont'd)

(c) ☐ MESA filing fee (fee information available at https://www.mass.gov/how-to/how-to-file-for-a-mesa-project-review).
Make check payable to "Commonwealth of Massachusetts - NHESP" and ***mail to NHESP*** at above address

*Projects altering **10 or more acres** of land, also submit:*

(d) ☐ Vegetation cover type map of site

(e) ☐ Project plans showing Priority & Estimated Habitat boundaries

(f) OR Check One of the Following

1. ☐ Project is exempt from MESA review.
Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, https://www.mass.gov/service-details/exemptions-from-review-for-projectsactivities-in-priority-habitat; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)

2. ☐ Separate MESA review ongoing. a. NHESP Tracking # b. Date submitted to NHESP

3. ☒ Separate MESA review completed.
Include copy of NHESP "no Take" determination or valid Conservation & Management Permit with approved plan.

3. For coastal projects only, is any portion of the proposed project located below the mean high water line or in a fish run?

a. ☐ Not applicable – project is in inland resource area only b. ☐ Yes ☒ No

If yes, include proof of mailing, hand delivery, or electronic delivery of NOI to either:

South Shore - Cohasset to Rhode Island border, and the Cape & Islands:

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
836 South Rodney French Blvd.
New Bedford, MA 02744
Email: dmf.envreview-south@mass.gov

North Shore - Hull to New Hampshire border:

Division of Marine Fisheries -
North Shore Office
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930
Email: dmf.envreview-north@mass.gov

Also if yes, the project may require a Chapter 91 license. For coastal towns in the Northeast Region, please contact MassDEP's Boston Office. For coastal towns in the Southeast Region, please contact MassDEP's Southeast Regional Office.

c. ☐ Is this an aquaculture project? d. ☐ Yes ☒ No

If yes, include a copy of the Division of Marine Fisheries Certification Letter (M.G.L. c. 130, § 57).

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C. Other Applicable Standards and Requirements (cont'd)

4. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?

   a. ☐ Yes ☒ No If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations). **Note:** electronic filers click on Website.

   b. ACEC

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

5. Is any portion of the proposed project within an area designated as an Outstanding Resource Water (ORW) as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00?

   a. ☐ Yes ☒ No

6. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?

   a. ☐ Yes ☒ No

7. Is this project subject to provisions of the MassDEP Stormwater Management Standards?

   a. ☒ Yes. Attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) and check if:

      1. ☐ Applying for Low Impact Development (LID) site design credits (as described in Stormwater Management Handbook Vol. 2, Chapter 3)

      2. ☒ A portion of the site constitutes redevelopment

      3. ☐ Proprietary BMPs are included in the Stormwater Management System.

   b. ☐ No. Check why the project is exempt:

      1. ☐ Single-family house

      2. ☐ Emergency road repair

      3. ☐ Small Residential Subdivision (less than or equal to 4 single-family houses or less than or equal to 4 units in multi-family housing project) with no discharge to Critical Areas.

D. Additional Information

☐ This is a proposal for an Ecological Restoration Limited Project. Skip Section D and complete Appendix A: Ecological Restoration Notice of Intent – Minimum Required Documents (310 CMR 10.12).

Applicants must include the following with this Notice of Intent (NOI). See instructions for details.

Online Users: Attach the document transaction number (provided on your receipt page) for any of the following information you submit to the Department.

1. ☒ USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)

2. ☒ Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.

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Bureau of Resource Protection - Wetlands

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D. Additional Information (cont'd)

3. ☐ Identify the method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s), Determination of Applicability, Order of Resource Area Delineation, etc.), and attach documentation of the methodology.

4. ☒ List the titles and dates for all plans and other materials submitted with this NOI.

RWY 4R GS EG Shelter Replacement Project
a. Plan Title

FAA
b. Prepared By

Kevin Grant
c. Signed and Stamped by

02/14/2020
d. Final Revision Date

Variable
e. Scale

f. Additional Plan or Document Title

g. Date

5. ☐ If there is more than one property owner, please attach a list of these property owners not listed on this form.

6. ☐ Attach proof of mailing for Natural Heritage and Endangered Species Program, if needed.

7. ☐ Attach proof of mailing for Massachusetts Division of Marine Fisheries, if needed.

8. ☒ Attach NOI Wetland Fee Transmittal Form

9. ☐ Attach Stormwater Report, if needed.

E. Fees

1. ☐ Fee Exempt: No filing fee shall be assessed for projects of any city, town, county, or district of the Commonwealth, federally recognized Indian tribe housing authority, municipal housing authority, or the Massachusetts Bay Transportation Authority.

Applicants must submit the following information (in addition to pages 1 and 2 of the NOI Wetland Fee Transmittal Form) to confirm fee payment:

1011
2. Municipal Check Number

07/12/2021
3. Check date

1012
4. State Check Number

07/12/2021
5. Check date

Anita
6. Payor name on check: First Name

McLain-Powell
7. Payor name on check: Last Name

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Document Transaction Number

City/Town

F. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

Kevin Grant — 1. Signature of Applicant

08/12/2021 — 2. Date

Peter DeBenn — 3. Signature of Property Owner (if different)

8/12/2021 — 4. Date

5. Signature of Representative (if any)

6. Date

For Conservation Commission:
Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents, two copies of the NOI Wetland Fee Transmittal Form, and the city/town fee payment, to the Conservation Commission by certified mail or hand delivery.

For MassDEP:
One copy of the completed Notice of Intent (Form 3), including supporting plans and documents, one copy of the NOI Wetland Fee Transmittal Form, and a **copy** of the state fee payment to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery.

Other:
If the applicant has checked the "yes" box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

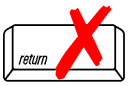
The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

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

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



A. Applicant Information

1. Location of Project:

Maverick Street	East Boston
a. Street Address	b. City/Town
c. Check number	d. Fee amount

2. Applicant Mailing Address:

Kevin	Grant
a. First Name	b. Last Name

Federal Aviation Administration
c. Organization

1200 District Avenue
d. Mailing Address

Burlington	MA	01803
e. City/Town	f. State	g. Zip Code

781-238-7842	781-238-7458	Kevin.Grant@faa.gov
h. Phone Number	i. Fax Number	j. Email Address

3. Property Owner (if different):

Peter	DeBruin
a. First Name	b. Last Name

Massachusetts Port Authority (Massport)
c. Organization

1 Harborside Drive, Suite 200S
d. Mailing Address

East Boston	MA	02128
e. City/Town	f. State	g. Zip Code

617-593-0026		pdebruin@massport.com
h. Phone Number	i. Fax Number	j. Email Address

B. Fees

To calculate filing fees, refer to the category fee list and examples in the instructions for filling out WPA Form 3 (Notice of Intent).

Fee should be calculated using the following process & worksheet. ***Please see Instructions before filling out worksheet.***

Step 1/Type of Activity: Describe each type of activity that will occur in wetland resource area and buffer zone.

Step 2/Number of Activities: Identify the number of each type of activity.

Step 3/Individual Activity Fee: Identify each activity fee from the six project categories listed in the instructions.

Step 4/Subtotal Activity Fee: Multiply the number of activities (identified in Step 2) times the fee per category (identified in Step 3) to reach a subtotal fee amount. Note: If any of these activities are in a Riverfront Area in addition to another Resource Area or the Buffer Zone, the fee per activity should be multiplied by 1.5 and then added to the subtotal amount.

Step 5/Total Project Fee: Determine the total project fee by adding the subtotal amounts from Step 4.

Step 6/Fee Payments: To calculate the state share of the fee, divide the total fee in half and subtract $12.50. To calculate the city/town share of the fee, divide the total fee in half and add $12.50.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

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

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
Category 3(b). EG Shelter and site	1	$1,050.00	$1,050.00

Step 5/Total Project Fee: $1,050.00

Step 6/Fee Payments:

Total Project Fee:	$1,050.00 a. Total Fee from Step 5
State share of filing Fee:	$512.50 b. 1/2 Total Fee **less $**12.50
City/Town share of filling Fee:	$1,500.00* c. 1/2 Total Fee **plus** $12.50

* Boston Conservation Commission fee of $1,500.00 paid instead of municipal share of Fee pursuant to City of Boston Title 14, Section 450

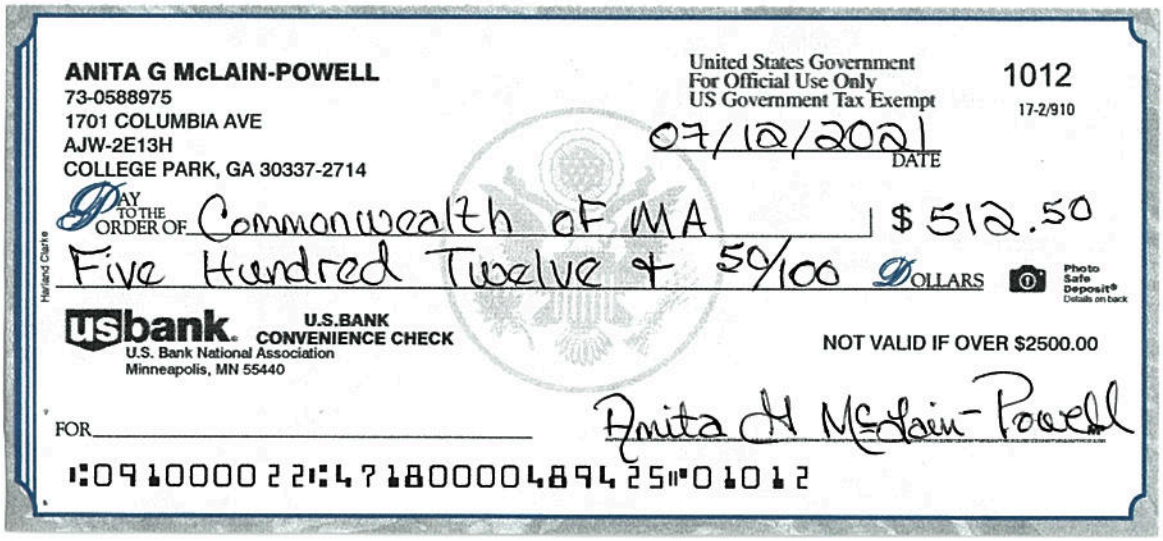
C. Submittal Requirements

a.) Complete pages 1 and 2 and send with a check or money order for the state share of the fee, payable to the Commonwealth of Massachusetts.

Department of Environmental Protection
Box 4062
Boston, MA 02211

b.) **To the Conservation Commission:** Send the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and the city/town fee payment.

To MassDEP Regional Office (see Instructions): Send a copy of the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and a **copy** of the state fee payment. (E-filers of Notices of Intent may submit these electronically.)



ANITA G McLAIN-POWELL
73-0588975
1701 COLUMBIA AVE
AJW-2E13H
COLLEGE PARK, GA 30337-2714

United States Government
For Official Use Only
US Government Tax Exempt

1012
17-2/910

07/12/2021
DATE

PAY TO THE ORDER OF Commonwealth of MA $ 512.50

Five Hundred Twelve & 50/100 DOLLARS

Photo Safe Deposit® Details on back

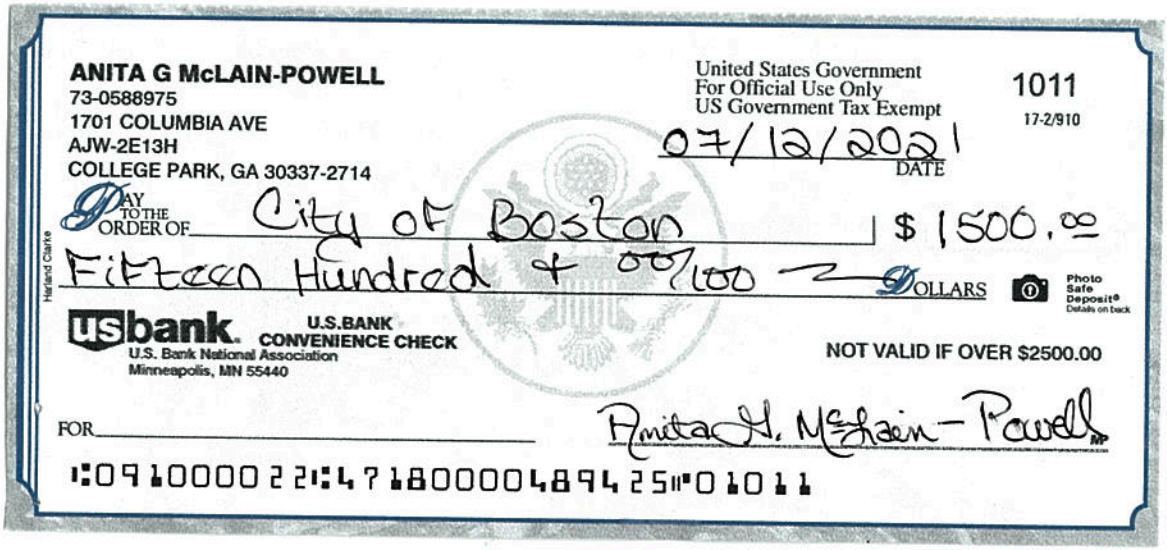
usbank. U.S.BANK CONVENIENCE CHECK
U.S. Bank National Association
Minneapolis, MN 55440

NOT VALID IF OVER $2500.00

FOR _____ Anita H McLain-Powell

⑆091000022⑆47180000489425⑈01012

Harland Clarke



ANITA G McLAIN-POWELL
73-0588975
1701 COLUMBIA AVE
AJW-2E13H
COLLEGE PARK, GA 30337-2714

United States Government
For Official Use Only
US Government Tax Exempt

1011
17-2/910

07/12/2021
DATE

PAY TO THE ORDER OF City of Boston $ 1500.00

Fifteen Hundred & 00/100 DOLLARS

Photo Safe Deposit® Details on back

usbank. U.S.BANK CONVENIENCE CHECK
U.S. Bank National Association
Minneapolis, MN 55440

NOT VALID IF OVER $2500.00

FOR _____ Anita H. McLain-Powell

⑆091000022⑆47180000489425⑈01011

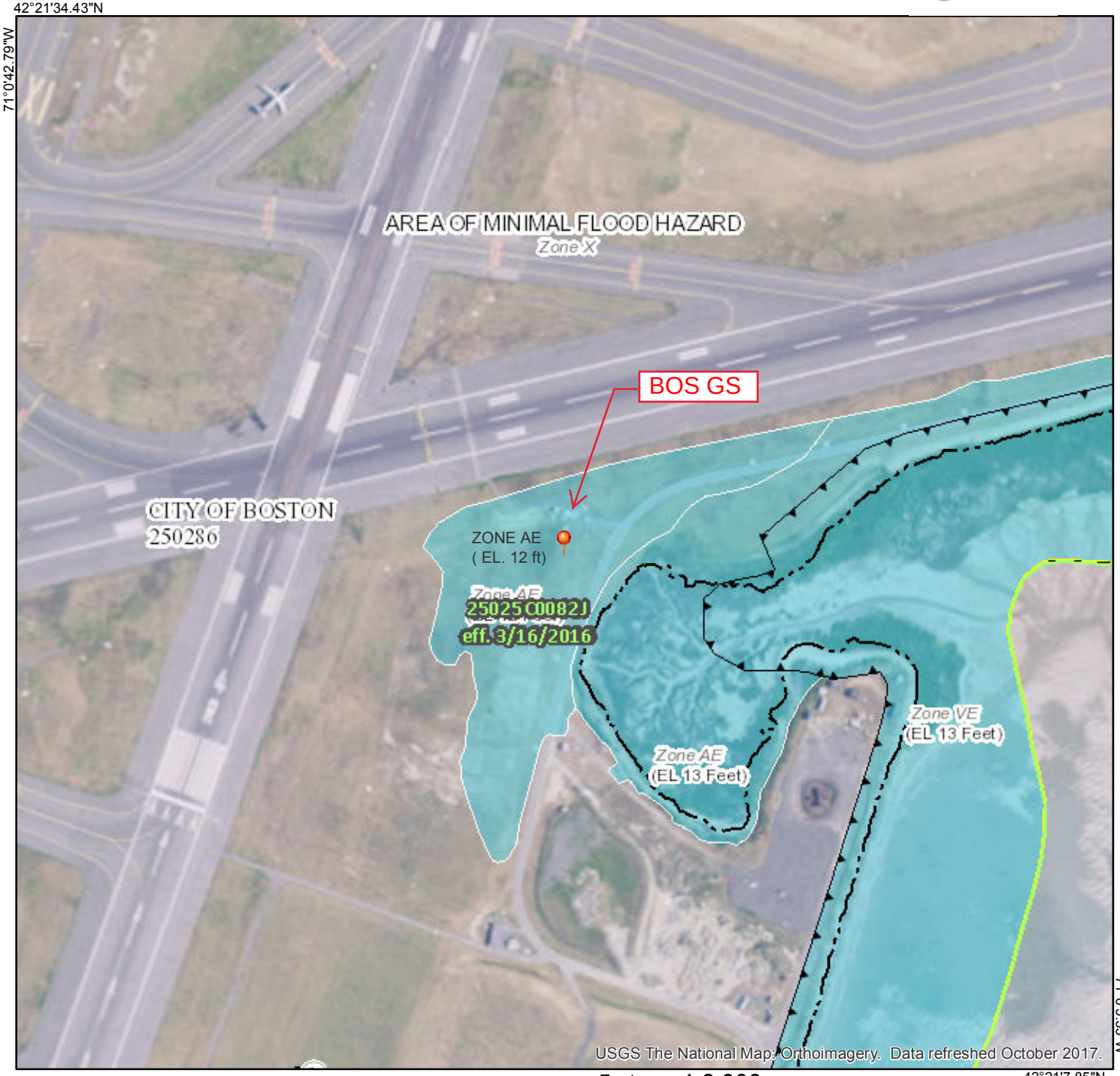
Harland Clarke

APPENDIX A

FEMA Flood Insurance Rate Map

National Flood Hazard Layer FIRMette

FEMA



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS	Without Base Flood Elevation (BFE) *Zone A, V, A99*
	With BFE or Depth *Zone AE, AO, AH, VE, AR*
	Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
	Future Conditions 1% Annual Chance Flood Hazard *Zone X*
	Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
	Area with Flood Risk due to Levee *Zone D*
OTHER AREAS	NO SCREEN Area of Minimal Flood Hazard *Zone X*
	Effective LOMRs
	Area of Undetermined Flood Hazard *Zone D*
GENERAL STRUCTURES	Channel, Culvert, or Storm Sewer
	Levee, Dike, or Floodwall
OTHER FEATURES	20.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
	Coastal Transect
	513 Base Flood Elevation Line (BFE)
	Limit of Study
	Jurisdiction Boundary
	Coastal Transect Baseline
	Profile Baseline
	Hydrographic Feature
MAP PANELS	Digital Data Available
	No Digital Data Available
	Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 9/24/2018 at 8:42:44 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

APPENDIX B

Natural Heritage Map

OLIVER Mass GIS – Natural Heritage

* Screenshot taken on 03/04/2020

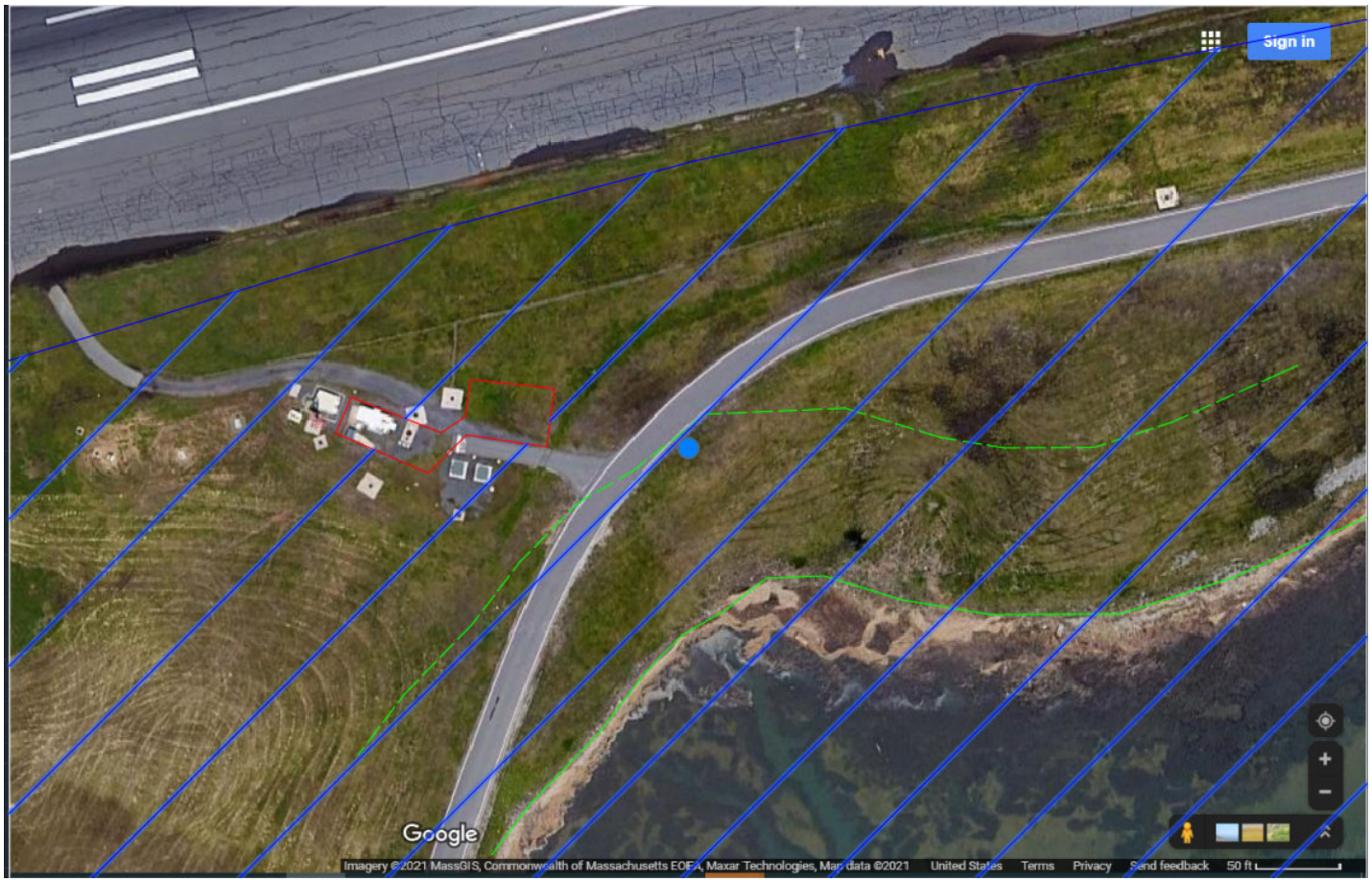
Legend:

- NHESP Priority Habitats of Rare Species
- NHESP Natural Communities
- NHESP Estimated Habitats of Rare Wildlife
- NHESP Certified Vernal Pools
- Potential Vernal Pools

APPENDIX C

Resource Area Plan

Resource Area Plan
Boston Logan RWY 4R Glide Slope (BOS GS)
Boston, Massachusetts



U.S. Department of Transportation
Federal Aviation Administration

Project:
BOS GS EG Shelter Replacement

FAA JCN:
1508292

Date:
August 12, 2021

Legend:

- Project Area
- Apparent Wetland Limit
- 100’ Wetland Buffer Zone
- Special Flood Hazard Area, Zone AE (BFE 12 ft.)

APPENDIX D

Massport Floodproofing Design Submittal Form

Massport Capital Programs

Floodproofing Design Submittal Form

Project Number: TAA #5357

Project Name: BOS RWY 4R GS EG Shelter Replacement / BOS RWY 4R GS EG Replacement

Building Name/Number: FAA RWY 4R Glide Slope Engine Generator Shelter

Submission: 90% (Schematic, 30% / 90% / Final)

1. Indicate the applicable DFE for the project from the table below:

Location	Existing Facilities	New Facilities
Logan International Airport; South Boston Maritime Facilities	13.7 ft. (NAVD88)	17.0 ft. (NAVD88)

*Add 0.81 ft. to NAVD88 elevations to convert to NGVD29 elevations.
*Add 6.46 ft. to NAVD88 elevations to convert to BCB elevations.

2. Enter the existing or proposed elevation of the lowest floor of the lowest enclosed space, whichever is applicable:

Existing elevation (ft NAVD88)	
Proposed elevation (ft NAVD88)	14.48

*Subtract 0.81 ft. from NGVD29 elevations to convert to NAVD88 elevations.

3. Describe existing/proposed uses, including occupancy, of spaces below the DFE:

There are no proposed uses or occupancy below the DFE.

4. Provide a narrative summary of the proposed floodproofing performance objectives, and strategies and measures proposed to achieve them:

By elevating the new EG shelter above the DFE the FAA hopes to protect the electrical and mechanical equipment housed inside the shelter from flood waters. Where power and communications conduits below the DFE enter the shelter, the spaces between cables within the conduits will be sealed using duct seal to prevent water entry. The transformer is existing and raising it above the DFE would require re-cabling which is outside the scope of the EG shelter replacement project.

5. **In the table below, indicate proposed critical equipment protection measures to be in place at project completion**: Indicate whether the following critical equipment will be elevated above the DFE, located in dry floodproofed enclosure (Dry FP), wet floodproofed (Wet FP), protected by other methods, or not protected. Only if the listed equipment will not be present at the existing or proposed facility upon project completion should "not applicable" be selected.

Critical equipment	Elevated Above DFE	Dry FP	Wet FP	Other	Not Protected	Not Applicable
Electrical						
Substations						X
Transformers					X	
Switchgear	X					
Emergency panels	X					
Emergency generators	X					
Meter centers						X
Service and distribution panels	X					
Cable terminations and splices	X					
Stock, parts	X					
Water and Plumbing						
Domestic/fire water pumps and controls						X
Sump pump and controls						X
Ejector and grinder pumps						X
Water heaters						X
Plumbing systems (lavatories, showers, toilets)						X
Pipe insulation						X
Mechanical						
Boilers						X
Air conditioning units and condensers						X
Chilled water systems						X
Pumps						X
Air intake and exhaust vents/louvers	X					

Critical equipment	Elevated Above DFE	Dry FP	Wet FP	Other	Not Protected	Not Applicable
Ventilation units	X					
Unit heaters	X					
Distribution duct work						X
Telecommunications						
Telephone switches						X
Network interface devices						X
Data/computer centers/rooms						X
Dispatch rooms						X
Emergency communications centers						X
Public Announcement system controls						X
Radio systems (incl. personal radio storage areas)						X
Surveillance systems	X					
IDF closets						X
Access control systems						X
Emergency and Fire						
Fire alarm master boxes						X
Emergency operations centers						X
Emergency supplies (medical, food/water, cots/blankets)						X
Emergency vehicles and specialized equipment (medical, fire, rescue, law enforcement)						X
Other						
Records storage						X
Office space						X
Hazardous Materials						
Waste oil						X
Fuel storage tanks	X					
Chemical supplies						X

6. **For areas proposed to be dry floodproofed in the table in Section 5, describe assumptions, structural analyses conducted, and conclusions regarding the capability of the structure to withstand design flood forces.**

7. **In the table below, list all equipment proposed to be protected by "Other" methods in the table in Section 5, describe the proposed protection measures, and indicate the level of protection the measures are designed to provide:** (if additional space is needed, submit information as an attachment)

Equipment Type	Proposed Protection Measure	Level of Protection (high, medium, low)

8. **In the table below, list all equipment proposed to be "Not Protected" in the table in Section 5, their per unit replacement costs, and their replacement lead time:** (if additional space is needed, submit information as an attachment)

Equipment Type	Units Located Below DFE (number)	Unit Replacement Cost ($)	Replacement Lead Time (days)
25 KVA Transformer	1	$5,000	63

9. **Provide additional operational planning information on floodproofing measures requiring human intervention to be effective:** (i.e. temporary installation of protective barriers or relocation of stock/equipment) (if additional space is needed, submit information as an attachment)

Measure	How Much Advanced Time is Needed to Install or Implement (hours)	Staff Requirements Needed to Install or Implement (No. of staff)	Storage Location of Tools and Materials Needed to Install or Implement (e.g., onsite vs. central storage facility)

Submitted by: Kevin Grant _____ 12/12/2019

Engineer of Record — Date

Reviewed by: _____ _____

Massport Project Manager — Date

_____ _____

Facility Manager — Date

_____ _____

Massport Resiliency Program Manager — Date

CC: Massport Director of Capital Programs

Massport Deputy Director of Capital Programs

APPENDIX E

MESA Determination Letter

MASSWILDLIFE

DIVISION OF
FISHERIES & WILDLIFE

1 Rabbit Hill Road, Westborough, MA 01581
p: (508) 389-6300 | f: (508) 389-7890
MASS.GOV/MASSWILDLIFE

April 30, 2021

Boston Conservation Commission
Boston Environment Department
1 City Hall Plaza, Room 709
Boston MA 02201

Kevin Grant
Federal Aviation Administration
1200 District Avenue
Burlington MA 01803

RE:	Applicant:	Kevin Grant, FAA
	Project Location:	off Maverick Street, Logan International Airport
	Project Description:	Replacement of Runway 4R Glide Slope Engine Generator Shelter
	DEP Wetlands File No.:	Not Assigned
	NHESP File No.:	**21-40108**

Dear Commissioners & Applicant:

The Natural Heritage & Endangered Species Program of the Massachusetts Division of Fisheries & Wildlife (the "Division") received a Notice of Intent with site plans (dated 02/14/2020) and proposed site figure (undated) in compliance with the rare wildlife species section of the Massachusetts Wetlands Protection Act Regulations (310 CMR 10.37). The Division also received the MESA Review Checklist and supporting documentation for review pursuant to the MA Endangered Species Act Regulations (321 CMR 10.18).

The Division has determined that this Project, as currently proposed, will occur **within** the actual habitat of the Eastern Meadowlark (*Sturnella magna*), Grasshopper Sparrow (*Ammodramus savannarum*) and Upland Sandpiper (*Bartramia longicuda*), species state-listed as Special Concern, Threatened and Endangered, respectively. These species and their habitats are protected in accordance with the MESA.

The purpose of the Division's review of the proposed project under the WPA regulations is to determine whether the project will have any adverse effects on the Resource Areas Habitats of state-listed species. The purpose of the Division's review under the MESA regulations is to determine whether a Take of state-listed species will result from the proposed project. The Take of state-listed species is defined as "in reference to animals…harm…kill…disrupt the nesting, breeding, feeding or migratory activity…and in reference to plants…collect, pick, kill, transplant, cut or process…Disruption of nesting, breeding, feeding, or migratory activity may result from, but is not limited to, the modification, degradation, or destruction of Habitat" of state-listed species (321 CMR 10.02).

WETLANDS PROTECTION ACT (WPA)

Based on a review of the information that was provided and the information that is currently contained in our database, the Division has determined that this project, as currently proposed, **will not adversely affect** the actual Resource Area Habitat of state-protected rare wildlife species. Therefore, it is our opinion that this project meets the state-listed species performance standard for the issuance of an Order of Conditions.

Please note that this determination addresses only the matter of rare wildlife habitat and does not pertain to other wildlife habitat issues that may be pertinent to the proposed project.

MASSACHUSETTS ENDANGERED SPECIES ACT (MESA)

Based on the information provided and the information contained in our database, the Division finds that this project, as currently proposed, **must be conditioned** in order to avoid a prohibited Take of state-listed species (321 CMR 10.18(2)(a)). To avoid a prohibited Take of state-listed species, the following conditions must be met:

1. **Time of Year Restriction.** Work associated with the proposed project shall not occur during the period **May 1 – July 31**, to protect grassland breeding bird species.
2. **Grassland Restoration.** All proposed grassland restoration areas and those grassland areas disturbed by construction activities, shall be restored to warm-season grasslands utilizing the Division-approved seed mix. If imported topsoil is necessary, then the soil must consist of a sandy loam and be certified weed/invasive free, to the greatest extent possible. Any modification to the Division-approved seed mix (below) must be submitted to the Division for review and written approval prior to use and must consist of native species, identify the seed source and composition.

Common Name[1]	Scientific Name	% in Mix (by Weight)
Little bluestem[2]	*Schizachyrium scoparium*	25
Common hairgrass	*Deschampsia flexuosa*	25
Poverty grass	*Danthonia spicata*	25
Annual ryegrass	*Lolium multiflorum*	25

[1] All seed must be locally sourced from plants grown in New England or New York.
[2] Little bluestem seed must be coated and inoculated.

3. **Compliance Report and As-Built Plan**: Within sixty (60) days of completion of work, the Applicant shall submit as-built site plans and a brief written report including, photographs showing final constructed conditions with particular emphasis on demonstrating compliance with the Conditions herein and include supplemental documentation, as appropriate.
4. **Authorization Duration**. This authorization is valid for 5 years from the date of issuance. Work may be completed at any time during this 5-year period in compliance with the conditions herein. Thereafter, the applicant shall re-file under the MESA.

Provided the above-noted condition is fully implemented and there are no changes to the project plans, this project will not result in a Take of state-listed species. We note that all work is subject to the anti-segmentation provisions (321 CMR 10.16) of the MESA. This determination is a final decision of the Division of Fisheries and Wildlife pursuant to 321 CMR 10.18. Any changes to the proposed project or

any additional work beyond that shown on the site plans may require an additional filing with the Division pursuant to the MESA. This project may be subject to further review if no physical work is commenced within five years from the date of issuance of this determination, or if there is a change to the project.

Please note that this determination addresses only the matter of state-listed species and their habitats. If you have any questions regarding this letter please contact Amy Hoenig, Endangered Species Review Assistant, at Amy.Hoenig@mass.gov.

