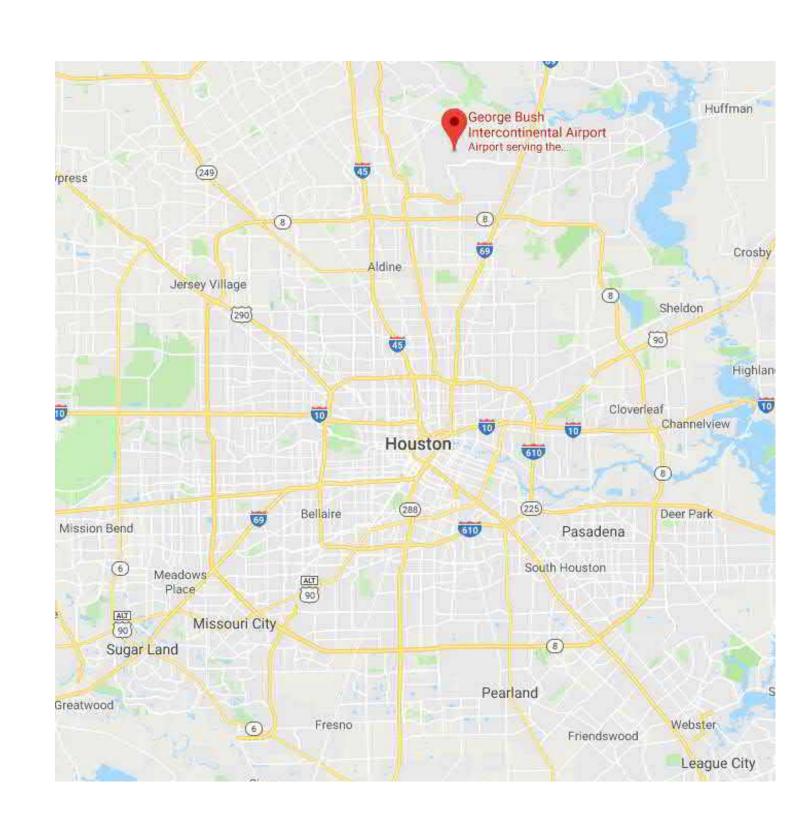


# 794A IAH TERMINAL A/B GARAGE SIGNAGE AND WAYFINDING GEORGE BUSH INTERCONTINENTAL AIRPORT (IAH)

ISSUED FOR PERMIT SEPTEMBER 14, 2020



AREA MAP N.T.S

# PROJECT TEAM

OWNER
HOUSTON AIRPORT
SYSTEM

16930 FRONTAGE RD. HOUSTON, TX 77032 281.233.1049 (P) WAYFINDING DESIGNER
LABOZAN
ASSOCIATES

949 LASALLE ST. SUPERIOR, CO 80027 303.494.7849 (P) ARCHITECT

JACOBS ENGINEERING

GROUP

5985 ROGERDALE RD. HOUSTON, TX 77072 281.721.8400 (P)



VICINITY MAP N.T.S

Jacobs

5985 Rogerdale Road

REVISIONS

Mark Date Description
0 09/14/2020 ISSUED FOR PERMIT

OWNER:

HOUSTON
AIRPORTS

DIRECTOR
HOUSTON AIRPORT SYSTEM



SAL 25538 LEGY

IAH TERMINAL A/B GARAGE SIGNAGE AND WAYFINDING

AIP NO:

CIP NO:

HAS NO: 749A KEY PLAN:

Jacobs Project No.: WHX
Drawing Title:

GENERAL COVER SHEET

 Date:
 09/14/2020

 Designed By:
 L.A.
 Drawing No.:

 Drawn By:
 E.A.
 G-000

 Checked By:
 A.B.
 G-000

/14/2020 6:41:18 PM

5985 Rogerdale Road Houston, TX 77072 (281) 721-8400 www.iacobs.com TBPE Firm #2966

Description 09/14/2020 ISSUED FOR PERMIT

REVISIONS

HOUSTON **AIRPORTS** APPROVED BY

HOUSTON AIRPORT SYSTEM

CONSULTANT:





# ШО $\triangleleft$ 9 $\Box$ $\triangleleft$ A P P ZZ $\mathbf{C}$

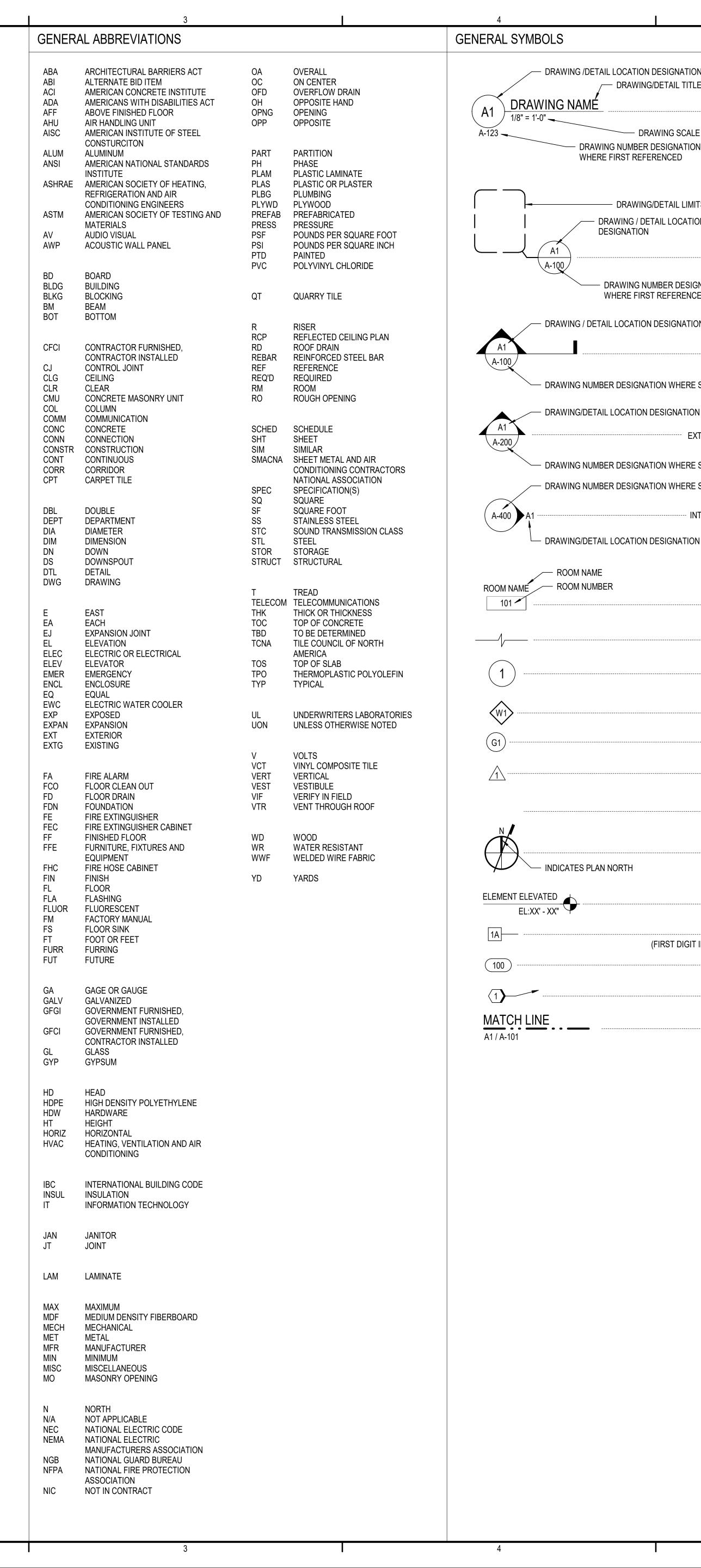
HAS NO: 749A KEY PLAN:

Jacobs Project No.:

GENERAL DRAWING INDEX

WHXK7105

09/14/2020 Designed By: L.A. Drawing No.: Drawn By: E.A. G-001



**GENERAL NOTES** 

DRAWING /DETAIL LOCATION DESIGNATION

- DRAWING NUMBER DESIGNATION

WHERE FIRST REFERENCED

DESIGNATION

DRAWING / DETAIL LOCATION DESIGNATION

- DRAWING NUMBER DESIGNATION WHERE SHOWN

- DRAWING NUMBER DESIGNATION WHERE SHOWN

DRAWING NUMBER DESIGNATION WHERE SHOWN

**ROOM NAME** 

— ROOM NUMBER

INDICATES PLAN NORTH

DRAWING/DETAIL LOCATION DESIGNATION

- DRAWING/DETAIL TITLE

DRAWING SCALE

DRAWING/DETAIL LIMITS

DRAWING NUMBER DESIGNATION

WHERE FIRST REFERENCED

DRAWING / DETAIL LOCATION

- DRAWING DESIGNATION

DETAIL DESIGNATION

SECTION / DETAIL DESIGNATION

EXTERIOR ELEVATION DESIGNATION

INTERIOR ELEVATION DESIGNATION

**ROOM TAG** 

BREAK LINE

**GLASS TAG** 

REVISION CLOUD

- NORTH ARROW

**ELEVATION TARGET** 

PARTITION TYPE TAG

- DOOR TAG

- KEYED NOTE

MATCH LINE

(FIRST DIGIT INDICATES HOURLY FIRE RATING)

- COLUMN REFERENCE

· WINDOW / LOUVER TYPE TAG

--REVISION DESIGNATION TAG

1. THIS DRAWING HAS GENERAL INFORMATION, NOT ALL MAY APPLY TO THIS PROJECT.

2. THE "OWNER" IS THE HOUSTON AIRPORT SYSTEM. THE "ARCHITECT / ENGINEER" IS JACOBS.

THE TERMS "CONSTRUCTION CONTRACTOR", "GENERAL CONTRACTOR" AND "CONTRACTOR" SHALL BE UNDERSTOOD TO BE THE SAME UNLESS SPECIFICALLY NOTED OTHERWISE.

GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL DEBRIS AND CONSTRUCTION MATERIAL FROM THE SITE. CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR PROPERLY CLEANING ALL AREAS PRIOR TO FINAL ACCEPTANCE BY THE OWNER.

FOR ALL PHASES OF WORK THE GENERAL CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT DUST FROM RISING AND PROTECT BASE BUILDING HVAC SYSTEM.

ENSURE THAT ANY AREA, BUILDING MATERIAL OR ASSEMBLY WITHIN THE AREA OF WORK IS THOROUGHLY CLEANED AND DRY BEFORE BEING COVERED OR CONCEALED BY CONSTRUCTION. ANY MOLD, MILDEW OR OTHER MOISTURE CONDITION DEVELOPED WITHIN THE SCOPE OF WORK OF THIS CONTRACT (DEMOLITION OR NEW CONSTRUCTION) SHALL BE CORRECTED AND OR MITIGATED BY THE CONTRACTOR.

CONTRACTOR TO PLAN AND PROVIDE ALL REQUIRED SAFE GUARDS FOR THE PROTECTION OF EXISTING BASE BUILDING EMPLOYEES AND BUILDING USERS FROM CONSTRUCTION HAZARDS DURING ALL PHASES OF CONSTRUCTION.

CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR AND/OR THE REPLACEMENT OF ANY ITEMS DAMAGED DURING DEMOLITION, CONSTRUCTION, OR CLEAN-UP. CONSTRUCTION PERSONNEL SHALL BE CONFINED TO THE LIMITS OF THE CONSTRUCTION AREA. ALL OSHA REGULATIONS FOR CONSTRUCTION AREAS SHALL BE STRICTLY FOLLOWED.

CONTRACTOR TO PROVIDE ALL NECESSARY PASSENGER SAFETY SIGNAGE AS REQUIRED BY HAS DURING THE ENTIRE CONSTRUCTION WORK OF THE PROJECT.

10. CONTRACTOR TO PROVIDE A SAFETY PLAN PRIOR TO START OF CONSTRUCTION TO CLEARLY DELINEATE AREAS FOR CONSTRUCTION, SAFETY BARRIERS, EGRESS, EXITS, CONSTRUCTION TRAFFIC DURING THE VARIOUS PHASES AND WHEN CONDITIONS CHANGE.

11. CONTRACTOR TO COMPLY WITH ALL RULES AND REGULATIONS OF OWNER REGARDING SITE ACCESS, DELIVERIES, HANDLING OF MATERIALS, ACCUMULATION AND DISPOSAL OF DEBRIS, ETC.

12. ALL WORK PERFORMED SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE CODES AND REGULATIONS. NOTHING IN THE DRAWINGS OR RELATED DOCUMENTS IS TO BE CONSTRUED AS REQUIRING OR PERMITTING WORK THAT IS CONTRARY TO CODE REQUIREMENTS.

13. ANY DAMAGE TO EXISTING STRUCTURE DURING THE CONSTRUCTION OF THE NEW WORK SHALL BE REPAIRED TO EQUIVALENT OR BETTER THAN ORIGINAL CONDITION AT CONTRACTOR'S EXPENSE.

14. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT / ENGINEER OF ANY UNEXPECTED OR UNKNOWN FIELD CONDITIONS, ERRORS, OMISSIONS, OR DISCREPANCIES IN THE DRAWINGS. SPECIFICATIONS, OR CONTRACT DOCUMENTS PRIOR TO PROCEEDING WITH THE WORK OR SHOP FABRICATIONS.

15. CONTRACTOR TO OBTAIN WRITTEN APPROVAL FROM OWNER AND ARCHITECT / ENGINEER PRIOR TO ANY CHANGES OR DEVIATION FROM CONTRACT DOCUMENTS.

16. CONTRACTOR SHALL COORDINATE THE WORK AMONG ALL DESIGN DISCIPLINES AND CONSTRUCTION TRADES.

17. DETAILS FOR TYPICAL CONDITIONS ARE GENERALLY REFERRED TO ON THE DETAILS SHEET(S) WHERE THEY FIRST OCCUR AND ARE TYPICAL FOR LIKE CONDITIONS THROUGHOUT, UNLESS OTHERWISE NOTED.

18. "TYPICAL" MEANS TYPICAL FOR ALL SIMILAR CONDITIONS, UNLESS OTHERWISE NOTED.

19. "SIMILAR" MEANS REFERENCED ITEM IS SIMILAR IN NATURE TO ACTUAL DETAIL (I.E. OPPOSITE-HAND, REVERSE DIRECTION, ETC).

**Jacobs** 5985 Rogerdale Road

Houston, TX 77072 (281) 721-8400 www.jacobs.com TBPE Firm #2966

REVISIONS

09/14/2020 ISSUED FOR PERMIT

HOUSTON **AIRPORTS** APPROVED BY:

DIRECTOR HOUSTON AIRPORT SYSTEM

CONSULTANT:



SEAL:



# 3 GARAGE VYFINDING

A/B WA ERMINAL GE AND

IAH SIG AIP NO:

HAS NO: 749A

CIP NO:

KEY PLAN:

APPLICABLE CODES

SCOPE OF WORK

JURISDICTION: APPLICABLE CODES: CITY OF HOUSTON

2012 INTERNATIONAL BUILDING CODE W/ CITY OF HOUSTON AMENDMENTS

1. THE WORK TO BE DONE SHALL BE ACCORDING TO THESE DRAWINGS.

GEORGE BUSH INTERCONTINENTAL (IAH) AIRPORT.

BUSH INTERCONTINENTAL (IAH) AIRPORT.

INTENT BY LABOZAN ASSOCIATES.

2. THE WORK INCLUDES IDENTIFICATION OF ALL EXISTING SIGNAGE IN TERMINAL A/B GARAGE AT

3. THE WORK INCLUDES DEMOLITION OF EXISTING SIGNAGE IN TERMINAL A/B GARAGE AT GEORGE

4. THE WORK INCLUDES DOCUMENTATION OF THE NEW SIGNAGE USING THE APPROVED DESIGN

THE WORK REQUIRES CAREFUL AND THOROUGH COORDINATION WITH OWNER ITEMS.

2012 UNIFORM MECHANICAL CODE W/ CITY OF HOUSTON AMENDMENTS 2014 NATIONAL ELECTRICAL CODE 2012 UNIFORM PLUMBING CODE W/ CITY OF HOUSTON AMENDMENTS

2015 INTERNATIONAL ENERGY CONSERVATION CODE 2012 INTERNATIONAL FIRE CODE

2012 TEXAS ACCESSIBILITY STANDARDS 2010 AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES

OCCUPANCY GROUP: CONSTRUCTION TYPE:

BUILDING / PROJECT ADDRESS:

GEORGE BUSH INTERCONTINENTAL AIRPORT TERMINAL A/B GARAGE

**GROUP S-2** 

3870 NORTH TERMINAL ROAD HOUSTON, TX 77032

Jacobs Project No.: Drawing Title: **GENERAL** 

> ABBREVIATIONS, SYMBOLS, AND NOTES 09/14/2020

WHXK7105

Designed By: L.A. Drawing No.: Drawn By: E.A.

G-002 Checked By: A.B.

#### 1.2 SUMMARY

A. SECTION INCLUDES: 1. DEMOLITION AND REMOVAL OF SELECTED PORTIONS OF BUILDING OR STRUCTURE.

2. DEMOLITION AND REMOVAL OF SELECTED SITE ELEMENTS. 3. SALVAGE OF EXISTING ITEMS TO BE REUSED OR RECYCLED.

#### 1.3 DEFINITIONS

A. REMOVE: DETACH ITEMS FROM EXISTING CONSTRUCTION AND LEGALLY DISPOSE OF THEM OFF-SITE UNLESS

#### INDICATED TO BE REMOVED AND SALVAGED OR REMOVED AND REINSTALLED. B. REMOVE AND SALVAGE: CAREFULLY DETACH FROM EXISTING CONSTRUCTION, IN A MANNER TO PREVENT

DAMAGE, AND DELIVER TO OWNER READY FOR REUSE. C. REMOVE AND REINSTALL: DETACH ITEMS FROM EXISTING CONSTRUCTION, PREPARE FOR REUSE, AND

REINSTALL WHERE INDICATED. D. EXISTING TO REMAIN: EXISTING ITEMS OF CONSTRUCTION THAT ARE NOT TO BE PERMANENTLY REMOVED AND THAT ARE NOT OTHERWISE INDICATED TO BE REMOVED. REMOVED AND SALVAGED. OR REMOVED AND

#### 1.4 MATERIALS OWNERSHIP

REINSTALLED.

A. UNLESS OTHERWISE INDICATED, DEMOLITION WASTE BECOMES PROPERTY OF CONTRACTOR. B. HISTORIC ITEMS. RELICS. ANTIQUES. AND SIMILAR OBJECTS INCLUDING. BUT NOT LIMITED TO. CORNERSTONES AND THEIR CONTENTS, COMMEMORATIVE PLAQUES AND TABLETS, AND OTHER ITEMS OF INTEREST OR VALUE TO OWNER THAT MAY BE UNCOVERED DURING DEMOLITION REMAIN THE PROPERTY OF

OWNER. 1. CAREFULLY SALVAGE IN A MANNER TO PREVENT DAMAGE AND PROMPTLY RETURN TO OWNER.

#### 1.5 PREINSTALLATION MEETINGS

A. PRE-DEMOLITION CONFERENCE: 1. INSPECT AND DISCUSS CONDITION OF CONSTRUCTION TO BE SELECTIVELY DEMOLISHED.

2. REVIEW STRUCTURAL LOAD LIMITATIONS OF EXISTING STRUCTURE 3. REVIEW AND FINALIZE SELECTIVE DEMOLITION SCHEDULE AND VERIFY AVAILABILITY OF MATERIALS, DEMOLITION PERSONNEL, EQUIPMENT, AND FACILITIES NEEDED TO MAKE PROGRESS AND AVOID

4. REVIEW REQUIREMENTS OF WORK PERFORMED BY OTHER TRADES THAT RELY ON SUBSTRATES

EXPOSED BY SELECTIVE DEMOLITION OPERATIONS. 5. REVIEW AREAS WHERE EXISTING CONSTRUCTION IS TO REMAIN AND REQUIRES PROTECTION.

#### 1.6 INFORMATIONAL SUBMITTALS

A. PROPOSED PROTECTION MEASURES: SUBMIT REPORT, INCLUDING DRAWINGS, THAT INDICATES THE MEASURES PROPOSED FOR PROTECTING INDIVIDUALS AND PROPERTY, FOR ENVIRONMENTAL PROTECTION FOR DUST CONTROL AND , FOR NOISE CONTROL. INDICATE PROPOSED LOCATIONS AND CONSTRUCTION OF BARRIERS.

B. SCHEDULE OF SELECTIVE DEMOLITION ACTIVITIES: INDICATE THE FOLLOWING: 1. DETAILED SEQUENCE OF SELECTIVE DEMOLITION AND REMOVAL WORK, WITH STARTING AND ENDING

DATES FOR EACH ACTIVITY. ENSURE OWNER'S AND OTHER TENANTS' ON-SITE OPERATIONS ARE UNINTERRUPTED.

3. COORDINATION FOR SHUTOFF, CAPPING, AND CONTINUATION OF UTILITY SERVICES. 4. USE OF ELEVATOR AND STAIRS. 5. COORDINATION OF OWNER'S CONTINUING OCCUPANCY OF PORTIONS OF EXISTING BUILDING AND OF

2. INTERRUPTION OF UTILITY SERVICES. INDICATE HOW LONG UTILITY SERVICES WILL BE INTERRUPTED.

OWNER'S PARTIAL OCCUPANCY OF COMPLETED WORK. C. PREDEMOLITION PHOTOGRAPHS: SHOW EXISTING CONDITIONS OF ADJOINING CONSTRUCTION, INCLUDING FINISH SURFACES, THAT MIGHT BE MISCONSTRUED AS DAMAGE CAUSED BY DEMOLITION OPERATIONS.

D. WARRANTIES: DOCUMENTATION INDICATED THAT EXISTING WARRANTIES ARE STILL IN EFFECT AFTER COMPLETION OF SELECTIVE DEMOLITION.

#### 1.7 CLOSEOUT SUBMITTALS

SUBMIT BEFORE WORK BEGINS.

A. INVENTORY: SUBMIT A LIST OF ITEMS THAT HAVE BEEN REMOVED AND SALVAGED.

#### 1.8 FIELD CONDITIONS

A. OWNER WILL OCCUPY PORTIONS OF BUILDING IMMEDIATELY ADJACENT TO SELECTIVE DEMOLITION AREA. CONDUCT SELECTIVE DEMOLITION SO OWNER'S OPERATIONS WILL NOT BE DISRUPTED. B. CONDITIONS EXISTING AT TIME OF INSPECTION FOR BIDDING PURPOSE WILL BE MAINTAINED BY OWNER AS

FAR AS PRACTICAL C. NOTIFY ARCHITECT OF DISCREPANCIES BETWEEN EXISTING CONDITIONS AND DRAWINGS BEFORE

PROCEEDING WITH SELECTIVE DEMOLITION. D. HAZARDOUS MATERIALS: IT IS NOT EXPECTED THAT HAZARDOUS MATERIALS WILL BE ENCOUNTERED IN THE

1. IF SUSPECTED HAZARDOUS MATERIALS ARE ENCOUNTERED, DO NOT DISTURB; IMMEDIATELY NOTIFY ARCHITECT AND OWNER. HAZARDOUS MATERIALS WILL BE REMOVED BY OWNER UNDER A SEPARATE

CONTRACT E. STORAGE OR SALE OF REMOVED ITEMS OR MATERIALS ON-SITE IS NOT PERMITTED.

F. UTILITY SERVICE: MAINTAIN EXISTING UTILITIES INDICATED TO REMAIN IN SERVICE AND PROTECT THEM AGAINST DAMAGE DURING SELECTIVE DEMOLITION OPERATIONS. 1. MAINTAIN FIRE-PROTECTION FACILITIES IN SERVICE DURING SELECTIVE DEMOLITION OPERATIONS.

### 1.9 WARRANTY

A. EXISTING WARRANTIES: REMOVE, REPLACE, PATCH, AND REPAIR MATERIALS AND SURFACES CUT OR DAMAGED DURING SELECTIVE DEMOLITION, BY METHODS AND WITH MATERIALS SO AS NOT TO VOID EXISTING WARRANTIES. NOTIFY WARRANTOR BEFORE PROCEEDING

B. NOTIFY WARRANTOR ON COMPLETION OF SELECTIVE DEMOLITION, AND OBTAIN DOCUMENTATION VERIFYING THAT EXISTING SYSTEM HAS BEEN INSPECTED AND WARRANTY REMAINS IN EFFECT. SUBMIT DOCUMENTATION AT PROJECT CLOSEOUT

### PART 2 - PRODUCTS

### 2.1 PEFORMANCE REQUIREMENTS

A. REGULATORY REQUIREMENTS: COMPLY WITH GOVERNING EPA NOTIFICATION REGULATIONS BEFORE BEGINNING SELECTIVE DEMOLITION. COMPLY WITH HAULING AND DISPOSAL REGULATIONS OF AUTHORITIES HAVING JURISDICTION.

B. STANDARDS: COMPLY WITH ANSI/ASSE A10.6 AND NFPA 241 PART 3 - EXECUTION

# 3.1 EXAMINATION

A. VERIFY THAT UTILITIES HAVE BEEN DISCONNECTED AND CAPPED BEFORE STARTING SELECTIVE DEMOLITION

OPERATIONS. B. REVIEW RECORD DOCUMENTS OF EXISTING CONSTRUCTION PROVIDED BY OWNER. OWNER DOES NOT GUARANTEE THAT EXISTING CONDITIONS ARE SAME AS THOSE INDICATED IN RECORD DOCUMENTS. C. SURVEY EXISTING CONDITIONS AND CORRELATE WITH REQUIREMENTS INDICATED TO DETERMINE EXTENT OF SELECTIVE DEMOLITION REQUIRED.

D. WHEN UNANTICIPATED MECHANICAL, ELECTRICAL, OR STRUCTURAL ELEMENTS THAT CONFLICT WITH INTENDED FUNCTION OR DESIGN ARE ENCOUNTERED, INVESTIGATE AND MEASURE THE NATURE AND EXTENT OF CONFLICT. PROMPTLY SUBMIT A WRITTEN REPORT TO ARCHITECT.

#### 3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS A. EXISTING SERVICES/SYSTEMS TO REMAIN: MAINTAIN SERVICES/SYSTEMS INDICATED TO REMAIN AND

OR COLLAPSE OF CONSTRUCTION BEING DEMOLISHED.

PROTECT THEM AGAINST DAMAGE. B. EXISTING SERVICES/SYSTEMS TO BE REMOVED, RELOCATED, OR ABANDONED: LOCATE, IDENTIFY, DISCONNECT. AND SEAL OR CAP OFF INDICATED UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS SERVING AREAS TO BE SELECTIVELY DEMOLISHED.

1. OWNER WILL ARRANGE TO SHUT OFF INDICATED SERVICES/SYSTEMS WHEN REQUESTED BY

2. IF SERVICES/SYSTEMS ARE REQUIRED TO BE REMOVED, RELOCATED, OR ABANDONED, PROVIDE TEMPORARY SERVICES/SYSTEMS THAT BYPASS AREA OF SELECTIVE DEMOLITION AND THAT MAINTAIN CONTINUITY OF SERVICES/SYSTEMS TO OTHER PARTS OF BUILDING.

A. SITE ACCESS AND TEMPORARY CONTROLS: CONDUCT SELECTIVE DEMOLITION AND DEBRIS-REMOVAL OPERATIONS TO ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, WALKS, WALKWAYS, AND OTHER ADJACENT OCCUPIED AND USED FACILITIES.

B. TEMPORARY PROTECTION: PROVIDE TEMPORARY BARRICADES AND OTHER PROTECTION REQUIRED TO PREVENT INJURY TO PEOPLE AND DAMAGE TO ADJACENT BUILDINGS AND FACILITIES TO REMAIN. 1. PROVIDE PROTECTION TO ENSURE SAFE PASSAGE OF PEOPLE AROUND SELECTIVE DEMOLITION AREA

AND TO AND FROM OCCUPIED PORTIONS OF BUILDING. 2. PROTECT WALLS, CEILINGS, FLOORS, AND OTHER EXISTING FINISH WORK THAT ARE TO REMAIN OR THAT ARE EXPOSED DURING SELECTIVE DEMOLITION OPERATIONS.

3. COVER AND PROTECT FURNITURE, FURNISHINGS, AND EQUIPMENT THAT HAVE NOT BEEN REMOVED. C. TEMPORARY SHORING: PROVIDE AND MAINTAIN SHORING, BRACING, AND STRUCTURAL SUPPORTS AS REQUIRED TO PRESERVE STABILITY AND PREVENT MOVEMENT. SETTLEMENT. OR COLLAPSE OF CONSTRUCTION AND FINISHES TO REMAIN, AND TO PREVENT UNEXPECTED OR UNCONTROLLED MOVEMENT

1. STRENGTHEN OR ADD NEW SUPPORTS WHEN REQUIRED DURING PROGRESS OF SELECTIVE DEMOLITION.

D. REMOVE TEMPORARY BARRICADES AND PROTECTIONS WHERE HAZARDS NO LONGER EXIST.

3.4 SELECTIVE DEMOLITION, GENERAL A. GENERAL: DEMOLISH AND REMOVE EXISTING CONSTRUCTION ONLY TO THE EXTENT REQUIRED BY NEW

CONSTRUCTION AND AS INDICATED. USE METHODS REQUIRED TO COMPLETE THE WORK WITHIN LIMITATIONS OF GOVERNING REGULATIONS AND AS FOLLOWS: 1. PROCEED WITH SELECTIVE DEMOLITION SYSTEMATICALLY, FROM HIGHER TO LOWER LEVEL. COMPLETE SELECTIVE DEMOLITION OPERATIONS ABOVE EACH FLOOR OR TIER BEFORE DISTURBING SUPPORTING

MEMBERS ON THE NEXT LOWER LEVEL. 2. NEATLY CUT OPENINGS AND HOLES PLUMB, SQUARE, AND TRUE TO DIMENSIONS REQUIRED. USE CUTTING METHODS LEAST LIKELY TO DAMAGE CONSTRUCTION TO REMAIN OR ADJOINING CONSTRUCTION. USE HAND TOOLS OR SMALL POWER TOOLS DESIGNED FOR SAWING OR GRINDING, NOT HAMMERING AND CHOPPING, TO MINIMIZE DISTURBANCE OF ADJACENT SURFACES. TEMPORARILY

COVER OPENINGS TO REMAIN. 3. CUT OR DRILL FROM THE EXPOSED OR FINISHED SIDE INTO CONCEALED SURFACES TO AVOID MARRING EXISTING FINISHED SURFACES.

4. DO NOT USE CUTTING TORCHES UNTIL WORK AREA IS CLEARED OF FLAMMABLE MATERIALS. AT CONCEALED SPACES. SUCH AS DUCT AND PIPE INTERIORS. VERIFY CONDITION AND CONTENTS OF HIDDEN SPACE BEFORE STARTING FLAME-CUTTING OPERATIONS. MAINTAIN FIRE WATCH AND PORTABLE FIRE-SUPPRESSION DEVICES DURING FLAME-CUTTING OPERATIONS.

5. MAINTAIN ADEQUATE VENTILATION WHEN USING CUTTING TORCHES.

6. REMOVE DECAYED, VERMIN-INFESTED, OR OTHERWISE DANGEROUS OR UNSUITABLE MATERIALS AND PROMPTLY DISPOSE OF OFF-SITE. 7. REMOVE STRUCTURAL FRAMING MEMBERS AND LOWER TO GROUND BY METHOD SUITABLE TO AVOID

FREE FALL AND TO PREVENT GROUND IMPACT OR DUST GENERATION. 8. LOCATE SELECTIVE DEMOLITION EQUIPMENT AND REMOVE DEBRIS AND MATERIALS SO AS NOT TO IMPOSE EXCESSIVE LOADS ON SUPPORTING WALLS, FLOORS, OR FRAMING. 9. DISPOSE OF DEMOLISHED ITEMS AND MATERIALS PROMPTLY. COMPLY WITH REQUIREMENTS IN

DESIGN BUILDER'S SECTION 1D "SPECIAL CONDITIONS (ADDITIONAL PROVISIONS AND STANDARD

PROVISIONS). B. REMOVED AND REINSTALLED ITEMS:

1. CLEAN AND REPAIR ITEMS TO FUNCTIONAL CONDITION ADEQUATE FOR INTENDED REUSE. 2. PACK OR CRATE ITEMS AFTER CLEANING AND REPAIRING. IDENTIFY CONTENTS OF CONTAINERS.

3. PROTECT ITEMS FROM DAMAGE DURING TRANSPORT AND STORAGE 4. REINSTALL ITEMS IN LOCATIONS INDICATED. COMPLY WITH INSTALLATION REQUIREMENTS FOR NEW MATERIALS AND EQUIPMENT. PROVIDE CONNECTIONS, SUPPORTS, AND MISCELLANEOUS MATERIALS NECESSARY TO MAKE ITEM FUNCTIONAL FOR USE INDICATED.

C. EXISTING ITEMS TO REMAIN: PROTECT CONSTRUCTION INDICATED TO REMAIN AGAINST DAMAGE AND SOILING DURING SELECTIVE DEMOLITION. WHEN PERMITTED BY DESIGN BUILDER, ITEMS MAY BE REMOVED TO A SUITABLE, PROTECTED STORAGE LOCATION DURING SELECTIVE DEMOLITION AND CLEANED AND REINSTALLED IN THEIR ORIGINAL LOCATIONS AFTER SELECTIVE DEMOLITION OPERATIONS ARE COMPLETE.

3.5 DISPOSAL OF DEMOLISHED MATERIALS

A. GENERAL: EXCEPT FOR ITEMS OR MATERIALS INDICATED TO BE RECYCLED, REUSED, SALVAGED, REINSTALLED, OR OTHERWISE INDICATED TO REMAIN OWNER'S PROPERTY, REMOVE DEMOLISHED MATERIALS FROM PROJECT SITE AND LEGALLY DISPOSE OF THEM IN AN EPA-APPROVED LANDFILL.

1. DO NOT ALLOW DEMOLISHED MATERIALS TO ACCUMULATE ON-SITE. 2. REMOVE AND TRANSPORT DEBRIS IN A MANNER THAT WILL PREVENT SPILLAGE ON ADJACENT SURFACES AND AREAS.

3. REMOVE DEBRIS FROM ELEVATED PORTIONS OF BUILDING BY CHUTE, HOIST, OR OTHER DEVICE THAT WILL CONVEY DEBRIS TO GRADE LEVEL IN A CONTROLLED DESCENT 4. COMPLY WITH REQUIREMENTS IN DESIGN BUILDER'S SECTION 1D "SPECIAL CONDITIONS (ADDITIONAL PROVISIONS AND STANDARD PROVISIONS)."

B. BURNING: DO NOT BURN DEMOLISHED MATERIALS. C. DISPOSAL: TRANSPORT DEMOLISHED MATERIALS OFF OWNER'S PROPERTY AND LEGALLY DISPOSE OF THEM.

A. CLEAN ADJACENT STRUCTURES AND IMPROVEMENTS OF DUST, DIRT, AND DEBRIS CAUSED BY SELECTIVE DEMOLITION OPERATIONS. RETURN ADJACENT AREAS TO CONDITION EXISTING BEFORE SELECTIVE DEMOLITION OPERATIONS BEGAN.

END OF SECTION 02 4119

#### **SECTION 03 73 00** CONCRETE REHABILITATION

#### PART 1 – GENERAL

# 1.01 SUMMARY

A. This specification describes the structural repair/patching of interior and/or exterior vertical or overhead surfaces with a polymer-modified, portland cement mortar.

Refer to drawings for locations where exterior signs are to be removed and or replaced, the exterior driveway columns will require an skim coating to match the existing surface, which is Sika Quick Smooth Finish or Precast Exposed Stone Finish.

1.02 QUALITY ASSURANCE Manufacturing qualifications: The manufacturer of the specified product shall be ISO 9001 certified and have in existence a recognized ongoing quality assurance program independently audited on a regular basis.

Contractor qualifications: Contractor shall be qualified in the field of concrete repair and protection with a successful track record of 5 years or more. Contractor shall maintain qualified personnel who have receiveed product training by a manufacturer's representative.

Install materials in accordance with all safety and weather conditions required by manufacturer or as modified by applicable rules and regulations of local, state and federal authorities having jurisdiction. Consult Material Safety Data Sheets for complete handling recommendations.

### 1.03 DELIVERY, STORAGE, AND HANDLING

A. All materials must be delivered in original, unopened containers with the manufacturer's name, labels, product

identification, and batch numbers. Damaged material must be removed from the site immediately. Store all materials off the ground and protect from rain, freezing or excessive heat until ready for use.

### Condition the specified product as recommended by the manufacturer.

1.04 JOB CONDITIONS Environmental Conditions: Do not apply material if it is raining or snowing or if such conditions appear to be imminent.

Minimum application temperature 45°F (5°C) and rising. Protection: Precautions should be taken to avoid damage to any surface near the work zone due to mixing and handling of the specified material.

### 1.05 SUBMITTALS

Submit two copies of manufacturer's literature, to include: Product Data Sheets, and appropriate Material Safety Data

### 1.06 WARRANTY

Provide a written warranty from the manufacturer against defects of materials for a period of one (1) year, beginning with date of substantial completion of the project.

# PART 2 - PRODUCTS

the requirements of this specification. Precaset Exposed Stone Finish: Sikadur-31 Hi-Mod Gel, as manufactured by Sika Corporation. Where patching is required, including replacement of exposed stone, the contractor shall submit matching stone and epoxy material to adhere the stone to the panels for a finish to match the existing pattern and color.

A. Smoth Trowell Finish Columns: **SikaTop 123 Plus**, as manufactured by Sika Corporation, is considered to conform to

# 2.02 MATERIALS

Polymer-modified Portland cement mortar: Component A shall be a liquid polymer emulsion of an acrylic copolymer base and additives

a. pH: 4.5-6.5 b. Film Forming Temperature: 73°F max.

c. Tear Strength: 950-psi min. d. Elongation at Break: 500% min.

e. Particle Size: less than 0.1 micron Component A shall contain an organic, penetrating corrosion inhibitor which has been independently proven to reduce corrosion in concrete via ASTM G3 (half-cell potential tests). The corrosion inhibitor shall not be calcium nitrite, and shall have a minimum of 5 years of independent field testing to document performance on actual construction projects.

Component B shall be a blend of selected portland cements, specially graded aggregates, admixtures for controlling setting time, water reducers for workability, and an organic accelerator. The materials shall be non-combustible, both before and after cure.

The polymer-modified, portland cement mortar must be placeable from 1/8" to 1-1/2" in depth per lift for vertical applications and 1/8" to 1" in depth for overhead applications.

Provide a clear sealer to match the existing sealed finish.

Grade-3, Class-B/C and AASHTO M-235 specifications.

The materials shall be supplied in a factory-proportioned unit.

B. Cement Epoxy: 1. Sikadur 31, Hi-Mod Gel, is a 2-component, 100% solids, solvent-free, moisture-tolerant, high-modulus, highstrength, structural epoxy paste adhesive. It shall conform to the current ASTM C-881. Types I and IV.

C. Rocks for Precast patching: 1. Submit rock samples to match existing exposed preacast rock panels.

2.03 PERFORMANCE CRITERIA A. Typical Properties of the mixed polymer-modified, portland cement mortar:

Working Time: Approximately 15 minutes Finishing Time: 20 - 60 minutes

Color: concrete gray Typical Properties of the cured polymer-modified, portland cement mortar:

Compressive Strength (ASTM C-109 Modified) a. 1 day: 3500 psi min. (24.1 MPa)

b. 7 day: 6000 psi min. (44.8 MPa) c. 28 day: 7000 psi min. (48.3 MPa)

Flexural Strength (ASTM C-293) @ 28 days: 2000 psi (13.8 MPa) Splitting Tensile Strength (ASTM C-496) @ 28 days: 900 psi (6.2 MPa) Bond Strength (ASTM C-882 Modified) @ 28 days: 2200 psi (15.2 MPa) The portland cement mortar shall not produce a vapor barrier.

6. Density (wet mix): 132 lbs. / cu. ft. (2.2 kg/l) 7. Permeability - AASHTO T-277 @ 28 days Approximately 500 Coulombs

NOTE: TESTS ABOVE WERE PERFORMED WITH THE MATERIAL AND CURING CONDITIONS @ 71°F - 75°F AND 45-55% RELATIVE HUMIDITY.

#### PART 3 – EXECUTION

3.01 SURFACE PREPARATION Areas to be repaired must be clean, sound, and free of contaminants. All loose and deteriorated concrete shall be removed by mechanical means. Mechanically prepare concrete substrate to obtain a surface profile of +/- 1/16" (CSP 5 or greater as per ICRI Guidelines) with a new exposed aggregate surface. Area to be patched shall not be less than

B. Where reinforcing steel with active corrosion is encountered, sandblast the steel to a white metal finish to remove all contaminants and rust. Where corrosion has occurred due to the presence of chlorides, the steel shall be high pressure washed after mechanical cleaning. Prime steel with 2 coats of Sika Armatec 110 EpoCem as per the technical data sheet. (See Spec Component SC-201-0699)

#### 3.02 MIXING AND APPLICATION

Mechanically mix in an appropriate sized mortar mixer or with a Sika mud paddle and low speed (400-600 rpm) drill. Pour approximately 4/5 gal Component A into the mixing container. Add Component B while continuing to mix. Mix to a uniform consistency for a maximum of three minutes. Add remaining Component A to mix for desired consistency. Should smaller quantities be needed, be sure the components are measured in the correct ratio and that the Component B is uniformly blended before mixing the components together. Mix only that amount of material that can

be placed in 10 - 15 minutes. Do not retemper material. B. Placement Procedure: At the time of application, the substrate shall be saturated surface dry with no standing water. Mortar must be scrubbed into substrate filling all pores and voids. While the scrub coat is still plastic, force material against edge of repair, working toward center. If repair area is too large to fill while scrub coat is still wet use Sika Armatec 110 EpoCem in lieu of scrub coat. (See spec component SC-200-0699) After filling, consolidate then screed. Allow mortar to set to desired stiffness then finish with trowel for smooth surface. Wood float or sponge float for a rough surface. Areas where the depth of the repair area to sound concrete is greater than 1-1/2", the repair shall be made in lifts of 1-1/2" maximum thickness. The top surface of each lift shall be scored to produce a rough surface for the next lift. The preceding lift shall be allowed to reach final set before applying fresh material. The fresh mortar must be

scrubbed into the preceding lift. C. As per ACI recommendations for portland cement concrete, curing is required. Moist cure with wet burlap and polyethylene, a fine mist of water or a water-based\* compatible curing compound. Moist curing should commence immediately after finishing and continue for 48 hours. Protect newly applied material from rain, sun, and wind until compressive strength is 70% of the 28-day compressive strength. To prevent from freezing cover with insulating material. Setting time is dependent on temperature and humidity.

\*Pretesting of curing compound is recommended. E. Adhere to all procedures, limitations and cautions for the polymer-modified portland cement mortar in the manufacturers current printed technical data sheet and literature.

#### 3.05 CLEANING

The uncured polymer-modified portland cement mortar can be cleaned from tools with water. The cured polymer modified portland cement mortar can only be removed mechanically.

B. Leave finished work and work area in a neat, clean condition without evidence of spillovers onto adjacent areas.

END OF SECTION 03730

#### **SECTION 05 50 00 METAL FABRICATIONS**

### PART 1 - GENERAL

1.1 RELATED DOCUMENTS A. DRAWINGS AND GENERAL PROVISIONS OF THE CONTRACT. INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS.

#### 1.2 SUMMARY A. SECTION INCLUDES:

1. METAL FRAMING AND SUPPORTS FOR APPLICATIONS WHERE FRAMING AND SUPPORTS ARE NOT SPECIFIED IN OTHER SECTIONS.

#### 1.3 SUBMITTALS A. INDICATE QUANTITIES, LOCATIONS, PROFILES, SIZES, CONNECTION ATTACHMENTS, REINFORCING,

ANCHORAGE, SIZE AND TYPE OF FASTENERS, AND ACCESSORIES B. INCLUDE ERECTION DRAWINGS, ELEVATIONS, AND DETAILS WHERE APPLICABLE. C. INDICATE WELDED CONNECTIONS USING STANDARD AWS WELDING SYMBOLS. INDICATE NET WELD

E. SHOP DRAWINGS: SHOW FABRICATION AND INSTALLATION DETAILS FOR METAL FABRICATIONS. 1. PLANS, ELEVATIONS, ANCHORAGE, AND ACCESSORY ITEMS F. SAMPLES FOR VERIFICATION: FOR EACH TYPE AND FINISH OF EXTRUDED PROFILE.

# 1.4 QUALITY ASSURANCE

A. PREPARE SHOP DRAWINGS UNDER DIRECT SUPERVISION OF A PROFESSIONAL STRUCTURAL ENGINEER EXPERIENCED IN DESIGN OF THIS WORK AND LICENSED AT THE PLACE WHERE THE PROJECT IS LOCATED. B. WELDERS' CERTIFICATES: SUBMIT UNDER PROVISIONS OF SECTION 01400, CERTIFYING WELDERS EMPLOYED ON THE WORK, VERIFYING AWS QUALIFICATION WITHIN THE PREVIOUS 12 MONTHS.

### 1.6 PROJECT CONDITIONS

A. FIELD MEASUREMENTS: VERIFY ACTUAL LOCATIONS OF WALLS AND OTHER CONSTRUCTION CONTIGUOUS WITH METAL FABRICATIONS BY FIELD MEASUREMENTS BEFORE FABRICATION.

### PART 2 - PRODUCTS

2.1 METALS, GENERAL A. METAL SURFACES, GENERAL: PROVIDE MATERIALS WITH SMOOTH, FLAT SURFACES UNLESS OTHERWISE INDICATED. FOR METAL FABRICATIONS EXPOSED TO VIEW IN THE COMPLETED WORK, PROVIDE MATERIALS

# 2.2 FERROUS METALS

A. STEEL PLATES, SHAPES AND BARS: ASTM A36/A36M B. STEEL TUBING: ASTM A500/A500M, COLD FORMED STEEL TUBING C. SLOTTED CHANNEL FRAMING: COLD-FORMED METAL BOX CHANNELS COMPLYING WITH MFMA-4.

WITHOUT SEAM MARKS, ROLLER MARKS, ROLLED TRADE NAMES, OR BLEMISHES.

1. SIZE OF CHANNELS: AS INDICATED. 2. MATERIAL: COLD-ROLLED STEEL, ASTM A1008/A1008M, STRUCTURAL STEEL, GRADE 33: 0.0966-INCH MIN THICKNESS; COATED WITH RUST-INHIBITIVE, BACKED-ON ACRYLIC ENAMEL C. STAINLESS STEEL SHEET, STRIP AND PLATE: ASTM A240/A240M OR ASTM A666, TYPE 304

#### D. STAINLESS STEEL BARS AND SHAPES: ASTM A276/A276M, TYPE 304 2.3 NONFERROUS METALS

A. ALUMINUM PLATE AND SHEET: ASTM B209, ALLOY 6061-T6. B. ALUMINUM EXTRUSIONS: ASTM B221, ALLOY 6063-T6.

# 2.4 FASTENERS

A. GENERAL: UNLESS OTHERWISE INDICATED, PROVIDE TYPE 316 STAINLESS-STEEL FASTENERS FOR EXTERIOR USE AND ZINC-PLATED FASTENERS WITH COATING COMPLYING WITH ASTM B 633 OR ASTM F 1941. CLASS FE/ZN 5, AT EXTERIOR WALLS. SELECT FASTENERS FOR TYPE, GRADE, AND CLASS REQUIRED. 1. PROVIDE STAINLESS-STEEL FASTENERS FOR FASTENING STAINLESS STEEL. 2. PROVIDE STAINLESS-STEEL FASTENERS FOR FASTENING ALUMINUM.

B. STEEL BOLTS AND NUTS: REGULAR HEXAGON-HEAD BOLTS, ASTM A 307, GRADE A; WITH HEX NUTS, ASTM A

563: AND. WHERE INDICATED. FLAT WASHERS. C. STAINLESS-STEEL BOLTS AND NUTS: REGULAR HEXAGON-HEAD ANNEALED STAINLESS-STEEL BOLTS, ASTM F 593; WITH HEX NUTS, ASTM F 594; AND, WHERE INDICATED, FLAT WASHERS; ALLOY GROUP 1 D. ANCHOR BOLTS: ASTM F 1554, GRADE 36, OF DIMENSIONS INDICATED; WITH NUTS, ASTM A 563; AND, WHERE

INDICATED. FLAT WASHERS. 1. HOT-DIP GALVANIZE OR PROVIDE MECHANICALLY DEPOSITED, ZINC COATING WHERE ITEM BEING FASTENED IS INDICATED TO BE GALVANIZED.

F. PLAIN WASHERS: ROUND, ASME B18.22.1. G. LOCK WASHERS: HELICAL, SPRING TYPE, ASME B18.21.1

E. MACHINE SCREWS: ASME B18.6.3.

H. ANCHORS, GENERAL: ANCHORS CAPABLE OF SUSTAINING, WITHOUT FAILURE, A LOAD EQUAL TO SIX TIMES THE LOAD IMPOSED WHEN INSTALLED IN UNIT MASONRY AND FOUR TIMES THE LOAD IMPOSED WHEN INSTALLED IN CONCRETE, AS DETERMINED BY TESTING ACCORDING TO ASTM E 488, CONDUCTED BY A QUALIFIED INDEPENDENT TESTING AGENCY.

2.5 MISCELLANEOUS MATERIALS A. WELDING RODS AND BARE ELECTRODES: SELECT ACCORDING TO AWS SPECIFICATIONS FOR METAL ALLOY

B. UNIVERSAL SHOP PRIMER: FAST-CURING, LEAD- AND CHROMATE-FREE, UNIVERSAL MODIFIED-ALKYD PRIMER COMPLYING WITH MPI#79 AND COMPATIBLE WITH TOPCOAT.

1. USE PRIMER CONTAINING PIGMENTS THAT MAKE IT EASILY DISTINGUISHABLE FROM ZINC-RICH PRIMER.

C. GALVANIZING REPAIR PAINT: HIGH-ZINC-DUST-CONTENT PAINT COMPLYING WITH SSPC-PAINT 20 AND COMPATIBLE WITH PAINTS SPECIFIED TO BE USED OVER IT.

D. SHRINKAGE-RESISTANT GROUT: FACTORY-PACKAGED, NONMETALLIC, NONSTAINING, NONCORROSIVE, NONGASEOUS GROUT COMPLYING WITH ASTM C1107/C1107M. PROVIDE GROUT SPECIFICALLY RECOMMENDED BY MANUFACTURER FOR INTERIOR AND EXTERIOR APPLICATIONS.

#### 2.6 FABRICATION. GENERAL A. VERIFY DIMENSIONS ON SITE PRIOR TO SHOP FABRICATION.

3. REMOVE WELDING FLUX IMMEDIATELY.

B. SHOP ASSEMBLY: PREASSEMBLE ITEMS IN THE SHOP TO GREATEST EXTENT POSSIBLE. DISASSEMBLE UNITS ONLY AS NECESSARY FOR SHIPPING AND HANDLING LIMITATIONS. USE CONNECTIONS THAT MAINTAIN STRUCTURAL VALUE OF JOINED PIECES. CLEARLY MARK UNITS FOR REASSEMBLY AND COORDINATED INSTALLATION.

C. CUT, DRILL, AND PUNCH METALS CLEANLY AND ACCURATELY. REMOVE BURRS AND EASE EDGES TO A RADIUS OF APPROXIMATELY 1/32 INCH (1 MM) UNLESS OTHERWISE INDICATED. REMOVE SHARP OR ROUGH AREAS ON EXPOSED SURFACES.

D. FORM BENT-METAL CORNERS TO SMALLEST RADIUS POSSIBLE WITHOUT CAUSING GRAIN SEPARATION OR OTHERWISE IMPAIRING WORK.

E. FORM EXPOSED WORK WITH ACCURATE ANGLES AND SURFACES AND STRAIGHT EDGES. F. WELD CORNERS AND SEAMS CONTINUOUSLY TO COMPLY WITH THE FOLLOWING:

1. USE MATERIALS AND METHODS THAT MINIMIZE DISTORTION AND DEVELOP STRENGTH AND CORROSION RESISTANCE OF BASE METALS. 2. OBTAIN FUSION WITHOUT UNDERCUT OR OVERLAP.

4. AT EXPOSED CONNECTIONS, FINISH EXPOSED WELDS AND SURFACES SMOOTH AND BLENDED SO NO ROUGHNESS SHOWS AFTER FINISHING G. FORM EXPOSED CONNECTIONS WITH HAIRLINE JOINTS, FLUSH AND SMOOTH, USING CONCEALED

FASTENERS OR WELDS WHERE POSSIBLE. WHERE EXPOSED FASTENERS ARE REQUIRED, USE PHILLIPS

FLAT-HEAD (COUNTERSUNK) FASTENERS UNLESS OTHERWISE INDICATED. LOCATE JOINTS WHERE LEAST CONSPICUOUS. H. FABRICATE SEAMS AND OTHER CONNECTIONS THAT ARE EXPOSED TO WEATHER IN A MANNER TO EXCLUDE WATER, PROVIDE WEEP HOLES WHERE WATER MAY ACCUMULATE

I. CUT, REINFORCE, DRILL, AND TAP METAL FABRICATIONS AS INDICATED TO RECEIVE FINISH HARDWARE, SCREWS. AND SIMILAR ITEMS. J. PROVIDE FOR ANCHORAGE OF TYPE INDICATED; COORDINATE WITH SUPPORTING STRUCTURE. SPACE ANCHORING DEVICES TO SECURE METAL FABRICATIONS RIGIDLY IN PLACE AND TO SUPPORT INDICATED

# 2.7 MISCELLANEOUS FRAMING AND SUPPORTS

A. GENERAL: PROVIDE METAL FRAMING AND SUPPORTS NOT SPECIFIED IN OTHER SECTIONS AS NEEDED TO COMPLETE THE WORK. B. FABRICATE UNITS FROM STEEL SHAPES, PLATES, AND BARS OF WELDED CONSTRUCTION UNLESS

OTHERWISE INDICATED. FABRICATE TO SIZES, SHAPES, AND PROFILES INDICATED AND AS NECESSARY TO RECEIVE ADJACENT CONSTRUCTION. 1. FABRICATE UNITS FROM SLOTTED CHANNEL FRAMING WHERE INDICATED

C. GALVANIZE MISCELLANEOUS FRAMING AND SUPPORTS WHERE INDICATED.

2. FURNISH INSERTS FOR UNITS INSTALLED AFTER CONCRETE IS PLACED.

# D. PRIME MISCELLANEOUS FRAMING AND SUPPORTS WITH ZINC-RICH PRIMER WHERE INDICATED.

2.8 MISCELLANEOUS STEEL TRIM A. UNLESS OTHERWISE INDICATED, FABRICATE UNITS FROM STEEL SHAPES, PLATES, AND BARS OF PROFILES SHOWN WITH CONTINUOUSLY WELDED JOINTS AND SMOOTH EXPOSED EDGES. MITER CORNERS AND USE CONCEALED FIELD SPLICES WHERE POSSIBLE.

INSTALLATION WITH OTHER WORK. 1. PROVIDE WITH INTEGRALLY WELDED STEEL STRAP ANCHORS FOR EMBEDDING IN CONCRETE OR MASONRY CONSTRUCTION.

B. PROVIDE CUTOUTS, FITTINGS, AND ANCHORAGES AS NEEDED TO COORDINATE ASSEMBLY AND

# 2.9 FINISHES, GENERAL

2.11 ALUMINUM FINISHES

A. COMPLY WITH NAAMM'S "METAL FINISHES MANUAL FOR ARCHITECTURAL AND METAL PRODUCTS" FOR RECOMMENDATIONS FOR APPLYING AND DESIGNATING FINISHES. B. FINISH METAL FABRICATIONS AFTER ASSEMBLY.

C. FINISH EXPOSED SURFACES TO REMOVE TOOL AND DIE MARKS AND STRETCH LINES, AND TO BLEND INTO

C. PROVIDE STAINLESS STEEL OR GALVANIZED EXTERIOR MISCELLANEOUS STEEL TRIM AS INDICATED.

# SURROUNDING SURFACE.

A. FINISH DESIGNATIONS PREFIXED BY AA COMPLY WITH THE SYSTEM ESTABLISHED BY THE ALUMINUM ASSOICATION FOR DESIGNATING ALUMINUM FINISHES.

### PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL A. CUTTING, FITTING, AND PLACEMENT: PERFORM CUTTING, DRILLING, AND FITTING REQUIRED FOR INSTALLING METAL FABRICATIONS. SET METAL FABRICATIONS ACCURATELY IN LOCATION, ALIGNMENT, AND ELEVATION: WITH EDGES AND SURFACES LEVEL, PLUMB, TRUE, AND FREE OF RACK; AND MEASURED FROM ESTABLISHED LINES AND LEVELS

B. FIT EXPOSED CONNECTIONS ACCURATELY TOGETHER TO FORM HAIRLINE JOINTS. WELD CONNECTIONS

THAT ARE NOT TO BE LEFT AS EXPOSED JOINTS BUT CANNOT BE SHOP WELDED BECAUSE OF SHIPPING SIZE LIMITATIONS. DO NOT WELD, CUT, OR ABRADE SURFACES OF EXTERIOR UNITS THAT HAVE BEEN HOT-DIP GALVANIZED AFTER FABRICATION AND ARE FOR BOLTED OR SCREWED FIELD CONNECTIONS.

C. FIELD WELDING: COMPLY WITH THE FOLLOWING REQUIREMENTS: 1. USE MATERIALS AND METHODS THAT MINIMIZE DISTORTION AND DEVELOP STRENGTH AND CORROSION RESISTANCE OF BASE METALS.

2. OBTAIN FUSION WITHOUT UNDERCUT OR OVERLAP. 3. REMOVE WELDING FLUX IMMEDIATELY. 4. AT EXPOSED CONNECTIONS, FINISH EXPOSED WELDS AND SURFACES SMOOTH AND BLENDED SO NO ROUGHNESS SHOWS AFTER FINISHING AND CONTOUR OF WELDED SURFACE MATCHES THAT OF

D. FASTENING TO IN-PLACE CONSTRUCTION: PROVIDE ANCHORAGE DEVICES AND FASTENERS WHERE METAL

FABRICATIONS ARE REQUIRED TO BE FASTENED TO IN-PLACE CONSTRUCTION. PROVIDE THREADED

FASTENERS FOR USE WITH CONCRETE AND MASONRY INSERTS, TOGGLE BOLTS, THROUGH BOLTS, LAG SCREWS, WOOD SCREWS, AND OTHER CONNECTORS.

#### E. PROVIDE TEMPORARY BRACING OR ANCHORS IN FORMWORK FOR ITEMS THAT ARE TO BE BUILT INTO CONCRETE, MASONRY, OR SIMILAR CONSTRUCTION.

GALVANIZING TO COMPLY WITH ASTM A 780.

3.2 INSTALLING MISCELLANEOUS FRAMING AND SUPPORTS A. GENERAL: INSTALL FRAMING AND SUPPORTS TO COMPLY WITH REQUIREMENTS OF ITEMS BEING SUPPORTED, INCLUDING MANUFACTURERS' WRITTEN INSTRUCTIONS AND REQUIREMENTS INDICATED ON SHOP DRAWINGS.

#### 3.3 ADJUSTING AND CLEANING A. TOUCHUP PAINTING: IMMEDIATELY AFTER ERECTION, CLEAN FIELD WELDS, BOLTED CONNECTIONS, AND ABRADED AREAS. PAINT UNCOATED AND ABRADED AREAS WITH THE SAME MATERIAL AS USED FOR SHOP

PAINTING TO COMPLY WITH SSPC-PA 1 FOR TOUCHING UP SHOP-PAINTED SURFACES.

1. APPLY BY BRUSH OR SPRAY TO PROVIDE A MINIMUM 2.0-MIL DRY FILM THICKNESS. B. TOUCHUP PAINTING: CLEANING AND TOUCHUP PAINTING OF FIELD WELDS, BOLTED CONNECTIONS, AND ABRADED AREAS OF SHOP PAINT ARE SPECIFIED IN DIVISION 09 PAINTING SECTIONS. C. GALVANIZED SURFACES: CLEAN FIELD WELDS. BOLTED CONNECTIONS. AND ABRADED AREAS AND REPAIR

END OF SECTION 05 5000

Jacobs

5985 Rogerdale Road Houston, TX 77072 (281) 721-8400 www.jacobs.com TBPE Firm #2966

Description 09/14/2020 ISSUED FOR PERMIT

HOUSTON **AIRPORTS** APPROVED BY:

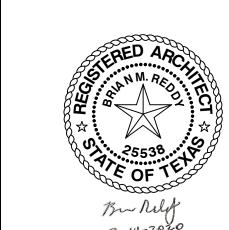
CONSULTANT:



DIRECTOR

HOUSTON AIRPORT SYSTEM

SEAL:



ARAGE INDING (1)

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CIP NO: HAS NO: 794A KEY PLAN:

AIP NO:

Jacobs Project No.: WHXK7105 ARCHITECTURAL

**SPECIFICATIONS** 

09/14/2020

Designed By:	L.A.	Drawing No.:	
Drawn By:	E.A.	$\Lambda$	
Checked By:	A.B.	A-00	

removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface p

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed.

C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and

1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce

It is the intent of the documents that signage be removed and painted behind the sign and reapplied.

reparation and painting.

