



Municipal Engineering Standards

APPENDIX H
PARKS AND TRAIL SIGN STANDARDS

City of St. Albert
Parks and Trails Sign Specifications

June 24, 2016

Revised

- October 26, 2016
- February 22, 2017
- February 23, 2017
- March 3, 2017
- December 15, 2017

CLIENT

City of St. Albert

PROJECT

PARKS AND TRAILS

SIGN SPECIFICATIONS

PROJECT NO.

15-0869.04

DRAWING

Sign Schedule

SCALE

As Shown

DATE

June 24, 2016

DRAWN

SK/CP

CHECKED

-

COMMENTS

-

REVISIONS

February 22, 2017

February 23, 2017

BONDcreative

BOND Creative Inc
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Tel 403 509 3340 Fax 403 509 3345

This drawing indicates design specifications only. BOND Creative Inc is not responsible for engineered shop drawings (if required) or for the construction and installation of signs, or sign structures. All measurements must be confirmed on site.

SHEET NO.

B.01

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Sign Schedule

Sign No.	Qty.	Description	Remarks	Drawing No.
-	-	Sign Schedule	-	B.01
-	-	Construction Keynotes	-	B.02
-	-	Park Sign Foundation Standards	Revised February 23, 2017	S-001-S-004
ID-1	-	Primary Park Identification	-	B.03
ID-2	-	Secondary Park Identification	-	B.04
ID-3	-	Tertiary Park Identification	-	B.05
ID-4	-	Wall Mounted Facility Identification	-	B.06
D-1	-	Pedestrian Directional	-	B.07
D-2	-	Trail Marker	-	B.08
IN-1	-	Primary Information/Orientation Hub	-	B.09
IN-2	-	Secondary Information/Orientation Hub	-	B.10
IN-3	-	Tertiary Information/Orientation Hub	-	B.11
IN-4	-	Facility Hours Information	-	B.12
IN-5	-	Freestanding Information	-	B.13
R-1	-	Regulatory Signs	-	B.13
T-1	-	Temporary Information - Small	-	B.14
T-2	-	Temporary Information - Large	-	B.15
INT-1	-	Primary Interpretive	-	B.16

CONSTRUCTION KEYNOTES

- 1 Square, pressure treated rough spruce (brown), ACQ treated (no stain or paint).
- 2 Welded square tube aluminum frame (Thickness TBD by Sign Supplier - minimum 2" thickness). Frame to match shape of adjoining sign face. Internal braces and structure as required. All corners welded and finished smooth. All exposed edges and faces to be painted black. Mechanically fastened to wood posts with non-corroding fasteners.
- 3 Aluminum panel mechanically fastened (fasteners to facilitate with removal or replacement of panel if required) tamper proof, non-corroding screws to wooden post. Panel to be stood off 1/4" away from surface. Rust resistant threaded anchors to be used and inset in wood post. No sharp edges or corners. Screw heads and all exposed sides and edges of panel to be painted to match.
- 4 Fabricated aluminum cabinet with internal square tube frame. Ensure frame and external sheeting are robust enough to resist warping. All welds and edges to be finished smooth. Fastener heads and all exposed sides and edges of panel to be painted to match.
- 5 Fabricated aluminum sign face. All welds and edges to be finished smooth. Mounted to cabinet frame with no visible fasteners.
- 6 Vinyl graphics and text. Applied first surface.
- 7 Custom pole mounting 'L' bracket securely fastened to spruce pole and concrete foundation. All corners welded and finished smooth. Non-corroding mounting hardware (stainless steel bolts with nylon washers). Engineering mounting details TBD by sign supplier.
- 8 BOND Creative Inc. not responsible for concrete foundations they are the sole responsibility of sign contractor. Sign contractor responsibilities:
 - Design of foundation by sign contractor, refer to drawings S-001-S-004
 - Stamped engineered drawings by sign contractor
 - Supply physical bolt template by sign contractor
 - Foundations by others
- 9 OPTION A - 3/4" deep vitreous enamel pan, mounted to panel. No front face visible fasteners (final artwork TBD).
 OPTION B - Scratch and UV resistant 3/8" clear carrier with digital print graphics on second surface.
 OPTION C - High pressure laminate digital map. 1/2" thickness. Mounting hardware is concealed. Apply with threaded inserts. Edges are smooth, polished black.
- 10 Aluminum sign face, mechanically fastened to internal frame with non-corroding, tamper proof fasteners. No sharp edges or corners, sign face to be void of buckling, warping or oil canning. Fastener heads and all exposed sides and edges of panel to be painted to match.
- 11 Aluminum sign face, mechanically fastened to internal frame. No visible fasteners, sign face to be void of buckling, warping or oil canning. All exposed sides painted navy blue, dark green and lime green.
- 12 Horizontal grain brushed aluminum capping with clear coat.
- 13 Aluminum sign blade mechanically fastened securely to custom sign blade clamp. No sharp edges or corners, sign face to be void of buckling, warping or oil canning.
- 14 Horizontal grain brushed aluminum custom sign blade clamp securely fastened to aluminum pole. All corners welded and finished smooth with clear coat.

- 15 Square 4" aluminum post.
- 16 Inlaid aluminum post topper securely fastened to spruce. No visible fasteners. Topper to be offset 1/4" off from surface. All corners welded and finished smooth.
- 17 Aluminum modular sign panel mechanically fastened (fasteners to facilitate with removal or replacement of panel if required) with tamper proof non-corroding, fasteners to frame. Ensure all fasteners are not visible. No sharp edges or corners, sign face to be void of buckling, warping or oil canning. Fastener heads and all exposed sides and edges of panel to be painted to match.
- 18 Standard mounting straps and support arms as required (fabricated from non-corroding material). Mechanical fasteners through face of sign and painted to match sign and positioned to avoid graphics.
- 19 Standard pole mounting sign system. Base plate mounted securely to surface with appropriate, non-corroding mechanical fasteners, leveling spacers, breakaway collars and standard mounting requirements (mounting details TBD by sign supplier).
- 20 Standard aluminum sign panel. No sharp edges or corners.
- 21 Exterior grade glulam laminated timber to match pressure treated rough spruce posts used throughout sign family.
- 22 Wood structure as fabricated by the City of St. Albert. All existing wood structures to be re-painted.
- 23 Standard galvanized steel, U-channel post provided by the City of St. Albert Public Works and are driven directly into the ground with no concrete foundation. Non-corroding hardware to be used.
- 24 First surface direct print on navy blue acrylic. Flush mounted to surface with tape and adhesive as required.
- 25 Non-glare lexan display window, painted second surface border, 1/32" spacer (open on both ends), second surface painted acrylic common back to match dark blue. Must accommodate 8 1/2"x14" (legal paper size) insert.
- 26 Masked and painted graphics
- 27 Map fastened with non-corrosive fasteners
- 28 Digitally printed graphics




Sign Finishes

- A Powdercoat. Satin finish. Ensure an even smooth texture to finished product. All exposed surfaces. No penetrations to substrate for suspension unless already existing or approved.
- B Silk screened graphics. Ensure maximum opacity to accommodate dark backgrounds.
- C Painted surfaces. Automotive grade paint with a satin finish. All surfaces to be smooth and free of blemishes. Paint all exposed surfaces.




Sign Colours

-  **White**
Opaque White 3M 7725-10
-  **Black - PMS Black C**
Opaque Vinyl: 3M 7725-12
-  **Dark Blue - PMS 539**
Matthews Paint: MP35286
Satin Finish
-  **Lime Green - PMS 382**
Matthews Paint: MP00488
Satin Finish
-  **Dark Green - PMS 350**
Matthews Paint: MP15953
Satin Finish
-  **Brown - PMS 477**
-  **Silver - PMS 877**

Interpretive Sign Colours

-  **Light Blue - PMS 292**
-  **Orange - PMS 716**
-  **Fuschia - PMS 233**

Regulatory Colours

-  **Warning Red - PMS 1797**
-  **Caution Yellow - PMS 124**
-  **RAL 6020 Chrome Green**
Powder Coated

Bracket Colour

-  **RAL 6020 Chrome Green**
Powder Coated

General Notes

No visible seams. All edges and seams welded and finished smooth.

Visible fasteners, brackets, support structures, and adhesives to be minimized, made of non-corroding elements, painted to match and countersunk where possible.

All surfaces to be flat and even - no deformation or buckling of any sheet materials or panels.

Structural and attachment details TBD by sign supplier.

All painted or powder coated surfaces to have a satin finish.

Automotive grade paint to be used in all masked and painted applications.

All mechanical fasteners to be non-corrosive/rust resistant.

ENGINEER STAMPED
DRAWINGS REQUIRED

CLIENT

City of St. Albert

PROJECT

PARKS AND TRAILS

SIGN SPECIFICATIONS

PROJECT NO.

15-0869.04

DRAWING

Construction Drawings

SCALE

As Shown

DATE

June 24, 2016

DRAWN

CHECKED

SK/CP

-

COMMENTS

-

REVISIONS

October 26, 2016

November 2, 2016

February 22, 2017

BONDcreative

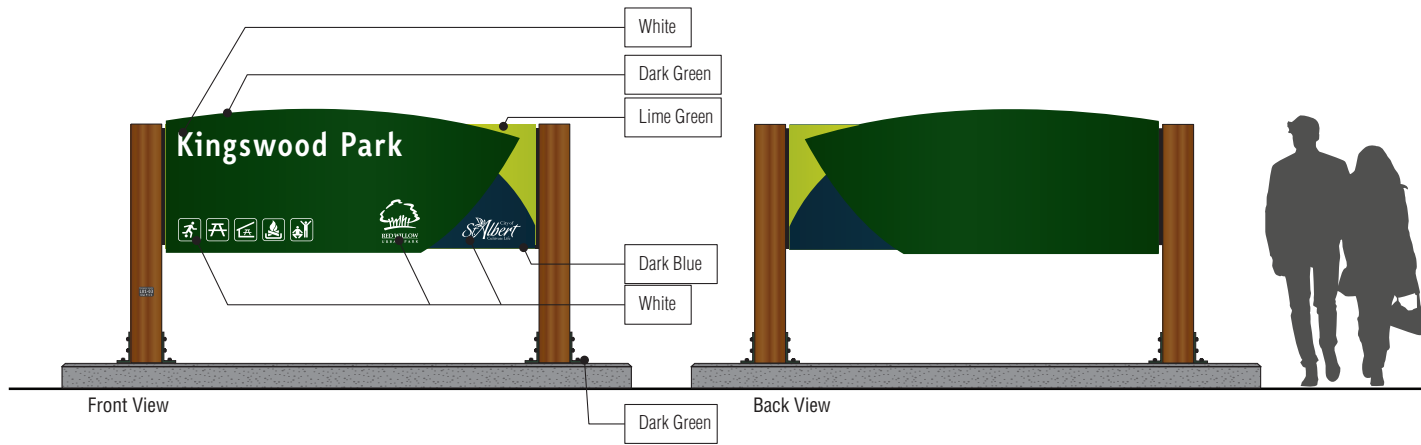
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Suite 208 5800 2nd Street SW
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SHEET NO.

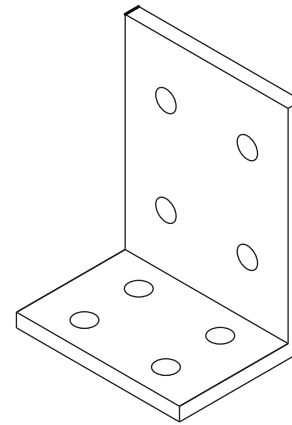
B.02

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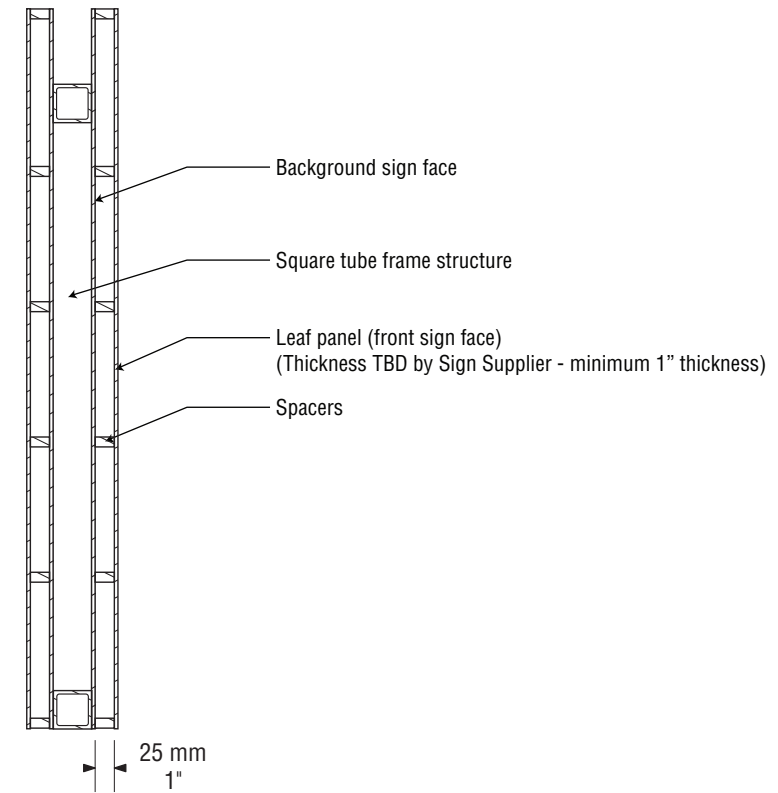
ID-1 Primary Park Identification • Colour Elevation

Scale: 1:50



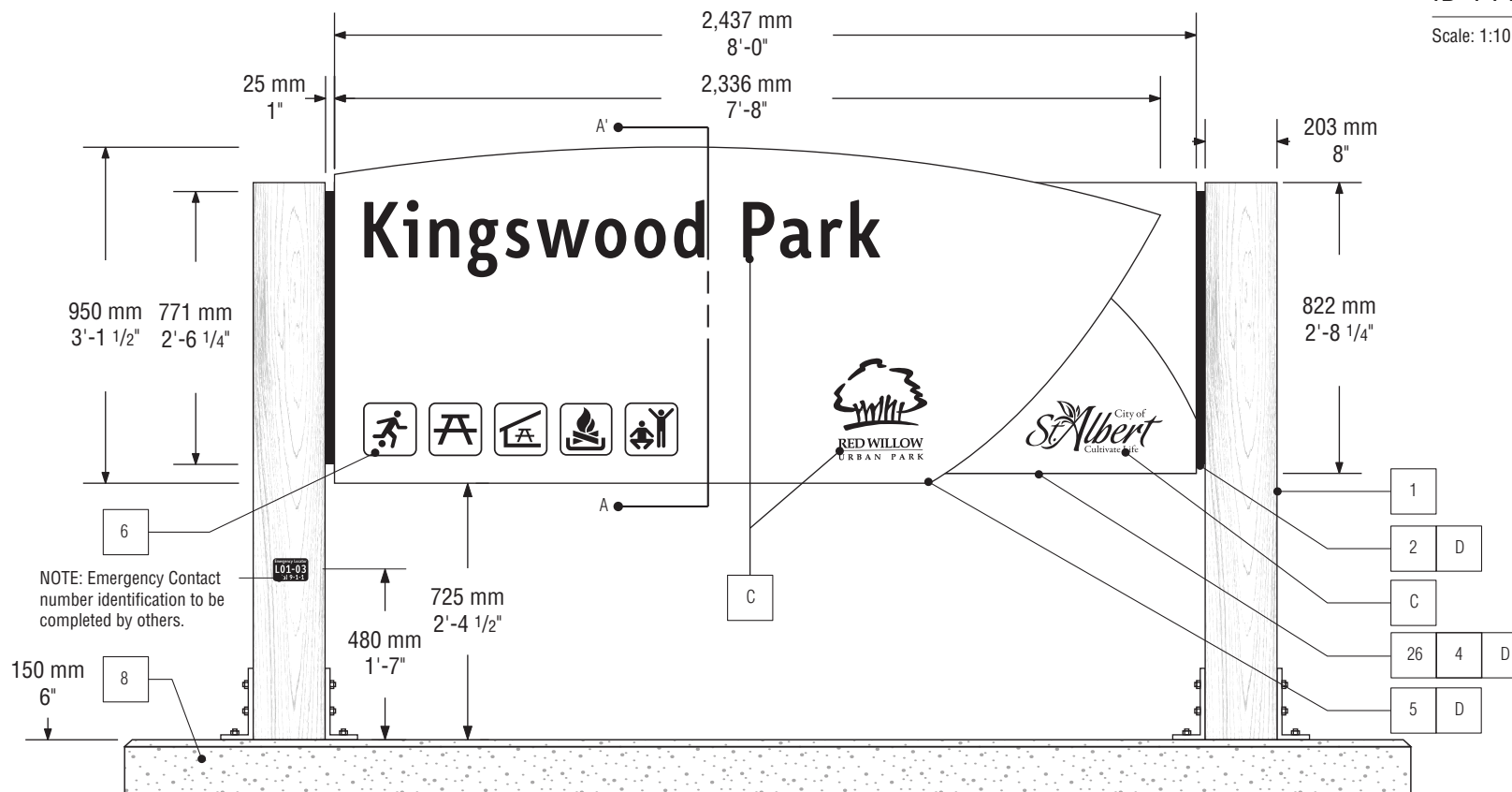
Medium Boot Detail

Scale: NTS
NOTE: Size of boots TBD as structural required.



ID-1 Primary Park Identification • Section A

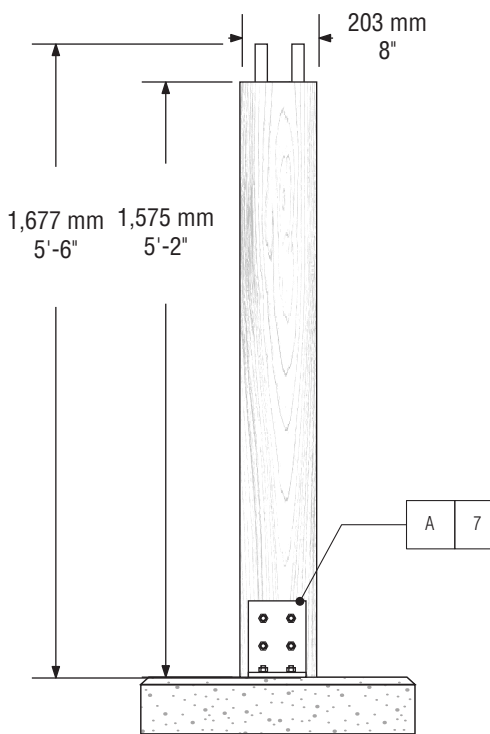
Scale: 1:10



ID-1 Primary Park Identification • Front View

Scale: 1:20

NOTE: Concrete to be 6" Above grade for snow removal and maintenance.



ID-1 Primary Park Identification • Side View

Scale: 1:20

NOTES:

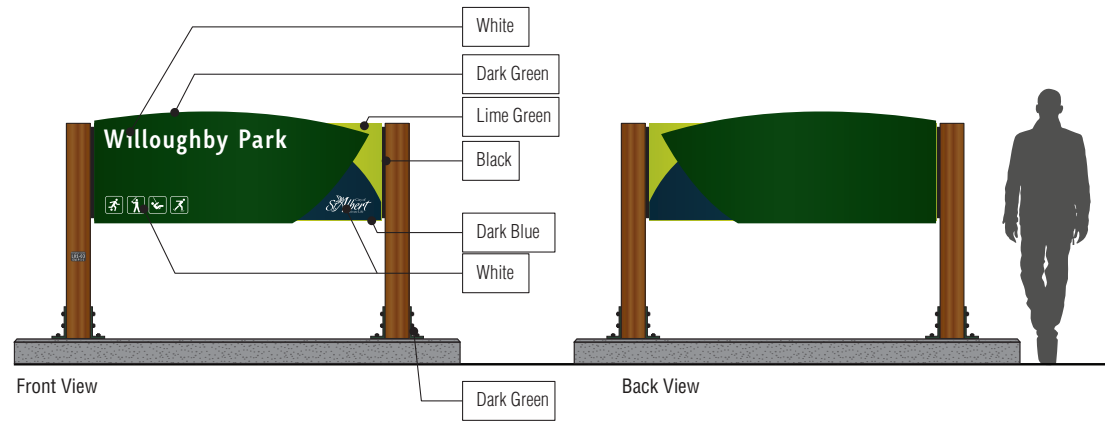
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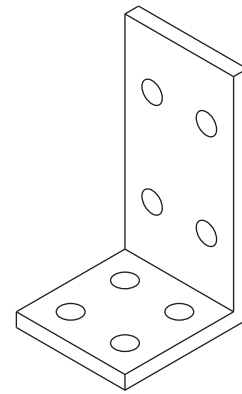
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This drawing supersedes previous issues.



