Stormwater Management Plan

MAC Multiple Point of Entry Facility

City of Minneapolis
Minneapolis-St Paul International Airport

Prepared for:
Metropolitan Airports Commission

Prepared by:
Kimley-Horn
767 Eustis Street, Suite 100
St. Paul, MN 55114
Contact: Helena Beikircher, PE
Greg Robinson, PE

Prepared On: 3/24/2026

Stormwater Management Report

for

MAC Multiple Point of Entry Facility

Prepared for:

Metropolitan Airports Commission

March 24, 2026

Prepared By:

Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100
St. Paul, MN 55114

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.

_____

Helena E. Beikircher, PE

Date: 3/24/2026 Registration No. 63584

Kimley»Horn

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1.0 Introduction

The proposed Metropolitan Airports Commission (MAC) Multiple Point of Entry (MPOE) Facility development (Project) is located directly west of the MAC General Offices building parking lot. The MAC General Offices building is located at 6040 28th Avenue South, Minneapolis MN 55450 at the Minneapolis-St Paul International Airport (MSP). The Project includes the installation of a duct bank and a 1,420 square foot maintenance building along the western edge of the parking lot. Portions of the existing parking lot will be reconstructed during the duct bank installation. The Project is in Minnehaha Creek Watershed District (MCWD) and the Fort Snelling Unorganized Territory. MCWD sets the pertinent requirements for stormwater management on the Project.

This report provides a summary of the methods, analyses, and results of the stormwater management design for the Project. The analysis of the existing and proposed drainage conditions was performed using HydroCAD Version 10.20-5c.

2.0 Regulatory Criteria

MCWD's stormwater requirements are triggered by the disturbance of 1 or more acres of land. The requirements vary based on site size, impervious area, and disturbed area. MCWD considers the relevant site size to include any contiguous parcels that the work is touching. See **Table 1** below for a summary of these areas. Based on MCWD's requirement guidance table, this Project is subject to rate control for the whole site and volume control for the net added impervious surface. See **Appendix 5** for the requirement guidance table. Rate control requires no increase in peak runoff rates for the 2-, 10-, and 100-year, 24-hour storm events. The volume control rule requires capture and retention of 1 inch of runoff from the net added impervious surface.

Fort Snelling Unorganized Territory does not have any stormwater requirements for development. MCWD requirements will be met for this Project.

Table 1: Project Area Summary

	Area (acres)
Site Size	22.89
Existing Impervious – Site	5.044
Proposed Impervious – Site	5.076
Disturbed Area	1.54
Existing Impervious – Disturbed Area	0.12
Proposed Impervious – Disturbed Area	0.15
Net Added Impervious	0.032

3.0 Existing Conditions

The west and south portions of the Project are located within and adjacent to Airport Dog Park 1, consisting of open green space with gravel walking paths. The eastern portion of the Project is in the

MAC General Offices building parking lot. Most of the local drainage travels east to west, ultimately outletting to Mother Lake. A small area on the eastern portion of the Project drains west to east to S 28th Ave, as shown in **Appendix 1.**

The MAC General Offices building parking lot was reconstructed in 2017. The reconstruction included the addition of multiple infiltration basins to treat runoff and provide volume control. As stated in a memorandum to MCWD from Kimley-Horn, dated 5/19/2017, the infiltration basins were designed to provide 21,843 cubic feet of water quality volume. The required water quality volume was 799 cubic feet. The 2017 project therefore provided an excess of 21,044 cubic feet of water quality volume. The memorandum is attached in **Appendix 4**.

Drainage areas generally match those from the 2017 Parking Lot Reconstruction. It is assumed that the current drainage patterns and stormwater infrastructure are generally consistent with those at the time of the 2017 project. This assumption is supported based on survey and publicly available aerial imagery. Existing stormwater basins IB-08 and IB-09 were designed as two adjacent basins in the 2017 project. Based on survey, LiDAR elevation information, and aerial imagery, the two basins now behave as one large basin.

An existing conditions analysis was performed using HydroCAD. The analysis includes the entire site based on MCWD's requirements. The existing conditions HydroCAD model includes the infiltration basins constructed as part of the 2017 Parking Lot Reconstruction and shows basins IB-08 and IB-09 as a combined basin titled IB-08/09. Basin IB-08/IB-09's elevations and storage are based on survey and LiDAR elevation information, updated from the storage stated in the 2017 Parking Lot Reconstruction MCWD Permit Application Memorandum, found in **Appendix 4.** Elevation, storage, and outlet information for all other infiltration basins were updated based on as-builts and survey information.

4.0 Proposed Conditions

Proposed conditions remain generally the same as existing conditions. A maintenance building is proposed west of the existing parking lot. The maintenance building and associated surrounding walkway will result in an increase in impervious area, totaling 1,420 square feet. All other disturbed areas will be restored to the existing condition once the duct bank is installed. Additional details are found in the Drainage Area Map in **Appendix 1.** As discussed in the previous section, the existing stormwater basins in this area have an excess of water quality volume. This stormwater management plan proposes to route runoff from the additional impervious area into the existing basin IB-08/09. No additional Best Management Practices (BMPs) will be added.

The grading associated with the proposed maintenance building will add a small amount of fill to the Project area. This fill encroaches on existing BMP IB-08/09 but does not change the basin's storage value below the overflow elevation of 834.5. The basin's storage volume below 834.5 is 2,409 cubic feet.

4.1 Water Quality Volume

Per MCWD stormwater requirements, the Project must treat 1 inch of runoff from net added impervious surfaces. As shown in **Table 1**, the net added impervious area is 0.032 acres. This equates to a required water quality volume of 116 cubic feet. Existing basin IB-08/09 will fulfill this requirement. The basin was designed with an infiltration rate of 0.45 in/hr. Geotechnical boring information, dated November 7, 2025, confirms this design rate. The geotechnical report, performed by Terracon, is found in **Appendix 6**. The stormwater report from the 2017 Parking Lot Reconstruction project states a design volume of 21,843 cubic feet across all proposed BMPs in that project. Based on survey and LiDAR elevation information, the volume provided within just IB-08/09 was determined to be 2,409 cubic feet below the outlet elevation of 834.5. With the assumption that the 799 cubic feet of required water quality volume from the 2017 project is treated in this basin, more than enough volume is left over for the needs of this Project. **Table 2** below summarizes the water quality volume.

Table 2: Water Quality Volume Summary

	Water Quality Volume (CF)
2017 Project Requirement	799
MPOE Project Requirement	116
Total Water Quality Volume	915
IB-08/09 Volume Available	2,409
IB-08/09 Volume Remaining	1,494

Table 3 below provides a summary of the high-water levels (HWL) in basin IB-09/09 in existing and proposed conditions. The results show that the additional impervious area routed into the basin does not increase the HWL. The overflow outlet sits on the western edge of the basin at an elevation of 835.6. Water outletting from this overflow drains to Mother Lake. The overflow is the same in existing and proposed conditions.

Table 3: Basin IB-08/09 High Water Levels

24-Hour Storm Event	**Existing High-Water Level**	**Proposed High Water Level**
2 Year (2.83 in.)	835.40	835.38
10 Year (4.24 in.)	835.69	835.69
100 Year (7.50 in.)	835.83	835.82

In existing conditions, Mother Lake receives 4.33 acre-feet of volume from the Project site. In proposed conditions, Mother Lake also receives 4.33 acre-feet of volume from the Project site, resulting in no increase in discharge volume.

4.2 Rate Attenuation

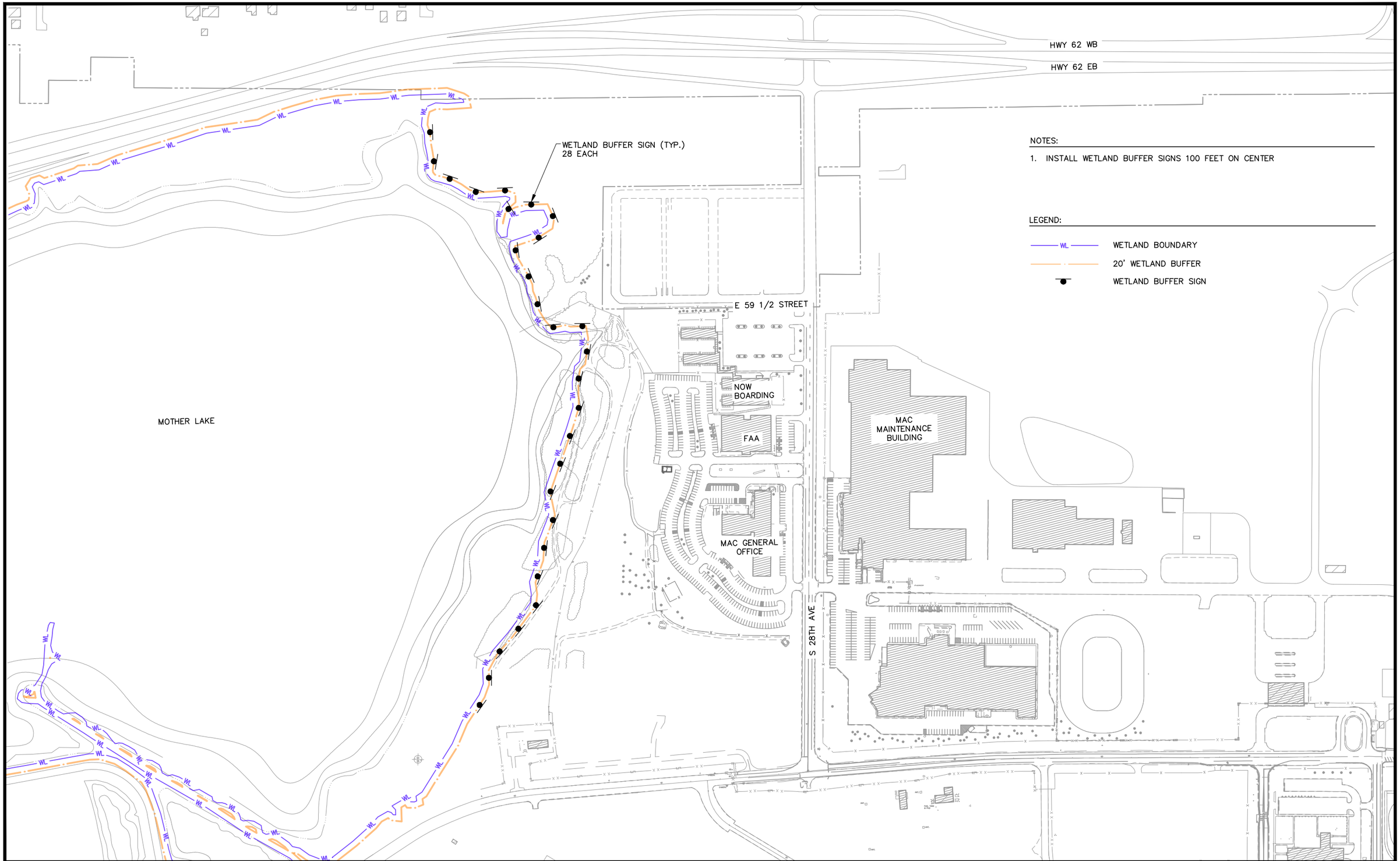
Table 4 below summarizes the runoff rates for the Project. The results show no increase, meeting the rate control requirements for MCWD.

Table 4: Rate Attenuation Summary

	2 Year (2.83 in.)	*10 Year (4.24 in.)*	*100 Year (7.50 in.)*
	Mother Lake Outfall		
Existing Rate (CFS)	9.14	22.65	79.03
Proposed Rate (CFS)	8.98	21.45	79.00
	S 28th Ave Outfall		
Existing Rate (CFS)	2.26	3.75	7.58
Proposed Rate (CFS)	2.26	3.75	7.58

5.0 Conclusion

The Project's additional impervious area will drain into an existing infiltration basin adjacent to the Project. The existing basin is large enough to accommodate the additional runoff and meet the MCWD's rate control and volume control requirements. It is recommended that the Project be constructed as designed.



NOTES:

1. INSTALL WETLAND BUFFER SIGNS 100 FEET ON CENTER

LEGEND:

- WL — WETLAND BOUNDARY
- 20' WETLAND BUFFER
- WETLAND BUFFER SIGN

Kimley»Horn
767 EUSTIS STREET, SUITE 100
SAINT PAUL, MINNESOTA 55114
Ph: 651-645-4197 www.kimley-horn.com

Metropolitan Airports Commission
GENERAL OFFICES
6040-28TH AVENUE SOUTH
MINNEAPOLIS, MN 55450

WETLAND BUFFER SIGN LOCATION

GRAPHIC SCALE IN FEET
0 75 150 300

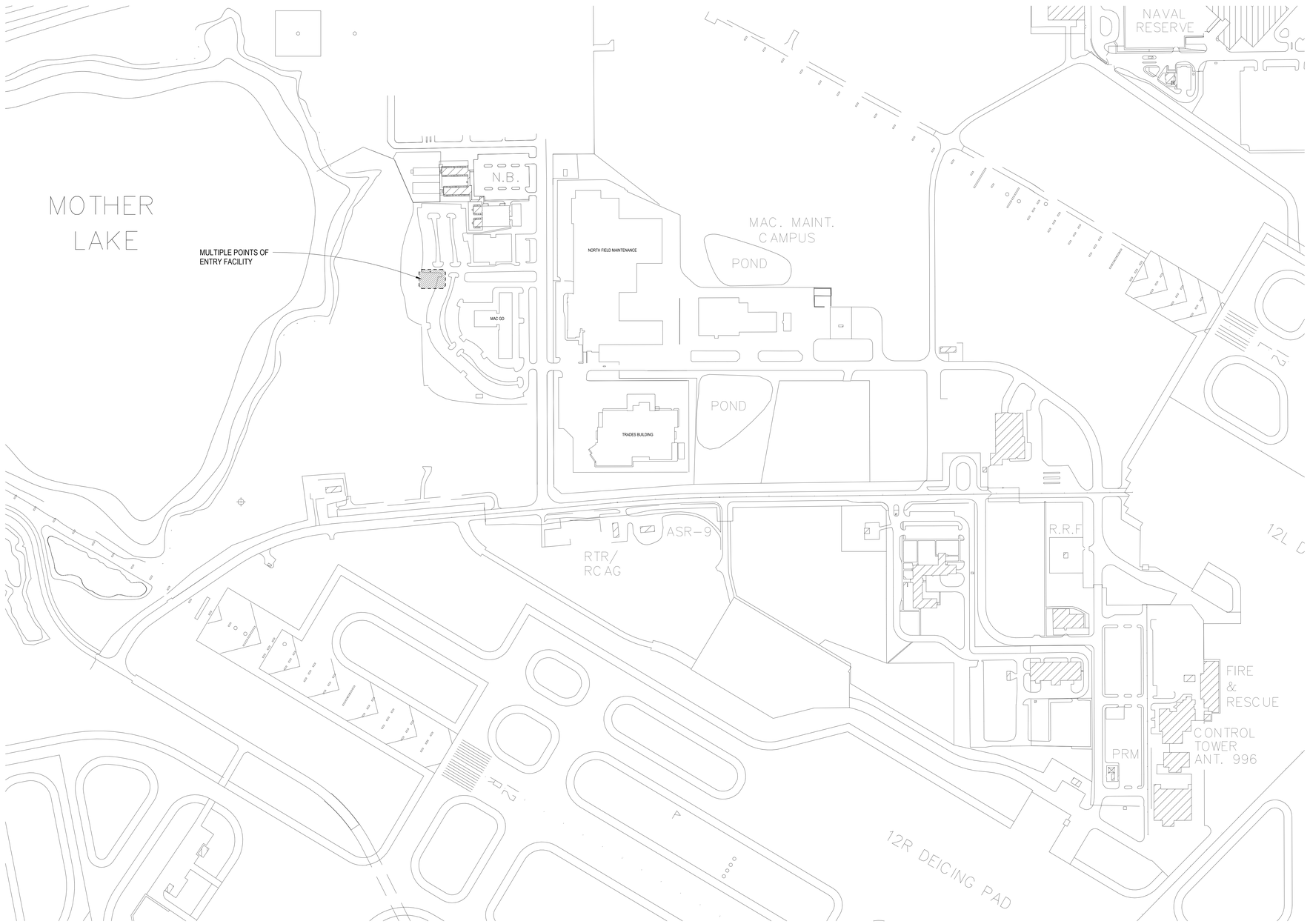
NORTH

K:\TWC_Aviation\MAC\372_2026 Multiple Points of Entry Facility\CADD\Exhibits\2026-03-12 Watershed Buffer Signs\Wetland Buffer Signs.dwg 3/12/2026 4:54 PM

Applicable Codes *:

2020 Minnesota State Building Code (or 2020 Minnesota Conservation Code for Existing Buildings)
2020 Minnesota Energy Code (Compliance path: IECC or ASHRAE 90.1)
2020 Minnesota Accessibility Code
2020 Minnesota State Fire Code
2020 Minnesota Plumbing Code
2020 Minnesota Mechanical Code
2023 Minnesota Electric Code
Minnesota High Pressure Piping Code

* Which include, but are not limited to, the following incorporated-by-reference codes and their MN amendments
- 2018 International Building Code (or 2018 International Existing Building Code (IEBC))
- 2018 International Energy Conservation Code (IECC)
- ASHRAE 90.1-2016
- ICC/ANSI A117.1-2009 Accessible and Usable Buildings and Facilities
- 2018 International Fire Code (IFC)
- 2018 Uniform Plumbing Code (UPC)
- 2018 International Mechanical Code (IMC)
- 2023 National Electric Code (NEC/NFPA 70)



1E SITE PLAN
1" = 200'-0"

DRAWING INDEX

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c0.13 SITE, GRADING, AND UTILITY PLAN SOIL CORRECTION SECTIONS
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c1.01 AIRFIELD LOCATION PLAN
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ce0.01 ELECTRICAL NOTES
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ce2.01 ELECTRICAL PLAN - SITE
ce3.01 DUCT BANK PROFILES
ce3.02 DUCT BANK PROFILES
ct4.01 FIBER PLAN - AIRFIELD
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ct5.01 FIBER ONE LINE DIAGRAM

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s0.02 GENERAL STRUCTURAL NOTES
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s2.02 MAC GENERAL OFFICE FOUNDATION PLAN AND SECTIONS
s5.01 FOUNDATION DETAILS
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a1.02 MAC GENERAL OFFICES - GARDEN LEVEL & PENTHOUSE PLANS
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a3.02 EXTERIOR ELEVATIONS - BRICK PATTERN
a3.03 EXTERIOR ELEVATIONS - BRICK PATTERN
a4.01 BUILDING SECTIONS, INTERIOR ELEVATIONS
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a7.02 WATERPRROFING PLAN AND DETAILS
a8.01 WOVEN WIRE MESH FENCE - PLAN, ELEVATION, DETAILS
a8.10 SCHEDULES, DOOR TYPES, FRAME TYPES
ar1.00 ROOFING COVER SHEET ROOF PLAN AND ROOFING DETAILS

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m2.01 FLOOR PLANS - HVAC
m4.00 HVAC DETAILS

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e0.51 SITE PLAN - ELECTRICAL
e2.11 FLOOR PLANS - ELECTRICAL
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e5.00 ELECTRICAL DIAGRAMS
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t2.01 FLOOR PLANS - TECHNOLOGY
t3.00 TECHNOLOGY ENLARGED PLANS
t4.00 TECHNOLOGY DETAILS
t6.00 TECHNOLOGY SCHEDULES

PROJECT
2026 MULTIPLE POINTS OF ENTRY FACILITY

CLIENT
Metropolitan Airports Commission
P.O. Box 11700
Minneapolis-St Paul Intl Airport
Saint Paul, MN 55111
MAC Contract No. 106-2-1072

ARCHITECT
Alliance
MSP International Airport
4300 Glumack Drive, Suite LT-3191
St Paul, MN 55111-3003
612.726.9012

LANDSCAPE ARCHITECT
Kimley-Horn
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St. Paul, MN 55114
651.645.4197

STRUCTURAL ENGINEER
Meyer Borgman Johnson
801 Nicollet Mall, Suite W2000
Minneapolis, MN 55402
612.338.0713

MECHANICAL, ELECTRICAL TELECOMMUNICATIONS ENGINEERS
IMEG
800 Washington Avenue North
Suite 640
Minneapolis, MN 55401
612.540.5000

ELECTRICAL ENGINEER - AIRSIDE
TKDA
3311 East Old Shakopee Road
Suite 300
Bloomington, MN 55425
651.292.4400

CIVIL ENGINEER - LANDSIDE
Kimley-Horn
767 North Eustis Street, Suite 100
St. Paul, MN 55114
651.645.4197

ROOFING & WATERPROOFING CONSULTANT
Inspec, Inc.
1000 Parkers Lane Road, Suite 100
Wayzata, MN 55391
763.546.3434

ENVIRONMENTAL CONSULTANT - SOIL AND GROUNDWATER
Terracon Consultants
13400 15th Avenue North
Minneapolis, MN 55441
763.489.3100

CONSTRUCTION COORDINATOR
Kraus Anderson Construction Company
7048 34th Avenue South
Minneapolis, MN 55450
612.727.2524

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Architect under the laws of the State of Minnesota.

FOR **Alliance**
BY
NAME **Jeffrey B. Loeschen**
DATE **23 FEB 2026**
REG NO **45554**

ISSUED FOR	DATE
BID SET	**23 FEB 2026**

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COMMISSION NO **2024060**

ALLiiANCE

DRAWING INDEX, APPLICABLE CODES, LOCATION PLAN

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SENSITIVE SECURITY INFORMATION WARNING: THIS RECORD CONTAINS SENSITIVE SECURITY INFORMATION THAT IS CONTROLLED UNDER 49 C.F.R. PARTS 15 AND 1520. NO PART OF THIS RECORD MAY BE DISCLOSED TO PERSONS WITHOUT A "NEED TO KNOW," AS DEFINED IN 49 C.F.R. PARTS 15 AND 1520, EXCEPT WITH THE WRITTEN PERMISSION OF THE ADMINISTRATOR OF THE TRANSPORTATION SECURITY ADMINISTRATION OR THE SECRETARY OF TRANSPORTATION. UNAUTHORIZED RELEASE MAY RESULT IN CIVIL PENALTIES OR OTHER ACTION. FOR U.S. GOVERNMENT AGENCIES, PUBLIC DISCLOSURE GOVERNED BY 5 U.S.C. 552 AND 49 C.F.R. PARTS 15 AND 1520

CONSTRUCTION NOTES

A. THE CONTRACTOR SHALL CALL "GOPHER STATE ONE CALL" (1-800-252-1166) AND THE FAA (LANCE SHELLER 612-713-4177) AT LEAST 48 HOURS (NOT INCLUDING WEEKENDS AND HOLIDAYS) PRIOR TO COMMENCING UNDERGROUND CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL COMPLY WITH MNDOT STANDARD SPECIFICATION 1507 "UTILITY PROPERTY AND SERVICE". THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY OWNER AND ENGINEER IF ANY UTILITIES ARE ENCOUNTERED THAT WERE NOT LOCATED.

B. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACTUAL CONSTRUCTION MEANS AND METHODS, INCLUDING TRENCH CONFIGURATION AND THE USE OF TRENCH SUPPORT IN ORDER TO MAINTAIN CONSTRUCTION LIMITS.

C. SEE SECTION 01 35 13 SPECIAL PROJECT PROCEDURES OF THE PROJECT MANUAL FOR SERVICE DISRUPTION NOTICE REQUIREMENTS.

D. SEE SECTION 02 61 00 MANAGEMENT OF IMPACTED AND CONTAMINATED MATERIAL OF THE PROJECT MANUAL FOR ALL REQUIREMENTS SET FOR THE REMOVAL AND DISPOSAL OF IMPACTED AND CONTAMINATED MATERIAL, IF ENCOUNTERED.

E. THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED IN ACCORDANCE WITH CI/ASCE 38-02, "STANDARD GUIDELINE FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

F. EXISTING UTILITY LOCATIONS SHOWN ON THE PLANS ARE CONSIDERED APPROXIMATE. ACTUAL LOCATIONS AND DEPTH SHALL BE VERIFIED BY THE CONTRACTOR IN THE FIELD PRIOR TO CONSTRUCTION.

G. THE CONTRACTOR SHALL VERIFY EXISTING ELEVATIONS ALONG EDGES WHERE NEW PAVEMENT MATCHES EXISTING CURB AND PAVEMENT.

H. THE PROJECT DATUM FOR THIS WORK IS THE HENNEPIN COUNTY COORDINATE SYSTEM (NAD83/2007) AND VERTICAL DATUM (NAVD88/2010) ADJUSTMENT, GEOID 09).

THE FOLLOWING MNDOT STANDARD PLATES SHALL APPLY ON THIS PROJECT

MNDOT STANDARD PLATES	
PLATE NO.	DESCRIPTION
3000 M	REINFORCED CONCRETE PIPE
3006 H	GASKET JOINT FOR R.C. PIPE
3133 D	RIPRAP AT RCP OUTLETS
7020 K	CONCRETE CURB

UTILITY CONTACTS	
XCEL ENERGY JOEL RUDE 5309 WEST 70TH STREET EDINA, MN 55439 952-380-2639 joel.rude@xcelenergy.com XCEL BUILDER'S CALL LINE 1-800-628-2121	LUMEN TECHNOLOGIES STEVE HOPPE 425 MONROE ST. ANOKA, MN 55303 612-431-3489 DIRECT 320-291-2852 MOBILE steve.hoppe@lumen.com
CENTERPOINT ENERGY DEAN NICHOLAS 505 NICOLLET MALL, P.O. BOX 59038 MINNEAPOLIS, MN 55459-0038 DIRECT: 612-321-4453 dean.nicholas@centerpointenergy.com	FAA PRIMARY: LANCE SHELLER 612-713-4177 lance.sheller@faa.gov FAA ALTERNATE: ERIC GAPP 612-713-4180 eric.gapp@faa.gov

STATEMENT OF ESTIMATED QUANTITIES

LINE NO.	BID ITEM NO.	ITEM DESCRIPTION	UNIT	ESTIMATED QUANTITY
1	01 55 26-1	Landside Traffic Control	Lump Sum	1
2	01 55 26-2	Airside Traffic Control	Lump Sum	1
3	01 71 13-1	Mobilization	Lump Sum	1
4	01 89 30-1	Silt Fence Type MS	Linear Foot	2,400
5	01 89 30-2	Sediment Control Log Type Wood Chip	Linear Foot	1,700
6	01 89 30-3	Rapid Soil Stabilization Method Type 3	Mgal	3
7	01 89 30-4	Hydraulic Tackafier, Type Natural	Mgal	3
8	01 89 30-5	Street Sweeper with a Pickup Broom	Hour	100
9	01 89 30-6	Inlet Protection	Each	10
10	01 89 30-7	Stabilized Construction Entrance/Exit	Each	3
11	31 23 00-1	Common Excavation (P)	Cubic Yard	334
12	31 23 00-2	Select Granular Material Modified (<10% Passing) (CV)	Cubic Yard	200
13	31 23 00-3	2-Foot Soil Correction (P)	Cubic Yard	114
14	31 23 00-4	Subgrade Excavation (EV)	Cubic Yard	50
15	31 23 00-5	Drainable Aggregate Base (OGAB) (CV)	Cubic Yard	50
16	31 37 00-1	24-Inch Random Riprap Class IV	Square Yard	17
17	32 05 05-1	Remove Concrete Curb	Linear Foot	168
18	32 05 05-2	Salvage 12-Inch FES	Each	1
19	32 05 05-3	Remove Concrete Walk	Square Foot	206
20	32 05 05-4	Remove Bituminous Pavement	Square Yard	388
21	32 05 05-5	Savage and Reinstall Boulders and Rock Mulch	Lump Sum	1
22	32 11 23-1	6-Inch Agggregare Base Class 5 (100% Crushed Limestone)	Square Yard	1,000
23	32 12 05-1	Bituminous Patching	Square Yard	413
24	32 16 05-1	4-Inch Concrete Walk	Square Foot	606
25	32 16 05-2	Concrete Curb, Design B6	Linear Foot	111
26	32 16 05-3	18-Inch Ribbon Curb	Linear Foot	17
27	32 16 05-4	Concrete Curb, Design B618	Linear Foot	88
28	32 17 23-1	4-Inch Solid Line Paint (White)	Linear Foot	150
29	32 31 00-1	Salvage and Reinstall Fence	Linear Foot	557
30	32 31 00-2	Salvage and Reinstall Gate	Each	2
31	32 31 00-3	48-Inch Orange Construction Fence	Linear Foot	6,500
32	32 31 00-4	Temporary Construction Fence	Linear Foot	225
33	32 92 19-1	Seeding (Method: Broadcast Seeding)	Acre	3
34	32 92 19-2	Turf Saver RTF Fescue	Acre	2
35	32 92 19-3	Loam Topsoil Borrow	Cubic Yard	2,244
36	32 92 19-4	MNL Pollinator Mix - Dry to Mesic	Acre	1
37	32 92 19-5	Rolled Erosion Prevention Product - Category 30	Square Yard	13,343
38	32 93 00-1	Deciduous Tree - 2.5" Cal. B&B	Each	6
39	32 93 00-2	Ornamental Tree - 8' Ht. Multi-Stem B&B	Each	4
40	32 93 00-3	Shrub - #5 Cont.	Each	24
41	32 93 00-4	Ornamental Grass - #1 Cont.	Each	18
42	32 93 00-5	Steel Edger	Linear Foot	98
43	32 93 00-6	Filter Fabric	Square Yard	22
44	32 93 00-7	Aggregates: 3-6" Trap Rock Rip Rap	Cubic Yard	4
45	32 93 00-8	Relocate Tree	Each	5
46	33 40 00-1	12-Inch RCP CL5 Storm Sewer	Linear Foot	40
47	33 40 00-2	Install Salvaged 12-inch FES	Each	1

2025 GOVERNING SPECIFICATIONS

ALL SITE BID ITEMS SHALL BE IN ACCORDANCE WITH THE 2025 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATION FOR CONSTRUCTION", DIVISION II CONSTRUCTION DETAILS AND DIVISION III MATERIALS, THE PROJECT MANUAL AND DETAILS IN THE CONSTRUCTION DRAWINGS. ALL TRAFFIC CONTROL SIGNING AND DEVICES SHALL CONFORM TO THE MNMUTCD, AND THE CURRENT ADDITION OF THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

LEGEND:

EXISTING / PROPOSED

- GATE VALVE
- HYDRANT
- REDUCER
- SANITARY MANHOLE
- STORM MANHOLE/CATCH BASIN
- UNKNOWN MANHOLE
- CATCH BASIN
- CLEANOUT
- FLOOR DRAIN
- DOWN PIPE/COLUMN
- FLARED END SECTION
- ELECTRIC MANHOLE
- COMMUNICATION MANHOLE
- COLUMN
- POWER POLE
- SOIL BORING
- SIGN
- LIGHT POLE
- CENTERLINE
- STORM SEWER
- SANITARY SEWER
- WATERMAIN
- CURB & GUTTER
- CURB & GUTTER (TIP OUT GUTTER)
- OVERHEAD POWER
- UNDERGROUND ELECTRIC
- UNDERGROUND TELEPHONE
- NATURAL GAS MAIN
- FUEL
- DUCT BANK
- IRRIGATION
- COMMUNICATIONS
- ABANDONED UTILITY LINE
- FENCE (CHAIN LINK)
- AOA SECURITY FENCE
- TREE
- CONTOURS
- EDGE OF WETLAND
- EDGE OF WATER
- MNDOT RIGHT OF WAY
- PROPERTY LINE

EARTHWORK SUMMARY

EXCAVATION

- 334 CY COMMON EXCAVATION (P)
- 50 CY SUBGRADE EXCAVATION (ESTIMATED) (EV) (AS DIRECTED BY THE ENGINEER)
- 114 CY 2-FOOT SOIL CORRECTION (P)
- 218 CY COMMON EXCAVATION (SOIL UNDER LANDSCAPED AREAS) → 27 CY OF CUT; 191 CY OF FILL*
- 20 CY COMMON EXCAVATION (SOIL UNDER BITUMINOUS PAVEMENT REPLACEMENT) → 20 CY OF CUT; .06 CY OF FILL*
- 96 CY COMMON EXCAVATION (SOIL UNDER BUILDING AND 4" CONCRETE WALK) → 95 CY OF FILL*

EMBANKMENT

- 200 CY SELECT GRANULAR MATERIAL MODIFIED (<10% PASSING) (CV) (ESTIMATED) (UNDER SUBGRADE EXCAVATION AND AS DIRECTED BY THE ENGINEER)
- 50 CY DRAINABLE AGGREGATE BASE (OGAB) (CV) (ESTIMATED) (AS DIRECTED BY THE ENGINEER)
- 2,244 CY LOAM TOPSOIL BORROW

***FILL ON SITE**

- 291 CY OPEN CUT DUCT BANK EXCAVATION
- 47 CY COMMON EXCAVATION (P) CUT

NOTE: THIS VOLUME IS PROVIDED AS A REFERENCE ONLY. SOIL MAY BE UNSUITABLE FOR BACKFILL AND IS ONLY TO BE USED AS DIRECTED BY THE ENGINEER.