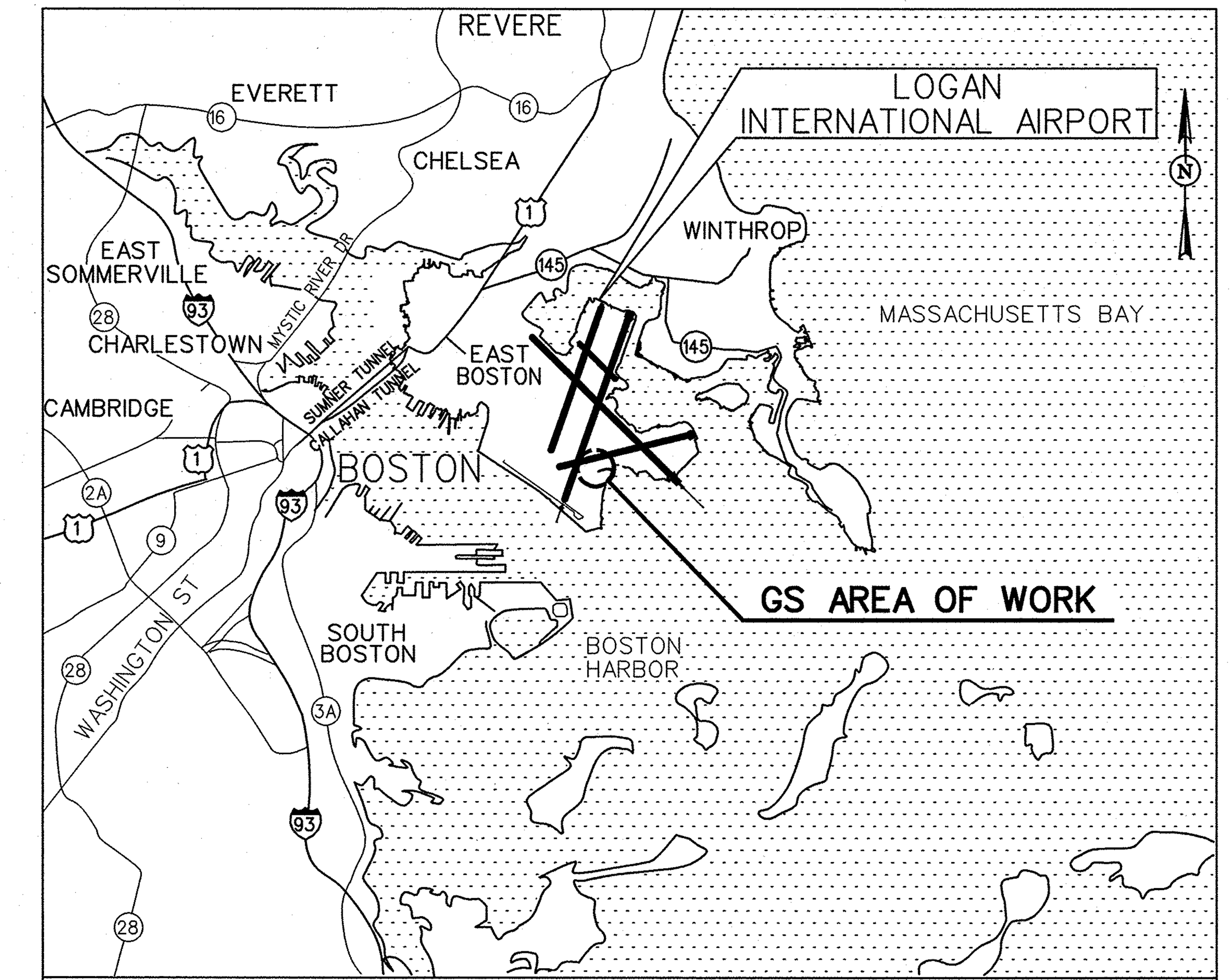
Sincerely,

Everose Schlüter, Ph.D.
Assistant Director

cc: Stewart Dalzell, MassPort
Peter DeBruin, MassPort
Scott Gerrie, KOBO Utility Construction Corp

APPENDIX F

Project Drawings



VICINITY MAP

ENGINE GENERATOR (EG) SHELTER REPLACEMENT
RUNWAY 4R GLIDE SLOPE (GS)
LOGAN INTERNATIONAL AIRPORT
BOSTON, MASSACHUSETTS

REV	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
	02/14/2020	CONSTRUCTION, DT #18645	1508292	01/30/2020	

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
ATO - TECHNICAL OPERATIONS EASTERN SERVICE AREA

GS
RUNWAY 4R
GS / EG SHELTER REPLACEMENT PROJECT
COVER SHEET

BOSTON LOGAN INTERNATIONAL AIRPORT MA

REVIEWED BY

SUBMITTED BY: K. GRANT, PROJECT ENGINEER

APPROVED BY: G. NEVILLE, MGR: ENGINEERING CENTER

DESIGNED KG
DRAWN KG
CHECKED KG

ISSUED BY ENGINEERING SERVICES INFRASTRUCTURE

DATE 02/14/2020 JCN 1508292
DRAWING NO BOS-1508292-G001 REV

ISSUED FOR: CONSTRUCTION

EDM: bos-1508292-g001.dgn

bos-1508292-g001.dgn 11:43:41 AM 3/2/2020 Michael CTR Gosselin

THIS DRAWING PRODUCED ON NEW ENGLAND REGION MICROSTATION SYSTEM

DRAWING LIST

ENGINE GENERATOR SHELTER (UIS PROJECT)

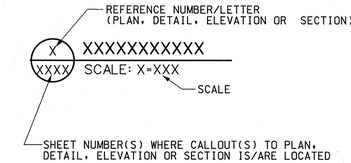
DRAWING NUMBER	DRAWING TITLE
BOS-1508292-G001	COVER SHEET
BOS-1508292-G002	INDEX SHEET
BOS-1508292-G003	GENERAL NOTES
BOS-1508292-G004	MATERIAL LIST & DETAILS
BOS-1508292-C001	EXISTING SITE PLAN
BOS-1508292-C002	PROPOSED SITE PLOT
BOS-1508292-C003	EXTERIOR ELEVATIONS
BOS-1508292-E001	ELECTRICAL DIAGRAMS AND NOTES
BOS-1508292-S001	FOUNDATION DETAILS
BOS-1508292-S002	STAIRS AND PLATFORMS

ABBREVIATIONS

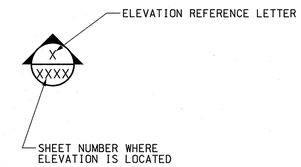
A	AMPERE
AASHTO	AMERICAN ASSOCIATION OF STATE AND HIGHWAY AND TRANSPORTATION OFFICIALS
AC	ADVISORY CIRCULAR
ACI	AMERICAN CONCRETE INSTITUE
AIC	AMPERE INTERRUPTING CAPACITY
AOA	AIR OPERATIONS AREA
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
ATO	AIR TRAFFIC ORGANIZATION (FAA)
AWG	AMERICAN WIRE GAUGE
BOS	GENERAL EDWARD LAWRENCE LOGAN INTERNATIONAL AIRPORT
COR	CONTRACTING OFFICER'S REPRESENTATIVE
D	DRAIN
DEB	DIRECT EARTH BURIAL
DFE	DESIGN FLOOD ELEVATION
DN	DOWN
E	ELECTRIC
EES	EARTH ELECTRODE SYSTEM
EG	ENGINE GENERATOR
EMT	ELECTRIC METALLIC TUBE
EUH	ELECTRIC UNIT HEATER
FAA	FEDERAL AVIATION ADMINISTRATION
FOD	FOREIGN OBJECT DEBRIS/DAMAGE
GAL	GALLON
GFI	GROUND FAULT INTERRUPTER
GFM	GOVERNMENT FURNISHED MATERIAL
GND	GROUND
GRS	GALVANIZED RIGID STEEL
GRSC	GALVANIZED RIGID STEEL CONDUIT
GS	GLIDE SLOPE
HSS	HOLLOW STRUCTURAL SECTION
INS	INSULATED
JCN	JOB CONTROL NUMBER
KVA	KILOVOLT-AMPERE
KW	KILLOWATT
LED	LIGHT-EMMITTING DIODE
L.P.	LIGHTNING PROTECTION
LSP	LISCENCED SITE PROFESSIONAL
MA	MASSACHUSETTS
MDP	MAIN DISTRIBUTION PANEL
MH	MANHOLE
MIN	MINIMUM
MPA	MASSACHUSETTS PORT AUTHORITY (MASSPORT)
NEC	NATIONAL ELECTRIC CODE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
OC	ON-CENTER
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
P	POWER
PE	PROFESSIONAL ENGINEER
PH	PHASE
PL	PLACES
PNL	PANEL
PSG	POWER SERVICES GROUP (FAA)
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
RE	RESIDENT ENGINEER
RMC	RIGID METAL CONDUIT
RSA	RUNWAY SAFETY AREA
RWY	RUNWAY
S	SWITCHGEAR
SS	STORM SEWER
SSC	SYSTEM SUPPORT CENTER (FAA)
STRD	STANDARD
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
TYP	TYPICAL
UIS	UNSTAFFED INFRASTRUCUTRE SUSTAINMENT (FAA)
UL	UNDERWRITERS LABORATORY
UST	UNDERGROUND STORAGE TANK
V	VOLT
VA	VOLT-AMPS
XFMR	TRANSFORMER

SYMBOLS LEGEND

SUBTITLE REFERENCE



ELEVATION CALLOUT REFERENCE



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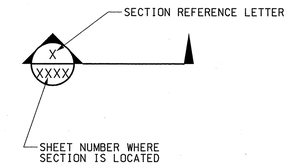

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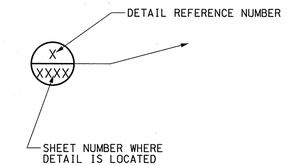

DRAWING PREFIXES

AXXX – ARCHITECTURAL
CXXX – CIVIL
EXXX – ELECTRICAL/ELECTRONIC
GXXX – GENERAL
OXXX – EQUIPMENT
RXXX – REAL ESTATE
SXXX – STRUCTURAL

REV	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
	02/14/2020	CONSTRUCTION, DT #18645	1508292	01/30/2020	

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
ATO - TECHNICAL OPERATIONS — EASTERN SERVICE AREA

GS

RUNWAY 4R
GS / EG SHELTER REPLACEMENT PROJECT
INDEX SHEET

BOSTON — LOGAN INTERNATIONAL AIRPORT — MA

REVIEWED BY	SUBMITTED BY	APPROVED BY
	K. GRANT	G. NEVILLE
	PROJECT ENGINEER	MGR: ENGINEERING CENTER
	DESIGNED KG	ISSUED BY: ENGINEERING SERVICES INFRASTRUCTURE
	DRAWN KG	DATE 02/14/2020 JCN 1508292
	CHECKED KG	DRAWING NO BOS-1508292-G002 REV

ISSUED FOR: CONSTRUCTION

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2/3/2020 11:40:05 AM Michael CTR Gosselin

THIS DRAWING PRODUCED ON NEW ENGLAND REGION MICROSTATION SYSTEM

GENERAL NOTES:

1. THIS DRAWING PACKAGE INDICATES WORK REQUIRED FOR REPLACEMENT OF THE ENGINE GENERATOR SHELTER SERVING THE RUNWAY 4R GLIDE SLOPE AT GENERAL EDWARD LAWRENCE LOGAN INTERNATIONAL AIRPORT, BOSTON, MASSACHUSETTS.

2. THE WORK ASSOCIATED WITH THIS EG SHELTER REPLACEMENT IS WITHIN THE AIRPORT OPERATIONS AREA (AOA). NO MOVEMENT BY CONTRACTOR, SUBCONTRACTORS, OR DELIVERY VEHICLES SHALL BE MADE ON THE AOA WITHOUT ESCORT BY THE AIRPORT AUTHORITY, FAA, COR, OR DESIGNATED CONTRACTOR ESCORT VEHICLE.

3. THE CONTRACTOR SHALL ARRANGE FOR AND ABIDE BY ALL SECURITY BADGING AND ACCESS REQUIREMENTS OF THE AIRPORT TO WORK ON THE AIRFIELD. SECURITY BADGING SHALL BE ON DISPLAY AT ALL TIMES WHILE ON THE AIRFIELD.

4. CONTRACTOR ACCESS ROUTES, STAGING AREAS AND EMPLOYEE PARKING AREAS SHALL BE APPROVED IN ADVANCE BY THE AIRPORT AUTHORITY.

5. CONTRACTOR'S VEHICLES SHALL BE EQUIPPED WITH AN APPROVED ROTATING BEACON AND/OR ORANGE AND WHITE FLAG.

6. CONTRACTOR'S CREW SHALL BE EQUIPPED WITH A RADIO AND SHALL MONITOR AIR TRAFFIC ON THE APPROPRIATE FAA FREQUENCIES.

7. WORK ON THE AOA AND WITHIN 250 FEET OF THE RUNWAY CENTERLINE AND 1,000 FEET FROM THE RUNWAY THRESHOLD (DEFINED AS THE RUNWAY SAFETY AREA) WILL REQUIRE A RUNWAY SHUTDOWN. ANY ACTIVITIES INVOLVING CRANES OR OTHER EQUIPMENT EXCEEDING 15 FEET IN HEIGHT MAY ALSO REQUIRE A RUNWAY SHUTDOWN OR OTHER PROVISIONS. COORDINATE ALL SUCH ACTIVITIES AND REQUIRED SHUTDOWNS WITH THE COR/RE, AND THE AIRPORT AT LEAST 48 HOURS IN ADVANCE.

8. WORK ASSOCIATED WITH THE GS EG SHELTER REPLACEMENT MAY REQUIRE A SHUTDOWN. COORDINATE ALL ACTIVITIES AND REQUIRED SHUTDOWNS WITH THE FAA SSC AT LEAST 48 HOURS IN ADVANCE.

9. THE CONTRACTOR SHALL MAINTAIN A CLEAN WORK SITE. EQUIPMENT AND MATERIAL SHALL BE REMOVED FROM THE WORK SITE AT THE END OF EACH WORK SHIFT. THE CONTRACTOR SHALL KEEP THE WORK SITE FREE OF CONSTRUCTION DEBRIS AND OTHER FOREIGN OBJECT DEBRIS (FOD) AT ALL TIMES. THE CONTRACTOR SHALL CONDUCT FOD INSPECTIONS OF ALL VEHICLES PRIOR TO DRIVING ON THE AOA. THE CONTRACTOR SHALL BE PREPARED TO REMOVE ANY DUST, DIRT, MUD OR OTHER FOD TRACKED OR OTHERWISE LEFT ON THE AOA AT ALL TIMES.

10. THE CONTRACTOR SHALL STRICTLY COMPLY WITH ALL OSHA REGULATIONS AT ALL TIMES. THE COR RESERVES THE RIGHT TO SUSPEND THE PROJECT SHOULD HE OR SHE DETERMINE THAT AN UNSAFE CONDITION EXISTS.

11. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MATERIAL UNLESS OTHERWISE INDICATED. THE CONTRACTOR SHALL PROVIDE ALL LABOR, EQUIPMENT, AND REQUIRED TEMPORARY POWER UNLESS OTHERWISE INDICATED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED PERMITS.

12. THE CONTRACTOR SHALL LEGALLY DISPOSE OF ALL MATERIAL AND EQUIPMENT NOT RETURNED TO OR RETAINED BY THE FAA.

13. IF CONDITIONS ARE DIFFERENT THAN THOSE INDICATED IN THE DRAWINGS OR SPECIFICATIONS, THE SUBCONTRACTOR SHALL CONTACT THE COR PRIOR TO PROCEEDING WITH CONSTRUCTION.

SITE WORK:

1. ALL DIMENSIONS, ELEVATIONS, CONTOURS AND HEIGHTS INDICATED ARE APPROXIMATE AND SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR.

2. ALL TRENCHES AND EXCAVATIONS WITHIN 250 FEET OF THE RUNWAY CENTERLINE AND 1,000 FEET FROM THE RUNWAY THRESHOLD (DEFINED AS THE RUNWAY SAFETY AREA) AND 65.5 FEET OF THE TAXIWAY CENTERLINE (DEFINED AS THE TAXIWAY SAFETY AREA) SHALL NOT BE LEFT OPEN OVERNIGHT AND SHALL BE BACKFILLED AND COMPACTED TO MATCH THE EXISTING GRADE BEFORE LEAVING THE SITE. STEEL PLATES MAY BE USED AS AN ALTERNATIVE ONLY WITH WRITTEN PERMISSION BY THE RE AND AIRPORT.

3. EXISTING UTILITY LOCATIONS SHOWN ARE APPROXIMATE. OTHER UTILITIES MAY NOT BE SHOWN. THE CONTRACTOR SHALL FIELD LOCATE ALL SUBSURFACE UTILITIES PRIOR TO ANY EXCAVATION OR DIRECTIONAL BORING OPERATIONS. DIRECT EARTH BURIED (DEB) RUNWAY AND TAXIWAY LIGHTING POWER CABLES AND OTHER FAA FACILITY POWER CABLES ARE HIGH VOLTAGE. FORTY-EIGHT (48) HOUR (MINIMUM) NOTICE BY THE SUBCONTRACTOR TO THE RE, THE AIRPORT AND THE FAA SSC IS REQUIRED FOR ALL UTILITY MARKING AND/OR FACILITY SHUTDOWNS.

4. THE CONTRACTOR SHALL BE PREPARED TO IMMEDIATELY REPAIR ANY UTILITIES DAMAGED DURING EXCAVATION OPERATIONS AND SHALL CONDUCT ALL SUCH REPAIRS AT CONTRACTOR'S EXPENSE.

5. ALL UNDERGROUND CABLE SHALL BE IN CONDUIT EXCEPT FOR BARE COPPER GROUND CABLE, GUARD WIRE, COUNTERPOISE, AND WHERE OTHERWISE INDICATED. UNDERGROUND CONDUIT SHALL BE 24 INCHES (MINIMUM) BELOW GRADE EXCEPT WHEN INTERFACING HANDHOLE ENTRANCES OR EXISTING CONDUIT AT OTHER DEPTHS OR WHERE OTHERWISE INDICATED. UNDERGROUND CONDUIT SHALL BE GALVANIZED RIGID STEEL CONDUIT (GRSC) EXCEPT WHERE OTHERWISE INDICATED. GRSC FITTINGS SHALL BE THREADED TYPE . EXPOSED THREADS SHALL BE SEALED WITH AN APPROVED SEALANT TO PREVENT CORROSION PRIOR TO BACKFILL OPERATIONS. CONDUITS SHALL BE CLEANED OF DEBRIS AND A NYLON PULL WIRE SHALL BE INSTALLED IN ALL CONDUITS.

6. ALL EXTERIOR CONDUITS ENTERING BUILDINGS (EXCEPT THOSE WITH GROUNDING CONDUCTORS ONLY) SHALL HAVE EXPANSION/DEFLECTION COUPLINGS. AN APPROVED GROUND JUMPER SHALL BE INSTALLED BETWEEN METALLIC CONDUIT ON EACH SIDE OF COUPLING UNLESS COUPLING IS INTERNALLY GROUNDED.

7. CONCRETE CABLE/DUCT MARKERS SHALL BE INSTALLED WHERE INDICATED ON THE DRAWINGS. CABLE/DUCT MARKERS SHALL BE PIGMENTED ORANGE AND SHALL NOT EXTEND MORE THAN 1 INCH ABOVE FINAL GRADE.

8. BACKFILL FOR CABLE OR DUCT TRENCHES OR FOR OTHER EXCAVATIONS SHALL BE PLACED IN LAYERS NOT EXCEEDING 8 INCHES AND EACH LAYER SHALL BE THOROUGHLY COMPACTED TO WITHIN 95% OF MAXIMUM DENSITY OF OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH AASHTO T-180. WHERE FILL IS REQUIRED IN THE RUNWAY/TAXIWAY SAFETY AREA, WORK SHALL COMPLY WITH FAA AC 150/5370-10. IF REQUIRED, THE CONTRACTOR SHALL ARRANGE FOR AN INDEPENDENT FIELD TEST TO VERIFY PROPER COMPACTION.

9. THE EXISTING GRADE SURROUNDING THE FOUNDATION OR TRENCH WORK SHALL BE STABILIZED AND PROTECTED FROM EROSION DURING AND IMMEDIATELY AFTER COMPLETION OF THE FOUNDATION OR CONDUIT INSTALLATION AND ALL REQUIRED EXCAVATION AND BACKFILL.

10. ALL EXCAVATIONS WITHIN 10 FEET OR LESS OF KNOWN UTILITIES SHALL BE PERFORMED BY HAND.

11. ALL DISTURBED AREAS SHALL BE RESTORED TO PRIOR CONDITION AT A MINIMUM. FINAL CONDITION SHALL BE APPROVED BY THE FAA AND THE AIRPORT.

FOUNDATION WORK:

1. CONTRACTOR SHALL PROVIDE A GEOTECHNICAL ENGINEER, LICENSED IN THE COMMONWEALTH OF MASSACHUSETTS, TO CONDUCT A GEOTECHNICAL SURVEY TO INVESTIGATE THE SUBSURFACE CONDITIONS AND PROVIDE A PE STAMPED GEOTECHNICAL ENGINEERING REPORT WITH DESIGN RECOMMENDATIONS (BASED ON SITE EXPLORATIONS) FOR THE SHELTER FOUNDATION AS WELL AS DEVELOPMENT OF AN EXCAVATION DEWATERING PLAN.

2. ALL CONCRETE WORK SHALL COMPLY WITH ACI-304, "RECOMMENDED PRACTICE FOR MEASURING, MIXING, TRANSPORTING AND PLACING CONCRETE", ACI-308R-16, "GUIDE TO EXTERNAL CURING OF CONCRETE", AND ACI-347R-14, "GUIDE TO FORMWORK FOR CONCRETE."

3. CAST IN PLACE CONCRETE SHALL BE 4000 PSI @ 28 DAYS, 3/4" MAX STONE IN MIX.

4. CONTRACTOR SHALL SUBMIT FOUNDATION DESIGNS TO THE MASSACHUSETTS PORT AUTHORITY FOR REVIEW AND APPROVAL PRIOR TO COMMENCEMENT OF ANY WORK.

EQUIPMENT INSTALLATION:

1. ASSEMBLE EQUIPMENT PER MANUFACTURER'S INSTRUCTIONS.

2. USE ANTI-SEIZE COMPOUND ON ALL THREADED PARTS.

3. ALL CHANNEL SHALL BE STAINLESS STEEL UNISTRUT OR APPROVED EQUAL.

4. ALL HARDWARE SHALL BE STAINLESS STEEL, UNLESS OTHERWISE INDICATED.

ELECTRICAL WORK:

1. ALL ELECTRICAL WORK SHALL CONFORM TO FAA-C-1217G AND FAA-C-1391D SPECIFICATIONS AND IN NO CASE SHALL VIOLATE THE NATIONAL ELECTRIC CODE (NFPA 70.).

2. THE CONTRACTOR SHALL MAKE ALL POWER, CONTROL, AND GROUND TERMINATIONS.

3. ALL FLEXIBLE LIQUIDTIGHT CONDUIT SHALL BE PROVIDED WITH AN EXTERNAL BONDING JUMPER IN ADDITION TO THE INTERNAL BONDING CONDUCTOR. THE BONDING JUMPER SHALL BE A #6 AWG GREEN INSULATED COPPER CONDUCTOR.

4. ALL CONTROL/DATA CABLE SHALL BE TWISTED PAIRS.

5. ALL CIRCUITS SHALL HAVE INDIVIDUAL NEUTRAL AND GROUNDING CONDUCTORS; NO SHARED NEUTRALS OR GROUNDS WILL BE PERMITTED.

6. NEUTRAL CONDUCTORS SHALL REMAIN ISOLATED FROM GROUND IN ALL LOCATIONS EXCEPT AT POWER SERVICE ENTRANCE.

7. WHERE POSSIBLE, POWER CABLES AND CONTROL/DATA CABLES SHALL RUN IN CONDUIT INDEPENDENT OF EACH OTHER. SEPARATE POWER AND CONTROL/DATA CABLES IN COMMON HANDHOLES, ENCLOSURES AND SHELTER SQUARE DUCT WIREWAY.

8. ALL CABLES SHALL BE PROPERLY COLOR CODED AND PERMANENTLY LABELED AT EACH END AND IN EACH HANDHOLE. ALL CABLES IN HANDHOLES SHALL BE LOOPED AROUND SEVERAL TIMES.

9. A DYNAMOMETER GRADUATED TO ACTUALLY INDICATE THE PROPER TENSION FOR ANY CABLE BEING PULLED THROUGH UNDERGROUND CONDUIT OR DUCT SHALL BE USED UNLESS THE CONTRACTOR ADAPTS A HARNESS OF THE PROPER SIZED ROPE THAT WILL LIMIT THE TENSION OF THE PULL. ANY COMBINATION OF CABLES PULLED IN CONDUIT OR DUCT SHALL NOT EXCEED THE SUM OF THE INDIVIDUAL ALLOWABLE TENSION OF EACH CABLE PLUS 15%.

10. ALL CABLE SPLICES WILL BE APPROVED IN ADVANCE BY FAA.

11. ALL PVC CONDUIT SHALL BE SCHEDULE 40.

ELECTRICAL GROUNDING:

1. GROUNDING AND LIGHTNING PROTECTION SHALL MEET FAA-STD-019F, "LIGHTNING AND SURGE PROTECTION, GROUNDING, BONDING AND SHIELDING REQUIREMENTS FOR FACILITIES AND ELECTRONIC EQUIPMENT".

2. ALL GROUND RODS SHALL BE COPPER CLAD STEEL, 3/4 INCH DIAMETER AND 10 FEET LONG. GROUND RODS SHALL BE DRIVEN SUCH THAT THE TOP OF ROD IS NO LESS THAN 12 INCHES BELOW GRADE.

3. ALL UNDERGROUND GROUND CONNECTIONS SHALL BE EXOTHERMICALLY WELDED. WELD INTEGRITY SHALL BE TESTED BY A 4 TERMINAL MILLIOHMMETER. SUCCESSFUL TEST SHALL BE LESS THAN 0.001 OHMS.

4. ALL UNDERGROUND GRSC SHALL BE GROUNDED USING A #2 AWG BARE COPPER GROUND TO THE GROUNDING COUNTERPOISE AND/OR GROUND ROD AT EACH END. ALL CONNECTIONS TO BE EXOTHERMICALLY WELDED.

5. UNDERGROUND GROUNDING CONDUCTORS SHALL BE 24 INCHES (MINIMUM) BELOW GRADE EXCEPT AT GROUND RODS AND AS OTHERWISE INDICATED.

6. ALL CABLE SHIELDS SHALL BE GROUNDED AT BOTH ENDS.

7. WHEN INSTALLING MULTIPLE GROUND CONDUCTORS TO ONE GROUND LUG THE SUBCONTRACTOR MUST USE A CONNECTOR (BURNDY FRAMATONE #YCHC OR EQUAL) AND A "PIGTAIL" TO SPLICE THE GROUNDS PRIOR TO CONNECTING TO THE LUG.

8. ALL UNUSED CONDUCTORS SHALL BE GROUNDED AT BOTH ENDS.

TESTING:

1. THE CONTRACTOR SHALL TEST ALL EQUIPMENT AND CABLES AS REQUIRED BY FAA STANDARDS AND SPECIFICATIONS.

2. VOLTAGE TESTS, INSULATION TESTS, AND GROUND RESISTANCE TESTS SHALL BE CONDUCTED ON ALL CONDUCTORS (AS APPROPRIATE) IN THE PRESENCE OF THE COR AND/OR THE RE. TESTS CONDUCTED WITHOUT THE COR OR THE RE PRESENT WILL BE REJECTED.

3. ALL TEST RESULTS SHALL BE FORWARDED TO THE FAA IN AN FAA SPECIFIED FORMAT.

4. CONTRACTOR TO VERIFY THAT ALL EQUIPMENT IS FULLY OPERATIONAL AND FUNCTIONING AS INTENDED. ANY DEFICIENCIES WITH GFM SHALL BE BROUGHT TO THE ATTENTION OF THE COR FOR A RESOULTION.

MASSPORT:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY PERMITS REQUIRED BY MASSPORT AS DETAILED IN THEIR MOST CURRENT LOGAN INTERNATIONAL AIRPORT GUIDE TO TENANT CONSTRUCTION.

2. PRIOR TO COMMENCMENT OF THE PROJECT, THE CONTRACTOR MUST SUBMIT TO MPA OPERATIONS AND THE COR A DETAILED SAFETY PLAN WHICH INCLUDES ALL VEHICLE CROSSINGS, BARRICADE PLACEMENT, AND CONSTRUCTION ACTIVITIES ON AND ADJACENT TO AIRCRAFT OPERATIONAL AREAS. THE SAFETY PLAN SHALL BE MODIFIED AND UPDATED ON A WEEKLY BASIS TO ADDRESS EACH PHASE AND/OR SUB-PHASE AS WORK PROGRESSES.

4. CONTRACTOR SHALL NOTIFY MPA SURVEY UNIT 24 HOURS PRIOR TO ANY EXCAVATION/INSTALLATION OF UNDERGROUND CONDUIT RUNS. THE CONTRACTOR SHALL ACCOMODATE MASSPORT SURVEYORS FOR THE DOCUMENTATION OF NEW CONDUIT RUNS.

5. THE CONTRACTOR SHALL ENGAGE THE SERVICES OF A LISCENCED SITE PROFESSIONAL TO CONDUCT AN ASSESSMENT OF SUBSURFACE CONTAMINATION AT AREAS OF FOUNDATION AND/OR UTILITY EXCAVATION. THE LSP SHALL SHALL ADDRESS ISSUES ASSOCIATED WITH POTENTIAL SOIL AND GROUNDWATER CONTAMINATION WITHIN THE PROPOSED PROJECT AREA.

6. ALL EXCESS SOIL REQUIRING OFF-SITE DISPOSAL SHALL BE FULLY CHARACTERIZED AND ACCOMPANIED BY AN LSP OPINION LETTER. THE PROPOSED OFF-SITE RECEIVING FACILITY SHALL BE APPROVED BY MASSPORT IN ADVANCE.

7. THE CONTRACTOR SHALL PROVIDE A EXCAVATION DEWATERING PLAN THAT DETAILS HOW GROUNDWATER WILL BE MANAGED.

REV	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
	02/14/2020	CONSTRUCTION, DT #18645	1508292	01/30/2020	

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
ATO - TECHNICAL OPERATIONS — EASTERN SERVICE AREA

GS

RUNWAY 4R
GS / EG SHELTER REPLACEMENT PROJECT
GENERAL NOTES

BOSTON — LOGAN INTERNATIONAL AIRPORT — MA

REVIEWED BY	SUBMITTED BY	APPROVED BY
	K. GRANT	G. NEVILLE
	PROJECT ENGINEER	MGR: ENGINEERING CENTER

DESIGNED	KG	ISSUED BY	DATE	02/14/2020	JCN	1508292
DRAWN	KG	ENGINEERING SERVICES INFRASTRUCTURE	DRAWING NO	BOS-1508292-G003		REV
CHECKED	KG					

ISSUED FOR: CONSTRUCTION

EDM: bos-1508292-g003.dgn

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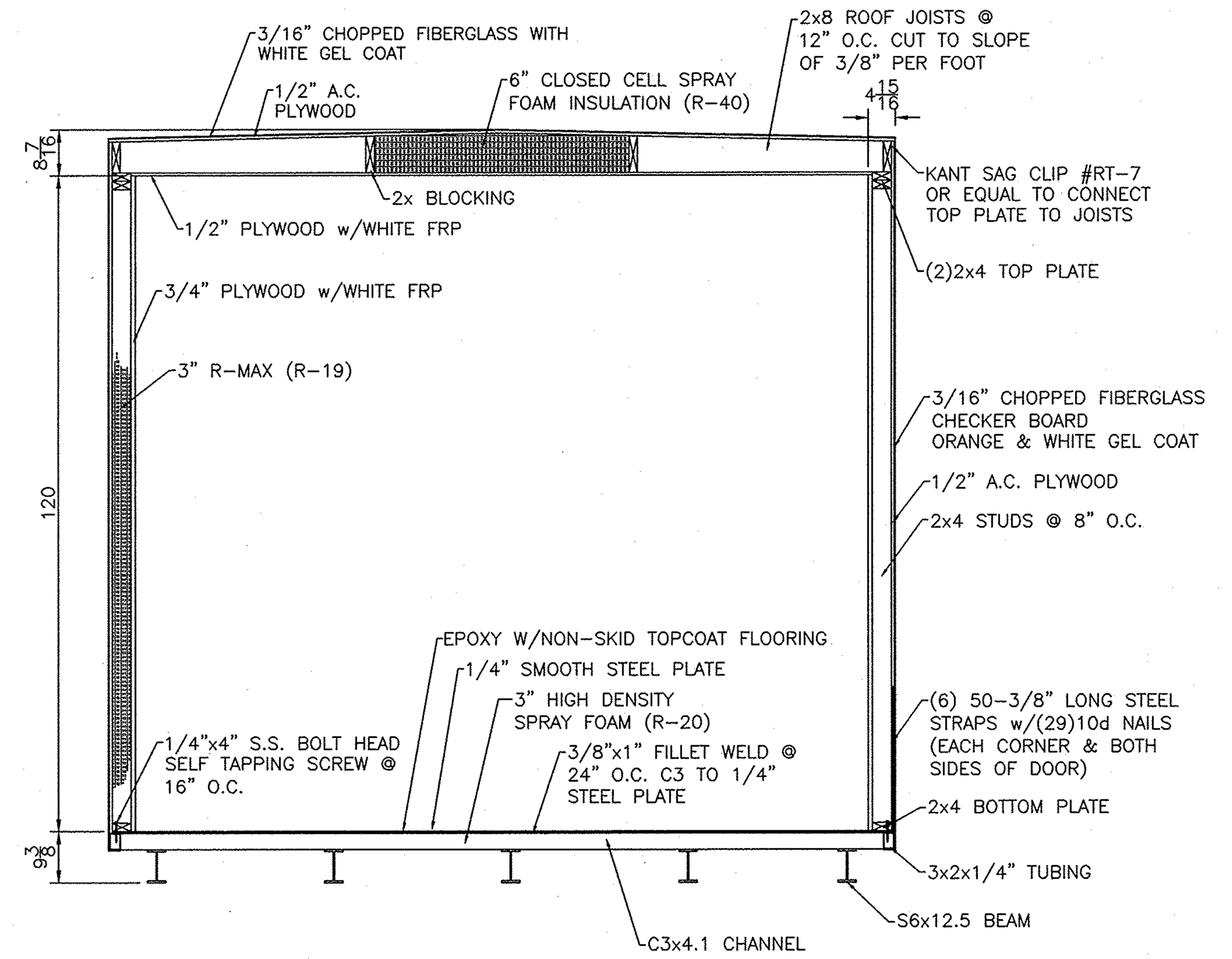
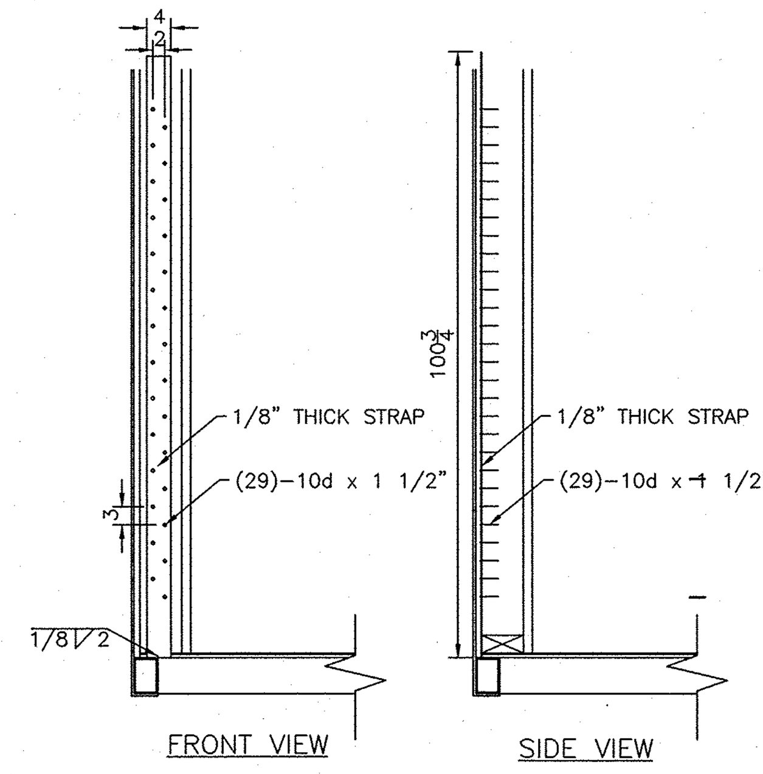
THIS DRAWING PRODUCED ON NEW ENGLAND REGION MICROSTATION SYSTEM