Remove surface-applied protection.

paint systems indicated.

paints to substrates. 3.3 APPLICATION Specification Manual.' 3.4 FIELD QUALITY CONTROL paint for dry film thickness. 3.5 CLEANING AND PROTECTION 3.6 EXTERIOR PAINTING SCHEDULE Latex System D. CMU Substrates (if required): Latex System: 1. Water-Based Light Industrial Coating System: a. Prime Coat: Primer, water-based, anti-corrosive for metal, MPI #107: S-W Pro Industrial Pro-Cryl Universal Primer. B66-310 Series. 5.0 to 10.0 mils wet. 2.0 to 4.0 mils dry. Intermediate Coat: Light industrial coating, exterior, water based, matching topcoat. Topcoat: Light industrial coating, exterior, water based, eggshell, (Gloss Level 3), MPI #161: S-W Pro Industrial Eq-Shel Acrylic B66-660 Series, at 2.5 to 4.0 mils dry, per coat. F. Ferrous Metal, Galvanized-Metal (Specifically the tube steel - metal guardrails at the drive way retaining walls): 1. Hi- Solids Polyurethane Industrial Coating System: a. Prime Coat: Primer, as recommended by the manufacturer. Intermediate Coat: Sherwin Williams Hi-Solids Polyurethane, Part S B65-300 Gloss Series – White – Protective and Marine Coatings. c. Topcoat: Sherwin Williams Hi-Solids Polyurethane, Part S B65-300 Gloss Series – White – Protective and Marine G. Plastic Trim Fabrication Substrates: Including architectural PVC, plastic, and fiberglass items. Latex System a. Prime Coat: Primer, bonding, water-based, MPI #3: S-W PrepRite ProBlock Latex Primer/Sealer. b. Intermediate Coat: Latex, exterior, flat, (Gloss Level 1), MPI #10: S-W A-100 Exterior Latex Flat, A6 Series, at 4.0 mils wet, 1.2 mils dry, per coat. c. Topcoat: Latex, exterior, satin, (Gloss Level 3-4), MPI #15: S-W A-100 Exterior Latex Satin, A82 Series, at 4.0 mils wet, 1.5 mils dry, per coat. Exterior Gypsum Board Substrates: Latex System: a. Prime Coat: Primer, bonding, water-based, MPI #3: S-W PrepRite ProBlock Latex Primer/Sealer. Intermediate Coat: Latex, exterior, satin, (Gloss Level 1), MPI #10: S-W A-100 Exterior Latex Flat, A6 Series, at 4.0 mils wet, 1.2 mils dry, per coat. Topcoat: Latex, exterior, satin, (Gloss Level 3-4), MPI #15: S-W A-100 Exterior Latex Satin, A82 Series, at 4.0 mils wet, Top coats to contain a mildewcide paint additive as approved by the architect END OF SECTION 099113

D. Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions. E. Exterior Concrete Driveway Column Substrates (ADD ALTERNATE SCOPE): Base bid is to paint the columns: Remove release agents, curing compounds, efflorescence, and chalk. Add Alternate Scope: At the contractor's option, chemically peal or sandblast columns to remove paint in order apply the specified concrete skim coat. Preparation must not impact the public's safety at the driveway area or impact the Steel Substrates: Remove rust, loose mill scale, and shop primer if any. Clean using methods recommended in writing by paint manufacturer, but not less than the following: SSPC-SP 3 (power tool cleaning) Shop-Primed Steel Substrates: Clean field welds, bolted connections, and areas where shop paint is abraded. Paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints. Plastic Trim & Guard Rail Fabrication Substrates: Remove dust, dirt, and other foreign material that might impair bond of A. Apply paints according to manufacturer's written instructions and recommendations in "MPI Architectural Painting" Use applicators and techniques suited for paint and substrate indicated. Paint surfaces behind movable items same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed items with prime coat only. Paint both sides and edges of exterior doors and entire exposed surface of exterior door frames. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or 5. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable Tint undercoats same color as topcoat, but tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Provide sufficient difference in shade of undercoats to distinguish each separate C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks. Painting Fire Suppression, Plumbing, HVAC, Electrical, Communication, and Electronic Safety and Security Work: 1. Paint the following work where exposed to view: a. Uninsulated metal piping. b. Pipe hangers and supports. Metal conduit. d. Plastic conduit. A. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test Contractor shall touch up and restore painted surfaces damaged by testing. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations. A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site. B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces. Products listed are shown as Sherwin Williams Products; provide these or comparable products by one of the two approved B. Concrete & Portland Cement Plaster (Stucco), Nontraffic Surfaces: a. Prime Coat: Primer sealer, latex, exterior, MPI #3: S-W Loxon Concrete & Masonry Primer Sealer, A24W8300, at 8.0 mils wet, 3.2 mils dry. b. Intermediate Coat: Latex, exterior, satin, (Gloss Level 3-4), MPI #15: S-W A-100 Exterior Latex Satin, A82 Series, at 4.0 mils wet, 1.5 mils dry, per coat. c. Topcoat: Latex, exterior, satin, (Gloss Level 3-4), MPI #15: S-W A-100 Exterior Latex Satin, A82 Series, at 4.0 mils wet, 1.5 mils dry, per coat. d. Top coats to contain a mildewcide paint additive as approved by the architect. Concrete Substrates. Pedestrian Traffic Surfaces: Latex Floor Paint System: a. First Coat: Floor paint, latex, slip-resistant, matching topcoat. b. Topcoat: Floor paint, latex, slip-resistant, low gloss, (maximum Gloss Level 3), MPI #60: S-W ArmorSeal Tread-Plex, B90 Series, at 1.5 to 2.0 mils dry per coat. a. Block Filler: Block filler, latex, interior/exterior: S-W PrepRite Block Filler, B25W25, at 75 to 125 sq. ft. per gal (1.8) b. Intermediate Coat: Latex, exterior, Satin, (Gloss Level 3-4), MPI #15: S-W A-100 Exterior Latex Satin, A82 Series, at 4.0 mils wet, 1.5 mils dry, per coat... c. Topcoat: Latex, exterior, satin, (Gloss Level 3-4), MPI #15: S-W A-100 Exterior Latex Satin, A82 Series. at 4.0 mils wet, 1.5 mils dry, per coat. d. Top coats to contain a mildewcide paint additive as approved by the architect. Ferrous Metal, Galvanized-Metal, and Aluminum Substrates:

1.7 DELIVERY, STORAGE, AND HANDLING A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C). Maintain containers in clean condition, free of foreign materials and residue.

PART 1 - GENERAL

1.2 SUMMARY

1.3 DEFINITIONS

1.4 ACTION SUBMITTALS

1.1 RELATED DOCUMENTS

Specification Sections, apply to this Section.

Steel and iron.

Gypsum board.

Plastic Laminate.

Indicate VOC content.

Label each coat of each Sample.

Sustainable Design Submittals:

1.5 MAINTENANCE MATERIAL SUBMITTALS

1.6 QUALITY ASSURANCE

Plastic.

Plaster.

Galvanized metal.

Remove rags and waste from storage areas daily. 1.8 FIELD CONDITIONS

A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F (10 Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F (3 deg C) above the dew point: or to damp or wet surfaces.

**SECTION 09 91 23** 

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01

MPI Gloss Level 1: Not more than five units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.

MPI Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

Product Data: For each type of product. Include preparation requirements and application instructions

Samples for Verification: For each type of paint system and in each color and gloss of topcoat.

Apply coats on Samples in steps to show each coat required for system.

1. Paint: 5 percent, but not less than 5 gal. of each material and color applied.

b. Other Items: Architect will designate items or areas required.

unless Architect specifically approves such deviations in writing.

MPI Gloss Level 2: Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

MPI Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.

Product List: Cross-reference to paint system and locations of application areas. Use same designations indicated on

A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective

A. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections

1. Architect will select one surface to represent surfaces and conditions for application of each paint system.

a. Vertical and Horizontal Surfaces: Provide samples of at least 100 sq. ft. (9 sq. m).

made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by

Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups

Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at

1. Include Printout of current "MPI Approved Products List" for each product category specified, with the proposed product

A. Section includes surface preparation and the application of paint systems on [interior substrates:

MPI Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.

MPI Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.

G. MPI Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

Provide VOC content data substantiating zero VOC content.

Submit Samples on rigid backing, 8 inches (200 mm) square

Samples for Initial Selection: For each type of topcoat product.

Label each Sample for location and application area.

covering for storage and identified with labels describing contents.

2. Final approval of color selections will be based on mockups.

Architect at no added cost to Owner.

time of Substantial Completion.

Drawings and in schedules. Include color designations.

**INTERIOR PAINTING** 

PART 2 - PRODUCTS

2.1 MANUFACTURERS Manufacturers: Subject to compliance with requirements, provide paint from one of the following approved manufacturers:

Beniamin Moore & Co. PPG Architectural Coating

Sherwin Williams Company Products: Subject to compliance with requirements, provide one of the products listed in the Exterior Painting Schedule for the

paint category indicated.

2.2 PAINT, GENERAL MPI Standards: Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products Lists." Material Compatibility

Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated. Provide materials that comply with minimal to zero VOC limits. Minimum Standards to comply with South Coast Air Quality

Management District Rule 1168. Colors: As indicated in a color schedule.

Application Coats: Schedule indicates primer and top coats for uncoated substrates. The painting contractor shall apply at least 2 coats on previously painted stucco and gypsum board substrates so that prior colors are not perceptible thru the new paint, if the prior paint color is perceived thru the new paint, the painting contractor shall apply new coat(s) at their cost. Interior & Exterior concrete and steel shall be prepped and stripped back to the raw substrate material.

2.3 SOURCE QUALITY CONTROL

Testing of Paint Materials: Owner reserves the right to invoke the following procedure: 1. Owner will engage the services of a qualified testing agency to sample paint materials. Contractor will be notified in advance and may be present when samples are taken. If paint materials have already been delivered to Project site, samples may be taken at Project site. Samples will be identified, sealed, and certified by testing agency.

Testing agency will perform tests for compliance with product requirements. Owner may direct Contractor to stop applying paints if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying paint materials from Project site, pay for testing, and repaint surfaces painted with rejected materials. Contractor will be required to remove rejected materials from previously painted surfaces if, on repainting with complying materials, the two paints are incompatible.

PART 3 - EXECUTION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows: Concrete: 12 percent.

Masonry (Clay and CMUs): 12 percent. Gypsum Board: 12 percent.

1. SSPC-SP 3. (power tool cleaning)

Plaster: 12 percent.

Gypsum Board Substrates: Verify that finishing compound is sanded smooth. Plaster Substrates: Verify that plaster is fully cured.

Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers. Proceed with coating application only after unsatisfactory conditions have been corrected. . Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual"

applicable to substrates and paint systems indicated. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.

It is the intent of the documents that signage be removed and painted behind the sign and reapplied. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and

Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce D. Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture

content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions. Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces or

mortar joints exceeds that permitted in manufacturer's written instructions. Steel Substrates: Remove rust, loose mill scale, and shop primer, if any. Clean using methods recommended in writing by paint manufacturer, but not less than the following:

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**REVISIONS** 

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Description 09/14/2020 | ISSUED FOR PERMIT

HOUSTON **AIRPORTS** APPROVED BY: DIRECTOR HOUSTON AIRPORT SYSTEM

CONSULTANT:



PERMIT PURPOSES.

THESE DOCUMENTS ARE FOR INTERIM REVIEW AND NOT FOR CONSTRUCTION, BIDDING, OR RESPONSIBLE ARCHITECT: BRIAN M. REDDY TEXAS 25538 04/23/2020

GARAGE TINDING 9  $\Box$  $\langle$  $\leq$ INAL AND 

**5** S HAS NO: 794A

AIP NO:

CIP NO:

KEY PLAN:

Jacobs Project No.: WHXK7105 ARCHITECTURAL **SPECIFICATIONS** 

10/16/20 Designed By: Designer Drawing No.: Drawn By: Author Checked By: Checker A-002

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**REVISIONS** 

TBPE Firm #2966

Description 09/14/2020 ISSUED FOR PERMIT

HOUSTON

**AIRPORTS** 

DIRECTOR HOUSTON AIRPORT SYSTEM

APPROVED BY:

CONSULTANT:

Labozan Associates



3 GARAGE VYFINDING A/B WA ERMINAL GE AND

IAH SIG AIP NO: CIP NO:

HAS NO: 794A

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KEY PLAN:

Jacobs Project No.: WHXK7105 ARCHITECTURAL

09/14/2020 Designed By: L.A. Drawing No.: A-003

Checked By: A.B.

**SPECIFICATIONS** 

END OF SECTION 099123

Paint finish shall be smooth and consistent, free of surface imperfections, orange peel texture, scratches, gouges, drips, bubbles, uneven coating application, overspray or other surface imperfections. Utilize Matthews Satin MAP or Owner Owner approved equal.

Foam Tape

G. Vinyl Graphics

Silicone Sealant

Painted Graphics

smooth and finish joints where possible.

good bond without blisters or fish-mouths.

and sharp, with profiles accurate and ornament true to pattern.

even with no light application allowing substrate or primer to show.

Extruded members are to be free of extrusion marks.

interfere with the smooth, normal operation of this facility.

until the final acceptance of the job by the owner

Acrylic

PART 3 - EXECUTION

3.1 FABRICATION

3.2 INSTALLATION

END OF SECTION 101404

Double sided acrylic adhesive closed cell urethane foam tape, 3M Series A20, #4016 or equal. Preparation of sign and

Subject to compliance with requirements, provide 3M Diamond Grade DG3 Series 4090 white reflective sheeting or

Owner approved equal with digitally printed image. Colors and images vary, refer to sign type layouts. The digital print

shall be protected by 3M ElectroCut film series 1170 clear UV protection film or Owner approved equal with a PMMA

Digital Image - The printing resolution shall be a minimum of 540 dots per inch (DPI). All numbers, letters, symbols and

borders or backgrounds on signs shall be digitally printed (directly or through reverse image) before the sheeting is

adhered to the panels, unless otherwise approved by engineer. Final signs to be printed with custom blue or gray as

Digital Printing Process - The inkjet printer must be capable of printing with a resolution of 540 dots per inch on a media

of 48 inches wide, at a minimum. Digital printing must be performed using an environmentally friendly, flexible, UV

incandescent, curable ink. The overlaminate must be applied with the use of a laminator capable of heating to 170

Warranty - Image durability, special or custom colors that are used in the manufacturing of digitally printed graphics,

discolor, crack, peel, blister or lose reflectivity such that the signs become visually unsuitable for their intended purpose.

which are not defined by ASTM D4965, must be warranted for a period of 8 years and shall not excessively fade,

Utilize correct paint products designed to adhere to the variety of installation surfaces occurring on this project.

Acrylic Sheet: ASTM D 4802, category as standard with manufacturer for each sign, Type UVF (UV filtering).

Design, fabricate and install components to allow for expansion and contraction within a minimum of a 100-degree F

D. Shop and field assembled joints are to be true and tight, with minimal use of filling compounds. Finish hollow sign elements

with matching material on all faces, tops, bottoms and ends, so that elements have the appearance of solid material.

mounting points as required for assembly. Use concealed fasteners wherever possible.

temperature range, without causing excessive opening, buckling or overstressing of joints, adhesives, welds and fasteners.

Form work to specified sizes, shapes and profiles, with true curves, lines and angles. Provide necessary brackets, lugs and

Shop fabricate as much as is practical, minimizing field fabrication. Fasten joints flush to conceal attachments, or weld, grind

Signs shall have a consistent, smooth surface, with even texture, straight edges and flat panel surfaces. Panel surfaces are to

be flat and true with a maximum surface tolerance is 1/8 inch for 10 feet in length. Lines, joints and miters are to be smooth

Pre-drill holes for bolts and screws. Exposed ends and edges of panels are to be milled smooth with slightly eased edges.

H. All painted surfaces are to have proper surface preparation and priming prior to application of finish coatings. Finish is to be

All moveable parts, including hardware are to be assembled and finished to allow for smooth operation without binding, deformation or distortion of adjoining members. All contact surfaces are to fit tight without forcing or warping components.

Protect products against damage during field handling and installation. Protect adjacent existing materials, finishes and

Coordinate timing of installation work with HAS operations and project management to insure execution of work does not

signs shall be installed where best suited to provide a consistent appearance throughout the project.

for inspection. Replace any damaged landscaping materials to match condition prior to installation.

Remove temporary protective coverings and strippable films as signs are installed.

Correct or remove signs or installation work deemed by the owner as unsafe immediately upon notification.

landscaping as necessary to prevent damage. Touch up exposed hardware to match color and finish of surrounding surface

Mount signs in proper alignment, level and plumb in accordance with the contract documents. Where not otherwise specified,

Contractor shall own and be responsible for all signs that are damaged. lost or stolen while materials are on the job site, and

Upon completing installation, clean all sign surfaces and adjacent building surfaces affected by sign installation prior to calling

For all sign elements related to gate number changes, make sign face changes to reflect new gate numbering, then provide

easily removable cover so that current gate numbers can be easily changed to new gate numbers on the date of the change.

Shop Applied Vinyl: Align vinyl film in final position and apply to surface. Firmly press film from the middle outward to obtain

degrees Fahrenheit with a nip pressure of 90 pounds per square inch. All digitally printing shall be done in a

workmanlike manner and as recommended by the manufacturer of the reflective sheeting.

Clear silicone based commercial grade adhesive as manufactured by General Electric. Preparation of sign and

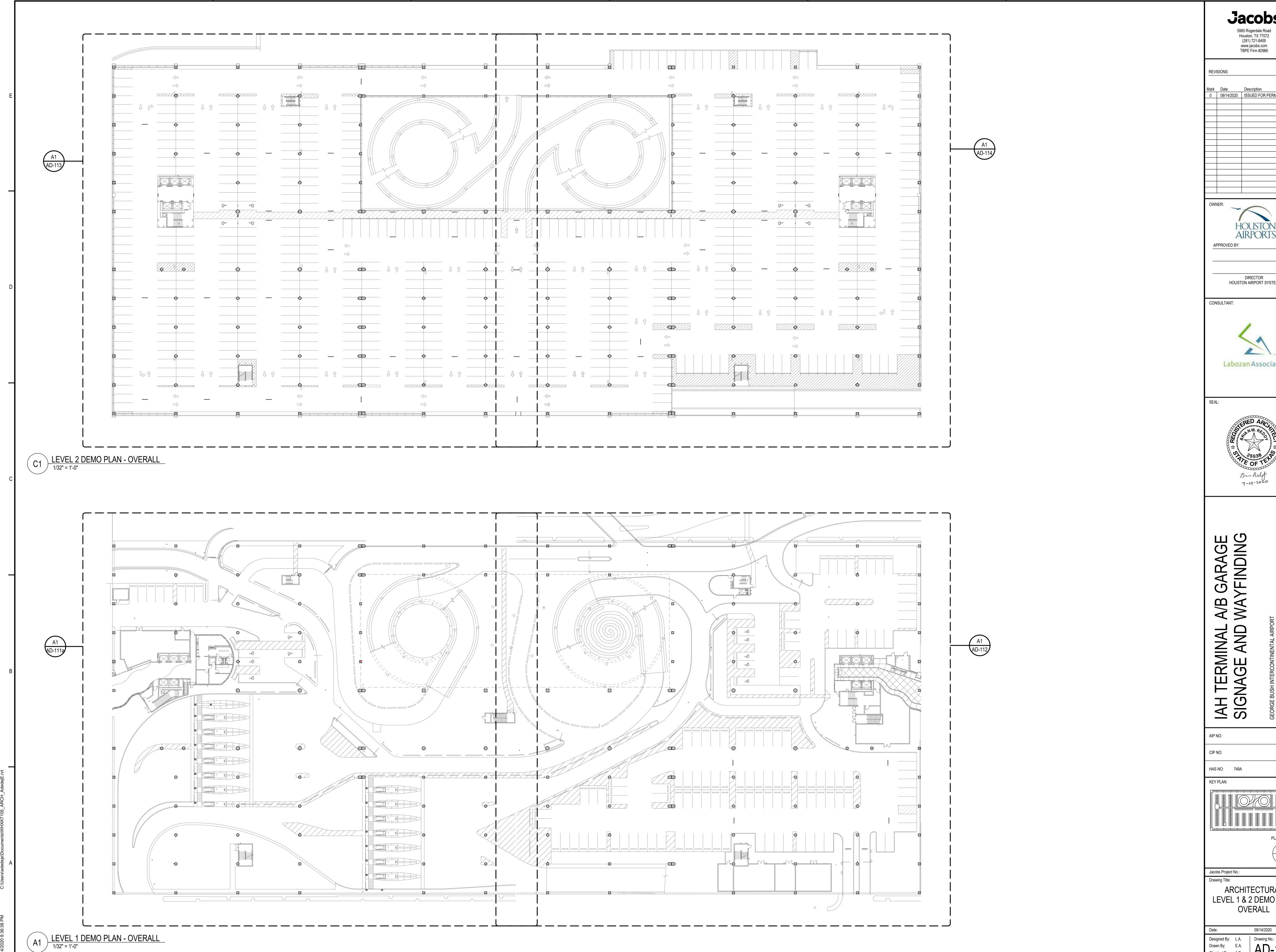
mounting surface and installation techniques to be in accordance with manufacturer's specifications.

mounting surface and installation techniques to be in accordance with manufacturer's specifications.

Utilize 3M vinyl products suitable for applicable installation surfaces.

Surface coatings are to be compatible with adhesives and other materials utilized to apply graphics or other elements to their surface, with no discoloration or other deterioration. Provide MAP graffiti resistant satin clear coat on all sign surfaces.

D. Fasteners 1. Unless otherwise specified, utilize stainless steel fasteners for mechanical connections. Upon installation, paint finish any exposed fasteners to match surrounding finish.

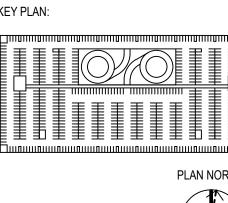


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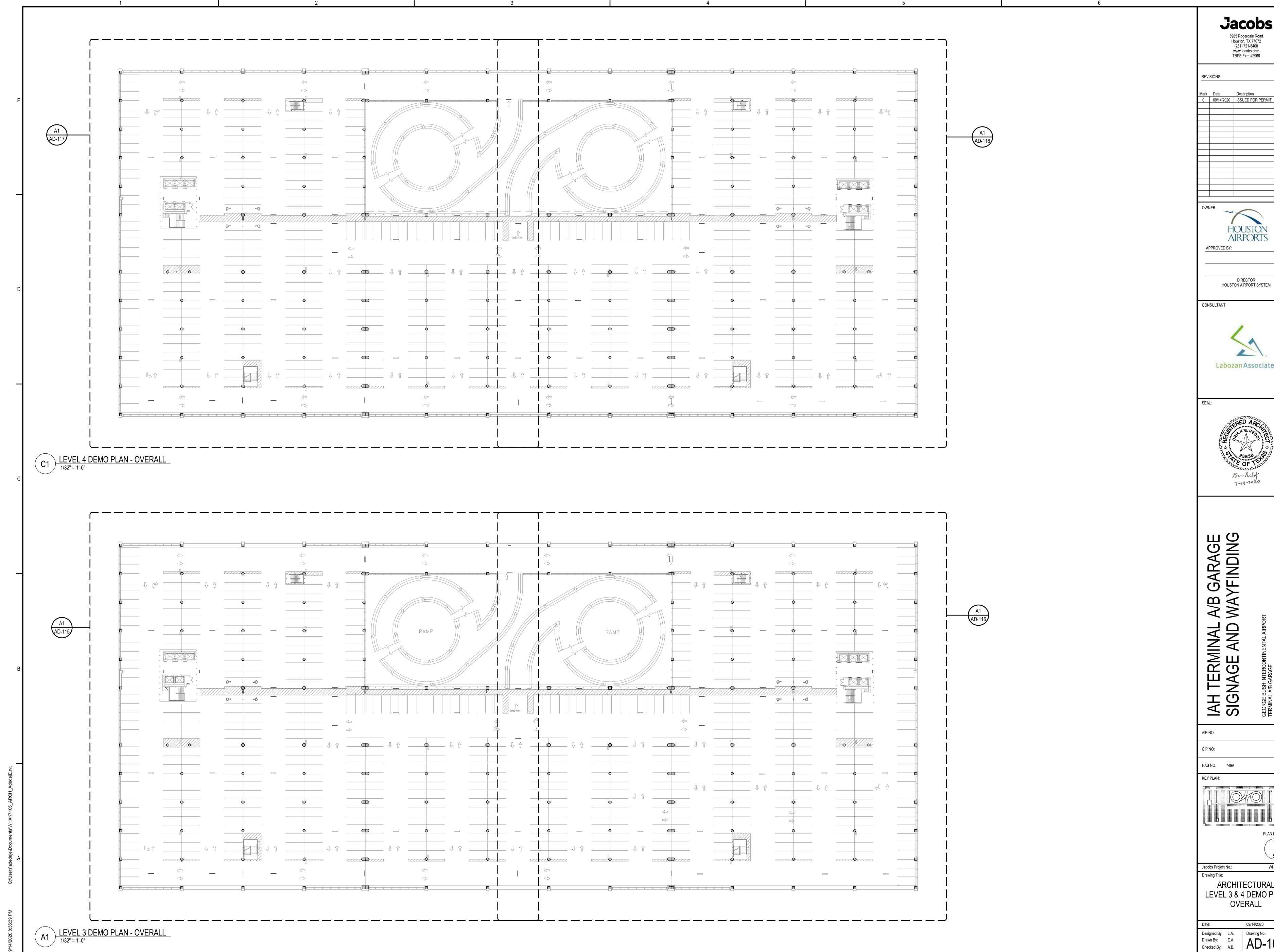
DIRECTOR HOUSTON AIRPORT SYSTEM







ARCHITECTURAL LEVEL 1 & 2 DEMO PLAN OVERALL







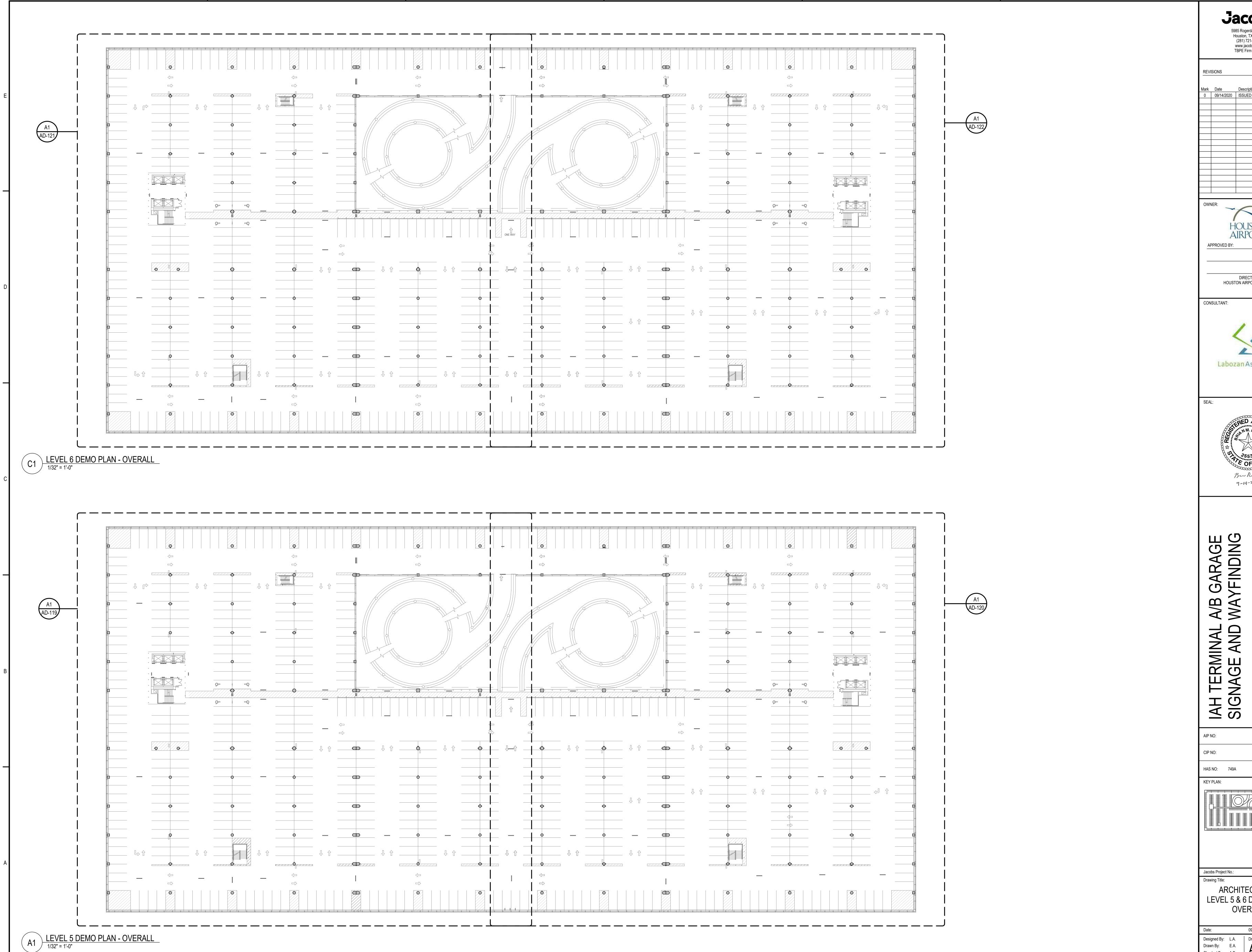
ARCHITECTURAL LEVEL 3 & 4 DEMO PLAN

Designed By: L.A.

Drawn By: E.A.
Checked By: A.B.

Drawing No.:

AD-102



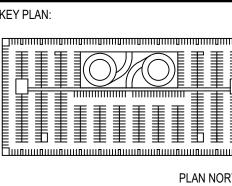
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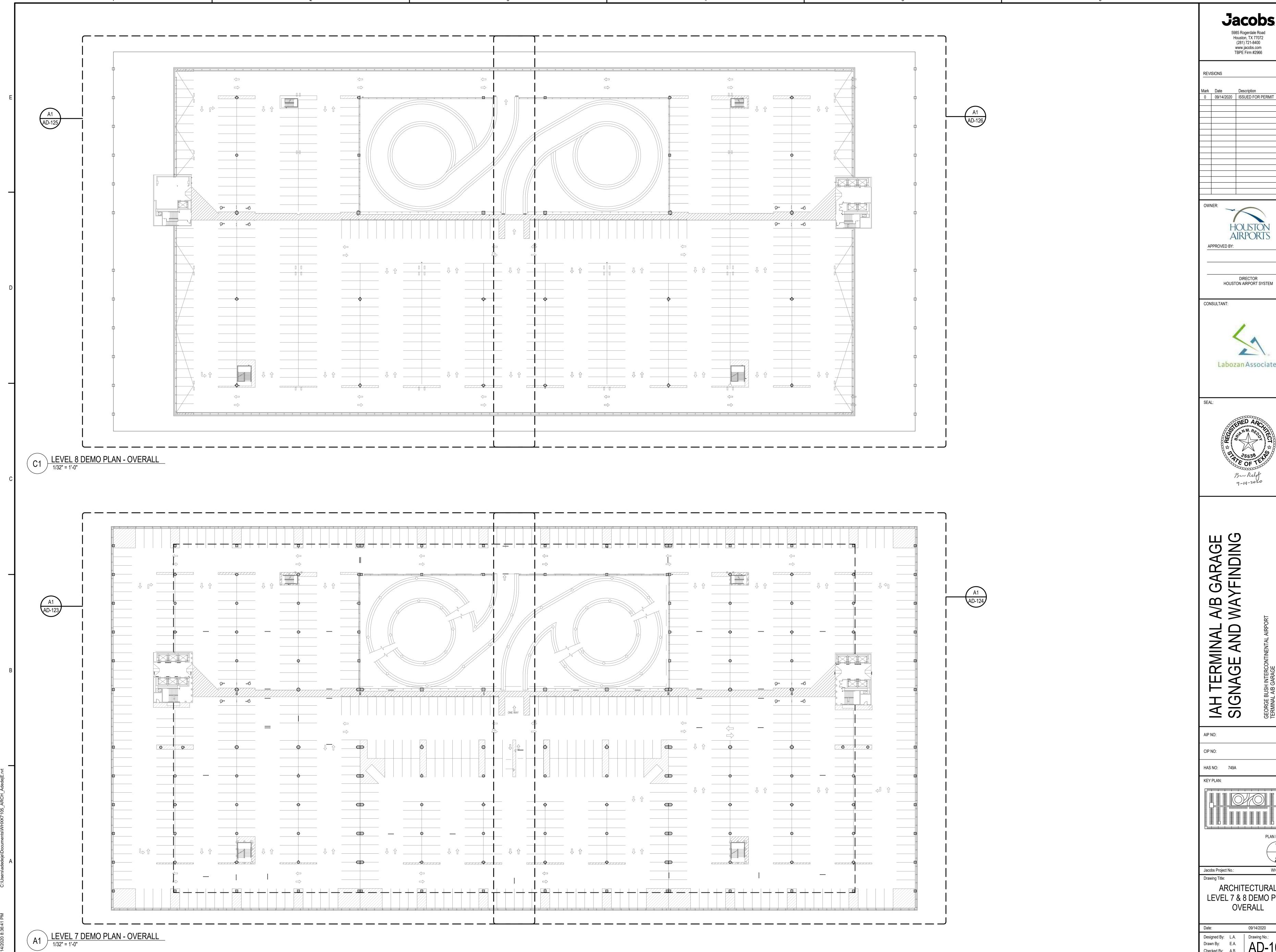
HOUSTON AIRPORT SYSTEM







ARCHITECTURAL LEVEL 5 & 6 DEMO PLAN **OVERALL** 



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ARCHITECTURAL LEVEL 7 & 8 DEMO PLAN OVERALL

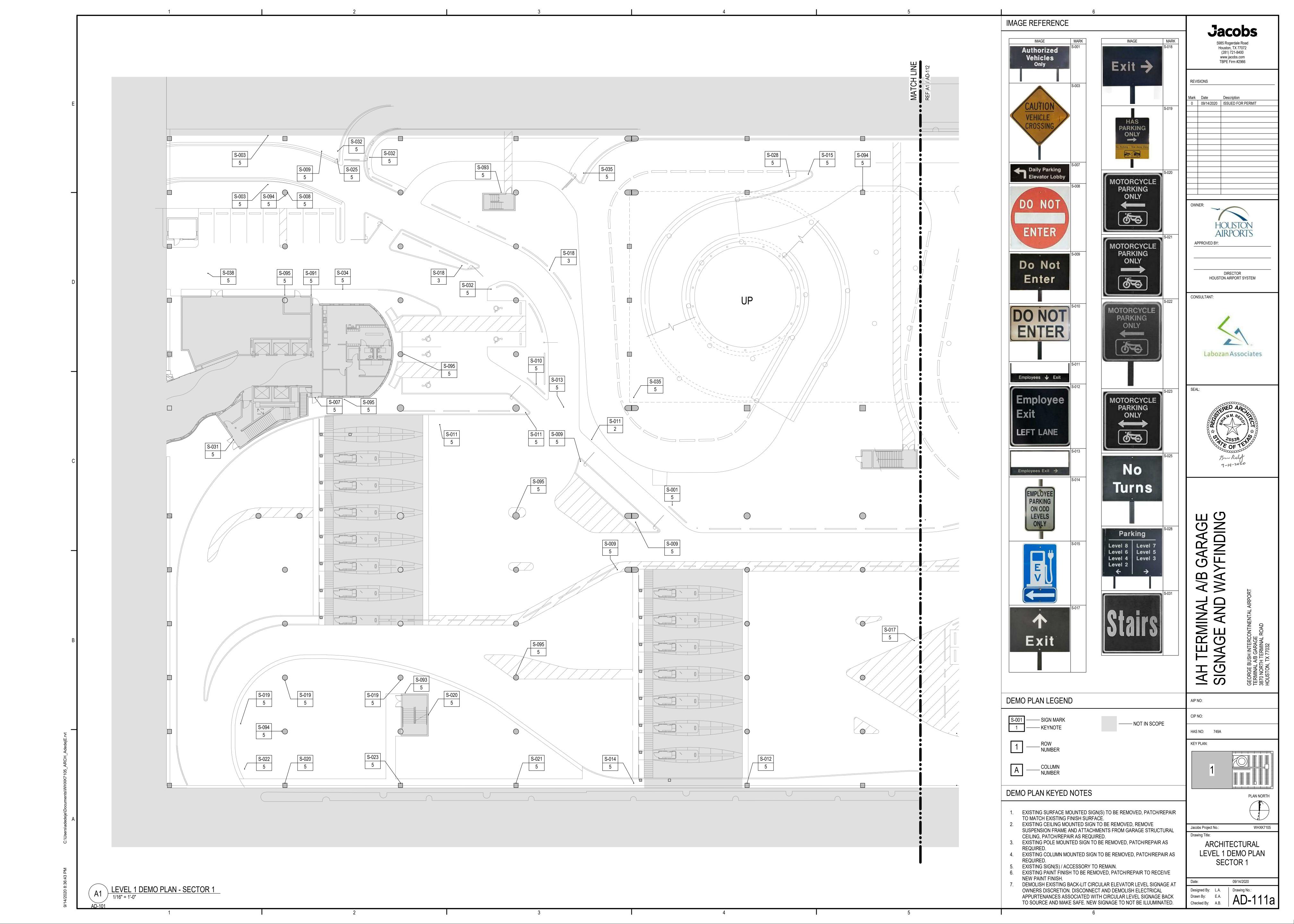


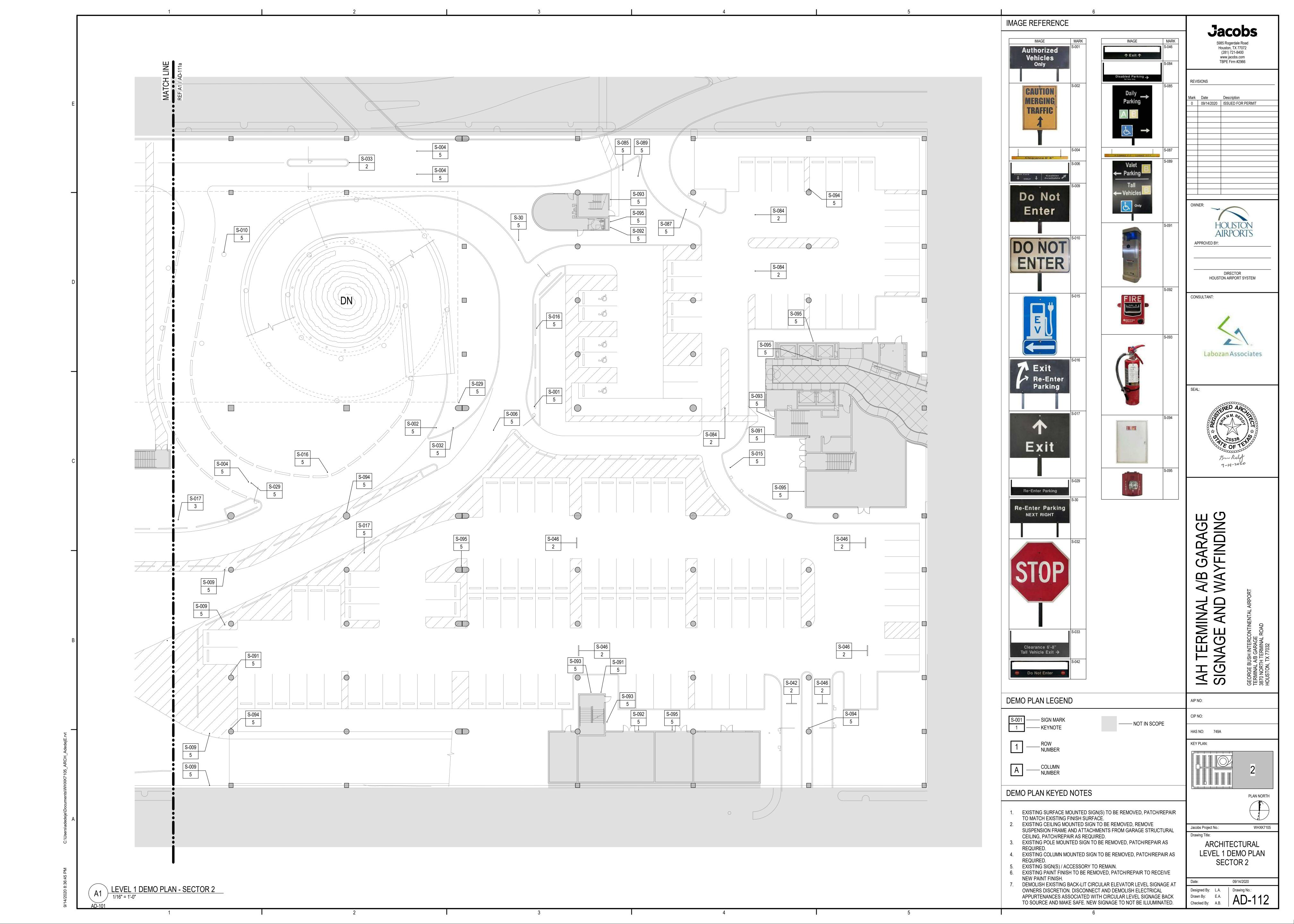
IMAGE REFERENCE **Jacobs** 5985 Rogerdale Road Houston, TX 77072 (281) 721-8400 www.jacobs.com TBPE Firm #2966 
 Mark
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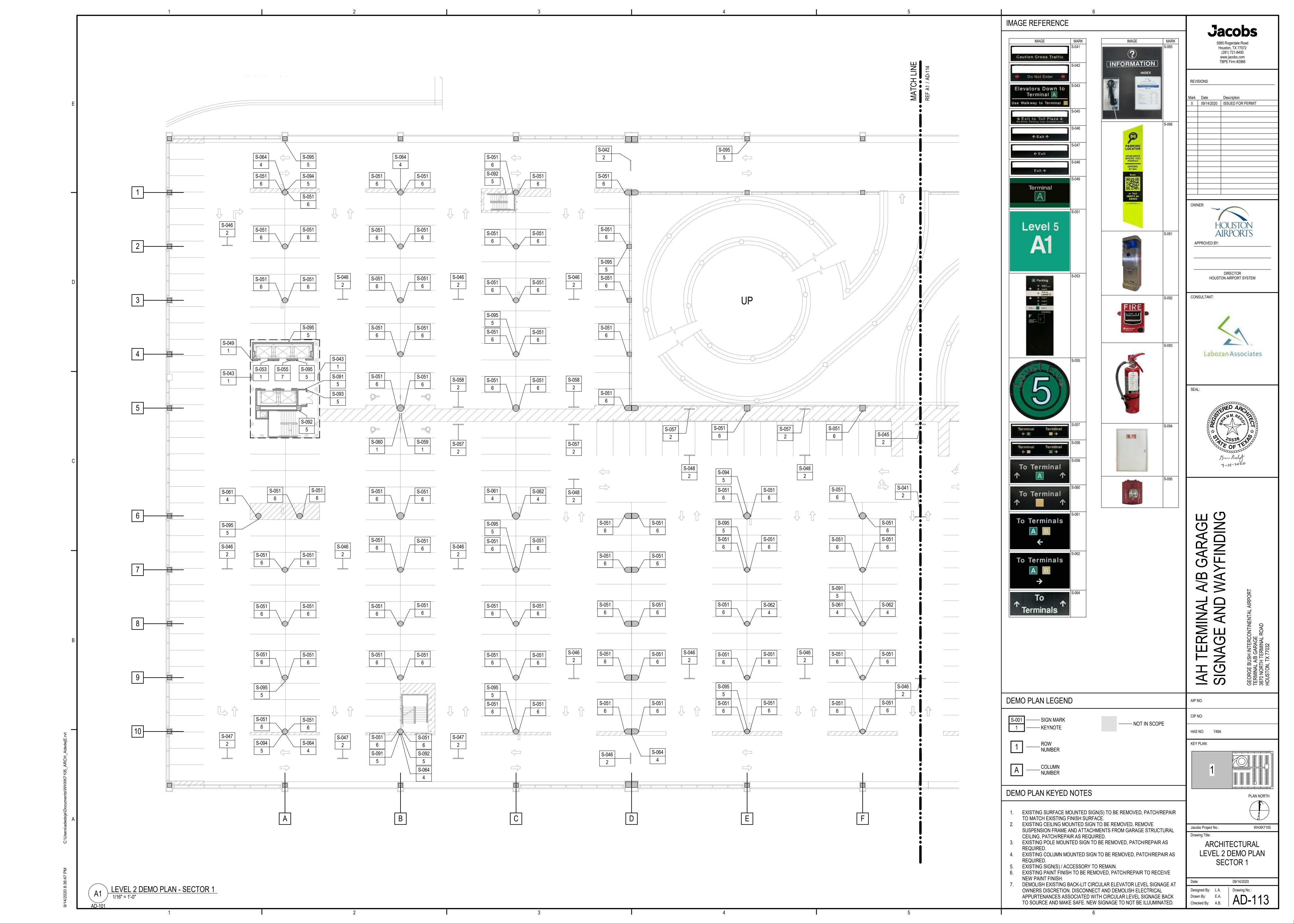
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 09/14/2020
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 Terminal A Valet → ← Up to Parking APPROVED BY: DIRECTOR HOUSTON AIRPORT SYSTEM CONSULTANT: Labozan Associates IAH TERMINAL A/B GARAGE SIGNAGE AND WAYFINDING DEMO PLAN KEYED NOTES PLAN NORTH 1. EXISTING SURFACE MOUNTED SIGN(S) TO BE REMOVED, PATCH/REPAIR TO MATCH EXISTING FINISH SURFACE. 2. EXISTING CEILING MOUNTED SIGN TO BE REMOVED, REMOVE WHXK7105 Jacobs Project No.: SUSPENSION FRAME AND ATTACHMENTS FROM GARAGE STRUCTURAL Drawing Title: CEILING, PATCH/REPAIR AS REQUIRED. 3. EXISTING POLE MOUNTED SIGN TO BE REMOVED, PATCH/REPAIR AS ARCHITECTURAL LEVEL 1 DEMO PLAN 4. EXISTING COLUMN MOUNTED SIGN TO BE REMOVED, PATCH/REPAIR AS SECTOR 1 REQUIRED. 5. EXISTING SIGN(S) / ACCESSORY TO REMAIN. 6. EXISTING PAINT FINISH TO BE REMOVED, PATCH/REPAIR TO RECEIVE NEW PAINT FINISH. 09/14/2020 7. DEMOLISH EXISTING BACK-LIT CIRCULAR ELEVATOR LEVEL SIGNAGE AT

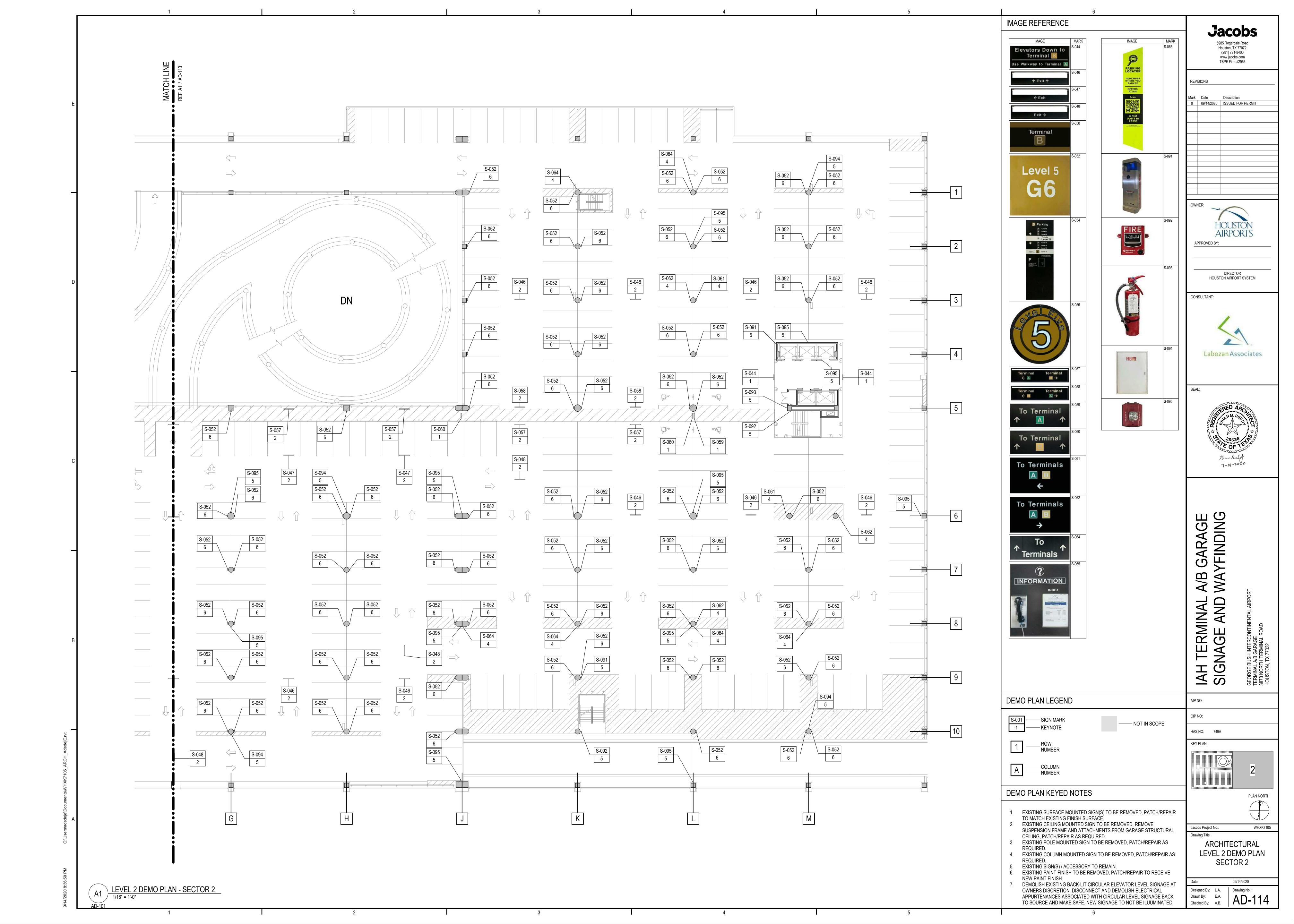
Designed By: L.A. Drawing No.: Drawn By: E.A. Checked By: A.B. AD-111b

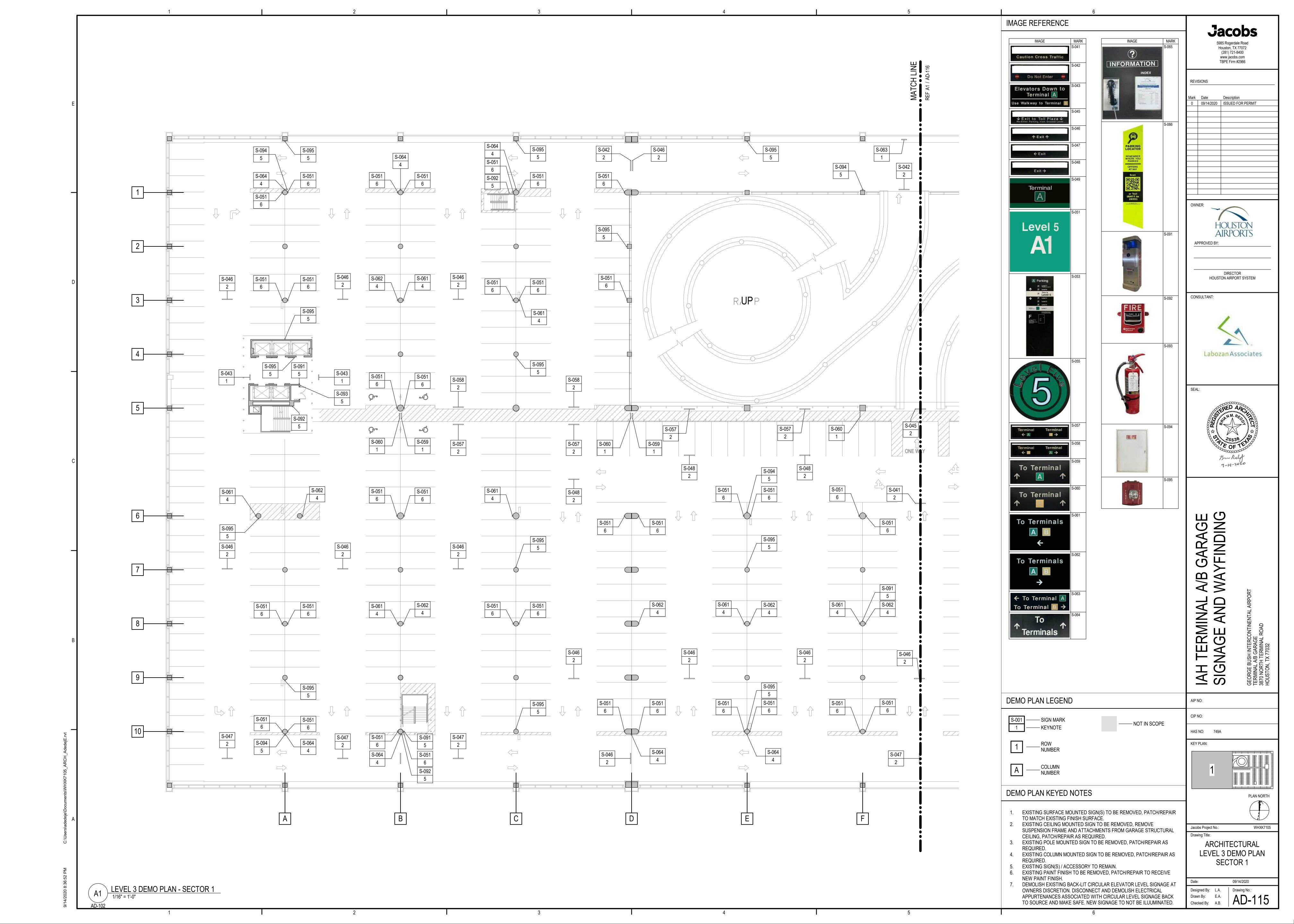
OWNERS DISCRETION. DISCONNECT AND DEMOLISH ELECTRICAL

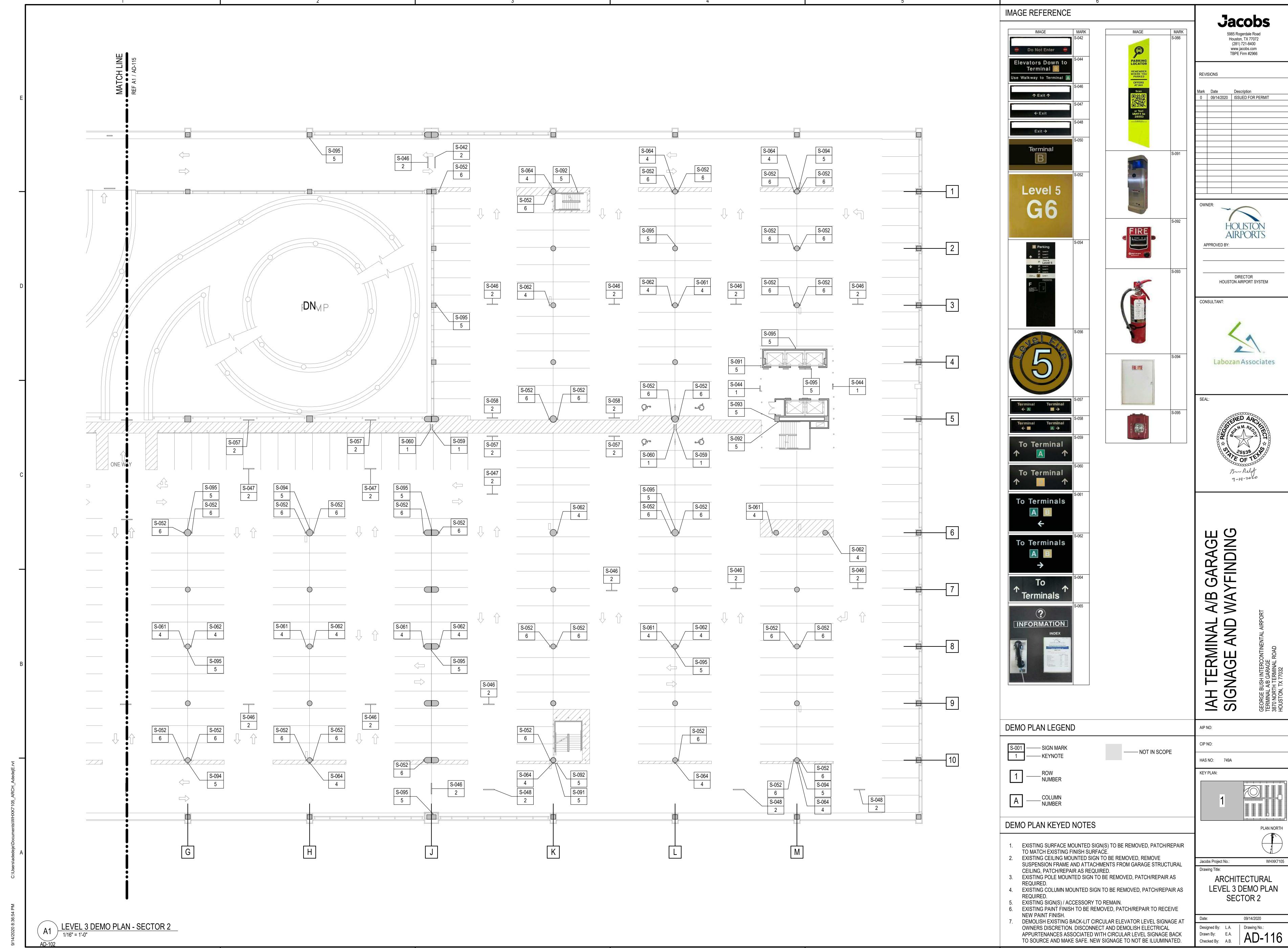
APPURTENANCES ASSOCIATED WITH CIRCULAR LEVEL SIGNAGE BACK TO SOURCE AND MAKE SAFE. NEW SIGNAGE TO NOT BE ILUUMINATED.

