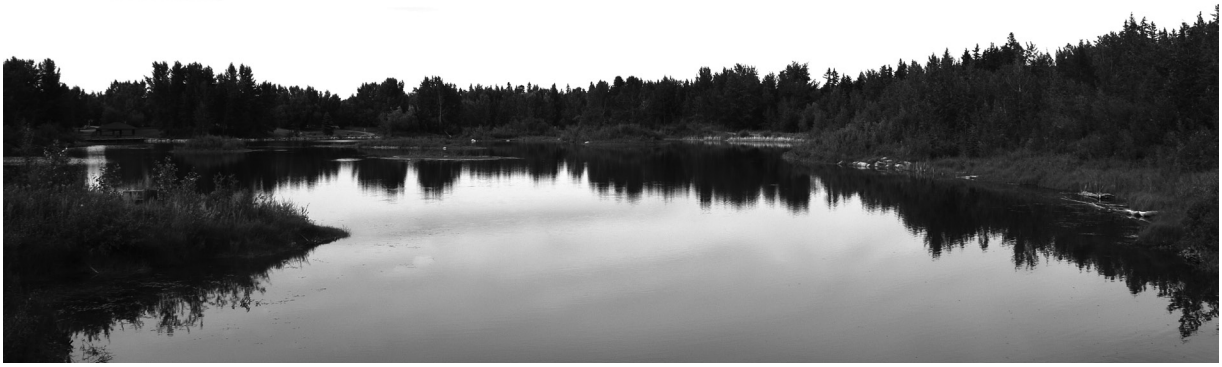

WASKASOO PARK
Signage Identity Standards

A GUIDE FOR THE PLANNING, DESIGN AND PRODUCTION OF WASKASOO PARK SIGNAGE

MAY 2010
PREPARED BY:
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EXECUTIVE SUMMARY

The primary objective of this document is to provide a clear framework for the signage identity system for Waskasoo Park, ensuring that the public recognizes the park as a continuous and distinct resource within the City of Red Deer. As part of Waskasoo Park's unique identity, it is important for the signage to reveal the diverse character of the place. It is a park that is both urban and natural, which caters to a variety of users and offers a multitude of activities from season to season. The signage should reflect this and provide a consistent aesthetic which effectively brands the park while fostering a positive association with the many amenities that Waskasoo Park has to offer.

These signage identity standards aim to create an efficient and cohesive signage system for the park that unifies the many parks within the Waskasoo Park system and improves the visitor's experience. The signage family utilizes a hierarchy of signage types, with each type serving a distinct role in the park's signage system and possessing a specific purpose, viewing distance, size and graphic layout. Unifying them is a consistency in the colour, materials and graphic style which creates an overall identity to the signage family. They strive to maximize value by balancing cost, durability and multi-functionality. In utilizing an interconnected hierarchy, information is presented to Waskasoo Park users in a step-by-step fashion, with additional layers of information being added to the user experience with each sign they encounter.

The purpose of the new signage family is to go beyond the necessities of providing users with crucial park information. Its overall purpose is to help create a cohesive, contemporary identity for Waskasoo Park. This identity will enhance the user's experience by providing necessary information in a clear, concise manner, it will provide an easy-to-use wayfinding system, and it will help to create a memorable image of Waskasoo Park for park visitors.

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PREFACE

Scope

This document is intended to provide a clear set of objectives, guidelines, procedures and templates for the development of future signage for Waskasoo Park. It is not intended to provide information for the specific content of each sign within the new identity standards, but rather to provide the tools necessary to develop signage which is consistent with the identity standards put forth.

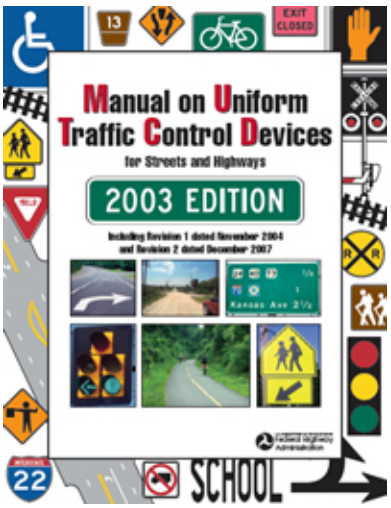
Format of Report

The chapters within this document subsequently build upon one another to describe a clear procedure for the development, design and production of signage for Waskasoo Park. The concept of identity is first explored, followed by an introduction to the signage family hierarchy and the individual signage types that are intended to accommodate the diverse needs of the entire Waskasoo Park system. Next, the rationale behind the graphic layout of the typology templates is explained, followed by an outline of the procedures for the planning and development of signage content. Finally, material options and construction details are provided for each signage type.

REFERENCE STANDARDS

In addition to the information provided in this guide, the following reference standards should be consulted in the design, planning, siting, and installation of signage within Waskasoo Park. In the event of a conflict in content regarding human health and safety, those terms of reference listed below shall take precedence over the contents of this document.

- Alberta Infrastructure and Transportation. Traffic Safety Act. Current edition.
- Alberta Infrastructure and Transportation. Highway Guide and Information Sign Manual. Current edition.
- Alberta Infrastructure and Transportation. H8 - Signs, Supports and Poles: Alberta Infrastructure and Transportation roadside design guide. Current edition.
- Alberta Infrastructure and Transportation. Standards Specifications for Highway Construction. Current edition.
- City of Red Deer. Traffic Safety Action Plan. Current edition.
- City of Red Deer. Traffic Signal Installation Standards. Current edition.
- City of Red Deer. Roadway Design Standards. Current edition.



Supplemental Information that may be of assistance in signage design can be found in the following documents.

- Federal Highway Administration. Manual on Uniform Traffic Control Devices [MUTCD], Metric Version. Current edition.
- Parks Canada Identity Program. Exterior Signage Standards and Guidelines. Current edition.

CHAPTER 1 INTRODUCTION

In many ways, Waskasoo Park is the heart of the City of Red Deer. In the Cree language, Was-ka-soo means “elk river,” a translation of which gave both the Red Deer River and the City their names. This historical connection between City and the river is deeper than its namesake. The Park acts as a buffer between City and River and offers a valuable public space within this transition zone between the two.

As part of Waskasoo Park’s unique identity, it is important for the signage to reveal the diverse character of the place. It is a park that is both urban and natural, which caters to a variety of users, and which offers a multitude of activities from season to season. The signage should provide a consistent aesthetic which effectively brands the park and fosters a positive association with the many amenities that Waskasoo Park has to offer. In essence, the signage family is the handshake of Waskasoo Park — it is what greets users upon arrival. It is also the voice of Waskasoo Park — it is what speaks, educates and directs the user experience while visitors are in the park.

Existing Signage System

The graphic identity and much of the content of the existing signage is out-dated and over the years it has suffered from ageing, material weathering and vandalism.

Consistency in layout and design throughout the entire signage family is lacking, and there is a failure to create a cohesive identity. The logo and fonts utilized no longer convey a contemporary sense of place, and the existing signage material wears quickly and begins to age without regular, routine maintenance.

This detracts from the user’s experience of the park, and does not effectively market Waskasoo Park as a key destination within the increasingly urban, contemporary city that Red Deer is becoming. This is a driving factor in the creation of a new signage identity for Waskasoo Park.

Way-finding and Imageability:
Image of the City, Kevin Lynch

Way-finding was a term first described by urbanist Kevin Lynch in his seminal book *An Image of the City* (1960). In the book, Lynch describes way-finding as the means by which humans and animals navigate through space using perceptual cues, senses, and prior experience with the external environment. In the modern city, maps, signage and many other visual media are also used for navigation.

Through the repeated process of way-finding, Lynch proposes that people begin to develop environmental images in which mental pictures of places and the ways they are interconnected. We use these mental maps to navigate through space. The accuracy or coherence of the environmental image is what Lynch refers to as imageability. Through his research on imageability of actual cities, he found that people organize environmental images based on paths, landmarks, regions, edges and nodes.

In Waskasoo Park, it is important to consider the concepts of way-finding and imageability in the design and location of signage. Signage not only provides detailed information to help people construct environmental images, they can also demarcate landmarks, paths, nodes and edges. The information presented should reinforce the image of a landmark, for example, so that users better understand where they are in the park system. They should also be located at critical nodes to signify importance within the park system. Finally, the signage family itself can begin to operate as landmarks, they can provide cues that there is something important in the area to take note of.

A New Identity for Waskasoo Park

The purpose of the new signage family is to go beyond the necessities of providing users with crucial park information. Its overall purpose is to help create a cohesive, contemporary identity for Waskasoo Park. This identity will enhance the user's experience by providing necessary information in a clear, concise manner, and will also help users to understand how and where the park weaves throughout the city. This is something that every city must strive to accomplish with its citizens — to provide clear wayfinding and imageability (see sidebar).

Whenever users encounter a sign, it reminds them they are not just in any park, but they are in Waskasoo Park. Beyond the written words 'Waskasoo Park', the park identity is conveyed by the appearance, colour and visual consistency of the signage family. These are non-verbal, sensory cues which we all use to communicate. In many ways, these sensory cues are more effective at creating an overall identity than the message itself.

Signage Objectives

The Waskasoo Signage Family is designed with the following goals in mind:

- To develop and reinforce a clear and consistent identity for Waskasoo Park
- To provide effective and consistent wayfinding information to direct users throughout the park
- To educate users about the park's key destinations, amenities, history and environment
- To maximize value of investment through standardized design, use of long-lasting materials, and careful consideration for fabrication, installation, maintenance, and life cycle

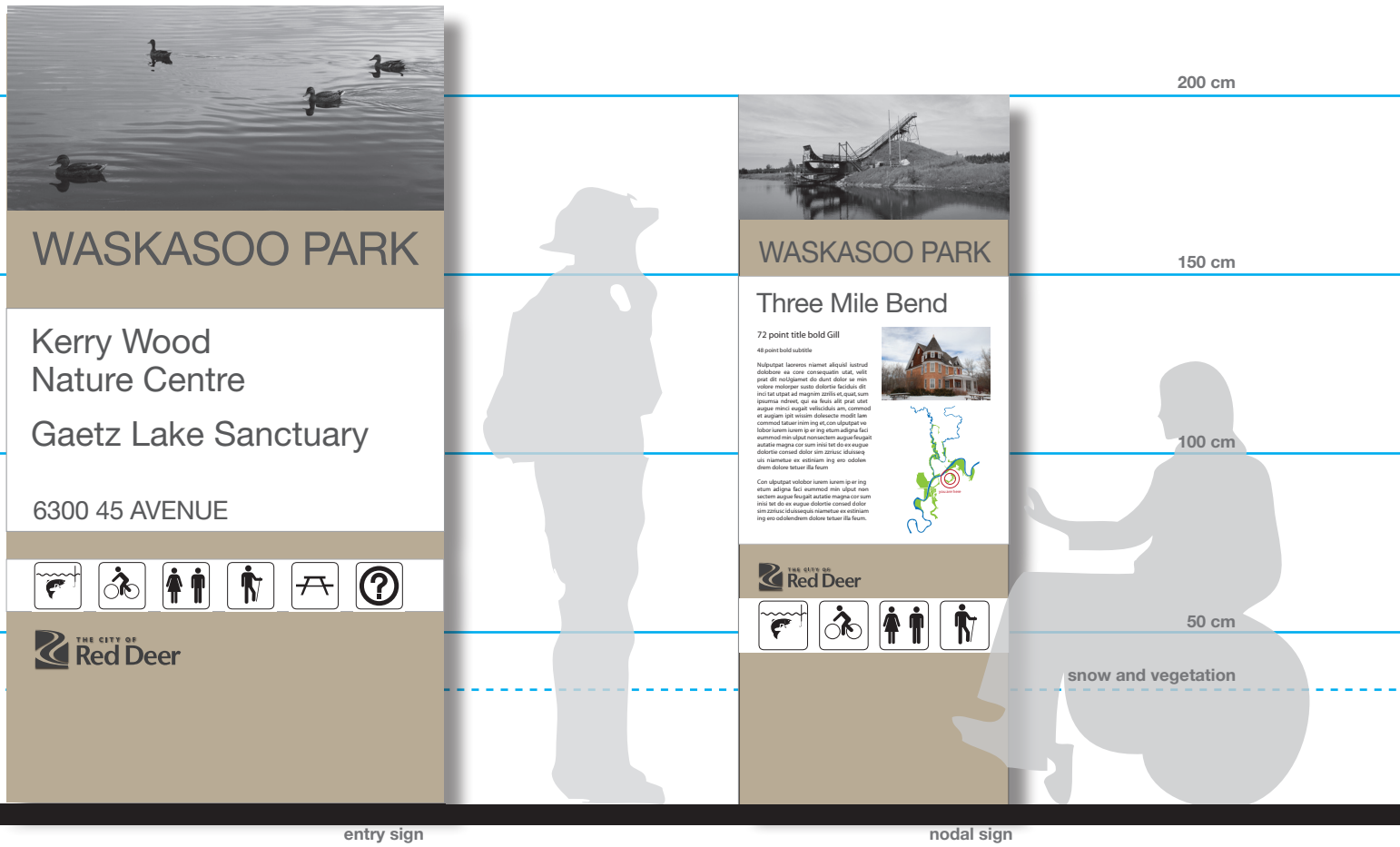
Way-Finding by Maps

The City of Red Deer Waskasoo Park system currently provides users a single map at key entry points to the park. The expansion of this wayfinding system to include smaller maps along trails will assist users in navigating the park system in its entirety.

Existing Signage Use

The City of Red Deer Parks sign system consists of nearly 1,700 signs across the city. This volume of signage creates issues of sustainability and signage effectiveness. The signage system described in this document provides an opportunity to reduce the number of signs throughout the park. Signage is frequently added to areas as issues arise resulting in the inconsistent and ineffective use of enforcement signage. This is often the case in the use of signs such as “pick up litter” or “clean up after pets”. These signs are typically ineffective and decrease the overall impact and attention of signs that hold a positive message or provide interpretation. Any sign system should be focused on positive messaging and enforcement signage (such as “No Swimming” or “Yield”) should only be used when a serious safety hazard exists.

figure 1. Waskasoo Park Signage family
scale 1:20



entry sign

nodal sign

CHAPTER 2 SIGNAGE FAMILY OVERVIEW

The Waskasoo Park signage family consists of six different sign types. Each has a specific role, viewing distance, size and graphic layout. Between each there is a consistency in the colour, materials and graphic style which creates an overall identity to the signage family. Furthermore, the intent of the appearance of the signage family is for the signs to be distinctive within their surroundings, whether they are natural or urban.

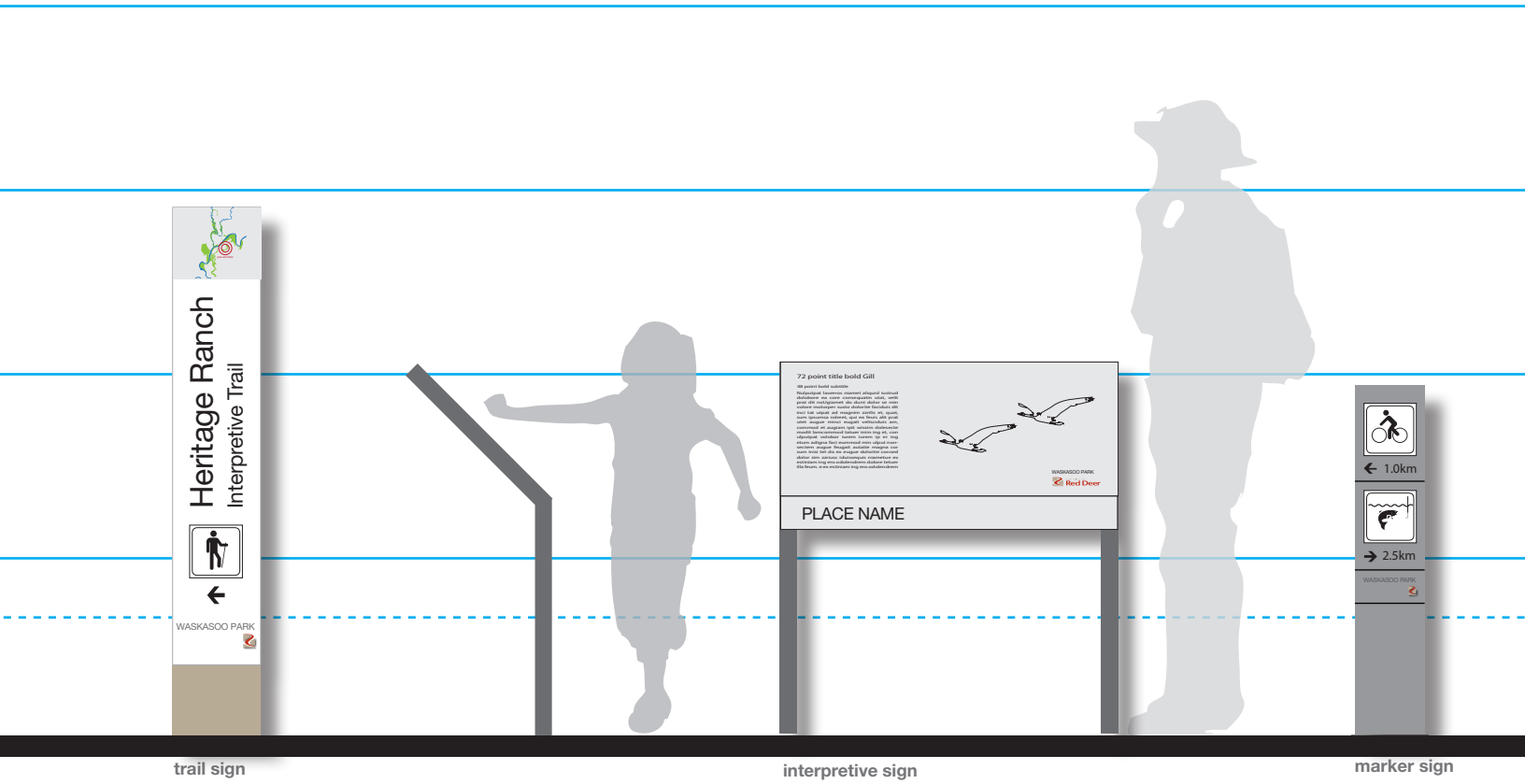
The signage family is illustrated below, and is presented at the proper scale that users would interact with each type. On the pages that follow are images which demonstrate the appearance of the sign as they would be installed in-situ.

Signage composition should consider the average heights of its intended audiences. The illustrations below depict various users interacting with the signs.
Some average height statistics:

Adults
Canadian male 174 cm
Canadian female 160 cm

Children
4 years 104 cm
5 years 110 cm
6 years 116 cm
7 years 122 cm
8 years 128 cm
9 years 134 cm
10 years 140 cm

Wheelchair user 125 cm



trail sign

interpretive sign

marker sign

Signage Hierarchy

One of the strengths of a cohesive signage family is the establishment of order and a signage hierarchy. A clear signage hierarchy allows information to be presented to Waskasoo Park users in a step-by-step fashion, with additional layers of information being added to the user experience with each sign they encounter.

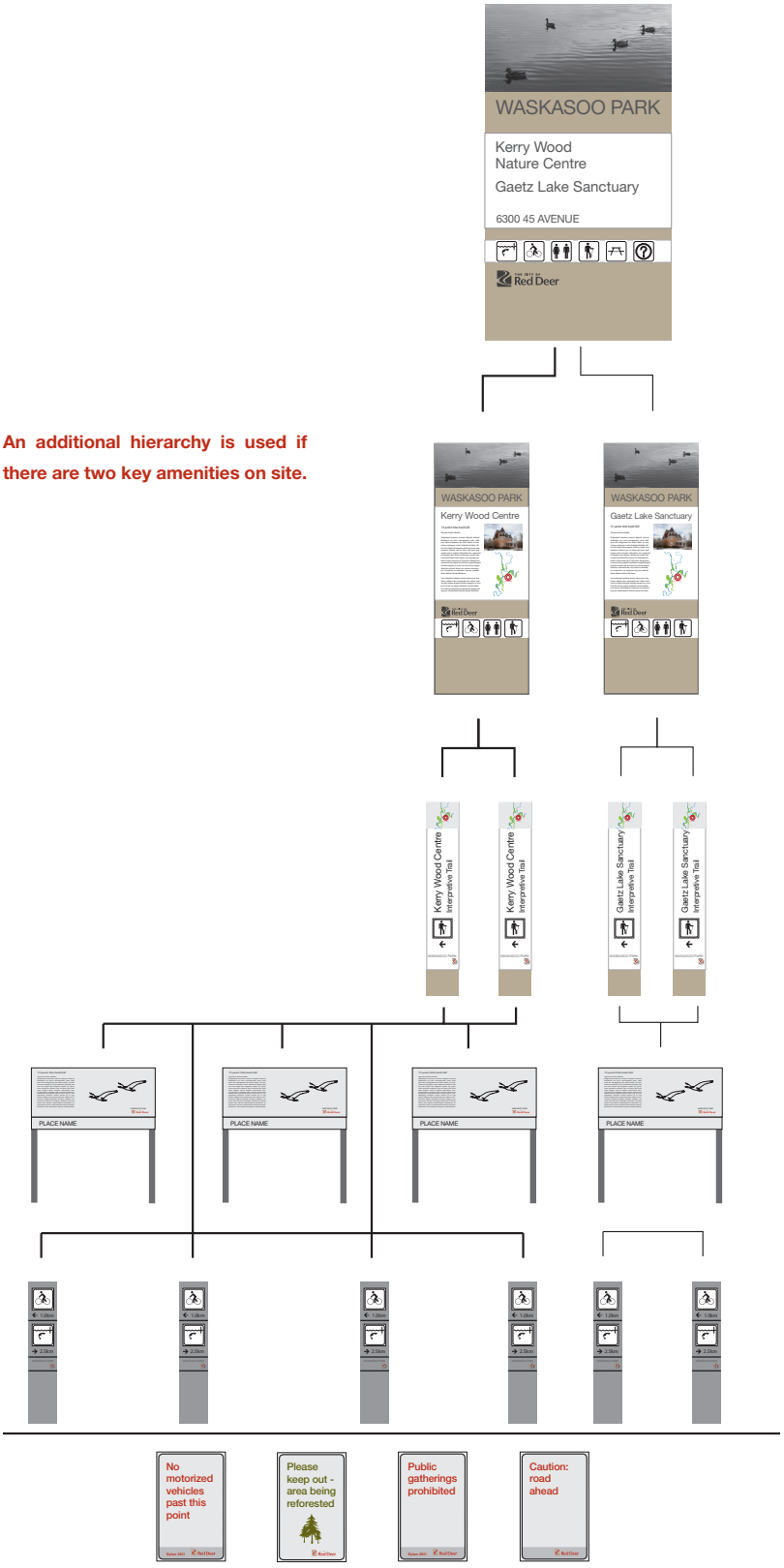
This permits the separation of sign usage: clear, concise signs designed to aid in navigation, such as entry and directional signage, can be placed at entrances and junctions in the park where they will have the greatest effect. Signs with a more detailed content, such as interpretive and nodal signage can be placed within the park where they can be encountered by the user at their leisure.

The use of a hierarchy enhances the navigability and user's understanding of the park, is an effective method of education and acts as wayfinding device, as there is a continual reinforcement of information cues to park users.

On the opposite page, a diagram demonstrates how the concept of signage hierarchy can be applied to Waskasoo Park signage. To enforce the connection between signs, it is recommended to use identical or similar iconic images at the top of the entry, nodal and trail signs within a particular area of the park. These iconic images should be representative of the content of the signage to be found on site. It could be a key landmark, destination, person, plant or animal. By using similar imagery, an identity is established for the park area, and visitors are better able to construct an environmental map of the location. Refer to Appendix C for photographic images to be utilized.

figure 2. Opposite Page: Signage Family Hierarchy Diagram

An additional hierarchy is used if there are two key amenities on site.



Entry sign

- Directs and welcomes users to the location.
- Provides key information only, ie. Gaetz Lake Sanctuary
- Includes address for emergency services

Nodal sign

- Extrapolates Entry sign message.
- Provides detailed site information, maps, images, text descriptions, hours of operation, rules, etc. Ie. map of site, hiking routes, historical information.

Trail Sign

- In-field signage for key wayfinding points.
- Directs users along the right path.
- Uses symbols for key points (ie. viewpoint ahead).

Interpretive Sign

- Educational info.
- Wayfinding

Marker Sign Wayfinding

- Enforcement.
- Distance and direction info.

Advisory Signage

- Text based + advisory signs that fall outside of the established hierarchy.

Entry Sign

figure 3. Entry sign in-situ

To mark major Waskasoo Park attractions, this sign has a design speed of 50 km/h, and is visible from an average of 60m. This visibility distance allows sufficient time for a driver to:

- prepare to read the sign;
- read the primary and secondary message;
- Make necessary lane changes, slow down and react to the signage message.

It is for this reason that the Entry Sign is the largest of all signs within the family, and is intended to introduce residents, tourists and other visitors to the destination. Because these signs will be encountered by the user before the place they identify are actually seen, these signs must be highly visible, and capable of operating as landmarks in and of themselves.

As the sign is intended for drivers, the message delivered must be kept to a minimum. The sign is restricted to key information, including the place name, address and pictographs of the amenities found.

For speeds greater than 50 km/h, it is also recommended to place an additional street sign ahead of the Entry Sign to inform drivers of the upcoming attraction.

Nodal Sign

figure 4. Nodal sign in-situ

Designed for a multitude of uses, the nodal sign is intended to convey a variety of detailed information. It is meant to be encountered by pedestrians and cyclists rather than drivers and passengers.

As a sign that contains detailed information, it is designed to provide a clear hierarchy of messages — primary, secondary, and tertiary levels of information are communicated incrementally to park users as they approach the sign.

The name / logo “Waskasoo Park” appears on every sign, and an image depicting the topic of the sign appears above it. The image at the top of the sign should support the secondary message to provide non-verbal cues about the place as well. The words “Waskasoo Park” are legible from approximately 35m away.

The secondary message containing a place name, for example, is visible from 20m for the average user. This distance will allow pedestrians and cyclists to decide if the tertiary message is useful to them, and to approach the sign for more detailed information. The tertiary message will contain maps, images and text about the nearby area. It could be used to educate users about the cultural and natural history of the location.

Finally, the design allows for the placement of pictographs beneath the tertiary message for quick reference, as well as for those who speak English as a second language.

Interpretive Sign

figure 5. Interpretive sign in-situ

Interpretive signage is one of the primary means to educate users about a specific topic. The content of interpretive signage may vary through cultural, historical, political and environmental topics. The greatest value of interpretive signage is the fact that it can educate park users without the need for Park staff or interpreters. It should appeal to a wide range of audiences and ages, and find an appropriate balance between visual and textual information.

As interpretive signs are often located in areas with scenic views or in natural environments, they should be less visible than entry or nodal signs. By using an angled design, the impact on views is reduced, and users can look beyond the signage to view the subject of the sign. The height and angle of the sign should consider accessibility requirements, including the heights of children and wheelchair users.

figure 6. Interpretive sign alternate

The primary message of the sign is placed at the bottom of the sign, in vertical orientation, to inform users of the content of the sign as they approach it. The primary message is visible at an average distance of 20m, encouraging pedestrians and cyclists to approach the sign for further viewing.

Interpretive signs may be adapted to become wayfinding aids by depicting a map of the local area and a ‘You Are Here’ indicator.

Trail Sign

figure 7. Trail sign in-situ

The trail sign is designed for the purpose of conveying a primary and secondary message, supported by pictographs or directional arrows where required. Generally, it is intended to be used for the purpose of wayfinding.

The primary message is visible from approximately 25m, and the secondary message is visible from an average of 18m. This reading distance and the tall, slender profile of the sign provides the necessary wayfinding information to park users without detracting from the scenery. The visual image at the top also allows for non-verbal information about the destination to be communicated to the user, and should be consistent with images used in adjacent entry and nodal signs.