NAILING SCHEDULE

ROOF: USE 8d NAILS AT 6" OC AND 4" OC ON 4' ENDS
FLOOR: USE 10d NAILS AT 6" OC AND 4" OC ON 4' ENDS
SHEAR WALLS: USE 6d NAILS AT 4" OC
LONG WALLS: USE #66G NAILS AT 4" OC



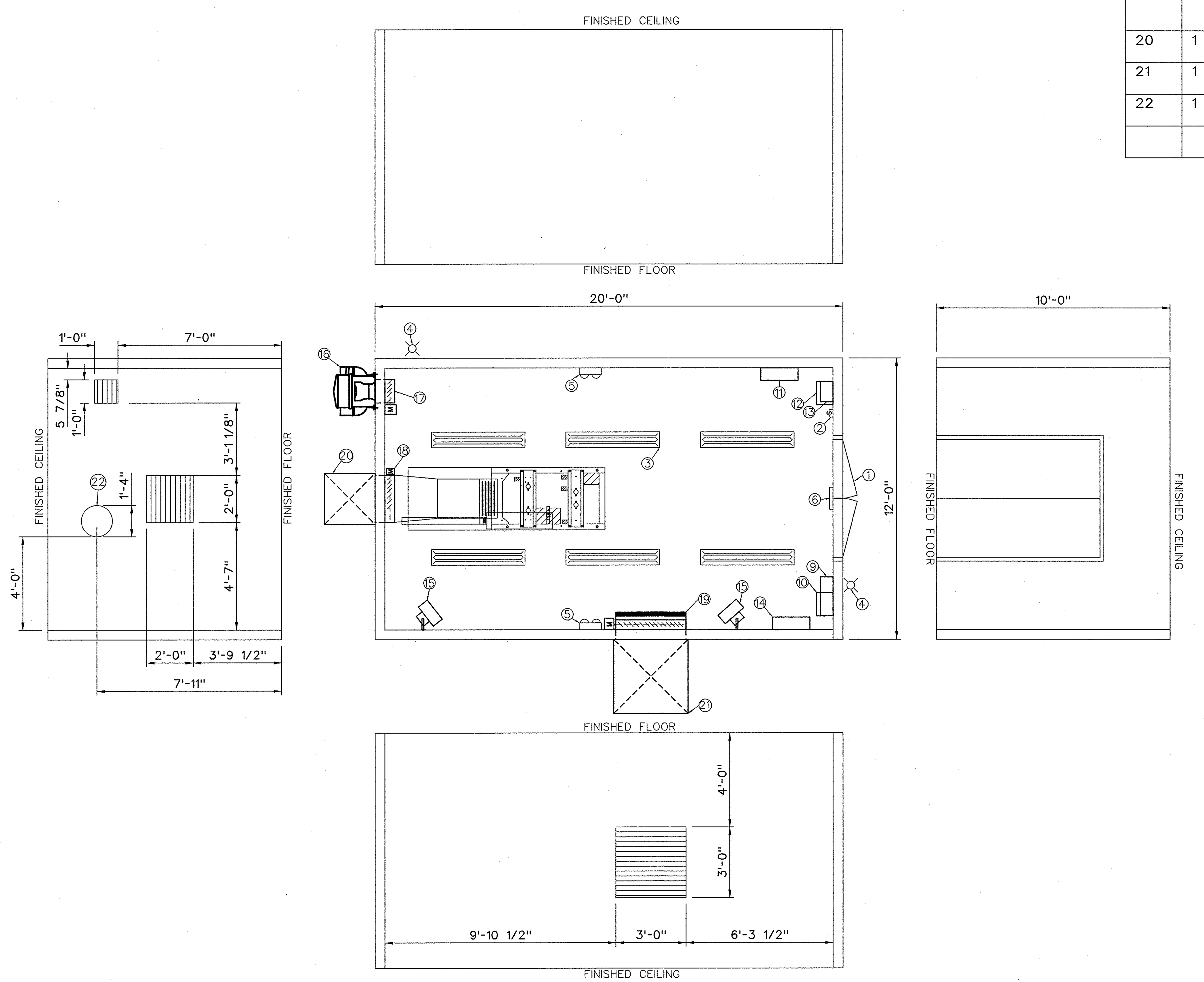
CONSTRUCTION DETAIL
NOT TO SCALE



STRAP DETAILS
NOT TO SCALE
NOTE: STRAP ON EACH CORNER & EACH SIDE OF DOOR (6 REQUIRED)

UIS GFM MATERIAL LIST

ITEM#	QTY.	VENDOR/PART#	DESCRIPTION	NOTES
1	1	-	ALIMINMUM CONTAINER DOOR 5'x7' ((2) 2'-6"'x7' DOORS) WITH A DOOR CLOSURE, THREE-POINT LATCH, LOCKSET WITH BEST CORE (NO SUBSTITUTES), AND 24" DEEP FIBERGLASS DOOR SHIELD	PROVIDED AND INSTALLED BY DUPONT
2	2	-	120V LIGHT SWITCH, 20 AMP, COMMERCIAL GRADE	PROVIDED AND INSTALLED BY DUPONT
3	6	MOBERN 1-48LED48	4' PREMIUM GRADE LED INDUSTRIAL FIXTURE	PROVIDED AND INSTALLED BY DUPONT
4	2 2	ASD-SFL15040 INTERMATIC T101	EXTERIOR LED FLOOD LIGHT 24-HOUR MECHANICAL TIME SWITCH	PROVIDED AND INSTALLED BY DUPONT
5	2	LITHONIA EU2-LED-M12	EMERGENCY LIGHT	PROVIDED AND INSTALLED BY DUPONT
6	1	LITHONIA LQM	EXIT LIGHT	PROVIDED AND INSTALLED BY DUPONT
7	8	-	GENERAL PURPOSE DUPLEX RECEPTACLES, 125V, 20A,	PROVIDED AND INSTALLED BY DUPONT
8	4	-	GFIDUPLEX RECEPTACLES, 125V, 20A MIN, UL GROUP I, CLASS A	PROVIDED AND INSTALLED BY DUPONT
9	1	SQUARE D NF TYPE	PANEL EG - SINGLE PHASE 120/240V, 225AF, 125A MAIN BREAKER, 30 CIRCUITS	PROVIDED AND INSTALLED BY DUPONT
10	1	RAYVOSS 120-2S-M3-2-06-A	TVSS FOR PANEL EG	PROVIDED AND INSTALLED BY DUPONT
11	1	SQUARE D H224N	SERVICE ENTRANCE COMMERCIAL DISCONNECT SWITCH	PROVIDED AND INSTALLED BY DUPONT
12	1	RAYVOSS 120-2S-M1-3-06-A-H	TVSS FOR SERVICE ENTRANCE COMMERCIAL DISCONNECT SWITCH	PROVIDED AND INSTALLED BY DUPONT
13	1	SQUARE D H223N	DISCONNECT SWITCH FOR TVSS	PROVIDED AND INSTALLED BY DUPONT
14	1	SIEMENS DTF224	FACILITY LOAD DISCONNECT SWITCH	PROVIDED MOUNTED BY DUPONT, WIRED BY OTHERS
15	2	QMARK MUH03-21	3KW, 240V ELECTRIC UNIT HEATER WITH MOUNTING BRACKET AND LINE VOLTAGE THERMOSTAT	PROVIDED AND INSTALLED BY DUPONT
16	1	DAYTON 4HZ43	SIDEWALL DIRECT DRIVE EXHAUST FAN WITH BIRD SCREEN AND THERMOSTAT	PROVIDED AND INSTALLED BY DUPONT
17	1	DAMPER: RUSKIN CD50 ACTUATOR: BELIMO AFBUP (SIDE MOUNT)	12" W X 12" H MOTORIZED CONTROL DAMPER, 2-POSITION DAMPER, PARALLEL BLADE, CONCEALED LINKAGE	PROVIDED AND INSTALLED BY DUPONT
18	1	DAMPER: RUSKIN CD50 ACTUATOR: BELIMO AFBUP (SIDE MOUNT)	24" W X 24" H MOTORIZED CONTROL DAMPER, 2-POSITION DAMPER, PARALLEL BLADE, CONCEALED LINKAGE	PROVIDED AND INSTALLED BY DUPONT
19	1	DAMPER: RUSKIN CD50 ACTUATOR: BELIMO AFBUP (SIDE MOUNT)	36" W X 36" H MOTORIZED CONTROL DAMPER, 2-POSITION DAMPER, PARALLEL BLADE, CONCEALED LINKAGE, FILTER, AND FILTER FRAME. SEE DRAWING M003.	PROVIDED AND INSTALLED BY DUPONT
20	1	-	26" W X 26" H x 26" D x 0.125" THICK ALUMINUM EXHAUST 90° RAIN HOOD WITH BIRD AND INSECT SCREENS	SHIPPPED LOOSE BY DUPONT FOR INSTALL BY CONTRACTOR
21	1	-	38" W X 38" H x 38" D x 0.125" THICK ALUMINUM EXHAUST 90° RAIN HOOD WITH BIRD AND INSECT SCREENS	SHIPPPED LOOSE BY DUPONT FOR INSTALL BY CONTRACTOR
22	1	-	SHELTER PENETRATION FOR A 1'-4" DIAMETER EXHAUST THIMBLE.	PENETRATION BY DUPONT FOR INSTALL BY OTHERS (PSG)



1 G004 FLOOR PLAN DETAIL
NOT TO SCALE

NOTES:

1. DRAWING IS FOR REFERENCE ONLY.
2. MATERIALS IDENTIFIED BY A SPECIFIC VENDOR MAY BE SUBSTITUTED BY THE SHELTER MANUFACTURER (DUPONT) UPON FAA APPROVAL.
3. PRIOR TO DELIVERY, DUPONT SHALL PROVIDE THE FAA WITH SHELTER DRAWINGS STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MASSACHUSETTS. THE STAMPED DRAWINGS SHALL INCLUDE THE APPROVED GFM MATERIAL LIST, SHELTER DETAILS, AND DESIGN CALCULATIONS.
4. UPON COMPLETION OF THE UIS SHELTER PROJECT THE EG, SUBBASE FUEL TANK, AND ASSOCIATED EQUIPMENT WILL BE INSTALLED ON-SITE UNDER A SEPERATE FAA POWER SERVICES GROUP (PSG) CONTRACT. SEE DRAWING SERIES BOS-1508064 FOR ADDITIONAL INFORMATION.

REV	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
	02/14/2020	CONSTRUCTION, DT #18645	1508292	01/30/2020	

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
ATO - TECHNICAL OPERATIONS — EASTERN SERVICE AREA

GS
RUNWAY 4R
GS / EG SHELTER REPLACEMENT PROJECT
MATERIAL LIST & DETAILS

BOSTON — LOGAN INTERNATIONAL AIRPORT — MA

REVIEWED BY
SUBMITTED BY: K. GRANT — PROJECT ENGINEER
APPROVED BY: G. NEVILLE — MGR: ENGINEERING CENTER
DESIGNED KG
DRAWN KG
CHECKED KG
ISSUED BY: ENGINEERING SERVICES INFRASTRUCTURE
DATE 02/14/2020
JCN 1508292
DRAWING NO BOS-1508292-G004
REV

ISSUED FOR: CONSTRUCTION

EDM: bos-1508292-g004.dgn

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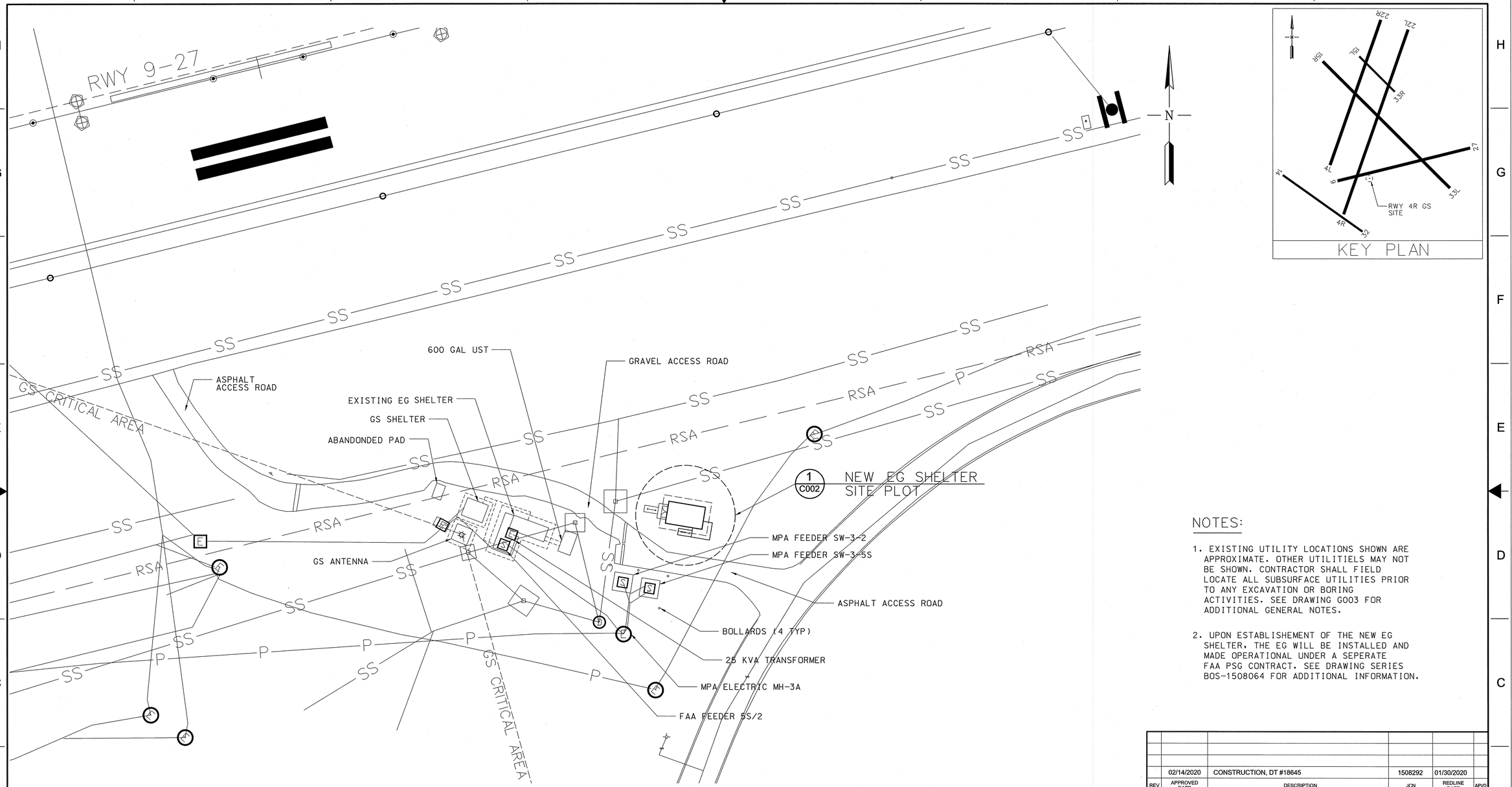
THIS DRAWING PRODUCED ON NEW ENGLAND REGION MICROSTATION SYSTEM



1 C002 NEW EG SHELTER SITE PLOT

1 C001 EXISTING SITE RWY 4R GS
SCALE: 1"=25'-0"

25' 0 25' 50'
SCALE: 1" = 25'

KEY PLAN

NOTES:

1. EXISTING UTILITY LOCATIONS SHOWN ARE APPROXIMATE. OTHER UTILITIELS MAY NOT BE SHOWN. CONTRACTOR SHALL FIELD LOCATE ALL SUBSURFACE UTILITIES PRIOR TO ANY EXCAVATION OR BORING ACTIVITIES. SEE DRAWING G003 FOR ADDITIONAL GENERAL NOTES.

2. UPON ESTABLISHEMENT OF THE NEW EG SHELTER. THE EG WILL BE INSTALLED AND MADE OPERATIONAL UNDER A SEPERATE FAA PSG CONTRACT. SEE DRAWING SERIES BOS-1508064 FOR ADDITIONAL INFORMATION.

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DEPARTMENT OF TRANSPORTATION
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ATO - TECHNICAL OPERATIONS — EASTERN SERVICE AREA

GS

RUNWAY 4R
GS / EG SHELTER REPLACEMENT PROJECT
EXISTING SITE PLAN

BOSTON — LOGAN INTERNATIONAL AIRPORT — MA

REVIEWED BY	SUBMITTED BY	APPROVED BY
	K. GRANT	G. NEVILLE
	PROJECT ENGINEER	MGR: ENGINEERING CENTER
DESIGNED KG	ISSUED BY: ENGINEERING SERVICES INFRASTRUCTURE	DATE 02/14/2020 JCN 1508292
DRAWN KG		DRAWING NO BOS-1508292-C001 REV
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ISSUED FOR: CONSTRUCTION

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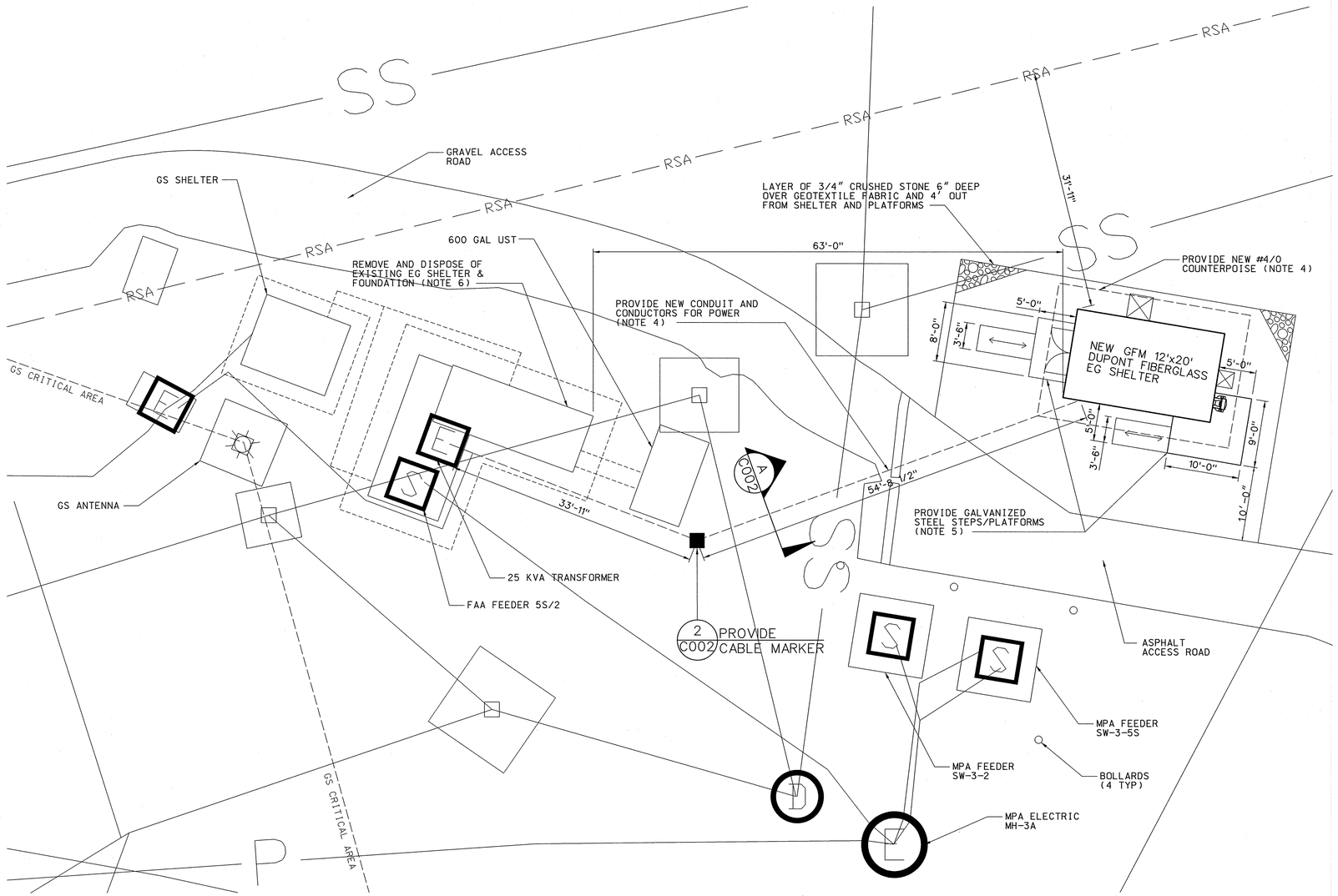
NOTES:

1. THE BOSTON RUNWAY 4R GLIDE SLOPE IS A OPERATIONAL FACILITY. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE COR TO MINIMIZE ANY IMPACTS.
2. SEE DRAWING G003 FOR ADDITIONAL GENERAL NOTES.
3. THE EG SHELTER WILL BE DELIVERED BY OTHERS. THE CONTRACTOR SHALL COORDINATE WITH THE COR TO ACCEPT DELIVERY AND ASSIST IN PLACEMENT AS NECESSARY.
4. SEE DRAWING E001 FOR ADDITIONAL INFORMATION.
5. SEE DRAWING S002 FOR ADDITIONAL INFORMATION.
6. SEE SPECIFICATION SECTION 01 11 00 FOR ADDITIONAL INFORMATION.



1 C002 RWY 4R GS PROPOSED SITE PLOT
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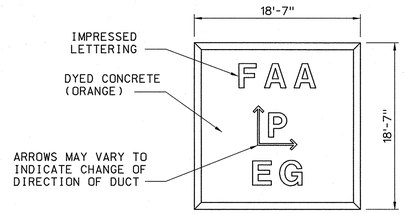
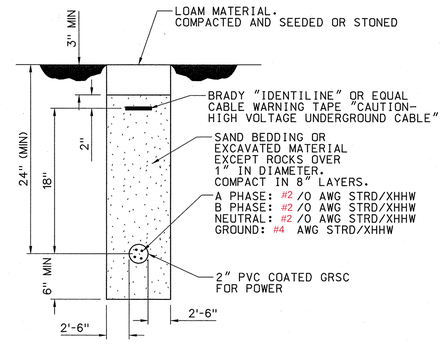


2 C002 CONCRETE CABLE MARKER
NO TO SCALE



A C002 TRENCH SECTION
NO TO SCALE

REV	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
	02/14/2020	CONSTRUCTION, DT #18645	1508292	01/30/2020	

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
ATO - TECHNICAL OPERATIONS — EASTERN SERVICE AREA

GS
RUNWAY 4R
GS / EG SHELTER REPLACEMENT PROJECT
PROPOSED SITE PLAN

BOSTON — LOGAN INTERNATIONAL AIRPORT — MA

REVIEWED BY	SUBMITTED BY	APPROVED BY
	K. GRANT	G. NEVILLE
	PROJECT ENGINEER	MGR: ENGINEERING CENTER

DESIGNED KG | DRAWN KG | CHECKED KG
ISSUED BY: ENGINEERING SERVICES INFRASTRUCTURE
DATE 02/14/2020 | JCN 1508292
DRAWING NO BOS-1508292-C002 | REV

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bos-1508292-c002.dgn 2/6/2020 11:56:44 AM Michael CTR Gosselin

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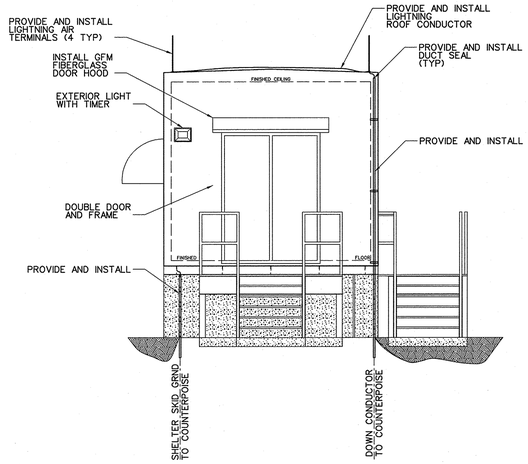

A C003 EXTERIOR ELEVATION (WEST)
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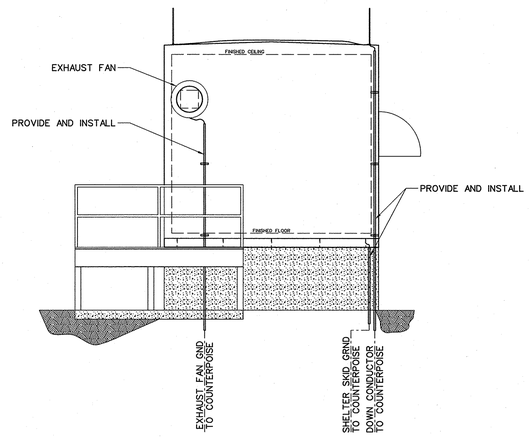

B C003 EXTERIOR ELEVATION (EAST)
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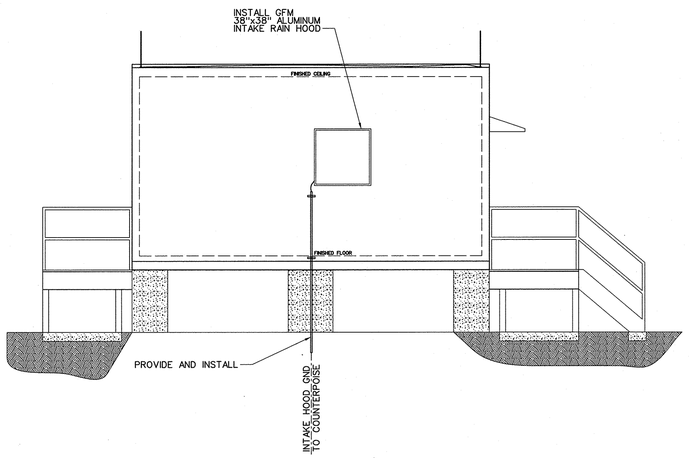
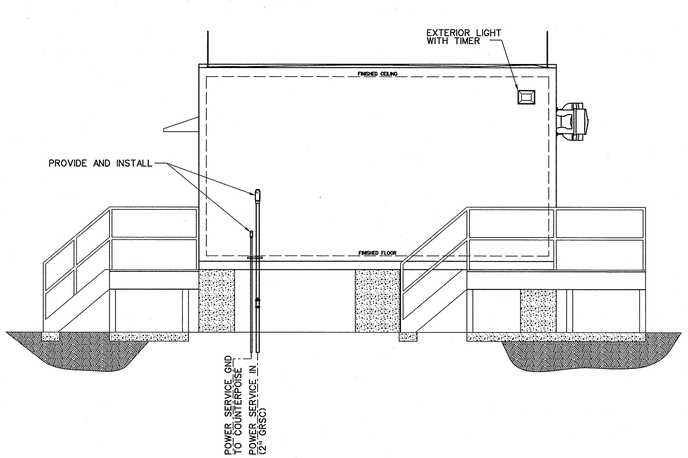


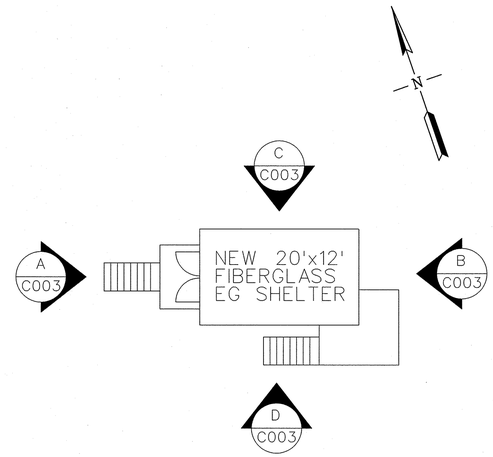
C C003 EXTERIOR ELEVATION (NORTH)
SCALE: 1/4"=1'-0"



D C003 EXTERIOR ELEVATION (SOUTH)
SCALE: 1/4"=1'-0"

NOTES:

1. ALL CONDUIT OPENINGS INTO THE SHELTER ARE TO BE SEALED TO PREVENT ANY INSECTS OR MOISTURE FROM ENTERING THE SHELTER.
2. EXPANSION COUPLINGS SHALL BE PLACED ON ALL EXTERIOR VERTICAL GRS CONDUITS.
3. CONDUIT LOCATIONS SHOWN ARE DIAGRAMATIC ONLY. ACTUAL LOCATIONS TO BE DETERMINED IN FIELD.
4. ALL EXTERIOR CONDUITS, HOODS, AND PIPING SHALL BE GROUNDED. REFER TO ELECTRICAL DRAWING FOR DETAILS. CONNECTIONS SHALL MEET BONDING REQUIREMENTS IN FAA-STD-019F.
5. CONTRACTOR SHALL CORE INTO SHELTER TO BRING NECESSARY CONDUITS IN. CONTRACTOR SHALL COORDINATE WITH THE FAA RE TO FIELD LOCATE ANY CONDUITS SHOWN IN THE DRAWING. CONTRACTOR SHALL VERIFY ALL PENETRATIONS AND EQUIPMENT DIMENSIONS TO ENSURE ALIGNMENT AND NO INTERFERENCE.



1 C003 KEY PLAN
NOT TO SCALE

REV	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
	02/14/2020	CONSTRUCTION, DT #18645	1508292	01/30/2020	

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FEDERAL AVIATION ADMINISTRATION
ATO - TECHNICAL OPERATIONS — EASTERN SERVICE AREA

GS

RUNWAY 4R
GS / EG SHELTER REPLACEMENT PROJECT
EXTERIOR ELEVATIONS

BOSTON — LOGAN INTERNATIONAL AIRPORT — MA

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	K. GRANT	G. NEVILLE
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3/2/2020 11:58:14 AM Michael CTR Gosselin

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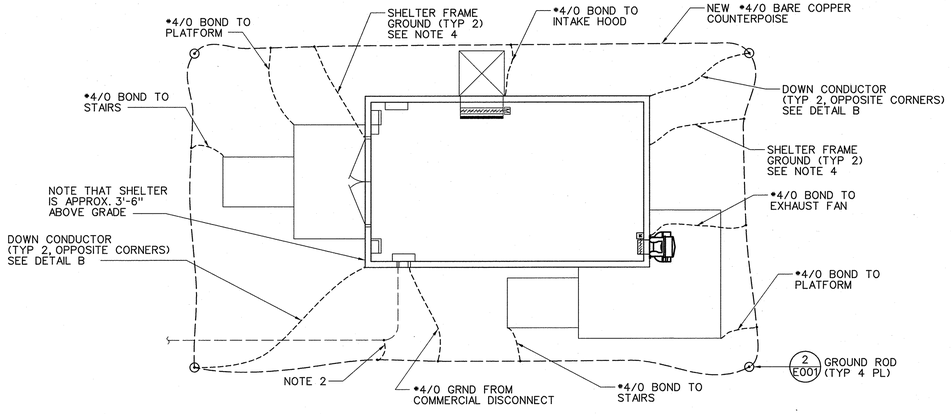
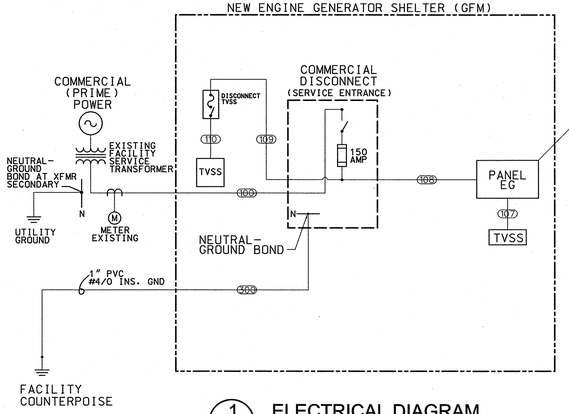


A E001 **FACILITY GROUNDING**
NO TO SCALE

GROUNDING NOTES:

1. CONTRACTOR SHALL INSTALL A NEW EARTH ELECTRODE SYSTEM.
2. ALL UNDERGROUND GRSC SHALL BE GROUNDED USING A #2 AWG BARE COPPER GROUND TO THE GROUNDING COUNTERPOISE AND/OR GROUND ROD AT EACH END.
3. EES SYSTEM CONNECTIONS TO THE SHELTER SHALL BE 24" (MIN) BELOW GRADE.
4. CONTRACTOR SHALL PROVIDE AND INSTALL TWO 4/0 AWG FACILITY SKID GROUNDS (COLOR CODED GREEN) FROM THE BUILDING SKID TO THE EES.



1 E001 **ELECTRICAL DIAGRAM**
NO TO SCALE

ONELINE DIAGRAM NOTES:

1. PROVIDE AND INSTALL NEW FACILITY FEEDERS FROM 25 KVA TRANSFORMER. CONDUCTORS SHALL BE SIZED #2 /O AWG (QTY 3) WITH #4 AWG GREEN GROUND. INSTALL NEW CONDUIT, MINIMUM 2" GRSC.
2. ALL PENETRATIONS SHALL BE GROUTED ON THE OUTSIDE OF THE CONDUIT AND SEALED ON THE INTERIOR WITH A REMOVEABLE SEALING COMPOUND AFTER INSTALLATION OF CONDUIT AND CONDUCTORS.
3. ALL CONDUCTORS SHALL BE MINIMUM COPPER, THWN, 600V RATED. ALL BOLTED CONNECTIONS SHALL BE VIA HYDRAULICALLY CRIMPED TWO HOLE LUGS UTILIZING BELLVILLE WASHERS. REFER TO FAA-STD-019F FOR MECHANICAL CONNECTION REQUIREMENTS.