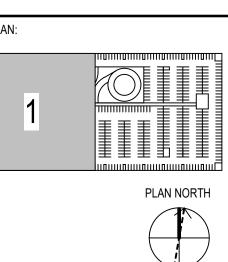


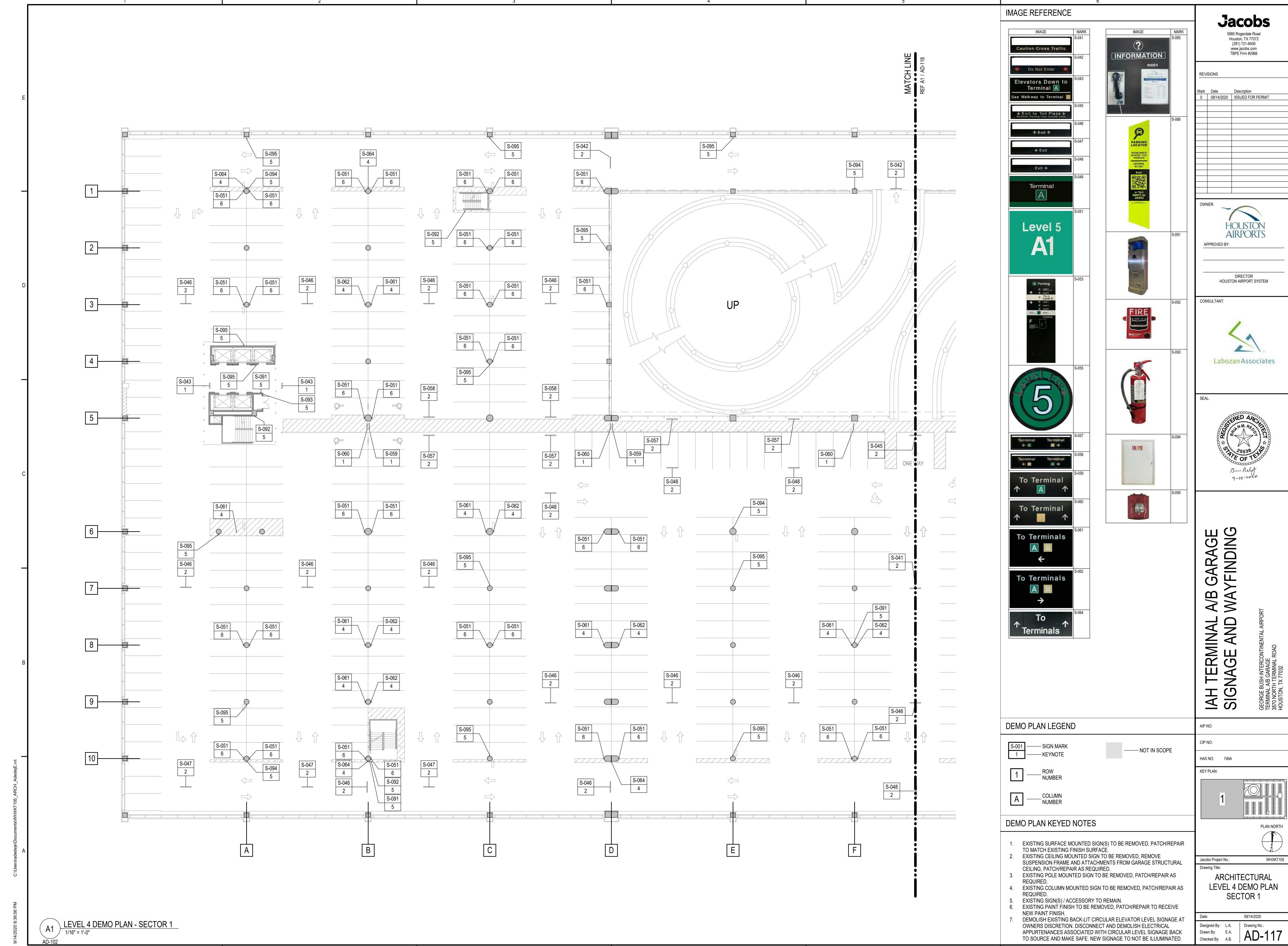


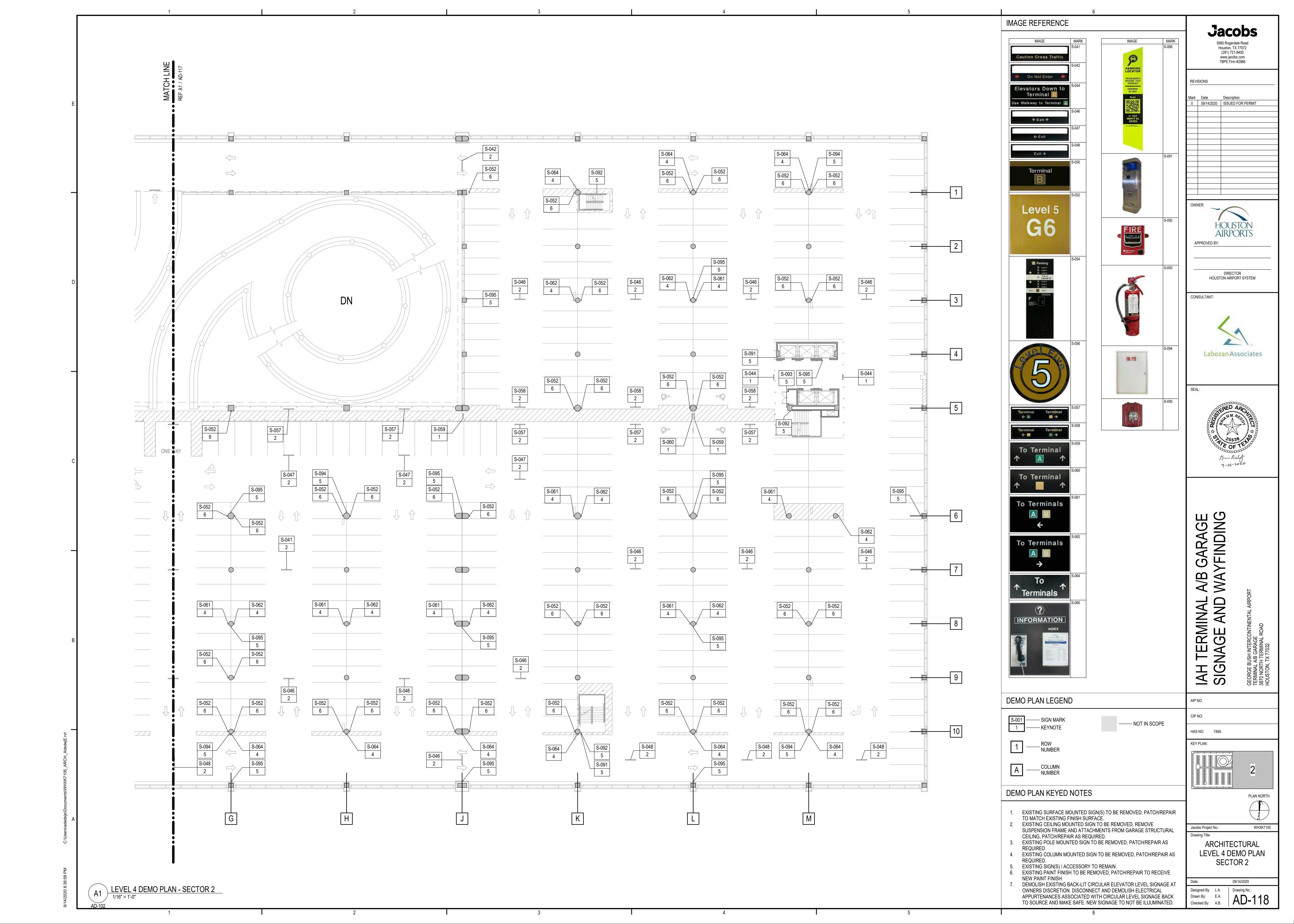


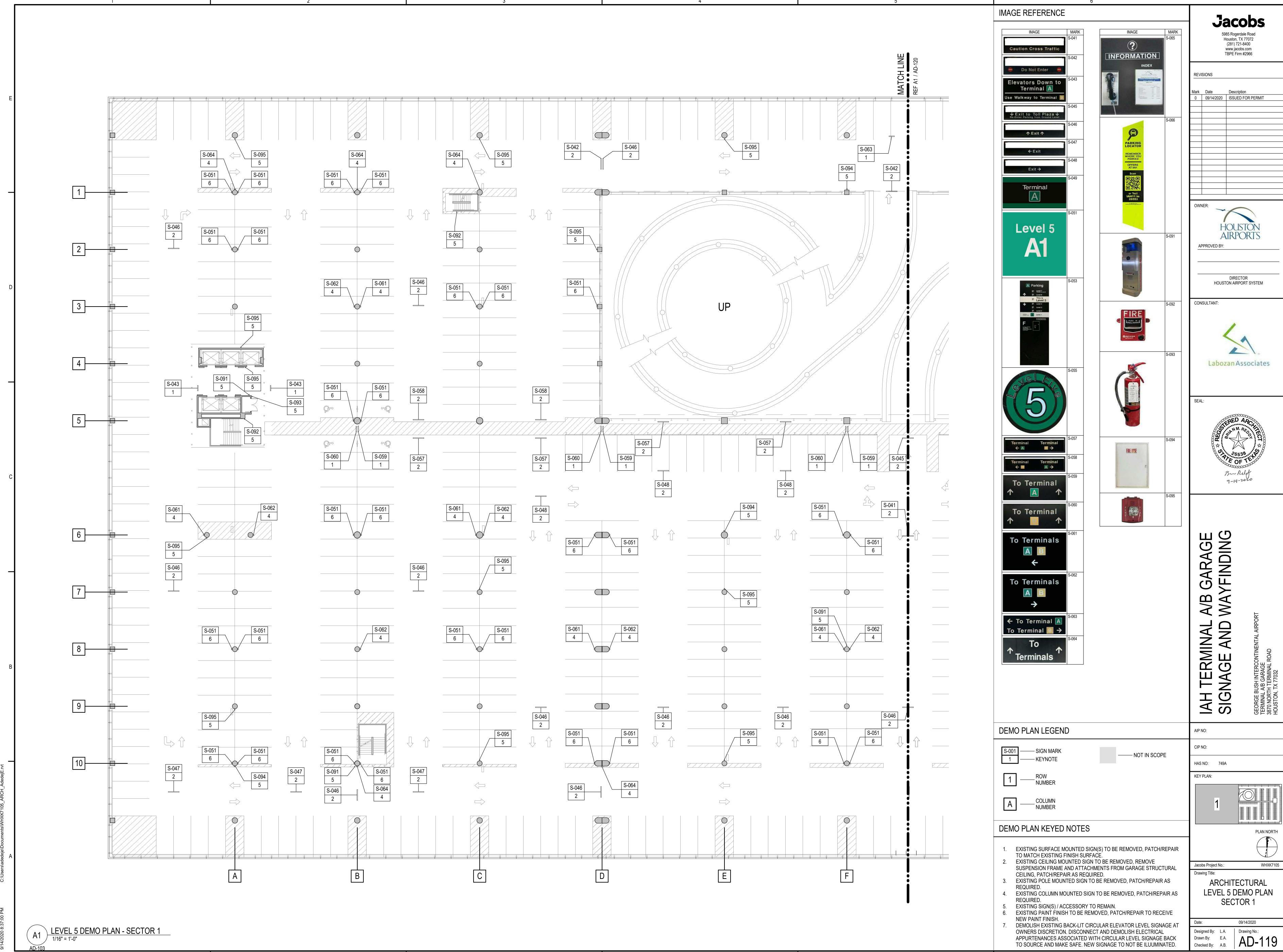


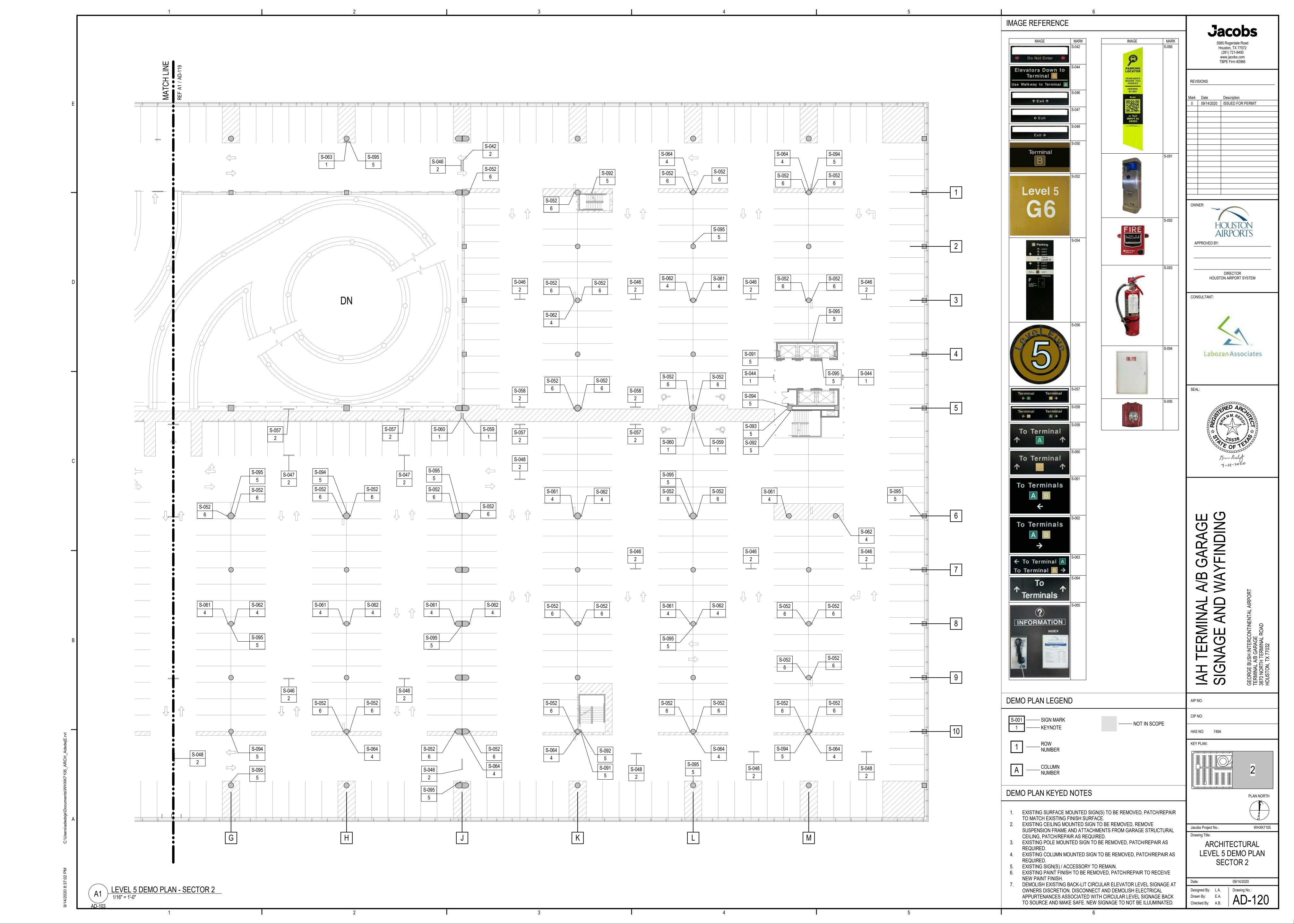


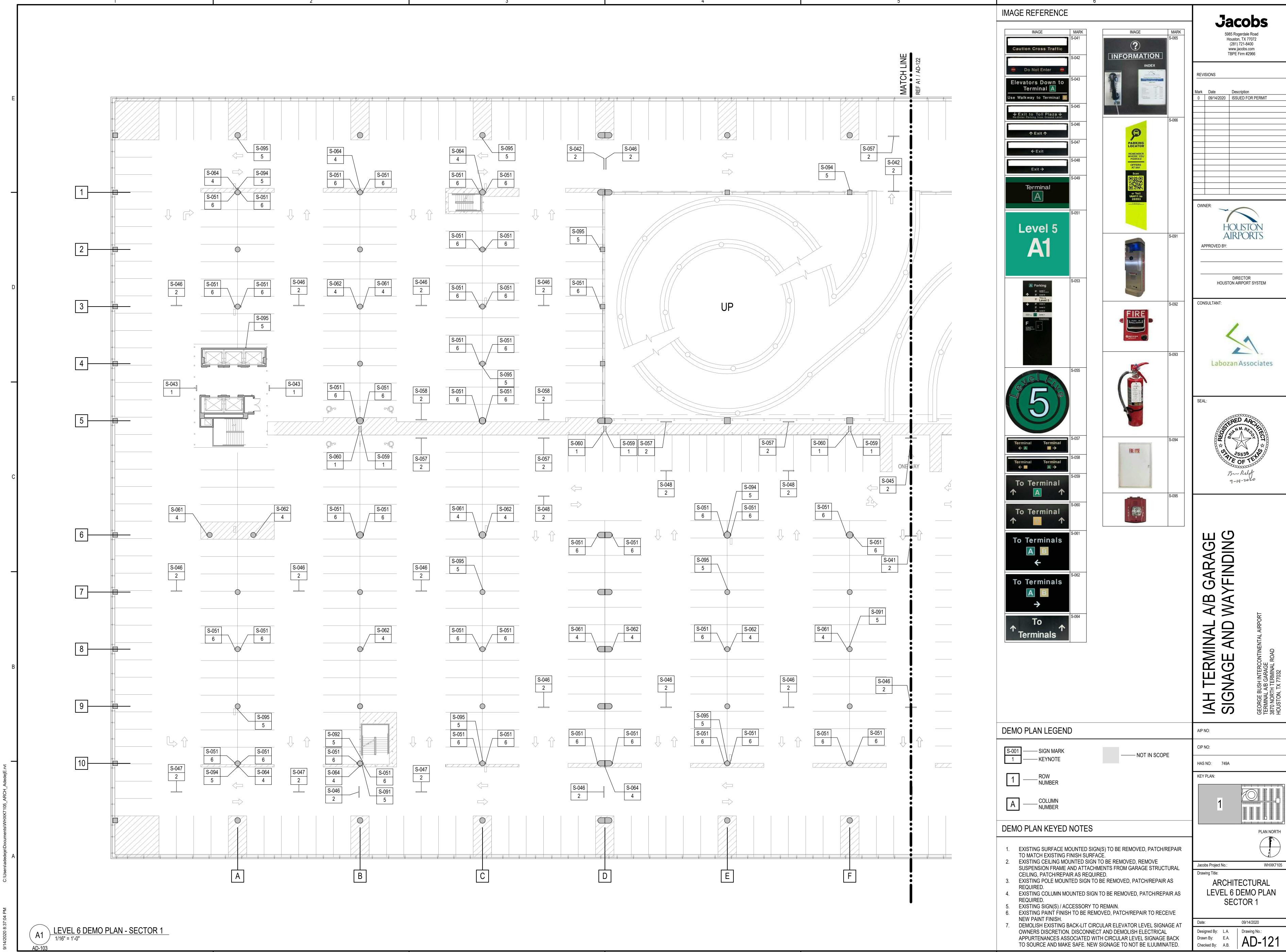


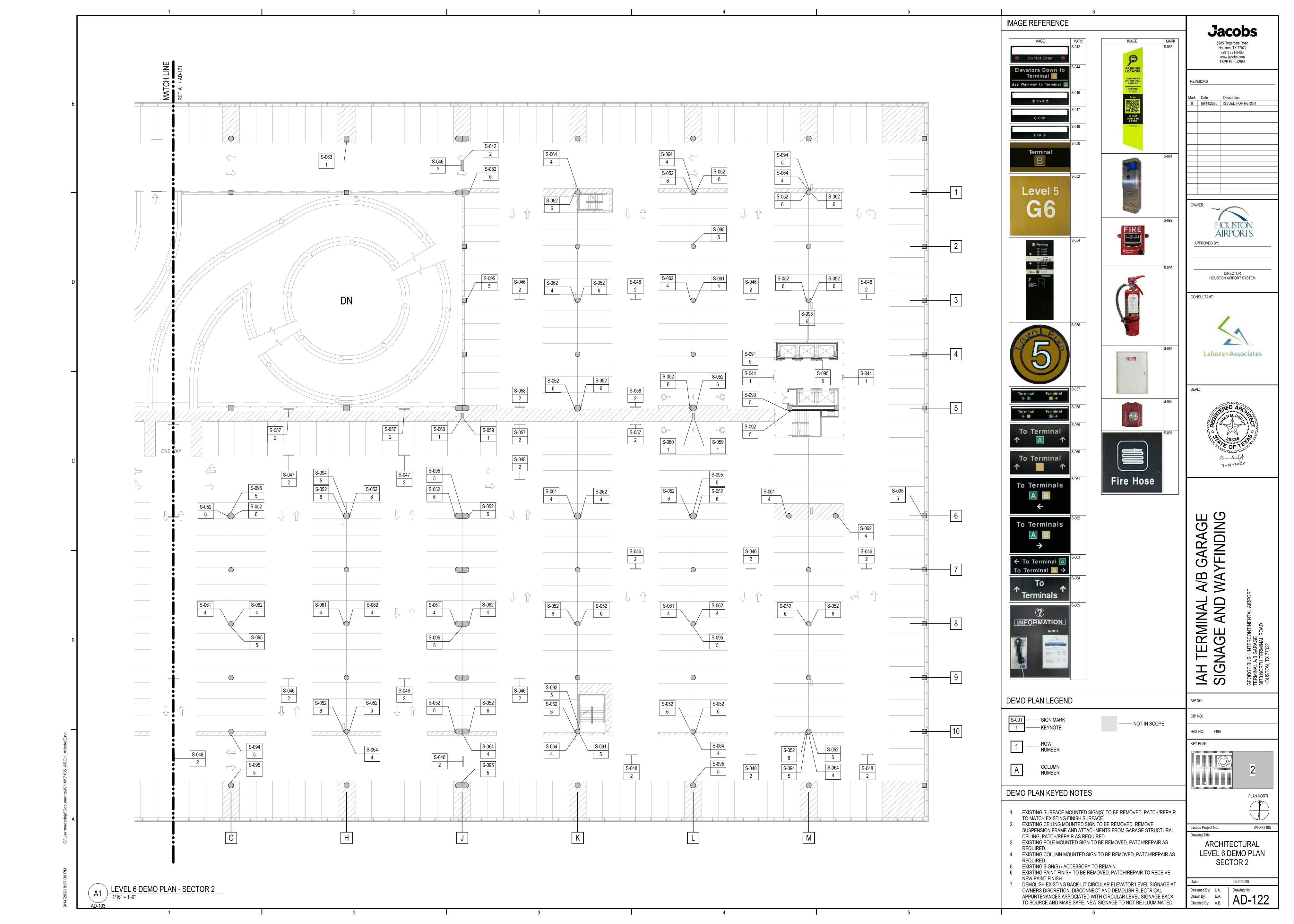


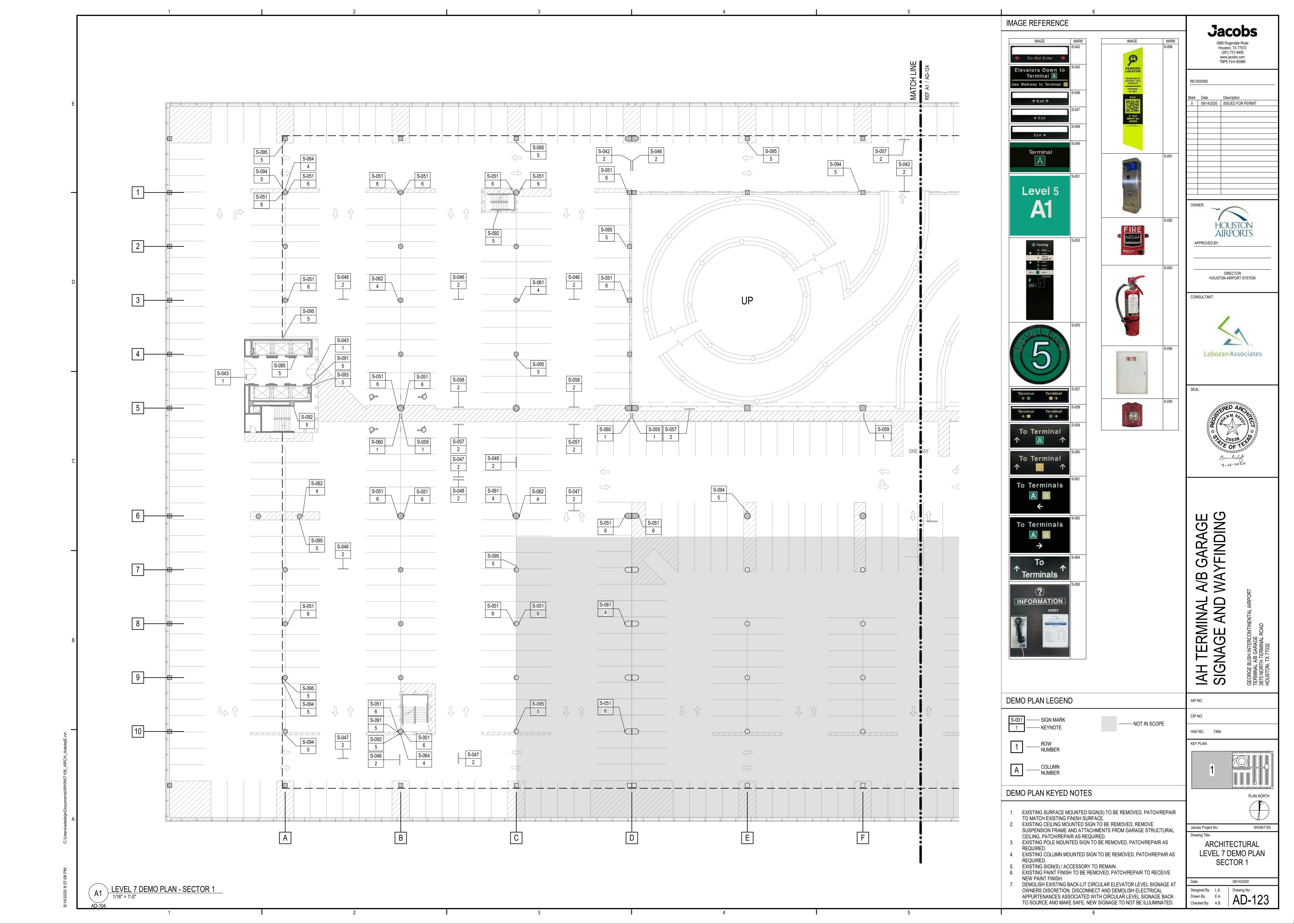


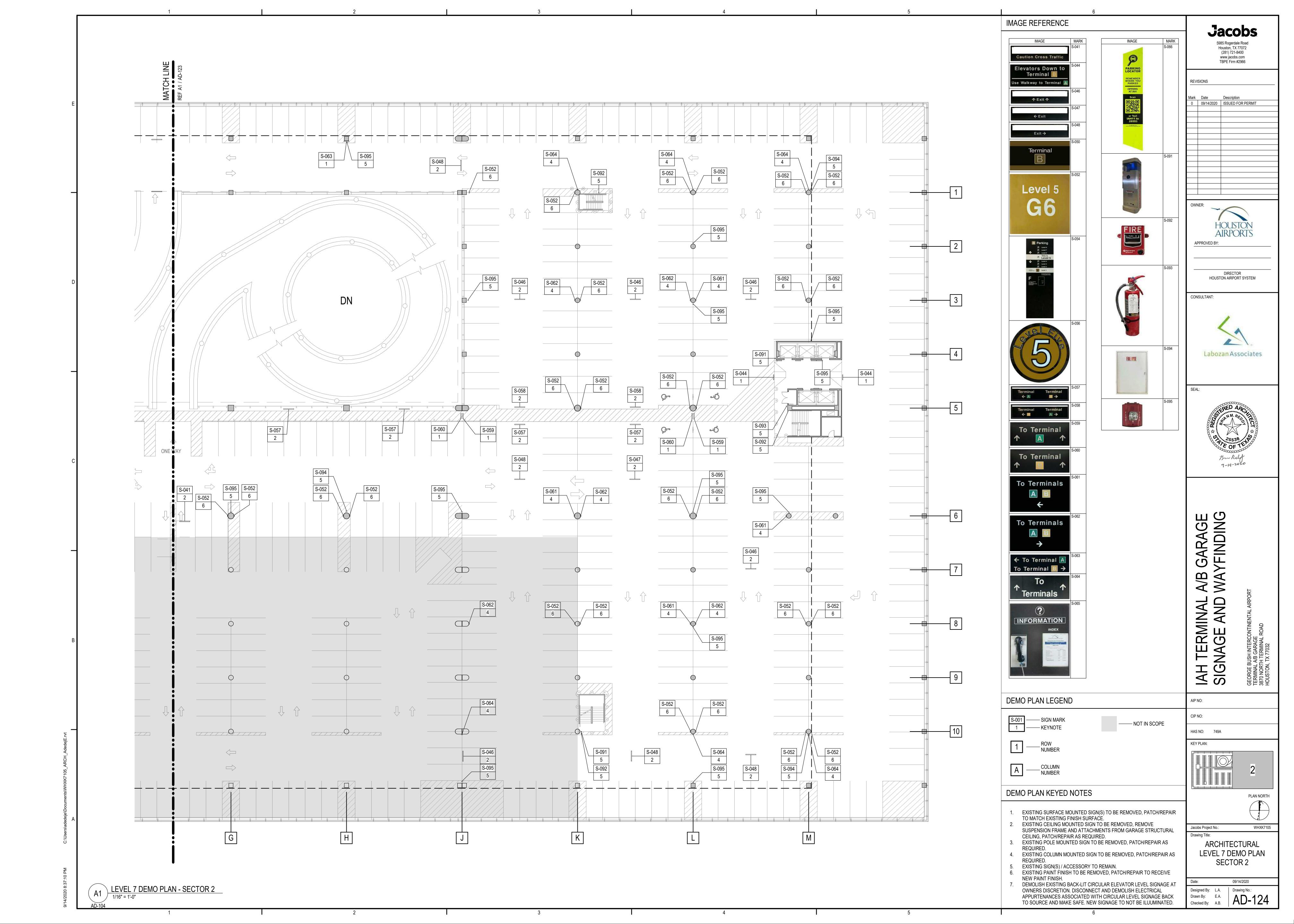


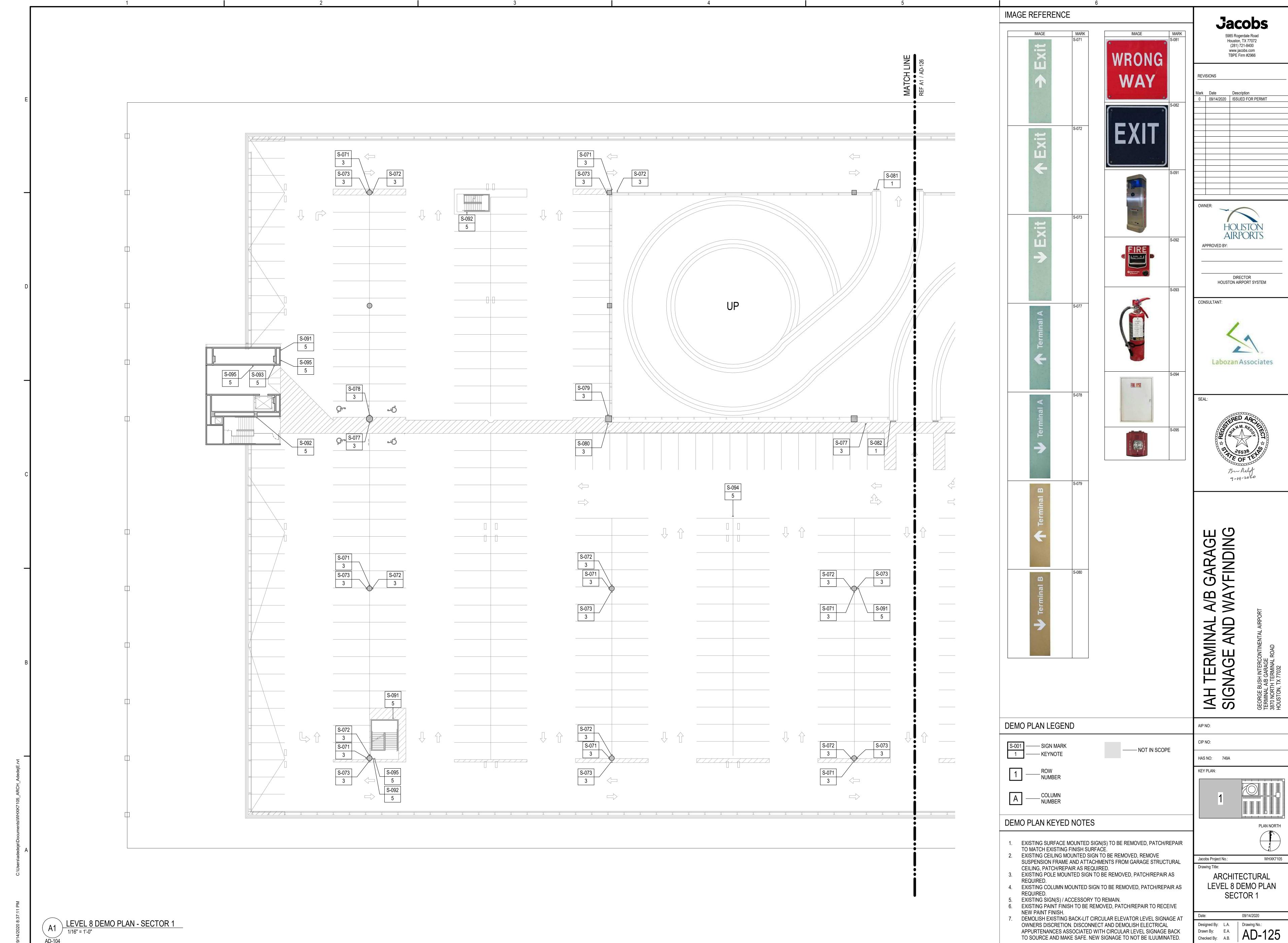


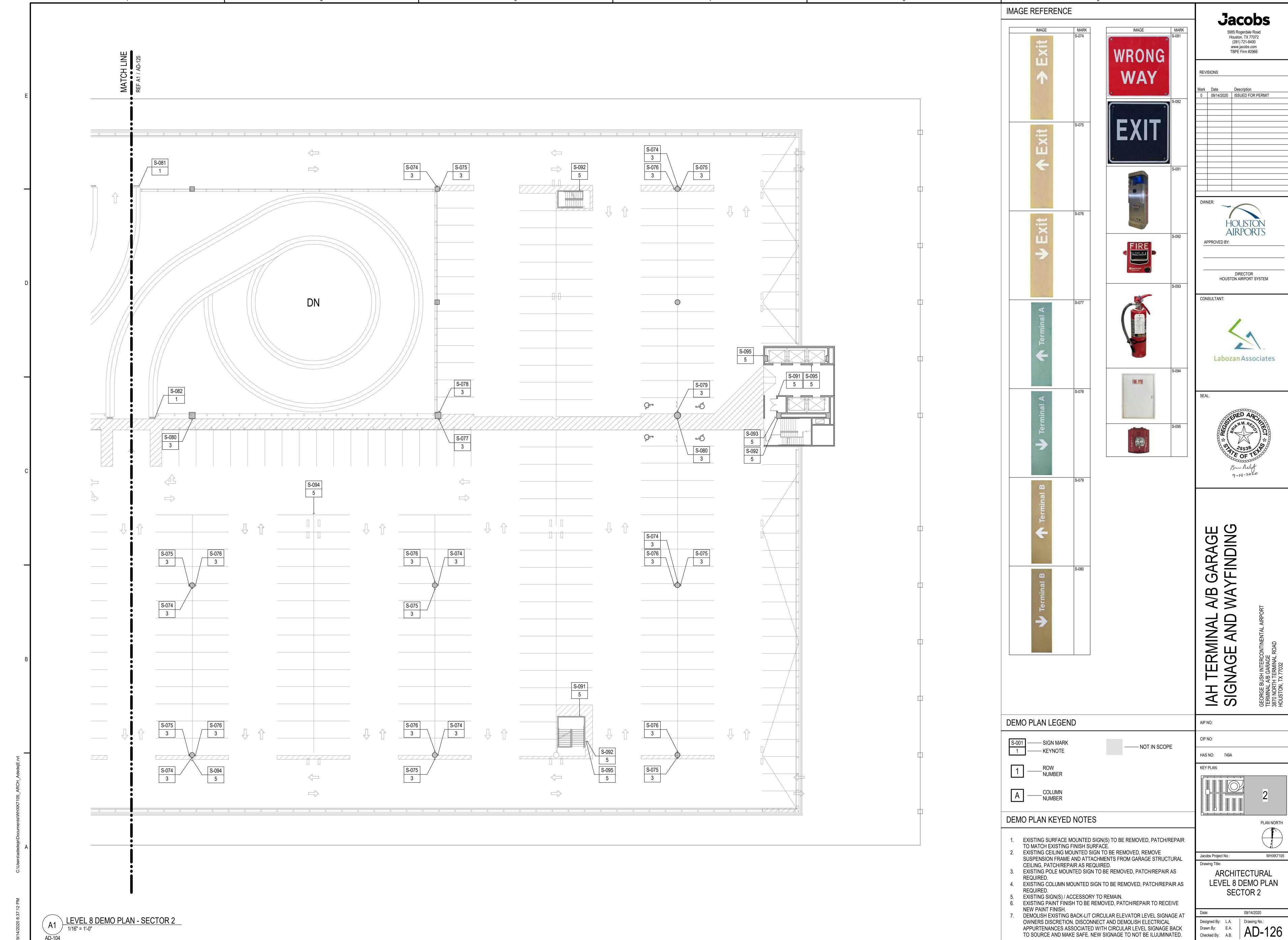
















#### INTRODUCTION

Airports can be complex and difficult spaces to navigate. Numerous factors affect public perception and levels of customer service with the associated airport. This is particularly true when airport modifications or upgrade programs are undertaken. Older terminals and roadways typically have outdated and inconsistent wayfinding signage systems not reflective of current world principles and standards, and improvement projects create even more challenges for individuals functioning within the airport's wayfinding processes.

As an airport continues to evolve, it is important that its wayfinding and signage systems be designed to accommodate changes in a holistic manner. It must be understood that regardless of an individual facility's demarcation, the wayfinding pathways extend to and from the surrounding roadways, parking, curbsides, terminals and concourse areas. Facility architecture, services, functions and amenities, as well as vertical and horizontal routes, must always be carefully considered and viewed as part of the airport's interconnected and overall wayfinding system. A solid understanding of graphic/visual cues and human behavioral responses to wayfinding processes is paramount, and the established wayfinding system must also function seamlessly, within the built environment, without user hesitation or confusion, regardless of what area of the airport is being navigated.

#### **BACKGROUND**

Over the next several years, Houston Airport System (HAS) will be implementing major transformations within all of their Houston Metropolitan Area airport properties, including George Bush Intercontinental (IAH), William P. Hobby Airport (HOU) and Ellington Field (EFD). These terminals and their associated facilities, as well as their surrounding roadway systems, will be improved and/or expanded, creating continually changing wayfinding conditions.

Recognizing the complexity of their redevelopment plans, HAS commissioned Labozan Associates, Inc. (LAI) to provide wayfinding analysis and evaluation of the overall existing wayfinding signage programs at all three Houston airport properties. Starting with IAH, LAI developed and presented several conceptual signage options that established a new holistic and refreshed "HAS Branded" wayfinding signage system. Through the use of computer-rendered "before and after" walk-through simulations (focused on typical wayfinding pathways throughout all IAH terminal facility and roadway areas), the analysis identified potential discrepancies that may occur as a result of the Airport's redevelopment plans, as well as how the new wayfinding system would address those issues holistically. HAS staff and stakeholders reviewed and approved the final conceptual wayfinding system option during a multi-phased consensus-building process. This newly approved HAS branded wayfinding system will be implemented within all current and future Houston area HAS airport property improvement programs.

#### **PURPOSE**

This document presents information regarding the general design intent and planned implementation of HAS' new wayfinding signage system within IAH's Parking Garage A/B. It will present the new HAS parking/garage wayfinding signage system with regards to specific graphic design standards, general wayfinding signage design intent detailing, general sign location plans and typical examples of graphic depictions of messaging per sign locations within the scope of the IAH's Parking Garage A/B wayfinding program.

#### SCOPE

The scope of this document includes the general design intent, criteria and descriptions for the updated HAS wayfinding signage system as they pertain to implementation within IAH Parking Garage A/B wayfinding program. This includes:

- Overview
- Graphic Standards
- Design Intent
- Sign Location Plans & Message Schedules (typical only)

# Signs regulated by this document:

 All in scope new HAS parking/garage wayfinding system signage (as shown within this document and within public-use areas only), including directional, identification and informational wayfinding signs

Signs NOT regulated by this document:

- Terminal/Concourse signage
- Garage/Parking signage
- Roadways signage
- Tenant/concession/retail/advertising signs and standards
- Directory map artwork
- FIDS/BIDS/CUTE systems
- Regulatory or life-safety/egress signs
- Egress evacuation map artwork
- Branded Airline elements/systems/signs
- Rental car facilities/areas/signs
- Non-public, back-of-the-house, office or airside/runway/exterior areas/signs
- Sign demolition plans/details/etc
- Existing/non-updated (aka "older" or "original") IAH wayfinding signage

#### DOCUMENT ORGANIZATION

This document is organized into the following chapters:

### 1.0 Overview & Standards

Includes the purpose, background, scope of work, general requirements and descriptions of the HAS wayfinding system. Also includes specific graphic and design criteria/universal standards applicable to all HAS wayfinding signage:

- Messages & Terminology includes standardized HAS message hierarchy and terminology for each category organized by sign type/message priority (primary, secondary and tertiary).
- Typography includes descriptions/uses of HAS wayfinding typography.
- Symbol Standards includes a list of all HAS wayfinding universal symbols.
- Arrow Standards includes HAS arrow standards, sizes, applications/ meanings, rotation angles and placement.
- Color Standards includes all universal color standards as applicable to the overall HAS wayfinding system.
- Sign Family Overview includes a brief organized index of sign types.

# 2.0 Design Intent

General design intent of new IAH Parking Garage A/B wayfinding signage, including design intent, general mounting and intended sign usage.

#### 3.0 Design Intent - Signage Details

Additional design intent details for IAH Parking Garage A/B wayfinding signage.

#### 4.0 through 10.0 Location Plans & Message Schedules

Sign location plans and message schedules showing intended typical locations and messages of updated IAH Parking Garage A/B wayfinding signage.

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 Description

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OWNER:

HOUSTON
AIRPORTS

DIRECTOR HOUSTON AIRPORT SYSTEM

CONSULTANT:



SEAL:



I TERMINAL A/B GARAGE SNAGE AND WAYFINDING

IP NO:

HAS NO: 749A

KEY PLAN:

cobs Project No.:

09/14/2020

ned By: L.A. Drawing No.:
n By: Q.P.

1.1 INTRODUCTION

L.A. Drawing No.:
Q.P. A.B. 1-1

#### **GOVERNING BODIES, CODES & REGULATIONS**

Governing bodies, codes, city ordinances and standards affecting the HAS wayfinding sign system are outlined in this section. The accompanying lists have been compiled from various entities and codes affecting HAS properties, however, it is not to be considered a complete or final list of requirements. These lists have been initially established by HAS, and changes will be coordinated with and approved by HAS as required on an individual case-bycase basis. If there is a conflict between a requirement listed here and another authoritative code or standard, the more stringent one shall be applied.

NOTE: This section is for general reference only. It is the responsibility of the designer/fabricator/installer to always design/fabricate/engineer/install all signage to meet or exceed all current applicable local, state and national codes and regulations.

#### **General Requirements**

- An eggshell or satin finish (11 to 19 degree gloss on 60 degree gloss meter) on sign faces and elements is to be used in order to eliminate distracting levels of sheen.
- Letters and numbers on signs shall have a width-to-height ratio between 3:5 and 1:1 and a stroke-width-to-height ratio between 1:5 and 1:10.
- Characters and numbers on signs shall be sized according to the viewing distance from which they are to be read unless otherwise noted. The minimum height is measured using a capital letter height, and is shown as an "X" for the basis of measurement reference.
- For all tactile signs, the physical sign surface, background finish, contrast, materials, mounting heights/locations, letters/numbers and Braille shall be sized, spaced and applied to the meet the most recent Federal ADA standards for Accessible Design, Texas Accessibility Standards and/or other local requirements.
- Elements and spaces of accessible facilities which shall be identified by the "International Symbol of Accessibility" are:
  - Parking spaces designated as reserved for individuals with disabilities
  - Accessible passenger loading zones
  - Accessible entrances when not all are accessible (inaccessible entrances shall have directional signs indicating the route to the nearest accessible entrance)
  - When older facilities contain non-accessible elevators and/or restrooms, the accessible elevators and restrooms must be identified as such
  - All other requirements as dictated by local, state and national standards/ building codes and regulations

#### Governing Bodies & Authoritative Organizations

The following list includes (but may not be limited to) the governing bodies and authoritative organizations as applicable to design and engineering at HAS properties:

- AAAE: American Association of Airport Executives
- AASHTO: American Association of State Highway & Transportation Officials
- ACC: Airport Consultants Council
- ACRP: Airport Cooperative Research Program: Report 52
- AIGA: American Institute of Graphic Arts
- ANSI: American National Standards Institute
- ASTM: American Society for Testing and Materials
- ATA: Air Transport Association of America
- AWI: Architectural Woodwork Institute
- CAA: Civil Aeronautics Administration
- CAB: Civil Aeronautics Board
- CABO: Council of American Building Officials
- CSI: Construction Specification Institute
- FAA: Federal Aviation Administration
- FHA: Federal Highway Administration
- IATA: International Air Transport Association
- NEMA: National Electric Manufacturers Association
- NFPA: National Fire Protection Association
- TXDOT: Texas Department of Transportation
- Other governing bodies and authoritative organizations as deemed necessary

# Codes & Regulations

The following list includes (but may not be limited to) the governing bodies and authoritative organizations as applicable to design and engineering at HAS properties:

- ADA: Americans with Disabilities Act
- ANSI: American National Standards Institute
- IBC: International Building Code
- LSC: Life Safety Code (written by the NFPA)
- NEC: No Exposure Certification
- SPC: Standard Plumbing Code (written by the NFPA)
- SBCCI: Standard Building Code
- TDLR: Texas Department of Licensing and Regulation
- UBC: Uniform Building Code
- Other codes and regulations as deemed necessary by HAS

#### DESIGN INTENT: DEFINITION & LIMITATIONS OF THIS DOCUMENT

Labozan Associates, Inc. (LAI) creates design intent documentation/specifications for the purposes of illustrating new wayfinding signage system design intent only, as it relates to the applicable wayfinding project and its predefined area of scope. LAI is not responsible or liable in any regard for final engineering, material selection, fabrication, installation or performance specification of any kind. The included design intent documentation and specifications are based on the most recent information and drawings as provided to LAI by HAS and the Project Team at the time of publication. Any included drawings, specifications or information within LAI's design intent documentation is to only be used as a general guideline. No information contained within LAI's design intent documentation or specifications should be construed as engineered elements or used for the purposes of final sign fabrication, specification or installation. The Fabricator/Contractor/Installer is responsible for all final design, engineering, fabrication and material specifications with regard to all structural, electrical, mechanical, foundation, installation and material selection/processes, and must be approved by HAS prior to final fabrication/install. In addition:

- All final design, engineering and amount/sizing of structural sign support elements, material types/ thicknesses, dimensions, welds and attachment methods shall be performed and approved by an engineer licensed in the State of Texas to meet or exceed all applicable local, state and national codes, standards and regulations. Where a conflict occurs between LAI's design intent documentation/specifications, the more stringent requirements per all codes apply.
- Final engineering, dimensions, materials and fabrication are the responsibility of the Contractor/ Fabricator/Installer, and the Contractor/Fabricator/Installer must ensure the highest quality fit and finish for all components of the completed product. All final detailing and specifications are to be provided by the Contractor/Fabricator/Installer within their final fabrication-ready shop drawings and must be approved by HAS prior to final fabrication and installation.
- Wherever dissimilar metals or possibly corrosive installation surfaces are in contact, always separate contact surfaces prior to assembly or installation with the necessary protective coatings/gaskets/ washers to prevent galvanic, moisture related and all other types of corrosion.
- Final fabrication methods, materials, quality and fit/finish to be reviewed and approved by HAS through prototype reviews and testing prior to final fabrication production run/installation processes.
- Colors shown are for reference only, and are subject to the limitations of the printing process and/or variance of electronic screen displays. Refer to color system swatches and/or final finish samples for accurate reference.
- All messages shown in this document must be reviewed by the Contractor/Fabricator/Installer prior to final fabrication and installation (see message schedules for actual messaging by individual location and sign type). Any discrepancies will be identified, documented, corrected and coordinated with HAS during the C.A. process and prior to final fabrication and installation.
- Sign locations/orientations and plans shown are approximations based on the most current plan drawings as provided to LAI at the time of the document's completion. Sign locations are for general design intent and wayfinding planning purposes only. They should not be construed or deemed as absolute or final locations. Field verification, marking and documentation of every final location is to be performed by the Contractor/Fabricator/Installer and coordinated with HAS for final approval.
- All final install locations must be marked and verified in the field for proper structural integrity, adequate line of sight, utilities/property-line/other existing or future interferences, and must be in complete compliance with all local, state and national codes prior to fabrication or installation.
- Adjustments to sign locations shown must be documented by the Contractor/Fabricator/Installer and provided to HAS for final approval.
- Demolition plans of existing wayfinding signage is not in scope nor included; survey, removal and/or relocation of existing signage is to be coordinated by the Contractor/Fabricator/Installer with HAS.

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3 GARAGE VYFINDING A/B WA ERMINAL GE AND H W

1.1 INTRODUCTION

#### MESSAGE FUNCTIONS

This section defines the four basic functions of a "message" as it pertains to the HAS wayfinding system. It is to be utilized by anyone designing or specifying new or updated wayfinding signage to be implemented at HAS airport properties.

#### **Directional Messages**

Directional messages are the main source of information enabling wayfinding traffic to choose the proper route to a specific destination point. This process involves selecting the correct destination point, and then determining at which point a change of direction will be required. Properly placed directional signage at decision points in adequate quantities is necessary for rapid movement of passengers, employees and vehicles.

#### **Identification Messages**

Identification messages mark specific locations/destinations within a defined area or environment. In addition to these locations, identification messages provide proper public exposure to leased tenant spaces and other spaces as governed by Airport Management.

#### Informational Messages

Informational messages typically provide specific, detailed and supplementary wayfinding information to assist in orientation within an unfamiliar and/or complex environment. In addition, informational messaging that is graphic in nature (i.e. directory maps) help with providing precise locations for the user in context to the overall facility and its destinations/amenities/etc..

#### Regulatory / Safety Messages

Regulatory/Safety messages relate to DPS, FAA, TSA and CBP requirements, as well as other federal, state, and local city codes/regulations. In general, these messages provide travelers with important regulatory information, such as travel advice, warnings and restrictions.

# **Temporary Messages**

Temporary messages generally fall into a separate category of messages, and are typically established during the course of fluctuating interim wayfinding conditions due to construction related processes. Temporary signs shall only be used on an interim basis while permanent signs are in the process of fabrication, repair and/or maintenance. Temporary signs are also an excellent way to test new wayfinding elements and locations prior to final fabrication. Note that all temporary messages shall be reviewed and approved by HAS and Airport Management prior to implementation.

#### MESSAGE HIERARCHY

This section defines standards for a complete and uniform hierarchy of HAS wayfinding system messages and terminology. These standards shall be utilized for all new and updated wayfinding signage implemented at HAS properties.

The need for visual continuity among all messages and information of the same hierarchy will help eliminate elements which may interrupt the functional wayfinding process or add confusion. Clear and concise information presented by Primary and Secondary signs/messaging systems ensure efficient passenger circulation. Tertiary signs/messaging must always be coordinated with primary and secondary signs/messaging, as well as interior design features and elements. This tertiary category of signs should also always be visually distinguished from other wayfinding signs.

Messages will always be organized and maintained within three distinct and functionally tiered categories: Primary, Secondary and Tertiary (see Figure 1.2.1 for a full message hierarchy list).

#### **Primary Messages**

This information shall be the largest and the most visible information on each sign. Primary information includes, but may not be limited to:

- Exterior direction to and identification of Terminal(s).
- Exterior direction to major vehicular arteries (i.e. nearby access roads).
- IAH example: interior direction to and identification of multiple Terminals if applicable (i.e. A, B, C, D, E) and inter-terminal transit (i.e. Skyway and Subway trains)
- Interior direction to and identification of Gates.
- Interior direction to and identification of Baggage Claim and Ticketing/Check-In.

# Secondary Messages

This information supplements and reinforces information already conveyed by the primary messages and signs listed above. It usually indicates the auxiliary services and support functions of the facility. Secondary information includes, but may not be limited to:

- Exterior direction to and identification of Ticketing/Check-In, Baggage Claim, and specific Parking Facilities/Areas
- Exterior identification of Rental Car Return, Airport Exit, etc...
- Interior direction to and identification of Elevators and Restrooms.
- Interior direction to Parking and Ground Transportation.

# **Tertiary Messages**

Tertiary sign information supplements both the primary and secondary messages, and typically informs visitors of regulations and warnings. All regulatory/safety signs are generally considered to be tertiary within the HAS wayfinding system. Tertiary information includes, but may not limited to:

- Exterior and Interior TSA related notification messages.
- Interior CBP related notification messages.
- Exterior "No Parking" messages.
- FAA required warnings, notifications and information.
- Other messages required by code.

#### MESSAGE TERMINOLOGY

#### **Basic Requirements**

Terminology, or nomenclature as it applies to airport signage and wayfinding systems, is a standardized set of words, syntax, grammar, spelling, and symbols used to communicate information to the user of the airport. Terminology systems ensure that information is presented in a consistent way, and that the content of this information is always clear and concise. When a term is shown with a corresponding symbol, that term will always appear with its symbol as indicated in Figure 1.4.1, unless otherwise noted.

#### Change Procedures for Terminology

Consistent use of terminology for established messaging within the HAS wayfinding system is always required. All changes to or additions of new terminology shall require coordination, review and approval by HAS.

#### FOREIGN LANGUAGE: APPLICATION & USE

#### Universal Symbols

Using universal symbols will assist international and non-English speaking travelers with locating airport destinations in a universal manner, while also eliminating the possibility of unintended bias for individual groups and languages. See Section 1.4 Graphic Standards - Symbols.

#### Informational Wayfinding Signage and Supplemental Materials

Accommodating multiple languages on informational wayfinding signage (i.e. directories and information centers), as well as supplemental materials (such as hand-outs and maps) is the recommended and preferred method of providing detailed wayfinding information to the most diverse groups of non-English speaking airport users. Standards and guidelines for this type of information is not covered within this document and is to be coordinated with HAS as applicable and required.

#### Foreign Language Translations

Foreign language translations, if shown within this documenti, are placeholders only. All foreign language translations that are used within the HAS wayfinding system are to be provided by professional translators and will be coordinated with HAS staff for final approval prior to final fabrication and installation. All foreign language translations will use the most common and universal dialect for each individual foreign language as deemed appropriate by professional translators, and is to be coordinated with HAS staff for final approval prior to final fabrication and installation.

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A/B GARAGE WAYFINDING TERMINAL NAGE AND

IAH SIG

1.2 GRAPHIC STANDARDS MESSAGES & **TERMINOLOGY** 

Designed By: L.A. Drawing No. Checked By: A.B.

# **MESSAGE HIERARCHY - HAS Parking**

PRIMARY	SECONDARY	TERTIARY	REGULATORY/STATUTORY
Vehicular Directional - Parking - Exit - Parking X (used only at IAH: "X" = terminal letter): - Parking AB; Parking C; Parking DE - Parking C WEST; Parking C CENTRAL; Parking C EAST; Parking DE - Red Garage; Blue Garage (used only at HOU) - Additional Parking - Return to Parking - Level X; Levels X-X ("X" = garage level numbers) - Exit: Credit Cards - Exit: Cashier	Vehicular Directional  - Terminal X (used only at IAH: "X" = terminal letter)  - X Arrivals (used only at IAH: "X" = terminal letter)  - ecopark (Ecopark = only at HOU)  - Return to Parking  - High Vehicles  - Upper Levels  - KEEP RIGHT (or LEFT)  - RAMP DOWN (or UP)	Vehicular Directional - Employees Only	Notifications: - AUTHORIZED PERSONNEL ONLY - DO NOT ENTER - Warning: Restricted Area, Do Not Enter - Warning: Emergency Exit Only, Door Monitored by Alarm - CAUTION: WATCH FOR CROSSING VEHICLES - CLEARANCE: X'-X" ("X" = feet and inches of lowest clearance) - Etc  Other / General: - No Smoking - All life safety/egress - Elevator escape route maps/notifications (with ADA code compliance)
Vehicular Identification  - Parking X (used only at IAH: "X" = terminal letter)  - Red Garage / Blue Garage (used only at HOU)  - Level X ("X" = garage level number)	Vehicular Identification  - Parking X (used only at IAH: "X" = terminal letter):  - Parking AB; Parking C; Parking DE  - Parking C WEST; Parking C CENTRAL; Parking C EAST; Parking DE  - Welcome to:  - Level X ("X" = level number)  - Exit  - Exit: Cashier  - Exit: Credit Cards	Vehicular Identification  - CAUTION: Crossing Traffic  - CAUTION: PEDESTRIAN CROSSING  - CAUTION: Clearance X'-X" ("X" = height number)  - Employees Only  - Restricted Areas  - Reserved Parking	
Pedestrian Directional  - Terminal(s) X (used only at IAH: "X" = terminal letter)  - Section X ("X" = section number)  - Departures  - Arrivals	Pedestrian Directional - Elevator - Stairs - Use: Elevator X (used only at IAH: "X" = elevator ID): - C Elevator X ("X" = WEST, CENTRAL, EAST, WEST-2, EAST-2) - DE Elevator X ("X" = CENTRAL, EAST-1, EAST-2)	Pedestrian Directional  - Use Elevators/Stairs to Level X ("X" = garage level number)  - Use Crosswalk to Garage  - Use Elevator to Level 3 Bridge  - Exit and use Crosswalk to Garage  - Walk around Elevator & continue on Bridge Walkway to Garage  - Walkway behind Elevators  - Parking DE via Walking through Parking C EAST Level 3  - Bridge to(used only at IAH)	
Pedestrian Identification  - Terminal(s) X (used only at IAH: "X" = terminal letter)  - A (B, C, D, E) Column ID Bands ((used only at IAH)  - Parking X (used only at IAH: "X" = terminal letter)  - Section X ("X" = section number)  - C Elevator X ("X" = WEST, CENTRAL, EAST, WEST-2, EAST-2)  - DE Elevator X ("X" = CENTRAL, EAST-1, EAST-2)	Pedestrian Identification - Elevator - Stairs		
Vehicular Informational - SPACES THIS GARAGE (counts by entire garage area) - ADDITIONAL PARKING: Use Levels 4-6 to: X (used only at IAH: "X" = Garage area): - Parking C WEST; Parking C CENTRAL; Parking C EAST; Parking DE - Available Spaces (counts by level; used only at HOU) - Parking Rate Information (per Airport and Garage as req'd)	Pedestrian Informational - Information - Level Directory		NOTE: This message/terminology list is the most recent at the time of this document's publication; messages/terminology may be expanded and/or change depending on the unique needs, design conditions & requirements of individual HAS wayfinding modernization programs during design development processes; Always verify and obtain the most recent HAS messaging and terminology list prior to any final design or message specification

Figure **1.2.1** 

HAS Wayfinding Message Hierarchy List: Parking/Garage Areas

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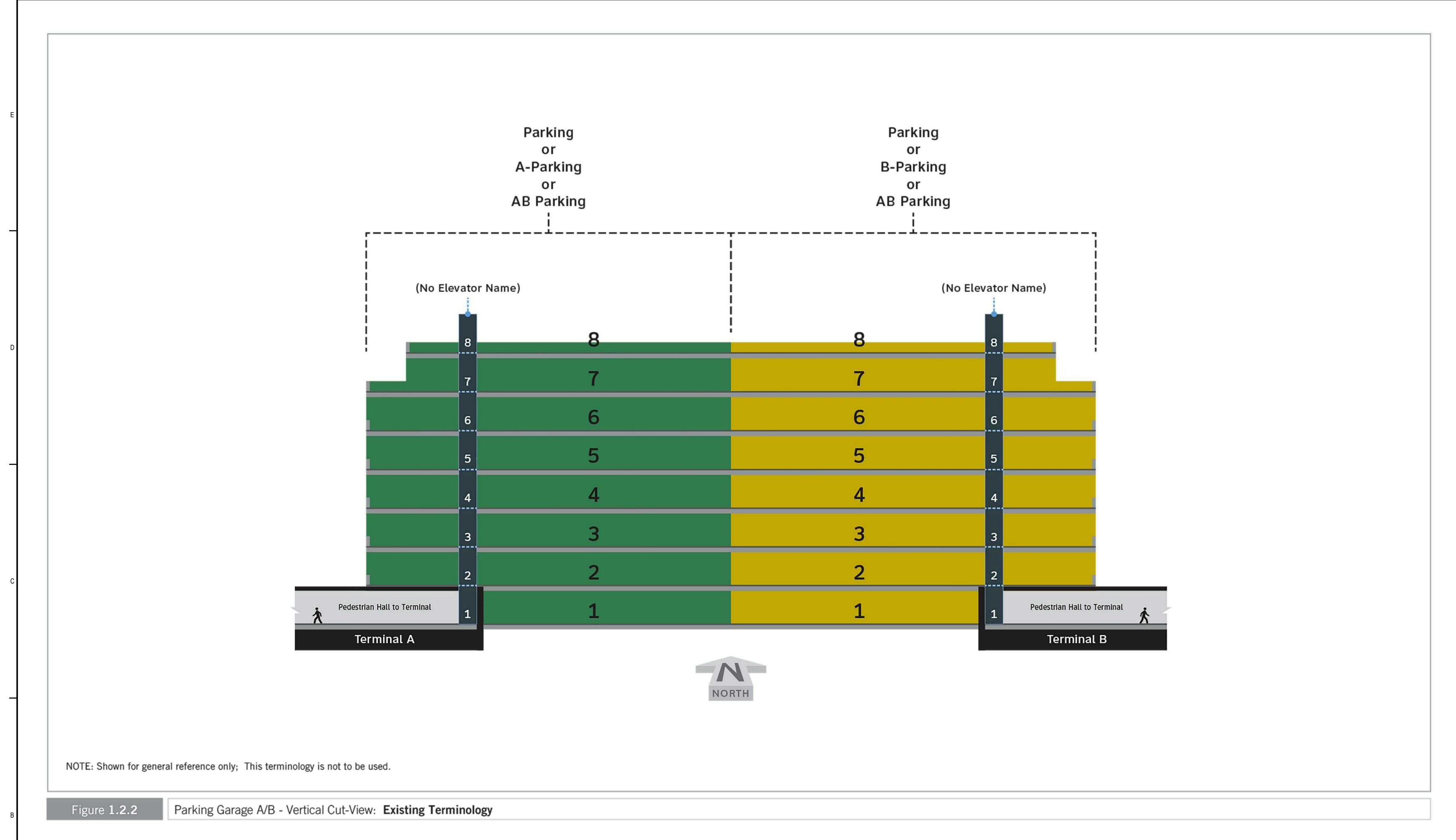




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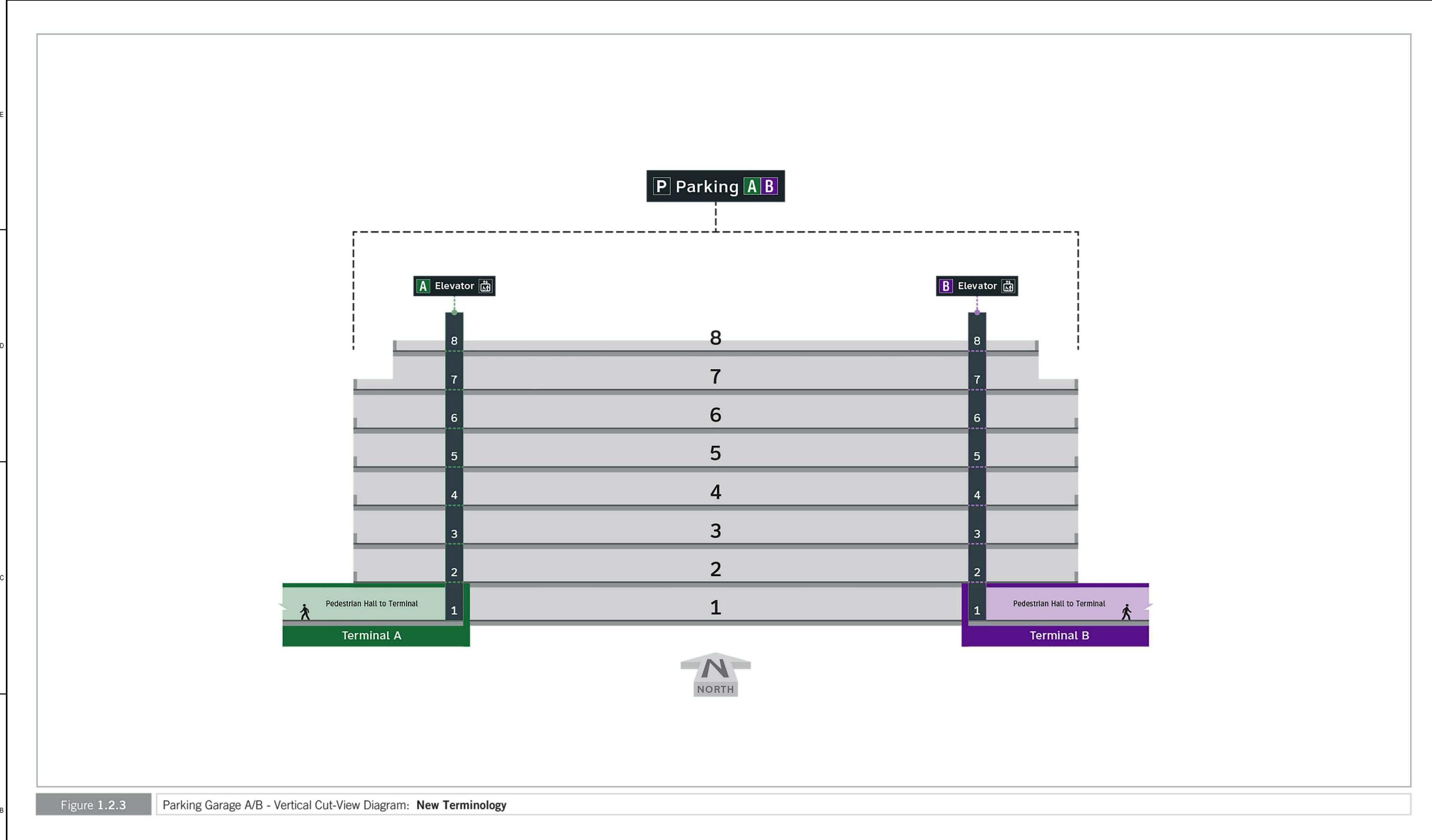
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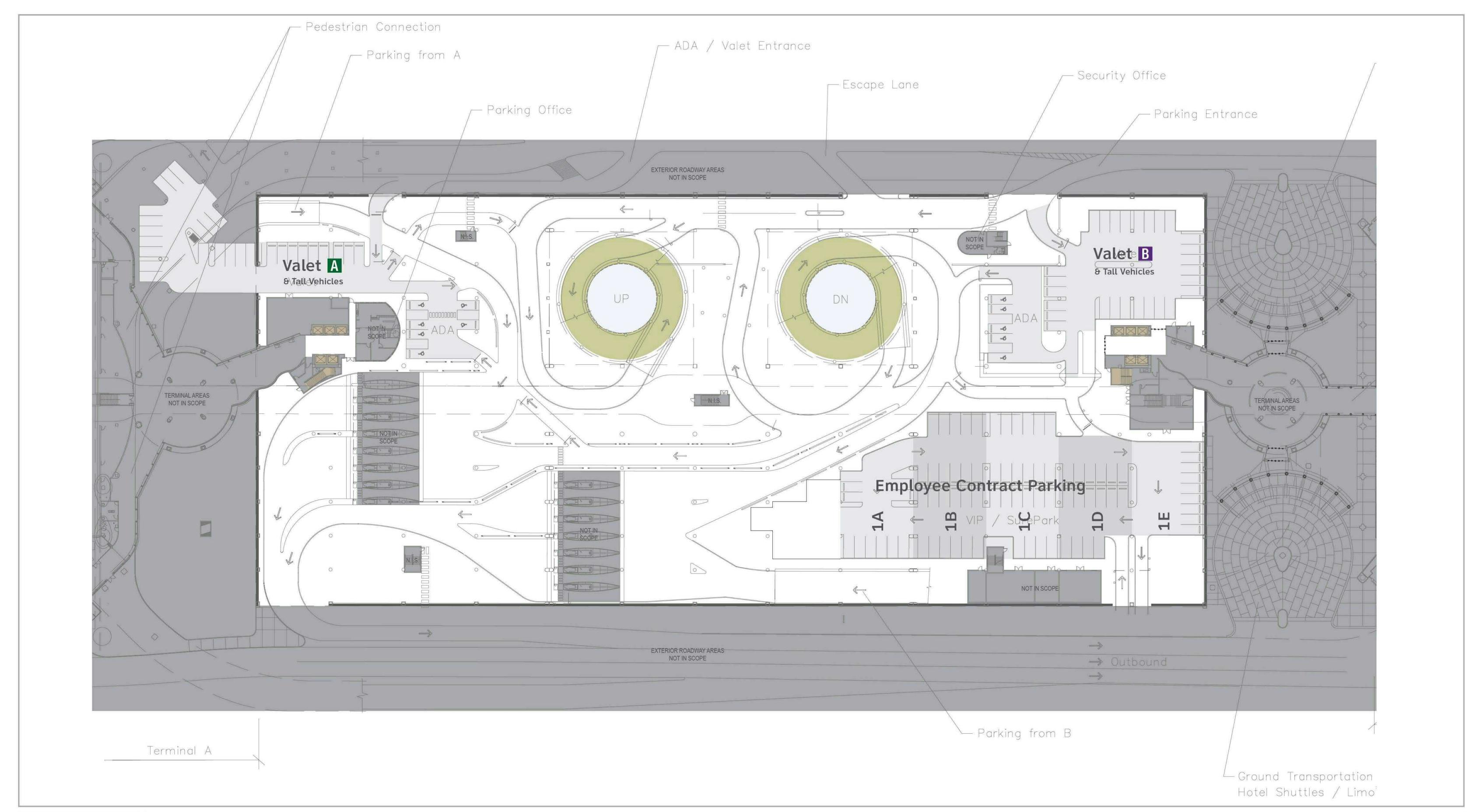
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Parking Garage A/B - Horizontal Plan View: New Terminology - Level 1

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HAS NO: 749A

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Parking Garage A/B - Horizontal Plan View: New Terminology - Level 2

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Designed By: L.A. Drawing No.: Drawn By: Q.P.
Checked By: A.B.