- 739 CY AVAILABLE ON SITE. THIS VOLUME IS PROVIDED FOR REFERENCE ONLY. SOIL MAY BE UNSUITABLE FOR REUSE AS TOPSOIL.
- 225 CY 8-CELL DUCT BANK EXCAVATION
- 26 CY 4-CELL DUCT BANK EXCAVATION
- 8 CY 2-CELL DUCT BANK EXCAVATION
- 18 CY 5-CELL DUCT BANK EXCAVATION
- 14 CY 3-CELL DUCT BANK EXCAVATION

PROJECT
2026 MULTIPLE POINTS OF ENTRY FACILITY

CLIENT
Metropolitan Airports Commission
P.O. Box 11700
Minneapolis-St Paul Intl Airport
Saint Paul, MN 55111
MAC Contract No.106-2-1072

ARCHITECT
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STRUCTURAL ENGINEER
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612.338.0713

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763.489.3100

CONSTRUCTION COORDINATOR
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7048 34th Avenue South
Minneapolis, MN 55450
612.727.2524

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FOR: Kimley-Horn
BY: Gregory W. Robinson
NAME: GREGORY W. ROBINSON, P.E.
DATE: 23 FEB 2026
REG NO: 44269

ISSUED FOR	DATE
BID SET	23 FEB 2026

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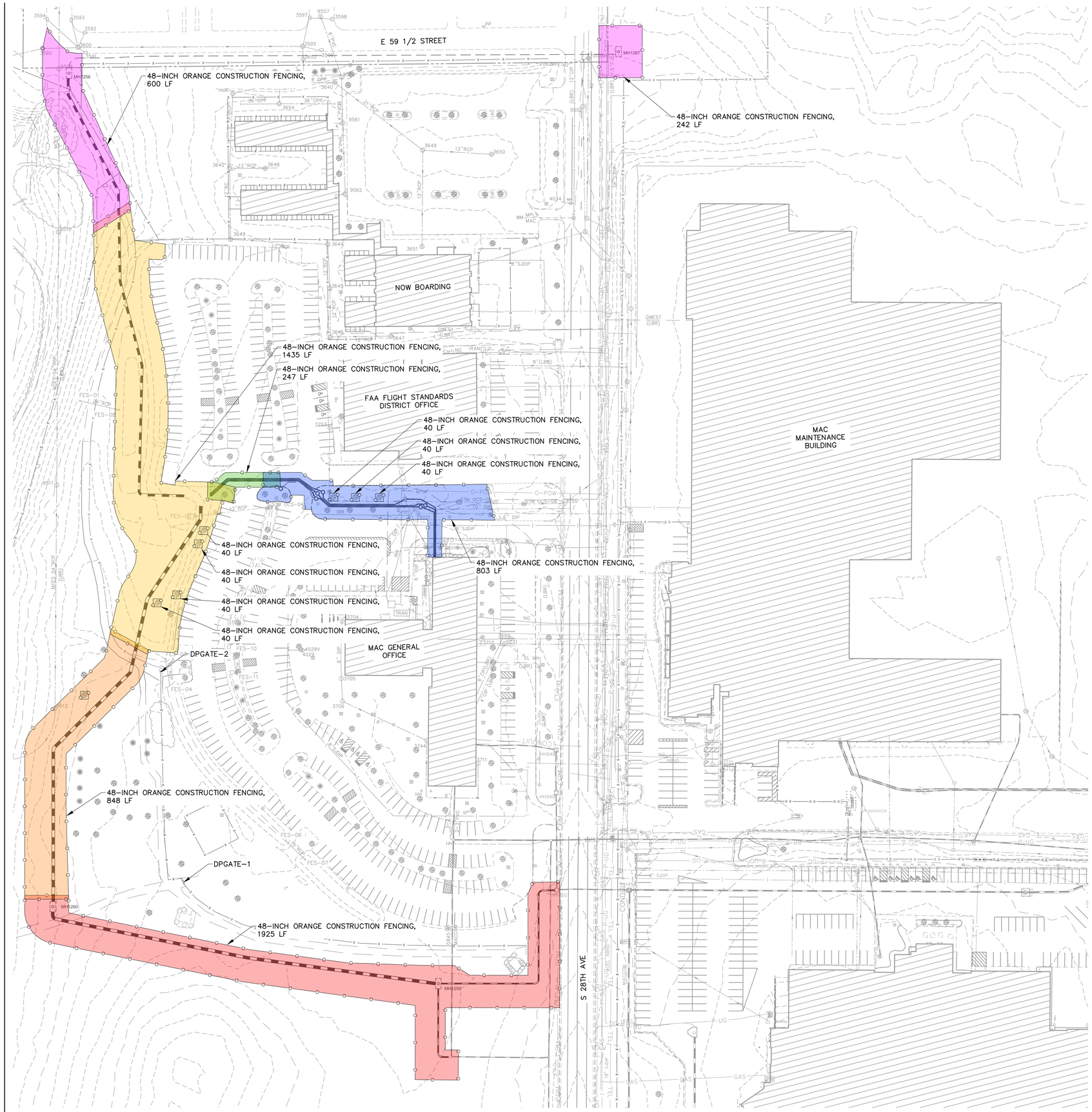
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CONSTRUCTION NOTES & STATEMENT OF QUANTITIES

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NOTES:

1. DURING CONSTRUCTION, ONLY ONE PHASE OF THE DUCT BANK MAY BE CONSTRUCTED AT A TIME.
2. CONTRACTOR SHALL MAINTAIN PUBLIC ACCESS TO THE "DOG PARK" THROUGH DPGATE–1 AND DPGATE–2 AT ALL TIMES.
3. OPEN EXCAVATIONS SHALL BE PROTECTED WITH ORANGE CONSTRUCTION FENCE WHEN NOT BEING WORKED.
4. PROTECT SEEDED AREAS WITH ORANGE CONSTRUCTION FENCING DURING TURF ESTABLISHMENT PERIOD.

LEGEND:

- PHASE 1
- PHASE 2
- PHASE 3
- PHASE 4
- PHASE 5
- PHASE 6
- 48–INCH ORANGE CONSTRUCTION FENCING

NORTH

GRAPHIC SCALE IN FEET
0 25 50 100

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2026 MULTIPLE POINTS OF ENTRY FACILITY

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NAME
DATE 23 FEB 2026
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CONSTRUCTION PHASING

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TRAFFIC CONTROL NOTES AND GUIDELINES

GENERAL

1. TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MNMUTCD), INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL LAYOUTS.
2. THE CONTRACTOR SHALL FURNISH, INSTALL AND MAINTAIN THE DEVICES IN THIS TRAFFIC CONTROL PLAN UNLESS OTHERWISE NOTED.
3. FIELD CONDITIONS MAY REQUIRE MODIFICATIONS OF THIS LAYOUT AS DEEMED NECESSARY BY THE ENGINEER.
4. ALL DISTANCES ARE APPROXIMATE.
5. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ANY WORK AREAS NEAR TRAFFIC IN ACCORDANCE WITH THE MNMUTCD.
6. SIGN INSTALLATIONS SHALL BE REVIEWED PRIOR TO INSTALLATION AND LOCATION MAY BE ADJUSTED BY THE ENGINEER TO AVOID OBSTRUCTING EXISTING SIGNS OR TO AVOID EXISTING UTILITIES.
7. THE TRAFFIC CONTROL PLANS AND PHASING DEPICT A GENERAL PLAN FOR MAINTAINING TRAFFIC. ADDITIONAL TRAFFIC CONTROL MAY BE REQUIRED TO COMPLETE SPECIFIC PORTIONS OF THE PROJECT. ADDITIONAL TRAFFIC CONTROL SHALL BE INCLUDED IN THE LUMP SUM BID ITEM 01 55 26–1 TRAFFIC CONTROL.
8. IF THE CONTRACTOR REQUESTS TO PERFORM THE CONSTRUCTION WORK IN A SEQUENCE OTHER THAN WHAT IS SHOWN IN THE TRAFFIC CONTROL PLAN, THE CONTRACTOR SHALL PROVIDE COMPLETE REVISED PHASING PLANS TO BE APPROVED BY THE ENGINEER.
9. THE CONTRACTOR SHALL MAINTAIN THE TRAFFIC FLOWS DETAILED HEREIN AT ALL TIMES.
10. ALL TRAFFIC CONTROL SIGNS, TRAFFIC CONTROL BARRELS, SIGN TEMPORARY COVERING, DELINEATORS, PAVEMENT MARKINGS, PAVEMENT MARKING COVERS/REMOVALS, TYPE III BARRICADES, & FLAGGERS DETAILED ON THE TRAFFIC CONTROL DRAWINGS SHALL BE INCLUSIVE TO THE LUMP SUM BID ITEM 01 55 26–1 TRAFFIC CONTROL.
11. SEE SPECIFICATION SECTION 01 11 00 SUMMARY OF WORK & 01 35 13 SPECIAL PROJECT PROCEDURES FOR ADDITIONAL HAULING REQUIREMENTS AND WORK RESTRICTIONS.

SIGNING

1. ALL TRAFFIC CONTROL DEVICES ON ROADS OPEN TO TRAFFIC THAT ARE NOT CONSISTENT WITH TRAFFIC OPERATION SHALL BE COVERED, REMOVED OR REVISED AS DIRECTED BY THE ENGINEER.
2. WHEN SIGNS ARE PLACED, THEY SHALL BE MOUNTED ON TEMPORARY SIGN SUPPORTS AND SUPPORTED WITH TEMPORARY SANDBAG BALLAST. THE SIGNS SHALL BE MOUNTED AT VERTICAL HEIGHT AND HORIZONTAL OFFSET CONSISTENT WITH THE "TEMPORARY TRAFFIC CONTROL SIGN LOCATION DETAIL" INCLUDED HEREIN.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY EXTRA SIGNING NEEDED TO FACILITATE TRAFFIC SWITCHES OR FOR TRANSITIONING TRAFFIC FROM ONE STAGE TO ANOTHER.
4. ALL ORANGE WARNING AND ORANGE GUIDE SIGNS SHALL BE FABRICATED WITH SIGNING SHEET MATERIAL AS LISTED ON THE MNDOT APPROVED PRODUCT LIST FOR "SHEETING FOR RIGID TEMPORARY WORK ZONE SIGNS, DELINEATORS, AND MARKERS."
5. BARRICADES SHALL BE FABRICATED WITH SIGN SHEETING MATERIAL LISTED ON THE MNDOT APPROVED PRODUCTS LIST FOR "BARRICADE SHEETING".

HAUL ROUTES

1. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING AND CLEANING ALL ROADWAYS USED AS HAUL ROUTES.

PAVEMENT MARKINGS

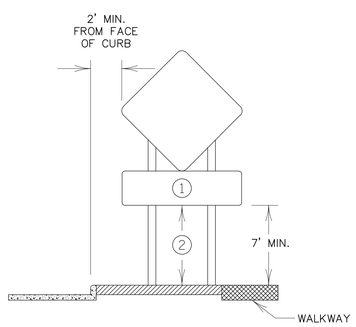
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION AND PLACEMENT OF TEMPORARY AND FINAL PAVEMENT MARKINGS.
2. THE CONTRACTOR SHALL COVER ANY CONFLICTING PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER. ALL PAVEMENT MARKING COVERS SHALL BE REMOVABLE PREFORMED PLASTIC MASK BLACK AND SHALL BE INCLUSIVE TO THE LUMP SUM BID ITEM FOR TRAFFIC CONTROL.
3. ALL TEMPORARY PAVEMENT MARKINGS SHALL BE REMOVABLE PREFORMED PAVEMENT MARKING TAPE AND SHALL BE INCLUSIVE TO THE LUMP SUM BID ITEM 01 55 26–1 TRAFFIC CONTROL.

BARRIER & DELINEATION

1. THE CONTRACTOR SHALL FURNISH, INSTALL AND MAINTAIN TOP MOUNTED BARRIER DELINEATORS WITH A MINIMUM OF 24 SQ. IN. OF REFLECTIVE SURFACE AREA AND BE PLACED AT 25' SPACES ON TOP OF THE BARRIER WHEN THE BARRIER IS WITHIN 10' OF TRAFFIC UNLESS OTHERWISE NOTED OR AS DIRECTED BY THE ENGINEER. IF THE TRAFFIC ENGINEER REQUIRES SIDE MOUNTED BARRIER DELINEATORS, THEY WILL HAVE A MINIMUM OF 12 SQ. IN. OF REFLECTIVE SURFACE AREA AND BE PLACED AT 12.5' SPACES.
2. THE CONTRACTOR SHALL NOT INSTALL PORTABLE PRECAST CONCRETE BARRIER RESULTING IN THE INTRODUCTION OF A BLUNT END CONDITION WITHIN THE CLEAR ZONE.

TRAFFIC CONTROL NOTES

1. ITEMS QUANTIFIED ON THE TRAFFIC CONTROL DRAWINGS ARE FOR TEMPORARY CONSTRUCTION ITEMS AND ARE NOT QUANTIFIED ON OTHER DRAWINGS WITHIN THIS PLAN SET UNLESS OTHERWISE NOTED.
2. WORK IDENTIFIED IN EACH STAGE IS APPROXIMATE. THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND COORDINATE THE SCOPE OF WORK PERFORMED WITH THE ENGINEER.



TEMPORARY TRAFFIC CONTROL SIGN LOCATION DETAIL

GENERAL NOTES:

1. IF ANY PART OF A SIGN OR SIGN ASSEMBLY EXTENDS MORE THAN 4" INTO THE PEDESTRIAN FACILITY, THE MINIMUM HEIGHT TO BOTTOM OF THE SIGN OR SIGN ASSEMBLY SHALL BE 7'.
2. IF GROUND MOUNTED TEMPORARY SIGN OR SIGN ASSEMBLY IS PLACED ON 2–1/2" SQUARE TUBE RISER POST(S), THE MINIMUM CLEARANCE FOR THE GROUND LINE TO THE BOTTOM OF THE LOWEST SIGN ON THE ASSEMBLY SHALL BE 7', OR AS SHOWN IN DETAIL, WHICHEVER IS GREATER.

BARRICADE MOUNTED SIGNS*			
ITEM	SIGN NO.	COLOR	SIZE (W x H)
ROAD CLOSED	R11–2M	BLACK ON WHITE	48" x 30"
SIDEWALK CLOSED	R9–9	BLACK ON WHITE	30" x 18"

"W" SERIES*			
SIGN	SIGN NO.	COLOR	SIZE (W X H)
ROAD WORK AHEAD	W20–1	BLACK ON ORANGE	36" x 36"

*SIGNAGE TABULATIONS FOR TRAFFIC CONTROL ARE PROVIDED FOR INFORMATION ONLY.

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FOR Kimley-Horn
BY Gregory W. Robinson
NAME GREGORY W. ROBINSON, P.E.
DATE 23 FEB 2026
REG NO 44269

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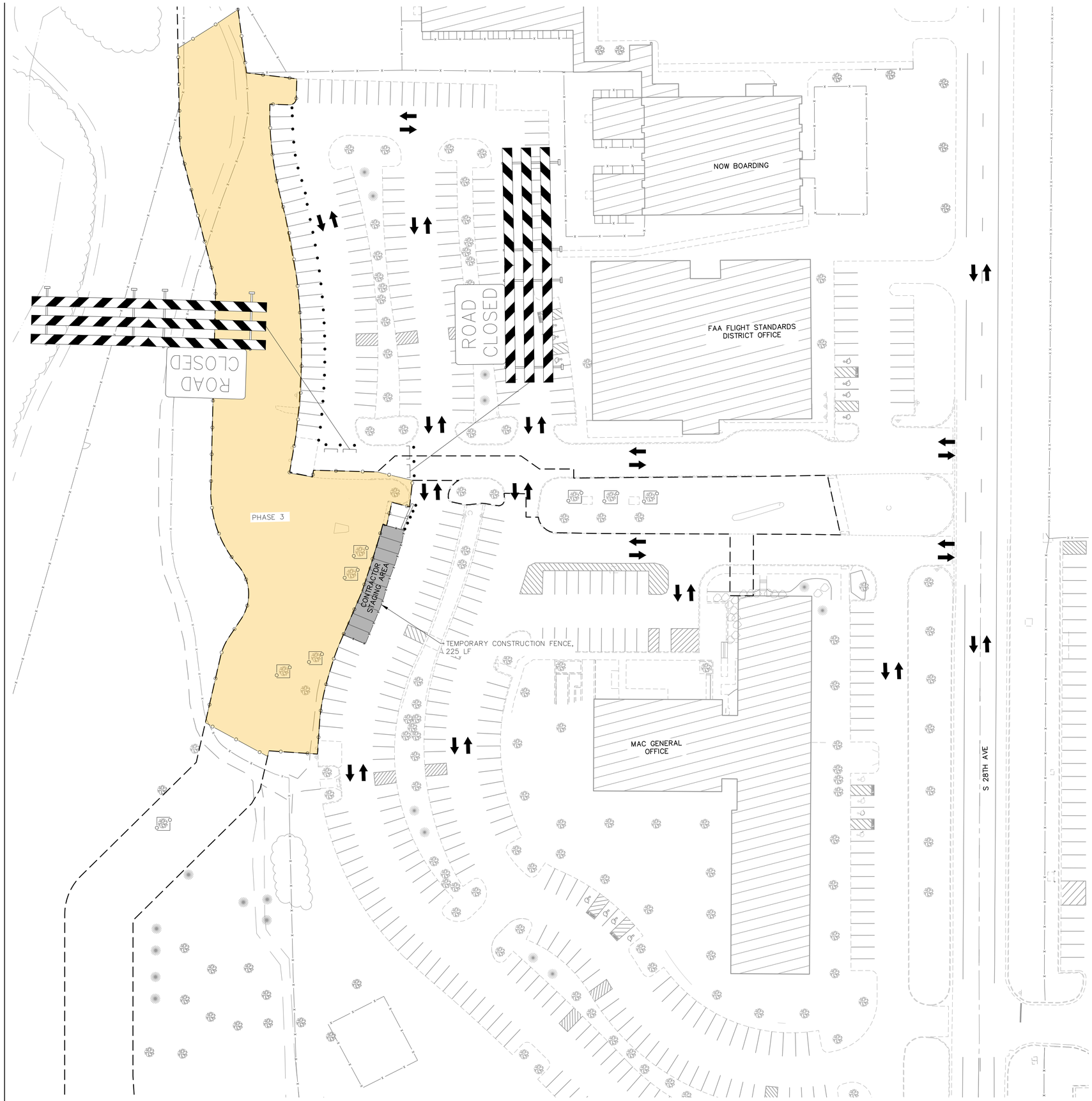
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TEMPORARY TRAFFIC CONTROL NOTES

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NOTES:

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2. ACCESS TO FAA FLIGHT STANDARDS DISTRICT OFFICE PARKING LOT SHALL BE MAINTAINED AT ALL TIMES.

LEGEND:

- TRAFFIC CONTROL BARRELS
- TYPE III BARRICADE
- PORTABLE PRECAST CONCRETE BARRIER DESIGN 8337C
- TEMPORARY CONSTRUCTION FENCE
- STAGING AREA
- PROJECT LIMITS
- 48–INCH ORANGE CONSTRUCTION FENCING
- TRAFFIC CONTROL SIGNS
- TRAFFIC FLOW ARROWS (NOT INSTALLED)

NORTH

GRAPHIC SCALE IN FEET
0 15 30 60

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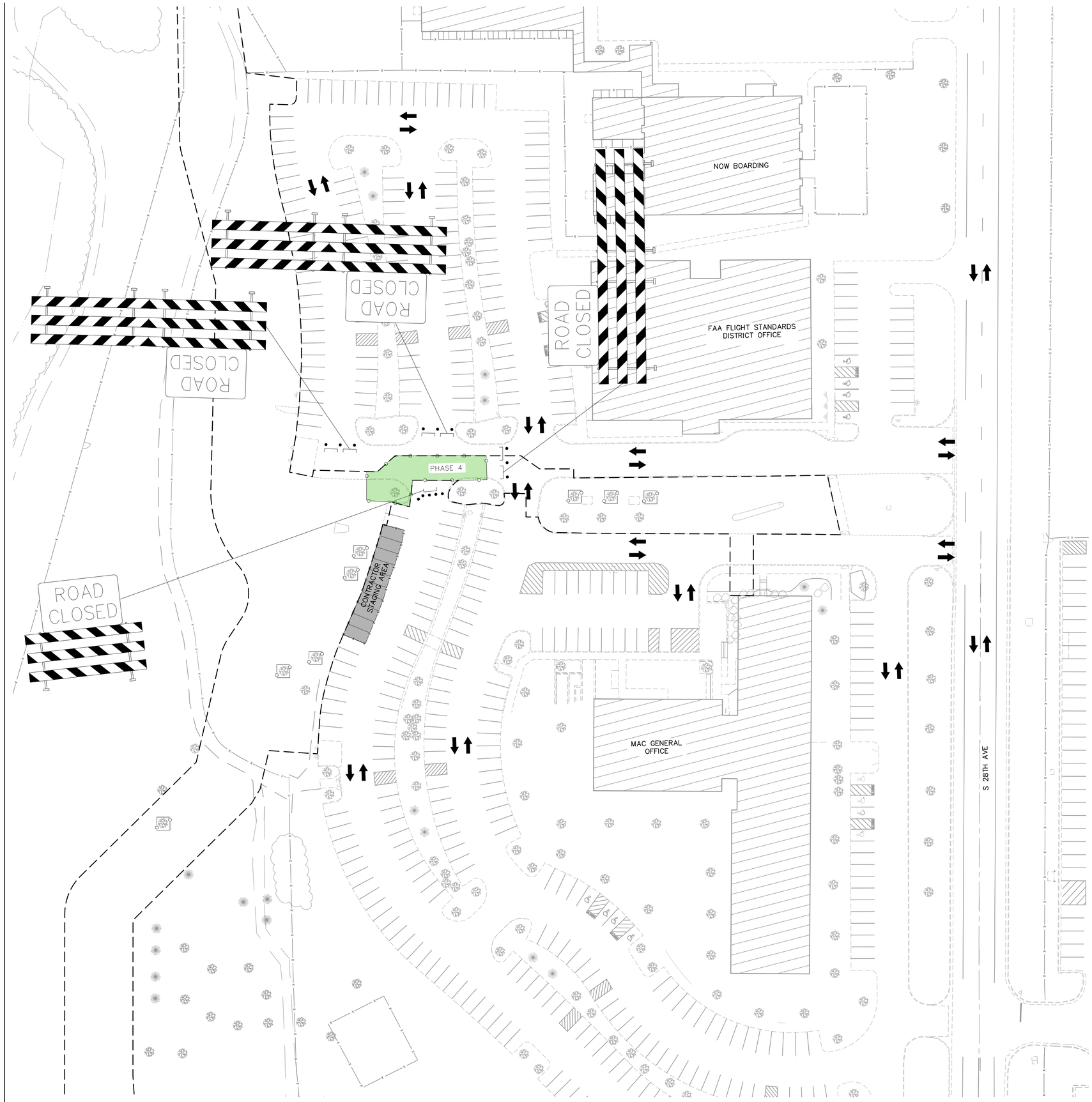
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TEMPORARY TRAFFIC CONTROL PHASE 3

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2. ACCESS TO FAA FLIGHT STANDARDS DISTRICT OFFICE PARKING LOT SHALL BE MAINTAINED AT ALL TIMES.

LEGEND:

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- TYPE III BARRICADE
- PORTABLE PRECAST CONCRETE BARRIER DESIGN 8337C
- TEMPORARY CONSTRUCTION FENCE
- STAGING AREA
- PROJECT LIMITS
- 48–INCH ORANGE CONSTRUCTION FENCING
- TRAFFIC CONTROL SIGNS
- TRAFFIC FLOW ARROWS (NOT INSTALLED)

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0 15 30 60

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TEMPORARY TRAFFIC CONTROL
PHASE 4

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LEGEND:

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CONSTRUCTION COORDINATOR
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Minneapolis, MN 55450
612.727.2524

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FOR **Kimley-Horn**
BY
NAME **GREGORY W. ROBINSON, P.E.**
DATE **23 FEB 2026**
REG NO **44269**

ISSUED FOR	DATE
BID SET	**23 FEB 2026**

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COMMISSION NO **160400372**

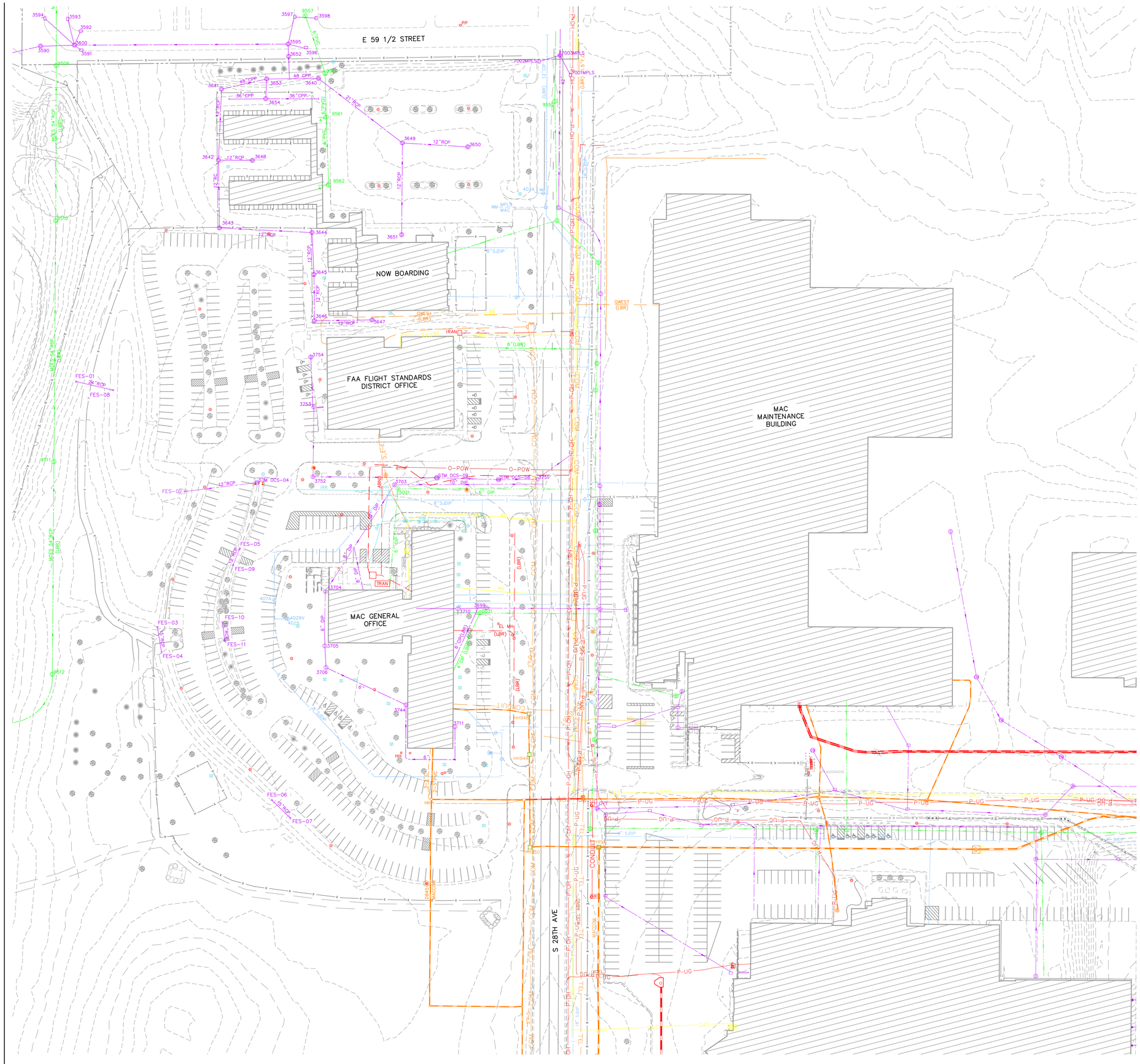
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TEMPORARY TRAFFIC CONTROL
PHASE 5

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THIS DRAWING IS INTENDED TO BE PRINTED IN COLOR.

PROJECT

2026 MULTIPLE POINTS OF ENTRY FACILITY

CLIENT

Metropolitan Airports Commission
P.O. Box 11700
Minneapolis-St Paul Intl Airport
Saint Paul, MN 55111

MAC Contract No.106-2-1072

ARCHITECT
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COMMISSION NO 160400372

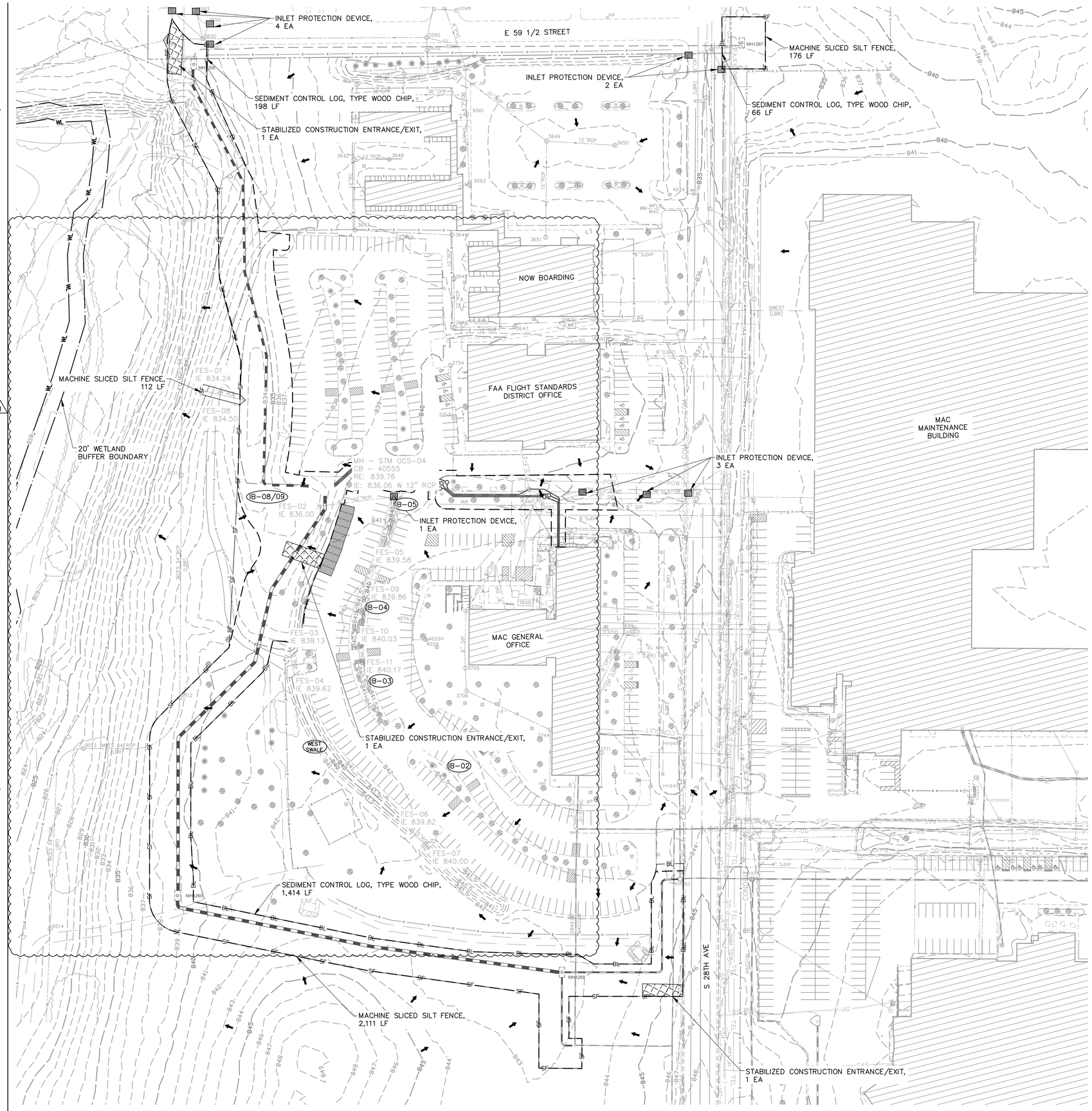
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EXISTING CONDITIONS

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NOTES:

A. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED AT LEAST ONCE A WEEK OR WITHIN 24 HOURS OF A RAIN EVENT RESULTING IN 0.25 INCHES OR GREATER.

B. SEDIMENT CONTROL DEVICES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT THE PROJECT.

C. CONCRETE WASHOUT SHALL BE DONE IN ACCORDANCE WITH THE MPCA AND THE EPA CONCRETE WASHOUT GUIDANCE. SEE THE APPENDIX OF THE PROJECT MANUAL.

