YESCO

Proposal

For Work At
Railroad Canyon and Main Street Underpasses
I-15 freeway
Lake Elsinore CA 92530
United States

Billing Address
City of Lake Elsinore Engineering Dept
130 South Main St.
Lake Elsinore CA 92530
United States

Account Executive
008242 Jason V Gopperton
Yesco Signs LLC
10235 Bellegrave Avenue
Jurupa Valley CA 91752
United States

Date	Project Number	Project Description	Pricing Valid Until	Deposit
08/14/2023	PRY-48772	Lake Elsinore Underpass Graphic Panel Project	09/13/2023	

Item	Amount
California Sign Sales Lump Sum cost to Manufacture and inastall illuminated signs and graphic panels for two I 15 underpasses at Railroad Canyon Rd. and Main St. in Lake Elsinore per City provided RFP drawings and details dated August 16, 2022and specifications dated July 27, 2023. See attached spreadsheet for Unit and Line Item Pricing.	$871,728.00
California Sign Sales Mock Up Allowance	$25,000.00
Design and Engineering (WIP) Engineering / Shop Drawings for cabinet ocnstruction and attachement to retaining wall.	$8,000.00
Design and Engineering (WIP) Engineering Allowance for Electrical and HVAC scopes - if required. To be billed at cost plus 25%.	$10,000.00
Permit Acquisition Permit Acquisition Labor - Fees, if any, to be billed separately at cost.	$5,000.00
California Sign Sales Electrical Sub Contractor Scope of Work: NON PREVAILING Installation of wiring from customer pedestal to light boxes / signage in Underpass areas. Circuits to be installed in customer installed conduits with pullropes. Light boxes to be linked together with common circuits. Concrete pads to be poured next to pedestal locations on north sides atlocations with unistrut frames and backboards installed for juntion boxes (data & power). Circuits to be tied into existing meter pedestals.	$87,838.00

Item		Amount
Exclusions Exclusions / Qualifications: Right to Review. In submitting this proposal, YESCO LLC dba YESCO Signs LLC hereby reserves the right to review and negotiate any terms and conditions contained in any Agreement and/or Purchase Order it may be required to enter into, including General Conditions and Special Conditions, as well as any documents incorporated therein by reference, upon the acceptance of such proposal. Permits / Permit Procurement. Permits and Permit Procurement costs are excluded. If required, Permit related costs to be calculated on a time and material basis with procurement labor billed at $90 per hour and permit fees reimbursed at cost and added as a change order to the overall contract price. Lane Closure / Lane Closure Permits. Lane Closure and Lane Closure Permit costa are an allowance only. Actual costs will be calculated on a time and material basis at cost plus 25% and allowance will be adjusted accordingly via contract change order. Primary Electrical. YESCO will specify primary power requirements. Owner / GC to provide primary power to sign locations. Transformer(s), switch gear, energy management systems, harmonic filters, contactors and related electrical control infrastructure is the responsibility of the Owner. Structural. Customer is to provide YESCO with soils report(s) for foundation design as required by the Building Official, Underground Utilities. Relocation or repair of utilities, whether above grade or below grade is excluded. This includes storm drains and/or drain Pipe. Third Party Inspections. All third-party inspections specific to signage scope of work to be provided by Owner / GC. Work Shift. YESCO proposal is based on work being completed during standard work shift. Over time, if requested, is additional. Work Area. Proposal contingent upon access for YESCO crews and equipment staging in and around the sign area(s) for installation. Prevailing Wages: Prevailing wages have been included for the installation activities in this proposal. Union Forces. No Trade Union Labor will be utilized to perform this scope of work. Bonds. Performance and payment bonds are excluded. Validity. This Proposal is valid for 30 days with the exception of material cost increases due to Trade Tarif levees beyond the control of YESCO and its suppliers.		
Payment Terms CASH SALE. Progress Payments to be made as follows: 25% upon receipt of permit with monthly progress billings based on actual percentage of completion for fabrication and installation activities. FINANCING. Financing available for approved clients via YESCO Financial Solutions (YFS) starting at $23,976 per month for 60 months. Additional rates, terms and options available for qualified clients. All YFS Financing includes extended warranty on internal components for the duration of the term. Ask your YESCO representative for details. EXTENDED WARRANTY. Extended warranty for site labor services available for $450 / month which covers field labor and internal lighting and electrical components and excludes primary load centers, primary conductors, network cabling and 4G Hotspot / wifi equipment.		
Or $22,479.50/month for 60 mos with $112,397.48 down.	Subtotal	$1,007,566.00
Click to apply: apps.yesco.com/creditapplication	Tax Total (%)	$28,713.63
Required maintenance payment not included	Total	$1,036,279.63

This Proposal is subject to acceptance of YESCO's Standard Terms and Conditions, which are available for your review at www.yesco.com/terms/standardtermsandconditions.pdf. The proposed financing terms are only estimates. Final terms are subject to due diligence and formal credit approval by YESCO Financial Solutions.

YESCO® Financial Solutions℠

Finance Lease Proposal

Product Leased
See YESCO Agreement referencing Project Number PRY-48772

Amount Financed	Term (in months)	Lease Payment	Maintenance Payment	Total Monthly Payment
$1,036,279.63	60	$23,525.52	$450.00	$23,975.52

Refundable Deposit	Capital Reduction	Lease Processing Fee	Total Due At Signing	End of Lease Residual
	$0.00	$500.00		$1.00

This Finance Lease Proposal is subject to credit approval and execution of a definitive lease agreement that includes YESCO's Finance Lease Terms and Conditions, which can be found at www.yesco.com/terms/financeleasetermsandconditions.html. Click here to complete the YESCO Credit Application or request a hard copy from your YESCO account executive.

City of Lake Elsinore

Line Items for Project Railroad Canyon Road & Main Street Underpass Graphic Panels Project (CIP # Z10093)

Item Num	Item Description	Unit of Measure	Quantity	Unit Price	Line Total
1	Mobilization	LS	1	20,733.00	20,733.00
2	Traffic Control (Allowance - Actual to be billed at cost + 25%)	LS	1	50,000.00	50,000.00
3	6’ x 6’ Internally Illuminated Cabinets for Main St	EA	12	15,092.00	181,104.00
3.1	6' x 6' Custom Waterjet Services for Graphic Art Panels for Main St	EA	12	6,363.00	76,356.00
4	6’ x 6’ Internally Illuminated Cabinets for Railroad Canyon Road	EA	12	15,092.00	181,104.00
4.1	6' x 6' Custom Waterjet Services for Graphic Art Panels for Railroad Canyon Road	EA	12	6,363.00	76,356.00
5	6’ x 6’ Internally Illuminated Lake Elsinore Logo “E” Panels for Main St. and Railroad Canyon Road - (Includes routed logo panels)	EA	4	17,592.00	70,368.00
6	2’-0”x 24’-3” Internally Illuminated “HISTORIC MAIN STREET” sign	EA	2	24,377.00	48,754.00
7	2’-0”x 29’-8” Internally Illuminated “RAILROAD CANYON RD” sign	EA	1	29,823.00	29,823.00
8	2’-0”x 19’-6” Internally Illuminated “DIAMOND DR” sign	EA	1	19,603.00	19,603.00
9	Trico 2 RGBW (DMX) LED Modules - Main Street	EA	43	402.00	17,286.00
10	12V 60W QIS Power Supply - Main Street (quote states 45 are req'd)	EA	90	39.00	3,510.00
11	Double-end Male Connector with 7’0” lead - Main Street (quote states only 3 req'd)	EA	5	131.00	655.00
12	Single-end Male Connector with 7’0” lead - Main Street (quote states 2 are req'd)	EA	1	98.00	98.00
13	Double-end Male Connector 18” Wire (18AWG) - Main Street (quote states 2 are req'd)	EA	1	98.00	98.00
14	Anpro 180 7500K Modules - Main Street	EA	3	114.00	342.00
15	Talent 1 Nola/Cloud Controller - Main Street	EA	1	2,790.00	2,790.00
16	Talent 1 Nola Controller (Receiver) -Main Street	EA	1	2,512.00	2,512.00
17	Talent 1 Secondary- Main Street	EA	2	907.00	1,814.00
18	Ethernet Network Cable - Main Street	EA	2	23.00	46.00
19	Maintenance Fee For Cloud System (3 years) - Main Street	LS	1	3,139.00	3,139.00
20	4G Hotspot Service Fee (First 12 months) - Main Street	LS	1	2,512.00	2,512.00
21	Anpro 180 7500K - Railroad Cyn. & Diamond Dr.	EA	3	114.00	342.00
22	Double-End Male Connector 18” Wire (18AWG) - Railroad Cyn. & Diamond Dr. (quote states 2 req'd)	EA	1	98.00	98.00
23	Double-End Male Connector With 7’ Lead - Railroad Cyn. & Diamond Dr. (quote states 3 req'd)	EA	5	131.00	655.00
24	12V 60W Power Supply - Railroad Cyn. & Diamond Dr. (quote states 47 are req'd)	EA	89	39.00	3,471.00
25	Trico 2 RGBW DMX Modules Railroad Cyn. & Diamond Dr.	EA	43	402.00	17,286.00
26	Talent 1 Nola/Cloud Controller Railroad Cyn. & Diamond Dr.	EA	1	2,790.00	2,790.00
27	Talent 1 Nola Controller Receiver Railroad Cyn. & Diamond Dr.	EA	1	2,512.00	2,512.00
28	Talent 1 Secondary - Railroad Cyn. & Diamond Dr. (quote states 2 req'd)	EA	1	907.00	907.00
29	Ethernet Network Cable - Railroad Cyn. & Diamond Dr. (quote states 2 req'd)	EA	4	23.00	92.00
30	Single-End Male Connector With 7’ Lead - Railroad Cyn. & Diamond Dr. (quote states 2 req'd)	EA	1	98.00	98.00
31	4G Hotspot Service Fee (First 12 Months) - Railroad Cyn. & Diamond Dr.	LS	1	2,512.00	2,512.00
32	Maintenance Fee For Cloud System (3 Years) - Railroad Cyn. & Diamond Dr.	LS	1	3,139.00	3,139.00
33	Programming Fee	LS	1	629.00	629.00
34	Training of City Staff	LS	1	2,500.00	2,500.00
35	Conductor Wires (Sub Contractor to pull conductors & network cables - NON PREVAILING)	LS	1	87,838.00	87,838.00
36	Mock Up Allowance		1	25,000.00	25,000.00
37	Contractor's contingency		1	45,694.00	45,694.00
38	Subtotal				984,566.00
39	Sales Taxes - Based on 1/3 of sales price at 8.75%				28,713.6200
40	Civil Engineering for cabinet attachemnt to retaining walls				8,000.0000
41	Outsource Engineering allownace for Electrical and HVAC - if required				10,000.0000
42	Permit Procurement - if required (fees, if any to be billed separately at cost)				5,000.0000
43	Total Project Price				1,036,279.62

LAKE ELSINORE
MAIN STREET HISTORIC DISTRICT
UNDERPASS GRAPHICS

Chapter I

SITE PLAN

SCALE: N.T.S.

Hunt
88 North Fair Oaks #105
Pasadena, CA 91103
626.793.7847
HUNT DESIGN

DAVID EVANS AND ASSOCIATES INC.

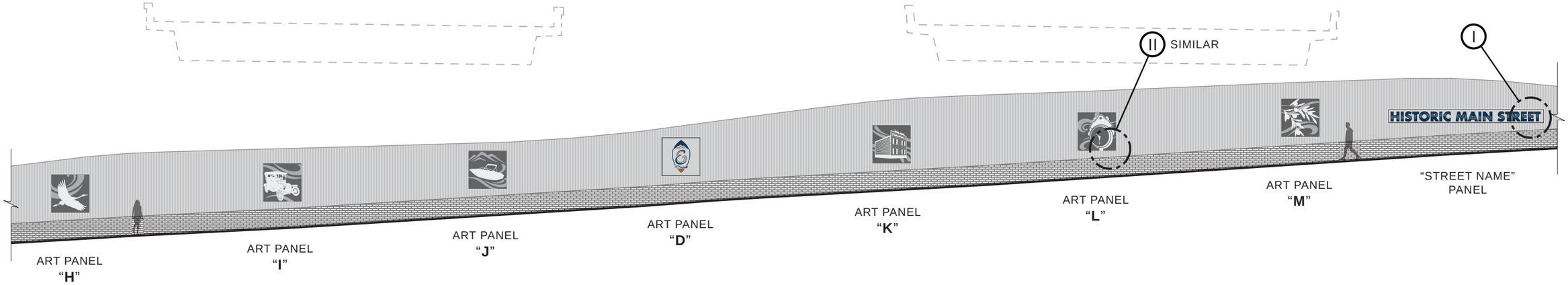
PROJECT
Lake Elsinore Underpass Graphics

CLIENT
David Evans and Associates

DATE
Aug 16, 2022

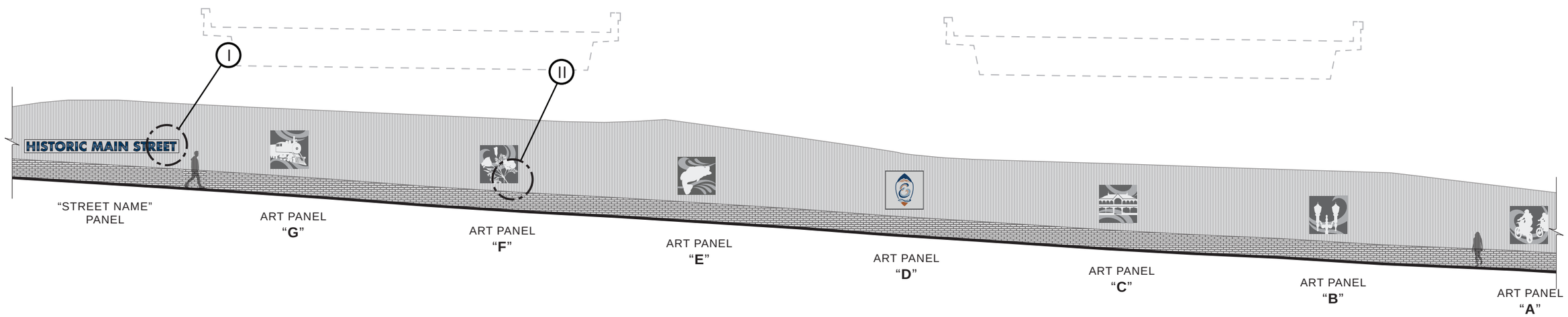
SHEET TITLE
Main Street
Site Plan

SHEET #
2.0



NORTH ELEVATION | NORTH RETAINING WALL

SCALE: 1/16" = 1'-0"



SOUTH ELEVATION | SOUTH RETAINING WALL

SCALE: 1/16" = 1'-0"

Hunt
88 North Fair Oaks #105
Pasadena, CA 91103
626.793.7847
HUNT DESIGN

DAVID EVANS AND ASSOCIATES INC.

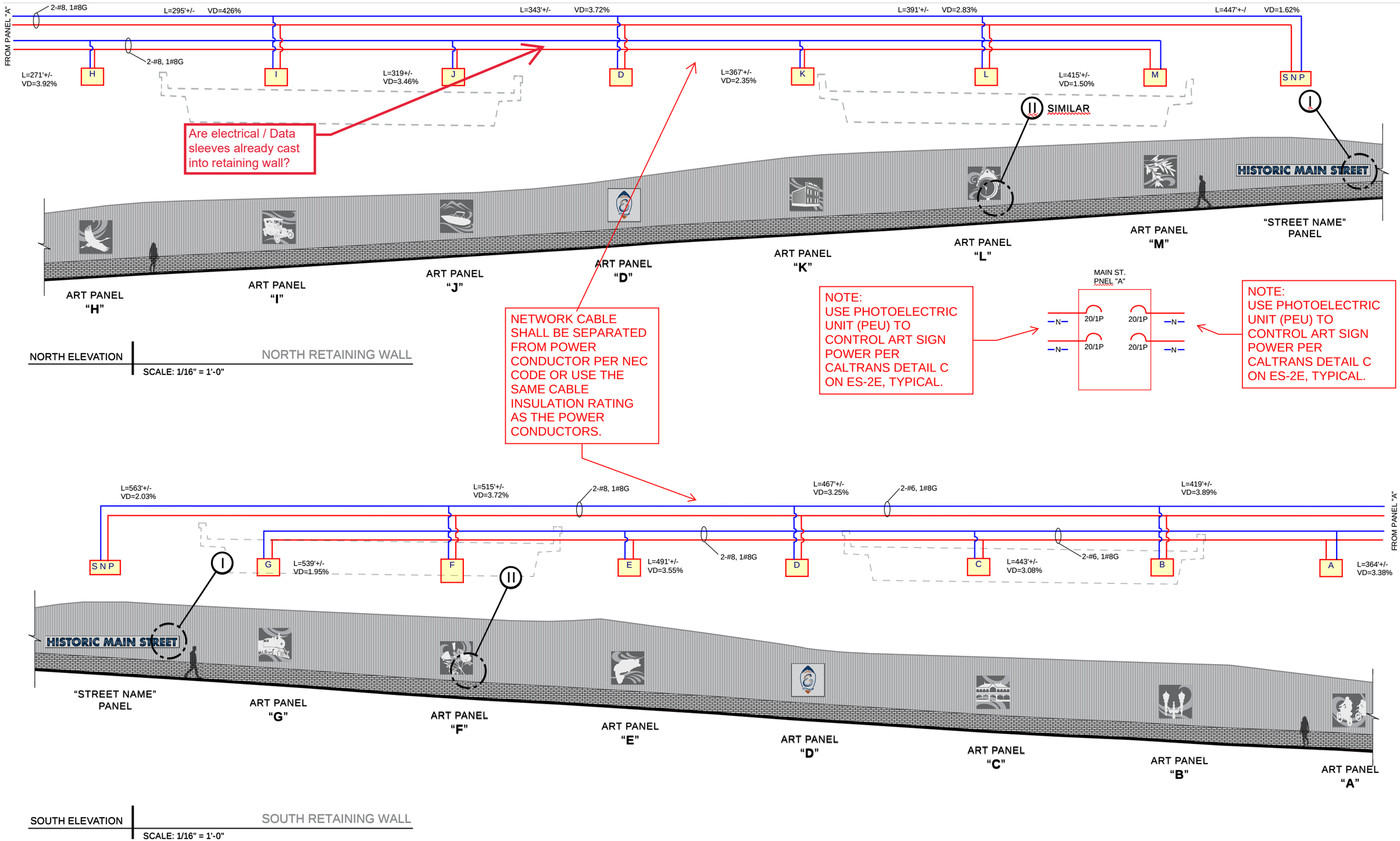
PROJECT
Lake Elsinore Underpass Graphics

CLIENT
David Evans and Associates

DATE
Aug 16, 2022

SHEET TITLE
Main Street
Site Elevation

SHEET #
3.0



Hunt
88 North Fair Oaks #105
Pasadena, CA 91103
626.793.7847
HUNT DESIGN

DAVID EVANS AND ASSOCIATES INC.

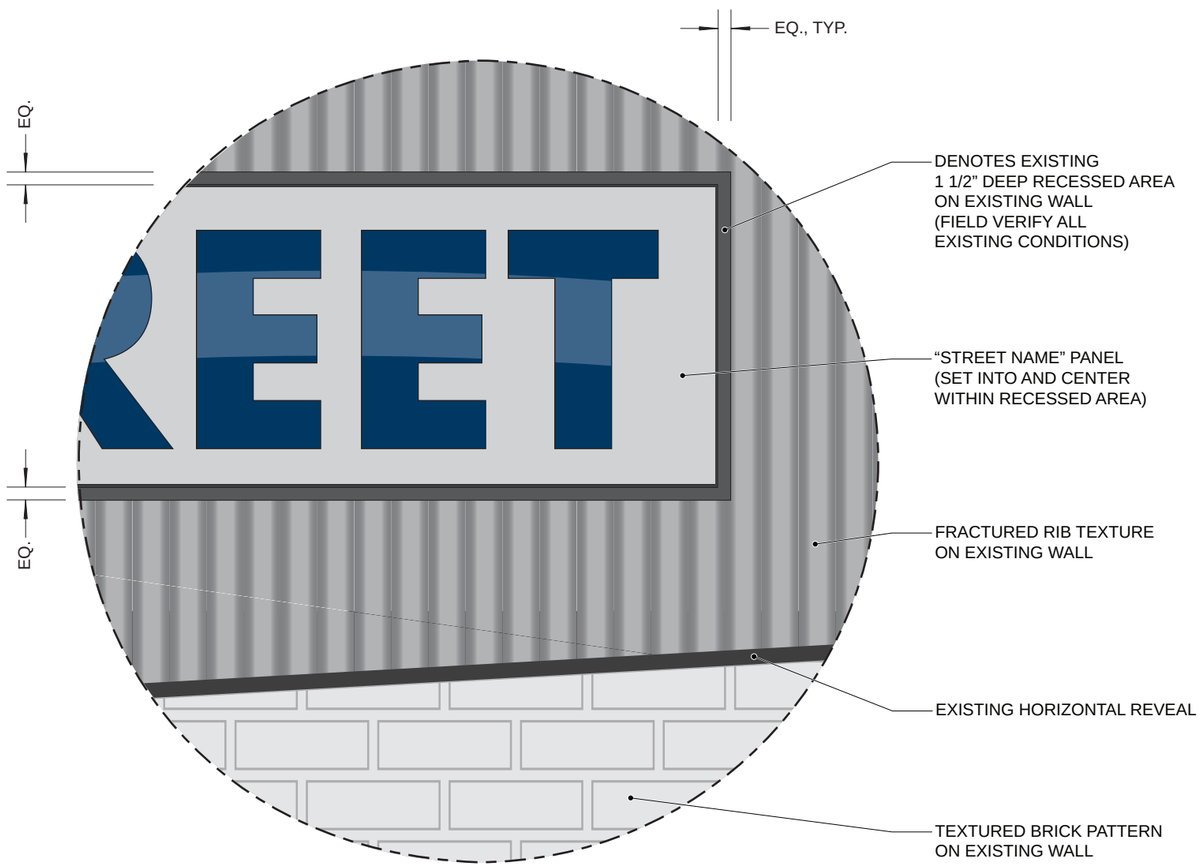
PROJECT
Lake Elsinore Underpass Graphics

CLIENT
David Evans and Associates

DATE
Aug 16, 2022

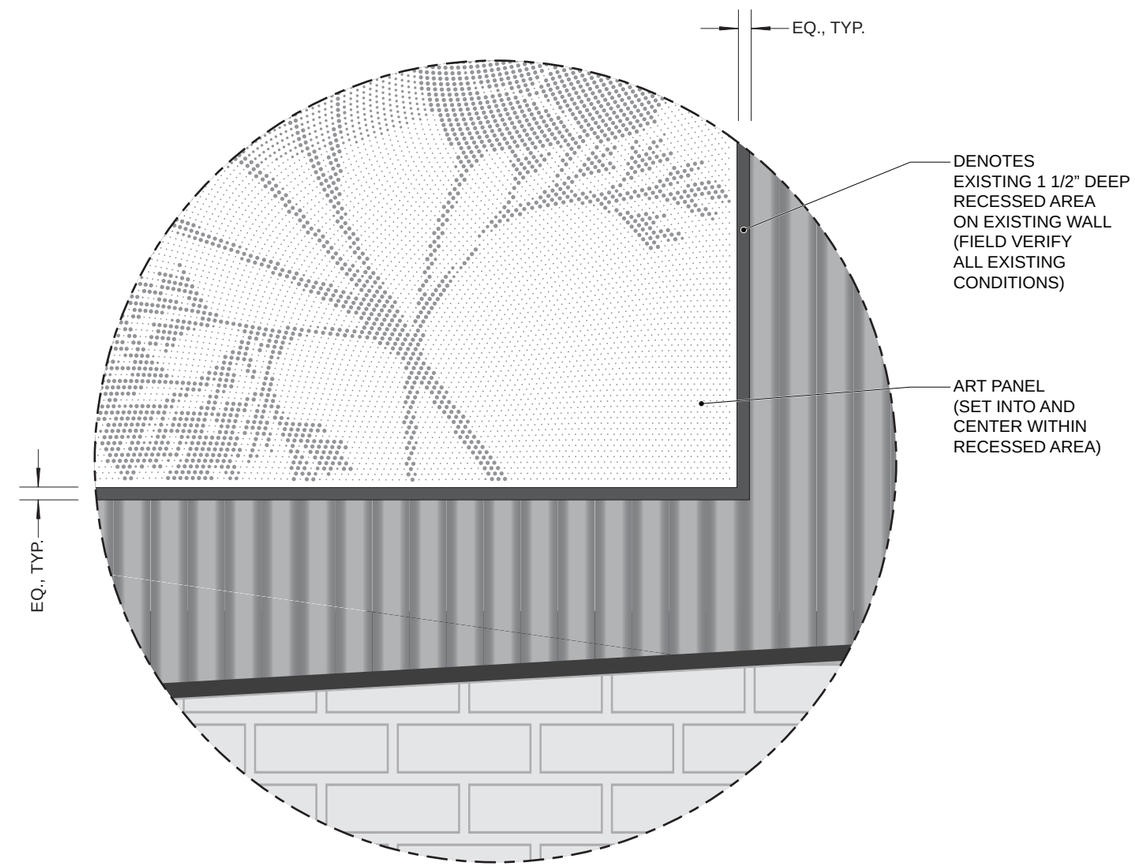
SHEET TITLE
Main Street Wire Diagram

SHEET #
4.0



SITE ELEVATION DETAIL VIEW I

SCALE: 1" = 1'-0"



SITE ELEVATION DETAIL VIEW II

SCALE: 1" = 1'-0"

Hunt
88 North Fair Oaks #105
Pasadena, CA 91103
626.793.7847
HUNT DESIGN
DAVID EVANS AND ASSOCIATES INC.

