City of Hamilton

LIGHT RAIL TRANSIT SUB-COMMITTEE

AGENDA

Meeting #: 25-001
Date: February 20, 2025
Time: 2:30 p.m.
Location: Council Chambers
Hamilton City Hall
71 Main Street West

Carrie McIntosh, Legislative Coordinator (905) 546-2424 ext. 2729

Pages

1. CALL TO ORDER

2. CEREMONIAL ACTIVITIES

3. APPROVAL OF AGENDA

   (Added Items, if applicable, will be noted with *)

4. DECLARATIONS OF INTEREST

5. APPROVAL OF MINUTES OF PREVIOUS MEETING

6. DELEGATIONS

7. ITEMS FOR INFORMATION

   7.1 Hamilton Light Rail Transit (LRT) Project Update (PED25052) (City Wide) — 3

   This item will be preceded by a presentation.

   7.2 Street Design and Furniture Standards for the Hamilton LRT Corridor (PED25051) (City Wide) — 41

   This item will be preceded by a presentation.

8. ITEMS FOR CONSIDERATION

Members of the public can contact the Clerk's Office to acquire the documents considered at this meeting, in an alternate format.

9. MOTIONS

10. NOTICE OF MOTIONS

11. ADJOURNMENT

INFORMATION REPORT

TO:	Chair and Members Light Rail Transit Sub-Committee
COMMITTEE DATE:	February 20, 2025
SUBJECT/REPORT NO:	Hamilton Light Rail Transit (LRT) Project Update (PED25052) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Abdul Shaikh (905) 546-2424 Ext. 6559
SUBMITTED BY: **SIGNATURE:**	Abdul Shaikh Director, Hamilton LRT Project Office Planning and Economic Development Department 

COUNCIL DIRECTION

Not applicable.

INFORMATION

The City, Metrolinx and the Ministry of Transportation ratified the Memorandum of Understanding (MOU) for the Hamilton Light Rail Transit (LRT) Project in September 2021. The general project update was previously provided in the Hamilton Light Rail Transit (LRT) Project Update (PED22117) received by the LRT Sub-Committee on May 16, 2022. Subsequently, the LRT Project Office has provided updates on specific items through various reports and presentations to the LRT Sub-Committee. This report aims to provide a general project update at a high level, covering key project activities that City staff have been engaged in since the execution of the MOU to the present.

Enabling Works

Enabling works are discrete and essential underground projects, on or adjacent to the LRT corridor which are being delivered in advance of major construction to reduce complexities. Projects are funded by Metrolinx and delivered by Metrolinx or the City or respective Third Party Utility on behalf of Metrolinx. These works have been delivered in conjunction with needed capital improvements on City infrastructure to facilitate a more cost-effective delivery for both the City and Metrolinx and reduce construction disruption in the community.

The LRT Project Office has delivered or commenced construction of watermain enabling works for Metrolinx, inclusive of the following coordinated works for Public Works:

- Sherman Avenue
    - Resurfacing, sidewalk repairs and cycling facilities
    - Completed in August 2024
- Wentworth Street
    - Resurfacing and Two-Way Conversion
    - Active construction, planned completion in Q2 2025
- Queenston and Nash
    - Large valve replacements and lowering of 1200mm watermain across Queenston under future guideway (Construction Administration)
    - Construction is on hold, planned completion in Q4 2025
- Main and Rosewood
    - Narrower, safer, greener and more balanced roadway corridor which prioritizes the pedestrian and cyclist experience
    - Construction to commence in Q2 2025, planned completion in Q4 2026
- Main and Ottawa
    - No Coordinated works
    - Construction to commence in Q2 2025, planned completion in Q4 2026

Metrolinx funds all the enabling projects. The City is contributing to the cost of coordinated works, as highlighted above. In addition to the City's initiated enabling projects, Metrolinx is currently working with other Third Party Utilities, such as Alectra, Bell Canada and Enbridge, to complete enabling works before the major construction begins along the LRT corridor. This includes projects by Alectra (Vineland, Maple Ave, Dunsmure and manhole investigations), Bell Canada (Main and Ottawa Streets) and Enbridge (Rosewood and Queenston Road).

Project Design

The LRT design currently available to the public is from the 2017 Environmental Project Report (EPR) addendum. The design evolved in the first iteration of the project and significant modifications were communicated to the Council through various reports.

While the project was paused, the City developed new standards and guidelines such as the Vision Zero Strategy, Complete Street Design Guidelines, Climate Change Action Strategy, City-wide Transportation Master Plan, Main Street Two-Way Conversion and the Truck Route Master Plan.

In November 2023, Metrolinx announced a major design realignment that:

- eliminated the LRT-only bridge across Highway 403;
- shifted the route to run along Dundurn and Main; and
- shifted access to the Operations and Maintenance Storage Facility (OMSF) from Longwood Road to Frid Street.

City staff have been working with Metrolinx to update the 2017 design concept, inclusive of, the above as well as current City approved initiatives and standards. As per the MOU, Metrolinx remains the lead on this task and will remain the ultimate decision-maker on design modifications, including those resulting from the City's new project requirements. City staff have identified design changes/themes under consideration in the following:

- Hamilton Light Rail Transit (LRT) Design Update (PED22118) received by the LRT Sub-Committee on May 16, 2022;
- Hamilton Light Rail Transit (LRT) Design Update (PED22118(a)) received by the LRT Sub-Committee on July 18, 2022; and
- Hamilton Light Rail Transit (LRT) Governance Frameworks and Design Update (PED23139) received by the LRT Sub-Committee on June 2, 2023.

Metrolinx expects to release a document in the coming months which provides for a more current understanding of the design concept for the corridor. The design concept would be considered as a reference design for the project's procurement process and refinements are expected when Metrolinx retains its designers and contractors (Alliance Partner) to deliver the project. The document does not reflect enhancements or additional works that the City may propose funding for inclusion in the project.

Project Procurement

Metrolinx is the project owner and is responsible for project delivery. Metrolinx is implementing a delivery strategy for major construction works for the LRT Project, which consists of two main packages (packaging of elements are subject to change):

Package 1 - Civil Works and Utilities

- Mainly Third-Party assets designed, constructed, commissioned, and handed over to stakeholders; and,
- Private and Public Utilities, Civil Structures (bridges and grade separations), Road and Urban Realm.

Package 2 - Stops, Rail, Systems (SRS)

- Guideway, rail, systems, operations and maintenance storage facility (OMSF), and integration of Light Rail Vehicles (LRVs) delivered for Revenue Service; and,
- Potential to include light rail vehicles and operations and maintenance period.

Metrolinx initiated the Request for Qualification for Package 1 on November 6, 2024 and is recommending an Alliance Contracting delivery (a form of "Collaborative Contracting") that prioritizes high levels of interface with municipalities and third-party utilities making it well-suited for the scope of Package 1.

The Alliance contracting model includes four phases:

- Request for Qualification (RFQ)
- Request for Proposal (RFP)
- Development Phase
- Implementation Phase

The release of the RFQ for the Hamilton LRT Project was an important milestone and the first step of the procurement process, inviting proponents to submit a statement of qualifications for Package 1. The shortlisted qualified proponents will then be invited to submit proposals for the delivery of the project in the RFP process, which is anticipated for Spring 2025. Through the RFP process, one shortlisted preferred partner will enter the Development Phase and be invited to submit the project proposal. Upon acceptance of the project proposal by Metrolinx, the Implementation Phase will be initiated, and major construction will commence. The schedule for the Implementation Phase will be determined through the Development Phase.

A City representative will be part of the evaluation committee with Metrolinx staff for the RFQ and RFP for Package 1 procurement. The contracting model and timing for Package 2 - Stops, Rail, Systems (SRS) are not currently known.

LRT Operations Model

The MOU establishes that the City will be responsible for operations and non-lifecycle maintenance costs of the LRT system. The Province has indicated they are open to input from the City regarding the role the City would like to play in the operations of the LRT system. As the project owner, the final decision will remain with Metrolinx.

In 2023, City staff established a working group to assess the City's role in the operations of the LRT Project. The working group undertook an extensive review, which was supported by the City's internal governance framework established for the LRT Project. This work was completed in the following three stages:

- Stage 1: Present operational models and assessment criteria for how staff will assess models.
- Stage 2: Present preliminary analysis of operational models.
- Stage 3: Present final analysis as well as recommended operational model.

Stage 1 was presented to the LRT Sub-Committee on July 26, 2023, through the Report PED23166, which included the overview of the following four operations models under consideration:

- Model 1: Third party performs all 'Operational Activities'.
- Model 2: City performs 'Passenger Interface Provider Activities'.
- Model 3: City performs 'LRT Vehicle Operations and Passenger Interface Provider Activities'.
  Model 4: City performs all 'Operational Activities'.