ID-2 Secondary Park Identification • Colour Elevation

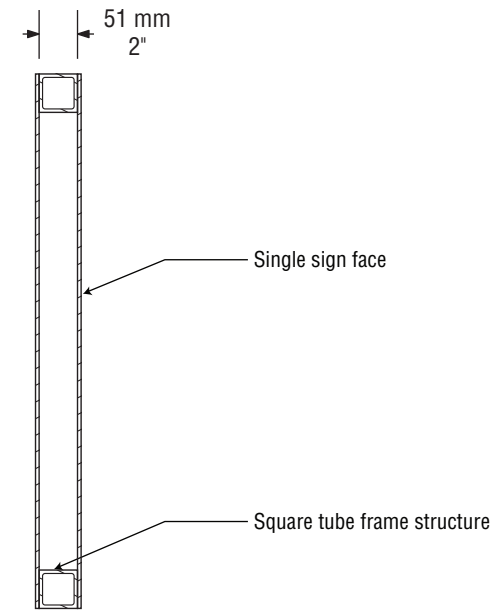
Scale: 1:50



Small Boot Detail

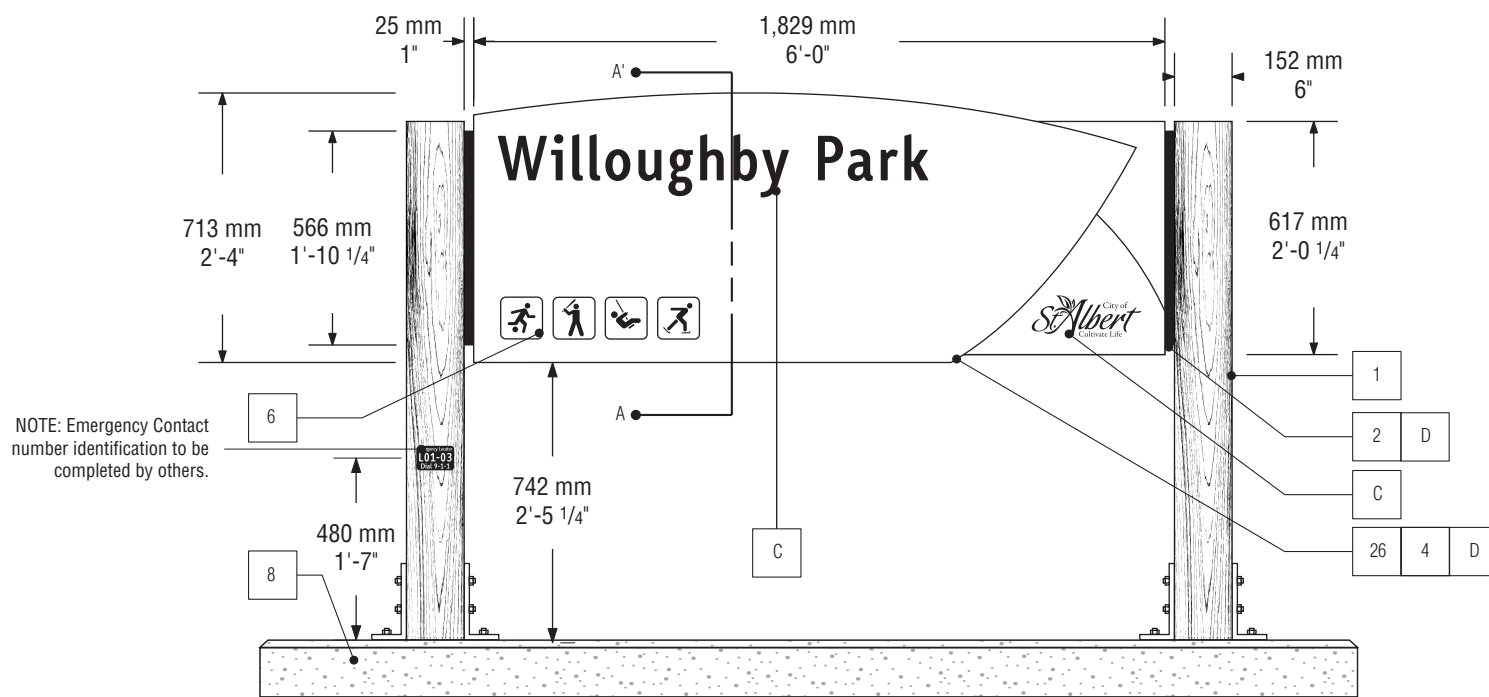
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NOTE: Size of boots TBD as structural required.



ID-2 Secondary Park Identification • Section A

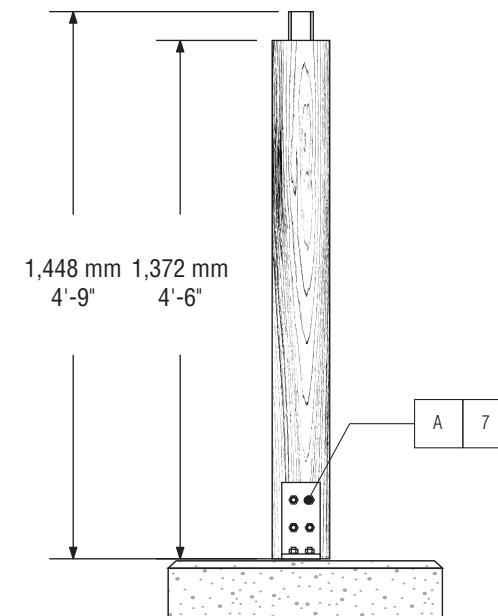
Scale: 1:10



ID-2 Secondary Park Identification • Front View

Scale: 1:20

NOTE: Concrete to be 6" Above grade for snow removal and maintenance.



ID-2 Secondary Park Identification • Side View

Scale: 1:20

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CLIENT

City of St. Albert

PROJECT

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15-0869.04

DRAWING

ID-2 Secondary Park Identification

SCALE

As Shown

DATE

June 24, 2016

DRAWN

SK/CP

CHECKED

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COMMENTS

-

REVISIONS

October 26, 2016

BONDcreative

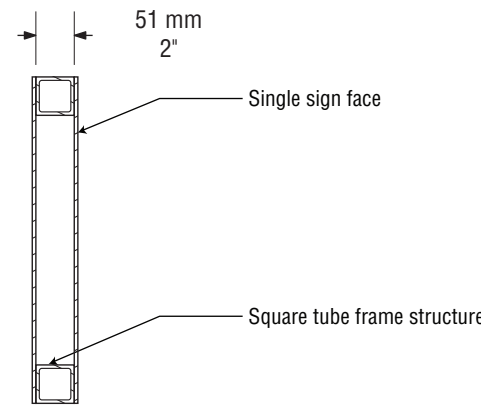
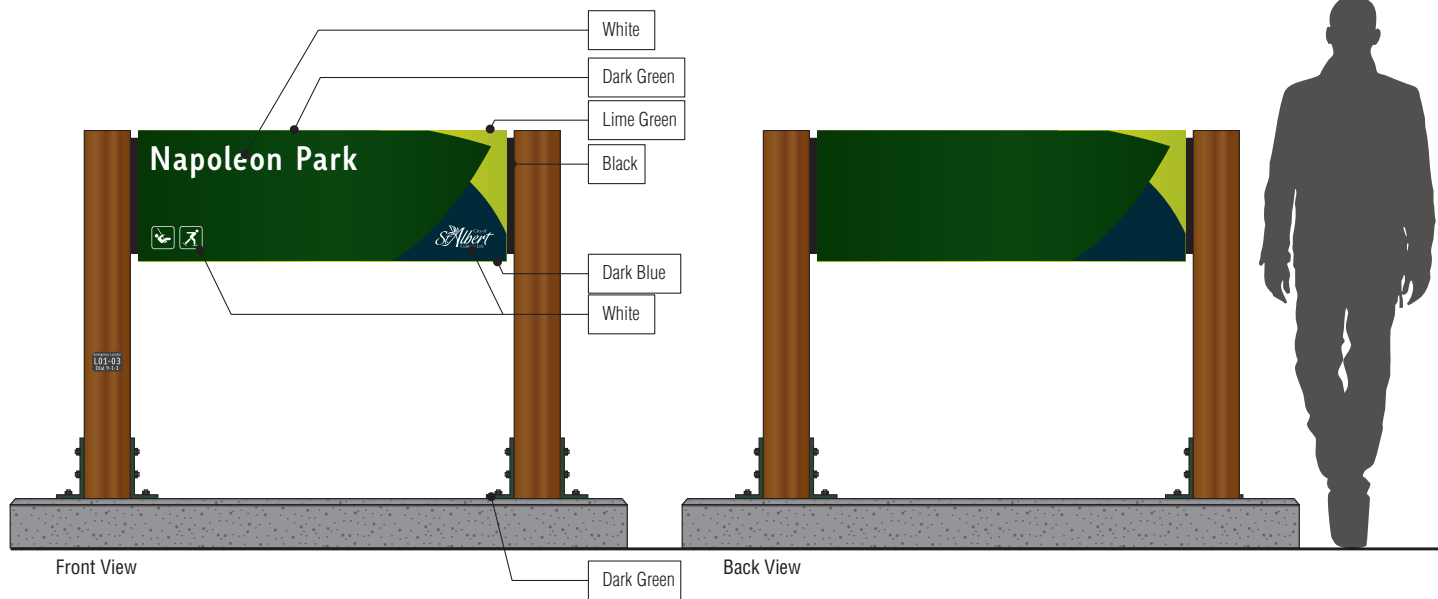
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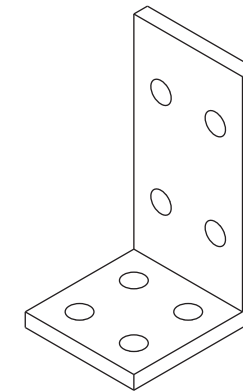
B.04

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ID-3 Tertiary Park Identification • Section A

Scale: 1:10



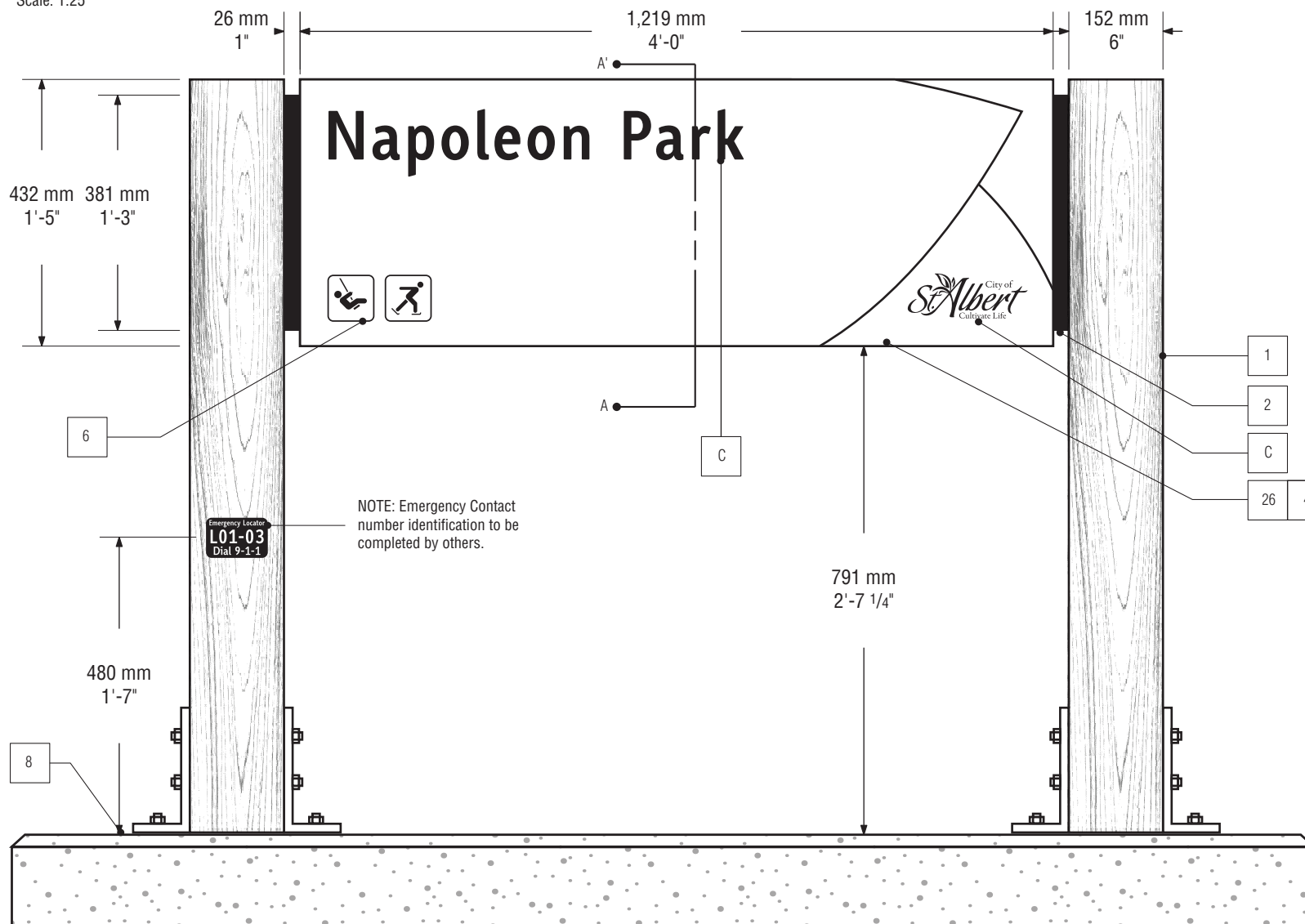
Small Boot Detail

Scale: NTS

NOTE: Size of boots TBD as structural required.

ID-3 Tertiary Identification Sign • Colour Elevation

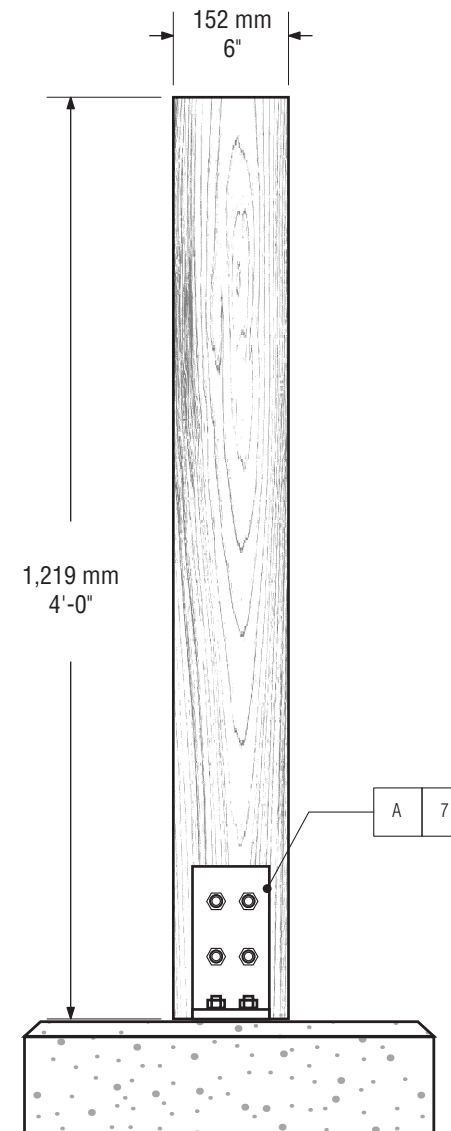
Scale: 1:25



ID-3 Tertiary Park Identification • Front View

Scale: 1:10

NOTE: Concrete to be 6" Above grade for snow removal and maintenance.



ID-3 Tertiary Park Identification • Side View

Scale: 1:10

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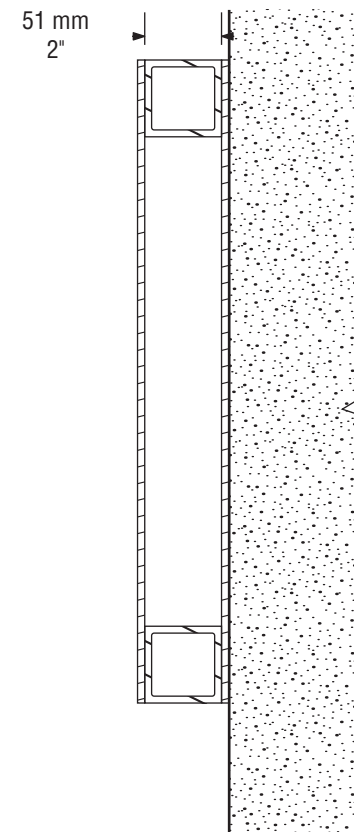
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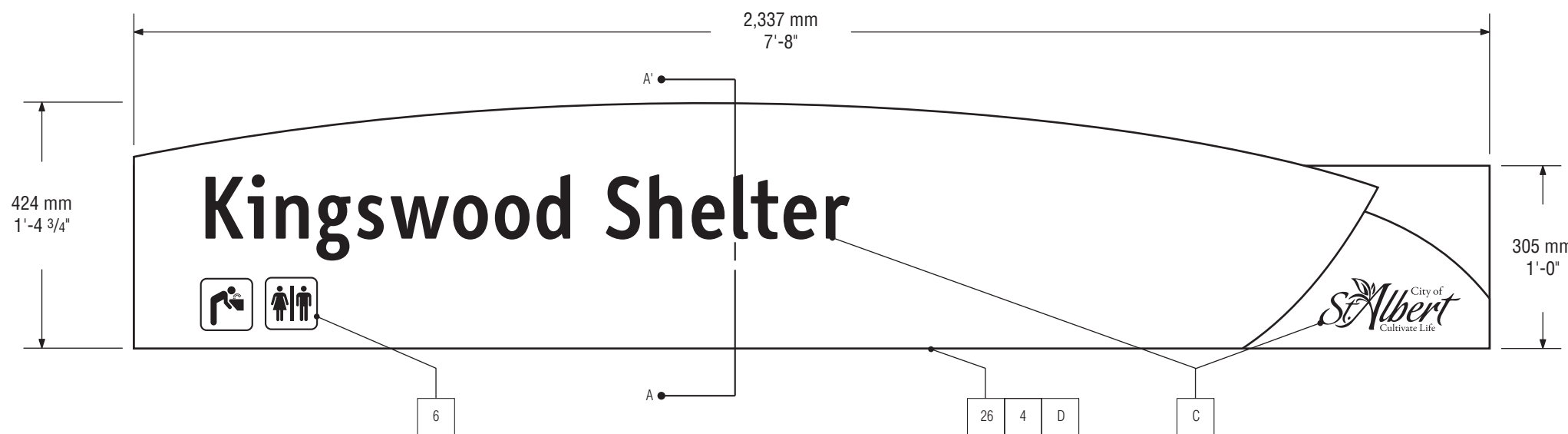
ID-4 Wall Mounted Facility Identification • Colour Elevation

Scale: 1:25



ID-4 Wall Mounted Facility Identification • Section A

Scale: 1:5



ID-4 Wall Mounted Facility Identification • Front View

Scale: 1:10

ID-4 Wall Mounted Facility Identification • Side View

Scale: 1:10

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CLIENT

City of St. Albert

PROJECT

PARKS AND TRAILS

SIGN SPECIFICATIONS

PROJECT NO.

