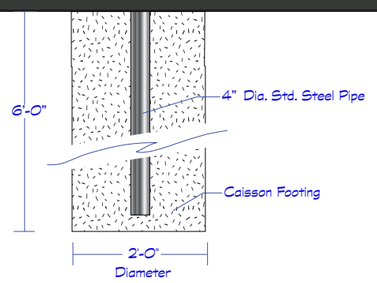
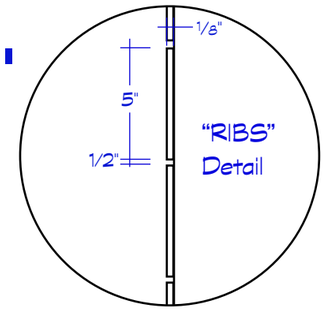
QTY (2) REQUIRED





A — DOUBLE FACED INTERNALLY ILLUMINATED MONUMENT SIGN

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

Sign Area 46.6 sf

Fabricate and install two (2) double faced internally illuminated aluminum monument signs.

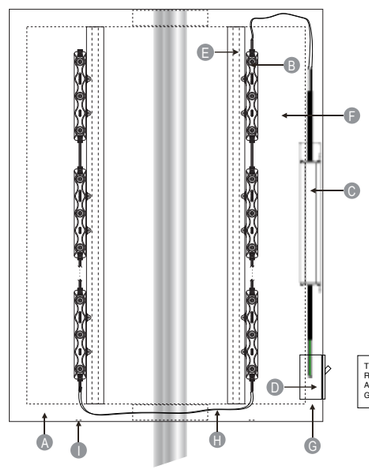
"TAILWINDS": Halo illuminated reverse pan channel 3" deep, painted white, mounted 1.5" off surface.

"AT GATEWAY": Puth-thru acrylic copy 1/2" clear acrylic overlaid with 3M 3630-31 Medium Gray translucent vinyl.

Install the display in a 2'-0" dia x 6'-0" deep footings on a 4" diameter starndard steel pipes as per ASA Engineering. *Royal Sign is a ASA member in good standing.

Sign to be painted to match building paint scheme.

D/F Cabinet / LEDs - Cross Section Detail



A	aluminum cabinet / frame
B	ws-6600 LED
C	power supply
D	J-box w/ disconnect switch
E	H-channel aluminum
F	acrylic / Lexan face
G	primary power (in)
H	low voltage wiring
I	weep holes

THIS SIGN IS INTENDED TO BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF ARTICLE 600 OF THE NATIONAL ELECTRICAL CODE AND/OR OTHER APPLIABLE LOCAL CODES. THIS INCLUDES PROPER GROUNDING AND BONDING OF THE SIGN. **U.L. LISTED**

Client:
Tailwinds at Gateway

Location:
8017 E. Pecos Rd.
Mesa, AZ 85212

royal sign
2631 N. 31st Ave.
Phoenix, AZ 85009
602-278-6286
royalsign.net

Project
220287

1 14 FEB 2022
2 21 FEB 2022
3 19 APR 2022
4 09 JUN 2022
5 n/a
6 n/a
7 n/a
8 n/a
9 n/a
10 n/a

Project Manager:
Raymond Owens

E-Mail:
raymond@royalsign.net

Approval Signatures

X _____
Client

X _____
Landlord

Customer is responsible for providing a dedicated electrical circuit within six feet of each sign location and any desired electrical timing devices.

Sheet Title
Exterior

Page Number
1 of 1

SIGN ENGINEERING STANDARDS FOR THE STATE OF ARIZONA FOR V = 105 MPH

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S3. SMALL SINGLE POLE - FOUNDATION
S4. SINGLE POLE - PIPE & ROUND HSS
S5. SMALL SINGLE POLE - PIPE
S6. SINGLE POLE - SQUARE TUBE
S7. SMALL SIGNLE POLE - SQUARE TUBE
S8. DOUBLE POLE - FOUNDATION
S9. DOUBLE POLE - PIPE & ROUND HSS
S10. DOUBLE POLE - SQUARE TUBE
S11. WOOD POSTS
S12. FLAG POLE
S13. CABINET ANGLE FRAMING
S14. CABINET TUBE FRAMING
S15. ANCHOR BOLTS & BASE PLATES
S16. MASONRY WALL W/ SPREAD FOOTING
S17. SPREAD FOOTING
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S19. WALL/CHANNEL LETTER SIGN ATTACHMENTS
S20. CABINET DETAILS
S21. STEEL DETAILS
S22. INSTRUCTIONS

ABBREVIATIONS

CLR	CLEAR
DIA	DIAMETER
DWG	DRAWING
EA	EACH
EF	EACH FACE
EL	ELEVATION
EW	EACH WAY
FT	FEET OR FOOT
IN	INCHES
MAX	MAXIMUM
M.B.	MACHINE BOLT
MIN	MINIMUM
OC	ON CENTER
REV	REVISION
TYP.	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE

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SIGN DESIGN ENGINEERING STANDARDS; FOR THE STATE OF ARIZONA

PROJECT NUMBER: 18147

DATE: 11-6-2018

SCALE: NO SCALE

DRAWN BY: MFS

DESIGNED BY: MFS

REVISIONS:

NO.	DATE
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3	
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5	

THIS ELECTRONIC SIGNATURE HAS BEEN AUTHORIZED BY ME

Registered Professional Engineer (Civil) CERTIFICATE NO. 50863 MICHAEL FRANKLIN SULLAWAY Date Signed ARIZONA U.S.A.