Parking Garage A/B - Horizontal Plan View: New Terminology - Level 3

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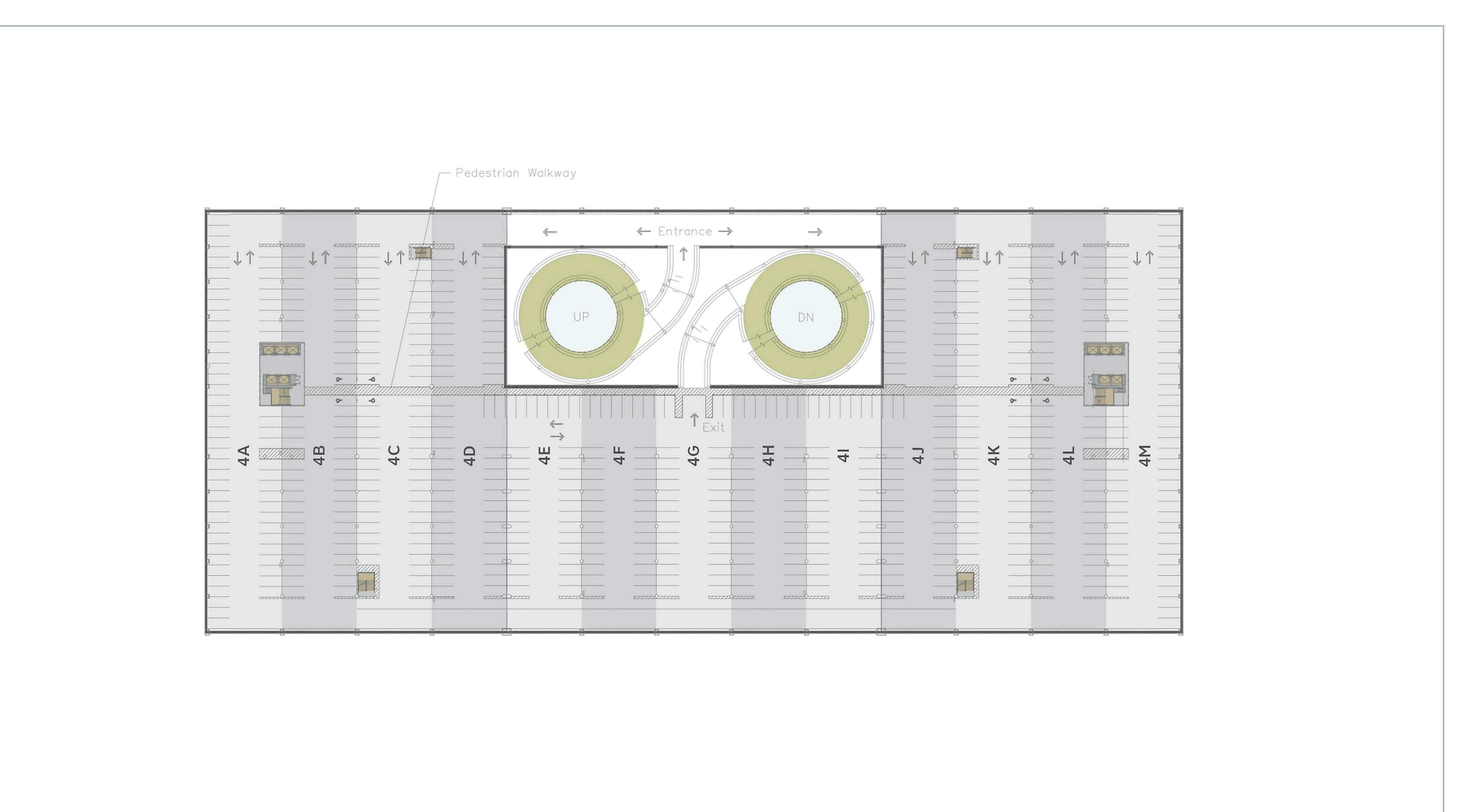




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Parking Garage A/B - Horizontal Plan View: New Terminology - Level 4

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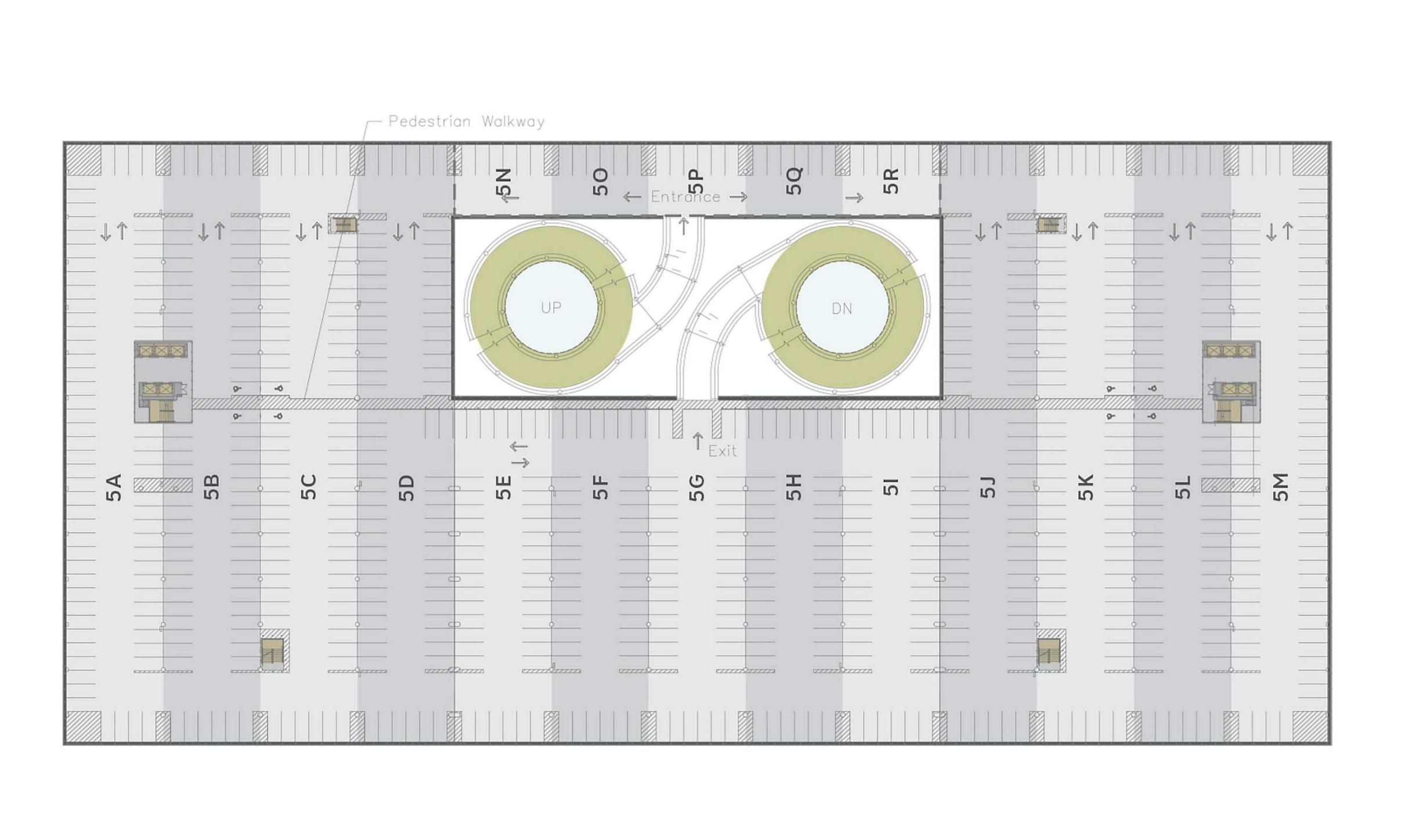
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Checked By: A.B.

Drawing No.:

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Parking Garage A/B - Horizontal Plan View: New Terminology - Level 5

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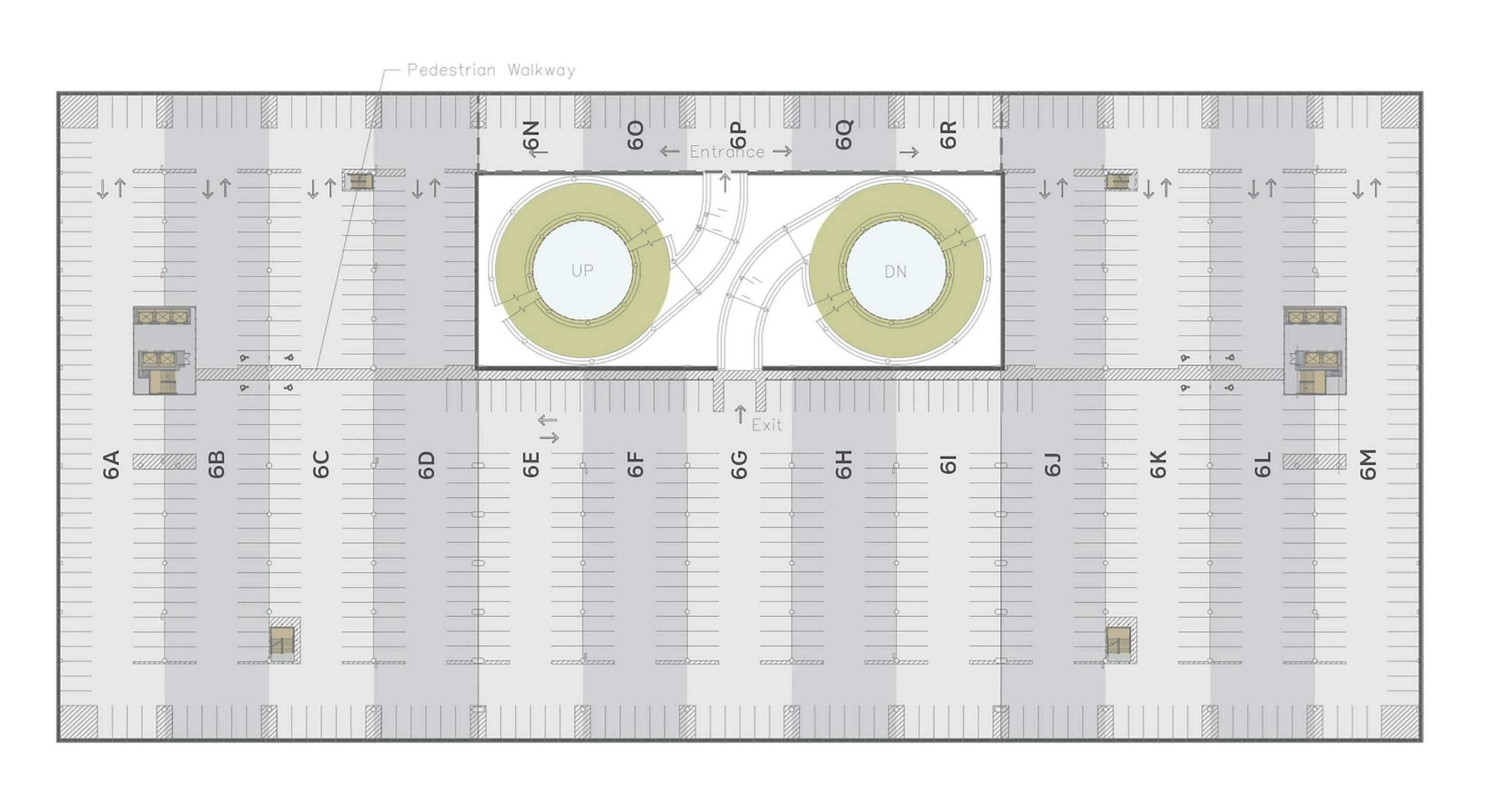
Designed By: L.A.

Drawing No.:

Checked By: A.B.

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Parking Garage A/B - Horizontal Plan View: New Terminology - Level 6

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Checked By: A.B.

Drawing No.:

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Parking Garage A/B - Horizontal Plan View: New Terminology - Level 8

### HAS WAYFINDING: TYPE STYLES

### **Acceptable Type Styles**

The Clearview font family has been chosen as the standard HAS wayfinding typeface due to its wayfinding efficiency and industry-wide adoption as a typeface that is suitable for use in wayfinding programs. Note that specific Clearview type styles are uniquely associated with Pedestrian and Vehicular related wayfinding audiences. As such, only the following applicable type styles may be used:

- Pedestrian Wayfinding: all text on Pedestrian HAS wayfinding signage shall be set in the following ClearviewText and ClearviewOne font families, unless otherwise specified (see Figure 1.3.1a):
  - ClearviewText Medium = all standard wayfinding word messages
  - ClearviewOne Book Condensed = supplemental wayfinding word messages (i.e. "via," "to:" and CBP notification text)
- Vehicular Wayfinding: all text on Vehicular HAS wayfinding signage shall be set in the following Clearview Highway font family, unless otherwise specified (see Figure 1.3.1b):
  - Clearview Highway 2-W = all standard wayfinding word messages ("W" = white text on dark background)
  - Clearview Highway 1-W = supplemental wayfinding ID word messages ("W" = white text on dark background)
  - Clearview Highway 2-B = all standard wayfinding word messages ("B" = black text on light background)
  - Clearview Highway 1-B = supplemental wayfinding ID word messages ("B" = black text on light background)

### Capitalization

Aside from special decorative uses where all-caps is desirable and/or used on specific regulatory related messaging, all word messages shall be in "Title Case." Title Case is defined as the initial "alpha" letter shown in upper case followed by lower case letters for each individual word in a given message.

Examples of exceptions include (but are not limited to):

- EXIT: EXIT ONLY
- DO NOT ENTER
- ATM
- KEEP LEFT; KEEP RIGHT
- NEXT LEFT; NEXT RIGHT

Other notables regarding message capitalization:

- As required by the Americans with Disabilities Act, all tactile messages shall be in all upper case.
- All vehicular wayfinding signage must meet all requirements as established within MUTCD and TXDOT signage design standards.
- Upper case letters shall have an upper case "X" height as determined by using a capital letter "I" when determining a layout's text height dimension.
- Lower case letters should have a lower case "x" height that is approximately two-thirds the height of the upper case letters.

ClearviewText Medium:

# **ABCDEFGHIJKLMNOPQRSTUVWXYZ** abcdefghijklmnopqrstuvwxyz 1234567890 !@#\$%^&\*()-+=\*/:

Figure **1.3.1a** 

Type Style: Pedestrian Wayfinding Text Example

ClearviewOne Book Condensed:

ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopgrstuvwxyz 1234567890 !@#\$%^&\*()-+=\*/:

Clearview Highway 2-W ("W" = white text on dark background):

**ABCDEFGHIJKLMNOPQRSTUVWXYZ** abcdefghijklmnopqrstuvwxyz 1234567890 !@#\$%^&\*()-+=\*/:

Clearview Highway 2-B ("B" = black text on light background):

**ABCDEFGHIJKLMNOPQRSTUVWXYZ** abcdefghijklmnopgrstuvwxyz 1234567890 !@#\$%^&\*()-+=\*/:

Figure **1.3.1b** 

Type Style: Vehicular Wayfinding Text

- Each word in a message shall be capitalized, with the exception of articles, prepositions and conjunctions (i.e. to, from, via, etc.).
- A consistent capital letter height shall always be maintained when wayfinding signs are used in sequence unless otherwise noted.

### Typographic Restrictions

Typefaces or weights not described here shall not be used at HAS airport properties, unless otherwise noted and approved by HAS.

The following additional typographic restrictions shall always apply and be strictly adhered to when designing or specifying signage for HAS airport properties:

- Use only the type styles as specified for a specific traffic type as shown in this document (i.e. Pedestrian vs. Vehicular):
  - Use only Pedestrian type styles on Pedestrian wayfinding signage.
  - Use only Vehicular type styles on Vehicular wayfinding signage.

Clearview Highway 1-W ("W" = white text on dark background):

ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz 1234567890 !@#\$%^&\*()-+=\*/:

Clearview Highway 1-B ("B" = black text on light background):

**ABCDEFGHIJKLMNOPQRSTUVWXYZ** abcdefghijklmnopgrstuvwxyz 1234567890 !@#\$%^&\*()-+=\*/:

 Modification of letter shapes is prohibited unless otherwise specified and approved by HAS.

 Condensed, extended, skewed, stretched, outlined or otherwise distorted type shall not be used.

Language to this effect will always be included in the specifications for all related HAS wayfinding signage projects, and variances must be reviewed and approved by HAS.

Type styles specialized for a particular sign face or graphic layout shall be used exactly as specified in wayfinding signage design documents. Deviations from the sign type's application provided in layouts are strictly prohibited. Refer to individual sign types for exact specifications and text sizing/layout details.

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A/B GARAGE WAYFINDING IAH TERMINAL ASIGNAGE AND A

1.3 GRAPHIC STANDARDS **TYPOGRAPHY** 

### HAS WAYFINDING: TYPE SPACING

### Letter Spacing (Kerning and Tracking)

Kerning is typically defined as the process of adjusting the spacing between characters in a proportional font, usually to achieve a visually pleasing result within a set of readable text. Also note that while kerning adjusts the individual spacing between individual letter forms, tracking instead adjusts the spacing uniformly over an overall set/range of characters in a word or set of words. Tracking adjustments are not usually as ideal for readability on wayfinding signage as they tend to make individual words and groups of words more difficult to read, whereas kerning helps to maintain the visual harmony of words.

Unless otherwise indicated, all sign messages shall use the Clearview font family's default letter spacing with regards to kerning and tracking. Messages set according to the typeface maker's letter spacing standards will not normally require adjustment (see Figures 1.3.2a and 1.3.2b). In some circumstances, modification of the spacing between individual letters or letter-sets may improve the appearance and legibility of a sign message. Examples of typical needs for kerning adjustments include (but may not be limited to) improved visibility at increased viewing distances, as well as the elimination of unacceptable levels of "halation" (aka visual blurring together of letter strokes/graphic elements) due to internal or external illumination of the sign face.

Designers are required to review sample messages for all sign projects, and shall recommend spacing modifications where they can be shown to be advantageous or necessary. In these instances, hand-kerning will be required to adjust spacing and shall be noted as such within the sign's specific layout using a +/- pica unit of measurement as used within professional graphic design software. Other letter spacing restrictions include: reducing normal letter or word spacing (i.e. to fit a lengthy message within a restrictive size layout area) is not acceptable and shall always be avoided; punctuation marks, which relate to two letters, should be spaced equally from both letters.

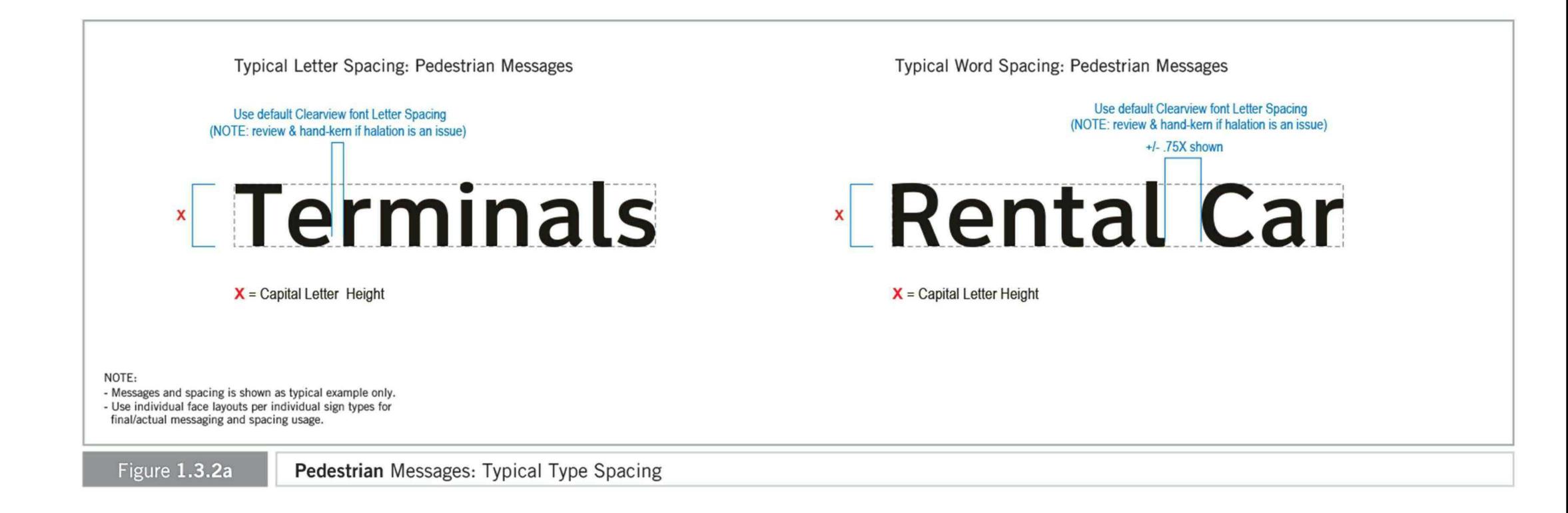
### **Word Spacing**

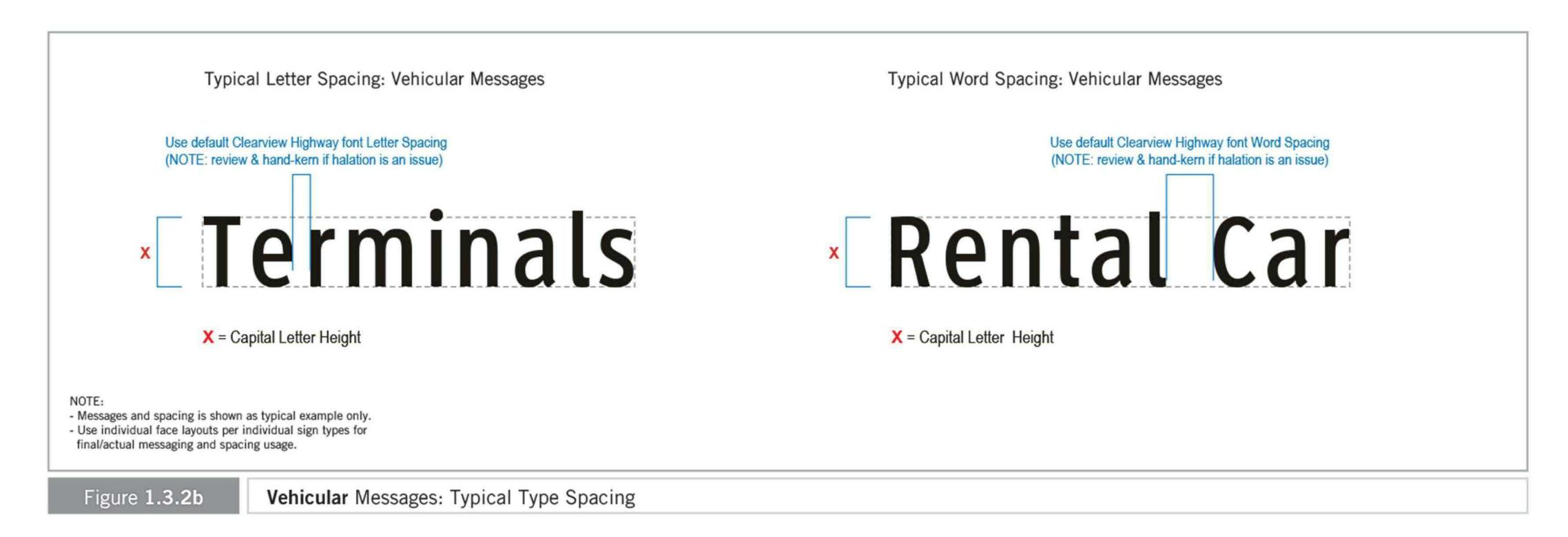
Unless otherwise indicated, spacing between words in a message is typically 3/4 (.75) times the capital letter height (adjust by appropriate percentage if handkerning). For example, a message using 4" cap letters will have approximately 3" between words (see Figures 1.3.2a and 1.3.2b).

### Line Spacing (Leading)

Leading is typically defined as the distance between the baselines of successive lines of type. Typically the \*spacing between related lines of message text (i.e. a message in a layout that must continue to the next line down due to not enough available width on the first line) will typically be approximately ½ (.50) times the capital letter height (unless otherwise noted). And typically the \*spacing between unrelated message text lines (i.e. two completely separate ideas/ destinations/messages) will typically be approximately 1 times the capital letter height (unless otherwise noted).

\*NOTE: Always refer to actual HAS wayfinding signage face layouts for all final definitive line spacing requirements per each individual sign type as shown in current HAS wayfinding signage design intent/construction documents.





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IAH TERMINAL A/B GARAGE SIGNAGE AND WAYFINDING

1.3 GRAPHIC STANDARDS **TYPOGRAPHY** 

IAH TERMINAL A/B GARAGE SIGNAGE AND WAYFINDING

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**AIRPORTS** 

DIRECTOR HOUSTON AIRPORT SYSTEM

Labozan Associates

CONSULTANT:

CIP NO:

HAS NO: 749A

KEY PLAN:

Jacobs Project No.:

1.4 GRAPHIC STANDARDS SYMBOLS

WHXK7105

Designed By: L.A. Drawing No.:

Checked By: A.B.

### HAS WAYFINDING: ARROWS

Arrows, when used as directional elements, are more flexible and require less sign layout space than messages. This section defines the standards for HAS wayfinding arrows and their rotation angles, sizes, proportions, applications and general placement.

### **Arrow Proportions**

The standard HAS directional arrow (as shown in Figure 1.5.1) must always be proportionally consistent (width-to-height ratio) throughout the entire sign system, regardless of the sign type or layout that it is being applied to. It should never be disproportioned, squashed or stretched in any dimension in order to make it fit on a sign face with limited size, or for any other circumstance. Typical proportioning between arrow and message sizes for the HAS wayfinding sign system will be determined as follows:

- Pedestrian wayfinding signage:
  - By individual sign face layout sizes, sign locations, visibility distances/ angles, mounting heights and per ADA requirements.
- Vehicular wayfinding signage:
  - By individual sign layout sizes, sign locations, visibility distances/angles, mounting heights, posted speeds and per MUTCD/TXDOT standards.

### Arrow Size Scaling

When scaling an arrow, it must always be locked at it's default proportions as shown in Figure 1.5.1. This will eliminate the possibility of skewing the arrow's proportions when scaling it for use on differently sized \*sign face layouts.

\*NOTE: Always refer to actual HAS wayfinding signage face layouts for all final definitive arrow sizing per each individual sign type as shown in current HAS wayfinding signage design intent/construction documents.

### **Arrow Placement and Text Alignment**

The placement of arrows on sign faces and in relation to message text will conform to the standard guidelines provided for each specific sign type and their corresponding traffic type (i.e. Pedestrian or Vehicular), as well as all applicable ADA and MUTCD/TXDOT requirements. Arrows and their related message text may not be positioned in any other location on the sign face unless otherwise indicated. When new and/or customized sign types or layouts are necessary, the following general guidelines and restrictions apply to arrows and their corresponding message text alignment:

Pedestrian: General Arrow Placement

- Arrows should NEVER point into text.
- Left-facing arrows should be located toward the left side of signs
- Right-facing arrows should be located toward the right side of signs
- Forward-facing and/or downward-facing arrows are typically located closest to the flow of traffic

Pedestrian: General Text Alignment with Arrows

- Left-facing arrows require left justified message text/symbols
- Right-facing arrows require right justified message text/symbols

 Forward-facing and/or downward-facing arrows require text/symbols to be justified closest to the flow of traffic (i.e. if forward traffic is hugging the right side of a corridor, the arrow should be on the right side of the face with the text justified right, and vice versa)

Vehicular: General Arrow Placement

- Roadside left-facing arrows should be located toward the left side of signs
- Roadside right-facing arrows should be located toward the right side of signs
- Forward-facing and/or Downward-facing arrows on overhead signs are typically centered over their corresponding traffic lanes
- Forward-facing and/or Downward-facing arrows on roadside signs are typically located closest to the flow of traffic or centered (depending on the sign type's use and layout)

Vehicular: General Text Alignment with Arrows

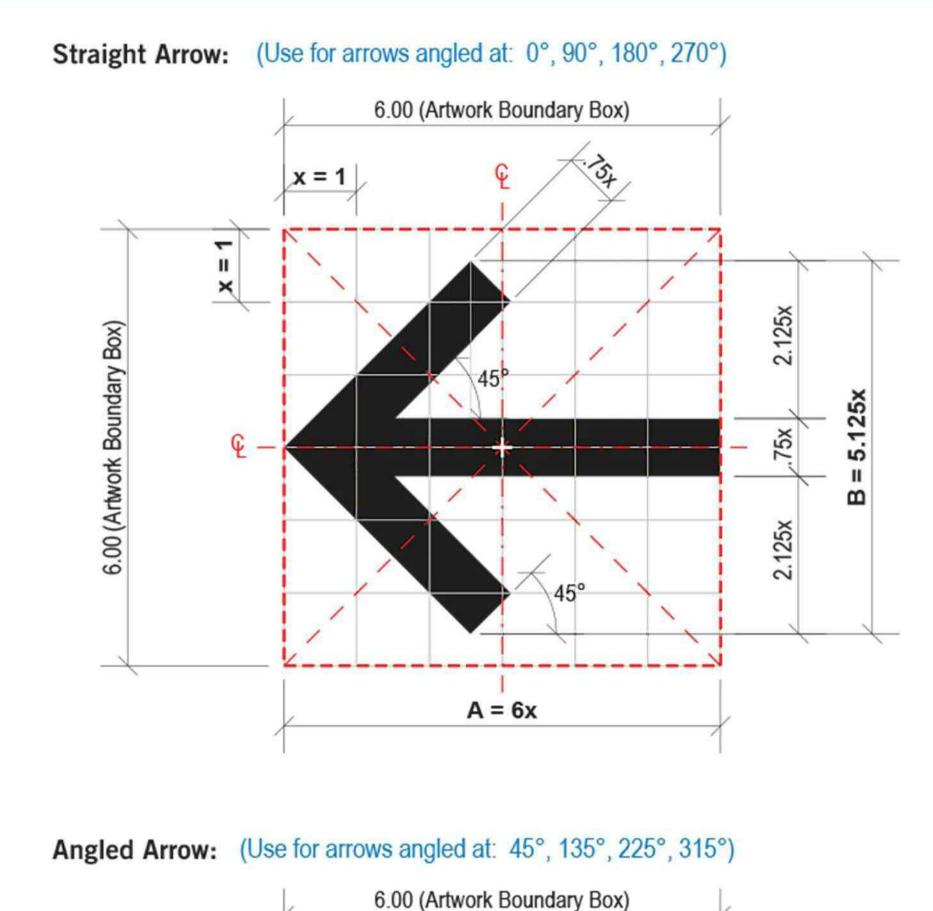
- Left-facing arrows require left justified message text/symbols, unless otherwise noted or required by MUTCD/TXDOT
- Right-facing arrows require right justified message text/symbols, unless otherwise noted or required by MUTCD/TXDOT
- Forward-facing arrows on roadside signs typically use text justified toward traffic flow, while overhead signs typically use centered text/arrows

### **Arrow Rotation**

A consistent rotation angle and the directional information that an arrow conveys is as important as the accompanying message text. The rotation angle that conveys "straight ahead" is particularly notable. For example, either an "up" arrow (12 o'clock) or a "down" arrow (6 o'clock) can be used to convey forward movement, and is typically interpreted differently based on a sign's given location, relative pathway conditions and/or the type of wayfinding traffic that is viewing it.

Note that arrow rotation angle selection must always be done so consistently throughout the entire HAS wayfinding system and in accordance with these established arrow rotation standards. The following are general guidelines for the selection and use of arrow rotation:

- The standard wayfinding arrow can be rendered in eight (8) different predetermined rotation angles (see Figures 1.5.2a and 1.5.2b). No alternate rotation angles are acceptable, unless approved by HAS.
- Arrow rotation angles should follow the guidelines provided in this section. Straight-ahead pedestrian movement will always be indicated at HAS properties by upward-facing arrows (12 o'clock), unless a downward-facing arrow can be shown to be clearly advantageous in a specific circumstance (i.e. "use this lane"). Note that straight downward-facing arrows (6 o'clock) are typically reserved to indicate movement to a lower level (i.e. at the top of a down stairway or escalator).
- Vehicular wayfinding arrow rotation will always follow MUTCD/TXDOT reqs.
- For a full list of acceptable arrow applications, rotation angles and their designated message interpretations for HAS wayfinding, see Figures 1.5.2a and 1.5.2b.



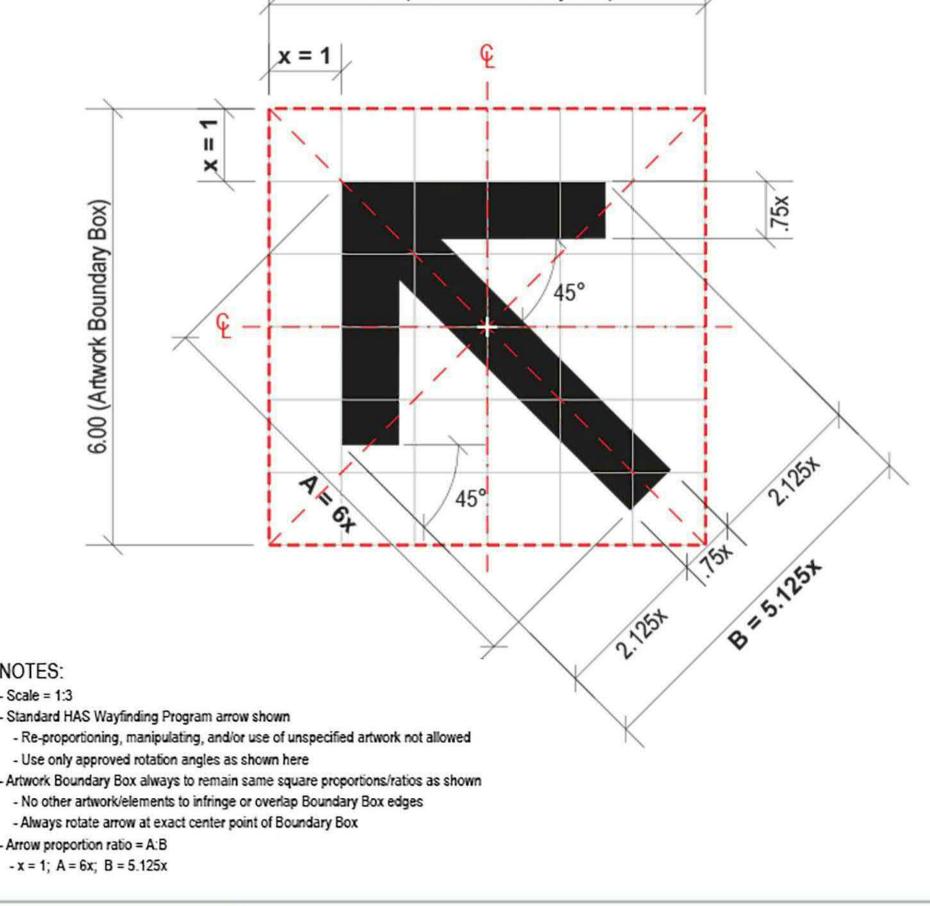


Figure **1.5.1** 

HAS Wayfinding Arrow: Artwork & Proportions

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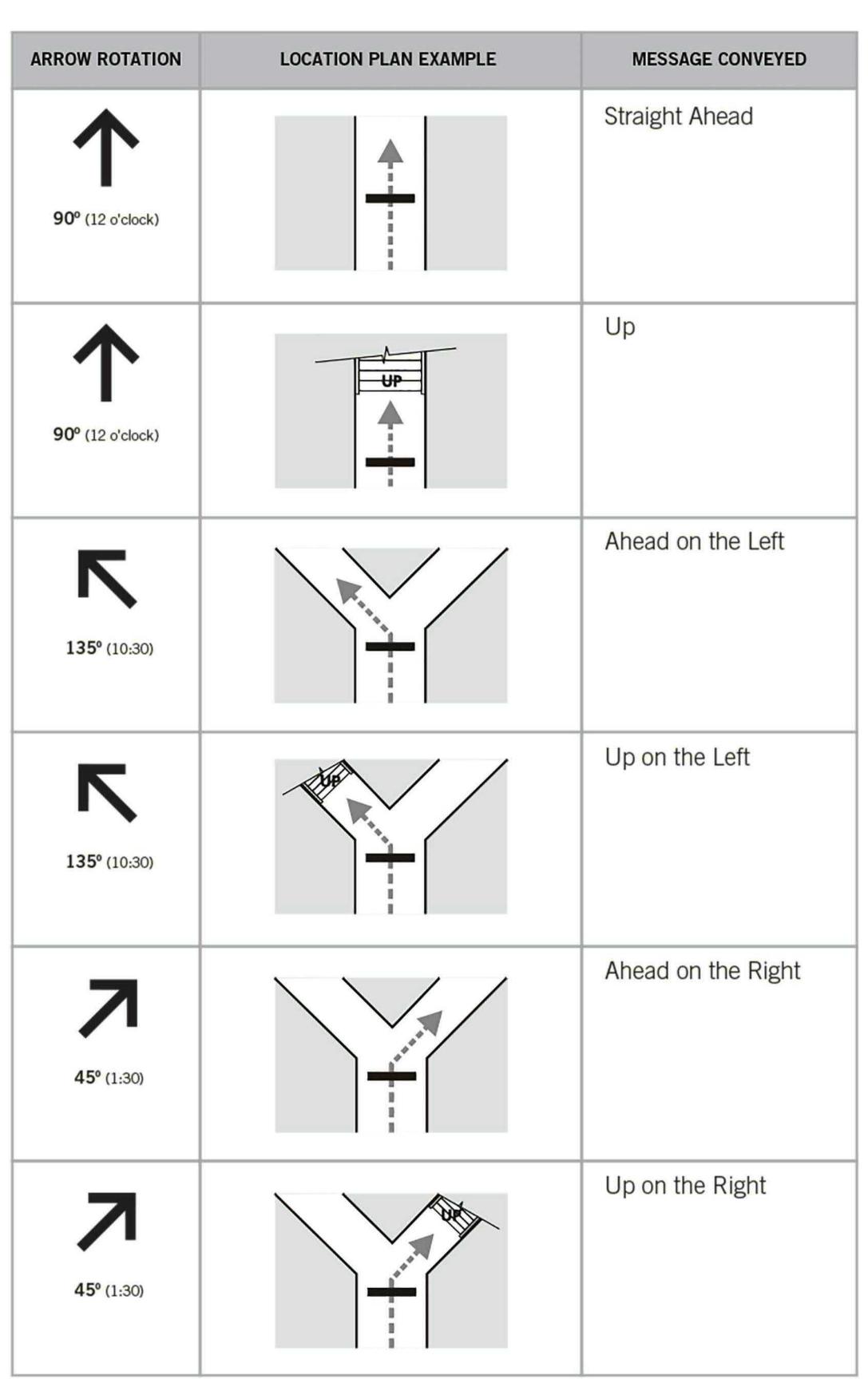


A/B GARAGE WAYFINDING TERMINAL SNAGE AND

IAH SIGI

1.5 GRAPHIC STANDARDS

**ARROWS** 



ARROW ROTATION	LOCATION PLAN EXAMPLE	MESSAGE CONVEYED
0° (3 o'clock)		Right
315° (4:30)		Down on the Right
180° (9 o'clock)		Left
225° (7:30)		Down on the Left
270° (6 o'clock)	DN L	Down
270° (6 o'clock)		Use this lane / row / aisle / line

## NOTES:

Figure **1.5.2a** 

Source: Guidelines for Airport Signage & Graphics - Latest Ed.
 Schematic representations only; drawings not to scale

Wayfinding Arrows: Applications - Pedestrian

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CONSULTANT:

APPROVED BY:





IAH TERMINAL A/B GARAGE SIGNAGE AND WAYFINDING

HAS NO: 749A

CIP NO:

KEY PLAN:

Jacobs Project No.:
Drawing Title:

1.5 GRAPHIC STANDARDS ARROWS

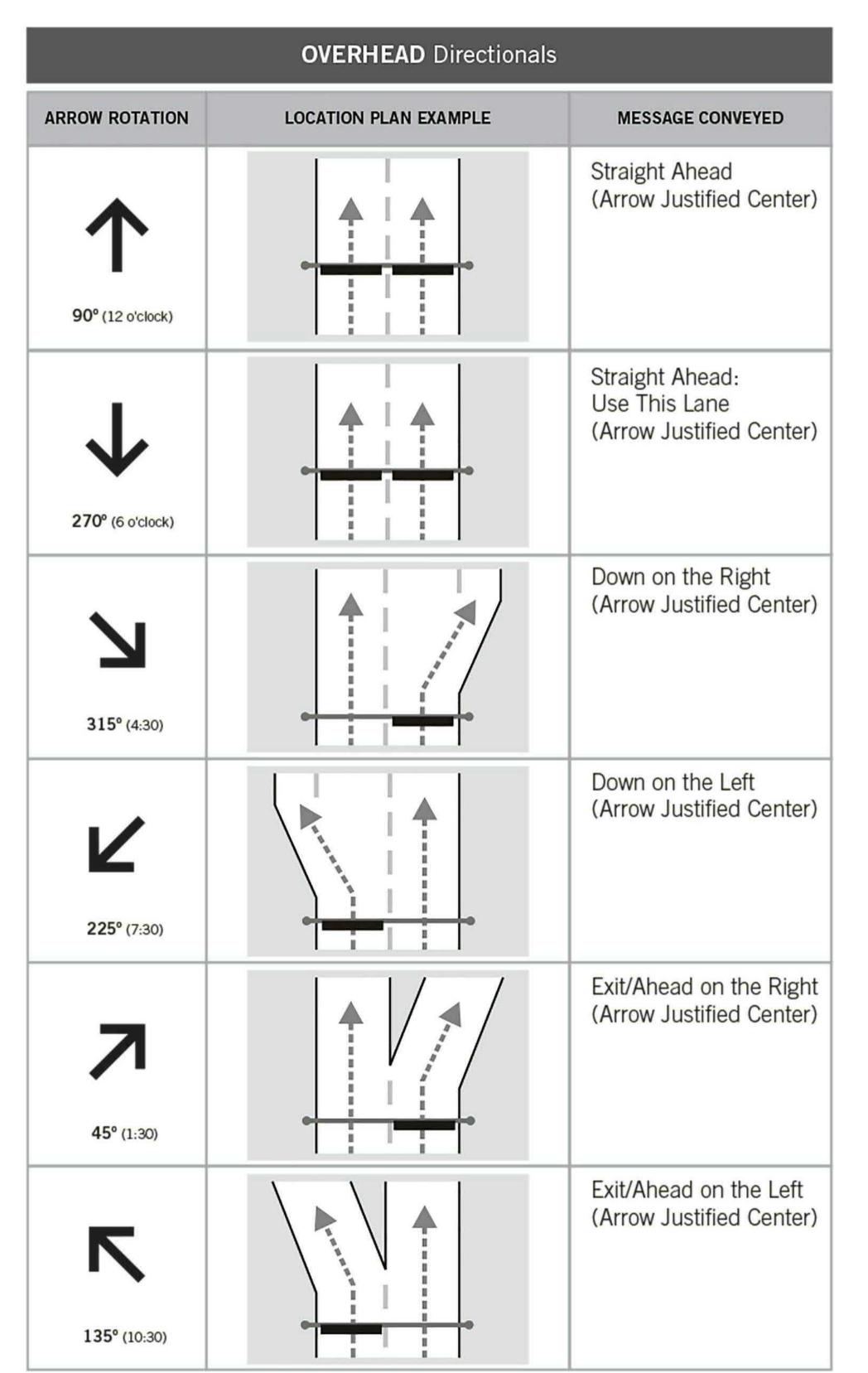
Designed By: L.A.

Drawing No.:

Checked By: A.B.

Drawing No.:

1-19



	CANTILEVER Directiona	ıls
ARROW ROTATION	LOCATION PLAN EXAMPLE	MESSAGE CONVEYED
90° (12 o'clock)		Straight Ahead (Arrow Justified Center)
90° (12 o'clock)		Straight Ahead (Arrow Justified Center)
270° (6 o'clock)		Straight Ahead: Use This Lane (Arrow Justified Center)
270° (6 o'clock)		Straight Ahead: Use This Lane (Arrow Justified Center)
135° (10:30)		Exit/Ahead on the Left (Arrow Justified Center)
45° (1:30)		Exit/Up on the Right (Arrow Justified Center)

	ROADSIDE Directionals			
ARROW ROTATION	LOCATION PLAN EXAMPLE	MESSAGE CONVEYED		
90° (12 o'clock)		Straight Ahead (Arrow Justified Left)		
90° (12 o'clock)		Straight Ahead (Arrow Justified Right)		
45° (1:30)		Exit/Ahead on the Right (Arrow Justified Right)		
0° (3:00)		To the Right (Arrow Justified Right)		
135° (10:30)		Exit/Ahead on the Left (Arrow Justified Left)		
180° (9 o'clock)		To the Left (Arrow Justified Left)		

- NOTES:
   Arrow applications shown are for general reference only
   Arrow type and application may vary based on condition
   Reference MUTCD for additional standards and guidelines

Figure **1.5.2b** 

Wayfinding Arrows: Applications - Vehicular

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IAH TERMINAL A/B GARAGE SIGNAGE AND WAYFINDING

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HAS NO: 749A KEY PLAN:

Jacobs Project No.:

1.5 GRAPHIC STANDARDS ARROWS

Designed By: L.A.

Drawing No.:

Checked By: A.B.

Drawing No.:

1-20

### HAS WAYFINDING: COLOR SYSTEM

In order to maintain a visually and graphically holistic system of wayfinding signage, the presentation of color must always be consistent and maintained on all elements of HAS wayfinding signage. These colors and their manufacturing equivalents (as shown in Figure 1.6.1) shall always be used when designing or specifying HAS wayfinding signage, unless otherwise noted and approved by HAS.

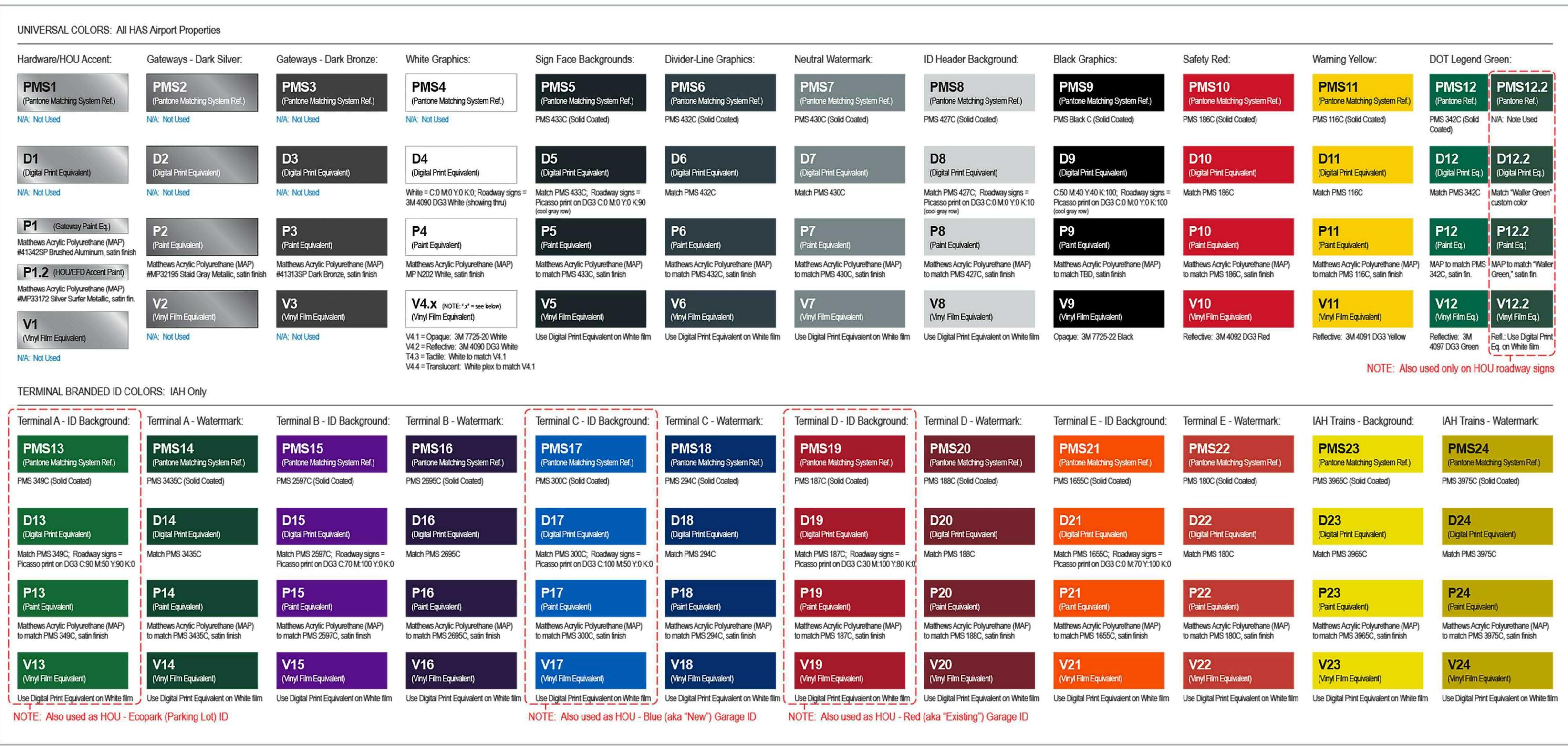


Figure **1.6.1** 

HAS Wayfinding Color System

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CONSULTANT:



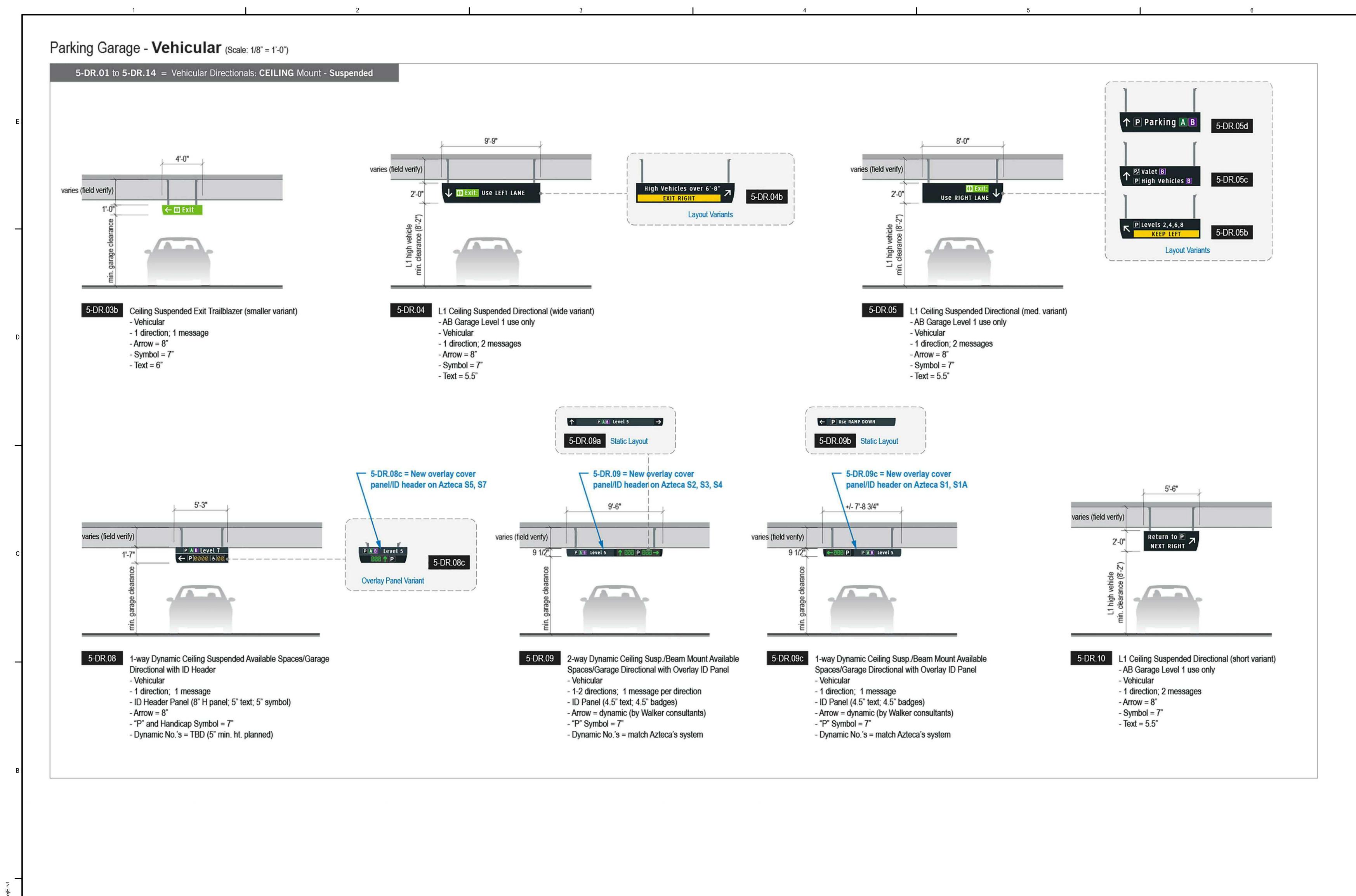
A/B GARAGE
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CIP NO:

HAS NO: 749A KEY PLAN:

1.6 GRAPHIC STANDARDS COLORS



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AIP NO:

CIP NO: 749A

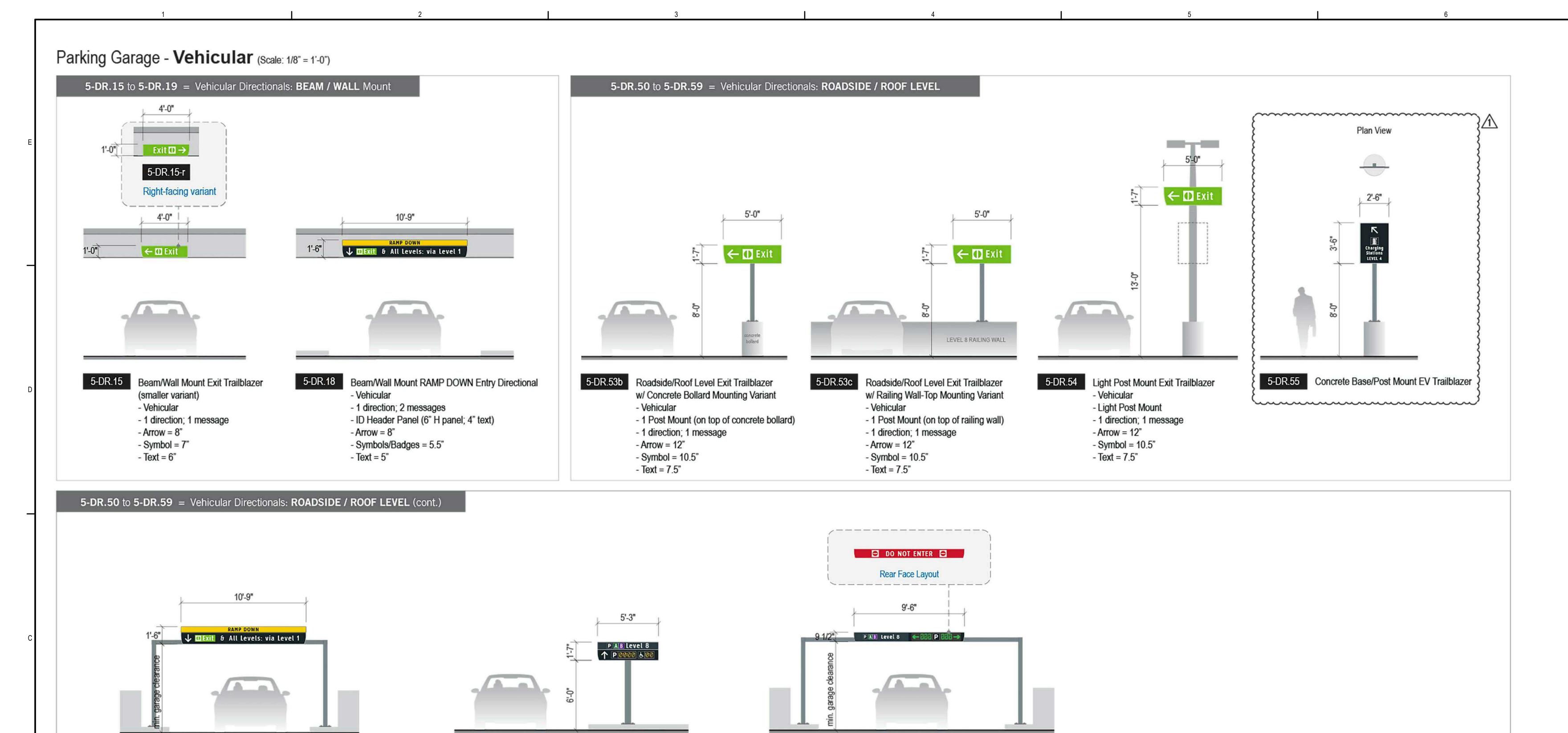
KEY PLAN:

Jacobs Project No.:
Drawing Title:

1.7 SIGN TYPE INDEX PARKING GARAGE A/B VEHICULAR

Designed By: L.A. Drawing No.:

Drawn By: Q.P.
Checked By: A.B.



5-DR.59 Roof Level Available Spaces/Garage Directional with Overlay ID Panel

1-2 directions; 1 message per direction

Arrow = dynamic (by Walker consultants)

- Dynamic No.'s = match Azteca's system

- ID Panel (4.5" text; 4.5" badges)

- "P" Symbol = 7"

5-DR.58 1-way Roof Level Available Spaces/Garage

Directional with ID Header

- 1 direction; 1 message

- Symbols/Badges = 5.5"

- Dynamic No.'s = TBD (5" min. ht. planned)

Vehicular

- 1 Post Mount

- Arrow = 8"

- Text = 5.5"

A/B GARAGE WAYFINDING IAH TERMINAL / SIGNAGE AND /

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CONSULTANT:

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CIP NO: HAS NO: 749A

PARKING GARAGE A/B VEHICULAR

Checked By: A.B.