15-0869.04

DRAWING

ID-4 Wall Mounted Facility Identification

SCALE

As Shown

DATE

June 24, 2016

DRAWN

SK/CP

CHECKED

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COMMENTS

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REVISIONS

October 26, 2016

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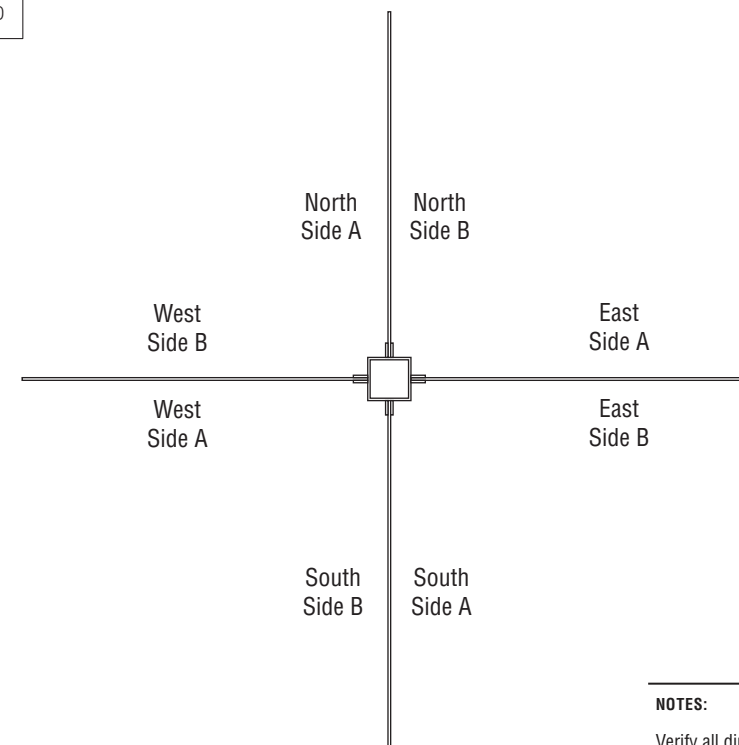
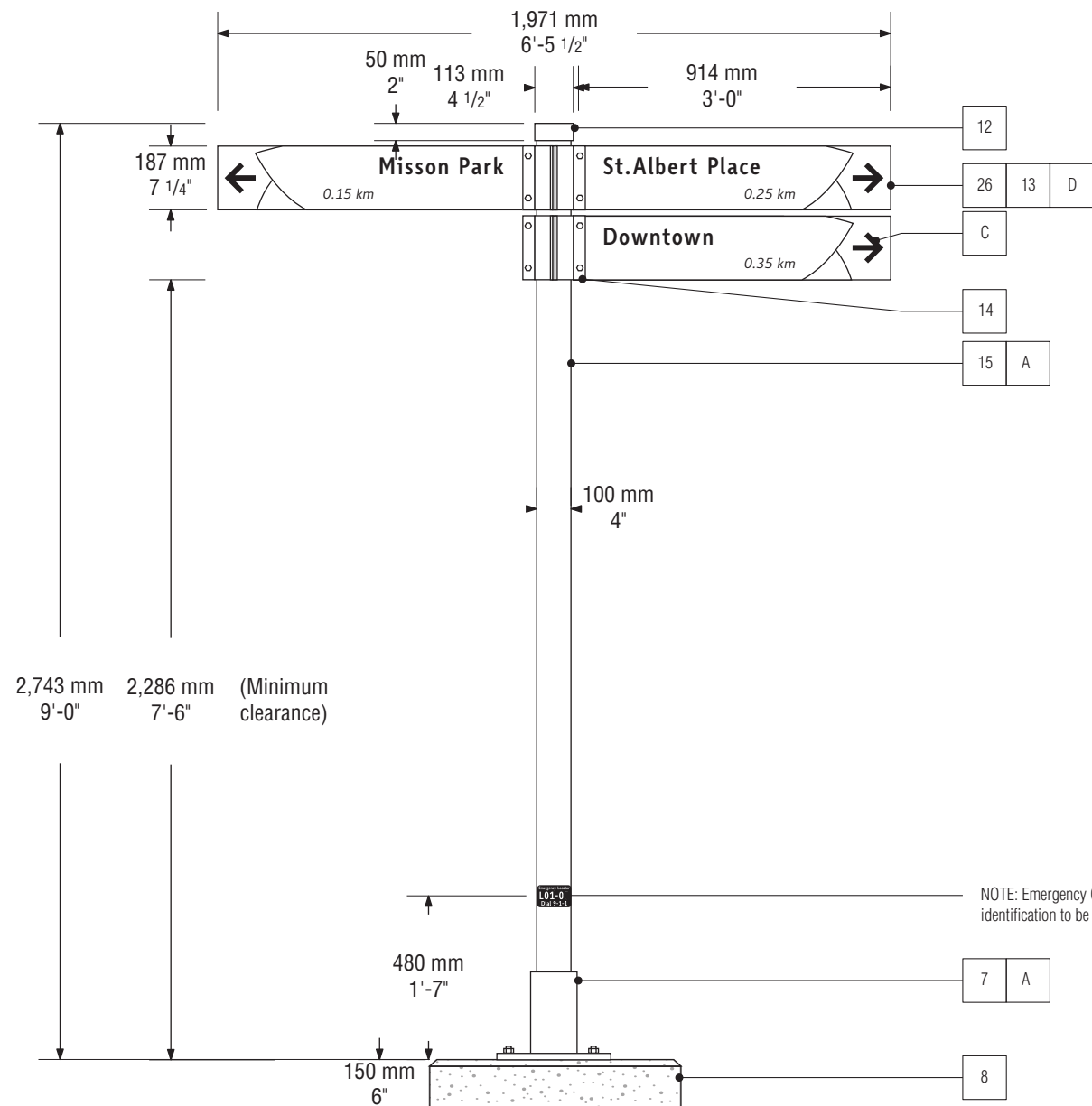
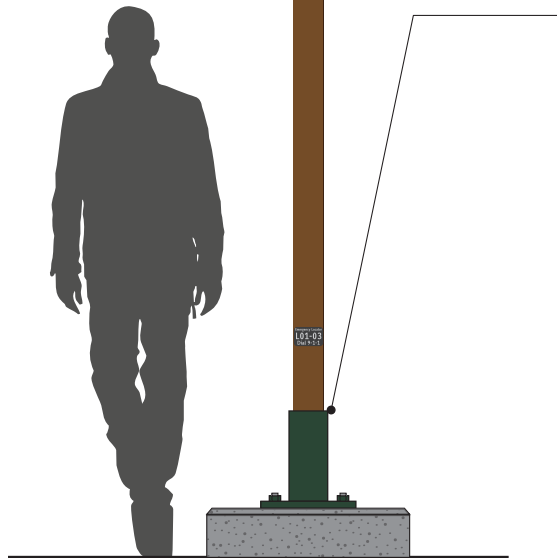
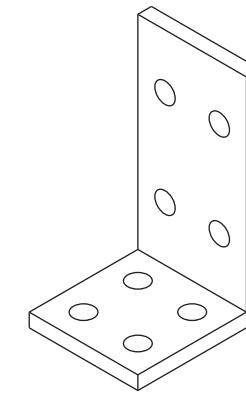
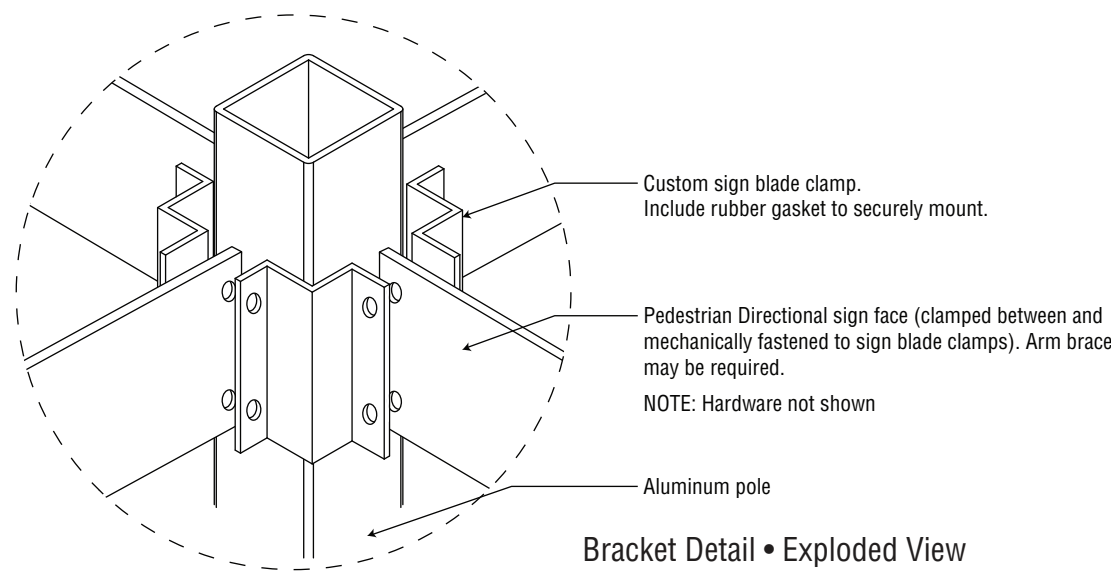
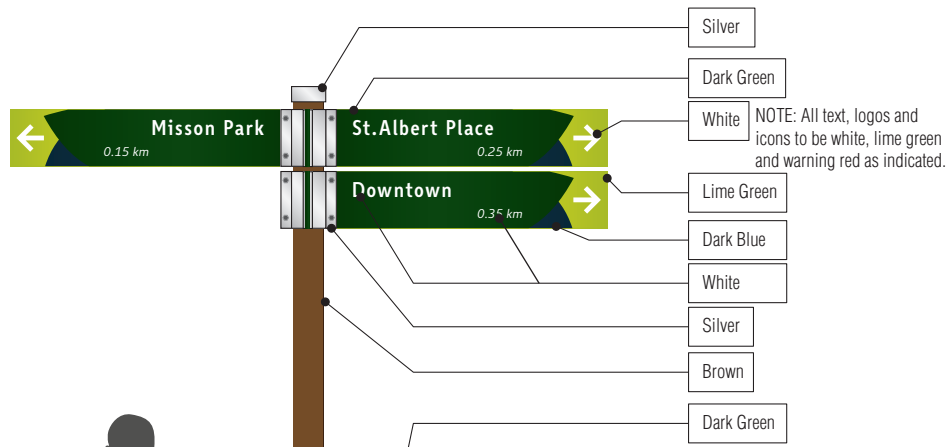
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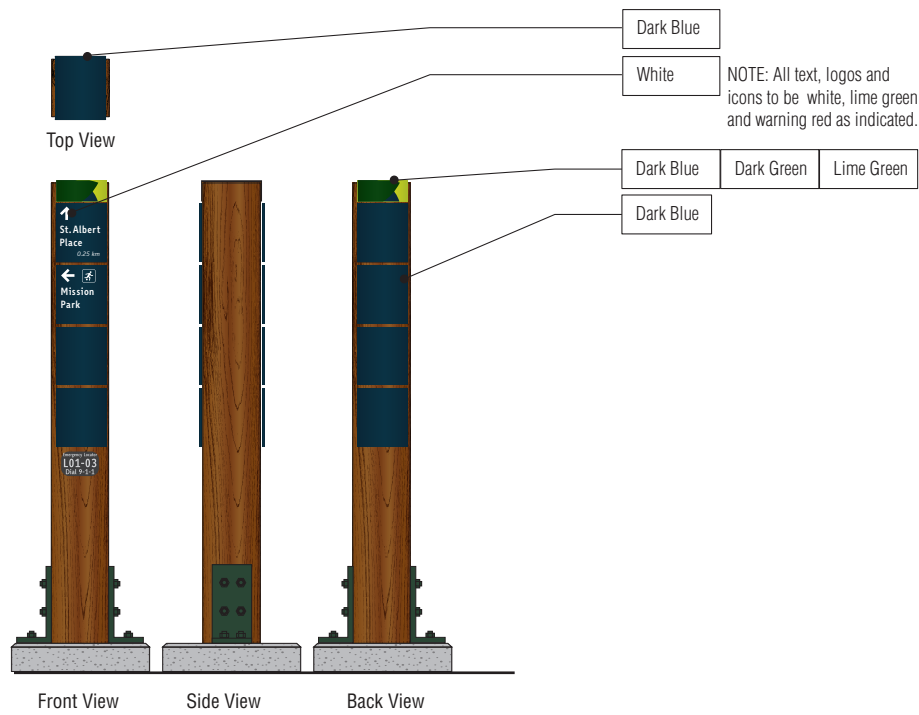
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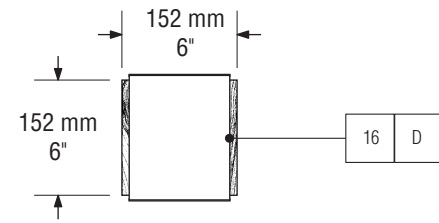
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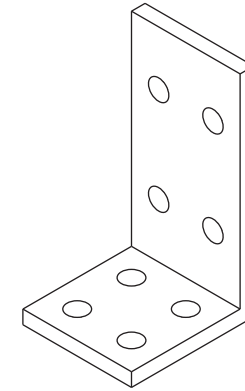
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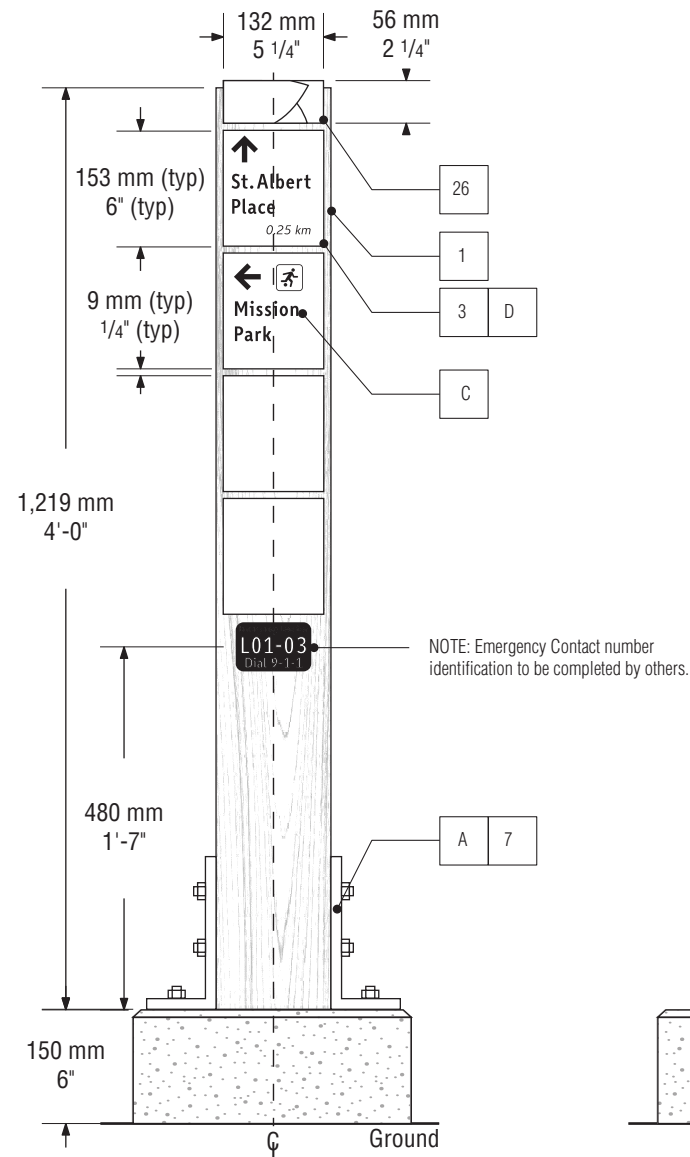
D-2 Trail Marker • Front/Side/Top Elevation
Scale: 1:20



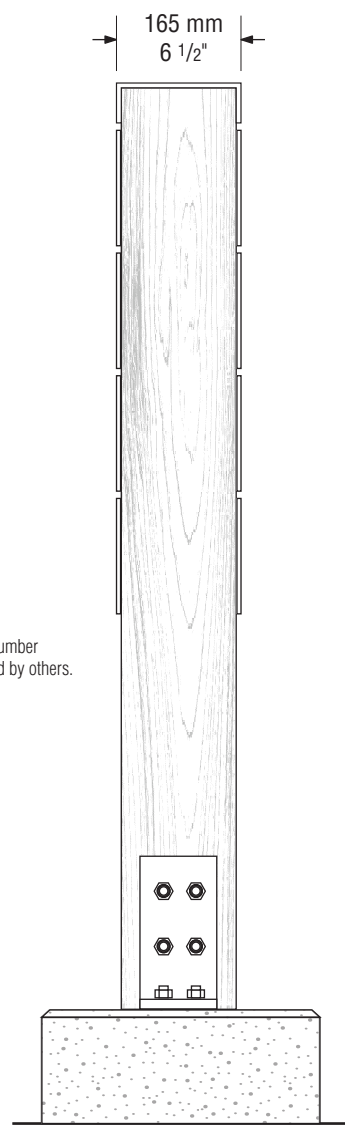
D-2 Trail Marker • Top View
Scale: 1:10



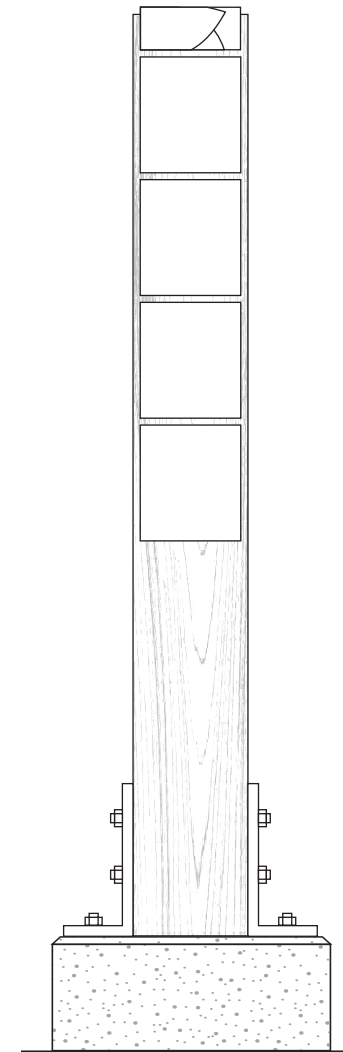
Small Boot Detail
Scale: NTS
NOTE: Size of boots TBD as structural required.



D-2 Trail Marker • Front View
Scale: 1:10



D-2 Trail Marker • Side View
Scale: 1:10



D-2 Trail Marker • Back View
Scale: 1:10
NOTE: No messaging shown on Back View.

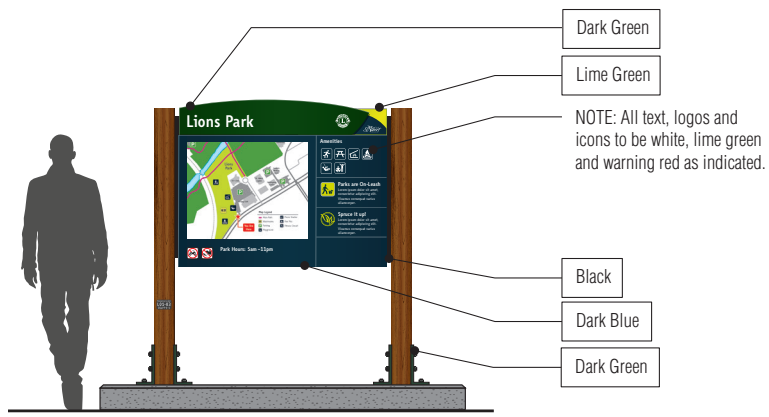
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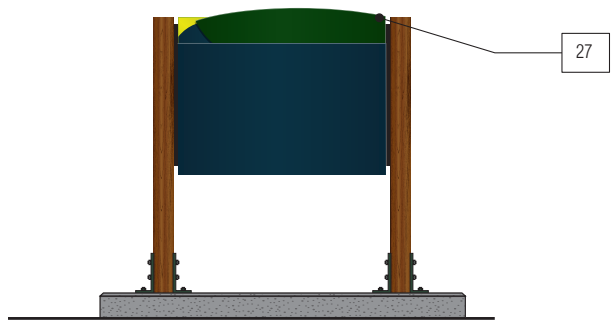
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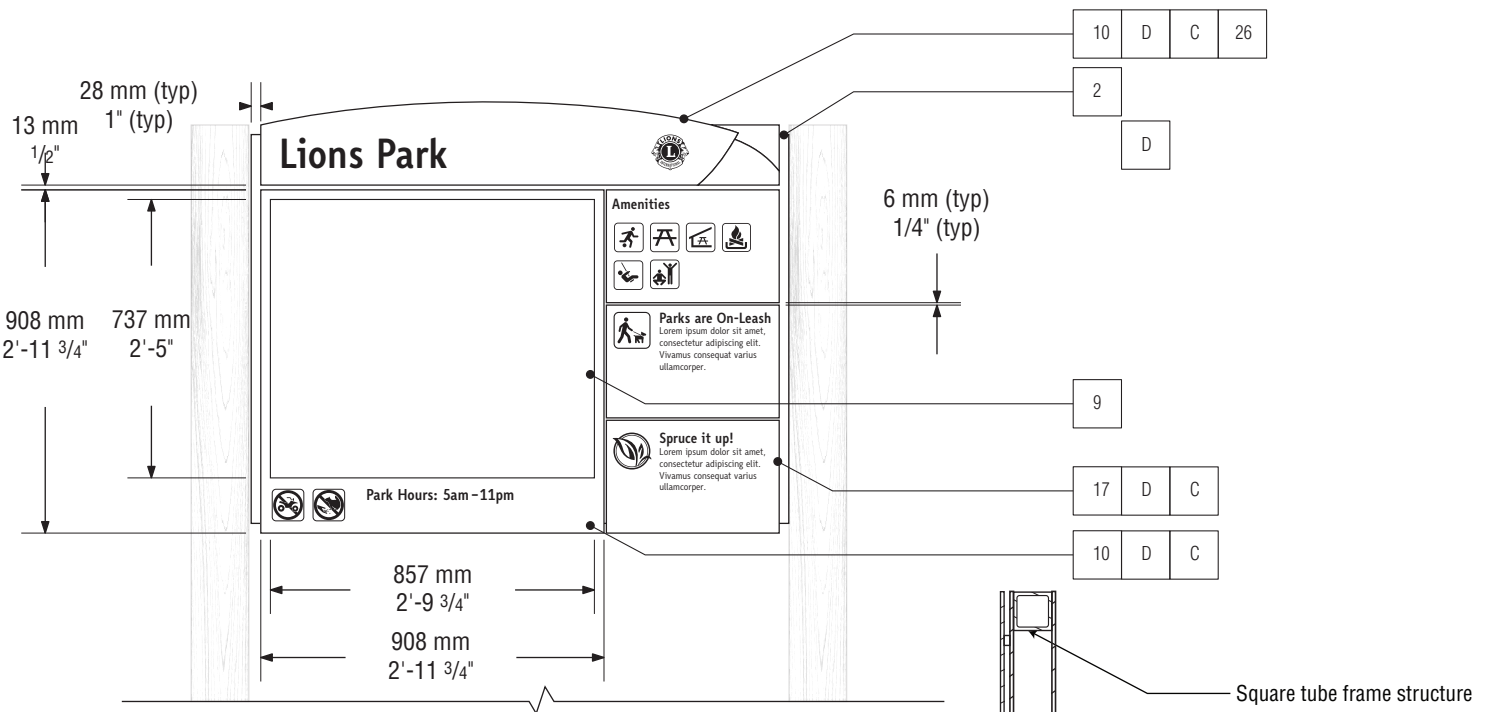
Front View



Back View

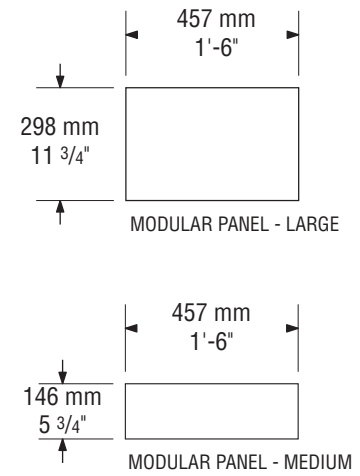
IN-1 Primary Information/Orientation Hub • Colour Elevation