PROJECT
Lake Elsinore Underpass Graphics

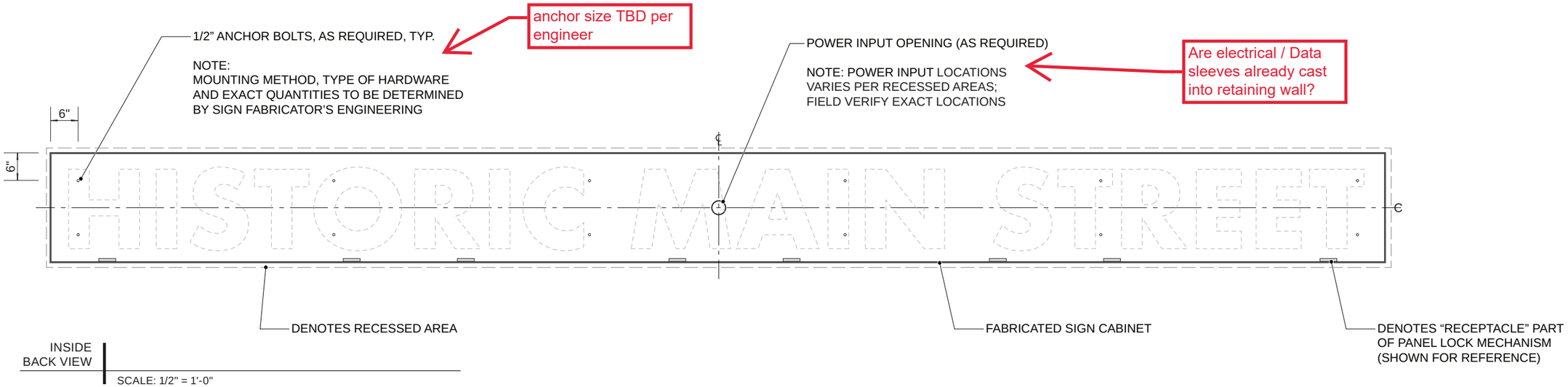
CLIENT
David Evans and Associates

DATE
Aug 16, 2022

SHEET TITLE
Main Street
Site Elevation Detail

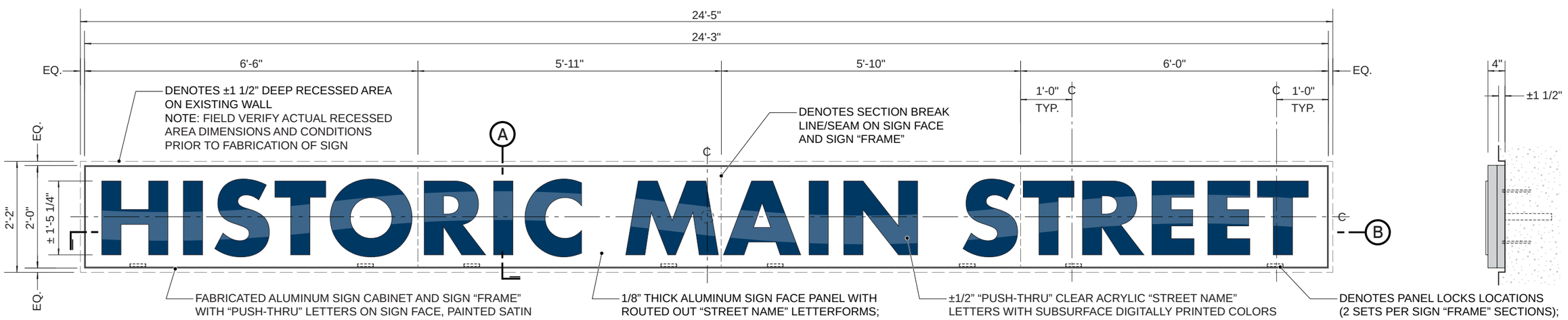
SHEET #
5.0

STREET NAME PANEL



INSIDE BACK VIEW

SCALE: 1/2" = 1'-0"



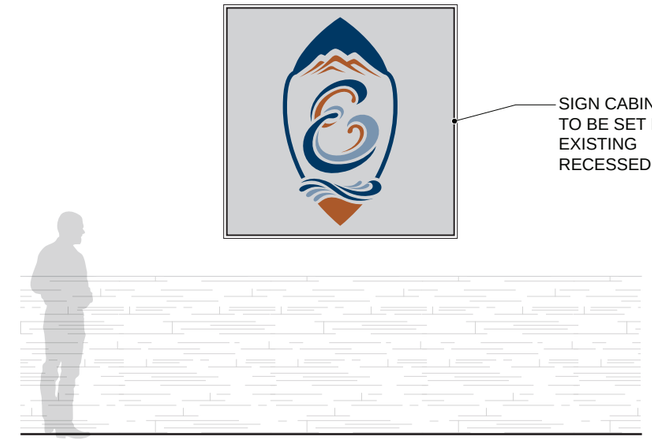
ELEVATION

SCALE: 1/2" = 1'-0"

SIDE VIEW

SCALE: 1/2" = 1'-0"

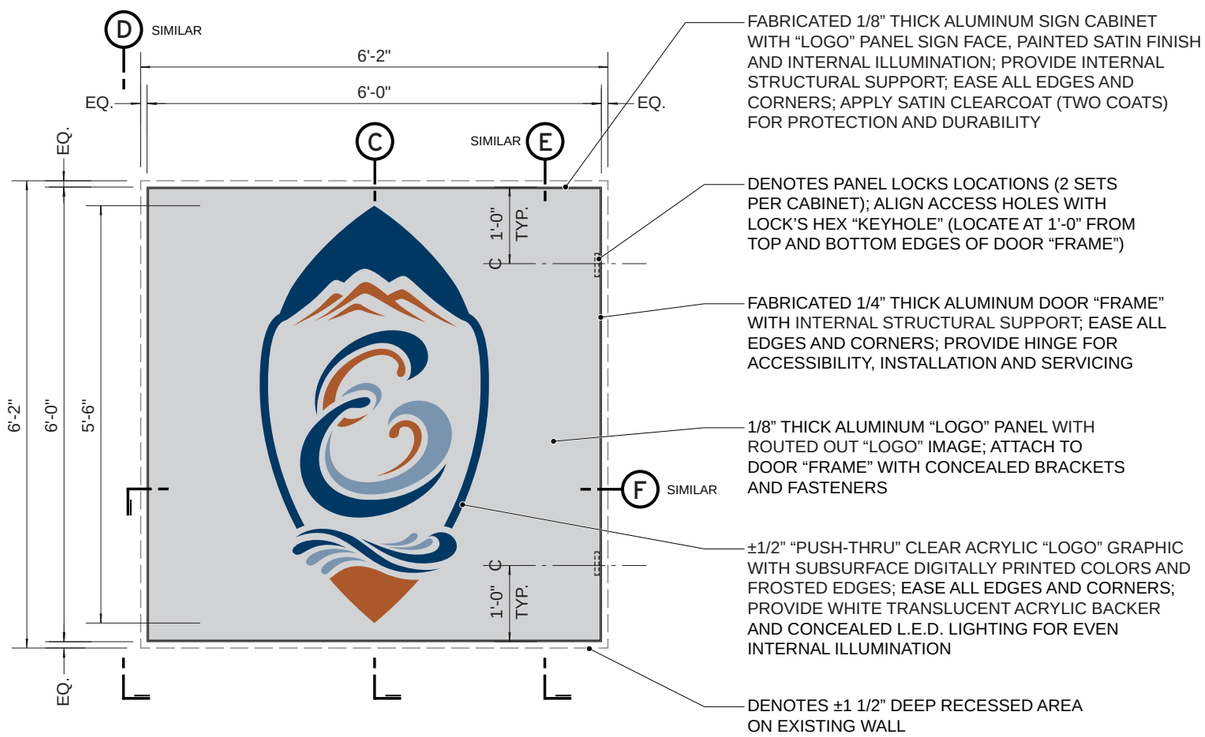
LOGO PANEL



LOCATION ELEVATION

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

Are electrical / Data sleeves already cast into retaining wall?

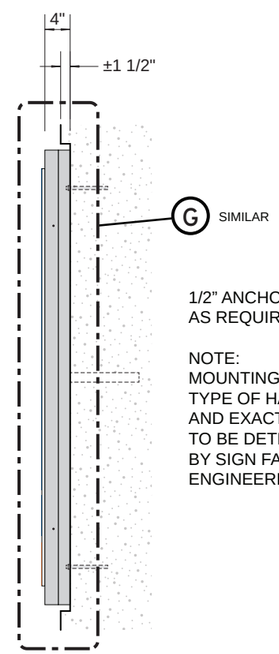


FRONT VIEW

QUANTITY: 2

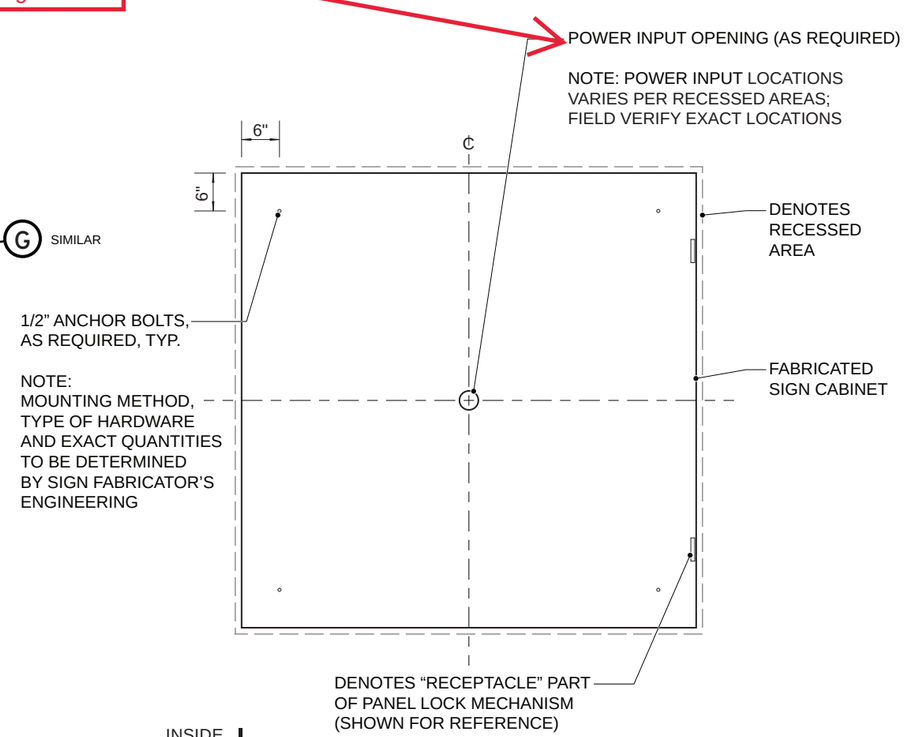
SCALE: 1/2" = 1'-0"

NOTE: FIELD VERIFY ACTUAL RECESSED AREA DIMENSIONS AND CONDITIONS PRIOR TO FABRICATION OF SIGN



SIDE VIEW

SCALE: 1/2" = 1'-0"



INSIDE BACK VIEW

SCALE: 1/2" = 1'-0"

ART PANEL

Need to determine / suggest how to makle sure graphics are visible when illuminated.
- Second Surface vinyl / colors for graphic?
- Is the background area outside of graphics intened to be illuminated?
- If not - do we need to perforate the backgrond area?
- Colors?

How do graphics take shape during the day? Must be painted multi colors.

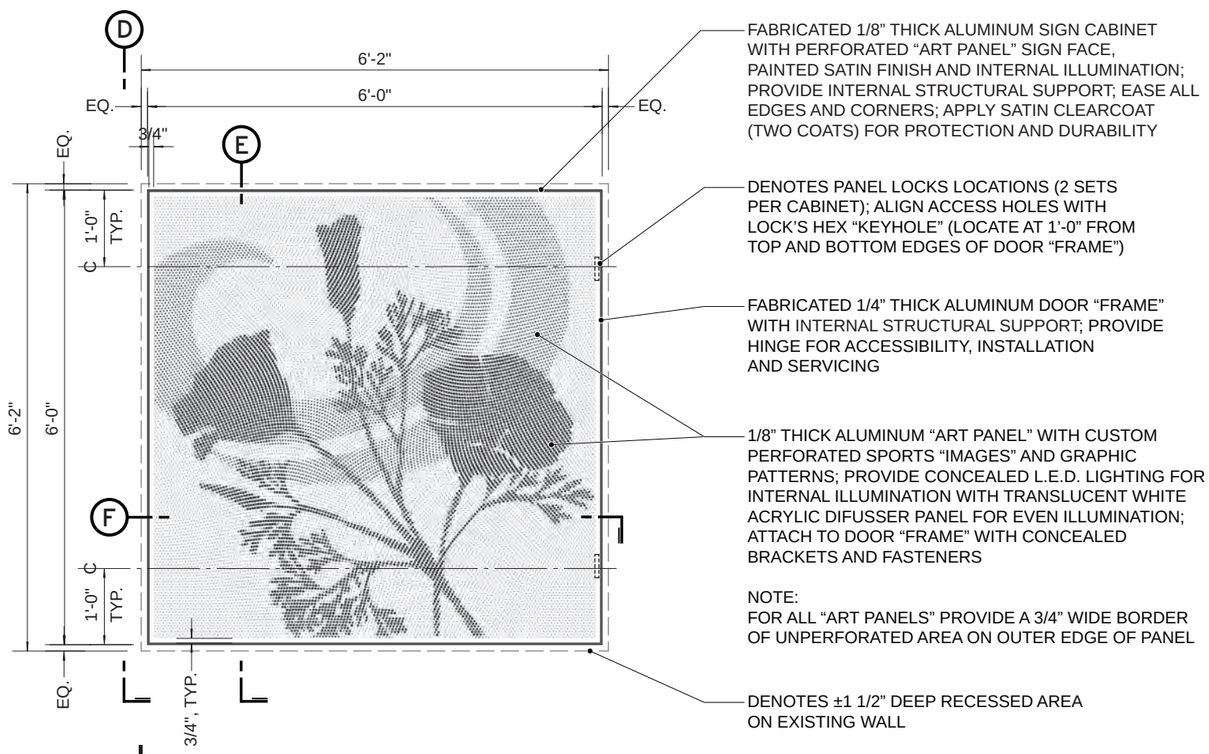
What size are perforations? 1/8" / 3/16" / 1/4"

Need to find a source for cust6om perforation ... RNS waterjet? Punch? Laser?

LOCATION ELEVATION

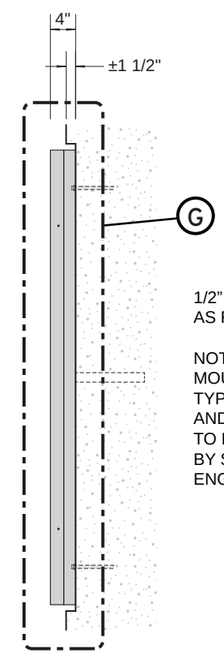
SCALE: 1/4" = 1'-0"

Are electrical / Data sleeves already cast into retaining wall?



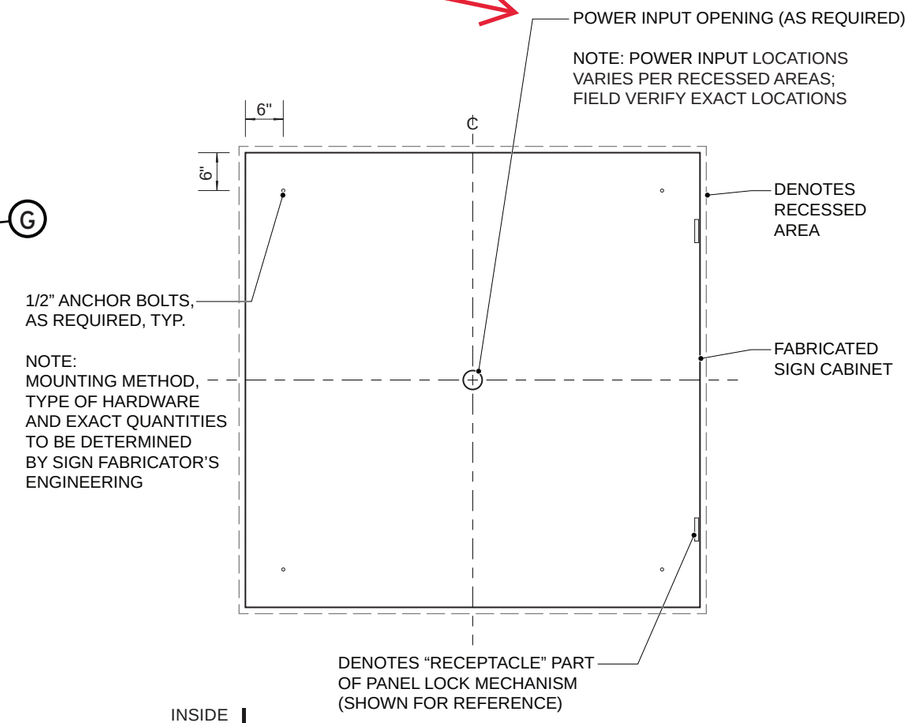
FRONT VIEW

SCALE: 1/2" = 1'-0"



SIDE VIEW

SCALE: 1/2" = 1'-0"



INSIDE BACK VIEW

SCALE: 1/2" = 1'-0"

Hunt
88 North Fair Oaks #105
Pasadena, CA 91103
626.793.7847
HUNT DESIGN
DAVID EVANS AND ASSOCIATES INC.

PROJECT
Lake Elsinore Underpass Graphics

CLIENT
David Evans and Associates

DATE
Aug 16, 2022

SHEET TITLE
Main Street
Art Panel Sign Elevation

SHEET #
8.0

ART PANEL

A - GRAND PRIX

B - HISTORIC STREETLAMP

C - THE CHIMES

E - FISHING

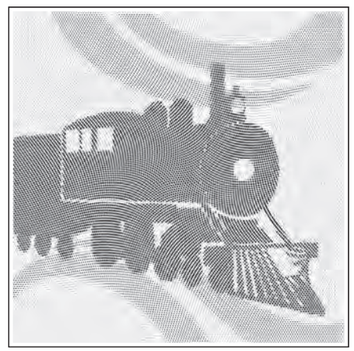
Need to determine / suggest how to makle sure graphics are visible when illuminated.
- Second Surface vinyl / colors for graphic?
- Is the background area outside of graphics intened to be illuminated?
- If not - do we need to perforate the backgrond area?
- Colors?

How do graphics take shape during the day? Must be painted multi colors.

What size are perforations? 1/8" / 3/16" / 1/4"

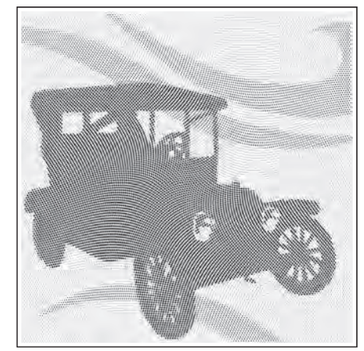
Need to find a source for cust6om perforation ... RNS waterjet? Punch? Laser?