PANEL SCHEDULE

PANEL NAME: PANEL EG — VOLTAGE 120/240V, 1 PH — PANEL LOCATION: EG SHELTER — SITE:

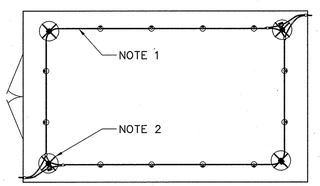
DESCRIPTION	BREAKER POLE	BREAKER AMP	LOAD PER PHASE (VA) A	LOAD PER PHASE (VA) B	CIRCUIT NUMBER		LOAD PER PHASE (VA) A	LOAD PER PHASE (VA) B	BREAKER POLE	BREAKER AMP	DESCRIPTION
LIGHTS	1	20			1	2			1	20	LIGHTS
RECEPTACLES	1	20			3	4			1	20	RECEPTACLES
EG BLOCK HEATER*	2	20			5	6			2	20	EF-1
EG BLOCK HEATER*	2	20			7	8			2	20	EF-1
BATTERY CHARGER*	1	20			9	10			2	20	SPARE
EUH-1 (3 KW)	2	20			11	12			2	20	SPARE
EUH-1 (3 KW)	2	20			13	14			2	20	EUH-2 (3 KW)
OVERFILL ALARM (RELAY IN CONSOLE)*	1	20			15	16			2	20	EUH-2 (3 KW)
FUEL MONITORING TLS-4 SQ CONSOLE*	1	20			17	18			1	20	EG ENV. CONTROL PANEL*
SPARE	1	20			19	20			1	20	EMERG. LIGHTS
SPARE	1	20			21	22			1	20	EXTERIOR LIGHTS
SPARE	2	20			23	24			1	20	EXTERIOR RECEPTACLES (GFI)
SPARE	2	20			25	26			1	20	ERNS PANEL P1B*
PANEL EG	2	60			27	28			1	20	ERNS OUTLET*
PANEL EG	2	60			29	30			1	20	SPARE

PHASE A:	(VA)	MAIN BRKR A/F: 225 A/T: 100 AT	PNL FEED:	MANUFACTURER:	SQUARE D
PHASE B:	(VA)	AIC RATING: 10K	TOTAL CONNECTED LOAD (KVA):=	AMPS	
		MAIN COPPER BUS:	TOTAL DEMAND LOAD (KVA)=	AMPS	
QUANTITY OF BREAKERS:	30	PNL_MOUNTING: SURFACE	FEEDER SIZE: 100A 1 SET 2"C	4 #2 AWG,	#6 GRD

* INSTALLED LATER BY THE PSG EG REPLACEMENT PROJECT

CONDUIT & CONDUCTOR SCHEDULE

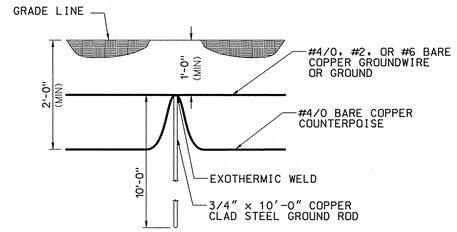
CONDUIT & CABLE IDENTIFICATION NUMBER	FROM	TO	CONDUIT SIZE	CONDUIT TYPE	DESCRIPTION	CONDUCTOR SIZE (AWG)/INSULATION	FUNCTION	COLOR
100	UTILITY SERVICE	SERVICE ENTRANCE COMMERCIAL DISCONNECT	2"	RMC	COMMERCIAL (UTILITY) SERVICE FEEDER FROM TRANSFORMER TO FACILITY SERVICE ENTRANCE	#2/0 AWG STRD/XHHW	A PHASE	BLACK
						#2/0 AWG STRD/XHHW	B PHASE	RED
						#2/0 AWG STRD/XHHW	NEUTRAL	WHITE
						#4 AWG STRD/XHHW	GROUND	GREEN
107	COMMERCIAL DISCONNECT PANEL EG	TVSS – PANEL EG	1"	EMT		#6 AWG STRD/XHHW	A PHASE	BLACK
						#6 AWG STRD/XHHW	B PHASE	RED
						#6 AWG STRD/XHHW	NEUTRAL	WHITE
						#6 AWG STRD/XHHW	GROUND	GREEN
108	COMMERCIAL DISCONNECT	PANEL EG	2"	EMT	FACILITY MAIN DISTRIBUTION PANEL (MDP) TO TVSS	#1/0 AWG STRD/XHHW	A PHASE	BLACK
						#1/0 AWG STRD/XHHW	B PHASE	RED
						#1/0 AWG STRD/XHHW	NEUTRAL	WHITE
						#6 AWG STRD/XHHW	GROUND	GREEN
109	SERVICE ENTRANCE COMMERCIAL DISCONNECT	DISCONNECT – COMMERCIAL POWER	1 1/2"	EMT	LOAD DISCONNECT TO DISCONNECT COMMERCIAL POWER DO NOT VIOLATE 10 FT TAP RULE	#2 AWG STRD/XHHW	A PHASE	BLACK
						#2 AWG STRD/XHHW	B PHASE	RED
						#2 AWG STRD/XHHW	NEUTRAL	WHITE
						#6 AWG STRD/XHHW	GROUND	GREEN
110	DISCONNECT – PANEL COMMERCIAL POWER	TVSS – SE	1 1/2"	EMT	DISCONNECT TO TVSS	#2 AWG STRD/XHHW	A PHASE	BLACK
						#2 AWG STRD/XHHW	B PHASE	RED
						#2 AWG STRD/XHHW	NEUTRAL	WHITE
						#6 AWG STRD/XHHW	GROUND	GREEN
300	SERVICE ENTRANCE DISCONNECT SWITCH	FACILITY COUNTERPOISE	1"	PVC	NEC CODE REQUIRED FACILITY NEUTRAL TO GROUND BOND 2014 NEC ARTICLE 250-66 AS A MINIMUM	#4/0 AWG 19 STRAND INS. COPPER	GROUND	INSULATED GREEN



B E001 **FACILITY LIGHTNING PROTECTION**
NO TO SCALE

LIGHTNING PROTECTION NOTES:

1. CONTRACTOR SHALL INSTALL CLASS 2 LIGHTNING PROTECTION (L.P.) RING AROUND TOP OF NEW SHELTER.
2. CONTRACTOR SHALL INSTALL FOUR 24" HARGER 1224CUAT (OR EQUAL) AIR TERMINALS ON OPPOSITE (CENTER) ENDS OF THE SHELTER ROOF.
3. AIR TERMINALS SHALL BE PLACED ON HARGER CUBU121 (OR APPROVED EQUAL) BRONZE HORIZONTAL BASE 1/2 ".
4. EXTEND TWO DOWN CONDUCTORS FROM L.P. RING TO THE EES SYSTEM. EXOTHERMICALLY WELD DOWN CONDUCTORS TO GROUND ROD AT THE EES SYSTEM.
5. CONTRACTOR SHALL ADHERE L.P. SYSTEM TO NEW SHELTER BY USE OF ADHESIVE CABLE HOLDERS AND BASES.
6. CONTRACTORS SHALL INSTALL LIGHTNING PROTECTION SYSTEM IN ACCORDANCE WITH FAA-STD-019F: LIGHTNING AND SURGE PROTECTION, GROUNDING, BONDING, AND SHIELDING REQUIREMENTS FOR FACILITIES AND ELECTRONIC EQUIPMENT.



2 E001 **TYPICAL GROUND ROD INSTALLATION**
NO TO SCALE

GENERAL ELECTRIC NOTES:

1. ALL ELECTRICAL WORK SHALL CONFORM TO FAA-C-1217G, FAA-C-1391D SPECIFICATIONS AND NFPA 70 (NEC).
2. THE CONTRACTOR SHALL TERMINATE ALL POWER AND GROUND CONNECTIONS UNLESS NOTED OTHERWISE.
3. ALL FLEXIBLE LIQUIDTIGHT CONDUIT SHALL BE PROVIDED WITH AN EXTERNAL BONDING JUMPER IN ADDITION TO THE INTERNAL BONDING CONDUCTOR. THE BONDING JUMPER SHALL BE A #6 AWG GREEN INSULATED COPPER CONDUCTOR.
4. ALL CIRCUITS SHALL HAVE INDIVIDUAL NEUTRAL AND GROUNDING CONDUCTORS: NO SHARED NEUTRALS OR GROUNDS WILL BE PERMITTED.
5. NEUTRAL CONDUCTORS SHALL REMAIN ISOLATED FROM GROUND IN ALL LOCATIONS EXCEPT AT POWER SERVICE ENTRANCE.
6. ALL PVC CONDUIT SHALL BE SCHEDULE 40 UNLESS OTHERWISE NOTED.
7. GROUNDING AND LIGHTNING PROTECTION SHALL MEET FAA STANDARD 019F, "LIGHTNING AND SURGE PROTECTION, GROUNDING, BONDING, AND SHIELDING REQUIREMENTS FOR FACILITIES AND ELECTRONIC EQUIPMENT"
8. ELECTRICAL AND ELECTRONIC GROUNDING INCLUDING THE LIGHTNING PROTECTION SYSTEM SHALL MEET OR EXCEED ALL PROVISIONS OF THE LATEST EDITION OF:
   NFPA 70: NATIONAL ELECTRIC CODE (NEC);
   NFPA 780: STANDARD FOR THE INSTALLATION OF LIGHTNING PROTECTION SYSTEMS
   FAA-STD-019F: LIGHTNING AND SURGE PROTECTION, GROUNDING, BONDING, AND SHIELDING REQUIREMENTS FOR FACILITIES AND ELECTRONIC EQUIPMENT.

TESTING:

1. THE CONTRACTOR SHALL TEST ALL EQUIPMENT AND CABLES AS REQUIRED BY FAA STANDARDS AND SPECIFICATIONS.
2. VOLTAGE TESTS, INSULATION TESTS, AND GROUND RESISTANCE TESTS SHALL BE CONDUCTED ON ALL INSTALLED CONDUCTORS AS SPECIFIED IN DIVISION 26 OF THE CONTRACT SPECIFICATIONS.
3. THE TEST RESULTS SHALL BE FORWARDED TO THE FAA IN AN FAA SPECIFIED FORMAT.
4. ALL UNDERGROUND GROUND CONNECTIONS SHALL BE EXOTHERMICALLY WELDED UNLESS OTHERWISE INDICATED. WELD INTEGRETY SHALL BE TESTED BY A 4 TERMINAL MILLIOHMMETER. SUCCESSFUL TEST SHALL BE LESS THAN 0.001 OHMS.

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DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
ATO - TECHNICAL OPERATIONS — EASTERN SERVICE AREA

GS

RUNWAY 4R
GS / EG SHELTER REPLACEMENT PROJECT
ELECTRICAL DIAGRAM AND NOTES

BOSTON — LOGAN INTERNATIONAL AIRPORT — MA

REVIEWED BY	SUBMITTED BY	APPROVED BY
	K. GRANT	G. NEVILLE
	PROJECT ENGINEER	MGR: ENGINEERING CENTER
DESIGNED KG	ISSUED BY: ENGINEERING SERVICES INFRASTRUCTURE	DATE 02/14/2020 JCN 1508292
DRAWN KG		DRAWING NO BOS-1508292-E001 REV
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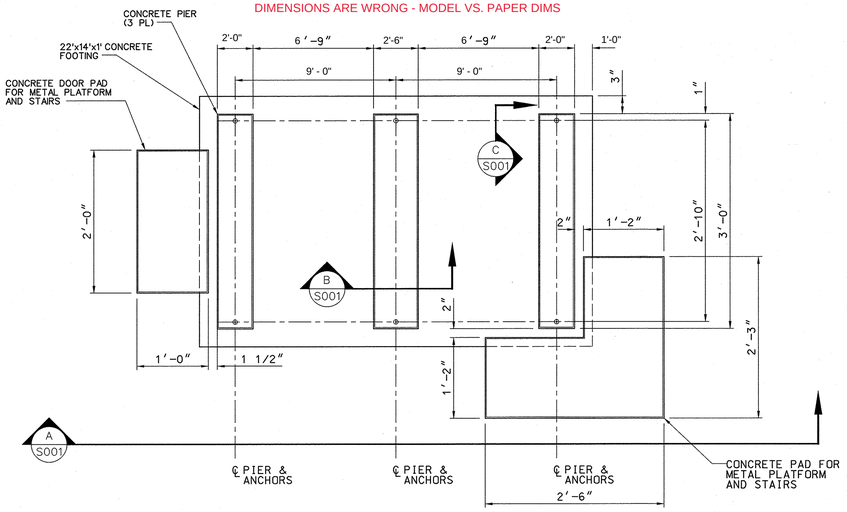
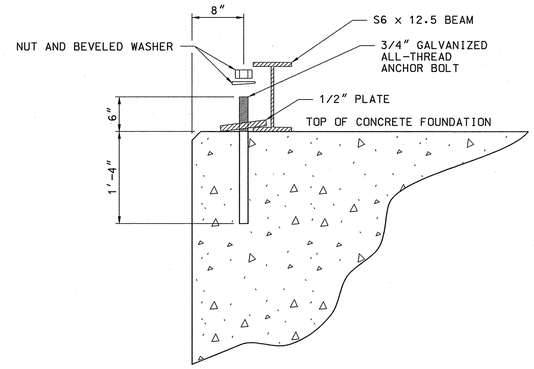
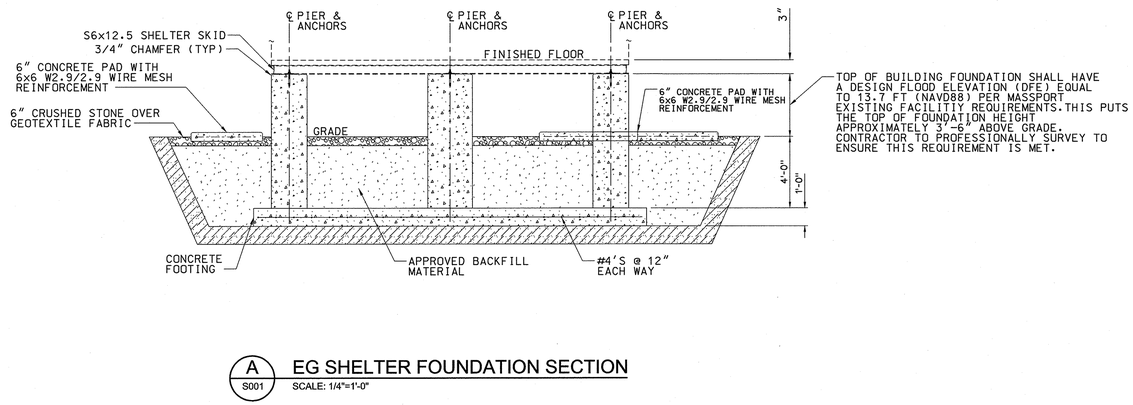
DIMENSIONS ARE WRONG - MODEL VS. PAPER DIMS



1 S001 **EG SHELTER FOUNDATION PLAN**
SCALE: 1/4"=1'-0"



C S001 **ANCHOR BOLT DETAIL**
NOT TO SCALE



A S001 **EG SHELTER FOUNDATION SECTION**
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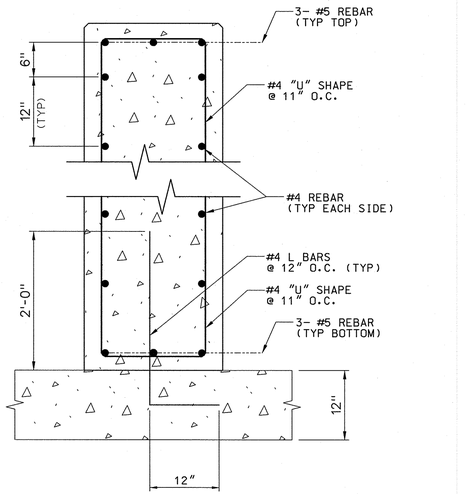

B S001 **REINFORCEMENT DETAIL**
NOT TO SCALE

4' 0 4' 8'
SCALE: 1/4" = 1'-0"

NOTES:

1. THIS DRAWING IS FOR REFERENCE ONLY. ALL ELEMENTS OF THE FOUNDATION SHOWN INCLUDING THE SHELTER PAD, PIERS, BASE SLAB PLATFORM/STAIR PADS, REINFORCING BARS, AND THEIR DIMENSIONS ARE FOR VISUALIZATION PURPOSES ONLY. THE SHELTER AND STAIR/PLATFORM FOUNDATIONS ARE TO BE DESIGNED BY THE CONTRACTOR AND MAY NOT MATCH WHAT IS SHOWN ON THIS DRAWING.

2. THE CONTRACTOR SHALL DESIGN THE SHELTER FOUNDATION, INCLUDING PLATFORM/STAIR PADS, BASED ON RECOMMENDATIONS PROVIDED IN THE GEOTECHNICAL ENGINEERING REPORT. THE CONTRACTORS FOUNDATION DESIGN SHALL BE PREPARED AND STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE COMMONWEALTH OF MASSACHUSETTS. THE STAMPED FOUNDATION DESIGN SHALL BE SUBMITTED TO THE FAA AND MASSPORT FOR REVIEW AND APPROVAL PRIOR TO COMMENCEMENT OF ANY WORK.

3. ANCHOR BOLT LOCATIONS AND EMBEDMENTS SHOWN ARE TYPICAL FOR FAA DUPONT SHELTER INSTALLATIONS. THE STATE LISCENCED PROFESSIONAL ENGINEER DESIGNING THE FOUNDATION SHALL BE RESPONSIBLE FOR THE DESIGN OF THE SHELTER ANCHOR BOLTS.

4. ALL CONCRETE WORK SHALL COMPLY WITH ACI-304, "GUIDE FOR MEASURING, MIXING, TRANSPORTING, AND PLACING CONCRETE", ACI-308, "GUIDE TO EXTERNAL CURING OF CONCRETE", AND ACI-347, "GUIDE TO FORMWORK FOR CONCRETE".

5. CONCRETE SHALL DEVELOP 4000 PSI IN 28 DAYS WITH A MAXIMUM SLUMP OF 3" AND A MAXIMUM AGGREGATE SIZE OF 3/4". EXCEPT WHERE OTHERWISE INDICATED.

6. ALL REINFORCING STEEL SHALL COMPLY WITH ASTM A615, GRADE 60.

7. EXPANSION ANCHORS, IF USED, SHALL BE HILTI HSL HEAVY DUTY ANCHORS OR APPROVED EQUAL AND SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

8. DRILL AND EPOXY ANCHOR BOLTS WITH PRO-POXY 300 FAST OR AN APPROVED EQUAL.

9. ALL EDGES OF EXPOSED CONCRETE SHALL HAVE A 3/4" CHAMFER.

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ATO - TECHNICAL OPERATIONS — EASTERN SERVICE AREA

GS

RUNWAY 4R
GS / EG SHELTER REPLACEMENT PROJECT
FOUNDATION DETAILS

BOSTON — LOGAN INTERNATIONAL AIRPORT — MA

REVIEWED BY	SUBMITTED BY	APPROVED BY
	K. GRANT	G. NEVILLE
	PROJECT ENGINEER	MGR: ENGINEERING CENTER

DESIGNED	KG	ISSUED BY	DATE	JCN
DRAWN	KG	ENGINEERING SERVICES INFRASTRUCTURE	02/14/2020	1508292
CHECKED	KG		DRAWING NO	REV
			BOS-1508292-S001	

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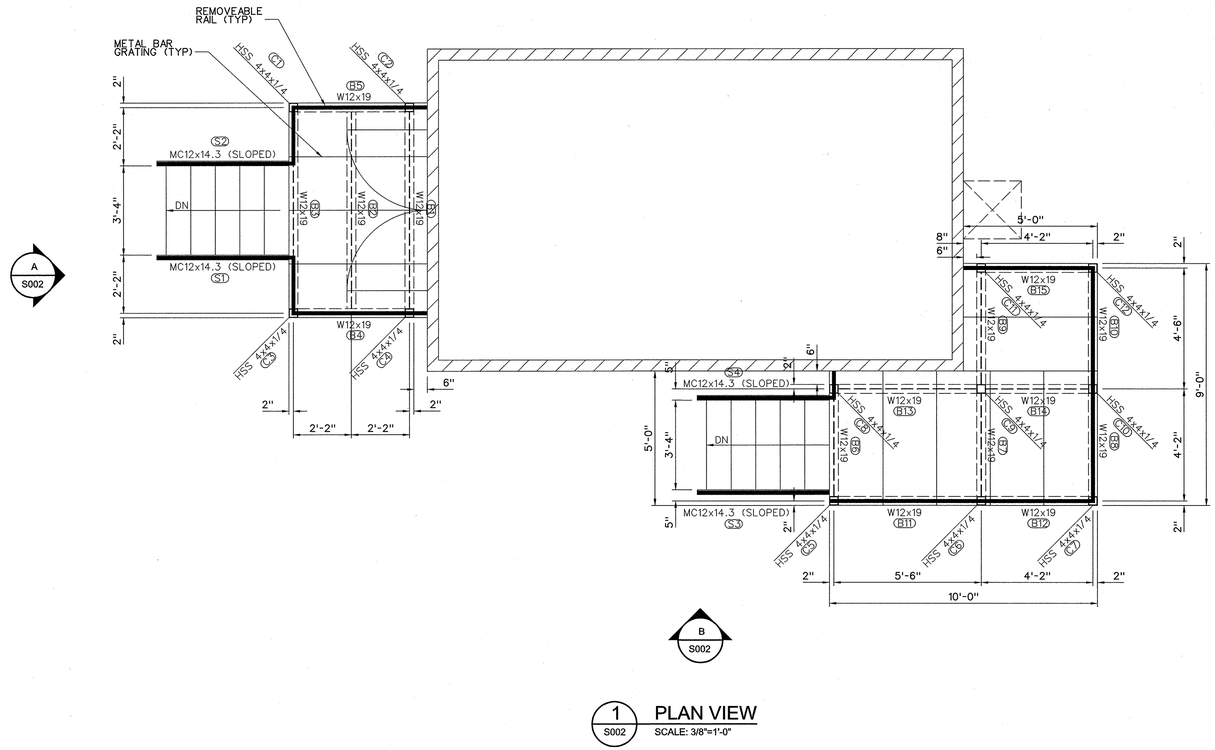
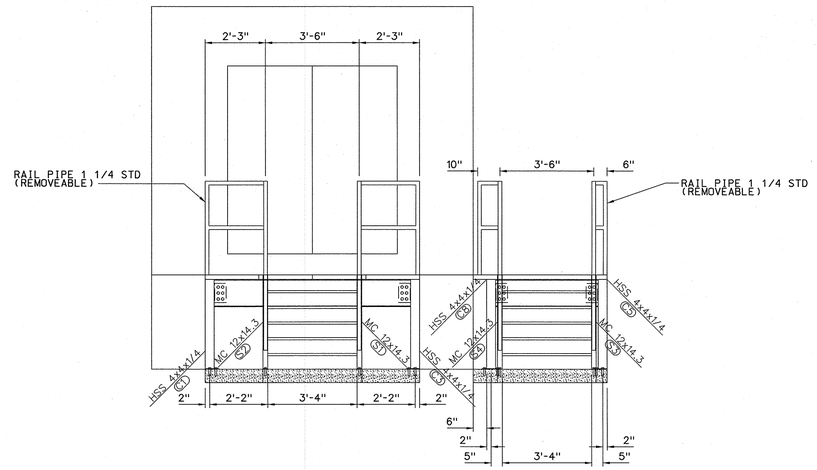
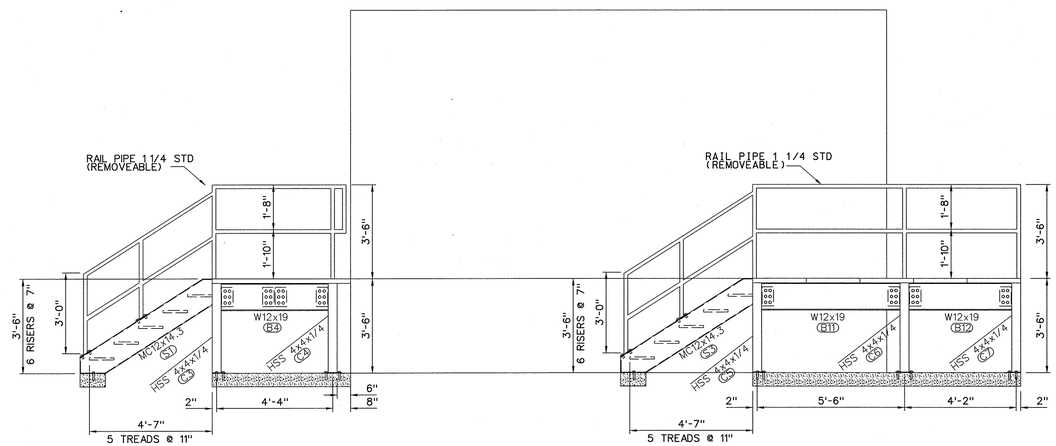


1 S002 **PLAN VIEW**
SCALE: 3/8"=1'-0"



A S002 **FRONT VIEW**
SCALE: 3/8"=1'-0"



B S002 **SIDE VIEW**
SCALE: 3/8"=1'-0"

NOTES:

1. DRAWING IS FOR REFERENCE ONLY. CONTRACTOR SHALL FURNISH SHOP DRAWINGS FOR PLATFORMS AND STAIRS THAT ARE STAMPED BY A PROFESSIONAL ENGINEER LISCENCED IN THE STATE OF MASSACHUSETTS. SHOP DRAWINGS SHALL DETAIL FRAMING MEMBERS, COLUMNS, CONNECTIONS, ANCHORAGE, DECK MATERIALS, TREADS, PENETRATIONS, AND RAILINGS. SHOP DRAWINGS SHALL BE APPROVED BY THE PROJECT ENGINEER BEFORE FABRICATION CAN PROCEED.

2. PLATFORM FRAMING MEMBERS SHALL BE OFFSET FROM THE BUILDING AND/OR FOUNDATION WALLS A MINIMUM OF 6" TO ALLOW SPACE FOR CONDUIT ATTACHMENT TO THE EXTERIOR OF THE STRUCTURE.

3. RAILINGS SHALL BE FABRICATED IN SECTIONS THAT ARE REMOVEABLE TO ALLOW EASY ACCESS FOR FUTURE EQUIPMENT REPLACEMENTS.

4. STEEL BEAMS, CHANNELS, COLUMNS, GUARDRAILS, CONNECTIONS, DECKING, AND HARDWARE SHALL BE HOT DIPPED GALVANIZED.

REV	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
	02/14/2020	CONSTRUCTION, DT #18645	1508292	01/30/2020	

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
ATO - TECHNICAL OPERATIONS — EASTERN SERVICE AREA

GS

RUNWAY 4R
GS / EG SHELTER REPLACEMENT PROJECT
STAIRS AND PLATFORMS

BOSTON — LOGAN INTERNATIONAL AIRPORT — MA

REVIEWED BY	SUBMITTED BY: K. GRANT	APPROVED BY: G. NEVILLE
	PROJECT ENGINEER	MGR: ENGINEERING CENTER
DESIGNED KG / DRAWN KG / CHECKED KG	ISSUED BY: ENGINEERING SERVICES INFRASTRUCTURE	DATE 02/14/2020 JCN 1508292
		DRAWING NO BOS-1508292-S002 REV

ISSUED FOR: CONSTRUCTION

bos-1508292-s002.dgn 10/2/2020 12:03:18 PM Michael CTR Gosselin

EDM: bos-1508292-s002.dgn

THIS DRAWING PRODUCED ON NEW ENGLAND REGION MICROSTATION SYSTEM

MASSWILDLIFE

DIVISION OF
FISHERIES & WILDLIFE

1 Rabbit Hill Road, Westborough, MA 01581
p: (508) 389-6300 | f: (508) 389-7890
MASS.GOV/MASSWILDLIFE

April 30, 2021

Boston Conservation Commission
Boston Environment Department
1 City Hall Plaza, Room 709
Boston MA 02201

Kevin Grant
Federal Aviation Administration
1200 District Avenue
Burlington MA 01803

RE:	Applicant:	Kevin Grant, FAA
	Project Location:	off Maverick Street, Logan International Airport
	Project Description:	Replacement of Runway 4R Glide Slope Engine Generator Shelter
	DEP Wetlands File No.:	Not Assigned
	NHESP File No.:	**21-40108**

Dear Commissioners & Applicant:

The Natural Heritage & Endangered Species Program of the Massachusetts Division of Fisheries & Wildlife (the "Division") received a Notice of Intent with site plans (dated 02/14/2020) and proposed site figure (undated) in compliance with the rare wildlife species section of the Massachusetts Wetlands Protection Act Regulations (310 CMR 10.37). The Division also received the MESA Review Checklist and supporting documentation for review pursuant to the MA Endangered Species Act Regulations (321 CMR 10.18).

The Division has determined that this Project, as currently proposed, will occur **within** the actual habitat of the Eastern Meadowlark (*Sturnella magna*), Grasshopper Sparrow (*Ammodramus savannarum*) and Upland Sandpiper (*Bartramia longicuda*), species state-listed as Special Concern, Threatened and Endangered, respectively. These species and their habitats are protected in accordance with the MESA.

The purpose of the Division's review of the proposed project under the WPA regulations is to determine whether the project will have any adverse effects on the Resource Areas Habitats of state-listed species. The purpose of the Division's review under the MESA regulations is to determine whether a Take of state-listed species will result from the proposed project. The Take of state-listed species is defined as "in reference to animals…harm…kill…disrupt the nesting, breeding, feeding or migratory activity…and in reference to plants…collect, pick, kill, transplant, cut or process…Disruption of nesting, breeding, feeding, or migratory activity may result from, but is not limited to, the modification, degradation, or destruction of Habitat" of state-listed species (321 CMR 10.02).

WETLANDS PROTECTION ACT (WPA)

Based on a review of the information that was provided and the information that is currently contained in our database, the Division has determined that this project, as currently proposed, **will not adversely affect** the actual Resource Area Habitat of state-protected rare wildlife species. Therefore, it is our opinion that this project meets the state-listed species performance standard for the issuance of an Order of Conditions.

Please note that this determination addresses only the matter of rare wildlife habitat and does not pertain to other wildlife habitat issues that may be pertinent to the proposed project.

MASSACHUSETTS ENDANGERED SPECIES ACT (MESA)

Based on the information provided and the information contained in our database, the Division finds that this project, as currently proposed, **must be conditioned** in order to avoid a prohibited Take of state-listed species (321 CMR 10.18(2)(a)). To avoid a prohibited Take of state-listed species, the following conditions must be met:

1. **Time of Year Restriction.** Work associated with the proposed project shall not occur during the period **May 1 – July 31**, to protect grassland breeding bird species.
2. **Grassland Restoration.** All proposed grassland restoration areas and those grassland areas disturbed by construction activities, shall be restored to warm-season grasslands utilizing the Division-approved seed mix. If imported topsoil is necessary, then the soil must consist of a sandy loam and be certified weed/invasive free, to the greatest extent possible. Any modification to the Division-approved seed mix (below) must be submitted to the Division for review and written approval prior to use and must consist of native species, identify the seed source and composition.

Common Name[1]	Scientific Name	% in Mix (by Weight)
Little bluestem[2]	*Schizachyrium scoparium*	25
Common hairgrass	*Deschampsia flexuosa*	25
Poverty grass	*Danthonia spicata*	25
Annual ryegrass	*Lolium multiflorum*	25

[1] All seed must be locally sourced from plants grown in New England or New York.
[2] Little bluestem seed must be coated and inoculated.

3. **Compliance Report and As-Built Plan**: Within sixty (60) days of completion of work, the Applicant shall submit as-built site plans and a brief written report including, photographs showing final constructed conditions with particular emphasis on demonstrating compliance with the Conditions herein and include supplemental documentation, as appropriate.
4. **Authorization Duration**. This authorization is valid for 5 years from the date of issuance. Work may be completed at any time during this 5-year period in compliance with the conditions herein. Thereafter, the applicant shall re-file under the MESA.

Provided the above-noted condition is fully implemented and there are no changes to the project plans, this project will not result in a Take of state-listed species. We note that all work is subject to the anti-segmentation provisions (321 CMR 10.16) of the MESA. This determination is a final decision of the Division of Fisheries and Wildlife pursuant to 321 CMR 10.18. Any changes to the proposed project or

any additional work beyond that shown on the site plans may require an additional filing with the Division pursuant to the MESA. This project may be subject to further review if no physical work is commenced within five years from the date of issuance of this determination, or if there is a change to the project.

Please note that this determination addresses only the matter of state-listed species and their habitats. If you have any questions regarding this letter please contact Amy Hoenig, Endangered Species Review Assistant, at Amy.Hoenig@mass.gov.

Sincerely,

Everose Schlüter, Ph.D.
Assistant Director

cc: Stewart Dalzell, MassPort
Peter DeBruin, MassPort
Scott Gerrie, KOBO Utility Construction Corp

KOBO SUBMITTAL FORM

FAA New England Region
Boston AJW-2E15L

KOBO Utility Construction Corp.
P.O. Box 578
Sandwich, MA 02563
(508) 888-2255

Transmittal #: **05**

Revision #:

Attn:	Contract #: 6973GH-21-00010 Project #:	KOBO Job #: 20-028
	Project Name: R/W 4 Glide Slope EG Shelter Replacement	
☐ Check here if submittal is from a subcontractor.	Subcontractor:	Date Submitted: 03/03/2021

Item #	Specification Section #	Paragraph #	Description of Item (Size, Type, Name, Manufacturer, Etc.)	No. of copies Submitted	No. of copies Returned	Approved	Approved with Notations	Disapproved Resubmit
			Dewatering Plan	1e				

(E = Electronically Transmitted)

Contractor Signature: Scott Gerrie Reviewed By: _____

Title: _____ Date: 03/03/2021 Title: _____ Date:

☑ I hereby certify that this submittal has been reviewed for accuracy, completeness, and compliance with contract requirements.

Reviewer Comments:

Contracting Officers Representative: _____ Date:

SUBMITTAL LOG DATES:

From Contractor ( ) To COR: ( ) From COR: ( ) To Contractor ( )

Utility Construction Corp.

4 Victory Drive
P.O. Box 578
Sandwich, MA 02563
Tele: 508.888.2255
Fax: 508.888.2224

DEWATERING PLAN
BOS LOGAN INTL. AIRPORT
RW4R GS Engine Gen. Shelter Repl.
Contact #: 6973GH-21-C-00010

GENERAL SCOPE:

The excavation earth disturbance is minor in nature at an expected elevation at 5' or less below grade in the location of the new EG Shelter as shown on C001 and C002 (attached). The excavation will consist of (2) different excavations;

(1) For Shelter: Excavation approx. 16' x 30' equaling 480 sf of excavations / disturbance.
(2) Trench line excavation for new electric: approx. 100' long by 24" depth totaling 200 sf of shallow & narrow trench line excavation.