Expires: 06-30-2022

DESIGN CODES

IBC 2018 with Arizona Ammendments
ASCE 7-16
AISC Fifteenth Edition
ACI 2016
NDS 2018
WIND LOAD DESIGN PARAMETERS;
115 MPH, EXPOSURE C, RISK CATEGORY II, K_{zt}=1.0, K_s=0.85, I=1.0, G=0.85
SEISMIC DESIGN PARAMETERS;
S_s= 2, S_1=NA, S_{ds} =NA, S_{d1}=NA, C_d =0.381, R=3.5, I=1.0
SEISMIC DESIGN CATEGORY A, OCCUPANCY CATEGORY II

GENERAL NOTES

1. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS ELEVATIONS AND FIELD CONDITIONS BEFORE BEGINNING CONSTRUCTION. IF ANY DISCREPENCIES ARE FOUND THE ENGINEER OF RECORD SHALL BE NOTIFIED IMMEDIATELY.

2. THE CONTRACTOR SHALL IMMIDIATELY NOTIFY THE ENGINEER OF RECORD OF ANY ON SITE CONDITIONS THAT DO NOT REFLECT THE DRAWINGS, OR OF ANY CONDITIONS THAT AFFECT THE DESIGN OR CONSTRUCTION. THIS INCLUDES ANY AND ALL SITE CONDITIONS SUCH AS ADVERSE SOIL CONDITIONS, DISCOVERED UTILITIES, GROUND WATER, ETC.

3. THESE ENGINEERING DRAWINGS HEREIN SHOW THE COMPLETED STRUCTURE IN ITS FINAL STATE. THE MEANS AND METHODS OF CONSTRUCTION AS WELL AS TEMPORARY WORKS REQUIRED TO COMPLETE THE STRUCTURE ARE THE RESPONSIBILITY OF THE CONTRACTOR.

4. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE AS WELL AS ANY ADDITIONAL CODES AND AMENDMENTS OF THE JURISDICTION OF AUTHORITY.

5. SIGNS MAY NOT BE LOCATED WITHIN THE PUBLIC RIGHT-OF-WAY.

6. ALL SIGNS ARE ON-SITE SIGNS.

7. CONTRACTORS RESPONSIBLE FOR THE CONSTRUCTION OF A WIND OR SEISMIC FORCE RESISTING SYSTEM/ COMPONENT LISTED IN THE "STATEMENT OF SPECIAL INSPECTION" SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE BUILDING INSPECTORS AND THE OWNER PRIOR TO THE COMMENCEMENT OF WORK ON SUCH SYSTEM OR COMPONENT PER IBC SECTION 1704.

8. "FOR HEIGHT OF THE SIGN EXCEED ITS WIDTH, IT SHALL BE DESIGNED AND COMPLY WITH POLE SIGN REQUIREMENT; FOR WIDTH OF SIGN EXCEED ITS HEIGHT, IT SHALL BE DESIGNED AND COMPLY WITH MONUMENT SIGN REQUIREMENT.

REINFORCED MASONRY

1. THE C.M.U. BLOCK SHALL CONFORM TO ASTM C90 WITH STRENGTH f'm = 1500 PSI.

2. MORTAR PER ASTM C270, TYPE S WITH A MINIMUM STRENGTH OF 1800 PSI.

3. GROUT SHALL BE IN CONFORMANCE WITH ASTM C476. COMPRESSIVE STRENGTH AS PER ASTM C1019.

4. CELLS SHALL BE FILLED SOLID WITH GROUT.

5. VERTICAL BARS ARE TO BE TIED OR FIXED IN POSITION BY OTHER MEANS AND IN INTERVALS NOT LESS THAN 200 BAR DIAMETERS.

6. DOWEL BARS ARE TO BE SAME SIZE AND SPACING AS WALL REINFORCEMENT.

7. MONUMENT DESIGN IS FOR A MINIMUM WIDTH OF 16"

FOUNDATIONS

1. THE FOUNDATION DESIGN IS BASED ON THE MINIMUM SOIL BEARING VALUES OF 1500 PSF AND LATERAL BEARING OF 150 PSF/FT AS PER IBC CLASS 4 SOIL TABLE 1806.2. ALLOWABLE BEARING CAN BE INCREASED BY 1/3 FOR WIND AND SEISMIC LOADS.