5-DR.56 Roof Level Span Stucture Mount RAMP DOWN

- ID Header Panel (6" H panel; 4" text)

**Entry Directional** 

- 1 direction; 2 messages

- Symbols/Badges = 5.5"

- Vehicular

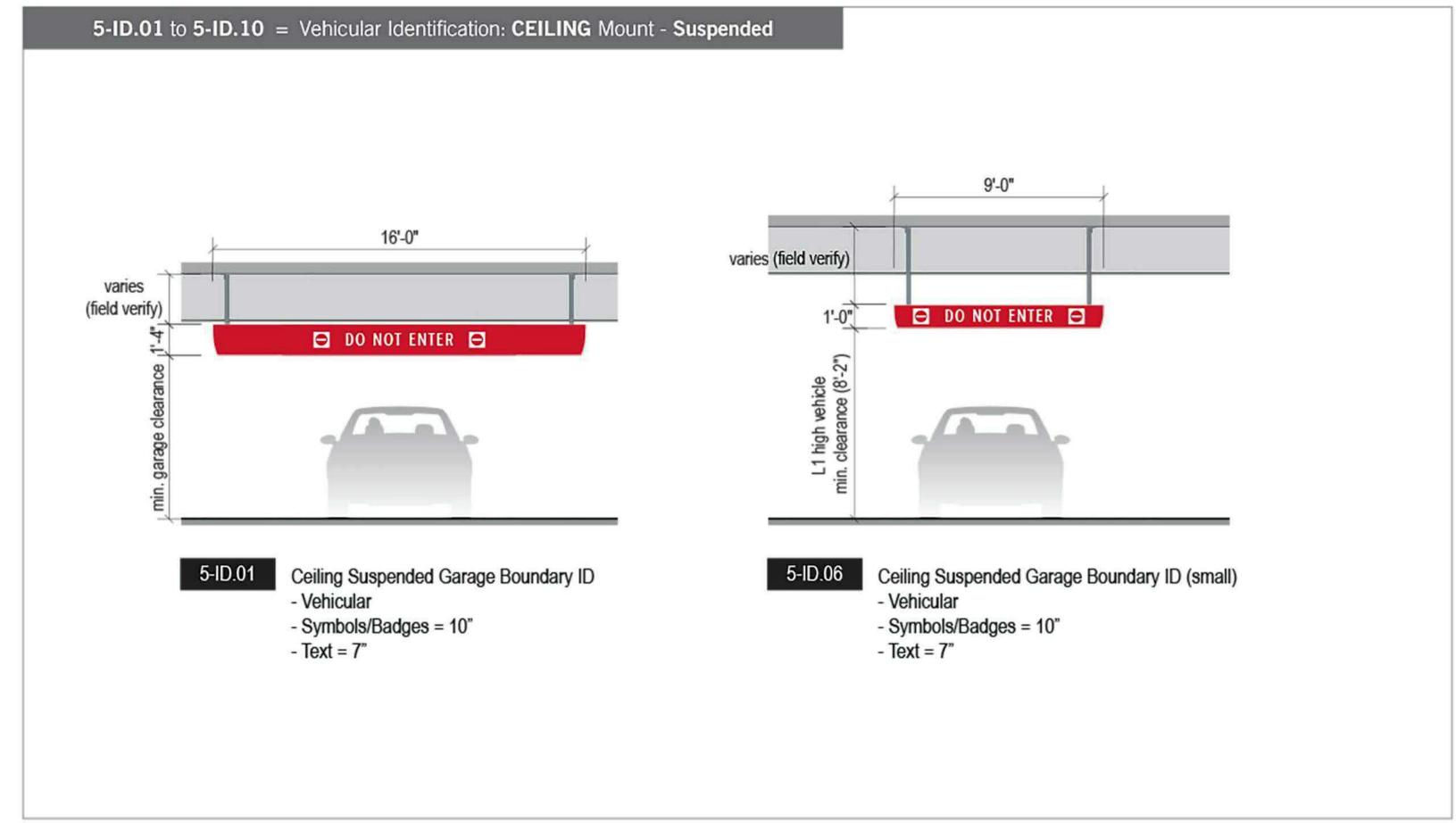
- Arrow = 8"

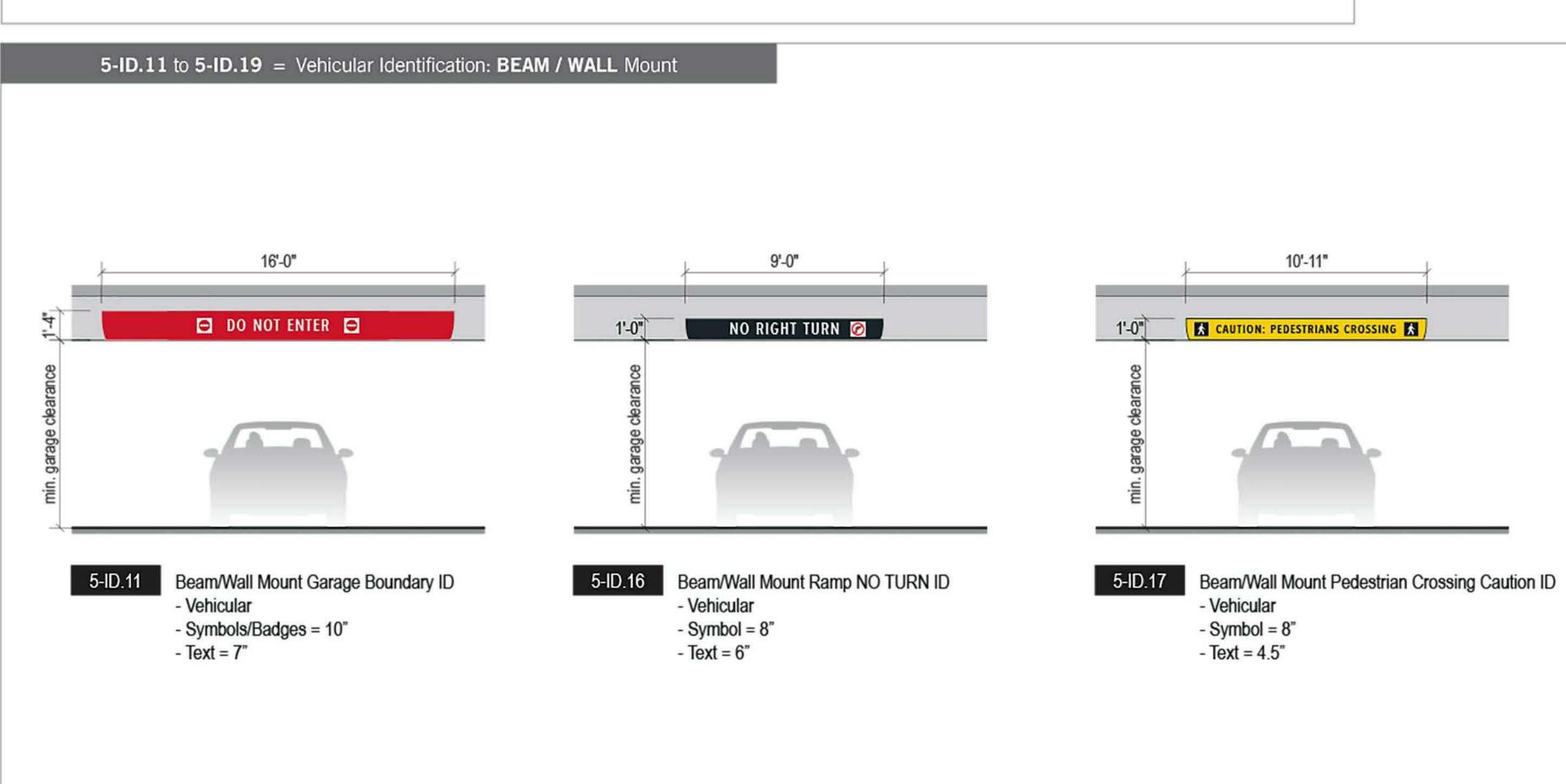
- Text = 5"

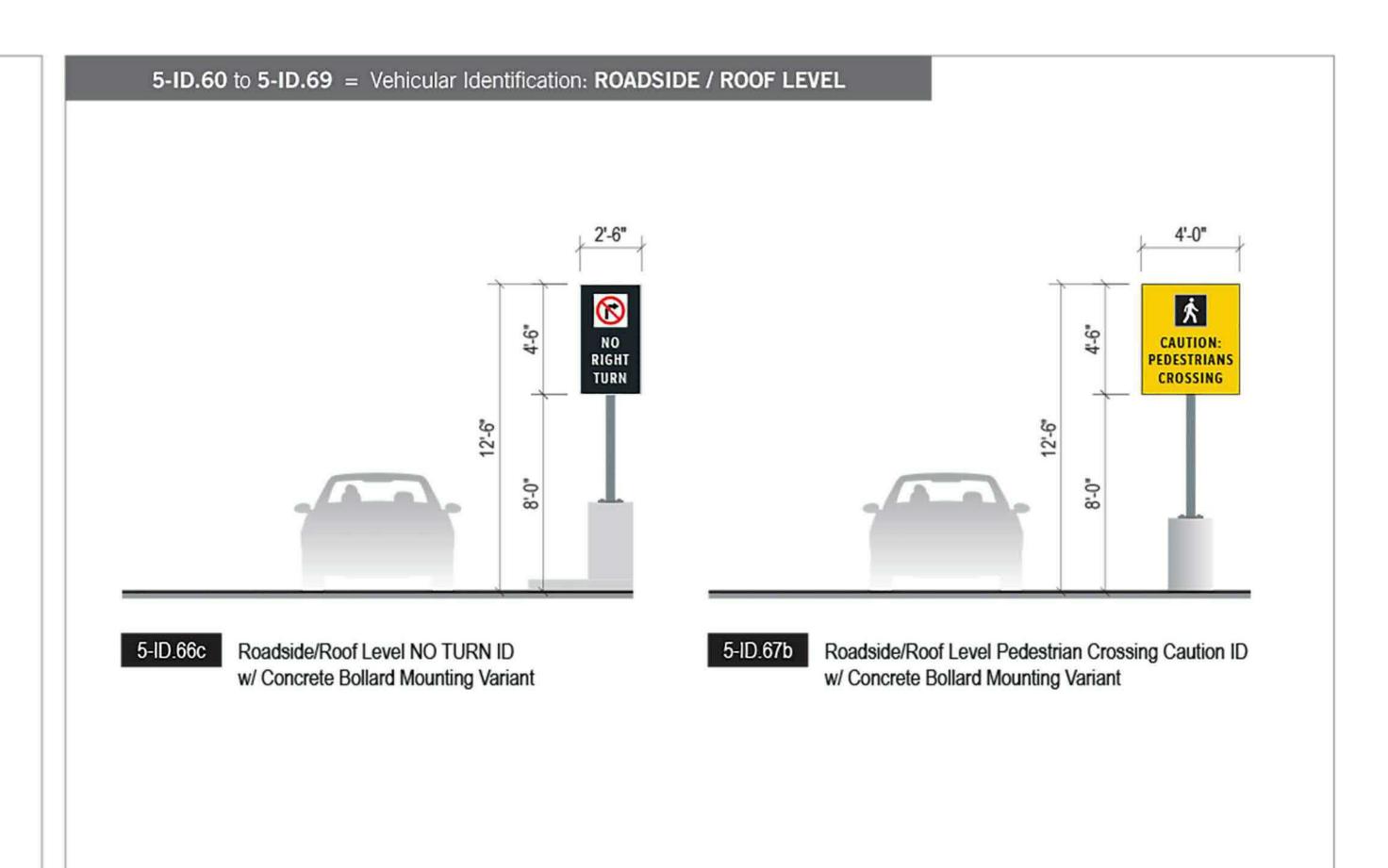
1.7 SIGN TYPE INDEX

Designed By: L.A. Drawing No.:

# Parking Garage - Vehicular (Scale: 1/8" = 1'-0")







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CIP NO: HAS NO: 749A

1.7 SIGN TYPE INDEX PARKING GARAGE A/B VEHICULAR

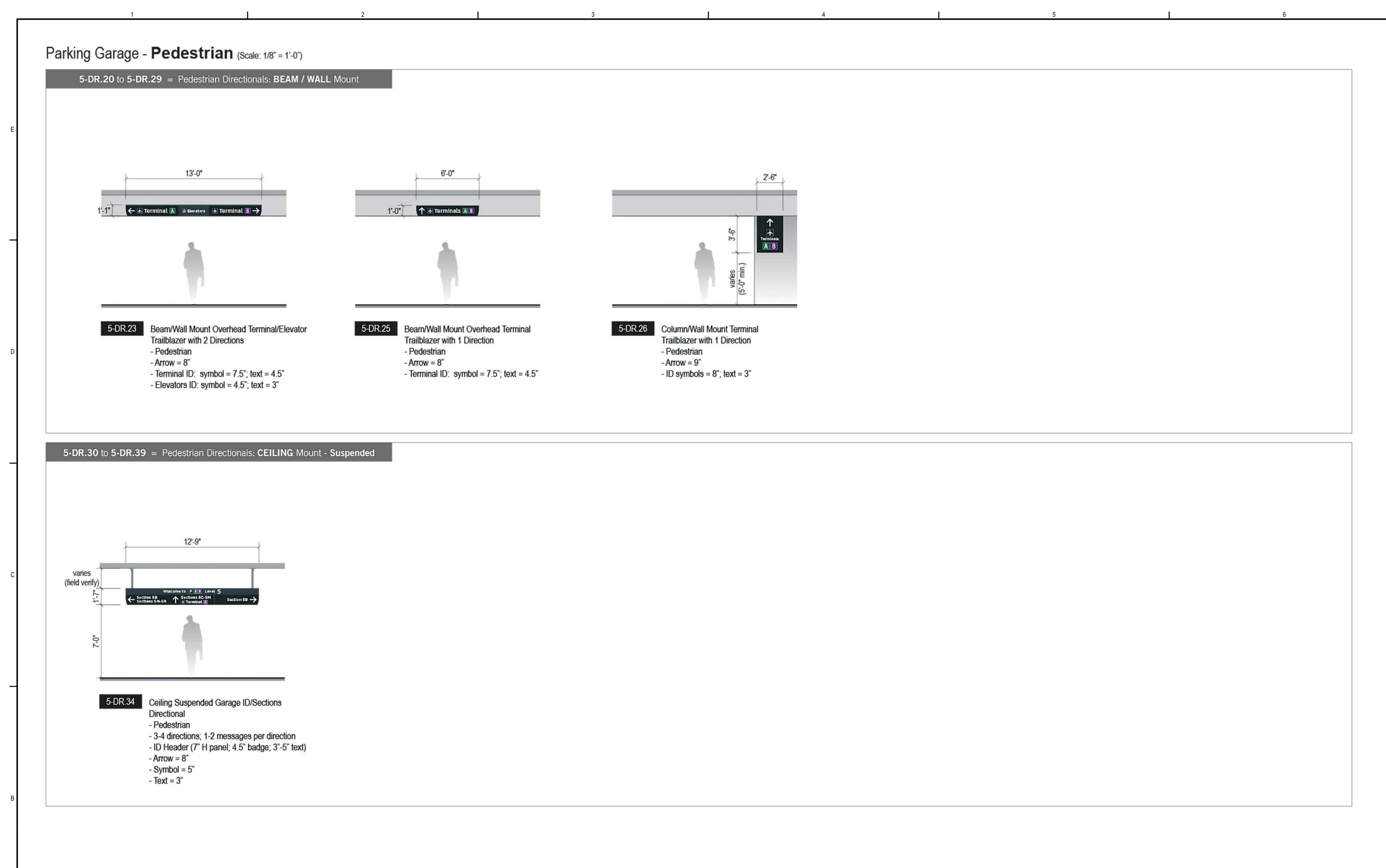
Designed By: L.A.

Drawing No.:

Checked By: A.B.

Drawing No.:

1-24



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IAH TERMINAL A/B GARAGE SIGNAGE AND WAYFINDING

1.8 SIGN TYPE INDEX PARKING GARAGE A/B PEDESTRIAN

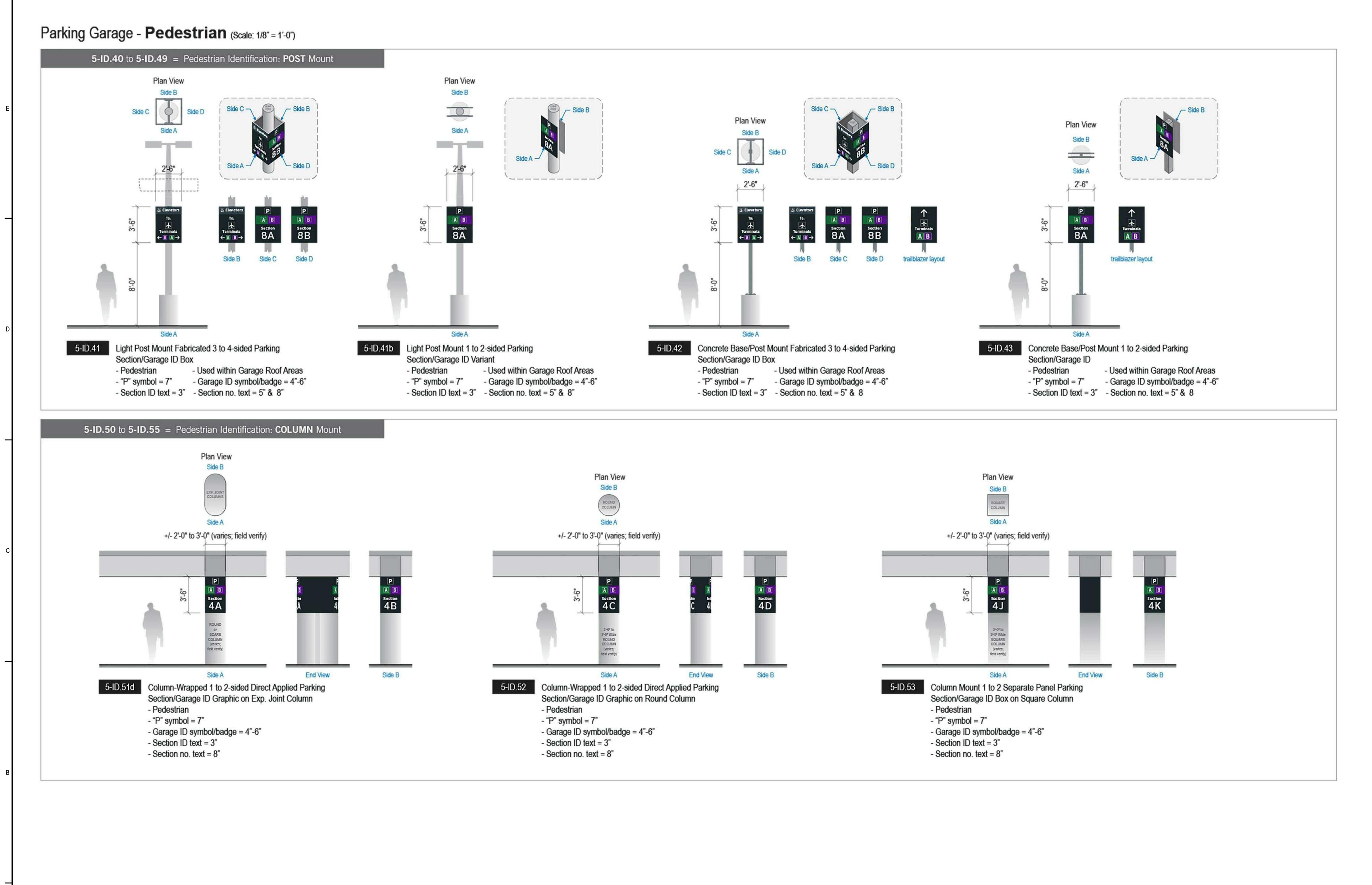
Designed By: L.A.

Drawing No.:

Checked By: A.B.

Drawing No.:

1-25



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CIP NO:

HAS NO: 749A

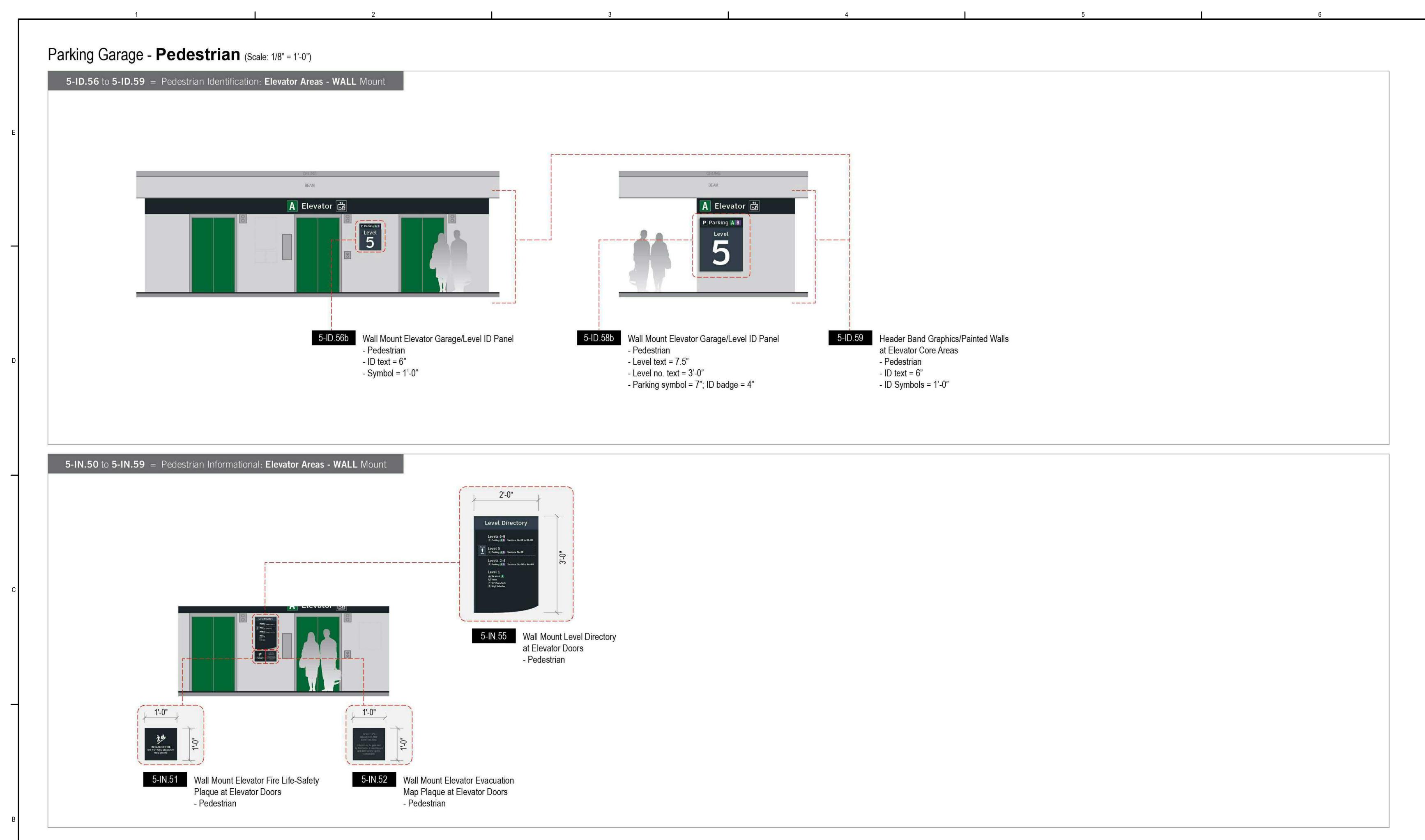
1.8 SIGN TYPE INDEX PARKING GARAGE A/B PEDESTRIAN

Designed By: L.A.

Drawn By: Q.P.
Checked By: A.B.

Drawing No.:

1-26



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AIP NO:

CIP NO:

HAS NO: 74

acobs Project No.:

1.8 SIGN TYPE INDEX
PARKING GARAGE A/B
PEDESTRIAN

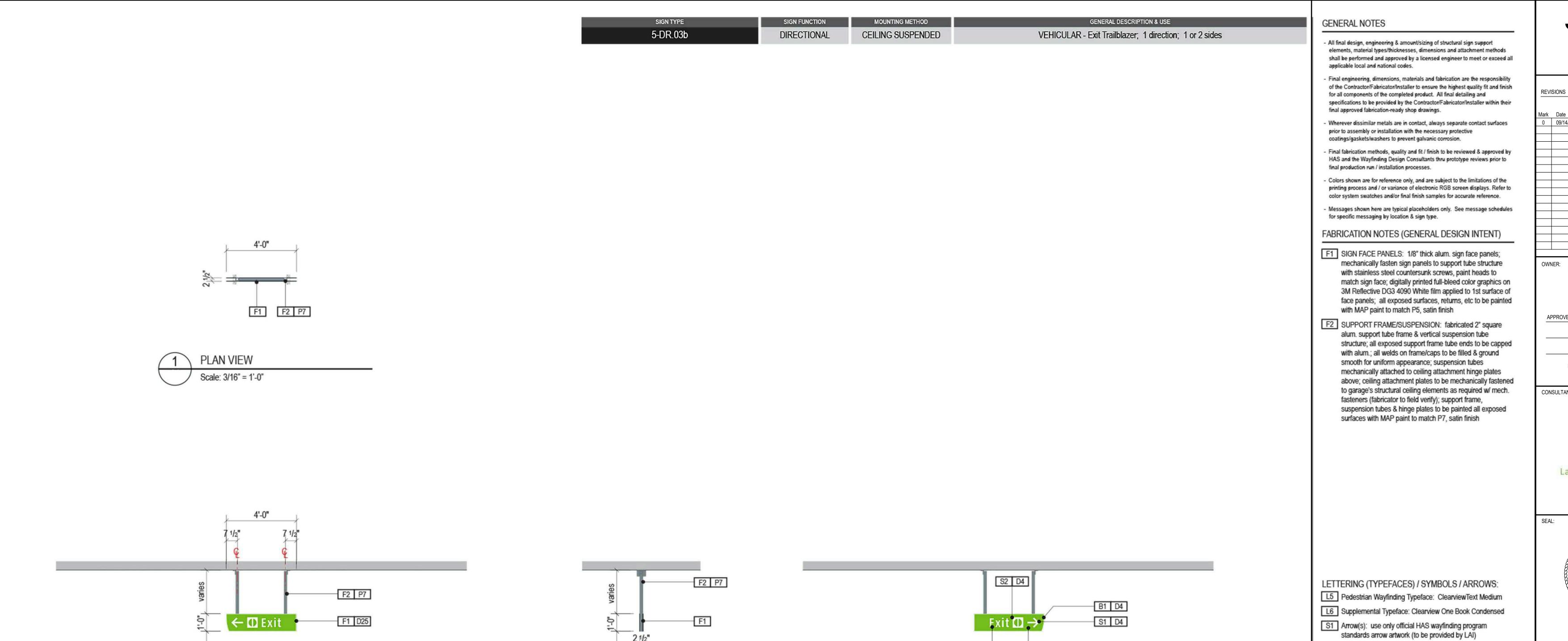
Designed By: L.A.
Drawing No.:

Checked By: A.B.

Drawing No.:

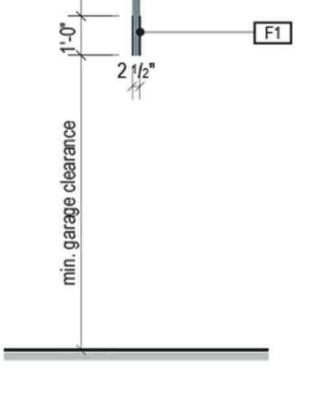
1-27

/4/2020 8:47:58 PM C:\User



**ELEVATION** 

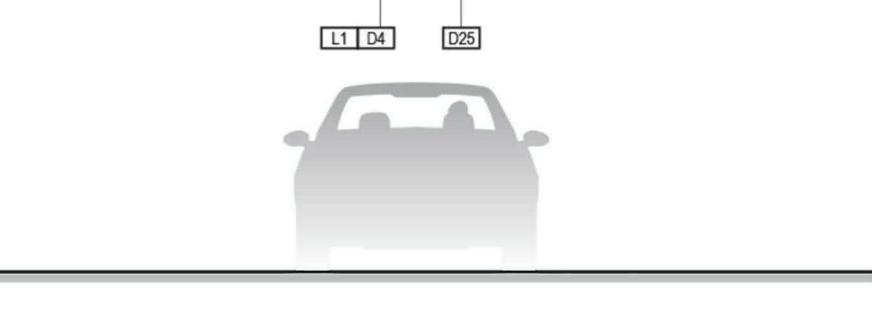
Scale: 3/16" = 1'-0"



END VIEW

Scale: 3/16" = 1'-0"





ELEVATION (OPPOSITE SIDE) Scale: 3/16" = 1'-0"

- S2 Int'l Symbols: use only official HAS wayfinding program symbol artwork (to be provided by LAI)

### COLORS:

NOTES: "D" = digitally printed colors as generated by 3M Picasso printer (or equal) on 3M Reflective DG3 4090 White unless otherwise noted; "P" = Matthews Acrylic Polyurethane (MAP) paint (or equal), satin finish; "V" = 3M vinyl films (or equal)

- D4 White: 3M DG3 4090 showing thru digital print background
- D5 Dark Gray: match PMS 433C
- D6 Med. Dark Gray: match PMS 432C
- D7 Med. Gray: match PMS 430C
- D17 Blue: match PMS 300C
- P1.2 Silver: MAP paint MP33172 Silver Surfer Metallic P4 White: MAP paint MP N202 White, satin finish
- P5 Dark Gray: MAP paint matched to PMS 433C
- P6 Med. Dark Gray: MAP paint match PMS 432C
- P7 Med. Gray: MAP paint matched to PMS 430C
- P17 Blue: MAP paint matched to PMS 300C
- V4.1 White: Opaque 3M 7725-20 White

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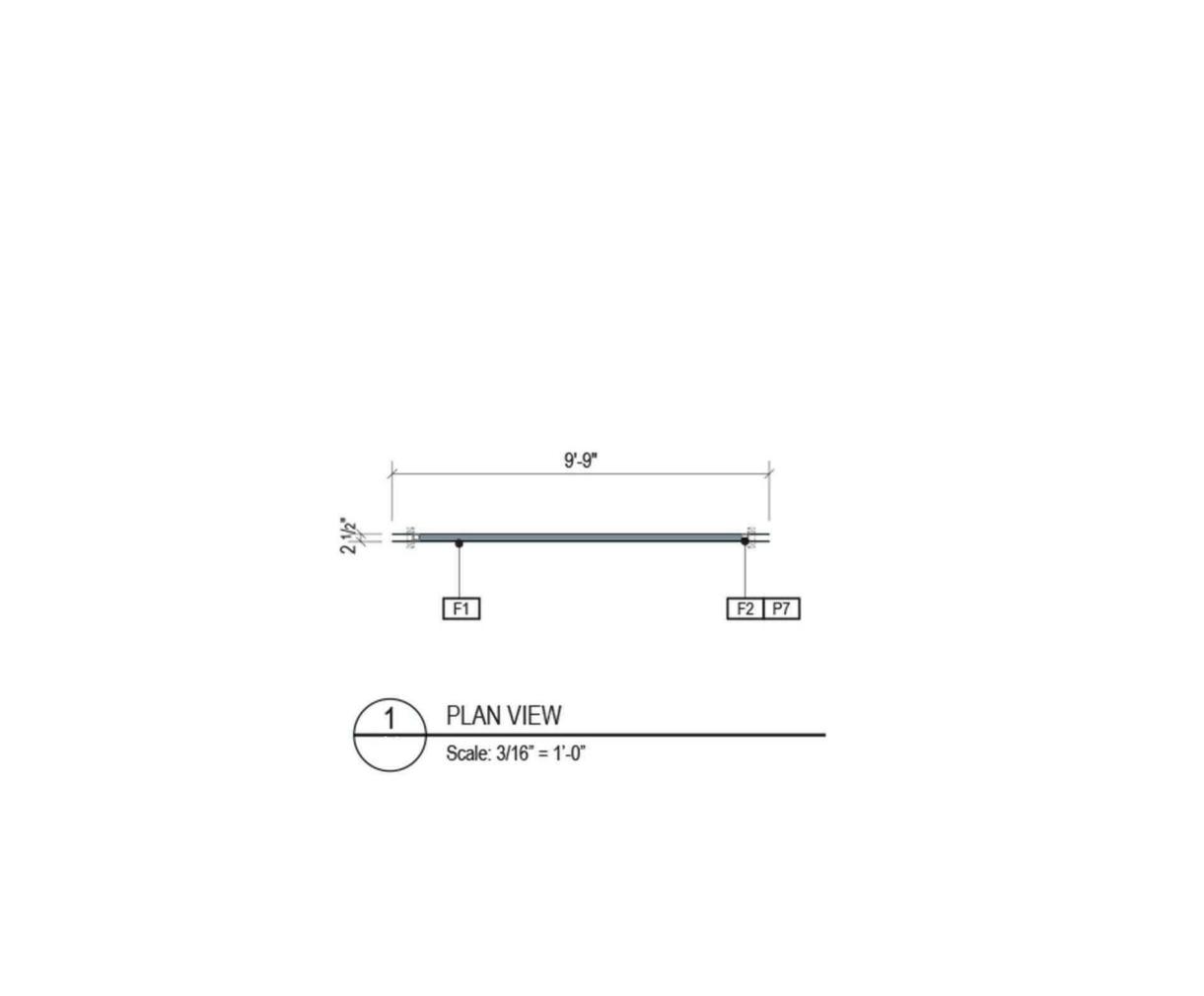
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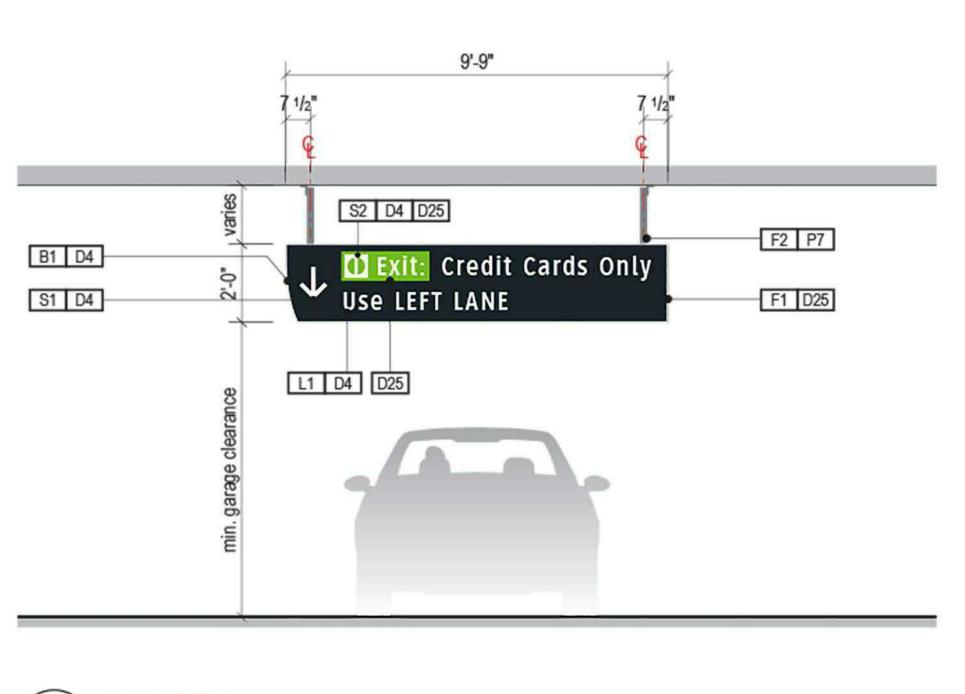
HAS NO: 749A

2.1 DESIGN INTENT PARKING GARAGE **VEHICULAR SIGNS** 

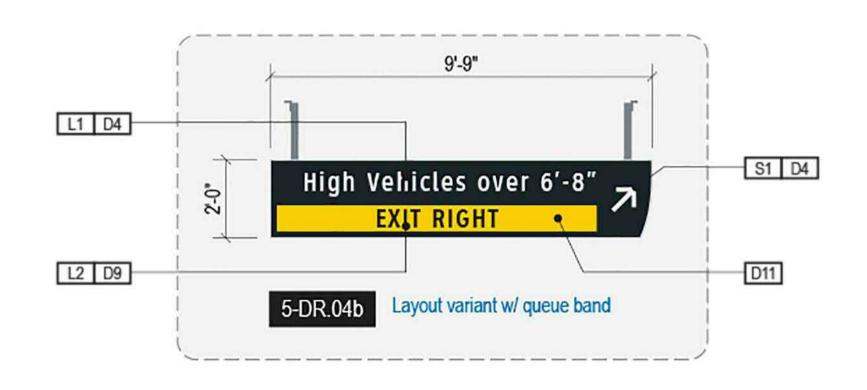
Designed By: L.A. Drawing No.: Drawn By: Q.P.
Checked By: A.B.

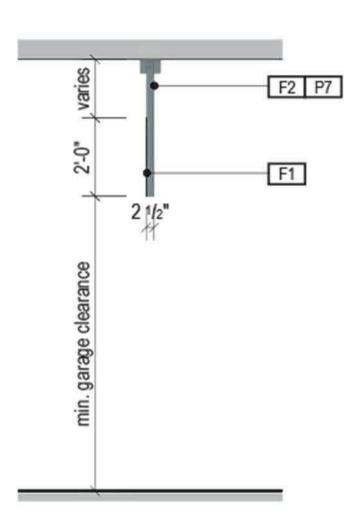
2-1



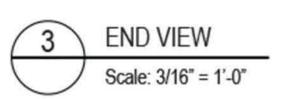








5-DR.04; 5-DR.04b







ELEVATION (OPPOSITE SIDE) Scale: 3/16" = 1'-0"

SIGN FUNCTION

DIRECTIONAL

MOUNTING METHOD

CEILING SUSPENDED

### GENERAL NOTES

GENERAL DESCRIPTION & USE

VEHICULAR - L1 Ceiling Suspended Directional (wide variant); 1 direction; 1 or 2 sides

- All final design, engineering & amount/sizing of structural sign support elements, material types/thicknesses, dimensions and attachment methods shall be performed and approved by a licensed engineer to meet or exceed all applicable local and national codes.
- Final engineering, dimensions, materials and fabrication are the responsibility of the Contractor/Fabricator/Installer to ensure the highest quality fit and finish for all components of the completed product. All final detailing and specifications to be provided by the Contractor/Fabricator/Installer within their final approved fabrication-ready shop drawings.
- Wherever dissimilar metals are in contact, always separate contact surfaces prior to assembly or installation with the necessary protective coatings/gaskets/washers to prevent galvanic corrosion.
- Final fabrication methods, quality and fit / finish to be reviewed & approved by HAS and the Wayfinding Design Consultants thru prototype reviews prior to final production run / installation processes.
- Colors shown are for reference only, and are subject to the limitations of the printing process and / or variance of electronic RGB screen displays. Refer to color system swatches and/or final finish samples for accurate reference.
- Messages shown here are typical placeholders only. See message schedules for specific messaging by location & sign type.

### FABRICATION NOTES (GENERAL DESIGN INTENT)

- F1 SIGN FACE PANELS: 1/8" thick alum. sign face panels; mechanically fasten sign panels to support tube structure with stainless steel countersunk screws, paint heads to match sign face; digitally printed full-bleed color graphics on 3M Reflective DG3 4090 White film applied to 1st surface of face panels; all exposed surfaces, returns, etc to be painted with MAP paint to match P5, satin finish
- F2 SUPPORT FRAME/SUSPENSION: fabricated 2" square alum, support tube frame & vertical suspension tube structure; all exposed support frame tube ends to be capped with alum.; all welds on frame/caps to be filled & ground smooth for uniform appearance; suspension tubes mechanically attached to ceiling attachment hinge plates above; ceiling attachment plates to be mechanically fastened to garage's structural ceiling elements as required w/ mech. fasteners (fabricator to field verify); support frame, suspension tubes & hinge plates to be painted all exposed surfaces with MAP paint to match P7, satin finish



- LETTERING (TYPEFACES) / SYMBOLS / ARROWS: L1 Vehicular Wayfinding Typeface: Clearview Highway 2-W
- L2 Vehicular Wayfinding Typeface: Clearview Highway 2-B
- L4 Vehicular Dynamic Numbers: TBD by others
- L6 Supplemental Typeface: Clearview One Book Condensed
- S1 Arrow(s): use only official HAS wayfinding arrow art
- S2 Int'l Symbols: use only official HAS wayfinding symbol art B1 Sign Face Reflective White Border - 1/2\* full-bleed border
- B2 Dynamic Unit White Border border to match symbol field
- B3 Black Border 1/2" full-bleed border

### COLORS:

NOTES: "D" = digitally printed colors as generated by 3M Picasso printer (or equal) on 3M Reflective DG3 4090 White unless otherwise noted; "P" = Matthews Acrylic Polyurethane (MAP) paint (or equal), satin finish; "V" = 3M vinyl films (or equal)

- D4 White: 3M DG3 4090 showing thru digital print background
- D5 Dark Gray: PMS 433C D6 Med. Gray: PMS 432C
- D8 Light Gray: PMS 427C
- D9 Black: C:50 M:40 Y:40 K:100 D10 Safety Red: PMS 186C
- D11 Warning Yellow: 3M Reflective DG3 4091 Yellow
- D13 Green: PMS 349C D15 Purple: PMS 2597C
- D25 Exit Green: PMS 368C
- P5 Dark Gray: PMS 433C P7 Med. Gray: PMS 430C
- P13 Green: PMS 349C P15 Purple: PMS 2597C

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Labozan Associates

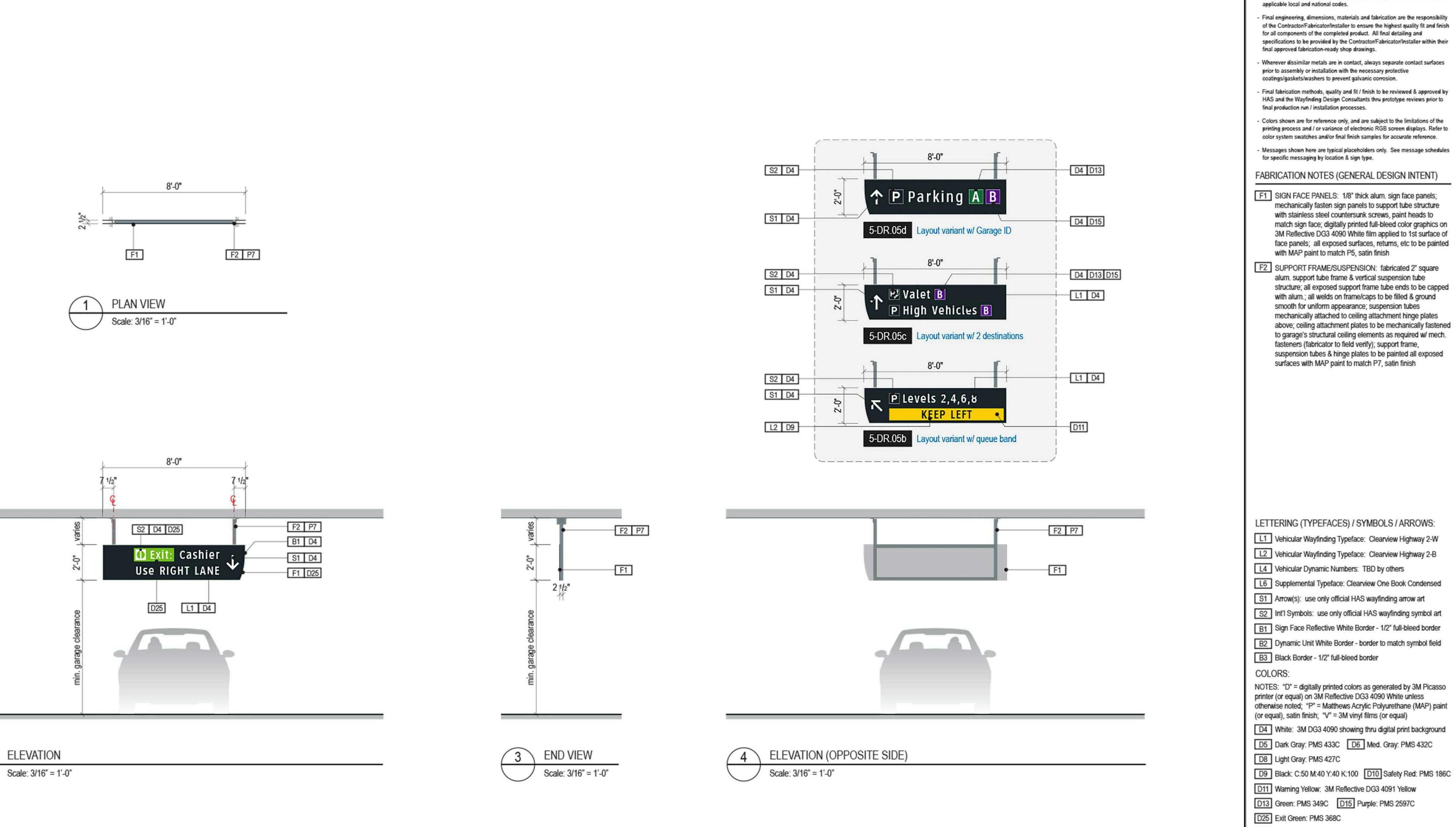
A/B GARAGE WAYFINDING IAH TERMINAL / SIGNAGE AND /

HAS NO: 749A

CIP NO:

2.1 DESIGN INTENT PARKING GARAGE **VEHICULAR SIGNS** 

Designed By: L.A. Drawing No.: Drawn By: Q.P. Checked By: A.B. 2-2



DIRECTIONAL

5-DR.05; 5-DR.05b thru 5-DR.05d

MOUNTING METHOD

CEILING SUSPENDED

GENERAL DESCRIPTION & USE

VEHICULAR - L1 Ceiling Suspended Directional (med. variant); 1 direction; 1 or 2 sides

**Jacobs** GENERAL NOTES

 All final design, engineering & amount/sizing of structural sign support elements, material types/thicknesses, dimensions and attachment methods

shall be performed and approved by a licensed engineer to meet or exceed all

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CONSULTANT:



L6 Supplemental Typeface: Clearview One Book Condensed S1 Arrow(s): use only official HAS wayfinding arrow art S2 Int'l Symbols: use only official HAS wayfinding symbol art

B1 Sign Face Reflective White Border - 1/2\* full-bleed border

B2 Dynamic Unit White Border - border to match symbol field B3 Black Border - 1/2" full-bleed border

COLORS:

NOTES: "D" = digitally printed colors as generated by 3M Picasso printer (or equal) on 3M Reflective DG3 4090 White unless otherwise noted; "P" = Matthews Acrylic Polyurethane (MAP) paint (or equal), satin finish; "V" = 3M vinyl films (or equal)

D4 White: 3M DG3 4090 showing thru digital print background D5 Dark Gray: PMS 433C D6 Med. Gray: PMS 432C

D8 Light Gray: PMS 427C

D9 Black: C:50 M:40 Y:40 K:100 D10 Safety Red: PMS 186C

D11 Warning Yellow: 3M Reflective DG3 4091 Yellow D13 Green: PMS 349C D15 Purple: PMS 2597C

D25 Exit Green: PMS 368C

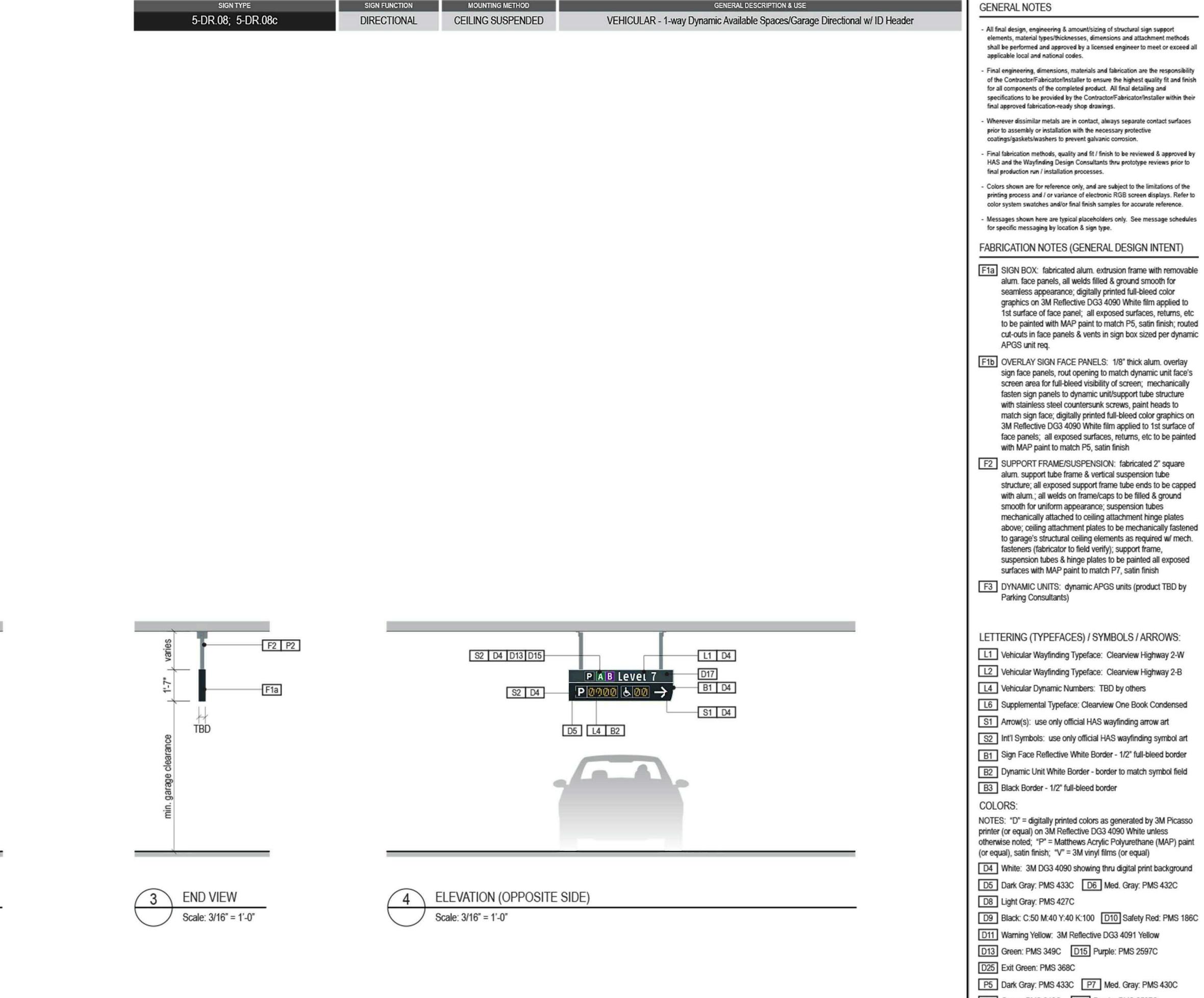
P5 Dark Gray: PMS 433C P7 Med. Gray: PMS 430C P13 Green: PMS 349C P15 Purple: PMS 2597C

A/B GARAGE WAYFINDING IAH TERMINAL / SIGNAGE AND /

CIP NO: HAS NO: 749A

2.1 DESIGN INTENT PARKING GARAGE **VEHICULAR SIGNS** 

Designed By: L.A. Drawing No.: Drawn By: Q.P.
Checked By: A.B.



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CONSULTANT:



DIRECTOR

HOUSTON AIRPORT SYSTEM



B2 Dynamic Unit White Border - border to match symbol field B3 Black Border - 1/2" full-bleed border

(or equal), satin finish; "V" = 3M vinyl films (or equal)

D4 White: 3M DG3 4090 showing thru digital print background D5 Dark Gray: PMS 433C D6 Med. Gray: PMS 432C

D8 Light Gray: PMS 427C

D9 Black: C:50 M:40 Y:40 K:100 D10 Safety Red: PMS 186C

D11 Warning Yellow: 3M Reflective DG3 4091 Yellow D13 Green: PMS 349C D15 Purple: PMS 2597C

D25 Exit Green: PMS 368C

P5 Dark Gray: PMS 433C P7 Med. Gray: PMS 430C P13 Green: PMS 349C P15 Purple: PMS 2597C

A/B GARAGE WAYFINDING IAH TERMINAL / SIGNAGE AND /

CIP NO:

HAS NO: 749A

2.1 DESIGN INTENT PARKING GARAGE

**VEHICULAR SIGNS** 

Designed By: L.A. Drawing No.:

Drawn By: Q.P.
Checked By: A.B.

2-4

F2 P2

.\_\_\_\_\_,

\\_\_\_\_\_\_\_\_

Cover Panel on Azteca's

Ceiling Susp. S5, S7 1-way

Dynamic Ceiling Suspended

Available Spaces/Garage

Directional with ID Header

F2 P2

F1a

PAB Level 5

5'-3"

PAB Level 7

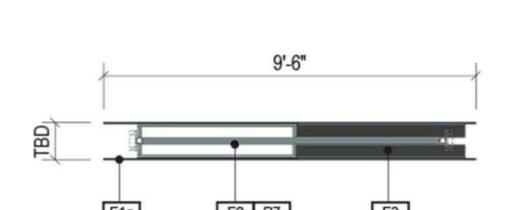
← P0000 800

**ELEVATION** 

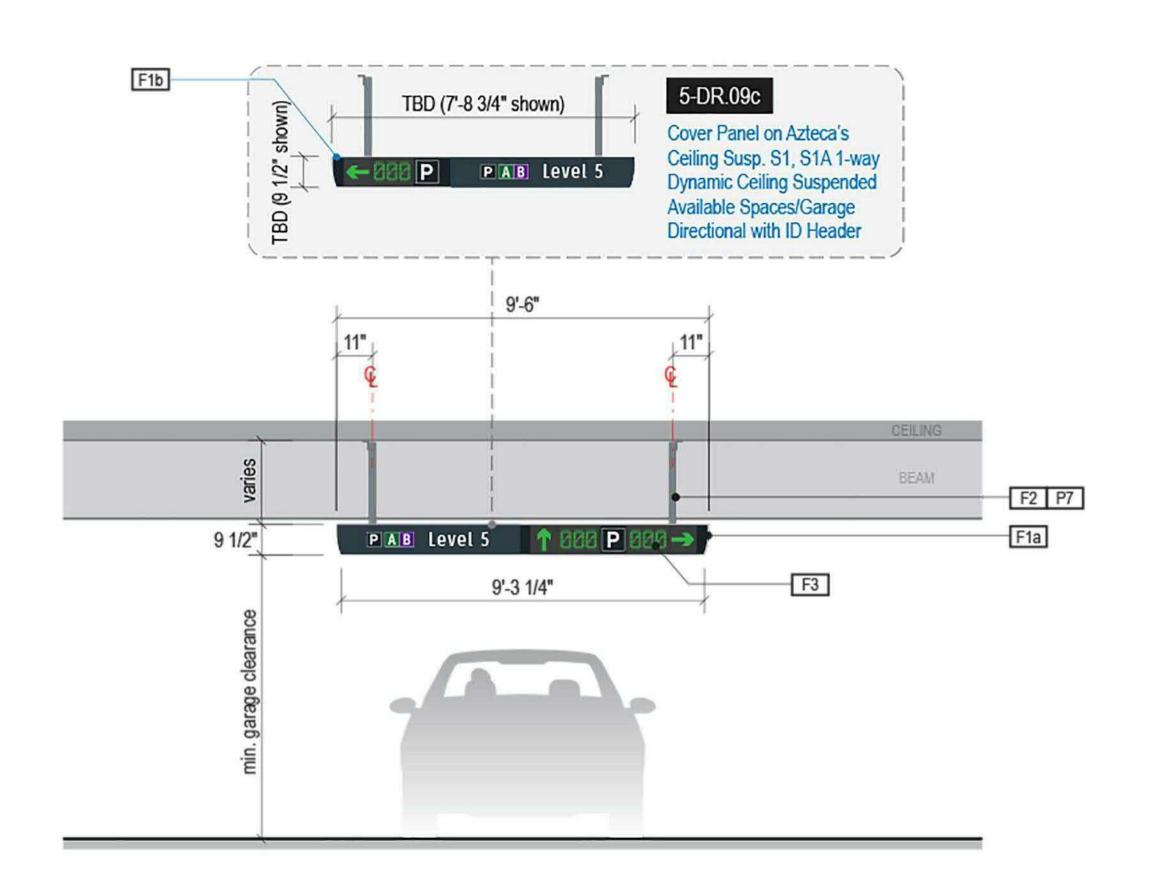
Scale: 3/16" = 1'-0"

PLAN VIEW

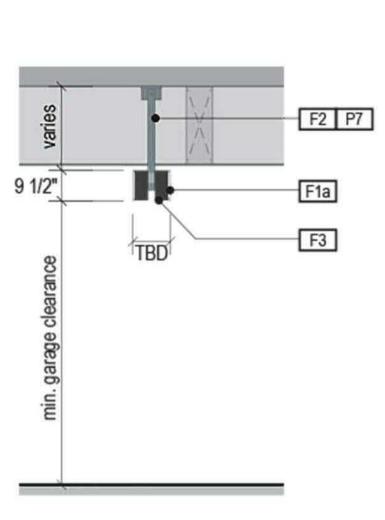
Scale: 3/16" = 1'-0"



PLAN VIEW Scale: 3/16" = 1'-0"

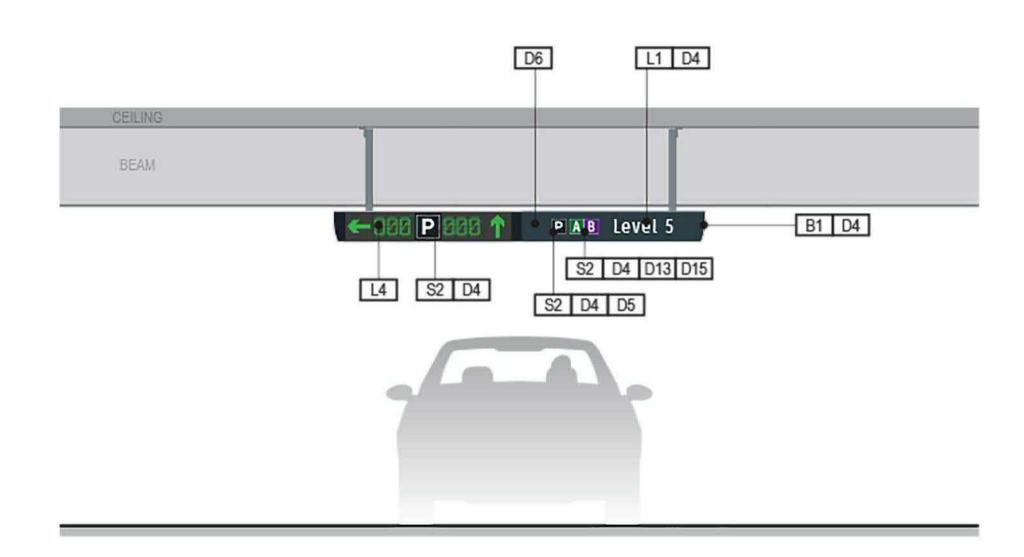


**ELEVATION** Scale: 3/16" = 1'-0"



5-DR.09; 5-DR.09c

**END VIEW** Scale: 3/16" = 1'-0"



ELEVATION (OPPOSITE SIDE)

Scale: 3/16" = 1'-0"

MOUNTING METHOD

CEILING SUSP./BEAM

SIGN FUNCTION

DIRECTIONAL

GENERAL NOTES

GENERAL DESCRIPTION & USE

2-way Dynamic Ceiling Susp./Beam Mnt. Available Spaces/Garage Directional with Overlay ID Panel

 All final design, engineering & amount/sizing of structural sign support elements, material types/thicknesses, dimensions and attachment methods shall be performed and approved by a licensed engineer to meet or exceed all

final approved fabrication-ready shop drawings.

- applicable local and national codes. Final engineering, dimensions, materials and fabrication are the responsibility of the Contractor/Fabricator/Installer to ensure the highest quality fit and finish for all components of the completed product. All final detailing and specifications to be provided by the Contractor/Fabricator/Installer within their
- Wherever dissimilar metals are in contact, always separate contact surfaces prior to assembly or installation with the necessary protective coatings/gaskets/washers to prevent galvanic corrosion.
- Final fabrication methods, quality and fit / finish to be reviewed & approved by HAS and the Wayfinding Design Consultants thru prototype reviews prior to final production run / installation processes.
- Colors shown are for reference only, and are subject to the limitations of the printing process and / or variance of electronic RGB screen displays. Refer to color system swatches and/or final finish samples for accurate reference.
- Messages shown here are typical placeholders only. See message schedules for specific messaging by location & sign type.

### FABRICATION NOTES (GENERAL DESIGN INTENT)

- F1 OVERLAY SIGN FACE PANELS: 1/8" thick alum. overlay sign face panels, rout opening to match dynamic unit face's screen area for full-bleed visibility of screen; mechanically fasten sign panels to dynamic unit/support tube structure with stainless steel countersunk screws, paint heads to match sign face; digitally printed full-bleed color graphics on 3M Reflective DG3 4090 White film applied to 1st surface of face panels; all exposed surfaces, returns, etc to be painted with MAP paint to match P5, satin finish
- F2 SUPPORT FRAME/SUSPENSION: fabricated 2" square alum. support tube frame & vertical suspension tube structure; all exposed support frame tube ends to be capped with alum.; all welds on frame/caps to be filled & ground smooth for uniform appearance; suspension tubes mechanically attached to ceiling attachment hinge plates above; ceiling attachment plates to be mechanically fastened to garage's structural ceiling elements as required w/ mech. fasteners (fabricator to field verify); support frame, suspension tubes & hinge plates to be painted all exposed surfaces with MAP paint to match P7, satin finish
- F3 DYNAMIC UNITS: dynamic APGS units (product TBD by Parking Consultants)

LETTERING (TYPEFACES) / SYMBOLS / ARROWS:

L1 Vehicular Wayfinding Typeface: Clearview Highway 2-W

L2 Vehicular Wayfinding Typeface: Clearview Highway 2-B

L6 Supplemental Typeface: Clearview One Book Condensed

S2 Int'l Symbols: use only official HAS wayfinding symbol art

B1 Sign Face Reflective White Border - 1/2\* full-bleed border

B2 Dynamic Unit White Border - border to match symbol field

NOTES: "D" = digitally printed colors as generated by 3M Picasso printer (or equal) on 3M Reflective DG3 4090 White unless otherwise noted; "P" = Matthews Acrylic Polyurethane (MAP) paint

D4 White: 3M DG3 4090 showing thru digital print background

D5 Dark Gray: PMS 433C D6 Med. Dark Gray: PMS 432C

D9 Black: C:50 M:40 Y:40 K:100 D10 Safety Red: PMS 186C

(or equal), satin finish; "V" = 3M vinyl films (or equal)

D11 Warning Yellow: 3M Reflective DG3 4091 Yellow

D13 Green: PMS 349C D15 Purple: PMS 2597C

P13 Green: PMS 349C P15 Purple: PMS 2597C

P5 Dark Gray: PMS 433C P7 Med. Gray: PMS 430C

S1 Arrow(s): use only official HAS wayfinding arrow art

L4 Vehicular Dynamic Numbers: TBD by others

B3 Black Border - 1/2" full-bleed border

D8 Light Gray: PMS 427C

D25 Exit Green: PMS 368C

COLORS:



**Jacobs** 

Mark	Date	Description
0	09/14/2020	ISSUED FOR PERMIT
OWN	IER:	

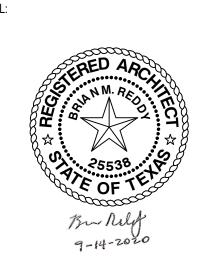
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HOUSTON AIRPORT SYSTEM

CONSULTANT:

DIRECTOR





A/B GARAGE WAYFINDING

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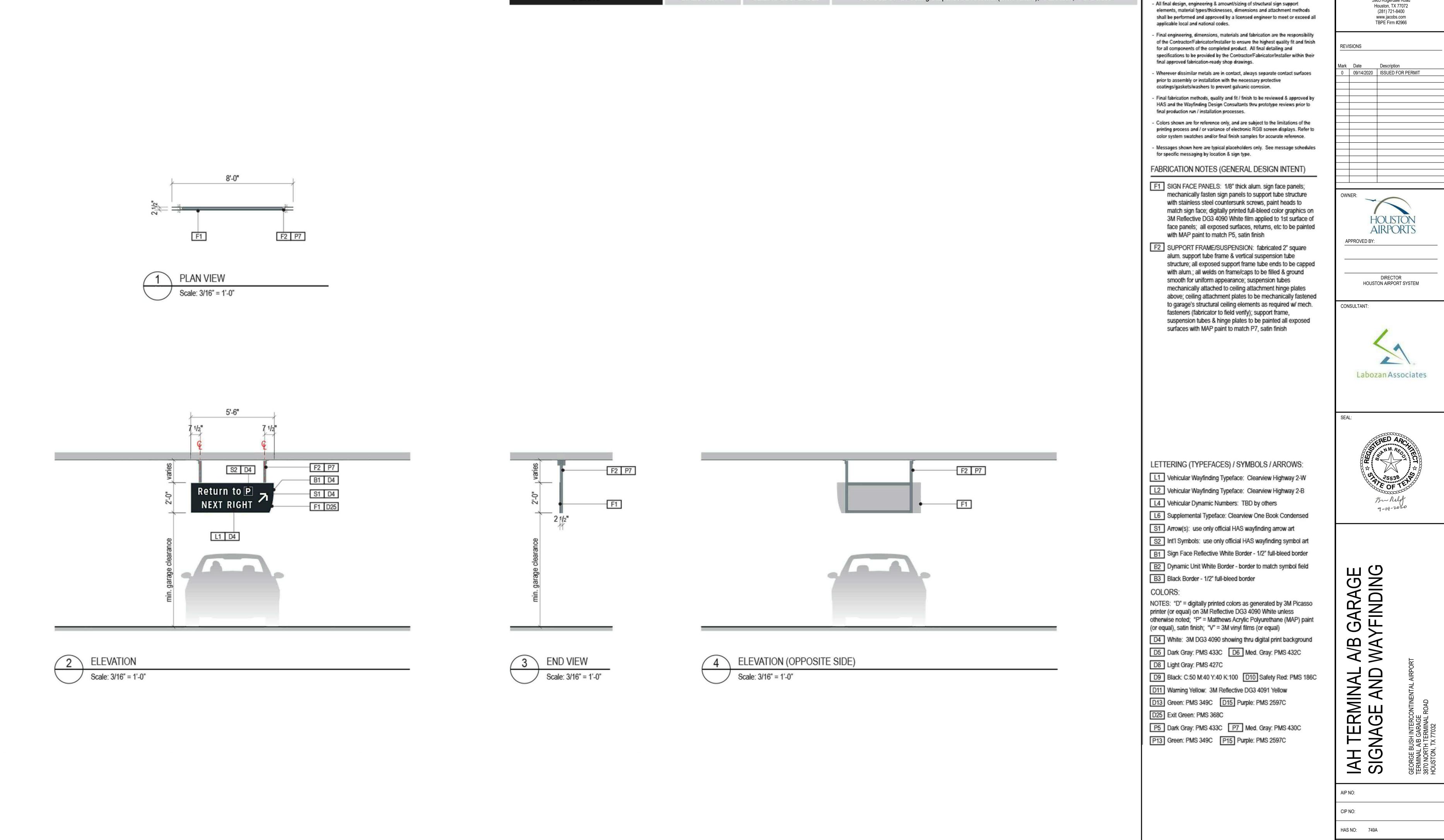
CIP NO:

HAS NO: 749A

2.1 DESIGN INTENT PARKING GARAGE **VEHICULAR SIGNS** 

Designed By: L.A. Drawing No.: Drawn By: Q.P.
Checked By: A.B.