F - POPPIES



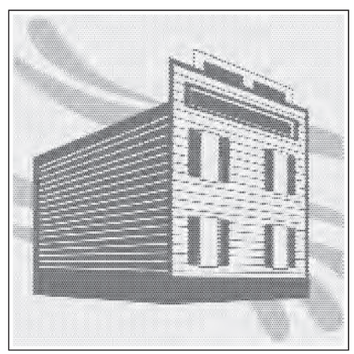
G - TRAIN

H - WATER FOWL

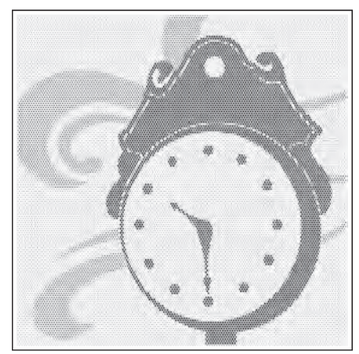


I - CAR SHOW

J - BOATING



K - ARMORY



L - CLOCK

M - OLIVES

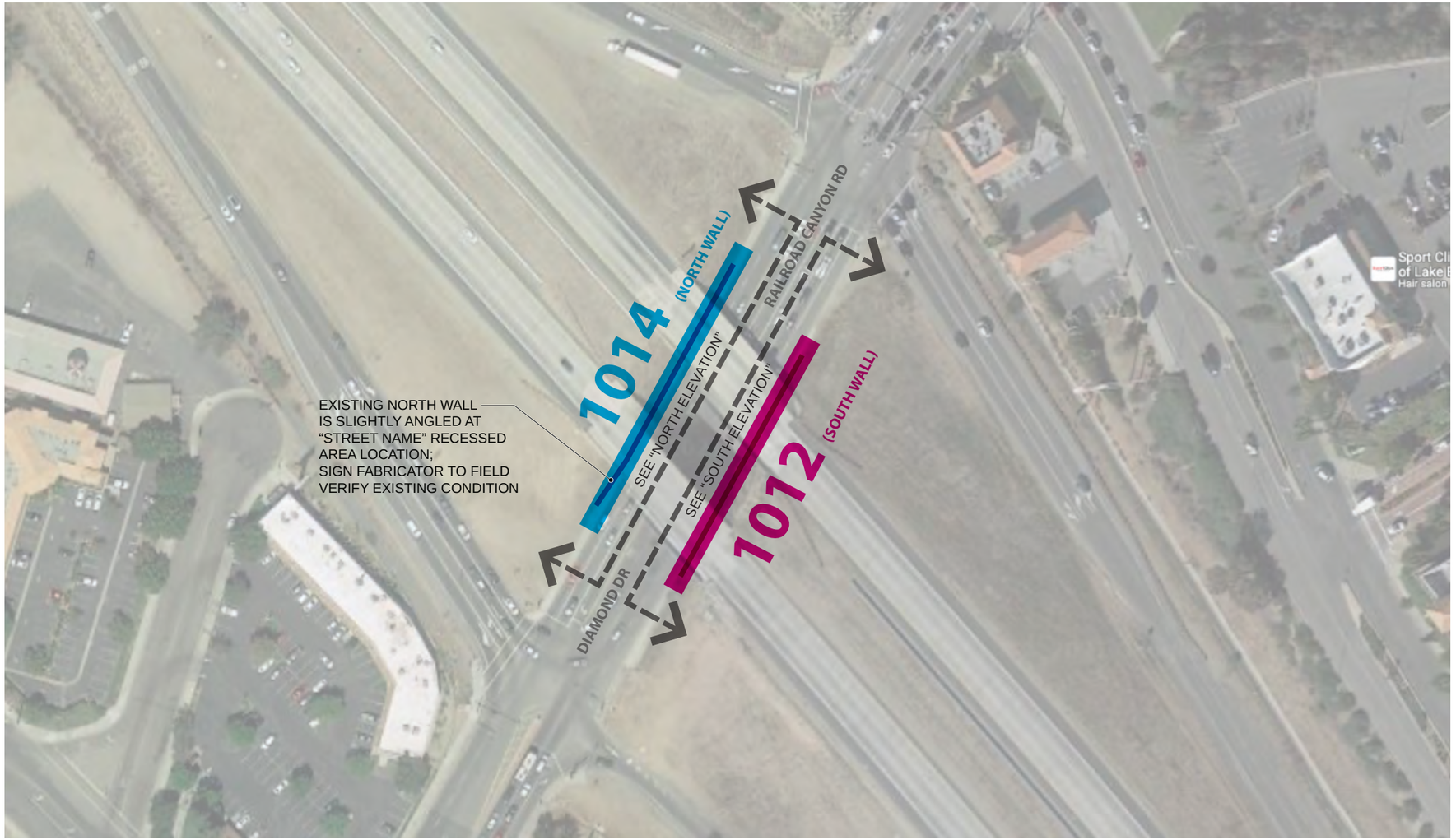
D - LE LOGO QUANTITY: 2

ART PANEL LAYOUTS

SCALE: 3/8" = 1'-0"

LAKE ELSINORE
RAILROAD CANYON INTERCHANGE
UNDERPASS GRAPHICS

Chapter 2



SITE PLAN

SCALE: N.T.S.

Hunt
88 North Fair Oaks #105
Pasadena, CA 91103
626.793.7847
HUNT DESIGN

DAVID EVANS AND ASSOCIATES INC.

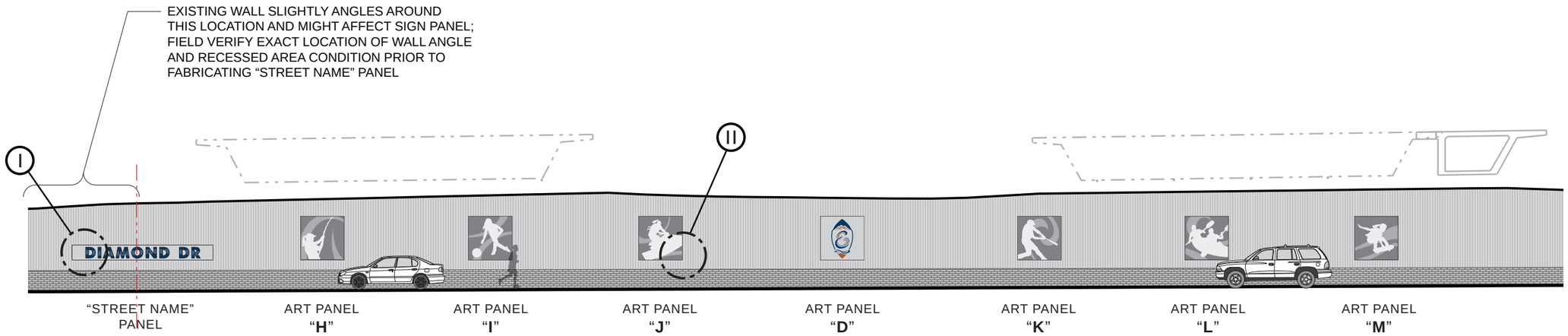
PROJECT
Lake Elsinore Underpass Graphics

CLIENT
David Evans and Associates

DATE
Aug 16, 2022

SHEET TITLE
Railroad Canyon
Site Plan

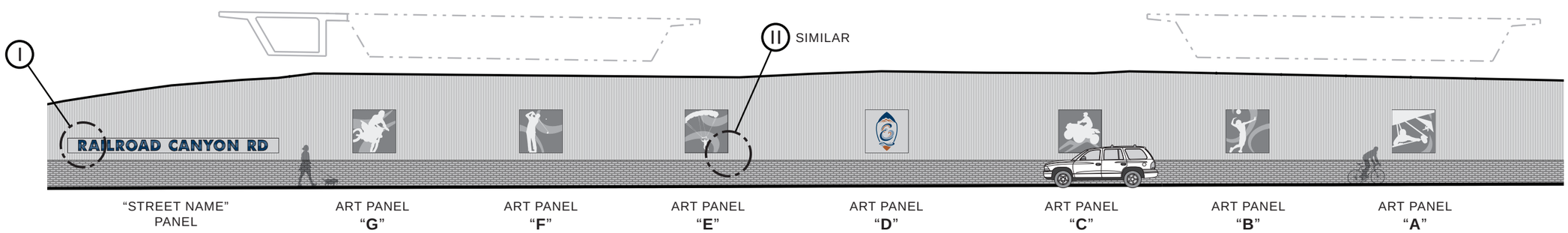
SHEET #
11.0



NORTH ELEVATION

RETAINING WALL **1014** (NORTH WALL)

SCALE: 1/16" = 1'-0"



SOUTH ELEVATION

RETAINING WALL **1012** (SOUTH WALL)

SCALE: 1/16" = 1'-0"

Hunt
88 North Fair Oaks #105
Pasadena, CA 91103
626.793.7847
HUNT DESIGN

DAVID EVANS AND ASSOCIATES INC.

PROJECT
Lake Elsinore Underpass Graphics

CLIENT
David Evans and Associates

DATE
Aug 16, 2022

SHEET TITLE
Railroad Canyon Site Elevation

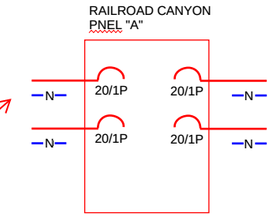
SHEET #
12.0

survey angle in wall and suggest seam location - Cannot seam mid letter.

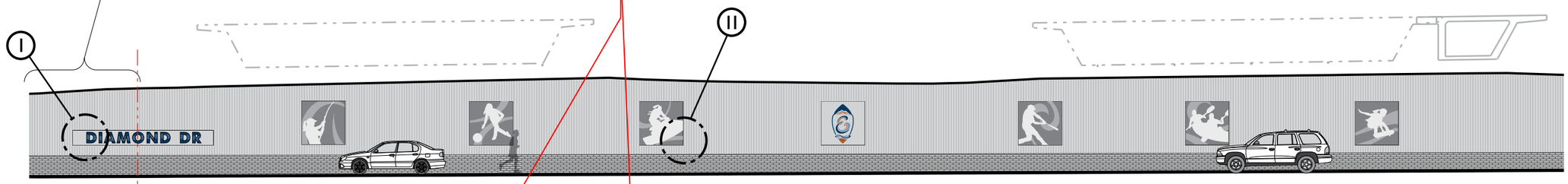
EXISTING WALL SLIGHTLY ANGLES AROUND THIS LOCATION AND MIGHT AFFECT SIGN PANEL; FIELD VERIFY EXACT LOCATION OF WALL ANGLE AND RECESSED AREA CONDITION PRIOR TO FABRICATING "STREET NAME" PANEL

NETWORK CABLE SHALL BE SEPARATED FROM POWER CONDUCTOR PER NEC CODE OR USE THE SAME CABLE INSULATION RATING AS THE POWER CONDUCTORS.

NOTE:
USE PHOTOELECTRIC UNIT (PEU) TO CONTROL ART SIGN POWER PER CALTRANS DETAIL C ON ES-2E, TYPICAL.



NOTE:
USE PHOTOELECTRIC UNIT (PEU) TO CONTROL ART SIGN POWER PER CALTRANS DETAIL C ON ES-2E, TYPICAL.

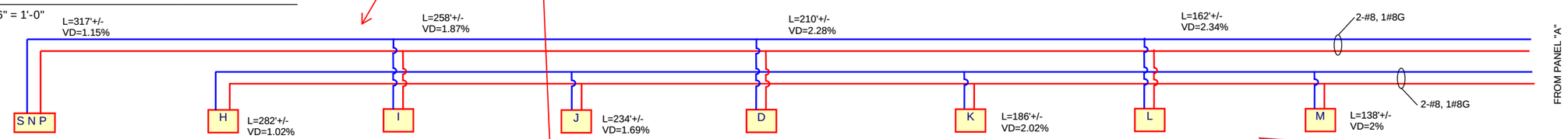


"STREET NAME" PANEL | ART PANEL "H" | ART PANEL "I" | ART PANEL "J" | ART PANEL "D" | ART PANEL "K" | ART PANEL "L" | ART PANEL "M"

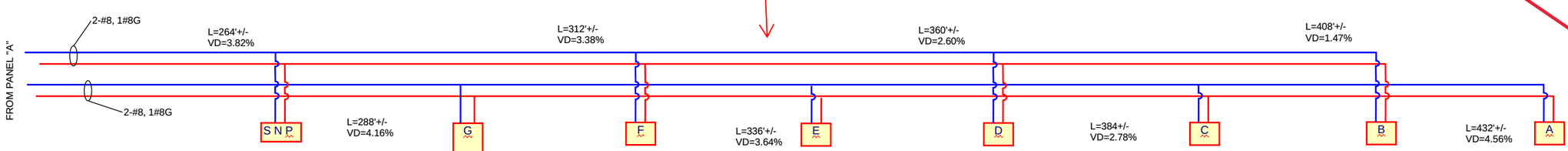
NORTH ELEVATION

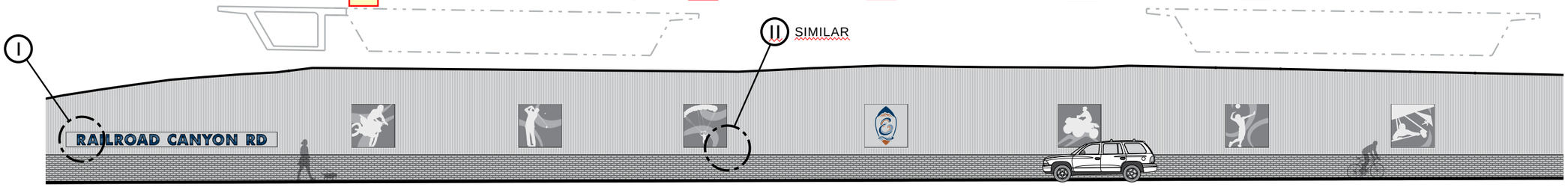
RETAINING WALL **1014** (NORTH WALL)

SCALE: 1/16" = 1'-0"



Are electrical / Data sleeves already cast into retaining wall?





"STREET NAME" PANEL | ART PANEL "G" | ART PANEL "F" | ART PANEL "E" | ART PANEL "D" | ART PANEL "C" | ART PANEL "B" | ART PANEL "A"

SOUTH ELEVATION

RETAINING WALL **1012** (SOUTH WALL)

SCALE: 1/16" = 1'-0"

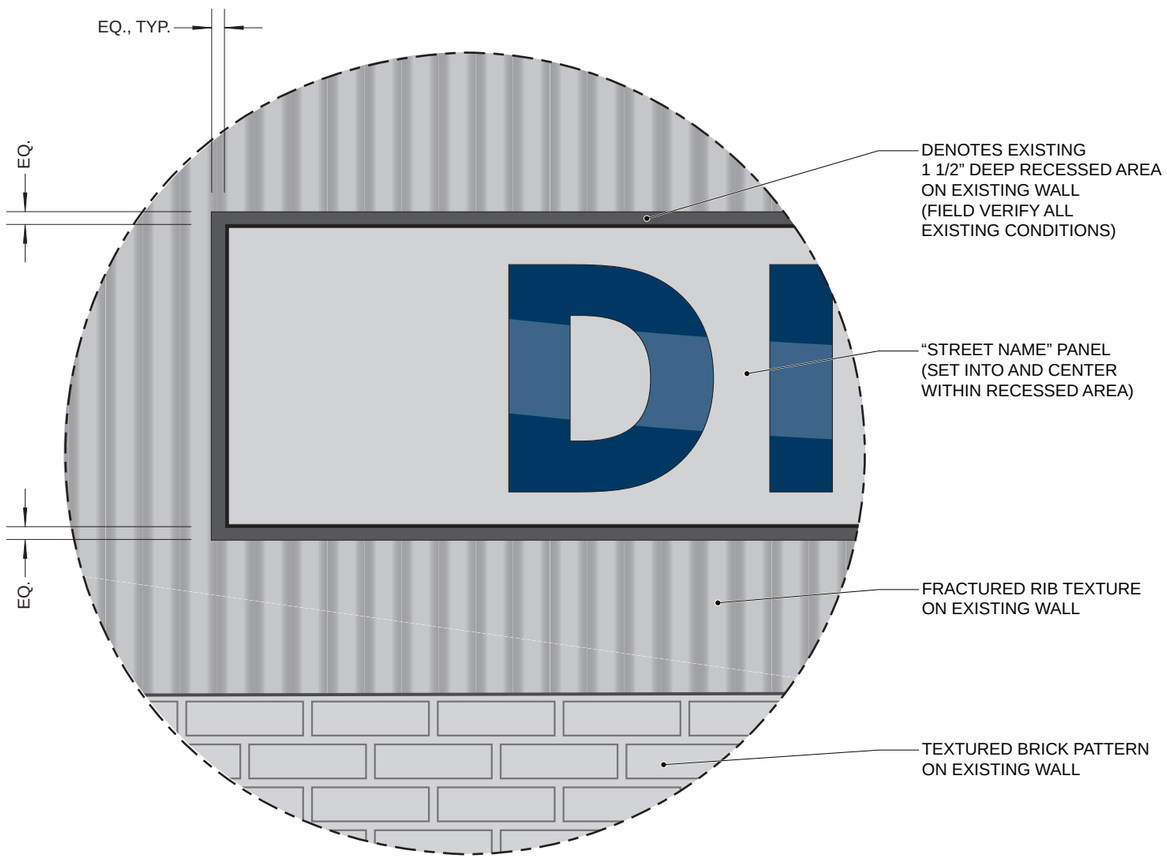
Hunt
88 North Fair Oaks #105
Pasadena, CA 91103
626.793.7847
HUNT DESIGN
DAVID EVANS AND ASSOCIATES INC.

PROJECT: Lake Elsinore Underpass Graphics

CLIENT: David Evans and Associates

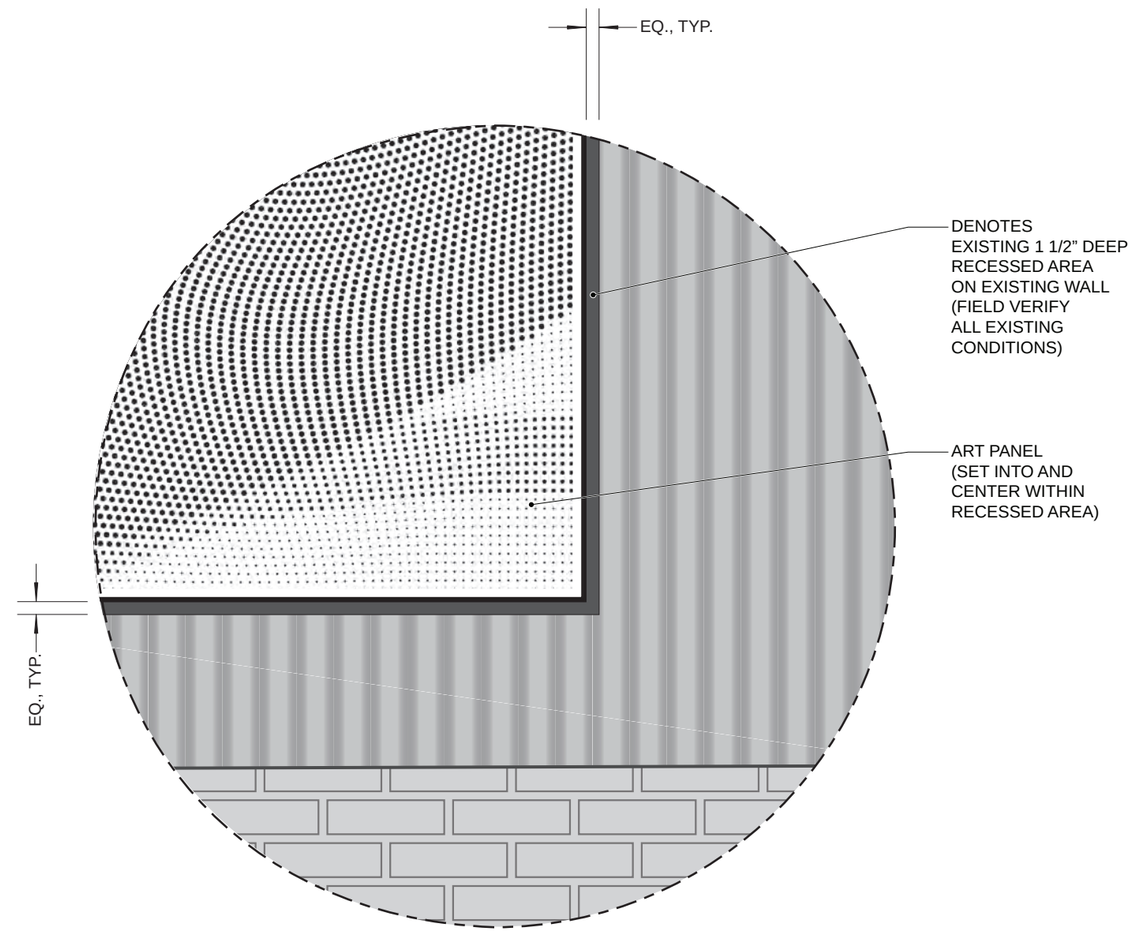
DATE: Aug 16, 2022

SHEET TITLE: Railroad Canyon Wire Diagram



SITE ELEVATION DETAIL VIEW I

SCALE: 1" = 1'-0"



SITE ELEVATION DETAIL VIEW II

SCALE: 1" = 1'-0"

Hunt
88 North Fair Oaks #105
Pasadena, CA 91103
626.793.7847
HUNT DESIGN

DAVID EVANS AND ASSOCIATES INC.

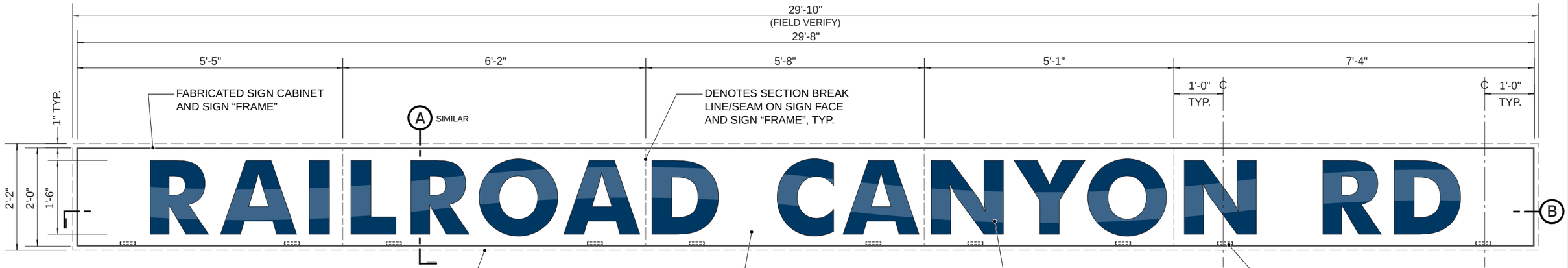
PROJECT
Lake Elsinore Underpass Graphics

CLIENT
David Evans and Associates

DATE
Aug 16, 2022

SHEET TITLE
Railroad Canyon
Site Elevation Detail

STREET NAME PANEL



FABRICATED SIGN CABINET AND SIGN "FRAME"

DENOTES SECTION BREAK LINE/SEAM ON SIGN FACE AND SIGN "FRAME", TYP.