Stage 2 was presented to the LRT Sub-Committee on September 25, 2023, through Report PED23166(a), outlining a preliminary assessment of LRT operational models using the selected criteria. This preliminary assessment included ranking and weighting each criterion, namely: Customer Experience (35%), Risk and Liabilities (30%), Cost to the City (25%), and Interface between Parties (10%).

Stage 3 was presented to the LRT Sub-Committee on January 29, 2024, through the Report PED23166(b), providing assessment results and a recommendation for the City's preferred operational model. A decision was deferred to the General Issue Committee (GIC). At the April 17, 2024 GIC meeting, members received the staff recommendation and approved the following:

> (a) That the City endorse Operations Model 2 (Municipality performs passenger interface activities) to be selected as the City's preferred LRT operations model;
>
> (b) That within the first 5 years, staff begin the process of preparing the City to transition to Operations Model 4, where the Municipality assumes all aspects of operational activities from the third party at the 10-year mark; and
>
> (c) That staff seek approval from Council, at the appropriate time, to enter negotiations with Metrolinx and the Province of Ontario, to transition fully the operations of LRT to the City of Hamilton.

The above recommendation has been sent to Metrolinx for their consideration. The City is currently waiting for Metrolinx's final decision. Regarding the City's role in maintenance, staff is seeking clarity from Metrolinx on which tasks they would be open for the City to take on. Upon receiving that feedback, staff will complete the assessment and make a recommendation to Council.

City Standards and Guidelines

Per Article 8 of the MOU, Metrolinx is responsible for ensuring that New City Infrastructure will be:

- Built to the standards and guidelines for the design, construction, rehabilitation and protection of such New City Infrastructure in force in Hamilton on the date which is three months prior to the request for proposal issuance date and which are available upon request to engineers and architects licensed in Ontario;
- Built to replace existing City infrastructure and assets on a "like for like" basis with respect to function, size, capacity and location, unless otherwise provided in the Benchmark PSOS for a particular asset; and
- Built in compliance with the City's laws and those federal and provincial laws applicable to and enforceable against the City.

With regards to the City's standards and guidelines, the cutoff date set out in section 8.1(ii) of the MOU is noteworthy (emphasis added):

"[New City Infrastructure will be] ... built to the standards and guidelines for the design, construction, rehabilitation and protection, as the case may be, of such New City Infrastructure ***in force in Hamilton on the date which is three months prior to the request for proposal issuance date*** *and which are available upon request to engineers and architects licensed to practice in the Province of Ontario (the Basic Standard)."*

Metrolinx is currently in the Request for Qualification process and the expectation is that this process will align with the Request for Proposal, which is anticipated to be issued in Spring 2025.

Starting in 2022, City standards, criteria and guidelines were compiled by the LRT Project Office, staff dedicated to project and members of the City Extended Resource Team staff who support the project. Staff have taken the opportunity to streamline, address gaps, supplement and expedite revisions such that a robust library of over 80 standards, criteria and guidelines will be made in advance of the three month submission requirement prior to RFP. The City is coordinating these timelines with Metrolinx.

Property Acquisitions

The existing municipal right-of-way is insufficient for the construction of all utility relocations, public realm components, LRT stops, track and other construction requirements. As owner of the project, Metrolinx's real estate and legal teams are responsible for the acquisition of the requisite lands. Metrolinx continues to negotiate

with property owners on a “willing seller/willing buyer” basis and relies on the expropriation process as a backstop option due to time sensitivities.

The project requires approximately 102 full property and 240 partial property purchases. To date, 79 of 102 full properties have been acquired for the project and acquisition activities remain ongoing for both partial and full property needs. All properties to date have been purchased on a willing seller/willing buyer basis. Of the 79 full properties acquired to date, 49 demolitions have been completed on the LRT corridor with additional demolitions planned for 2025.

The expropriation process began in February 2024. Metrolinx is in the process of registering the plan of Expropriation for 15 more full buyouts. Registration of the Expropriation Plans is intended to be complete by February 2025.

The City has negotiated increased property takes with Metrolinx which support the wider pedestrian zones identified in the Complete Street guidelines as part of 122 partial property takes currently in the acquisition process.

In addition to private lands, the City and Metrolinx are currently negotiating the transfer and compensation for some lands from 14 adjacent municipal properties such as parking lots and parks to the municipal right-of-way.

Community Engagement and Communications

The LRT Project Office presented Hamilton Light Rail Transit Project Communications and Engagement Update (PED24150) to the LRT Sub-Committee on September 20, 2024. Report PED24150 identified the roles and responsibilities between the City and Metrolinx as per the established Communication Protocol. The following are the types of engagement activities that the City and Metrolinx continue to utilize for the project.

- Elected official briefings;
- Townhalls and open houses (virtual and in-person);
- BIA walking tours;
- Local partnerships;
- Printed materials, mailers, construction/demolition notices;
- Stakeholder meetings (e.g., BIAs, Hamilton Community Benefit Network (HCBN), Hamilton Chamber of Commerce, etc.);
- Metrolinx ‘Transit in Your Community’ school presentations;
- Community events and pop ups;
    - Festivals (e.g., Open Streets, Supercrawl);
    - Library pop-ups;
    - Park pop-ups; and,
    - Bike Day and City of Hamilton cycling events (year-round);

- Metrolinx LRT Community Office;
- Social media and email newsletter; and
- Corridor/neighbourhood canvasses.

Metrolinx and City LRT communications and engagement teams meet regularly to discuss the above engagement and pop-up opportunities. Report PED24150 also provided the yearly engagement activities. For example, in 2023-2024, Metrolinx held 44 “Transit in Your Community” sessions and 50 events comprising of LRT pop-ups, events, and festivals.

Metrolinx has also opened a Community Office in June 2024, at the Royal Connaught building, located at 116 King Street East. The Community Office is another way to engage the community in addition to events and canvasses, and is being used for hosting pop-ups, small events, and stakeholder meetings as the project progresses.

Affordable Housing and Community Benefits

The MOU acknowledges the critical importance of affordable housing and community benefits per the following:

The Province continues to recognize the critical importance of building affordable housing near transit stations and maximizing high quality jobs and benefits for communities adjacent to or affected by the Project.

The Province has indicated that they will be initiating working group meetings to begin exploring approaches for meeting the above objective. Despite repeated attempts by City staff to expedite the scheduling of the meetings, none have been scheduled to date.

In addition, at its meeting of April 6, 2022, Council directed through a motion, as follows:

That staff, in collaboration with the federal and provincial Governments and Metrolinx, be directed to establish a strategic land disposition and or acquisition plan along the Hamilton LRT corridor for the purpose of planning to deliver future municipal services including, but not limited to, parks, as well as non-profit affordable housing and report back to the General Issues Committee.

Staff have compiled preliminary options for strategic land acquisition on the LRT corridor for municipal uses, including affordable housing and community services and amenities.

On May 22, 2024, the Mayor sent correspondence requesting the establishment of the working group to the Minister of Housing, Infrastructure and Communities Infrastructure

Canada and the Minister of Transportation, Ontario. City staff will continue to follow up with the parties until such time that meetings have been scheduled.

Agreements

The MOU mentions of the following series of agreements and protocols that are to be incorporated into the MOU as “schedules”.

Schedule A Train Operator Services Agreement
Schedule B Municipal Funding Agreement (also known as Payment for Services Agreement)
Schedule C Commissioning and Acceptance Protocol
Schedule D Fare and Non-Fare Revenue Matters
Schedule E Staffing Agreement
Schedule F Municipal Infrastructure Agreement
Schedule G Real Estate Protocol
Schedule H Permits, Licenses and Approvals
Schedule I Communications Protocol
Schedule J Dispute Resolution Protocol
Schedule K Governance Protocol

In addition, the City and Metrolinx have worked on the Preparatory Activities Agreement for the City to lead on enabling projects. A brief overview of each agreement is provided in Appendix A: Agreements Update.

LRT Enhancements

The MOU requires Metrolinx to replace City infrastructure impacted by the LRT Project on a “like for like” basis unless Metrolinx has previously agreed otherwise or as required by the City’s standards and guidelines. The MOU allows the City to request enhancement of City infrastructure as part of LRT construction, provided that the City is funding the incremental cost beyond Metrolinx’s obligations per the MOU. Staff is currently working with Metrolinx and is in the process of identifying the list of potential enhancements.