D. CONTRACTOR SHALL KEEP THE ADJACENT ROADWAY CLEAN OF CONSTRUCTION DEBRIS.

E. SEE c0.09 FOR STORM WATER POLLUTION PREVENTION DETAILS.

LEGEND:

- STAGING AREA
- SF — MACHINE SLICED SILT FENCE
- BL — SEDIMENT CONTROL LOG, TYPE WOOD CHIP
- FLOW DIRECTION
- INLET PROTECTION DEVICE
- STABILIZED CONSTRUCTION ENTRANCE/EXIT
- PROJECT LIMIT
- WL — WETLAND BOUNDARY
- 20' WETLAND BUFFER

NORTH

GRAPHIC SCALE IN FEET
0 25 50 100

PROJECT
2026 MULTIPLE POINTS OF ENTRY FACILITY

CLIENT
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BY:
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DATE: 23 FEB 2026
REG NO: 44269

ISSUED FOR	DATE
1 BID SET	23 FEB 2026
FO-01	XX XXX 2026

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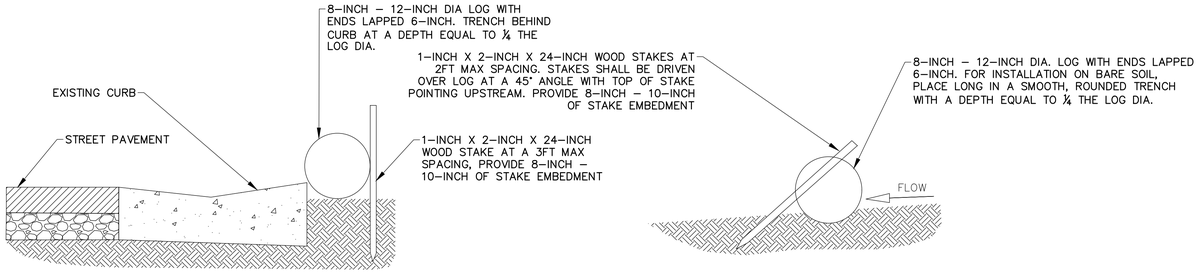
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STORM WATER POLLUTION PREVENTION PLAN

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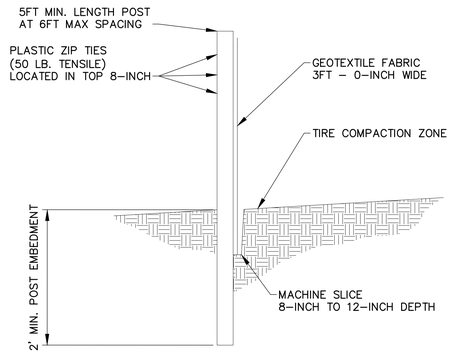
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CURB INSTALLATION

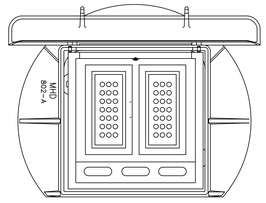
FIELD INSTALLATION USING STRAW OR WOOD CHIP

1 SEDIMENT CONTROL LOG INSTALLATION

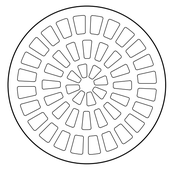


NOTES:
1. PAID FOR AS SILT FENCE, TYPE MS.
2. CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL TEMPORARY SEDIMENT CONTROL DEVICES UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

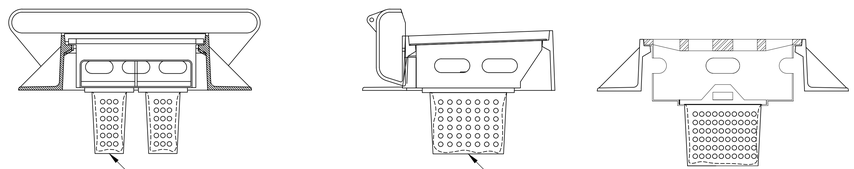
2 INSTALLATION OF MACHINE SLICED SILT FENCE

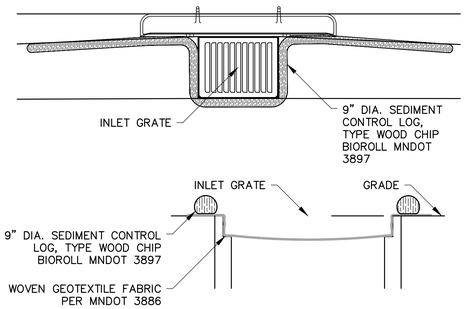


SQUARE OR RECTANGULAR CASTING



ROUND CASTING





3 INLET PROTECTION DEVICE

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DATE 23 FEB 2026
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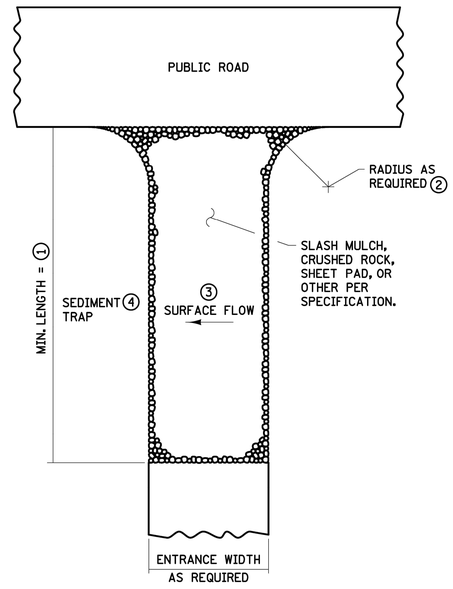
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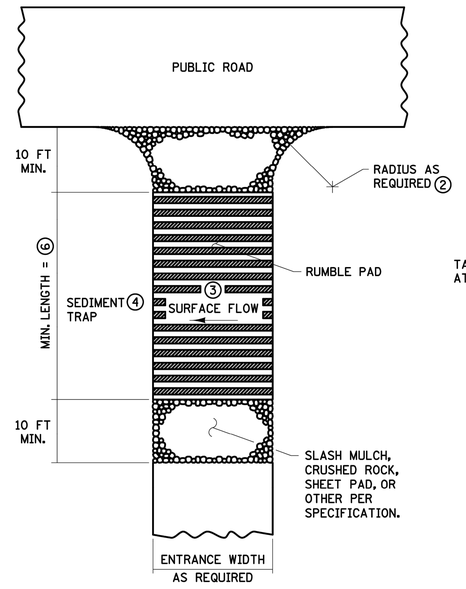
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STORM WATER POLLUTION PREVENTION DETAILS

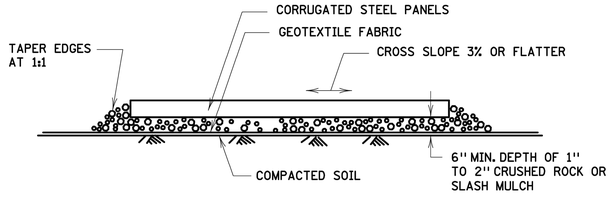
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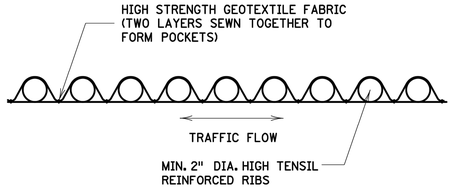
SLASH MULCH, CRUSHED ROCK, OR SHEET PAD CONSTRUCTION EXIT ⑤⑦



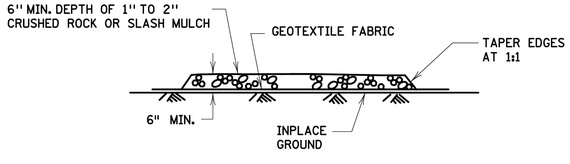
RUMBLE PAD CONSTRUCTION EXIT ⑤⑦



RUMBLE PAD



SHEET PAD



SLASH MULCH OR CRUSHED ROCK

NOTES:

SEE SPECS. 2573 & 3882.

1. MINIMUM LENGTH SHALL BE THE GREATER OF 50 FEET OR A LENGTH SUFFICIENT TO ALLOW A MINIMUM OF 5 TIRE ROTATIONS ON THE PROVIDED PAD. MINIMUM LENGTH SHALL BE CALCULATED USING THE LARGEST TIRE WHICH WILL BE USED IN TYPICAL OPERATIONS.
2. PROVIDE RADIUS OR WIDEN PAD SUFFICIENTLY TO PREVENT VEHICLE TIRES FROM TRACKING OFF OF PAD WHEN LEAVING SITE.
3. IF RUNOFF FROM DISTURBED AREAS FLOWS TOWARD CONSTRUCTION EXITS, PREVENT RUNOFF FROM DRAINING DIRECTLY TO PUBLIC ROAD OVER CONSTRUCTION EXIT BY CROWNING THE EXIT OR SLOPING TO ONE SIDE. IF SURFACE GRADING IS INSUFFICIENT, PROVIDE OTHER MEANS OF INTERCEPTING RUNOFF.
4. IF RUNOFF FROM CONSTRUCTION EXITS WILL DRAIN OFF OF PROJECT SITE, PROVIDE SEDIMENT TRAP WITH STABILIZED OVERFLOW.
5. IF A TIRE WASH OFF IS REQUIRED THE CONSTRUCTION EXITS SHALL BE GRADED TO DRAIN THE WASH WATER TO A SEDIMENT TRAP.
6. MINIMUM LENGTH OF RUMBLE PAD SHALL BE 20 FEET, OR AS REQUIRED TO REMOVE SEDIMENT FROM TIRES. IF SIGNIFICANT SEDIMENT IS TRACKED FROM THE SITE, THE RUMBLE PAD SHALL BE LENGTHENED OR THE DESIGN MODIFIED TO PROVIDE ADDITIONAL VIBRATION. WASH-OFF LENGTH SHALL BE AS REQUIRED TO EFFECTIVELY REMOVE CONSTRUCTION SEDIMENT FROM VEHICLE TIRES.
7. MAINTENANCE OF CONSTRUCTION EXITS SHALL OCCUR WHEN THE EFFECTIVENESS OF SEDIMENT REMOVAL HAS BEEN REDUCED. MAINTENANCE SHALL CONSIST OF REMOVING SEDIMENT AND CLEANING THE MATERIALS OR PLACING ADDITIONAL MATERIAL (SLASH MULCH OR CRUSHED ROCK) OVER SEDIMENT FILLED MATERIAL TO RESTORE EFFECTIVENESS.

LEAD EXPERT OFFICE	LYNN CLARKOWSKI CHIEF ENVIRONMENTAL OFFICER OFFICE OF ENVIRNOMENTAL STEWARDSHIP		TEMPORARY SEDIMENT CONTROL STABILIZED CONSTRUCTION EXIT	APPROVED: 02-28-2017 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.405	5 OF 8
	DEPARTMENT OF TRANSPORTATION		STANDARD PLAN	STATE PROJ. NO.		SHEET NO.	
				TRUNK HWY.		TOTAL SHEETS	

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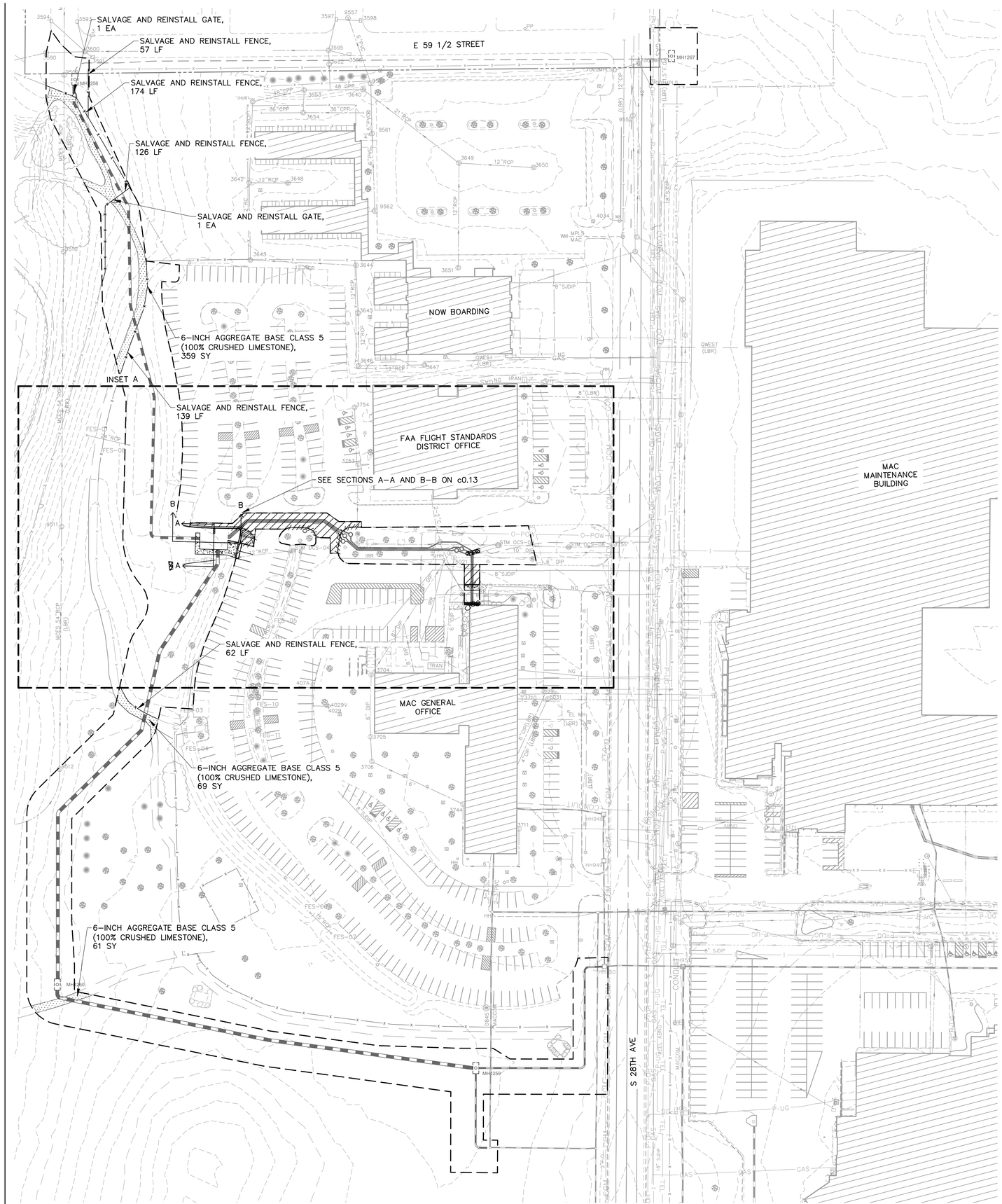
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STORM WATER POLLUTION PREVENTION DETAILS

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NOTES:

1. THE CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF THE UTILITIES AND TOPOGRAPHIC FEATURES PRIOR TO THE COMMENCEMENT OF SITE GRADING. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE CONSTRUCTION COORDINATOR OF DISCREPANCIES OR VARIATIONS FROM THE PLANS.
2. VERIFY LOCATION AND ELEVATION OF ALL UTILITY CROSSINGS PRIOR TO CONSTRUCTION.
3. ALL UTILITIES SHALL BE SURVEYED AS THEY ARE CONSTRUCTED. FIELD SURVEYS SHALL BE DONE UNDER THE SUPERVISION OF A LAND SURVEYOR REGISTERED IN THE STATE OF MINNESOTA. UTILITIES BACKFILLED PRIOR TO BEING SURVEYED SHALL BE IMMEDIATELY RE-EXCAVATED AT THE CONTRACTORS SOLE EXPENSE AND SURVEYED. UTILITY SURVEYS ARE INCIDENTAL TO THE UTILITY BID ITEMS.
4. THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED IN ACCORDANCE WITH CI/ASCE 38-02, "STANDARD GUIDELINE FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."
5. VERIFY INVERT ELEVATION AND LOCATION PRIOR TO CONSTRUCTION WHERE NEW CONSTRUCTION CONNECTS TO EXISTING CONSTRUCTION.
6. SEE DUCT BANK PLANS FOR ADDITIONAL DUCT BANK INFORMATION.
7. SEE SECTION 33 40 00 FOR ADDITIONAL STORM SEWER INFORMATION.

LEGEND:

742 PROPOSED CONTOURS

~742~ EXISTING CONTOURS

AGGREGATE BASE CLASS 5

NORTH

GRAPHIC SCALE IN FEET
0 25 50 100

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ENVIRONMENTAL CONSULTANT - SOIL AND GROUNDWATER
Terracon Consultants
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763.489.3100

CONSTRUCTION COORDINATOR
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7048 34th Avenue South
Minneapolis, MN 55450
612.727.2524

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FOR Kimley-Horn
BY GREGORY W. ROBINSON
NAME GREGORY W. ROBINSON, P.E.
DATE 23 FEB 2026
REG NO 44269

ISSUED FOR	DATE
BID SET	23 FEB 2026

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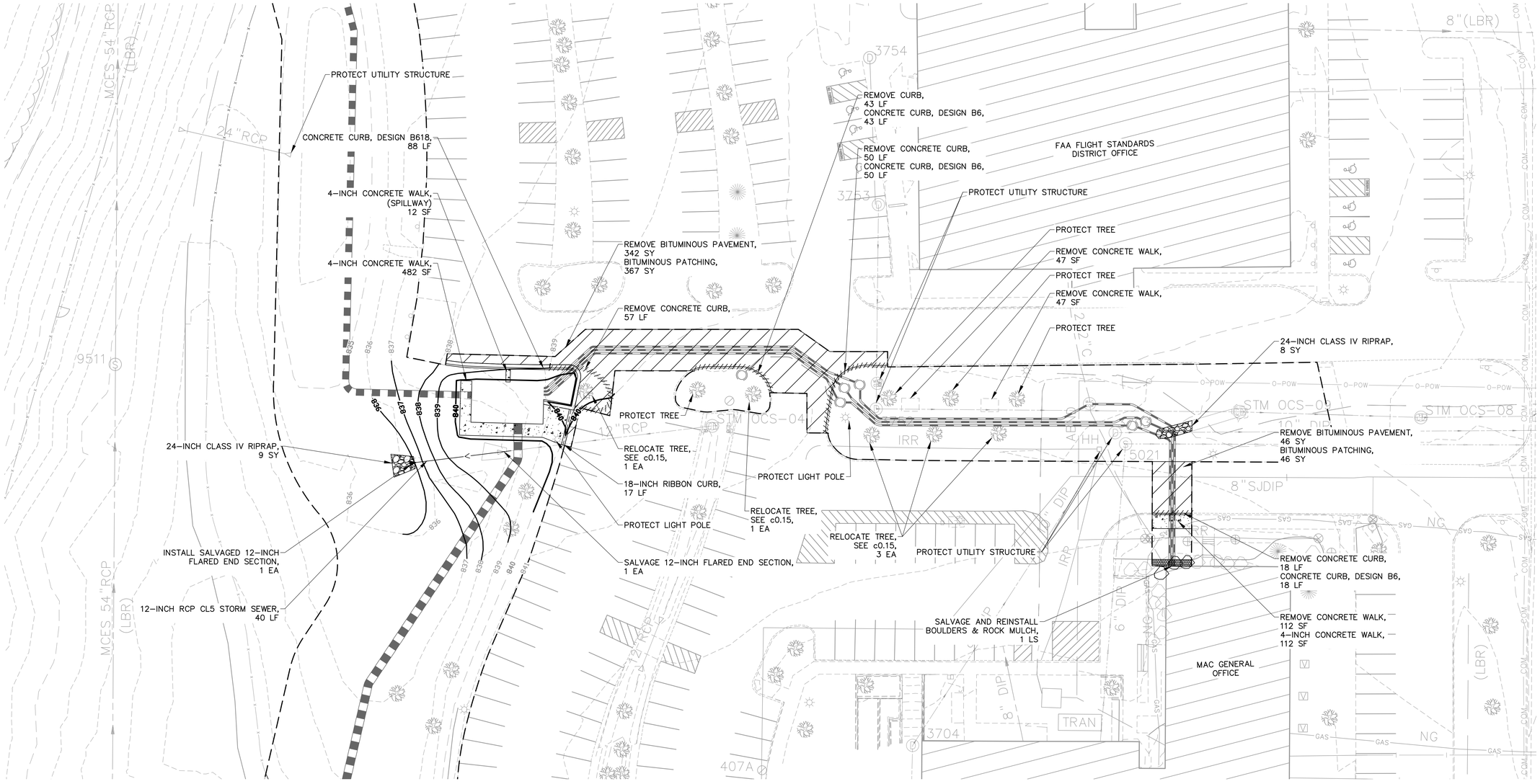
ALLiiANCE

SITE, GRADING, AND UTILITY PLAN OVERALL

c0.11

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NOTES:

1. THE CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF THE UTILITIES AND TOPOGRAPHIC FEATURES PRIOR TO THE COMMENCEMENT OF SITE GRADING. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE CONSTRUCTION COORDINATOR OF DISCREPANCIES OR VARIATIONS FROM THE PLANS.
2. VERIFY LOCATION AND ELEVATION OF ALL UTILITY CROSSINGS PRIOR TO CONSTRUCTION.
3. ALL UTILITIES SHALL BE SURVEYED AS THEY ARE CONSTRUCTED. FIELD SURVEYS SHALL BE DONE UNDER THE SUPERVISION OF A LAND SURVEYOR REGISTERED IN THE STATE OF MINNESOTA. UTILITIES BACKFILLED PRIOR TO BEING SURVEYED SHALL BE IMMEDIATELY RE–EXCAVATED AT THE CONTRACTORS SOLE EXPENSE AND SURVEYED. UTILITY SURVEYS ARE INCIDENTAL TO THE UTILITY BID ITEMS.
4. THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED IN ACCORDANCE WITH CI/ASCE 38–02, "STANDARD GUIDELINE FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."
5. VERIFY INVERT ELEVATION AND LOCATION PRIOR TO CONSTRUCTION WHERE NEW CONSTRUCTION CONNECTS TO EXISTING CONSTRUCTION.
6. SEE DUCT BANK PLANS FOR ADDITIONAL DUCT BANK INFORMATION.
7. SEE SECTION 33 40 00 FOR ADDITIONAL STORM SEWER INFORMATION.

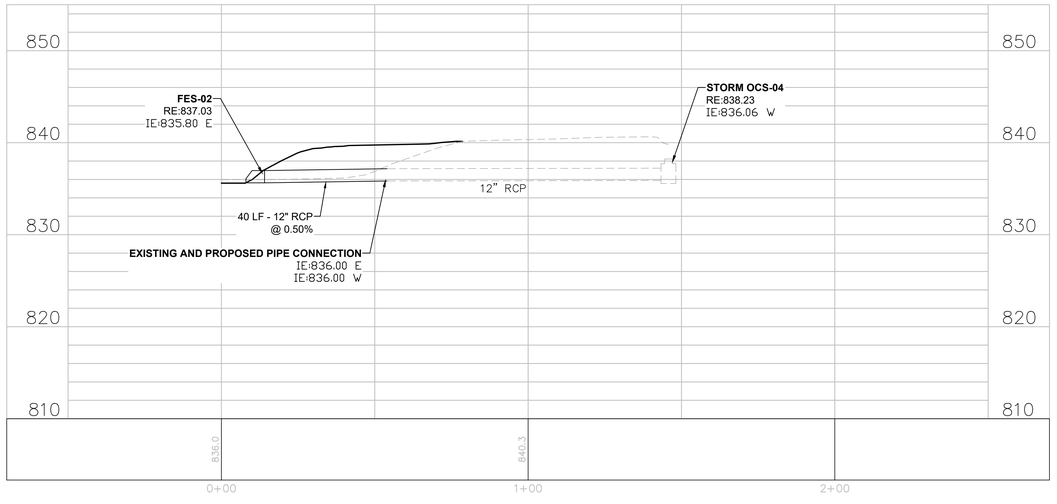
LEGEND:

- 742 — PROPOSED CONTOURS
- 742 — EXISTING CONTOURS
- 12–INCH RCP CL5 STORM SEWER
- SALVAGED 12–INCH FLARED END SECTION
- 24–INCH CLASS IV RIPRAP
- CONCRETE WALK REPLACEMENT
- REMOVE BITUMINOUS PAVEMENT AND BITUMINOUS PATCHING
- SALVAGE AND REINSTALL ROCK MULCH
- SALVAGE AND REINSTALL BOULDER
- REMOVE CURB

NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

STORM–1



PROJECT
2026 MULTIPLE POINTS OF ENTRY FACILITY

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Metropolitan Airports Commission
P.O. Box 11700
Minneapolis-St Paul Intl Airport
Saint Paul, MN 55111
MAC Contract No.106-2-1072

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FOR Kimley-Horn
BY Gregory W. Robinson
NAME GREGORY W. ROBINSON, P.E.
DATE 23 FEB 2026
REG NO 44269

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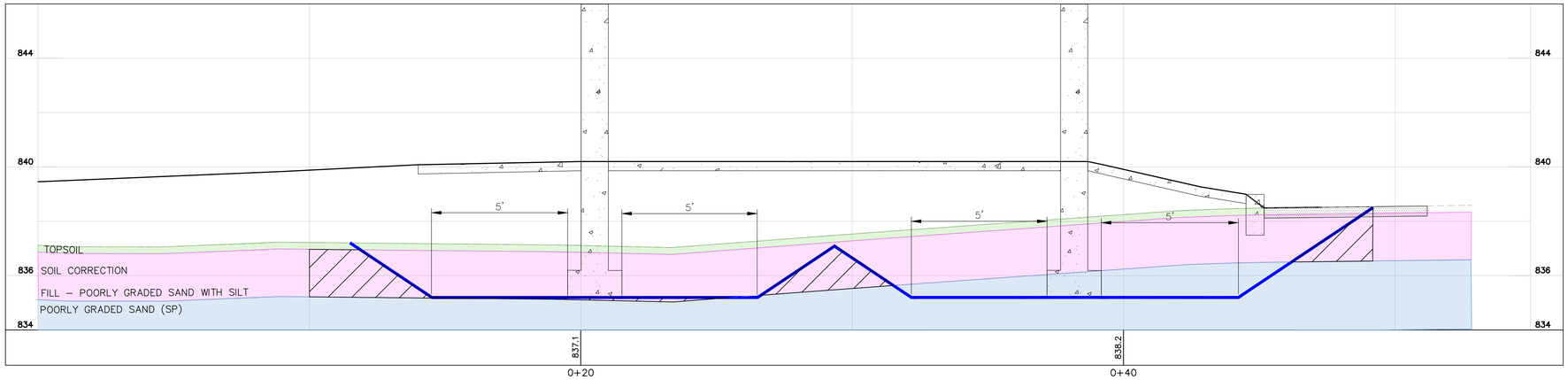
ALLIANCE

SITE, GRADING, AND UTILITY PLAN
INSET A

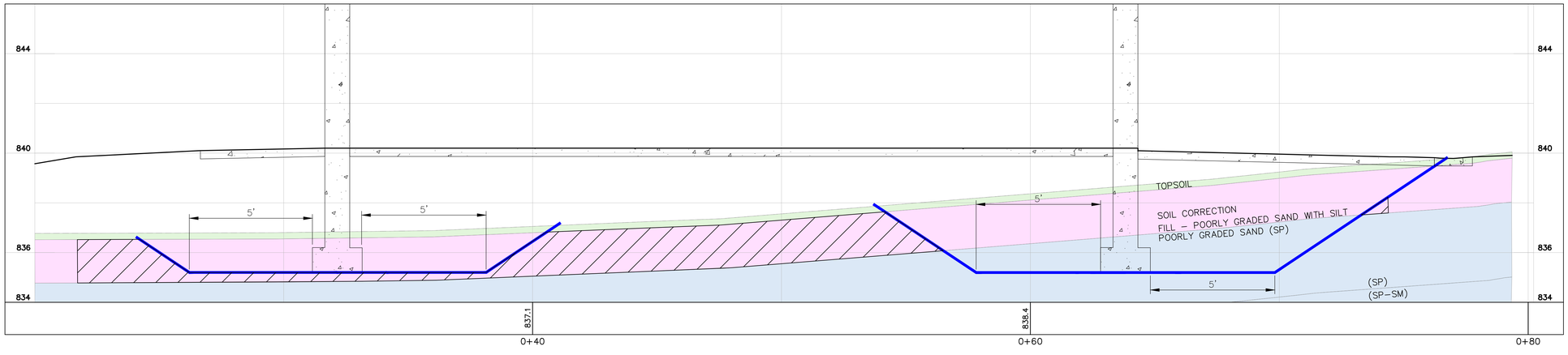
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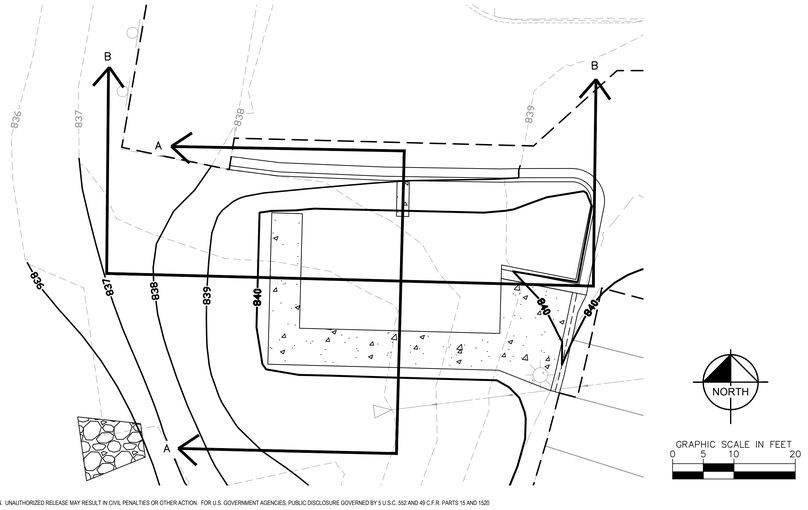
1 SECTION A–A



2 SECTION B–B

NOTES:

1. THIS DRAWING IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY.
2. DO NOT PLAN FOOTING OR BUILDING LOCATIONS/DEPTH BASED ON THIS DRAWING. SEE STRUCTURAL DRAWINGS FOR BUILDING EXCAVATION AND FOOTING REQUIREMENTS.
3. BUILDING EXCAVATION IS INCIDENTAL TO THE DIV 0–48 ALL BUILDING GENERAL, MECHANICAL, & ELECTRICAL CONSTRUCTION PAY ITEM.
4. SEE GEOTECHNICAL REPORT IN THE APPENDIX FOR THE PROJECT MANUAL FOR SOIL CORRECTION AND COMPACTION REQUIREMENTS.