2. THE FOOTING EXCAVATION SHALL BE KEPT FREE AND CLEAR OF LOOSE MATERIAL AND FREE STANDING WATER.

3. ANY ADVERSE SOIL CONDITIONS ARE TO BE REPORTED TO THE ENGINEER OF RECORD. IF SUCH ADVERSE SOIL CONDITIONS ARE ENCOUNTERED A SOILS INVESTIGATION/REPORT MAY BE REQUIRED.

4. FOUNDATION AND SOIL DESIGN SHALL COMPLY WITH SECTION 1801.2 OF THE INTERNATIONAL BUILDING CODE.

5. SHALLOW FOUNDATIONS SHALL BE BUILT ON UNDISTURBED SOIL, COMPACTED FILL MATERIAL OR CONTROLLED LOW-STRENGTH MATERIAL (CLSM). COMPACTED FILL MATERIAL SHALL BE PLACED IN ACCORDANCE WITH IBC SECTION 1804.5 AND CLSM SHALL BE PLACED IN ACCORDANCE WITH IBC SECTION 1804.6. THE MINIMUM DEPTH OF SHALLOW FOOTINGS SHALL BE 12" BELOW GRADE.

STRUCTURAL STEEL

1. STEEL CONSTRUCTION SHALL CONFORM TO AISC STANDARDS AND IBC CHAPTER 22.

2. PIPE STEEL SHALL BE ASTM A53 GRADE B WITH A YIELD STRENGTH OF 35 KSI, UP TO 12" AS PER AISC. ROUND HSS PER ASTM A500 WITH A YIELD OF 42 KSI IS ALSO ACCEPTABLE.

3. ROUND HSS STEEL SHALL BE ASTM A500 GRADE B WITH A YIELD STRENGTH OF 46 KSI. THIS SHALL BE FOR DIAMETERS OF UP TO 20". SIZES LARGER THAN SHOWN IN THE AISC MANUAL SHALL ALSO CONFORM TO ASTM A500 GRADE 46 KSI.

4. RECTANGULAR HSS STEEL SHALL BE ASTM A500 GRADE B WITH A YIELD STRENGTH OF 50 KSI, UP TO SQUARE TUBE OF 16". SIZES LARGER THAN SHOWN IN THE AISC MANUAL SHALL ALSO CONFORM TO ASTM A500 GRADE 50 KSI.

5. PLATES, BARS AND OTHER STRUCTURAL STEEL SHAPES SHALL BE ASTM A36 WITH A YIELD STRENGTH OF 36KSI.

6. STEEL MEMBERS PERMANENTLY EXPOSED TO ENVIRONMENTAL CONDITIONS SHALL BE TREATED WITH RUST-INHIBITED PRIMER, EXCEPT FOR MATERIALS THAT ARE GALVANIZED OR OF STAINLESS STEEL.

7. WELDING SHALL CONFORM TO AMERICAN WELDING SOCIETY STANDARDS. ALL NON-FIELD WELDING SHALL BE PERFORMED BY AN APPROVED FABRICATOR AND HAVING CURRENT EXPERIENCE IN THE TYPE OF WELDS SHOWN ON THE DRAWINGS. ALL CERTIFICATES SHALL BE FROM ACCEPTED TESTING AGENCIES. ALL WELDING TO BE DONE BY E70 SERIES LOW HYDROGEN RODS.

8. THE CONTRACTOR HAS THE OPTION TO SHOP WELD OR FIELD WELD. FIELD WELD IS SUBJECT TO SPECIAL INSPECTION WHERE NOTED. SOME FIELD WELDING IS OF A NON-STRUCTURAL NATURE.

9. ANCHOR BOLTS SHALL BE ASTM F1554 GRADE 36 OR THREADED RODS WITH A36 STEEL.

10. FIELD WELD TO BE PERFORMED BY CERTIFIED WELDERS FOR STRUCTURAL STEEL. CONTINUOUS INSPECTION BY A DEPUTY INSPECTOR IS REQUIRED.

CONCRETE

1. CONCRETE CONSTRUCTION SHALL CONFORM TO IBC CHAPTER 19 AND THE REQUIREMENTS OF ACI 301 AND ACI 318 FOR MATERIAL AND PLACEMENT STANDARDS.

2. ADMIXURES ARE NOT TO BE USED WITHOUT PRIOR APPROVAL OF THE ENGINEER. ANY ADMIXURES THAT REDUCE THE CONCRETE STRENGTH SHALL NOT BE USED. CONCRETE SHALL BE FREE OF CHLORIDE. FLY ASH SHALL NOT BE MORE THAN 15% OF THE TOTAL WEIGHT OF THE CONCRETE.