The City has proactively included the following two budget items in the 2023 Tax and Rate supported Capital Budget, which are anticipated to be used for the City’s enhancements items as part of the LRT Project.

Public Realm Improvements – LRT (Surface Enhancements)

This budget was sourced from Development Charges (50%) and Tax Supported Capital Budget (50%) and was established to fund the incremental costs of delivering additional municipal surface works and/or enhancements in the LRT corridor which are in addition

to the base scope agreed upon by both parties. The inclusion of speciality surface treatments would be a representative example.

Budget allocations for the Public Realm Improvements are as follows:

2023	2024	2025	2026	Total
$0	$3,330,000	$3,330,000	$3,330,000	$9,990,000

City Initiated Subsurface Priorities Coordinated or Integrated with LRT

This budget was sourced from Development Charges (50%) and Rate Supported Capital Budget (50%) and was established to fund the incremental costs of delivering additional municipal subsurface works and/or enhancements in the LRT corridor which are in addition to the base scope agreed upon by both parties. The inclusion of subsurface works adjacent to the corridor would be a representative example.

Budget allocations for the City Initiated Subsurface Priorities are as follows:

2023	2024	2025	2026	Total
$1,020,000	$3,010,000	$3,010,000	$3,010,000	$10,050,000

It is expected that once the design has evolved further, that a list of potential enhancements, prioritized based on an assessment criterion, will be identified by staff for Council's consideration. Upon confirmation by Council, the City would then enter into an agreement with Metrolinx to commit the funds to the LRT Project budget. Staff will submit an Information Report providing greater detail on the process and proposed criterion and seek Council direction in Q2 2025.

Streamlining City Processes

The Alliance delivery model chosen by Metrolinx for the LRT Project, coupled with the size and complexity of the corridor, has created unique challenges for staff in their roles as Project Partner, Owner, Operator of the right-of-way and Permitting Authority.

To ensure an efficient project delivery, while continuing to protect City interests, dedicated City LRT staff have consulted with other staff to identify opportunities to streamline, adapt, revise or create efficiencies in existing processes. Staff have also reviewed LRT projects in the GTA to leverage the knowledge and experience of municipal staff in those areas.

Permit Process

The LRT Project Office, in consultation with the City's Corridor Management group are establishing a responsive permitting process, inclusive of a unique dashboard which

facilitates an efficient workflow and provides status updates for the permitting associated with major construction in the LRT Project. The process is administered by the LRT Project Office and is currently being applied to smaller works in the corridor in order to identify possible improvements or refinements prior to full implementation. The permit process will be applied to works delivered by Metrolinx, their Alliance Partner and Third Party Utilities.

Furthermore, the LRT Project Office has been supporting, by means of conducting trainings and workshops for those City staff who are required to navigate Metrolinx' permitting requirements, either obtaining a Metrolinx Corridor Development Permit (CDP) for City works or processing external permit inquiries which would have interactions with Metrolinx permits.

Submittal Process

Prior to permitting, the City will be receiving submissions from Metrolinx's Alliance Partner and Third Party Utilities at multiple design milestones for review, comment, and approvals as appropriate.

Since LRT works touch upon multiple service areas in the City, a City Extended Resources Team (CERT), comprised of over 60 staff, was formed to help support and provide supplemental subject matter expertise to dedicated City LRT staff upon request.

To facilitate an efficient and coordinated review and approval process, the LRT Project Office and City IT staff developed a special module (LRT Comments Management Application) that will assist in data sharing and the consolidation of comments and approvals.

The module is being applied to smaller works in the corridor in order to identify possible improvements or refinements prior to full implementation.

Construction Closure Process

Construction of the project will precipitate full and partial closures of sidewalks, cycling facilities and vehicular lanes of various durations. This will impact local businesses, residents, pedestrians, transit users, cyclists, drivers and goods movement through and crossing the corridor.

The process identifies the roles and responsibilities of Metrolinx, their Alliance Partner and City staff and details the requisite timeframes. Communication touch points, consultation with Emergency Services, coordination with HSR and City Capital projects is identified. As part of the project delivery, the Alliance Partner is required to develop

and maintain a webpage which identifies active construction, closures and detours. The specifics of the webpage will be determined prior to major construction.

LRT Streetscape Design Coordination Strategy (for Private Development)

Staff have been coordinating the development applications adjacent to the LRT corridor with Metrolinx and its designers and contractors. Staff is currently working on developing this process which aims to develop an LRT Streetscape design strategy that will apply to development proposals for sites adjacent to the LRT Corridor and provide direction to developers and staff on establishing a compatible streetscape interface between the new development and the adjacent ROW. This process will guide developers in building an interim streetscape for development frontage adjacent to the LRT corridor while protecting the ultimate streetscape interests that will be built as part of the LRT Project. Upon finalization of this process and receiving appropriate internal approvals, the process will become a requirement for all development applications adjacent to the LRT corridor.

Council Direction

Staff have sought Council direction for various aspects of the LRT Project, involving LRT Governance Framework, affordable housing, community benefits, small business support, social procurements, climate justice lens, and the Major Transit Station Area. More specifically:

Change Tracking Framework

The LRT Sub-Committee directed staff at the September 20, 2024 LRT Sub-Committee meeting to develop the terms of reference, presented in report PED24207 at the LRT Sub-Committee on November 15, 2024, and are currently advancing a framework with indicators that will be used to track changes through the entire pre-construction, construction and post-construction/operations stages of LRT. The framework will assist with tracking changes in economic, environmental, and social conditions in the LRT corridor which will ultimately serve a number of important purposes including but not limited to allowing City service areas to ensure that the benefits of LRT for Hamilton are maximized and that staff, Metrolinx, residents and other stakeholders can be kept informed of changes.

Climate Justice Lens

In December 2023, the LRT Sub-Committee directed staff to review the information presented by CityLab Semester in Residence students regarding ‘Applying a Climate Justice Lens to the Light Rail Transit.’ and directed staff to report back respecting what recommendations the City is acting on and if there are additional recommendations for the LRT Sub-Committee to consider. At the May 23, 2024 LRT Sub-Committee, a

recommendation was approved directing ‘That staff report back the process to enable recruitment of additional non-voting community advisors to the Light Rail Transit Sub-Committee table to ensure that the Sub-Committee’s composition reflects the community from a climate justice point of view.’ Staff have been working on this recommendation, and the first report (PED24087(a)) was presented to the LRT Sub-Committee on November 15, 2024. Staff were subsequently directed to explore various governance models for including additional community voices and will bring a follow-up report to the LRT Sub-Committee in April 2025.

Major Transit Station Areas

The Provincial Planning Statement (2024) has established minimum density targets for Major Transit Station Areas (MTSAs). In June 2022, Council approved a Municipal Comprehensive Review (MCR) for the City, which, among other changes, added a new policy framework for Major Transit Station Areas (MTSAs) to the Urban Hamilton Official Plan. The City is currently planning for MTSAs in the lower City, including 17 LRT stops and 3 GO rail stations. The first report (PED23105) ‘Draft Major Transit Station Areas’ was presented to the Planning Committee on September 19, 2023. Staff is working to finalize the MTSA Report and Official Plan Amendment and aiming to present to the Planning Committee later in 2025. The Ministry of Municipal Affairs and Housing is the final approval authority of the MTSA Official Plan Amendment.

Small Business Grant and Support Programs

At the May 23, 2024 LRT Sub-Committee, Council directed staff to research and explore potential small business grant and support programs in consultation with key stakeholders and to perform this scan on an annual basis. Staff presented the findings at the November 15, 2024 LRT Sub-Committee in a report, 'Information on Potential Grant and Support programs related to Light Rail Transit Construction (PED24182)'. Staff will repeat this scan again in Q4 2025 and will report if there are any changes to the report presented at the November LRT Sub-Committee.

At the October 26, 2023 Open for Business Sub-Committee, Council directed staff to report back on the plan for working with the small business community along the LRT corridor and terminal points leading up to and during the construction. Staff responded to this at the April 8 2024 Open for Business Sub-Committee through report Light Rail Transit Corridor Business Update (PED24074).

Next Steps (12 Month Look Ahead)

Over the next 12 months, staff will engage in the following activities:

- Lead the design and construction of City works;
- Develop schedules, protocols and agreements of the MOU;

- Investigate enhancements and additional City works for inclusion in LRT Project;
- Review, approve, coordinate and issue permits for Third Party Utility works in the corridor;
- Work with the Province on affordable housing and community benefits programs;
- Address Council and Committee directions; and
- Support Metrolinx in:
    - advancing the surface and subsurface LRT designs
    - evaluating the procurement candidates
    - property acquisition process
    - community and stakeholder engagement.