PROJECT

2026 MULTIPLE POINTS OF ENTRY FACILITY

CLIENT

Metropolitan Airports Commission
P.O. Box 11700
Minneapolis-St Paul Intl Airport
Saint Paul, MN 55111

MAC Contract No.106-2-1072

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FOR Kimley-Horn
BY
NAME GREGORY W. ROBINSON, P.E.
DATE 23 FEB 2026
REG NO 44269

ISSUED FOR	DATE
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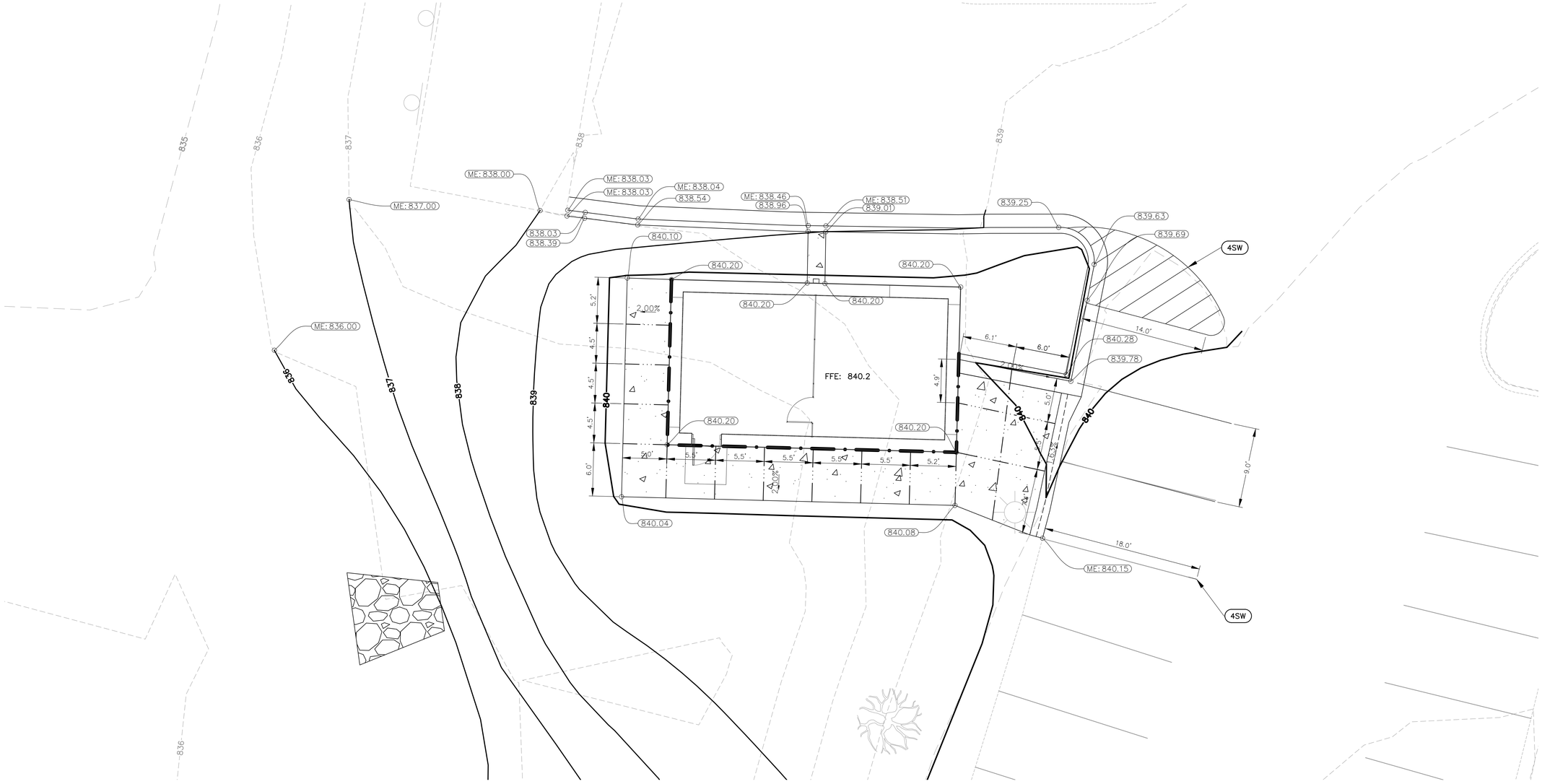
ALLïANCE

SITE, GRADING, AND UTILITY PLAN
SOIL CORRECTION SECTIONS

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PAVEMENT MARKING TABULATION		
ITEM	UNIT	QUANTITY
4" SOLID LINE – WHITE PAINT	LF	150

LEGEND:

- 742 PROPOSED CONTOURS
- 742 EXISTING CONTOURS
- 1L1TH JOINT
- E1 JOINT
- 4SW 4" SOLID LINE PAINT – WHITE

NORTH

GRAPHIC SCALE IN FEET
0 2.5 5 10

PROJECT
2026 MULTIPLE POINTS OF ENTRY FACILITY

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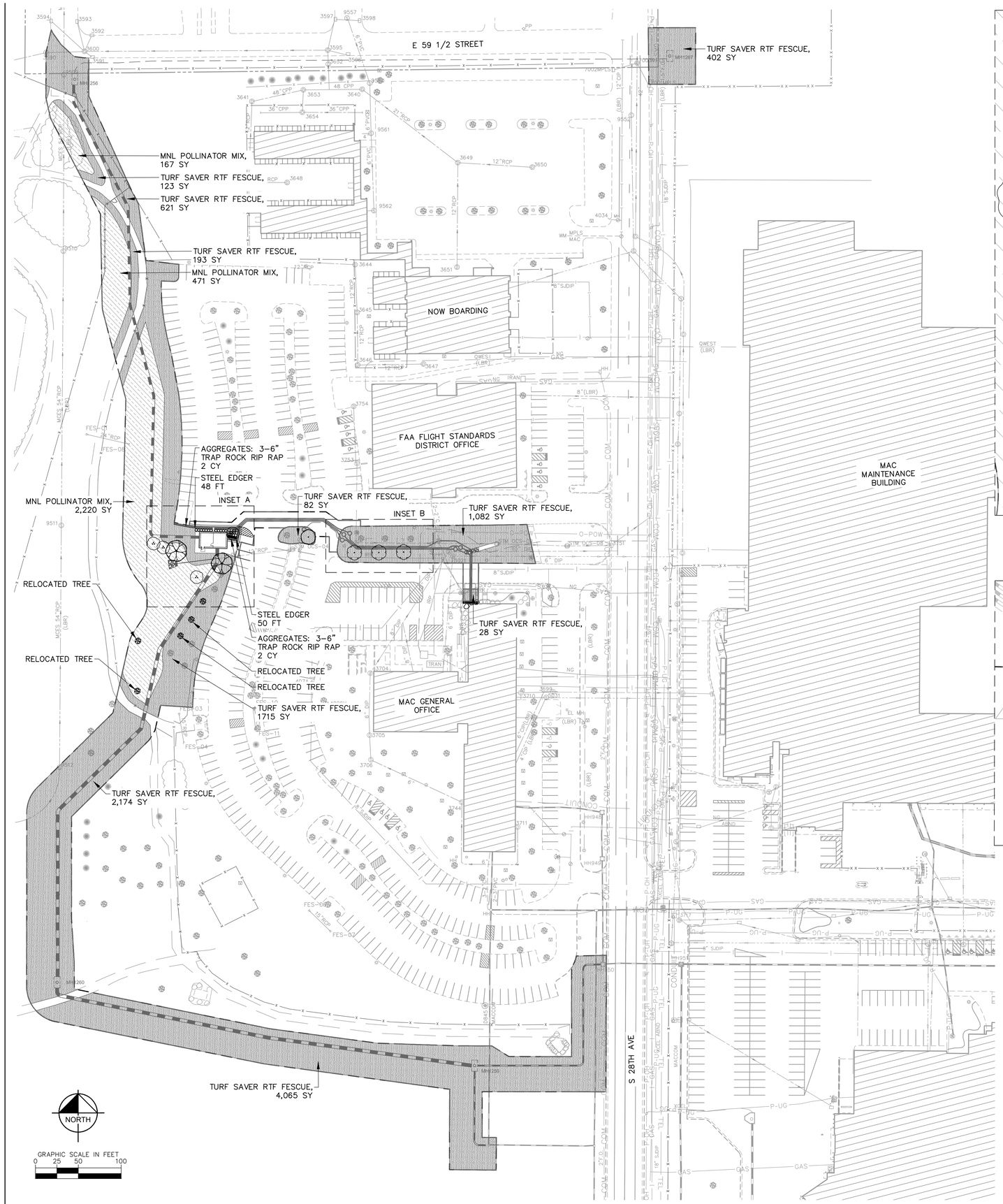
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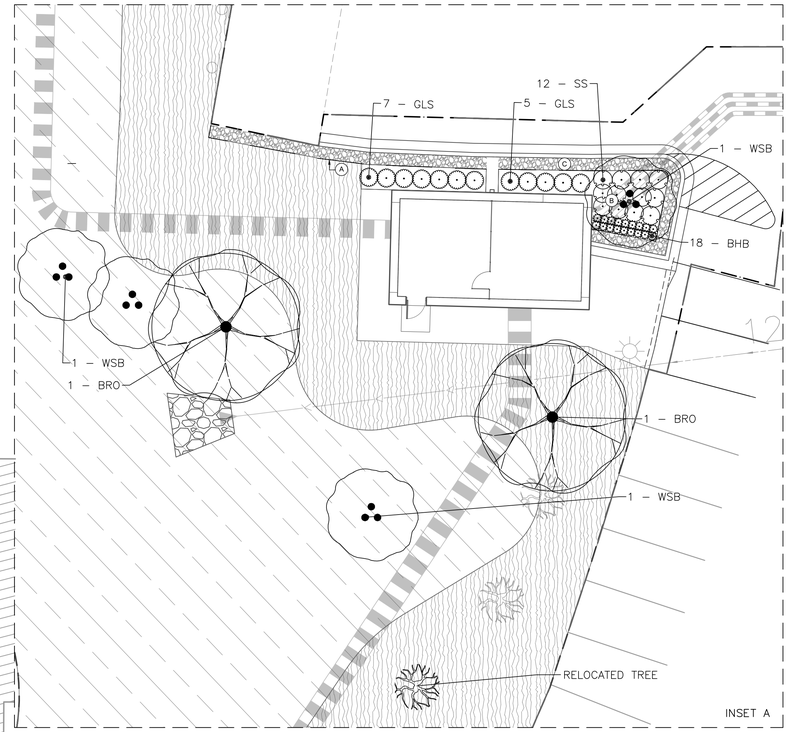
JOINT AND PAVEMENT MARKING PLAN

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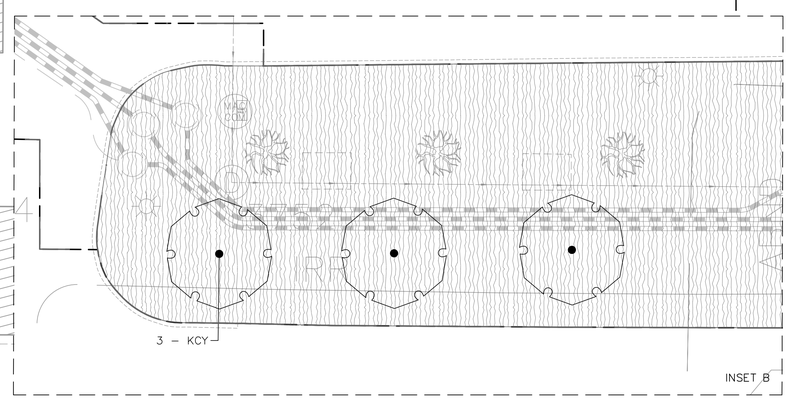
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A LANDSCAPE PLAN - INSET A
1"=10'–0"

NORTH



B LANDSCAPE PLAN - INSET B
1"=10'–0"

NORTH

LEGEND

- AGGREGATES: 3-6" TRAP ROCK RIP RAP - GRAY; REFER TO DETAIL 3/c0.16 and 4/c0.16
- TURF SAVER RTF FESCUE; REFER TO SPEC. 32 92 19
- MNL POLLINATOR MIX - DRY TO MESIC; REFER TO SPEC. 32 92 19
- METAL EDGER; REFER TO SPEC. 32 93 00
- LIMITS OF WORK
- RELOCATED TREES

LANDSCAPE KEYNOTES

- (A) STEEL EDGER (TYP.)
- (B) PLANTING AREA (TYP.)
- (C) AGGREGATES: 3-6" TRAP ROCK RIP RAP (TYP.)

NOTES:

1. PROTECT SEEDED AREAS WITH ORANGE CONSTRUCTION FENCING DURING TURF ESTABLISHMENT PERIOD.
2. COORDINATE TREE RELOCATION WITH THE LANDSCAPE ARCHITECT PRIOR TO RELOCATING TREES.

PROJECT
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FOR Kimley-Horn
BY
NAME STEPHEN HIMMERICH, PLA
DATE 23 FEB 2026
REG NO 55121

ISSUED FOR	DATE
BID SET	23 FEB 2026

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RESTORATION AND LANDSCAPE PLAN

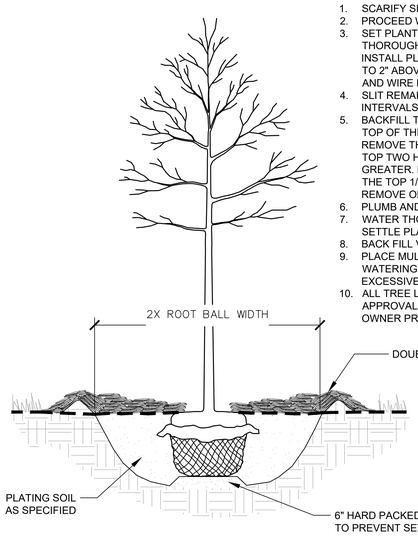
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NOTES:

1. SCARIFY SIDES AND BOTTOM OF HOLE.
2. PROCEED WITH CORRECTIVE PRUNING.
3. SET PLANT ON UNDISTURBED NATIVE SOIL OR THOROUGHLY COMPACTED PLANTING SOIL. INSTALL PLANT SO THE ROOT FLARE IS AT OR UP TO 2" ABOVE THE FINISHED GRADE WITH BURLAP AND WIRE BASKET, (IF USED), INTACT.
4. SLIT REMAINING TREATED BURLAP AT 6" INTERVALS.
5. BACKFILL TO WITHIN APPROXIMATELY 12" OF THE TOP OF THE ROOT BALL, THEN WATER PLANT. REMOVE THE TOP 1/3 OF THE BASKET OR THE TOP TWO HORIZONTAL RINGS WHICHEVER IS GREATER. REMOVE ALL BURLAP AND NAILS FROM THE TOP 1/3 OF THE BALL. REMOVE ALL TWINE. REMOVE OR CORRECT STEM GIRDLING ROOTS.
6. PLUMB AND BACKFILL WITH PLANTING SOIL.
7. WATER THOROUGHLY WITHIN 2 HOURS TO SETTLE PLANTS AND FILL VOIDS.
8. BACK FILL VOIDS AND WATER SECOND TIME.
9. PLACE MULCH WITHIN 48 HOURS OF THE SECOND WATERING UNLESS SOIL MOISTURE IS EXCESSIVE.
10. ALL TREE LOCATIONS TO BE STAKED FOR APPROVAL BY LANDSCAPE ARCHITECT AND OWNER PRIOR TO FINAL INSTALLATION.

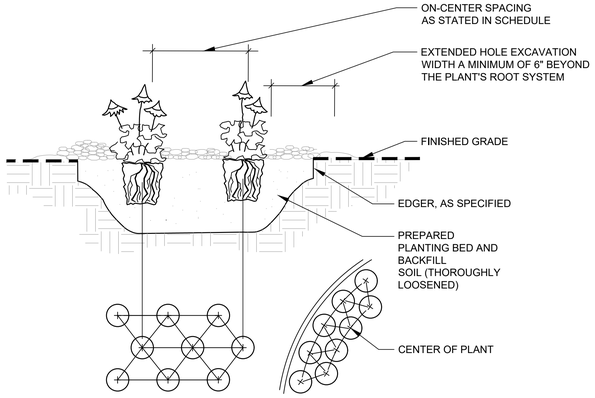


1 TREE PLANTING

N.T.S. TWC-160-400-350-02

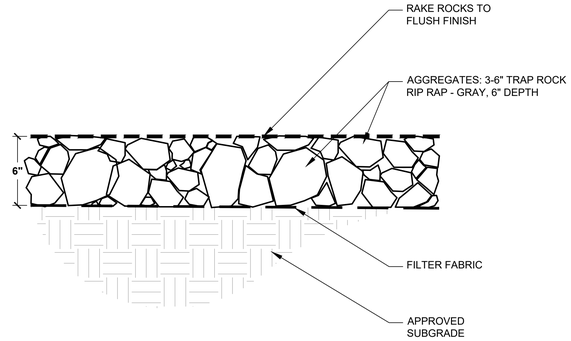
NOTES:

1. SCARIFY SIDES AND BOTTOM OF HOLE.
2. PROCEED WITH CORRECTIVE PRUNING OF TOP AND ROOT.
3. REMOVE CONTAINER AND SCORE OUTSIDE OF SOIL MASS TO REDIRECT AND PREVENT CIRCLING FIBROUS ROOTS.
4. PLUMB AND BACKFILL WITH PLANTING SOIL.
5. WATER THOROUGHLY WITHIN 2 HOURS TO SETTLE PLANTS AND FILL VOIDS.
6. BACK FILL VOIDS AND WATER SECOND TIME.
7. PLACE MULCH WITHIN 48 HOURS OF THE SECOND WATERING UNLESS SOIL MOISTURE IS EXCESSIVE.
8. MIX IN 3" - 4" OF ORGANIC COMPOST.



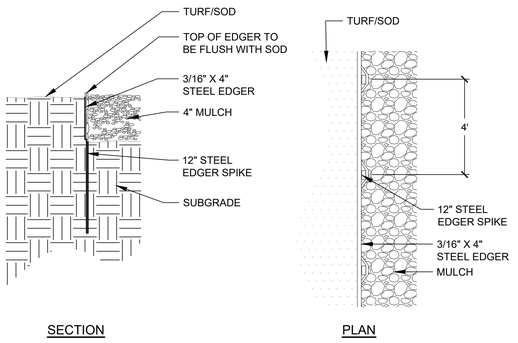
2 SHRUB/PERENNIAL PLANTING

N.T.S. TWC-160-400-350-04



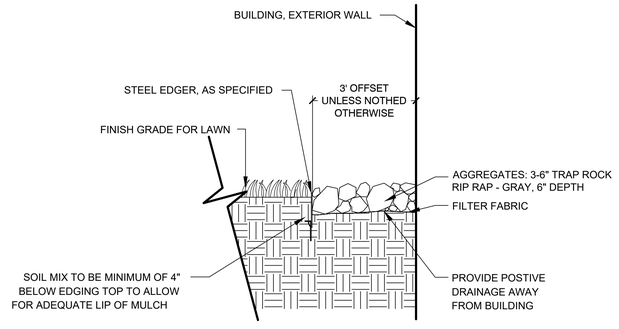
3 3" TO 6" GRAY TRAP ROCK SURFACING

N.T.S. TWC-160-400-350-08



4 STEEL EDGER

N.T.S. TWC-160-400-350-06



5 STONE MAINTENANCE EDGE DETAIL

NTS TWC-160-400-350-07

PLANT SCHEDULE				
SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME
ORNAMENTAL TREE				
	WSB	4	BETULA POPULIFOLIA 'WHITESPIRE'	WHITESPIRE BIRCH
OVERSTORY TREE				
	KCY	3	GYMNOCLADUS DIOICA 'ESPRESSO'	ESPRESSO KENTUCKY COFFEETREE
	SWO	1	QUERCUS BICOLOR	SWAMP WHITE OAK
	BRO	2	QUERCUS MACROCARPA	BUR OAK
DECIDUOUS SHRUBS				
	GLS	12	RHUS AROMATICA 'GRO-LOW'	GRO-LOW FRAGRANT SUMAC
	SS	12	SPIRAEA SORBIFOLIA	FALSE SPIREA
PERENNIALS AND GRASSES				
	BHB	18	SCHIZACHYRIUM SCOPARIUM 'MINNBLUEA' PP #17,310	BLUE HEAVEN LITTLE BLUESTEM
GROUND COVERS				
	MNL	0.6 ACRES	MNL POLLINATOR MIX	DRY TO MESIC
	RTF	2.2 ACRES	TURF SAVER RTF SEED	

LANDSCAPE NOTES

1. CONTACT COMMON GROUND ALLIANCE AT 811 OR CALL811.COM TO VERIFY LOCATIONS OF ALL UNDERGROUND UTILITIES PRIOR TO INSTALLATION OF ANY PLANTS OR LANDSCAPE MATERIAL.
2. SEE ELECTRICAL PLANS FOR SITE LIGHTING.
3. NO PLANTING WILL BE INSTALLED UNTIL ALL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA.
4. ALL SUBSTITUTIONS MUST BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO SUBMISSION OF ANY BID AND/OR QUOTE BY THE LANDSCAPE CONTRACTOR.
5. PROVIDE TWO YEAR GUARANTEE OF ALL PLANT MATERIALS. THE GUARANTEE BEGINS ON THE DATE OF THE LANDSCAPE ARCHITECT'S OR OWNER'S WRITTEN ACCEPTANCE OF THE INITIAL PLANTING. REPLACEMENT PLANT MATERIAL SHALL HAVE A ONE YEAR GUARANTEE COMMENCING UPON PLANTING.
6. PLANTS SHALL BE IMMEDIATELY PLANTED UPON ARRIVAL AT SITE. PROPERLY HEEL-IN MATERIALS IF NECESSARY; TEMPORARY ONLY.
7. PRIOR TO PLANTING, FIELD VERIFY THAT THE ROOT COLLAR/ROOT FLARE IS LOCATED AT THE TOP OF THE BALLED & BURLAP TREE. IF THIS IS NOT THE CASE, SOIL SHALL BE REMOVED DOWN TO THE ROOT COLLAR/ROOT FLARE. WHEN THE BALLED & BURLAP TREE IS PLANTED, THE ROOT COLLAR/ROOT FLARE SHALL BE EVEN OR SLIGHTLY ABOVE FINISHED GRADE.
8. OPEN TOP OF BURLAP ON BB MATERIALS; REMOVE POT ON POTTED PLANTS; SPLIT AND BREAK APART PEAT POTS.
9. PRUNE PLANTS AS NECESSARY - PER STANDARD NURSERY PRACTICE AND TO CORRECT POOR BRANCHING OF EXISTING AND PROPOSED TREES.
10. WRAP ALL SMOOTH-BARKED TREES - FASTEN TOP AND BOTTOM. REMOVE BY APRIL 1ST.
11. STAKING OF TREES AS REQUIRED; REPOSITION, PLUMB AND STAKE IF NOT PLUMB AFTER ONE YEAR.
12. THE NEED FOR SOIL AMENDMENTS SHALL BE DETERMINED UPON SITE SOIL CONDITIONS PRIOR TO PLANTING. LANDSCAPE CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT FOR THE NEED OF ANY SOIL AMENDMENTS.
13. BACKFILL SOIL AND TOPSOIL TO ADHERE TO MN/DOT STANDARD SPECIFICATION 3877 (FILTER TOPSOIL BORROW) AND TO BE EXISTING TOP SOIL FROM SITE FREE OF ROOTS, ROCKS LARGER THAN ONE INCH, SUBSOIL DEBRIS, AND LARGE WEEDS UNLESS SPECIFIED OTHERWISE. MINIMUM 4" DEPTH TOPSOIL FOR ALL LAWN GRASS AREAS AND 12" DEPTH TOPSOIL FOR TREE, SHRUBS, AND PERENNIALS.
14. MULCH TO BE AT ALL TREE, SHRUB, PERENNIAL, AND MAINTENANCE AREAS. TREE AND SHRUB PLANTING BEDS SHALL HAVE 4" DEPTH OF DOUBLE SHREDDED HARDWOOD MULCH. DOUBLE SHREDDED HARDWOOD MULCH TO BE USED AROUND ALL PLANTS WITHIN TURF AREAS. PERENNIAL AND ORNAMENTAL GRASS BEDS SHALL HAVE 2" DEPTH DOUBLE SHREDDED HARDWOOD MULCH. MULCH TO BE FREE OF DELETERIOUS MATERIAL AND NATURAL IN COLOR, OR APPROVED EQUAL. ROCK MULCH TO BE ON COMMERCIAL GRADE FILTER FABRIC, BY TYPAR, OR APPROVED EQUAL WITH NO EXPOSURE. MULCH AND FABRIC TO BE APPROVED BY OWNER PRIOR TO INSTALLATION. MULCH TO MATCH EXISTING CONDITIONS (WHERE APPLICABLE).
15. EDGING TO BE COMMERCIAL GRADE COL-MET (OR EQUAL) STEEL EDGING; 3/16" THICK x 5" TALL, COLOR BLACK, OR SPADED EDGE, AS INDICATED. STEEL EDGING SHALL BE PLACED WITH SMOOTH CURVES AND STAKED WITH METAL SPIKES NO GREATER THAN 4 FOOT ON CENTER WITH TOP OF EDGER AT GRADE, FOR MOWERS TO CUT ABOVE WITHOUT DAMAGE. UTILIZE CURBS AND SIDEWALKS FOR EDGING WHERE POSSIBLE. WHERE EDGING TERMINATES AT A SIDEWALK, BEVEL OR RECESS ENDS TO PREVENT TRIP HAZARD. SPADED EDGE TO PROVIDE V-SHAPED DEPTH AND WIDTH TO CREATE SEPARATION BETWEEN MULCH AND GRASS. INDIVIDUAL TREE, SHRUB, OR RAIN-GARDEN BEDS TO BE SPADED EDGE, UNLESS NOTED OTHERWISE. EDGING TO MATCH EXISTING CONDITIONS (WHERE APPLICABLE).
16. ALL DISTURBED AREAS TO BE SODDED OR SEEDED, UNLESS OTHERWISE NOTED. PARKING LOT ISLANDS TO BE SODDED WITH SHREDDED HARDWOOD MULCH AROUND ALL TREES AND SHRUBS. SOD TO BE TURF SAVER RTF, FREE OF LAWN WEEDS. ALL TOPSOIL AREAS TO BE RAKED TO REMOVE DEBRIS AND ENSURE DRAINAGE. SLOPES OF 3:1 OR GREATER SHALL BE STAKED. SEED AS SPECIFIED AND PER MN/DOT SPECIFICATIONS. IF NOT INDICATED ON LANDSCAPE PLAN, SEE EROSION CONTROL PLAN.
17. PROVIDE NECESSARY WATERING OF PLANT MATERIALS UNTIL THE PLANT IS FULLY ESTABLISHED OR IRRIGATION SYSTEM IS OPERATIONAL. OWNER WILL NOT PROVIDE WATER FOR CONTRACTOR.
18. REPAIR ALL DAMAGE TO PROPERTY FROM PLANTING OPERATIONS AT NO COST TO OWNER.
19. MAINTAIN TREES, SHRUBS, AND OTHER PLANTS UNTIL PROJECT COMPLETION, BUT IN NO CASE, LESS THAN FOLLOWING PERIOD; 1 YEAR AFTER PROJECT COMPLETION. MAINTAIN TREES, SHRUBS, AND OTHER PLANTS BY PRUNING, CULTIVATING, AND WEEDING AS REQUIRED FOR HEALTHY GROWTH. RESTORE PLANTING SAUCERS. TIGHTEN AND REPAIR STAKE AND GUY SUPPORTS AND RESET TREES AND SHRUBS TO PROPER GRADES OR VERTICAL POSITION AS REQUIRED. RESTORE OR REPLACE DAMAGED WRAPPINGS. SPRAY AS REQUIRED TO KEEP TREES AND SHRUBS FREE OF INSECTS AND DISEASE. REPLENISH MULCH TO THE REQUIRED DEPTH. MAINTAIN LAWNS FOR 45 DAYS AFTER INSTALLING SOD INCLUDING MOWING WHEN SOD RECITES 4" IN HEIGHT. WEED PLANTING BEDS AND MULCH SAUCERS AT MINIMUM ONCE A MONTH DURING THE GROWING SEASON. PROVIDE A MONTHLY REPORT TO THE OWNER ON WEEDING AND OTHER MAINTENANCE RESPONSIBILITIES.

PROJECT

2026 MULTIPLE POINTS OF ENTRY FACILITY

CLIENT

Metropolitan Airports Commission
P.O. Box 11700
Minneapolis-St Paul Intl Airport
Saint Paul, MN 55111
MAC Contract No.106-2-1072

ARCHITECT
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MSP International Airport
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763.546.3434

ENVIRONMENTAL CONSULTANT - SOIL AND GROUNDWATER
Terracon Consultants
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Minneapolis, MN 55441
763.489.3100

CONSTRUCTION COORDINATOR
Kraus Anderson Construction Company
7048 34th Avenue South
Minneapolis, MN 55450
612.727.2524

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Landscape Architect under the laws of the State of Minnesota.

FOR Kimley-Horn
BY
NAME STEPHEN HIMMERICH, PLA
DATE 23 FEB 2026
REG NO 55121

ISSUED FOR	DATE
BID SET	23 FEB 2026

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COMMISSION NO 160400372

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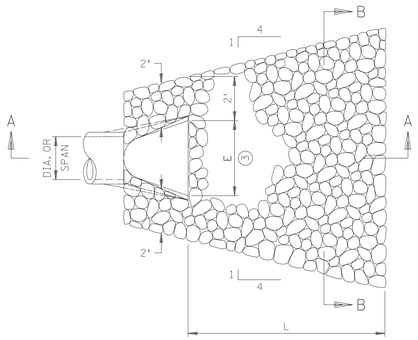
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TABLE OF QUANTITIES
RIPRAP AT RCP OUTLETS

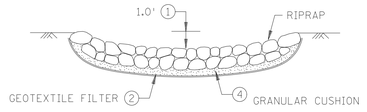
DIA. OF ROUND PIPE (IN.)	L (FT.)	CLASS II d_{50} = 6" GEO-TEXTILE FILTER (SQ.YD.)	CLASS II d_{50} = 6" GRANULAR FILTER UNDER APRON (CU.YD.)	CLASS II d_{50} = 6" 12" DEPTH RIPRAP (CU.YD.)	CLASS III d_{50} = 9" GEO-TEXTILE FILTER (SQ.YD.)	CLASS III d_{50} = 9" GRANULAR FILTER UNDER APRON (CU.YD.)	CLASS III d_{50} = 9" 18" DEPTH RIPRAP (CU.YD.)	CLASS IV d_{50} = 12" GEO-TEXTILE FILTER (SQ.YD.)	CLASS IV d_{50} = 12" GRANULAR FILTER UNDER APRON (CU.YD.)	CLASS IV d_{50} = 12" 24" DEPTH RIPRAP (CU.YD.)
12	8	16.9	0.2	3.0	19.6	0.3	4.4	22.6	0.3	5.9
15	8	18.0	0.2	3.2	20.8	0.3	4.8	23.9	0.4	6.4
18	10	22.4	0.3	4.3	25.6	0.4	6.4	29.0	0.5	8.5
21	10	24.1	0.4	4.7	27.4	0.6	7.1	30.9	0.7	9.4
24	12	29.7	0.5	6.2	33.4	0.8	9.2	37.3	1.0	12.3
27	12	31.4	0.6	6.6	35.2	0.9	9.9	39.2	1.2	13.2
30	14	37.4	0.8	8.2	41.6	1.1	12.3	46.0	1.5	16.4
36	16	45.9	1.1	10.6	50.5	1.6	15.8	55.4	2.1	21.1
42	18	52.8	1.2	12.5	57.8	1.7	18.7	63.0	2.3	24.9
48	20	61.1	1.5	14.8	66.5	2.2	22.2	72.0	2.9	29.6

TABLE OF QUANTITIES
RIPRAP AT RCP-A OUTLETS

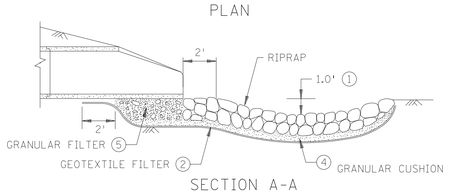
SPAN OF PIPE ARCH (IN.)	L (FT.)	CLASS II d_{50} = 6" GEO-TEXTILE FILTER (SQ.YD.)	CLASS II d_{50} = 6" GRANUL FILTER UNDER APRON (CU.YD.)	CLASS II d_{50} = 6" 12" DEPTH RIPRAP (CU.YD.)	CLASS III d_{50} = 9" GEO-TEXTILE FILTER (SQ.YD.)	CLASS III d_{50} = 9" GRANUL FILTER UNDER APRON (CU.YD.)	CLASS III d_{50} = 9" 18" DEPTH RIPRAP (CU.YD.)	CLASS IV d_{50} = 12" GEO-TEXTILE FILTER (SQ.YD.)	CLASS IV d_{50} = 12" GRANUL FILTER UNDER APRON (CU.YD.)	CLASS IV d_{50} = 12" 24" DEPTH RIPRAP (CU.YD.)
22	10	22.4	0.3	4.1	25.6	0.4	6.1	29.0	0.5	8.1
28	12	29.5	0.5	5.7	33.2	0.7	8.5	37.1	0.9	11.3
36	14	37.3	0.8	7.5	41.5	1.1	11.2	45.8	1.5	14.9
43	16	45.9	1.1	9.5	50.5	1.6	14.3	55.3	2.1	19.0
51	18	52.5	1.2	11.3	57.5	1.7	16.9	62.7	2.3	22.5
58	20	59.9	1.3	13.2	65.2	1.9	19.8	70.7	2.5	26.4



PLAN



SECTION B-B



SECTION A-A

NOTES:

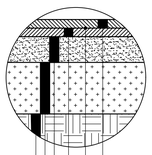
REQUIREMENTS FOR GEOTEXTILE TYPE, RIPRAP SIZE AND THICKNESS WILL BE DESIGNATED IN THE PLANS.

PIPE SIZES LARGER THAN THOSE SHOWN REQUIRE A SPECIAL DESIGN.

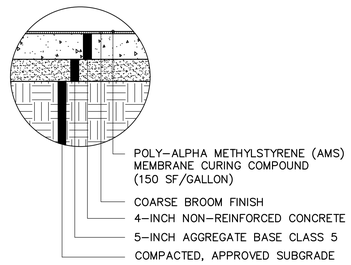
1. FOR PIPES GREATER THAN OR EQUAL TO 30", USE 1.5'.
2. GEOTEXTILE FILTER, SPEC. 3733, SHALL COVER THE BOTTOM AND SIDES OF THE AREA EXCAVATED FOR THE RIPRAP, GRANULAR FILTER MATERIALS.
3. DIMENSION E IS GIVEN ON STANDARD PLATES 3100 AND 3110.
4. GRANULAR FILTER, SPEC. 3601, MAY BE USED AS A CUSHION LAYER. PLACE FILTER PER SPEC. 2511. THE CUSHION LAYER IS INCIDENTAL.
5. GRANULAR FILTER OR RIPRAP, SPEC. 3601, TO EXTEND UNDER ENTIRE OPEN PORTION OF PIPE APRON. DEPTH OF MATERIAL UNDER APRON SHALL MATCH RIPRAP DEPTH. WHEN USING RIPRAP INCREASE RIPRAP QUANTITY ACCORDINGLY AND PLACE A 3" LAYER OF 1.5" CRUSHED ROCK UNDER THE APRON TO AID IN GRADING FOR APRON PLACEMENT. CRUSHED ROCK IS INCIDENTAL.