3. THE 28 DAY CONCRETE STRENGTH SHALL BE A MINIMUM OF 2500 PSI (GROUP U OCCUPANCY)

4. WATER CEMENT RATIO SHALL BE A MAXIMUM OF 0.45. THE MAXIMUM AGGREGATE SIZE SHALL BE 1".

5. TYPE V PORTLAND CEMENT SHALL CONFORM TO ASTM C150. CONCRETE MIXING SHALL CONFORM TO ASTM C94 AND THE SLUMP SHALL NOT BE GREATER THAN 4 ½".

6. ALL REINFORCEMENT, ANCHOR BOLTS AND OTHER INSERTS SHALL BE WELL SECURED IN POSITION PRIOR TO PLACING CONCRETE.

7. FORMWORK SHALL NOT BE REMOVED UNTIL CONCRETE HAS REACHED A STRENGTH OF 75% OF THE DESIGN STRENGTH.

8. CONCRETE COVER OF REINFORCEMENT SHALL BE AS FOLLOWS:

CONCRETE PLACED DIRECTLY AGAINST EARTH	3"
TOP OF SLAB	1"
FORMED CONCRETE WITH EARTH BACKFILL	2"

REINFORCING STEEL

1. DEFORMED REINFORCING STEEL BARS SHALL CONFORM TO ASTM A615 WITH A YIELD STRENGTH OF 60 KSI. ANY BARS TO BE WELDED SHALL CONFORM TO ASTM A706.

2. DETAILING, FABRICATION AND PLACEMENT OF REINFORCING BARS SHALL CONFORM TO ACI 315, AND CRSI.

3. LAP SPLICES SHALL BE A MINIMUM CLASS "B" TENSION LAP SPLICE AS PER ACI 318 OR 40 TIMES BAR DIAMETER. SPLICES SHALL BE STAGGERED BY A MINIMUM OF ONE LAP LENGTH.

4. SPLICE LOCATIONS ARE SUBJECT TO THE APPROVAL OF THE ENGINEER OF RECORD.

5. ALL REINFORCING BARS SHALL BE CLEAN AND FREE FROM LOOSE MILL SCALE, RUST, OIL, DEBREE, OR ANY OTHER MATERIAL THAT MAY AFFECT THE BOND WITH CONCRETE.

ALUMINUM

1. ALL ALUMINUM CONSTRUCTION SHALL CONFORM WITH THE AA ADM-1 ALUMINUM DESIGN MANUAL. ALLUMINUM SECTIONS SHALL BE 6061-T6 WITH A MINIMUM TENSILE YIELD STRENGTH OF 30KSI.

2. PROTECTION BETWEEN DISSIMILAR METALS SHALL BE PROVIDED.

SPECIAL INSPECTION

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE SPECIAL INSPECTION AGENCY AT LEAST ONE DAY PRIOR TO PERFORMING ANY WORK THAT REQUIRES SPECIAL INSPECTION. SPECIAL INSPECTION WORK THAT IS INSTALLED OR COVERED WITHOUT THE APPROVAL OF THE INSPECTOR MAY BE SUBJECT TO REMOVAL OR EXPOSURE.

SPECIAL INSPECTION SCHEDULE

SPECIAL INSPECTION REQUIRED WHERE NOTED ON DRAWINGS	CONTINUOUS	PERIODIC
STRUCTURAL STEEL		
HIGH STRENGTH BOLTS		X
FIELD WELDING-		
COMPLETE & PARTIAL PEN. GROOVE WELDS	X	
MULTIPASS FILLET WELDS	X	
SINGLE-PASS FILLET WELDS > 5/16"	X	
REINFORCED CONCRETE		X
CONCRETE WITH DESIGN STRENGTH GREATER THAN 2500 PSI	X	
EPOXY OR GROUTED DOWELS		X

ROUGH CARPENTRY

1. WOOD CONSTRUCTION SHALL CONFORM TO IBC CHAPTER 23 AND THE NDS. THE MAXIMUM MOISTURE CONTENT SHALL NOT EXCEED 19%.

2. ALL FRAMING LUMBER SHALL BE DOUGLAS FIR LARCH, GRADE MARKED BY THE W.O.L.I.B. OR W.W.P.A. AS FOLLOWS:

STRINGERS	D.F. CONSTRUCTION GRADE
POSTS	D.F. #1

3. ALL PLYWOOD SHALLL CONFORM TO PS-1 OR A.P.A. PRP-108, HAVE AN EXTERIOR OR EXPOSURE 1 CLASSIFICATION AND SHALL BERAR THE STAMP OF AN APPROVED TESTING AGENCY. THE FACE GRAIN SHALL BE PERPENDICULAR TO SUPPORTS. NAILING SHALL BE CORROSION RESISTANT COMMON NAILS. ALL PLYWOOD SHALL BE ½" NOMINAL THICKNESS MINIMUM WITH A SPAN/INDEX RATIO OF 24/0.

4. WOOD POSTS IN DIRECT CONTACT WITH EARTH OR CONCRETE SHALL BE PRESSURE TREATED UP TO 8" ABOVE GRADE, STAMPED BY AN APPROVED AGENCY.