DENOTES ±1 1/2" DEEP RECESSED AREA ON EXISTING WALL

NOTE: FIELD VERIFY ACTUAL RECESSED AREA DIMENSIONS AND CONDITIONS PRIOR TO FABRICATION OF SIGN

SIGN FACE PANEL WITH ROUTED OUT "STREET NAME" LETTERFORMS; ATTACH TO SIGN "FRAME"

"PUSH-THRU" CLEAR ACRYLIC "STREET NAME" LETTERS

FONT TYPE: **FUTURA BT BOLD**

DENOTES PANEL LOCKS LOCATIONS (2 SETS PER SIGN "FRAME" SECTIONS)

ADDITIONAL SIGN CABINET

SCALE: 1/2" = 1'-0"

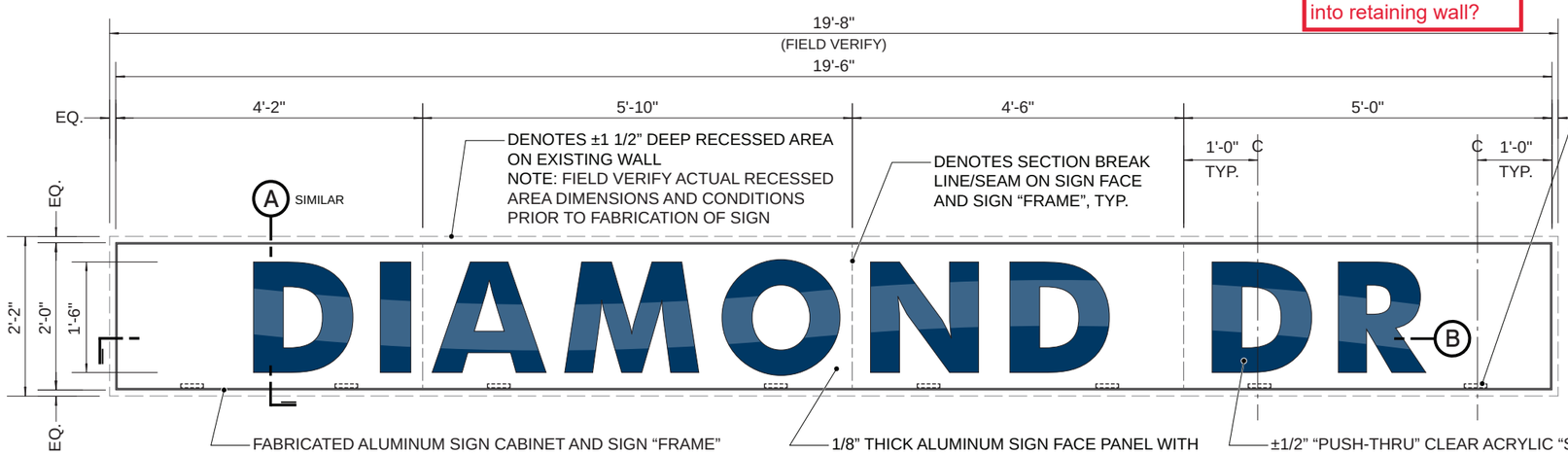
Panel lock specs per McMaster Carr cut sheet.

Are electrical / Data sleeves already cast into retaining wall?

DENOTES PANEL LOCKS LOCATIONS (2 SETS PER SIGN "FRAME" SECTIONS); ALIGN ACCESS HOLES WITH LOCK'S HEX "KEYHOLES" (LOCATE AT 1'-0" FROM LEFT AND RIGHT EDGES OF SIGN "FRAMES")

POWER INPUT OPENING (QUANTITY AS REQUIRED)

NOTE: POWER INPUT LOCATIONS VARIES PER RECESSED AREAS; FIELD VERIFY EXACT LOCATIONS



DENOTES ±1 1/2" DEEP RECESSED AREA ON EXISTING WALL
NOTE: FIELD VERIFY ACTUAL RECESSED AREA DIMENSIONS AND CONDITIONS PRIOR TO FABRICATION OF SIGN

DENOTES SECTION BREAK LINE/SEAM ON SIGN FACE AND SIGN "FRAME", TYP.

FABRICATED ALUMINUM SIGN CABINET AND SIGN "FRAME" WITH "PUSH-THRU" LETTERS ON SIGN FACE, PAINTED SATIN FINISH AND INTERNAL ILLUMINATION; PROVIDE INTERNAL STRUCTURAL SUPPORT; SIGN "FRAME" TO BE HINGED FOR ACCESSIBILTY AND INSTALLATION; EASE ALL EDGES AND CORNERS; APPLY SATIN CLEARCOAT (TWO COATS) FOR PROTECTION AND DURABILITY

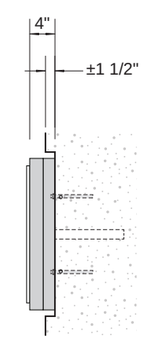
1/8" THICK ALUMINUM SIGN FACE PANEL WITH ROUTED OUT "STREET NAME" LETTERFORMS; ATTACH TO SIGN "FRAME" WITH CONCEALED BRACKETS AND COUNTERSUNK FASTENERS

±1/2" "PUSH-THRU" CLEAR ACRYLIC "STREET NAME" LETTERS WITH SUBSURFACE DIGITALLY PRINTED COLORS AND FROSTED EDGES; EASE ALL EDGES AND CORNERS; PROVIDE WHITE TRANSLUCENT ACRYLIC BACKER AND CONCEALED L.E.D. LIGHTING FOR EVEN INTERNAL ILLUMINATION

FONT TYPE: **FUTURA BT BOLD**

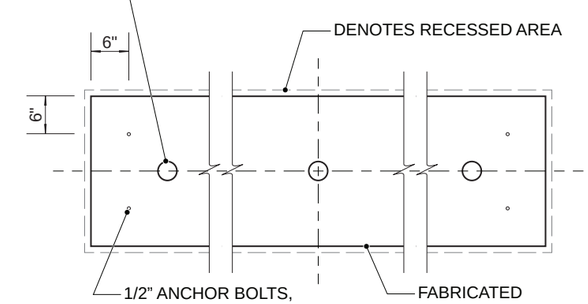
ELEVATION

SCALE: 1/2" = 1'-0"



SIDE VIEW

SCALE: 1/2" = 1'-0"



DENOTES RECESSED AREA

1/2" ANCHOR BOLTS, AS REQUIRED, TYP.

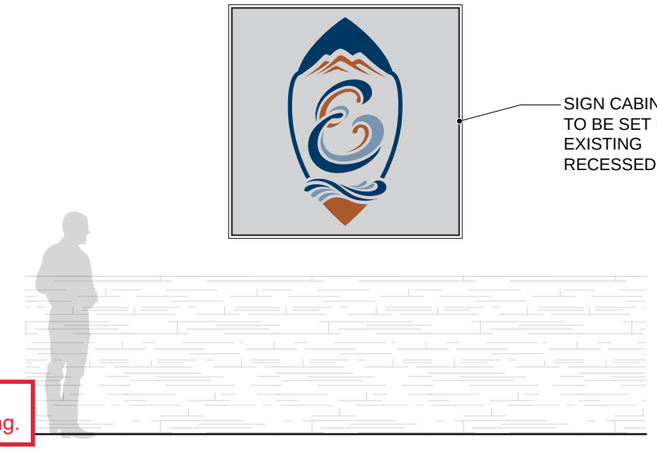
FABRICATED SIGN CABINET

NOTE: MOUNTING METHOD, TYPE OF HARDWARE AND EXACT QUANTITIES TO BE DETERMINED BY SIGN FABRICATOR'S ENGINEERING

INTERNAL BACK VIEW

SCALE: 1/2" = 1'-0"

LOGO PANEL

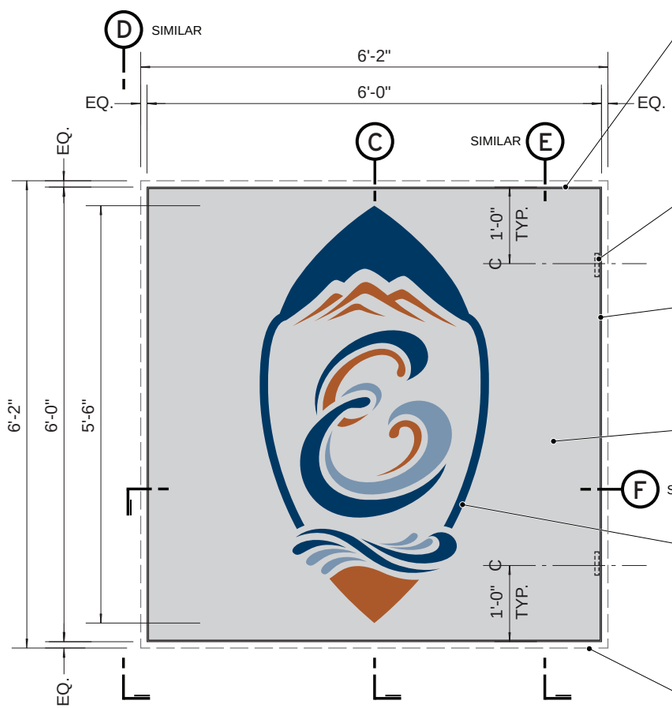


LOCATION ELEVATION

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

std framing methods - concealed hinge / alum framing.

Are electrical / Data sleeves already cast into retaining wall?



FABRICATED 1/8" THICK ALUMINUM SIGN CABINET WITH "LOGO" PANEL SIGN FACE, PAINTED SATIN FINISH AND INTERNAL ILLUMINATION; PROVIDE INTERNAL STRUCTURAL SUPPORT; EASE ALL EDGES AND CORNERS; APPLY SATIN CLEARCOAT (TWO COATS) FOR PROTECTION AND DURABILITY

DENOTES PANEL LOCKS LOCATIONS (2 SETS PER CABINET); ALIGN ACCESS HOLES WITH LOCK'S HEX "KEYHOLE" (LOCATE AT 1'-0" FROM TOP AND BOTTOM EDGES OF DOOR "FRAME")

FABRICATED 1/4" THICK ALUMINUM DOOR "FRAME" WITH INTERNAL STRUCTURAL SUPPORT; EASE ALL EDGES AND CORNERS; PROVIDE HINGE FOR ACCESSIBILITY, INSTALLATION AND SERVICING

1/8" THICK ALUMINUM "LOGO" PANEL WITH ROUTED OUT "LOGO" IMAGE; ATTACH TO DOOR "FRAME" WITH CONCEALED BRACKETS AND FASTENERS

±1/2" "PUSH-THRU" CLEAR ACRYLIC "LOGO" GRAPHIC WITH SUBSURFACE DIGITALLY PRINTED COLORS AND FROSTED EDGES; EASE ALL EDGES AND CORNERS; PROVIDE WHITE TRANSLUCENT ACRYLIC BACKER AND CONCEALED L.E.D. LIGHTING FOR EVEN INTERNAL ILLUMINATION

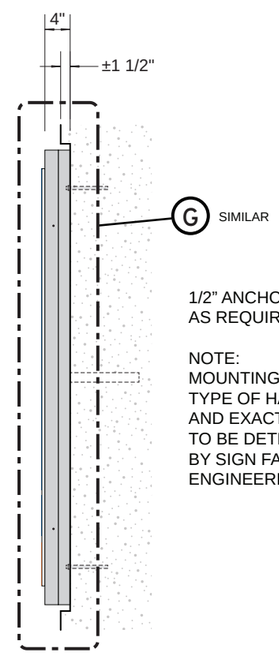
DENOTES ±1 1/2" DEEP RECESSED AREA ON EXISTING WALL

NOTE: FIELD VERIFY ACTUAL RECESSED AREA DIMENSIONS AND CONDITIONS PRIOR TO FABRICATION OF SIGN

FRONT VIEW

QUANTITY: 2

SCALE: 1/2" = 1'-0"

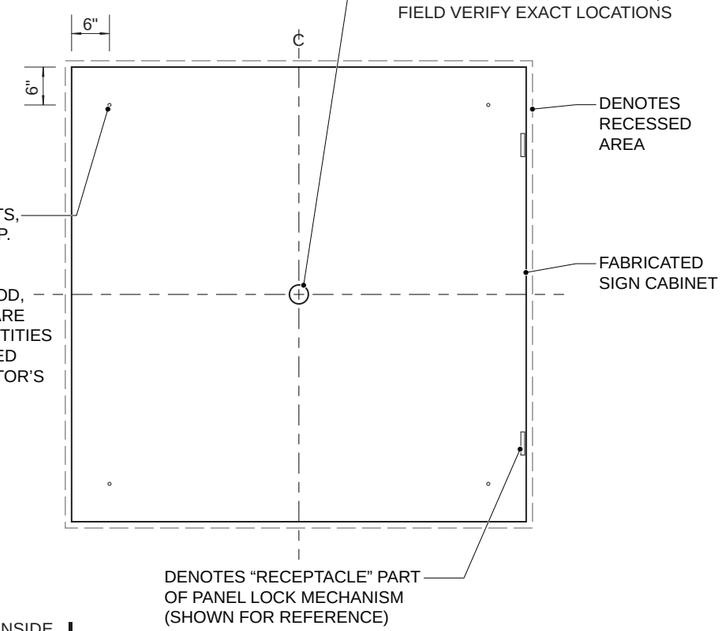


SIDE VIEW

SCALE: 1/2" = 1'-0"

POWER INPUT OPENING (AS REQUIRED)

NOTE: POWER INPUT LOCATIONS VARIES PER RECESSED AREAS; FIELD VERIFY EXACT LOCATIONS



DENOTES RECESSED AREA

1/2" ANCHOR BOLTS, AS REQUIRED, TYP.

NOTE: MOUNTING METHOD, TYPE OF HARDWARE AND EXACT QUANTITIES TO BE DETERMINED BY SIGN FABRICATOR'S ENGINEERING

FABRICATED SIGN CABINET

DENOTES "RECEPTACLE" PART OF PANEL LOCK MECHANISM (SHOWN FOR REFERENCE)

INSIDE BACK VIEW

SCALE: 1/2" = 1'-0"

Hunt

88 North Fair Oaks #105
Pasadena, CA 91103
626.793.7847

HUNT DESIGN

DAVID EVANS AND ASSOCIATES INC.

PROJECT
Lake Elsinore Underpass Graphics

CLIENT
David Evans and Associates

DATE
Aug 16, 2022

SHEET TITLE
Railroad Canyon
Logo Panel Sign Elevation

SHEET # 16 OF 38
16.0

ART PANEL

Need to determine / suggest how to makle sure graphics are visible when illuminated.
- Second Surface vinyl / colors for graphic?
- Is the background area outside of graphics intened to be illuminated?
- If not - do we need to perforate the backgrond area?
- Colors?

How do graphics take shape during the day? Must be painted multi colors.

What size are perforations? 1/8" / 3/16" / 1/4"

Need to find a source for cust6om perforation ... RNS waterjet? Punch? Laser?

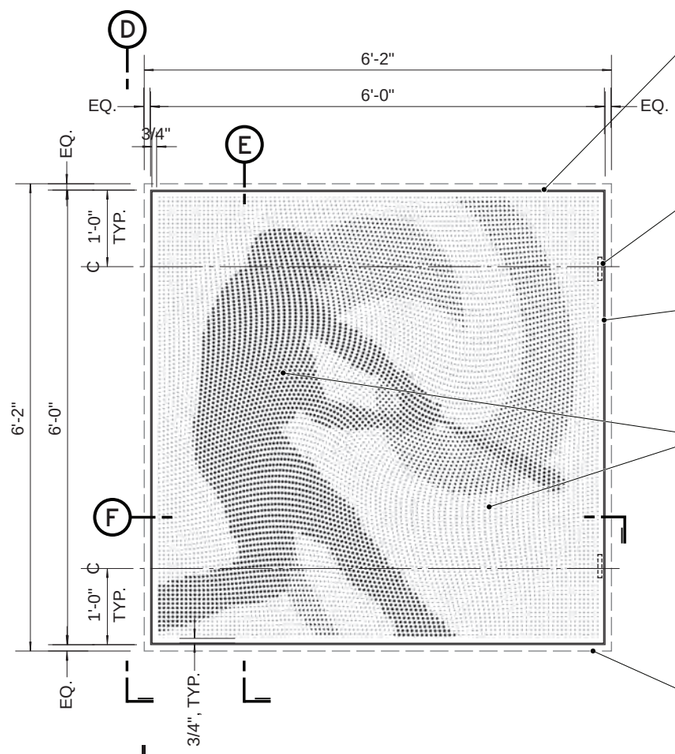
SIGN CABINET TO BE SET INTO EXISTING RECESSED AREA

LOCATION ELEVATION

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

std framing methods - concealed hinge / alum framing.

Are electrical / Data sleeves already cast into retaining wall?



FRONT VIEW

SCALE: 1/2" = 1'-0"

FABRICATED 1/8" THICK ALUMINUM SIGN CABINET WITH PERFORATED "ART PANEL" SIGN FACE, PAINTED SATIN FINISH AND INTERNAL ILLUMINATION; PROVIDE INTERNAL STRUCTURAL SUPPORT; EASE ALL EDGES AND CORNERS; APPLY SATIN CLEARCOAT (TWO COATS) FOR PROTECTION AND DURABILITY

DENOTES PANEL LOCKS LOCATIONS (2 SETS PER CABINET); ALIGN ACCESS HOLES WITH LOCK'S HEX "KEYHOLE" (LOCATE AT 1'-0" FROM TOP AND BOTTOM EDGES OF DOOR "FRAME")

FABRICATED 1/4" THICK ALUMINUM DOOR "FRAME" WITH INTERNAL STRUCTURAL SUPPORT; PROVIDE HINGE FOR ACCESSIBILITY, INSTALLATION AND SERVICING

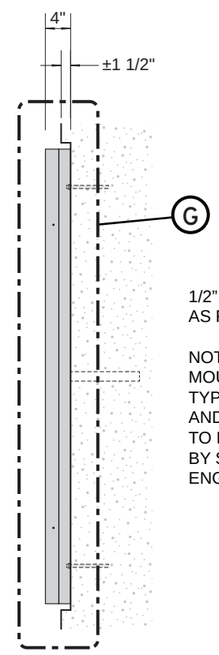
1/8" THICK ALUMINUM "ART PANEL" WITH CUSTOM PERFORATED SPORTS "IMAGES" AND GRAPHIC PATTERNS; PROVIDE CONCEALED L.E.D. LIGHTING FOR INTERNAL ILLUMINATION WITH TRANSLUCENT WHITE ACRYLIC DIFUSSER PANEL FOR EVEN ILLUMINATION; ATTACH TO DOOR "FRAME" WITH CONCEALED BRACKETS AND FASTENERS

routed panel source?

NOTE:
FOR ALL "ART PANELS" PROVIDE A 3/4" WIDE BORDER OF UNPERFORATED AREA ON OUTER EDGE OF PANEL

DENOTES ±1 1/2" DEEP RECESSED AREA ON EXISTING WALL

NOTE: FIELD VERIFY ACTUAL RECESSED AREA DIMENSIONS AND CONDITIONS PRIOR TO FABRICATION OF SIGN

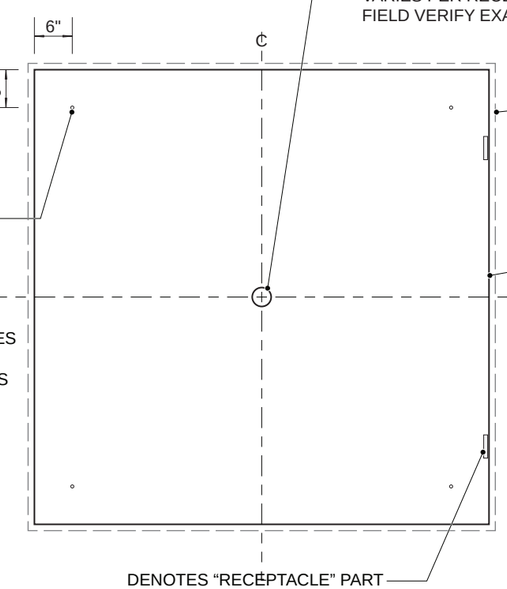


SIDE VIEW

SCALE: 1/2" = 1'-0"

POWER INPUT OPENING (AS REQUIRED)

NOTE: POWER INPUT LOCATIONS VARIES PER RECESSED AREAS; FIELD VERIFY EXACT LOCATIONS



DENOTES RECESSED AREA

1/2" ANCHOR BOLTS, AS REQUIRED, TYP.

NOTE:
MOUNTING METHOD, TYPE OF HARDWARE AND EXACT QUANTITIES TO BE DETERMINED BY SIGN FABRICATOR'S ENGINEERING

FABRICATED SIGN CABINET

DENOTES "RECEPTACLE" PART OF PANEL LOCK MECHANISM (SHOWN FOR REFERENCE)

INSIDE BACK VIEW

SCALE: 1/2" = 1'-0"

Hunt
88 North Fair Oaks #105
Pasadena, CA 91103
626.793.7847
HUNT DESIGN

DAVID EVANS AND ASSOCIATES INC.

PROJECT
Lake Elsinore Underpass Graphics

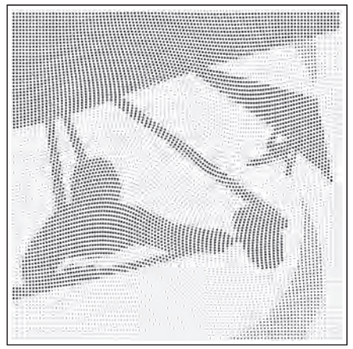
CLIENT
David Evans and Associates

DATE
Aug 16, 2022

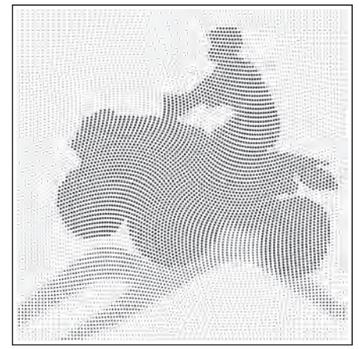
SHEET TITLE
Railroad Canyon
Art Panel Sign Elevation

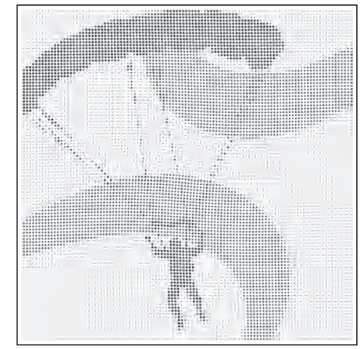
SHEET # 17 OF 38
17.0

ART PANEL


A - HANG GLIDING

B - VOLLEYBALL


C - ATV

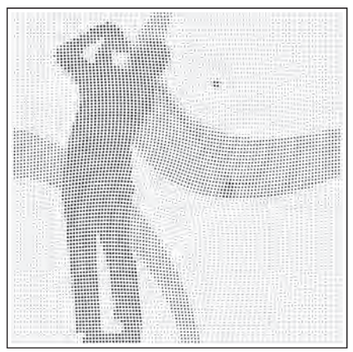

E - SKYDIVING

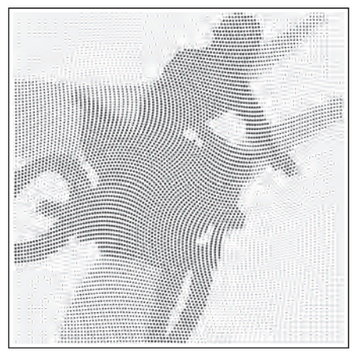
Need to determine / suggest how to makle sure graphics are visible when illuminated.
- Second Surface vinyl / colors for graphic?
- Is the background area outside of graphics intened to be illuminated?
- If not - do we need to perforate the backgrond area?
- Colors?