WORK PLAN:

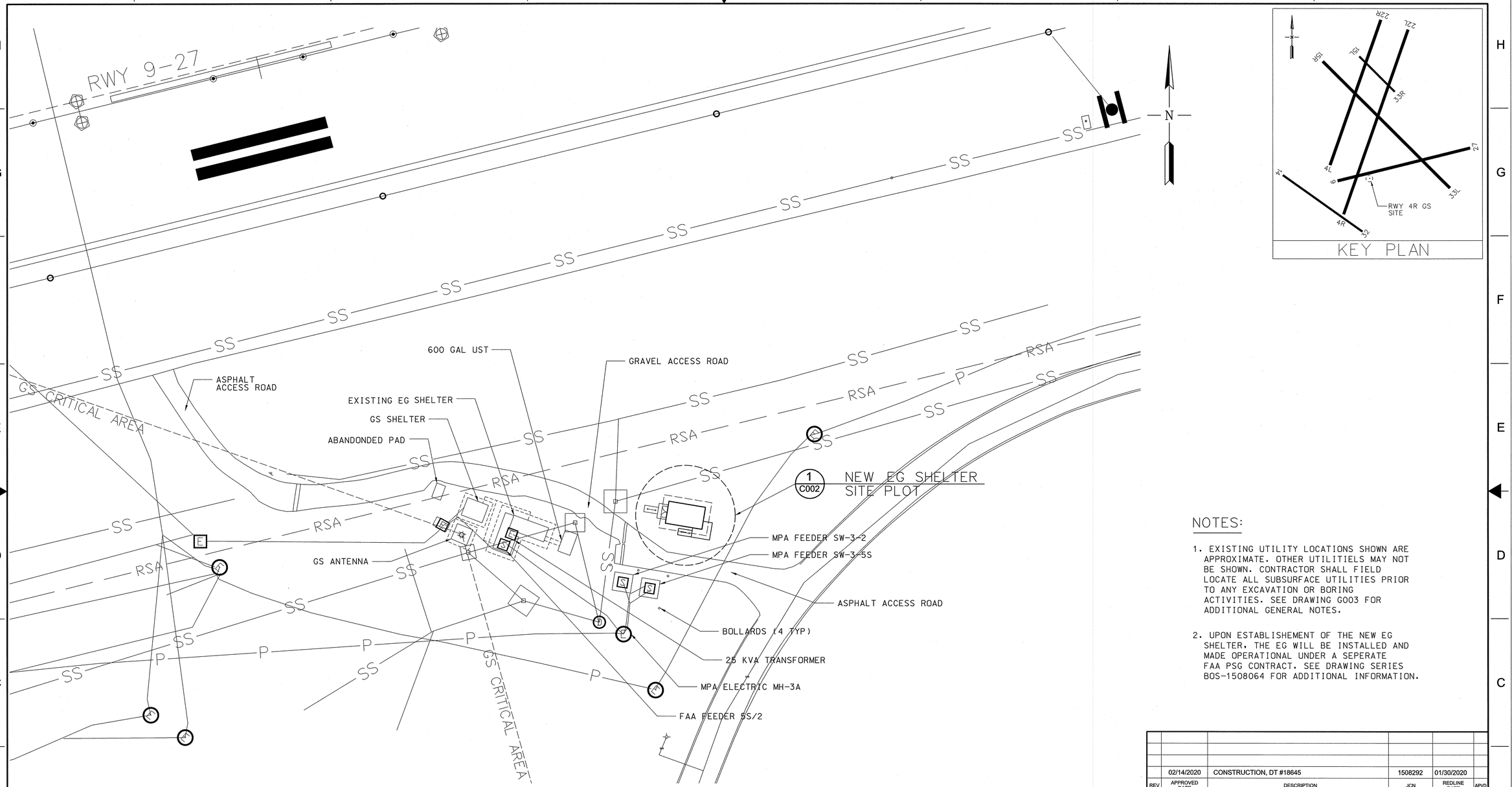
No significant water infiltration is expected. General water infiltration into excavation(s) shall be dewatered by means of a 2" pump surrounded by stone on intake. Discharged length and location will be field determined and appropriately directed into a Dewatering filter bag. If necessary, added 8" waddles or straw bales installed at outfall of filter bag.

All appropriate environmental concerns will be monitored and evaluated daily and addressed as necessary.

Expected excavation time frame is less then 4 days total for both locations.

Respectfully,

Scott Gerrie



1 C002 NEW EG SHELTER SITE PLOT

1 C001 EXISTING SITE RWY 4R GS
SCALE: 1"=25'-0"

25' 0 25' 50'
SCALE: 1" = 25'

KEY PLAN

NOTES:

1. EXISTING UTILITY LOCATIONS SHOWN ARE APPROXIMATE. OTHER UTILITIELS MAY NOT BE SHOWN. CONTRACTOR SHALL FIELD LOCATE ALL SUBSURFACE UTILITIES PRIOR TO ANY EXCAVATION OR BORING ACTIVITIES. SEE DRAWING G003 FOR ADDITIONAL GENERAL NOTES.

2. UPON ESTABLISHEMENT OF THE NEW EG SHELTER. THE EG WILL BE INSTALLED AND MADE OPERATIONAL UNDER A SEPERATE FAA PSG CONTRACT. SEE DRAWING SERIES BOS-1508064 FOR ADDITIONAL INFORMATION.

REV	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
	02/14/2020	CONSTRUCTION, DT #18645	1508292	01/30/2020	

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
ATO - TECHNICAL OPERATIONS — EASTERN SERVICE AREA

GS

RUNWAY 4R
GS / EG SHELTER REPLACEMENT PROJECT
EXISTING SITE PLAN

BOSTON — LOGAN INTERNATIONAL AIRPORT — MA

REVIEWED BY	SUBMITTED BY	APPROVED BY
	K. GRANT	G. NEVILLE
	PROJECT ENGINEER	MGR: ENGINEERING CENTER
DESIGNED KG	ISSUED BY: ENGINEERING SERVICES INFRASTRUCTURE	DATE 02/14/2020 JCN 1508292
DRAWN KG		DRAWING NO BOS-1508292-C001 REV
CHECKED KG		

ISSUED FOR: CONSTRUCTION

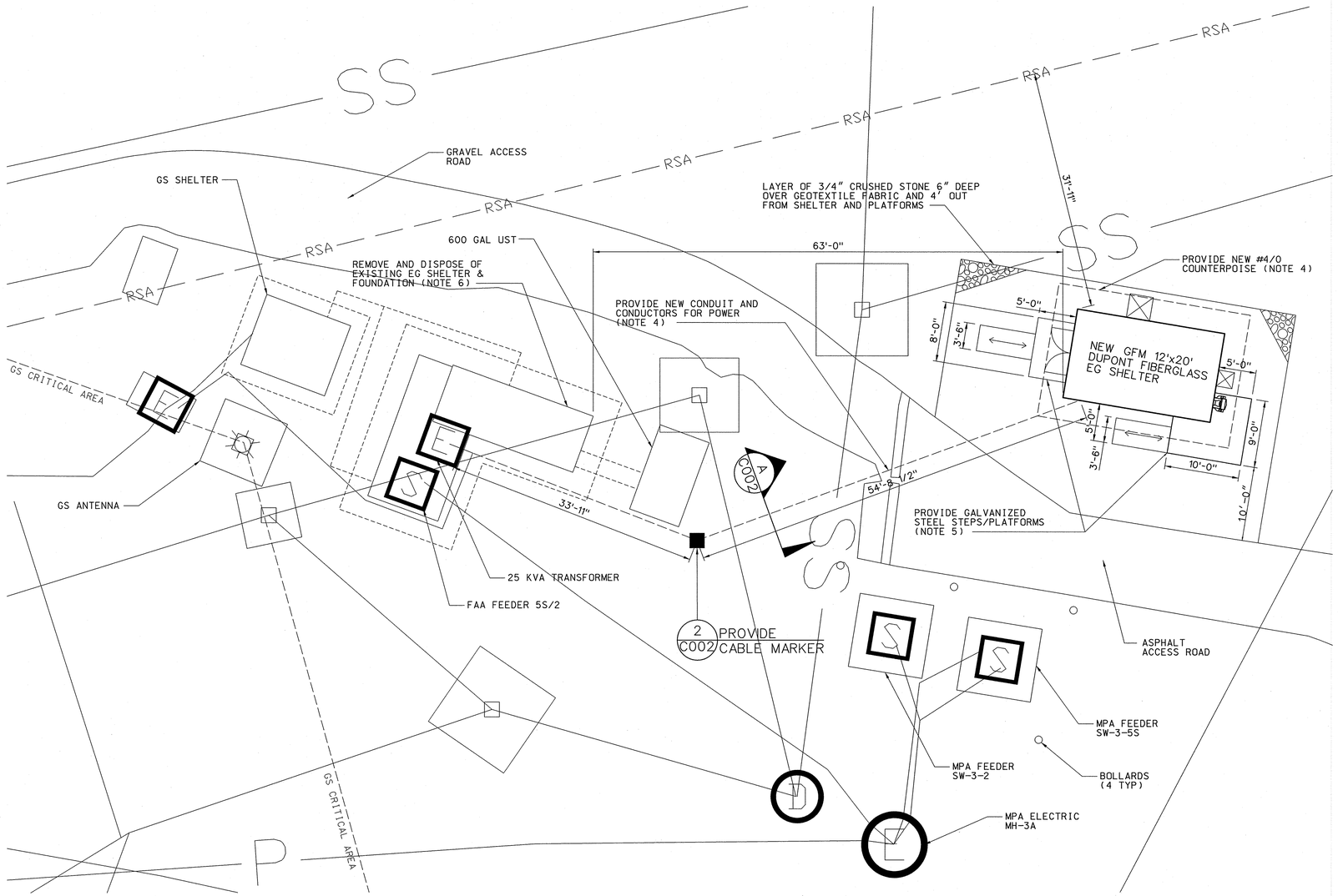
bos-1508292-c001.dgn 3/2/2020 11:50:00 AM Mathias CTR Gosselin

EDM: bos-1508292-c001.dgn

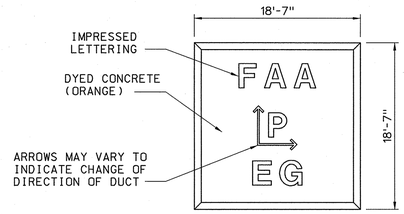
THIS DRAWING PRODUCED ON NEW ENGLAND REGION MICROSTATION SYSTEM

NOTES:

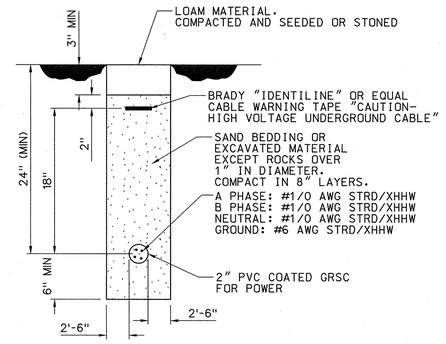
1. THE BOSTON RUNWAY 4R GLIDE SLOPE IS A OPERATIONAL FACILITY. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE COR TO MINIMIZE ANY IMPACTS.
2. SEE DRAWING G003 FOR ADDITIONAL GENERAL NOTES.
3. THE EG SHELTER WILL BE DELIVERED BY OTHERS. THE CONTRACTOR SHALL COORDINATE WITH THE COR TO ACCEPT DELIVERY AND ASSIST IN PLACEMENT AS NECESSARY.
4. SEE DRAWING E001 FOR ADDITIONAL INFORMATION.
5. SEE DRAWING S002 FOR ADDITIONAL INFORMATION.
6. SEE SPECIFICATION SECTION 01 11 00 FOR ADDITIONAL INFORMATION.



1 C002 RWY 4R GS PROPOSED SITE PLOT
SCALE: 1/8"=1'-0"



2 C002 CONCRETE CABLE MARKER
NO TO SCALE



A C002 TRENCH SECTION
NO TO SCALE

REV	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
	02/14/2020	CONSTRUCTION, DT #18645	1508292	01/30/2020	

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
ATO - TECHNICAL OPERATIONS — EASTERN SERVICE AREA

GS
RUNWAY 4R
GS / EG SHELTER REPLACEMENT PROJECT
PROPOSED SITE PLAN

BOSTON — LOGAN INTERNATIONAL AIRPORT — MA

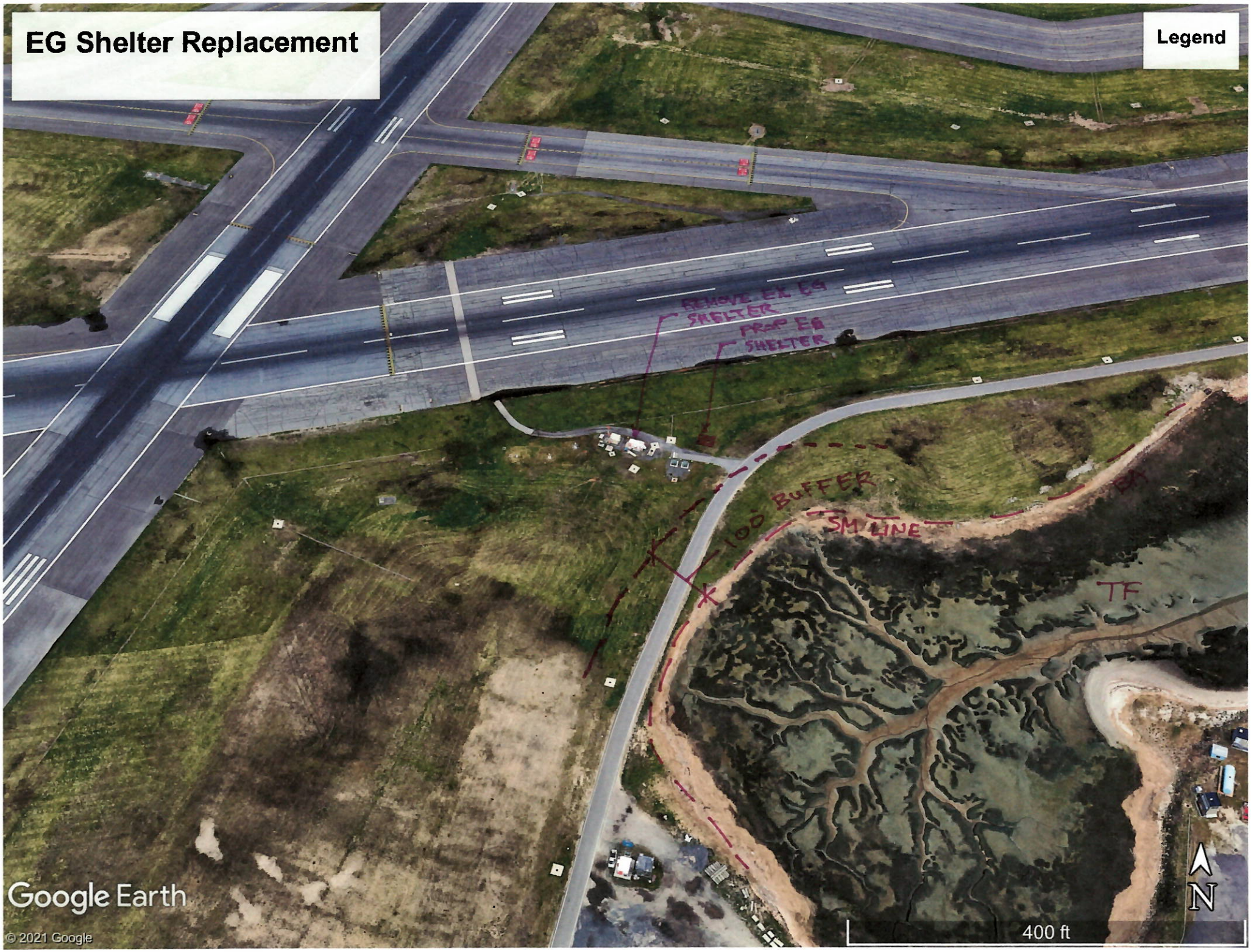
REVIEWED BY	SUBMITTED BY	APPROVED BY
	K. GRANT	G. NEVILLE
	PROJECT ENGINEER	MGR: ENGINEERING CENTER

DESIGNED KG | DRAWN KG | CHECKED KG
ISSUED BY: ENGINEERING SERVICES INFRASTRUCTURE
DATE 02/14/2020 | JCN 1508292
DRAWING NO BOS-1508292-C002 | REV

ISSUED FOR: CONSTRUCTION

bos-1508292-c002.dgn 2/5/2020 11:56:44 AM Michael CTR Gosselin

EDM: bos-1508292-c002.dgn


EG Shelter Replacement
Legend
REMOVE EX EG SHELTER
PROP EG SHELTER
100' BUFFER
SM LINE
EX
TF
Google Earth
© 2021 Google
400 ft
N

Chapter 91 Jurisdiction

Tidelands Jurisdiction Chapter 91 Jurisdiction

Tax Parcels for Query

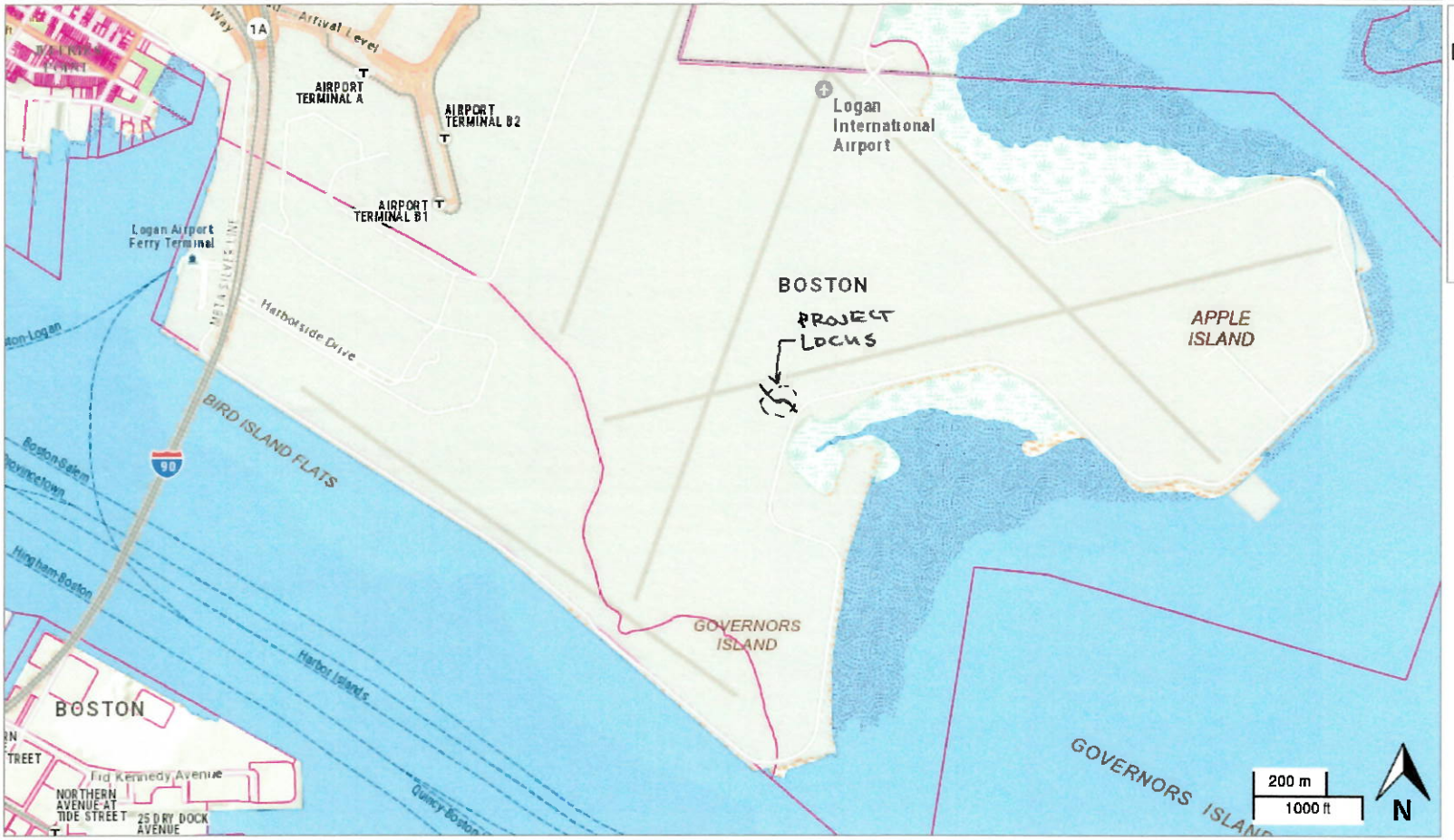
Detailed Features

Tax Parcels for Display

MassGIS Statewide Basemap
MassGIS Topographic Features Basemap

AREA NOT WITHIN CHAPTER 91 JURISDICTION

ACEC



Areas of Critical Environmental Concern ACECs

Tax Parcels for Query

Detailed Features

Tax Parcels for Display

MassGIS Statewide Basemap
MassGIS Topographic Features Basemap

AREA NOT WITHIN ACEC

NHESP

NHESP Priority Habitats of Rare Species

NHESP Estimated Habitats of Rare Wildlife

NHESP Certified Vernal Pools

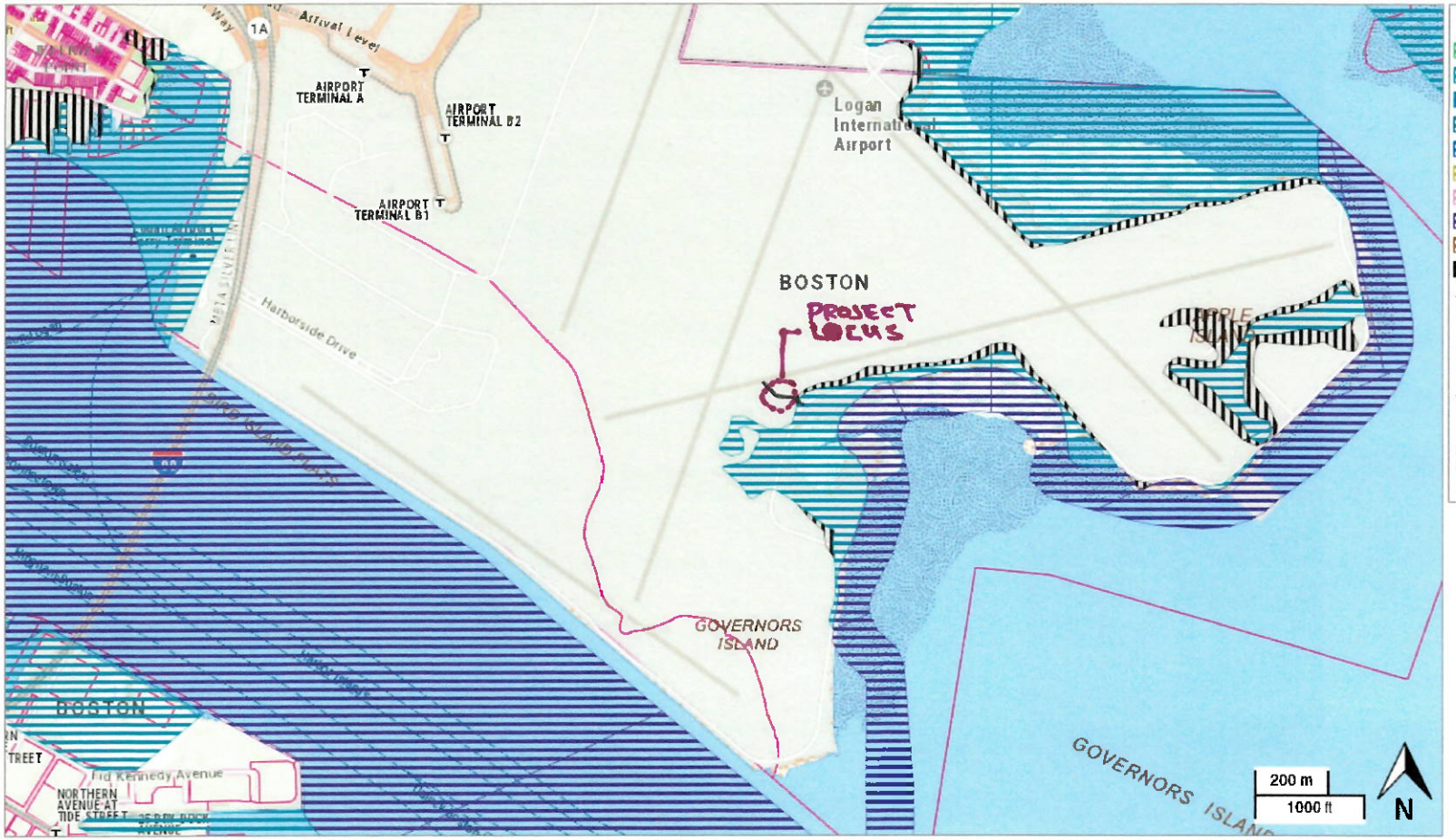
Tax Parcels for Query

Detailed Features

Tax Parcels for Display

MassGIS Statewide Basemap
MassGIS Topographic Features Basemap

FEMA Flood Zone



Q3 Flood Zones (from Paper FIRMs, All Available Areas)
- A
- AE
- AE Floodway
- AH
- AO
- D
- V
- VE
- Area Not Included
- X500

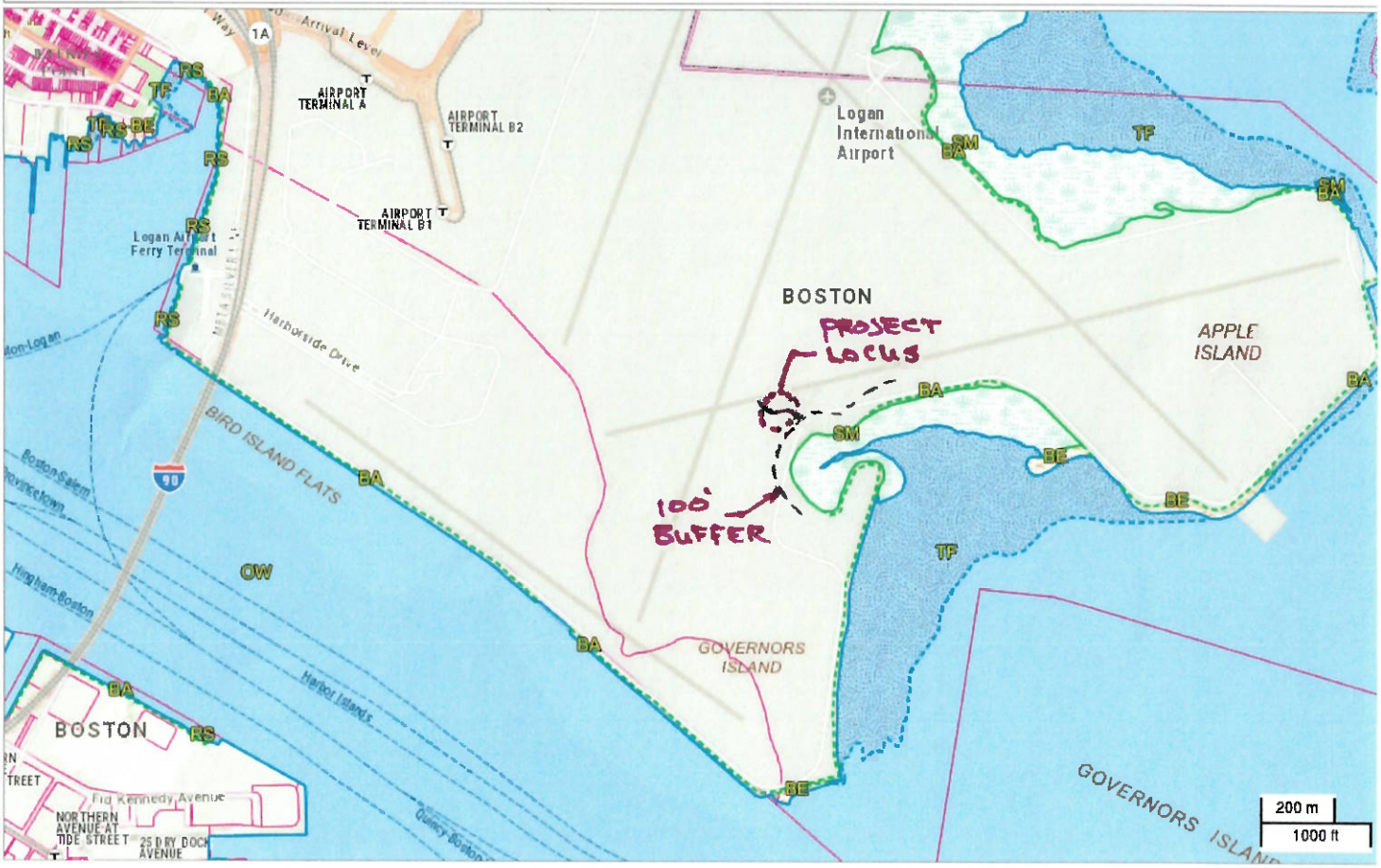
Tax Parcels for Query

Detailed Features

Tax Parcels for Display

MassGIS Statewide Basemap
MassGIS Topographic Features Basemap

Mass DEP Resource Areas



71°1'52.93"W 42°22'36.62"N

70°59'59.57"W 42°20'30.94"N

FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR DRAFT FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at https://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For communities and countywide map dates, refer to the Flood Insurance Study Report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Basemap information shown on this FIRM was provided in digital format by the United States Geological Survey (USGS). The basemap shown is the USGS National Map: Orthoimagery. Last refreshed October, 2020.

This map was exported from FEMA's National Flood Hazard Layer (NFHL) on 3/15/2021 4:31 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time. For additional information, please see the Flood Hazard Mapping Updates Overview Fact Sheet at https://www.fema.gov/media-library/assets/documents/118418.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards. This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes. The effects of wave hazards between Zone VE and the LiMWA (or between the shoreline and the LiMWA for areas where Zone VE is not identified) will be similar to, but less severe than, those in Zone VE.

Limit of Moderate Wave Action (LiMWA)

SCALE

Map Projection:
GCS, Geodetic Reference System 1980;
Vertical Datum: NAVD88

For information about the specific vertical datum for elevation features, datum conversions, or vertical monuments used to create this map, please see the Flood Insurance Study (FIS) Report for your community at https://msc.fema.gov

N

1 inch = 500 feet 1:6,000

0 250 500 1,000 1,500 2,000 Feet

0 50 100 200 300 400 Meters

FEMA National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

SUFFOLK COUNTY, MASSACHUSETTS
ALL JURISDICTIONS
PANEL 82 OF 176

Panel Contains:

COMMUNITY	NUMBER	PANEL
TOWN OF WINTHROP	250289	0082
CITY OF BOSTON	250286	0082

MAP NUMBER
25025C0082J
EFFECTIVE DATE
March 16, 2016

BOS GS EG Shelter Replacement – Construction Means & Methods

Pre-Construction:

The FAA, as a requirement of the Tenant Alteration Application (TAA), will conduct a pre-construction meeting with Massport before the TAA can be signed and officially approved. This meeting will cover a variety of topics including scheduling, access, safety, environmental (excavation dewatering plan, soil stockpile/removal, etc.), laydown areas, and various other topics necessary for successful project completion. Two issues that will likely stem from this meeting will be restricted areas and erosion and sedimentation control which are described in more detail below.

As this project is within close proximity to airport runways there are certain restricted areas that must first be clearly delineated so that personnel, equipment, and materials do not infringe upon them. The Runway 9/27 Safety Area extends 250 feet from the runway centerline which places it in close proximity to the existing BOS GS facility. Additionally, the GS critical area is a specific ground area in front of the GS antenna array that must remain clear in order for the equipment to function properly. The Contractor, in conjunction with Massport Survey Department, will have to stake out these areas so that they can remain free of any personnel, equipment and materials during construction.

Within the project area are four existing catch basins that are part of the Logan Airport closed drainage system. Prior to construction the Contractor will install erosion and sedimentation control in the form of catch basin inserts with filter socks placed around the perimeter of the concrete catch basin inlets. This will prevent any debris, oils, and sediment from entering the Massport closed drainage system. These will be inspected by the FAA throughout the project to ensure they are functioning as intended.

FAA Unstaffed Infrastructure Sustainment (UIS) Construction:

The UIS Contractor is expected to begin by excavating for the shelter concrete foundation. This will most likely be conducted using a mini excavator as the shelter foundation is not that large. The necessary formwork will be installed and the foundation poured using a ready-mix concrete truck. As the foundation is curing the UIS Contractor can work on other items such as trenching from the existing 25 KVA transformer to the new shelter for incoming power. This trench would be dug using the mini excavator to a depth of approximately 2.5 feet for a length of about 89 feet. At this time the UIS Contractor can also install the new earth electrode system (EES) used for facility grounding. The EES consists of a #4/0 bare copper wire that surrounds the facility and is attached to copper ground rods at the corners by exothermic welds. Once the concrete foundation has cured Dupont (the shelter manufacturer) will be called to offload the new fiberglass shelter onto the foundation using a crane. The offload will likely have to occur at night because the runway will need to be shut down due to the height of the crane. At the same time the new power conductors will be connected to the transformer to take advantage of the runway shutdown as it will require the GS to be temporarily out of service. Once the shelter is properly aligned on the foundation the anchor bolts will be drilled and epoxied in place so that the shelter I-beams can be locked in place. The UIS Contractor can now finish the facility grounding by attaching the equipment grounds to the EES and installing the lightning protection on the roof and connecting that to the EES as well. Concurrent with facility grounding the formwork for the shelter platform/stair foundations can be installed and poured using a ready-mix concrete truck. Once these foundations have cured the steel shelter platforms and stairs can be erected. The area around the shelter can then be backfilled, compacted, geotextile fabric laid down and covered with ¾" crushed stone spread using the mini excavator. The UIS Contractor will now have to wait until the EG installation

portion of the project is complete. Once it is, they can then remove the existing 20' x 8' former EG shelter and associated concrete foundation. The former shelter will be removed, intact, on a flatbed trailer to eliminate the possibility of foreign object debris due to on-site demolition.

FAA Power Services Group (PSG) Construction:

Once the new shelter has been landed on the concrete foundation and powered from the existing transformer the PSG Contractor can begin their work. This will include mounting and installing the 20KW Kohler EG with a 120-gallon subbase fuel tank inside the new shelter. The shelter has double doors with a removable mullion and the front stair platform has removable railings to the PSG Contractor can use a telehandler for this installation. The associated equipment such as the automatic transfer switch, environmental control panel, environmental remote monitoring system, and remote fill station will then be installed and wired as required. The PSG Contractor will need to trench from the new shelter to the GS equipment shelter for the EG backup power conductors serving the GS equipment. This trench would be dug using a mini excavator to a depth of approximately 2.5 feet for a length of about 140 feet. Once the new EG has been tested it will be time to cutover from the existing EG to the new one. This will require the GS to be temporarily out of service. Upon successful cutover, the GS will return to service and the former EG and 600-gallon diesel UST can then be removed. The PSG Contractor will hire a state licensed UST removal contractor and a licensed site professional to ensure closure requirements are met.