APPENDICES AND SCHEDULES ATTACHED

Appendix “A” to Report PED25052 – Agreements Update

Agreements Update

Staffing Agreement

The Staffing Agreement creates temporary and permanent full-time equivalents (FTEs) for the City to work on the LRT Project, provided there is no levy impact. The Staffing Agreement has been executed by the City Manager pursuant to the delegated authority provided in Report PED21176.

Communications Protocol

The Communications Protocol sets out the roles of the Ministry of Transportation, Metrolinx, and the City for all communications related to the LRT Project. The Communications Protocol for the pre-procurement phase has been executed by the City Manager pursuant to the delegated authority provided in Report PED21176(a).
An update to this protocol for the procurement and construction phases has been recently finalized between the City and Metrolinx. Staff is aiming to bring this updated Communication Protocol for Council's approval in Q1 2025.

Governance Protocol

The main purpose of the Governance Framework is to identify, escalate and resolve intergovernmental delivery issues affecting delivery of the project. The Governance Protocol has been finalized, and the Council has provided delegated authority to the City Manager to execute pursuant to Report PED21176(a). Staff is aiming to execute this protocol in Q1 2025.

Real Estate Protocol

The Real Estate Protocol addresses the transfer of lands from the City to Metrolinx, (to build the LRT) and from Metrolinx to the City (for example, for transfer of future road allowances). Council has provided delegated authority to the City Manager to negotiate and execute the Real Estate Protocol pursuant to Report PED21176(a). As of the date of writing this report, the City and Metrolinx are working toward finalizing the Real Estate Protocol, with anticipated execution in Q2 2025.

Dispute Resolution Protocol

The Dispute Resolution Protocol sets out a process to expedite resolution of disputes with a view to ensuring construction delays are reduced or eliminated. This protocol has been recently finalized between the City and Metrolinx. Staff is aiming to seek Council approval of this protocol in Q1 2025.

Municipal Funding Agreement

The Municipal Funding Agreement (also known as Payment for Services Agreement) sets out the terms which will govern the payments by the City for operation, and non-lifecycle maintenance costs related to the LRT Project. Over the past year, Metrolinx and the City have been working on a Term Sheet which is currently going through an internal approval process. Upon receiving internal approval, staff will seek Council approval of the Term Sheet.

Permits, Licenses and Approvals Protocol

The Permits, Licenses, and Approvals Protocol sets out the provisions applicable to the City’s engagement in design, processing the City’s permits, licences, and approvals pertaining to the LRT Project and the City’s role as regulatory and planning authority related thereto. City staff have supplied Metrolinx with current city-wide requirements on permits, licenses, and approvals. Metrolinx and City staff have recently started working to develop this protocol. When both parties have agreed to the terms of this protocol, staff will seek Council approval for execution.

Commissioning and Acceptance Protocol

The Commissioning and Acceptance Protocol sets out the requirements for commissioning and acceptance of infrastructure owned by the City and the step-by-step process pertaining to such commissioning and acceptance. Metrolinx and City staff have recently started working to develop this protocol. When both parties have agreed to the terms of this protocol, staff will seek Council approval for execution.

Fare and Non-Fare Revenue Matters Protocol

The Fare and Non-Fare Revenue Matters Protocol sets out the fare and certain non-fare revenue to which the City is entitled, in consideration of the City’s obligations for the payment of operations and non-lifecycle maintenance for LRT. City staff is currently awaiting the first draft of this protocol from Metrolinx. When both parties have finalized this protocol, staff will seek Council approval for execution.

Municipal Infrastructure Agreement

The Municipal Infrastructure Agreement sets out the terms applicable to “additional City infrastructure” the City may request Metrolinx build as part of the LRT Project (at the City’s sole expense). This agreement will be developed based on Metrolinx's standard process, the Third Party Scope Request (TPSR) process, which is being applied to all Metrolinx projects. City staff is currently awaiting the first draft of this agreement from Metrolinx. When both parties have finalized this agreement, staff will seek Council approval for execution.

Train Operator Services Agreement

The Train Operator Services Agreement will outline details pertinent between the City and Metrolinx, subject to the agreement between Metrolinx and the LRT operator when selected. Work on this agreement will begin once the LRT's operator has been confirmed.

Preparatory Activities Agreement (Outside of MOU)

In addition to the agreements and protocols contemplated in the MOU, Council authorized and directed the Mayor and City Manager to execute a Preparatory Activities Agreement (PAA) pursuant to Report Preparatory Activities Agreement - Hamilton Light Rail Transit (LRT) (PED23050), received by Council on March 22, 2023. The PAA has been executed and outlines the process that obliges the City to deliver certain municipal infrastructure works required before major LRT construction can begin and obliges Metrolinx to fund the required City staffing costs and the actual construction costs for such preliminary infrastructure works. A work authorization form is required prior to commencement of each enabling work project.

Hamilton

Hamilton Light Rail Transit Project

Project Update
LRT Sub-Committee
February 20, 2025

Agenda

- Enabling Works
- Project Design
- Project Procurement
- LRT Operations Model
- City Standards and Guidelines
- Property Acquisitions and Demolitions
- Community Engagement and Communications
- Affordable Housing and Community Benefits
- Agreements
- LRT Enhancements
- Streamlining City Processes
- Council Directions
- Next Steps

Enabling Works

Metrolinx is working with the City and Third Party Utilities to deliver enabling works

City Works

- Sherman Avenue (completed)
- Wentworth Street (active construction)
- Queenston and Nash (construction on hold)
- Main and Rosewood (tender award stage)
- Main and Ottawa (design stage)

Third Party Utility

- Alectra (Vineland, Maple Ave, Dunsmure and manhole investigations)
- Bell Canada (Main and Ottawa Streets)
- Enbridge (Rosewood and Queenston Road)

Project Design

- Design concept available on the public website is from the 2017 Environmental Project Report addendum
- Some design modifications have already been confirmed and communicated to Council through various reports
- Since 2017, the City has adopted new standards and guidelines that necessitate revisiting the design
- City and Metrolinx are working together to update the design concept
- Metrolinx intends to publish an updated public-facing conceptual reference design in Spring 2025
- Design will continue to evolve during the detailed design phase

Conceptual Rendering

Project Procurement

Advance Enabling Works: Early strategic relocation of some select private and public utilities

Package 1 - Civil Works and Utilities

- Mainly Third Party assets designed, constructed, commissioned, and handed over to stakeholders; and,
- Private and Public Utilities, Civil Structures (bridges and grade separations), Road and Urban Realm.

Package 2 - Stops, Rail, Systems (SRS)

- Guideway, rail, systems, operations and maintenance storage facility (OMSF), and integration of Light Rail Vehicles (LRVs) delivered for Revenue Service; and,
- Potential to include light rail vehicles and operations and maintenance period.

Project Procurement

- Metrolinx initiated the Request for Qualification (RFQ) for Package 1 on November 6, 2024 and is recommending an Alliance Contracting delivery (a form of “Collaborative Contracting”)
- Alliance Contracting delivery includes four phases:
  - Request for Qualification (RFQ)
  - Request for Proposal (RFP)
  - Development Phase
  - Implementation Phase
- Metrolinx anticipates issuing the RFP in Spring 2025
- One shortlisted partner will enter the Development Phase
- Timelines for the Development Phase and Implementation Phase are not known at this time

Project Operations Model (continued)

- In 2023, staff was tasked to assess the City's roles in the operations of the LRT system
- Staff completed this assessment in three stages:
  - Stage 1: Operational models and assessment criteria for how staff will assess models
  - Stage 2: Preliminary analysis of operational models
  - Stage 3: Final analysis as well as recommended operational model
- Council recommendations on the preferred operations model were received at the April 17, 2024 GIC meeting
- City is currently waiting for Metrolinx's final decision

City Standards and Guidelines

- Pursuant to the MOU, Metrolinx shall construct City infrastructure that is:
  - Built to the standards and guidelines for the design, construction, rehabilitation and protection of such City infrastructure in force in Hamilton on the date which is three months prior to the request for proposal issuance date;
  - Built to replace existing City infrastructure and assets on a "like for like" basis (unless otherwise provided in the Benchmark PSOS);
  - Built in compliance with the City's laws and those federal and provincial laws applicable to and enforceable against the City.
- Staff have taken the opportunity to streamline, address gaps, supplement and expedite revisions
- Robust library of over 80 standards, criteria and guidelines have been submitted in advance of the three month submission requirement prior to RFP