How do graphics take shape during the day? Must be painted multi colors.

What size are perforations? 1/8" / 3/16" / 1/4"

Need to find a source for cust6om perforation ... RNS waterjet? Punch? Laser?


F - GOLF

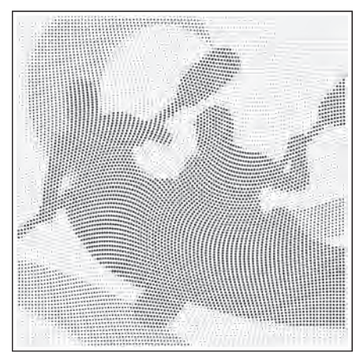

G - MOTOCROSS

H - FISHING

I - BOWLING

J - JET SKI

K - BASEBALL


L - KAYAKING

M - SKATEBOARDING

D - LE LOGO QUANTITY: 2

ART PANEL LAYOUTS

SCALE: 3/8" = 1'-0"

Hunt
88 North Fair Oaks #105
Pasadena, CA 91103
626.793.7847
HUNT DESIGN

DAVID EVANS AND ASSOCIATES INC.

PROJECT
Lake Elsinore Underpass Graphics

CLIENT
David Evans and Associates

DATE
Aug 16, 2022

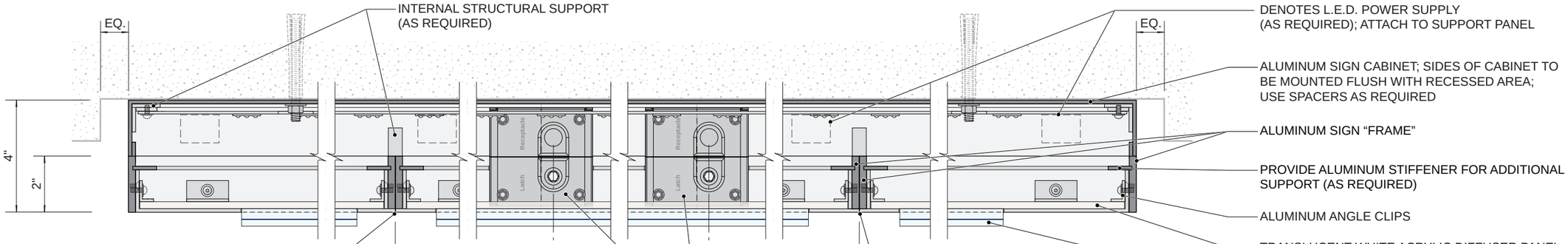
SHEET TITLE
Railroad Canyon
Art Panel Sign Layouts

SHEET #
18.0

SIGNAGE DETAILS & LIGHTING INFORMATION

Chapter 3

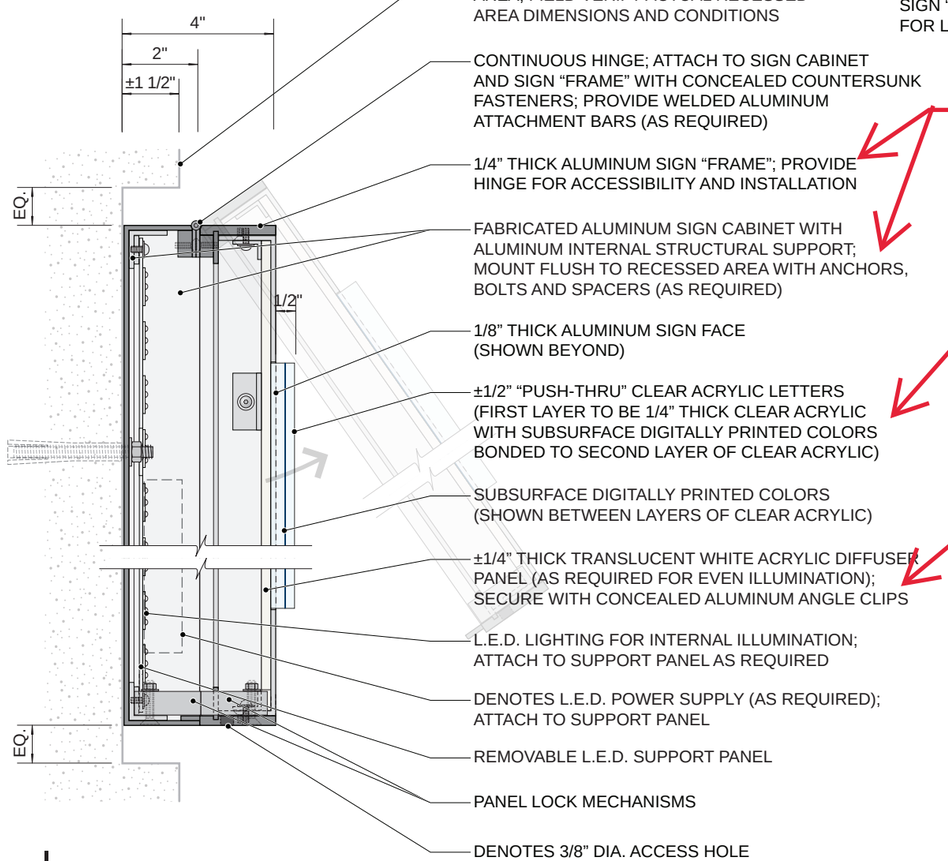
DETAILS



DETAIL B
SCALE: 3" = 1'-0"

Panel lock specs attached from Mcmaster Carr.

No "Sandwich" vinyl

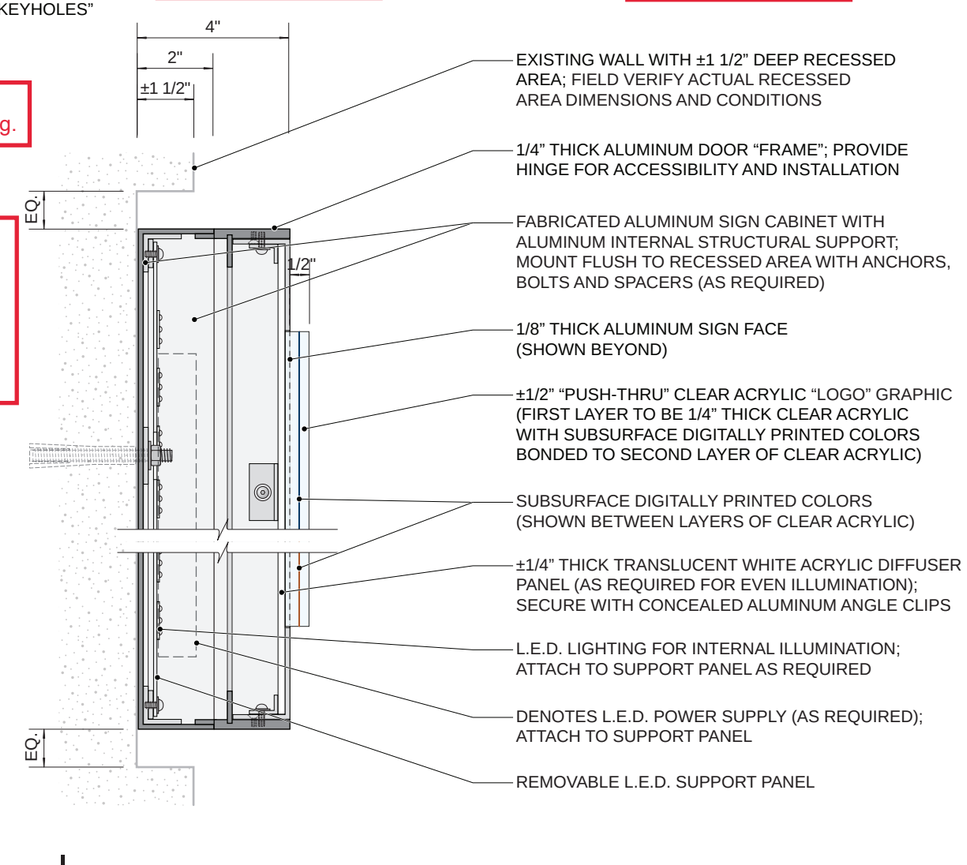


DETAIL A
SCALE: 3" = 1'-0"

std framing methods - concealed hinge / alum framing.

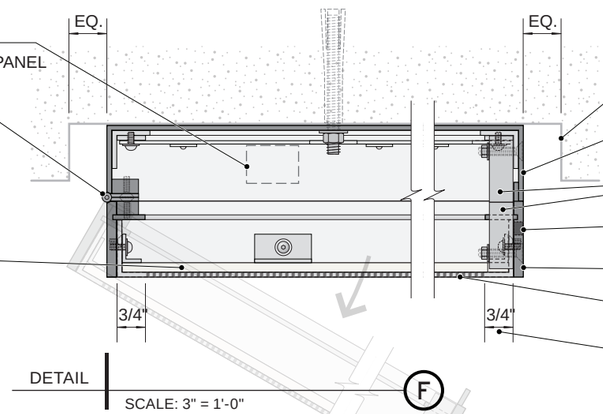
no "sandwich" vinyl between panels here - use std methods for push copy / 2nd surf vinyl make sure vinyl is two layer to prevent washing out.

Only use diffuser if necessary - eliminating would make cabinet much lighter?



DETAIL C
SCALE: 3" = 1'-0"

DETAILS



DENOTES L.E.D. POWER SUPPLY (AS REQUIRED); ATTACH TO SUPPORT PANEL

CONTINUOUS HINGE; ATTACH TO SIGN CABINET AND DOOR "FRAME" WITH CONCEALED COUNTERSUNK FASTENERS; PROVIDE WELDED ALUMINUM ATTACHMENT BARS (AS REQUIRED)

TRANSLUCENT WHITE ACRYLIC DIFFUSER PANEL

EXISTING WALL WITH ±1 1/2" DEEP RECESSED AREA; FIELD VERIFY ACTUAL RECESSED AREA DIMENSIONS AND CONDITIONS

ALUMINUM SIGN CABINET; SIDES OF CABINET TO BE MOUNTED FLUSH WITH RECESSED OPENING; USE SPACERS AS REQUIRED

PANEL LOCK MECHANISMS

per McMaster Specs

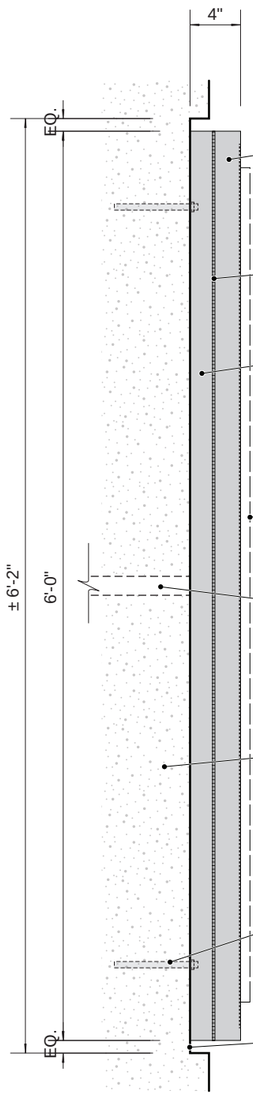
DENOTES 3/8" DIA. ACCESS HOLE

ALUMINUM DOOR "FRAME"

ALUMINUM "ART PANEL" WITH PERFORATED GRAPHICS

DENOTES 3/4" WIDE BORDER (UNPERFORATED)

DETAIL F
SCALE: 3" = 1'-0"



HINGED SIGN CABINET DOOR "FRAME" WITH PERFORATED "ART PANEL"

CONTINUOUS HINGE

SIGN CABINET; SIDES OF CABINET TO BE MOUNTED FLUSH WITH RECESSED AREA; USE SPACERS AS REQUIRED

DENOTES "PUSH-THRU" "LOGO", WHERE IT OCCURS

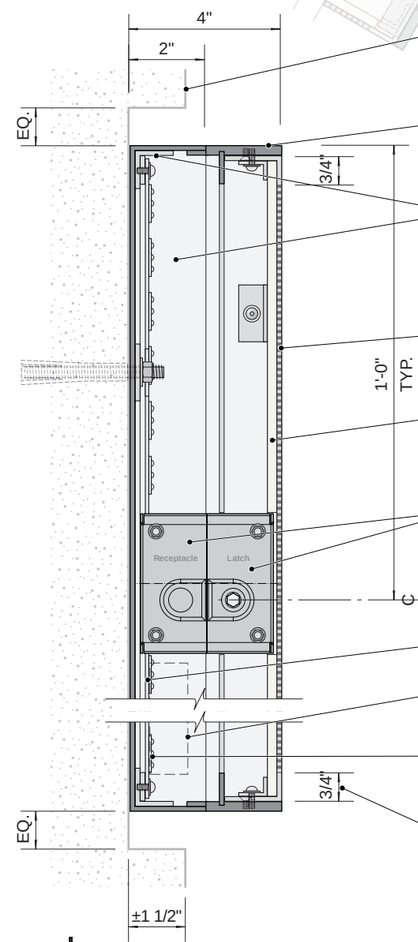
POWER INPUT; LOCATIONS VARY PER RECESSED AREAS; FIELD VERIFY EXACT LOCATIONS

EXISTING WALL

ANCHOR BOLTS, AS REQUIRED

RECESSED AREA; FIELD VERIFY ACTUAL DIMENSIONS AND CONDITIONS

DETAIL D
SCALE: 1" = 1'-0"



EXISTING WALL WITH ±1 1/2" DEEP RECESSED AREA; FIELD VERIFY ACTUAL RECESSED AREA DIMENSIONS AND CONDITIONS

Panel lock specs attached from Mcmaster Carr.

1/4" THICK ALUMINUM DOOR "FRAME"; PROVIDE HINGE FOR ACCESSIBILITY AND INSTALLATION

FABRICATED ALUMINUM SIGN CABINET WITH ALUMINUM INTERNAL STRUCTURAL SUPPORT; MOUNT FLUSH TO RECESSED AREA WITH ANCHORS, BOLTS AND SPACERS (AS REQUIRED)

std framing methods - concealed hinge / alum framing.

1/8" THICK ALUMINUM "ART PANEL" WITH PERFORATED GRAPHIC IMAGES

±1/4" THICK TRANSLUCENT WHITE ACRYLIC DIFFUSER PANEL (AS REQUIRED FOR EVEN ILLUMINATION)

Only use diffuser if necessary - eliminating would make cabinet much lighter?

PANEL LOCK MECHANISMS; PROVIDE TWO SETS PER CABINET (LOCATE NEAR TOP AND NEAR BOTTOM); PROVIDE 3/8" DIA. ACCESS HOLES ON SIDE OF DOOR "FRAME" FOR LOCKING/UNLOCKING LOCKS

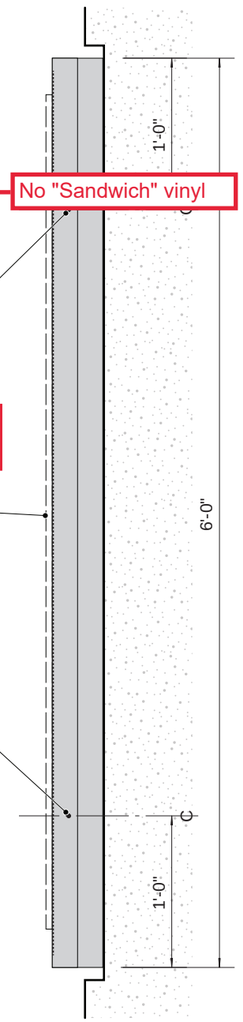
REMOVABLE L.E.D. SUPPORT PANEL

DENOTES L.E.D. POWER SUPPLY (AS REQUIRED); ATTACH TO SUPPORT PANEL

L.E.D. LIGHTING FOR INTERNAL ILLUMINATION; ATTACH TO SUPPORT PANEL AS REQUIRED

DENOTES 3/4" WIDE BORDER (UNPERFORATED AREA ON OUTER EDGE OF "ART PANEL")

DETAIL E
SCALE: 3" = 1'-0"



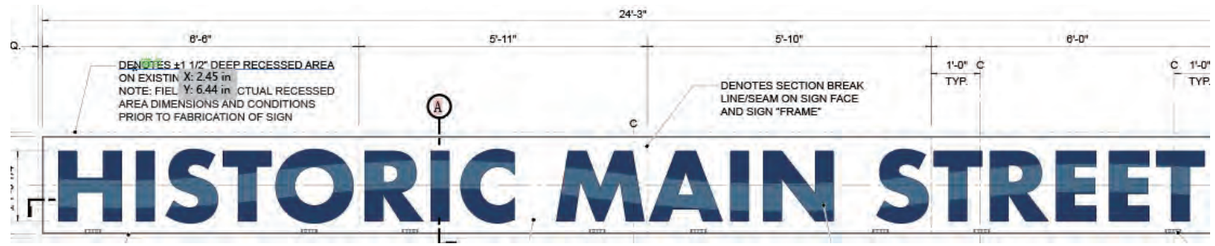
No "Sandwich" vinyl

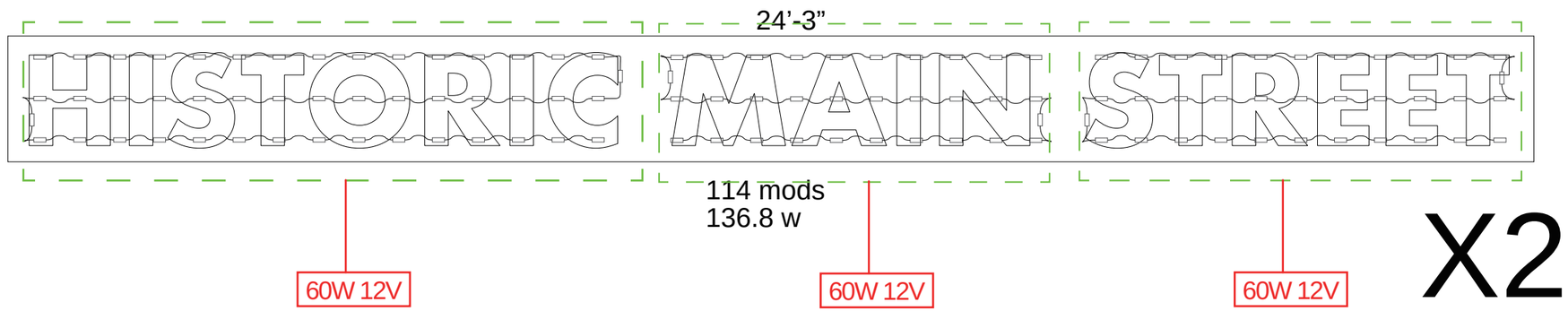
ACCESS HOLE FOR TOP PANEL LOCK LOCATION

DENOTES "PUSH-THRU" "LOGO", WHERE IT OCCURS

ACCESS HOLE FOR BOTTOM PANEL LOCK LOCATION

DETAIL G
SCALE: 1" = 1'-0"



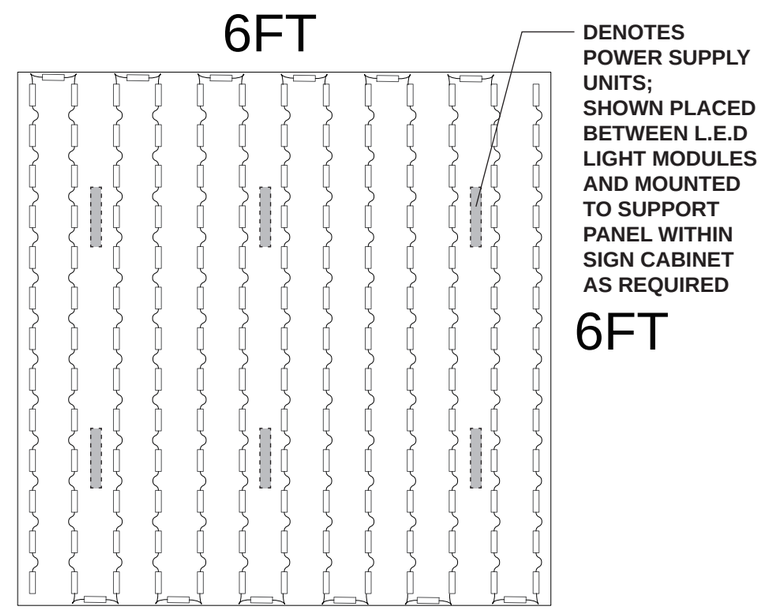


SELECTION CRITERIA			LED Modules
Code	QISM2003		
Modules Type	ANPRO 180 White 7500k		
Total Quantity	228	[PCS]	
Total Power Consumption	273.6	[Watts]	
Power Supplies 60w 12v	6	[PCS]	
MOUNTING BRACKETS		[PCS]	

G2G

ATTENTION:
QUANTITIES SHOWN BELOW ARE QUANTITIES NEEDED FOR THE JOB.
THIS NUMBER MAY NOT REFLECT QUANTITIES SOLD PER PACKAGE.
ALL PRODUCTS MUST BE SOLD BY PACKAGE QUANTITIES.
(exception : If job is being cut and sealed by G2G the quote will reflect quantities being used)

QISA1001 Double-End Male Connector 18in Wire (18AWG): 6PCS
QISA4001 Double-end Male Connector 7FT Jacketed Cable (18AWG): 6PCS
QISPS1001#2 G2G-QIS-60W-12VDC (V2): 6PCS



DENOTES POWER SUPPLY UNITS; SHOWN PLACED BETWEEN L.E.D LIGHT MODULES AND MOUNTED TO SUPPORT PANEL WITHIN SIGN CABINET AS REQUIRED

181 mods
289.6 w

X14

G2G

SELECTION CRITERIA		
Code	QISM5004	
Modules Type	Trico 2 RGBW	
Total Quantity	2534	[PCS]
Total Power Consumption	4054.4	[Watts]
Power Supplies 60w 12v	84	[PCS]
MOUNTING BRACKETS		[PCS]

LED Modules

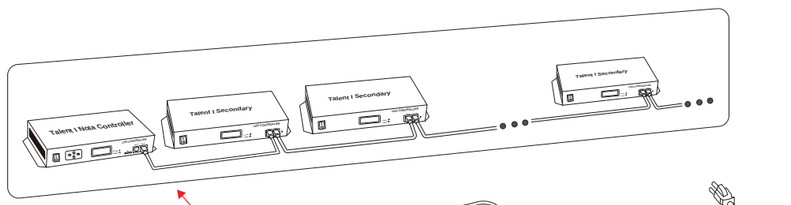
- ☐ Trico RGB (SPI)
- ☐ Trico RGB (DMX)
- ☐ Trico RGBW (DMX)
- ☐ Trico L (DMX)
- ☑ Trico 2 RGBW(DMX)

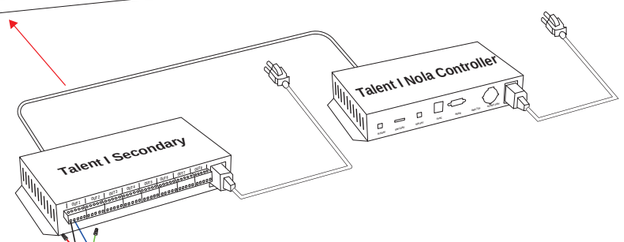
ATTENTION:
QUANTITIES SHOWN BELOW ARE QUANTITIES NEEDED FOR THE JOB.
THIS NUMBER MAY NOT REFLECT QUANTITIES SOLD PER PACKAGE.
ALL PRODUCTS MUST BE SOLD BY PACKAGE QUANTITIES.
(exception : If job is being cut and sealed by G2G the quote will reflect quantities being used)

Customized Talent I Nola & Cloud Sender: 1pcs
C1021 Talent I Nola Controller Receiver: 1pcs
C1004 Talent I Secondary: 2pcs
AFA1015 Ethernet network cable: 2pcs
QISA4001 Double-end Male Connector 7FT Jacketed Cable (18AWG): 84PCS
QISA2001 Single-end Male Connector 7FT Jacketed Cable (18AWG): 14PCS
QISPS1001#2 G2G-QIS-60W-12VDC (V2): 84PCS

NOTE:
QUANTITIES INDICATE REQUIREMENTS FOR MAIN STREET LOCATION.