Marker Sign

figure 8. Marker sign in-situ

The marker sign is the most simple of the signage family. Through its simplicity, it is suitable for many different uses, including:

- way-finding;
- enforcement;
- advisory warnings; and,
- other messages that utilize pictographs.

The marker sign does not utilize text to communicate its message, but rather pictographs, directional arrows, and numerical distances. Generally, these are used to direct users who are already en-route, to post a warning, or enforce a rule.

The marker family is the most numerous and widely used in the park system. As such, three structural variants are used to accommodate different usage requirements and installation methods through out the park.

Option I
Welded steel column bolted to a concrete base for areas with high visual impact or high levels of vandalism.
Option II
Steel column mounted to a ground anchor for areas where a concrete base is not practical, yet some vandal resistance is required.
Option III
Steel column directly embedded in the ground, for areas with difficult access and minimal vandalism.

Advisory and Text Based Signs

figure 9. Advisory sign in-situ

Given the size and diverse nature of the park, there are some signage requirements that fall outside of the existing hierarchy due to message, intent, or location. While these signs may be distinct, one-off signage, it is imperative that they are consistent with the established graphic system.

To accommodate this diverse signage group, some common signage layouts are presented in this manual. Chapter 4 contains the methods and rules for developing those layouts, and can be used to generate specific layouts as required.

It should be noted that these signs only supplement the signage hierarchy and should be used sparingly. Careful and thorough site sign planning will ensure an efficient system that is cost effective and improves the user's experience, while remaining considerate of the sign's visual impact.

Primary usage for this signage class is building mounted signage, single or reduced message advisory signs, and vehicular wayfinding information.

CHAPTER 3 SIGNAGE PLANNING + CONSIDERATIONS

Designing effective signage requires careful coordination and planning of the entire process, from pre-planning through construction document development. The purpose of this chapter is to provide general guidelines for content development; and to outline a clear process for signage planning so that the manufacturing and installation processes can be undertaken easily and without unnecessary costs.

Written Signage Content

Textual signage content is necessary to provide information to park users. Because of the diverse audience who must be able to comprehend the messages provided, it is necessary to develop content which is clear, concise and written in simple, proper English. Where necessary, written content should be reviewed by a qualified interpretive writer.

One of the most effective means of developing concise signage content is through the establishment of a clear message hierarchy. Using graphic layout and typography, the hierarchy provides visual cues to establish an order of importance to the sign text.

Primary Message

The primary message provides the most important information. It is written in the largest font, given the greatest visual prominence, and provides users with enough information for them to decide if the signage is significant to them. For these reasons, it is also visible from the farthest distance. The primary message should be very brief.

Secondary Message

The secondary message could be considered the subtitle to the primary message. It is intended to communicate supportive information in a clear, brief format.

Tertiary Message

Tertiary messages often contain detailed information which is educational, informative or for enforcement purposes. Signs with large viewing distances should use tertiary messages sparingly. For closely viewed signs, however, tertiary messages can be highly effective for providing information to park users.

The following section, Signage Accessibility, should be referred to for guidelines on developing written signage content, especially tertiary information.

Signage Accessibility

As a public space, Waskasoo Park must be accessible to all people regardless of age, languages spoken or level of ability. Therefore, it is also necessary for the signage within the Park to provide information to a diverse user audience. Signs, by nature, are heavily dependent on the written word to convey information. However, it is beneficial to incorporate visual messages wherever possible to allow for a greater degree of accessibility. Furthermore, the dimension and sizes of signs, especially those that are intended to be encountered at close proximity, should consider the diversity of Waskasoo Park users.

The *Smithsonian Guidelines for Accessible Exhibition Design* (Smithsonian Institute) provide detailed guidelines on sentence structure, length and difficulty of language for exhibition information. These guidelines should be followed in the development of signage content, especially tertiary messages with longer textual descriptions. Key points of the guidelines are summarized below:

- Develop hierarchical messages. Tertiary messages, for example, should contain a short introductory paragraph to aid comprehension for people using English as a second language, and people with reduced vision.
- Use columns with no more than 45-50 characters per line.
- Provide illustrations which complement textual information.
- Avoid overuse of capitalized, italicized, bold or underlined text. It is preferable to adjust font size and hierarchy.
- Lower edges of signs should be less than 685mm from the ground. This is to provide a cane detectable barrier.

For proper legibility, text should be sized so that it can be read by people with reduced vision. Ensure that the minimum type size meets or exceeds those figures listed in table below, and that the sign is positioned so that individuals may approach it at the desired viewing distances listed. These values should be cross-referenced with those listed in the Design Distance and Graphic Details sections.

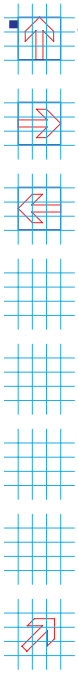
Accessible type sizes by viewing distance (adapted from Parks Canada, 1994)

Average vision viewing distance	Low vision viewing distance	Min. type size (x-height)	Min. type size (Pt set height)
2m	Less than 75mm	4.5mm	24pt
4m	1m	9mm	48pt
9m	2m	19mm	100pt
14m	3m	29mm	148pt

pictograph
- 1. an ancient or prehistoric drawing or painting on a rock wall;
- 2. one of the symbols belonging to a pictorial graphic system;
- 3. a diagram representing statistical data by pictorial forms

(Merriam Webster Dictionary)

figure 10. Arrow Directions



Graphic Content

As discussed in the previous section, the use of photographs, illustrations and diagrams are of crucial importance in creating effective signage. Not only do images provide visual appeal to the overall composition, they also reinforce written messages by depicting content in a visual form. A large portion of the population retains visual information more easily than written, and visual content is much more accessible to children, people with reduced vision and individuals using English as a second language.

Current Photographs

Site photographs of key locations for signage installations should be included wherever possible. Photograph selection should be completed on a site-by-site basis so that images complement the theme and text developed for each park node. Content could include landscape images, keystone species, and abstracted photographs. Ultimately, the images chosen should find a balance between content suitability, message clarity, technical and artistic quality.

Please refer to Appendix and accompanying CD for a selection of site-specific photographic images that may be utilized for sign content.

Historical Photographs

As an integral part of the City of Red Deer's history, archival images provide an excellent opportunity to depict history. Using images from the Archives Society of Alberta, historical image content can be found on a searchable database and purchased for use in signage content (ASA, 2008).

The ASA's photographic archive can be found on the following website:
http://asalive.archivesalberta.org:8080/access/asa/photo/

Pictographs

Pictographs are widely used in way-finding system sin all types of environments. Their greatest value lies in the means by which information is communicated - it is an entirely visual form of communication, and can be understood by speakers of all languages. The City of Red Deer has developed a series of pictographs to be used in City Signage. This pictograph library is attached to this document as Appendix C.

Developing New Signage

The following process should be followed when developing new signage for Waskasoo Park. It is provided in a sequence of phases that will ensure the proper steps have been taken prior to signage production (adapted from Parks Canada, 2007).

Phase 1 - Pre-planning

- Team organization: the project team should be organized according to required expertise, including: City of Red Deer staff, content developers / writers, interpreters / educators, wayfinding experts, graphic designers and manufacturers.
- Data organization: relevant background information should be collected, including site data, background educational content, historical data, environmental data, etc.
- Planning meeting: the project team should meet to discuss objectives and distribute pre-planning data.
- Typology planning: the project team should agree on which typology within the signage family should be chosen according to signage needs.
- Design Distance: preliminary discussions on design distance can be made once a typology is chosen. Modifications for unique accessibility requirements should also be outlined at this time.

Phase 2 - Site planning

- Site documentation: site visits, aerial and digital photographs, identify potential locations.
- Locate existing signage, site barriers, utilities and rights-of-way.
- Cross reference collected data for potential site locations and rank locations according to suitability.

Phase 3 - Layout development

- Text development: the project team should collaborate to develop the primary, secondary and tertiary messages.
- Image development: relevant photographs, historical images, maps and illustrations should be planned and created alongside text development.
- Pictograph planning: develop a list of required pictographs.
- Graphic design: once draft content development has been undertaken, the provided signage templates should be used to develop the graphic layout for the sign. Content should be carefully edited for brevity, composition and layout so as to fit within the overall design strategy for the chosen typology.

Phase 4 - Construction documents

- Construction drawings: after the graphic layout has been created according to the specified template for the sign typology, the final design should be converted to the necessary software file formats for manufacturing. This may include the creation of CAD drawings, the conversion of text to outlines to ensure proper typography details, and the development of site-specific installation details.
- Final site planning: a final site plan should be developed showing the chosen location and installation details for new signage. Installation locations should be accurately dimensioned and georeferenced for locating final site location using GPS.
- Drawing review and approval: once the drawing set has been completed by the signage designers, the project team should review all the drawings for omissions and errors. If no revisions are required, the lead individual on the project team should provide written authorization that the drawings are ready for production.

Phase 5 - Plan Finalization

- After the necessary approvals have been made, the drawings should be collected into a cohesive set and prepared for distribution to contractors and manufacturers for production.
- Once installation is complete, the construction documents should be archived for future reference and the signage location and details added to existing GIS data for inventory purposes.

Signage Placement

1 Entry Sign

Entry sign to be positioned at main entrance, perpendicular to approaching traffic. Minimum distance of 2.0m from the outside edge of roadway to the inside edge of sign. Maximum distance of 4.5m from the outside edge of roadway to the inside edge of sign.

2 Nodal Sign

Nodal Sign to be positioned at parking access point or appropriate node. Sign should be placed to be visible from the parking area, while facing the trail or node. Sign should be as close to the trail or node as possible without interfering with pedestrian traffic.

3 Marker Sign

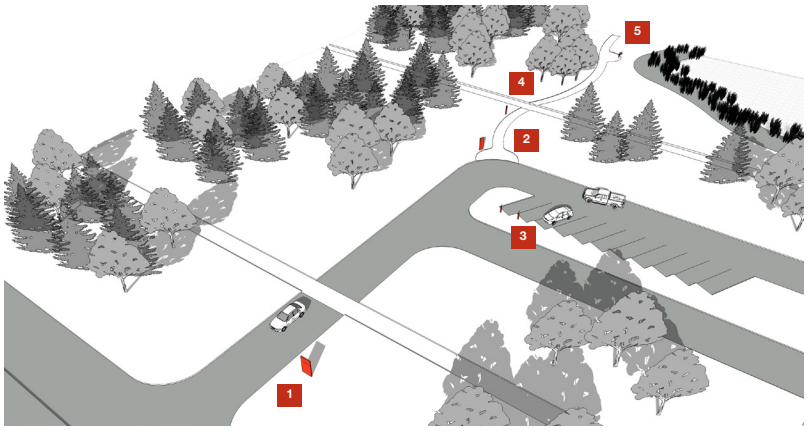
Marker signs should be placed in as visible location as possible without obstructing traffic and should be placed a minimum of 0.3m and a maximum of 2.0m away from the outside edge of roadway or parking stall.

4 Trail Sign

Trail sign should be positioned to face the trail in order to be visible to traffic in both directions. Minimum distance of 0.5m from the approximate edge of the trail, to a maximum of 1.5 m.

5 Interpretive Sign

Interpretive signage should be positioned approximately parallel to the trail and out of the way of traffic. Align the sign to the view or subject of the signage and avoid obstructing the view where possible.



CHAPTER 4 GRAPHIC LAYOUT SYSTEM

Overview

This section comprises an overview of the graphic layout system used to determine the arrangement of message elements — fonts, text size, hierarchy and spacing, symbols, directional arrows, etc. — along with images, colour palette and overall composition of each sign type within the family. A cohesive identity for the entire signage family is created by balancing these elements within and between the individual signage types.

Consistency and Adjustments

In order to maintain consistency, it is critically important to provide a clear set of guidelines in the design of individual signs, so as to achieve a high level of continuity between all future signs within Waskasoo Park. This consistency in layout is paramount to ensure that the identity of both the signage family and Waskasoo Park are maintained over the coming years. For consistency, the City of Red Deer should provide signage designers with electronic templates of each signage type, ensure that designers have purchased and installed the appropriate fonts, and that drawings are produced at 1:1 scale.

Graphic layout should be done with professional software such as Adobe Illustrator or equivalent. When transposing graphic elements to other programs such as AutoCAD or to manufacturers, all fonts should be converted to outlines to ensure the design cannot be accidentally altered.

With regard to layout adjustments, signage designers should not alter overall dimensions or substitute fonts, colour palettes, logo designs under any circumstances. Margins, line spacings, font sizes and layouts should be adjusted only where necessary to allow for a particular message to fit within the prescribed composition.

With regard to advisory and text-based signs, minor adjustments to a layout may be required due to variations in content or location. Any modifications must not compromise legibility of the signage elements or seriously detract from the overall signage identity. Where required, seek assistance from a qualified sign designer to help preserve the desired effect.

A Brief Introduction to Helvetica

Developed in the late 1950s by Max Miedinger, this typeface has become one of the most widely used for government and corporate logos, signage and advertisements. The Canadian Federal Government, Parks Canada, New York Transit Authority, 3M and Microsoft all use Helvetica Neue in their promotional materials.

One of the reasons for its widespread use is its high degree of legibility makes it an ideal choice for headlines and short messages.

Helvetica Neue 55 Roman
abcdefghijklmn
opqrstuvwxyz
ABCDEFGHIJKLMN
OPQRSTUVWXYZ

Red Deer Corporate Colours

The City of Red Deer's Corporate Colours are shown below, as outlined in the *Corporate Identity Standards Guide.*

When specifying materials and finishes, provide the following values to manufacturers for colour reproduction.

Pantone 7530
CMYK C00 M08 Y21 K32
RGB R185 G171 B151

Pantone 1805
CMYK C0 M91 Y100 K23
RGB R191 G49 B26v

Grid + Composition

The composition of all signage is based on a grid system for continuity throughout the entire signage family. It provides clear ordering principles for different signs within the same typology (ie. entry signage), and continuity between different typologies (ie. entry vs. nodal signage). Furthermore, the grid ensures that the signs are legible for the chosen design speed and distance.

Additionally, an ordered composition based on a grid ensures that future signage design will be similar in appearance and identity to those already installed elsewhere through the City. It is very important that future signage follows the same rules of composition as existing signage.

Typeface

Primary and secondary messages should always be in the typeface or font Helvetica Neue 55 Roman to incorporate the high level of legibility and contemporary style that is associated with this prolific sans-serif font. Ideal for headlines and short messages, it is considered to be one of the premium fonts available. Helvetica Neue is a recently standardized version of the entire family of the typeface, and should not be substituted for other Helvetica typefaces. All signage designers and contractors should be required to hold a valid licence for the Helvetica Neue font family.

Tertiary messages should utilize Gill Sans MT for consistency with The City of Red Deer Corporate Standards Identity Guide. Font size should be large enough to ensure that those with reduced vision are still able read messages from a reasonable distance. Actual font size is dependent upon a variety of factors, as discussed in Design Distance, and details for specific signage typologies are provided in Graphic Details.

Colour

Where possible, the colours used in the signage should incorporate the same colours used in The City of Red Deer Corporate Standards Identity Guide. Because of limitations in reproducing colour accurately in various materials, paints and finishes, it is not always possible to replicate exactly the Pantone Standards adopted by the City of Red Deer. If this is the case, samples should be obtained for colour matching purposes and adjustments made accordingly.

Design Distance

Design distance is used when designing signage layouts, to refer to the intended distance from which signage should be viewed. Ultimately, the design distance influences the overall composition of the sign, including size of text, images, borders and symbols. In determining the appropriate design distance for the Waskasoo Park signage family, factors considered were:

- whether the sign was intended for pedestrians, cyclists or drivers;
- diversity in human factors;
- the degree to which the sign must stand out from its environment;
- the amount of information presented on the sign; and,
- its intended use—wayfinding or educational.

Once a design distance is chosen, it is used to determine the unit "x." Once determined, "x" becomes the standard unit of the composition of the sign. The following section illustrates Graphic Details for detailed information about the unit "x" for each sign typology.

The "x" factor explained:

Commonly used in signage design, the "x" factor is literally the height of the uncapitalized letter "x" in a given font. It is often used to determine the distance from which a particular message is legible.

Signage Typologies, Design Distance, and Element Sizing

Signage Typology	Primary Design Distance [m]	Secondary Design Distance [m]	**"x" Factor [mm]**	Waskasoo Name logo [mm / x value]	Place Name [mm / x value]	Red Deer Logo [mm / x value]	Primary Message [mm / x value]	Secondary Message [mm / x value]	Tertiary Messages [mm / x value]	Symbols [mm / x value]	Directional Arrow [mm / x value]
Entry	60	25	**75**	96 1.25x	56 0.75x	113 1.5x	113 1.5x	56 0.75x	n/a n/a	150 2x	n/a n/a
Nodal	35	20	**50**	62.5 1.25x	37.5 0.75x	75 1.5x	50 1x	37.5 0.75x	See layout	150 3x	n/a n/a
Interpretive	20	3	**50**	n/a n/a	37.5 0.75x	50 1x	37.5 0.75x	n/a n/a	See layout	n/a n/a	n/a n/a
Trail	25	20	**50**	25 0.5x	50 1x	n/a n/a	50 1x	37.5 0.75x	n/a n/a	150 3x	50 1x
Marker	25	12	**50**	15 0.3x	n/a n/a	n/a n/a	25 0.5x	n/a n/a	n/a n/a	150 3x	50 1x
Text-Based [Vehicular]	60	25	**75**	n/a n/a	n/a n/a	n/a n/a	75 1x	56 0.75x	n/a n/a	450 6x	150 2x
Text-Based [Pedestrian]	36	12	**25**	n/a n/a	n/a n/a	n/a n/a	25 1x	12.5 0.5x	n/a n/a	150 6x	50 2x

Layout Grid

The layout grid is the foundation of the layout system. It is intended to provide consistent position and scaling of message elements. While not displayed on the finished sign, it is used to order the sign elements in a consistent and legible manner that can then be scaled to a desired design distance using the appropriate “x” factor.

Directional Arrow

The direction arrow is a wayfinding device used to advise or direct users of features within the park. For layout purposes, the arrow is displayed with a non-printing reference grid that is used in positioning and scaling of the direction arrow during the layout process. Based on legibility testing, a 3x arrow will be used as a standard size for signage. A non-printing keyline surrounds the arrow to assist in positioning and scaling the arrow on the layout grid.

Text Message

The text message is comprised of primary, secondary, and possibly tertiary messages and any numerical elements. The format is consistent with the typeface described previously in this chapter. The majority of advisory and text based signs will use a 1x size, however in some instances it may be required to enlarge a primary message - “Caution”, “Attention”, “Warning” - to visually contrast with a secondary image.

Symbol

A symbol size of 2x has been adopted for instances where the symbol is secondary or supporting a text message. For signage with a symbol as a primary element, sizing is increased to 3x.

Border

In some instances it may be necessary to include a border around the perimeter of the sign to increase detection and visibility, particularly during low light conditions. All free-standing signage mounted along side a trail or pathway shall have a border to reduce the risk of collision.

Entry Signage Layout

figure 11. Entry sign layout
scale 1:20

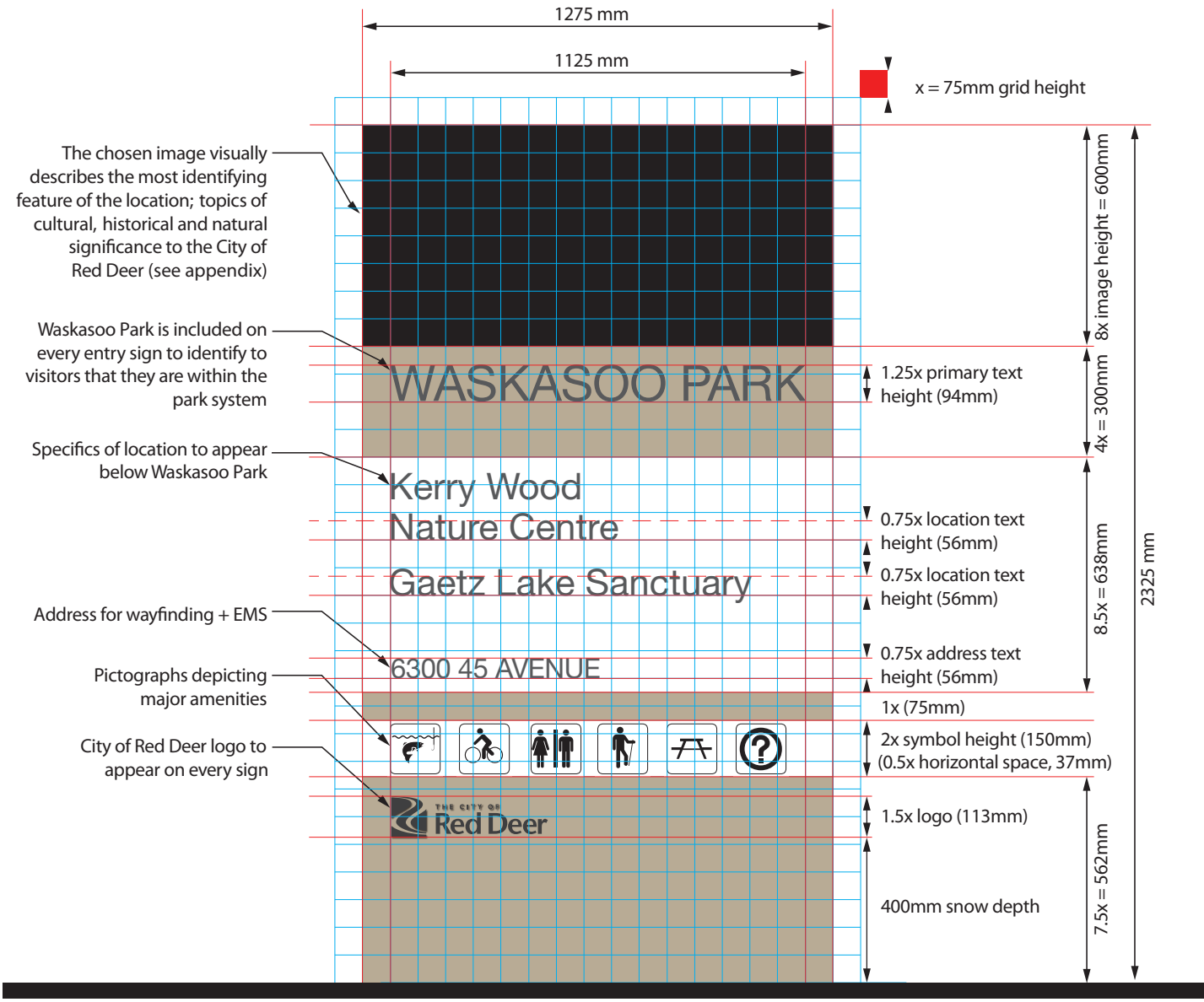
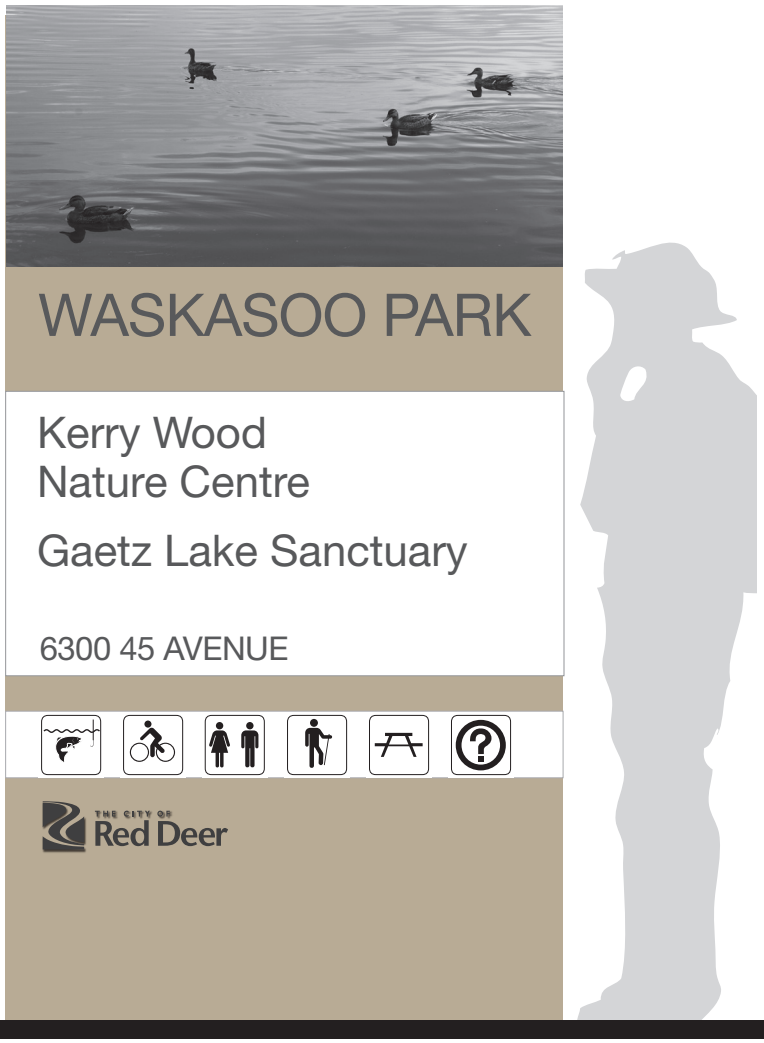