APPROVED DECEMBER 9, 2013 STATE DESIGN ENGINEER	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION RIPRAP AT RCP OUTLETS	SPECIFICATION REFERENCE 3100 3110 3601 3733 2511	STANDARD PLATE NO. 3133D

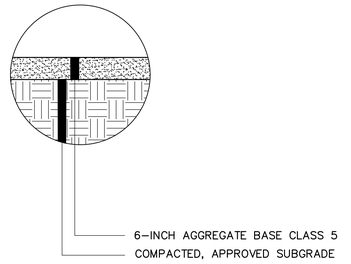
1 24" DEPTH RIPRAP CLASS IV – AT 12–INCH FLARED END SECTION



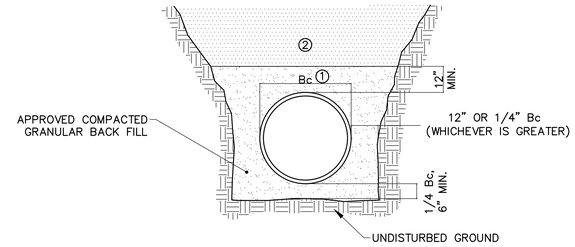
2 BITUMINOUS PATCHING



3 4–INCH CONCRETE PAVEMENT



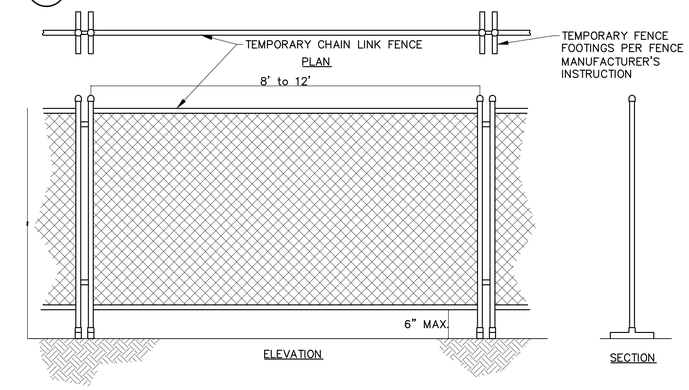
5 AGGREGATE BASE CLASS 5 AGGREGATE PATH RESTORATION



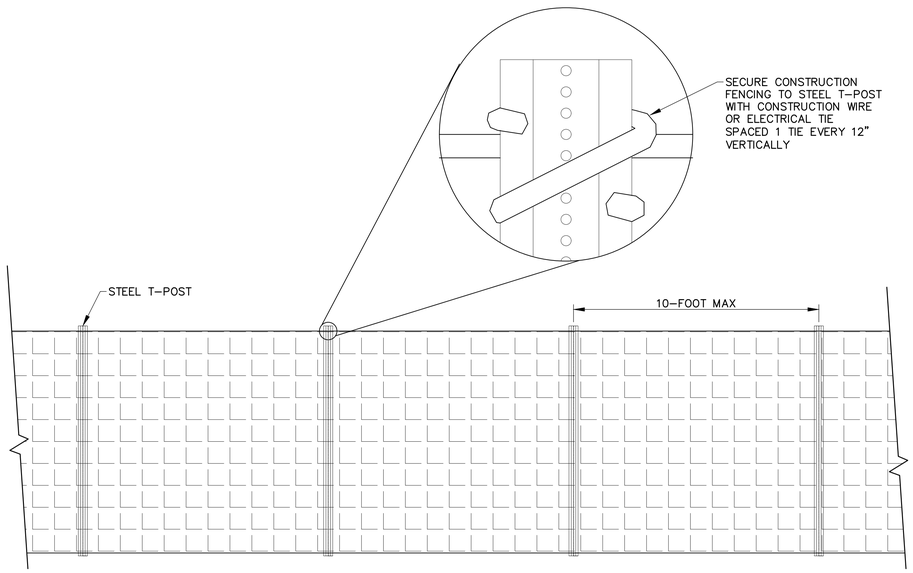
1 Bc = OUTSIDE DIAMETER OF THE PIPE

2 APPROVED GRANULAR BACKFILL.

4 PIPE BEDDING



6 TEMPORARY CONSTRUCTION FENCE



7 48" ORANGE CONSTRUCTION FENCING

PROJECT
2026 MULTIPLE POINTS OF ENTRY FACILITY

CLIENT
Metropolitan Airports Commission
P.O. Box 11700
Minneapolis-St Paul Intl Airport
Saint Paul, MN 55111
MAC Contract No.106-2-1072

ARCHITECT
Alliance
MSP International Airport
4300 Glumack Drive, Suite LT-3191
St Paul, MN 55111-3003
612.726.9012

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Minneapolis, MN 55441
763.489.3100

CONSTRUCTION COORDINATOR
Kraus Anderson Construction Company
7048 34th Avenue South
Minneapolis, MN 55450
612.727.2524

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Engineer under the laws of the State of Minnesota.

FOR Kimley-Horn
BY
NAME GREGORY W. ROBINSON, P.E.
DATE 23 FEB 2026
REG NO 44269

ISSUED FOR	DATE
BID SET	23 FEB 2026

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COMMISSION NO 160400372

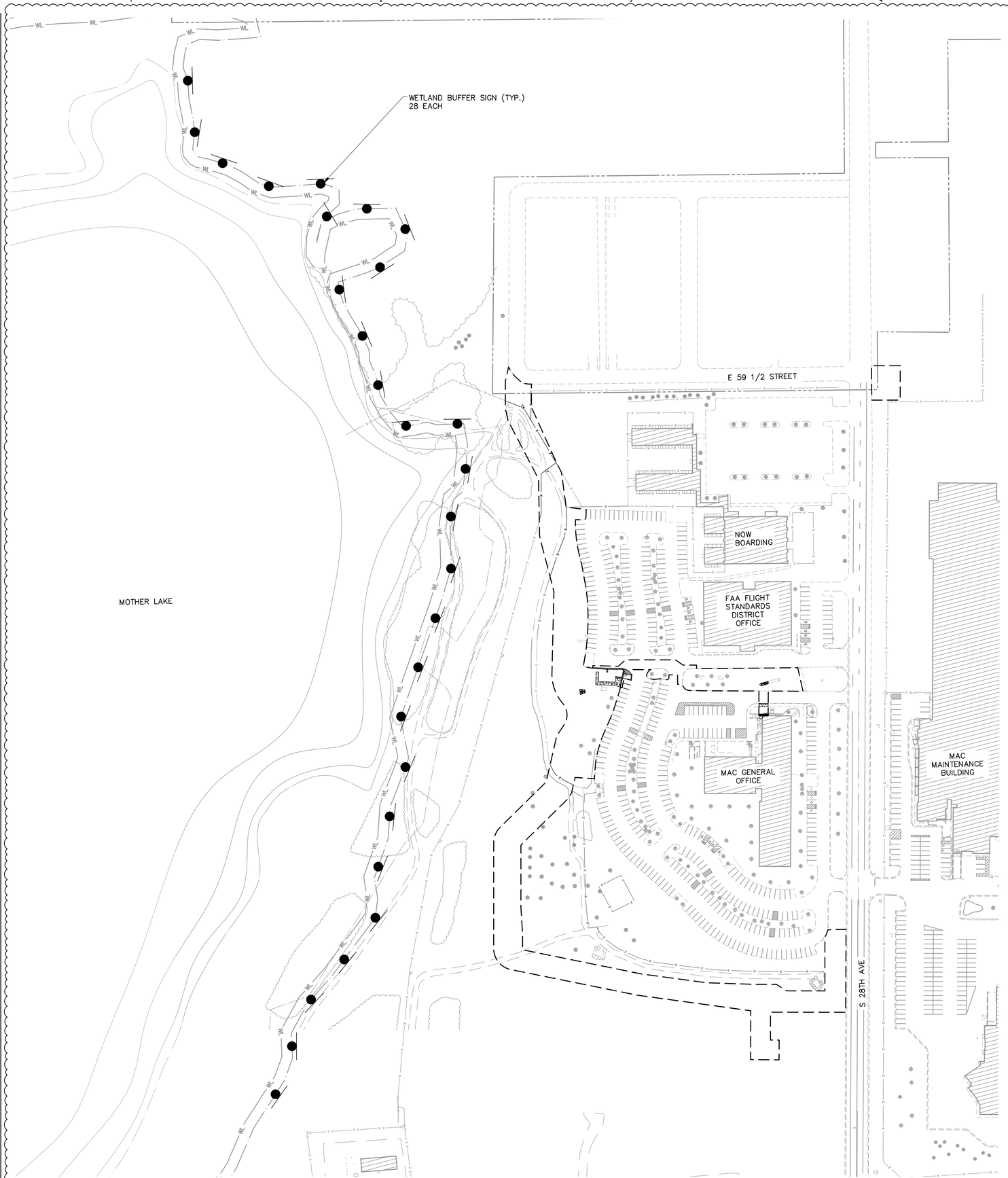
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SITE DETAILS

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NOTES:

1. INSTALL WETLAND BUFFER SIGNS 100 FEET OR LESS APART.

LEGEND:

WL — WETLAND BOUNDARY

20 FOOT WETLAND BUFFER

WETLAND BUFFER SIGN

NORTH

GRAPHIC SCALE IN FEET
0 40 80 160

PROJECT

2026 MULTIPLE POINTS OF ENTRY FACILITY

CLIENT

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P.O. Box 11700
Minneapolis-St Paul Intl Airport
Saint Paul, MN 55111

MAC Contract No.106-2-1072

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Minneapolis, MN 55450
612.727.2524

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Engineer under the laws of the State of Minnesota.

FOR **Kimley-Horn**
BY
NAME **GREGORY W. ROBINSON, P.E.**
DATE **19 MARCH 2026**
REG NO **44269**

ISSUED FOR	DATE
1 BID SET	23 FEB 2026
FO-01	XX XXX 2026

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COMMISSION NO **160400372**

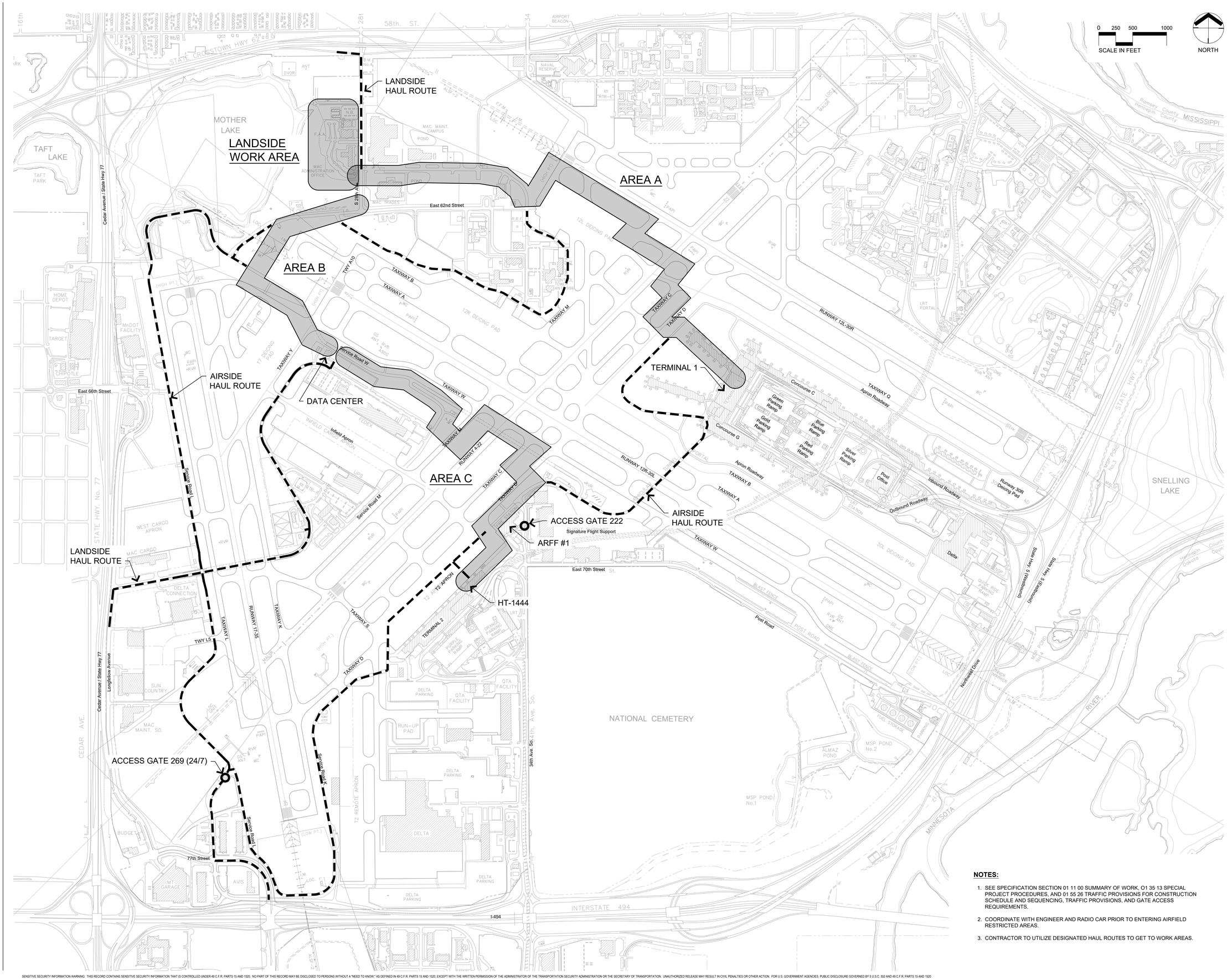
ALLiiANCE

WETLAND BUFFER SIGNS

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NOTES:

1. SEE SPECIFICATION SECTION 01 11 00 SUMMARY OF WORK, O1 35 13 SPECIAL PROJECT PROCEDURES, AND 01 55 26 TRAFFIC PROVISIONS FOR CONSTRUCTION SCHEDULE AND SEQUENCING, TRAFFIC PROVISIONS, AND GATE ACCESS REQUIREMENTS.
2. COORDINATE WITH ENGINEER AND RADIO CAR PRIOR TO ENTERING AIRFIELD RESTRICTED AREAS.
3. CONTRACTOR TO UTILIZE DESIGNATED HAUL ROUTES TO GET TO WORK AREAS.

PROJECT
2026 MULTIPLE POINTS OF ENTRY FACILITY

CLIENT
Metropolitan Airports Commission
P.O. Box 11700
Minneapolis-St Paul Intl Airport
Saint Paul, MN 55111
MAC Contract No, 106-2-1072

ARCHITECT
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ENVIRONMENTAL CONSULTANT - SOIL AND GROUNDWATER
Terracon Consultants
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763.489.3100

CONSTRUCTION COORDINATOR
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Minneapolis, MN 55450
612.727.2524

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Architect under the laws of the State of Minnesota.

FOR TKDA
BY Daniel W. Palmer
NAME DANIEL W. PALMER
DATE 23 FEB 2026
REG NO 54167

ISSUED FOR	DATE
BID SET	23 FEB 2026

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COMMISSION NO 21580

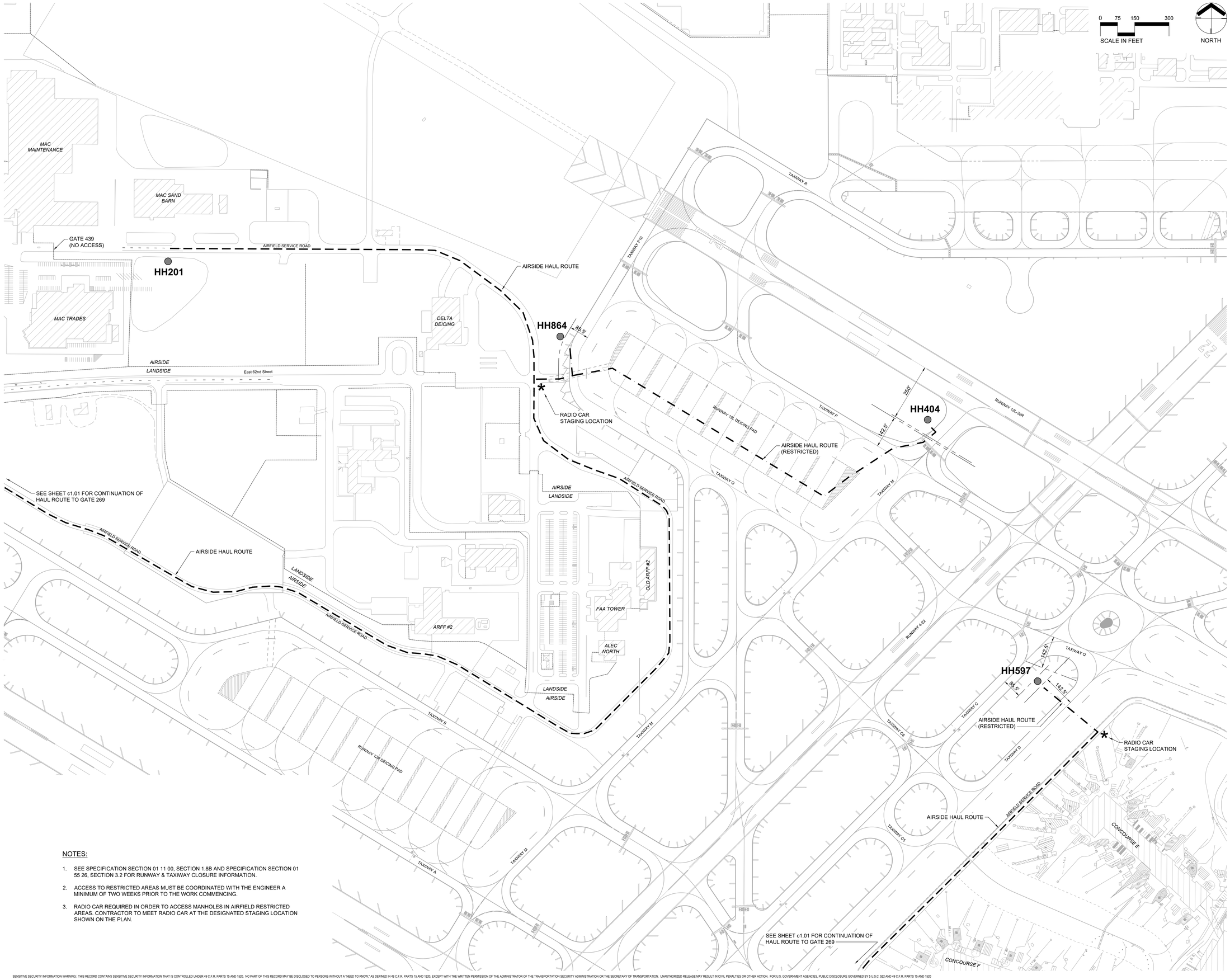
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AIRFIELD LOCATION PLAN

c1.01

Plot: 02/19/2026
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NOTES:

1. SEE SPECIFICATION SECTION 01 11 00, SECTION 1.8B AND SPECIFICATION SECTION 01 55 26, SECTION 3.2 FOR RUNWAY & TAXIWAY CLOSURE INFORMATION.
2. ACCESS TO RESTRICTED AREAS MUST BE COORDINATED WITH THE ENGINEER A MINIMUM OF TWO WEEKS PRIOR TO THE WORK COMMENCING.
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CONSTRUCTION STAGING PLAN - AREA A

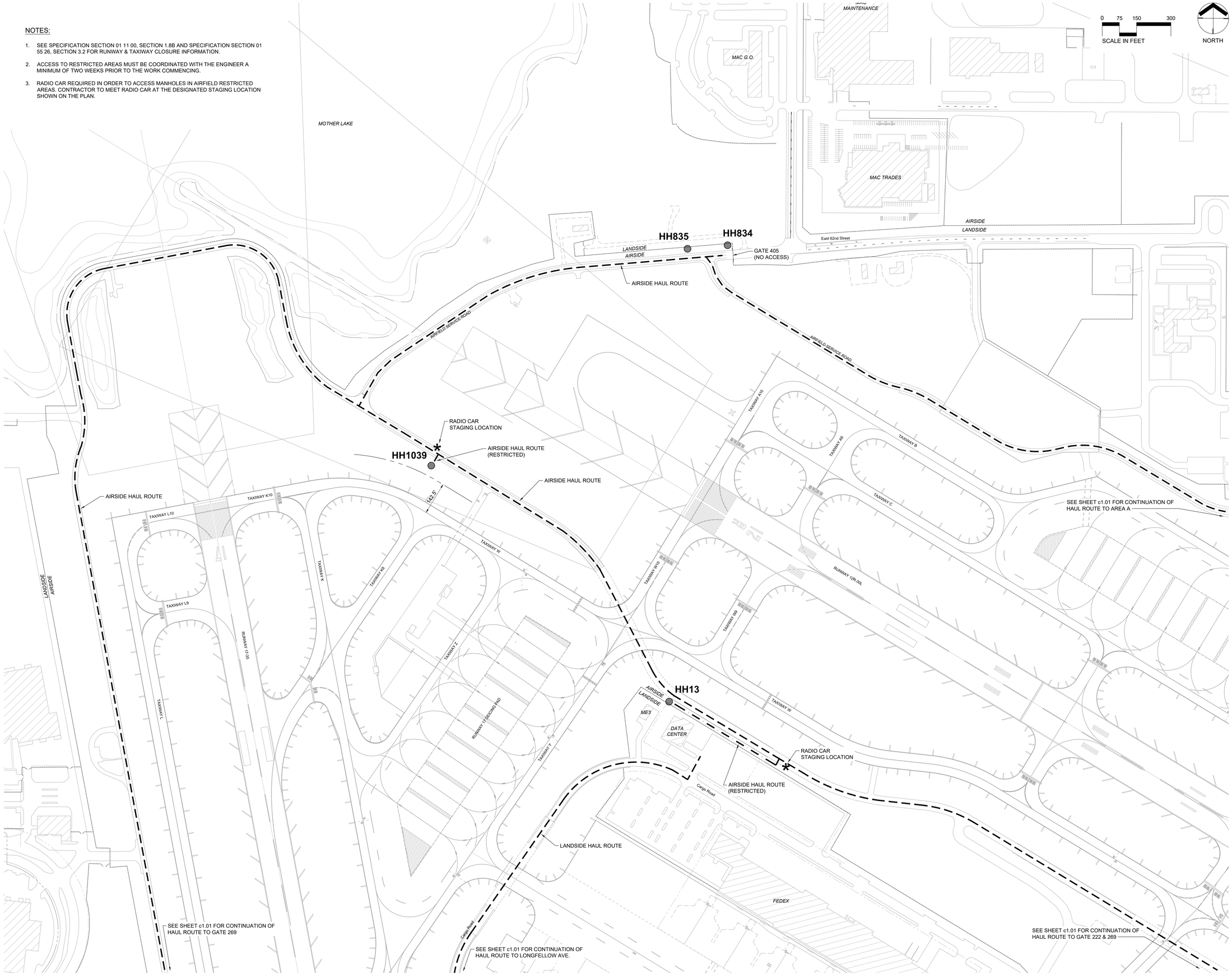
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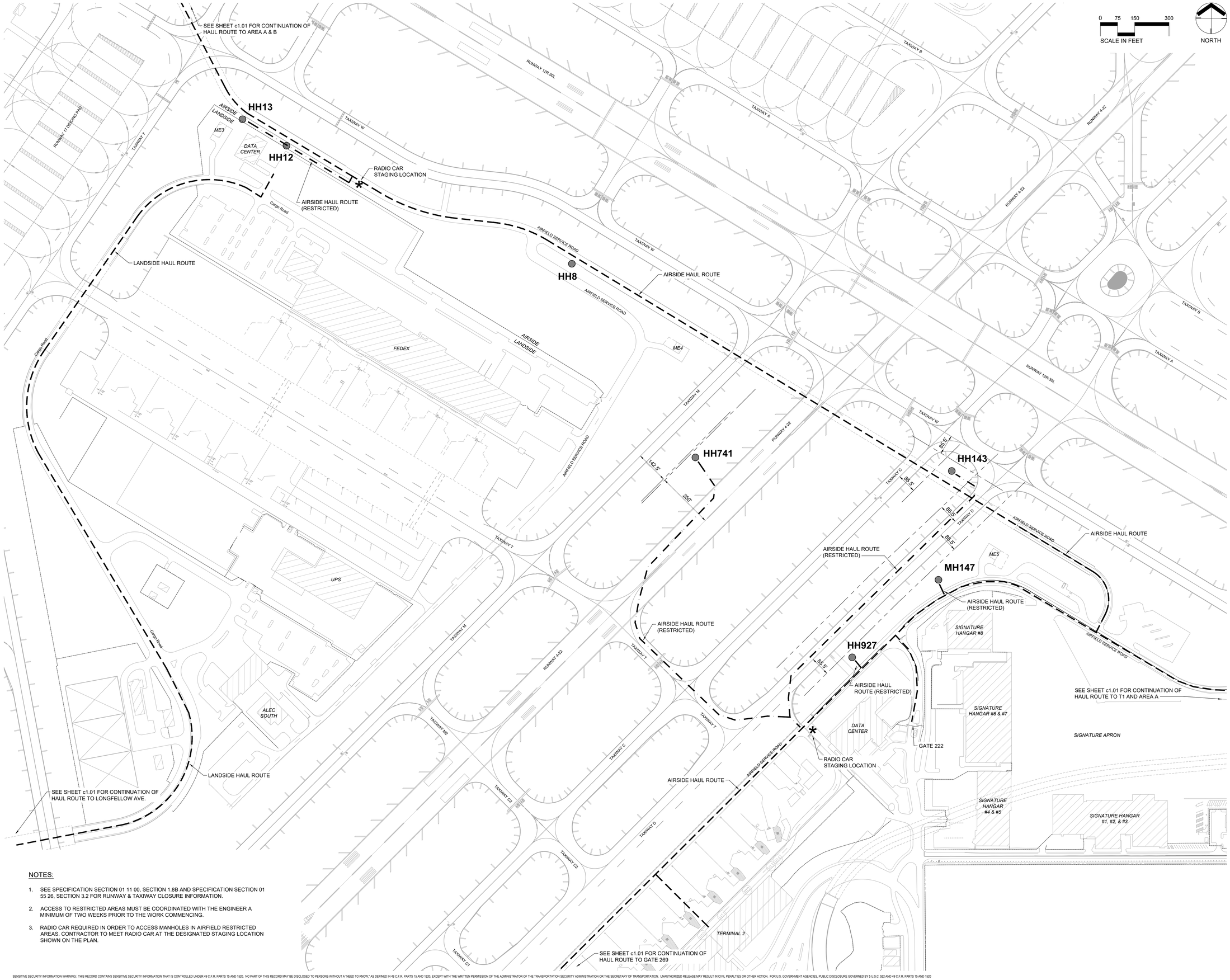
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CONSTRUCTION STAGING PLAN - AREA B

c1.03

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Plot: 02/19/2026
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CONSTRUCTION STAGING PLAN - AREA C

c1.04

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
BFG	BELOW FINISHED GRADE
CUH	CABINET UNIT HEATER
CB	CIRCUIT BREAKER
CCT	DENOTES CIRCUIT(S)
CP	CONTROL PANEL
CU	CONDENSING UNIT
DP	DISTRIBUTION PANEL
EF	EXHAUST FAN
EM	EMERGENCY
ELEV	ELEVATOR
EPO	EMERGENCY POWER OFF
FACP	FIRE ALARM CONTROL PANEL
FSD	FIRE/SMOKE DAMPER
F	FURNACE
EWC	ELECTRIC WATER COOLER
GFI	GROUND FAULT INTERRUPTING
GND	GROUND
HT	HEAT TRACE
MC	MOMENTARY CONTACT
MD	MOTORIZED DAMPER
MT	EMPTY
NC	NORMALLY CLOSED
NL	NEW LOCATION OF RELOCATED EQUIPMENT OR DEVICES
NO	NORMALLY OPEN
PB	PULLBOX
RL	EXISTING EQUIPMENT OR DEVICES TO BE RELOCATED
R	REMOVE EXISTING EQUIPMENT OR DEVICES
SAS	SAFETY SWITCH
SS	SELECTOR SWITCH
TT	TELEPHONE BOARD
TC	TERMINAL CABINET
VFD	VARIABLE FREQUENCY DRIVE
WH	WATER HEATER
WP	WEATHERPROOF
X	INDICATES EXISTING DEVICE, FIXTURE, OR WIRING TO REMAIN, UNLESS OTHERWISE NOTED

NOTE:

ITEMS SHOWN ON THIS SHEET ARE STANDARD SYMBOLS AND ABBREVIATIONS AND MAY NOT ALL APPEAR ON THE PROJECT DRAWINGS.

SYMBOLS

COMMUNICATION

- J-BOX, 4-1/16"x4-1/16"x2-1/2" DEEP WITH 2 GANG RING
- JACK, DATA
- JACK, DATA/VOICE
- JACK, TELEPHONE (VOICE)
- JACK, TELEVISION
- WIRELESS MICROPHONE RECEIVER
- PROJECTOR
- P.A. SYSTEM SPEAKER, CEILING MOUNTED
- SPEAKER, HORN TYPE
- SOUND RE-INFORCEMENT SPEAKER MOUNTED ON 4" SQUARE JUNCTION BOX.
- WI/FI ACCESS POINT

FIRE ALARM

- DETECTOR, SMOKE / HEAT (S- SMOKE, B- BEAM, D-DUCT, F- FIXED, RR-RATE/RISE)
- STROBE - WITH CANDELA RATING
- SPEAKER
- SPEAKER/STROBE - WITH CANDELA RATING
- INDIVIDUAL ADDRESSABLE MODULE
- MAGNETIC DOOR HOLDER
- MANUAL PULL STATION
- SWITCH, FLOW
- SWITCH, TAMPER
- FIRE/SMOKE DAMPER W/ POWER CONNECTION FROM FACP TO ACTUATOR AND DUCT DETECTOR.