2-5



DIRECTIONAL

SIGN TYPE

5-DR.10

MOUNTING METHOD

CEILING SUSPENDED

GENERAL DESCRIPTION & USE

VEHICULAR - L1 Ceiling Suspended Directional (short variant); 1 direction; 1 or 2 sides

GENERAL NOTES

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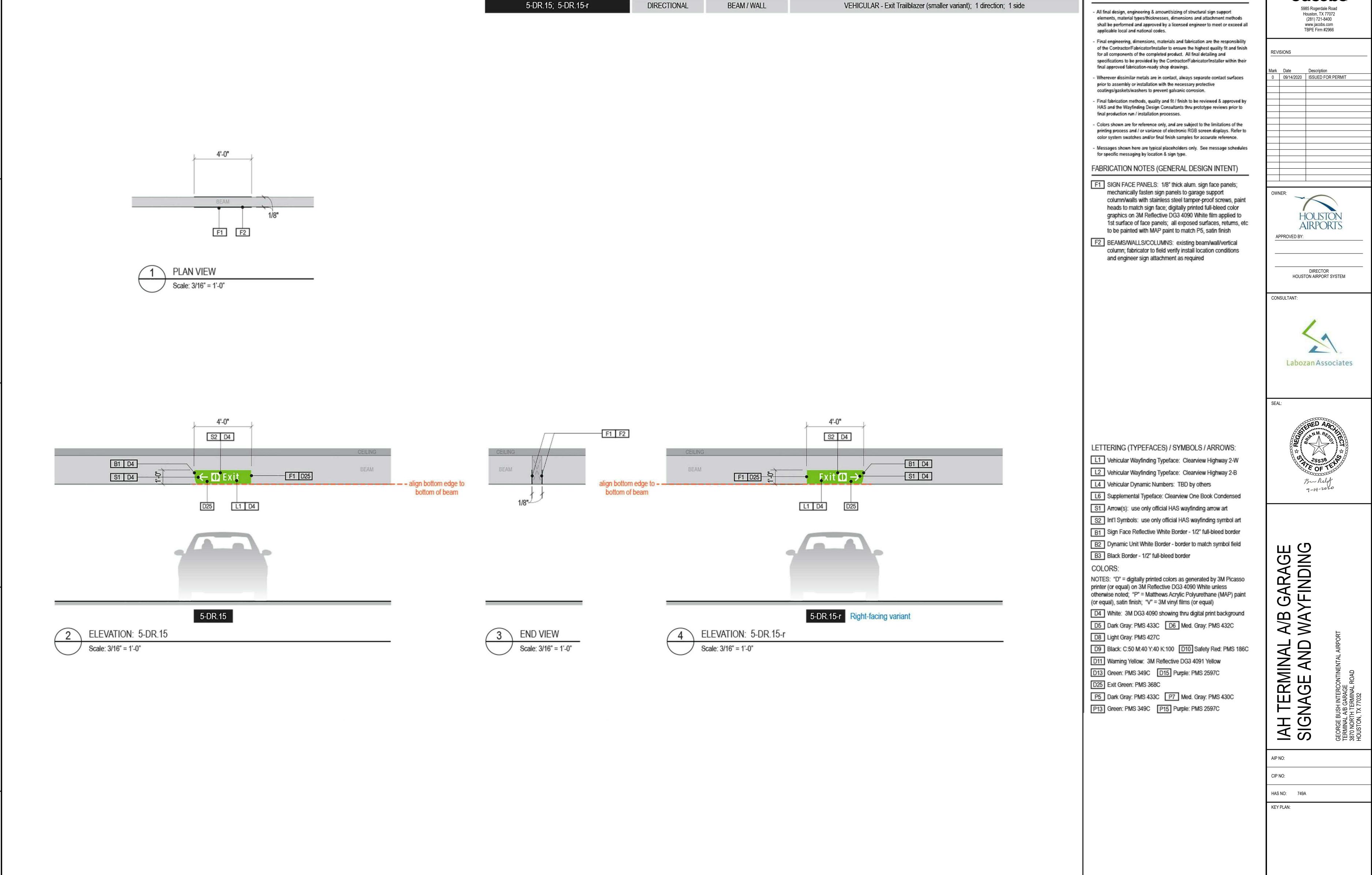
2.1 DESIGN INTENT

**VEHICULAR SIGNS** 

PARKING GARAGE

Designed By: L.A. Drawing No.: Drawn By: Q.P.
Checked By: A.B.

2-6



MOUNTING METHOD

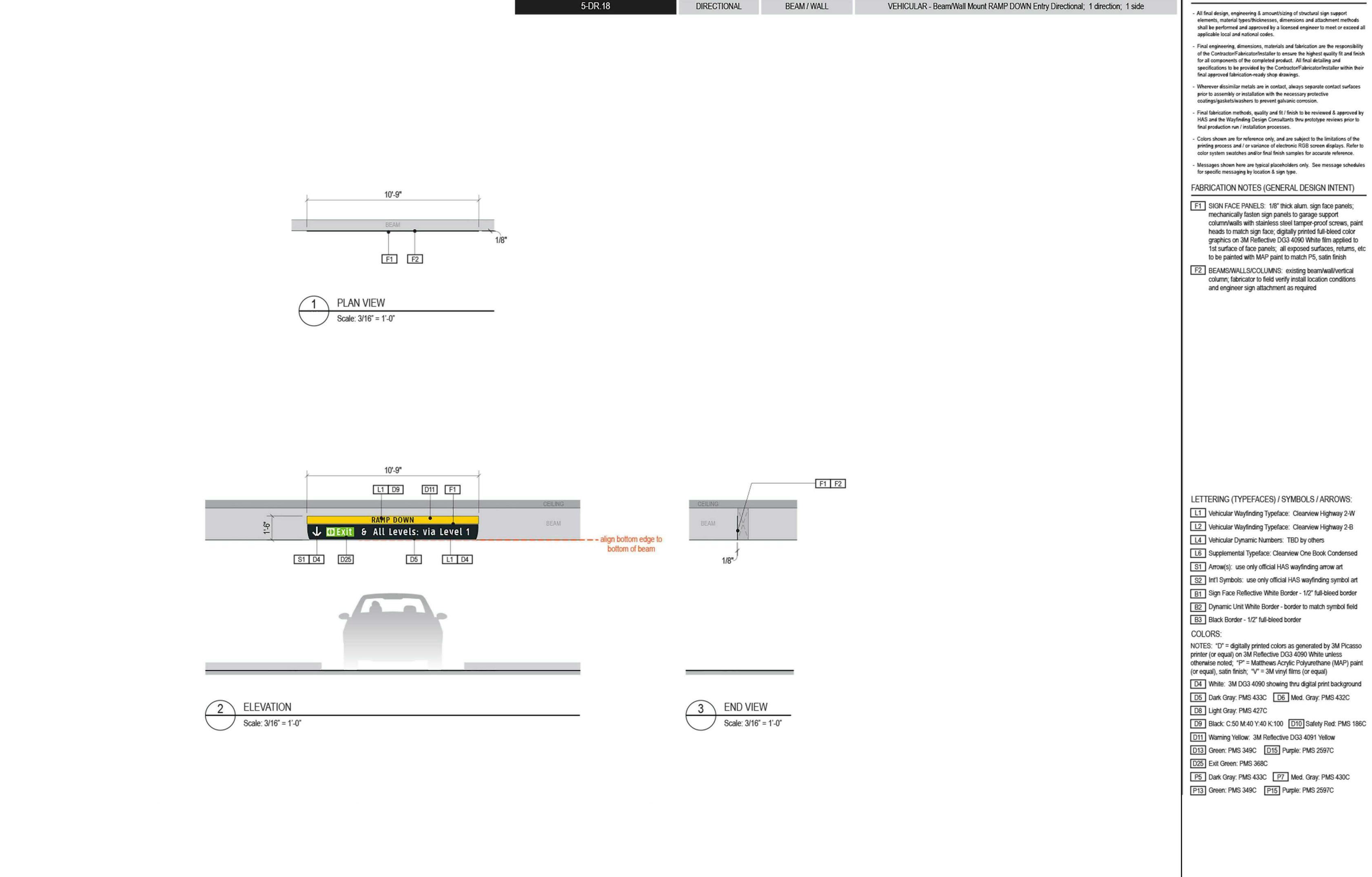
GENERAL DESCRIPTION & USE

GENERAL NOTES

**Jacobs** 

2.1 DESIGN INTENT PARKING GARAGE **VEHICULAR SIGNS** 

Designed By: L.A. Drawing No.: Drawn By: Q.P.
Checked By: A.B.



SIGN TYPE

MOUNTING METHOD

GENERAL DESCRIPTION & USE

GENERAL NOTES

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 Date
 Description

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APPROVED BY:

DIRECTOR HOUSTON AIRPORT SYSTEM

Labozan Associates

CONSULTANT:

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IAH TERMINAL A/B GARAGE SIGNAGE AND WAYFINDING

AIP NO:

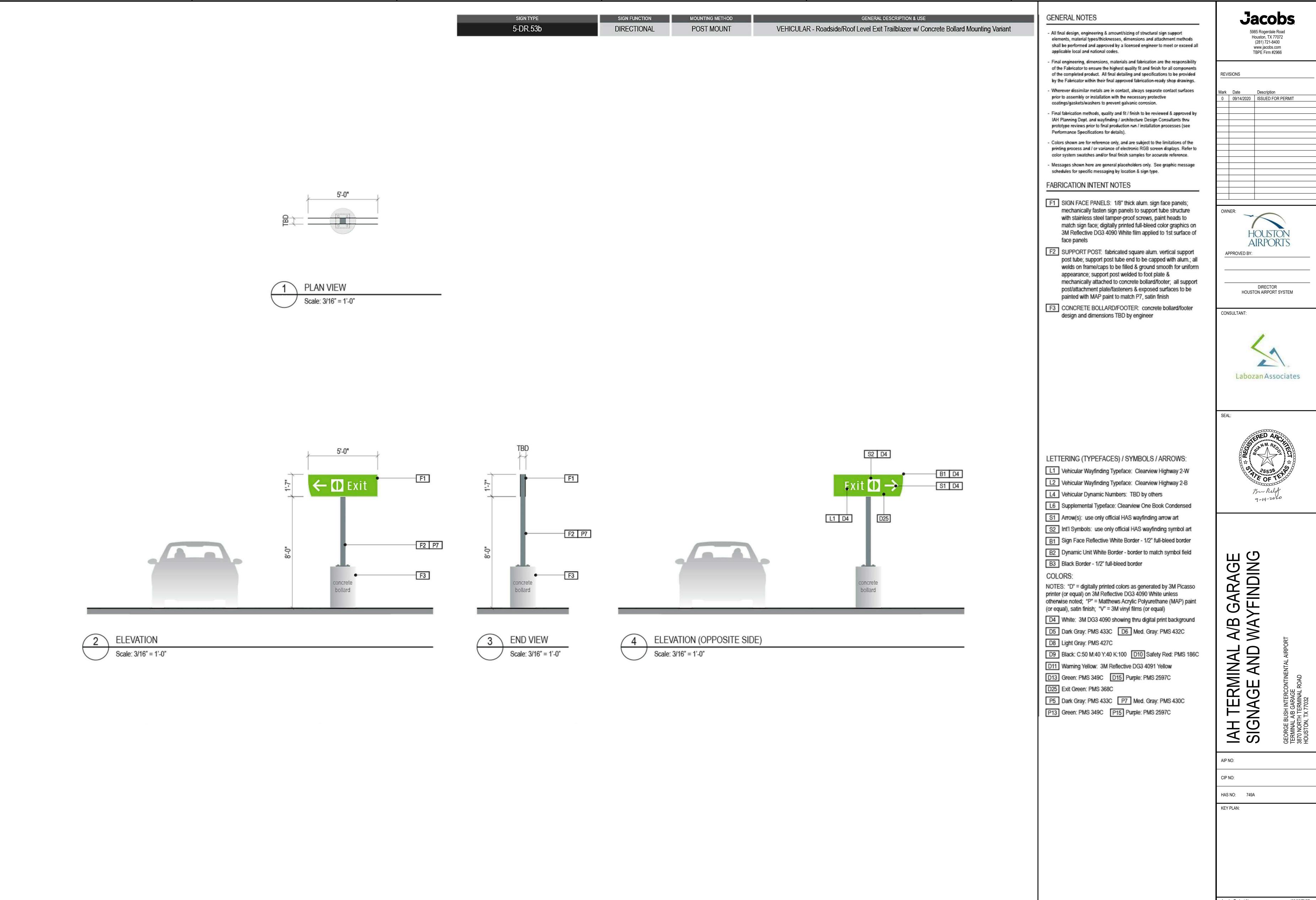
HAS NO: 749A

Jacobs Project No.:

Drawing Title:

2.1 DESIGN INTENT PARKING GARAGE VEHICULAR SIGNS

Designed By: L.A. Drawing No.:
Drawn By: Q.P.
Checked By: A.B.



Jacobs Project No.:

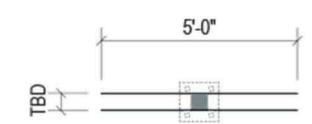
2.1 DESIGN INTENT PARKING GARAGE VEHICULAR SIGNS

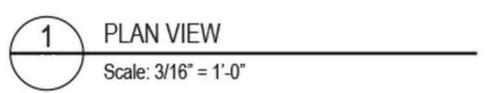
Designed By: L.A. Drawing No.:

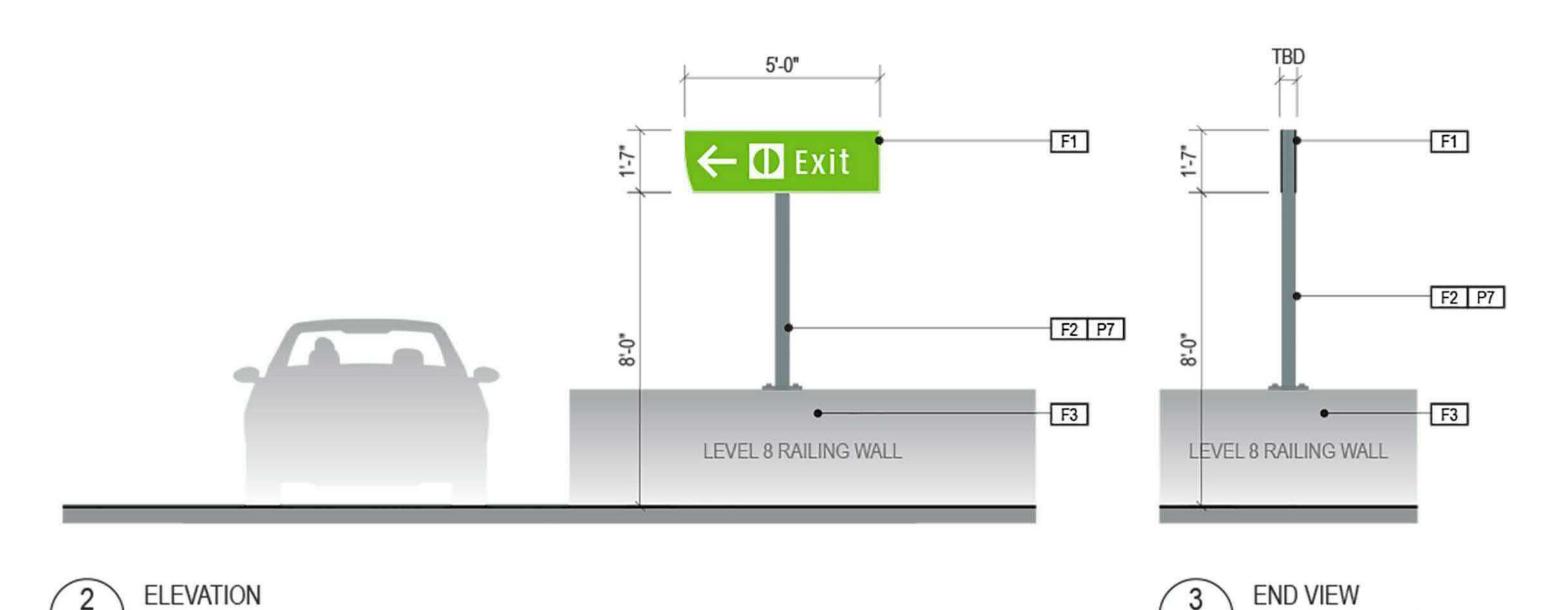
Drawn By: Q.P.
Checked By: A.B.

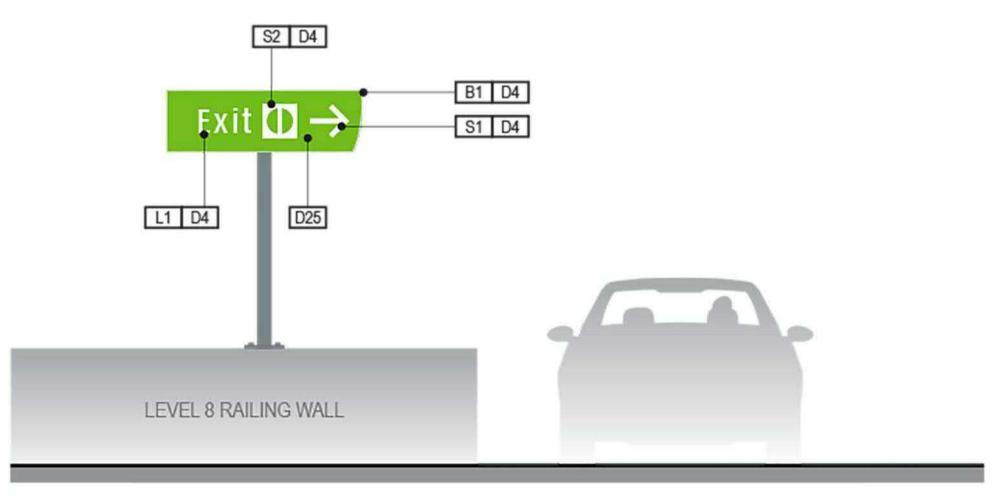
Drawing No.:

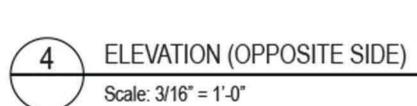
2-9











Scale: 3/16" = 1'-0"

### GENERAL NOTES

- All final design, engineering & amount/sizing of structural sign support elements, material types/thicknesses, dimensions and attachment methods shall be performed and approved by a licensed engineer to meet or exceed all applicable local and national codes.
- Final engineering, dimensions, materials and fabrication are the responsibility of the Fabricator to ensure the highest quality fit and finish for all components of the completed product. All final detailing and specifications to be provided
- by the Fabricator within their final approved fabrication-ready shop drawings. - Wherever dissimilar metals are in contact, always separate contact surfaces

prior to assembly or installation with the necessary protective coatings/gaskets/washers to prevent galvanic corrosion.

- Final fabrication methods, quality and fit / finish to be reviewed & approved by IAH Planning Dept. and wayfinding / architecture Design Consultants thru prototype reviews prior to final production run / installation processes (see Performance Specifications for details).
- Colors shown are for reference only, and are subject to the limitations of the printing process and / or variance of electronic RGB screen displays. Refer to color system swatches and/or final finish samples for accurate reference.
- Messages shown here are general placeholders only. See graphic message schedules for specific messaging by location & sign type.

### FABRICATION INTENT NOTES

- F1 SIGN FACE PANELS: 1/8" thick alum. sign face panels; mechanically fasten sign panels to support tube structure with stainless steel tamper-proof screws, paint heads to match sign face; digitally printed full-bleed color graphics on 3M Reflective DG3 4090 White film applied to 1st surface of face panels
- F2 SUPPORT POST: fabricated square alum. vertical support post tube; support post tube end to be capped with alum.; all welds on frame/caps to be filled & ground smooth for uniform appearance; support post welded to foot plate & mechanically attached to concrete bollard/footer; all support post/attachment plate/fasteners & exposed surfaces to be painted with MAP paint to match P7, satin finish
- F3 GARAGE ROOF LEVEL WALL: attachment to garage's roof level wall-top TBD by engineer

LETTERING (TYPEFACES) / SYMBOLS / ARROWS:

L1 Vehicular Wayfinding Typeface: Clearview Highway 2-W

L2 Vehicular Wayfinding Typeface: Clearview Highway 2-B

L6 Supplemental Typeface: Clearview One Book Condensed

S2 Int'l Symbols: use only official HAS wayfinding symbol art

S1 Arrow(s): use only official HAS wayfinding arrow art

L4 Vehicular Dynamic Numbers: TBD by others

B3 Black Border - 1/2" full-bleed border



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CONSULTANT:





B1 Sign Face Reflective White Border - 1/2" full-bleed border B2 Dynamic Unit White Border - border to match symbol field

NOTES: "D" = digitally printed colors as generated by 3M Picasso printer (or equal) on 3M Reflective DG3 4090 White unless otherwise noted; "P" = Matthews Acrylic Polyurethane (MAP) paint (or equal), satin finish; "V" = 3M vinyl films (or equal) D4 White: 3M DG3 4090 showing thru digital print background

- D5 Dark Gray: PMS 433C D6 Med. Gray: PMS 432C
- D8 Light Gray: PMS 427C

COLORS:

- D9 Black: C:50 M:40 Y:40 K:100 D10 Safety Red: PMS 186C
- D11 Warning Yellow: 3M Reflective DG3 4091 Yellow D13 Green: PMS 349C D15 Purple: PMS 2597C
- D25 Exit Green: PMS 368C
- P5 Dark Gray: PMS 433C P7 Med. Gray: PMS 430C
- P13 Green: PMS 349C P15 Purple: PMS 2597C

- A/B GARAGE WAYFINDING AH TERMINAL A

<u>≺</u> S	GEO TERI
P NO:	
P NO:	

2.1 DESIGN INTENT

Designed By: L.A. Drawing No.:

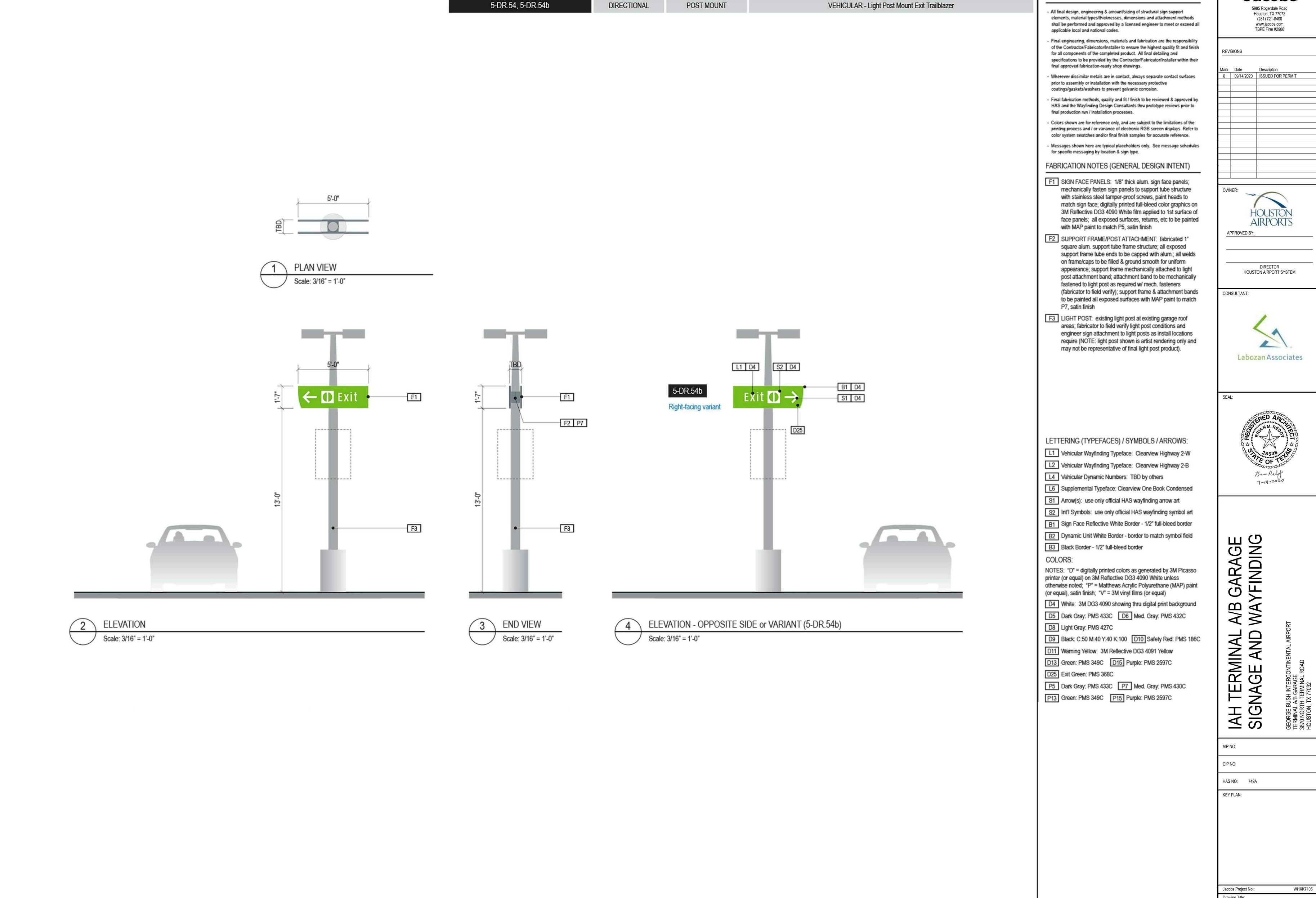
Drawn By: Q.P.
Checked By: A.B.

2-10

Scale: 3/16" = 1'-0"

**VEHICULAR SIGNS** 

PARKING GARAGE



MOUNTING METHOD

GENERAL DESCRIPTION & USE

GENERAL NOTES

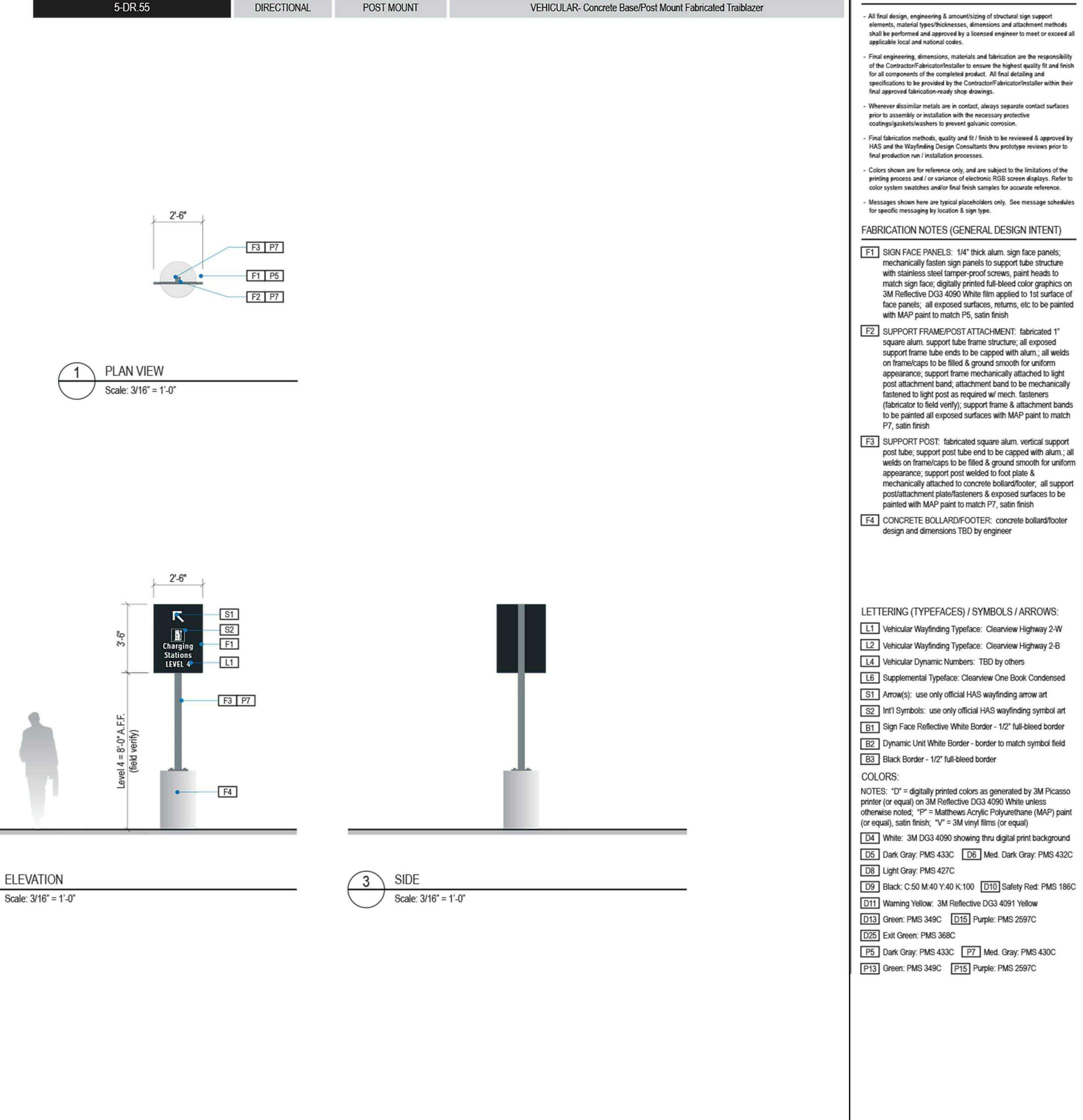
**Jacobs** 

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2.1 DESIGN INTENT PARKING GARAGE **VEHICULAR SIGNS** 

Designed By: L.A. Drawing No.: Drawn By: Q.P.
Checked By: A.B.

2-11



GENERAL DESCRIPTION & USE

SIGN FUNCTION

MOUNTING METHOD

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GENERAL NOTES

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HOUSTON AIRPORT SYSTEM

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- A/B GARAGE WAYFINDING

IAH TERMINAL / SIGNAGE AND \

CIP NO:

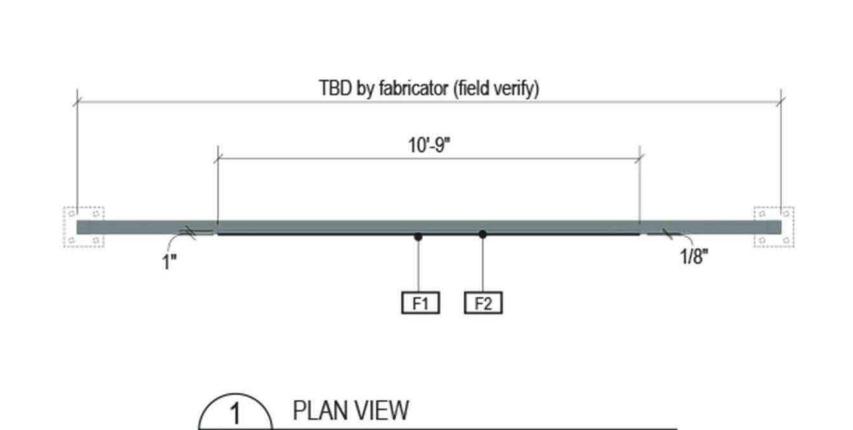
HAS NO: 749A

2.1 DESIGN INTENT PARKING GARAGE **VEHICULAR SIGNS** 

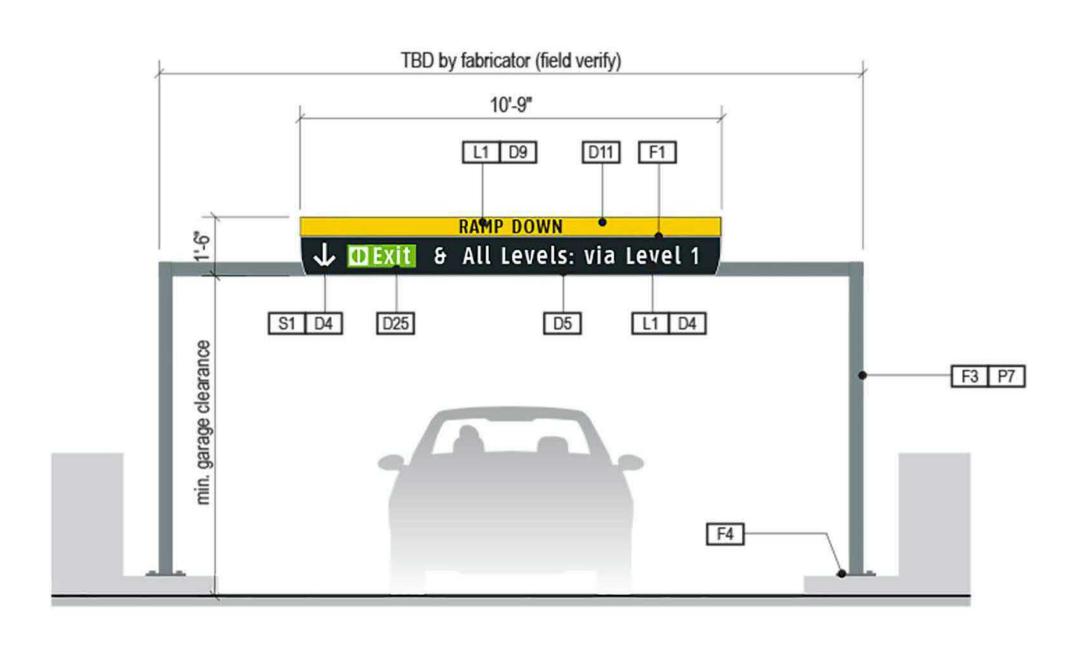
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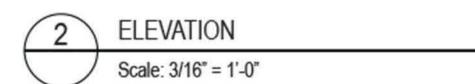
Drawn By: Q.P.
Checked By: A.B.

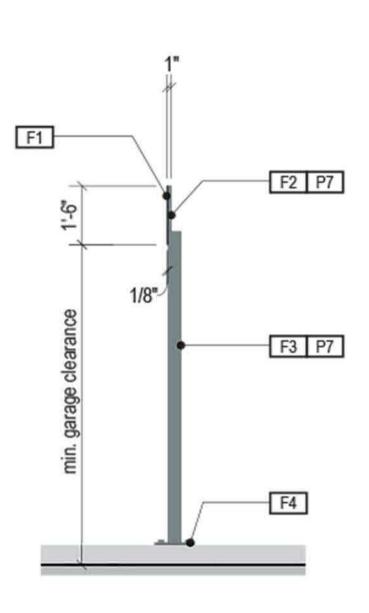
2-12



Scale: 3/16" = 1'-0"







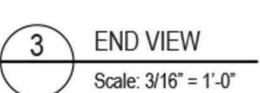
SIGN FUNCTION

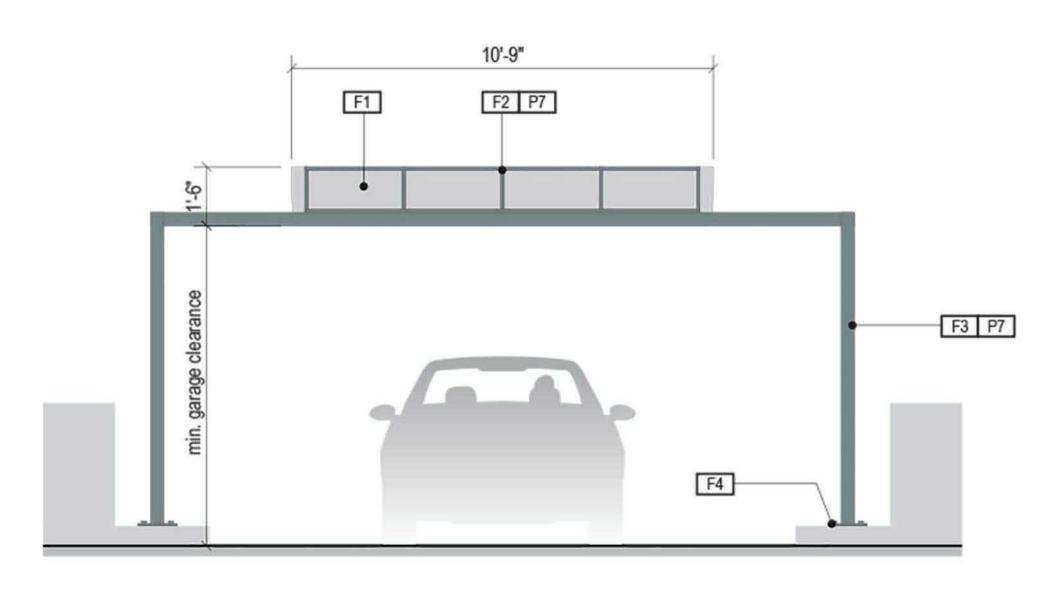
DIRECTIONAL

5-DR.56

MOUNTING METHOD

SPAN STRUCTURE





4 ELEVATION (OPPOSITE SIDE)
Scale: 3/16" = 1'-0"

### GENERAL NOTES

GENERAL DESCRIPTION & USE

VEHICULAR - Span Structure Mount RAMP DOWN Entry Directional; 1 direction; 1 side

- All final design, engineering & amount/sizing of structural sign support elements, material types/thicknesses, dimensions and attachment methods shall be performed and approved by a licensed engineer to meet or exceed all applicable local and national codes.
- Final engineering, dimensions, materials and fabrication are the responsibility
  of the Fabricator to ensure the highest quality fit and finish for all components
  of the completed product. All final detailing and specifications to be provided
- by the Fabricator within their final approved fabrication-ready shop drawings.

  Wherever dissimilar metals are in contact, always separate contact surfaces prior to assembly or installation with the necessary protective
- Final fabrication methods, quality and fit / finish to be reviewed & approved by IAH Planning Dept. and wayfinding / architecture Design Consultants thru prototype reviews prior to final production run / installation processes (see Performance Specifications for details).

coatings/gaskets/washers to prevent galvanic corrosion.

- Colors shown are for reference only, and are subject to the limitations of the printing process and / or variance of electronic RGB screen displays. Refer to color system swatches and/or final finish samples for accurate reference.
- Messages shown here are general placeholders only. See graphic message schedules for specific messaging by location & sign type.

### FABRICATION INTENT NOTES

- F1 SIGN FACE PANELS: 1/8" thick alum. sign face panels; mechanically fasten sign panels to support tube structure with stainless steel tamper-proof screws, paint heads to match sign face; digitally printed full-bleed color graphics on 3M Reflective DG3 4090 White film applied to 1st surface of face panels
- F2 SUPPORT FRAME/FACE ATTACHMENT: fabricated 1" square alum. support tube frame structure; support frame mechanically attached to span structure; support frame & attachments to be painted all exposed surfaces with MAP paint to match P7, satin finish
- F3 VERTICAL SUPPORT POST/SPAN STRUCTURE &
  ATTACHMENT PLATE: structural square alum. post with
  alum. top cap & structural bottom ground/floor attachment
  plate, all seams welded, filled and ground smooth to give
  uniform appearance; paint all exposed surfaces with MAP
  paint to match P1, satin fin.
- F4 MOUNTING: mount vertical supports plumb & level with non-corroding mechanical fasteners thru bottom plate to floor/ ground as install loc. cond. req. (field verify, use in-ground/floor footer if required); NOTE: use gasket/coating as req'd to eliminate corrosion at floor/ground and support post attachment plate contact point; use TXDOT/MUTCD approved break-away system as req'd
- LETTERING (TYPEFACES) / SYMBOLS / ARROWS:

  L1 Vehicular Wayfinding Typeface: Clearview Highway 2-W
- L2 Vehicular Wayfinding Typeface: Clearview Highway 2-B
- L4 Vehicular Dynamic Numbers: TBD by others
- L6 Supplemental Typeface: Clearview One Book Condensed
- S1 Arrow(s): use only official HAS wayfinding arrow art
- S2 Int'l Symbols: use only official HAS wayfinding symbol art

  B1 Sign Face Reflective White Border 1/2" full-bleed border
- B2 Dynamic Unit White Border border to match symbol field
- B3 Black Border 1/2" full-bleed border

### COLORS:

NOTES: "D" = digitally printed colors as generated by 3M Picasso printer (or equal) on 3M Reflective DG3 4090 White unless otherwise noted; "P" = Matthews Acrylic Polyurethane (MAP) paint (or equal), satin finish; "V" = 3M vinyl films (or equal)

- D4 White: 3M DG3 4090 showing thru digital print background
- D5 Dark Gray: PMS 433C D6 Med. Gray: PMS 432C
- D8 Light Gray: PMS 427C
- D9 Black: C:50 M:40 Y:40 K:100 D10 Safety Red: PMS 186C
- D11 Warning Yellow: 3M Reflective DG3 4091 Yellow
- D13 Green: PMS 349C D15 Purple: PMS 2597C
- D25 Exit Green: PMS 368C
- P5 Dark Gray: PMS 433C P7 Med. Gray: PMS 430C
- P13 Green: PMS 349C P15 Purple: PMS 2597C

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Mark Date Description

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OWNER:

HOUSTON
AIRPORTS

APPROVED BY:

DIRECTOR HOUSTON AIRPORT SYSTEM

CONSULTANT:

Labozan Associates

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IAH TERMINAL A/B GARAGE SIGNAGE AND WAYFINDING

AIP NO:

HAS NO: 749A

KEY PLAN:

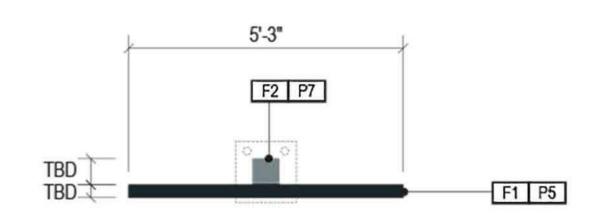
Jacobs Project No.:

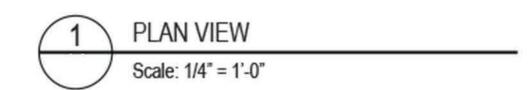
2.1 DESIGN INTENT PARKING GARAGE VEHICULAR SIGNS

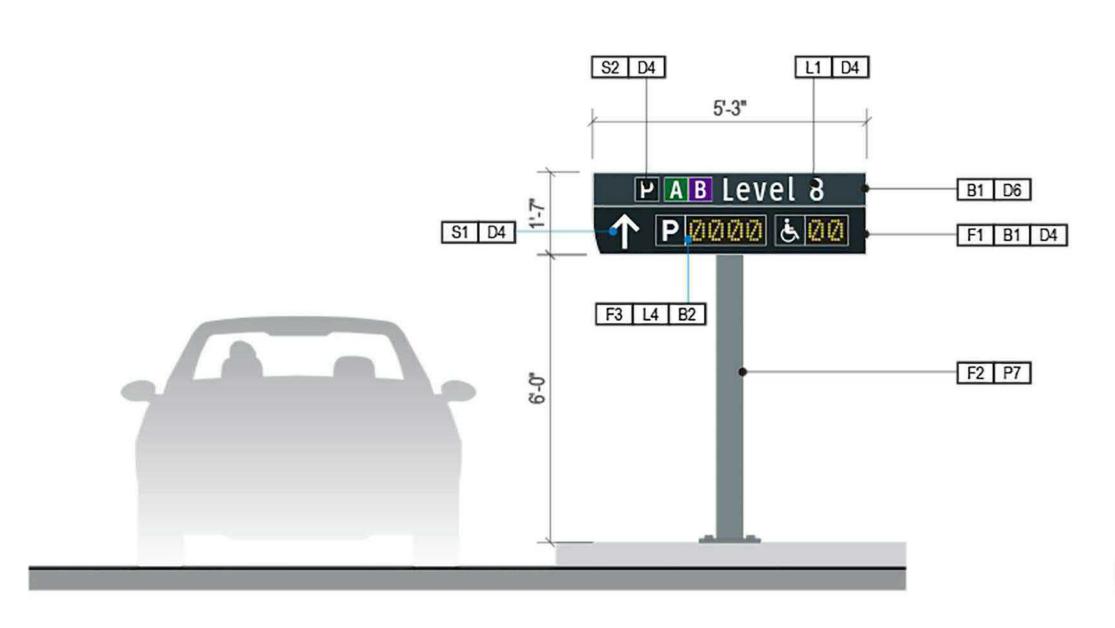
Designed By: L.A. Drawing No.:

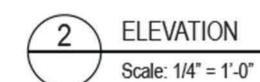
Drawn By: Q.P.
Checked By: A.B.

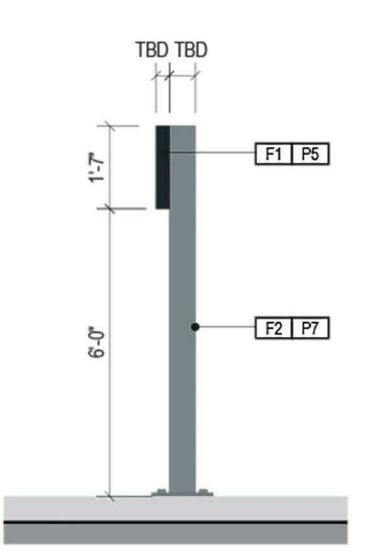
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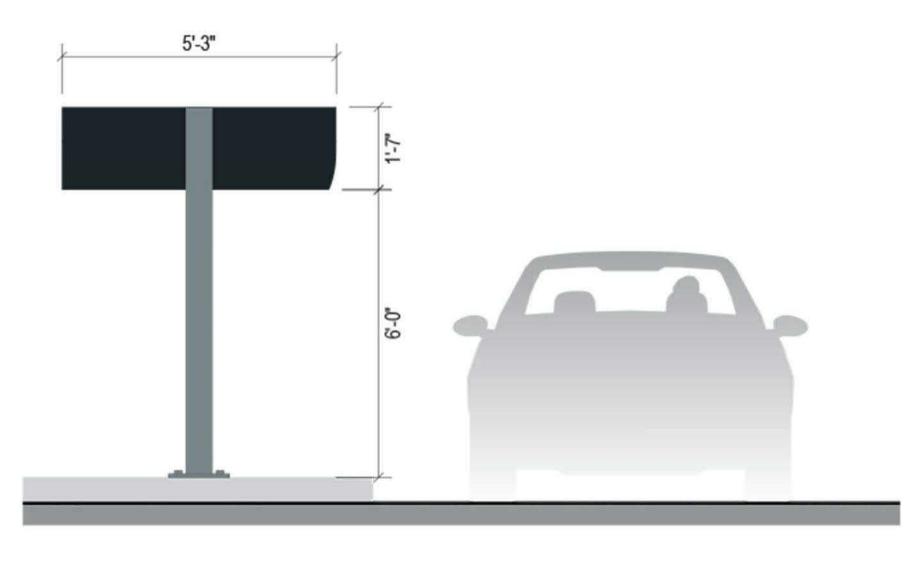












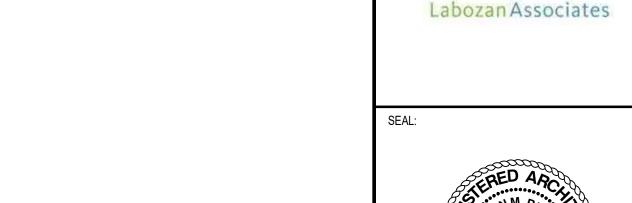
ELEVATION (OPPOSITE SIDE) Scale: 1/4" = 1'-0"

### GENERAL NOTES

- All final design, engineering & amount/sizing of structural sign support elements, material types/thicknesses, dimensions and attachment methods shall be performed and approved by a licensed engineer to meet or exceed all
  - applicable local and national codes. Final engineering, dimensions, materials and fabrication are the responsibility of the Contractor/Fabricator/Installer to ensure the highest quality fit and finish for all components of the completed product. All final detailing and specifications to be provided by the Contractor/Fabricator/Installer within their
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- Messages shown here are typical placeholders only. See message schedules for specific messaging by location & sign type.

### FABRICATION NOTES (GENERAL DESIGN INTENT)

- F1 OVERLAY SIGN FACE PANELS: 1/8" thick alum. overlay sign face panels, rout opening to match dynamic unit face's screen area for full-bleed visibility of screen; mechanically fasten sign panels to dynamic unit/support tube structure with stainless steel countersunk screws, paint heads to match sign face; digitally printed full-bleed color graphics on 3M Reflective DG3 4090 White film applied to 1st surface of face panels; all exposed surfaces, returns, etc to be painted with MAP paint to match P5, satin finish
- F2 SUPPORT POST: fabricated square alum. vertical support post tube; support post tube end to be capped with alum.; all welds on frame/caps to be filled & ground smooth for uniform appearance; support post welded to foot plate & mechanically attached to concrete bollard/footer; all support post/attachment plate/fasteners & exposed surfaces to be painted with MAP paint to match P7, satin finish
- F3 DYNAMIC UNITS: dynamic APGS units (product TBD by Parking Consultants)



- LETTERING (TYPEFACES) / SYMBOLS / ARROWS:
- L1 Vehicular Wayfinding Typeface: Clearview Highway 2-W
- L2 Vehicular Wayfinding Typeface: Clearview Highway 2-B L4 Vehicular Dynamic Numbers: TBD by others
- L6 Supplemental Typeface: Clearview One Book Condensed
- S1 Arrow(s): use only official HAS wayfinding arrow art
- S2 Int'l Symbols: use only official HAS wayfinding symbol art
- B1 Sign Face Reflective White Border 1/2" full-bleed border
- B2 Dynamic Unit White Border border to match symbol field
- B3 Black Border 1/2" full-bleed border

### COLORS:

NOTES: "D" = digitally printed colors as generated by 3M Picasso printer (or equal) on 3M Reflective DG3 4090 White unless otherwise noted; "P" = Matthews Acrylic Polyurethane (MAP) paint (or equal), satin finish; "V" = 3M vinyl films (or equal)

- D4 White: 3M DG3 4090 showing thru digital print background
- D5 Dark Gray: PMS 433C D6 Med. Gray: PMS 432C
- D8 Light Gray: PMS 427C
- D9 Black: C:50 M:40 Y:40 K:100 D10 Safety Red: PMS 186C
- D11 Warning Yellow: 3M Reflective DG3 4091 Yellow
- D13 Green: PMS 349C D15 Purple: PMS 2597C
- D25 Exit Green: PMS 368C
- P5 Dark Gray: PMS 433C P7 Med. Gray: PMS 430C
- P13 Green: PMS 349C P15 Purple: PMS 2597C

- A/B GARAGE WAYFINDING IAH TERMINAL / SIGNAGE AND /

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09/14/2020 ISSUED FOR PERMIT

HOUSTON

DIRECTOR

HOUSTON AIRPORT SYSTEM

REVISIONS

OWNER:

APPROVED BY:

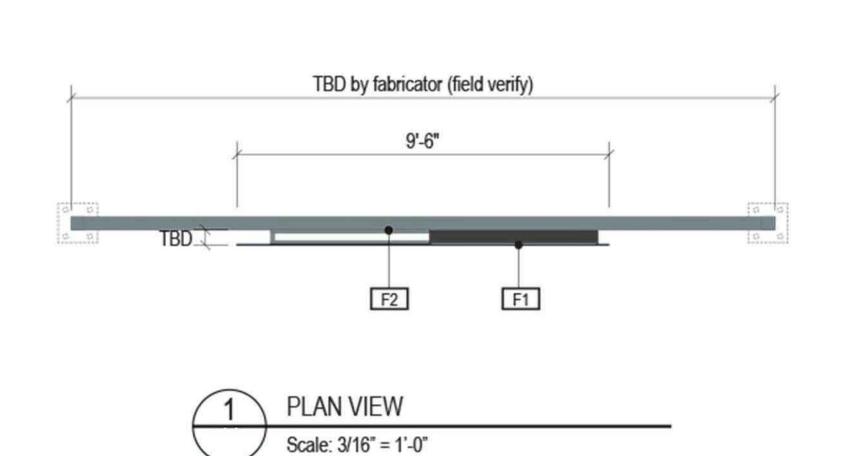
CONSULTANT:

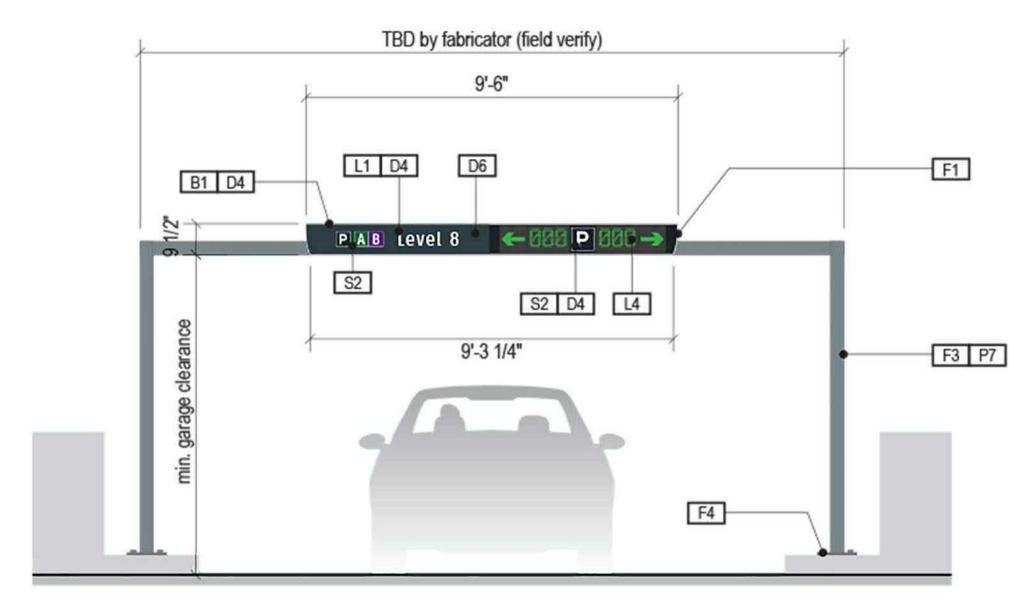
CIP NO:		
HAS NO:	749A	
KEY PLAN:		

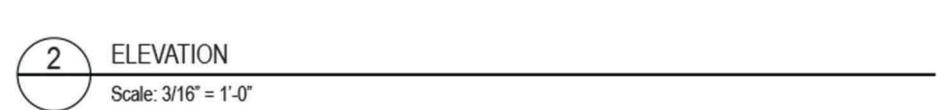
2.1 DESIGN INTENT PARKING GARAGE **VEHICULAR SIGNS** 

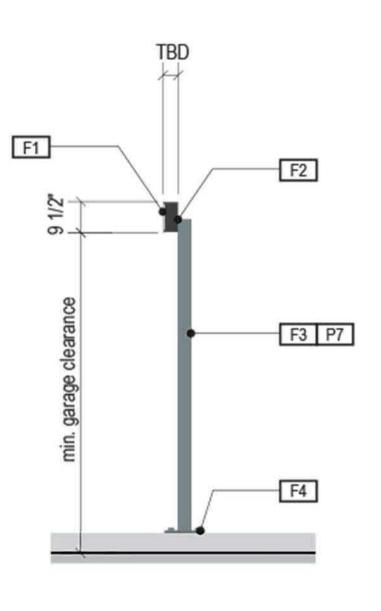
Designed By: L.A. Drawing No.: Drawn By: Q.P.
Checked By: A.B.

2-14



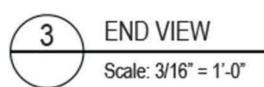


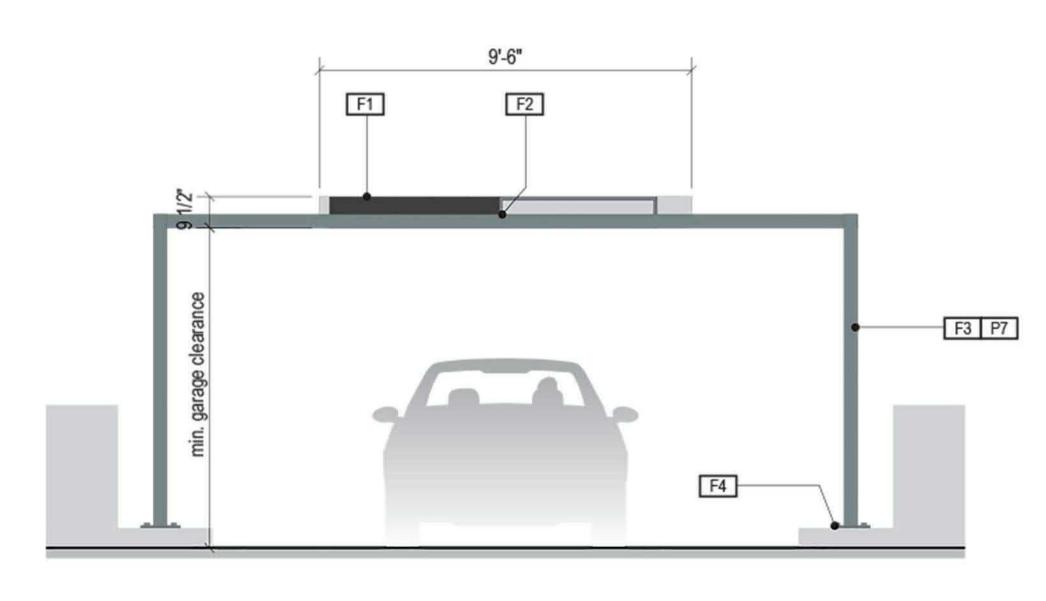




SIGN TYPE

5-DR.59





4 ELEVATION (OPPOSITE SIDE)
Scale: 3/16" = 1'-0"

MOUNTING METHOD

SPAN STRUCTURE

SIGN FUNCTION

DIRECTIONAL

### GENERAL NOTES

GENERAL DESCRIPTION & USE

- VEHICULAR Span Structure Mnt. Roof Level Available Spaces/Garage Directional w/ Overlay ID Panel

   All final design, engineering & amount/sizing of structural sign support elements, material types/thicknesses, dimensions and attachment methods shall be performed and approved by a licensed engineer to meet or exceed all applicable local and national codes.
  - Final engineering, dimensions, materials and fabrication are the responsibility
    of the Fabricator to ensure the highest quality fit and finish for all components
    of the completed product. All final detailing and specifications to be provided
  - by the Fabricator within their final approved fabrication-ready shop drawings.

     Wherever dissimilar metals are in contact, always separate contact surfaces prior to assembly or installation with the necessary protective
  - Final fabrication methods, quality and fit / finish to be reviewed & approved by IAH Planning Dept. and wayfinding / architecture Design Consultants thru prototype reviews prior to final production run / installation processes (see Performance Specifications for details).

coatings/gaskets/washers to prevent galvanic corrosion.

- Colors shown are for reference only, and are subject to the limitations of the printing process and / or variance of electronic RGB screen displays. Refer to color system swatches and/or final finish samples for accurate reference.
- Messages shown here are general placeholders only. See graphic message schedules for specific messaging by location & sign type.

### FABRICATION INTENT NOTES

- F1 SIGN FACE PANELS: 1/8" thick alum. sign face panels; mechanically fasten sign panels to support tube structure with stainless steel tamper-proof screws, paint heads to match sign face; digitally printed full-bleed color graphics on 3M Reflective DG3 4090 White film applied to 1st surface of face panels
- F2 SUPPORT FRAME/FACE ATTACHMENT: fabricated 1" square alum. support tube frame structure; support frame mechanically attached to span structure; support frame & attachments to be painted all exposed surfaces with MAP paint to match P7, satin finish
- F3 VERTICAL SUPPORT POST/SPAN STRUCTURE &
  ATTACHMENT PLATE: structural square alum. post with
  alum. top cap & structural bottom ground/floor attachment
  plate, all seams welded, filled and ground smooth to give
  uniform appearance; paint all exposed surfaces with MAP
  paint to match P1, satin fin.
- F4 MOUNTING: mount vertical supports plumb & level with non-corroding mechanical fasteners thru bottom plate to floor/ ground as install loc. cond. req. (field verify, use in-ground/floor footer if required); NOTE: use gasket/coating as req'd to eliminate corrosion at floor/ground and support post attachment plate contact point; use TXDOT/MUTCD approved break-away system as req'd
- LETTERING (TYPEFACES) / SYMBOLS / ARROWS:
- L1 Vehicular Wayfinding Typeface: Clearview Highway 2-W
  L2 Vehicular Wayfinding Typeface: Clearview Highway 2-B
- L4 Vehicular Dynamic Numbers: TBD by others
- L6 Supplemental Typeface: Clearview One Book Condensed

  S1 Arrow(s): use only official HAS wayfinding arrow art
- S2 Int'l Symbols: use only official HAS wayfinding symbol art
- B1 Sign Face Reflective White Border 1/2\* full-bleed border
- B2 Dynamic Unit White Border border to match symbol field
- B3 Black Border 1/2" full-bleed border

### COLORS:

NOTES: "D" = digitally printed colors as generated by 3M Picasso printer (or equal) on 3M Reflective DG3 4090 White unless otherwise noted; "P" = Matthews Acrylic Polyurethane (MAP) paint (or equal), satin finish; "V" = 3M vinyl films (or equal)

- D4 White: 3M DG3 4090 showing thru digital print background
- D5 Dark Gray: PMS 433C D6 Med. Gray: PMS 432C
- D8 Light Gray: PMS 427C
- D9 Black: C:50 M:40 Y:40 K:100 D10 Safety Red: PMS 186C
- D11 Warning Yellow: 3M Reflective DG3 4091 Yellow
- D13 Green: PMS 349C D15 Purple: PMS 2597C
- D25 Exit Green: PMS 368C
- P5 Dark Gray: PMS 433C P7 Med. Gray: PMS 430C
- P13 Green: PMS 349C P15 Purple: PMS 2597C

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REVI	ISIONS	
Mark	Date	Description
0	09/14/2020	ISSUED FOR PERMIT
	l	
1WO		OUSTON JRPORTS
Al	PPROVED BY:	
_		
_		
l —		DIRECTOR

CONSULTANT:



AL:

AL:

AL:

ARED ARCHITECT

ASSESSED ARCHIT

- A/B GARAGE WAYFINDING

SIGNAGE AND WAS GEORGE BUSH INTERCONTINENTAL AIR GARAGE 3870 NORTH TERMINAL ROAD HOUSTON, TX 77032

IO:	
IO:	
NO:	749A

cobs Project No.: WHXK7105
awing Title:

2.1 DESIGN INTENT
PARKING GARAGE

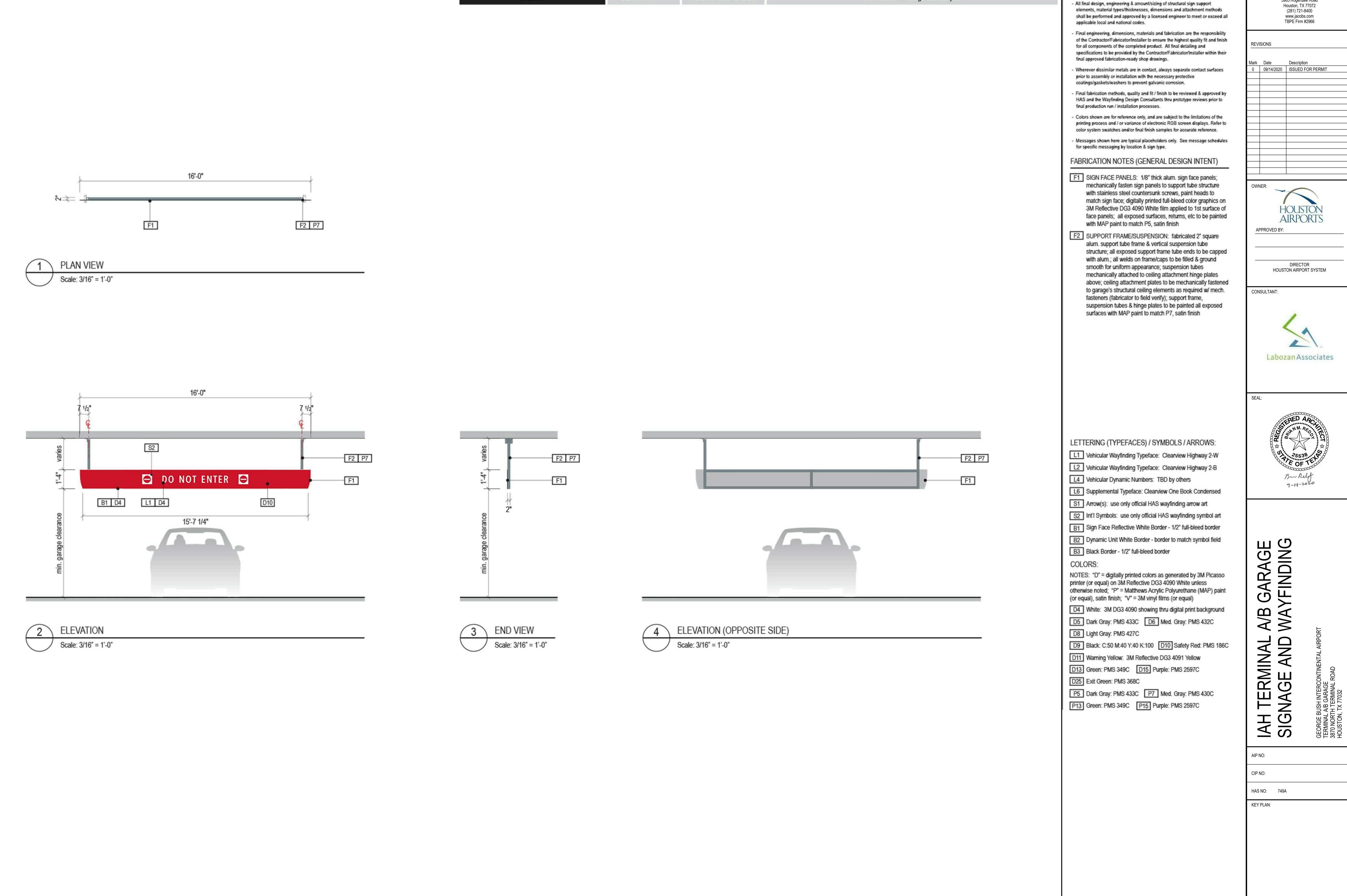
 Date:
 09/14/2020

 Designed By:
 L.A.