figure 12. Entry sign rendering
scale 1:20



Nodal Signage Layout

figure 13. Nodal sign layout
scale 1:20

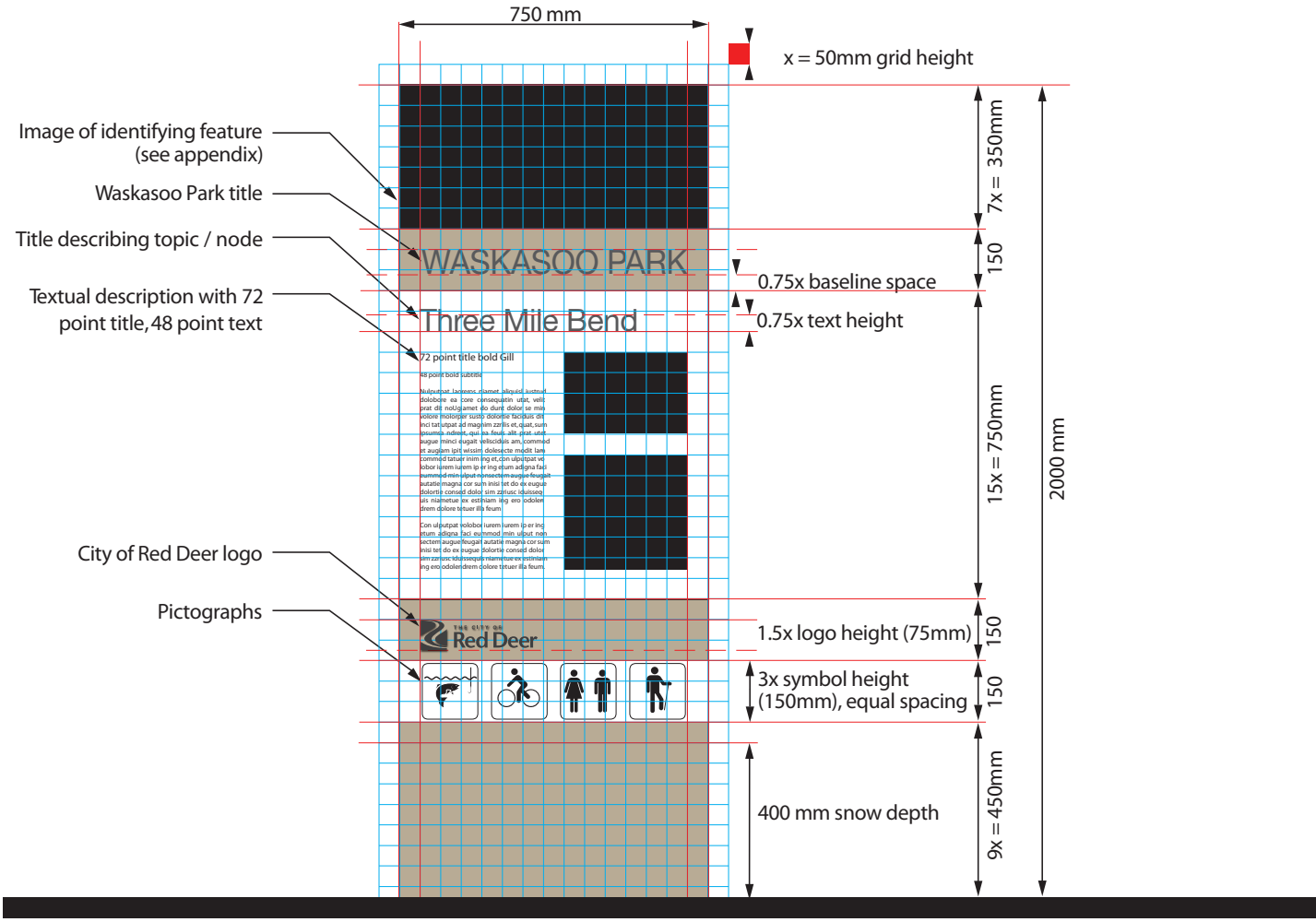


figure 14. Nodal sign rendering
scale 1:20

Interpretive Signage Layout

figure 15. Interpretive sign layout
scale 1:20

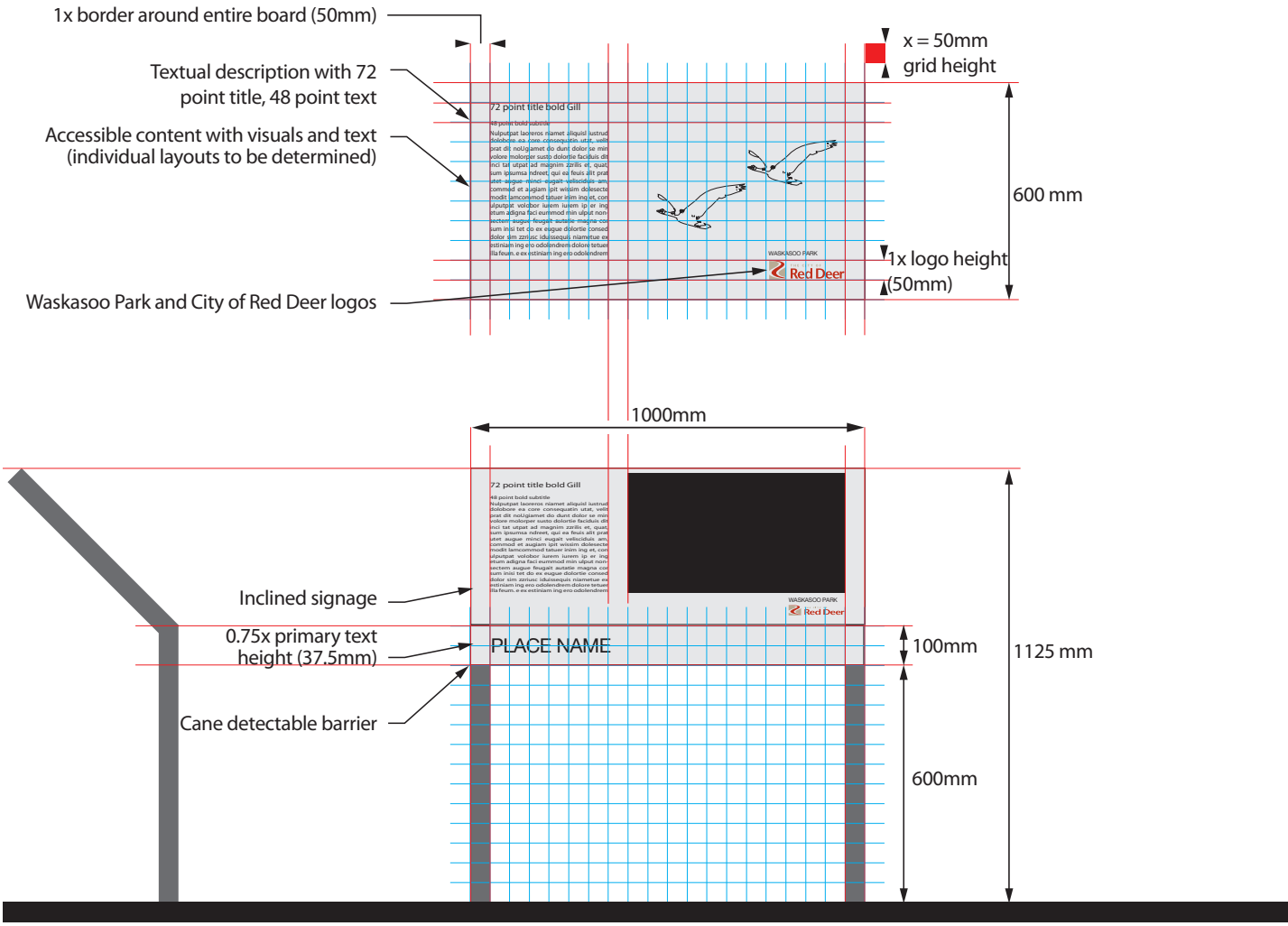
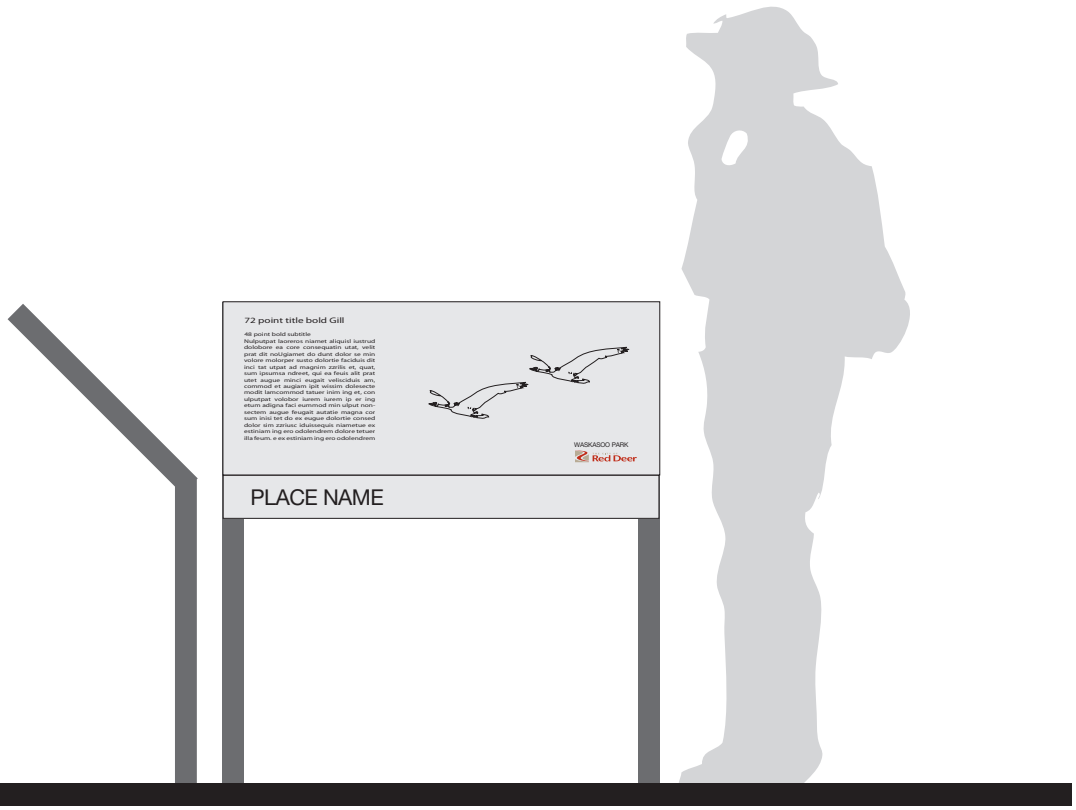
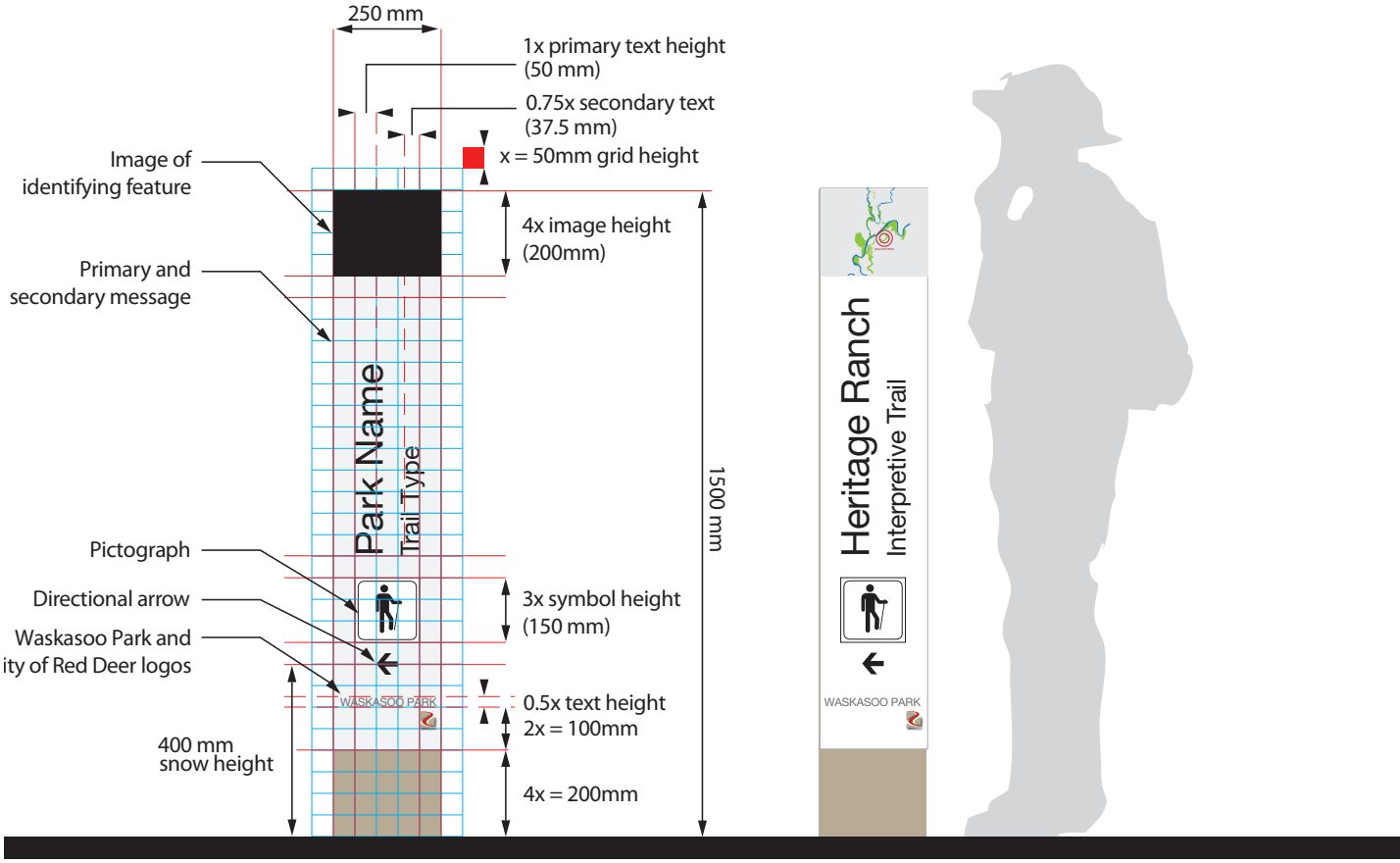


figure 16. Interpretive sign rendering
scale 1:20



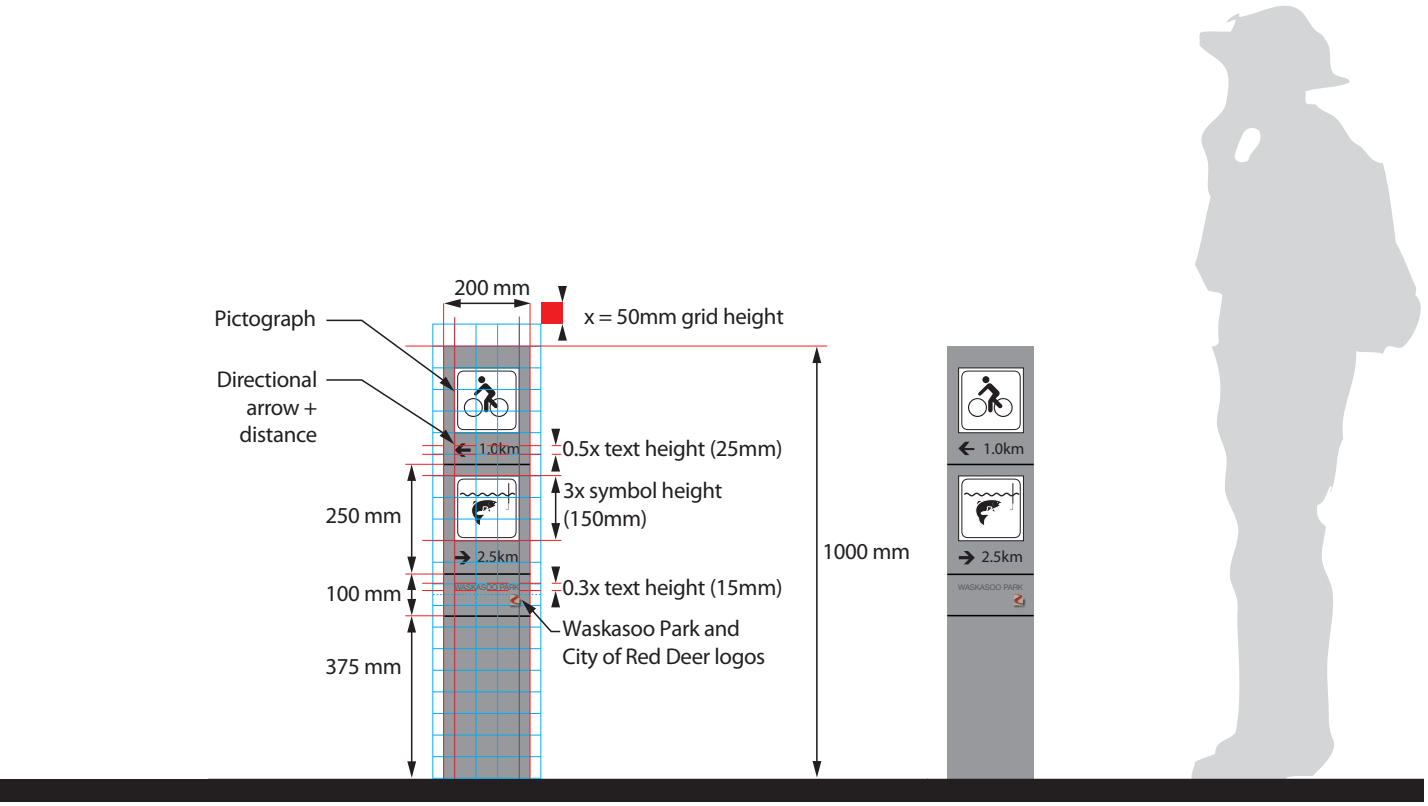
Trail Signage Layout

figure 17. Trail sign layout and rendering
scale 1:20



Marker Signage Layout

figure 18. Marker sign layout and rendering
scale 1:20



Advisory and Text-Based Signage Layout

These text-based signs are based on a viewing distance of 15m, and the correlating ‘x’ of 25mm. As described earlier, this proportional system allows for scaling if the viewing distance is exceptional.

All font is Helvetica Neue lt std 65 medium.

figure 19. Text bylaw layout
- 1x margin around
- 25mm text height
- red left justify text
- bylaw number (bottom left)
- City of Red Deer logo (bottom right)
- 1.5x gray bar

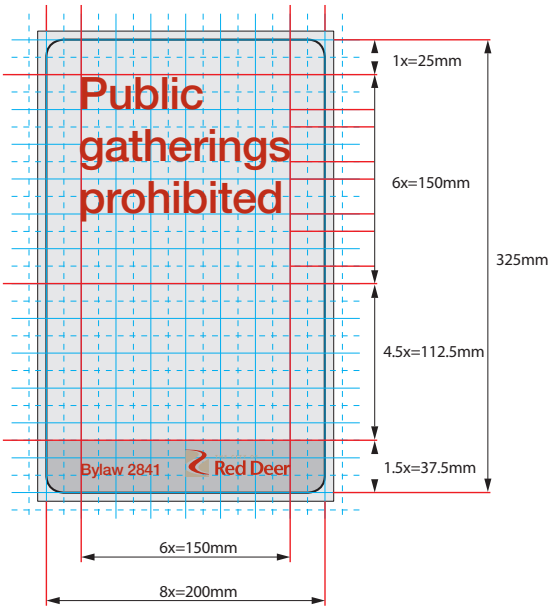
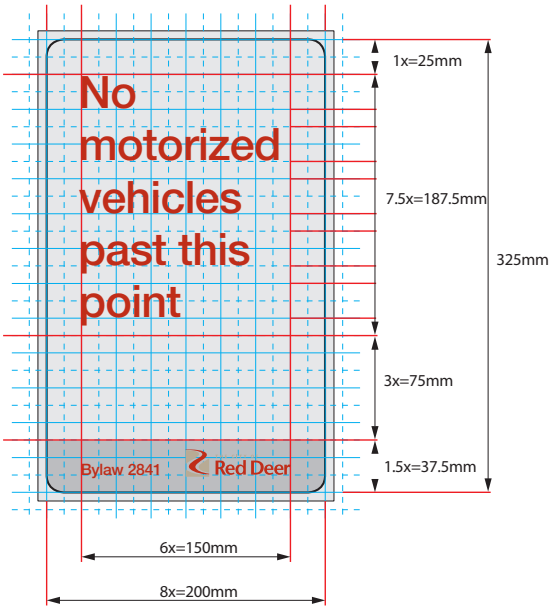


figure 20. Text (5 lines) bylaw layout
- 1x margin around
- 25mm text height
- red left justify text
- bylaw number (bottom left)
- City of Red Deer logo (bottom right)
- 1.5x gray bar



Pantone 7530
CMYK C00 M08 Y21 K32
RGB R185 G171 B151

Pantone 1805
CMYK C0 M91 Y100 K23
RGB R191 G49 B26

Pantone Cool Grey 5 U
CMYK C0 M0 Y0 K29
RGB R190 G192 B194

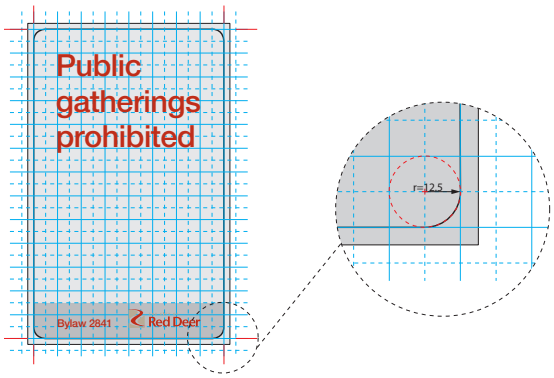


figure 21. Corner border detail
- 12.5mm (.5x) radius fillet
- 1.5mm (.25x) border

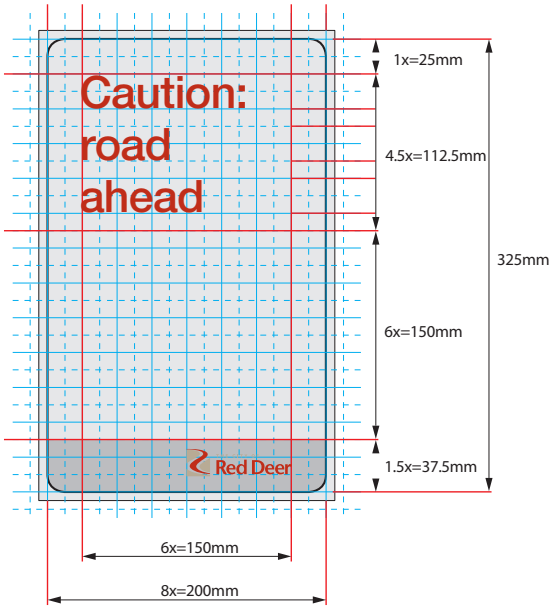


figure 22. Text only layout
- 1x margin around
- 25mm text height
- red left justify text
- City of Red Deer logo (bottom right)
- 1.5x gray bar

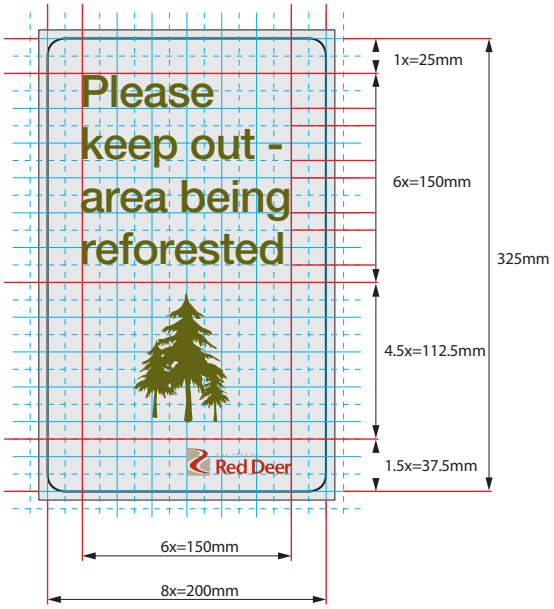


figure 23. Text + image layout
- 1x margin around
- 25mm text height
- green left justify text
- City of Red Deer logo (bottom right)
- 3.5x image

Pantone 385 C
CMYK C24 M13 Y93 K60
RGB R100 G4100 B21

CHAPTER 5 MATERIALS AND CONSTRUCTION

Ductal / GFRC Construction Details

This option takes advantage of Ductal or glass fibre reinforced concrete's (GFRC) impressive physical properties to create a strong and durable structure that is extremely resistant to weather, deterioration, and vandalism. The structure consists entirely of Ductal or glass fibre reinforced concrete, to which phenolic-fused signage elements are bolted flush to its face making them less susceptible to vandalism. Should a panel be damaged or require revision, it can be unbolted from the structure and replaced. The sign is affixed to a concrete base by a system of steel brackets concealed below grade to maintain visual integrity and add support.

The following are detailed sectional views to help illustrate the construction methods used in the various signage types using Ductal / GFRC.

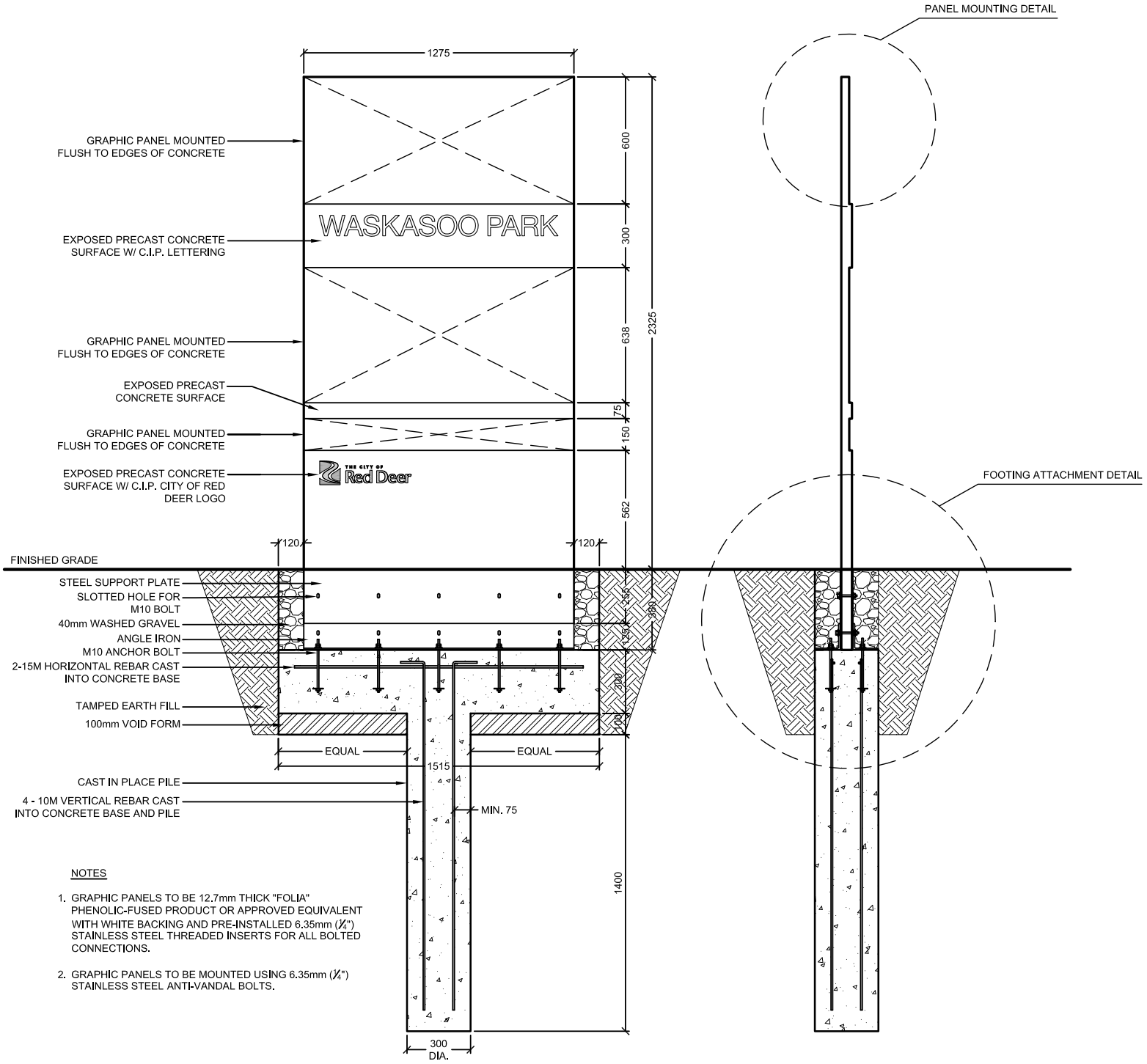
Graphic Panels

Graphic panels manufactured from a phenolic-fused product such as Folia by Systeme Huntingdon are bolted to the concrete panel structure. Options are provided for single or double-sided signs.