5. BOLT HOLES IN WOOD SHALL BE DRILLED 1/32" TO 1/16" DIAMETER LARGER THAN THE NOMINAL BOLT SIZE.

6. LAG BOLTS SHALL BE PRE-DRILLED TO A DIAMETER OF 60% OF THE SHANK DIAMETER. THE BOLT SHALL BE TURNED AND NOT HAMMERED.

7. MANUFACTURED PRODUCTS USED FOR WOOD CONSTRUCTION, SUCH AS SIMPSON STRONG-TIE, SHALL CONFORM TO THE APPROPRIATE UP-TO-DATE REPORT BY THE INTERNATIONAL CODE COUNCIL.

SIGN ASSOCIATION ARIZONA

SULLAWAY ENGINEERING
10815 RANCHO BERNARDO RD., SUITE 260
SAN DIEGO, CA 92198
PROJECTMANAGER@SULLAWAYENG.COM
(858)-312-5150
www.sullawayeng.com

SIGN DESIGN ENGINEERING STANDARDS; FOR THE STATE OF ARIZONA

PROJECT NUMBER: 18147

DATE: 11-6-2018

SCALE: NO SCALE

DRAWN BY: MFS

DESIGNED BY: MFS

REVISIONS:

NO.	DATE
1	
2	
3	
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THIS ELECTRONIC SIGNATURE HAS BEEN AUTHORIZED BY ME

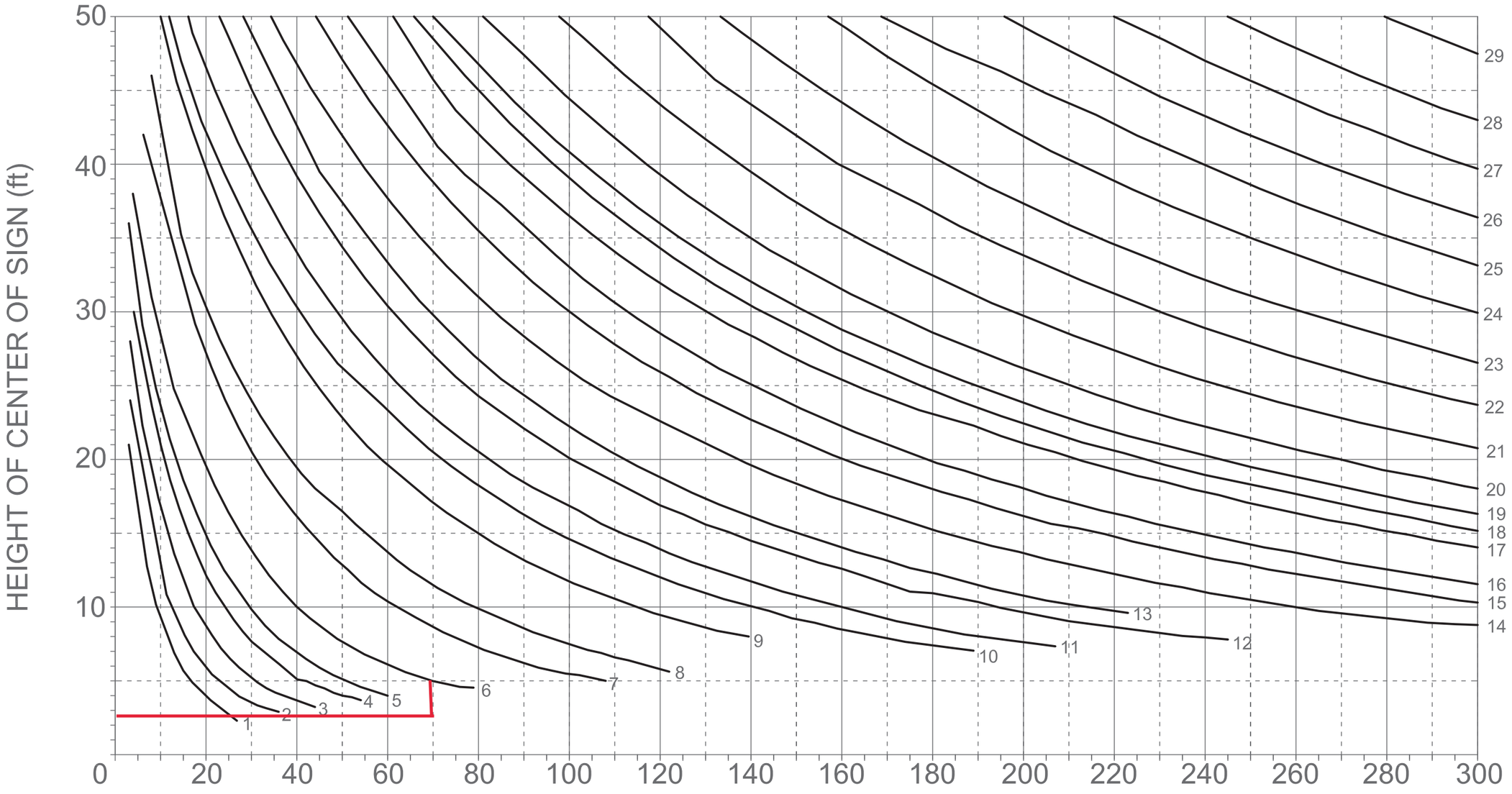
Registered Professional Engineer (Civil) CERTIFICATE NO. 50863 MICHAEL FRANKLIN SULLAWAY Date Signed ARIZONA U.S.A.