SECURITY/ACCESS CONTROL

- AUTOMATIC DOOR OPERATOR
- BUZZER
- CARD READER
- CHIME
- CLOSED CIRCUIT CAMERA, WALL
- CLOSED CIRCUIT CAMERA, CEILING
- DOOR CONTACTS
- ELECTRIC STRIKE
- GATE OPERATOR
- HANDICAP DOOR PUSH-BUTTON
- KEY PAD
- MOTION DETECTOR
- SECURITY SIREN
- EMERGENCY PHONE

MISCELLANEOUS

- FLOOR BOX
- HAND HOLE
- JUNCTION BOX
- NOTE, REFERRAL
- NOTE, REVISION
- POWER POLE
- PULL BOX

LIGHTING

- DAYLIGHT SENSOR
- EXIT LIGHT, CEILING
- EXIT LIGHT, WALL MNT w/EM
- LUMINAIRE TYPE
- CIRCUIT NUMBER
- SWITCH IDENTIFICATION
- LUMINAIRE, CEILING
- LUMINAIRE, NIGHTLIGHT/EMERGENCY LIGHT (½ SHADING)
- LUMINAIRE, POLE MOUNTED
- LUMINAIRE, FLUORESCENT
- LUMINAIRE, WALL MOUNT
- LUMINAIRE TYPE AND CIRCUIT #
- OCCUPANCY SENSOR (OS) - EQUAL TO WATTSTOPPER SERIES
- SWITCH, DIMMER
- SWITCH, SINGLE GANG (b-SWITCH IDENTIFICATION,
- SWITCH, LOW VOLTAGE (WATTSTOPPER OR APPROVED EQUAL) a,b - SWITCH IDENTIFICATION AND INDICATES TWO BUTTON SWITCH
- SWITCH, SINGLE GANG SP (DUAL RELAY) (OS-EQUAL TO WATTSTOPPER, b-SWITCH IDENTIFICATION)
- PHOTOSENSOR
- SWITCH WITH PILOT

DEVICES

- CONTROL DEVICE (PL- PILOT LIGHT, PC PHOTOCELL, PB-PUSHBUTTON,MS-MOTION SENSOR,)
- RECEPTACLE, CEILING DUPLEX
- RECEPTACLE, DOUBLE DUPLEX
- RECEPTACLE, DUPLEX, T - TAMPERPROOF
- RECEPTACLE, SINGLE
- RECEPTACLE, SPECIAL, NEMA# AS NOTED
- RECEPTACLE, SPLIT WIRED
- J-BOX, 4"X4"X2-1/2" DEEP WITH 2 GANG RING

EQUIPMENT

- CONTROL MODULE
- DISCONNECT SWITCH
- EQUIPMENT
- KEYED SWITCH
- MOTOR
- MOTOR STARTER, COMBINATION
- MOTOR STARTER, MAGNETIC
- MOTOR STARTER, MANUAL
- PANEL, ANNUNCIATOR/ALARM
- PANEL, AS DESIGNATED
- PANEL, POWER PANEL
- PANEL, POWER (FLUSH)
- PANEL, TERMINAL CABINET
- TIME SWITCH
- TRANSFORMER

AIRFIELD ELECTRICAL

	EXISTING	PROPOSED
DIRECT BURIAL CABLE		
COUNTERPOISE CONDUCTOR		CP
GROUND ROD		
2" CONDUIT EMPTY		
2" CONDUIT WITH: (4) #8 5KV & (1) #6 GROUND		
ELECTRICAL DUCT BANK	D-437	D-437
ELECTRICAL MANHOLE	431	431
ELECTRICAL HANDHOLE	HH	HH
RUNWAY EDGE LIGHT		
RUNWAY CENTERLINE LIGHT		100 W
TAXIWAY EDGE LIGHT	BASE STAKE	BASE STAKE
BASE FOR FUT. EDGE LIGHT		
GUIDANCE SIGN	S200	S200
LIGHT POLE		
POWER POLE	PP	
TEMPORARY TAXIWAY EDGE LIGHT		100
TEMPORARY TAXIWAY RETROREFLECTIVE MARKER		100
EFSO		E

ELECTRICAL NOTES

A. GENERAL

1. THE ELECTRICAL INSTALLATION, AS A MINIMUM, SHALL MEET THE NATIONAL ELECTRICAL CODE AND LOCAL REGULATIONS.
2. ASCERTAIN THAT LIGHTING SYSTEM COMPONENTS (INCLUDING FAA APPROVED EQUIPMENT) ARE COMPATIBLE IN ALL RESPECTS WITH EACH OTHER AND THE REMAINDER OF THE NEW/EXISTING SYSTEM. NON-COMPATIBLE COMPONENTS SHALL BE REPLACED AT NO ADDITIONAL COST TO THE AIRPORT SPONSOR WITH A SIMILAR UNIT APPROVED BY THE ENGINEER (DIFFERENT MODEL OR DIFFERENT MANUFACTURER) THAT IS COMPATIBLE WITH THE REMAINDER OF THE AIRPORT LIGHTING SYSTEM.
3. SHOULD THE CONTRACTOR SELECT TO FURNISH AND INSTALL AIRPORT LIGHTING EQUIPMENT REQUIRING ADDITIONAL WIRING, TRANSFORMERS, ADAPTERS, MOUNTINGS, ETC.,TO THOSE SHOWN ON THE DRAWINGS AND/OR LISTED IN THE SPECIFICATIONS, THE COST FOR THESE ITEMS SHALL BE INCIDENTAL TO THE EQUIPMENT COST.
4. THE CONTRACTOR-INSTALLED EQUIPMENT (INCLUDING FAA APPROVED) SHALL GENERATE NO ELECTROMAGNETIC INTERFERENCE IN THE EXISTING AND/OR NEW COMMUNICATIONS, WEATHER, AND AIR TRAFFIC CONTROL EQUIPMENT. EQUIPMENT GENERATING SUCH INTERFERENCE SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST WITH EQUIPMENT MEETING THE APPLICABLE SPECIFICATIONS WHICH GENERATES NO ELECTROMAGNETIC INTERFERENCE.
5. WHEN A SPECIFIC TYPE, STYLE, CLASS, ETC. OF APPROVED EQUIPMENT IS SPECIFIED ONLY THAT TYPE, STYLE, CLASS, ETC. WILL BE ACCEPTABLE EVEN THOUGH EQUIPMENT OF OTHER TYPES, STYLES, CLASSES, ETC. MAY BE FAA APPROVED FOR THE APPLICATION.
6. INSTRUCTIONS FROM THE ENGINEER TO THE CONTRACTOR REGARDING CHANGES TO OR DEVIATIONS FROM THE PLANS AND SPECIFICATIONS SHALL BE IN WRITING WITH COPIES SENT TO THE AIRPORT SPONSOR AND THE FAA FIELD OFFICE (ADO/AFO). THE CONTRACTOR SHALL ACCEPT ONLY SUCH WRITTEN INSTRUCTIONS FROM THE ENGINEER REGARDING ANY CHANGES FROM THE PLANS AND SPECIFICATIONS.
7. EXISTING EQUIPMENT AND CONDUIT LOCATIONS ARE SCHEMATIC, APPROXIMATE, AND SHOWN FOR REFERENCE ONLY; FIELD VERIFY ALL LOCATIONS. ITEMS SHOWN IN SOLID LIGHT LINES AND/OR DESIGNATED WITH A 'X' SHALL REMAIN.
8. CONDUIT SHOWN IN DASHED LINES OR BY NOTE REPRESENT HIDDEN, UNDERFLOOR, OR UNDERGROUND RUNS. ROUTING IS SCHEMATIC.
9. NOT ALL CONDUIT SHOWN. ALL EXISTING CONDUIT AND WIRE SIZES ARE APPROXIMATIONS AND SUBJECT TO FIELD VERIFICATION. ALL SCHEDULED CONDUIT AND WIRE SIZES ARE PRELIMINARY AND REQUIRE CONFIRMATION AT TIME OF INSTALLATION.
10. IF POWER OR CONTROL SOURCES OF EXISTING DEVICES ARE REMOVED, THEN REMOVE WIRING BACK TO LAST ACTIVE SOURCE, IF NECESSARY, EXTEND CIRCUITS TO REFEED DEVICES/EQUIPMENT THAT ARE TO REMAIN.
11. VISIT THE SITE TO VERIFY THE EXTENT OF DEMOLITION AND REMODELING PRIOR TO BID. WHERE EQUIPMENT IS DESIGNATED TO BE REMOVED, REMOVE ALL ASSOCIATED CONDUIT AND WIRING BACK TO SOURCE AND LABEL CIRCUITS AS SPARE. UPDATE PANEL DIRECTORIES AND NAMEPLATES TO REFLECT DEMOLITION AND NEW WORK ACCOMPLISHED. MAINTAIN CIRCUIT CONTINUITY TO EQUIPMENT WHICH IS TO REMAIN.
12. REMOVE JUNCTION BOXES, CONDUIT AND WIRING NOT USED AS A RESULT OF THIS PROJECT. CONSULT OWNER REGARDING DISPOSAL OR SALVAGE OF REMOVED ELECTRICAL EQUIPMENT. PROVIDE COVERPLATE ON EXISTING UNCOVERED JUNCTION BOXES AND PULLBOXES.
13. UPDATE PANELBOARD SCHEDULES (TYPEWRITTEN AND DATED) TO REFLECT CHANGES. UNLESS OTHERWISE NOTED, UNUSED PANELBOARD CIRCUIT BREAKERS REMAINING FROM REMOVALS SHALL REMAIN FOR FUTURE USE. LABEL SUCH CIRCUITS AS "SPARE". PROVIDE EQUIPMENT LABELS AS NEEDED. PANELBOARD SCHEDULE CIRCUIT DESCRIPTION TO BE UNIQUE PER NEC.
14. LABEL ALL EXISTING AND NEW PROJECT AREA JUNCTION BOXES, CONDULETS, AND RECEPTACLE COVERS WITH SOURCE PANELBOARD NAME(S) AND BRANCH CIRCUIT NUMBER(S). NUMBERS AT RECEPTACLES AND LUMINARIES CORRESPOND WITH ASSOCIATED PANELBOARDS. VERIFY EXISTING PANELBOARD CIRCUITRY. BRANCH CIRCUIT CONDUIT RUNS ARE NOT SHOWN TO SIMPLIFY DRAWING. LABEL ALL PROJECT AREA SIGNAL OUTLET COVERS WITH SOURCE EQUIPMENT NAME AND CABLE DESIGNATOR AS APPROPRIATE.
15. REFER TO SPECIFICATIONS FOR MATERIALS AND INSTALLATION REQUIREMENTS OR AS DESCRIBED ON DRAWINGS.
16. ALL PROPOSED OUTAGES MUST BE PRE-APPROVED BY THE OWNER AND SCHEDULED SO AS TO MINIMIZE THE DURATION. IF A PROPOSED OUTAGE IS DEEMED UNACCEPTABLE OR TOO LONG BY OWNER, THEN THE CONTRACTOR MUST PROVIDE TEMPORARY WIRING AND/OR GENERATOR(S) TO MAINTAIN POWER TO THE AFFECTED EQUIPMENT AT NO ADDITIONAL COST TO THE OWNER.
17. ANY CONTRACTOR PREMIUM TIME DUE TO THE SCHEDULING OF SERVICE INTERRUPTIONS SHALL BE INCLUDED IN THE BID.
18. ALL CIRCUIT CONDUCTORS SIZING SHALL BE INCREASED WHERE REQUIRED FOR VOLTAGE DROP AND REDUCED TO ACCOUNT FOR DERATING DUE TO AMBIENT TEMPERATURE. VOLTAGE DROP CALCULATION TO BE DONE AT MINIMUM 80% OF PROTECTIVE DEVICE RATING. ALL BRANCH CIRCUIT AND FEEDER WIRING SHALL LIMIT THE VOLTAGE DROP TO 3% FOR EITHER SEGMENT AND 5% OVERALL.
19. THE CONTRACTOR SHALL COLLECT ALL DATA NECESSARY TO COMPLETE ARC FLASH ANALYSIS AND COORDINATION INCLUDING TRANSFORMER RATINGS, FUSE MANUFACTURER AND RATING; CIRCUIT BREAKER MANUFACTURER, MODEL NUMBERS, RATINGS, AND SETTINGS; AND WIRE COUNT, CONFIGURATION, RATING, AND LENGTHS. DATA SHALL BE PROVIDED TO TKDA AFTER CONSTRUCTION IS COMPLETED AND A MINIMUM OF TWO (2) WEEKS PRIOR TO ENERGIZATION OF THE EQUIPMENT.
20. THE CONTRACTOR SHALL PROVIDE A COPY OF THE DRAWINGS INDICATING THE INSTALLED CONDUIT ROUTE FROM THE MAIN SWITCHBOARD TO THE PASSENGER BOARDING BRIDGE EXTERIOR SAFETY DISCONNECT SWITCH.
21. THESE ELECTRICAL NOTES SHALL APPLY THROUGHOUT THE DRAWING SET.

B. FIELD LIGHTING

1. UNLESS OTHERWISE NOTED, UNDERGROUND FIELD POWER MULTIPLE AND SERIES CIRCUIT CONDUCTORS SHALL BE FAA APPROVED L-824 TYPE. INSULATION VOLTAGE AND SIZE SHALL BE AS SPECIFIED.
2. NO COMPONENTS OF PRIMARY CIRCUIT SUCH AS CABLE, CONNECTORS AND TRANSFORMERS SHALL BE BROUGHT ABOVE GROUND AT EDGE LIGHTS, SIGNS, REIL, PAPI, ETC.
3. THERE SHALL BE NO EXPOSED POWER/CONTROL CABLES BETWEEN THE POINT WHERE THEY LEAVE THE UNDERGROUND (DEB, L-867 OR L-868 BASES) AND WHERE THEY ENTER THE EQUIPMENT (SUCH AS PAPI, REIL, RPD, ETC.) ENCLOSURES. THESE CABLES SHALL BE ENCLOSED IN EMT CONDUIT OR IN FLEXIBLE, WATERTIGHT CONDUIT WITH BREAKABLE COUPLING(S) AT THE GRADE OR THE HOUSING COVER AS SHOWN IN APPLICABLE DETAILS.
4. THE JOINT OF THE L-823 PRIMARY CONNECTORS SHALL BE WRAPPED WITH AT LEAST ONE LAYER OF PLASTIC TAPE ONE-HALF LAPPED, EXTENDING AT LEAST 1-1/2 INCHES ON EACH SIDE OF THE JOINT AS SHOWN IN THE APPLICABLE DETAIL.
5. THE CABLE ENTRANCE INTO THE FIELD-ATTACHED L-823 CONNECTORS SHALL BE ENCLOSED BY A HEAT SHRINKABLE TUBING WITH INTERNAL ADHESIVE AS SHOWN ON THE CABLE SPLICING DETAIL.
6. THE ID OF THE PRIMARY L-823 FIELD ATTACHED CONNECTORS SHALL MATCH THE CABLE OD TO PROVIDE A WATERTIGHT CABLE ENTRANCE. THIS ENTRANCE SHALL BE ENCAPSULATED IN A HEAT SHRINKABLE TUBING WITH CONTINUOUS, FACTORY APPLIED INTERNAL ADHESIVE, AS SHOWN ON THE CABLE SPLICING DETAIL.
7. L-823 TYPE II, TWO-CONDUCTOR SECONDARY CONNECTORS SHALL BE CLASS "A" (FACTORY MOLDED).
8. THERE SHALL BE NO SPLICES IN THE SECONDARY CABLE(S) WITHIN THE STEMS OF TAXIWAY EDGE LIGHT FIXTURES AND/OR THE WIREWAY LEADING TO TAXIWAY SIGNS.
9. ELECTRICAL INSULATING GREASE SHALL BE APPLIED WITHIN THE L-823 SECONDARY TWO CONDUCTOR CONNECTORS TO PREVENT WATER ENTRANCE. THESE CONNECTIONS SHALL NOT BE TAPED.
10. DEB ISOLATION TRANSFORMER SHALL BE BURIED AT A DEPTH OF 10 INCHES ON A LINE CROSSING THE LIGHT AND PERPENDICULAR TO THE RUNWAY/TAXIWAY CENTERLINE AT A LOCATION 12 INCHES FROM THE LIGHT OPPOSITE FROM THE TAXIWAY.
11. DEB PRIMARY CONNECTORS SHALL BE BURIED AT A DEPTH OF 10 INCHES NEAR THE ISOLATION TRANSFORMER. THEY SHALL BE ORIENTED PARALLEL WITH THE TAXIWAY CENTERLINE. THERE SHALL BE NO BENDS IN THE PRIMARY CABLE 6 INCHES, MINIMUM, FROM THE ENTRANCE INTO THE FIELD-ATTACHED PRIMARY CONNECTOR.
12. A SLACK OF 3 FEET MINIMUM SHALL BE PROVIDED IN THE PRIMARY CABLE AT EACH TRANSFORMER/CONNECTOR TERMINATION. AT STAKE-MOUNTED LIGHTS THE SLACK SHALL BE LOOSELY COILED IMMEDIATELY BELOW THE ISOLATION TRANSFORMER.
13. DIRECTION OF PRIMARY CABLES SHALL BE IDENTIFIED BY COLOR CODING AS FOLLOWS: WHEN FACING LIGHT WITH BACK TO PAVEMENT, CABLE TO THE LEFT IS CODED RED AND CABLE TO THE RIGHT IS CODED BLUE. THIS APPLIES TO STAKE MOUNTED AND BASE MOUNTED LIGHTS WHERE THE BASE HAS ONLY ONE ENTRANCE.
14. L-867 BASES SHALL BE SIZE B, CLASS 1A UNLESS OTHERWISE NOTED. L-868 BASES FOR ELEVATED LIGHTS SHALL BE SIZE B, 24" DEEP, CLASS 1A GALVANIZED STEEL. LIGHT BASES FOR IN-PAVEMENT LIGHTS SHALL BE SIZE B, CLASS 1B STAINLESS STEEL. DEPTH AS SHOWN ON DETAIL.
15. BASE MOUNTED BREAKABLE COUPLINGS SHALL NOT HAVE WEEP HOLES TO THE OUTSIDE. PLUGGED UP HOLES SHALL NOT BE ACCEPTABLE. IT SHALL HAVE A 1/4" DIAMETER, MINIMUM, OR EQUIVALENT OPENING FOR DRAINAGE FROM THE SPACE AROUND THE SECONDARY CONNECTOR INTO THE L-868 BASE.
16. THE ELEVATION OF THE BREAKABLE COUPLING SHALL NOT EXCEED 1-1/2 INCH ABOVE THE EDGE OF THE COVER IN CASE OF BASE MOUNTED COUPLINGS, OR THE TOP OF THE STAKE IN THE CASE OF STAKE MOUNTED COUPLINGS.
17. WHERE THE BREAKABLE COUPLING IS NOT AN INTEGRAL PART OF THE LIGHT FIXTURE STEM OR MOUNTING LEG, A BEAD OF SILICON SEALANT SHALL BE APPLIED COMPLETELY AROUND LIGHT STEM OR WIREWAY AT BREAKABLE COUPLING TO PROVIDE A WATERTIGHT SEAL.
18. TOPS OF THE STAKES SUPPORTING LIGHT FIXTURES SHALL BE FLUSH WITH THE SURROUNDING GRADE.
19. EDGE LIGHT NUMBERING TAGS SHALL BE FACING THE PAVEMENT.
20. POWER AND CONTROL CABLES IN MAN/HAND HOLES SHALL BE TAGGED. USE EMBOSSED METAL STRIPS ATTACHED AT BOTH ENDS TO THE CABLE BY THE USE OF PLASTIC STRAPS. MINIMUM OF TWO TAGS SHALL BE PROVIDED ON EACH CABLE IN A MAN/HAND HOLE - ONE AT THE CABLE ENTRANCE AND ONE AT THE CABLE EXIT. IN ADDITION PROVIDE A TAG ON BOTH SIDES OF SPLICES IN MANHOLES.
21. APPLY AN OXIDE INHIBITING, ANTI-SEIZING COMPOUND TO ALL BOLTS, NUTS AND BREAKABLE COUPLING THREADS. BOLTS FOR IN-PAVEMENT LIGHTS SHALL BE COATED STAINLESS STEEL.
22. AIRFIELD LIGHTING MUST BE OPERATIONAL EACH NIGHT USING EITHER PERMANENT CONDUCTORS OR TEMPORARY CONNECTIONS APPROVED BY THE ENGINEER.
23. EXISTING ELECTRICAL EQUIPMENT WITHIN THE VICINITY OF CONSTRUCTION LIMITS SHALL BE PROTECTED, I.E., REMOVED AND REPLACED, HAND EXCAVATED AROUND OR BRIDGED.
24. CONDUIT RUNS EXCEEDING 100 FEET IN LENGTH REQUIRE A 6" MOVEMENT EXPANSION COUPLING.

C. POWER AND CONTROL

1. STENCIL/LABEL ALL ELECTRICAL EQUIPMENT TO IDENTIFY FUNCTION, CIRCUIT VOLTAGE AND PHASE. WHERE THE EQUIPMENT CONTAINS FUSES, ALSO STENCIL THE FUSE OR FUSE LINK AMPERE RATING. WHERE THE EQUIPMENT DOES NOT HAVE SUFFICIENT STENCILING AREA, THE STENCILING SHALL BE DONE ON THE WALL NEXT TO THE UNIT. THE LETTERS SHALL BE ONE INCH HIGH AND PRINTED IN WHITE OR BLACK PAINT TO PROVIDE THE HIGHEST CONTRAST WITH THE BACKGROUND.
2. COLOR CODE ALL PHASE WIRING BY THE USE OF COLORED WIRE INSULATION AND/OR COLORED TAPE. WHERE TAPE IS USED, THE WIRE INSULATION SHALL BE BLACK. BLACK, RED, AND BLUE SHALL BE USED FOR THREE-PHASE SYSTEMS 120/208V SYSTEMS, AND ORANGE, BROWN, AND YELLOW FOR 277/480V SYSTEMS. CIRCUITS SUPPLYING LINE TO NEUTRAL LOADS, BOTH 120V AND 277V, SHALL HAVE DEDICATED NEUTRALS. NEUTRAL CONDUCTORS SHALL HAVE TRACER STRIPE ALONG ENTIRE LENGTH INDICATING ASSOCIATED PHASE.
3. BRANCH CIRCUIT CONDUCTORS CONNECTED TO A PARTICULAR PHASE SHALL BE IDENTIFIED WITH THE SAME COLOR. THE COLOR CODING SHALL BE EXTENDED TO THE POINT OF UTILIZATION.
4. IN CONTROL WIRING THE SAME COLOR SHALL BE USED THROUGHOUT THE SYSTEM FOR THE SAME FUNCTION, SUCH AS 10%, 30%, 100% BRIGHTNESS CONTROL, ETC.
5. POWER AND CONTROL CIRCUIT CONDUCTORS SHALL BE COPPER. ALUMINUM WILL NOT BE ACCEPTED. THIS INCLUDES WIRE, CABLE, BUSSES, TERMINALS, SWITCH/PANEL COMPONENTS, ETC.
6. LOW VOLTAGE (600V) AND HIGH VOLTAGE (5000V) CONDUCTORS SHALL BE INSTALLED IN SEPARATE RACEWAYS.
7. INTERIOR CONDUIT SHALL BE EMT. EXTERIOR CONDUIT SHALL BE GALVANIZED RIGID STEEL CONDUIT (GRSC). EXTERIOR CONDUIT LESS THAN THREE (3') FEET ABOVE GRADE SHALL BE PVC COATED RIGID STEEL CONDUIT. INTERIOR STRUT CHANNEL AND HARDWARE SHALL BE HOT DIPPED GALVANIZED. EXTERIOR STRUT CHANNEL AND HARDWARE SHALL BE STAINLESS STEEL.
8. RIGID STEEL CONDUIT SHALL BE INSTALLED THROUGHOUT THE AIRFIELD LIGHTING ELECTRICAL CENTER (ALEC) UNLESS OTHERWISE SPECIFIED.
9. RIGID CONDUIT SHALL BE TERMINATED AT CONSTANT CURRENT REGULATORS WITH A SECTION (10' MIN.) OF LIQUID TIGHT FLEXIBLE METAL CONDUIT.
10. THREADED FITTINGS AND CONNECTIONS ARE REQUIRED FOR ALL RIGID CONDUIT. USE DOUBLE LOCK NUTS AT EACH CONDUIT TERMINATION.
11. FLEXIBLE METAL CONDUIT MAY BE USED FOR FINAL CONNECTIONS ABOVE DROP CEILINGS AND CONTINUOUSLY IN WALLS IN FINISHED AREAS; OTHERWISE, LIQUID TIGHT FMC SHALL BE USED IN REQUIRED LOCATIONS FOR FINAL CONNECTIONS (NO CONTINUOUS RUNS).
12. UNLESS OTHERWISE SHOWN, EXPOSED CONDUITS SHALL BE RUN PARALLEL TO OR AT RIGHT ANGLES WITH THE LINES OF THE STRUCTURE.
13. USE CONDUIT BUSHINGS AT EACH CONDUIT TERMINATION. WHERE NO. 4 AWG OR LARGER UNGROUNDED WIRE IS INSTALLED, USE INSULATED BUSHINGS.
14. NEATLY LACE WIRING IN DISTRIBUTION PANELS, SWITCHES AND JUNCTION/PULL BOXES.
15. EQUIPMENT CABINETS SHALL NOT BE USED AS PULL/JUNCTION BOXES. ONLY WIRING TERMINATING AT THE EQUIPMENT SHALL BE BROUGHT INTO THESE ENCLOSURES.
16. SPLICES AND JUNCTION POINTS SHALL BE PERMITTED ONLY IN JUNCTION BOXES, DUCTS EQUIPPED WITH REMOVABLE COVERS, AND AT EASILY ACCESSIBLE LOCATIONS.
17. CIRCUIT BREAKERS SHALL BE PROVIDED AS INDICATED ON THE DRAWINGS. ALL ITEMS REQUIRED FOR INSTALLATION INTO THE EXISTING DISTRIBUTION SHALL BE INCIDENTAL TO THE BID ITEM INDICATED IN THE SPECIFICATION.
18. WALL MOUNTED EQUIPMENT ENCLOSURES SHALL BE MOUNTED ON STRUT CHANNEL OR WOODEN MOUNTING BOARDS. WOODEN EQUIPMENT MOUNTING BOARDS SHALL BE EXTERIOR GRADE 3/4" PLYWOOD, BOTH SIDES PAINTED WITH ONE COAT OF PRIMER AND TWO COATS OF GRAY, OIL-BASED ENAMEL.
19. WRAP ALL PRIMARY AND SECONDARY POWER TRANSFORMER CONNECTIONS WITH SUFFICIENT LAYERS OF INSULATING TAPE AND COVER WITH INSULATING VARNISH FOR FULL VALUE OF CABLE INSULATION VOLTAGE.
20. UNLESS OTHERWISE NOTED, INDOOR SINGLE CONDUCTOR CONTROL WIRING SHALL BE NO. 14 AWG.
21. BOTH ENDS OF EACH CONTROL CONDUCTOR SHALL BE TERMINATED AT A TERMINAL BLOCK. THE TERMINAL BLOCKS SHALL BE OF PROPER RATING AND SIZE, AND THEY SHALL BE LOCATED IN EQUIPMENT ENCLOSURES OR SPECIAL TERMINAL CABINETS.
22. CONTROL CONDUCTOR TERMINATIONS SHALL BE OF THE OPEN-EYE CONNECTOR/SCREW TYPE. SOLDERED, CLOSED-EYED TERMINATIONS OR TERMINATIONS WITHOUT CONNECTORS ARE NOT ACCEPTABLE. (EXCEPTION-RATED TERMINAL BLOCK.)
23. IN TERMINAL BLOCK CABINETS THE MINIMUM SPACING BETWEEN PARALLEL TERMINAL BLOCKS SHALL BE 6 INCHES. THE MINIMUM SPACING BETWEEN TERMINAL BLOCK SIDES/ENDS AND CABINET SIDES/BOTTOM/TOP SHALL BE 5 INCHES. THE MINIMUM SPACING WILL BE INCREASED AS REQUIRED BY THE NUMBER OF CONDUCTORS. ADDITIONAL SPACING SHALL BE PROVIDED AT CONDUCTOR ENTRANCES.
24. DUAL LUGS SHALL BE USED WHERE TWO WIRES, SIZE NO. 6 OR LARGER, ARE TO BE CONNECTED TO THE SAME TERMINAL.
25. BOTH ENDS OF CONTROL CONDUCTORS SHALL BE IDENTIFIED AS TO THE CIRCUIT, TERMINAL BLOCK, AND TERMINAL NUMBER.
26. SEE RELATED PLUMBING AND HVAC DRAWINGS FOR LOCATION OF MECHANICAL EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS. COORDINATE INTERCONNECTION REQUIREMENTS WITH MECHANICAL AND FROM EQUIPMENT SUBMITTAL DOCUMENTS.

D. GROUNDING

1. GROUND NON-CURRENT CARRYING METAL PARTS OF ELECTRICAL EQUIPMENT WITH NO. 6 AWG COPPER CONDUCTOR. CONDUCTOR SHALL BE RUN INSIDE CABINETS AND IN CONDUITS TOGETHER WITH OTHER WIRES. WHERE THIS IS NOT FEASIBLE, RUN THE EXPOSED GROUNDING WIRE PARALLEL OR AT RIGHT ANGLES TO THE BUILDING LINES AND/OR MANHOLES AND SECURE IT AT LEAST EVERY 24 INCHES AND WITHIN 6 INCHES FROM BENDS OR JUNCTIONS, WHERE SUBJECT TO PHYSICAL DAMAGE, USE NO. 4 AWG.
2. GROUND CONNECTIONS TO GROUND RODS, BUSSES, PANELS, ETC. SHALL BE MADE WITH PRESSURE TYPE SOLDERLESS LUGS AND GROUND CLAMPS. SOLDERED OR BOLT AND WASHER TYPE CONNECTIONS ARE NOT ACCEPTABLE. CLEAN ALL METAL SURFACES BEFORE MAKING GROUND CONNECTIONS. UNDERGROUND CONNECTIONS SHALL BE MADE USING CADWELD EXOTHERMIC WELDS.
3. TOPS OF GROUND RODS SHALL BE 12 INCHES BELOW GRADE.
4. THE RESISTANCE TO GROUND OF THE VAULT GROUNDING SYSTEM WITH THE COMMERCIAL POWER LINE NEUTRAL DISCONNECTED SHALL NOT EXCEED 10 OHMS.
5. THE RESISTANCE TO GROUND OF THE COUNTERPOISE SYSTEM, OR AT ISOLATED LOCATIONS SUCH AS AIRPORT BEACON, SHALL NOT EXCEED 25 OHMS.
6. ALL RACEWAYS SHALL CONTAIN A GROUNDING CONDUCTOR.

PROJECT

2026 MULTIPLE POINTS OF ENTRY FACILITY

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I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Architect under the laws of the State of Minnesota.

FOR TKDA
BY
NAME TOSHIYA ISOMURA
DATE 23 FEB 2026
REG NO 56658

ISSUED FOR	DATE
BID SET	23 FEB 2026

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COMMISSION NO 21580

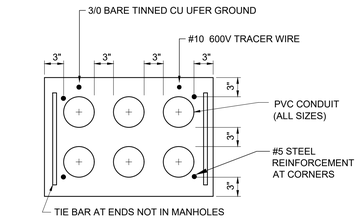
ALLiiANCE

ELECTRICAL NOTES

ce0.01

SENSITIVE SECURITY INFORMATION WARNING: THIS RECORD CONTAINS SENSITIVE SECURITY INFORMATION THAT IS CONTROLLED UNDER 49 C.F.R. PARTS 15 AND 1520. NO PART OF THIS RECORD MAY BE DISCLOSED TO PERSONS WITHOUT A "NEED TO KNOW," AS DEFINED IN 49 C.F.R. PARTS 15 AND 1520, EXCEPT WITH THE WRITTEN PERMISSION OF THE ADMINISTRATOR OF THE TRANSPORTATION SECURITY ADMINISTRATION OR THE SECRETARY OF TRANSPORTATION. UNAUTHORIZED RELEASE MAY RESULT IN CIVIL PENALTIES OR OTHER ACTION. FOR U.S. GOVERNMENT AGENCIES, PUBLIC DISCLOSURE GOVERNED BY 5 U.S.C. 552 AND 49 C.F.R. PARTS 15 AND 1520

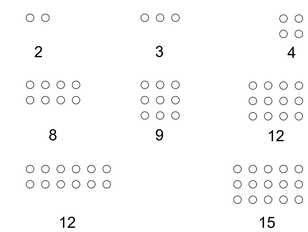
Plot: 02/19/2026
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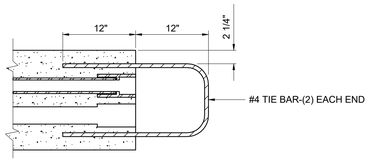
NOTE:

1. EACH DUCT (BOTH EMPTY AND OCCUPIED) SHALL HAVE A PULL STRING INSTALLED.
2. #10 600V TRACER WIRE SHALL BE ATTACHED TO TOP RUNG OF LADDER FOR ACCESS. LEAVE 10' COILED.
3. UFER GROUND AND TRACER WIRE SHALL BE INCIDENTAL TO DUCT BANK, NO SEPARATE MEASUREMENT WILL BE MADE.
4. DUCT BANK INSTALLED UNDER PAVEMENT SHALL HAVE GRANULAR BACKFILL TO ELEVATION WHERE CRUSHED AGGREGATE STARTS. PAYMENT INCIDENTAL TO DUCT BANK.