Scale: 1:50



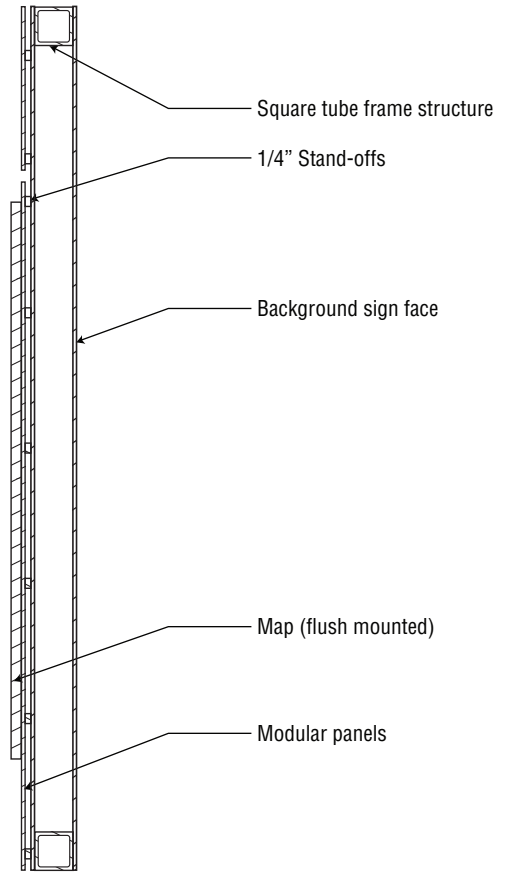
IN-1 Primary Information/Orientation Hub • Detail A

Scale: 1:20



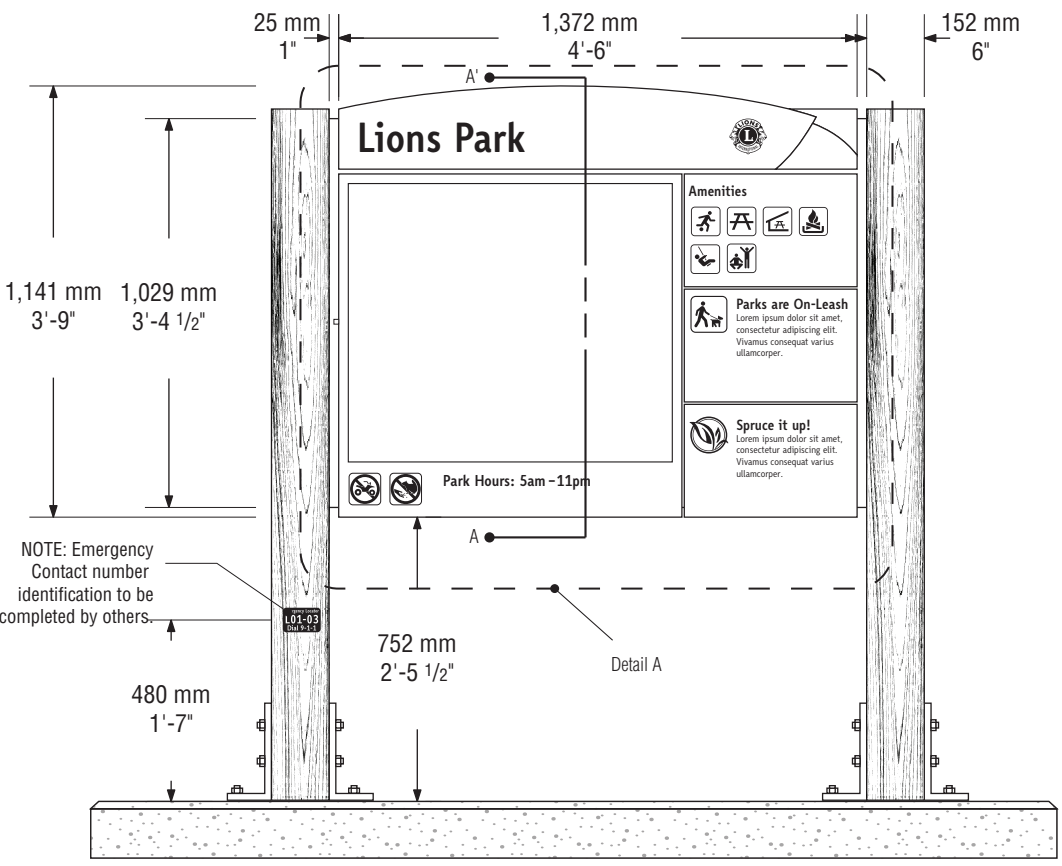
Modular Panel Sizes

Scale: 1:20
NOTE: PANELS ARE MODULAR



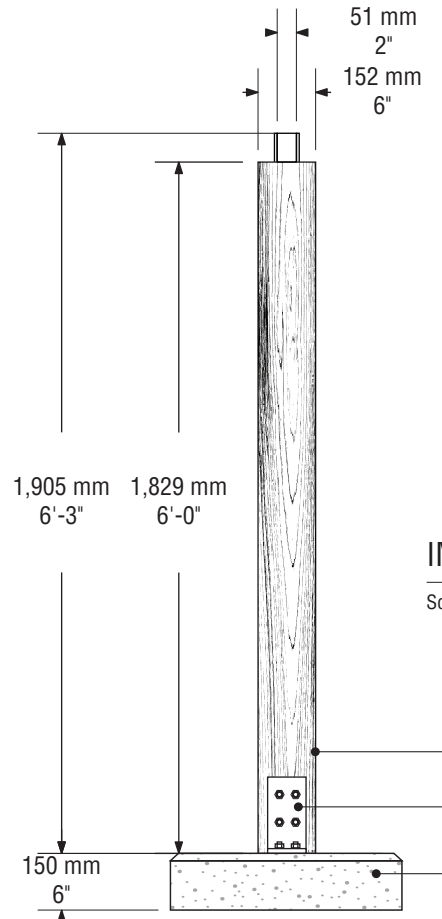
IN-1 Primary Information/Orientation Hub • Section A

Scale: 1:10



IN-1 Primary Information/Orientation Hub • Front View

Scale: 1:20
NOTE: Concrete to be 6" Above grade for snow removal and maintenance.



IN-1 Primary Information/Orientation Hub • Side View

Scale: 1:20

NOTES:

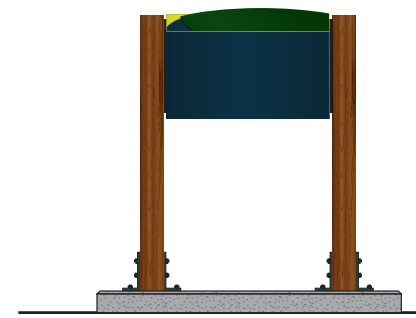
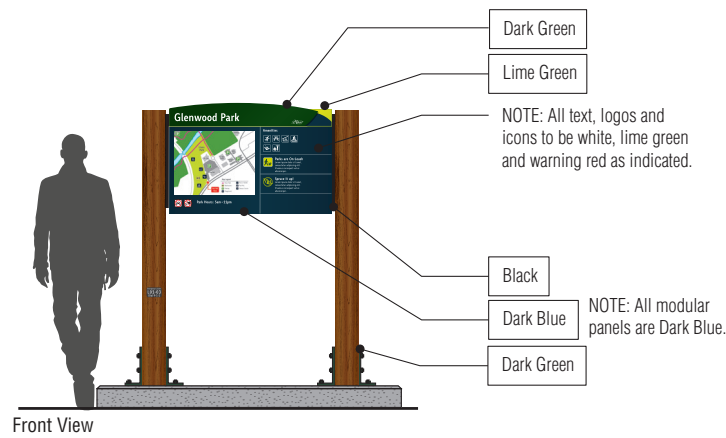
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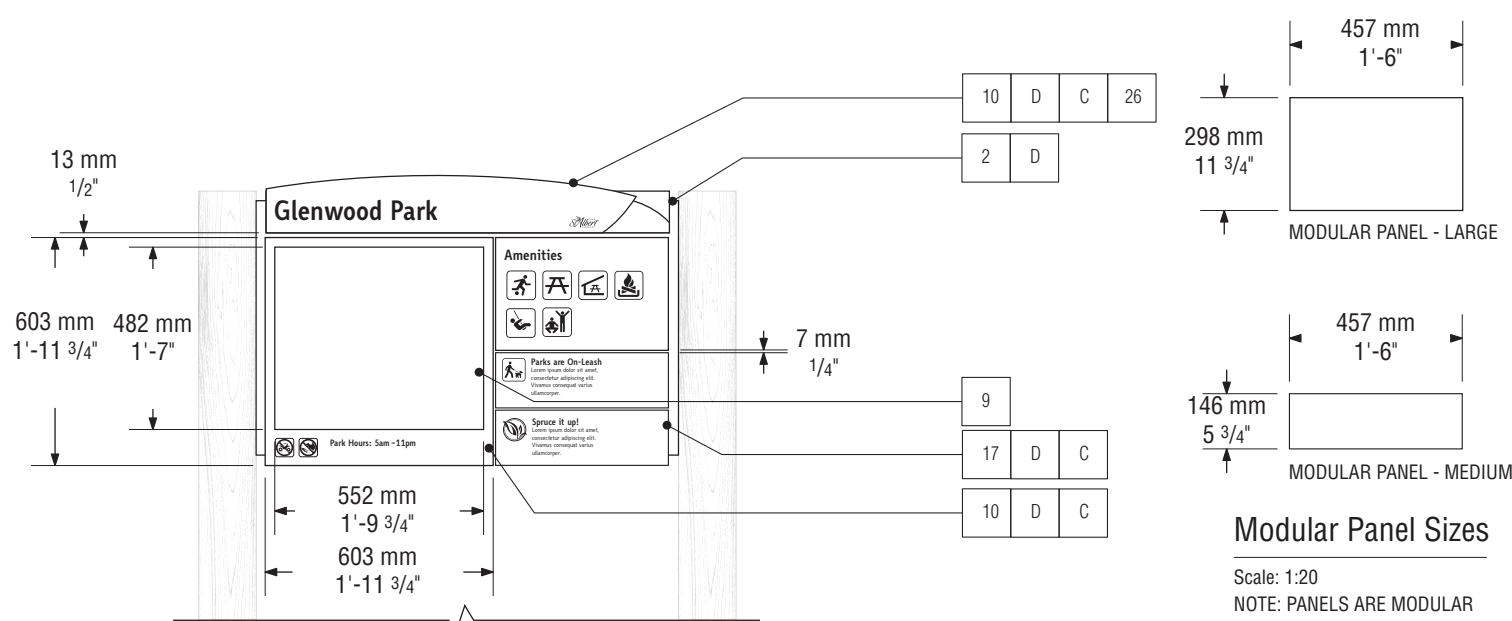
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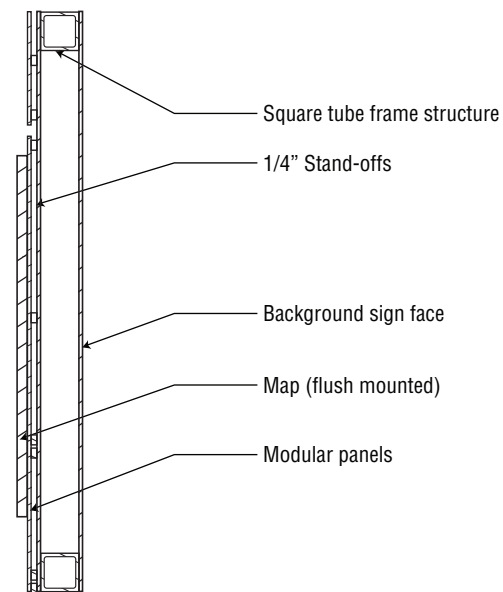
Back View
IN-2 Secondary Information/ Orientation Hub
• Colour Elevation

Scale: 1:50



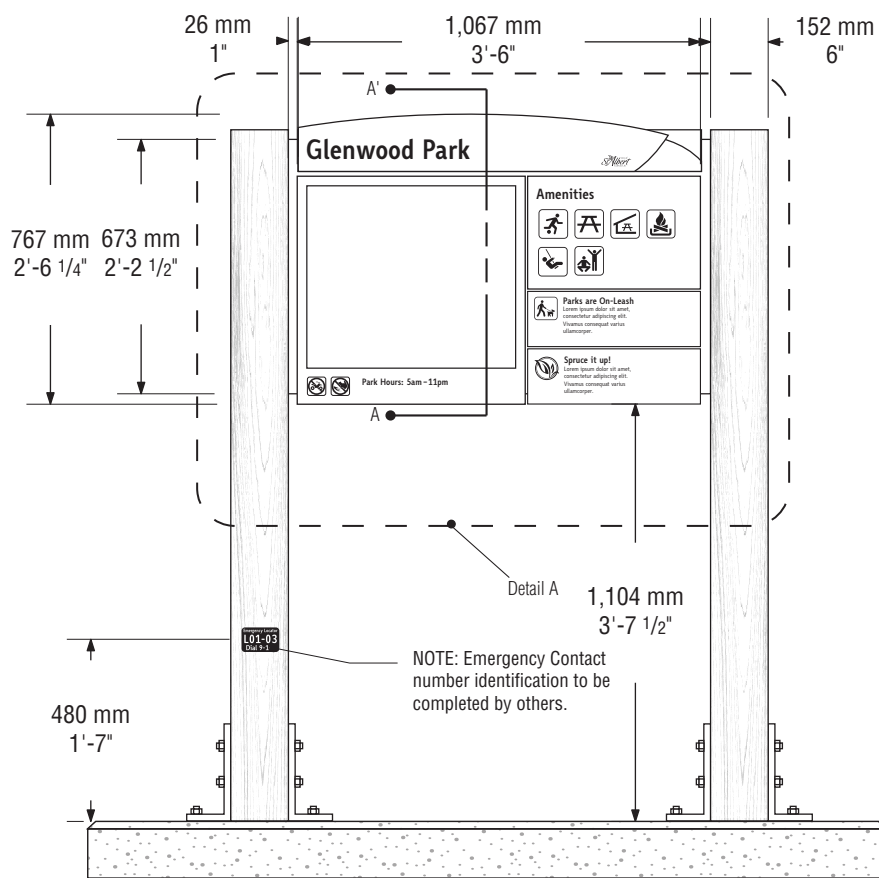
IN-2 Secondary Information/ Orientation Hub • Detail A

Scale: 1:20



IN-2 Secondary Information/Orientation Hub • Section A

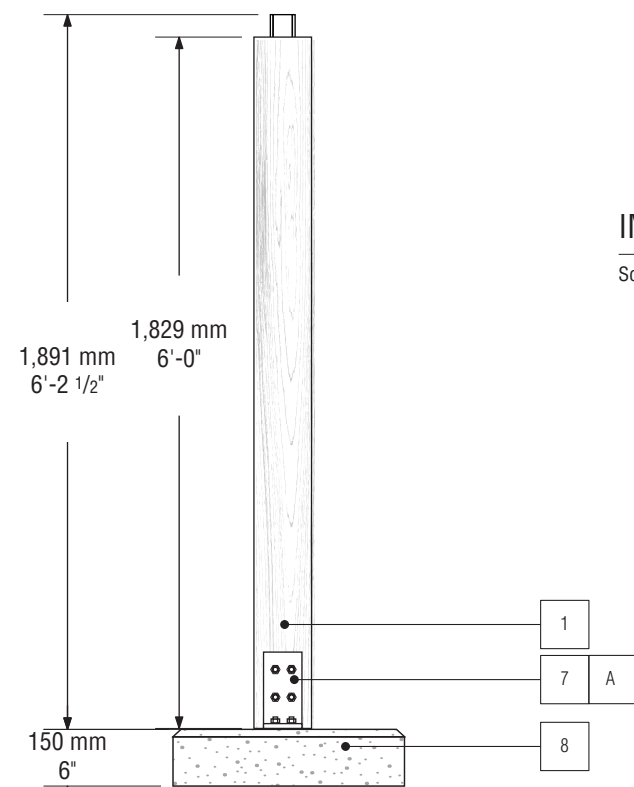
Scale: 1:10



IN-2 Secondary Information/ Orientation Hub • Front View

Scale: 1:20

NOTE: Concrete to be 6" Above grade for snow removal and maintenance.



IN-2 Secondary Information/ Orientation Hub • Side View

Scale: 1:20

CLIENT

City of St. Albert

PROJECT

PARKS AND TRAILS
SIGN SPECIFICATIONS

PROJECT NO.

15-0869.04

DRAWING

IN-2 Secondary Information/
Orientation Hub

SCALE

As Shown

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June 24, 2016

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CHECKED

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COMMENTS

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REVISIONS

October 26, 2016

NOTES:

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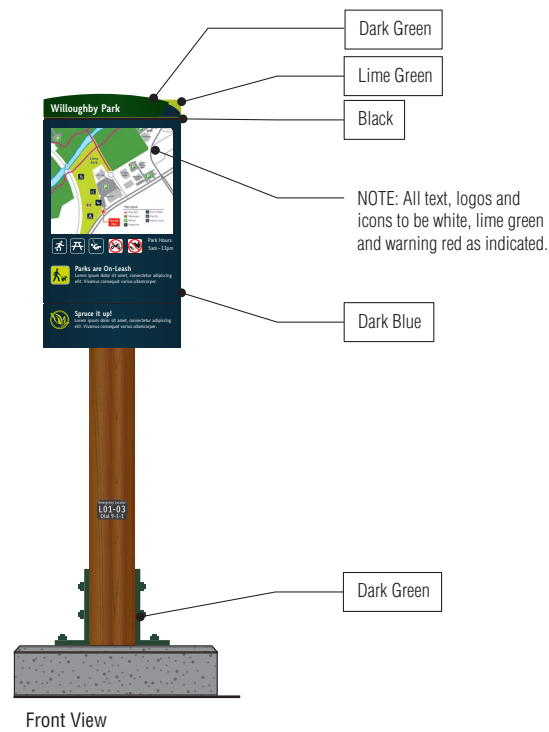
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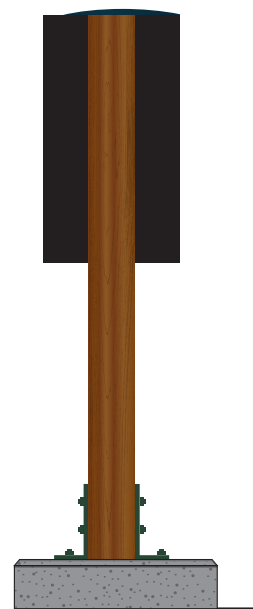
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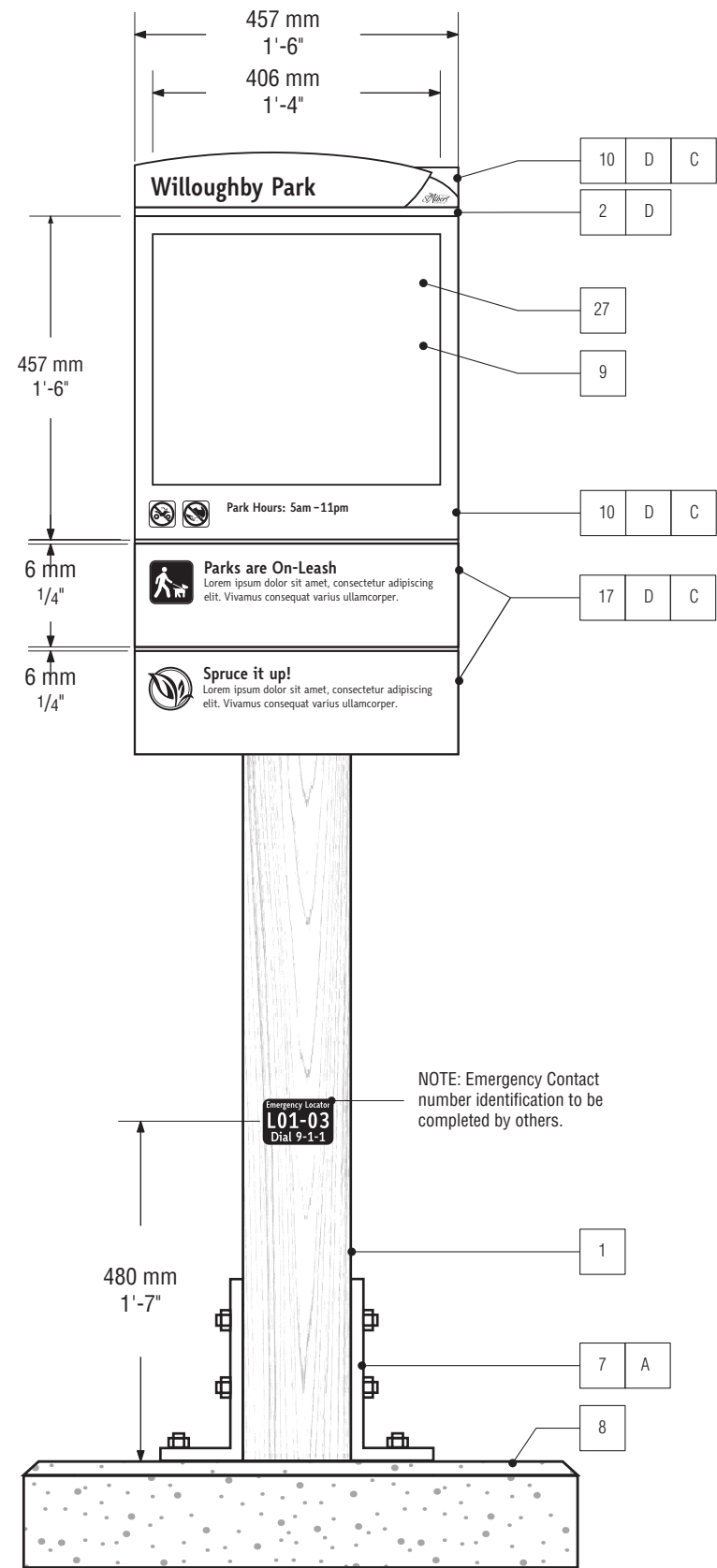
Front View