Expires: 06-30-2022

V = 105 MPH

SHEET TITLE: GENERAL NOTES & DESIGN CRITERIA

SHEET: S1



PILE SIZE (DIAMETER AND DEPTH IN FT)								
#	DIA.	DEPTH	#	DIA.	DEPTH	#	DIA.	DEPTH
1	1.50	4.0	11	2.50	9	21	4.00	12.0
2	2.00	4.0	12	3.00	9.0	22	4.00	13.0
3	1.50	5.0	13	2.50	10.0	23	4.50	13.0
4	2.00	5.0	14	3.00	10.0	24	4.50	14.0
5	1.50	6.0	15	3.50	10.0	25	5.00	14.0
6	2.00	6.0	16	3.00	11.0	26	5.00	15.0
7	2.00	7.0	17	3.50	11.0	27	5.50	15.0
8	2.50	7.0	18	4.00	11.0	28	6.00	15.0
9	2.50	8.0	19	3.00	12.0	29	6.00	16.0
10	3.00	8.0	20	3.50	12.0			

NOTES

1. PLOT POINT AND CHOOSE THE CURVE ABOVE THE POINT

ARIZONA SIGN ASSOCIATION

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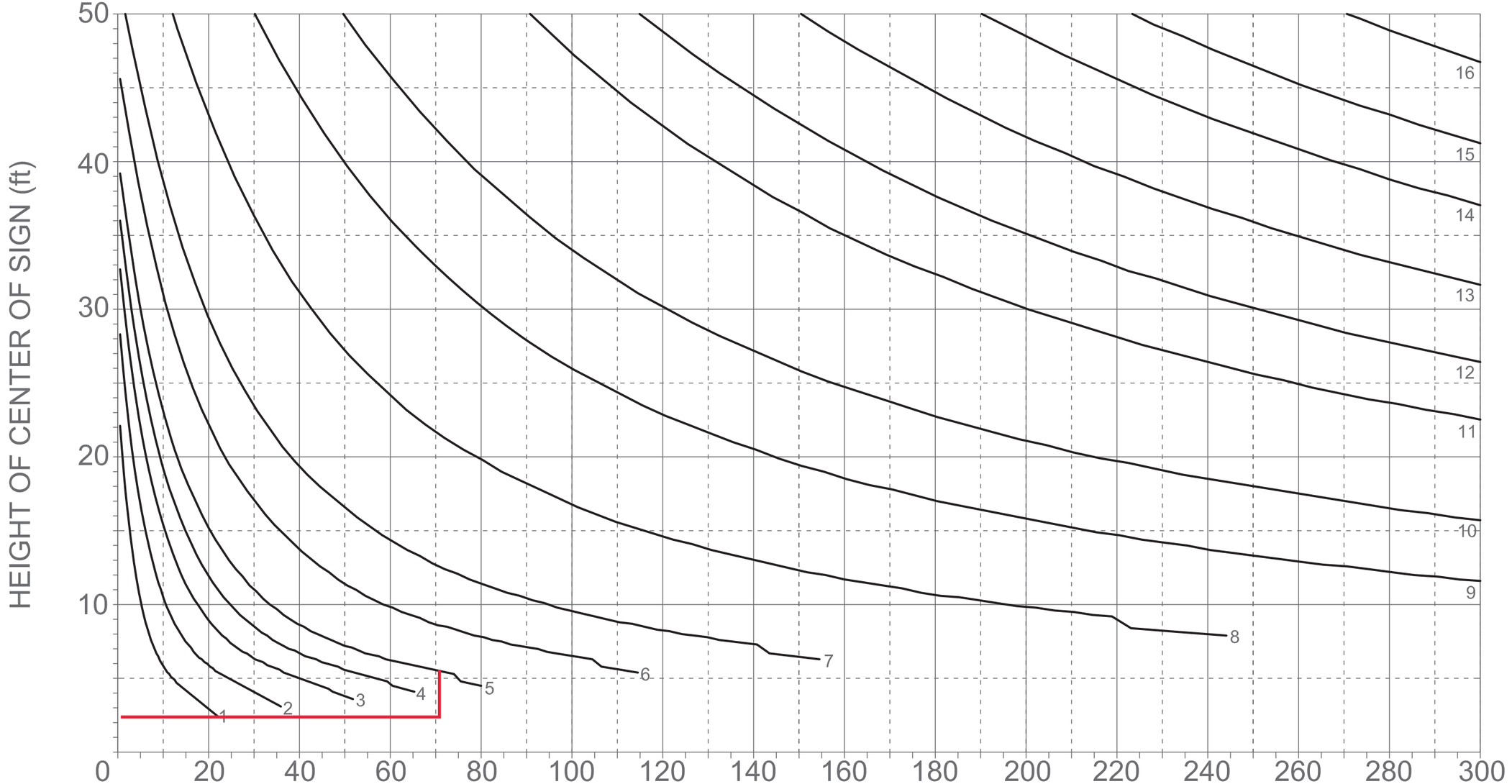
CERTIFICATE NO.
50863
MICHAEL FRANKLIN SULLAWAY
Date Signed
ARIZONA U.S.A.