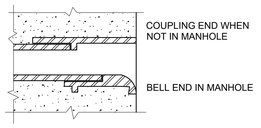
TYPICAL DUCT BANK SECTION



TYPICAL CONFIGURATIONS



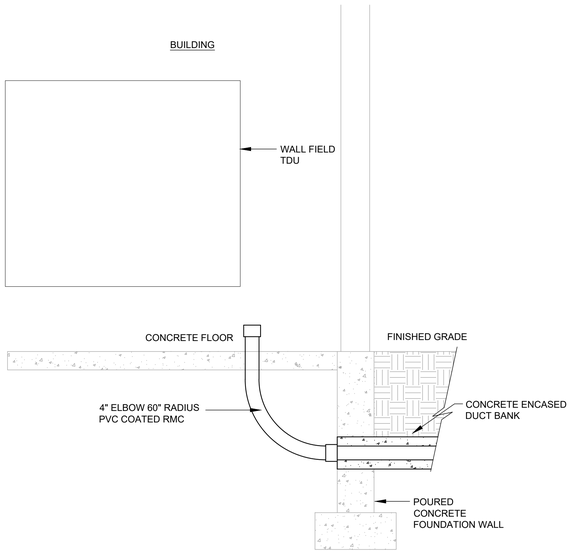
DUCT BANK TERMINATION WHEN NOT IN MANHOLE



DUCT TERMINATION DETAIL

1 / ce1.01 — DUCT BANK DETAILS

NOT TO SCALE



2 / ce1.01 — CONDUIT TO BUILDING DETAIL

NOT TO SCALE

MAC DUCTBANK

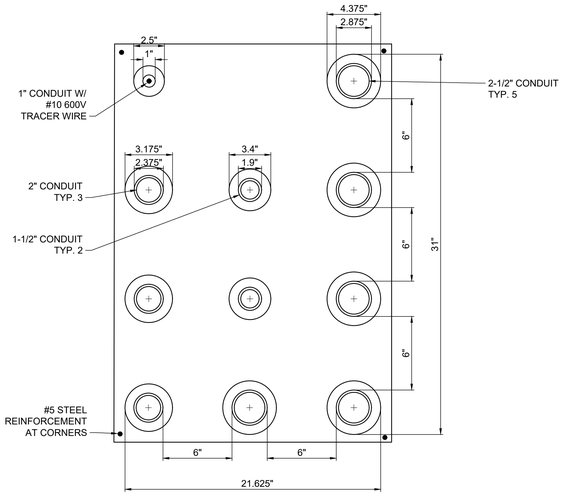
DUCT NO.	NO. OF CELLS	SIZE OF CELL	FORM WxH	CONTENTS CELL	CIRCUIT	CONDUCTORS	ASSOCIATED MANHOLE		LENGTH	NOTE(S)
D-1259	(4)	4"	2x2	1	SPARE	EMPTY				
				2	SPARE	EMPTY				
				3	SPARE	EMPTY				
				4	MAC COMM.	(1) 19 TUBE CABLE	MH1259	HH950	265'	
D-1260	(4)	4"	2x2	1	SPARE	EMPTY				
				2	SPARE	EMPTY				
				3	SPARE	EMPTY				
				4	MAC COMM.	(1) 19 TUBE CABLE	MH1259	HH	100'	
D-1261	(8)	4"	4x2	1	SPARE	EMPTY				
				2	SPARE	EMPTY				
				3	SPARE	EMPTY				
				4	SPARE	EMPTY				
				5	SPARE	EMPTY				
				6	SPARE	EMPTY				
				7	MAC COMM.	(1) 19 TUBE CABLE				
				8	MAC COMM.	(1) 19 TUBE CABLE	MH1260	MH1259	500'	
D-1262	(8)	4"	4x2	1	SPARE	EMPTY				
				2	SPARE	EMPTY				
				3	SPARE	EMPTY				
				4	SPARE	EMPTY				
				5	SPARE	EMPTY				
				6	SPARE	EMPTY				
				7	MAC COMM.	(1) 19 TUBE CABLE				
				8	MAC COMM.	(1) 19 TUBE CABLE	MPOE	MH1260	565'	
D-1263	(3)	2"	1x3	1	SPARE	EMPTY				
				2	FIRE ALARM	SEE MECHANICAL DRAWINGS				
				3	MAC COMM.	(1) 7 TUBE CABLE	HH1253	GO	100'	
D-1264	(3)	2"	1x3	1	SPARE	EMPTY				
				2	FIRE ALARM	SEE MECHANICAL DRAWINGS				
				3	MAC COMM.	(1) 7 TUBE CABLE	HH1264	HH1253	110'	
D-1265	(3)	2"	1x3	1	SPARE	EMPTY				
				2	FIRE ALARM	SEE MECHANICAL DRAWINGS				
				3	MAC COMM.	(1) 7 TUBE CABLE	MPOE	HH1264	150'	
D-1266	(8)	4"	4x2	1	ISP	EMPTY				
				2	ISP	EMPTY				
				3	ISP	EMPTY				
				4	ISP	EMPTY				
				5	ISP	EMPTY				
				6	ISP	EMPTY				
				7	ISP	EMPTY				
				8	ISP	EMPTY	MH1266	MPOE	600'	
D-1267	(8)	4"	N/A	1	ISP	EMPTY				
				2	ISP	EMPTY				
				3	ISP	EMPTY				
				4	ISP	EMPTY				
				5	ISP	EMPTY				
				6	ISP	EMPTY				
				7	ISP	EMPTY				
				8	ISP	EMPTY	MH1267	MH1256	700'	1
D-1924	(5)	2-1/2"	1x5	1	SPARE	EMPTY				
				2	EV CHARGING - FUTURE	EMPTY				
				3	EV CHARGING - FUTURE	EMPTY				
				4	MPOE ELECTRICAL	SEE ELECTRICAL DRAWINGS				
				5	MPOE ELECTRICAL	SEE ELECTRICAL DRAWINGS	HH1924	GO	70'	
D-1925	(2)	1-1/2"	1x2	1	SPARE	EMPTY				
				2	MPOE ELECTRICAL	SEE ELECTRICAL DRAWINGS	HH1925	GO	70'	
D-1926	(5)	2-1/2"	1x5	1	SPARE	EMPTY				
				2	EV CHARGING - FUTURE	EMPTY				
				3	EV CHARGING - FUTURE	EMPTY				
				4	MPOE ELECTRICAL	SEE ELECTRICAL DRAWINGS				
				5	MPOE ELECTRICAL	SEE ELECTRICAL DRAWINGS	HH1926	HH1924	130'	
D-1927	(2)	1-1/2"	1x2	1	SPARE	EMPTY				
				2	MPOE ELECTRICAL	SEE ELECTRICAL DRAWINGS	HH1927	HH1925	140'	
D-1928	(5)	2-1/2"	1x5	1	SPARE	EMPTY				
				2	EV CHARGING - FUTURE	EMPTY				
				3	EV CHARGING - FUTURE	EMPTY				
				4	MPOE ELECTRICAL	SEE ELECTRICAL DRAWINGS				
				5	MPOE ELECTRICAL	SEE ELECTRICAL DRAWINGS	MPOE	HH1926	150'	
D-1929	(2)	1-1/2"	1x2	1	SPARE	EMPTY				
				2	MPOE ELECTRICAL	SEE ELECTRICAL DRAWINGS	MPOE	HH1927	150'	

3 / ce1.01 — DUCT BANK TUNNEL SCHEDULE

NOT TO SCALE

NOTE:

1. DIRECTIONAL BORED CONDUITS



4 / ce1.01 — DUCT BANK TUNNEL TERMINATION

NOT TO SCALE

NOTE:

1. REFER TO DRAWING a7.02 AND s2.02 FOR BUILDING PLANS AND CORING
2. REFER TO DRAWING e0.51 FOR INTERIOR CONTINUATION.
3. SEE DRAWING a7.02 FOR WATERPROOFING.

PROJECT

2026 MULTIPLE POINTS OF ENTRY FACILITY

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I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Architect under the laws of the State of Minnesota.

FOR TKDA
BY
NAME TOSHIYA ISOMURA
DATE 23 FEB 2026
REG NO 56658

ISSUED FOR	DATE
BID SET	23 FEB 2026

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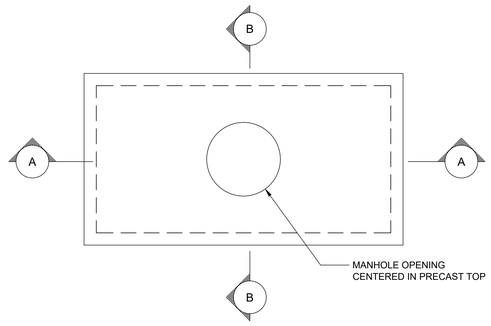
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ELECTRICAL DETAILS

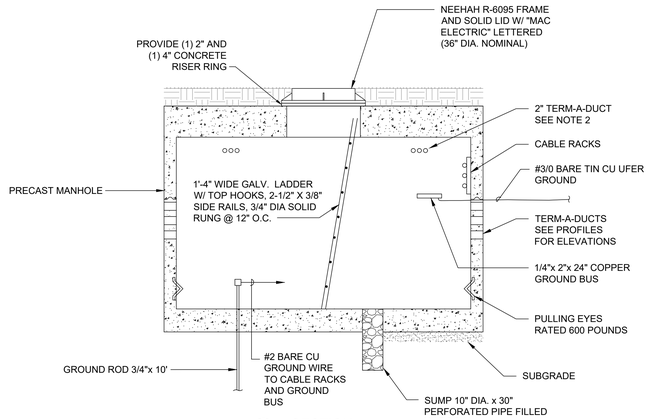
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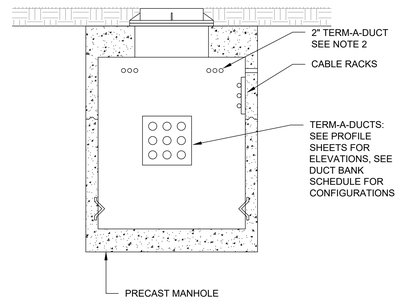
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TOP PLAN

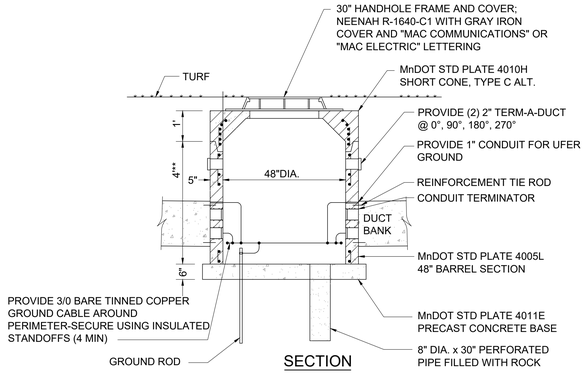


A SECTION



B SECTION

1 ce1.02 MANHOLE DETAILS



SECTION

2 ce1.02 HANDHOLE DETAILS

STRUCTURAL NOTES

A. DESIGN:

1. DESIGN IN ACCORDANCE WITH THE FOLLOWING CODES:
   a. MINNESOTA BUILDING CODE 2020 (INCORPORATING 2018 IBC) AMENDMENTS
   b. A.C.I. 318-14
   c. AISC 360-16
   d. AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAYS, SIGNS, LUMINARIES AND TRAFFIC SIGNALS, 10TH ED.
   e. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 10TH ED.
2. DESIGN LOADS:
   a. SOIL UNIT WEIGHT = 120 PCF
   b. LATERAL SOIL LOAD = 50 PCF (FLUID EQUIVALENT)
   c. SURCHARGE LIVE LOAD DETERMINED AS GREATEST SUBGRADE PRESSURE RESULTING FROM LOADS LISTED UNDER THE APPLICABLE LOADING SCENARIO AS OUTLINED BY AASHTO (DESIGNATED IN 'VAULT SCHEDULE'):
      1. HS-20 TRUCK.
   d. MAX. SOIL COVER DEPTH = 6'-0": FOR DEPTH > 6', CONSULT ENGINEER.
   e. ELECTRICAL LOADS:
      1. CABLE RACK - 2000 POUND POINT LOAD 12" ON CENTER

B. FOUNDATION:

1. FOUNDATIONS SHALL BEAR ON UNDISTURBED, UNFROZEN SUBGRADE, EXCEPT WHERE COMPACTED SUB-GRADE IS SPECIFIED ON THE PLANS OR IN THE SPECIFICATION.
2. ALLOWABLE NET SOIL BEARING PRESSURE = 2500 PSF (ASSUMED). BEARING PRESSURE TO BE CONFIRMED BY GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTION

C. PRECAST PRESTRESSED CONCRETE:

1. PRECAST CONCRETE MEMBERS AND CONNECTIONS SHALL BE DESIGNED AND CONSTRUCTED TO SAFELY SUSTAIN THEIR OWN WEIGHT, THE APPLICABLE LIVE LOADS LISTED IN 'A' ABOVE, AND ALL SUPERIMPOSED LOADS. DESIGN SHALL INCLUDE VERIFICATION OF ALL ELECTRICAL LOADS.
2. DESIGN, FABRICATION, TRANSPORTATION, AND ERECTION SHALL BE PER THE LATEST A.C.I. CODE AND P.C.I. HANDBOOK
   a. THE 28-DAY COMPRESSIVE STRENGTH SHALL BE MINIMUM 5000 PSI ENTRAINED AIR IN THE MIXTURES SHALL BE OPTIONAL WITH THE SUPPLIER, BUT IN NO CASE SHALL ENTRAINED AIR EXCEED 6%. IF AN ADMIXTURE IS USED WHICH ENTRAINS AIR, THE PRECAST MANUFACTURER SHALL TEST THE MIXTURE FREQUENTLY TO ASSURE CONSTANT AIR CONTENT BELOW THE SPECIFIED MAXIMUM. COARSE AGGREGATE SHALL CONTAIN NO IRON OXIDES. ADMIXTURES SHALL CONTAIN NO CHLORIDES.
   b. PRESTRESSING STRAND SHALL BE UNCOATED, SEVEN-WIRE, STRESS-RELIEVED STRAND CONFORMING TO ASTM A416, GRADE 250 OR 270, AS SUITABLE FOR THE APPLICABLE DESIGN. THE STRAND MANUFACTURER SHALL SUBMIT A CERTIFICATION VIA THE CONTRACTOR THAT THE MATERIAL HAS BEEN TESTED IN ACCORDANCE WITH AND MEETS THE REQUIREMENTS OF ASTM AA416. IF THE DESIGNS REQUIRE BOTH GRADES, THE PRECAST MANUFACTURER SHALL SUBMIT CERTIFICATION THAT THE GRADE 270 MATERIAL WAS INSTALLED IN THE APPLICABLE MEMBERS; CERTIFICATE SHALL ENUMERATE THE SPECIFIC MEMBERS.
3. CAST IN ALL OPENINGS SHOWN ON DRAWINGS, EXACT SIZE AND LOCATIONS AS PER APPROVED SHOP DRAWINGS.
4. FURNISH AND PLACE ALL SLEEVES, ANGLES, PLATES, AND INSERTS AS SHOWN ON THE DRAWINGS OR AS SPECIFIED.
5. MANHOLES SHALL BE CONSTRUCTED AS DETAILED AND SET PLUMB WITH A MAXIMUM DEVIATION OF +/- 0.1 FOOT FROM VERTICAL. ALL ROWS OF STEPS SHALL BE SET VERTICAL THROUGH THE HEIGHTS OF THE MANHOLES.
6. ANY ENGINEERING DESIGN PROVIDED BY OTHERS AND SUBMITTED FOR REVIEW SHALL BEAR THE SIGNATURE AND VALID REGISTRATION NUMBER OF A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MINNESOTA.
7. ALL PRECAST WALL PANELS SHALL BE GROUTED FULL LENGTH AND WIDTH AT JOINT WITH FOUNDATION WALL. BACKER ROD AND SEAL OUTSIDE FACE BEFORE PLACING GROUT. ALL STEEL CONNECTION PLATES THAT WILL BE IN CONTACT WITH SOIL AND NOT COVERED BY FLOOR CONCRETE SHALL BE COATED WITH BITUMINOUS PAINT AFTER INSTALLATION.
8. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL. PRECAST FABRICATION SHALL NOT BEGIN UNTIL SHOP DRAWINGS HAVE BEEN APPROVED BY THE ENGINEER.

D. METAL FABRICATIONS:

1. MATERIAL SPECIFICATIONS, UNLESS NOTED OTHERWISE ON PLAN:
   a. ANGLES AND PLATES ASTM A36 (Fy = 36 KSI)
2. CONNECTIONS:
   a. BOLTED CONNECTIONS SHALL BE FASTENED WITH HIGH STRENGTH A-325 OR A307 BOLTS DESIGNED FOR THREADS INCLUDED IN SHEAR PLANES (CONNECTION TYPE N) EXCEPT AS NOTED ON THE PLANS.
   b. WELDING SHALL CONFORM TO THE CURRENT AMERICAN WELDING SOCIETY CODE. WELDING ELECTRODES SHALL BE E70XX, UNLESS NOTED OTHERWISE. ALL WELDING SHALL BE BY AWS CERTIFIED WELDERS. WELDS WHICH ARE FOUND TO BE FAULTY SHALL BE REWORKED BY THE CONTRACTOR AT NO COST.
3. FABRICATIONS:
   a. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL. STEEL FABRICATION SHALL NOT BEGIN UNTIL SHOP DRAWINGS HAVE BEEN APPROVED BY THE ENGINEER.
   b. STEEL SHALL BE FABRICATED IN A LICENSED STEEL FABRICATION SHOP.
   c. STEEL SHALL BE HOT-DIPPED GALVANIZED PER ASTM A123. VENT HOLES SHALL BE PLUGGED.
4. ERECTIONS:
   a. FIELD CUTTING OF STEEL OR OTHER FIELD MODIFICATIONS ARE PROHIBITED WITHOUT WRITTEN APPROVAL FROM THE ENGINEER.
   b. GALVANIZING SHALL BE REPAIRED IN THE FIELD AT THE LOCATION OF ANY FIELD WELDS OR DAMAGED AREAS PER ASTM A780.

GENERAL NOTES

1. PROVIDE "RAM-NECK" BITUMINOUS MATERIAL FOR SEAL BETWEEN ALL MANHOLE JOINTS; MANHOLE FRAME AND ADJUSTING RINGS, ADJUSTING RINGS AND MANHOLE, AND ANY PRECAST MANHOLE JOINTS.
2. IN ADDITION TO THE DUCT BANK ENTRANCES, PROVIDE (6) 2" TERM-A- DUCT ON ALL WALLS.
3. MANHOLE COVERS SHALL BE AIRCRAFT RATED WITH THE LETTERING "MAC ELECTRIC" OR "MAC COMMUNICATIONS".
4. PROVIDE DUCT BANK IDENTIFICATION ABOVE EACH DUCT ENTRANCE WITH ENGRAVED NAMEPLATE ANCHORED TO WALL.
5. THE MANHOLE CASTING SHALL BE ADJUST TO 1/4" TO 3/4" BELOW THE APRON PAVEMENT. CASTING WHICH MEASURE OUTSIDE THIS TOLERANCE SHALL BE RE-ADJUSTED AT NO ADDITIONAL COST TO THE OWNER.

MAC MANHOLES		
MHNUMBER	NORTHING	EASTING
MH1256	538461.82	137924.66
MH1257	539156.44	137951.87
MH1259	538928.54	136774.11
MH1260	538441.30	136871.23

3 ce1.02 MH SCHEDULE

MAC HANDHOLES		
HHNUMBER	NORTHING	EASTING
HH1264	538782.83	137395.10
HH1924	538906.14	137376.60
HH1925	538912.25	137378.53
HH1926	538774.09	137387.13
HH1927	538775.97	137393.62
HH1928	538729.54	137399.47

4 ce1.02 HH SCHEDULE

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612.727.2524

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Architect under the laws of the State of Minnesota.

FOR TKDA
BY
NAME TOSHIYA ISOMURA
DATE 23 FEB 2026
REG NO 56658

ISSUED FOR	DATE
BID SET	23 FEB 2026

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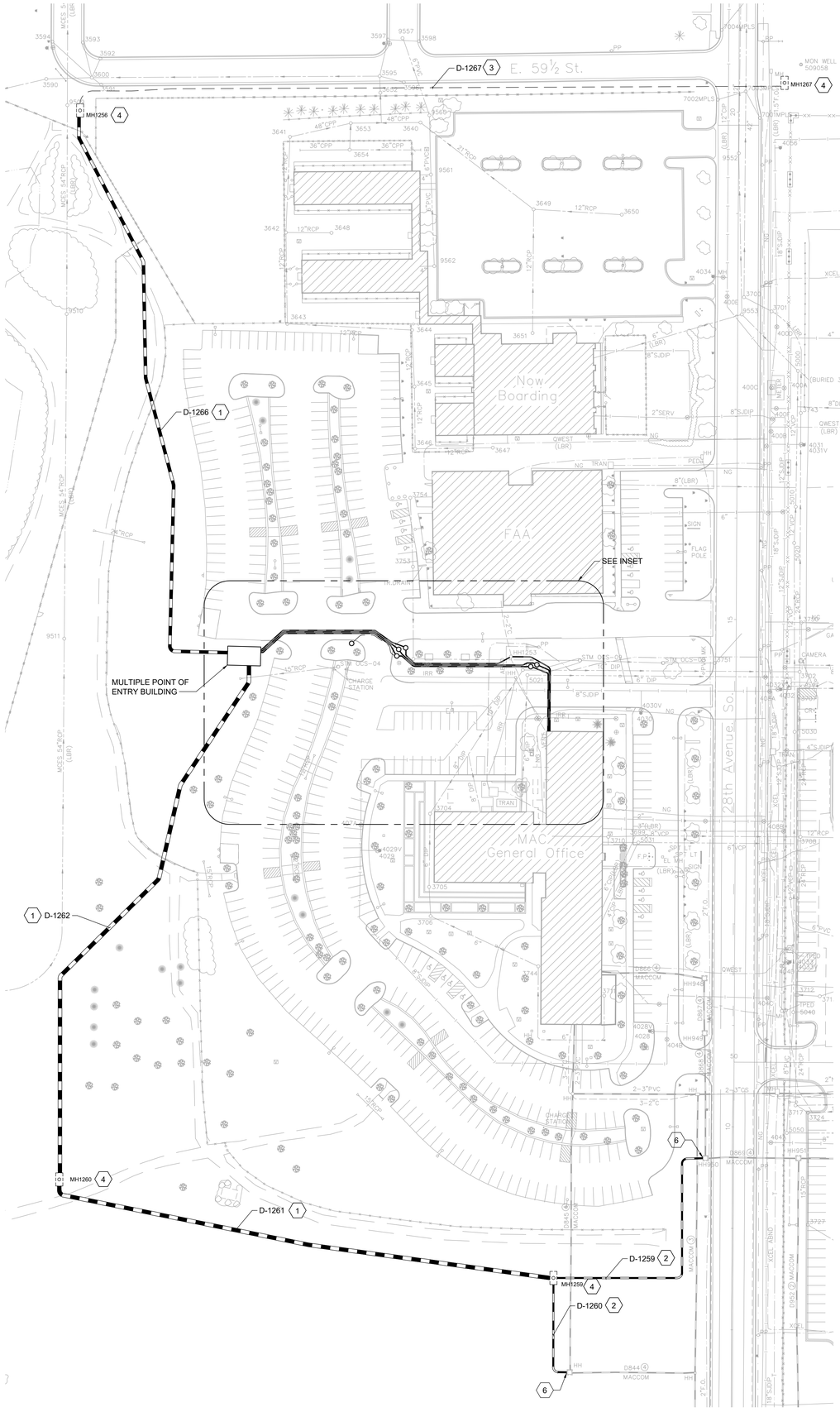
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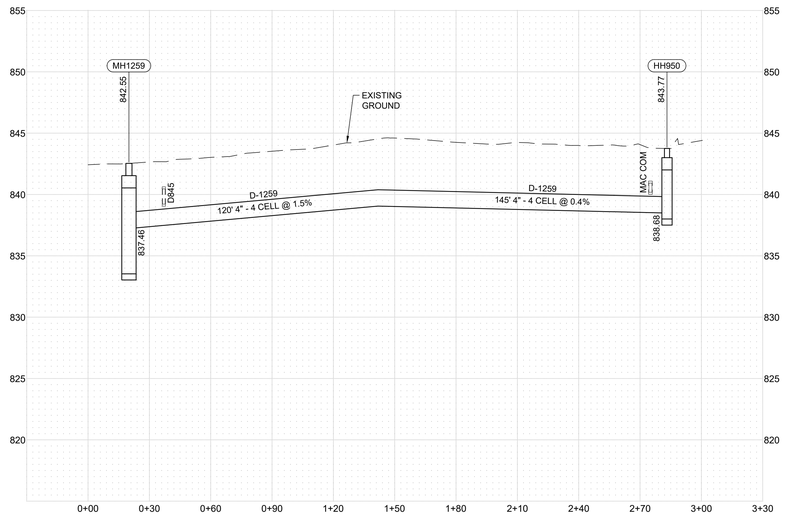
MANHOLE DETAILS

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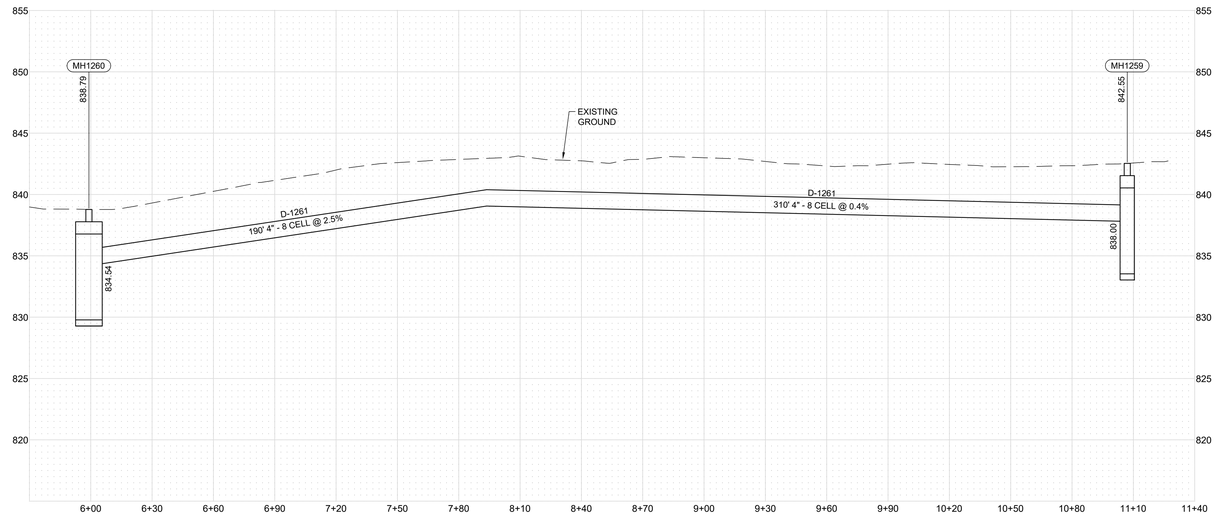
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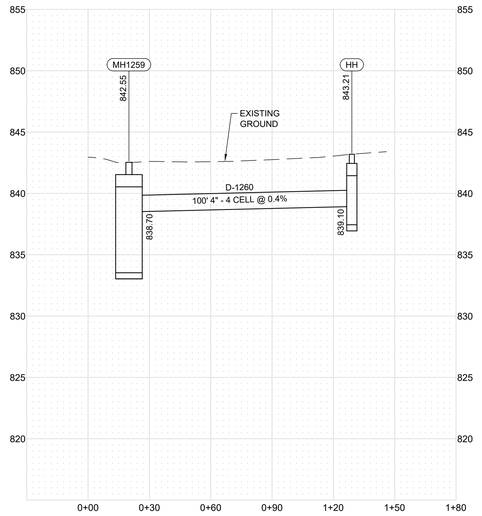

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E. 59½ St.
MH1256 4
MH1267 4
D-1266 1
Now Boarding
FAA
SEE INSET
MULTIPLE POINT OF ENTRY BUILDING
MAC General Office
CHARGE STATION
28th Avenue So.
D-1262 1
MH1260 4
D-1261 1
D-1259 2
MH1259 4
D-1260 2
6
WEATHER STATION
MON. WELL 509058
XCEL 5KV
XCEL (ABAND.)
XCEL
TR.DRAIN
IRR
TRAN
CAMERA
SIGN
FLAG POLE
PEDS
CRC
SPEC EL
F.P.S.
MCES 54"RCP (LBR)
MCES 42"RCP (LBR)
MCES 5'-6"X4'-6"CB (LBR)
MCES 54"RCP
15"RCP
21"RCP
36"CPP
48"CPP
12"RCP
18"SJDIP
8"SJDIP
4"SJDIP
8"DIP
6"DIP
2"SERV
6"VCP
4"VCP
2-3"PVC
2-2"C
3-2"C
STM OCS-04
STM OCS-05
STM OCS-06
STM OCS-07
STM OCS-08
STM OCS-09
STM OCS-10
STM OCS-11
STM OCS-12
STM OCS-13
STM OCS-14
STM OCS-15
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STM OCS-21
STM OCS-22
STM OCS-23
STM



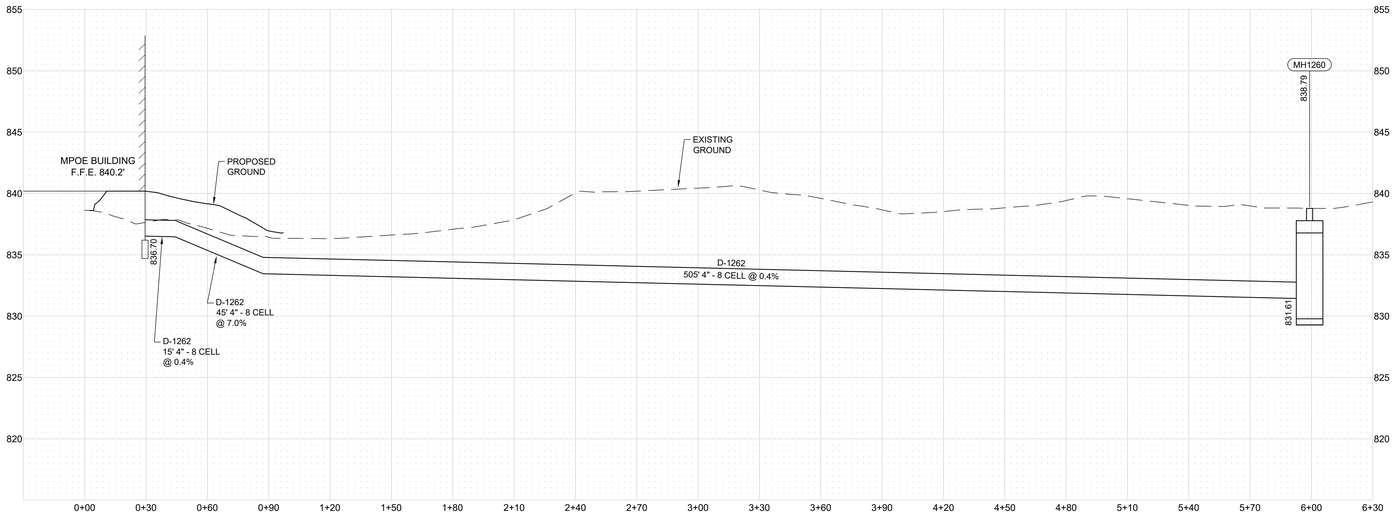
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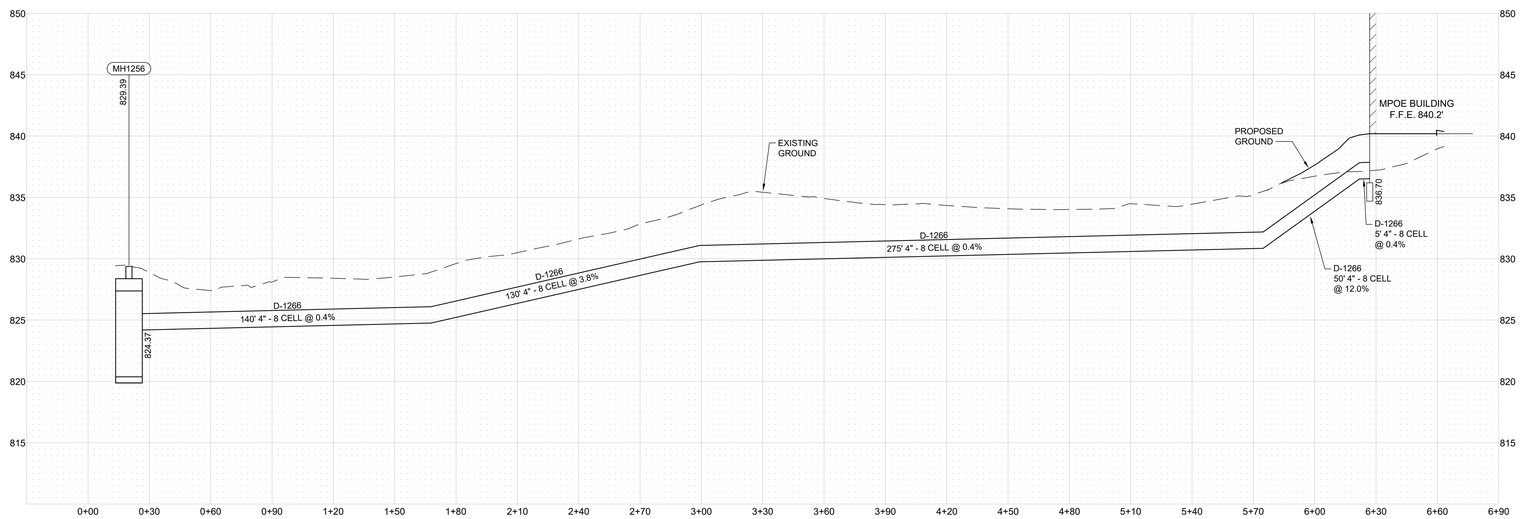
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D-1262



D-1266

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PROJECT

2026 MULTIPLE POINTS OF ENTRY FACILITY

CLIENT

Metropolitan Airports Commission
P.O. Box 11700
Minneapolis-St Paul Intl Airport
Saint Paul, MN 55111
MAC Contract No, 106-2-1072

ARCHITECT
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MSP International Airport
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BY	
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DATE	23 FEB 2026
REG NO	56658