Trico 2 DMX - Talent I Wiring Diagram Overview



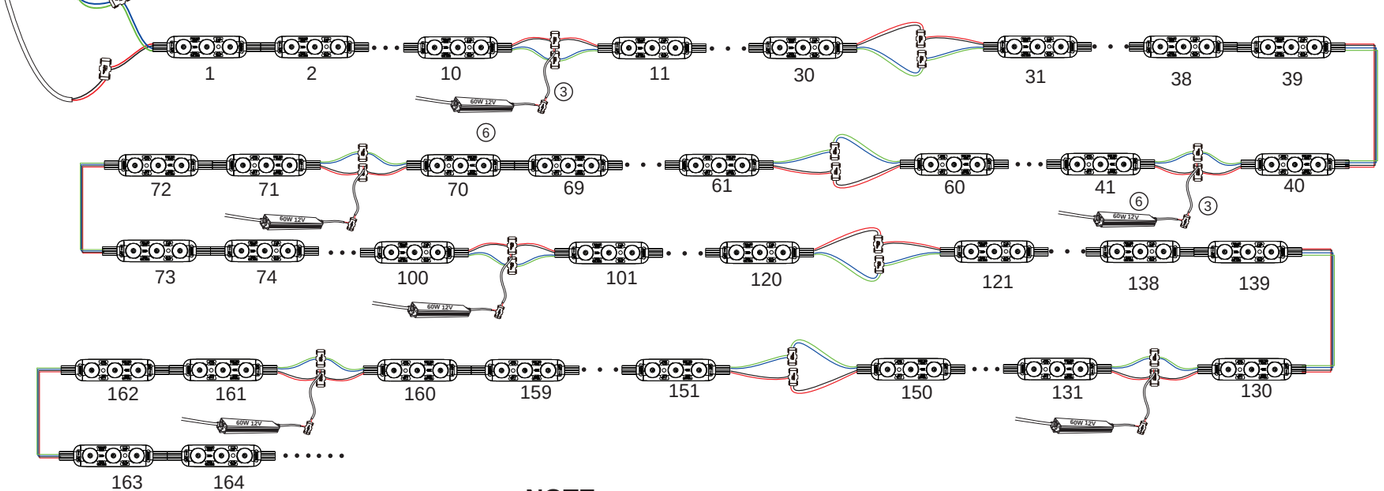


G2G

- ① QISA3001 Power Distribution Connector (PDC)
- ② QISA1001 Double-End Male Connector 18in Wire (18AWG)
- ③ QISA4001 Double-end Male Connector 7FT Jacketed Cable (18AWG)
- ④ QISA2001 Single-end Male Connector 7FT Jacketed Cable (18AWG)
- ⑤ QISA7001 Data Double-End Male Connector Wire (3FT, 18AWG)
- ⑥ QISPS1001#2 G2G-QIS-60W-12VDC (V2)

OR APPROVED EQUAL

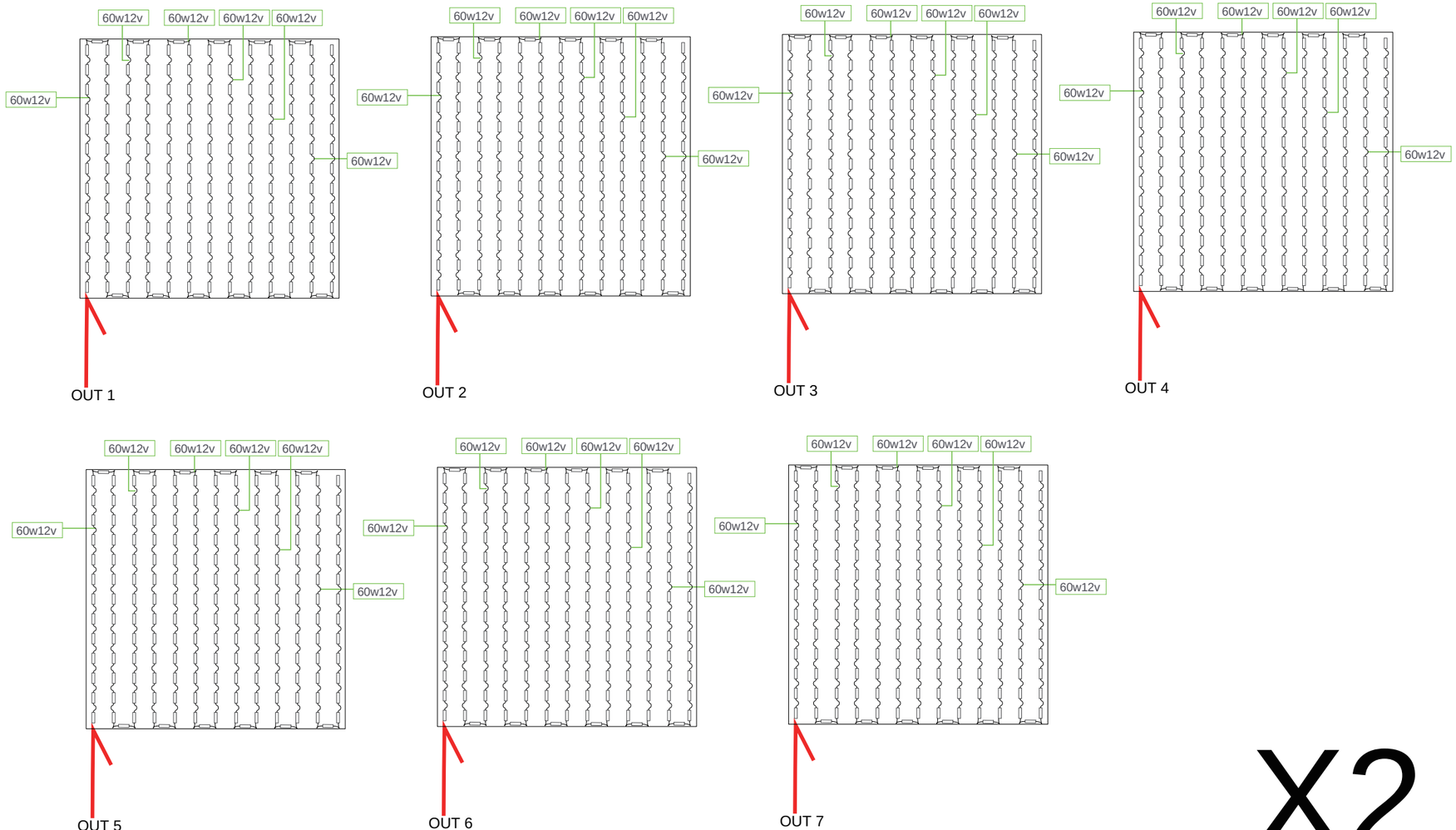
*Max 250PCS for each port
*Same Wiring Method For Each Port.



NOTE:
WIRING DIAGRAM IS TYPICAL FOR EACH ART PANEL CABINET.
REFER TO SHEET 3.0 FOR ART PANEL QUANTITIES/LOCATIONS.

Daisy Chain

Detailed Wiring Diagram



X2

NOTE:
WIRING DIAGRAMS ARE TYPICAL FOR ART PANEL CABINETS.
REFER TO SHEET 3.0 FOR ART PANEL QUANTITIES/LOCATIONS.

Hunt
88 North Fair Oaks #105
Pasadena, CA 91103
626.793.7847
HUNT DESIGN
DAVID EVANS AND ASSOCIATES INC.

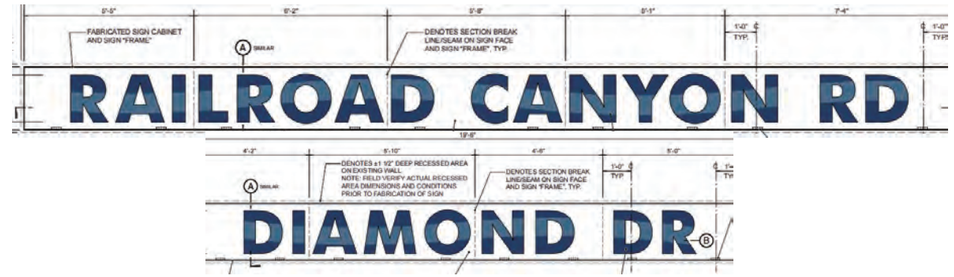
PROJECT
Lake Elsinore Underpass Graphics

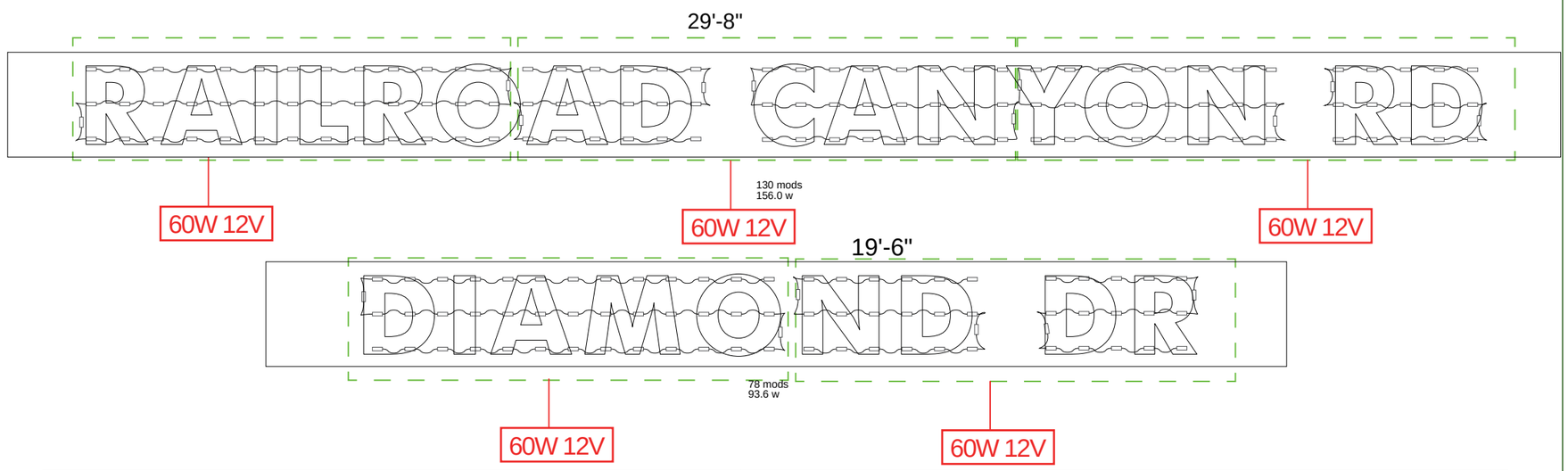
CLIENT
David Evans & Associates

DATE
Aug 16, 2022

SHEET TITLE
Lighting Information

SHEET #
25 OF 38
25.0

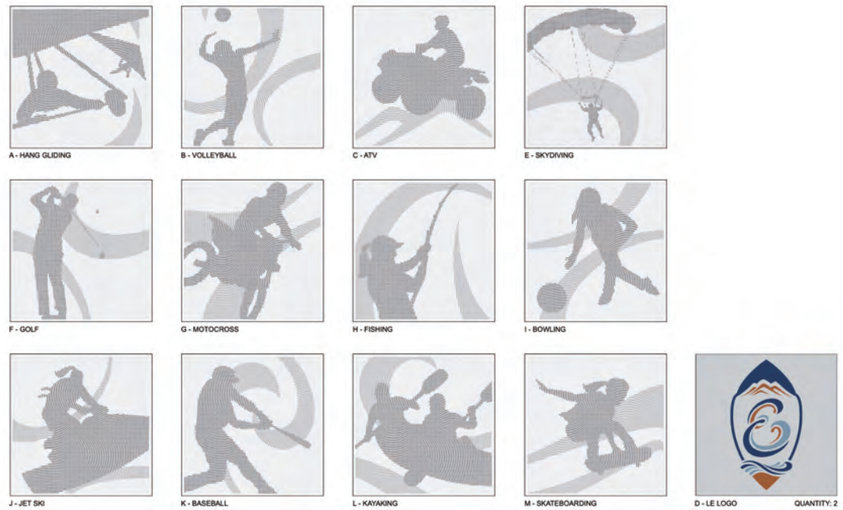


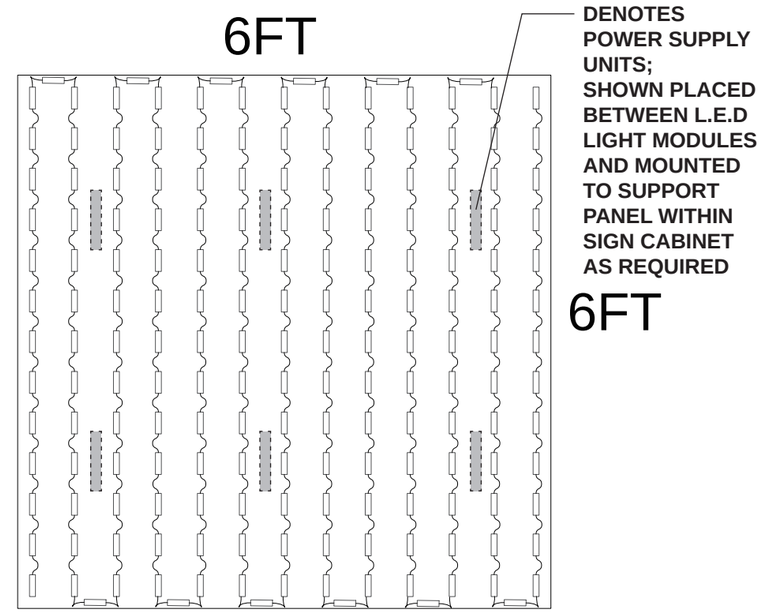


SELECTION CRITERIA		LED Modules
Code	QISM2003	
Modules Type	ANPRO 180 White 7500k	G2G
Total Quantity	208 [PCS]	
Total Power Consumption	249.6 [Watts]	
Power Supplies 60w 12v	5 [PCS]	
MOUNTING BRACKETS	[PCS]	

ATTENTION:
QUANTITIES SHOWN BELOW ARE QUANTITIES NEEDED FOR THE JOB.
THIS NUMBER MAY NOT REFLECT QUANTITIES SOLD PER PACKAGE.
ALL PRODUCTS MUST BE SOLD BY PACKAGE QUANTITIES.
(exception : If job is being cut and sealed by G2G the quote will reflect quantities being used)

QISA1001 Double-End Male Connector 18in Wire (18AWG): 8PCS
QISA4001 Double-end Male Connector 7FT Jacketed Cable (18AWG): 8PCS
QISPS1001#2 G2G-QIS-60W-12VDC (V2): 5PCS





181 mods
289.6 w

X14

SELECTION CRITERIA		
Code	QISM5004	
Modules Type	Trico 2 RGBW	
Total Quantity	2534	[PCS]
Total Power Consumption	4054.4	[Watts]
Power Supplies 60w 12v	84	[PCS]
MOUNTING BRACKETS		[PCS]

LED Modules

- ☐ Trico RGB (SPI)
- ☐ Trico RGB (DMX)
- ☐ Trico RGBW (DMX)
- ☐ Trico L (DMX)
- ☑ Trico 2 RGBW(DMX)

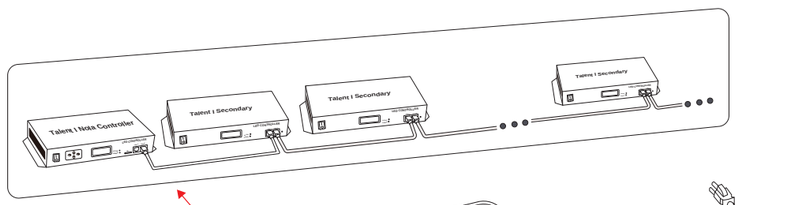
G2G

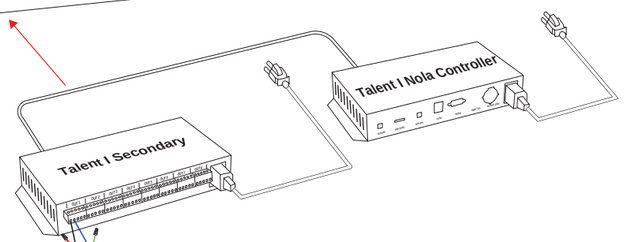
ATTENTION:
QUANTITIES SHOWN BELOW ARE QUANTITIES NEEDED FOR THE JOB.
THIS NUMBER MAY NOT REFLECT QUANTITIES SOLD PER PACKAGE.
ALL PRODUCTS MUST BE SOLD BY PACKAGE QUANTITIES.
(exception : If job is being cut and sealed by G2G the quote will reflect quantities being used)

Customized Talent I Nola & Cloud Sender: 1pcs
C1021Talent I Nola Controller Receiver: 1pcs
C1004 Talent I Secondary: 2pcs
AFA1015 Ethernet network cable: 2pcs
QISA4001 Double-end Male Connector 7FT Jacketed Cable (18AWG): 84PCS
QISA2001 Single-end Male Connector 7FT Jacketed Cable (18AWG): 14PCS
QISPS1001#2 G2G-QIS-60W-12VDC (V2): 84PCS

NOTE:
QUANTITIES INDICATE REQUIREMENTS FOR RAILROAD CANYON/DIAMOND LOCATION.