Back View

IN-3 Tertiary Information/
Orientation Hub • Colour Elevation

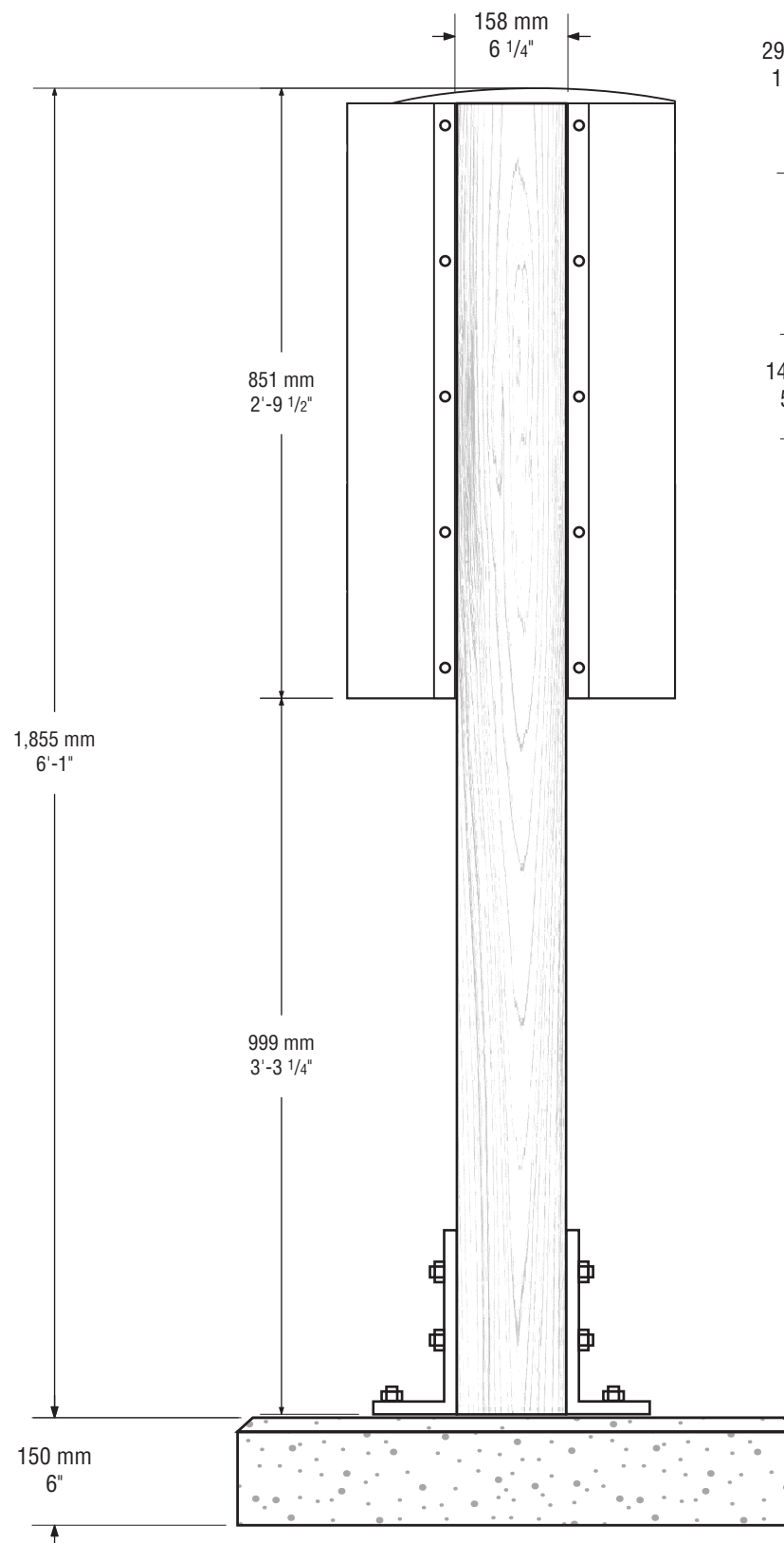
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IN-3 Tertiary Information/Orientation Hub • Front View

Scale: 1:10

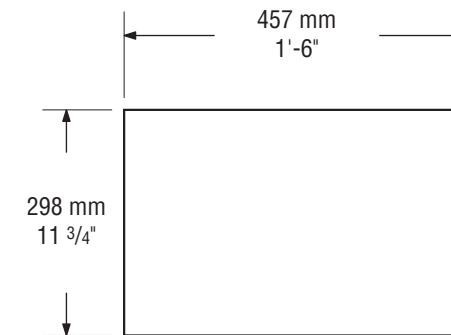
NOTE: Concrete to be 6" Above grade for snow removal and maintenance.



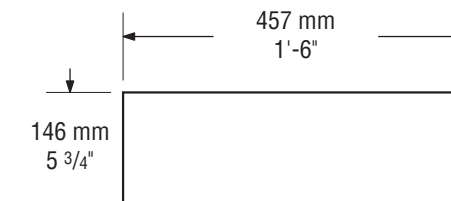
IN-3 Tertiary Information/Orientation Hub • Back View

Scale: 1:10

NOTE: Concrete to be 6" Above grade for snow removal and maintenance.



MODULAR PANEL - LARGE

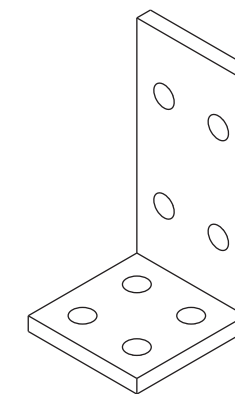


MODULAR PANEL - MEDIUM

Modular Panel Sizes

Scale: 1:20

NOTE: PANELS ARE MODULAR



Small Boot Detail

Scale: NTS

NOTE: Size of boots TBD as structural required.

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City of St. Albert

PROJECT

PARKS AND TRAILS
SIGN SPECIFICATIONS

PROJECT NO.

15-0869.04

DRAWING

IN-3 Tertiary Information/
Orientation Hub

SCALE

As Shown

DATE

June 24, 2016

DRAWN

SK/CP

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COMMENTS

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REVISIONS

October 26, 2016

February 21, 2017

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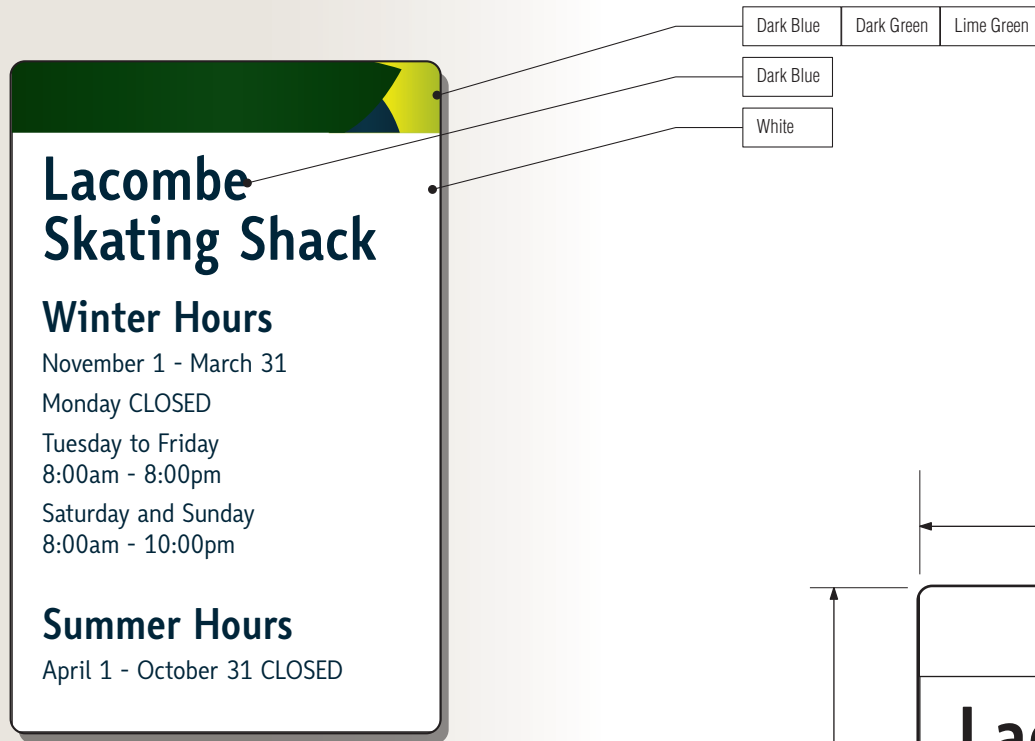
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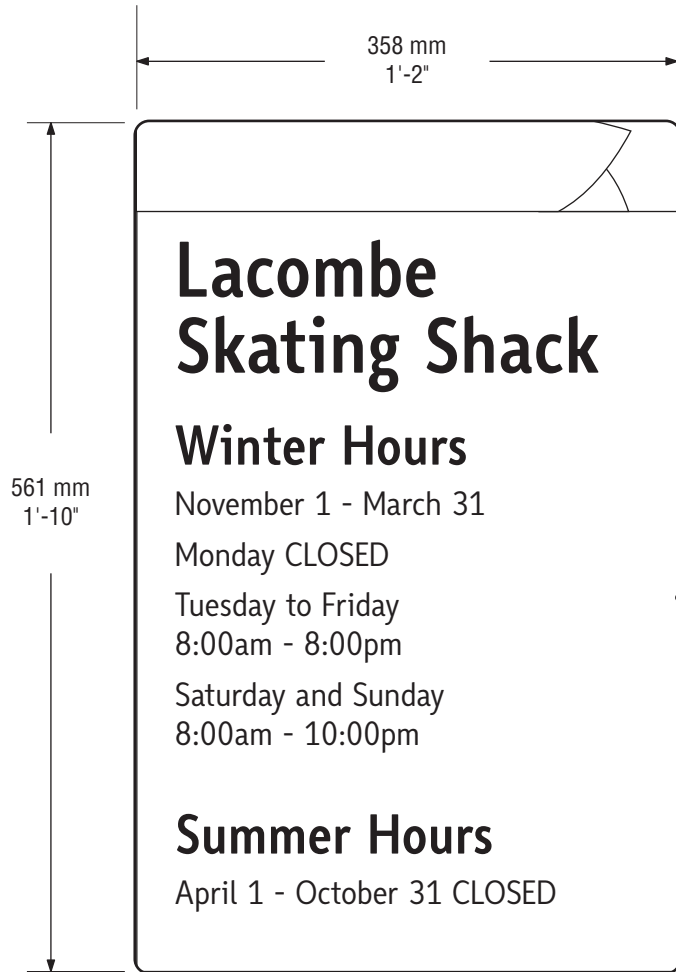
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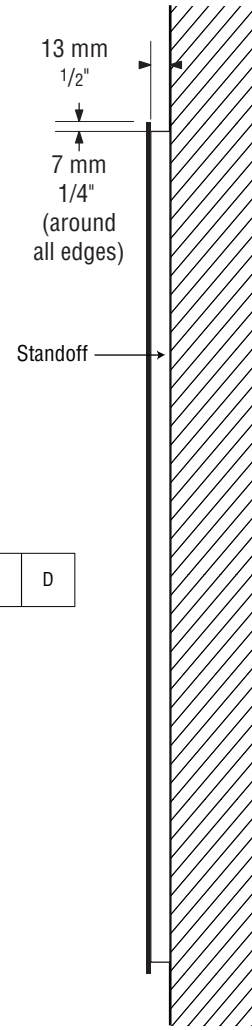


Dark Blue Dark Green Lime Green
Dark Blue
White



IN-4 Facility Hours Information • Front View

Scale: 1:5

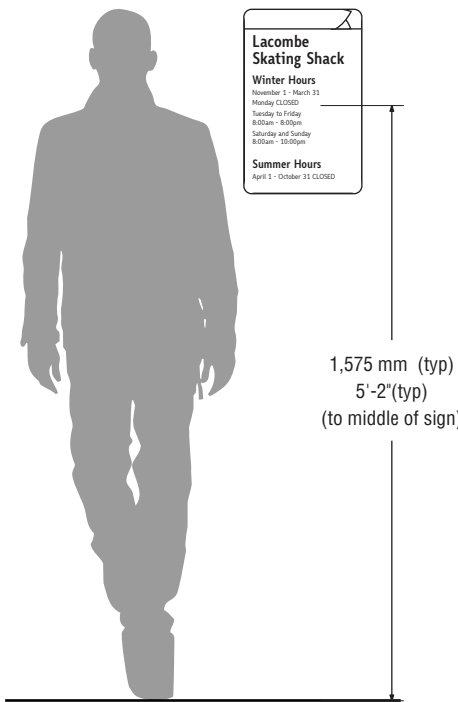


IN-4 Facility Hours Information • Side View

Scale: 1:5

IN-4 Facility Hours Information • Colour Elevation

Scale: 1:4



IN-4 Facility Hours Information • Front Elevation

Scale: 1:20

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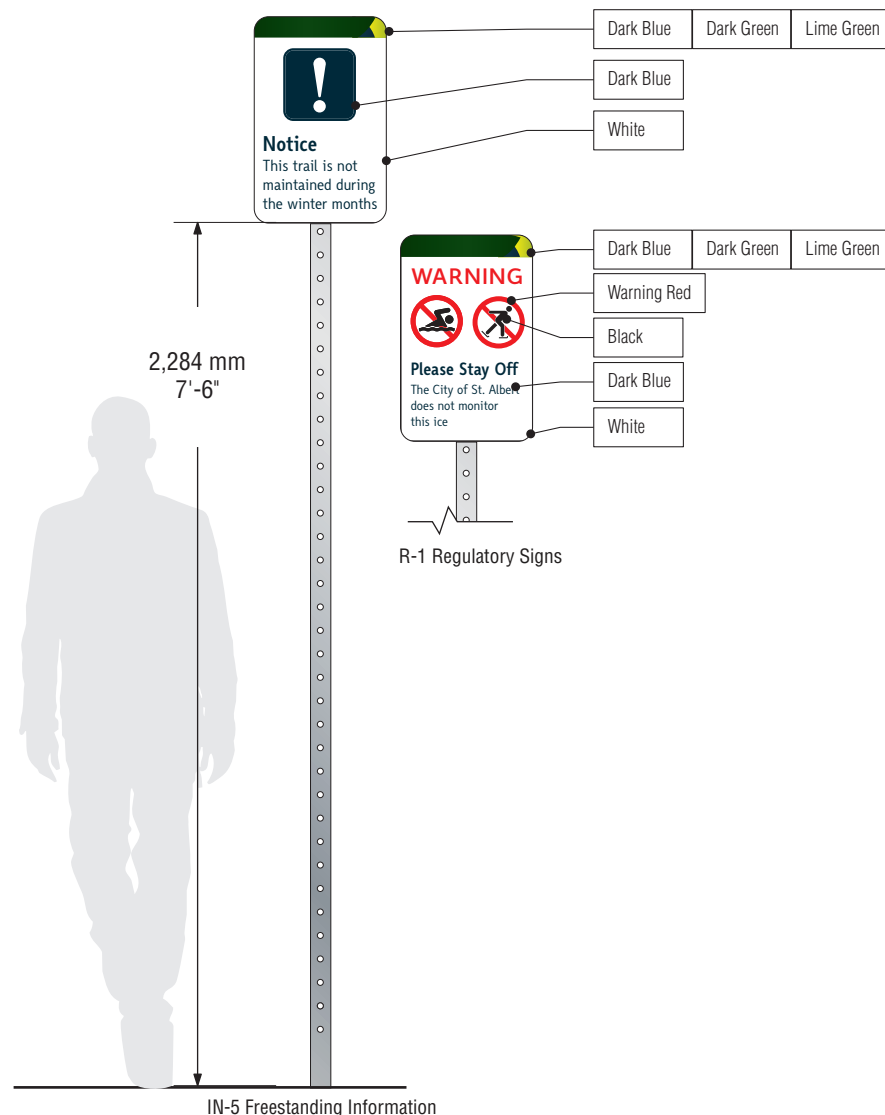
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IN-5 Freestanding Information/
R-1 Regulatory Signs • Front Elevation

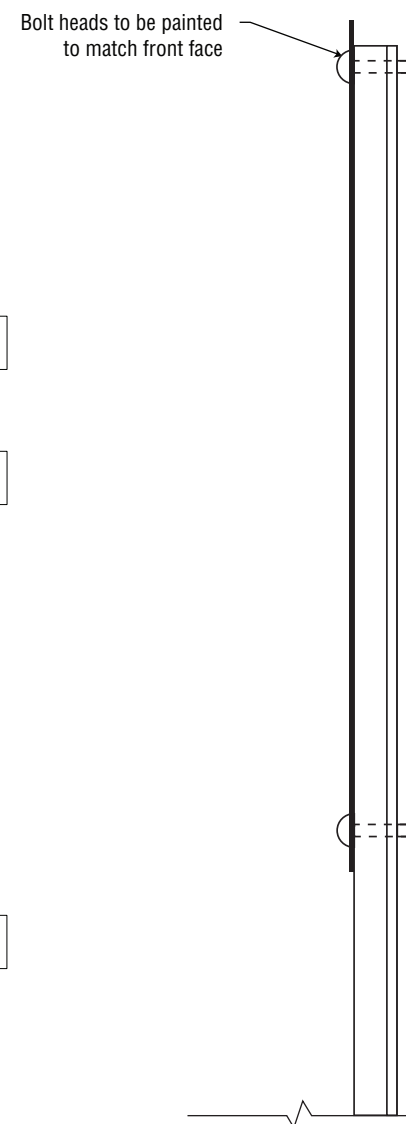
Scale: 1:20



IN-5 Freestanding Information/
R-1 Regulatory Signs • Front View

Scale: 1:5

NOTE: IN-5 Freestanding Information Sign shown as typical



IN-5 Freestanding Information/
R-1 Regulatory Signs • Side View

Scale: 1:5

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PARKS AND TRAILS

SIGN SPECIFICATIONS

PROJECT NO.