Once the former EG shelter, foundation and UST have been removed the disturbed area will be re-seeded in accordance with the grassland restoration requirements as outlined in the NHESP 21-40108 determination letter. The erosion and sedimentation controls will be left in place until the grass has established. They will also be checked periodically by the local FAA technicians to ensure they are functioning properly.

Boston Planning & Development Agency
Climate Resiliency Report Summary

Submitted: 10/12/2021 14:58:46

A.1 - Project Information

Project Name:	BOS RWY 4R GS EG Shelter Replacement			
Project Address:	1 Harborside Dr., East Boston, MA 02128			
Filing Type:	Design / Building Permit (prior to final design approval)			
Filing Contact:	Kevin Grant	Federal Aviation Administration	Kevin.Grant@faa.gov	781-238-7842
Is MEPA approval required?	No	MEPA date:		

A.2 - Project Team

Owner / Developer:	Massport (Land) / FAA (Facility)
Architect:	N/A
Engineer:	Kevin Grant
Sustainability / LEED:	N/A
Permitting:	Kevin Grant
Construction Management:	Shaun Sullivan, FAA

A.3 - Project Description and Design Conditions

List the principal Building Uses:	House backup emergency generator for RWY 4R Glide Slope equipment
List the First Floor Uses:	House backup emergency generator for RWY 4R Glide Slope equipment
List any Critical Site Infrastructure and or Building Uses:	RWY 4R GS is a critical navigational aid for instrument landing at Logan Airport

Site and Building:

Site Area (SF):	2058	Building Area (SF):	240
Building Height (Ft):	11.67	Building Height (Stories):	1
Existing Site Elevation – Low (Ft BCB):	16.34	Existing Site Elevation – High (Ft BCB):	16.38
Proposed Site Elevation – Low (Ft BCB):	16.46	Proposed Site Elevation – High (Ft BCB):	16.46
Proposed First Floor Elevation (Ft BCB):	20.94	Below grade spaces/levels (#):	0

Article 37 Green Building:

LEED Version - Rating System:	N/A	LEED Certification:	No
Proposed LEED rating:		Proposed LEED point score (Pts.):	N/A

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Building Envelope:

When reporting R values, differentiate between R discontinuous and R continuous. For example, use "R13" to show R13 discontinuous and use R10c.i. to show R10 continuous. When reporting U value, report total assembly U value including supports and structural elements.

Roof:	19 c.i.	Exposed Floor :	20 c.i.
Foundation Wall:	N/A	Slab Edge (at or below grade):	N/A

Vertical Above-grade Assemblies (%'s are of total vertical area and together should total 100%):

Area of Opaque Curtain Wall & Spandrel Assembly:	2	Wall & Spandrel Assembly Value:	1.2
Area of Framed & Insulated / Standard Wall:	92	Wall Value:	19 c.i.
Area of Vision Window:	0	Window Glazing Assembly Value:	N/A
		Window Glazing SHGC:	N/A
Area of Doors:	6	Door Assembly Value :	0.5

Energy Loads and Performance

For this filing – describe how energy loads & performance were determined	Based on a 1-for-1 replacement of an existing shelter		
Annual Electric (kWh):	10500	Peak Electric (kW):	7.5
Annual Heating (MMbtu/hr):	0.007	Peak Heating (MMbtu):	0.014
Annual Cooling (Tons/hr):	0	Peak Cooling (Tons):	0
Energy Use - Below ASHRAE 90.1 - 2013 (%):		Have the local utilities reviewed the building energy performance?:	No
Energy Use - Below Mass. Code (%):		Energy Use Intensity (kBtu/SF):	0.07

Back-up / Emergency Power System

Electrical Generation Output (kW):	20	Number of Power Units:	1
System Type (kW):	20	Fuel Source:	Diesel

Emergency and Critical System Loads (in the event of a service interruption)

Electric (kW):	20	Heating (MMbtu/hr):	0.007
		Cooling (Tons/hr):	0

B – Greenhouse Gas Reduction and Net Zero / Net Positive Carbon Building Performance

Reducing greenhouse gas emissions is critical to avoiding more extreme climate change conditions. To achieve the City's goal of carbon-neutrality by 2050 the performance of new buildings will need to progressively improve to carbon net zero and net positive.

B.1 – GHG Emissions - Design Conditions

For this filing - Annual Building GHG Emissions (Tons):

For this filing - describe how building energy performance has been integrated into project planning, design, and engineering and any supporting analysis or modeling:

Describe building specific passive energy efficiency measures including orientation, massing, building envelop, and systems:

Describe building specific active energy efficiency measures including high performance equipment, controls, fixtures, and systems:

Describe building specific load reduction strategies including on-site renewable energy, clean energy, and storage systems:

Describe any area or district scale emission reduction strategies including renewable energy, central energy plants, distributed energy systems, and smart grid infrastructure:

Describe any energy efficiency assistance or support provided or to be provided to the project:

B.2 - GHG Reduction - Adaptation Strategies

Describe how the building and its systems will evolve to further reduce GHG emissions and achieve annual carbon net zero and net positive performance (e.g. added efficiency measures, renewable energy, energy storage, etc.) and the timeline for meeting that goal (by 2050):

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C - Extreme Heat Events

Annual average temperature in Boston increased by about 2˚F in the past hundred years and will continue to rise due to climate change. By the end of the century, the average annual temperature could be 56° (compared to 46° now) and the number of days above 90° (currently about 10 a year) could rise to 90.

C.1 – Extreme Heat - Design Conditions

Temperature Range - Low (Deg.):		Temperature Range - High (Deg.):	
Annual Heating Degree Days:		Annual Cooling Degree Days	

What Extreme Heat Event characteristics will be / have been used for project planning

Days - Above 90° (#):		Days - Above 100° (#):	
Number of Heatwaves / Year (#):		Average Duration of Heatwave (Days):	

Describe all building and site measures to reduce heat-island effect at the site and in the surrounding area:

C.2 - Extreme Heat – Adaptation Strategies

Describe how the building and its systems will be adapted to efficiently manage future higher average temperatures, higher extreme temperatures, additional annual heatwaves, and longer heatwaves:

Describe all mechanical and non-mechanical strategies that will support building functionality and use during extended interruptions of utility services and infrastructure including proposed and future adaptations:

D - Extreme Precipitation Events

From 1958 to 2010, there was a 70 percent increase in the amount of precipitation that fell on the days with the heaviest precipitation. Currently, the 10-Year, 24-Hour Design Storm precipitation level is 5.25". There is a significant probability that this will increase to at least 6" by the end of the century. Additionally, fewer, larger storms are likely to be accompanied by more frequent droughts.

D.1 – Extreme Precipitation - Design Conditions

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What is the project design precipitation level? (In. / 24 Hours)	

Describe all building and site measures for reducing storm water run-off:

D.2 - Extreme Precipitation - Adaptation Strategies

Describe how site and building systems will be adapted to efficiently accommodate future more significant rain events (e.g. rainwater harvesting, on-site storm water retention, bio swales, green roofs):

E – Sea Level Rise and Storms

Under any plausible greenhouse gas emissions scenario, the sea level in Boston will continue to rise throughout the century. This will increase the number of buildings in Boston susceptible to coastal flooding and the likely frequency of flooding for those already in the floodplain.

Is any portion of the site in a FEMA Special Flood Hazard Area?	Yes	What Zone:	AE
What is the current FEMA SFHA Zone Base Flood Elevation for the site (Ft BCB)?			18.46
Is any portion of the site in the BPDA Sea Level Rise Flood Hazard Area (see SLR-FHA online map)?	Yes		

If you answered YES to either of the above questions, please complete the following questions.
Otherwise you have completed the questionnaire; thank you!

E.1 – Sea Level Rise and Storms – Design Conditions

Proposed projects should identify immediate and future adaptation strategies for managing the flooding scenario represented by the Sea Level Rise Flood Hazard Area (SLR-FHA), which includes 3.2' of sea level rise above 2013 tide levels, an additional 2.5" to account for subsidence, and the 1% Annual Chance Flood. After using the SLR-FHA to identify a project's Sea Level Rise Base Flood Elevation, proponents should calculate the Sea Level Rise Design Flood Elevation by adding 12" of freeboard for buildings, and 24" of freeboard for critical facilities and infrastructure and any ground floor residential units.

What is the Sea Level Rise - Base Flood Elevation for the site (Ft BCB)?	19.5		
What is the Sea Level Rise - Design Flood Elevation for the site (Ft BCB)?	21.5	First Floor Elevation (Ft BCB):	20.94
What are the Site Elevations at Building (Ft BCB)?	16.34	What is the Accessible Route Elevation (Ft BCB)?	16.38

Describe site design strategies for adapting to sea level rise including building access during flood events, elevated site areas, hard and soft barriers, wave / velocity breaks, storm water systems, utility services, etc.:

The BOS GS site is on the airfield between active runways so site design strategies are not feasible besides what Massport has already done for the entire airfield

Describe how the proposed Building Design Flood Elevation will be achieved including dry / wet flood proofing, critical systems protection, utility service protection, temporary flood barriers, waste and drain water back flow prevention, etc.:

By elevating the new EG shelter above the Massport DFE, FAA hopes to protect the electrical and mechanical equipment housed inside from flood waters. Where power and communications conduits below the DFE enter the shelter, the spaces between cables within the conduits will be sealed using duct seal to prevent water entry.

Describe how occupants might shelter in place during a flooding event including any emergency power, water, and waste water provisions and the expected availability of any such measures:

This is an unstaffed equipment shelter. Nobody will shelter in place at this facility

Describe any strategies that would support rapid recovery after a weather event:

Electrical and mechanical equipment are located above the DFE and local FAA staff are trained in restoration of equipment.

E.2 – Sea Level Rise and Storms – Adaptation Strategies

Describe future site design and or infrastructure adaptation strategies for responding to sea level rise including future elevating of site areas and access routes, barriers, wave / velocity breaks, storm water systems, utility services, etc.:

The BOS GS site is on the airfield between active runways so future site design strategies are not feasible besides what Massport has planned for the entire airfield. The FAA will likely raise the GS equipment shelter above the DFE whenever that shelter reaches the end of its lifecycle.

Describe future building adaptation strategies for raising the Sea Level Rise Design Flood Elevation and further protecting critical systems, including permanent and temporary measures:

Future building adaptation is unlikely. The FAA is moving away from EG shelters in favor of outdoor EG units so at the end of this shelters lifecycle it may be replaced with an outdoor unit.

Thank you for completing the Boston Climate Change Checklist!

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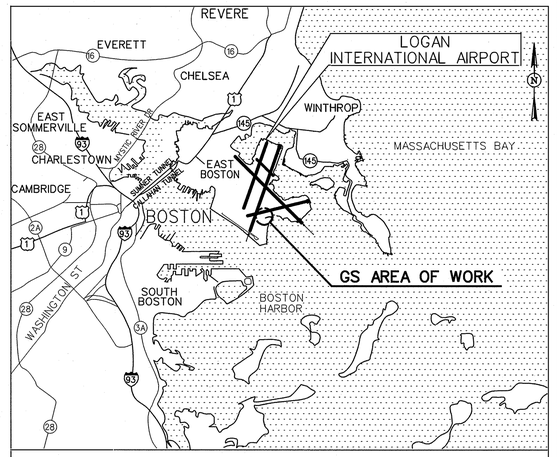
Climate Resiliency Report Summary

boston planning & development agency

For questions or comments about this checklist or Climate Change best practices, please contact:
John.Dalzell@boston.gov



VICINITY MAP

ENGINE GENERATOR (EG) SHELTER REPLACEMENT
RUNWAY 4R GLIDE SLOPE (GS)
LOGAN INTERNATIONAL AIRPORT
BOSTON, MASSACHUSETTS

REV	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
	02/14/2020	CONSTRUCTION, DT #18645	1508292	01/30/2020	

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
ATO - TECHNICAL OPERATIONS — EASTERN SERVICE AREA

GS

RUNWAY 4R
GS / EG SHELTER REPLACEMENT PROJECT
COVER SHEET

BOSTON — LOGAN INTERNATIONAL AIRPORT — MA

REVIEWED BY	SUBMITTED BY: K. GRANT	APPROVED BY: G. NEVILLE
	PROJECT ENGINEER	MGR: ENGINEERING CENTER
DESIGNED KG	ISSUED BY: ENGINEERING SERVICES INFRASTRUCTURE	DATE 02/14/2020 JCN 1508292
DRAWN KG		DRAWING NO BOS-1508292-G001 REV
CHECKED KG		

ISSUED FOR: CONSTRUCTION

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THIS DRAWING PRODUCED ON NEW ENGLAND REGION MICROSTATION SYSTEM

DRAWING LIST

ENGINE GENERATOR SHELTER (UIS PROJECT)

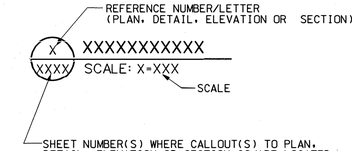
DRAWING NUMBER	DRAWING TITLE
BOS-1508292-G001	COVER SHEET
BOS-1508292-G002	INDEX SHEET
BOS-1508292-G003	GENERAL NOTES
BOS-1508292-G004	MATERIAL LIST & DETAILS
BOS-1508292-C001	EXISTING SITE PLAN
BOS-1508292-C002	PROPOSED SITE PLOT
BOS-1508292-C003	EXTERIOR ELEVATIONS
BOS-1508292-E001	ELECTRICAL DIAGRAMS AND NOTES
BOS-1508292-S001	FOUNDATION DETAILS
BOS-1508292-S002	STAIRS AND PLATFORMS

ABBREVIATIONS

A	AMPERE
AASHTO	AMERICAN ASSOCIATION OF STATE AND HIGHWAY AND TRANSPORTATION OFFICIALS
AC	ADVISORY CIRCULAR
ACI	AMERICAN CONCRETE INSTITUE
AIC	AMPERE INTERRUPTING CAPACITY
AOA	AIR OPERATIONS AREA
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
ATO	AIR TRAFFIC ORGANIZATION (FAA)
AWG	AMERICAN WIRE GAUGE
BOS	GENERAL EDWARD LAWRENCE LOGAN INTERNATIONAL AIRPORT
COR	CONTRACTING OFFICER'S REPRESENTATIVE
D	DRAIN
DEB	DIRECT EARTH BURIAL
DFE	DESIGN FLOOD ELEVATION
DN	DOWN
E	ELECTRIC
EES	EARTH ELECTRODE SYSTEM
EG	ENGINE GENERATOR
EMT	ELECTRIC METALLIC TUBE
EUH	ELECTRIC UNIT HEATER
FAA	FEDERAL AVIATION ADMINISTRATION
FOD	FOREIGN OBJECT DEBRIS/DAMAGE
GAL	GALLON
GFI	GROUND FAULT INTERRUPTER
GFM	GOVENRMENT FURNISHED MATERIAL
GND	GROUND
GRS	GALVANIZED RIGID STEEL
GRSC	GALVANIZED RIGID STEEL CONDUIT
GS	GLIDE SLOPE
HSS	HOLLOW STRUCTURAL SECTION
INS	INSULATED
JCN	JOB CONTROL NUMBER
KVA	KILOVOLT-AMPERE
KW	KILLOWATT
LED	LIGHT-EMMITTING DIODE
L.P.	LIGHTNING PROTECTION
LSP	LISCENCED SITE PROFESSIONAL
MA	MASSACHUSETTS
MDP	MAIN DISTRIBUTION PANEL
MH	MANHOLE
MIN	MINIMUM
MPA	MASSACHUSETTS PORT AUTHORITY (MASSPORT)
NEC	NATIONAL ELECTRIC CODE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
OC	ON-CENTER
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
P	POWER
PE	PROFESSIONAL ENGINEER
PH	PHASE
PL	PLACES
PNL	PANEL
PSG	POWER SERVICES GROUP (FAA)
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
RE	RESIDENT ENGINEER
RMC	RIGID METAL CONDUIT
RSA	RUNWAY SAFETY AREA
RWY	RUNWAY
S	SWITCHGEAR
SS	STORM SEWER
SSC	SYSTEM SUPPORT CENTER (FAA)
STRD	STANDARD
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
TYP	TYPICAL
UIS	UNSTAFFED INFRASTRUCUITRE SUSTAINMENT (FAA)
UL	UNDERWRITERS LABORATORY
UST	UNDERGROUND STORAGE TANK
V	VOLT
VA	VOLT-AMPS
XFMR	TRANSFORMER

SYMBOLS LEGEND

SUBTITLE REFERENCE



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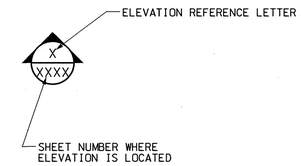

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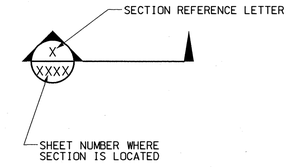
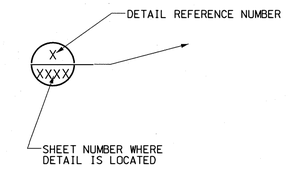


DETAIL CALLOUT REFERENCE



DRAWING PREFIXES

AXXX – ARCHITECTURAL
CXXX – CIVIL
EXXX – ELECTRICAL/ELECTRONIC
GXXX – GENERAL
QXXX – EQUIPMENT
RXXX – REAL ESTATE
SXXX – STRUCTURAL

REV	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
	02/14/2020	CONSTRUCTION, DT #18645	1508292	01/30/2020	

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
ATO - TECHNICAL OPERATIONS — EASTERN SERVICE AREA

GS

RUNWAY 4R
GS / EG SHELTER REPLACEMENT PROJECT
INDEX SHEET

BOSTON — LOGAN INTERNATIONAL AIRPORT — MA

REVIEWED BY	SUBMITTED BY	APPROVED BY
	K. GRANT	G. NEVILLE
	PROJECT ENGINEER	MGR: ENGINEERING CENTER
DESIGNED KG	ISSUED BY: ENGINEERING SERVICES INFRASTRUCTURE	DATE 02/14/2020 JCN 1508292
DRAWN KG		DRAWING N O BOS-1508292-G002 REV
CHECKED KG		

ISSUED FOR: CONSTRUCTION

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THIS DRAWING PRODUCED ON NEW ENGLAND REGION MICROSTATION SYSTEM

GENERAL NOTES:

1. THIS DRAWING PACKAGE INDICATES WORK REQUIRED FOR REPLACEMENT OF THE ENGINE GENERATOR SHELTER SERVING THE RUNWAY 4R GLIDE SLOPE AT GENERAL EDWARD LAWRENCE LOGAN INTERNATIONAL AIRPORT, BOSTON, MASSACHUSETTS.
2. THE WORK ASSOCIATED WITH THIS EG SHELTER REPLACEMENT IS WITHIN THE AIRPORT OPERATIONS AREA (AOA). NO MOVEMENT BY CONTRACTOR, SUBCONTRACTORS, OR DELIVERY VEHICLES SHALL BE MADE ON THE AOA WITHOUT ESCORT BY THE AIRPORT AUTHORITY, FAA, COR, OR DESIGNATED CONTRACTOR ESCORT VEHICLE.
3. THE CONTRACTOR SHALL ARRANGE FOR AND ABIDE BY ALL SECURITY BADGING AND ACCESS REQUIREMENTS OF THE AIRPORT TO WORK ON THE AIRFIELD. SECURITY BADGING SHALL BE ON DISPLAY AT ALL TIMES WHILE ON THE AIRFIELD.
4. CONTRACTOR ACCESS ROUTES, STAGING AREAS AND EMPLOYEE PARKING AREAS SHALL BE APPROVED IN ADVANCE BY THE AIRPORT AUTHORITY.
5. CONTRACTOR'S VEHICLES SHALL BE EQUIPPED WITH AN APPROVED ROTATING BEACON AND/OR ORANGE AND WHITE FLAG.
6. CONTRACTOR'S CREW SHALL BE EQUIPPED WITH A RADIO AND SHALL MONITOR AIR TRAFFIC ON THE APPROPRIATE FAA FREQUENCIES.
7. WORK ON THE AOA AND WITHIN 250 FEET OF THE RUNWAY CENTERLINE AND 1,000 FEET FROM THE RUNWAY THRESHOLD (DEFINED AS THE RUNWAY SAFETY AREA) WILL REQUIRE A RUNWAY SHUTDOWN. ANY ACTIVITIES INVOLVING CRANES OR OTHER EQUIPMENT EXCEEDING 15 FEET IN HEIGHT MAY ALSO REQUIRE A RUNWAY SHUTDOWN OR OTHER PROVISIONS. COORDINATE ALL SUCH ACTIVITIES AND REQUIRED SHUTDOWNS WITH THE COR/RE, AND THE AIRPORT AT LEAST 48 HOURS IN ADVANCE.
8. WORK ASSOCIATED WITH THE GS EG SHELTER REPLACEMENT MAY REQUIRE A SHUTDOWN. COORDINATE ALL ACTIVITIES AND REQUIRED SHUTDOWNS WITH THE FAA SSC AT LEAST 48 HOURS IN ADVANCE.
9. THE CONTRACTOR SHALL MAINTAIN A CLEAN WORK SITE. EQUIPMENT AND MATERIAL SHALL BE REMOVED FROM THE WORK SITE AT THE END OF EACH WORK SHIFT. THE CONTRACTOR SHALL KEEP THE WORK SITE FREE OF CONSTRUCTION DEBRIS AND OTHER FOREIGN OBJECT DEBRIS (FOD) AT ALL TIMES. THE CONTRACTOR SHALL CONDUCT FOD INSPECTIONS OF ALL VEHICLES PRIOR TO DRIVING ON THE AOA. THE CONTRACTOR SHALL BE PREPARED TO REMOVE ANY DUST, DIRT, MUD OR OTHER FOD TRACKED OR OTHERWISE LEFT ON THE AOA AT ALL TIMES.
10. THE CONTRACTOR SHALL STRICTLY COMPLY WITH ALL OSHA REGULATIONS AT ALL TIMES. THE COR RESERVES THE RIGHT TO SUSPEND THE PROJECT SHOULD HE OR SHE DETERMINE THAT AN UNSAFE CONDITION EXISTS.
11. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MATERIAL UNLESS OTHERWISE INDICATED. THE CONTRACTOR SHALL PROVIDE ALL LABOR, EQUIPMENT, AND REQUIRED TEMPORARY POWER UNLESS OTHERWISE INDICATED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED PERMITS.
12. THE CONTRACTOR SHALL LEGALLY DISPOSE OF ALL MATERIAL AND EQUIPMENT NOT RETURNED TO OR RETAINED BY THE FAA.
13. IF CONDITIONS ARE DIFFERENT THAN THOSE INDICATED IN THE DRAWINGS OR SPECIFICATIONS, THE SUBCONTRACTOR SHALL CONTACT THE COR PRIOR TO PROCEEDING WITH CONSTRUCTION.

SITE WORK:

1. ALL DIMENSIONS, ELEVATIONS, CONTOURS AND HEIGHTS INDICATED ARE APPROXIMATE AND SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR.
2. ALL TRENCHES AND EXCAVATIONS WITHIN 250 FEET OF THE RUNWAY CENTERLINE AND 1,000 FEET FROM THE RUNWAY THRESHOLD (DEFINED AS THE RUNWAY SAFETY AREA) AND 65.5 FEET OF THE TAXIWAY CENTERLINE (DEFINED AS THE TAXIWAY SAFETY AREA) SHALL NOT BE LEFT OPEN OVERNIGHT AND SHALL BE BACKFILLED AND COMPACTED TO MATCH THE EXISTING GRADE BEFORE LEAVING THE SITE. STEEL PLATES MAY BE USED AS AN ALTERNATIVE ONLY WITH WRITTEN PERMISSION BY THE RE AND AIRPORT.
3. EXISTING UTILITY LOCATIONS SHOWN ARE APPROXIMATE. OTHER UTILITIES MAY NOT BE SHOWN. THE CONTRACTOR SHALL FIELD LOCATE ALL SUBSURFACE UTILITIES PRIOR TO ANY EXCAVATION OR DIRECTIONAL BORING OPERATIONS. DIRECT EARTH BURIED (DEB) RUNWAY AND TAXIWAY LIGHTING POWER CABLES AND OTHER FAA FACILITY POWER CABLES ARE HIGH VOLTAGE. FORTY-EIGHT (48) HOUR (MINIMUM) NOTICE BY THE SUBCONTRACTOR TO THE RE, THE AIRPORT AND THE FAA SSC IS REQUIRED FOR ALL UTILITY MARKING AND/OR FACILITY SHUTDOWNS.
4. THE CONTRACTOR SHALL BE PREPARED TO IMMEDIATELY REPAIR ANY UTILITIES DAMAGED DURING EXCAVATION OPERATIONS AND SHALL CONDUCT ALL SUCH REPAIRS AT CONTRACTOR'S EXPENSE.
5. ALL UNDERGROUND CABLE SHALL BE IN CONDUIT EXCEPT FOR BARE COPPER GROUND CABLE, GUARD WIRE, COUNTERPOISE, AND WHERE OTHERWISE INDICATED. UNDERGROUND CONDUIT SHALL BE 24 INCHES (MINIMUM) BELOW GRADE EXCEPT WHEN INTERFACING HANDHOLE ENTRANCES OR EXISTING CONDUIT AT OTHER DEPTHS OR WHERE OTHERWISE INDICATED. UNDERGROUND CONDUIT SHALL BE GALVANIZED RIGID STEEL CONDUIT (GRSC) EXCEPT WHERE OTHERWISE INDICATED. GRSC FITTINGS SHALL BE THREADED TYPE - EXPOSED THREADS SHALL BE SEALED WITH AN APPROVED SEALANT TO PREVENT CORROSION PRIOR TO BACKFILL OPERATIONS. CONDUITS SHALL BE CLEANED OF DEBRIS AND A NYLON PULL WIRE SHALL BE INSTALLED IN ALL CONDUITS.
6. ALL EXTERIOR CONDUITS ENTERING BUILDINGS (EXCEPT THOSE WITH GROUNDING CONDUCTORS ONLY) SHALL HAVE EXPANSION/DEFLECTION COUPLINGS. AN APPROVED GROUND JUMPER SHALL BE INSTALLED BETWEEN METALLIC CONDUIT ON EACH SIDE OF COUPLING UNLESS COUPLING IS INTERNALLY GROUNDED.
7. CONCRETE CABLE/DUCT MARKERS SHALL BE INSTALLED WHERE INDICATED ON THE DRAWINGS. CABLE/DUCT MARKERS SHALL BE PIGMENTED ORANGE AND SHALL NOT EXTEND MORE THAN 1 INCH ABOVE FINAL GRADE.
8. BACKFILL FOR CABLE OR DUCT TRENCHES OR FOR OTHER EXCAVATIONS SHALL BE PLACED IN LAYERS NOT EXCEEDING 8 INCHES AND EACH LAYER SHALL BE THOROUGHLY COMPACTED TO WITHIN 95% OF MAXIMUM DENSITY OF OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH AASHTO T-180. WHERE FILL IS REQUIRED IN THE RUNWAY/TAXIWAY SAFETY AREA, WORK SHALL COMPLY WITH FAA AC 150/5370-10. IF REQUIRED, THE CONTRACTOR SHALL ARRANGE FOR AN INDEPENDENT FIELD TEST TO VERIFY PROPER COMPACTION.
9. THE EXISTING GRADE SURROUNDING THE FOUNDATION OR TRENCH WORK SHALL BE STABILIZED AND PROTECTED FROM EROSION DURING AND IMMEDIATELY AFTER COMPLETION OF THE FOUNDATION OR CONDUIT INSTALLATION AND ALL REQUIRED EXCAVATION AND BACKFILL.
10. ALL EXCAVATIONS WITHIN 10 FEET OR LESS OF KNOWN UTILITIES SHALL BE PERFORMED BY HAND.
11. ALL DISTURBED AREAS SHALL BE RESTORED TO PRIOR CONDITION AT A MINIMUM. FINAL CONDITION SHALL BE APPROVED BY THE FAA AND THE AIRPORT.

FOUNDATION WORK:

1. CONTRACTOR SHALL PROVIDE A GEOTECHNICAL ENGINEER, LICENSED IN THE COMMONWEALTH OF MASSACHUSETTS, TO CONDUCT A GEOTECHNICAL SURVEY TO INVESTIGATE THE SUBSURFACE CONDITIONS AND PROVIDE A PE STAMPED GEOTECHNICAL ENGINEERING REPORT WITH DESIGN RECOMMENDATIONS (BASED ON SITE EXPLORATIONS) FOR THE SHELTER FOUNDATION AS WELL AS DEVELOPMENT OF AN EXCAVATION DEWATERING PLAN.
2. ALL CONCRETE WORK SHALL COMPLY WITH ACI-304, "RECOMMENDED PRACTICE FOR MEASURING, MIXING, TRANSPORTING AND PLACING CONCRETE", ACI-308R-16, "GUIDE TO EXTERNAL CURING OF CONCRETE", AND ACI-347R-14, "GUIDE TO FORMWORK FOR CONCRETE."
3. CAST IN PLACE CONCRETE SHALL BE 4000 PSI @ 28 DAYS, 3/4" MAX STONE IN MIX.
4. CONTRACTOR SHALL SUBMIT FOUNDATION DESIGNS TO THE MASSACHUSETTS PORT AUTHORITY FOR REVIEW AND APPROVAL PRIOR TO COMMENCEMENT OF ANY WORK.

EQUIPMENT INSTALLATION:

1. ASSEMBLE EQUIPMENT PER MANUFACTURER'S INSTRUCTIONS.
2. USE ANTI-SEIZE COMPOUND ON ALL THREADED PARTS.
3. ALL CHANNEL SHALL BE STAINLESS STEEL UNISTRUT OR APPROVED EQUAL.
4. ALL HARDWARE SHALL BE STAINLESS STEEL, UNLESS OTHERWISE INDICATED.

ELECTRICAL WORK:

1. ALL ELECTRICAL WORK SHALL CONFORM TO FAA-C-1217G AND FAA-C-1391D SPECIFICATIONS AND IN NO CASE SHALL VIOLATE THE NATIONAL ELECTRIC CODE (NFPA 70.).
2. THE CONTRACTOR SHALL MAKE ALL POWER, CONTROL, AND GROUND TERMINATIONS.
3. ALL FLEXIBLE LIQUIDTIGHT CONDUIT SHALL BE PROVIDED WITH AN EXTERNAL BONDING JUMPER IN ADDITION TO THE INTERNAL BONDING CONDUCTOR. THE BONDING JUMPER SHALL BE A #6 AWG GREEN INSULATED COPPER CONDUCTOR.
4. ALL CONTROL/DATA CABLE SHALL BE TWISTED PAIRS.
5. ALL CIRCUITS SHALL HAVE INDIVIDUAL NEUTRAL AND GROUNDING CONDUCTORS; NO SHARED NEUTRALS OR GROUNDS WILL BE PERMITTED.
6. NEUTRAL CONDUCTORS SHALL REMAIN ISOLATED FROM GROUND IN ALL LOCATIONS EXCEPT AT POWER SERVICE ENTRANCE.
7. WHERE POSSIBLE, POWER CABLES AND CONTROL/DATA CABLES SHALL RUN IN CONDUIT INDEPENDENT OF EACH OTHER. SEPARATE POWER AND CONTROL/DATA CABLES IN COMMON HANDHOLES, ENCLOSURES AND SHELTER SQUARE DUCT WIREWAY.
8. ALL CABLES SHALL BE PROPERLY COLOR CODED AND PERMANENTLY LABELED AT EACH END AND IN EACH HANDHOLE. ALL CABLES IN HANDHOLES SHALL BE LOOPED AROUND SEVERAL TIMES.
9. A DYNAMOMETER GRADUATED TO ACTUALLY INDICATE THE PROPER TENSION FOR ANY CABLE BEING PULLED THROUGH UNDERGROUND CONDUIT OR DUCT SHALL BE USED UNLESS THE CONTRACTOR ADAPTS A HARNESS OF THE PROPER SIZED ROPE THAT WILL LIMIT THE TENSION OF THE PULL. ANY COMBINATION OF CABLES PULLED IN CONDUIT OR DUCT SHALL NOT EXCEED THE SUM OF THE INDIVIDUAL ALLOWABLE TENSION OF EACH CABLE PLUS 15%.
10. ALL CABLE SPLICES WILL BE APPROVED IN ADVANCE BY FAA.
11. ALL PVC CONDUIT SHALL BE SCHEDULE 40.

ELECTRICAL GROUNDING:

1. GROUNDING AND LIGHTNING PROTECTION SHALL MEET FAA-STD-019F, "LIGHTNING AND SURGE PROTECTION, GROUNDING, BONDING AND SHIELDING REQUIREMENTS FOR FACILITIES AND ELECTRONIC EQUIPMENT".
2. ALL GROUND RODS SHALL BE COPPER CLAD STEEL, 3/4 INCH DIAMETER AND 10 FEET LONG. GROUND RODS SHALL BE DRIVEN SUCH THAT THE TOP OF ROD IS NO LESS THAN 12 INCHES BELOW GRADE.
3. ALL UNDERGROUND GROUND CONNECTIONS SHALL BE EXOTHERMICALLY WELDED. WELD INTEGRITY SHALL BE TESTED BY A 4 TERMINAL MILLIOHMMETER. SUCCESSFUL TEST SHALL BE LESS THAN 0.001 OHMS.
4. ALL UNDERGROUND GRSC SHALL BE GROUNDED USING A #2 AWG BARE COPPER GROUND TO THE GROUNDING COUNTERPOISE AND/OR GROUND ROD AT EACH END. ALL CONNECTIONS TO BE EXOTHERMICALLY WELDED.
5. UNDERGROUND GROUNDING CONDUCTORS SHALL BE 24 INCHES (MINIMUM) BELOW GRADE EXCEPT AT GROUND RODS AND AS OTHERWISE INDICATED.
6. ALL CABLE SHIELDS SHALL BE GROUNDED AT BOTH ENDS.
7. WHEN INSTALLING MULTIPLE GROUND CONDUCTORS TO ONE GROUND LUG THE SUBCONTRACTOR MUST USE A CONNECTOR (BURNDY FRAMATONE #YCHC OR EQUAL) AND A "PIGTAIL" TO SPLICE THE GROUNDS PRIOR TO CONNECTING TO THE LUG.
8. ALL UNUSED CONDUCTORS SHALL BE GROUNDED AT BOTH ENDS.