 Drawing No.:
 Drawing No.:

 Checked By:
 A.B.

**VEHICULAR SIGNS** 



IDENTIFICATION

SIGN TYPE

5-ID.01

MOUNTING METHOD

CEILING SUSPENDED

GENERAL DESCRIPTION & USE

VEHICULAR - Garage Boundary ID

GENERAL NOTES

**Jacobs** 

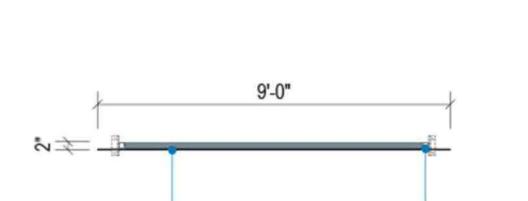
5985 Rogerdale Road Houston, TX 77072

2.1 DESIGN INTENT

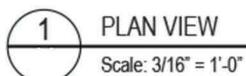
PARKING GARAGE **VEHICULAR SIGNS** 

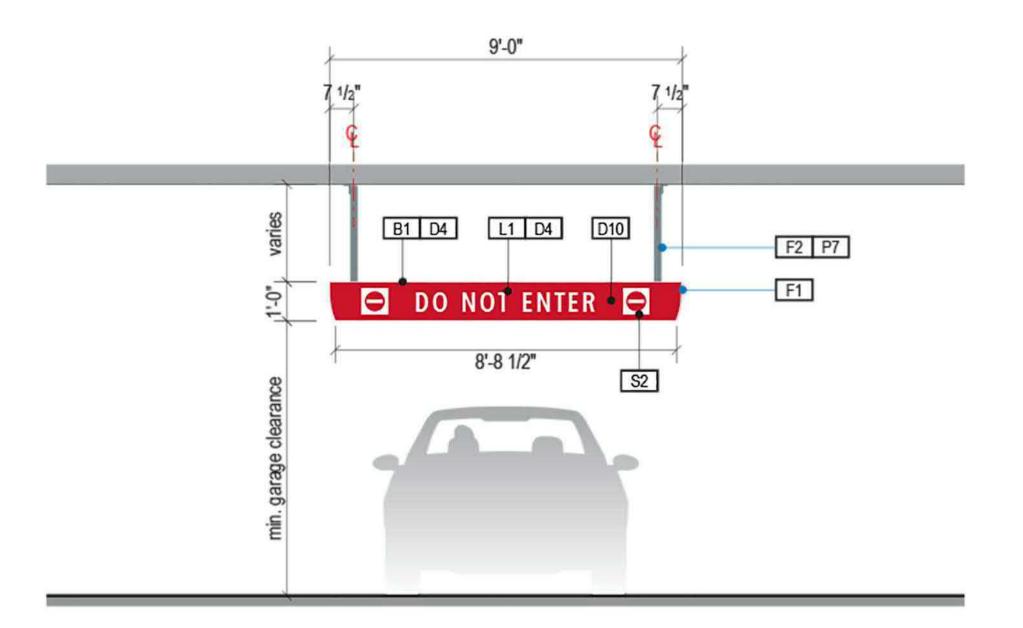
Designed By: L.A. Drawing No.: Drawn By: Q.P.
Checked By: A.B.

2-16

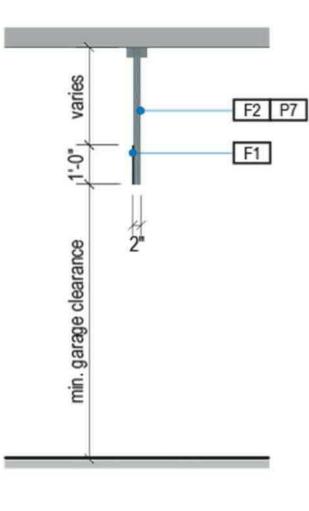


F2 P7





**ELEVATION** Scale: 3/16" = 1'-0"



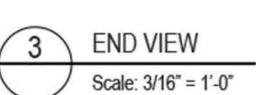
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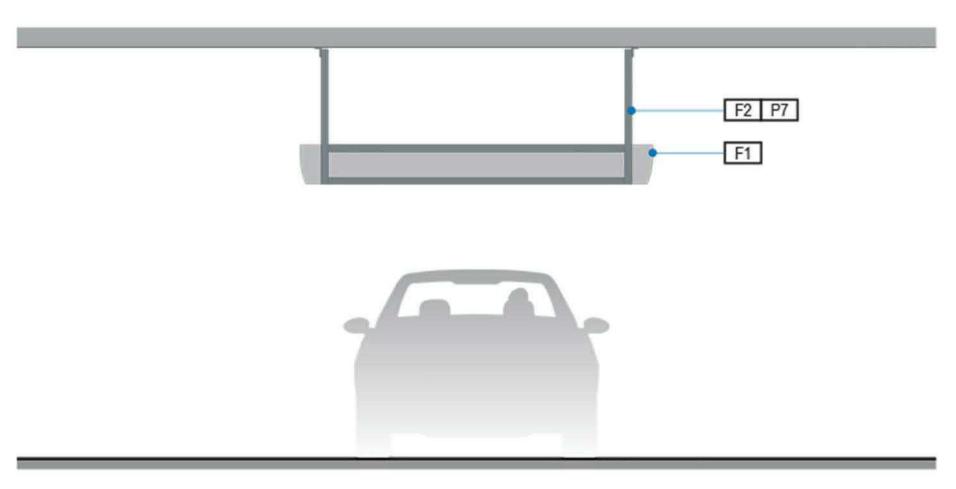
IDENTIFICATION

5-ID.06

MOUNTING METHOD

SUSPENDED





ELEVATION (OPPOSITE SIDE) Scale: 3/16" = 1'-0"

### GENERAL NOTES

GENERAL DESCRIPTION & USE

VEHICULAR - Ceiling Suspended Garage Boundary ID (small)

- All final design, engineering & amount/sizing of structural sign support elements, material types/thicknesses, dimensions and attachment methods shall be performed and approved by a licensed engineer to meet or exceed all applicable local and national codes.
- Final engineering, dimensions, materials and fabrication are the responsibility of the Contractor/Fabricator/Installer to ensure the highest quality fit and finish for all components of the completed product. All final detailing and specifications to be provided by the Contractor/Fabricator/Installer within their final approved fabrication-ready shop drawings.
- Wherever dissimilar metals are in contact, always separate contact surfaces prior to assembly or installation with the necessary protective coatings/gaskets/washers to prevent galvanic corrosion.
- Final fabrication methods, quality and fit / finish to be reviewed & approved by HAS and the Wayfinding Design Consultants thru prototype reviews prior to final production run / installation processes.
- Colors shown are for reference only, and are subject to the limitations of the printing process and / or variance of electronic RGB screen displays. Refer to color system swatches and/or final finish samples for accurate reference.
- Messages shown here are typical placeholders only. See message schedules for specific messaging by location & sign type.

### FABRICATION NOTES (GENERAL DESIGN INTENT)

- F1 SIGN FACE PANELS: 1/8" thick alum. sign face panels; mechanically fasten sign panels to support tube structure with stainless steel countersunk screws, paint heads to match sign face; digitally printed full-bleed color graphics on 3M Reflective DG3 4090 White film applied to 1st surface of face panels; all exposed surfaces, returns, etc to be painted with MAP paint to match P5, satin finish
- F2 SUPPORT FRAME/SUSPENSION: fabricated 2" square alum, support tube frame & vertical suspension tube structure; all exposed support frame tube ends to be capped with alum.; all welds on frame/caps to be filled & ground smooth for uniform appearance; suspension tubes mechanically attached to ceiling attachment hinge plates above; ceiling attachment plates to be mechanically fastened to garage's structural ceiling elements as required w/ mech. fasteners (fabricator to field verify); support frame, suspension tubes & hinge plates to be painted all exposed surfaces with MAP paint to match P7, satin finish

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REVISIONS

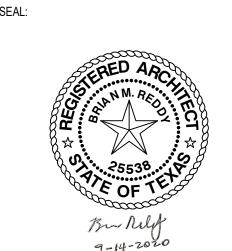
09/14/2020 ISSUED FOR PERMIT OWNER: HOUSTON **AIRPORTS** 

> DIRECTOR HOUSTON AIRPORT SYSTEM

CONSULTANT:

APPROVED BY:





L4 Vehicular Dynamic Numbers: TBD by others L6 Supplemental Typeface: Clearview One Book Condensed S1 Arrow(s): use only official HAS wayfinding arrow art

B2 Dynamic Unit White Border - border to match symbol field B3 Black Border - 1/2" full-bleed border COLORS:

S2 Int'l Symbols: use only official HAS wayfinding symbol art

B1 Sign Face Reflective White Border - 1/2" full-bleed border

LETTERING (TYPEFACES) / SYMBOLS / ARROWS:

L1 Vehicular Wayfinding Typeface: Clearview Highway 2-W

L2 Vehicular Wayfinding Typeface: Clearview Highway 2-B

NOTES: "D" = digitally printed colors as generated by 3M Picasso printer (or equal) on 3M Reflective DG3 4090 White unless otherwise noted; "P" = Matthews Acrylic Polyurethane (MAP) paint (or equal), satin finish; "V" = 3M vinyl films (or equal)

- D4 White: 3M DG3 4090 showing thru digital print background D5 Dark Gray: PMS 433C D6 Med. Gray: PMS 432C
- D8 Light Gray: PMS 427C
- D9 Black: C:50 M:40 Y:40 K:100 D10 Safety Red: PMS 186C
- D11 Warning Yellow: 3M Reflective DG3 4091 Yellow D13 Green: PMS 349C D15 Purple: PMS 2597C
- D25 Exit Green: PMS 368C
- P5 Dark Gray: PMS 433C P7 Med. Gray: PMS 430C
- P13 Green: PMS 349C P15 Purple: PMS 2597C

- A/B GARAGE WAYFINDING IAH TERMINAL / SIGNAGE AND /

	-	
NO:		
NO:		

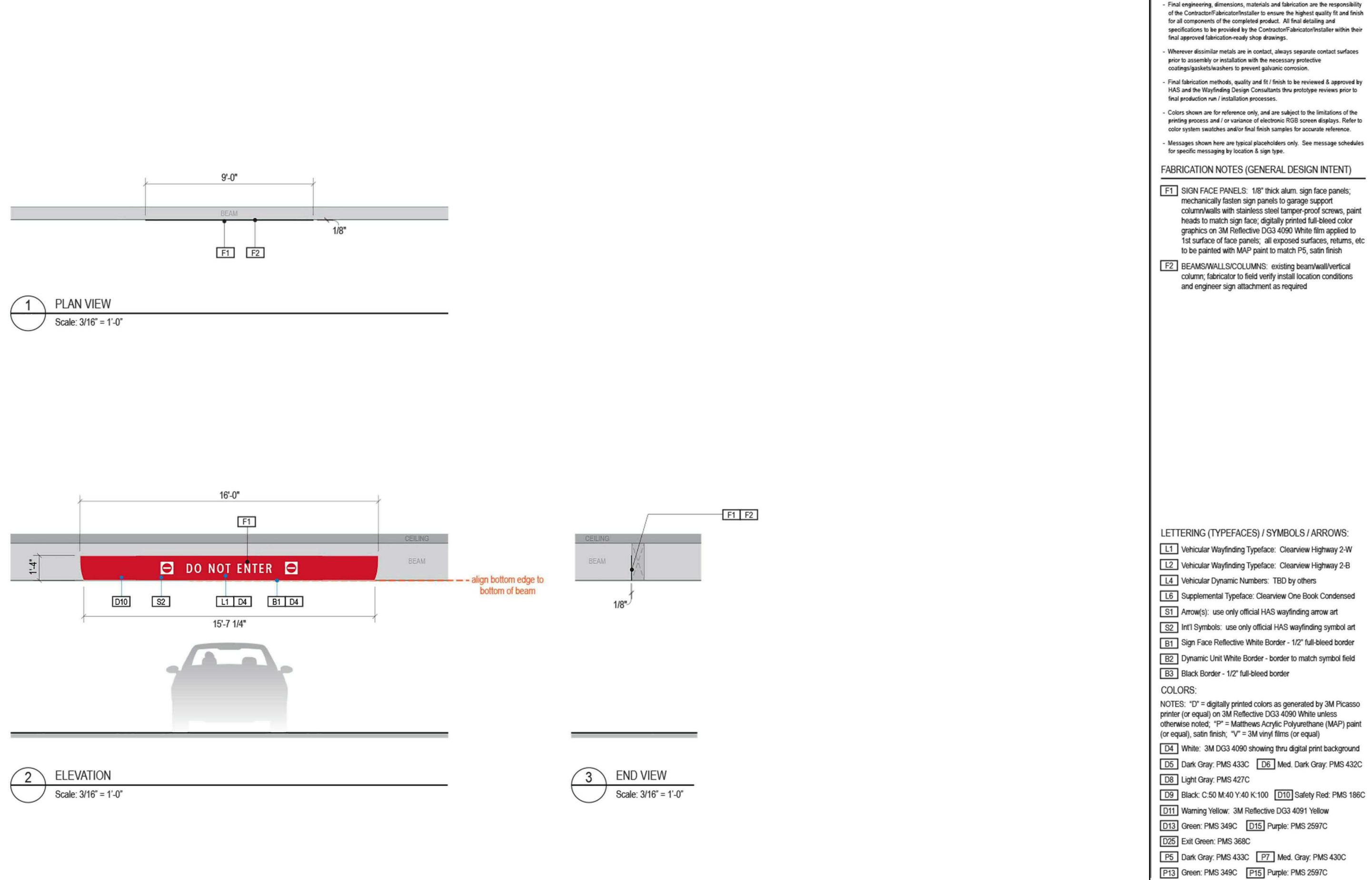
2.1 DESIGN INTENT PARKING GARAGE

**VEHICULAR SIGNS** 

Designed By: L.A. Drawing No.:

Drawn By: Q.P.
Checked By: A.B.

2-17



IDENTIFICATION

SIGN TYPE

5-ID.11

MOUNTING METHOD

BEAM / WALL

GENERAL DESCRIPTION & USE

VEHICULAR - Beam/Wall Mount Boundary ID

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DIRECTOR

HOUSTON AIRPORT SYSTEM



CONSULTANT:



B2 Dynamic Unit White Border - border to match symbol field

GENERAL NOTES

applicable local and national codes.

- All final design, engineering & amount/sizing of structural sign support elements, material types/thicknesses, dimensions and attachment methods

shall be performed and approved by a licensed engineer to meet or exceed all

D4 White: 3M DG3 4090 showing thru digital print background

D9 Black: C:50 M:40 Y:40 K:100 D10 Safety Red: PMS 186C

D13 Green: PMS 349C D15 Purple: PMS 2597C

P5 Dark Gray: PMS 433C P7 Med. Gray: PMS 430C

- A/B GARAGE WAYFINDING IAH TERMINAL / SIGNAGE AND /

CIP NO: HAS NO: 749A

2.1 DESIGN INTENT PARKING GARAGE **VEHICULAR SIGNS** 

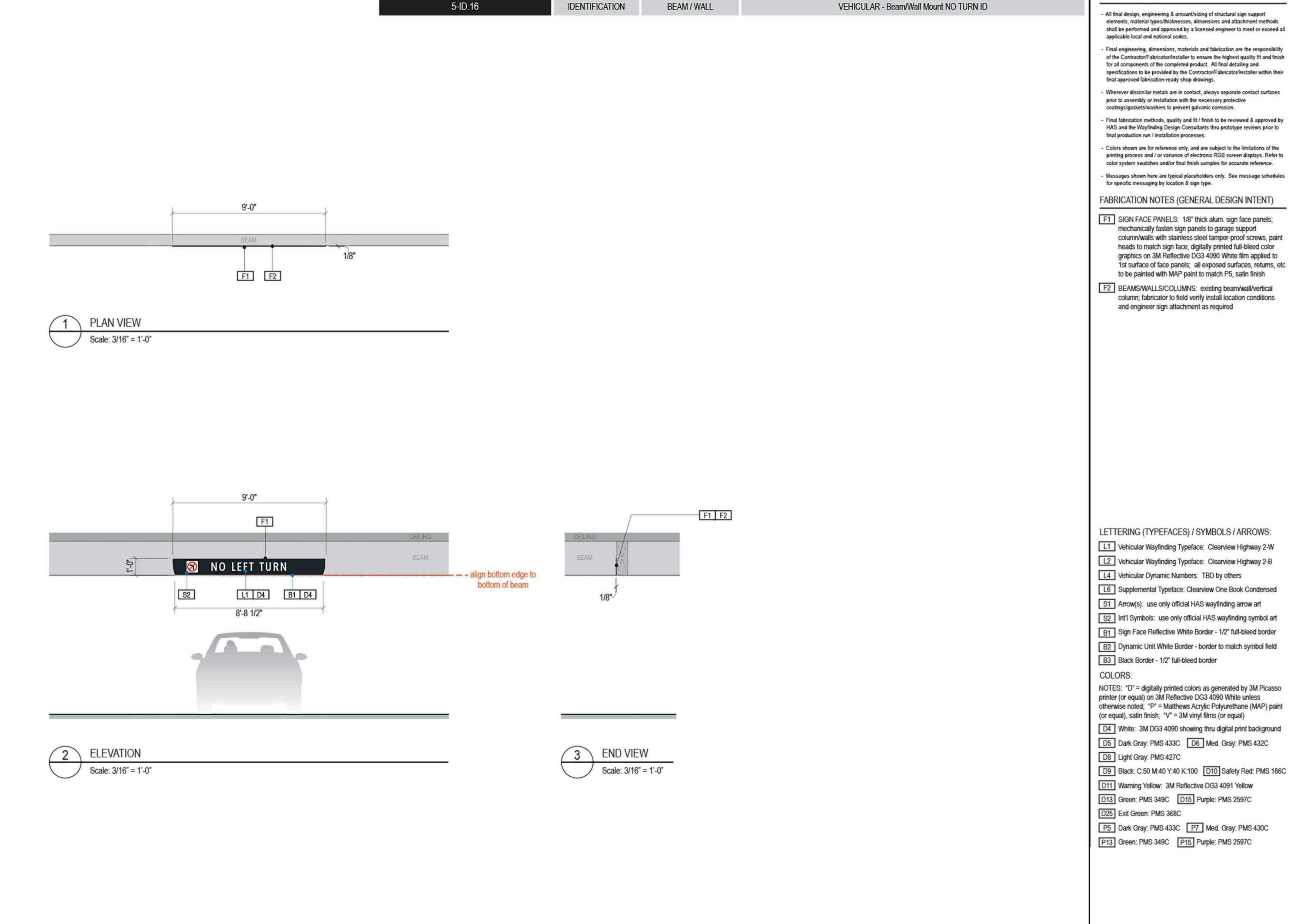
Designed By: L.A.

Drawing No.:

Checked By: A.B.

Drawing No.:

2-18



SIGN TYPE

MOUNTING METHOD

GENERAL DESCRIPTION & USE

GENERAL NOTES

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DIRECTOR HOUSTON AIRPORT SYSTEM

CONSULTANT:

APPROVED BY:





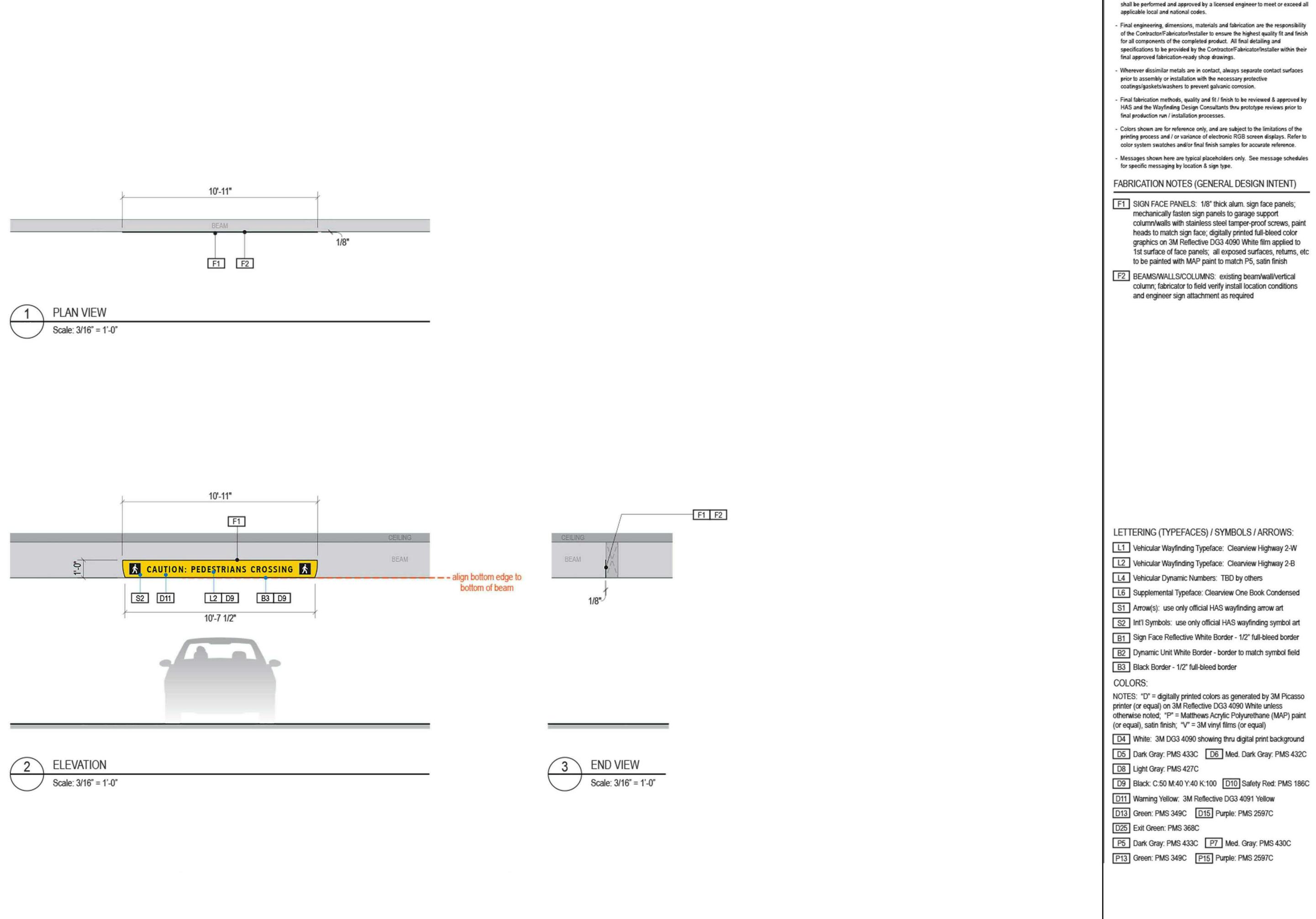
- A/B GARAGE WAYFINDING

IAH TERMINAL / SIGNAGE AND /

CIP NO: HAS NO: 749A

2.1 DESIGN INTENT

PARKING GARAGE **VEHICULAR SIGNS** 



IDENTIFICATION

SIGN TYPE

5-ID.17

MOUNTING METHOD

BEAM / WALL

GENERAL DESCRIPTION & USE

VEHICULAR - Beam/Wall Mount Pedestrian Crossing Caution ID

GENERAL NOTES

- All final design, engineering & amount/sizing of structural sign support elements, material types/thicknesses, dimensions and attachment methods **Jacobs** 

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HOUSTON APPROVED BY:

HOUSTON AIRPORT SYSTEM

DIRECTOR



CONSULTANT:

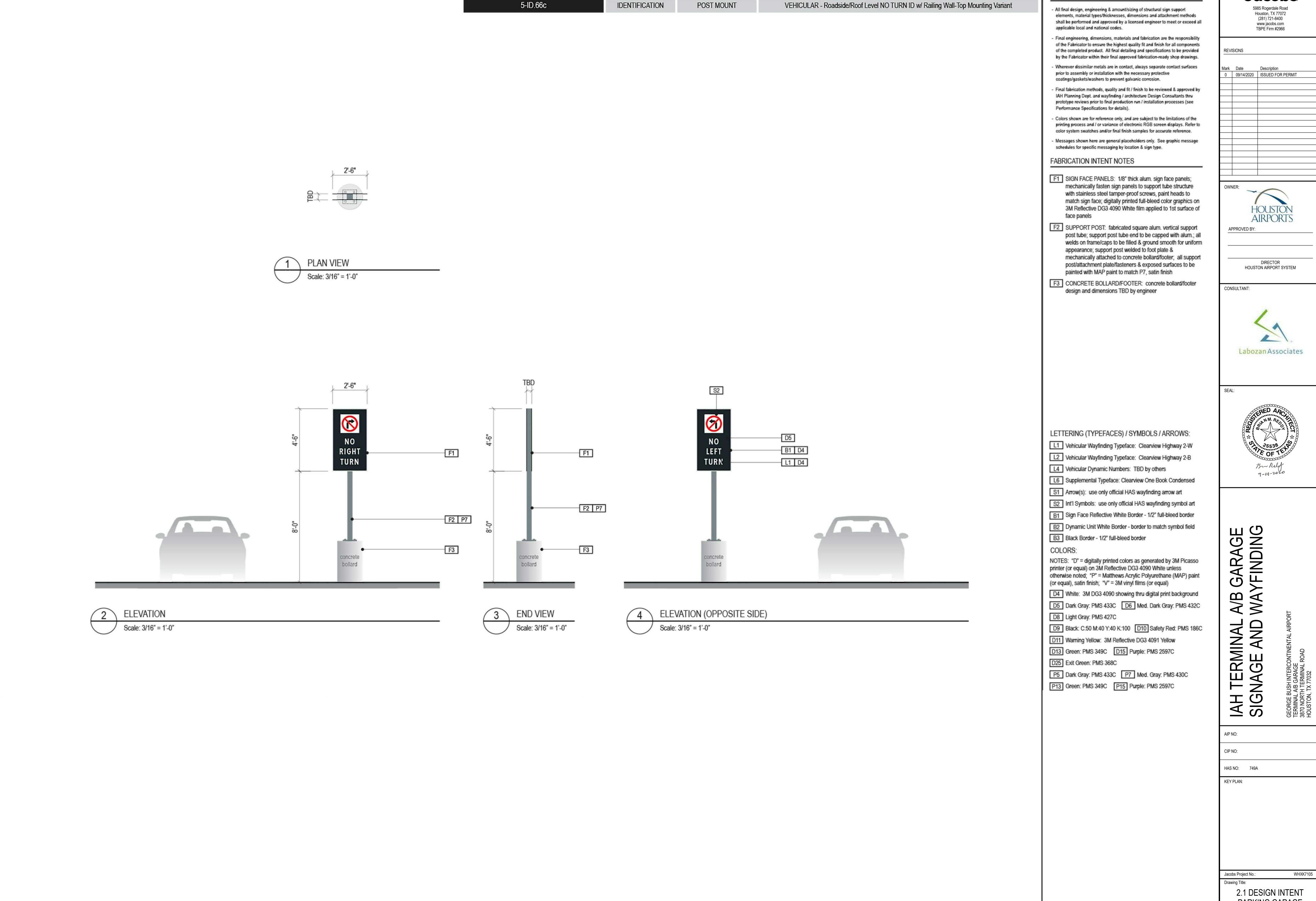


- A/B GARAGE WAYFINDING

IAH TERMINAL / SIGNAGE AND /

CIP NO: HAS NO: 749A

2.1 DESIGN INTENT PARKING GARAGE **VEHICULAR SIGNS** 



SIGN TYPE

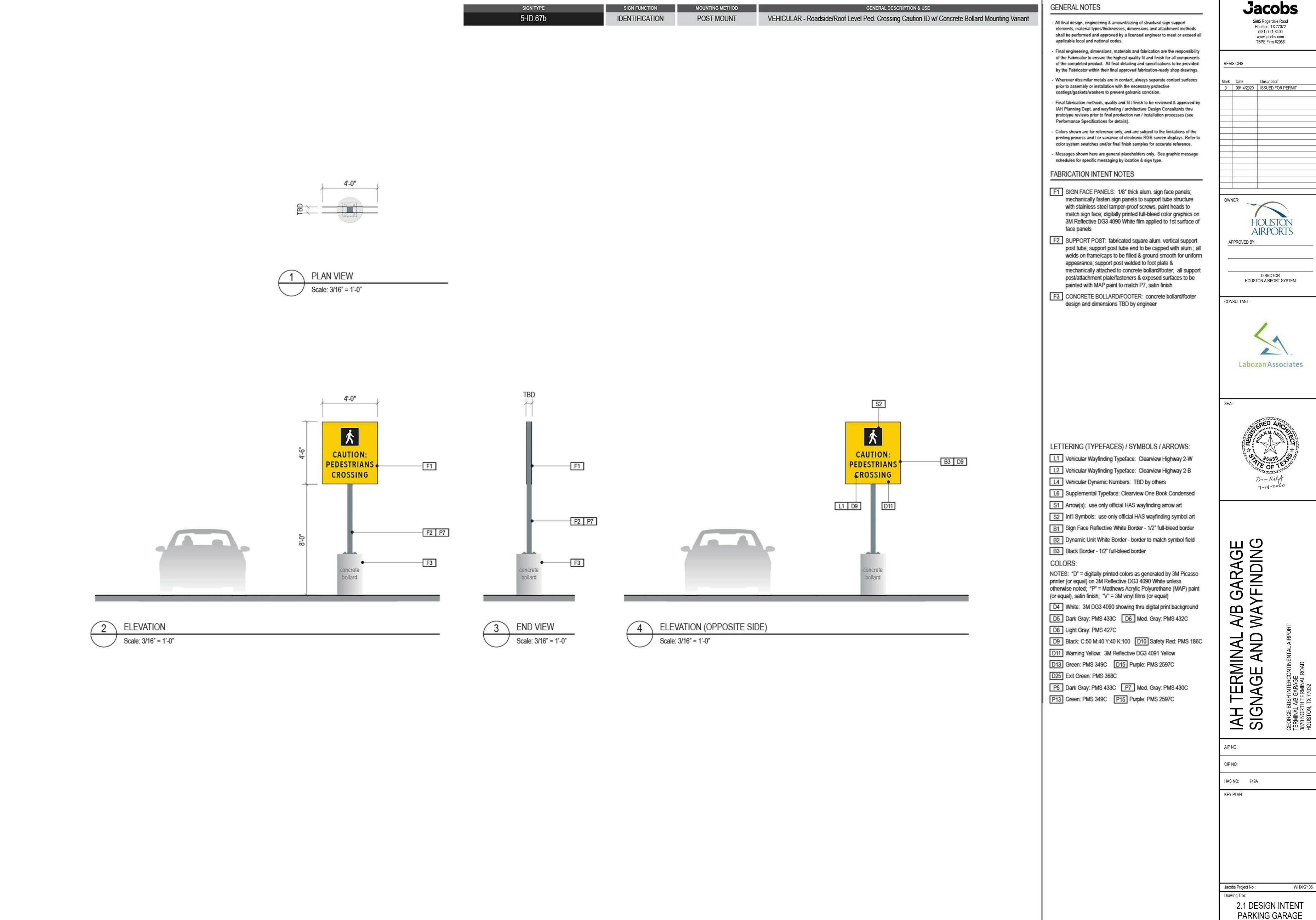
MOUNTING METHOD

Jacobs
5985 Rogerdale Road

GENERAL NOTES

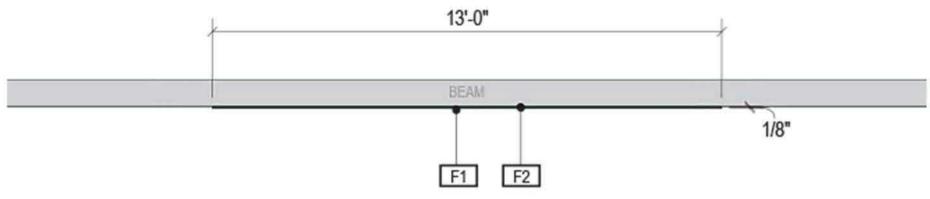
GENERAL DESCRIPTION & USE

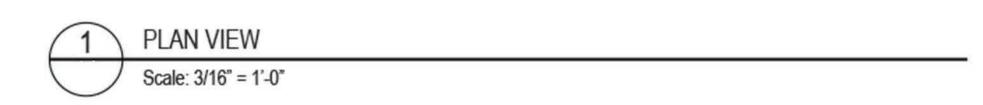
2.1 DESIGN INTENT PARKING GARAGE VEHICULAR SIGNS

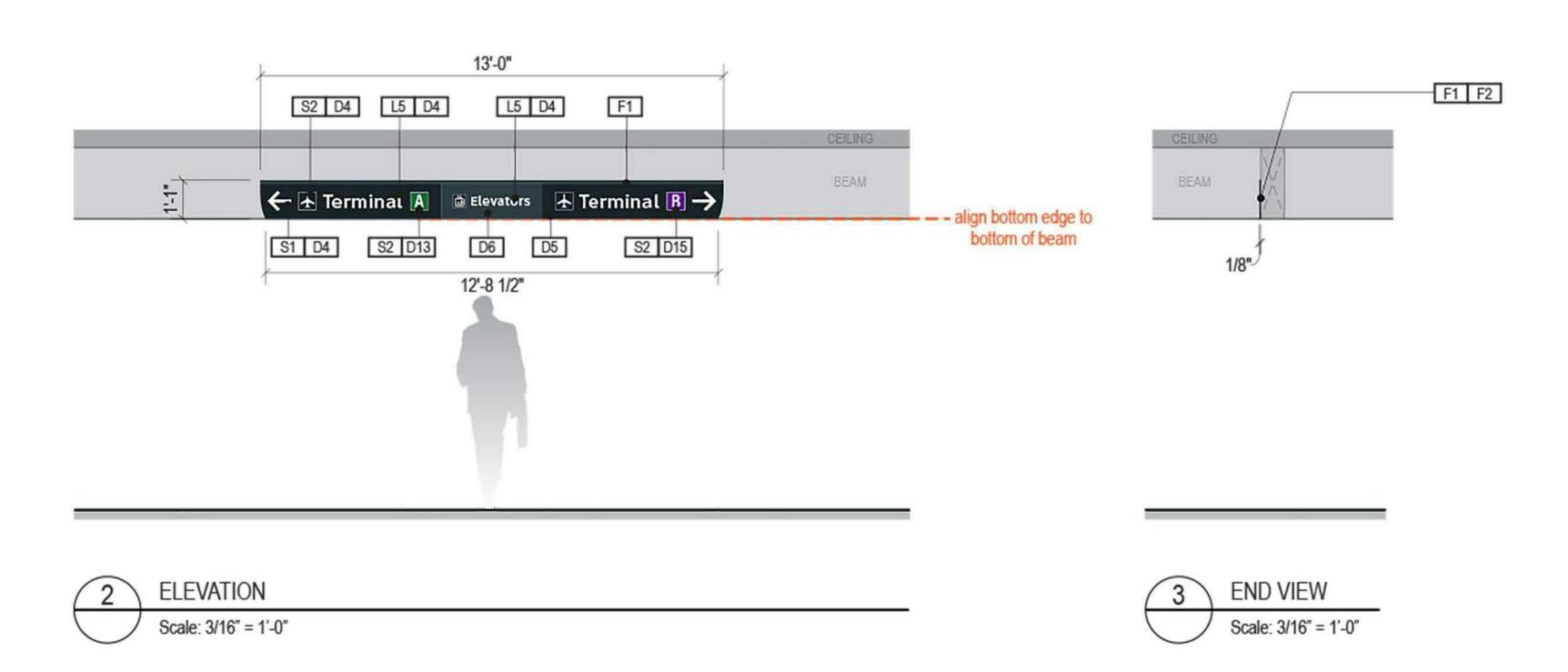


**VEHICULAR SIGNS** 









GENERAL NOTES

- All final design, engineering & amount/sizing of structural sign support elements, material types/thicknesses, dimensions and attachment methods shall be performed and approved by a licensed engineer to meet or exceed all applicable local and national codes.

- Final engineering, dimensions, materials and fabrication are the responsibility of the Contractor/Fabricator/Installer to ensure the highest quality fit and finish for all components of the completed product. All final detailing and specifications to be provided by the Contractor/Fabricator/Installer within their final approved fabrication-ready shop drawings.

- Wherever dissimilar metals are in contact, always separate contact surfaces prior to assembly or installation with the necessary protective coatings/gaskets/washers to prevent galvanic corrosion.

- Final fabrication methods, quality and fit / finish to be reviewed & approved by HAS and the Wayfinding Design Consultants thru prototype reviews prior to final production run / installation processes.

- Colors shown are for reference only, and are subject to the limitations of the printing process and / or variance of electronic RGB screen displays. Refer to color system swatches and/or final finish samples for accurate reference.

- Messages shown here are typical placeholders only. See message schedules for specific messaging by location & sign type.

#### FABRICATION NOTES (GENERAL DESIGN INTENT)

F1 SIGN FACE PANELS: 1/8" thick alum. sign face panels; mechanically fasten sign panels to garage support column/walls with stainless steel tamper-proof screws, paint heads to match sign face; digitally printed full-bleed color graphics on 3M Reflective DG3 4090 White film applied to 1st surface of face panels; all exposed surfaces, returns, etc to be painted with MAP paint to match P5, satin finish

F2 BEAMS/WALLS/COLUMNS: existing beam/wall/vertical column; fabricator to field verify install location conditions and engineer sign attachment as required

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DIRECTOR HOUSTON AIRPORT SYSTEM



CONSULTANT:



LETTERING (TYPEFACES) / SYMBOLS / ARROWS:

L5 Pedestrian Wayfinding Typeface: ClearviewText Medium L6 Supplemental Typeface: Clearview One Book Condensed

S1 Arrow(s): use only official HAS wayfinding program standards arrow artwork (to be provided by LAI)

S2 Int'l Symbols: use only official HAS wayfinding program symbol artwork (to be provided by LAI)

# COLORS:

NOTES: "D" = digitally printed colors as generated by 3M Picasso printer (or equal) on 3M Reflective DG3 4090 White unless otherwise noted; "P" = Matthews Acrylic Polyurethane (MAP) paint (or equal), satin finish; "V" = 3M vinyl films (or equal)

D4 White: 3M DG3 4090 showing thru digital print background

D5 Dark Gray: PMS 433C D6 Med. Dark Gray: PMS 432C

D8 Med. Gray: PMS 430C D8 Light Gray: PMS 427C D9 Black: C:50 M:40 Y:40 K:100 D10 Safety Red: PMS 186C

D13 Green: PMS 349C D15 Purple: PMS 2597C

D25 Exit Green: PMS 368C

P5 Dark Gray: PMS 433C P7 Med. Gray: PMS 430C

P13 Green: PMS 349C P15 Purple: PMS 2597C

V4.1 White: Opaque 3M 7725-20 White

A/B GARAGE WAYFINDING IAH TERMINAL / SIGNAGE AND /

CIP NO: HAS NO: 749A

2.2 DESIGN INTENT PARKING GARAGE PEDESTRIAN SIGNS



DIRECTIONAL

SIGN TYPE

5-DR.25

MOUNTING METHOD

BEAM / WALL

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DIRECTOR

HOUSTON AIRPORT SYSTEM

APPROVED BY:

CONSULTANT:

HOUSTON





P13 Green: PMS 349C P15 Purple: PMS 2597C

V4.1 White: Opaque 3M 7725-20 White

GENERAL NOTES

- All final design, engineering & amount/sizing of structural sign support elements, material types/thicknesses, dimensions and attachment methods

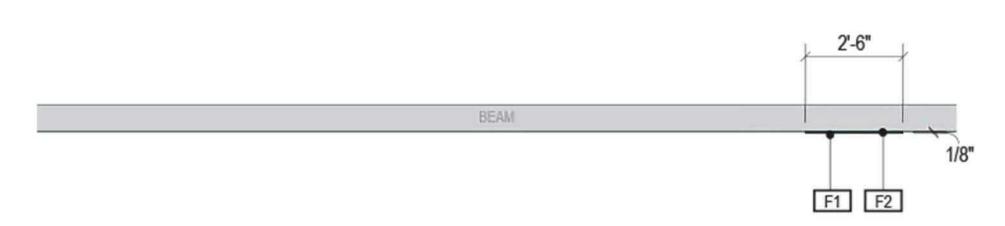
GENERAL DESCRIPTION & USE

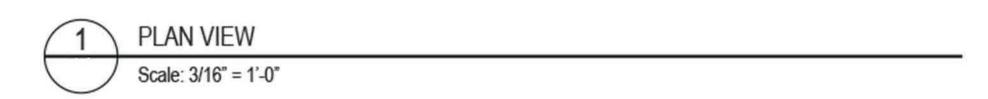
PEDESTRIAN - Beam/Wall Mount Overhead Terminal/Elevator Trailblazer with 1 Direction

- A/B GARAGE WAYFINDING IAH TERMINAL / SIGNAGE AND /

CIP NO: HAS NO: 749A

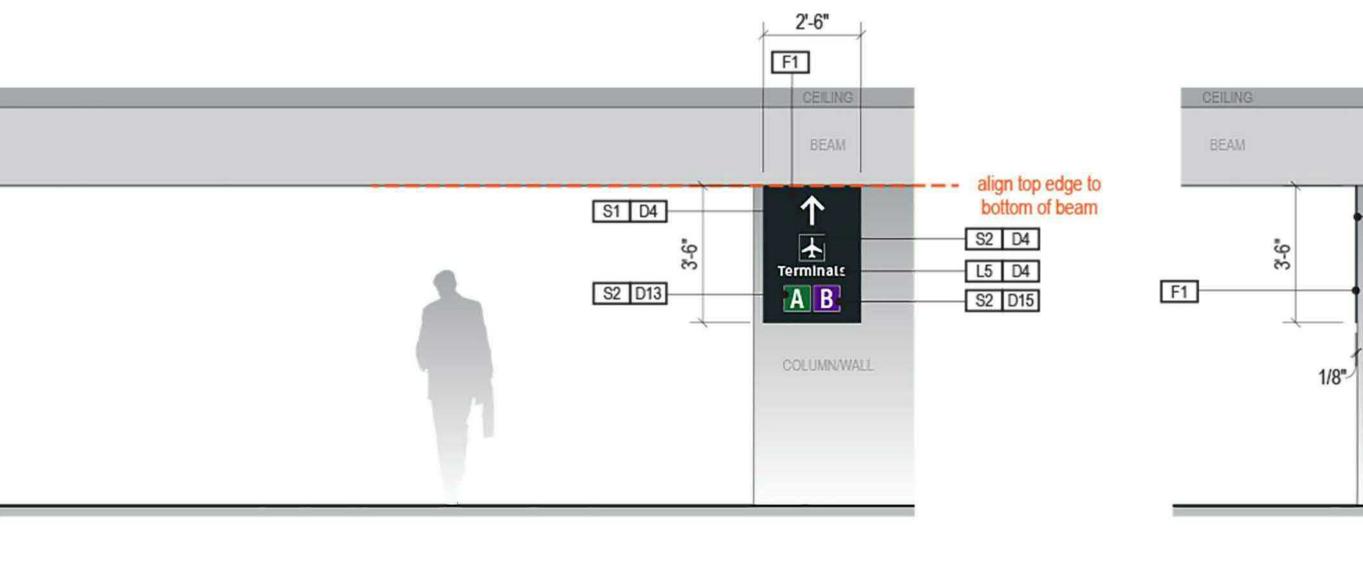
2.2 DESIGN INTENT PARKING GARAGE PEDESTRIAN SIGNS

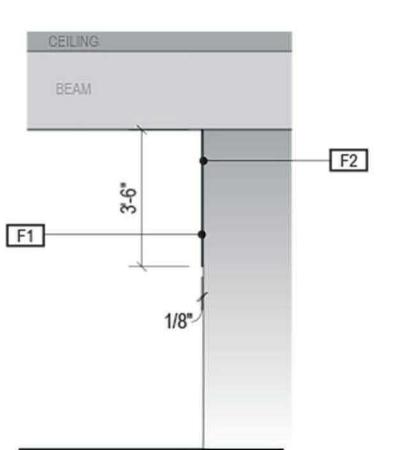




**ELEVATION** 

Scale: 3/16" = 1'-0"





3	END VIEW
	Scale: 3/16" = 1'-0"

#### GENERAL NOTES

- All final design, engineering & amount/sizing of structural sign support elements, material types/thicknesses, dimensions and attachment methods shall be performed and approved by a licensed engineer to meet or exceed all

final approved fabrication-ready shop drawings.

- applicable local and national codes. - Final engineering, dimensions, materials and fabrication are the responsibility of the Contractor/Fabricator/Installer to ensure the highest quality fit and finish for all components of the completed product. All final detailing and specifications to be provided by the Contractor/Fabricator/Installer within their
- Wherever dissimilar metals are in contact, always separate contact surfaces prior to assembly or installation with the necessary protective coatings/gaskets/washers to prevent galvanic corrosion.
- Final fabrication methods, quality and fit / finish to be reviewed & approved by HAS and the Wayfinding Design Consultants thru prototype reviews prior to final production run / installation processes.
- Colors shown are for reference only, and are subject to the limitations of the printing process and / or variance of electronic RGB screen displays. Refer to color system swatches and/or final finish samples for accurate reference.
- Messages shown here are typical placeholders only. See message schedules for specific messaging by location & sign type.

#### FABRICATION NOTES (GENERAL DESIGN INTENT)

- F1 SIGN FACE PANELS: 1/8" thick alum. sign face panels; mechanically fasten sign panels to garage support column/walls with stainless steel tamper-proof screws, paint heads to match sign face; digitally printed full-bleed color graphics on 3M Reflective DG3 4090 White film applied to 1st surface of face panels; all exposed surfaces, returns, etc to be painted with MAP paint to match P5, satin finish
- F2 BEAMS/WALLS/COLUMNS: existing beam/wall/vertical column; fabricator to field verify install location conditions and engineer sign attachment as required

LETTERING (TYPEFACES) / SYMBOLS / ARROWS:

L6 Supplemental Typeface: Clearview One Book Condensed

## COLORS:

D4 White: 3M DG3 4090 showing thru digital print background

D5 Dark Gray: PMS 433C D6 Med. Dark Gray: PMS 432C

D9 Black: C:50 M:40 Y:40 K:100 D10 Safety Red: PMS 186C

D13 Green: PMS 349C D15 Purple: PMS 2597C

P13 Green: PMS 349C P15 Purple: PMS 2597C

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HOUSTON APPROVED BY:

DIRECTOR HOUSTON AIRPORT SYSTEM

CONSULTANT:





L5 Pedestrian Wayfinding Typeface: ClearviewText Medium

S1 Arrow(s): use only official HAS wayfinding program standards arrow artwork (to be provided by LAI)

S2 Int'l Symbols: use only official HAS wayfinding program symbol artwork (to be provided by LAI)

NOTES: "D" = digitally printed colors as generated by 3M Picasso printer (or equal) on 3M Reflective DG3 4090 White unless otherwise noted; "P" = Matthews Acrylic Polyurethane (MAP) paint (or equal), satin finish; "V" = 3M vinyl films (or equal)

D8 Med. Gray: PMS 430C D8 Light Gray: PMS 427C

D25 Exit Green: PMS 368C

P5 Dark Gray: PMS 433C P7 Med. Gray: PMS 430C

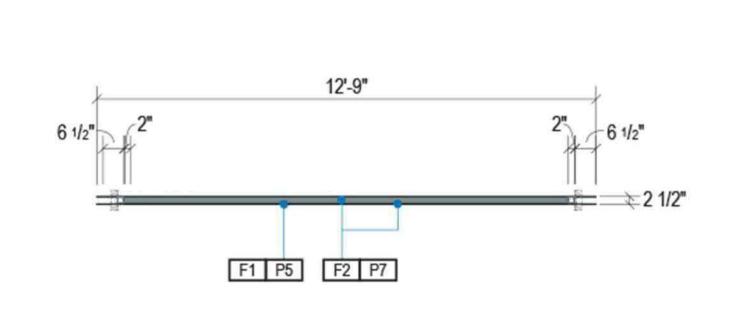
V4.1 White: Opaque 3M 7725-20 White

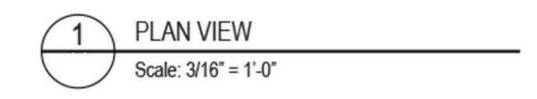
- A/B GARAGE ) WAYFINDING IAH TERMINAL / SIGNAGE AND \

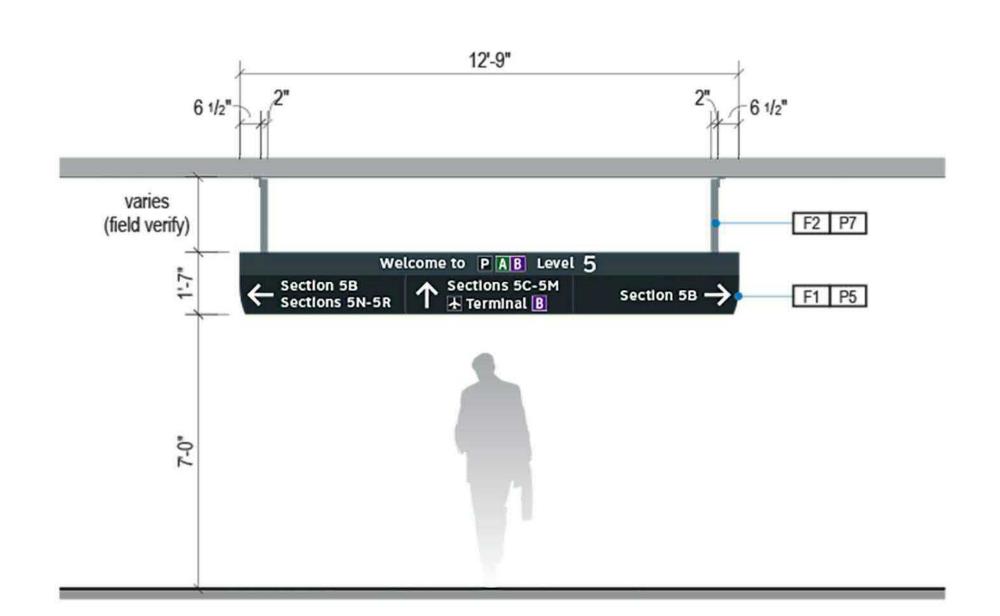
HAS NO: 749A

CIP NO:

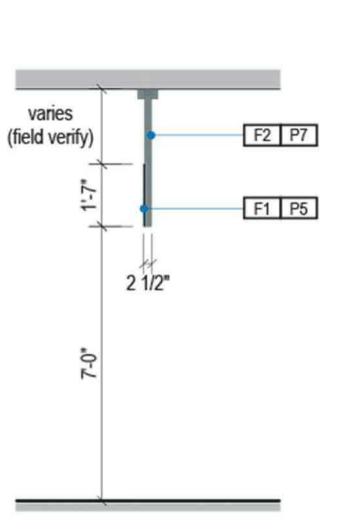
2.2 DESIGN INTENT PARKING GARAGE PEDESTRIAN SIGNS



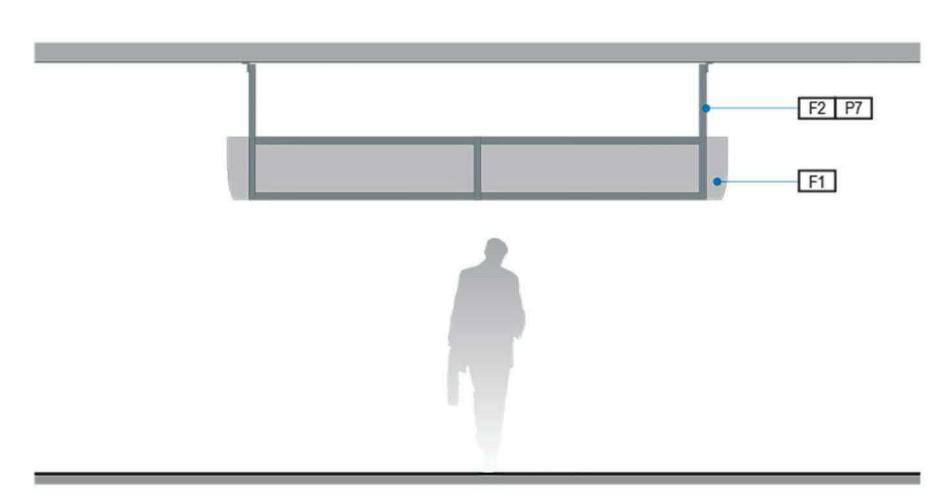




**ELEVATION** Scale: 3/16" = 1'-0"



**END VIEW** Scale: 3/16" = 1'-0"



ELEVATION (OPPOSITE SIDE)

#### GENERAL NOTES

GENERAL DESCRIPTION & USE

PEDESTRIAN - Garage ID/Sections Directional

- All final design, engineering & amount/sizing of structural sign support elements, material types/thicknesses, dimensions and attachment methods shall be performed and approved by a licensed engineer to meet or exceed all applicable local and national codes.
- Final engineering, dimensions, materials and fabrication are the responsibility of the Contractor/Fabricator/Installer to ensure the highest quality fit and finish for all components of the completed product. All final detailing and specifications to be provided by the Contractor/Fabricator/Installer within their
- final approved fabrication-ready shop drawings. Wherever dissimilar metals are in contact, always separate contact surfaces prior to assembly or installation with the necessary protective coatings/gaskets/washers to prevent galvanic corrosion.
- Final fabrication methods, quality and fit / finish to be reviewed & approved by HAS and the Wayfinding Design Consultants thru prototype reviews prior to final production run / installation processes.
- Colors shown are for reference only, and are subject to the limitations of the printing process and / or variance of electronic RGB screen displays. Refer to color system swatches and/or final finish samples for accurate reference.
- Messages shown here are typical placeholders only. See message schedules for specific messaging by location & sign type.

## FABRICATION NOTES (GENERAL DESIGN INTENT)

- F1 SIGN FACE PANELS: 1/8" thick alum. sign face panels; mechanically fasten sign panels to support tube structure with stainless steel countersunk screws, paint heads to match sign face; digitally printed full-bleed color graphics on 3M Reflective DG3 4090 White film applied to 1st surface of face panels; all exposed surfaces, returns, etc to be painted with MAP paint to match P5, satin finish
- F2 SUPPORT FRAME/SUSPENSION: fabricated 2" square alum. support tube frame & vertical suspension tube structure; all exposed support frame tube ends to be capped with alum.; all welds on frame/caps to be filled & ground smooth for uniform appearance; suspension tubes mechanically attached to ceiling attachment hinge plates above; ceiling attachment plates to be mechanically fastened to garage's structural ceiling elements as required w/ mech. fasteners (fabricator to field verify); support frame, suspension tubes & hinge plates to be painted all exposed surfaces with MAP paint to match P7, satin finish

LETTERING (TYPEFACES) / SYMBOLS / ARROWS:

L5 Pedestrian Wayfinding Typeface: ClearviewText Medium L6 Supplemental Typeface: Clearview One Book Condensed S1 Arrow(s): use only official HAS wayfinding program standards arrow artwork (to be provided by LAI)

S2 Int'l Symbols: use only official HAS wayfinding program symbol artwork (to be provided by LAI)

## COLORS:

NOTES: "D" = digitally printed colors as generated by 3M Picasso printer (or equal) on 3M Reflective DG3 4090 White unless otherwise noted; "P" = Matthews Acrylic Polyurethane (MAP) paint (or equal), satin finish; "V" = 3M vinyl films (or equal)

D4 White: 3M DG3 4090 showing thru digital print background

D5 Dark Gray: match PMS 433C

D6 Med. Dark Gray: match PMS 432C

D7 Med. Gray: match PMS 430C

D17 Blue: match PMS 300C

P1.2 Silver: MAP paint MP33172 Silver Surfer Metallic

P4 White: MAP paint MP N202 White, satin finish

P5 Dark Gray: MAP paint matched to PMS 433C

P6 Med. Dark Gray: MAP paint match PMS 432C

P7 Med. Gray: MAP paint matched to PMS 430C

V4.1 White: Opaque 3M 7725-20 White

P17 Blue: MAP paint matched to PMS 300C

A/B GARAGE WAYFINDING IAH TERMINAL / SIGNAGE AND /

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HOUSTON AIRPORT SYSTEM

Labozan Associates

REVISIONS

OWNER:

APPROVED BY:

CONSULTANT:

CIP NO:

HAS NO: 749A

2.2 DESIGN INTENT PARKING GARAGE PEDESTRIAN SIGNS

Designed By: L.A.

Drawing No.:

Checked By: A.B.

Drawing No.:

2-28

SIGN FUNCTION

DIRECTIONAL

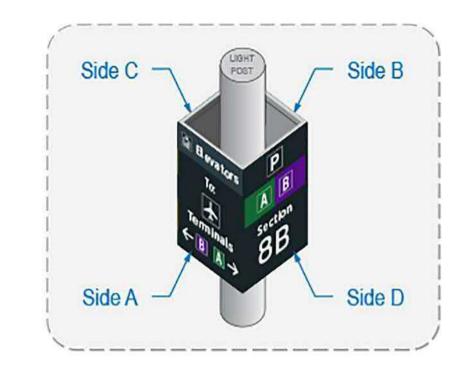
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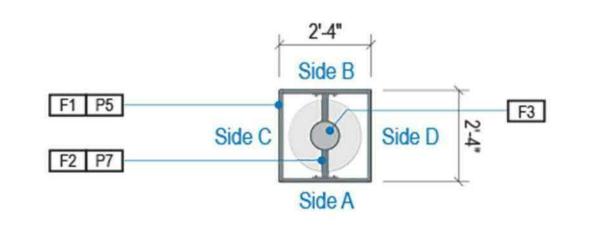
5-DR.34

MOUNTING METHOD

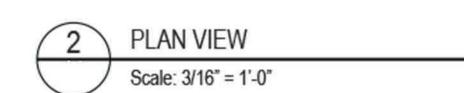
CEILING SUSPENDED

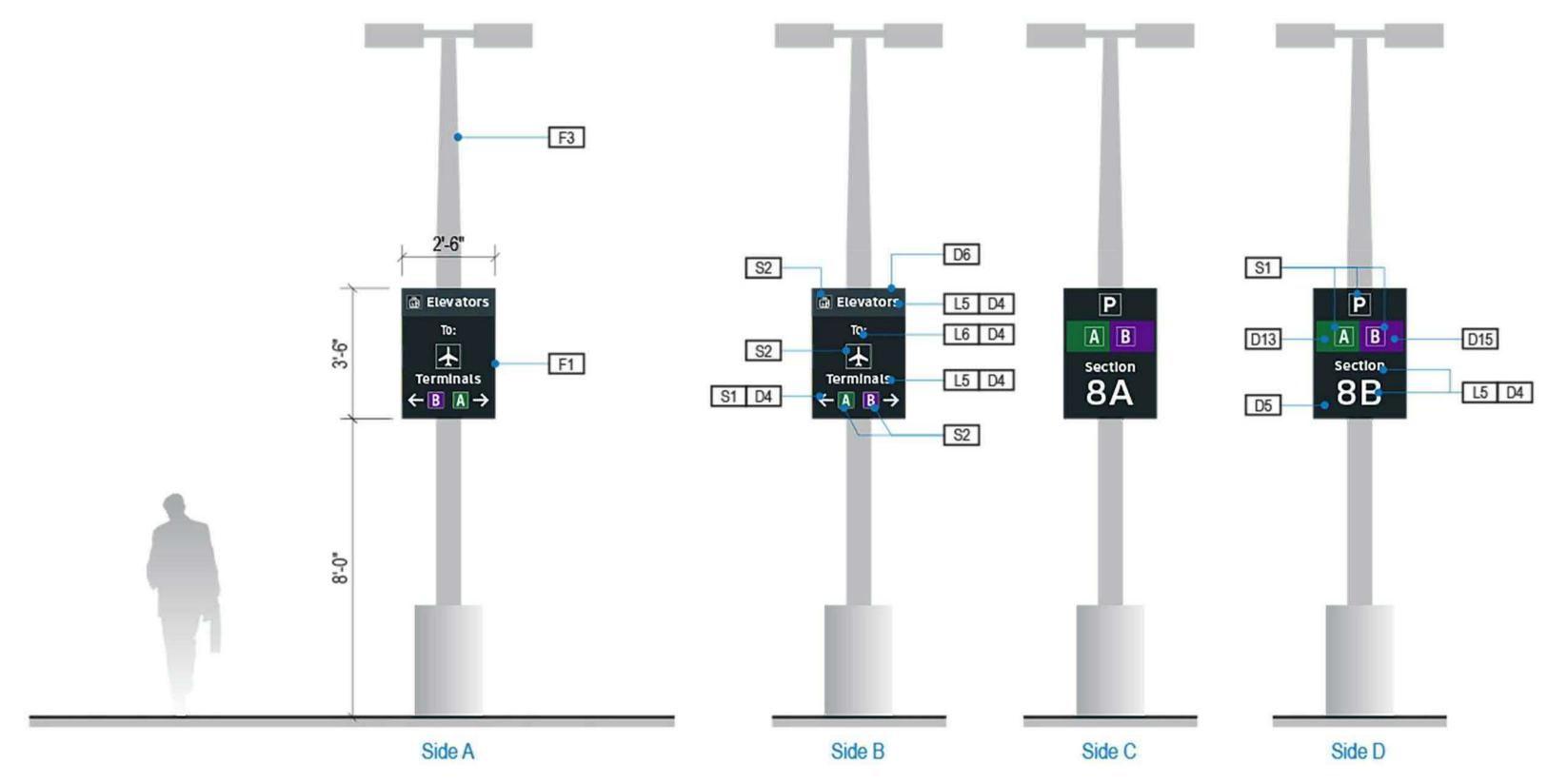
Scale: 3/16" = 1'-0"





Scale: N.T.S.