Conceptual Rendering

Property Acquisitions and Demolitions

- Metrolinx is leading property acquisition and negotiations
- Approximately 102 full properties and 240 partial property purchases are required
- To date, 79 full properties have been acquired, and property acquisitions are ongoing for both partial and full properties
- Expropriation process has been initiated including 15 more full buyouts
- City has negotiated wider pedestrian zones for 122 properties
- City and Metrolinx are currently negotiating the transfer of portions of 14 adjacent municipal properties into road right-of-way

Community Engagement and Communications

- For project-specific communications, Metrolinx has overall lead and responsibility, including major announcements
- Metrolinx community office opened in June 2024
- City and Metrolinx community engagement staff work collaboratively to resolve and respond to resident and media inquiries
- City and Metrolinx community engagement staff continue to meet with stakeholders and community organizations
- City and Metrolinx community engagement staff hold regular team meetings to discuss engagement opportunities, communications
- Metrolinx will develop a comprehensive strategy to support local businesses as the project evolves

Affordable Housing and Community Benefits

- Metrolinx and MTO acknowledge the importance of affordable housing and community benefits in MOU

- City staff in the Corporate Real Estate Office have compiled preliminary options for strategic land acquisition on the LRT corridor for municipal uses, including affordable housing and community services and amenities

- Province will be initiating working group meetings to begin exploring approaches for meeting the above objective

- City staff has been following up with the Province to initiate working group meetings

Agreements

- Memorandum of Understanding (MOU) ratified in September 2021
- Council has provided authority or delegated authority to the City Manager to execute the following:
  - Staffing Agreement (fully executed)
  - Communications Protocol for Pre-Procurement Phase (fully executed)
  - Preparatory Activities Agreement (fully executed)
  - Real Estate Protocol
  - Governance Protocol
- Other schedules that are in active negotiations or outstanding:
  - Dispute Resolution Protocol
  - Payment for Services Agreement
  - Commissioning and Acceptance Protocol
  - Municipal Infrastructure Agreement
  - Permits, Licenses and Approvals
  - Train Operator Services Agreement
  - Fare and Non-Fare Revenue Matters

Conceptual Rendering

LRT Enhancements

- MOU allows for the City to request enhancements to City infrastructure as part of LRT construction
- City will be responsible for funding incremental costs for all enhancement items
- City has allocated two budget items for potential enhancements in the 2023 Tax and Rate Supported Capital Budget ($10M for Public Realm Improvements and $10M for Underground Infrastructure Improvements)
- Staff will bring the list of potential enhancement items for Council approvals following further design advancement

Streamlining City Processes

- Largest linear infrastructure project and first-ever LRT project in the City, coupled with a unique delivery model, created challenges for staff in their roles as Project Partner, Owner, Operator of the right-of-way and Permitting Authority
- Staff reviewed other similar projects to leverage the knowledge and experience of municipal staff in those areas
- Staff have identified opportunities to streamline, adapt, revise or create efficiencies in existing processes, such as:
  - Permit Process
  - Submittal Process
  - Construction Closure Process
  - LRT Streetscape Design Coordination Strategy

Council Directions

Staff has sought Council direction for various aspects of the LRT Project:

- LRT Governance Framework (PED23139)
- LRT Strategic Site Selection (PED23142(a))
- Community Benefits (PED23262)
- Small Business Grant and Support Program (PED24074 and PED24182)
- Climate Justice Lens (PED24087 and PED24087(a))
- Change Tracking Framework (PED24207)
- Major Transit Station Area (PED23105)
- Social Procurements (In Progress)

Next Steps (12 Month Look Ahead)

- Lead the design and construction of City works
- Develop schedules, protocols and agreements of the MOU
- Investigate enhancements and additional City works for inclusion in LRT Project
- Review, approve, coordinate and issue permits for Third Party Utility works in the corridor
- Work with the Province on affordable housing and community benefits programs
- Address Council and Committee directions
- Continue to support Metrolinx in:
  - advancing the designs
  - procurement evolutions
  - property acquisitions
  - community and stakeholder engagement

Conceptual Rendering

Hamilton

QUESTIONS?

INFORMATION REPORT

TO:	Chair and Members Light Rail Transit Sub-Committee
COMMITTEE DATE:	February 20, 2025
SUBJECT/REPORT NO:	Street Design and Furniture Standards for the Hamilton LRT Corridor (PED25051) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Ana Cruceru (905) 546-2424 Ext. 5707
SUBMITTED BY: **SIGNATURE:**	Anita Fabac Acting Director of Planning and Chief Planner Planning and Economic Development Department 
SUBMITTED BY: **SIGNATURE:**	Abdul Shaikh Director, Hamilton LRT Project Office Planning and Economic Development Department 

COUNCIL DIRECTION

Not applicable.

INFORMATION

The “Street Design and Furniture Standards for the Hamilton LRT Corridor”, attached as Appendix “A” to Report PED25051, provides a set of design objectives and street furniture choices, to guide streetscape and public realm development along the future LRT Corridor. The document is an independent chapter and update to the existing “City of Hamilton Co-ordinated Street Furniture Guidelines” (August 2015), building on best practices and principles highlighted in this report. Along with the guidelines, the standards support the implementation of the “Complete Streets Design Manual” (July

2022) and address a recommendation from Council, associated with the Council approved Complete Streets Design Manual (PED21020(a)/PW21002(a)) (City Wide) staff report, which directs staff to update roadway design manuals and guidelines to reflect the manual. All the affected City asset owners have endorsed the "Street Design and Furniture Standards for the Hamilton LRT Corridor". These standards will be an important tool in working with Metrolinx to develop quality public spaces along the LRT corridor.

Standards Summary

The intent of the "Street Design and Furniture Standards for the Hamilton LRT Corridor" is to identify preferred design solutions for streetscaping and public realm development within the future LRT Corridor, to establish it as a consistent and identifiable streetscape in Hamilton, focusing on harmonization of design, scale, materials, and context. It also provides reference to established City policies, guidelines, and standards (such as the "Hamilton Complete Streets Design Guidelines" (June 2022); the "City of Hamilton Co-Ordinated Street Furniture Guidelines" (August 2015); "Forestry and Horticulture - Design and Preservation Manual for Assets on Public Property" (December 2024); "City of Hamilton Barrier-Free Design Guidelines" (2006); Urban Braille design standards; etc.) which relate to streetscaping.

Currently, the City relies on a limited range of bench and waste receptacle models, with a traditional, Victorian character. The new standards propose a simpler, more streamlined and practical style, sympathetic to the City's historic character in terms of colour and general outline, while compatible with the evolving architectural context along the Corridor. They establish general objectives, principles of selection, design theme and character, and include a catalogue identifying models of benches, bollards, waste containers, bicycle parking, tree grates and guards, planters, poles, luminaires, and pole arms.

The document provides design direction for pavement and landscaping, as well. Pavement design guidelines are largely based on "The Gore Standard: Hardscape Design" (2019) and the City's Urban Braille requirements, to achieve quality surface treatment and enhanced accessibility. Landscaping guidelines take note of new and existing Forestry and Horticulture technical requirements and identify opportunities and preferred practices for integrating street trees and other green features in the streetscape.

Another aspect addressed in the document is street furniture placement; it outlines the preferred frequency, conditions, and combination of elements, to support pedestrian comfort and encourage public transit use. Also included are general design guidelines for public realm development in special areas, such as the International Village area,

the Jackson Square frontage, and other potential sites where the project may be able to accommodate wider streetscapes or parkettes.

The street furniture catalogue provides a selection of elements and vendors, reflecting base design objectives and principles and illustrating the desired character and stylistic theme. The selection may be revisited, should special circumstances (such as sourcing issues, context-specific conditions requiring different installation or finish solutions, or other factors aiming to optimize access and maintenance) demand alternative options, similar models or alternative specifications. Alternative choices in specifications or models shall address the objectives, principles, and design theme mentioned in the document and will be reviewed and approved by the Director of Heritage and Urban Design.

The catalogue does not include or support solutions for street furniture with embedded advertising elements along the corridor (largely defined to occupy 50 metres north and south of the right of way), in order to establish a streamlined and quality streetscape aesthetic and to avoid visual clutter. This approach will impact the City's advertising street furniture program and its implementation area. Where proximity to the LRT corridor is preferred, these features may be placed in the future on side streets, to support the re-organization of the local bus network and pedestrian flows. Space availability within the corridor for advertising street furniture placement may be reconsidered in the future.