"Lafarge's revolutionary material that provides ultra-high performance, strength, ductility, durability and aesthetic flexibility. With strengths similar to metals, it is significantly stronger than normal concrete. Compressive strengths range between 20,000 to 30,000 psvi (150 to 200 MPa) compared to 3,000 to 7,000 psi (20 to 50 MPa) for normal concrete and flexural strengths range between 3,000 to 7,000 psi compared to 500 to 1,000 psi (3 to 7 MPa) for normal concrete."
www.lafarge.com

Entry Sign

figure 24. Entry sign exploded axonometric



NOTES

1. GRAPHIC PANELS TO BE 12.7mm THICK "FOLIA" PHENOLIC-FUSED PRODUCT OR APPROVED EQUIVALENT WITH WHITE BACKING AND PRE-INSTALLED 6.35mm (¼") STAINLESS STEEL THREADED INSERTS FOR ALL BOLTED CONNECTIONS.
2. GRAPHIC PANELS TO BE MOUNTED USING 6.35mm (¼") STAINLESS STEEL ANTI-VANDAL BOLTS.

figure 25. Entry Sign Typical Assembly Detail - front elevation and side section
scale 1:25

Nodal Sign

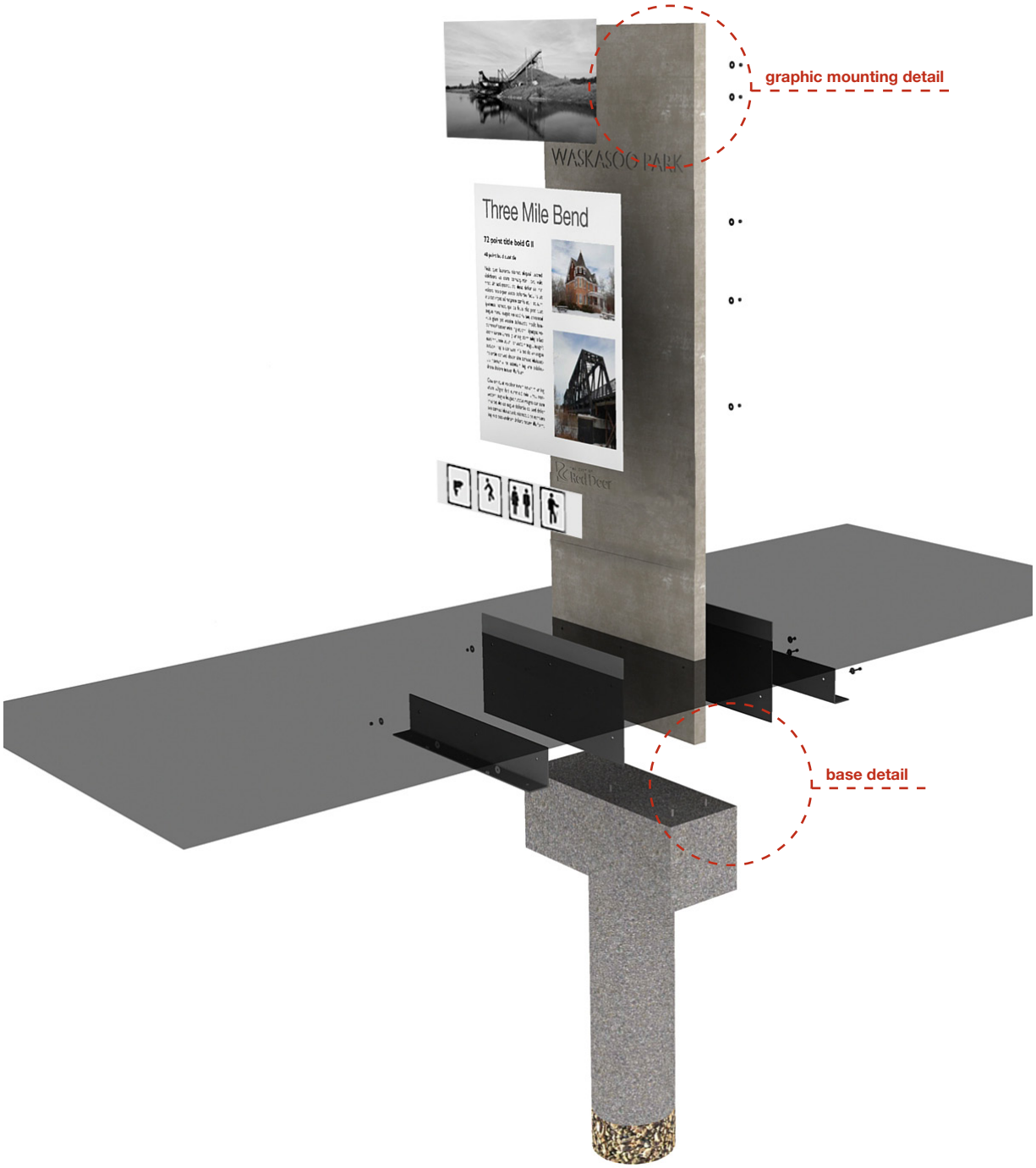
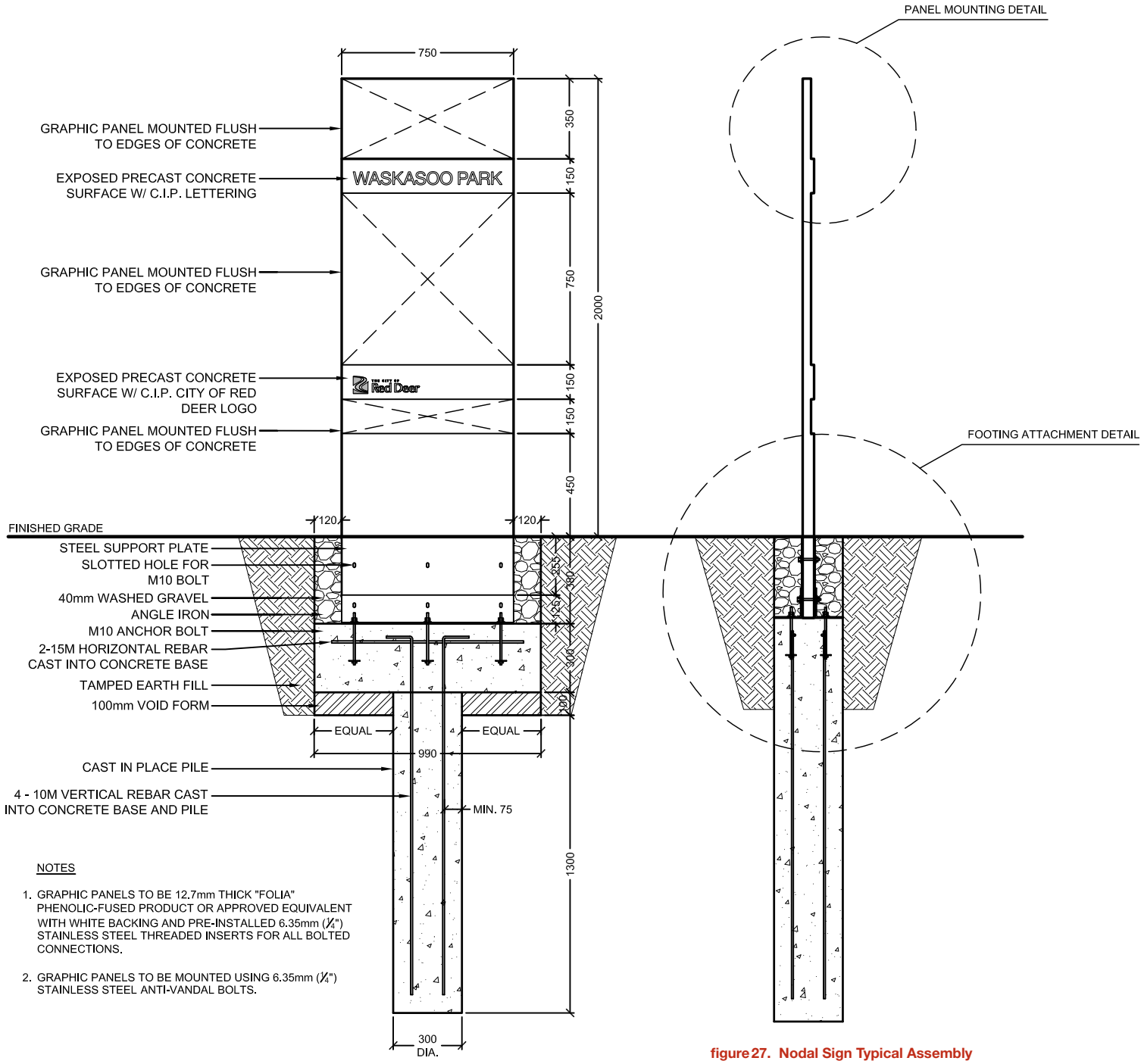


figure 26. Nodal sign exploded axonometric



NOTES

1. GRAPHIC PANELS TO BE 12.7mm THICK "FOLIA" PHENOLIC-FUSED PRODUCT OR APPROVED EQUIVALENT WITH WHITE BACKING AND PRE-INSTALLED 6.35mm (¼") STAINLESS STEEL THREADED INSERTS FOR ALL BOLTED CONNECTIONS.
2. GRAPHIC PANELS TO BE MOUNTED USING 6.35mm (¼") STAINLESS STEEL ANTI-VANDAL BOLTS.

figure 27. Nodal Sign Typical Assembly Detail - front elevation and side section
scale 1:25

Trail Sign

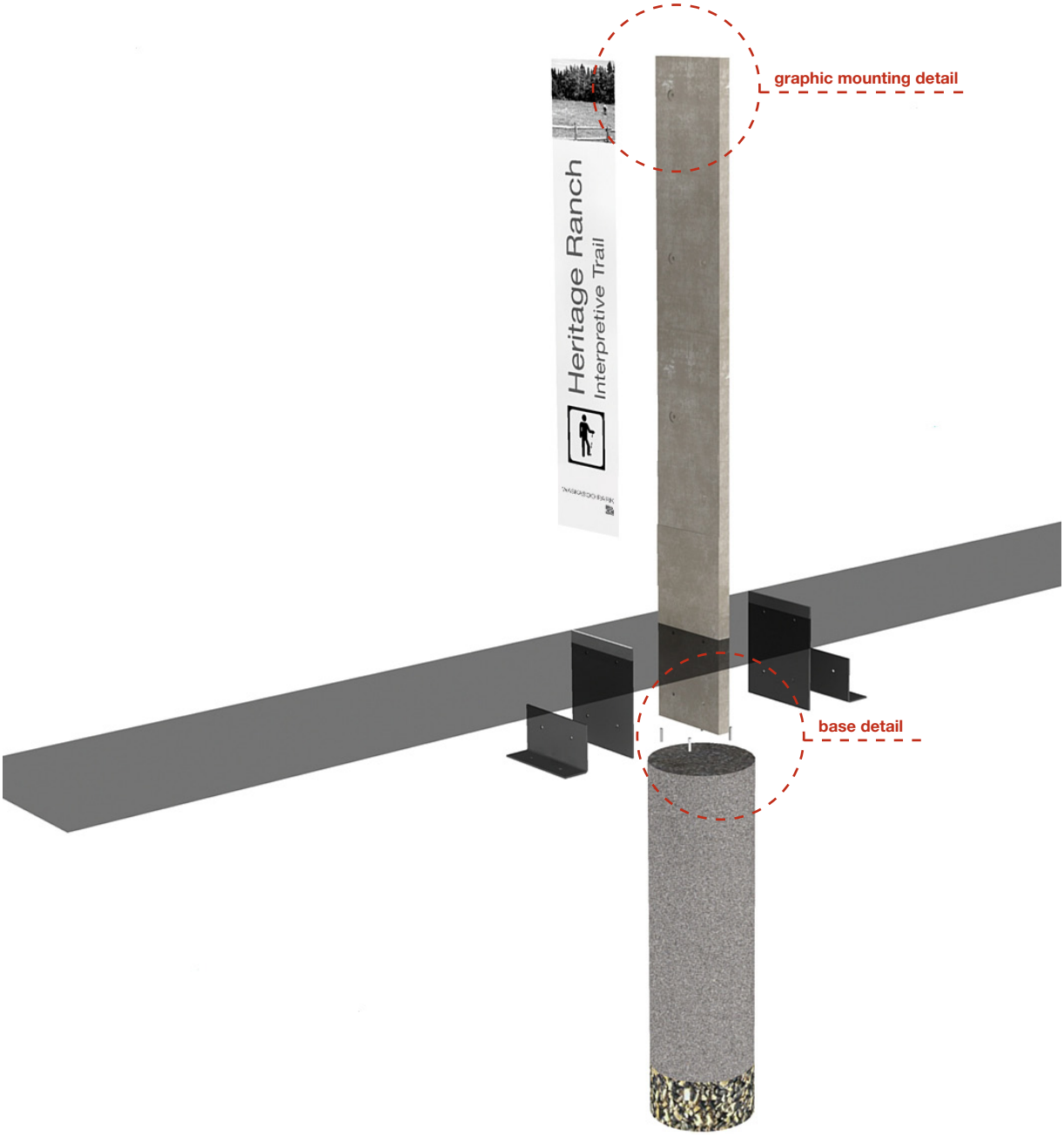


figure 28. Trail sign exploded axonometric

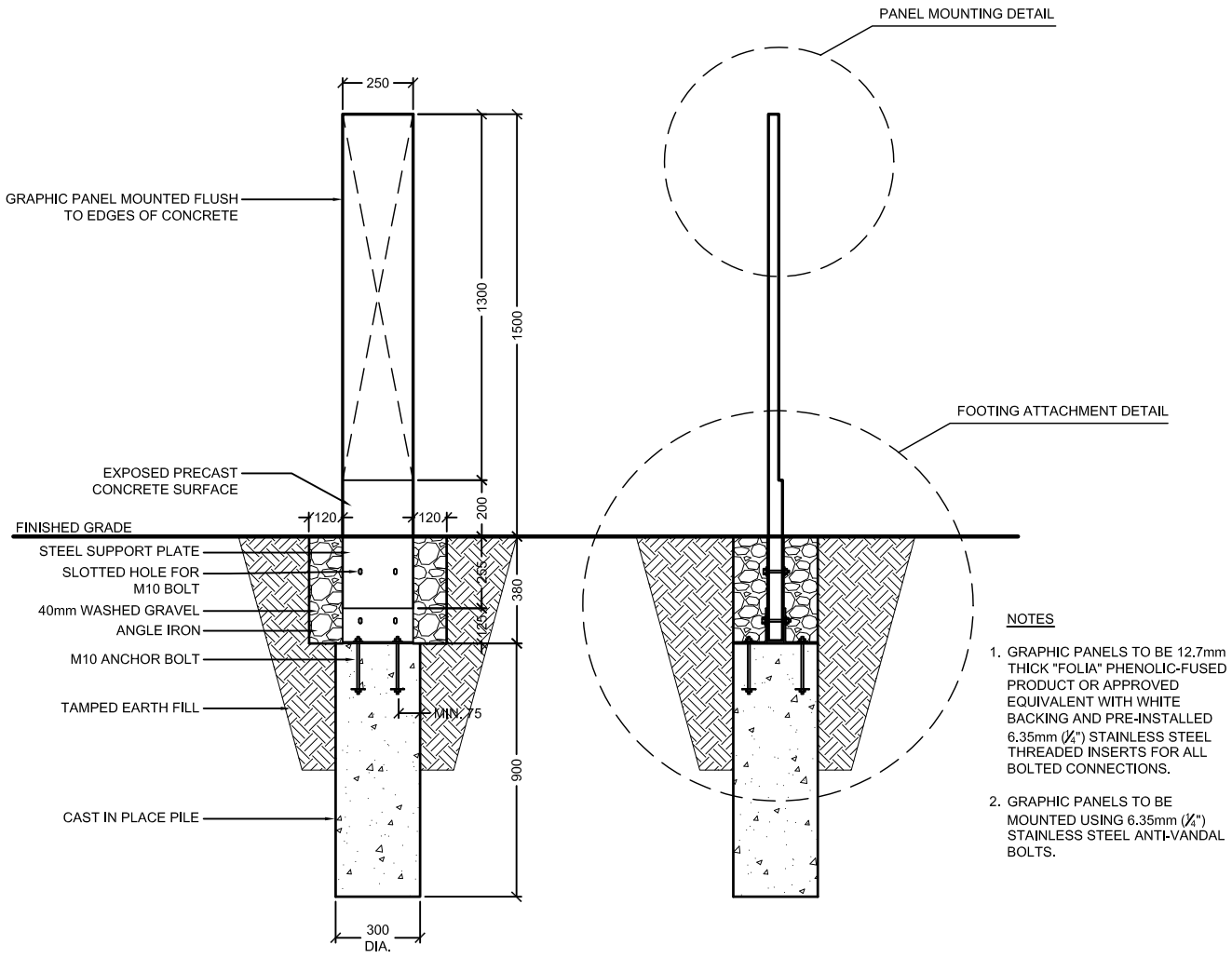


figure 29. Trail Sign Typical Assembly Detail - front elevation and side section
scale 1:25

Interpretive Signage

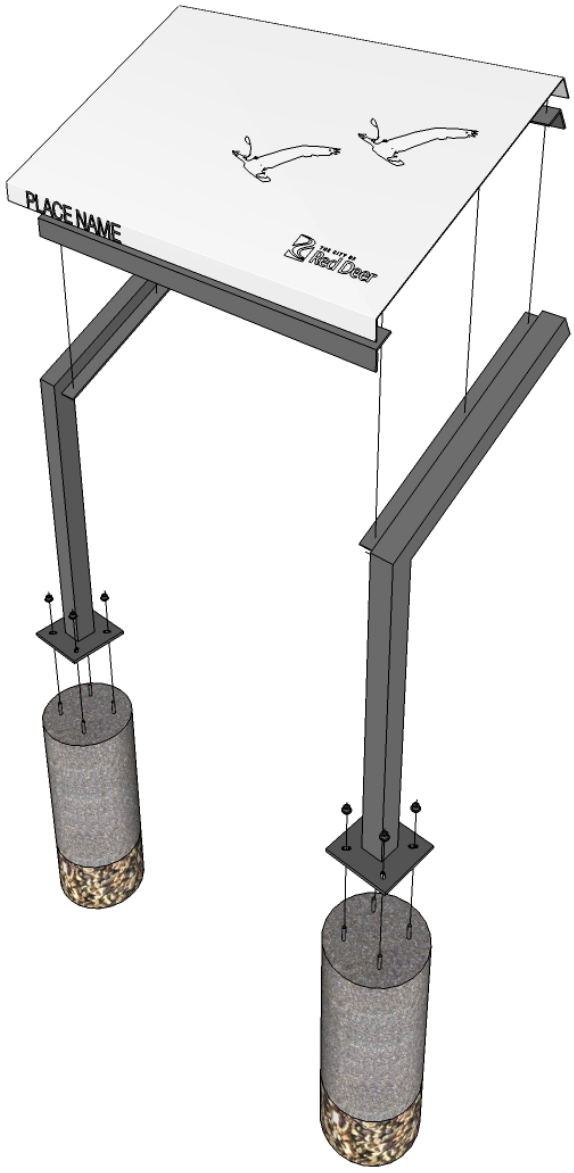
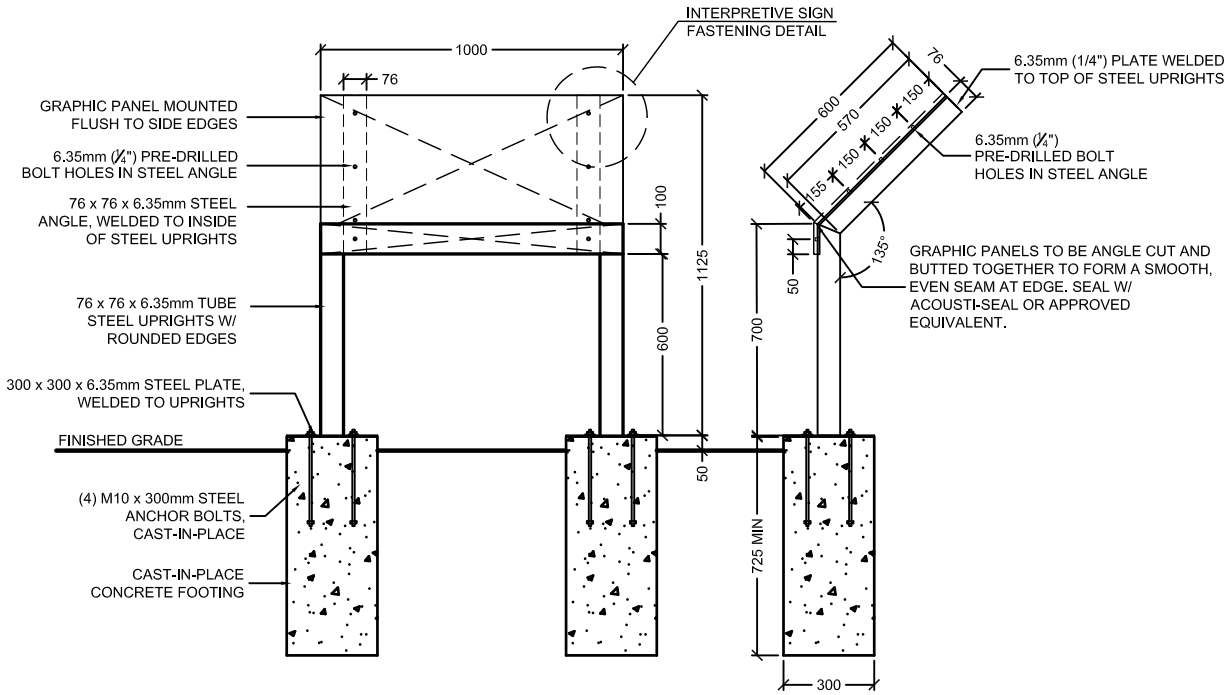


figure 30. Interpretive Sign
Exploded Axonometric



NOTES:

1. STEEL COMPONENTS TO BE TREATED WITH TWO-COAT SYSTEM CONSISTING OF ZINC PRIMER (SUCH AS DRYZINC BY TIGER DRYLAC) AND HIGH-DURABILITY POWDERCOAT (SUCH AS TIGER DRYLAC SERIES 38). POWDERCOAT COLOR BLACK.
2. CONCRETE COVER TO STEEL ANCHORS TO BE 75mm.
3. ALL HARDWARE TO BE HOT-DIPPED GALVANIZED STEEL UNLESS OTHERWISE NOTED.
4. VISIBLE WELDS SHALL BE GROUND DOWN TO REMOVE BURRS AND SHARP EDGES AND SHALL HAVE A NEAT AND UNIFORM APPEARANCE.
5. GRAPHIC PANELS TO BE 12.7mm THICK "FOLIA" PHENOLIC-FUSED PRODUCT OR APPROVED EQUIVALENT WITH WHITE BACKING AND PRE-INSTALLED 6.35mm (¼") STAINLESS STEEL THREADED INSERTS (NOT TO PUNCTURE FRONT OF PANEL) FOR ALL BOLTED CONNECTIONS.
6. GRAPHIC PANELS TO BE MOUNTED USING 6.35mm (¼") STAINLESS STEEL ANTI-VANDAL BOLTS.

figure 31. Interpretive Sign Ground-Mounted Detail
scale 1:25

Interpretive Signage
Railing Mount

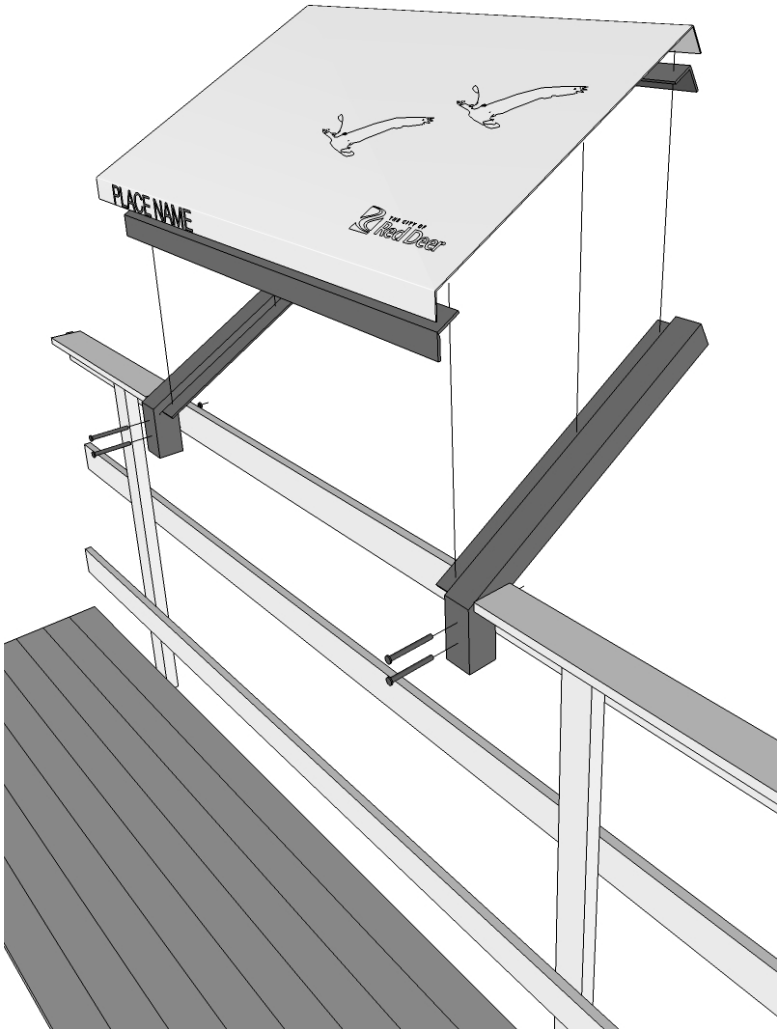
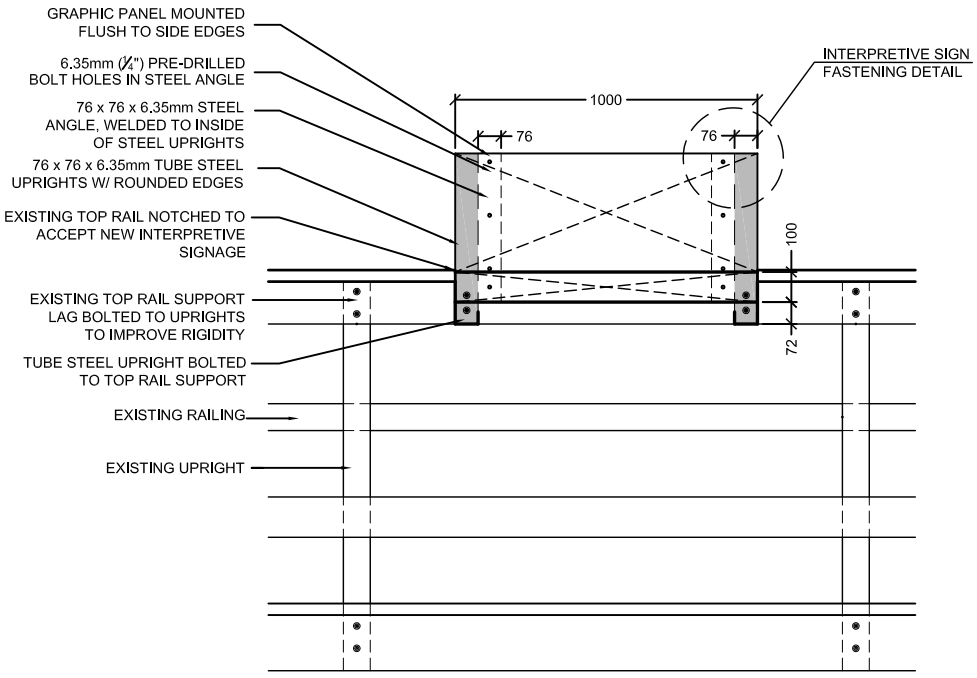


figure 32. Interpretive Sign Railing Mount Exploded Axonometric



NOTES:

1. STEEL COMPONENTS TO BE TREATED WITH TWO-COAT SYSTEM CONSISTING OF ZINC PRIMER (SUCH AS DRYZINC BY TIGER DRYLAC) AND HIGH-DURABILITY POWDERCOAT (SUCH AS TIGER DRYLAC SERIES 38). POWDERCOAT COLOR BLACK.
2. ALL HARDWARE TO BE HOT-DIPPED GALVANIZED STEEL UNLESS OTHERWISE NOTED.
3. VISIBLE WELDS SHALL BE GROUND DOWN TO REMOVE BURRS AND SHARP EDGES AND SHALL HAVE A NEAT AND UNIFORM APPEARANCE.
4. GRAPHIC PANELS TO BE 12.7mm THICK "FOLIA" PHENOLIC-FUSED PRODUCT OR APPROVED EQUIVALENT WITH WHITE BACKING AND PRE-INSTALLED 6.35mm (¼") STAINLESS STEEL THREADED INSERTS (NOT TO PUNCTURE FRONT OF PANEL) FOR ALL BOLTED CONNECTIONS.
5. GRAPHIC PANELS TO BE MOUNTED USING 6.35mm (¼") STAINLESS STEEL ANTI-VANDAL BOLTS.