15-0869.04

DRAWING

IN-5 Freestanding Informaion

R-1 Regulatory Sign

SCALE

As Shown

DATE

June 24, 2016

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SK/CP

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-

COMMENTS

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REVISIONS

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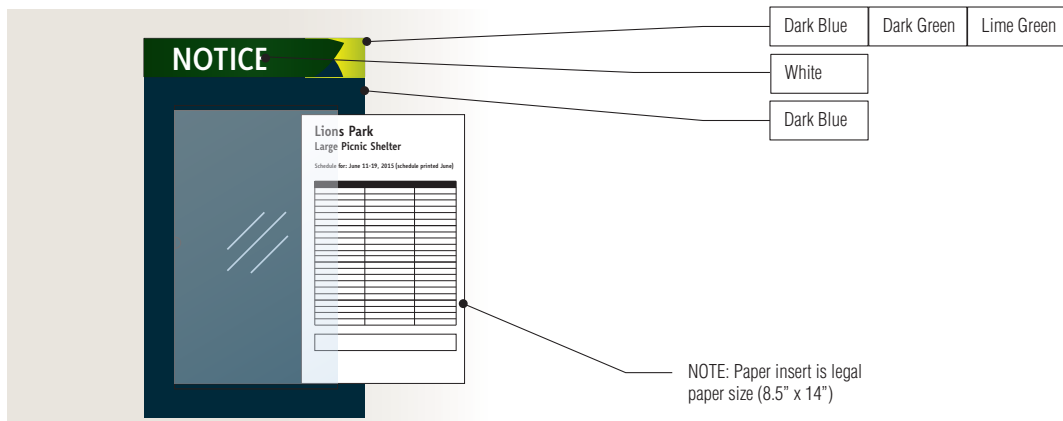
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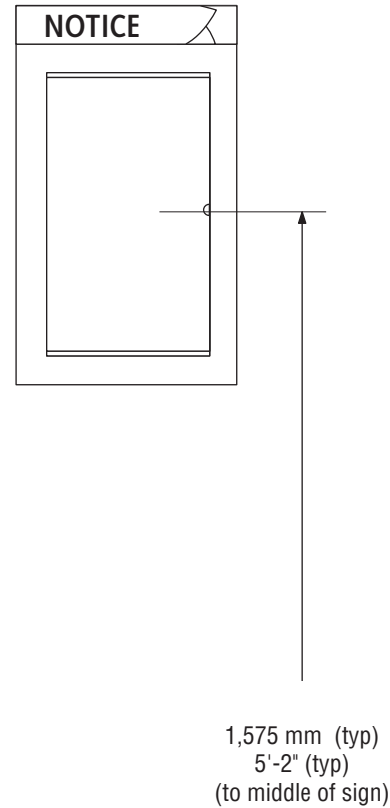
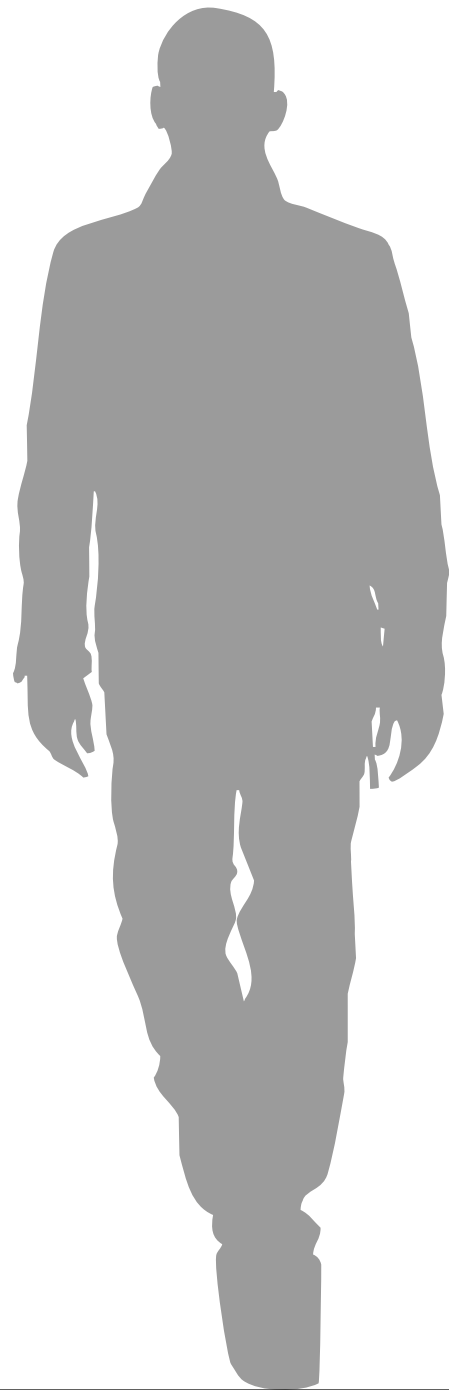
B.13

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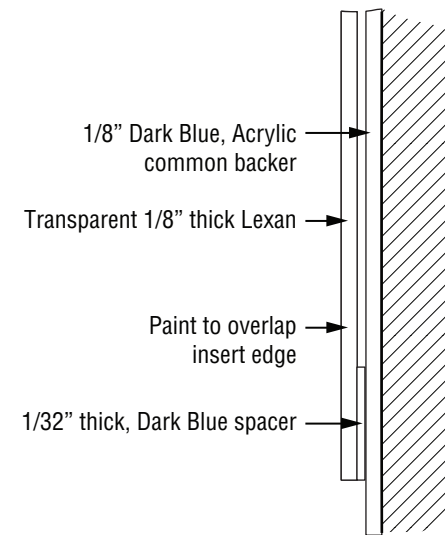
T-1 Temporary Information - Small • Front View

Scale: 1:10



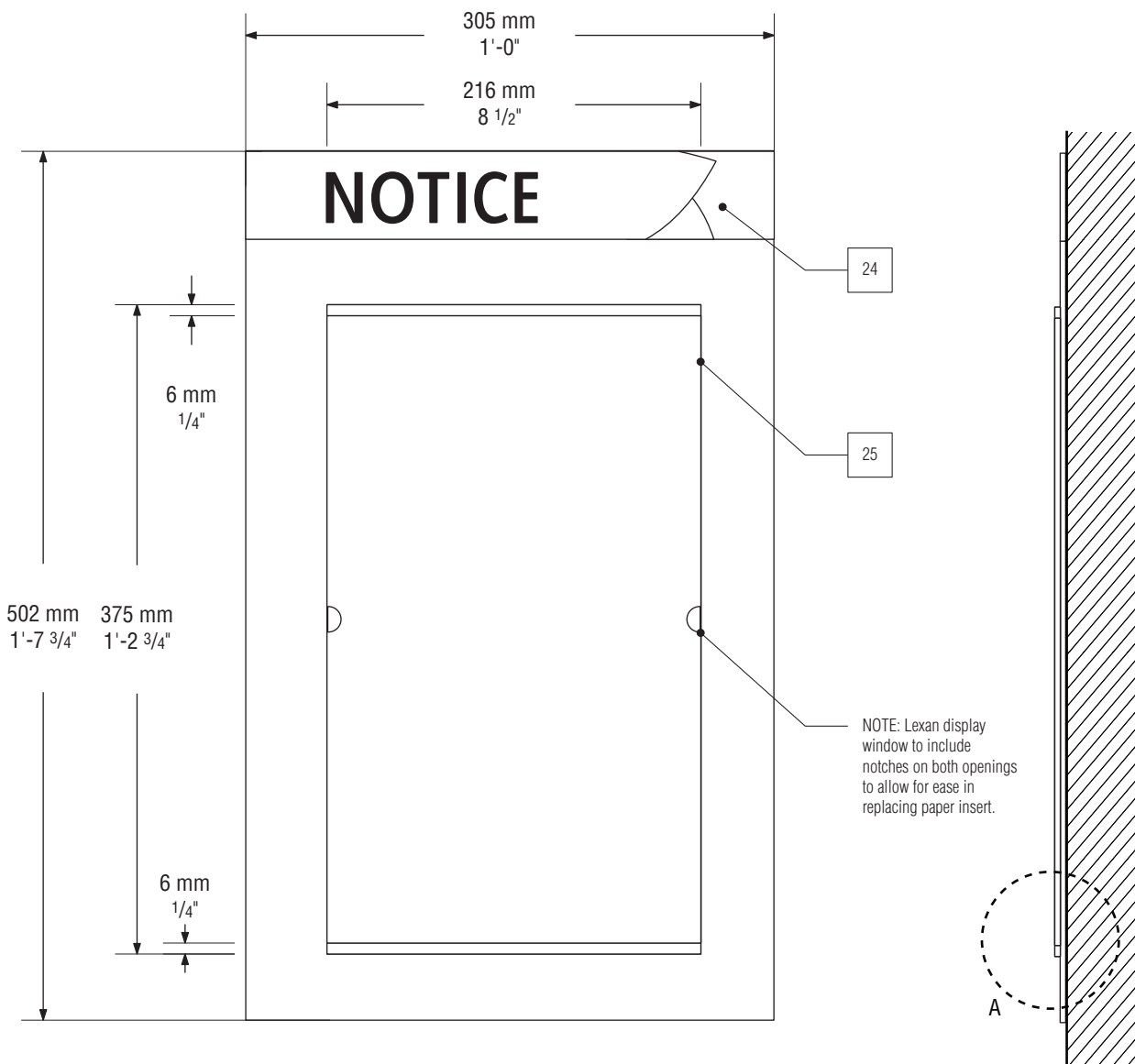
T-1 Temporary Information - Small • Front Elevation

Scale: 1:10



T-1 Temporary Information - Small • Detail A

Scale: NTS



T-1 Temporary Information - Small • Front View

Scale: 1:4

T-1 Temporary Information - Small • Side View

Scale: 1:4

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**PARKS AND TRAILS
SIGN SPECIFICATIONS**

PROJECT NO.

15-0869.04

DRAWING

T-1 Temporary Information - Small

SCALE

As Shown

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COMMENTS

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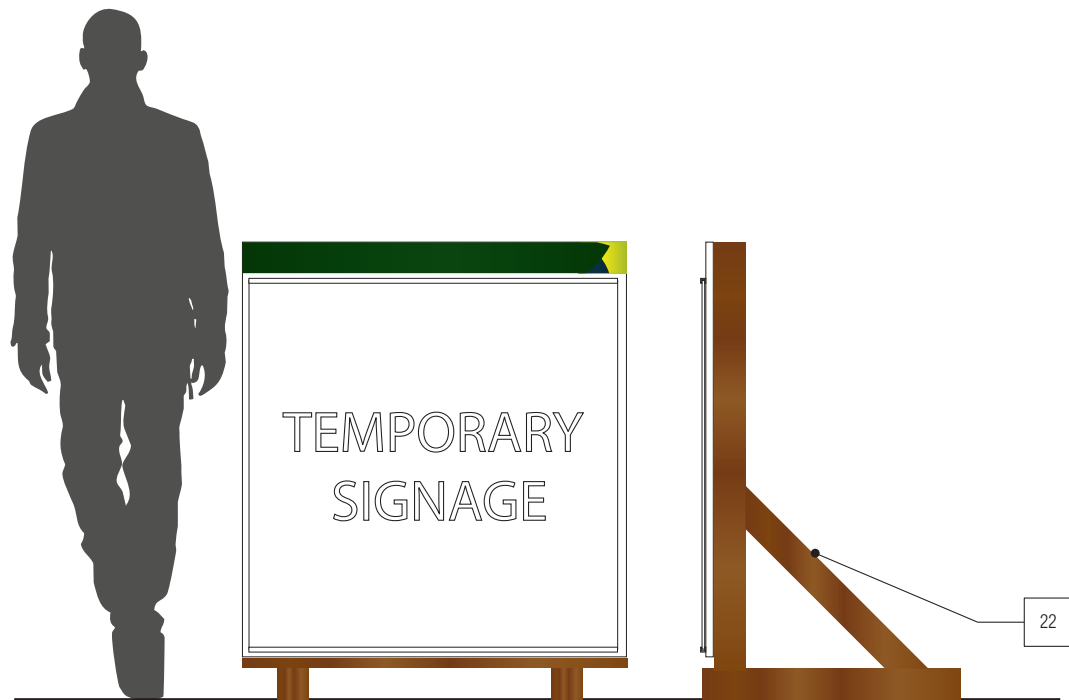
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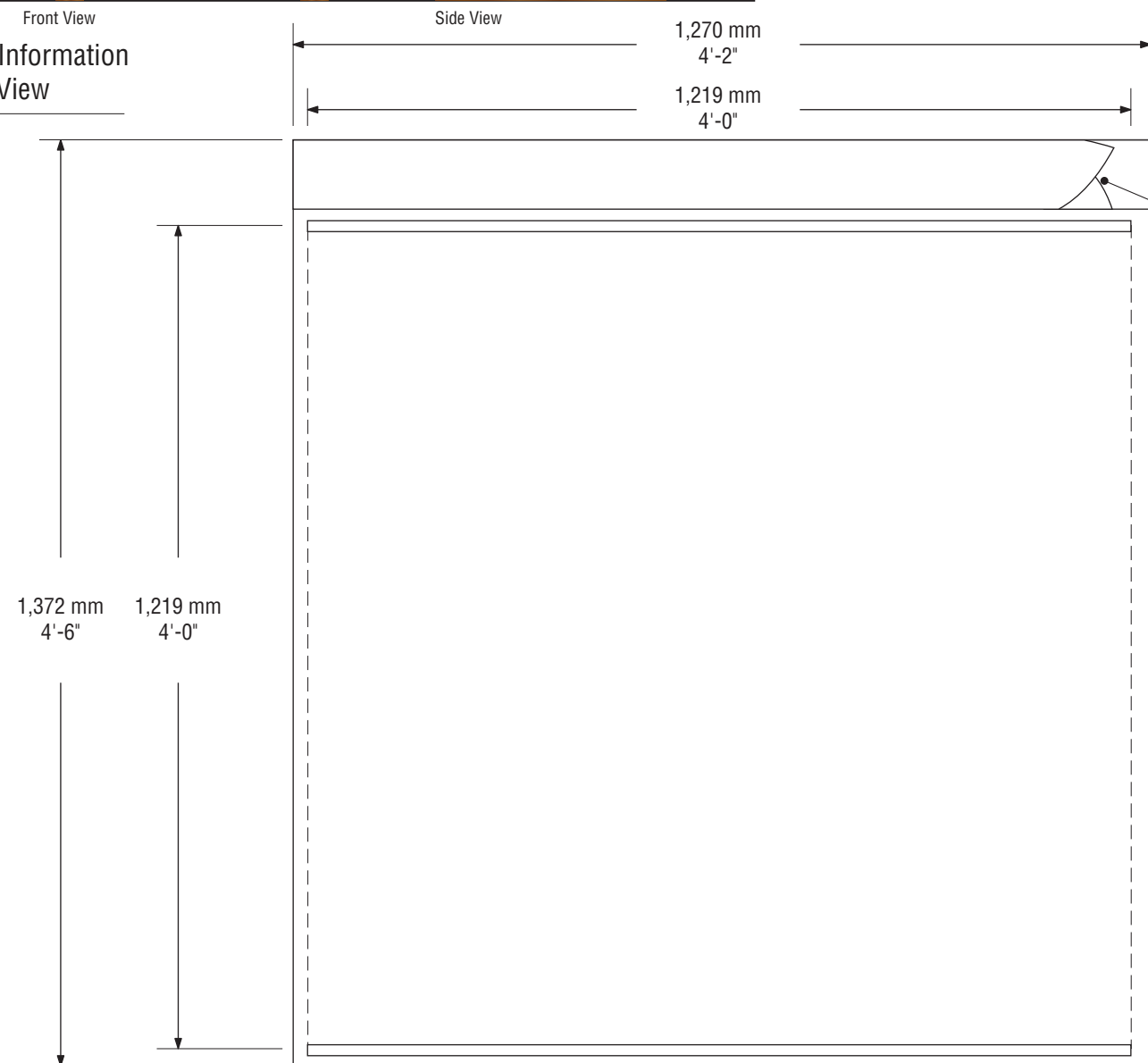
B.14

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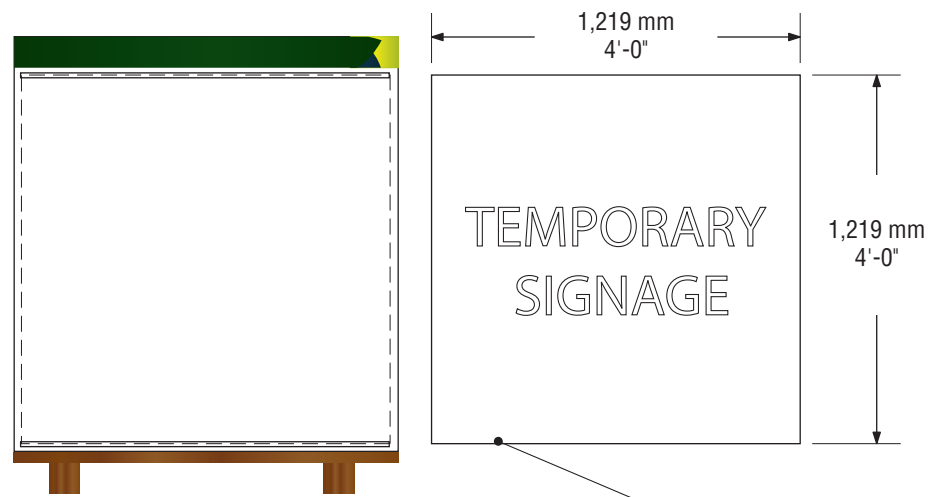
T-2 Temporary Information - Large • Front View

Scale: 1:25



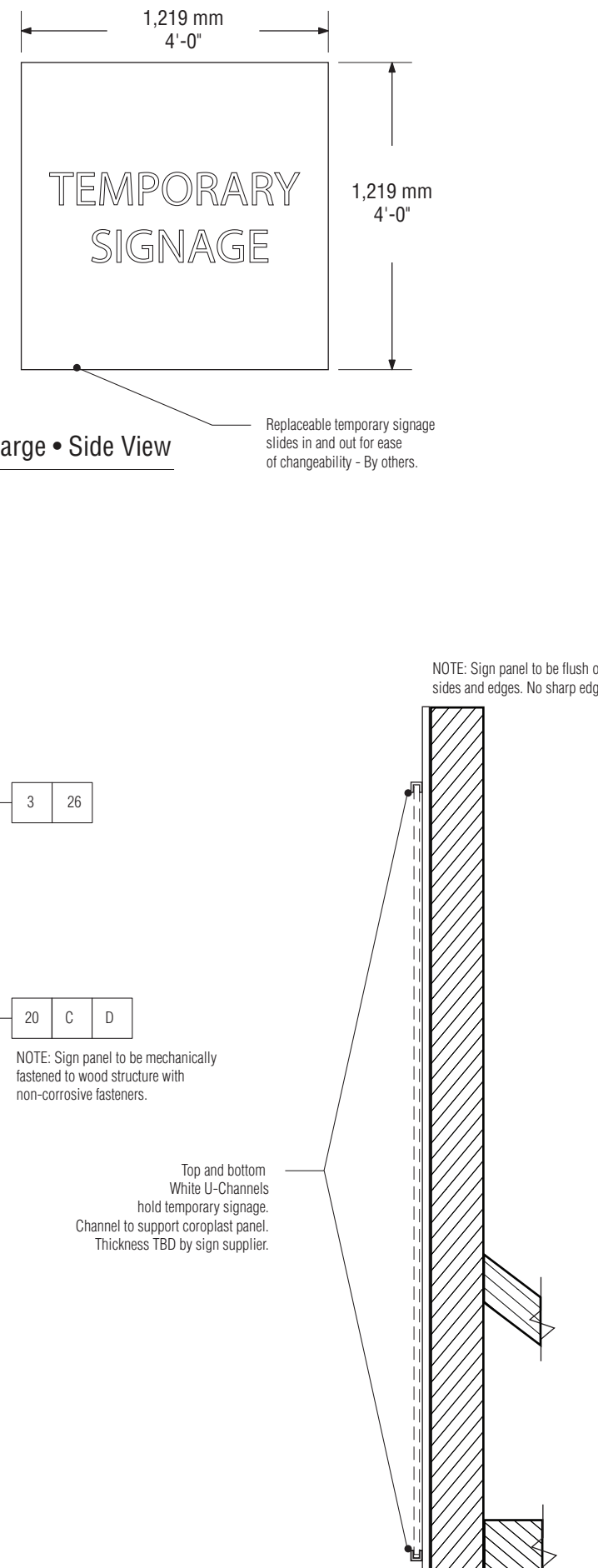
T-2 Temporary Information - Large • Front View

Scale: 1:10



T-2 Temporary Information - Large • Side View

Scale: 1:25



T-2 Temporary Information - Large • Side View

Scale: 1:10

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**PARKS AND TRAILS
SIGN SPECIFICATIONS**

PROJECT NO.

15-0869.04

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T-2 Temporary Information - Large

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COMMENTS

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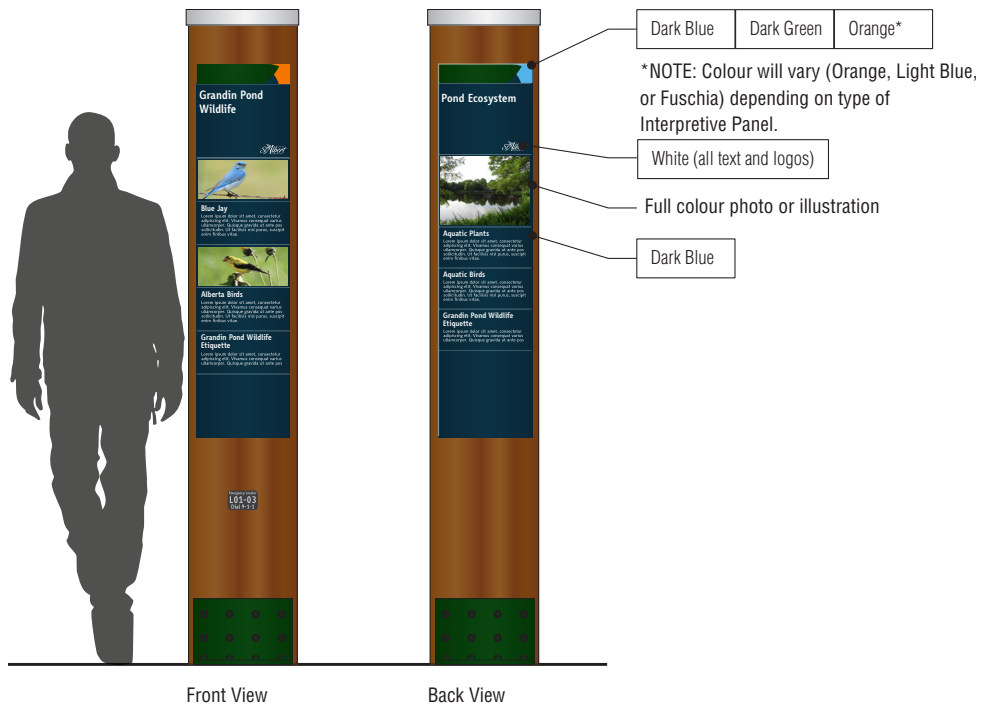
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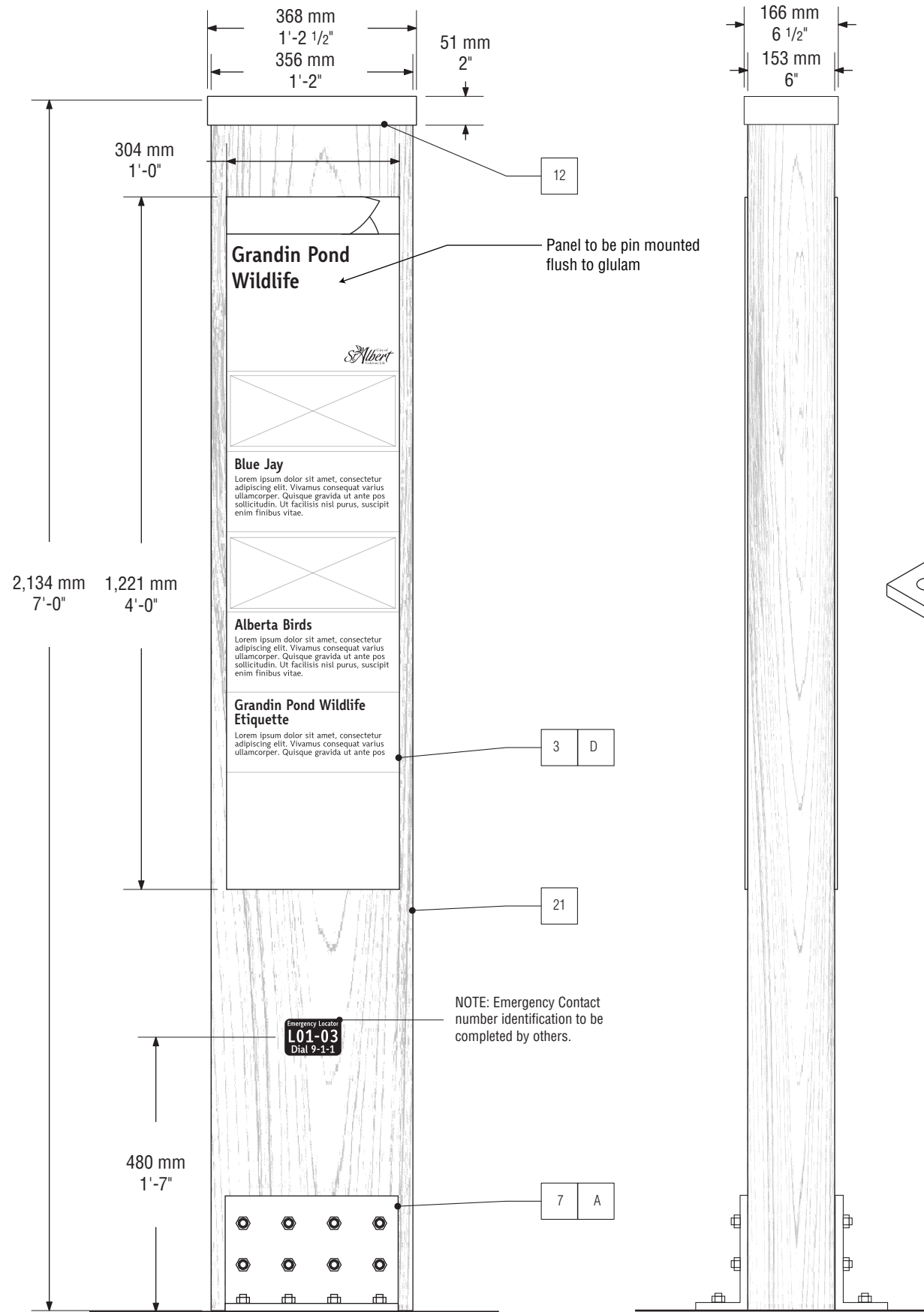
B.15