TESTING:

1. THE CONTRACTOR SHALL TEST ALL EQUIPMENT AND CABLES AS REQUIRED BY FAA STANDARDS AND SPECIFICATIONS.
2. VOLTAGE TESTS, INSULATION TESTS, AND GROUND RESISTANCE TESTS SHALL BE CONDUCTED ON ALL CONDUCTORS (AS APPROPRIATE) IN THE PRESENCE OF THE COR AND/OR THE RE. TESTS CONDUCTED WITHOUT THE COR OR THE RE PRESENT WILL BE REJECTED.
3. ALL TEST RESULTS SHALL BE FORWARDED TO THE FAA IN AN FAA SPECIFIED FORMAT.
4. CONTRACTOR TO VERIFY THAT ALL EQUIPMENT IS FULLY OPERATIONAL AND FUNCTIONING AS INTENDED. ANY DEFICIENCIES WITH GFM SHALL BE BROUGHT TO THE ATTENTION OF THE COR FOR A RESOULTION.

MASSPORT:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY PERMITS REQUIRED BY MASSPORT AS DETAILED IN THEIR MOST CURRENT LOGAN INTERNATIONAL AIRPORT GUIDE TO TENANT CONSTRUCTION.
2. PRIOR TO COMMENCMENT OF THE PROJECT, THE CONTRACTOR MUST SUBMIT TO MPA OPERATIONS AND THE COR A DETAILED SAFETY PLAN WHICH INCLUDES ALL VEHICLE CROSSINGS, BARRICADE PLACEMENT, AND CONSTRUCTION ACTIVITIES ON AND ADJACENT TO AIRCRAFT OPERATIONAL AREAS. THE SAFETY PLAN SHALL BE MODIFIED AND UPDATED ON A WEEKLY BASIS TO ADDRESS EACH PHASE AND/OR SUB-PHASE AS WORK PROGRESSES.
4. CONTRACTOR SHALL NOTIFY MPA SURVEY UNIT 24 HOURS PRIOR TO ANY EXCAVATION/INSTALLATION OF UNDERGROUND CONDUIT RUNS. THE CONTRACTOR SHALL ACCOMODATE MASSPORT SURVEYORS FOR THE DOCUMENTATION OF NEW CONDUIT RUNS.
5. THE CONTRACTOR SHALL ENGAGE THE SERVICES OF A LISCENCED SITE PROFESSIONAL TO CONDUCT AN ASSESSMENT OF SUBSURFACE CONTAMINATION AT AREAS OF FOUNDATION AND/OR UTILITY EXCAVATION. THE LSP SHALL SHALL ADDRESS ISSUES ASSOCIATED WITH POTENTIAL SOIL AND GROUNDWATER CONTAMINATION WITHIN THE PROPOSED PROJECT AREA.
6. ALL EXCESS SOIL REQUIRING OFF-SITE DISPOSAL SHALL BE FULLY CHARACTERIZED AND ACCOMPANIED BY AN LSP OPINION LETTER. THE PROPOSED OFF-SITE RECEIVING FACILITY SHALL BE APPROVED BY MASSPORT IN ADVANCE.
7. THE CONTRACTOR SHALL PROVIDE A EXCAVATION DEWATERING PLAN THAT DETAILS HOW GROUNDWATER WILL BE MANAGED.

REV	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
	02/14/2020	CONSTRUCTION, DT #18645	1508292	01/30/2020	

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
ATO - TECHNICAL OPERATIONS — EASTERN SERVICE AREA

GS

RUNWAY 4R
GS / EG SHELTER REPLACEMENT PROJECT
GENERAL NOTES

BOSTON — LOGAN INTERNATIONAL AIRPORT — MA

REVIEWED BY	SUBMITTED BY	APPROVED BY
	K. GRANT, PROJECT ENGINEER	G. NEVILLE, MGR: ENGINEERING CENTER

DESIGNED	KG	ISSUED BY	DATE	02/14/2020	JCN	1508292
DRAWN	KG	ENGINEERING SERVICES INFRASTRUCTURE	DRAWING NO	BOS-1508292-G003		REV
CHECKED	KG					

ISSUED FOR: CONSTRUCTION

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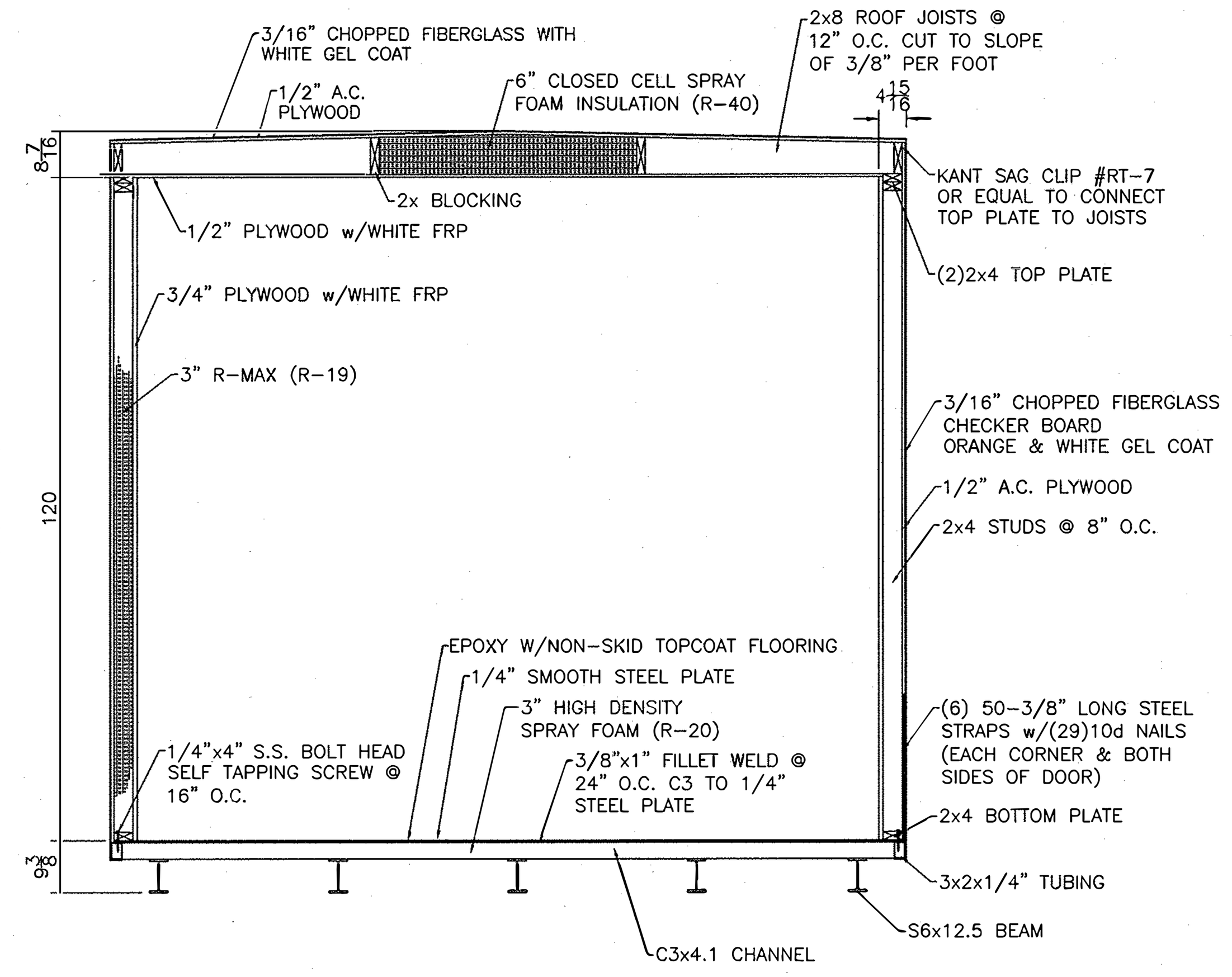
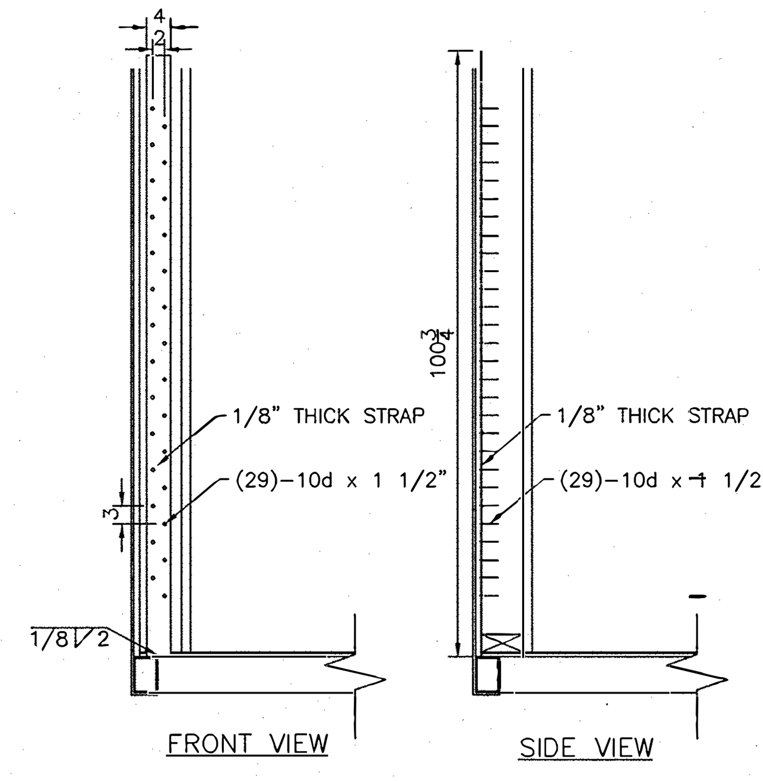
bos-1508292-g003.dgn 3/2/2020 11:16:41 AM Michael CTR Gosselin

THIS DRAWING PRODUCED ON NEW ENGLAND REGION MICROSTATION SYSTEM

NAILING SCHEDULE
ROOF: USE 8d NAILS AT 6" OC AND 4" OC ON 4' ENDS
FLOOR: USE 10d NAILS AT 6" OC AND 4" OC ON 4' ENDS
SHEAR WALLS: USE 6d NAILS AT 4" OC
LONG WALLS: USE #66G NAILS AT 4" OC



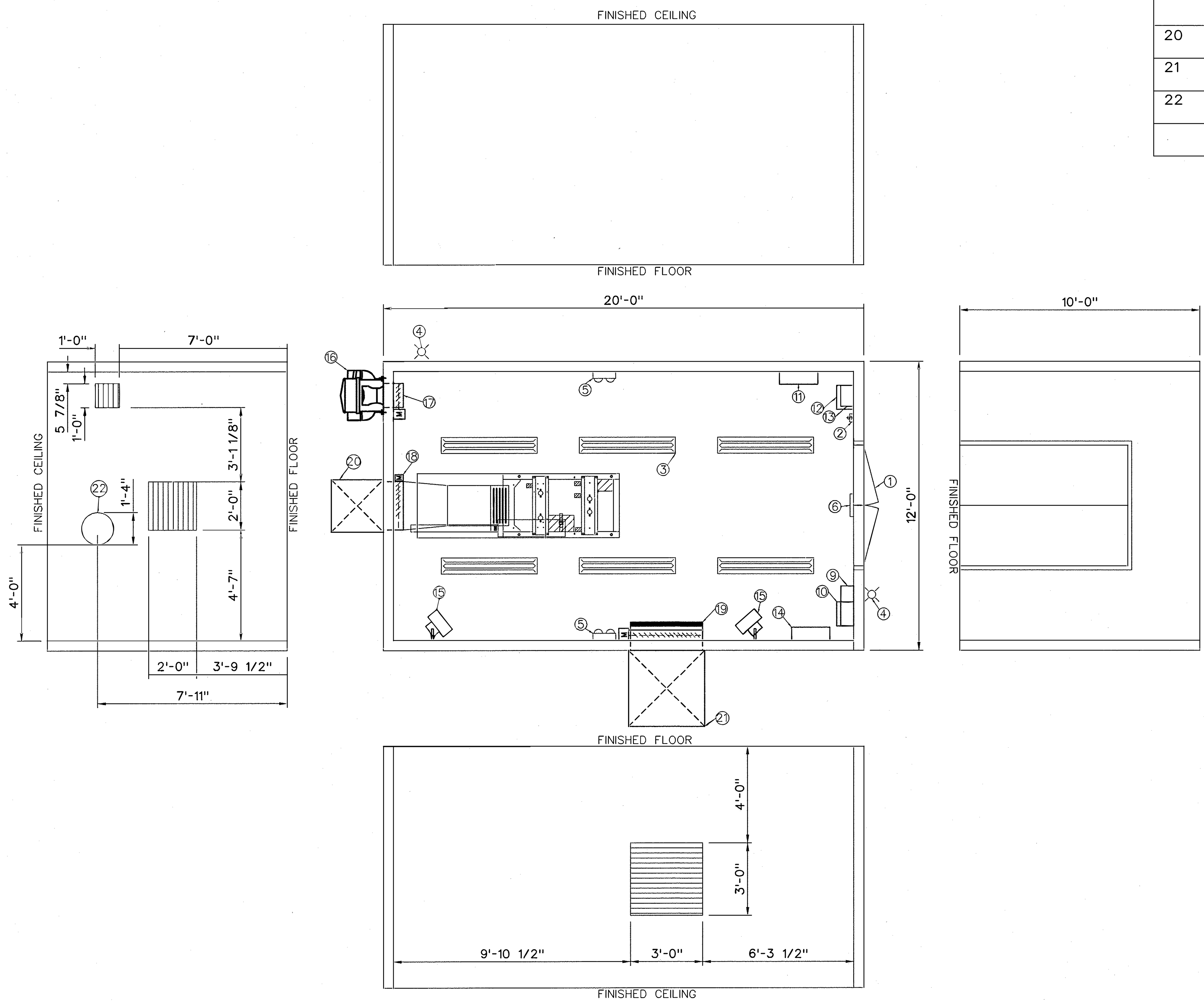
CONSTRUCTION DETAIL
NOT TO SCALE



STRAP DETAILS
NOT TO SCALE
NOTE: STRAP ON EACH CORNER & EACH SIDE OF DOOR (6 REQUIRED)

UIS GFM MATERIAL LIST

ITEM#	QTY.	VENDOR/PART#	DESCRIPTION	NOTES
1	1	-	ALIMINMUM CONTAINER DOOR 5'x7' ((2) 2'-6"x7' DOORS) WITH A DOOR CLOSURE, THREE-POINT LATCH, LOCKSET WITH BEST CORE (NO SUBSTITUTES), AND 24" DEEP FIBERGLASS DOOR SHIELD	PROVIDED AND INSTALLED BY DUPONT
2	2	-	120V LIGHT SWITCH, 20 AMP, COMMERCIAL GRADE	PROVIDED AND INSTALLED BY DUPONT
3	6	MOBERN 1-48LED48	4' PREMIUM GRADE LED INDUSTRIAL FIXTURE	PROVIDED AND INSTALLED BY DUPONT
4	2 2	ASD-SFL15040 INTERMATIC T101	EXTERIOR LED FLOOD LIGHT 24-HOUR MECHANICAL TIME SWITCH	PROVIDED AND INSTALLED BY DUPONT
5	2	LITHONIA EU2-LED-M12	EMERGENCY LIGHT	PROVIDED AND INSTALLED BY DUPONT
6	1	LITHONIA LQM	EXIT LIGHT	PROVIDED AND INSTALLED BY DUPONT
7	8	-	GENERAL PURPOSE DUPLEX RECEPTACLES, 125V, 20A,	PROVIDED AND INSTALLED BY DUPONT
8	4	-	GFIDUPLEX RECEPTACLES, 125V, 20A MIN, UL GROUP I, CLASS A	PROVIDED AND INSTALLED BY DUPONT
9	1	SQUARE D NF TYPE	PANEL EG - SINGLE PHASE 120/240V, 225AF, 125A MAIN BREAKER, 30 CIRCUITS	PROVIDED AND INSTALLED BY DUPONT
10	1	RAYVOSS 120-2S-M3-2-06-A	TVSS FOR PANEL EG	PROVIDED AND INSTALLED BY DUPONT
11	1	SQUARE D H224N	SERVICE ENTRANCE COMMERCIAL DISCONNECT SWITCH	PROVIDED AND INSTALLED BY DUPONT
12	1	RAYVOSS 120-2S-M1-3-06-A-H	TVSS FOR SERVICE ENTRANCE COMMERCIAL DISCONNECT SWITCH	PROVIDED AND INSTALLED BY DUPONT
13	1	SQUARE D H223N	DISCONNECT SWITCH FOR TVSS	PROVIDED AND INSTALLED BY DUPONT
14	1	SIEMENS DTF224	FACILITY LOAD DISCONNECT SWITCH	PROVIDED MOUNTED BY DUPONT, WIRED BY OTHERS
15	2	QMARK MUH03-21	3KW, 240V ELECTRIC UNIT HEATER WITH MOUNTING BRACKET AND LINE VOLTAGE THERMOSTAT	PROVIDED AND INSTALLED BY DUPONT
16	1	DAYTON 4HZ43	SIDEWALL DIRECT DRIVE EXHAUST FAN WITH BIRD SCREEN AND THERMOSTAT	PROVIDED AND INSTALLED BY DUPONT
17	1	DAMPER: RUSKIN CD50 ACTUATOR: BELIMO AFBUP (SIDE MOUNT)	12" W X 12" H MOTORIZED CONTROL DAMPER, 2-POSITION DAMPER, PARALLEL BLADE, CONCEALED LINKAGE	PROVIDED AND INSTALLED BY DUPONT
18	1	DAMPER: RUSKIN CD50 ACTUATOR: BELIMO AFBUP (SIDE MOUNT)	24" W X 24" H MOTORIZED CONTROL DAMPER, 2-POSITION DAMPER, PARALLEL BLADE, CONCEALED LINKAGE	PROVIDED AND INSTALLED BY DUPONT
19	1	DAMPER: RUSKIN CD50 ACTUATOR: BELIMO AFBUP (SIDE MOUNT)	36" W X 36" H MOTORIZED CONTROL DAMPER, 2-POSITION DAMPER, PARALLEL BLADE, CONCEALED LINKAGE, FILTER, AND FILTER FRAME. SEE DRAWING M003.	PROVIDED AND INSTALLED BY DUPONT
20	1	-	26" W X 26" H x 26" D x 0.125" THICK ALUMINUM EXHAUST 90° RAIN HOOD WITH BIRD AND INSECT SCREENS	SHIPPPED LOOSE BY DUPONT FOR INSTALL BY CONTRACTOR
21	1	-	38" W X 38" H x 38" D x 0.125" THICK ALUMINUM EXHAUST 90° RAIN HOOD WITH BIRD AND INSECT SCREENS	SHIPPPED LOOSE BY DUPONT FOR INSTALL BY CONTRACTOR
22	1	-	SHELTER PENETRATION FOR A 1'-4" DIAMETER EXHAUST THIMBLE.	PENETRATION BY DUPONT FOR INSTALL BY OTHERS (PSG)



1 G004 FLOOR PLAN DETAIL
NOT TO SCALE

NOTES:

1. DRAWING IS FOR REFERENCE ONLY.
2. MATERIALS IDENTIFIED BY A SPECIFIC VENDOR MAY BE SUBSTITUTED BY THE SHELTER MANUFACTURER (DUPONT) UPON FAA APPROVAL.
3. PRIOR TO DELIVERY, DUPONT SHALL PROVIDE THE FAA WITH SHELTER DRAWINGS STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MASSACHUSETTS. THE STAMPED DRAWINGS SHALL INCLUDE THE APPROVED GFM MATERIAL LIST, SHELTER DETAILS, AND DESIGN CALCULATIONS.
4. UPON COMPLETION OF THE UIS SHELTER PROJECT THE EG, SUBBASE FUEL TANK, AND ASSOCIATED EQUIPMENT WILL BE INSTALLED ON-SITE UNDER A SEPERATE FAA POWER SERVICES GROUP (PSG) CONTRACT. SEE DRAWING SERIES BOS-1508064 FOR ADDITIONAL INFORMATION.

REV	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
	02/14/2020	CONSTRUCTION, DT #18645	1508292	01/30/2020	

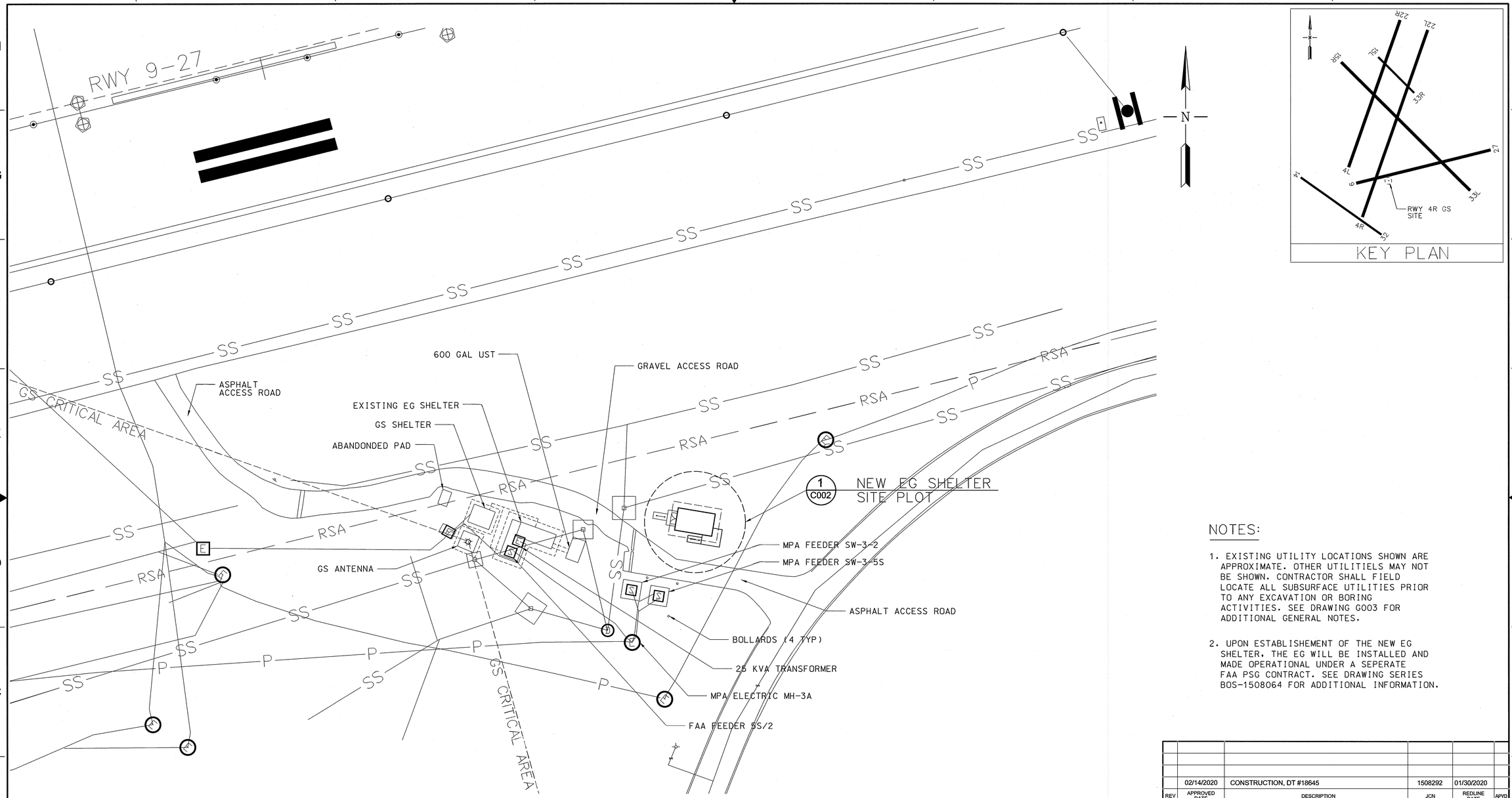
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
ATO - TECHNICAL OPERATIONS — EASTERN SERVICE AREA

GS
RUNWAY 4R
GS / EG SHELTER REPLACEMENT PROJECT
MATERIAL LIST & DETAILS

BOSTON — LOGAN INTERNATIONAL AIRPORT — MA

REVIEWED BY
SUBMITTED BY: K. GRANT — PROJECT ENGINEER
APPROVED BY: G. NEVILLE — MGR: ENGINEERING CENTER
DESIGNED KG / DRAWN KG / CHECKED KG
ISSUED BY: ENGINEERING SERVICES INFRASTRUCTURE
DATE 02/14/2020 — JCN 1508292
DRAWING NO: BOS-1508292-G004 — REV

ISSUED FOR: CONSTRUCTION



1 C002 NEW EG SHELTER SITE PLOT

1 C001 EXISTING SITE RWY 4R GS
SCALE: 1"=25'-0"

25' 0 25' 50'
SCALE: 1" = 25'

KEY PLAN

NOTES:

1. EXISTING UTILITY LOCATIONS SHOWN ARE APPROXIMATE. OTHER UTILITIELS MAY NOT BE SHOWN. CONTRACTOR SHALL FIELD LOCATE ALL SUBSURFACE UTILITIES PRIOR TO ANY EXCAVATION OR BORING ACTIVITIES. SEE DRAWING G003 FOR ADDITIONAL GENERAL NOTES.

2. UPON ESTABLISHEMENT OF THE NEW EG SHELTER, THE EG WILL BE INSTALLED AND MADE OPERATIONAL UNDER A SEPERATE FAA PSG CONTRACT. SEE DRAWING SERIES BOS-1508064 FOR ADDITIONAL INFORMATION.

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DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
ATO - TECHNICAL OPERATIONS — EASTERN SERVICE AREA

GS
RUNWAY 4R
GS / EG SHELTER REPLACEMENT PROJECT
EXISTING SITE PLAN

BOSTON — LOGAN INTERNATIONAL AIRPORT — MA

REVIEWED BY	SUBMITTED BY	APPROVED BY
	K. GRANT — PROJECT ENGINEER	G. NEVILLE — MGR: ENGINEERING CENTER
	DESIGNED KG	DATE 02/14/2020 JCN 1508292
	DRAWN KG	DRAWING NO BOS-1508292-C001 REV
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ISSUED BY: ENGINEERING SERVICES INFRASTRUCTURE

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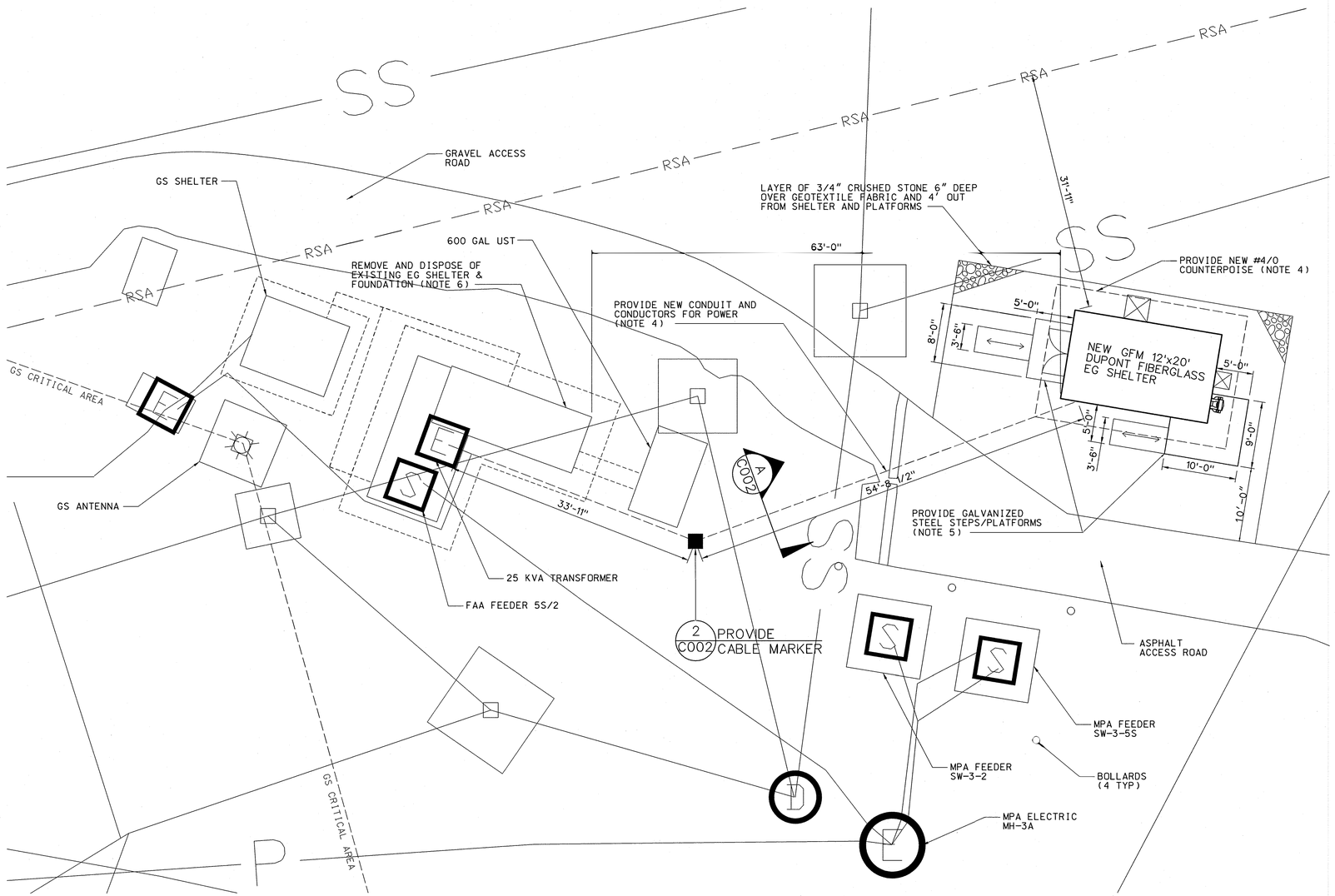
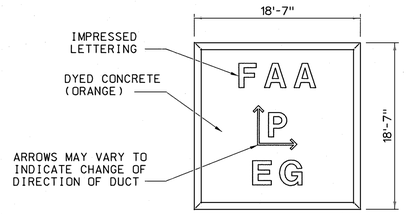
THIS DRAWING PRODUCED ON NEW ENGLAND REGION MICROSTATION SYSTEM

NOTES:

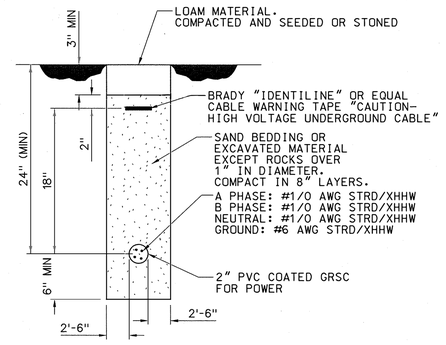
1. THE BOSTON RUNWAY 4R GLIDE SLOPE IS A OPERATIONAL FACILITY. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE COR TO MINIMIZE ANY IMPACTS.
2. SEE DRAWING G003 FOR ADDITIONAL GENERAL NOTES.
3. THE EG SHELTER WILL BE DELIVERED BY OTHERS. THE CONTRACTOR SHALL COORDINATE WITH THE COR TO ACCEPT DELIVERY AND ASSIST IN PLACEMENT AS NECESSARY.
4. SEE DRAWING E001 FOR ADDITIONAL INFORMATION.
5. SEE DRAWING S002 FOR ADDITIONAL INFORMATION.
6. SEE SPECIFICATION SECTION 01 11 00 FOR ADDITIONAL INFORMATION.