**ELEVATION** Scale: 3/16" = 1'-0" GENERAL NOTES

- All final design, engineering & amount/sizing of structural sign support elements, material types/thicknesses, dimensions and attachment methods shall be performed and approved by a licensed engineer to meet or exceed all applicable local and national codes.
- Final engineering, dimensions, materials and fabrication are the responsibility of the Contractor/Fabricator/Installer to ensure the highest quality fit and finish for all components of the completed product. All final detailing and specifications to be provided by the Contractor/Fabricator/Installer within their final approved fabrication-ready shop drawings.
- Wherever dissimilar metals are in contact, always separate contact surfaces prior to assembly or installation with the necessary protective coatings/gaskets/washers to prevent galvanic corrosion.
- Final fabrication methods, quality and fit / finish to be reviewed & approved by HAS and the Wayfinding Design Consultants thru prototype reviews prior to final production run / installation processes.
- Colors shown are for reference only, and are subject to the limitations of the printing process and / or variance of electronic RGB screen displays. Refer to color system swatches and/or final finish samples for accurate reference.
- Messages shown here are typical placeholders only. See message schedules for specific messaging by location & sign type.

#### FABRICATION NOTES (GENERAL DESIGN INTENT)

- F1 SIGN FACE PANELS: 1/8" thick alum. sign face panels; mechanically fasten sign panels to support tube structure with stainless steel tamper-proof screws, paint heads to match sign face; digitally printed full-bleed color graphics on 3M Reflective DG3 4090 White film applied to 1st surface of face panels; all exposed surfaces, returns, etc to be painted with MAP paint to match P5, satin finish
- F2 SUPPORT FRAME/POST ATTACHMENT: fabricated 1" square alum. support tube frame structure; all exposed support frame tube ends to be capped with alum.; all welds on frame/caps to be filled & ground smooth for uniform appearance; support frame mechanically attached to light post attachment band; attachment band to be mechanically fastened to light post as required w/ mech. fasteners (fabricator to field verify); support frame & attachment bands to be painted all exposed surfaces with MAP paint to match P7, satin finish
- F3 LIGHT POST: existing light post at existing garage roof areas; fabricator to field verify light post conditions and engineer sign attachment to light posts as install locations require (NOTE: light post shown is artist rendering only and may not be representative of final light post product).

- L5 Pedestrian Wayfinding Typeface: ClearviewText Medium L6 Supplemental Typeface: Clearview One Book Condensed
- S1 Arrow(s): use only official HAS wayfinding program standards arrow artwork (to be provided by LAI)
- S2 Int'l Symbols: use only official HAS wayfinding program symbol artwork (to be provided by LAI)

## COLORS:

NOTES: "D" = digitally printed colors as generated by 3M Picasso printer (or equal) on 3M Reflective DG3 4090 White unless otherwise noted; "P" = Matthews Acrylic Polyurethane (MAP) paint (or equal), satin finish; "V" = 3M vinyl films (or equal)

- D4 White: 3M DG3 4090 showing thru digital print background
- D5 Dark Gray: PMS 433C D6 Med. Dark Gray: PMS 432C
- D8 Med. Gray: PMS 430C D8 Light Gray: PMS 427C D9 Black: C:50 M:40 Y:40 K:100 D10 Safety Red: PMS 186C
- D13 Green: PMS 349C D15 Purple: PMS 2597C
- D25 Exit Green: PMS 368C
- P5 Dark Gray: PMS 433C P7 Med. Gray: PMS 430C
- P13 Green: PMS 349C P15 Purple: PMS 2597C
- V4.1 White: Opaque 3M 7725-20 White

- A/B GARAGE ) WAYFINDING IAH TERMINAL / SIGNAGE AND \

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DIRECTOR

HOUSTON AIRPORT SYSTEM

Labozan Associates

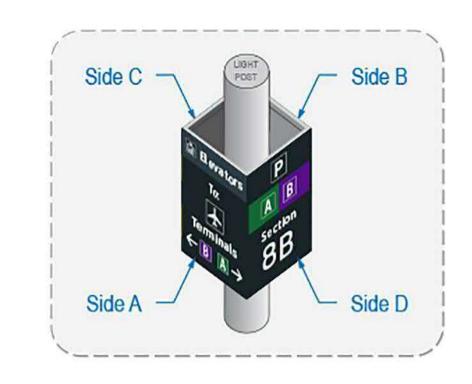
APPROVED BY:

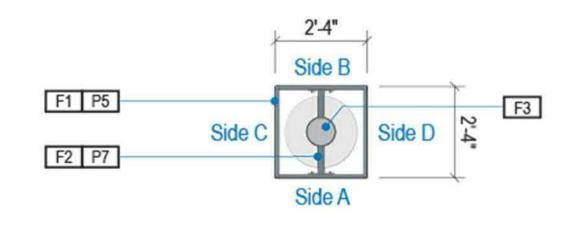
CONSULTANT:

REVISIONS

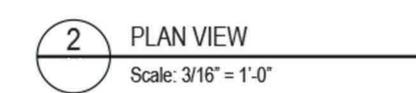
S NO:	749A
Y PLAN:	

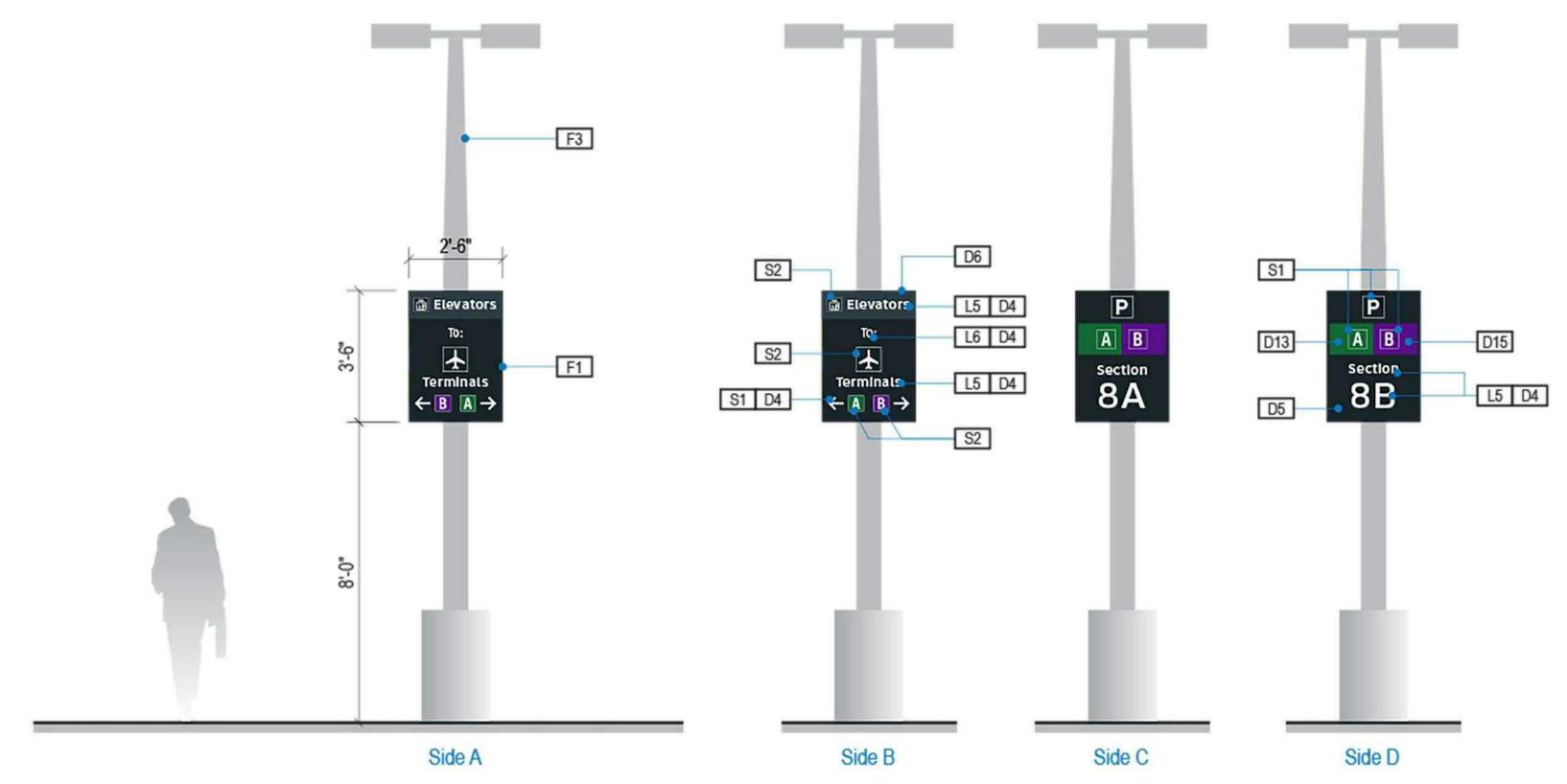
2.2 DESIGN INTENT PARKING GARAGE PEDESTRIAN SIGNS





ISOMETRIC Scale: N.T.S.





**ELEVATION** Scale: 3/16" = 1'-0" GENERAL NOTES

- All final design, engineering & amount/sizing of structural sign support elements, material types/thicknesses, dimensions and attachment methods shall be performed and approved by a licensed engineer to meet or exceed all applicable local and national codes.

final approved fabrication-ready shop drawings.

- Final engineering, dimensions, materials and fabrication are the responsibility of the Contractor/Fabricator/Installer to ensure the highest quality fit and finish for all components of the completed product. All final detailing and specifications to be provided by the Contractor/Fabricator/Installer within their
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- Colors shown are for reference only, and are subject to the limitations of the printing process and / or variance of electronic RGB screen displays. Refer to color system swatches and/or final finish samples for accurate reference.
- Messages shown here are typical placeholders only. See message schedules for specific messaging by location & sign type.

#### FABRICATION NOTES (GENERAL DESIGN INTENT)

- F1 SIGN FACE PANELS: 1/8" thick alum. sign face panels; mechanically fasten sign panels to support tube structure with stainless steel tamper-proof screws, paint heads to match sign face; digitally printed full-bleed color graphics on 3M Reflective DG3 4090 White film applied to 1st surface of face panels; all exposed surfaces, returns, etc to be painted with MAP paint to match P5, satin finish
- F2 SUPPORT FRAME/POST ATTACHMENT: fabricated 1" square alum. support tube frame structure; all exposed support frame tube ends to be capped with alum.; all welds on frame/caps to be filled & ground smooth for uniform appearance; support frame mechanically attached to light post attachment band; attachment band to be mechanically fastened to light post as required w/ mech. fasteners (fabricator to field verify); support frame & attachment bands to be painted all exposed surfaces with MAP paint to match P7, satin finish
- F3 LIGHT POST: existing light post at existing garage roof areas; fabricator to field verify light post conditions and engineer sign attachment to light posts as install locations require (NOTE: light post shown is artist rendering only and may not be representative of final light post product).

LETTERING	(TYPEFACES) / S	SYMBOLS / ARROWS:	

- L5 Pedestrian Wayfinding Typeface: ClearviewText Medium L6 Supplemental Typeface: Clearview One Book Condensed
- S1 Arrow(s): use only official HAS wayfinding program standards arrow artwork (to be provided by LAI)
- S2 Int'l Symbols: use only official HAS wayfinding program symbol artwork (to be provided by LAI)

## COLORS:

NOTES: "D" = digitally printed colors as generated by 3M Picasso printer (or equal) on 3M Reflective DG3 4090 White unless otherwise noted; "P" = Matthews Acrylic Polyurethane (MAP) paint (or equal), satin finish; "V" = 3M vinyl films (or equal)

- D4 White: 3M DG3 4090 showing thru digital print background
- D5 Dark Gray: PMS 433C D6 Med. Dark Gray: PMS 432C
- D8 Med. Gray: PMS 430C D8 Light Gray: PMS 427C D9 Black: C:50 M:40 Y:40 K:100 D10 Safety Red: PMS 186C
- D13 Green: PMS 349C D15 Purple: PMS 2597C
- D25 Exit Green: PMS 368C
- P5 Dark Gray: PMS 433C P7 Med. Gray: PMS 430C
- P13 Green: PMS 349C P15 Purple: PMS 2597C
- V4.1 White: Opaque 3M 7725-20 White

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	Date	Description
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		DIRECTOR
_	HOUS	TON AIRPORT SYSTEM



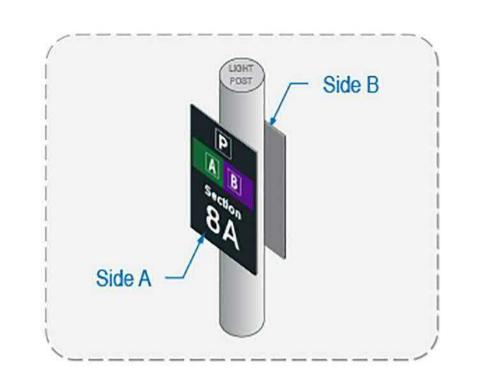
Labozan Associates

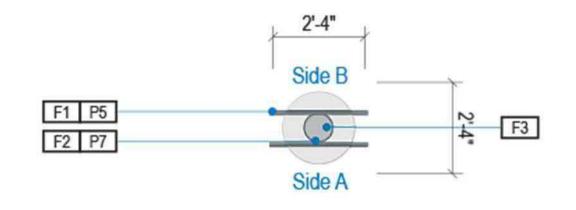
- A/B GARAGE ) WAYFINDING AH TERMINAL A

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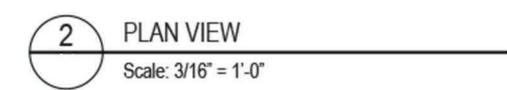
HAS NO: 749A

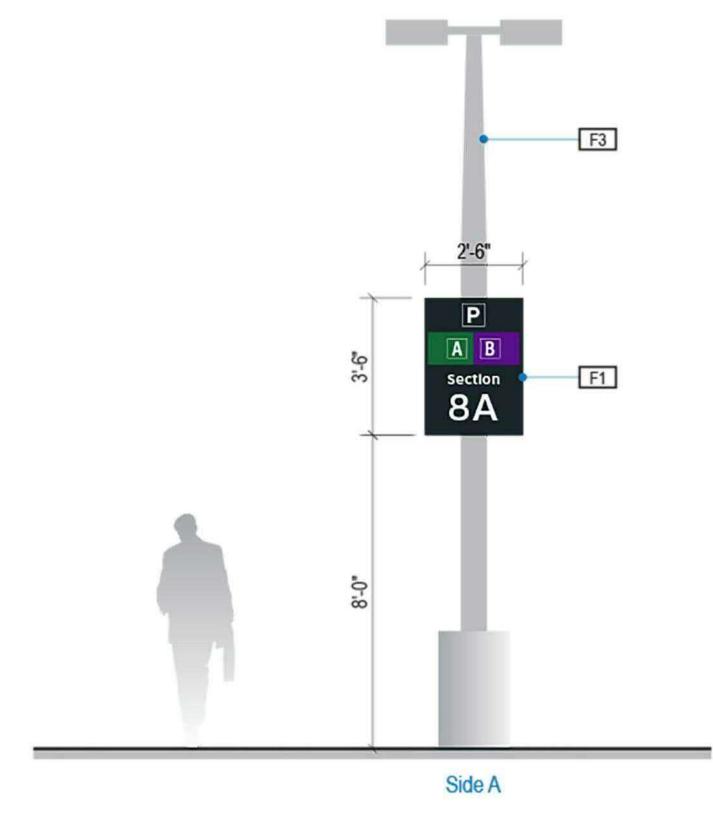
2.2 DESIGN INTENT PARKING GARAGE PEDESTRIAN SIGNS

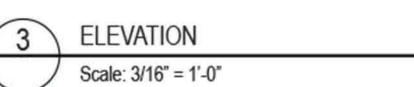




ISOMETRIC Scale: N.T.S.









Scale: 3/16" = 1'-0"

GENERAL NOTES

- All final design, engineering & amount/sizing of structural sign support elements, material types/thicknesses, dimensions and attachment methods shall be performed and approved by a licensed engineer to meet or exceed all applicable local and national codes.
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#### FABRICATION NOTES (GENERAL DESIGN INTENT)

- F1 SIGN FACE PANELS: 1/8" thick alum. sign face panels; mechanically fasten sign panels to support tube structure with stainless steel tamper-proof screws, paint heads to match sign face; digitally printed full-bleed color graphics on 3M Reflective DG3 4090 White film applied to 1st surface of face panels; all exposed surfaces, returns, etc to be painted with MAP paint to match P5, satin finish
- F2 SUPPORT FRAME/POST ATTACHMENT: fabricated 1" square alum. support tube frame structure; all exposed support frame tube ends to be capped with alum.; all welds on frame/caps to be filled & ground smooth for uniform appearance; support frame mechanically attached to light post attachment band; attachment band to be mechanically fastened to light post as required w/ mech. fasteners (fabricator to field verify); support frame & attachment bands to be painted all exposed surfaces with MAP paint to match P7, satin finish
- F3 LIGHT POST: existing light post at existing garage roof areas; fabricator to field verify light post conditions and engineer sign attachment to light posts as install locations require (NOTE: light post shown is artist rendering only and may not be representative of final light post product).

LETTERING (TYPEFACES) / SYMBOLS / ARROWS:	
LETTERMO (TTT ELAOLO) TOTMODOLO TARMONO.	

- L5 Pedestrian Wayfinding Typeface: ClearviewText Medium
- S1 Arrow(s): use only official HAS wayfinding program standards arrow artwork (to be provided by LAI)

- D4 White: 3M DG3 4090 showing thru digital print background
- D5 Dark Gray: PMS 433C D6 Med. Dark Gray: PMS 432C
- D8 Med. Gray: PMS 430C D8 Light Gray: PMS 427C
- D13 Green: PMS 349C D15 Purple: PMS 2597C
- P13 Green: PMS 349C P15 Purple: PMS 2597C
- V4.1 White: Opaque 3M 7725-20 White

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HOUSTON **AIRPORTS** APPROVED BY:

CONSULTANT:



DIRECTOR

HOUSTON AIRPORT SYSTEM

- A/B GARAGE WAYFINDING

IAH TERMINAL / SIGNAGE AND /



L6 Supplemental Typeface: Clearview One Book Condensed

S2 Int'l Symbols: use only official HAS wayfinding program symbol artwork (to be provided by LAI)

## COLORS:

NOTES: "D" = digitally printed colors as generated by 3M Picasso printer (or equal) on 3M Reflective DG3 4090 White unless otherwise noted; "P" = Matthews Acrylic Polyurethane (MAP) paint (or equal), satin finish; "V" = 3M vinyl films (or equal)

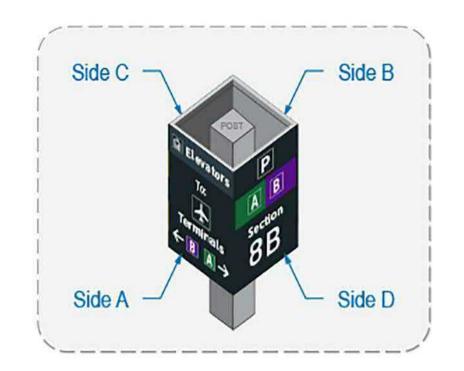
- D9 Black: C:50 M:40 Y:40 K:100 D10 Safety Red: PMS 186C
- D25 Exit Green: PMS 368C
- P5 Dark Gray: PMS 433C P7 Med. Gray: PMS 430C

CIP NO: HAS NO: 749A

2.2 DESIGN INTENT PARKING GARAGE PEDESTRIAN SIGNS

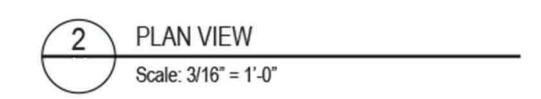
Designed By: L.A. Drawing No.: Drawn By: Q.P.
Checked By: A.B.

2-31



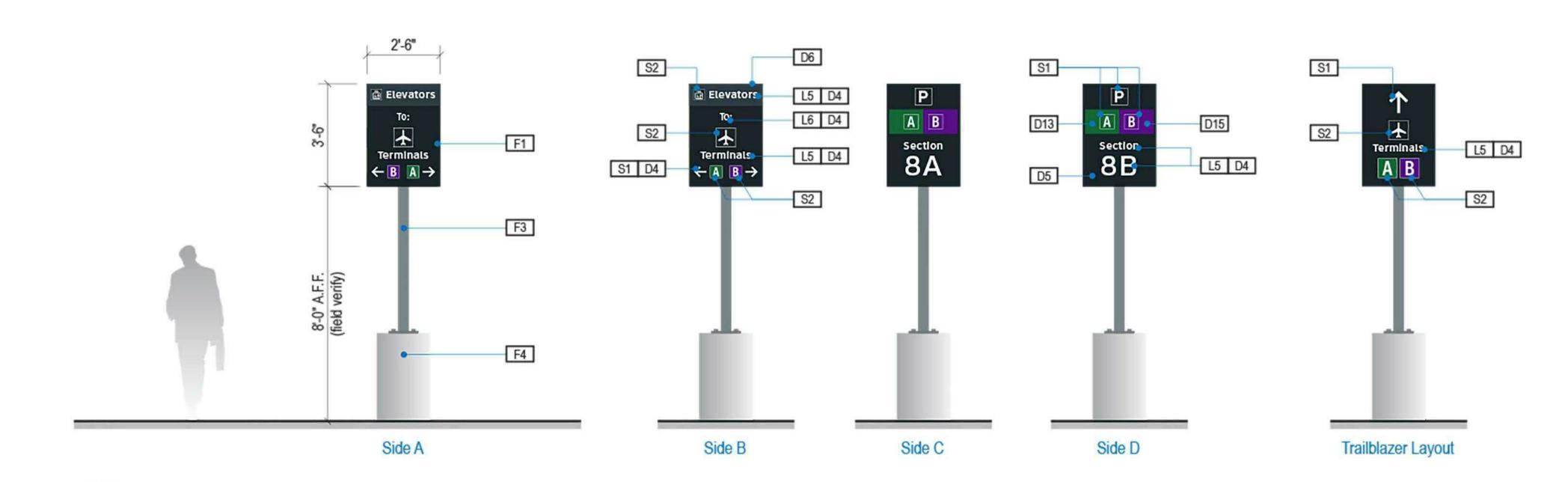
F1 P5 F2 P7





**ELEVATION** 

Scale: 3/16" = 1'-0"



GENERAL NOTES

- All final design, engineering & amount/sizing of structural sign support elements, material types/thicknesses, dimensions and attachment methods shall be performed and approved by a licensed engineer to meet or exceed all applicable local and national codes.
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  - Messages shown here are typical placeholders only. See message schedules for specific messaging by location & sign type.

#### FABRICATION NOTES (GENERAL DESIGN INTENT)

- F1 SIGN FACE PANELS: 1/4" thick alum. sign face panels; mechanically fasten sign panels to support tube structure with stainless steel tamper-proof screws, paint heads to match sign face; digitally printed full-bleed color graphics on 3M Reflective DG3 4090 White film applied to 1st surface of face panels; all exposed surfaces, returns, etc to be painted with MAP paint to match P5, satin finish
- F2 SUPPORT FRAME/POST ATTACHMENT: fabricated 1" square alum. support tube frame structure; all exposed support frame tube ends to be capped with alum.; all welds on frame/caps to be filled & ground smooth for uniform appearance; support frame mechanically attached to light post attachment band; attachment band to be mechanically fastened to light post as required w/ mech. fasteners (fabricator to field verify); support frame & attachment bands to be painted all exposed surfaces with MAP paint to match P7, satin finish
- F3 SUPPORT POST: fabricated square alum. vertical support post tube; support post tube end to be capped with alum.; all welds on frame/caps to be filled & ground smooth for uniform appearance; support post welded to foot plate & mechanically attached to concrete bollard/footer; all support post/attachment plate/fasteners & exposed surfaces to be painted with MAP paint to match P7, satin finish
- F4 CONCRETE BOLLARD/FOOTER: concrete bollard/footer design and dimensions TBD by engineer
- LETTERING (TYPEFACES) / SYMBOLS / ARROWS: L5 Pedestrian Wayfinding Typeface: ClearviewText Medium
- L6 Supplemental Typeface: Clearview One Book Condensed
- S1 Arrow(s): use only official HAS wayfinding program standards arrow artwork (to be provided by LAI)
- S2 Int'l Symbols: use only official HAS wayfinding program symbol artwork (to be provided by LAI)

## COLORS:

NOTES: "D" = digitally printed colors as generated by 3M Picasso printer (or equal) on 3M Reflective DG3 4090 White unless otherwise noted; "P" = Matthews Acrylic Polyurethane (MAP) paint (or equal), satin finish; "V" = 3M vinyl films (or equal)

- D4 White: 3M DG3 4090 showing thru digital print background
- D5 Dark Gray: PMS 433C D6 Med. Dark Gray: PMS 432C D8 Med. Gray: PMS 430C D8 Light Gray: PMS 427C
- D9 Black: C:50 M:40 Y:40 K:100 D10 Safety Red: PMS 186C
- D13 Green: PMS 349C D15 Purple: PMS 2597C
- D25 Exit Green: PMS 368C
- P5 Dark Gray: PMS 433C P7 Med. Gray: PMS 430C
- P13 Green: PMS 349C P15 Purple: PMS 2597C
- V4.1 White: Opaque 3M 7725-20 White

- A/B GARAGE ) WAYFINDING IAH TERMINAL / SIGNAGE AND /

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**AIRPORTS** 

DIRECTOR

HOUSTON AIRPORT SYSTEM

Labozan Associates

REVISIONS

OWNER:

APPROVED BY:

CONSULTANT:

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HAS NO: 749A

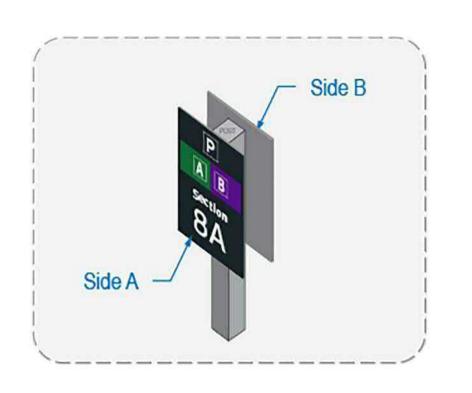
2.2 DESIGN INTENT

Designed By: L.A. Drawing No.:

PARKING GARAGE

PEDESTRIAN SIGNS

Drawn By: Q.P. Checked By: A.B. 2-32



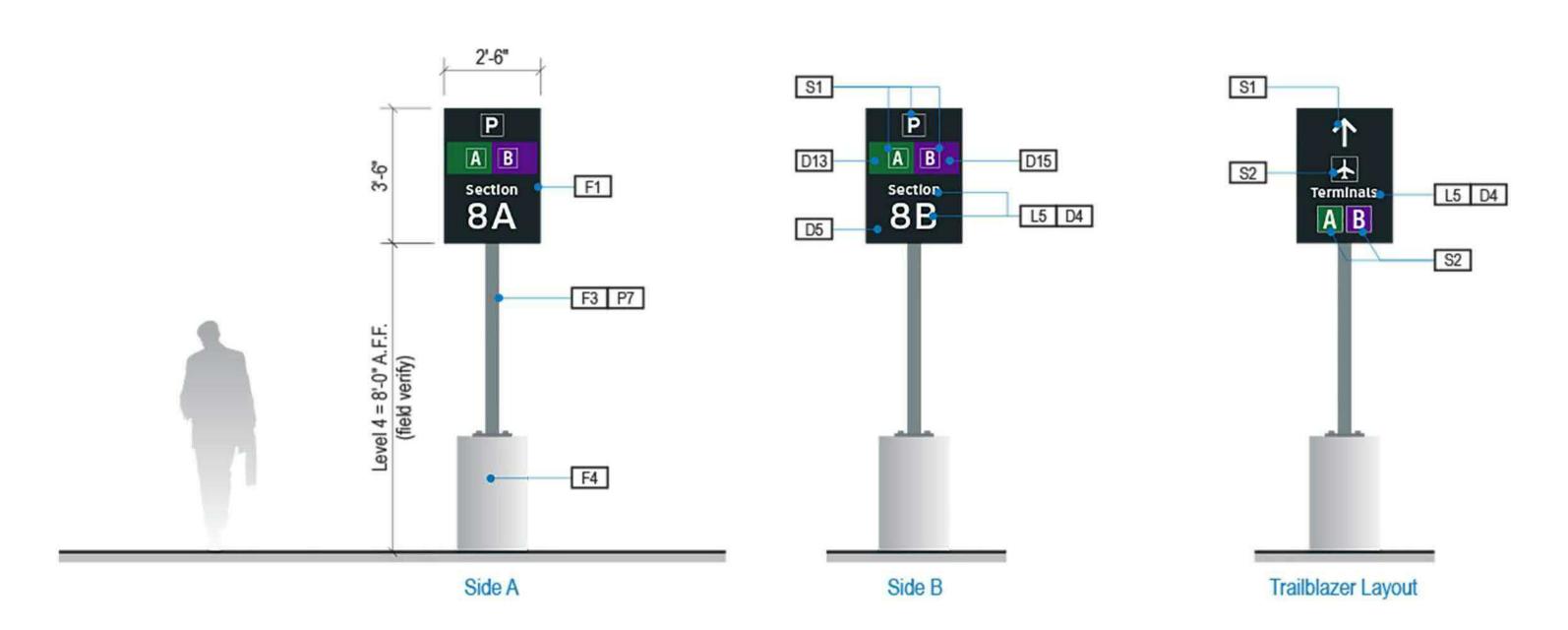
2'-6" F3 P7

**ISOMETRIC** Scale: N.T.S.

PLAN VIEW Scale: 3/16" = 1'-0"

**ELEVATION** 

Scale: 3/16" = 1'-0"



GENERAL NOTES

- All final design, engineering & amount/sizing of structural sign support elements, material types/thicknesses, dimensions and attachment methods shall be performed and approved by a licensed engineer to meet or exceed all applicable local and national codes.
  - Final engineering, dimensions, materials and fabrication are the responsibility of the Contractor/Fabricator/Installer to ensure the highest quality fit and finish for all components of the completed product. All final detailing and specifications to be provided by the Contractor/Fabricator/Installer within their final approved fabrication-ready shop drawings.
  - Wherever dissimilar metals are in contact, always separate contact surfaces prior to assembly or installation with the necessary protective coatings/gaskets/washers to prevent galvanic corrosion.
  - Final fabrication methods, quality and fit / finish to be reviewed & approved by HAS and the Wayfinding Design Consultants thru prototype reviews prior to
  - final production run / installation processes. · Colors shown are for reference only, and are subject to the limitations of the

printing process and / or variance of electronic RGB screen displays. Refer to color system swatches and/or final finish samples for accurate reference.

 Messages shown here are typical placeholders only. See message schedules for specific messaging by location & sign type.

#### FABRICATION NOTES (GENERAL DESIGN INTENT)

- F1 SIGN FACE PANELS: 1/4" thick alum. sign face panels; mechanically fasten sign panels to support tube structure with stainless steel tamper-proof screws, paint heads to match sign face; digitally printed full-bleed color graphics on 3M Reflective DG3 4090 White film applied to 1st surface of face panels; all exposed surfaces, returns, etc to be painted with MAP paint to match P5, satin finish
- F2 SUPPORT FRAME/POST ATTACHMENT: fabricated 1" square alum. support tube frame structure; all exposed support frame tube ends to be capped with alum.; all welds on frame/caps to be filled & ground smooth for uniform appearance; support frame mechanically attached to light post attachment band; attachment band to be mechanically fastened to light post as required w/ mech. fasteners (fabricator to field verify); support frame & attachment bands to be painted all exposed surfaces with MAP paint to match P7, satin finish
- F3 SUPPORT POST: fabricated square alum. vertical support post tube; support post tube end to be capped with alum.; all welds on frame/caps to be filled & ground smooth for uniform appearance; support post welded to foot plate & mechanically attached to concrete bollard/footer; all support post/attachment plate/fasteners & exposed surfaces to be painted with MAP paint to match P7, satin finish
- F4 CONCRETE BOLLARD/FOOTER: concrete bollard/footer design and dimensions TBD by engineer
- LETTERING (TYPEFACES) / SYMBOLS / ARROWS:

## COLORS:

- D4 White: 3M DG3 4090 showing thru digital print background
- D5 Dark Gray: PMS 433C D6 Med. Dark Gray: PMS 432C
- D9 Black: C:50 M:40 Y:40 K:100 D10 Safety Red: PMS 186C
- D13 Green: PMS 349C D15 Purple: PMS 2597C
- D25 Exit Green: PMS 368C
- P5 Dark Gray: PMS 433C P7 Med. Gray: PMS 430C
- V4.1 White: Opaque 3M 7725-20 White

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DIRECTOR

HOUSTON AIRPORT SYSTEM

HOUSTON

CONSULTANT:





L5 Pedestrian Wayfinding Typeface: ClearviewText Medium

L6 Supplemental Typeface: Clearview One Book Condensed

S1 Arrow(s): use only official HAS wayfinding program standards arrow artwork (to be provided by LAI)

S2 Int'l Symbols: use only official HAS wayfinding program symbol artwork (to be provided by LAI)

NOTES: "D" = digitally printed colors as generated by 3M Picasso printer (or equal) on 3M Reflective DG3 4090 White unless otherwise noted; "P" = Matthews Acrylic Polyurethane (MAP) paint (or equal), satin finish; "V" = 3M vinyl films (or equal)

- D8 Med. Gray: PMS 430C D8 Light Gray: PMS 427C

- P13 Green: PMS 349C P15 Purple: PMS 2597C

- A/B GARAGE ) WAYFINDING IAH TERMINAL / SIGNAGE AND /

CIP NO:

HAS NO: 749A

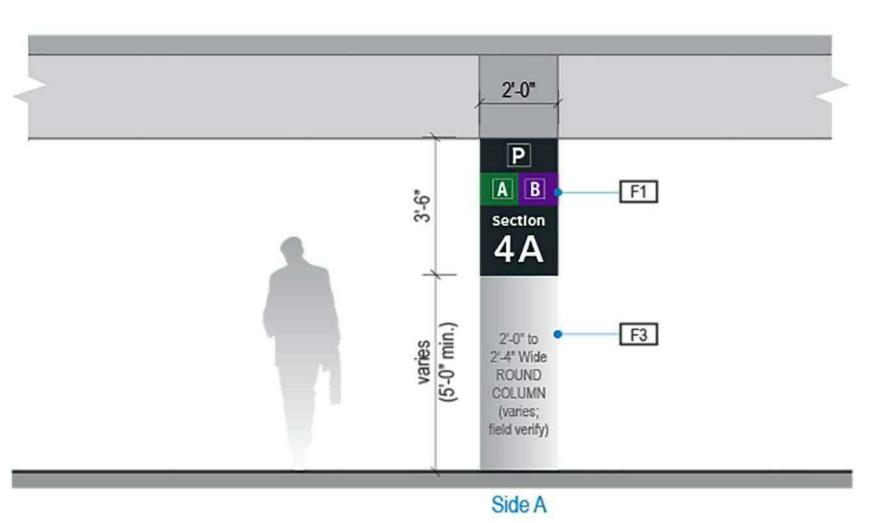
2.2 DESIGN INTENT PARKING GARAGE PEDESTRIAN SIGNS

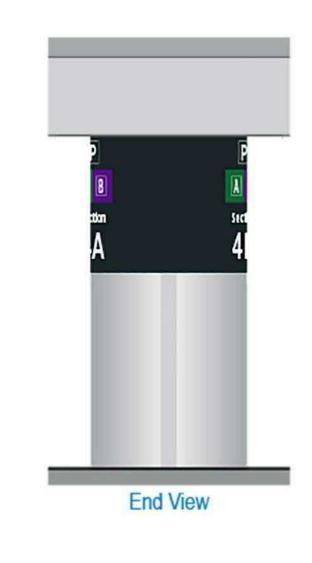
Drawn By: Q.P. Checked By: A.B. 2-33

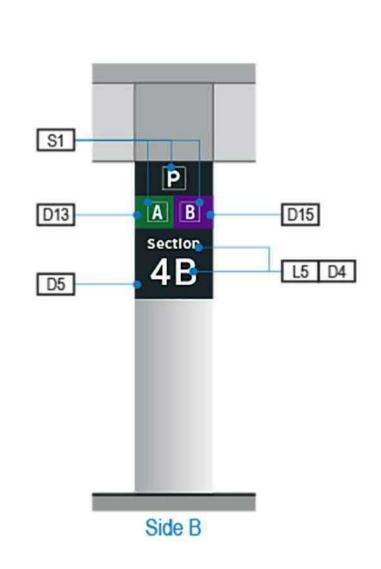
Designed By: L.A. Drawing No.:

Side B ROUND COLUMN Side A

PLAN VIEW Scale: 3/16" = 1'-0"







ELEVATION: Side A (Typical)

Scale: 3/16" = 1'-0"

GENERAL NOTES

- All final design, engineering & amount/sizing of structural sign support elements, material types/thicknesses, dimensions and attachment methods shall be performed and approved by a licensed engineer to meet or exceed all applicable local and national codes.
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  - Messages shown here are typical placeholders only. See message schedules for specific messaging by location & sign type.

#### FABRICATION NOTES (GENERAL DESIGN INTENT)

- F1 SIGN FACE PANELS: 1/4" thick alum. sign face panels; mechanically fasten sign panels to support tube structure with stainless steel tamper-proof screws, paint heads to match sign face; digitally printed full-bleed color graphics on 3M Reflective DG3 4090 White film applied to 1st surface of face panels; all exposed surfaces, returns, etc to be painted with MAP paint to match P5, satin finish
- F2 SUPPORT FRAME/COLUMN ATTACHMENT: fabricated 1\* square alum. support tube frame structure; all exposed support frame tube ends to be capped with alum.; all welds on frame/caps to be filled & ground smooth for uniform appearance; support frame mechanically attached to column attachment band; attachment band to be mechanically fastened to column as required w/ mech. fasteners (fabricator to field verify); support frame & attachment bands to be painted all exposed surfaces with MAP paint to match P7, satin finish
- F3 COLUMNS: existing vertical column; fabricator to field verify column conditions and engineer sign attachment to columns as install locations require

LETTERING (TYPEFACES) / SYMBOLS / ARROWS:

- L5 Pedestrian Wayfinding Typeface: ClearviewText Medium L6 Supplemental Typeface: Clearview One Book Condensed
- S1 Arrow(s): use only official HAS wayfinding program standards arrow artwork (to be provided by LAI)
- S2 Int'l Symbols: use only official HAS wayfinding program symbol artwork (to be provided by LAI)

## COLORS:

NOTES: "D" = digitally printed colors as generated by 3M Picasso printer (or equal) on 3M Reflective DG3 4090 White unless otherwise noted; "P" = Matthews Acrylic Polyurethane (MAP) paint (or equal), satin finish; "V" = 3M vinyl films (or equal)

- D4 White: 3M DG3 4090 showing thru digital print background
- D5 Dark Gray: PMS 433C D6 Med. Dark Gray: PMS 432C D8 Med. Gray: PMS 430C D8 Light Gray: PMS 427C
- D9 Black: C:50 M:40 Y:40 K:100 D10 Safety Red: PMS 186C
- D13 Green: PMS 349C D15 Purple: PMS 2597C
- D25 Exit Green: PMS 368C
- P5 Dark Gray: PMS 433C P7 Med. Gray: PMS 430C
- P13 Green: PMS 349C P15 Purple: PMS 2597C
- V4.1 White: Opaque 3M 7725-20 White

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- A/B GARAGE ) WAYFINDING

IAH TERMINAL / SIGNAGE AND \

CIP NO: HAS NO: 749A

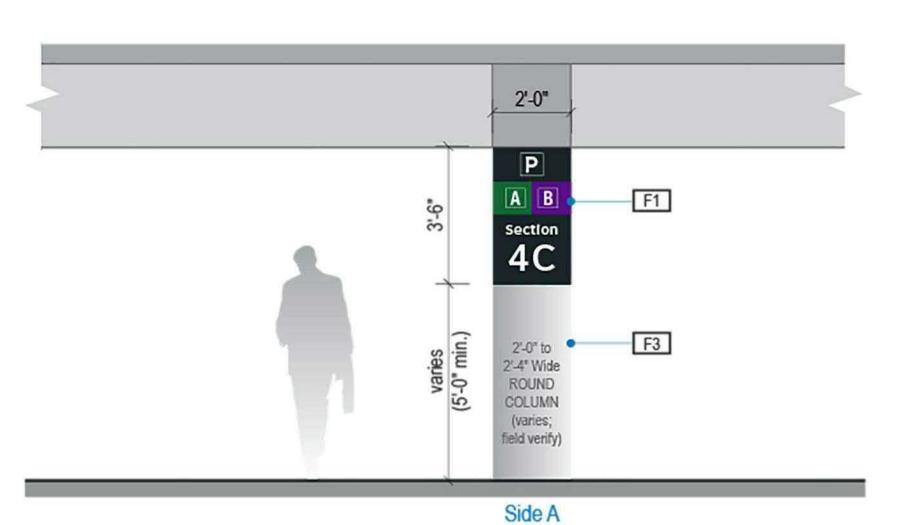
2.2 DESIGN INTENT PARKING GARAGE PEDESTRIAN SIGNS

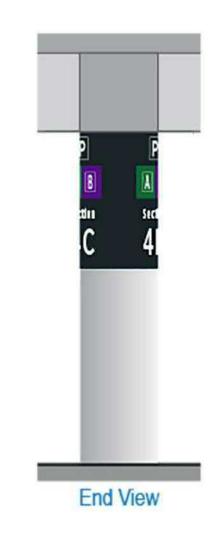
Designed By: L.A. Drawing No.: Drawn By: Q.P.
Checked By: A.B.

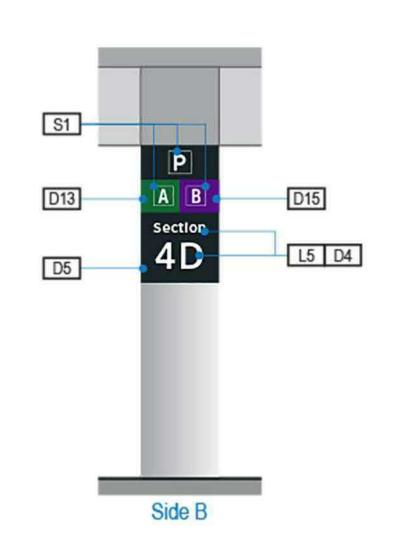
2-34

Side B ROUND COLUMN Side A

PLAN VIEW Scale: 3/16" = 1'-0"







ELEVATION: Side A (Typical)

Scale: 3/16" = 1'-0"

GENERAL NOTES

- All final design, engineering & amount/sizing of structural sign support elements, material types/thicknesses, dimensions and attachment methods shall be performed and approved by a licensed engineer to meet or exceed all

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## FABRICATION NOTES (GENERAL DESIGN INTENT)

- F1 SIGN FACE PANELS: 1/4" thick alum. sign face panels; mechanically fasten sign panels to support tube structure with stainless steel tamper-proof screws, paint heads to match sign face; digitally printed full-bleed color graphics on 3M Reflective DG3 4090 White film applied to 1st surface of face panels; all exposed surfaces, returns, etc to be painted with MAP paint to match P5, satin finish
- F2 SUPPORT FRAME/COLUMN ATTACHMENT: fabricated 1\* square alum. support tube frame structure; all exposed support frame tube ends to be capped with alum.; all welds on frame/caps to be filled & ground smooth for uniform appearance; support frame mechanically attached to column attachment band; attachment band to be mechanically fastened to column as required w/ mech. fasteners (fabricator to field verify); support frame & attachment bands to be painted all exposed surfaces with MAP paint to match P7, satin finish
- F3 COLUMNS: existing vertical column; fabricator to field verify column conditions and engineer sign attachment to columns as install locations require

LETTERING (TYPEFACES) / SYMBOLS / ARROWS:
L5 Pedestrian Wayfinding Typeface: ClearviewText Medium

- L6 Supplemental Typeface: Clearview One Book Condensed S1 Arrow(s): use only official HAS wayfinding program standards arrow artwork (to be provided by LAI)
- S2 Int'l Symbols: use only official HAS wayfinding program symbol artwork (to be provided by LAI)

## COLORS:

NOTES: "D" = digitally printed colors as generated by 3M Picasso printer (or equal) on 3M Reflective DG3 4090 White unless otherwise noted; "P" = Matthews Acrylic Polyurethane (MAP) paint (or equal), satin finish; "V" = 3M vinyl films (or equal)

- D4 White: 3M DG3 4090 showing thru digital print background
- D5 Dark Gray: PMS 433C D6 Med. Dark Gray: PMS 432C D8 Med. Gray: PMS 430C D8 Light Gray: PMS 427C
- D9 Black: C:50 M:40 Y:40 K:100 D10 Safety Red: PMS 186C
- D13 Green: PMS 349C D15 Purple: PMS 2597C
- D25 Exit Green: PMS 368C
- P5 Dark Gray: PMS 433C P7 Med. Gray: PMS 430C
- P13 Green: PMS 349C P15 Purple: PMS 2597C
- V4.1 White: Opaque 3M 7725-20 White

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CONSULTANT:



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- A/B GARAGE ) WAYFINDING IAH TERMINAL / SIGNAGE AND \

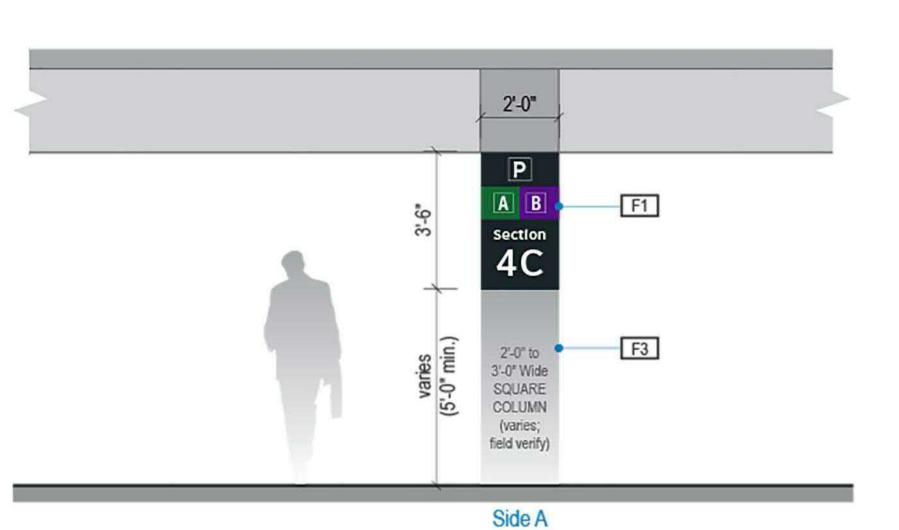
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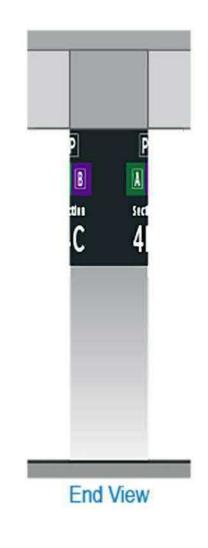
HAS NO: 749A

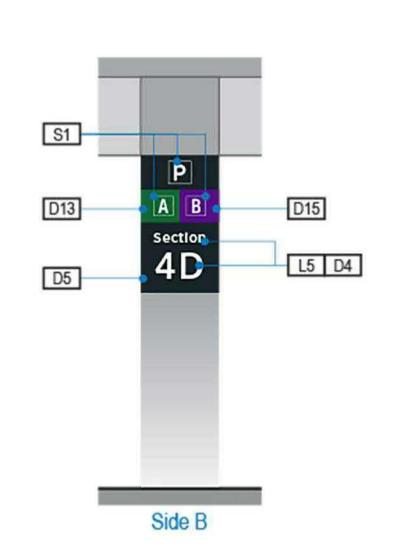
2.2 DESIGN INTENT PARKING GARAGE PEDESTRIAN SIGNS

Side B ROUND COLUMN Side A

PLAN VIEW Scale: 3/16" = 1'-0"







ELEVATION: Side A (Typical)

Scale: 3/16" = 1'-0"

GENERAL NOTES

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#### FABRICATION NOTES (GENERAL DESIGN INTENT)

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- F3 COLUMNS: existing vertical column; fabricator to field verify column conditions and engineer sign attachment to columns as install locations require

	A STATE OF
LETTERING (TYPEFACES) / SYMBOLS / ARROWS:	9-14
L5 Pedestrian Wayfinding Typeface: ClearviewText Medium	

L5 Pedestriar L6 Supplemental Typeface: Clearview One Book Condensed

- S1 Arrow(s): use only official HAS wayfinding program standards arrow artwork (to be provided by LAI)
- S2 Int'l Symbols: use only official HAS wayfinding program symbol artwork (to be provided by LAI)

## COLORS:

NOTES: "D" = digitally printed colors as generated by 3M Picasso printer (or equal) on 3M Reflective DG3 4090 White unless otherwise noted; "P" = Matthews Acrylic Polyurethane (MAP) paint (or equal), satin finish; "V" = 3M vinyl films (or equal)

- D4 White: 3M DG3 4090 showing thru digital print background
- D5 Dark Gray: PMS 433C D6 Med. Dark Gray: PMS 432C D8 Med. Gray: PMS 430C D8 Light Gray: PMS 427C
- D9 Black: C:50 M:40 Y:40 K:100 D10 Safety Red: PMS 186C
- D13 Green: PMS 349C D15 Purple: PMS 2597C
- D25 Exit Green: PMS 368C
- P5 Dark Gray: PMS 433C P7 Med. Gray: PMS 430C
- P13 Green: PMS 349C P15 Purple: PMS 2597C
- V4.1 White: Opaque 3M 7725-20 White

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HOUSTON AIRPORT SYSTEM

CONSULTANT:



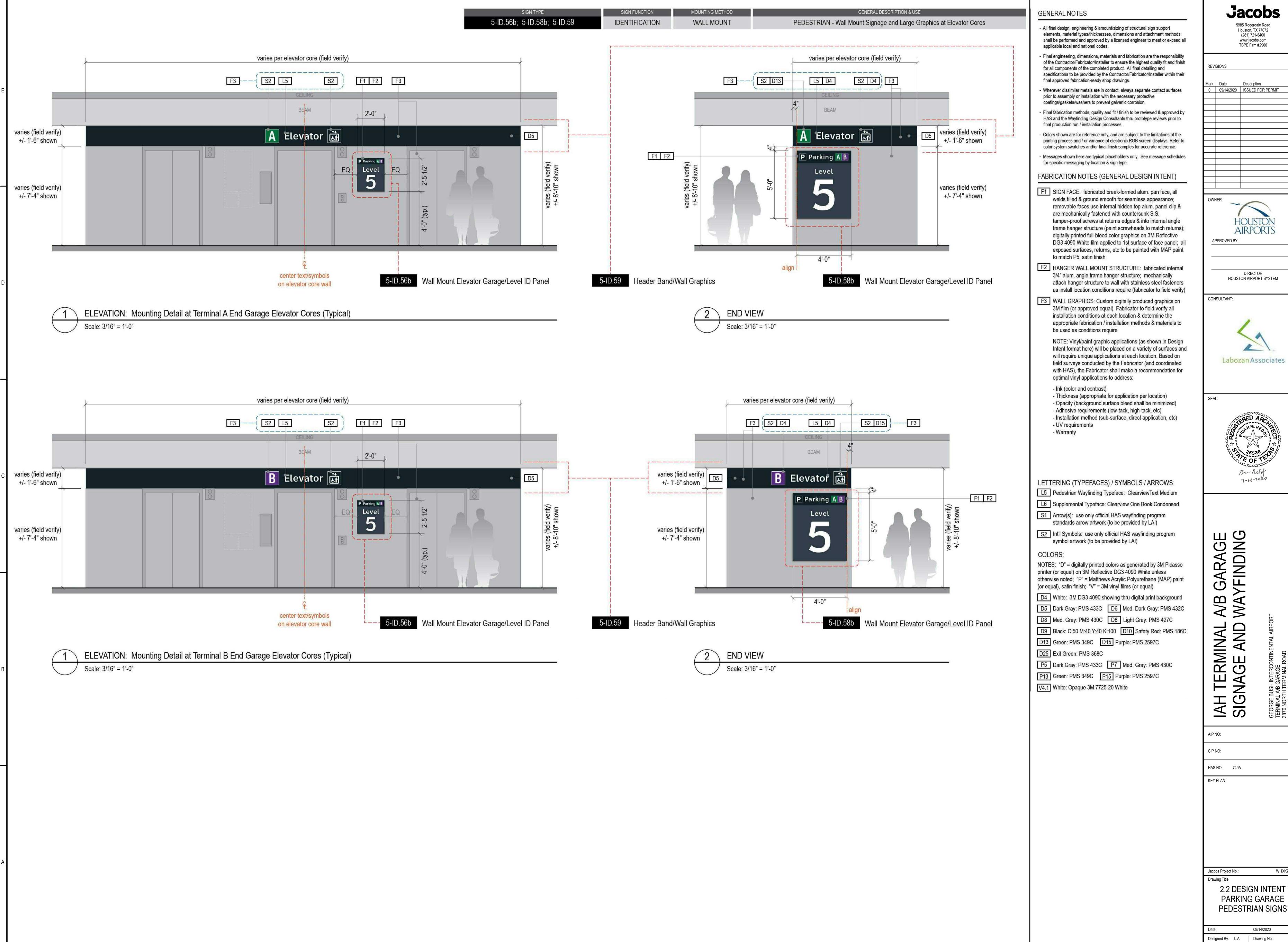


- A/B GARAGE ) WAYFINDING IAH TERMINAL / SIGNAGE AND \

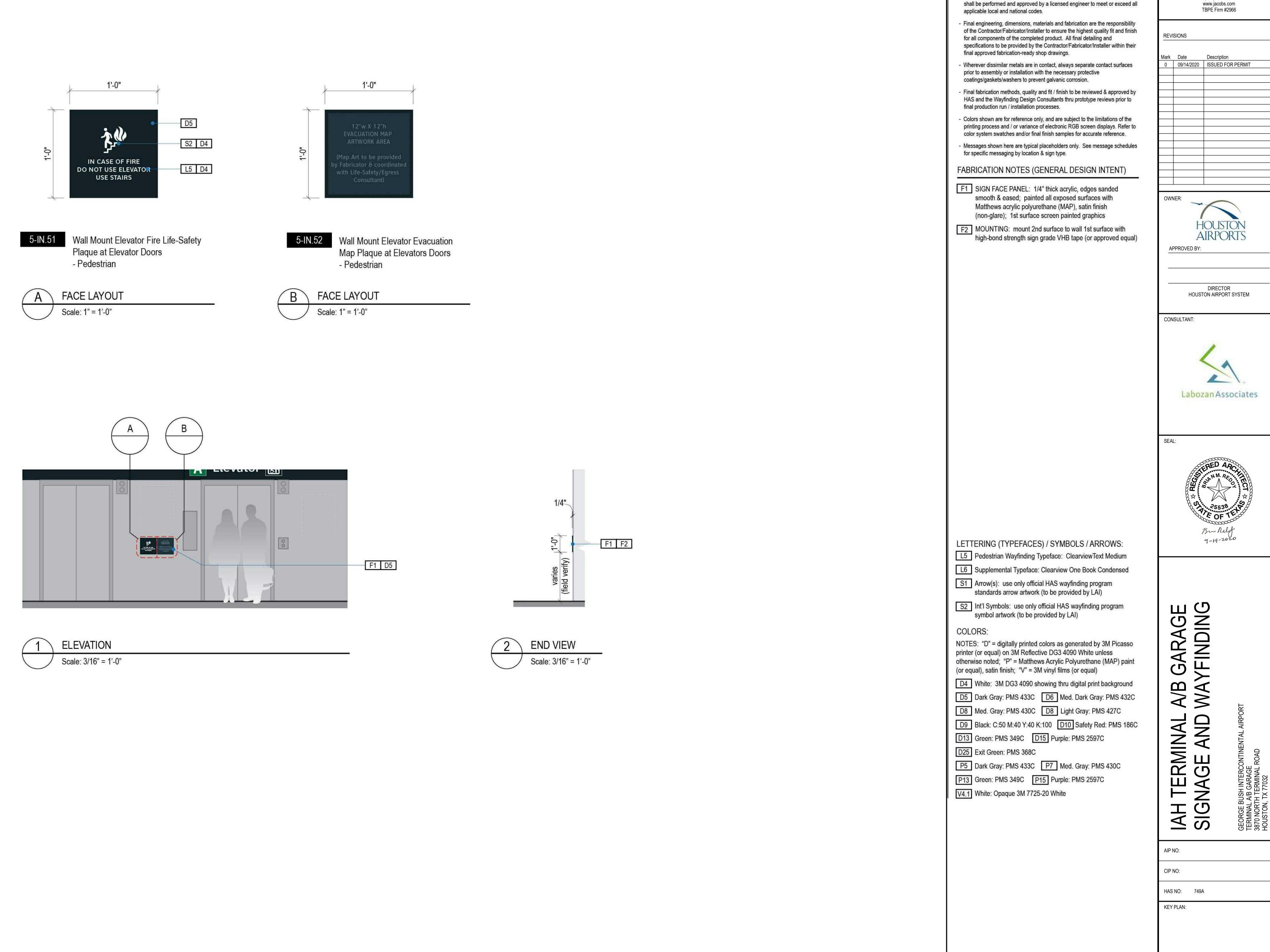
CIP NO:

HAS NO: 749A

2.2 DESIGN INTENT PARKING GARAGE PEDESTRIAN SIGNS



Drawn By: Q.P. Checked By: A.B. 2-37



IDENTIFICATION

SIGN TYPE

5-IN.51, 5-IN.52

MOUNTING METHOD

WALL MOUNT

**Jacobs** 

5985 Rogerdale Road Houston, TX 77072

**GENERAL NOTES** 

- All final design, engineering & amount/sizing of structural sign support elements, material types/thicknesses, dimensions and attachment methods

PEDESTRIAN - Wall Mount Elevator Fire Life-Safety Plaque

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2.2 DESIGN INTENT PARKING GARAGE PEDESTRIAN SIGNS

Level Directory Levels 6-8 S2 P Parking A B: Sections 6A-6R to 8A-8K Level 5 L1 D4 L2 D4 P Parking A B: Sections 5A-5R Levels 2-4 P Parking A B: Sections 2A-2M to 4A-4M Level 1 **★** Terminal **A** L1 D4 P. Valet - F1 P VIP/SurePark P High Vehicles L2 D4 D5

**END VIEW** 

Scale: 3/16" = 1'-0"

5-IN.55

SIGN FUNCTION

IDENTIFICATION

MOUNTING METHOD

WALL MOUNT

**GENERAL NOTES** 

PEDESTRIAN - Wall Mount Elevator Level Directory at Elevator Doors

SIGN TYPE 5-IN.55

Scale: 1" = 1'-0"

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specifications to be provided by the Contractor/Fabricator/Installer within their final approved fabrication-ready shop drawings. - Wherever dissimilar metals are in contact, always separate contact surfaces prior to assembly or installation with the necessary protective

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- Messages shown here are typical placeholders only. See message schedules for specific messaging by location & sign type.

FABRICATION NOTES (GENERAL DESIGN INTENT)

F1 CUSTOM HIGH PRESSURE LAMINATE PANEL: 1/2" thick Custom High Pressure Laminate (CHPL) phenolic resin panel (i.e. Fossil Industries brand product or approved equal); digitally printed full-bleed color graphics; 2nd surface mechanically fasten to wall with stainless steel fasteners and epoxied per manufacturer's specifications and as install location conditions req. (fabricator to field verify)

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REVISIONS



HOUSTON AIRPORT SYSTEM

DIRECTOR



CONSULTANT:



LETTERING (TYPEFACES) / SYMBOLS / ARROWS: L5 Pedestrian Wayfinding Typeface: ClearviewText Medium

S1 Arrow(s): use only official HAS wayfinding program standards arrow artwork (to be provided by LAI)

NOTES: "D" = digitally printed colors as generated by 3M Picasso printer (or equal) on 3M Reflective DG3 4090 White unless

D4 White: 3M DG3 4090 showing thru digital print background D5 Dark Gray: PMS 433C D6 Med. Dark Gray: PMS 432C

D13 Green: PMS 349C D15 Purple: PMS 2597C

P13 Green: PMS 349C P15 Purple: PMS 2597C

V4.1 White: Opaque 3M 7725-20 White

L6 Supplemental Typeface: Clearview One Book Condensed

S2 Int'l Symbols: use only official HAS wayfinding program symbol artwork (to be provided by LAI)

COLORS:

otherwise noted; "P" = Matthews Acrylic Polyurethane (MAP) paint (or equal), satin finish; "V" = 3M vinyl films (or equal)

D8 Med. Gray: PMS 430C D8 Light Gray: PMS 427C

D9 Black: C:50 M:40 Y:40 K:100 D10 Safety Red: PMS 186C

D25 Exit Green: PMS 368C

P5 Dark Gray: PMS 433C P7 Med. Gray: PMS 430C

- A/B GARAGE WAYFINDING IAH TERMINAL / SIGNAGE AND \

NO:			
NO:			
S NO:	749A		

2.2 DESIGN INTENT PARKING GARAGE PEDESTRIAN SIGNS

Designed By: L.A.

Drawing No.:

Checked By: A.B.

Drawing No.:

2-39

**ELEVATION** 

Scale: 3/16" = 1'-0"