Policy Implementation

The "Street Design and Furniture Standards for the Hamilton LRT Corridor" build on best practices and principles highlighted in the Council approved "City of Hamilton Co-ordinated Street Furniture Guidelines" (August 2015) and respond to Section 2.5.3 in this document, which acknowledges the importance of improving the image of transit and the experience of transit passengers along higher order corridors, through unique and consistent street furniture selection. The standards, along with these guidelines, support the implementation of the Council approved "Complete Streets Design Guidelines Manual" (July 2022) and address a recommendation from Council, associated with Council approved staff report Complete Streets Design Manual (PED21020(a)/PW21002(a)) (City Wide), directing staff to update roadway design manuals and guidelines to reflect the manual.

Council Recommendation wording for the Complete Streets Design Manual (PED21020(a)/PW21002(a)) (City Wide) staff report states: "(…)(a) That the Complete Streets Design Manual attached as Appendix "A" to Report PED21020(a)/PW21002(a) be approved as the basis for planning and designing City streets; (b) That staff be directed to update roadway design manuals and guidelines to reflect Complete Streets Design Manual, including, but not limited to, the Construction and Materials

Specifications Manual, Traffic Signal and Pavement Marking Designs Drawings, and other documents identified by staff; (…)".

Consultation

The development of these standards was led by staff in the Light Rail Transit (LRT) Office in consultation with a technical team including representatives from:

- Planning and Economic Development: Heritage and Urban Design, Placemaking Public Art and Projects, Integrated Active Transportation, Transportation Planning and Parking; and,
- Public Works: Transportation, Waste Collections, Transportation Operations, Forestry and Horticulture, Landscape Architectural Services, and Parks and Cemeteries.

The technical team was circulated for review and met on two occasions through 2024. Separate meetings were also held with individual groups throughout this period. Feedback received from circulations and meetings are reflected in the final document.

This document has received endorsement from all of the affected asset owners.

Financial Considerations

The Memorandum of Understanding (MOU) for the Hamilton Light Rail Transit (LRT) ratified in September 2021 includes a condition requiring Metrolinx to build City infrastructure in accordance with the City's standards and guidelines in force three months prior to request for proposal issuance. The LRT Project Office will negotiate the capital cost with Metrolinx through the implementation of the LRT project. If negotiations result in any capital cost contribution from the City, staff will bring information to Council for approval. It should be noted that the City has already allocated an enhancement budget for the LRT project.

Any incremental maintenance costs associated with these standards in post-LRT conditions compared to the existing pre-LRT context will be subject to Council approval through the City's budget process at a later time closer to project substantial completion. It is anticipated that the maintenance costs will be bundled with other City financial obligations for the overall operations and maintenance of the LRT system.

Inclusion, Diversity, Equity & Accessibility (IDEA)

Stated principles in the document and the proposed selection of street furniture prioritize inclusionary and equitable design, to accommodate people with mobility needs or visual impairment and to support safe access and usage across all ages. Bollards will help

delineate safe pedestrian-only areas; pedestrian-oriented light elements will promote safe use of streets at night; and benches of different types will offer seating options for a variety of contexts, to users of different abilities. The standards also include recommendations for maximum spacing, preferred locations, and appropriate microclimatic conditions for bench placement, to address the needs of an aging population.

APPENDICES AND SCHEDULES ATTACHED

Appendix “A” to Report PED25051 – Street Design and Furniture Standards for The Hamilton LRT Corridor
Appendix “B” to Report PED25051 – Street Design and Furniture Standards for The Hamilton LRT Corridor - Appendices

STREET DESIGN & FURNITURE STANDARDS

FOR THE HAMILTON LRT CORRIDOR

January 3, 2025

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1 Policy implementation and financial considerations

1.1 Policy implementation

The **Street Design and Furniture Standards for the Hamilton LRT Corridor** are providing a set of design objectives and standards for preferred street furniture choices within the future public realm along the LRT Corridor right of way. The document is an independent chapter and update to the **City of Hamilton Co-ordinated Street Furniture Guidelines** (August 2015), building on best practices and principles highlighted within. Section 2.5.3 (Transit Corridors) in the guidelines acknowledges that: "Street furniture that is part of Hamilton's transit system can be uniquely differentiated with a recognizable brand identity to improve the image of transit and provide a better experience for the transit passengers, as the transit network evolves in the future. It is important that this brand differentiation be consistent along the line, particularly where higher order services, including express bus are provided. Street furniture set(s) may be designed specifically to brand the line or differentiated level of service."

Along with the guidelines document, the standards support the implementation of the **Complete Streets Design Manual** (July 2022) and respond to recommendation from Council, associated with the Council approved **Complete Streets Design Manual (PED21020(a)/PW21002(a)) (City Wide)** staff report, to update roadway design manuals and guidelines to reflect the manual.

Recommendation wording for this staff report states: "(…)(a) That the Complete Streets Design Manual attached as Appendix "A" to Report PED21020(a)/PW21002(a) be approved as the basis for planning and designing City streets; (b) That staff be directed to update roadway design manuals and guidelines to reflect Complete Streets Design Manual, including, but not limited to, the Construction and Materials Specifications Manual, Traffic Signal and Pavement Marking Designs Drawings, and other documents identified by staff; (…)"

1.2 Financial considerations

The LRT Project Office will negotiate the capital cost with Metrolinx through the implementation of the LRT project. Maintenance costs, which involve repair and replacement of street furniture, will be the responsibility of the asset owners. Any incremental maintenance costs associated with these standards post LRT construction, compared to the existing pre-LRT conditions, will be subject to council approval. The LRT Project Office or asset owner will seek council approvals on the maintenance budget through the budgeting process at a later time, closer to the project's substantial completion. It is anticipated that the maintenance costs will be bundled with other City financial obligations for the overall operations and maintenance of the LRT system.

2 Introduction

The intent of this document is to identify preferred solutions for public realm elements along the LRT Corridor, focusing on harmonization of design, scale, materials, and location, to enhance it and establish it as an identifiable streetscape in Hamilton. It also provides references to established City policies, guidelines, and standards.

Solutions and standards summarized in the document refer to best practices for the design and placement of streetscape elements, aiming to:

- Establish a consistent and cohesive stylistic theme across the Corridor
- Address aspects of functionality, aesthetic value, flexibility in layout and placement, availability for sourcing, and durability
- Promote equitable and inclusionary design by ensuring the ease of pedestrian movement and accessibility through the design and placement of furniture, landscaping, and surface treatment
- Enhance the safety of City streets
- Promote and enhance Hamilton's civic identity
- Promote climate mitigation and adaptation through design choices that address climate impacts

Specific objectives and design principles for street amenities and furniture are defined in Section 6.3.

3 City of Hamilton – Reference Criteria, Guidelines, and Standards for Streetscaping

3.1 General streetscape design in the ROW

The **Complete Streets Design Manual** (July 2022) establishes a set of criteria and best practices for street design in the City of Hamilton, based on 'Complete Streets' principles. They are intended to identify the preferred dimensions and organization of space in the ROW, prioritizing pedestrian accessibility and comfort.

3.2 Street furniture placement

The **City of Hamilton Co-Ordinated Street Furniture Guidelines** (August 2015) provides direction regarding appropriate placement of street furniture and organization of the pedestrian realm within the streetscape; it also identifies preliminary street furniture selection criteria.

3.3 Tree, groundcover planting, and other street landscaping requirements

Tree and groundcover selection and planting standards, as well as other street landscaping requirements, are available in the City's **Forestry and Horticulture - Design and Preservation Manual for Assets on Public Property** (December 2024).

3.4 City accessibility standards

Please refer to AODA (Accessibility for Ontarians with Disabilities) standards and to the **City of Hamilton Barrier-Free Design Guidelines** (2006). Sidewalk features are to be installed according to the specifications listed in the City of Hamilton Std. RD124.01 – RD 124.03.

3.5 Urban Braille design

Information regarding principles, installation, design criteria and guidelines for the City's Urban Braille System are available on the City's Website. Please refer to City of Hamilton Std. RD 124.03 for technical details and consult with staff regarding updates to this standard and its application.

3.6 Parking pay stations

The City has specific walk-up parking machine placement and sizing requirements, which may impact streetscape design in those locations where on-street parking will be provided.

The minimum area required for a parking pay station is 0.6 metre x 0.6 metre, with accessible access. The clear space in front of the machine should be minimum 1.2 metres x 1.2 metres in size (1.5 metres preferred); the clear space may be the sidewalk area.

4 Streetscape design in the LRT Corridor

4.1 Typical streetscape design (pedestrian realm)

The pedestrian realm – or pedestrian zone - is that part of the street that provides physical space for pedestrian use, including sidewalks and, most often, street trees and other amenities. A quality pedestrian realm is a significant component of a vibrant and attractive urban environment, inviting and fostering pedestrian activity and supporting civic character and identity.