figure 33. Interpretive Sign Rail-Mounted
scale 1:25

Interpretive Sign Details

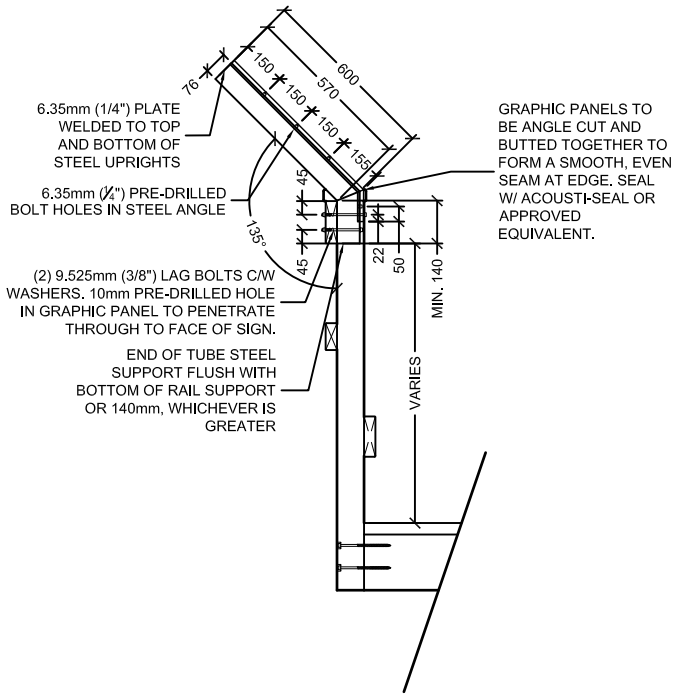


figure 34. Interpretive Sign Rail-Mounted
scale 1:25

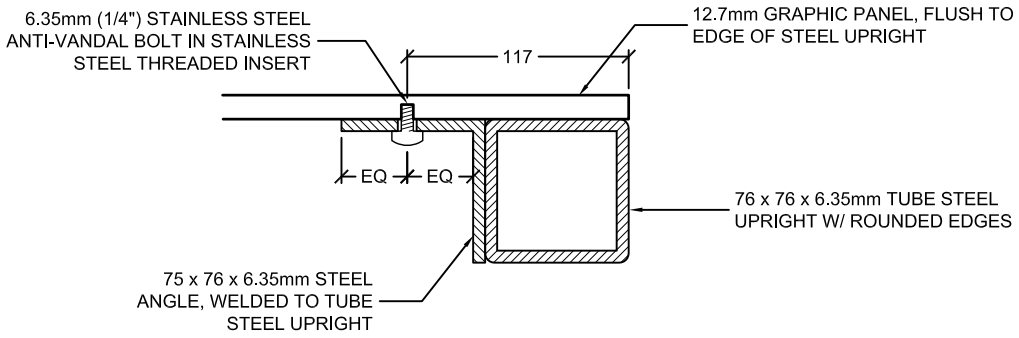


figure 35. Interpretive Sign Fastening Detail
scale 1:4

Marker Sign

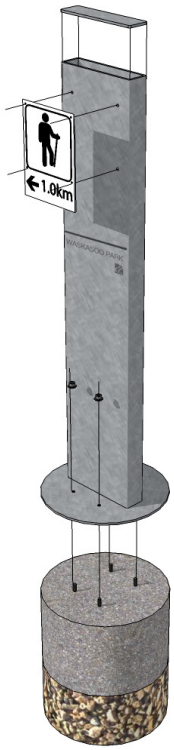
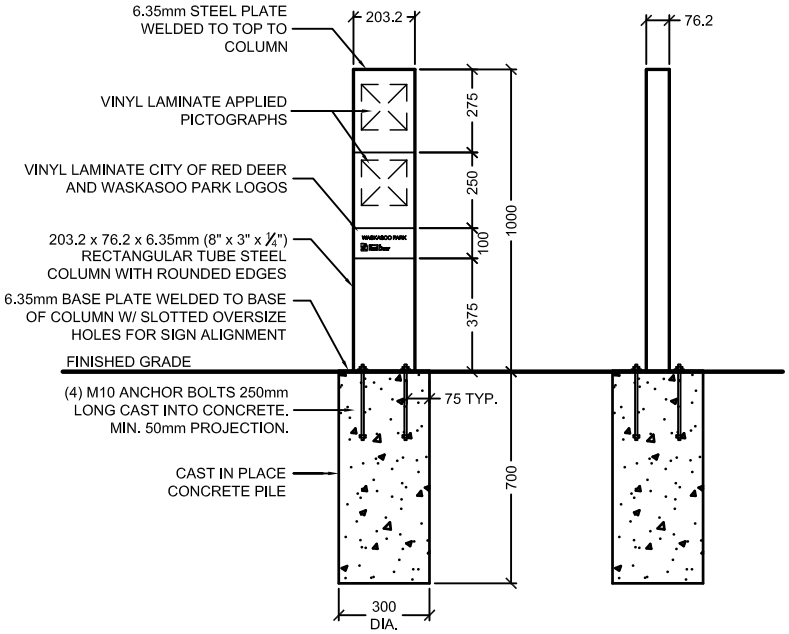


figure 36. Marker Sign Exploded Axonometric



NOTES

1. TUBE STEEL COLUMN TO BE TREATED WITH TWO-COAT SYSTEM CONSISTING OF ZINC PRIMER (SUCH AS DRYZINC BY TIGER DRYLAC) AND HIGH-DURABILITY POWDERCOAT (SUCH AS TIGER DRYLAC SERIES 38). POWDERCOAT COLOR TO MATCH PANTONE 7528.
2. VINYL LAMINATE GRAPHICS TO BE PRINTED ON TRANSLUCENT VINYL LAMINATE GRAPHIC FILM SUCH AS 3M SCOTCHCAL GRAPHIC FILM SERIES 3650 OR APPROVED EQUIVALENT SUITABLE FOR OUTDOOR APPLICATIONS. GRAPHICS SHALL BE PRINTED WITH A LOW GLOSS GRAPHIC PROTECTION AND APPLIED TO SIGN BASE FOLLOWING MANUFACTURER'S INSTRUCTIONS.
3. FASTENERS AND HARDWARE TO BE HOT-DIPPED GALVANIZED STEEL.
4. VISIBLE WELDS SHALL BE GROUND DOWN TO REMOVE BURRS AND SHARP EDGES AND SHALL HAVE A NEAT AND UNIFORM APPEARANCE.

figure 37. Marker Sign Construction Front and Side Sections
scale 1:25

Advisory and Text-Based

To ensure all enforcement and directional signage will be consistent with Waskasoo Park's identity, a 'general signage' system is introduced. Primarily consisting of text-based messages, these are intended to be used when no other signs in the hierarchy will suffice. For example, messages to drivers that require high posting and large letters, or single pictographs to be mounted on an existing fence or building. Construction and installation is simple and minimal, uses industry-standard materials, and the final product resembles that utilized in national parks.

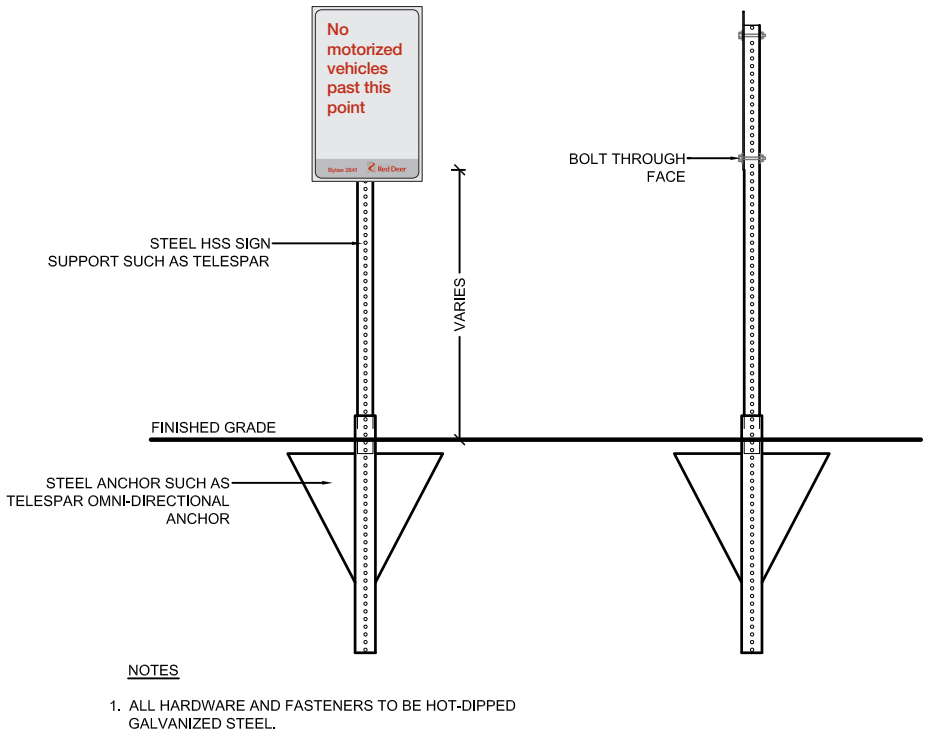
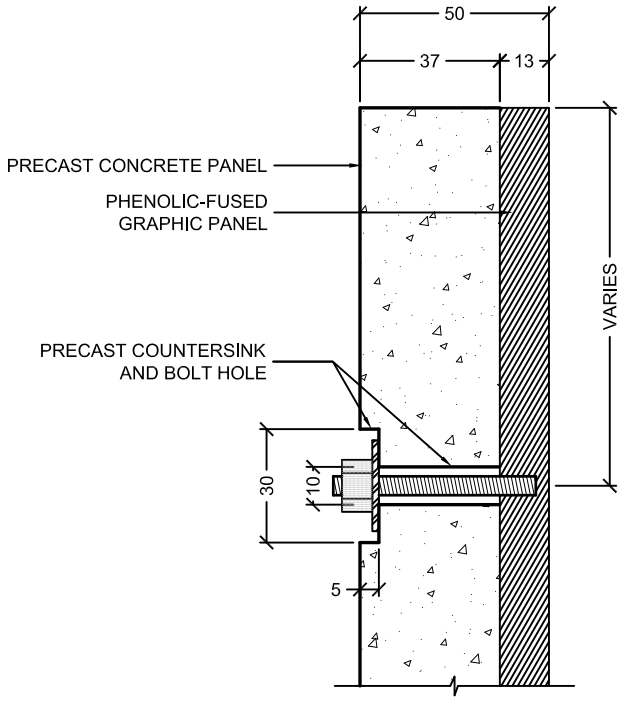


figure 38. Advisory Sign Installation Front and Side Elevations
not to scale

Ductal / GFRC Details

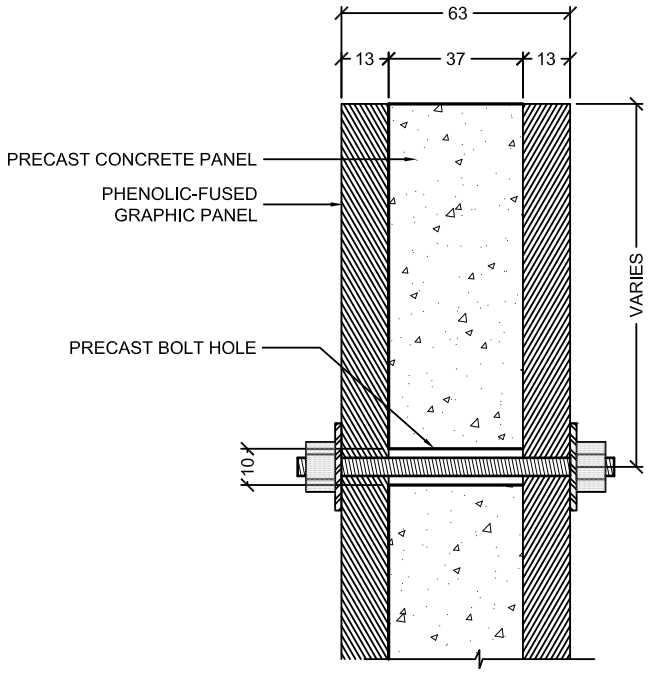


EDGE SEALING:
ACOUSTI - SEAL OR APPROVED EQUIVALENT APPLIED TO OUTSIDE EDGE OF PANEL BACK TO PREVENT WATER PENETRATION.

GRAPHIC PANEL:
12.7 mm SOLID PHENOLIC-FUSED PANEL SUCH AS "FOLIA" BY SYSTEME HUNTINGDON OR APPROVED EQUIVALENT.

MOUNTING CONFIGURATION:
55 x 6.35mm ANTI-VANDAL BOLT W. MATCHING NUT AND 25 mm DIAMETER WASHER ATTACHED INTO THREADED INSERT ON BACK OF GRAPHIC PANEL. ALL METAL HARDWARE TO BE STAINLESS STEEL.

figure 39. Single-Sided Panel Mounting Detail
scale 1:2



EDGE SEALING:
ACOUSTI - SEAL OR APPROVED EQUIVALENT APPLIED TO OUTSIDE EDGE OF PANEL BACK TO PREVENT WATER PENETRATION.

GRAPHIC PANEL:
12.7 mm SOLID PHENOLIC-FUSED PANEL SUCH AS "FOLIA" BY SYSTEME HUNTINGDON OR APPROVED EQUIVALENT.

MOUNTING CONFIGURATION:
55 x 6.35mm ANTI-VANDAL BOLT W. MATCHING NUT AND 25 mm DIAMETER WASHER ATTACHED INTO THREADED INSERT ON BACK OF GRAPHIC PANEL. ALL METAL HARDWARE TO BE STAINLESS STEEL.

figure 40. Double-Sided Panel Mounting Detail
scale 1:2

Ductal / GFRC Detail

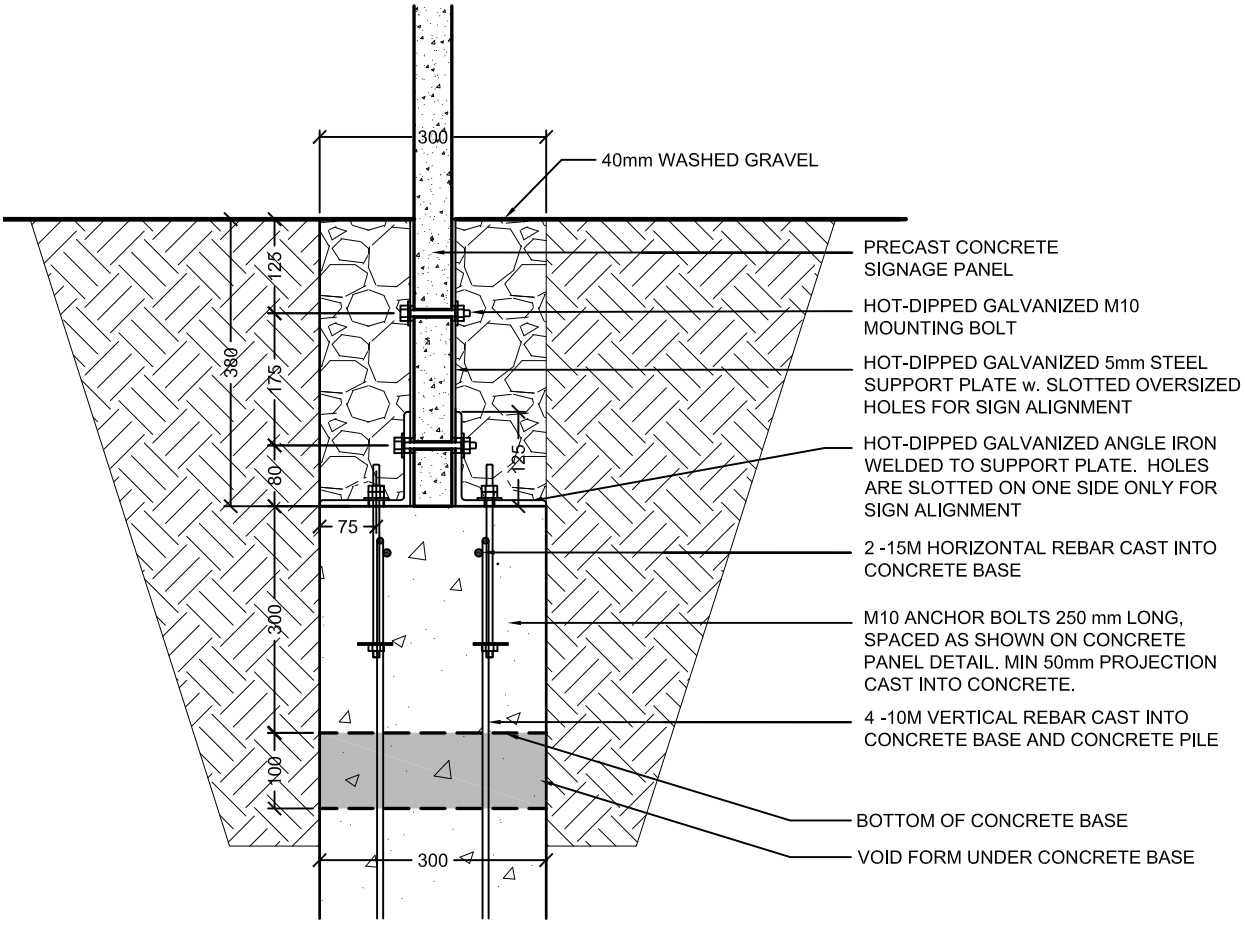
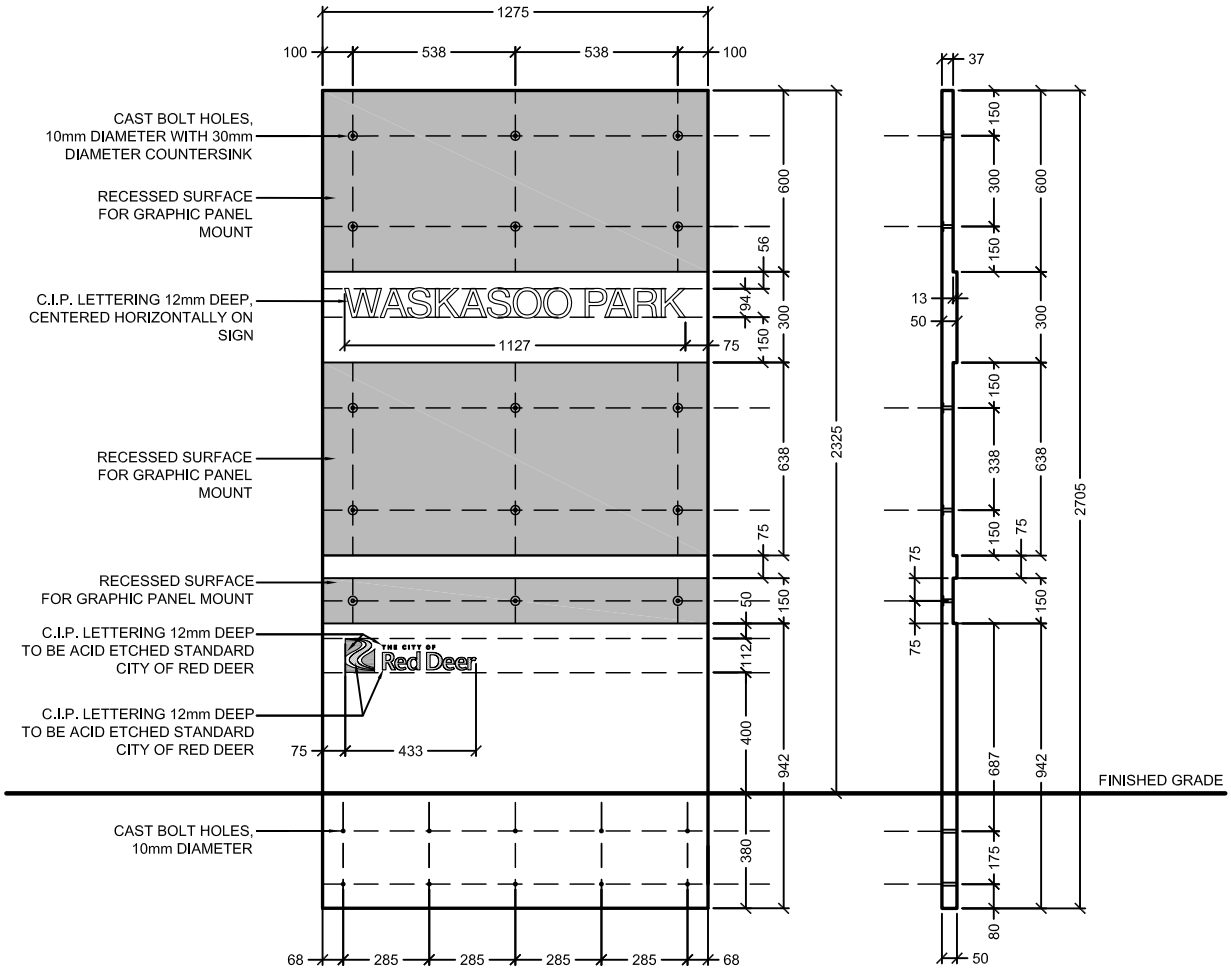


figure 41. Footing Attachment Detail
scale 1:10

Ductal / GFRC Panel Manufacturing

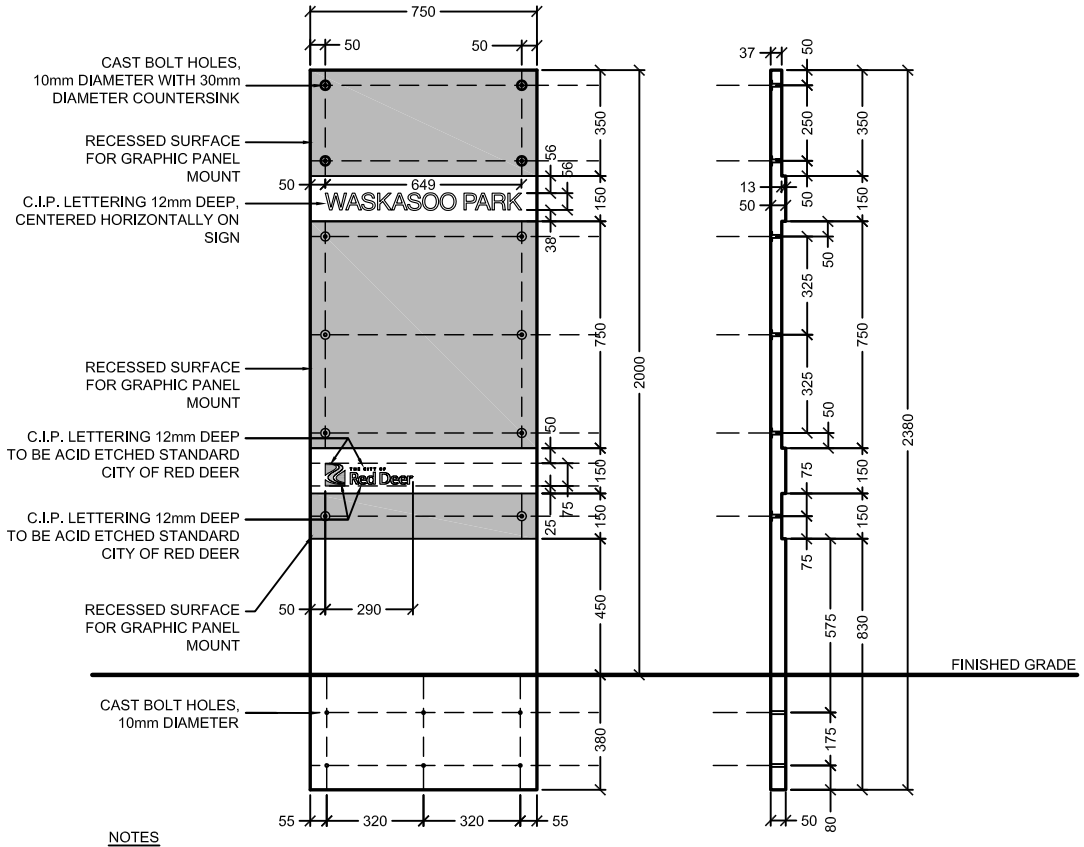
This design requires a manufacturer to cast each sign as per below specification.