Expires: 06-30-2022

V = 105 MPH **SHEET TITLE: SINGLE POLE - FOUNDATION** **SHEET: S2**



PIPE & ROUND HSS- UNITS; INCHES					
#	DIA	t	#	DIA	t
1	2	0.154	9	10.0	0.365
2	2.5	0.203	10	12.0	0.375
3	3.0	0.216	11	14.0	0.375
4	3.5	0.226	12	16.0	0.375
5	4.0	0.237	13	18.0	0.375
6	5.0	0.258	14	20.0	0.375
7	6.0	0.280	15	22.0	0.375
8	8.0	0.322	16	24.0	0.375

NOTES
1. PLOT POINT AND CHOOSE THE CURVE ABOVE THE POINT
2. Fy = 35 KSI FOR DIAMETERS < 12", Fy = 42 KSI FOR DIAMETERS ≥12"

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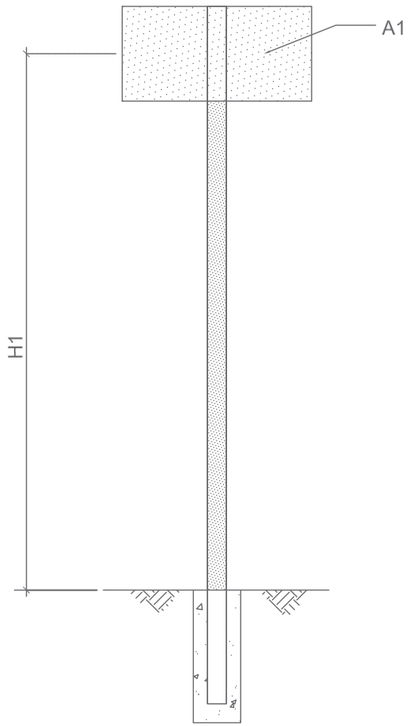
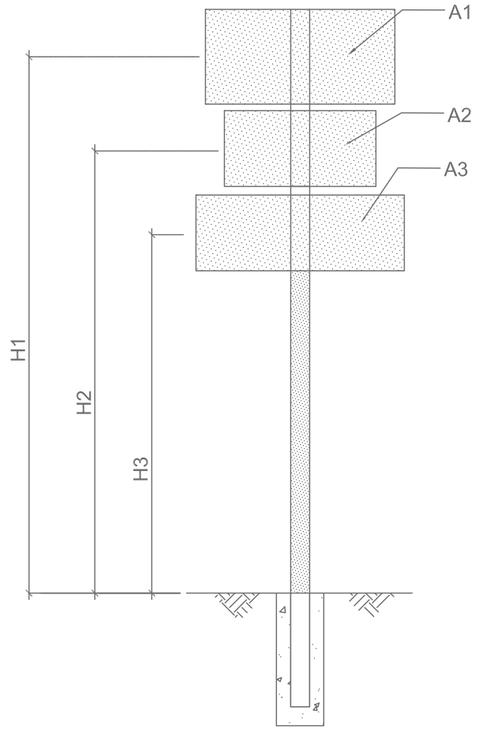
Registered Professional Engineer (Civil) CERTIFICATE NO. 50863 MICHAEL FRANKLIN SULLAWAY Date Signed ARIZONA U.S.A.