Generally, this space is perceived as a seamless area, stretching between the curb face and the building face, regardless of the threshold between public and private land. It should generally be designed as an integrated, seamless space, taking advantage of the combined public and private open area to accommodate pedestrian movement, pedestrian access to adjacent uses, spill-over patios, street furniture, street trees and green areas, as well as buffer elements between traffic, pedestrians, and buildings. However, for the purpose of this document, the pedestrian realm referred to is that part of the public ROW between the curb face and the edge of the ROW, which is subject to public investment, design, and construction.

The pedestrian realm within an urban streetscape is typically organized in four zones: the buffer zone, the street tree / furniture zone, the walkway zone, and the frontage zone (as outlined in the City's Complete Streets Design Manual). Depending on context, zones may be combined or defined less formally. Clear definitions and further information are available in the Complete Streets Design Manual document.

The **walkway zone** shall be treated with Urban Braille design and surface treatment along the entire corridor. Special pavement shall be considered for the buffer zone, the street tree/furniture zone, and the frontage zone in special design areas; quality concrete surfacing with brushed finish can be used instead in typical contexts.

Street furniture may be incorporated in the **buffer zone** (which can accommodate signs, poles, landscaping, bollards, and snow storage), the **street tree / furniture zone** (typically designed to include landscape beds, street tree plantings, benches, special light elements, waste receptacles, etc.), and/or the **frontage zone** (which could also accommodate a series of elements of furniture such as benches or bike locks). The buffer zone and the street tree/furniture zone may often be combined, to maximize opportunities for landscaping.

Figure 1 - Illustration of pedestrian zones. Source: City of Hamilton Complete Streets Design Manual

4.2 Green infrastructure in streetscape design

The Complete Streets Design Manual call for prioritization of low impact stormwater management features along streetscapes, where practicable, to mitigate urban heat island effect, improve biodiversity and air quality, and to facilitate stormwater management. Providing green areas in the urban landscape will complement sustainable and active transportation by improving comfort and safety for people walking, cycling, or waiting for transit.

See Section 6.2 (Landscaping) for further details.

4.3 Types of streetscapes in the LRT Corridor

Below is a general classification of streetscapes in the LRT Corridor, based on their capacity to accommodate different components of the pedestrian zone or realm.

4.3.1 Substandard Width Pedestrian Zone (under 3.0m)

This profile includes a curbed sidewalk, a buffer zone at the curb, and a frontage zone along the building edge, or a combination of these.

Design elements: This type of streetscape will often be too narrow to include more than the typical concrete sidewalk pavement with Urban Braille treatment. The buffer zone could incorporate special pavement or texture, as well as safety bollards, where needed. Special pavement may be considered for the frontage zone.

4.3.2 Constrained Width Pedestrian Zone (3.0m to 4.75m)

This condition will generally include a sidewalk with a buffer zone, and potentially a reduced street tree/furniture zone and/or frontage zone along the building edge.

Design elements: Special features such as decorative pavement, bollards, signage, and pedestrian scale light poles may be included in the buffer zone. The frontage zone may be treated with decorative pavement and, where space allows it, elements of street furniture (ex. benches, waste receptacles, lighting elements and bike locks).

The allocation of elements in the buffer zone and street tree/furniture zone design should be approached creatively, to maximize opportunities for street tree plantings in open beds. For example, snow storage and features such as signage or other elements without significant underground structure may be integrated with open planting beds. Hybrid tree planting solutions with a combination of open bed and slab covered soil trench (and/or potentially soil cells) may accommodate bike racks or other light-anchored features on the concrete slab. Layering underground infrastructure under tree planting trenches or soil cells should also be considered where feasible, to facilitate landscaping opportunities along the corridor.

4.3.3 Preferred Minimum Width Pedestrian Zone (equal or greater than 4.75m)

A standard pedestrian realm profile will have a sidewalk framed by a curb-side buffer zone, a furniture/street tree zone, and a functional frontage zone (or spill-over zone) along the building edge.

Design elements: Special pavement, bollards, signage, pedestrian scale light poles, special light fixtures, can be placed in the buffer zone, depending on context, at the direction of City staff. The frontage zone can incorporate special pavement and street furniture compatible with the context and complementary to the core line of furniture.

The furniture/street tree zones permit different surface treatments; the inclusion of street trees in open soil beds should be prioritized. Alternatives to open soil planting beds are noted in Section 6.2. Layering underground infrastructure under tree planting trenches or soil cells should also be considered where feasible, to facilitate landscaping opportunities along the corridor. Where layering is not feasible and street tree planting solutions cannot be accommodated, this zone shall be furnished with benches, waste receptacles, bike locks, etc., as appropriate.

5 Typical street furniture placement and site-specific streetscape design

5.1 Typical locations for street furniture placement

Pedestrian crosswalks, bus stops, important destinations (such as grocery stores, institutional uses like schools or community centres, parks, or parkettes, and longer stretches of commercial frontages), will incur higher pedestrian volumes and should be the target areas for bench, waste container, and bike parking locations. These areas should also be provided with adequate pedestrian lighting for safe after-hours use.

General:

- The 5 minute walk – or 'the pedestrian shed' - is generally considered to be the typical distance people are willing to walk before opting to drive. The distance translates generally to about 400m (or the length of 3-4 street blocks). Priority should be given to installing benches within this distance span along the corridor to provide periodic comfort zones and to encourage pedestrian activity.
- Benches should be placed away from the main walkway and buffered from the vehicular lane, preferably in association with a planting bed or near building faces (see further distance separation criteria in the City of Hamilton Co-ordinated Street Furniture Guidelines).
- Bench use will depend on adequate microclimate conditions of wind, shade, and sun and should be placed in locations where these conditions are met or can be achieved on site.

Pedestrian crosswalks:

- A configuration including a bench and waste bin should be considered on each side of the street, near pedestrian crosswalks, where medium pedestrian activity is expected.

Bus stops:

- Benches should be installed at bus stops without integrated seating or those bus stops with higher user volumes. If the context has significant pedestrian activity due to adjacent commercial or institutional uses, a waste bin and bike parking should also be included.

Important pedestrian destinations (such as grocery stores, institutional uses like schools or community centers, parks, or parkettes, and longer stretches of commercial frontages):

- Active street frontages should include at least one bench, waste bin, and bike parking configurations, near important primary entrances, in the frontage zone, or in the street tree and furniture zone.
- Where this type of frontage encompasses the majority of a block, more elements in this configuration could be included, pending availability of space in the frontage zone or the street tree/street furniture zone. Their spacing and placement should be coordinated with the location of existing or future landscape or tree planting beds and should prioritize proximity to uses encouraging pedestrian stationary activities (for ex. near cafes, restaurants, public institutions, green amenity).

5.2 Special design features for BIA areas

Local BIAs and other special character areas (such as designated historic districts) may wish to customize the look of their street frontage, to emphasize their presence along the City's streetscapes.

Variations to standard street furniture models – as established through this document and other City standards, specifications, or criteria – are discouraged, to ensure consistent streetscape design along the LRT corridor. Customized enhancements may be achieved with special add-on elements (such as signage, decorative banners), public art features, or enhanced landscaping (pending on availability of space) and shall build on landscape and surface treatments based on recommendations in this document and/or existing City requirements, standards, and criteria, to retain compatibility with the corridor identity.

5.3 Standards for the International Village and Gore Park (BIAs)

General design standards for the International Village and Gore Park areas are provided by **The Gore Standard: Hardscape Design** (2019). The application of this standard may include variations in color and pattern of the decorative pavement, subject to detailed corridor design.

Other minor variations from this standard may be expected in respect to special streetscape elements – such as landscape features, street furniture – which shall be informed by best practices and standards outlined in this document. The design of pedestrianized side streets or parkettes in this area, where applicable, may introduce unique configuration of space, unique landscape solutions, and elements of public art, subject to City requirements and criteria.

Note: Detailed design of this corridor segment is in progress, pending development of the LRT concept. This section may be updated at that time.

Figure 2 - Gore Park - Street Furniture

5.4 Other locations with special streetscape design

The following sites will also be considered for special streetscape design:

- McMaster University
- Jackson Square
- Eastgate Square
- Other potential sites and parkettes, as the Corridor design develops and generates areas with wider streetscape segments and contextual significance (for example near parks, bus hubs, LRT stops, important pedestrian routes or special community destinations).