1 C002 RWY 4R GS PROPOSED SITE PLOT
SCALE: 1/8"=1'-0"



2 C002 CONCRETE CABLE MARKER
NO TO SCALE



A C002 TRENCH SECTION
NO TO SCALE

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	02/14/2020	CONSTRUCTION, DT #18645	1508292	01/30/2020	

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
ATO - TECHNICAL OPERATIONS — EASTERN SERVICE AREA

GS
RUNWAY 4R
GS / EG SHELTER REPLACEMENT PROJECT
PROPOSED SITE PLAN

BOSTON — LOGAN INTERNATIONAL AIRPORT — MA

REVIEWED BY	SUBMITTED BY	APPROVED BY
	K. GRANT	G. NEVILLE
	PROJECT ENGINEER	MGR: ENGINEERING CENTER

DESIGNED KG. | DRAWN KG. | CHECKED KG.
ISSUED BY: ENGINEERING SERVICES INFRASTRUCTURE
DATE 02/14/2020 | JCN 1508292
DRAWING NO BOS-1508292-C002 | REV

ISSUED FOR: CONSTRUCTION

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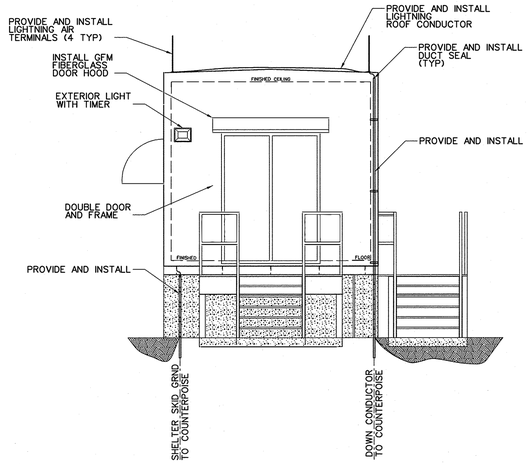
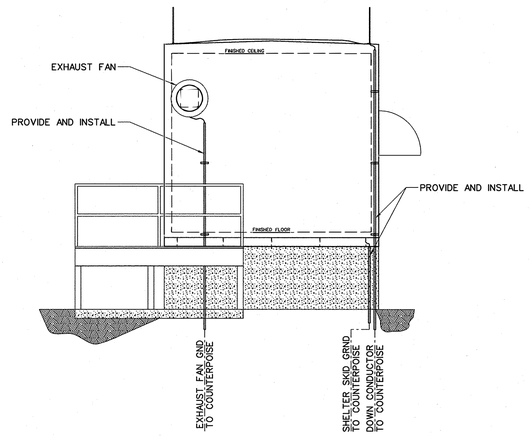
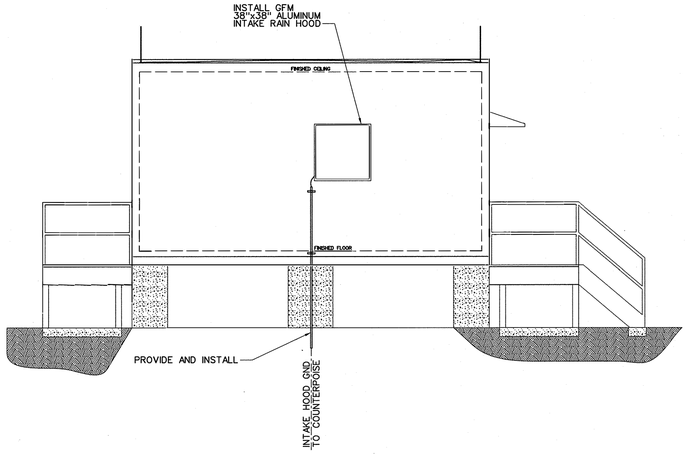


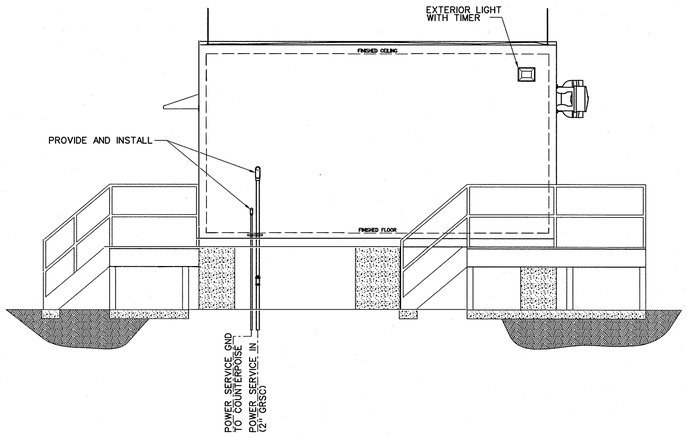
A C003 EXTERIOR ELEVATION (WEST)
SCALE: 1/4"=1'-0"



B C003 EXTERIOR ELEVATION (EAST)
SCALE: 1/4"=1'-0"



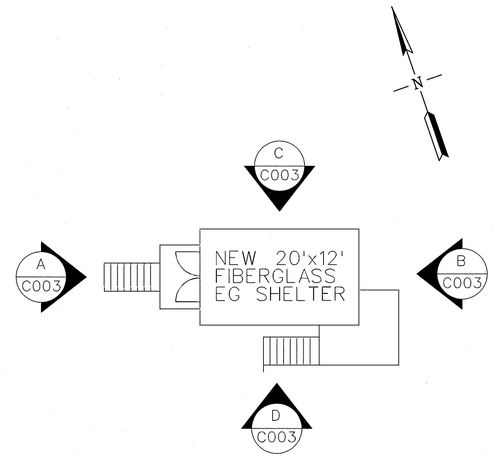
C C003 EXTERIOR ELEVATION (NORTH)
SCALE: 1/4"=1'-0"



D C003 EXTERIOR ELEVATION (SOUTH)
SCALE: 1/4"=1'-0"

NOTES:

1. ALL CONDUIT OPENINGS INTO THE SHELTER ARE TO BE SEALED TO PREVENT ANY INSECTS OR MOISTURE FROM ENTERING THE SHELTER.
2. EXPANSION COUPLINGS SHALL BE PLACED ON ALL EXTERIOR VERTICAL GRS CONDUITS.
3. CONDUIT LOCATIONS SHOWN ARE DIAGRAMATIC ONLY. ACTUAL LOCATIONS TO BE DETERMINED IN FIELD.
4. ALL EXTERIOR CONDUITS, HOODS, AND PIPING SHALL BE GROUNDED. REFER TO ELECTRICAL DRAWING FOR DETAILS. CONNECTIONS SHALL MEET BONDING REQUIREMENTS IN FAA-STD-019F.
5. CONTRACTOR SHALL CORE INTO SHELTER TO BRING NECESSARY CONDUITS IN. CONTRACTOR SHALL COORDINATE WITH THE FAA RE TO FIELD LOCATE ANY CONDUITS SHOWN IN THE DRAWING. CONTRACTOR SHALL VERIFY ALL PENETRATIONS AND EQUIPMENT DIMENSIONS TO ENSURE ALIGNMENT AND NO INTERFERENCE.



1 C003 KEY PLAN
NOT TO SCALE

REV	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
	02/14/2020	CONSTRUCTION, DT #18645	1508292	01/30/2020	

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
ATO - TECHNICAL OPERATIONS — EASTERN SERVICE AREA

GS
RUNWAY 4R
GS / EG SHELTER REPLACEMENT PROJECT
EXTERIOR ELEVATIONS

BOSTON — LOGAN INTERNATIONAL AIRPORT — MA

REVIEWED BY	SUBMITTED BY	APPROVED BY
	K. GRANT — PROJECT ENGINEER	G. NEVILLE — MGR: ENGINEERING CENTER
	DESIGNED KG	ISSUED BY: ENGINEERING SERVICES INFRASTRUCTURE
	DRAWN KG	DATE 02/14/2020 — JCN 1508292
	CHECKED KG	DRAWING NO BOS-1508292-C003 — REV

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2/20/20 11:58:14 AM Michael CTR Grosselin

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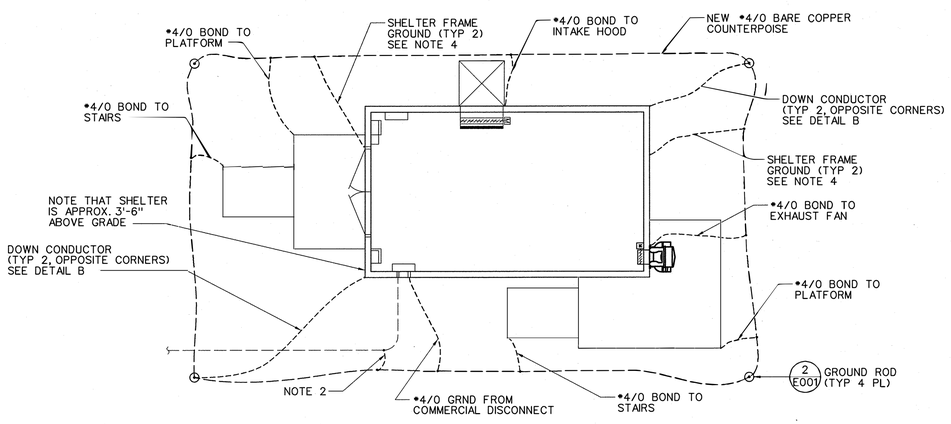
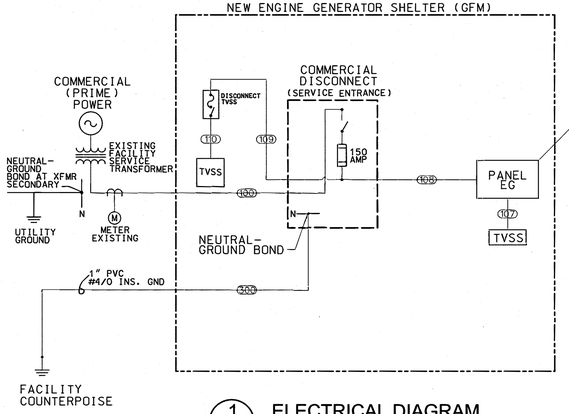


A E001 **FACILITY GROUNDING**
NO TO SCALE

GROUNDING NOTES:

1. CONTRACTOR SHALL INSTALL A NEW EARTH ELECTRODE SYSTEM.
2. ALL UNDERGROUND GRSC SHALL BE GROUNDED USING A #2 AWG BARE COPPER GROUND TO THE GROUNDING COUNTERPOISE AND/OR GROUND ROD AT EACH END.
3. EES SYSTEM CONNECTIONS TO THE SHELTER SHALL BE 24" (MIN) BELOW GRADE.
4. CONTRACTOR SHALL PROVIDE AND INSTALL TWO 4/0 AWG FACILITY SKID GROUNDS (COLOR CODED GREEN) FROM THE BUILDING SKID TO THE EES.



1 E001 **ELECTRICAL DIAGRAM**
NO TO SCALE

ONELINE DIAGRAM NOTES:

1. PROVIDE AND INSTALL NEW FACILITY FEEDERS FROM 25 KVA TRANSFORMER. CONDUCTORS SHALL BE SIZED #1/0 AWG (QTY 3) WITH #6 AWG GREEN GROUND. INSTALL NEW CONDUIT, MINIMUM 2" GRSC.
2. ALL PENETRATIONS SHALL BE GROUTED ON THE OUTSIDE OF THE CONDUIT AND SEALED ON THE INTERIOR WITH A REMOVEABLE SEALING COMPOUND AFTER INSTALLATION OF CONDUIT AND CONDUCTORS.
3. ALL CONDUCTORS SHALL BE MINIMUM COPPER, THWN, 600V RATED. ALL BOLTED CONNECTIONS SHALL BE VIA HYDRAULICALLY CRIMPED TWO HOLE LUGS UTILIZING BELLVILLE WASHERS. REFER TO FAA-STD-019F FOR MECHANICAL CONNECTION REQUIREMENTS.

PANEL SCHEDULE

PANEL NAME: PANEL EG — VOLTAGE 120/240V, 1 PH — PANEL LOCATION: EG SHELTER — SITE:

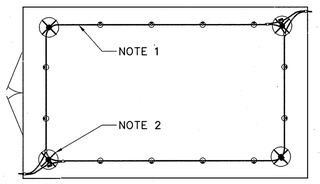
DESCRIPTION	BREAKER POLE	BREAKER AMP	LOAD PER PHASE (VA) A	LOAD PER PHASE (VA) B	CIRCUIT NUMBER		LOAD PER PHASE (VA) A	LOAD PER PHASE (VA) B	BREAKER POLE	BREAKER AMP	DESCRIPTION
LIGHTS	1	20			1	2			1	20	LIGHTS
RECEPTACLES	1	20			3	4			1	20	RECEPTACLES
EG BLOCK HEATER*	2	20			5	6			2	20	EF-1
EG BLOCK HEATER*	2	20			7	8			2	20	EF-1
BATTERY CHARGER*	1	20			9	10			2	20	SPARE
EUH-1 (3 KW)	2	20			11	12			2	20	SPARE
EUH-1 (3 KW)	2	20			13	14			2	20	EUH-2 (3 KW)
OVERFILL ALARM (RELAY IN CONSOLE)*	1	20			15	16			2	20	EUH-2 (3 KW)
FUEL MONITORING TLS-4 SQ CONSOLE*	1	20			17	18			1	20	EG ENV. CONTROL PANEL*
SPARE	1	20			19	20			1	20	EMERG. LIGHTS
SPARE	1	20			21	22			1	20	EXTERIOR LIGHTS
SPARE	2	20			23	24			1	20	EXTERIOR RECEPTACLES (GFI)
SPARE	2	20			25	26			1	20	ERMS PANEL P1B*
PANEL EG	2	60			27	28			1	20	ERMS OUTLET*
PANEL EG	2	60			29	30			1	20	SPARE

PHASE A: (VA) — MAIN BRKR A/F: 225 A/T: 100 AT — PNL FEED: — MANUFACTURER: SQUARE D
PHASE B: (VA) — AIC RATING: 10K — TOTAL CONNECTED LOAD (KVA):= — AMPS
MAIN COPPER BUS: — TOTAL DEMAND LOAD (KVA)= — AMPS
QUANTITY OF BREAKERS: 30 — PNL MOUNTING: SURFACE — FEEDER SIZE: 100A 1 SET 2"C — 4 #2 AWG, #6 GRD

* INSTALLED LATER BY THE PSG EG REPLACEMENT PROJECT

CONDUIT & CONDUCTOR SCHEDULE

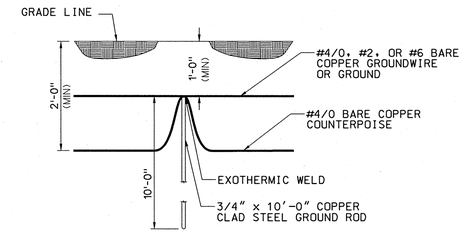
NUMBER	CONDUIT & CABLE IDENTIFICATION FROM	TO	CONDUIT SIZE	CONDUIT TYPE	DESCRIPTION	CONDUCTOR SIZE (AWG)/INSULATION	FUNCTION	COLOR
100	UTILITY SERVICE	SERVICE ENTRANCE / COMMERCIAL DISCONNECT	2"	RMC	COMMERCIAL (UTILITY) SERVICE FEEDER FROM TRANSFORMER TO FACILITY SERVICE ENTRANCE	#1/0 AWG STRD/XHHW	A PHASE	BLACK
						#1/0 AWG STRD/XHHW	B PHASE	RED
						#1/0 AWG STRD/XHHW	NEUTRAL	WHITE
						#6 AWG STRD/XHHW	GROUND	GREEN
107	COMMERCIAL DISCONNECT PANEL EG	TVSS – PANEL EG	1"	EMT		#6 AWG STRD/XHHW	A PHASE	BLACK
						#6 AWG STRD/XHHW	B PHASE	RED
						#6 AWG STRD/XHHW	NEUTRAL	WHITE
						#6 AWG STRD/XHHW	GROUND	GREEN
108	COMMERCIAL DISCONNECT	PANEL EG	2"	EMT	FACILITY MAIN DISTRIBUTION PANEL (MDP) TO TVSS	#1/0 AWG STRD/XHHW	A PHASE	BLACK
						#1/0 AWG STRD/XHHW	B PHASE	RED
						#1/0 AWG STRD/XHHW	NEUTRAL	WHITE
						#6 AWG STRD/XHHW	GROUND	GREEN
109	SERVICE ENTRANCE COMMERCIAL DISCONNECT	DISCONNECT – COMMERCIAL POWER	1 1/2"	EMT	LOAD DISCONNECT TO DISCONNECT COMMERCIAL POWER DO NOT VIOLATE TO FT TAP RULE	#2 AWG STRD/XHHW	A PHASE	BLACK
						#2 AWG STRD/XHHW	B PHASE	RED
						#2 AWG STRD/XHHW	NEUTRAL	WHITE
						#6 AWG STRD/XHHW	GROUND	GREEN
110	DISCONNECT – PANEL COMMERCIAL POWER	TVSS – SE	1 1/2"	EMT	DISCONNECT TO TVSS	#2 AWG STRD/XHHW	A PHASE	BLACK
						#2 AWG STRD/XHHW	B PHASE	RED
						#2 AWG STRD/XHHW	NEUTRAL	WHITE
						#6 AWG STRD/XHHW	GROUND	GREEN
300	SERVICE ENTRANCE DISCONNECT SWITCH	FACILITY COUNTERPOISE	1"	PVC	NEC CODE REQUIRED FACILITY NEUTRAL TO GROUND BOND 2014 NEC ARTICLE 250-66 AS A MINIMUM	#4/0 AWG 19 STRAND BARE COPPER	GROUND	INSULATED GREEN



B E001 **FACILITY LIGHTNING PROTECTION**
NO TO SCALE

LIGHTNING PROTECTION NOTES:

1. CONTRACTOR SHALL INSTALL CLASS 2 LIGHTNING PROTECTION (L.P.) RING AROUND TOP OF NEW SHELTER.
2. CONTRACTOR SHALL INSTALL FOUR 24" HARGER 1224CUAT (OR EQUAL) AIR TERMINALS ON OPPOSITE (CENTER) ENDS OF THE SHELTER ROOF.
3. AIR TERMINALS SHALL BE PLACED ON HARGER CUBU121 (OR APPROVED EQUAL) BRONZE HORIZONTAL BASE 1/2 ".
4. EXTEND TWO DOWN CONDUCTORS FROM L.P. RING TO THE EES SYSTEM. EXOTHERMICALLY WELD DOWN CONDUCTORS TO GROUND ROD AT THE EES SYSTEM.
5. CONTRACTOR SHALL ADHERE L.P. SYSTEM TO NEW SHELTER BY USE OF ADHESIVE CABLE HOLDERS AND BASES.
6. CONTRACTORS SHALL INSTALL LIGHTNING PROTECTION SYSTEM IN ACCORDANCE WITH FAA-STD-019F: LIGHTNING AND SURGE PROTECTION, GROUNDING, BONDING, AND SHIELDING REQUIREMENTS FOR FACILITIES AND ELECTRONIC EQUIPMENT.



2 E001 **TYPICAL GROUND ROD INSTALLATION**
NO TO SCALE

GENERAL ELECTRIC NOTES:

1. ALL ELECTRICAL WORK SHALL CONFORM TO FAA-C-1217G, FAA-C-1391D SPECIFICATIONS AND NFPA 70 (NEC).
2. THE CONTRACTOR SHALL TERMINATE ALL POWER AND GROUND CONNECTIONS UNLESS NOTED OTHERWISE.
3. ALL FLEXIBLE LIQUIDTIGHT CONDUIT SHALL BE PROVIDED WITH AN EXTERNAL BONDING JUMPER IN ADDITION TO THE INTERNAL BONDING CONDUCTOR. THE BONDING JUMPER SHALL BE A #6 AWG GREEN INSULATED COPPER CONDUCTOR.
4. ALL CIRCUITS SHALL HAVE INDIVIDUAL NEUTRAL AND GROUNDING CONDUCTORS: NO SHARED NEUTRALS OR GROUNDS WILL BE PERMITTED.
5. NEUTRAL CONDUCTORS SHALL REMAIN ISOLATED FROM GROUND IN ALL LOCATIONS EXCEPT AT POWER SERVICE ENTRANCE.
6. ALL PVC CONDUIT SHALL BE SCHEDULE 40 UNLESS OTHERWISE NOTED.
7. GROUNDING AND LIGHTNING PROTECTION SHALL MEET FAA STANDARD 019F, "LIGHTNING AND SURGE PROTECTION, GROUNDING, BONDING, AND SHIELDING REQUIREMENTS FOR FACILITIES AND ELECTRONIC EQUIPMENT"
8. ELECTRICAL AND ELECTRONIC GROUNDING INCLUDING THE LIGHTNING PROTECTION SYSTEM SHALL MEET OR EXCEED ALL PROVISIONS OF THE LATEST EDITION OF:
   NFPA 70: NATIONAL ELECTRIC CODE (NEC);
   NFPA 780: STANDARD FOR THE INSTALLATION OF LIGHTNING PROTECTION SYSTEMS
   FAA-STD-019F: LIGHTNING AND SURGE PROTECTION, GROUNDING, BONDING, AND SHIELDING REQUIREMENTS FOR FACILITIES AND ELECTRONIC EQUIPMENT.

TESTING:

1. THE CONTRACTOR SHALL TEST ALL EQUIPMENT AND CABLES AS REQUIRED BY FAA STANDARDS AND SPECIFICATIONS.
2. VOLTAGE TESTS, INSULATION TESTS, AND GROUND RESISTANCE TESTS SHALL BE CONDUCTED ON ALL INSTALLED CONDUCTORS AS SPECIFIED IN DIVISION 26 OF THE CONTRACT SPECIFICATIONS.
3. THE TEST RESULTS SHALL BE FORWARDED TO THE FAA IN AN FAA SPECIFIED FORMAT.
4. ALL UNDERGROUND GROUND CONNECTIONS SHALL BE EXOTHERMICALLY WELDED UNLESS OTHERWISE INDICATED. WELD INTEGRETY SHALL BE TESTED BY A 4 TERMINAL MILLIOHMMETER. SUCCESSFUL TEST SHALL BE LESS THAN 0.001 OHMS.

REV	APPROVED DATE	DESCRIPTION	JCN	REDLINE DATE	APVD
	02/14/2020	CONSTRUCTION, DT #18645	1508292	01/30/2020	

DEPARTMENT OF TRANSPORTATION
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ATO - TECHNICAL OPERATIONS — EASTERN SERVICE AREA

GS

RUNWAY 4R
GS / EG SHELTER REPLACEMENT PROJECT
ELECTRICAL DIAGRAM AND NOTES

BOSTON — LOGAN INTERNATIONAL AIRPORT — MA

REVIEWED BY	SUBMITTED BY	APPROVED BY
	K. GRANT	G. NEVILLE
	PROJECT ENGINEER	MGR: ENGINEERING CENTER

DESIGNED KG — DRAWN KG — CHECKED KG — ISSUED BY: ENGINEERING SERVICES INFRASTRUCTURE — DATE 02/14/2020 — JCN 1508292 — DRAWING NO BOS-1508292-E001 — REV

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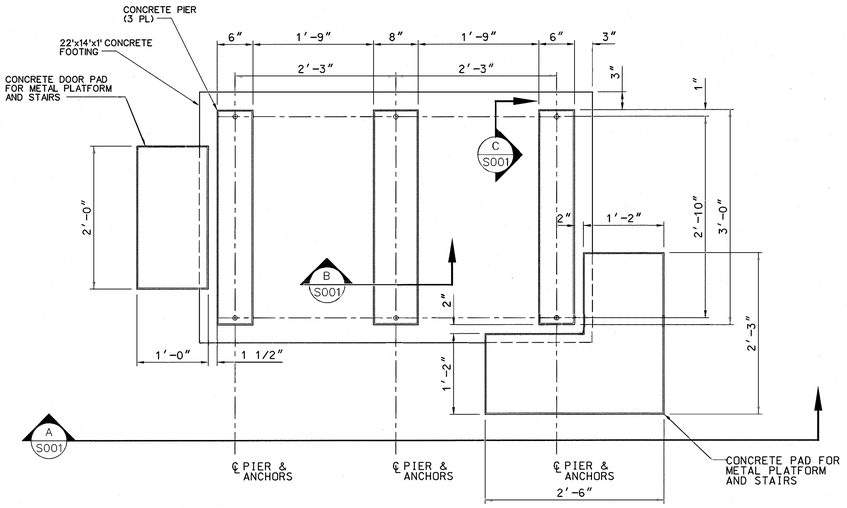
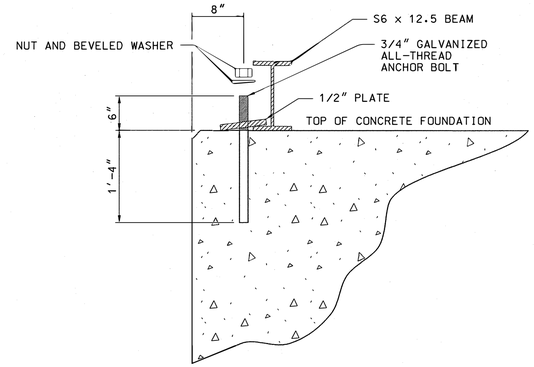
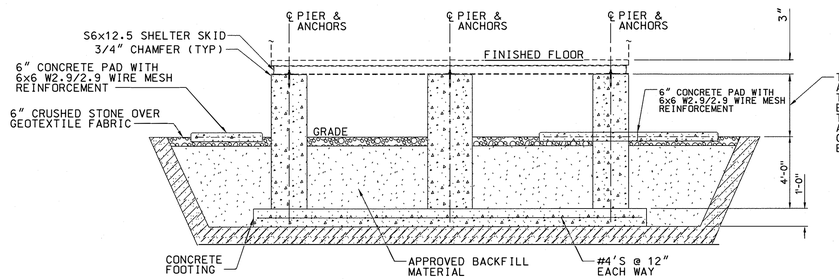


1 S001 **EG SHELTER FOUNDATION PLAN**
SCALE: 1/4"=1'-0"

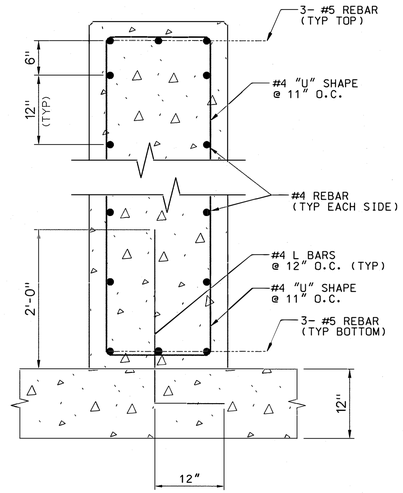


C S001 **ANCHOR BOLT DETAIL**
NOT TO SCALE



TOP OF BUILDING FOUNDATION SHALL HAVE A DESIGN FLOOD ELEVATION (DFE) EQUAL TO 13.7 FT (NAVD88) PER MASSPORT EXISTING FACILITIY REQUIREMENTS.THIS PUTS THE TOP OF FOUNDATION HEIGHT APPROXIMATELY 3'-6" ABOVE GRADE. CONTRACTOR TO PROFESSIONALLY SURVEY TO ENSURE THIS REQUIREMENT IS MET.

A S001 **EG SHELTER FOUNDATION SECTION**
SCALE: 1/4"=1'-0"



B S001 **REINFORCEMENT DETAIL**
NOT TO SCALE

4' 0 4' 8'
SCALE: 1/4" = 1'-0"

NOTES:

1. THIS DRAWING IS FOR REFERENCE ONLY. ALL ELEMENTS OF THE FOUNDATION SHOWN INCLUDING THE SHELTER PAD, PIERS, BASE SLAB PLATFORM/STAIR PADS, REINFORCING BARS, AND THEIR DIMENSIONS ARE FOR VISUALIZATION PURPOSES ONLY. THE SHELTER AND STAIR/PLATFORM FOUNDATIONS ARE TO BE DESIGNED BY THE CONTRACTOR AND MAY NOT MATCH WHAT IS SHOWN ON THIS DRAWING.
2. THE CONTRACTOR SHALL DESIGN THE SHELTER FOUNDATION, INCLUDING PLATFORM/STAIR PADS, BASED ON RECOMMENDATIONS PROVIDED IN THE GEOTECHNICAL ENGINEERING REPORT. THE CONTRACTORS FOUNDATION DESIGN SHALL BE PREPARED AND STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE COMMONWEALTH OF MASSACHUSETTS. THE STAMPED FOUNDATION DESIGN SHALL BE SUBMITTED TO THE FAA AND MASSPORT FOR REVIEW AND APPROVAL PRIOR TO COMMENCEMENT OF ANY WORK.
3. ANCHOR BOLT LOCATIONS AND EMBEDMENTS SHOWN ARE TYPICAL FOR FAA DUPONT SHELTER INSTALLATIONS. THE STATE LISCENCED PROFESSIONAL ENGINEER DESIGNING THE FOUNDATION SHALL BE RESPONSIBLE FOR THE DESIGN OF THE SHELTER ANCHOR BOLTS.
4. ALL CONCRETE WORK SHALL COMPLY WITH ACI-304, "GUIDE FOR MEASURING, MIXING, TRANSPORTING, AND PLACING CONCRETE", ACI-308, "GUIDE TO EXTERNAL CURING OF CONCRETE", AND ACI-347, "GUIDE TO FORMWORK FOR CONCRETE".
5. CONCRETE SHALL DEVELOP 4000 PSI IN 28 DAYS WITH A MAXIMUM SLUMP OF 3" AND A MAXIMUM AGGREGATE SIZE OF 3/4". EXCEPT WHERE OTHERWISE INDICATED.
6. ALL REINFORCING STEEL SHALL COMPLY WITH ASTM A615, GRADE 60.
7. EXPANSION ANCHORS, IF USED, SHALL BE HILTI HSL HEAVY DUTY ANCHORS OR APPROVED EQUAL AND SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
8. DRILL AND EPOXY ANCHOR BOLTS WITH PRO-POXY 300 FAST OR AN APPROVED EQUAL.
9. ALL EDGES OF EXPOSED CONCRETE SHALL HAVE A 3/4" CHAMFER.

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RUNWAY 4R
GS / EG SHELTER REPLACEMENT PROJECT
FOUNDATION DETAILS

BOSTON — LOGAN INTERNATIONAL AIRPORT — MA

REVIEWED BY	SUBMITTED BY	APPROVED BY
	K. GRANT	G. NEVILLE
	PROJECT ENGINEER	MGR: ENGINEERING CENTER
DESIGNED KG	ISSUED BY: ENGINEERING SERVICES INFRASTRUCTURE	DATE 02/14/2020 JCN 1508292
DRAWN KG		DRAWING NO BOS-1508292-S001 REV
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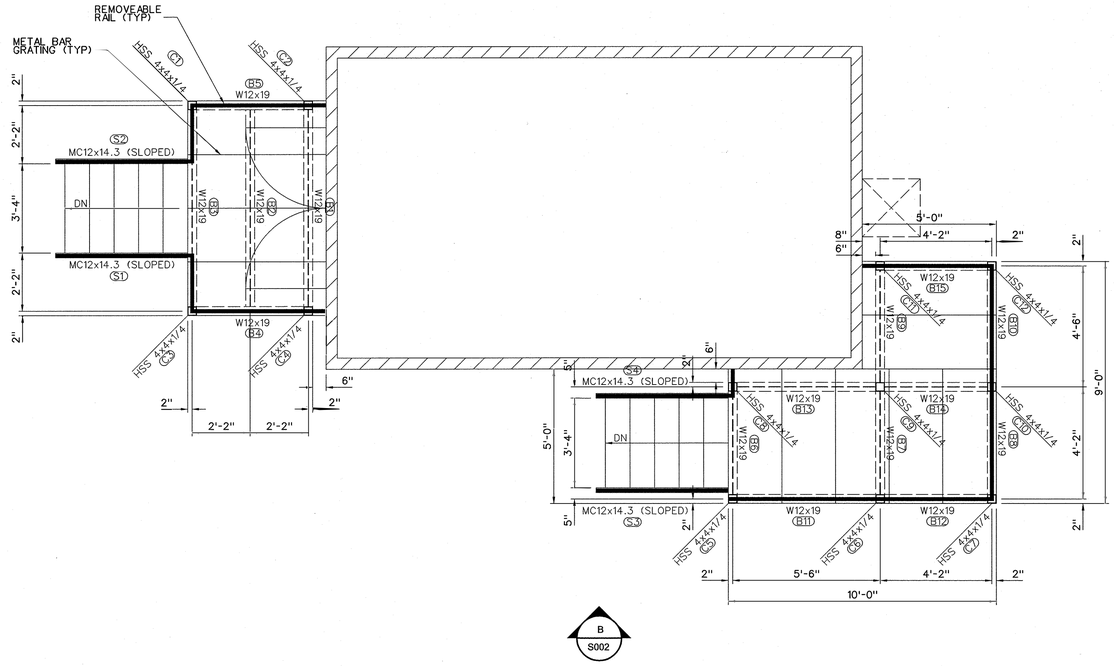
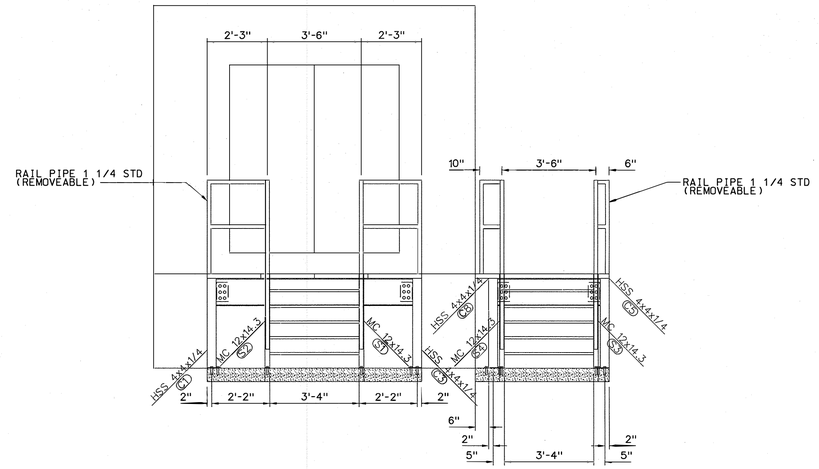
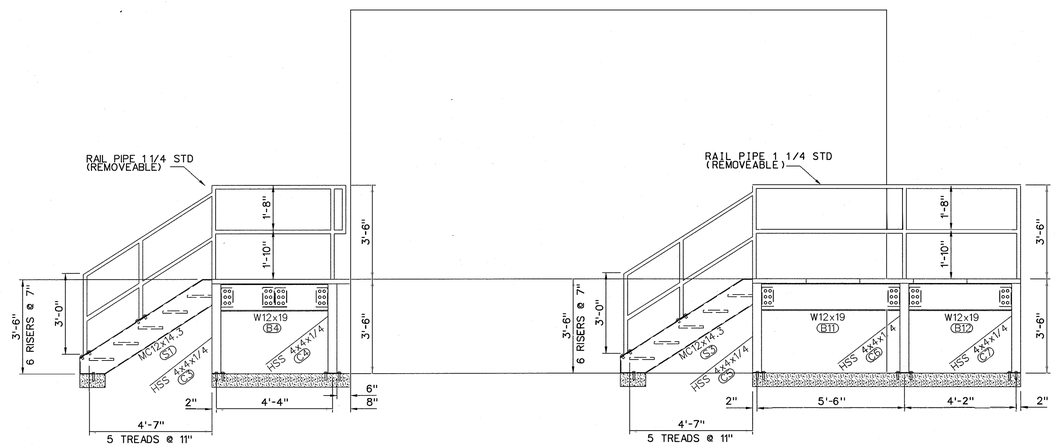


1 S002 **PLAN VIEW**
SCALE: 3/8"=1'-0"



A S002 **FRONT VIEW**
SCALE: 3/8"=1'-0"



B S002 **SIDE VIEW**
SCALE: 3/8"=1'-0"

NOTES:

1. DRAWING IS FOR REFERENCE ONLY. CONTRACTOR SHALL FURNISH SHOP DRAWINGS FOR PLATFORMS AND STAIRS THAT ARE STAMPED BY A PROFESSIONAL ENGINEER LISCENCED IN THE STATE OF MASSACHUSETTS. SHOP DRAWINGS SHALL DETAIL FRAMING MEMBERS, COLUMNS, CONNECTIONS, ANCHORAGE, DECK MATERIALS, TREADS, PENETRATIONS, AND RAILINGS. SHOP DRAWINGS SHALL BE APPROVED BY THE PROJECT ENGINEER BEFORE FABRICATION CAN PROCEED.
2. PLATFORM FRAMING MEMBERS SHALL BE OFFSET FROM THE BUILDING AND/OR FOUNDATION WALLS A MINIMUM OF 6" TO ALLOW SPACE FOR CONDUIT ATTACHMENT TO THE EXTERIOR OF THE STRUCTURE.
3. RAILINGS SHALL BE FABRICATED IN SECTIONS THAT ARE REMOVEABLE TO ALLOW EASY ACCESS FOR FUTURE EQUIPMENT REPLACEMENTS.
4. STEEL BEAMS, CHANNELS, COLUMNS, GUARDRAILS, CONNECTIONS, DECKING, AND HARDWARE SHALL BE HOT DIPPED GALVANIZED.

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STAIRS AND PLATFORMS

BOSTON — LOGAN INTERNATIONAL AIRPORT — MA

REVIEWED BY	SUBMITTED BY	APPROVED BY
	K. GRANT	G. NEVILLE
	PROJECT ENGINEER	MGR: ENGINEERING CENTER

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