Trico 2 DMX - Talent I Wiring Diagram Overview



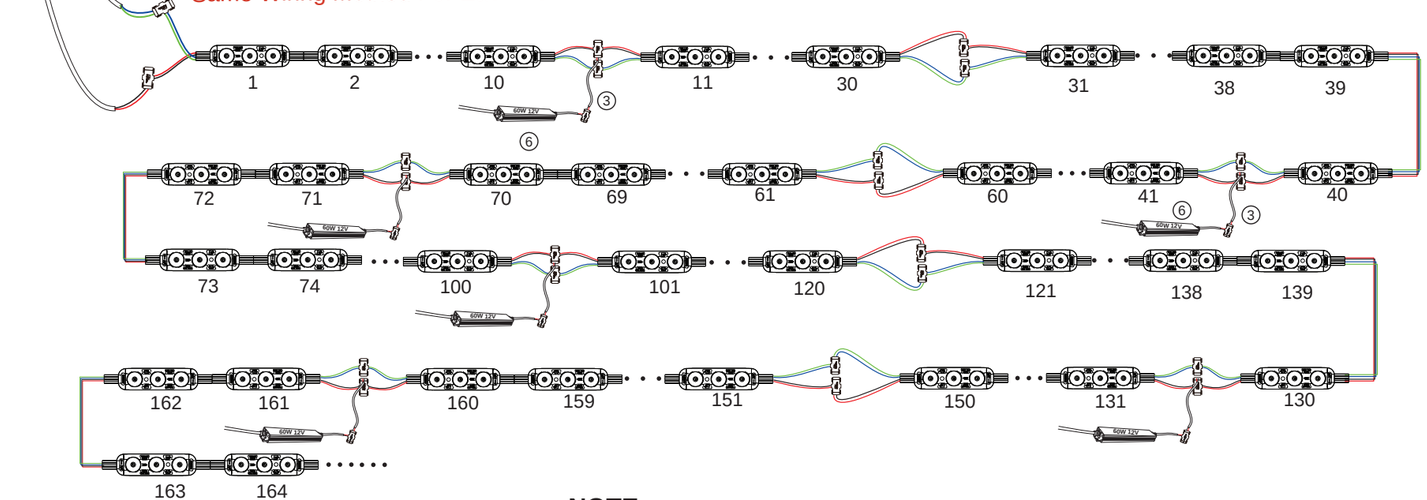


G2G

- ① QISA3001 Power Distribution Connector (PDC)
- ② QISA1001 Double-End Male Connector 18in Wire (18AWG)
- ③ QISA4001 Double-end Male Connector 7FT Jacketed Cable (18AWG)
- ④ QISA2001 Single-end Male Connector 7FT Jacketed Cable (18AWG)
- ⑤ QISA7001 Data Double-End Male Connector Wire (3FT, 18AWG)
- ⑥ QISPS1001#2 G2G-QIS-60W-12VDC (V2)

OR APPROVED EQUAL

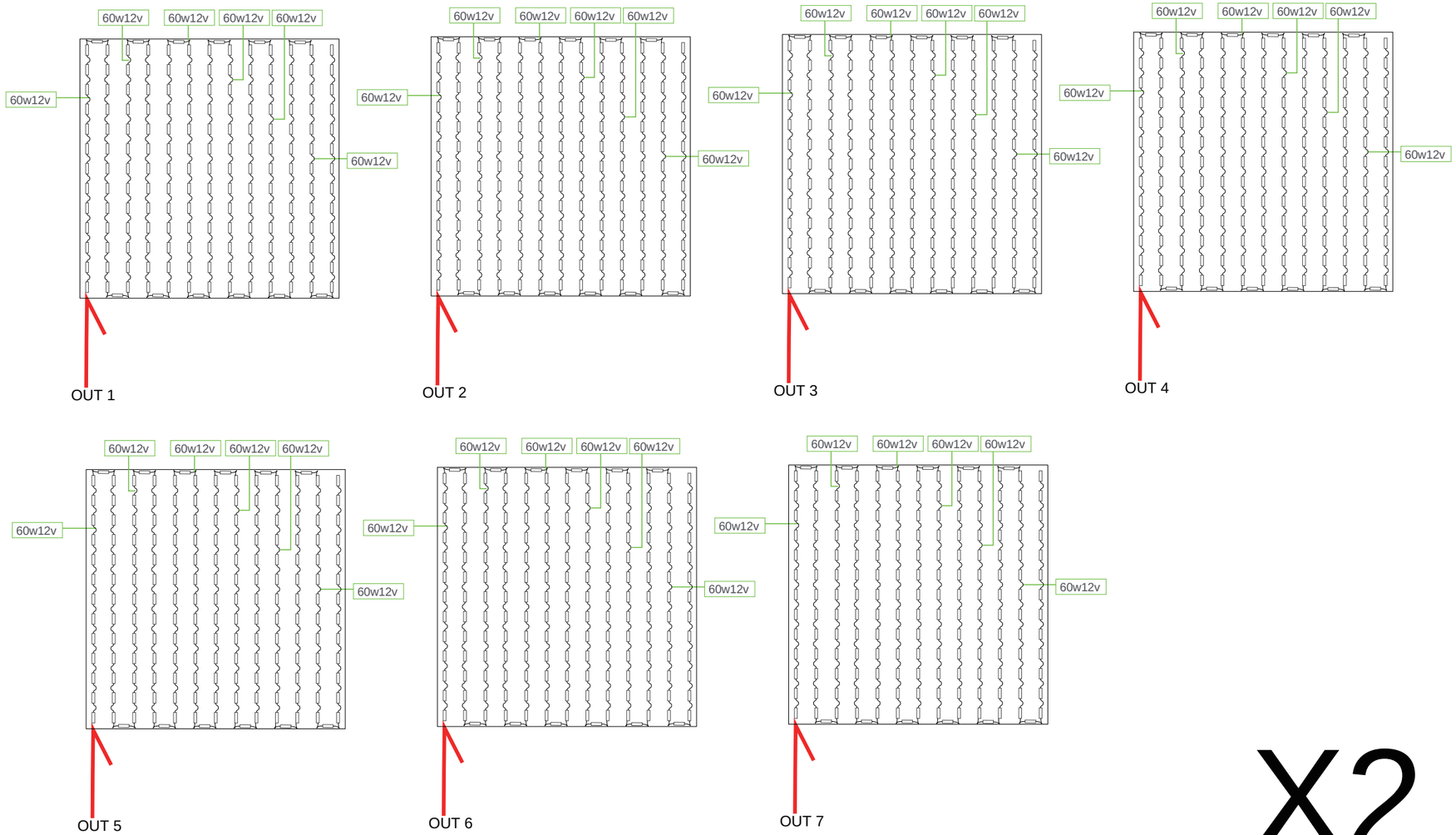
*Max 250PCS for each port
*Same Wiring Method For Each Port.



NOTE:
WIRING DIAGRAM IS TYPICAL FOR EACH ART PANEL CABINET.
REFER TO SHEET 11.0 FOR ART PANEL QUANTITIES/LOCATIONS.

Daisy Chain

Detailed Wiring Diagram



X2

NOTE:
WIRING DIAGRAMS ARE TYPICAL FOR ART PANEL CABINETS.
REFER TO SHEET 11.0 FOR ART PANEL QUANTITIES/LOCATIONS.

Hunt
88 North Fair Oaks #105
Pasadena, CA 91103
626.793.7847
HUNT DESIGN
DAVID EVANS AND ASSOCIATES INC.

PROJECT
Lake Elsinore Underpass Graphics

CLIENT
David Evans & Associates

DATE
Aug 16, 2022

SHEET TITLE
Lighting Information

SHEET #
29 OF 38
29.0

GENERAL SPECIFICATIONS

Chapter 4

2. Pattern definition: Full size exact outline on white paper of each letter, word, character, or form. Include outline of sign panel. Make outlines dark enough for long distance viewing.
3. These patterns, once accepted, will become the patterns or templates for shop fabrication. Retain all original annotated patterns reviewed during pattern submittal process. Retain final approved/stamped pattern for use and review at installation.
4. HDA to provide digital files in Adobe illustrator 2022 Encapsulated Postscript (.eps) format for sign contractor to use in producing patterns.

D. Colors and Material Samples
1. Submit samples for review and approval. Identify each sample with the sign type number to which the sample applies.
   a. Three (3) paint samples, 6" x 6", on actual specified materials to match color, texture and finish.
   b. Three (3) each type exposed metal used for major elements of work with respective finish.
   c. Three (3) each type plastic (acrylic, FRP, epoxy, Plastisol, polycarbonate, PVC, and Sintra) used for major elements of work with respective finish.
   d. Three (3) each type adhesive plastic film, including die-cut designs.
   e. Three (3) decorative hardware, including bolt heads, nail heads, screw heads, rivets and similar exposed items.
   f. Three (3) of all other items as may be required by City or as indicated on Drawings

E. Compile and maintain a listing of all paint colors with the factory batch number and formulation code for all paints and coatings. For custom semi-opaque and/or “wash” type finishes, provide specific mix ”reduced” formulations. Submit the list to the City for future maintenance reference.
   a. Three (3) copies of Manufacturer's Certificates of Material Standards to meet all Code and Ordinance Requirements.

F. Artwork:
1. Sign Contractor to provide all final artwork, including films, typesetting, and variations in art with graphic images, all city and state required forms of artwork based on electronic art files provided by Design Team.

1.3 MOCK-UPS

A. Mock-Ups: mock-ups shall be prepared by the Contractor as specified in these Specifications to test scale, color, appearance, legibility and/or aesthetic aspects of sign elements and are to be made of materials that simulate final construction materials and finishes.
Contractor to provide portion samples of “Street Name” panel, “Logo” panel, and “Art” panel. Samples to include illumination for viewing. Actual portions to be determined by design team prior to fabrication.

1.4 QUALITY ASSURANCE

A. Design Criteria

1. Structural design: Details on drawings indicate a design approach for sign structure but do not necessarily include all fabrication details required for the complete structural integrity of the signs, including consideration for static, dynamic and erection loads during handling, erecting, and service at the installed locations, nor do they necessarily consider the preferred shop practices of the individual sign fabricators. Therefore, it shall be the responsibility of the fabricator to perform the complete structural design of the signs and to incorporate all the safety features necessary to adequately support the sign for its intended use and purpose and to protect the City. Designs, which meet or exceed industry and code standard engineering practices, will be required. The sign fabricator

GENERAL SPECIFICATIONS
SECTION 101400
EXTERIOR SIGNAGE

PART 1 - GENERAL

provide patterns / color / Material Samples

1.1 SCOPE OF WORK

A. New signage and graphics elements throughout project as shown and located on the Construction Documents.

B. The construction documents to bid, fabricate and install signage and graphic elements for this project consist of:

1. Part 1
Signage Specifications and Drawings:
Specifications and Design Drawings are included in an 11" x 17" bound booklet.

The Specifications state the technical description of minimum quality and performance required of signage and graphic elements.

The Design Drawings show design intent, visual details and typical mounting conditions for signage and graphic elements.

1.2 SUBMITTALS

Provide the following submittals:

A. Shop Drawings
1. Provide three copies (electronic preferred) of shop drawings, engineering calculations and all pertinent information for each sign type in the Design Drawings for review and written approval prior to fabrication. Provide one hard copy set of all items reviewed to City.
2. Shop Drawings definition: Original shop instruction drawing on vendor's title block showing exactly how the sign will be made: exact materials; techniques; processes; dimensions; internal structure; lighting fixtures; ballast and wiring; welds; connections; fasteners; mounting details; access panels, trade coordination comments and other construction pertinent information for the manufacture and installation of all signage. Shop drawings showing structure shall be structurally calculated, showing total weight, wind load and overturn moment. All drawings shall be "wet" stamped and signed by a State licensed Structural Engineer. Shop drawings showing electrical shall be “wet” stamped and signed by a State licensed Electrical Engineer.
3. These drawings will, once accepted, be signed as reviewed and will become the documents from which the signs are fabricated. Note: All rejected shop drawings must be revised and resubmitted within ten (10) working days to the City until approval is obtained.
4. Shop drawings shall include heat and ventilation analysis for the sign cabinet performed, “wet” stamped and signed by a State licensed Mechanical Engineer.
5. Vendor requests to substitute alternate materials or techniques other than those noted on drawings or in these specifications shall be noted on the shop drawings.

B. Calculations
1. Prior to fabrication, provide engineer stamped calculations for all components that effect the structural design.

C. Patterns
1. Provide three (3) full size, paper pattern for all signs with painted, curved, stenciled, cutout, fabricated, routed, or sandblasted letters, characters, forms or other as noted on drawings for review and approval. Identify each pattern with the sign number to which the pattern applies.

shall submit engineer stamped calculations for foundations and all other sign components that affect the structural design. These shall be submitted to Hunt Design for information only.

a. When required because of size or weight of sign, provide lifting eyes. Lifting eyes shall be removable or visually inconspicuous in the finished work.
b. Include support backing and connection to existing support structure or mounting surface.

2. Fabrication and installation design: Unless otherwise directed by City, design to withstand severe guest abuse and souvenir theft vandalism, but not less than equivalent of resisting simple hand implements and tools (screwdrivers, knives, coins, keys, and similar items), and adult physical force.
3. Electrical design: It shall be the responsibility of the sign fabricator to perform the complete electrical design for illuminated signs. Major illuminated signs shall be designed by an electrical engineer and shall be UL approved.
   a. Provide lighting medium indicated on drawings.
   b. Provide all structural and electrical design data to Hunt Design for review prior to fabrication.
   c. Position illuminating elements within internally lighted signs or externally illuminated signs at such spacing as will assure uniform light distribution across the portion of the sign faces intended to be illuminated. Sign faces, which exhibit "hot spots", will be unacceptable unless such hot spots are intended to be integral design features of the signs.
   d. Provide access panel for all internally illuminated cabinets. Make access flush with adjacent surface, panels tight-fitting, lightproof, and waterproof. Show access panel location on shop drawing. Access panels to be in an accessible location, out of sight.
   e. Provide disconnect switches for all illuminated signs in accordance with electrical code requirements and as directed by the City. Locate disconnect and on/off switches in an accessible location, out of sight.
   f. Provide dimmer switches and timer for all neon illuminated signs. Locate dimmer switch in an accessible location, out of sight.
   g. For housing remote electrical components: Provide waterproof box to hide all electrical components. Box to have flush access panel for servicing. Mount box in a minimally visible way. Color and/or finish to match existing adjacent mounting surface.
   h. Verify location of power provided by others prior to sign fabrication.
   i. Provide pad lock or other means of security of equipment as directed by the City.
   j. Provide (1) additional receptacle per panel.
4. Waterproofing/Weatherproofing: All signs must be composed of weatherproof materials sufficient to ensure maximum durability of non-corrosive parts, finishes and electrical components. All finishes must be colorfast for the product manufacturer's limited warranty period. Irrigation elements must be repositioned to protect sign surfaces and other electrical components from calcium build-up and water spotting.
5. Interpretation of Plans and Specifications:
   a. The City will interpret the meaning of any part of the Plans and Specifications about which any misunderstanding may arise, and the City's decision will be final. Should there appear to be any error or discrepancy in or between the Plans and Specifications, the Contractor shall refer the matter to the City for adjustment and incorporation into shop drawings submittal before proceeding with the work. Should the Contractor proceed with the work without so referring the matter, the Contractor does so at its own risk and must bear any additional cost incurred as a result of failure to so refer.

B. Comply with all laws, ordinances, rules, regulations, and orders of any public authority having jurisdiction over this work.

GENERAL SPECIFICATIONS SECTION 101400
EXTERIOR SIGNAGE

C. Preparation:
   1. Protect exposed finish surfaces of hanging items from damage resulting from fabricated hanging/support assemblies.
   2. Prepare hanging items to receive proper attachments in accord with Contract Drawings and approved submittals. Install work in accord with approved shop drawings, patterns, and color/material submittals.

1.5 MAINTENANCE – MATERIALS AND DOCUMENTATION

A. Upon completion of work, Contractor is to provide written documentation outlining proper care and maintenance for all graphic materials, colors, finishes and hardware. Touch-up paint: Provide City with one 1/2 pint can of touch-up paint (including clear coat finish) of each type and color used in Work.

B. Provide warranty as follows:
   1. Warrant all work against failure because of faulty materials, workmanship, and design for a period of one year from date of acceptance by the City.
   2. Fading, cracking, warping, peeling, delaminating, rusting, corroding and structural failure, including distortion by whatever cause, shall be construed to mean failure because of faulty materials and workmanship.
   3. Failures during the warranty period shall be repaired or replaced to the satisfaction of, and without any cost to the City.
   4. Warranties for the sign electrical components including but not limited to LED drivers, DXM, and network equipment.

C. Upon completion of work: Contractor shall compile all sign electrical documentation, maintenance and installation manuals, including As-Built sign, single line diagram on a binder or digital PDF format to the City.

D. Upon Completion of work: Contractor shall provide the software and programing instruction to the City and train City personnel on how to run the program (2 City Staff for a min. of 4 hours).

Rick Bryson G2G

PART 2 - PRODUCTS

2.1 GENERAL

A. The work as herein identified, requires the manufacture and/or purchase of; and delivery, installation and/or application of: Signage and Environmental Graphics as part of the Sign Program documents.

2.2 MATERIALS – METALS

A. Aluminum
   1. Sheet Aluminum ASTM B209: Provide alloy and temper consistent with specific fabrication and finishing processes.
   2. Extruded aluminum: Provide alloy and temper consistent with specific fabrication and finishing processes.
   3. Bars, rod, wire, and shapes: ASTM B221
   4. Pipe and tubing: Seamless, minimum Schedule 40 or equivalent wall thickness
      a. Non-structural: ASTM B210 and ASTM B241.

2.3 MATERIALS – PLASTICS

A. Acrylic (exterior):
   1. Made with methylmethacrylate polymers, as manufactured by:
      a. AutoHaas (Rohm & Haas)

b. Acrylite
c. Or equal.
2. Provide tubing, solid sheet, laminated sheet, or cast acrylic in size, thickness, clarity, opacity, texture, and color required for work.
3. Provide ultra-violet resistant type, where exposed to sunlight.

B. Polycarbonate (exterior):
1. Sheet: Provide with scratch and ultra-violet resistant coating.
a. AtoHaas (Rohn & Haas)
b. Lexan by General Electric.
c. Or equal.
2. Film: 0.015 in. thick Lexan by General Electric or equal.
a. Provide with 925 chemical and mar-resistant coating.
b. Provide with matte (specular gloss value of 30 in accord with ASTM D523) finish.
c. AtoHaas (Rohn & Haas)
d. Lexan by General Electric.
e. Or equal.
3. Lexan by General Electric.
a. AtoHaas (Rohn & Haas)
b. Lexan by General Electric.
c. Or equal.
4. Acrylic/PVC: High impact acrylic polyvinylchloride thermoplastic sheet. Color shall be integral throughout the material and shall be of thickness and color(s) consistent with the type of item to be represented. Provide flame-retardant formulations for all use conditions and ultraviolet-resistant formulations where exposed to sunlight.
a. Kydex as by Kleerdex Co.
b. Crylex as by Atlas Plastics Corp.
c. Or equal.

2.4 MATERIALS – ADHESIVE FILM

A. Vinyl die-cut: Precision-cut, pre-spaced, computer-generated, pressure-sensitive type by 3M or equal.

B. Decalcomania (decal): Pressure sensitive adhesive type by 3M, or equal.

2.5 MATERIALS – LED LIGHTING

A. LED: All units are to carry U.L. certification and are to meet all applicable City, County and/or State codes. Power and loads are to be determined on a case by case basis. Signage Contractor is to coordinate power and load requirements with architect and general contractor.
1. LED lighting shall have a minimum of 50,000 hours of life prior to reaching 70% of illumination capacity.
2. Sign contractor is to submit relevant cut sheets and data specifications for each LED product used.
3. All LED lighting, unless otherwise stipulated in drawings, shall be of the same manufacturer and of the same color temperature.
4. Unless otherwise stipulated in drawings, illuminated cabinets and letterforms shall be evenly illuminated such that there are no visible hot spots or shadows from internal components. Sign contractor shall get written approval for fabrication of signage that is designed in such a way that even illumination is compromised or not possible. Sign contractor shall get written approval on required sign modifications to produce even illumination which may alter the visual aesthetic of the sign cabinet or letterform.

2.6 MATERIALS – ELECTRICAL

A. Code: Conform to California Electrical Code and National Electrical Code for materials.

GENERAL SPECIFICATIONS
SECTION 101400
EXTERIOR SIGNAGE

B. Approved listing: Materials must be approved and listed by Underwriters Laboratories, Inc.

C. Lighting fixtures: Standard manufacture as indicated on Design Drawings. Modify as indicated on Design Drawings and as necessary to conform to governing electrical standards and regulations. Provide without (or remove) identifying trademarks, trade names, model numbers, similar information on surfaces exposed to view.

D. Disconnects: Heavy duty, non-keyed, flush mounted, fused, or unfused, by:
1. General Electric
2. Square D
3. ITE.
4. Or equal
5. Provide NEMA 1 for dry locations and proper enclosure for others.

E. Conduit:
1. Above-grade: Threaded, rigid steel or intermediate metal, conforming to ANSI C80.1, UL 6 or UL 1242, unless specifically approved otherwise by City. Provide with hot-dipped galvanized coating. Provide threaded fittings, conforming to NEMA FB1, UL 514A, or UL 514B. Where specifically approved by City, flexible conduit must be liquid-tight type, conforming to UL 360.
2. Below-grade: Rigid PVC, conforming to UL 651, minimum Schedule 40. Provide cemented, socket-type fittings, conforming to NEMA TC3.

F. Junction boxes: Single-piece, pressed steel type with hot-dipped galvanized coating.

G. Dimmers: Continuously variable-type with extra (minimum 50%) load-capacity for future use.

H. Conductors: THHN, No. 12.

I. Accessories: Provide supports, hangers, and other accessories as required for the work.

2.7 MATERIALS – PRIMERS AND PAINTS (exterior)

A. Provide and use paint by:
1. Matthews Paint Co., Kenosha, WI
2. PPG Paint Co., Pittsburg, PA
3. Or equal.

B. Paint Schedule:
1. Aluminum:
a. Exterior surfaces of signs:
1) Pretreatment: Etching/wash type as recommended by paint manufacturer.
2) 1st coat: Epoxy primer.
3) 2nd coat: Two-component catalytic, linear, aliphatic polyurethane enamel with ultraviolet inhibitors. Automotive-type enamels are not acceptable.

2.8 MATERIALS – ANTI-GRAFFITI FINISHES

A. Anti-Graffiti Coatings - General

1. Coatings shall consist of a solvent based, water resistant, highly durable application that can be sprayed, rolled or brushed onto any architectural or sign surface, such as concrete, plaster, brick, wallboard, steel, aluminum or wood. Once applied and cured, all coatings must also be impervious to damage by graffiti removers or cleaners. Coating and cleaner compatibility is paramount. The coating must come in low gloss or glossy

and meet the following specifications as manufactured by Tradewinds International Inc, Ameron Coatings or approved substitution.

2. Anti-Graffiti Coatings - Application
   a. Protective Coating: Must be applied to clean, dry surface, bare or previously painted, including graffiti paint. No grease, oil, dirt, dust, silicon or any loose foreign material may be on the surface to be coated.
      1) Cleaning protocols
         (1a) Steel - Sand or bead blast to gray metal. Prime or apply topcoat direct-to-metal (dtm) before flash rust.
         (1b) Concrete & brick - High-pressure water wash 1,500 psi or higher. Allow dry time.
         (1c) Plaster & Wall Board - Plaster and taping compound must dry completely. Wash down must follow any sanding.
         (1d) Aluminum - Clean with solvent in small, manageable areas. All oil, grease, silicon, etc., must be adequately removed and the solvent completely evaporated before application.
         (1e) Wood - Recently installed dry wood is usually clean. Old wood, any grease or oil spots should be sanded down to dry clean wood.
         (1f) Painted Surfaces - Old paint should be chemically cleaned and etched with TSP or equivalent to remove oxidation, dirt, oil, grease, etc., and then properly dried before coating application. Testing for paint and coating compatibility is recommended.

3. Anti-Graffiti Coatings - Removal
   a. The graffiti remover must have the following characteristics be easily sprayable by trigger or pump applicator; be of sufficient thixotropic or gelatinous consistency to hang on vertical or overhead surfaces without running; rinse off easily with water; be completely biodegradable; be non-toxic; be non-flammable; contain no petroleum distillates; and contain no ingredients classified as hazardous by any state or federal agency.
   b. Spray affected area only. Use natural bristle brush or cloth to agitate compound into graffiti. Remove all material from surface with damp cloth or water spray, depending on surface. Repeat procedure if necessary.

2.9 MATERIALS – DIRECT PRINT TO SUBSTRATE

A. Translucent screen, sprayed or direct print inks with UV inhibitors applied directly to acrylic.
   1. As manufactured by:
      a. Lacryl 800 Series by MPC Matthews Paints
      b. 3M Piezo Inkjet Series 8900UV Ink by 3M
      c. Or equal

2.10 MATERIALS – MISCELLANEOUS

A. Cement for acrylic plastic: Weld-On Part No. 4 cement by Industrial Polychemical Co., or equal.

B. Adhesives.
   1. Silicone: Single-component silicone rubber by:
      a. General Electric
      b. Dow Corning
      c. Or equal
   2. Epoxy: Two-part, catalyzed; provide fast-setting, high-strength, flexible, high-viscosity or other specific types as necessary and approved by City.
   3. Tape: Double-coated, high strength acrylic adhesive foam tape, 3M VHB+ tape or equal.
   4. Thread-locking: Anaerobic, single-component adhesive, as manufactured by:
      a. Hernon.
      b. Loctite.
      c. Permabond.
      d. Or equivalent.
   5. Other: Exterior grade, waterproof, structural types as necessary and compatible with materials in contact with adhesives.

hex locks

C. Locks: Hex-Socket Draw Latches by McMaster-Carr, Part No. 1393A37 (Style C).

D. Neoprene: Synthetic rubber.

E. Miscellaneous hardware: Provide continuous (piano) hinges, hooks and hook-eyes, hinges and bolts with acorn nuts, chain, invisible (Soss) hinges, and other non-corrosive, commercial type hardware items including fasteners as necessary, where not specifically indicated on the Design Drawings.