NOTES

1. CONCRETE PANEL TO BE CONSTRUCTED OF "DUCTAL" STEEL FIBRE REINFORCED CONCRETE OR 3/4 STRAND GLASS FIBRE REINFORCED CONCRETE.
2. CONCRETE PANEL SHALL BE CAST WITH INTEGRAL CONCRETE COLOUR LIGHT BEIGE TO MATCH PANTONE 7528.
3. BOTH SIDES OF CONCRETE PANEL TO BE FINISHED WITH LIGHT SANDBLASTING OR BEADBLASTING TO ACHIEVE FINE-GRAIN UNIFORMITY OF CONCRETE, REMOVE SHINE, BUT NOT EXPOSE GLASS OR STEEL FIBRES.
4. GRAPHIC PANELS TO BE 12.7mm THICK "FOLIA" PHENOLIC-FUSED PRODUCT OR APPROVED EQUIVALENT WITH WHITE BACKING AND PRE-INSTALLED 6.35mm (¼") STAINLESS STEEL THREADED INSERTS (NOT TO PUNCTURE FRONT OF PANEL) FOR ALL BOLTED CONNECTIONS.
5. GRAPHIC PANELS TO BE MOUNTED USING 6.35mm (¼") STAINLESS STEEL ANTI-VANDAL BOLTS.
6. CONCRETE PANEL TO BE TREATED WITH NON-DESTRUCTIVE ANTI-GRAFFITI COATING SUCH AS GPA-200-1 GRAFFITI PROOFER ANTI-STICK BY SEI CHEMICAL, OR APPROVED EQUIVALENT.

figure 42. Entry Sign - Concrete Panel Detail
scale 1:25



NOTES

1. CONCRETE PANEL TO BE CONSTRUCTED OF "DUCTAL" STEEL FIBRE REINFORCED CONCRETE OR 3/4 STRAND GLASS FIBRE REINFORCED CONCRETE.
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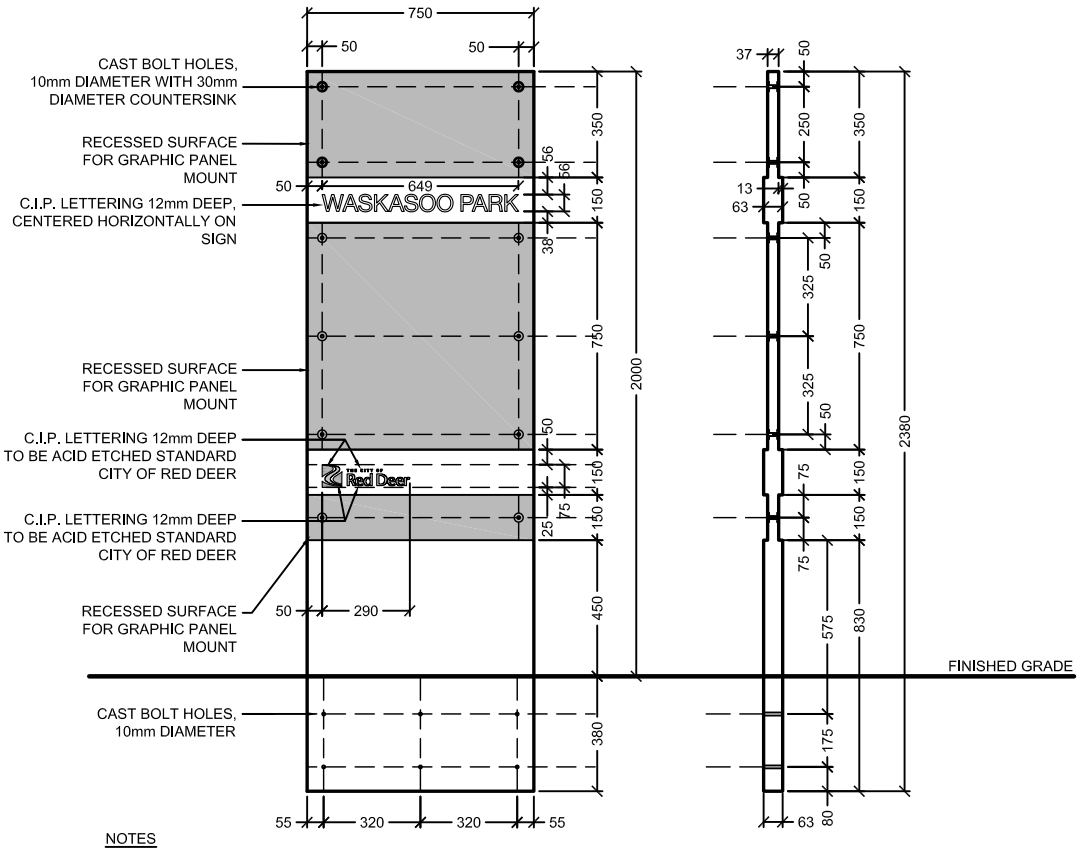
5. GRAPHIC PANELS TO BE MOUNTED USING 6.35mm (¼") STAINLESS STEEL ANTI-VANDAL BOLTS.
6. CONCRETE PANEL TO BE TREATED WITH NON-DESTRUCTIVE ANTI-GRAFFITI COATING SUCH AS GPA-200-1 GRAFFITI PROOFER ANTI-STICK BY SEI CHEMICAL, OR APPROVED EQUIVALENT.

figure 43. Nodal Sign Single-Sided Concrete Panel Detail
scale 1:25



NOTES

1. CONCRETE PANEL TO BE CONSTRUCTED OF "DUCTAL" STEEL FIBRE REINFORCED CONCRETE OR 3/4 STRAND GLASS FIBRE REINFORCED CONCRETE.
2. CONCRETE PANEL SHALL BE CAST WITH INTEGRAL CONCRETE COLOUR LIGHT BEIGE TO MATCH PANTONE 7528.
3. BOTH SIDES OF CONCRETE PANEL TO BE FINISHED WITH LIGHT SANDBLASTING OR BEADBLASTING TO ACHIEVE FINE-GRAIN UNIFORMITY OF CONCRETE, REMOVE SHINE, BUT NOT EXPOSE GLASS OR STEEL FIBRES.
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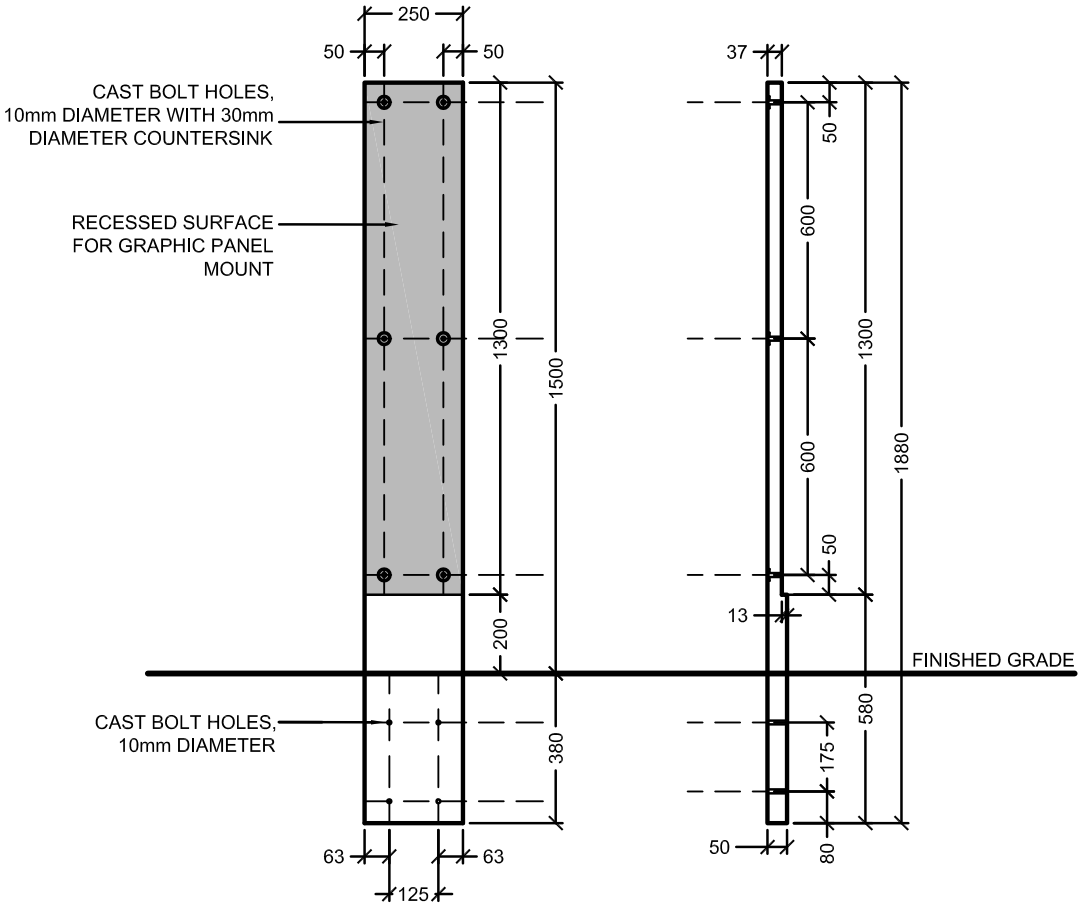
5. GRAPHIC PANELS TO BE MOUNTED USING 6.35mm (¼") STAINLESS STEEL ANTI-VANDAL BOLTS.
6. CONCRETE PANEL TO BE TREATED WITH NON-DESTRUCTIVE ANTI-GRAFFITI COATING SUCH AS GPA-200-1 GRAFFITI PROOFER ANTI-STICK BY SEI CHEMICAL, OR APPROVED EQUIVALENT.

figure 44. Nodal Sign Double-Sided Concrete Panel Detail
scale 1:25



NOTES

1. CONCRETE PANEL TO BE CONSTRUCTED OF "DUCTAL" STEEL FIBRE REINFORCED CONCRETE OR 3/4 STRAND GLASS FIBRE REINFORCED CONCRETE.

2. CONCRETE PANEL SHALL BE CAST WITH INTEGRAL CONCRETE COLOUR LIGHT BEIGE TO MATCH PANTONE 7528.

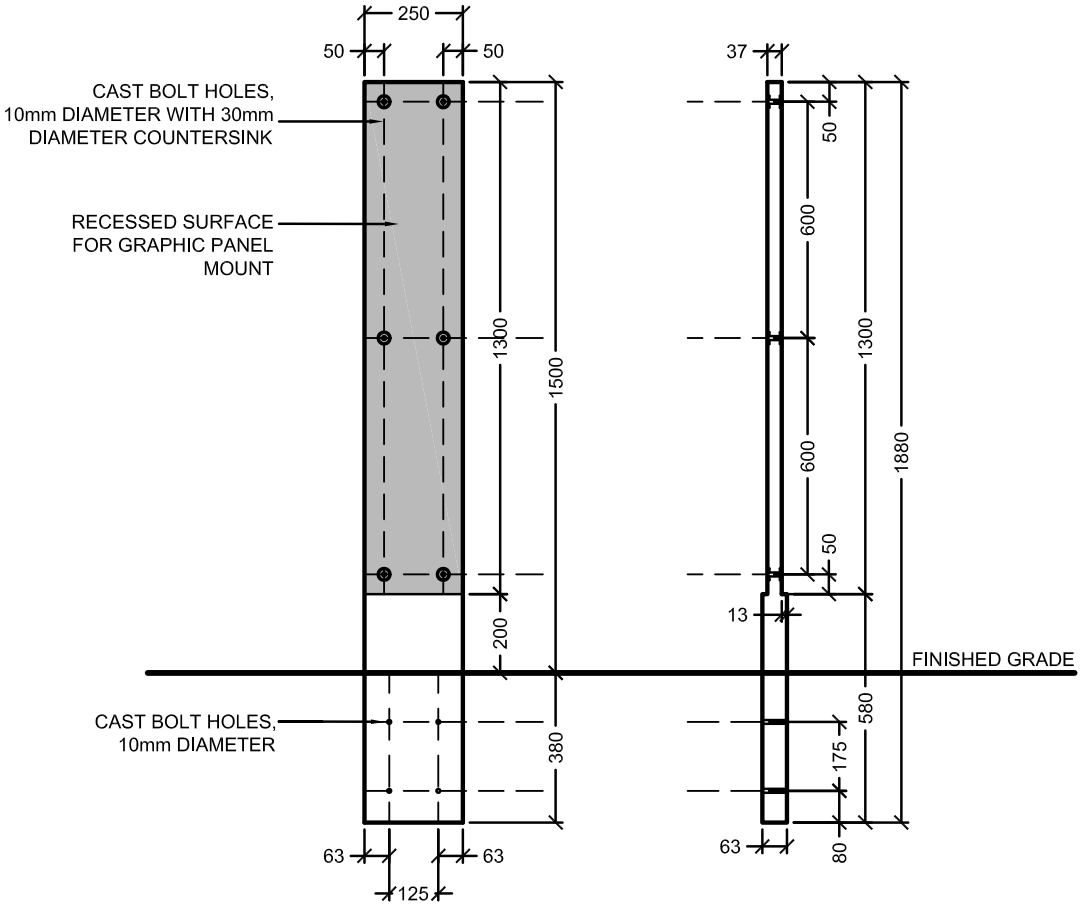
3. BOTH SIDES OF CONCRETE PANEL TO BE FINISHED WITH LIGHT SANDBLASTING OR BEADBLASTING TO ACHIEVE FINE-GRAIN UNIFORMITY OF CONCRETE, REMOVE SHINE, BUT NOT EXPOSE GLASS OR STEEL FIBRES.

4. GRAPHIC PANELS TO BE 12.7mm THICK "FOLIA" PHENOLIC-FUSED PRODUCT OR APPROVED EQUIVALENT WITH WHITE BACKING AND PRE-INSTALLED 6.35mm (¼") STAINLESS STEEL THREADED INSERTS (NOT TO PUNCTURE FRONT OF PANEL) FOR ALL BOLTED CONNECTIONS.

5. GRAPHIC PANELS TO BE MOUNTED USING 6.35mm (¼") STAINLESS STEEL ANTI-VANDAL BOLTS.

6. CONCRETE PANEL TO BE TREATED WITH NON-DESTRUCTIVE ANTI-GRAFFITI COATING SUCH AS GPA-200-1 GRAFFITI PROOFER ANTI-STICK BY SEI CHEMICAL, OR APPROVED EQUIVALENT.

figure 45. Trail Sign Single-Sided Concrete Panel Detail
scale 1:25



NOTES

1. CONCRETE PANEL TO BE CONSTRUCTED OF "DUCTAL" STEEL FIBRE REINFORCED CONCRETE OR 3/4 STRAND GLASS FIBRE REINFORCED CONCRETE.

2. CONCRETE PANEL SHALL BE CAST WITH INTEGRAL CONCRETE COLOUR LIGHT BEIGE TO MATCH PANTONE 7528.

3. BOTH SIDES OF CONCRETE PANEL TO BE FINISHED WITH LIGHT SANDBLASTING OR BEADBLASTING TO ACHIEVE FINE-GRAIN UNIFORMITY OF CONCRETE, REMOVE SHINE, BUT NOT EXPOSE GLASS OR STEEL FIBRES.

4. GRAPHIC PANELS TO BE 12.7mm THICK "FOLIA" PHENOLIC-FUSED PRODUCT OR APPROVED EQUIVALENT WITH WHITE BACKING AND PRE-INSTALLED 6.35mm (¼") STAINLESS STEEL THREADED INSERTS (THROUGH TO FRONT OF PANEL) FOR ALL BOLTED CONNECTIONS.

5. GRAPHIC PANELS TO BE MOUNTED USING 6.35mm (¼") STAINLESS STEEL ANTI-VANDAL BOLTS.

6. CONCRETE PANEL TO BE TREATED WITH NON-DESTRUCTIVE ANTI-GRAFFITI COATING SUCH AS GPA-200-1 GRAFFITI PROOFER ANTI-STICK BY SEI CHEMICAL, OR APPROVED EQUIVALENT.

figure 46. Trail Sign Double-Sided Concrete Panel Detail
scale 1:25

APPENDIX A

References

City of Red Deer. No Date. Corporate Identity Standards Guide for the City of Red Deer. 21pp. Internet resource available at <http://www.reddeer.ca>

City of Red Deer. No Date. City of Red Deer Waskasoo Park Sign System: a guide—for production, operation and maintenance of Waskasoo Park signs. 41 pp.

Lynch, K. 1960. The Image of the City. MIT Press. 202 pp.

Parks Canada. 1994. Design Guidelines for Media Accessibility. Department of Canadian Heritage. 48 pp.

Parks Canada. 2007. Parks Canada Identity Program Exterior Signage Standards and Guidelines. 355 pp.

Parks Canada. 2008. Trail and Back Country Facility Design Guidelines. 3.6.1 pp.

"Pictograph." 2008. Meriam Webster's Dictionary. Online edition available at <www.m-w.com>

Smithsonian Institute, Office of the Provost. Undated. Guidelines for Accessible Exhibition Design. Internet resource available at <http://si.edu/opa/accessibility/exdesign/start.htm>

APPENDIX B

Photo Graphics

The following pages illustrate the 'images of identifying features' that may be used on Entry and Nodal Signs. Trail signs are to feature the image specified for the node they are part of.

For additional images, please contact O2 Planning + Design.

Entry

figure 47. Great Chief

figure 48. Heritage Ranch

figure 49. Kiwanis Picnic

figure 50. Lions Campground

figure 51. Three Mile Bend

figure 52. River Bend Golf Course and Recreation Area

figure 53. Coronation Park

figure 54. McKenzie Trail Recreation Area

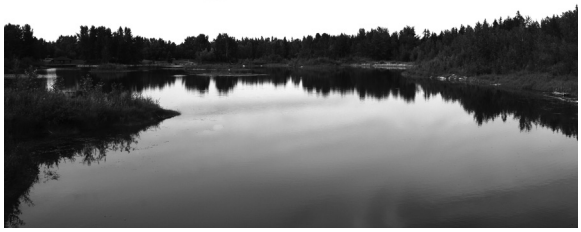


figure 55. Barret Park

figure 56. Kerry Wood Nature Centre

figure 57. Rotary Park

figure 58. Kin Canyon

figure 59. Maskepetoon Park

Nodal

figure 60. Kerry Woods Bird Sanctuary

figure 61. Cronquist House

figure 62. Generic image for nodal sign

figure 63. Generic image for nodal sign

figure 64. Generic image for nodal sign

figure 65. Generic image for nodal sign

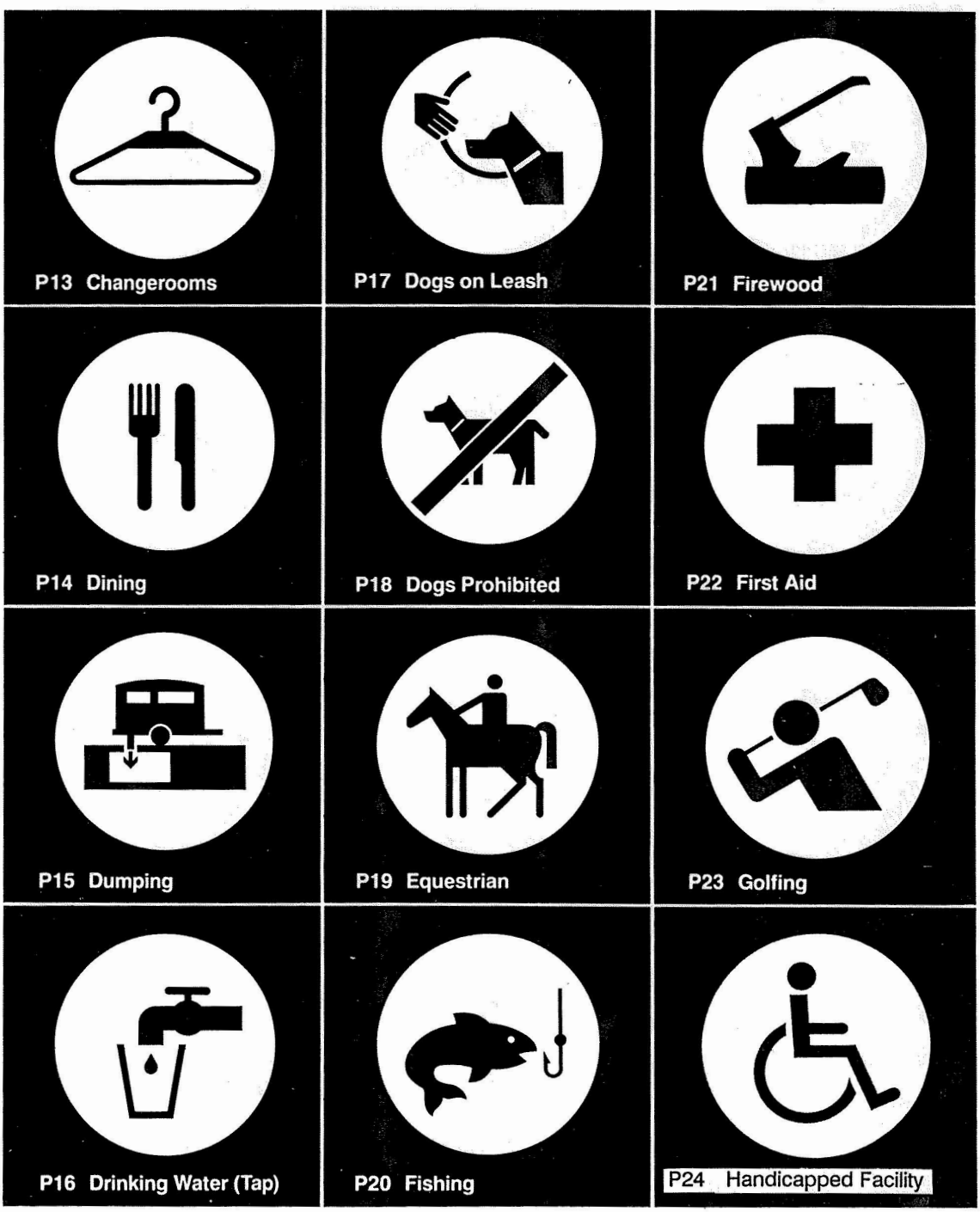
Superseded, please see Appendix C - 2020 Update

~~APPENDIX C~~

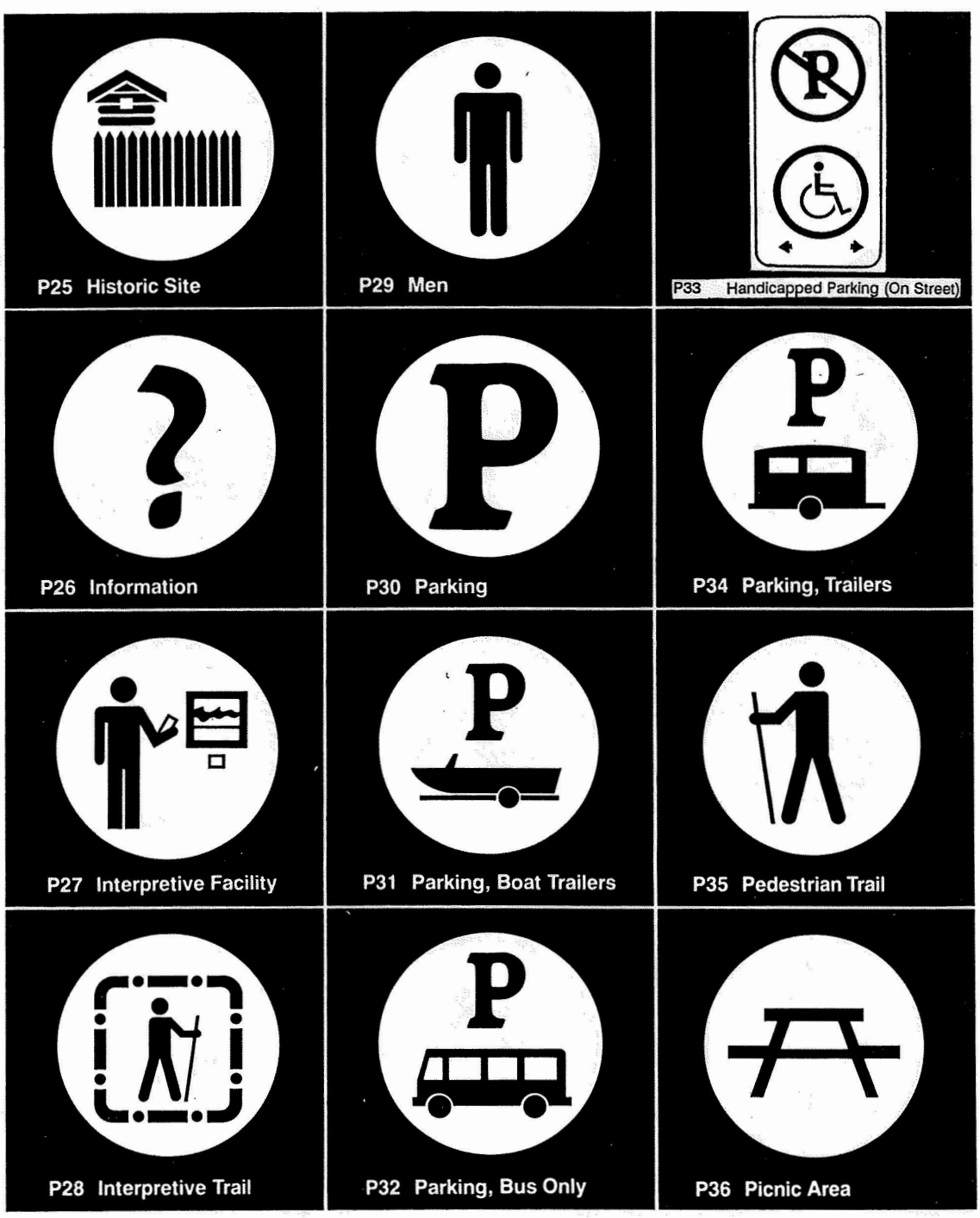
~~City of Red Deer Pictographs~~

The City of Red Deer pictograph family for use in signage throughout the city.

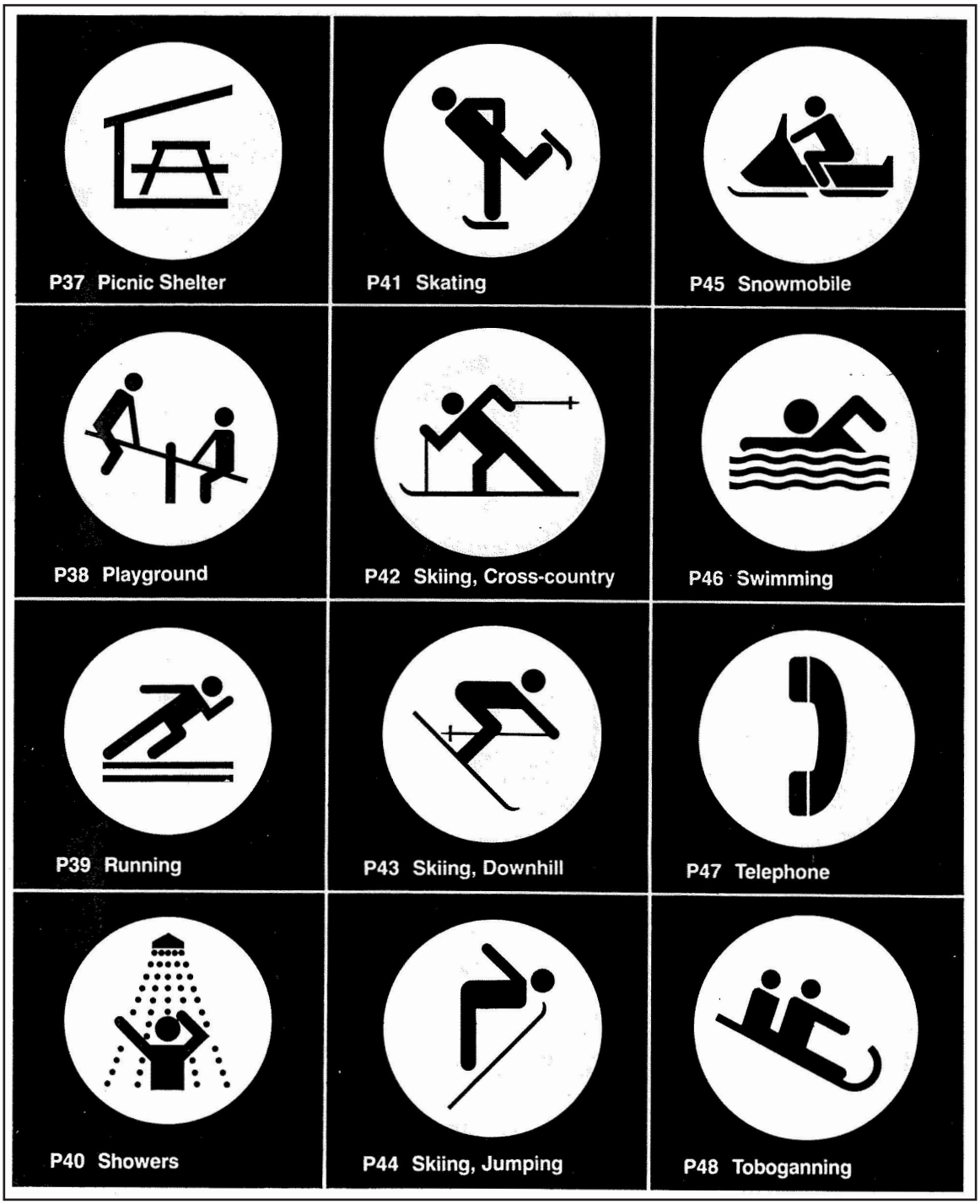
Superseded, please see Appendix C - 2020 Update