Expires: 06-30-2022

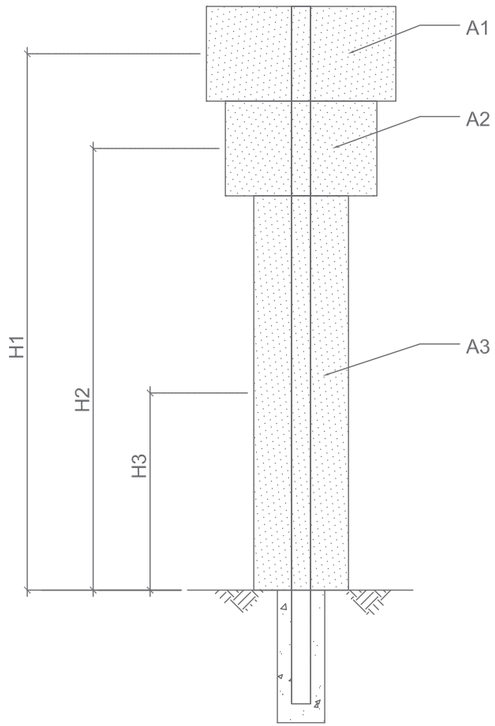
V = 105 MPH **SHEET TITLE: SINGLE POLE- PIPE & ROUND HSS** **SHEET: S4**



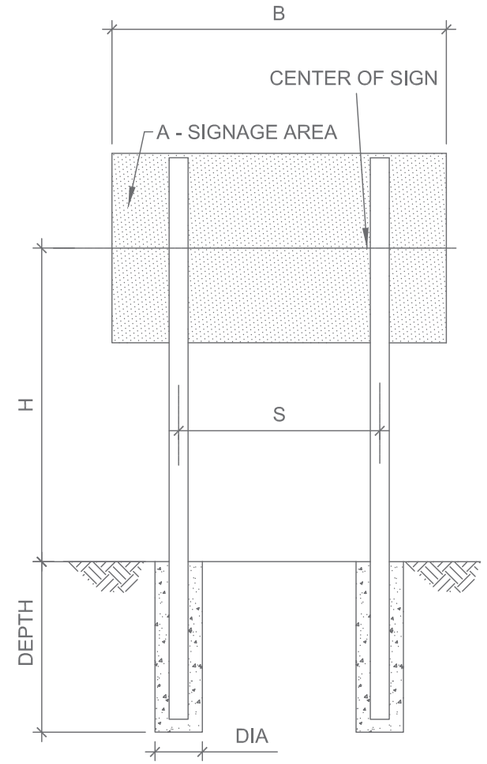
POLE AND FOOTING DIAGRAM
FOR POLE SIGNS



POLE AND FOOTING DIAGRAM
FOR MULTIPLE SIGNS



POLE AND FOOTING DIAGRAM
FOR SIGNS WITH POLE COVERS



POLE AND FOOTING DIAGRAM
FOR DOUBLE POLE SIGN

CALCULATION OF EXPOSED AREA (A) AND C.G.

1. FIND EXPOSED AREA (A);
   A = A1 + A2 + A3 + A4 (A3=A4=0.0 FOR POLE SIGNS)

2. FIND CENTROID OF COMBINED AREAS (C.G.);
   $C.G. = \frac{(A1 \times H1) + (A2 \times H2) + (A3 \times H3)}{A}$

3. WITH A (TOTAL AREA) AND H (HEIGHT)
USE THE CHARTS TO DETERMINE THE FOOTING AND POLE SIZES

WITH TWO AREAS; A=A1+A2 , $C.G. = \frac{A1xH1 + A2xH2}{A}$

NOTES
-FOR POLE AREA, ASSUME A POLE SIZE. USE SHEET 3 (OR APPROPRIATE SHEET) TO FIND THE ACTUAL POLE SIZE. REVISE A AND C.G., THEN GO THRU STEPS 1, 2, 3 TO VERIFY NEW POLE SIZE.
-FOR DOUBLE POLE SIGNS: POLE SPACING "S" MUST BE GREATER THAN 0.75 TIME THE SIGN WIDTH "B"

EXAMPLE

A1= 8x 16 = 128 sqft
A2 = 6 x 4 = 24 SQFT
A = 152 SQFT

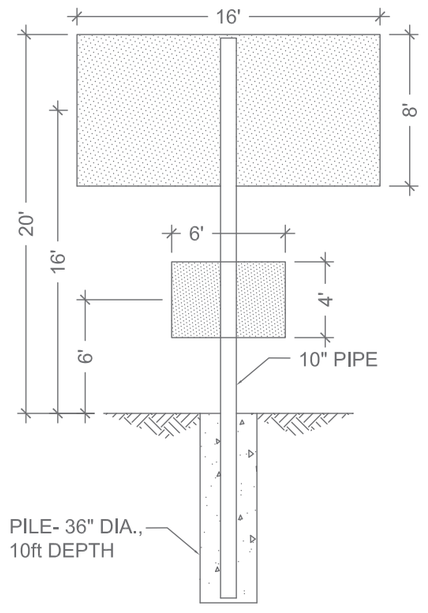
H1 = 16 ft
H2 = 6 ft

$C.G. = \frac{128x16 + 24x6}{152}$

C.G. = 14.42 ft

WITH A =152, C.G.=14.42,
PLOT ON SHEET 2, CURVE #18;
36" DIA., 10.0 ft

FROM SHEET 3, CURVE #9;
10" PIPE



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CERTIFICATE NO. 50863
MICHAEL FRANKLIN SULLAWAY
Date Signed
ARIZONA U.S.A.

Expires: 06-30-2022

SHEET TITLE: INSTRUCTIONS **SHEET: S22**