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INT-1 Primary Interpretive • Front View

Scale: 1:25

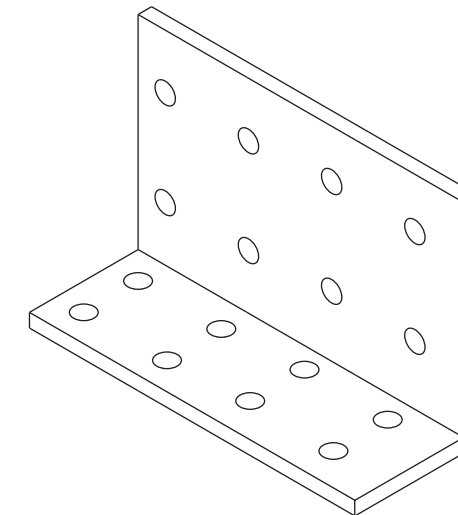


INT-1 Primary Interpretive • Front View

Scale: 1:10
NOTE: Concrete to be 6" Above grade for snow removal and maintenance.

INT-1 Primary Interpretive • Side View

Scale: 1:10



Large Boot Detail

Scale: NTS
NOTE: Size of boots TBD as structural required.

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SIGN SPECIFICATIONS**

PROJECT NO.

15-0869.04

DRAWING

INT-1 Primary Interpretive

SCALE

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B.16

GENERAL NOTES

- THE STRUCTURAL ENGINEER AND THE OWNER DOES NOT HAVE CONTROL OR CHARGE OF, AND SHALL NOT BE RESPONSIBLE FOR:
 - CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES,
 - FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK,
 - FOR THE ACT OR OMISSIONS OF THE CONTRACTOR, SUB CONTRACTORS OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK,
 - THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- CONTRACTOR SHALL CHECK ALL DIMENSIONS AND DETAILS PRIOR TO CONSTRUCTION TO ENSURE COMPATIBILITY.
- CONTRACTOR SHALL CONFIRM NO OBSTRUCTIONS OF UNDERGROUND OR ABOVE GROUND SERVICES PRIOR TO START OF WORK. ALBERTA ONE CALL 1-800-242-3447 AND CITY UTILITIES 780-459-1557.
- ELEVATIONS TO BE CONFIRMED ON SITE BY CONTRACTOR.
- DRAWINGS ARE DIMENSIONED IN MILLIMETERS; ELEVATIONS ARE NOTED IN METERS. DO NOT SCALE DRAWINGS.

DESIGN LOADS			
WIND LOAD:	q_{10}	0.35	kN/m ² (kPa)
	q_{60}	0.45	kN/m ² (kPa)
WIND LOAD IMPORTANCE FACTOR:			I_w 1.00
VANDALISM LOAD (LATERAL LOAD ON POST):			1 kN

FOUNDATIONS:

- SOIL PARAMETERS USED IN THE DESIGN OF THE FOUNDATION ARE BASED ON THE FOLLOWING ASSUMPTIONS:
 - ALLOWABLE SKIN FRICTION OF 15 kPa (SLS) BELOW A DEPTH OF 1.50 m.
 - ULTIMATE FACTORED SKIN FRICTION OF 12 kPa (ULS) BASED ON A FACTOR OF SAFETY OF 2.0 AND A ULS RESISTANCE FACTOR OF 0.4.
 - LATERAL SUBGRADE MODULUS OF 20 MN/m³.
 - NEGLECTIBLE SKIN FRICTION ABOVE A DEPTH OF 1.50 m.
 - SIGN POST FOUNDATION IS NOT PLACED ON LOOSE FILL (I.E. NO DOWNDRAW EFFECTS).
- CONFIRMATION OF SOIL CONDITIONS WITHIN THE FOUNDATION EXCAVATION FOOTPRINT TO BE CONFIRMED BY THE GEOTECHNICAL ENGINEER DURING CONSTRUCTION.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROCURE (IF REQUIRED) AND COORDINATE ALL GEOTECHNICAL FIELD REVIEWS WITH THE GEOTECHNICAL ENGINEER DURING CONSTRUCTION.
- DO NOT PLACE CONCRETE AGAINST FROZEN GROUND. THAW BY AN APPROVED METHOD AND THEN PROTECT EXCAVATIONS AND DRILLED HOLES FROM FREEZING PRIOR TO PLACING CONCRETE.
- PILES SHALL BE PLACED WITH THE FOLLOWING TOLERANCES:
 - NOT MORE THAN 2% OF ITS LENGTH OUT OF PLUMB FOR VERTICAL PILES.
 - NOT MORE THAN 75 mm OFF CENTER AT THE TOP.
- ALL DOWELS SHALL BE PLACED BEFORE CONCRETE IS POURED.
- COORDINATE CONSTRUCTION WITH ARCHITECTURAL AND/OR LANDSCAPE DRAWINGS.

CAST-IN-PLACE REINFORCED CONCRETE:

- CONCRETE SHALL CONFORM TO LATEST EDITION OF CSA-A23.1 A23.2 AND A23.3.
- CONCRETE MATERIALS, QUALITY, MIXING, PLACING, FORMWORK AND OTHER CONSTRUCTION PRACTICES TO CONFORM TO LATEST EDITION OF CSA-A23.1.
- SUPPLY CONTROLLED CONCRETE IN ACCORDANCE WITH CSA-A23.1 WITH PROPERTIES NOTED AS FOLLOWS:

CONCRETE PROPERTIES									
CONCRETE LOCATION	EXPOSURE CLASS	CEMENT TYPE	28 DAY STRENGTH	56 DAY STRENGTH	MAX. AGG. SIZE	MAX. W/C RATIO	MAX. SLUMP	AIR CONTENT	WET CURING PERIOD
PILES & PILE CAPS	S-2	HS	25 mPa	32 mPa	20 mm	0.45	120 mm	4 - 7%	3 days

- CONTRACTOR SHALL ONLY ADJUST THE MAXIMUM SLUMP BY THE ADDITION OF SUPER-PLASTICIZERS. NO ADMIXTURES SHALL BE USED WITHOUT THE APPROVAL OF THE ENGINEER. ADMIXTURES CONTAINING CHLORIDES SHALL NOT BE USED.
- USE OF FLY ASH LIMITED TO 30% BY MASS OF CEMENTING MATERIALS. ALL FLY ASH SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST EDITION OF CSA A3000 TYPE "F" OR "CL". MIN 28 DAY STRENGTH SHALL BE 32 mPa.
- CONCRETE AGGREGATE SHALL NOT REACT WITH ALKALIS CONTAINED WITHIN THE CONCRETE TO AN EXTENT THAT RESULTS IN EXCESSIVE EXPANSION OR CRACKING, OR BOTH, OF THE CONCRETE. WHEN POTENTIALLY REACTIVE AGGREGATES ARE TO BE CONSIDERED FOR USE, PREVENTIVE MEASURES ACCEPTABLE TO THE OWNER SHALL BE APPLIED. SEE CSA A23.1-09 SECTION 4.2.3.5.1.
- PROVIDE 100 mm VOID UNDER PILE CAPS FORMED USING FROST CUSHION BY BEAVER PLASTICS OR GEOSPAN BY PLASTIFAB. SOLID STYROFOAM IS NOT ACCEPTABLE.
- WINTER AND HOT WEATHER CONCRETE PROCEDURES TO LATEST EDITION OF CSA A23.1.
- PLACE AND CURE CONCRETE ACCORDING TO LATEST EDITION OF CSA A23.1.
- CONCRETE TO BE TESTED ACCORDING TO LATEST EDITION OF CSA A23.1.
- REJECT ALL CONCRETE WHEN TIME BETWEEN BATCHING AND PLACING EXCEEDS 2 HOURS.
- REFER TO ARCHITECTURAL DRAWINGS FOR SLAB ELEVATIONS AND DRAINAGE SLOPES.
- FIELD AND LABORATORY TESTING OF CONCRETE TO BE COMPLETED BY A QUALIFIED THIRD PARTY TESTING AND INSPECTION AGENCY.
- A MINIMUM OF THREE TEST CYLINDERS SHALL BE TAKEN FOR EACH TYPE OF MAJOR STRUCTURAL ELEMENT:
 - FOR EVERY 50 m³ PLACED PER DAY, OR FRACTION THEREOF; OR
 - WHEN PLACING LESS THAN 50 m³ OF CONCRETE.
ONE OF THE CYLINDERS SHALL BE TESTED AT 7 DAYS AND THE OTHER TWO SHALL BE TESTED AT 28 DAYS.
- THIRD PARTY CONCRETE TESTING TO BE PAID FOR BY THE CONTRACTOR.
- ADDITIONAL TESTING REQUIRED DUE TO CHANGES IN THE MATERIAL OR THE MIX PROPERTIES, AS WELL AS ANY EXTRA TESTING OF THE CONCRETE OR MATERIAL OCCASIONED BY THEIR FAILURE TO MEET THE SPECIFICATION REQUIREMENTS SHALL BE PAID FOR BY THE CONTRACTOR.

- PROTECT FRESHLY PLACED CONCRETE FROM DAMAGE DUE TO CONSTRUCTION OPERATIONS AND FROM WEATHER CONDITIONS OR ANY OTHER CIRCUMSTANCES WHICH WOULD LIKELY CAUSE DETERIORATION OF THE CONCRETE QUALITY.
- REMOVE ALL TIES, BOLTS, NAILS, AND OTHER METAL TO A DEPTH OF 25 mm AND FILL THE HOLES. CHIP OFF AND RUB ALL FINIS AND OTHER PROJECTIONS UNTIL FLUSH WITH THE GENERAL SURFACE.
- CONCRETE TO HAVE A TOOLED EDGE AND BROOM FINISH.

REINFORCING STEEL:

- ALL CONCRETE REINFORCEMENT TO BE IN ACCORDANCE WITH LATEST EDITION OF CSA G30.18.
- SPLICING OF REINFORCING STEEL SHALL NOT BE PERMITTED.
- SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION.
- REINFORCING BARS TO BE BILLET STEEL, DEFORMED BARS, GRADE 400 R.
- ACCURATELY PLACE REINFORCEMENT AND SECURE AGAINST DISPLACEMENT DURING CONCRETE PLACING, SUPPORT SHALL BE BY MEANS OF PLASTIC CHAIRS, SPACERS, OR BRICKS FOLLOWING THE RECOMMENDATIONS OF "REINFORCING STEEL - MANUAL OF STANDARD PRACTICE" (REINFORCING STEEL INSTITUTE OF CANADA). ALL CHAIRS OR BAR SUPPORTS SHALL BE NON-METALLIC. SPACING OF REINFORCEMENT SUPPORTS IN PILE CAPS NOT TO EXCEED 1000 mm.
- NO WELDING OF REINFORCING BARS SHALL BE PERMITTED.
- PROVIDE 50 mm COVER FOR REINFORCEMENT UNLESS NOTED OTHERWISE.
- COVER FOR REINFORCEMENT:

PILES:	75 mm
PILE CAPS (TOP AND SIDES):	50 mm
PILE CAPS (BOTTOM):	75 mm

STRUCTURAL STEEL:

- ALL STRUCTURAL STEEL PLATE TO BE GRADE 300W IN ACCORDANCE WITH CSA G40.21. CONFIRM ALL LOCATIONS, DIMENSIONS AND ELEVATIONS WITH ACTUAL SITE MEASUREMENTS BEFORE FABRICATION.
- SUBMIT SHOP DRAWINGS IN ACCORDANCE WITH GENERAL NOTES ON THESE DRAWINGS AND WITH SPECIFICATIONS. SHOP DRAWINGS FOR ANCHOR BOLT LAYOUT AND EMBEDDED PLATE SIZE AND LAYOUT SHALL ALSO BE SUBMITTED FOR REVIEW.
- WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS. FABRICATION SHOPS SHALL BE APPROVED BY THE CANADIAN WELDING BUREAU TO CSA-W47.1 (DIVISION 1, 2 OR 2.1). CERTIFICATIONS SHALL BE SUPPLIED TO THE ENGINEER UPON REQUEST.
- IMPERIAL SIZE BOLTS AND PLATE PRODUCTS ARE ACCEPTABLE ON AN EQUAL SIZE EQUAL STRENGTH BASIS.
- ALL STRUCTURAL STEEL TO BE FINISH PAINTED BY WIRE BRUSHING AND REMOVING ALL RUST, DIRT, MILL SCALE, WELD SPATTER AND ALL OTHER EXTRANEIOUS MATERIAL IN ACCORDANCE WITH SSPC SPECIFICATIONS SP7 BEFORE APPLYING POWDER COATING EXCEPT THOSE SURFACES TO BE IN CONTACT WITH CONCRETE. REFER TO ARCHITECTURAL DRAWINGS FOR FINISHING DETAILS.
- ALL EXPOSED WELDS TO BE CONTINUOUS. GRIND ALL EXPOSED WELDS SMOOTH, INCLUDING PAINTED STEEL.
- PROVIDE WEEP HOLES FOR ALL EXPOSED HSS MEMBERS.
- ANCHOR BOLTS TO BE HILTI HAS STAINLESS STEEL THREADED ROD TO GRADE AISI 304/316 SECURED WITH HILTI HIT-HY-200 OR RE-500 EPOXY ADHESIVE OR APPROVED EQUAL.
- PRIME SURFACE TO RECEIVE A POWDER COATED FINISH IN ACCORDANCE WITH THE POWDER COATING MANUFACTURES SPECIFICATIONS.
- APPLY 2 COATS OF STATIC ASPHALT TO ALL STEEL SURFACES IN CONTACT WITH CONCRETE.
- WELDS AND BURNED OR SCRATCHED SURFACES SHALL BE SURFACE PREPARED BY GRINDING OR BLASTING THEN TOUCHED UP AND RE-FINISHED AT COMPLETION OF ERECTION.
- HOLES THROUGH PLATES SHALL BE 2 mm LARGER THAN BOLT DIA.

WOOD

- ALL DESIGN, DETAILS, MATERIALS AND CONSTRUCTION PROCEDURES SHALL CONFORM TO CURRENT ADDITION OF CAN/CSA-086, ENGINEERING DESIGN IN WOOD.
- SAWN TIMBER:
 - DESIGN TO LATEST EDITION OF CSA CAN3-086.1.
 - ALL SAWN POST TO BE ROUGH SPRUCE (BROWN), ACQ TREATED (NO STAIN OR PAINT).
 - ALL WOOD TO BE PRESERVED WOOD - PRESSURE TREATED TO LATEST EDITION OF CSA-080.1-M AND ITS SUPPLEMENTS USING ACA OR CCA WATER-BORNE PRESERVATIVE.
 - ALL POST DIMENSIONS SHALL BE ACTUAL ROUGH SIZE, NOT NOMINAL SIZE.
 - FIELD TREAT CUTS AND DRILLED HOLES IN PRESERVED WOOD WITH TWO COATS OF SURFACE APPLIED PRESERVATIVE.
- ANY TIMBER NOT GRADE MARKED WILL BE REJECTED.
- NOTCHING AND DRILLING OF STRUCTURAL COMPONENTS SHALL FOLLOW THE GUIDELINES OUTLINED IN THE ALBERTA BUILDING CODE, PART 9 AND THE CANADIAN WOOD COUNCIL, WOOD DESIGN MANUAL.
- ALL TIMBER ELEMENTS ARE DESIGNED FOR WET SERVICE CONDITIONS.
- ALL FASTENERS TO BE STAINLESS STEEL TO GRADE 304/316.

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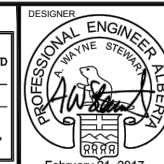
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STRUCTURAL CONSULTING ENGINEERING

NO.	DATE	DESCRIPTION	BY	CHK
2	17/03/02	NOTE REVISED	DBK	UM
1	17/02/23	REVISIONS D-2 DETAIL	DBK	UM
0	17/02/21	ISSUED FOR CONSTRUCTION	DBK	UM
NR	YY/MM/DD	ISSUE/REVISION DESCRIPTION	DRN	DES

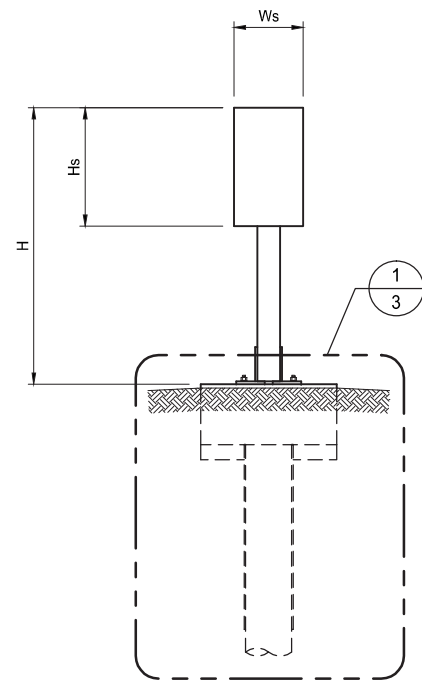
PERMIT STAMP	
PERMIT TO PRACTICE	GEOMETRIX GROUP ENGINEERING LTD
Signature: <i>A. Wayne</i>	
Date: February 21, 2017	
PERMIT NUMBER: P10423	
The Association of Professional Engineers, Geologists and Geophysicists of Alberta	



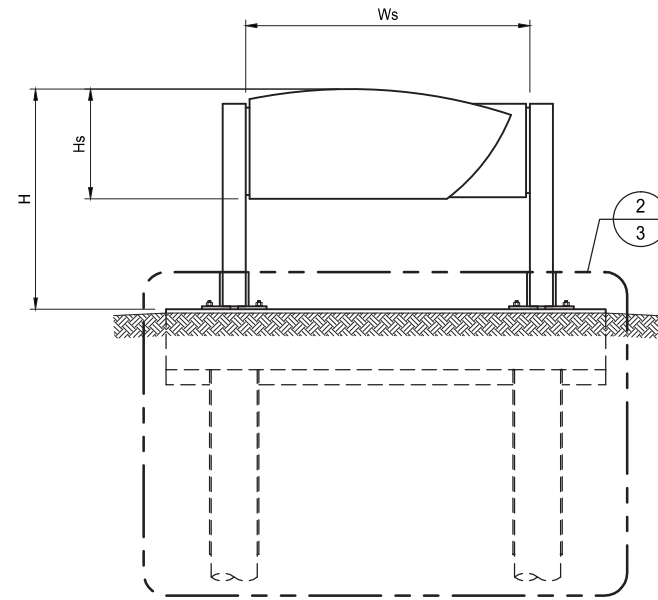
CLIENT:	THE CITY OF ST. ALBERT		
PROJECT:	PARK SIGN FOUNDATION STANDARDS		
LOCATION:	ST. ALBERT, ALBERTA		
GENERAL NOTES			
PROJECT NUMBER	DRAWING NUMBER	SHEET NUMBER	ISSUE/REVISION
16-1250	S-001	1 of 4	2

Paper Size: 11"x17"
 If field lines do not measure 20mm, the drawing has been reduced.