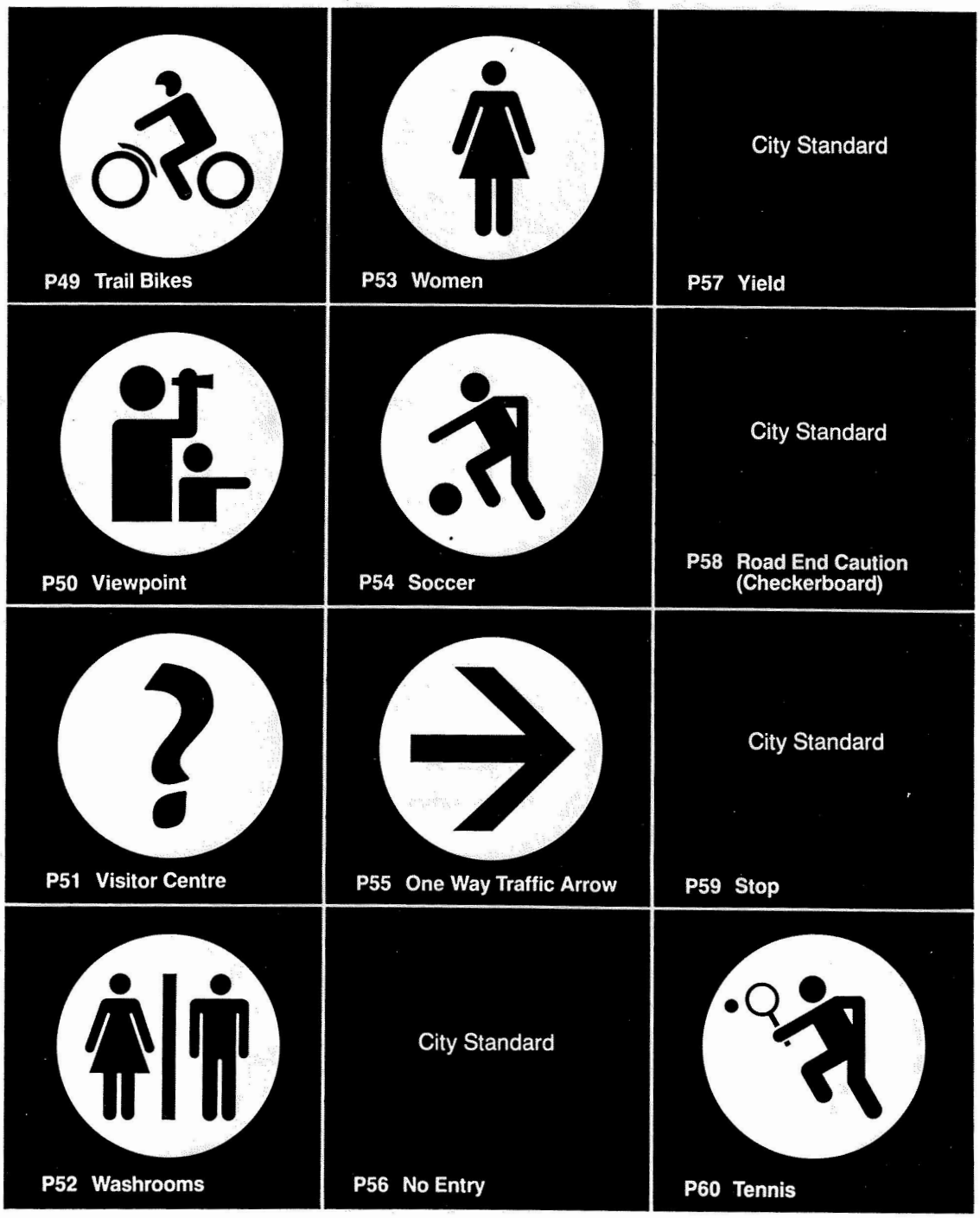
Superseded, please see Appendix C - 2020 Update



Superseded, please see Appendix C - 2020 Update

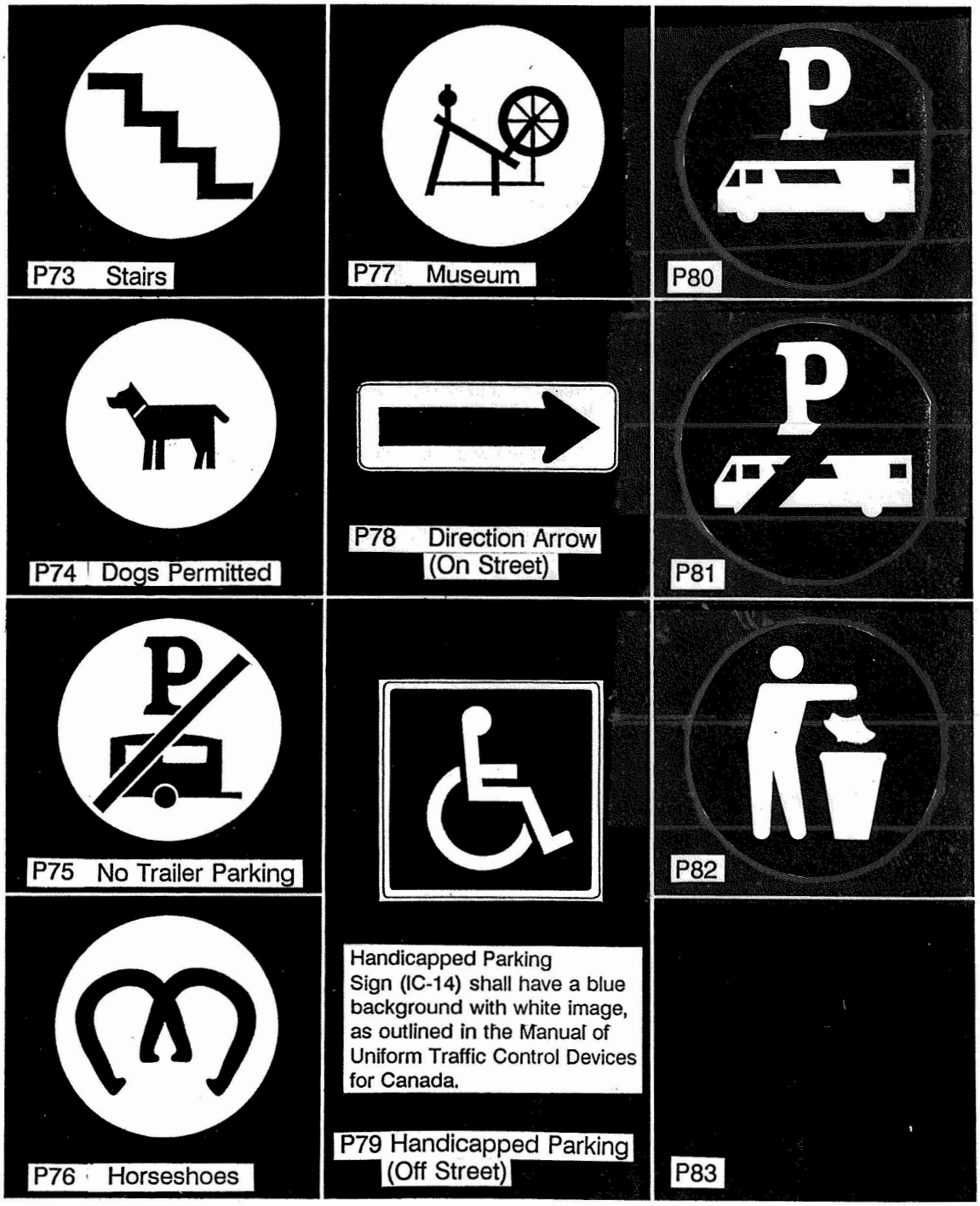


Superseded, please see Appendix C - 2020 Update



Superseded, please see Appendix C - 2020 Update

Superseded, please see Appendix C - 2020 Update



APPENDIX D

Wood Framed Sign Construction Details

In order to evaluate the economic and sustainability benefits of the recommended Ductal/ GFRC construction system, The City of Red Deer requested that a wood framed sign construction be explored and evaluated through a lifecycle costing analysis. Although this option was ultimately not selected, this component of the project has been outlined in Appendix D and E.

The following pages consist of exploded axonometric views and dimensioned elevations to illustrate the construction and size of each sign using a wood frame.