ISSUED FOR	DATE
BID SET	23 FEB 2026

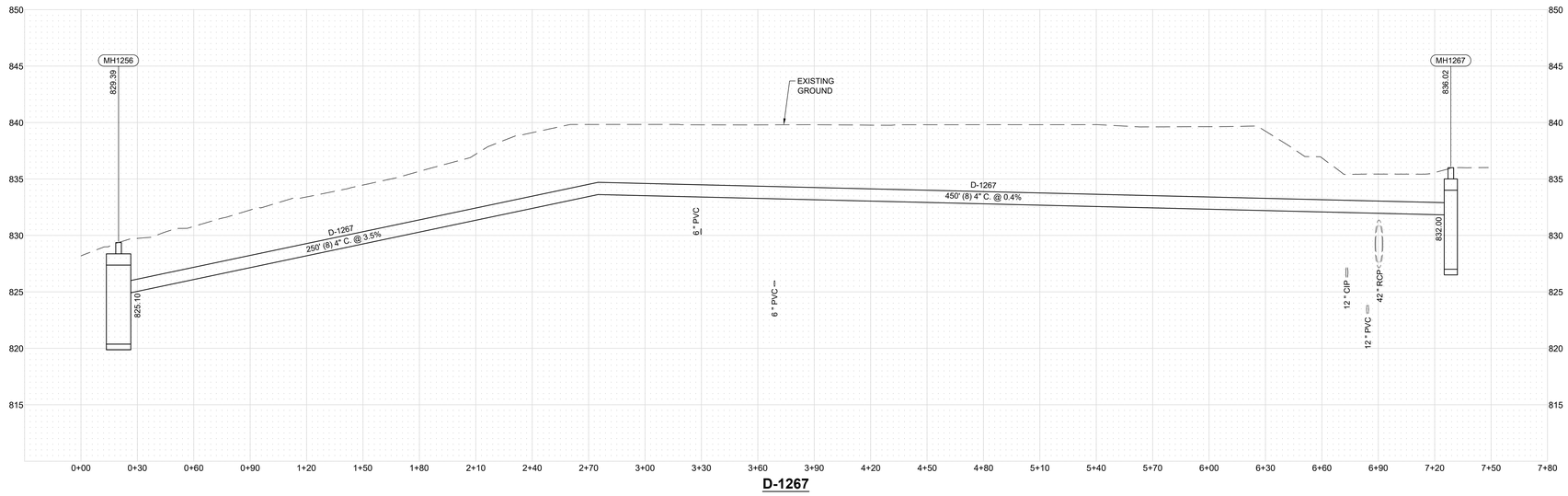
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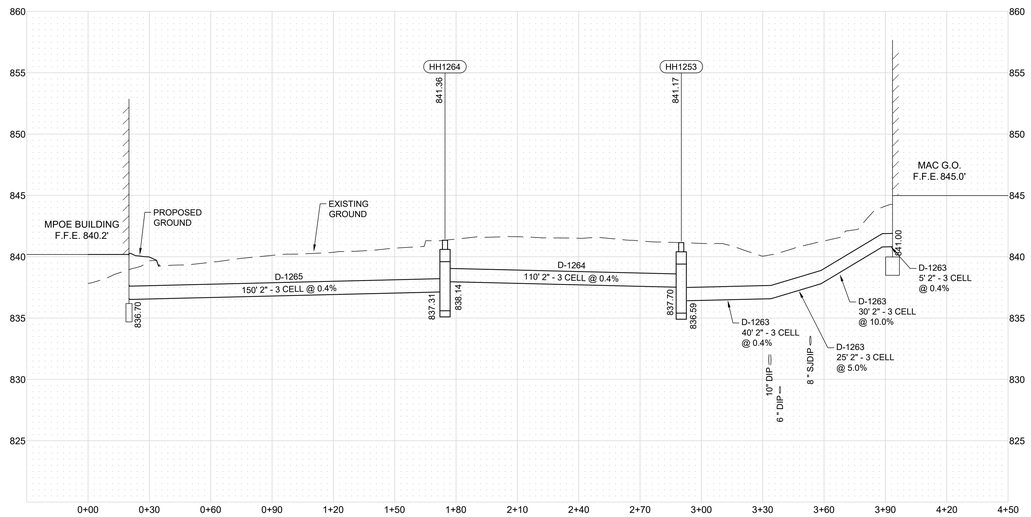
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DUCT BANK PROFILES

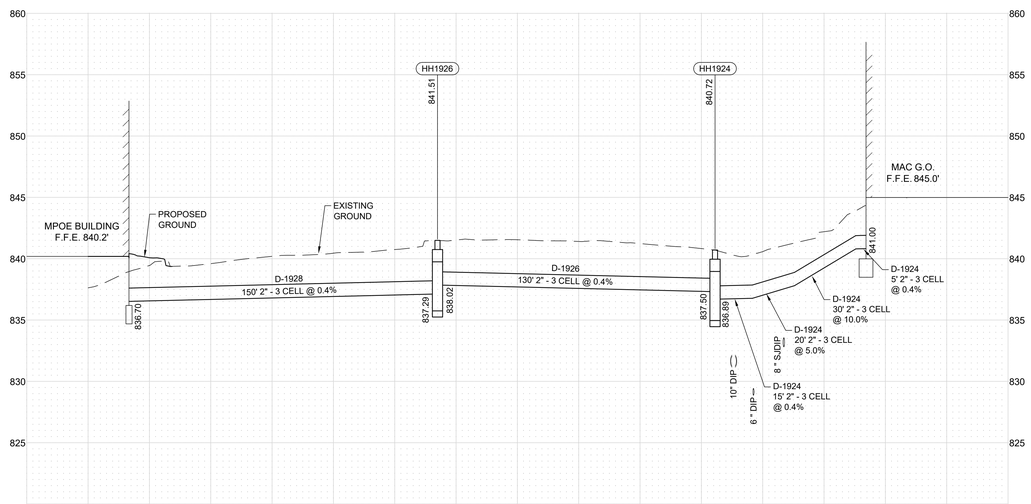
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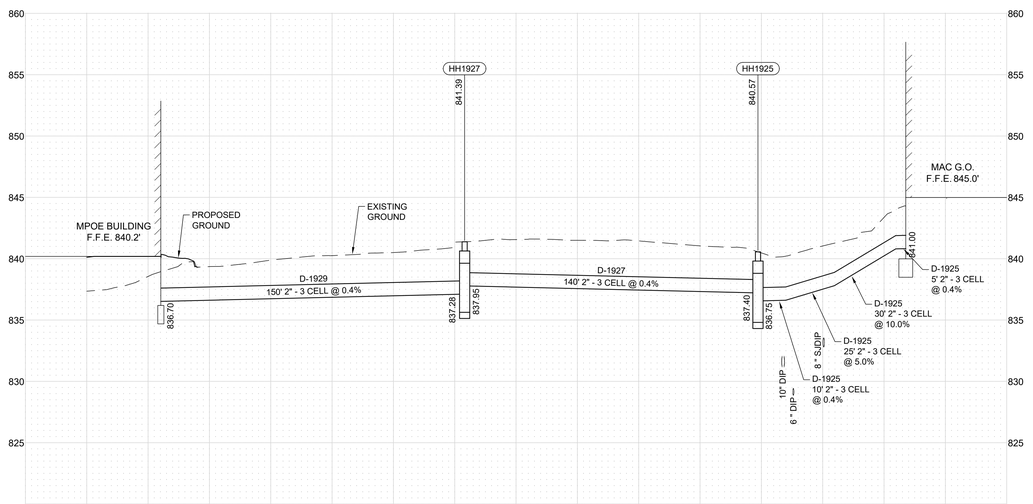
D-1267



D-1265 / D-1264 / D-1263



D-1928 / D-1926 / D-1924



D-1929 / D-1927 / D-1925

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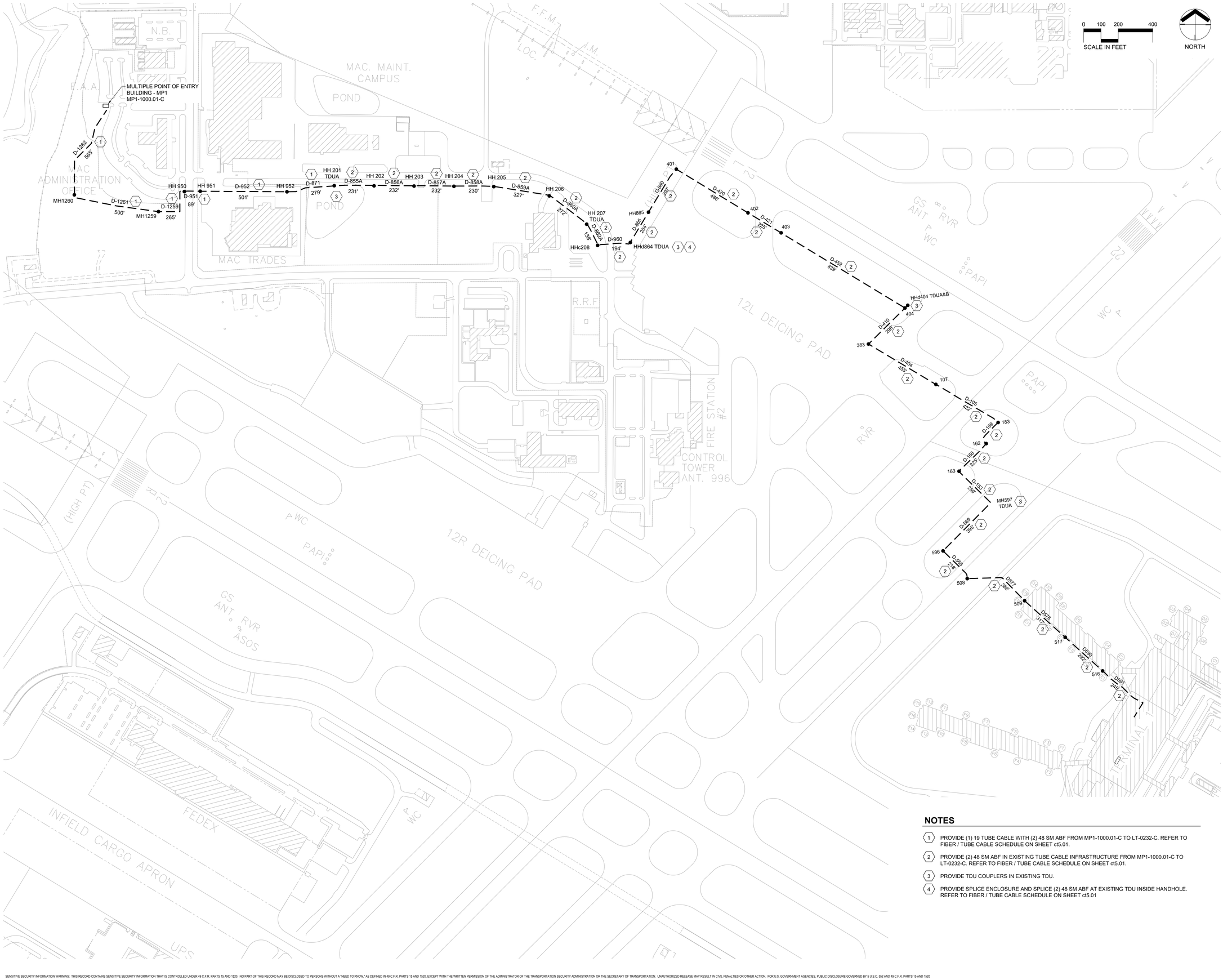
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ALLIANCE

DUCT BANK PROFILES

ce3.02



NOTES

1. PROVIDE (1) 19 TUBE CABLE WITH (2) 48 SM ABF FROM MP1-1000.01-C TO LT-0232-C. REFER TO FIBER / TUBE CABLE SCHEDULE ON SHEET ct5.01.
2. PROVIDE (2) 48 SM ABF IN EXISTING TUBE CABLE INFRASTRUCTURE FROM MP1-1000.01-C TO LT-0232-C. REFER TO FIBER / TUBE CABLE SCHEDULE ON SHEET ct5.01.
3. PROVIDE TDU COUPLERS IN EXISTING TDU.
4. PROVIDE SPLICE ENCLOSURE AND SPLICE (2) 48 SM ABF AT EXISTING TDU INSIDE HANDHOLE. REFER TO FIBER / TUBE CABLE SCHEDULE ON SHEET ct5.01

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Minneapolis, MN 55450
612.727.2524

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Architect under the laws of the State of Minnesota.

FOR **TKDA**
BY
NAME **TOSHIYA ISOMURA**
DATE **23 FEB 2026**
REG NO **56658**

ISSUED FOR	DATE
BID SET	**23 FEB 2026**

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COMMISSION NO **21580**

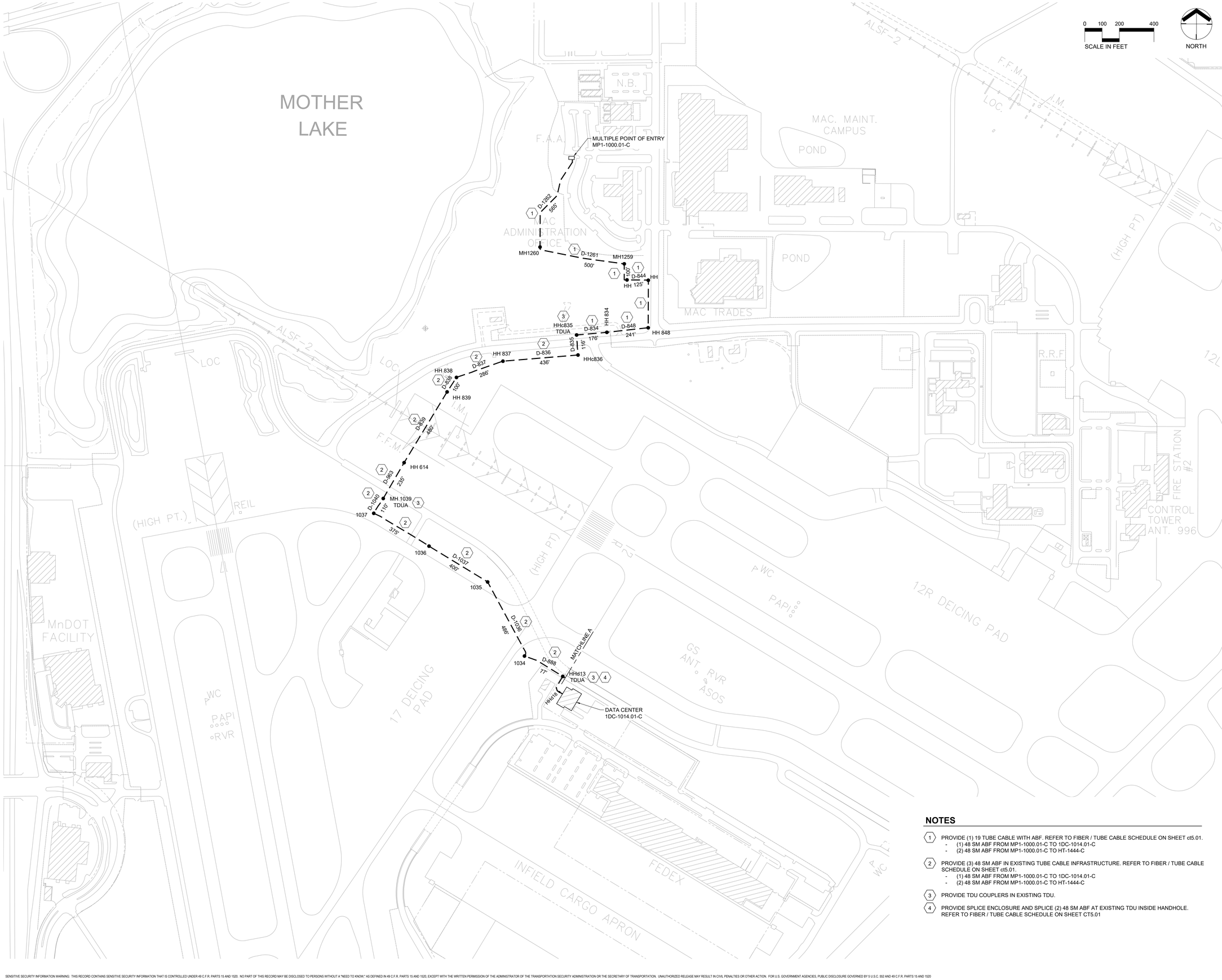
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FIBER PLAN - AIRFIELD

ct4.01

Plot: 02/19/2026
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NOTES

1. PROVIDE (1) 19 TUBE CABLE WITH ABF. REFER TO FIBER / TUBE CABLE SCHEDULE ON SHEET ct5.01.
   - (1) 48 SM ABF FROM MP1-1000.01-C TO 1DC-1014.01-C
   - (2) 48 SM ABF FROM MP1-1000.01-C TO HT-1444-C
2. PROVIDE (3) 48 SM ABF IN EXISTING TUBE CABLE INFRASTRUCTURE. REFER TO FIBER / TUBE CABLE SCHEDULE ON SHEET ct5.01.
   - (1) 48 SM ABF FROM MP1-1000.01-C TO 1DC-1014.01-C
   - (2) 48 SM ABF FROM MP1-1000.01-C TO HT-1444-C
3. PROVIDE TDU COUPLERS IN EXISTING TDU.
4. PROVIDE SPLICE ENCLOSURE AND SPLICE (2) 48 SM ABF AT EXISTING TDU INSIDE HANDHOLE. REFER TO FIBER / TUBE CABLE SCHEDULE ON SHEET CT5.01

PROJECT

2026 MULTIPLE POINTS OF ENTRY FACILITY

CLIENT

Metropolitan Airports Commission
P.O. Box 11700
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MAC Contract No, 106-2-1072

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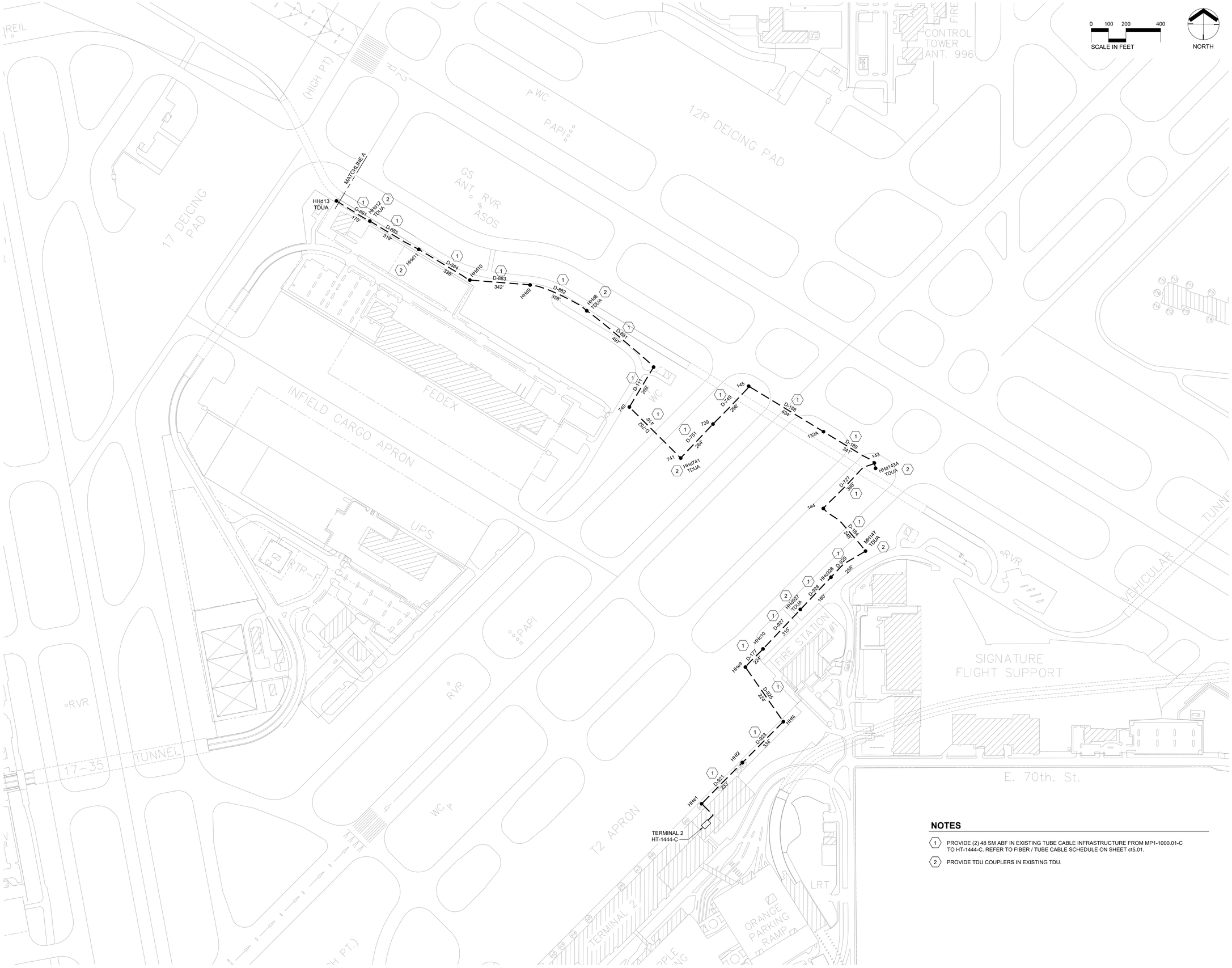
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FIBER PLAN - AIRFIELD

ct4.02

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Plot: 02/19/2026
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NOTES

1. PROVIDE (2) 48 SM ABF IN EXISTING TUBE CABLE INFRASTRUCTURE FROM MP1-1000.01-C TO HT-1444-C. REFER TO FIBER / TUBE CABLE SCHEDULE ON SHEET ct5.01.
2. PROVIDE TDU COUPLERS IN EXISTING TDU.

PROJECT

2026 MULTIPLE POINTS OF ENTRY FACILITY

CLIENT

Metropolitan Airports Commission
P.O. Box 11700
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DATE 23 FEB 2026
REG NO 56658

ISSUED FOR	DATE
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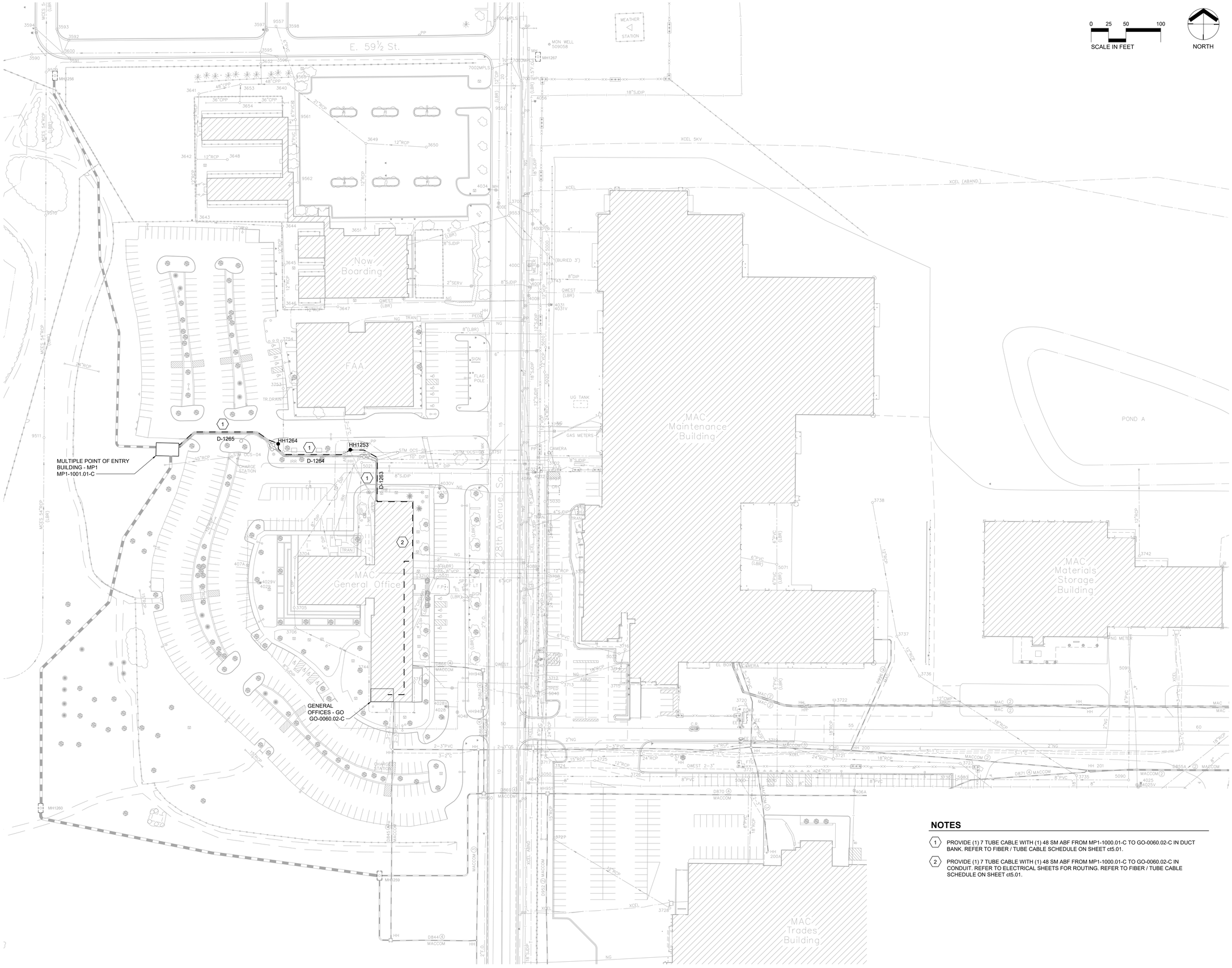
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FIBER PLAN - AIRFIELD

ct4.03

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NOTES

1. PROVIDE (1) 7 TUBE CABLE WITH (1) 48 SM ABF FROM MP1-1000.01-C TO GO-0060.02-C IN DUCT BANK. REFER TO FIBER / TUBE CABLE SCHEDULE ON SHEET ct5.01.
2. PROVIDE (1) 7 TUBE CABLE WITH (1) 48 SM ABF FROM MP1-1000.01-C TO GO-0060.02-C IN CONDUIT. REFER TO ELECTRICAL SHEETS FOR ROUTING. REFER TO FIBER / TUBE CABLE SCHEDULE ON SHEET ct5.01.

PROJECT

2026 MULTIPLE POINTS OF ENTRY FACILITY

CLIENT

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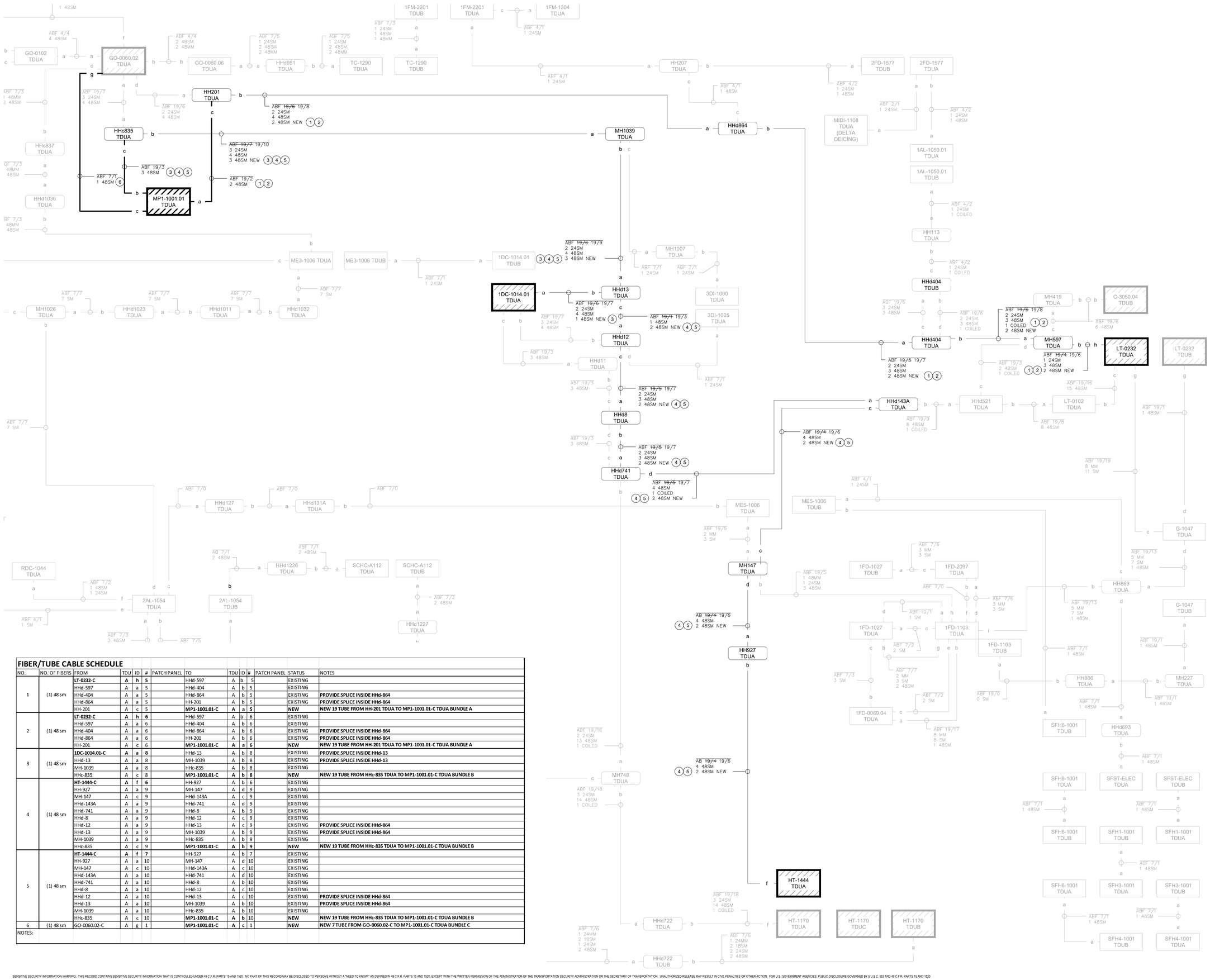
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FIBER PLAN - SITE

ct4.04

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FIBER/TUBE CABLE SCHEDULE

NO.	NO. OF FIBERS	FROM	TDU	ID	#	PATCH PANEL	TO	TDU	ID	#	PATCH PANEL	STATUS	NOTES
1	(1) 48 sm	**LT-0232-C**	**A**	**h**	**5**		HHd-597	A	b	5		EXISTING	
		HHd-597	A	a	5		HHd-404	A	b	5		EXISTING	
		HHd-404	A	a	5		HHd-864	A	b	5		EXISTING	**PROVIDE SPLICE INSIDE HHd-864**
		HHd-864	A	a	5		HH-201	A	b	5		EXISTING	**PROVIDE SPLICE INSIDE HHd-864**
		HH-201	A	c	5		**MP1-1001.01-C**	**A**	**a**	**5**		**NEW**	**NEW 19 TUBE FROM HH-201 TDUA TO MP1-1001.01-C TDUA BUNDLE A**
2	(1) 48 sm	**LT-0232-C**	**A**	**h**	**6**		HHd-597	A	b	6		EXISTING	
		HHd-597	A	a	6		HHd-404	A	b	6		EXISTING	
		HHd-404	A	a	6		HHd-864	A	b	6		EXISTING	**PROVIDE SPLICE INSIDE HHd-864**
		HHd-864	A	a	6		HH-201	A	b	6		EXISTING	**PROVIDE SPLICE INSIDE HHd-864**
		HH-201	A	c	6		**MP1-1001.01-C**	**A**	**a**	**6**		**NEW**	**NEW 19 TUBE FROM HH-201 TDUA TO MP1-1001.01-C TDUA BUNDLE A**
3	(1) 48 sm	**1DC-1014.01-C**	**A**	**a**	**8**		HHd-13	A	b	8		EXISTING	**PROVIDE SPLICE INSIDE HHd-13**
		HHd-13	A	a	8		MH-1039	A	b	8		EXISTING	**PROVIDE SPLICE INSIDE HHd-13**
		MH-1039	A	a	8		HHc-835	A	b	8		EXISTING	
		HHc-835	A	c	8		**MP1-1001.01-C**	**A**	**b**	**8**		**NEW**	**NEW 19 TUBE FROM HHc-835 TDUA TO MP1-1001.01-C TDUA BUNDLE B**
4	(1) 48 sm	**HT-1444-C**	**A**	**f**	**6**		HH-927	A	b	6		EXISTING	
		HH-927	A	a	9		MH-147	A	d	9		EXISTING	
		MH-147	A	c	9		HHd-143A	A	c	9		EXISTING	
		HHd-143A	A	a	9		HHd-741	A	d	9		EXISTING	
		HHd-741	A	a	9		HHd-8	A	b	9		EXISTING	
		HHd-8	A	a	9		HHd-12	A	c	9		EXISTING	
		HHd-12	A	a	9		HHd-13	A	c	9		EXISTING	**PROVIDE SPLICE INSIDE HHd-864**
		HHd-13	A	a	9		MH-1039	A	b	9		EXISTING	**PROVIDE SPLICE INSIDE HHd-864**
		MH-1039	A	a	9		HHc-835	A	b	9		EXISTING	
		HHc-835	A	c	9		**MP1-1001.01-C**	**A**	**b**	**9**		**NEW**	**NEW 19 TUBE FROM HHc-835 TDUA TO MP1-1001.01-C TDUA BUNDLE B**
5	(1) 48 sm	**HT-1444-C**	**A**	**f**	**7**		HH-927	A	b	7		EXISTING	
		HH-927	A	a	10		MH-147	A	d	10		EXISTING	
		MH-147	A	c	10		HHd-143A	A	c	10		EXISTING	
		HHd-143A	A	a	10		HHd-741	A	d	10		EXISTING	
		HHd-741	A	a	10		HHd-8	A	b	10		EXISTING	
		HHd-8	A	a	10		HHd-12	A	c	10		EXISTING	
		HHd-12	A	a	10		HHd-13	A	c	10		EXISTING	**PROVIDE SPLICE INSIDE HHd-864**
		HHd-13	A	a	10		MH-1039	A	b	10		EXISTING	**PROVIDE SPLICE INSIDE HHd-864**
		MH-1039	A	a	10		HHc-835	A	b	10		EXISTING	
		HHc-835	A	c	10		**MP1-1001.01-C**	**A**	**b**	**10**		**NEW**	**NEW 19 TUBE FROM HHc-835 TDUA TO MP1-1001.01-C TDUA BUNDLE B**
6	(1) 48 sm	GO-0060.02-C	A	g	1		**MP1-1001.01-C**	**A**	**c**	**1**		**NEW**	**NEW 7 TUBE FROM GO-0060.02-C TO MP1-1001.01-C TDUA BUNDLE C**
NOTES:													

PROJECT

2026 MULTIPLE POINTS OF ENTRY FACILITY

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FIBER ONE LINE DIAGRAM

ct5.01

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