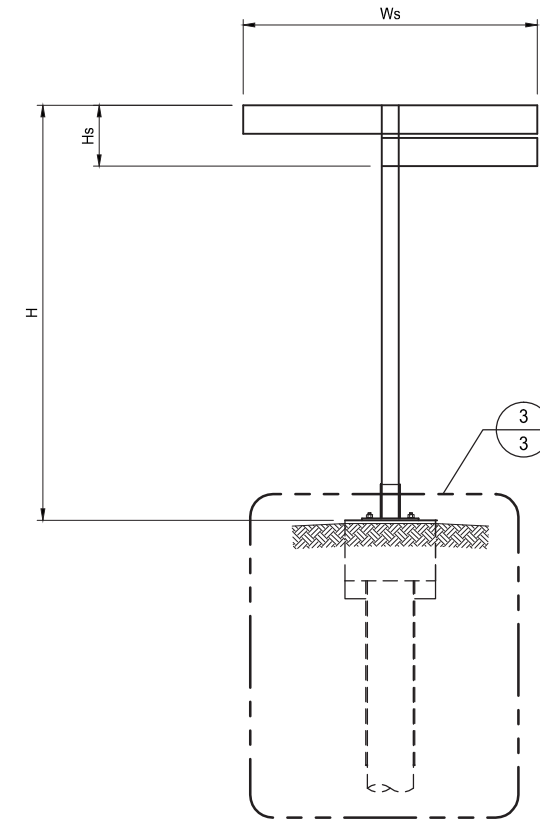
TABLE A: SIGN DESCRIPTION							
Sign Designation	Sign Type	Description	Width Ws (mm)	Height Hs (mm)	Overall Height H (mm)	Post Size (mm)	No of Posts
ID - 1	B	Primary Park Identification	2437	950	1677	203 X 203	2
ID - 2	B	Secondary Park Identification	1829	713	1448	152 X 152	2
ID - 3	B	Tertiary Park Identification	1219	432	1219	152 X 152	2
D - 1	C	Pedestrian Directional	1972	374	2743	113 x 113	1
D - 2	A	Trail Marker	-	-	1219	152 X 152	1
IN - 1	B	Primary Information/Orientation	1372	1141	1905	152 X 152	2
IN - 2	B	Secondary Information Sign	1067	767	1891	152 X 152	2
IN - 3	A	Tertiary Information Sign	457	851	1855	152 X 152	1
INT - 1	A	Primary Interpretive	-	-	2134	356 X 152	1



TYPE A
ONE WOOD POST SIGN SYSTEM
 1:50 SIGN IN-3, INT-1



TYPE B
TWO WOOD POSTS SIGN SYSTEM
 1:50 SIGN ID-1, ID-2, ID-3, IN-1, IN-2



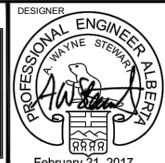
TYPE C
ALUMINUM POST SIGN SYSTEM
 1:50 SIGN D-1, D-2

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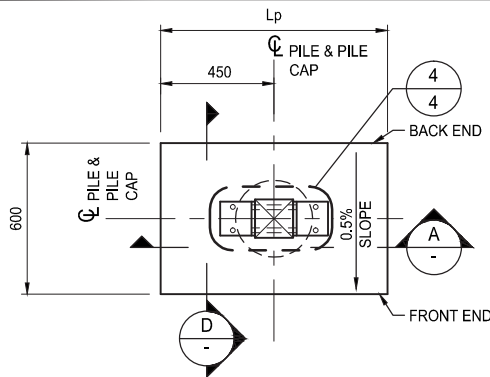
REV	YYMMDD	ISSUE/REVISION DESCRIPTION	DRN	DES	CHK
2	17/03/02	NOTE REVISED	DBK	UM	AWS
1	17/02/23	REVISIONS D-2 DETAIL	DBK	UM	AWS
0	17/02/21	ISSUED FOR CONSTRUCTION	DBK	UM	AWS

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 Signature: *[Signature]*
 Date: February 21, 2017
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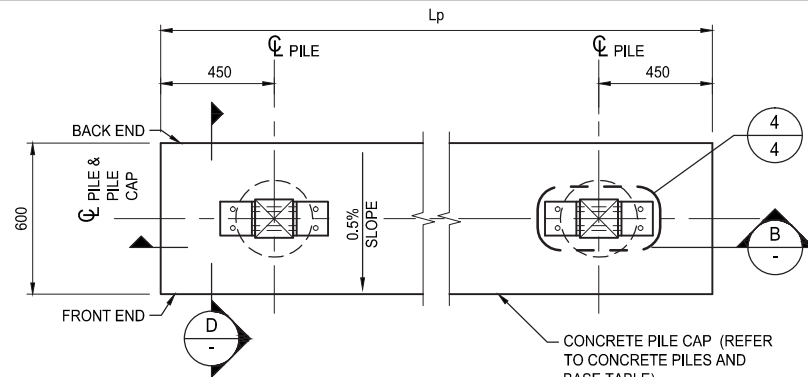


CLIENT:	THE CITY OF ST. ALBERT		
PROJECT:	PARK SIGN FOUNDATION STANDARDS		
LOCATION:	ST. ALBERT, ALBERTA		
GENERIC ELEVATIONS			
PROJECT NUMBER	DRAWING NUMBER	SHEET NUMBER	ISSUE/REVISION
16-1250	S-002	2 of 4	2

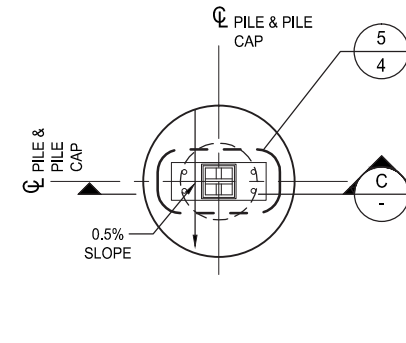
Sheet Size: 11"x17"
If this line does not measure 20mm, the drawing has been reduced.



TYPICAL PLAN
1:30



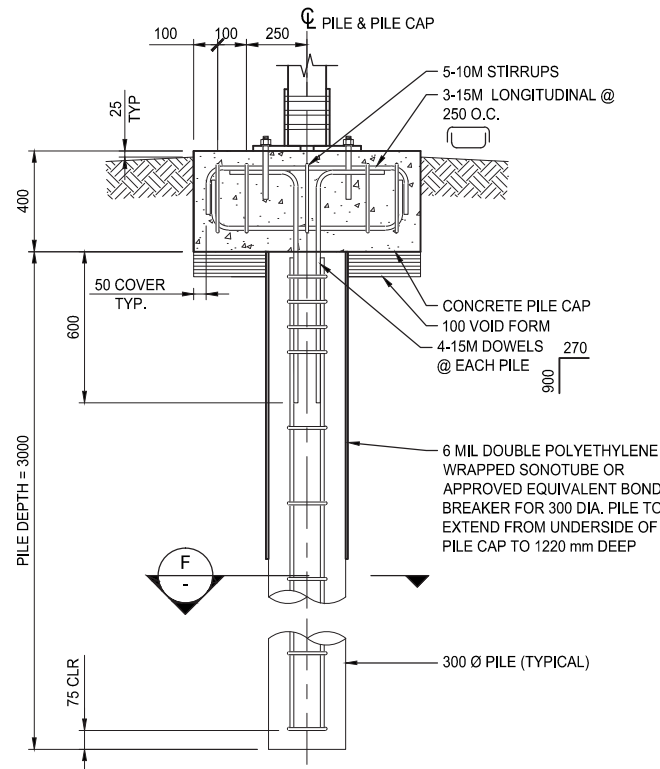
TYPICAL PLAN
1:30



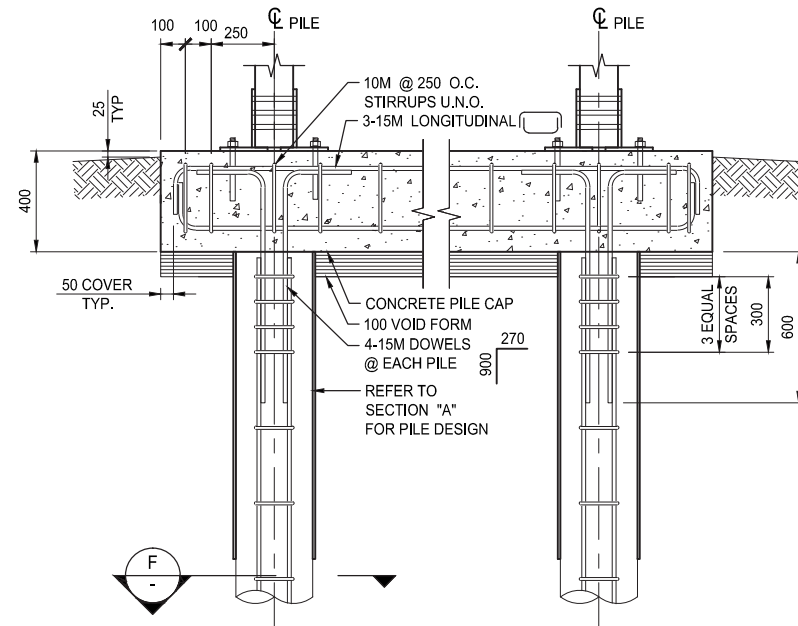
TYPICAL PLAN
1:30

TABLE B: CONCRETE PILE CAP		
Sign Designation	Description	Pile Cap Length Lp (mm)
ID - 1	Primary Park Identification	3600
ID - 2	Secondary Park Identification	2950
ID - 3	Tertiary Park Identification	2350
D - 1	Pedestrian Directional	See Detail 3
D - 2	Trail Marker	See Detail 3
IN - 1	Primary Information/Orientation	2500
IN - 2	Secondary Information/Sign	2200
IN - 3	Tertiary Information Sign	900
INT - 1	Primary Interpretive	900

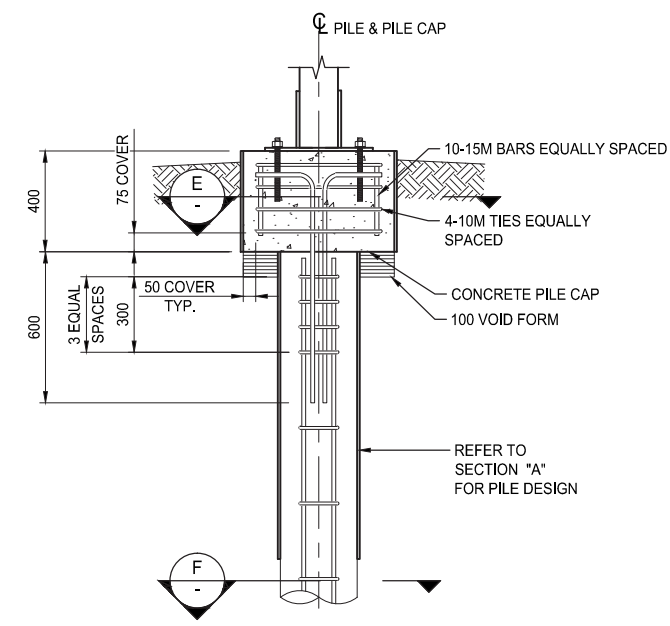
NOTE:
EXPOSED PILE CAP SURFACE CONCRETE TO BE LIGHT BROOM FINISH
IN LONG DIRECTION WITH 50mm TOOLED EDGES



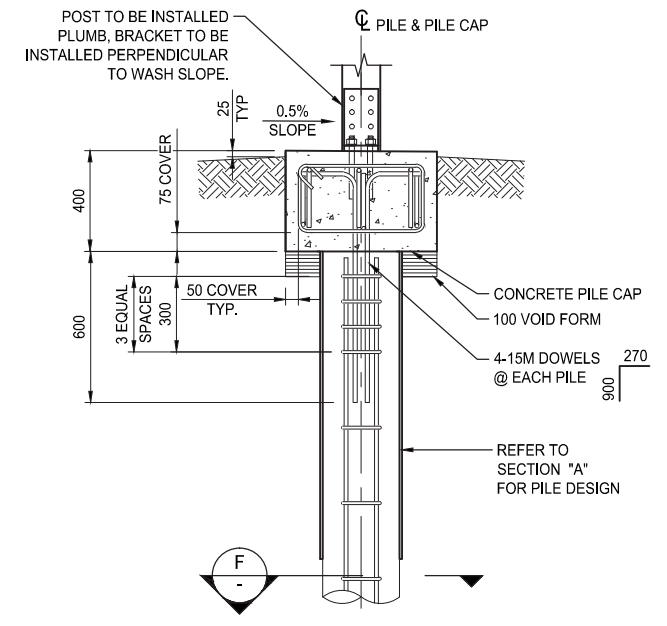
A SECTION
1:30



B SECTION
1:30



C SECTION
1:30

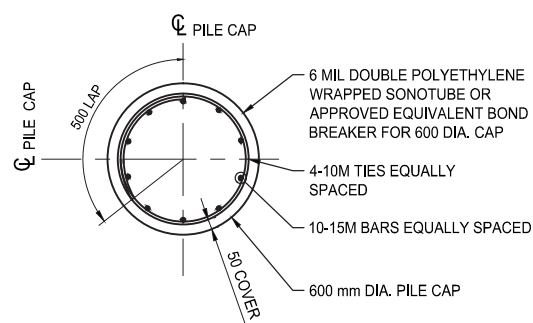


D SECTION
1:30

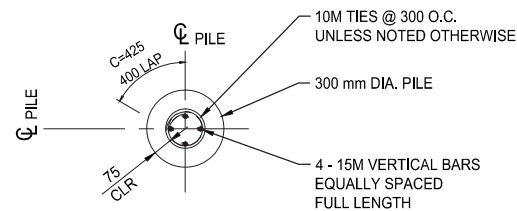
1 TYPICAL DETAIL
ONE POST SIGN SYSTEM

2 TYPICAL DETAIL
TWO POST SIGN SYSTEM

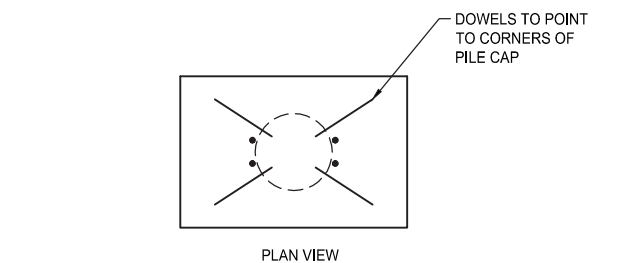
3 TYPICAL DETAIL
SIGN D-1, D-2



E SECTION
1:30



F SECTION
1:30



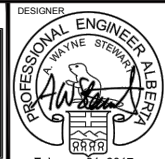
TYPICAL DOWEL
1:30

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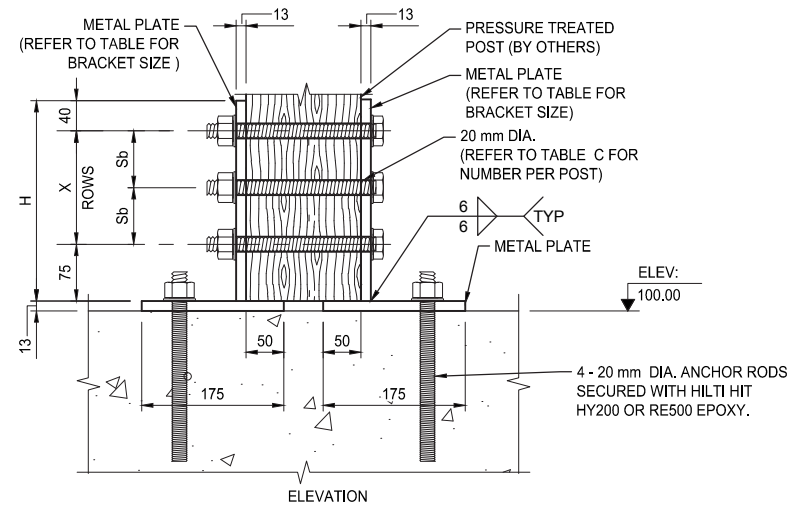
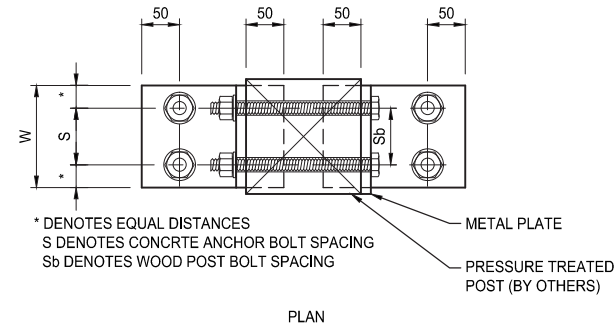
REV	YYMMDD	ISSUE/REVISION DESCRIPTION	DRN	DES	CHK
2	17/03/02	NOTE REVISED	DBK	UM	AWG
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0	17/02/21	ISSUED FOR CONSTRUCTION	DBK	UM	AWG

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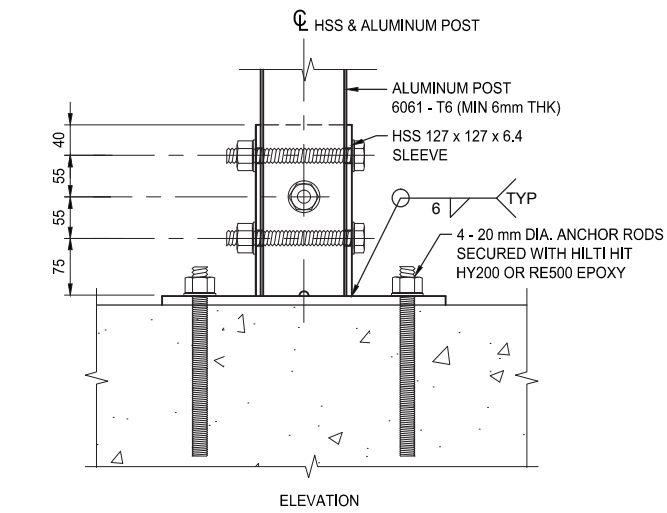
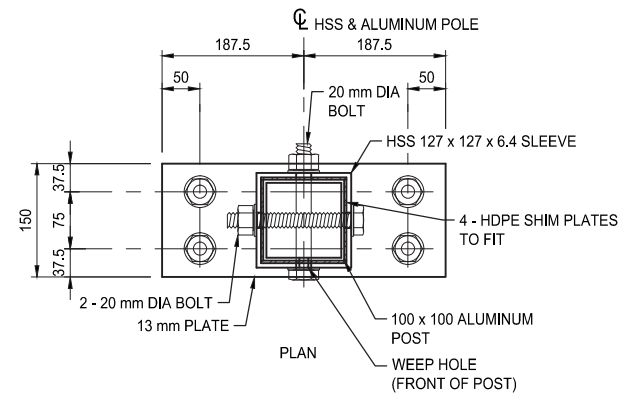


CLIENT: THE CITY OF ST. ALBERT
PROJECT: PARK SIGN FOUNDATION STANDARDS
LOCATION: ST. ALBERT, ALBERTA
PILE CAP AND PILE DETAILS
PROJECT NUMBER: 16-1250
DRAWING NUMBER: S-003
SHEET NUMBER: 3 of 4
ISSUE/REVISION: 2

Paper Size: 11"x17"
If this line does not measure 20mm, the drawing has been reduced.



4 DETAIL
1:10



5 DETAIL
1:10

TABLE C: ANCHOR BRACKETS AND BOLTS										
Sign Designation	Description	Bracket		Concrete Anchors		Bolts				
		Height, H (mm)	Width, W (mm)	Dia x Embedment Depth (mm)	Spacing, S (mm)	Bolt Dia (mm)	Bolt Spacing, Sb (mm)	Bolt Rows X	# of Bolts per Row	
ID - 1	Primary Park Identification	265	175	20 x 175	100	20	75	3	2	
ID - 2	Secondary Park Identification	265	135	20 x 175	75	20	75	3	2	
ID - 3	Tertiary Park Identification	265	135	20 x 175	75	20	75	3	2	
D - 1	Pedestrian Directional	SEE DETAIL 5								
D - 2	Trail Marker	265	135	20 x 175	75	20	75	3	2	
IN - 1	Primary Information/Orientation	265	135	20 x 175	75	20	75	3	2	
IN - 2	Secondary Information Sign	265	135	20 x 175	75	20	75	3	2	
IN - 3	Tertiary Information Sign	265	135	20 x 175	75	20	75	3	2	
INT - 1	Primary Interpretive	190	300	20 x 175	150	20	75	2	3	

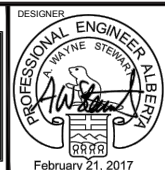
NOTE:
1. BRACKETS TO BE POWDER COATED RAL 6020 CHROME GREEN UNLESS NOTED OTHERWISE.
2. ALL ANCHOR RODS AND MOUNTING FASTENERS TO BE STAINLESS STEEL.

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CLIENT: THE CITY OF ST. ALBERT
PROJECT: PARK SIGN FOUNDATION STANDARDS
LOCATION: ST. ALBERT, ALBERTA
BRACKET, ANCHOR AND MISCELLANEOUS DETAILS
PROJECT NUMBER: 16-1250
DRAWING NUMBER: S-004
SHEET NUMBER: 4 of 4
ISSUE/REVISION: 2