Entry Sign

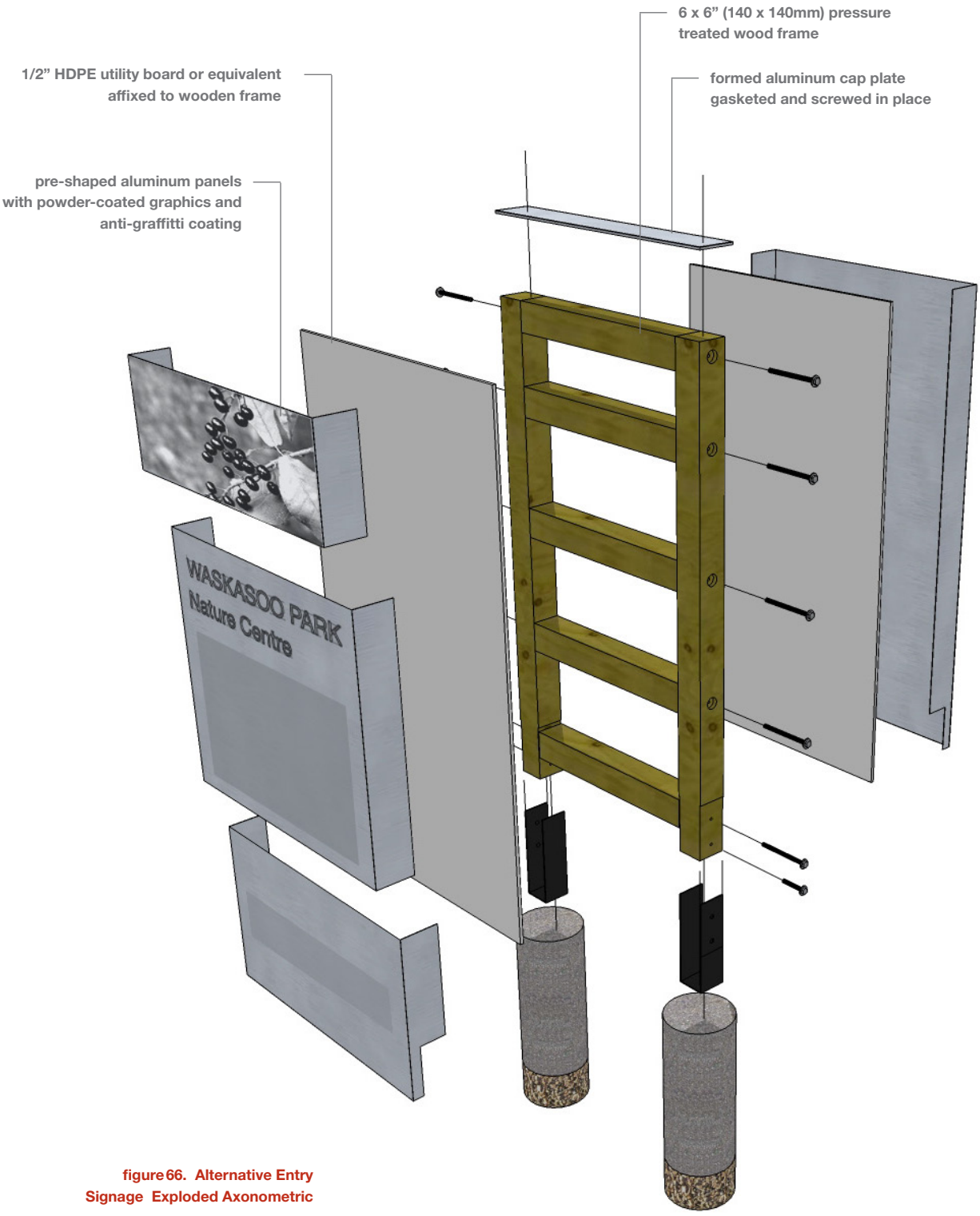


figure 66. Alternative Entry Signage Exploded Axonometric

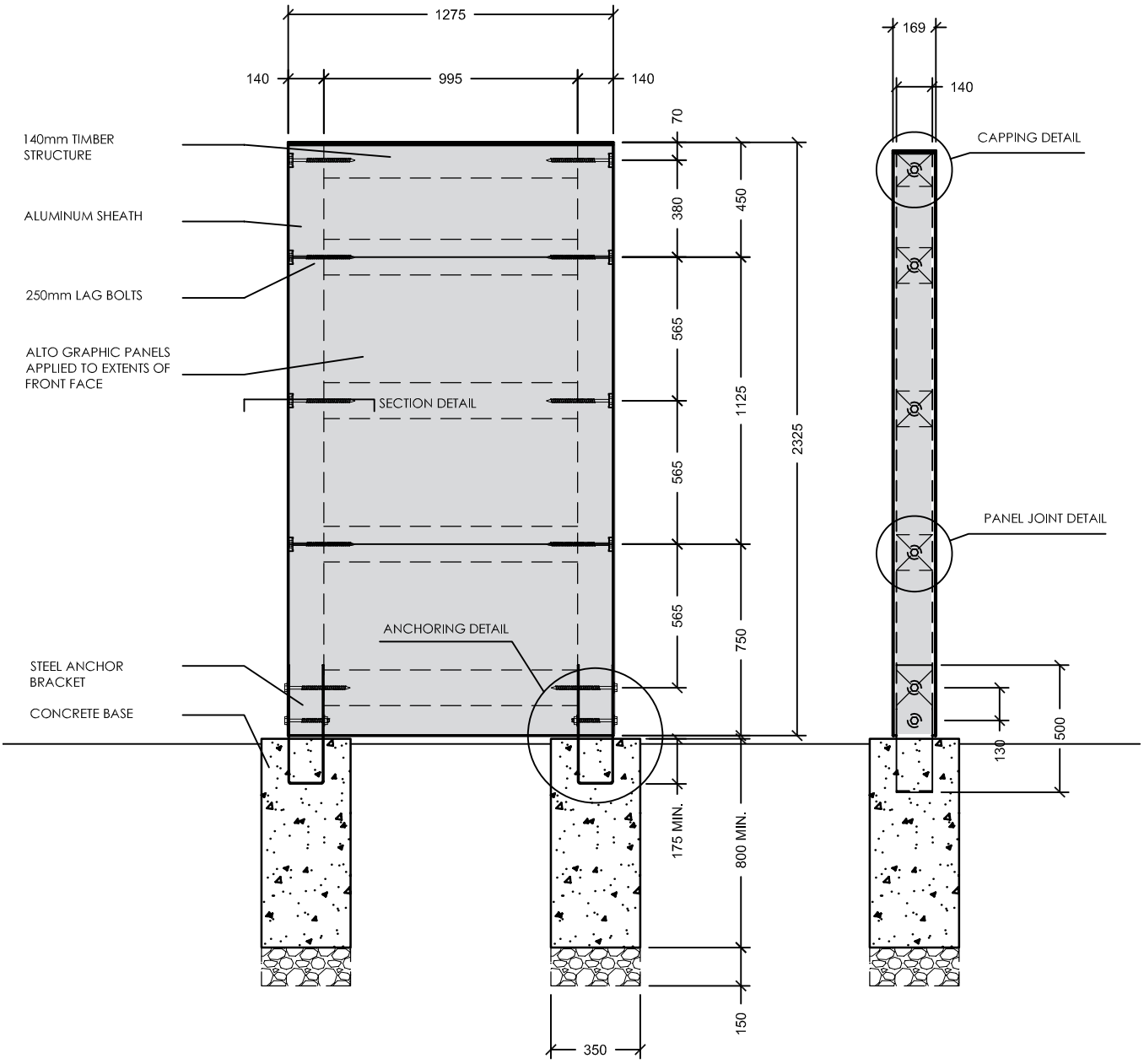


figure 67. Alternative Entry Signage Construction Front and Side Section 1:25

Nodal Sign

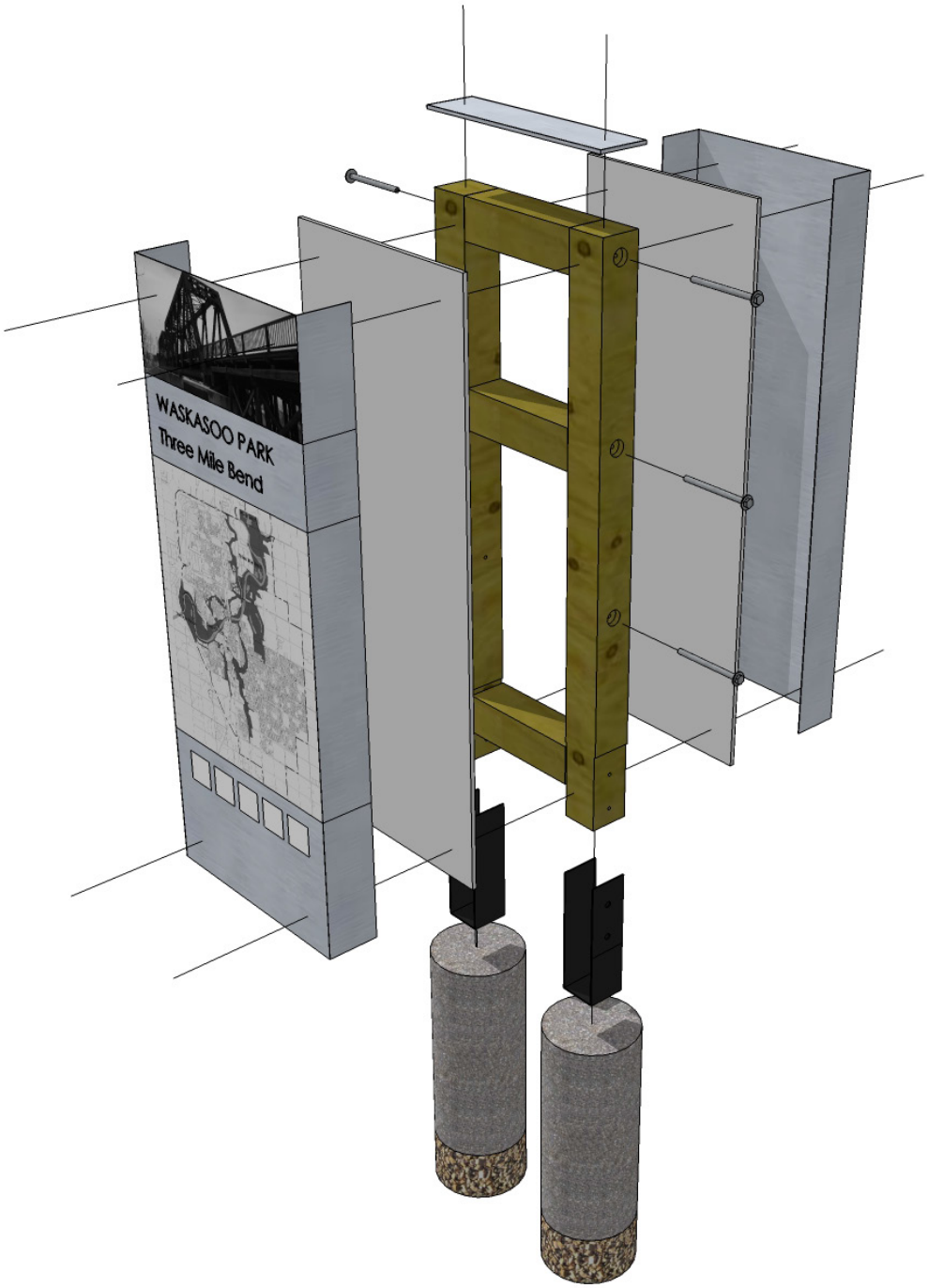


figure 68. Alternative Nodal Sign
Exploded Axonometric

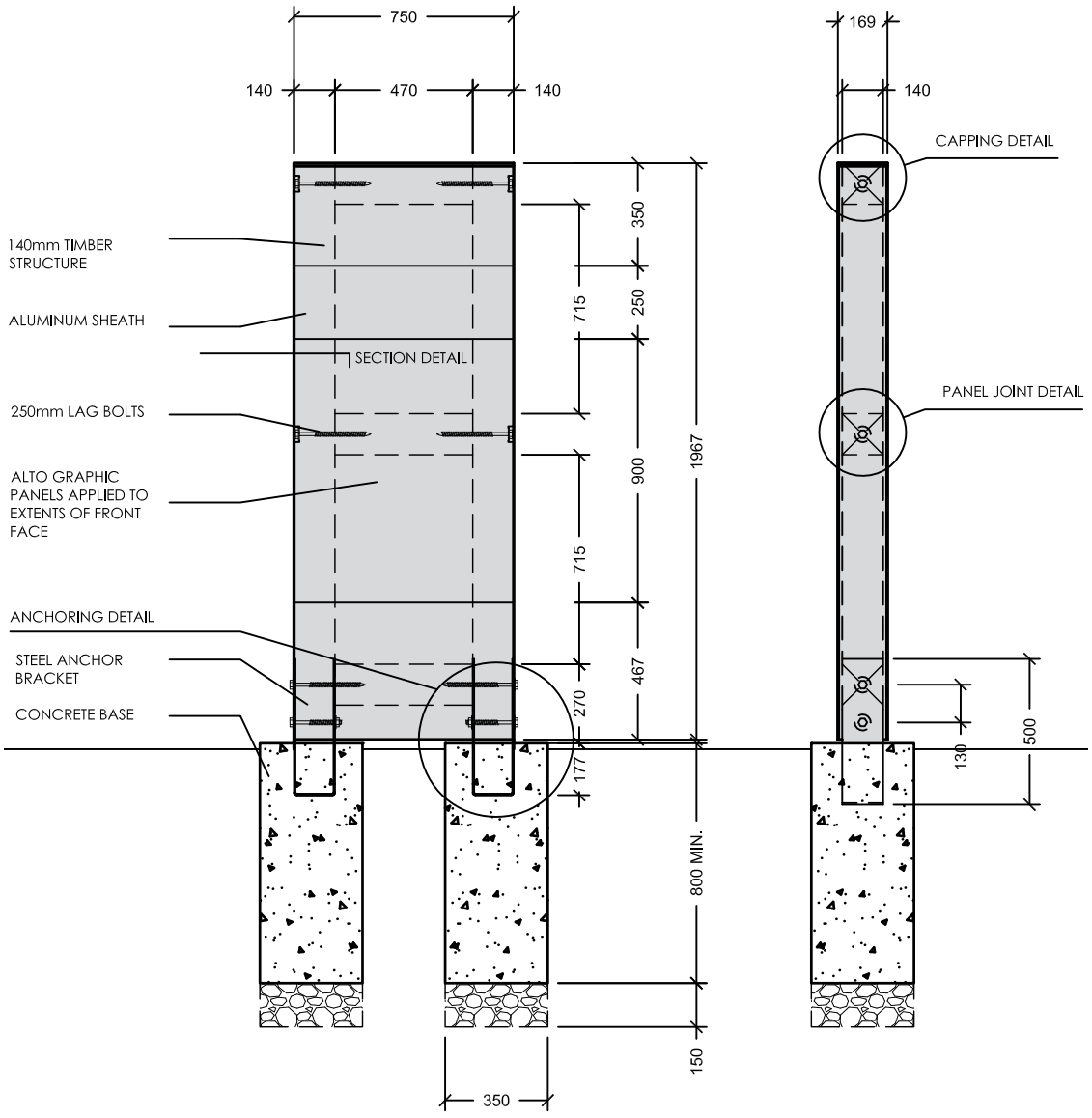


figure 69. Alternative Nodal Sign Construction Front and Side Sections 1:25

Trail Sign

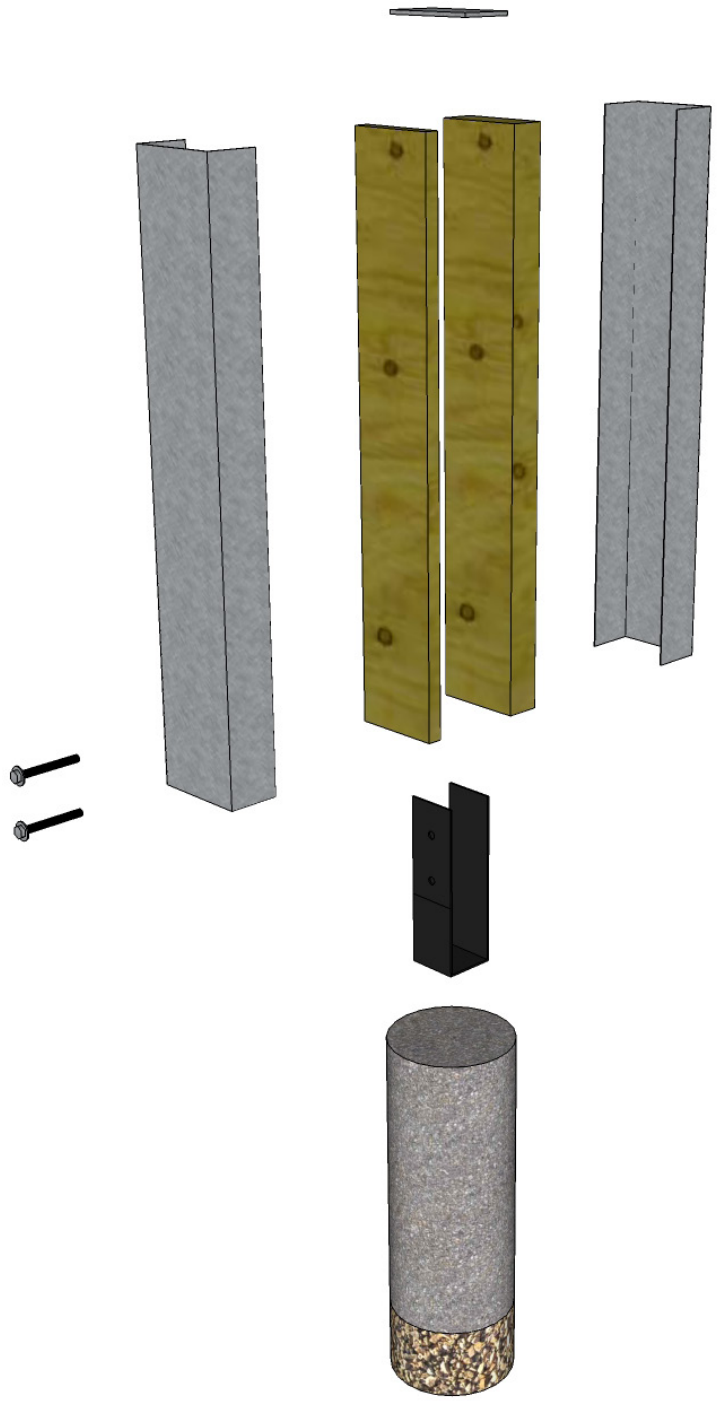


figure 70. Alternative Trail Signage
Exploded Axonometric

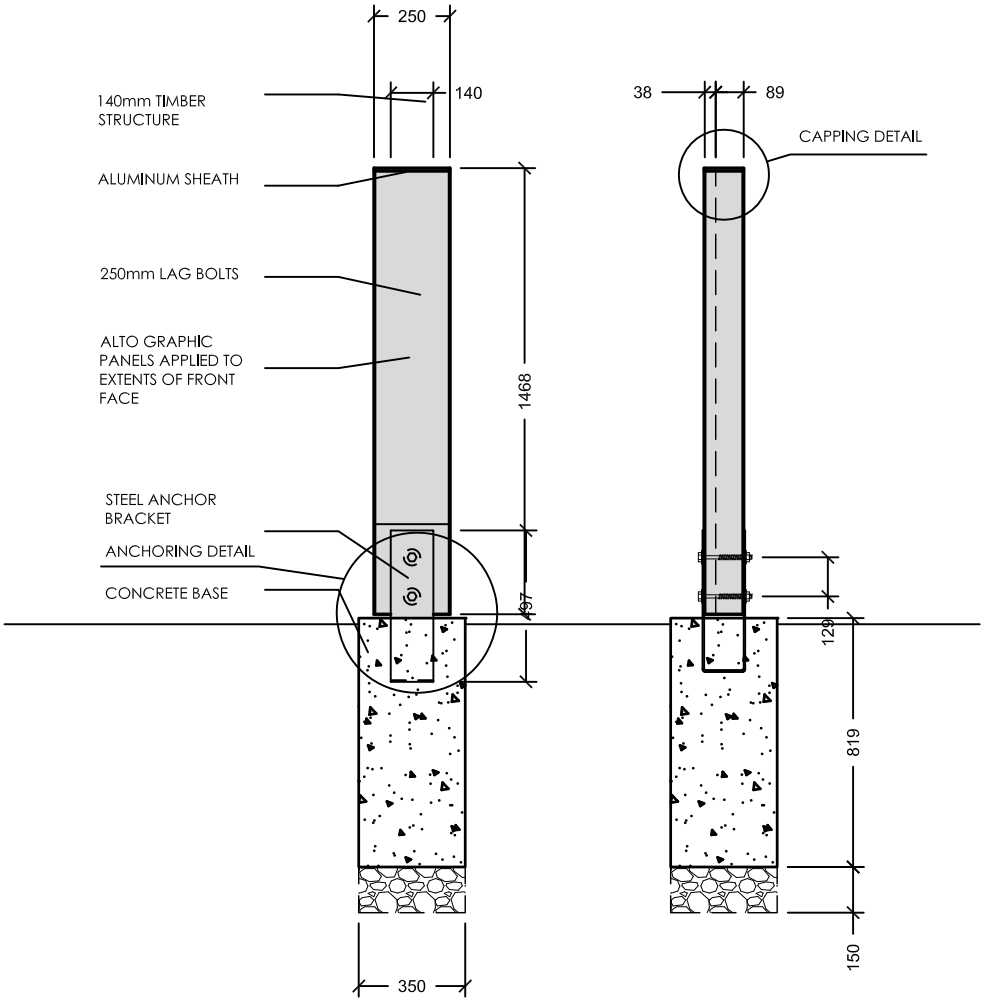


figure 71. Alternative Trail Signage Construction Front and Side Section

Wood-Frame Sign Detail

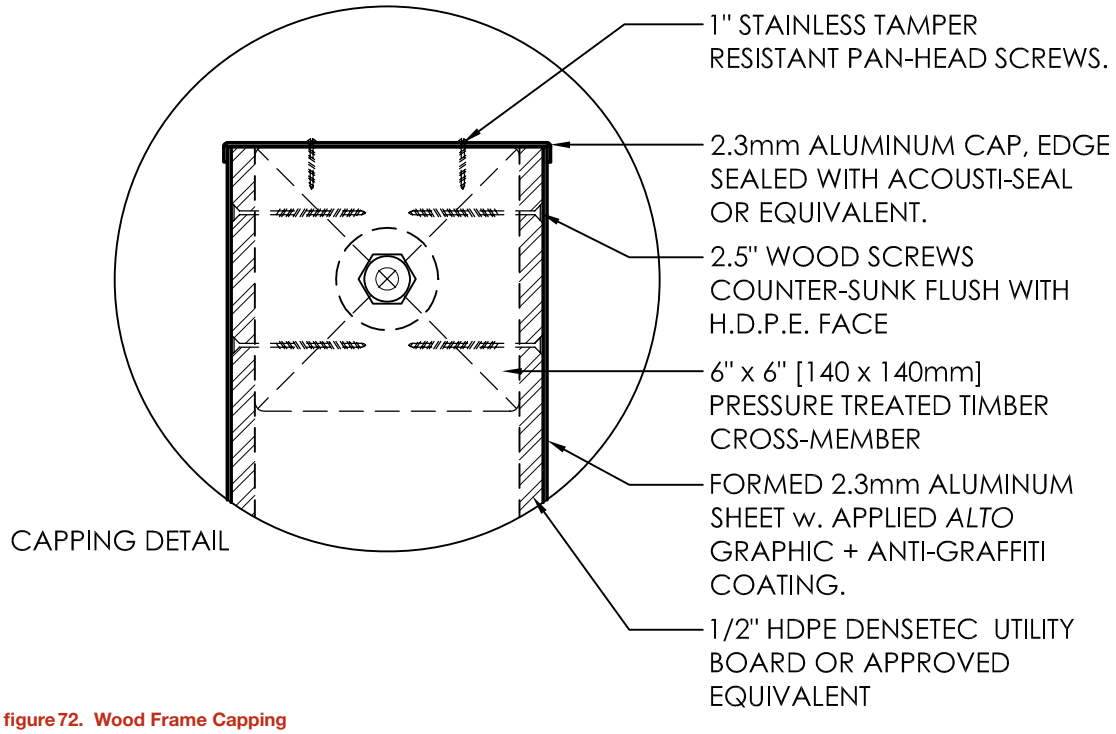


figure 72. Wood Frame Capping Detail

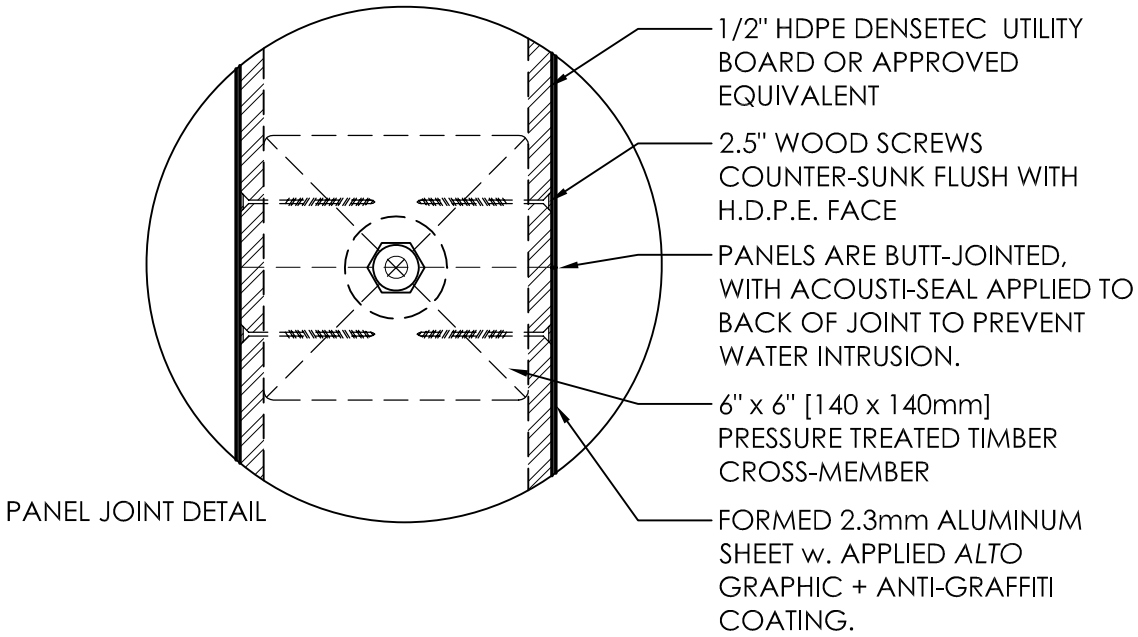


figure 73. Wood Frame Panel Joint Detail 1:15

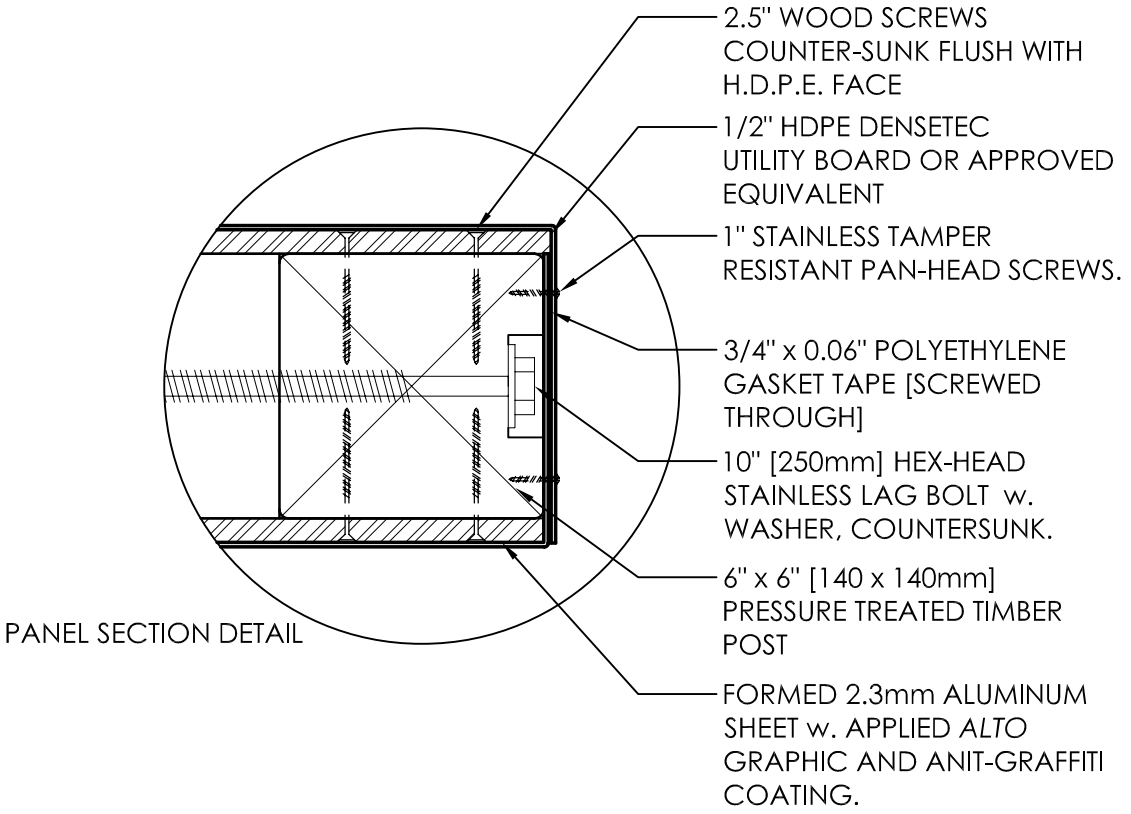


figure 74. Wood Frame Panel Section Detail 1:15

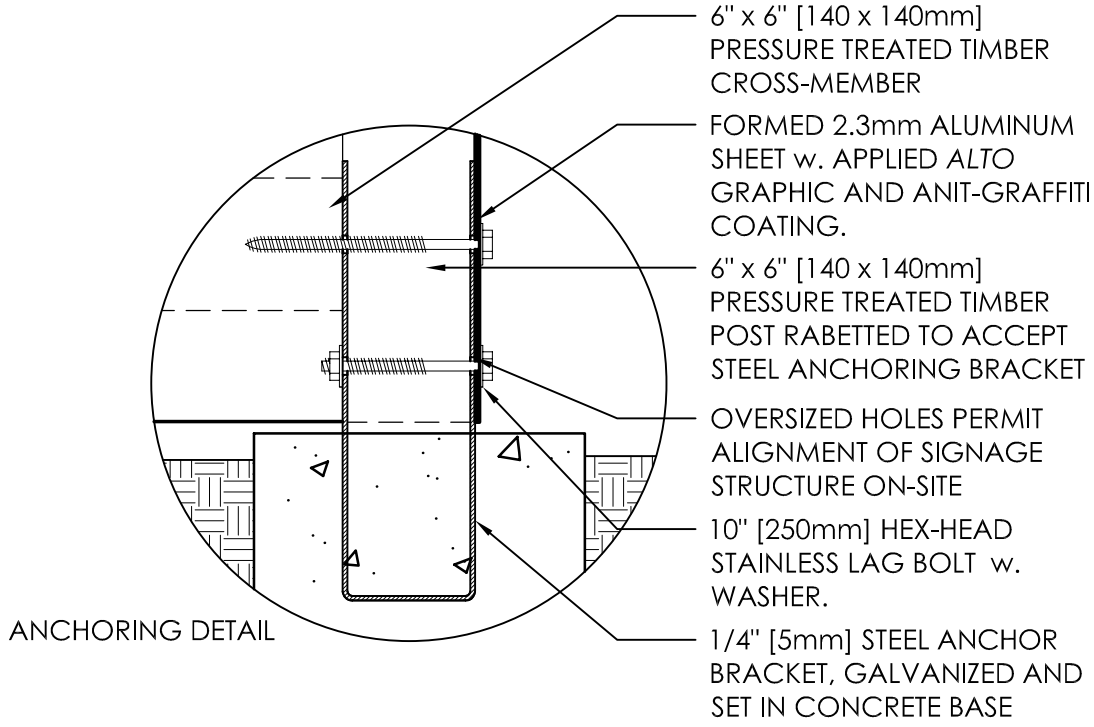


figure 75. Wood Frame Anchoring Detail

APPENDIX E

Comparison and Implementation

While the graphic layout of the Ductal option and Wood-frame option are nearly identical, the structural systems result in a distinct difference in the sign's overall appearance. This chapter highlights some of those differences, compares life-cycle costing, and finally states the preferred option recommended by O2 Planning + Design.

Aesthetics + Identity

Due to its material strength, the Ductal / GFRC option has a much thinner profile that is more in keeping with a slim, discreet, contemporary appearance. The wooden frame needs to be much thicker to provide comparable strength, and as such has a much thicker, monolithic appearance with a greater visual mass.

Materially, there is a marked contrast between the two options. The wood frame appears as a painted metal, whereas the Ductal / GFRC is a smooth concrete texture. Additionally, as the signage components are separate elements flush-mounted to the Ductal / GFRC structure, they tend to stand out more than the integrated elements of the wood option.

As the wood frame option is entirely clad in aluminum, any colour or graphic must be applied to the surface. Visually, this can be very engaging in areas of high detail, but on large uniform surfaces it can have a flat appearance. This may be aggravated by aging or vandalism that can mark the finish. Fortunately, if the finish is compromised, the aluminum will not corrode as steel does, so bubbling, flaking, and staining due to rusting is not a significant issue.

The Ductal / GFRC option uses the colour and texture of the concrete for the majority of the sign, providing a durable, uniform finish. The colour is consistent throughout the concrete, so any damage to the surface is less prominent. Ductal / GFRC is available in a variety of surface finishes due to its excellent detail casting, which also provides an opportunity to cast sign elements - such as the Waskasoo namemark and City of Red Deer logo - into the structure itself. Visually, this relief adds a depth to the sign, introducing a sense of quality and permanence. Due to its construction, this feature is not possible with the wood frame option.

The fastening systems also different: the wooden frame utilizes smaller tamper resistant screws down each side of the sign, and larger bolts to mount it to exposed bracketry and the concrete base. The Ductal / GFRC option has larger, more prominent bolts mounted on the rear of the sign, with the possibility of capping them to both conceal and protect them. Much of the anchoring system is concealed underground, resulting in a very simple, clean appearance.

Maintenance

Both systems have been designed to require as little maintenance as possible, and except in the event of extreme deliberate vandalism, both options should provide many years of trouble free use. Each option has a different maintenance strategy for different scenarios, the two significant scenarios being damage to the graphic signage, and damage to the structural component.

Should the *graphic panel* be defaced or require replacement:

- Since the aluminum graphic panel is integrated into the structure of the wood frame option, the entire panel would need to be removed by unscrewing it from the structure. Panel replacement should be prompt, as the exposed wooden-frame structure is more susceptible to weathering and vandalism. The frame of pressure treated lumber and HDPE plastic mitigates this. With the Ductal / GFRC option, replacing the graphic panel requires unbolting the damaged or outdated sign and reattaching the new one. As the concrete is by nature weather resistant, leaving the structure exposed is not a concern.

- Should the signage content need to be amended or replaced, both options offer relative flexibility. The wood frame option allows replacing the entire graphic panel at once. Conversely, replacing signage elements within the GFRC option may be easier and less expensive as they are individual attached components.

Both options are designed to resist a strong amount of structural stress; component durability and vandal resistance have been key priorities throughout the design process. Cleaning instructions for either the aluminum or phenolic-fused graphic panel products may be obtained form the manufacturer.

Should the signage *structure* be damaged and require repair or replacement:

- The repair of the wood frame structure is the simpler of the two options; much of the repair can be done on-site with standard woodworking tools. All of the components are readily available and are lightweight enough to easily handled. However, a large portion of the sign must be disassembled to replace frame components. Care must be taken as the aluminum skin is vulnerable to damage without underlying structure, and reassembly must adequately protect against water intrusion.

- The Ductal / GFRC system relies on inherent durability and strength to avoid damage. The concrete signage panel cannot be easily repaired, and in the event of a major structural failure, the entire sign structure must be replaced. To do so, a crew must expose the anchoring system, unbolt the broken sign, and replace it with a new structure. Some cost savings could be achieved by re-using any undamaged graphic panels. Another consideration is the weight of the signage elements; while the trail signs [70 kilograms ,150 lbs.] can be placed by hand, the entry signs weigh 625 kilograms [1400 lbs.] and must be placed using equipment. It should be noted that the heavier signs are sited in locations easily accessed by such equipment.

Cleaning

Regular maintenance of the signs should be limited. However, signs that accumulate grime should be cleaned using the following method:

- flush surface with clean water to remove any loose dirt and soften accumulated grime.
- Concrete can be pressure washed with a non-abrasive biodegradable detergent that will not damage surrounding vegetation.
- Graphic elements should be washed with a soft brush, rag or sponge. Use a mild, non-abrasive biodegradable detergent that will not harm surrounding vegetation. A list of appropriate cleaners is be available from the signage manufacturer.
- Wash from the top down, taking care not to “over scrub” and abrade the sign surface - doing so lessens the effectiveness of the anti-grafitti coating.
- When finished, rinse entire sign with clean water and allow to dry.

Long-term, some signs may display efflorescence, a leaching of minerals displayed on the surface as a whitish tint. Although this should not detract from their readability, restoration is possible with an acid wash and application of the anti-graffitti coating.

Installation

Generally, larger signs are placed in areas that are easily accessible by crews and machinery, facilitating the coring and concrete pouring of bases.

Groundcover details surrounding signage sites should both recover natural vegetation and prevent erosion / weeds that can occur if bare tamped earth is left revealed. A washed pea-gravel groundcover (for example, 20mm limestone gravel) should be applied over the disturbed site, as shown on construction details.

Implementation Strategy

Red Deer Recreation, Parks and Culture is developing an implementation plan for phasing in the new signage system. It is proposed that a complete sign program is instituted in Maskepetoon Park, a new node of Waskasoo. The department has developed an implementation strategy that will require Capital Budget funding of $150,000 per year for 2010-2013 and $75,000 per year from 2014-2018 (2009 dollars).

From there a node-by-node strategy can be taken, concurrent with a replacement of all entry signs, which will have the greatest visual impact for citizens and park users.

Waskasoo Park Sign Identity Program Implementation

Park Node	Year (Start)	Year (Complete)	Sign Type							Total Cost
			Entry Sign	Nodal Sign	Trail Sign	Interpretive	Marker Sign	Advisory Sign	Other (parking/ small)	
			$9,650	$5,270	$2,296	$1,118	$400	$300	$100	
Maskepetoon (Mask. Project Funded)	2010	2010	1	4	15	25	30	20	15	$112,620
Great Chief Park (incl Bower Ponds, Kiwanis GW Adv)	2010	2011	4	9	25	15	60	90	50	$216,200
Lions Campground & NorthBank	2011	2011	1	0	5	5	12	20	50	$42,520
Heritage Ranch (Partial Project Funding)	2011	2012	1	4	20	10	50	25	20	$117,330
Three Mile Bend	2012	2012	1	4	8	10	15	30	30	$78,278
McKenzie Trails	2013	2013	1	3	12	15	20	30	30	$89,782
Pines Escarpment	2013	2014	0	4	6	5	20	20	30	$57,446
Southbank Trail	2014	2014	0	3	10	15	20	15	15	$69,540
Kerrywood Nature Centre	2015	2015	1	2	8	20	10	20	10	$71,918
Devonian Trails	2016	2017	0	6	15	10	25	15	10	$92,740
Bower Woods	2017	2018	2	5	20	10	40	20	30	$127,750
River Bend Golf Course & Discovery Canyon	2019	2019	1	3	10	10	25	20	50	$80,600
Fort Normandeau	2020	2020	1	1	4	10	5	15	10	$42,784
Total			14	48	158	160	332	340	350	$1,199,508

Economics + Life Cycle

The following tables compare the costing of the two options. Each option is broken down into component cost and installation. The two options are also compared on the basis of a signage repair/ replacement scenario, a structural repair / replacement scenario, overall implementation, and then an overall lifecycle comparison based on a 30 year example.

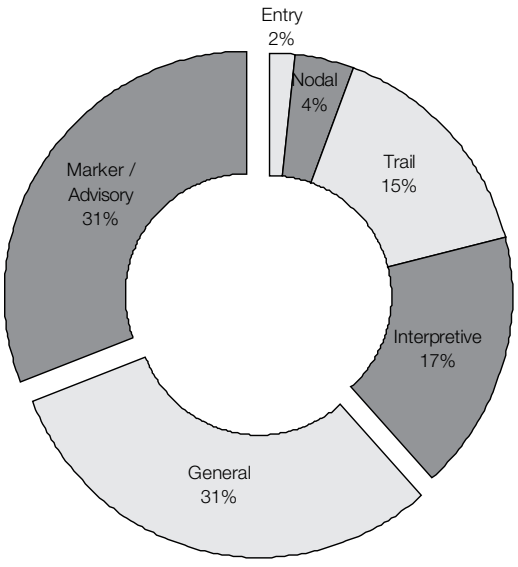
Please note that the number of required signs is a rough estimate only, based on supplied information from the City of Red Deer.
Also note this is an opinion of probable cost only.

table 1: Cost Comparison of Construction Options Summary

		Ductal		Wood-frame	
	Est. No.	unit cost installed	cost	unit cost installed	cost
Entry	15	$9,650	$144,750	$9,125	$136,875
Nodal	40	$5,270	$210,800	$5,800	$232,000
Trail	150	$2,296	$344,400	$2,000	$300,000
Interpretive	170	$1,118	$190,060	$1,200	$204,000
General	300	$200	$60,000	$200	$60,000
Marker / Advisory	300	$400	$120,000	$400	$120,000
	975		$1,070,010		$1,052,875
maintenance**			$41,000		$120,000
subtotal			$1,111,010		$1,172,875
+%20 Contingency			**$1,333,212**		**$1,407,450**

***approximately 1300 - 1600 signs of all types exist in Waskasoo Park currently**
****first 15 years, not including interpretive, general or marker signs**

figure 76. Quantity of Each Sign Type, as a Percentage of Total
- marker and general signs each comprise about one third



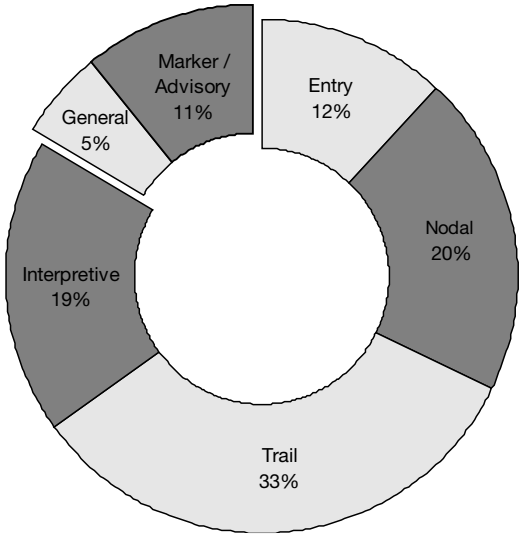


figure 77. Cost of Each Sign Type, as a Percentage of Total Budget
- marker and general signs combined equal less than one fifth of budget

Cost Breakdown by Component

This cost is broken down for a single sign of each type: 1 Entry, 1 Nodal, and 1 Trail Sign. Overall implementation cost is based upon 15 Entry Signs, 40 Nodal Signs and 150 Trail Signs.

Note: marker, interpretive and advisory signs do not have optional materials and construction methods and therefore have been excluded in this comparative section.

table 2: Implementation Cost of Ductal / GFRC Signs

Ductal / GFRC Construction

	Entry Sign	Nodal Sign	Trail Sign
Graphic Panels, Hardware, + Mounting	$1,900	$850	$298
Ductal / GFRC Structure	$5,250	$2,420	$873
Base Hardware, Installation + Mounting	$2,500	$2,000	$1,125
Total Unit Cost	$9,650	$5,270	$2,296
Estimated Quantity	15	40	150
Subtotal	$144,750	$210,800	$344,400
Total			$699,950
+%20 Contingency			**$839,940**

table 3: Implementation cost of Wood-Frame Signs

Wood Frame Construction

	Entry Sign	Nodal Sign	Trail Sign
Graphic Panels, Hardware, + Mounting	$4,500	$2,300	$775
Wood Frame + HDPE Panels	$3,360	$2,353	$450
Base Hardware, Installation + Mounting	$1,265	$1,150	$775
Total Unit Cost	$9,125	$5,803	$2,000
Estimated Quantity	15	40	150
Subtotal	$136,875	$232,120	$300,000
Total			$668,995
+%20 Contingency			**$802,794**

Maintenance Cost Comparison

What follows is a comparison of two maintenance scenarios; the first being the replacement of damaged and obsolete graphic panels, followed by the repair or replacement of the overall signage structure. A weighted average of the replacement or repair costs for each sign type is then generated for each option.

table 4: Repair Costs of GFRC and Wood-frame

Signage Repair Estimates	Graphic Panel Repair*	Structural Repair*
Ductal / GFRC	$599.51	$1,689.02
Wood Frame	$1,192.68	$682.93

*based on a weighted avg assuming equal probability of any sign requiring repair

Life-Cycle Comparison

Life Cycle costing is based on a 15 and 30 year life cycles, with costs based on average repair / replacement value. The 30 year scenario addresses a complete replacement of graphic signage elements.

table 5: 15 Year Scenario Lifecycle Costs

Ductal / GFRC Life-Cycle Estimates	Total Signs:	205
Implementation Cost:		$858,690.00
15% require signage replacement / update	31	$18,584.88
2% require structural replacement	5	$8,445.12
Estimated 15 year cost of Ductal / GFRC Option		$885,720.00

Wood Framed Life-Cycle Estimates	Total Signs:	205
Implementation Cost:		$802,794.00
15% require signage replacement / update	31	$36,973.17
25% require structural replacement	52	$35,512.20
Estimated 15 year cost of Wood Frame Option		$875,279.37

table 6: 30 Year Scenario Lifecycle Costs, Including Full Signage Update

Ductal / GFRC Life-Cycle Estimates	Total Signs:	205
Implementation Cost:		$858,690.00
100% require signage replacement / update	205	$122,900.00
5% require structural replacement	11	$18,579.27
Estimated 30 year cost + Signage Update		$1,000,169.27

Wood Framed Life-Cycle Estimates	Total Signs:	205
Implementation Cost:		$802,794.00
100% require signage replacement / update	205	$244,500.00
50% require structural replacement	103	$70,341.46
Estimated 30 year cost + Signage Update		$1,117,635.46

Note: these figures are opinion of probable cost only

Life Cycle Analysis

Despite the initial cost difference of about 7%, the chart below illustrates that the more durable, easily repairable system makes the Ductal / GFRC more economical in the long-run.

It is also important to compare the environmental sustainability of the two systems - the maintenance intervals are fewer and less intensive; and the required labour, energy, and materials, both consumed and disposed of, are greatly reduced with the lower maintenance Ductal / GFRC option.

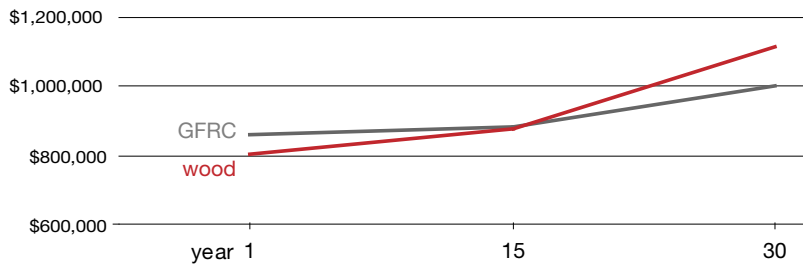


figure 78. Lifecycle Costs of GFRC vs. Wood-frame Construction Methods

Summary

Aesthetically, the Ductal / GFRC is the preferred option: the concrete panel is thinner, more discrete, and well suited to a natural setting. Due to durability, it will also maintain its appearance for a number of years, resisting vandalism and the elements.

From a maintenance perspective, Ductal / GFRC is the preferred option. The structural durability alone is much greater than that of the wood frame option and the comparative ease of replacing or changing a signage panel further improves the ability to maintain the concrete signs. The greater cost of structural replacement must be weighed against both the durability of the concrete structure, and the labour involved in exposing and replacing the wooden frame in repairing a wood frame sign.

Economically, the recommendation is Ductal / GFRC. The higher initial cost is offset by the durability of the structure, with a marked difference in the cost of replacing applied signage - particularly if the entire graphic elements were updated.