F. Ferrous metal hardware is not acceptable.
   1. City approval of type and finish is required for all items.
   2. Mechanical fasteners must be flush (flat head), tamperproof and match finish and type of material being fastened, unless indicated otherwise.
      a. Aluminum, brass, and bronze bolts, screws, and nuts: ASTM F467 and ASTM F468.
      b. Stainless steel studs (threaded pins), bolts, screws, and nuts: ASTM F593 and ASTM F594.
      c. Fractional-turn, captive and similar specialty-type screw assemblies: As manufactured by: Southco, Inc., Tamperproof Screw Co., or equal.
      d. Provide aluminum or stainless steel threaded inserts for bolting and screwing into acrylic plastics and similar "soft" materials.
      e. Set screws: Headless, cup point, stainless steel socket set screws with self-locking, threaded stainless steel insert.
      f. Stainless steel lag bolts and screws: ANSI B18.2.1.
      g. Plain washers: ANSI B18.22.
   3. Nylon washers: Friction-reducing, abrasion-resistant, high strength, virgin nylon (or Teflon); fiber, PVC, FRP, rubber, metals and similar materials are not acceptable.
   4. Provide all brass hardware with a protective coating of clear metal lacquer, baked-on.
   5. Cable: Fed. Spec. RR-W-410 or Mil. Spec. MIL-W-83420, minimum 1/16-in. diameter multi-stranded, stainless steel aircraft cable with stranded stainless steel wire core. Provide stainless steel sleeves, thimbles, clips, turnbuckles, and similar swaged fittings that develop full strength of cable; crimped fittings are not acceptable. Machine bolt anchors: Stainless steel, chemical-adhesive type as manufactured by:
      a. Rawl.
      b. Ramset/Red Head.
      c. Hilti.
      d. Or equal.
   6. City has option to purchase extra components at bid price.

PART 3 - EXECUTION

3.1 STRUCTURAL

A. It shall be the responsibility of the Contractor to perform the structural design of the signs and to incorporate all the safety features necessary to adequately support the sign for its intended use and purpose and to protect the City. Designs that meet or exceed industry and code standard engineering practices will be required. The sign fabricator shall submit engineer stamped calculations for foundations, lifting eyes and other sign components that effect the structural design.
   1. Include foundations when part of the signage and graphics work.
   2. Include support backing and connection to existing support structure or mounting surface.

B. Design loads:
   1. All forces resulting from dead loads, live loads, rated loads, wind loads, and seismic loads as applicable shall be applied in determining adequacy of all parts of a suspension system and the system as a whole.
      a. Wind loads and seismic loads shall be in accord with governing loads.
      b. Dead loads consist of the weight of the suspended object(s), and, if a separate system, the load of the suspension system.

C. Allowable stresses:
   1. Allowable stresses shall not exceed values which would cause permanent distortion of any structural or machinery component.
   2. All components of stress shall have the benefit of engineering calculations and data, and such calculations and data shall be used in the selection of materials.
   3. Stresses due to combined loads shall be in accord with governing codes.

D. Support:
   1. Consideration shall be given to the support structure to which overhead objects may be attached to assure sufficient structural strength and appropriate connection points.
   2. Every suspended object shall be connected by means of sufficient and appropriate attachments and hangers to the support structure designed for its application. The only exceptions are loads of 2 lb. or less which may be attached to architectural materials. These objects may be suspended from walls or ceilings made of tile, plaster, or gypsum board without connecting directly to the structure.
   3. Loads more than 2 lb. suspended from a vertical plane, such as a wall or column, shall be supported and installed in a positive manner that maximizes the structures provided. In addition, when visual design criteria permit, a ledge shall be provided to support the bottom edge of the object. Friction attachments are not acceptable.
   4. The primary support of a suspended object may be designed as a concentrated load that is suspended from a single point, or as a distributed load where the weight of a suspended object is suspended by means of more than one primary support sharing the load equally.
   5. Whenever possible, objects shall be designed to be supported as a distributed load.
   6. When determining the load of an object or system, both the total weight of the object or system and the specific load at each suspension point shall be considered. Basic statics and known material properties and weight distributions shall be used in determination of support loading.
   7. Consideration shall be given to the design of the support structure and access to the structure to which overhead objects are intended to be attached. System design shall include adequate access for installation, inspection, and maintenance.
   8. Qualified, trained individuals shall perform all rigging installations with prior rigging experience. Individuals who hang items shall be familiar with these Specifications.
   9. Attaching to structure: Care shall be taken to minimize loading conditions that induce torque in structural members. Attachments to existing structure shall be as specified in approved shop drawings.

E. Attachment points of suspended items:

GENERAL SPECIFICATIONS SECTION 101400
EXTERIOR SIGNAGE

   1. Every suspended item shall be constructed to withstand the stresses imposed within its structure by the rigging design. Hardware used to form a rigging point on an item shall meet the intent and requirements of this Section.

F. Connections:
   1. All sign brackets, members, connections, welds, bolts, screws, etc. shall conform to 2013 California Building Code, ASCE 7-10 and all appropriate material reference documents.

G. Safety factors:
   1. The systems used for supporting suspended objects shall be sufficiently secure so as to prevent failure.
   2. The safety ratio for a specific installation shall, as a minimum, meet a 5:1 safety ratio over the minimum allowable load for the installation condition.
   3. The required minimum safety ratio applies to the total system. Individual components of a system may be rated at higher values, depending upon the component. The lowest value shall determine the safety factor of the system. Certified "working load" factors that have the basis of laboratory testing are acceptable. As an example, chain manufacturers traditionally use a safety factor of 4:1 over breaking strength as ultimate working load. Wire rope shall use the 5:1 safety factor.
   4. Required fail-safe system: Every object suspended overhead shall be designed with a single-point fail-safe system.
      a. Every malfunction or failure of a critical component, due to whatever cause, shall not create a life or limb threatening condition or progressive failure of the system.

H. Seismic requirements:
   1. All suspended items, connections, and systems shall be designed to resist a seismic load of a 1-g vertical force and a 1/2-g horizontal force.
   2. If a suspended item is free to rotate and its path is clear through a 45° swing, no seismic bracing is required. If a suspended item is free to rotate and a collision is possible within a 45° envelope with the potential to threaten public safety, then lateral bracing which will prevent the collision is required.

3.2 ELECTRICAL

A. It shall be the responsibility of the Contractor to perform the complete electrical design for illuminated signs. Illuminated signs shall be designed by an electrical engineer and shall be UL approved.
   1. Provide lighting medium indicated on drawings.
   2. Position illuminating elements within internally lighted signs or externally illuminated signs at such spacing as will assure uniform light distribution across the portion of the sign faces intended to be illuminated. Sign faces that exhibit “hot-spots” will be unacceptable unless such hot spots are intended to be integral design features of the signs.
   3. Access panels shall be flush for all internally illuminated cabinets. Access panel shall be flush with adjacent surface, tight fitting, lightproof and waterproof. Show accesses panel location on shop drawing. Access panels to be in an accessible location, out of sight.
   4. Provide disconnect switches for all illuminated signs in accordance with electrical code requirements. Locate disconnect and on/off switches in an accessible location, out of sight.
   5. For housing remote electrical components: Provide waterproof box to hide all electrical components. Box to have flush access panel for servicing. Mount box in a minimally visible way. Color and/or finish to match existing adjacent mounting surface. Provide pad lock or other means of security of equipment as directed by the City.

3.3 LED LIGHTING

A. LED: All units are to carry U.L. certification and are to meet all applicable City, County and/or State codes. Power and load are to be determined on a case by case basis. Signage Contractor is to coordinate power and load requirements with architect and general contractor.

1. LED lighting shall have a minimum of 50,000 hours of life prior to reaching 70% of illumination capacity.

2. Sign contractor is to submit relevant cut sheets and data specifications for each LED product used.

3. All LED lighting, unless otherwise stipulated in drawings, shall be of the same manufacturer and of the same color temperature.

4. Sign contractor to provide a minimum of 20 preset lighting programs from which the city of Lake Elsinore can choose to implement for seasonal or specialty lighting effects.

5. Unless otherwise stipulated in drawings, illuminated cabinets and letterforms shall be evenly illuminated such that there are no visible hot spots or shadows from internal components. Sign contractor shall get written approval for fabrication of signage that is designed in such a way that even illumination is compromised or not possible. Sign contractor shall get written approval on required sign modifications to produce even illumination which may alter the visual aesthetic of the sign cabinet or letterform.

3.4 SIGN CABINETS AND SIMILAR ENCLOSURES

A. Fabricate of sheet aluminum (0.090-in. minimum thickness) as indicated. Brake-formed, Heliarc electric welded construction, precision formed, with straight and even corners and edges. Visible distortions and other irregularities, due to heat of welding process, is not permitted on exposed surfaces. Test welds using dye-penetrant or vacuum-seam tester; reweld where necessary to obtain solid, complete weld joint. Welds shall be smooth and flush. Finish to match adjacent surfaces.

B. Accurately rout portions of sign cabinets to required designs. Finish edges of routed portions to match adjacent surfaces. Coordinate with fabrication of "cut-out" letters and shapes to assure a tight, hairline-type joint appearance.

C. Provisions for acrylic "cut-out" letters and shapes:

1. Provide enough clips to retain all sides and to preclude any looseness or movement of acrylic or separation of acrylic from interior face of cabinet.
2. Provide continuous angle to support and retain perimeter of acrylic faces where necessary.
3. Clips and retainers must not cast shadows or otherwise be visible on face of acrylic when signs are internally illuminated.

D. Based on results of heat and ventilation analysis performed by state licensed mechanical engineer, provide an internal system of ventilation (screened openings, passages, and electric fans) to assure a uniform dissipation of heat from electrical components of electrically powered and illuminated signs, heat (solar) absorption by sign and other sources. Any openings in exterior surfaces must be internally baffled to prevent "light leaks" and prevent entry of rain, snow, wind-blown debris, and other foreign matter, and screened to prevent entry of insects.

RGB components

E. Provide drain holes to prevent accumulation of water within signs. Holes must be inconspicuous and be in inconspicuous locations; holes must also be located such that drainage does not occur onto signs, or other surfaces subject to staining. Provide internal system of baffles to prevent "light leaks" through drain holes of illuminated signs. Provide insect screening over drain holes.

F. Fabricate door frames as specified for cabinets.
1. Weld or use concealed fasteners to continuously attach continuous hinge to door and case. Hinges must be concealed when doorframe is in the closed, locked position.
2. Provide continuous, flexible weather seal gasket between doorframe and cabinet.
3. Install locks at location(s) necessary and adjust to ensure a tight-fitting weather seal at perimeter of doorframe contacting cabinet.
4. Set single-piece glass panel in accord with GANA Glazing Manual using neoprene setting blocks, spacers and glazing tape or vinyl glazing beads to preclude looseness and glass-metal contact. Glazing blocks and spacers must not be readily visible from exterior side of glass door.

G. Fabricate removable external panels as specified for cabinets.
1. Use system of continuous angles and Z-clips and inconspicuous, tamperproof fasteners to secure removable panels to cabinets, as indicated on Drawings.
2. Provide continuous, flexible weather seal gasket between removable panels and cabinet.
3. Provide aircraft cable safety strap and attachments of design and type to withstand the dynamic loads imposed by falling weight of the removable panels without failure of cable safety strap or attachments nor damage to signs, including removable panels; provide easily detachable attachment of cable safety strap to permit complete removal for servicing, maintenance, etc.

H. Fabricate removable internal panels as specified for cabinets.
1. Provide magnetic-type attachment to sheet steel backing where indicated.
2. Provide lift-out-type frame holder where indicated. Use concealed fasteners where possible.
3. Provide one extra set of panels.

3.5 FABRICATED LETTERS, NUMBERS AND SHAPES

A. Provide materials and workmanship that is performed by skilled craftsman under the supervision of trained foremen, experienced in the trade or craft required to accomplish the Work and produce a product of high quality.

B. Where internal or "halo"-type illumination is indicated, interior surfaces of formed (channel) letters and shapes shall be finished with synthetic enamel, white color.

C. Where internal or "halo"-type illumination is indicated, fabricate letters and shapes with internal support system to secure letters and shapes to supporting surface and allow easy, quick removal for maintenance of illumination components. Internal system must not cast shadows nor obstruct illumination as to be visibly apparent when fully illuminated letters and shapes are viewed from the front.

D. Finish exposed edges to match finish of face, free of finishing marks.
1. Finish: Polyurethane enamel, directionally brushed, or mirror polished as indicated.

3.6 ACRYLIC LETTERS AND SHAPES

A. Precision-milled single-piece or routed letters and shapes. Polish exposed edges to match finish of face, free of polishing markings, unless indicated otherwise. "Punched thru" portions must fit accurately into routed portions of cabinet with tight, hairline joints and snugly into back of formed (channel) letters.

B. Evidence of laminating process of letters and shapes to carrier or diffuser, including the carrier itself, must not be visible on face of signs when internally illuminated. Provide continuous opaque masking material at perimeter of routed opening.

C. Maintain protective paper covering on exposed faces during fabrication wherever possible. Remove immediately prior to City's review of completed sign fabrication.

D. Coordinate fabrication of sheet plate and formed (channel) letters and shapes, and routing of sign cabinets to assure a tight, hairline type joint between materials.

E. Fabricate laminated acrylic plastic and sheet plate letters and shapes to assure precise, matching shapes and forms with tight, hairline joint.

3.7 PAINTING AND FINISHING:

A. Definitions:
1. The term "paint" as used herein includes enamels, polyurethanes, paints, primers, sealers, fillers, stains, and coatings systems whether used as prime, intermediate or finish coats.
2. The term "system" implies that each finish is comprised of materials and quantities appropriate for the surface to be finished, and includes preparation priming/sealing, and intermediate and finish coats as applicable.

B. Sample finishes: Refer to Section 1.2 - "SUBMITTALS".

C. Paint color references: As indicated on Design Drawings.

D. Paint formulation: All paint materials shall be especially formulated to meet all local and state environmental codes and specifications, with anti-mildew agents incorporated into the formulations. This requirement applies to all materials including those for interiors of sign cabinets and cans. In addition, include carefully balanced ultraviolet inhibitors for exterior materials.

E. Application:

1. Properly prepare subsurfaces and apply materials in an environment most favorable for producing best quality work. Where indicated or necessary, etch surfaces prior to applying finish paint materials.
   a. Finish surfaces shall be free of streaks, laps, runs, or pile-up of paints, with all surfaces uniformly covered.
   b. Surfaces with over spray are not acceptable.
2. Unless specified or directed otherwise, provide semi-gloss (specular gloss value of 50 in accord with ASTM D523) finish for all surfaces.
3. Unless specified or directed otherwise, provide "clear coat" finish over all exposed, finish painted surfaces consisting of a two-component catalytic, clear, acrylic polyurethane enamel with ultraviolet inhibitors. Unless otherwise directed by City, provide semi-gloss for metal and plastic surfaces and flat/matte gloss for wood surfaces.
4. Seal all edges of plywood and end grain of solid stock wood even though it may be concealed by other work.

3.8 FABRICATION - GENERAL

A. It is intended that the workmanship be of the highest quality obtainable by the respective trades and crafts experienced in the fabrication of signs

B. Finished work shall be of highest quality to pass eye-level examination and scrutiny. Scratches, paint drips or sags and other visual defects are not acceptable.

GENERAL SPECIFICATIONS
SECTION 101400
EXTERIOR SIGNAGE

C. Copy application: Sign copy shall be crisp, sharp, clean, and free from "ticks," discontinuous curves, line waver, and similar type imperfections.
1. Letterforms shall conform to prescribed proportions.
2. Whenever possible, messages shall be set full-size.
3. Letterforms shall be aligned so as to maintain a baseline parallel to sign format, with margins and layout as indicated on Design Drawings and approved shop drawings.

D. Sign construction:
1. Construct work to eliminate burrs, cutting edges, and sharp corners.
2. Finish welds on exposed surfaces to be imperceptible in the finished work.
3. Except as indicated or directed otherwise, finish surfaces smooth.
4. Surfaces that are intended to be flat shall be without bulges, depressions, oil canning, or other physical deformities; use thicker materials or other means of stiffening or reinforcement to achieve intended results.
5. Fabricate continuous, internal support/mounting systems required to adequately secure/support signs. Where necessary, make provisions to allow for easy, quick removal for maintenance, etc. Where internal illumination is indicated, internal system must not cast shadows nor obstruct illumination as to be visibly apparent when fully illuminated sign is viewed from front.
6. Except where approved otherwise by City, conceal fasteners.
7. Make signs tight fitting, between parts and sections, and with adjacent surfaces. Unless indicated otherwise, non-welded joints between various portions of signs must be weatherproof (for exterior signs) and have tight, hairline-type appearance, without gaps (varying or otherwise). Provide sufficient fastenings to preclude looseness, racking, or similar movement.
8. Make access panels and similar removable, external portions tight-fitting, lightproof, and weatherproof with adjacent surfaces. Provide access panels and removable portions occurring in overhead (i.e., greater than 6 feet above adjacent grade) locations with aircraft cable safety strap and attachments of design and type to withstand the dynamic loads imposed by falling weight of the access panels or removable portions without failure of cable safety strap or attachments nor damage to signs, including access panels and removable portions; provide easily detachable attachment of cable safety strap to permit complete removal for servicing, maintenance, etc.
9. Provide fabricated metal light baffle clips or approved porous foam blocking over weep holes to prevent light leaks thru holes.
10. Locate UL labels and similar identification required by the local building authorities on exterior of sign, at specific locations as indicated on approved shop drawings. Do not apply other labels of any type that cannot be concealed.
11. Conform with manufacturer's recommended fabricating procedures regarding fastening, restraining, expansion, and contraction of FRP, polyurethane foam, acrylic plastic and other dissimilar materials.
12. Exercise care to assure that finished surfaces are unblemished in completed Work.
13. Isolate dissimilar materials. Exercise particular care to isolate non-ferrous metals from ferrous metals, including fasteners.
14. Position illuminating elements within internally lighted signs at such spacing as will assure uniform light distribution across portion of sign faces intended to be illuminated. Sign faces that exhibit “hot-spots” will be unacceptable unless such hot spots are intended to be integral design features of signs.
15. Provide flush-mounted, non-keyed, weatherproof disconnect switches for electrically powered or illuminated signs in accord with electrical code and UL requirements. Locate disconnects on top or back of signs in a manner so as to not be visible to public guests unless indicated otherwise on Design Drawings.
16. Locate items requiring maintenance, such as lamps, ballasts, transformers, wiring connections, etc., in easily accessible areas.
17. Assembly of electrical components must conform to requirements of Underwriters Laboratories, Inc. "Standards for Sign Safety US UL 48" and qualify sign to receive and bear UL label.

18. Fabricating copy: Unless specifically indicated on Design Drawings otherwise, fabricate sign copy as follows.
    a. Cut-out copy: All letter and number cut-outs shall be made from material and gauge as indicated on Design Drawings. Cutting shall be done in such manner that edges and corners of finished letterforms will be sharp and true. Letterforms with nicked, cut, ragged, rounded (positive or negative) corners, and similar disfigurements will not be acceptable.
    c. Routed copy: Cutting and routing shall be done in such manner that edges and corners of finished letterforms shall be sharp and true. Letterforms with nicked, cut, ragged, rounded (positive or negative) corners, and similar disfigurements will not be acceptable. Letterforms shall be aligned so as to maintain a base line parallel to the sign format, with margins and layout as indicated on Design Drawings and approved shop drawings. Vertical strokes shall be plumb. Mechanically fasten center of letters to acrylic plastic as required.

3.9 INSTALLATION – GENERAL

A. Verify and stake the exact sign locations at on site walk-through with City at the job site for all sign locations which are not exactly dimensioned on the drawings. Notify City of any conditions that may adversely affect satisfactory installation of graphic elements.

B. Except as indicated otherwise on the drawings, install prefabricated work plumb, level, square and true to line.

C. Securely anchor work in proper location using anchors, anchorages, fasteners, or other methods approved on shop drawings. All anchors and fasteners shall be appropriate to the anchorage condition.

D. Provide final electrical power hook-up. After final electrical connections have been made, test all electrical systems to assure that all are in proper working order.

E. Coordinate work and access to site with the City.

F. Final adjustment and cleaning:
    1. Touch-up all scratched, marred, abraded, or otherwise damaged surfaces to match original surfaces.
    2. Clean-up work area after installation has been completed.

3.10 MATERIAL HANDLING

A. Pack, wrap, crate, bundle, box, bag, or otherwise package, handle, transport, and store all fabricated work as necessary to provide protection from damage by every cause.

B. Provide clear and legible identifying information on all product packaging to ensure proper on-site review and installation.

3.11 PROJECT CONDITIONS

A. Protection:
    1. Warning signs and other methods of protection must be sufficiently substantial to withstand normal, anticipated construction activities and are subject to City's approval.

B. Sequencing/Scheduling: Coordinate fabrication, delivery, installation, field finishing and field-application, where applicable, of the work of this section, with progress of construction and City's schedule.

GENERAL SPECIFICATIONS
SECTION 101400
EXTERIOR SIGNAGE

C. All fabrication shall be done in an approved and registered fabrication shop, per CBC Chapter 17.

?

D. Maintain all structural integrity of existing structures. Alteration requires a design by California Licensed Civil or Structural Engineer and must be submitted for review and approval by City prior to installation.

3.12 RESTORATION

A. Damage due to negligence of the Contractor to surfaces or building components, shall be repaired and restored to its original condition by the Contractor at no extra cost to the City. Patch and paint around all cuts to match adjacent surfaces.

B. Patch and paint around all cuts to match adjacent surfaces. Replace with ceiling, wall or floor tiles affected by the installation with new tiles.

3.13 INSPECTION

A. City reserves the right to inspect work in the fabrication shop in progress and before it is shipped to the job site for installation.

B. Fabricator shall inspect installation locations for conditions that will adversely affect execution, performance and quality of work, and shall not proceed with installation until unsatisfactory conditions have been corrected.

END OF SECTION 101440