Design for these areas shall refer to the core line of furniture and surface treatments, to retain consistency with the corridor streetscape character. Additional or alternative compatible street furniture, landscaping features, pavement elements, as well as public art, are encouraged and

supported. Shade elements, such as awnings, canopies, trellises, or other types of similar installations should be used in those areas with limited tree canopy and expected higher pedestrian traffic.

6 Elements of streetscaping

6.1 Pavement

6.1.1 Typical concrete pavement

The standard default treatment for hard surfaced elements in the pedestrian realm – buffer zones, walkways, and frontage zones - shall be concrete. Special Urban Braille treatment will be used for walkways.

A light color palette should be used, where applicable, to minimize impacts of solar radiation.

6.1.2 Decorative pavement

Placement:

- Decorative pavers shall be considered for the buffer zone, furnishing zone, and frontage zone, where applicable. They shall be installed on a concrete substrate, for durability.
- Where the streetscape is designed with a ‘shared street’ or ‘curb-less street’ profile prioritizing pedestrians the entire ROW – excluding the Urban Braille sidewalk – shall be surfaced with durable decorative pavement.
- Accent paver strips with different colors or textures should be employed to delineate special zones in the pedestrian realm or the ROW (for ‘shared street’ segments), where this distinction is useful. For example, furnishing zone areas, special landscape areas, or, in the case of ‘shared street’ design, transitions from sidewalks to roadway space or to parking areas can be delineated with accent strips to help visually organize the space for multiple users.
- Accent paver areas with different colors or textures could be used as an alternative method to accent paver strips, to highlight or define such special zones.

Type, color, material:

- Typical details, including materials, size, colors, application, and construction, are provided in “The Gore Standard: Hardscape Design”.
- As a general guideline special pavement materials or treatments shall be durable and safe for pedestrian use.

6.2 Landscaping

6.2.1 General guidelines for planting beds

All planting beds shall have sufficient soil depths for the plant material specified as well as a sub-drain connected to the storm sewer. Native planting and species shall be given preference and comply with the approved lists of plant species identified in the City's **Forestry and Horticulture - Design and Preservation Manual for Assets on Public Property** (December 2024). Raised curbs/edges or low decorative rail/fence shall be used to protect planting and soils from damages caused by snow clearing, de-icing salts and high pedestrian activity. Where feasible, incorporate seating wall edges and wall-mounted benches to the planting beds to provide additional seating opportunities. Please note design standards for curbed beds in the specifications appendix to the manual mentioned above.

Consider the use of Low Impact Development (LID) storm water management facilities wherever practicable. Surface facilities such as Bioswales and Rain Gardens are better suited where adequate space is allocated to planting areas in the street tree/furnishing zone. Constrained areas are better served with below-grade facilities utilizing soil cell systems.

6.2.2 Street trees

Street trees are a priority component of the pedestrian realm. A range of street tree planting conditions are supported, depending on their suitability to context and availability of space (above and underground) in the boulevard:

- Street tree plantings in open beds (soil trenches);
- Street trees in hybrid systems (open beds combined with soil cell systems); and
- Street trees in closed systems (soil-cell systems).

Tree plantings in open beds or hybrid systems are preferred as these systems generally provide better tree growing conditions.

For specific standards and guidelines regarding street trees, including preferred species, supported planting solutions, required soil volumes, etc., please see the City's **Forestry and Horticulture - Design and Preservation Manual for Assets on Public Property**.

6.2.3 Decorative plant material for open beds or planters

Open beds or planters shall incorporate low-maintenance, year-round coverage plant material, resistant to salt and with a clean appearance. The selection of plant material can consist in sod, or a selection of ground-cover species, perennial grasses, and shrubs.

For preferred species and planting standards, please see the City's **Forestry and Horticulture - Design and Preservation Manual for Assets on Public Property.**

6.3 Street furniture (Objectives, Principles, and Theme)

Objectives:

Street furniture shall be of superior design, well sited, maintained, functional, accessible, and safe. It shall help build and support Hamilton's civic identity and establish a sense of visual continuity along the LRT Corridor.

Principles:

- Modularity and flexibility – Street elements shall allow for different placement and configuration opportunities, to respond to different contexts and their spatial parameters. Some parts of furniture elements should be customizable to support special conditions or character in different areas.
- Style/design coordination across family of elements – Visual continuity and consistency in style and design are important to creating a special identity for the LRT Corridor. The design, details, materials and colors should be simple, elegant, and timeless, to respond to the variety of Hamilton architecture and be compatible with other styles and design themes. The family of street furniture should be chosen to allow additional or optional elements, to adapt to context.
- Accessibility – The selection of elements should prioritize inclusionary and equitable design, to accommodate people with disabilities or impairments and support usage across ages (from children to the elderly). Furniture placement shall provide for clearances which accommodate free pedestrian, wheelchair, or scooter movement and shall ensure safe movement for the visually impaired by having bases that are cane detectable.
- Safety – Elements must use safe design and details to prevent injury. Their placement shall address aspects related to visibility, sightlines, accessibility, and ingress/egress.

- Durability and ease of maintenance – Materials and finishes shall have a proven ability to withstand severe environmental conditions and vandalism. Assembly and installation shall ensure stability of use in high traffic environments. Repair and replacement (sourcing) must be easy to avoid long term gaps in the streetscape.

Design theme and character:

The Gore Park area has been rehabilitated in recent years and equipped with a series of elements of furniture based on Victorian design, intended to emphasize the historic character of the area.

Street furniture choices for the LRT Corridor shall be characterized by a streamlined and practical style, drawing from historic design themes, in terms of color and general design outline, while simple in terms of detailing. The intent is to ensure streetscape elements will remain visually and functionally compatible with the diverse architectural context and civic infrastructure along the Corridor, as it evolves.

7 Street Furniture Catalogue

The street furniture catalogue identifies a preferred selection of types and models of street furniture meeting criteria noted in Section 6.3 and currently available from vendors with local or regional contacts. The selection covers several categories, from benches to light poles, to support consistent public realm development in a wide range of street configurations along the LRT corridor, pending final LRT design.

Where special circumstances - such as sourcing issues, context-specific conditions requiring different installation or finish solutions, or other factors aiming to optimize access and maintenance - require alternative options, similar models or alternative specifications for the same model may be considered from the same or other vendors. When working with a vendor, continue to look for technological advances and solutions sensitive to aspects of climate change.

Alternative choices in specifications or models shall address the objectives, principles, and design theme mentioned in Section 6.3, in this document. They will be reviewed and approved by the Heritage and Urban Design department.

7.1 Benches

Below are bench types selected for the LRT Corridor. The selection includes backed and backless options, with or without arms, to reflect different conditions in the streetscape, as well as different accessibility needs. The options are largely drawn from the same model range, for design consistency.

Note the **City of Hamilton Co-Ordinated Street Furniture Guidelines** for direction on appropriate placement and spacing in relation to other elements in the streetscape and accessibility objectives. Also see the **Forestry and Horticulture - Design and Preservation Manual for Assets on Public Property** specifications appendix for wall-mounted bench solutions (associated with planter walls).

7.1.1 ‘900 Series – 970’ Backed bench by Maglin (Black finish)

Specifications:

- Models: MBE-0970-00062 (Black)
- Material: Cast aluminum ends; Orange peel texture high density polyethylene seat and back (Black)

- Installation: Surface mounted
- Finish: Black powder coat for aluminum ends; Anti-graffiti finish

Figure 3 - 900 Series Backed Maglin Bench

7.1.2 '900 Series – 970' Armless bench by Maglin (Black finish)

The armless bench – from the same style series as the 970 Maglin bench - should be used in tandem with the typical bench with arms, in locations close to green amenity or parks, to provide an accessible seating alternative for those using mobility aids.

Specifications:

- Models: MBE-0970-00109 (Black)
- Material: Cast aluminum ends; Orange peel texture high density polyethylene seat and back (Black)
- Installation: Surface mounted
- Finish: Black powder coat for aluminum ends; Anti-graffiti finish

Figure 4 - Series 900 Armless Bench by Maglin

7.1.3 '900 Series – 970' Backless Bench by Maglin (Black finish)

The backless bench – from the same style series as the 970 Maglin bench – is available in custom 1219mm (4ft, custom) and 1524mm (5ft) lengths and should be used where conditions may be adequate for seating but too constrained for typical bench placement. They may be placed in the frontage zone, in association with principal building entrances, or in the street tree and furniture zone, book-ending planting zones and planters, or combined with other elements of furniture (like streetlights and waste bins).

Note: Cut sheets for the 1219mm (4ft) model is included in the appendices. Cut sheet for a custom 1524mm (5ft) bench can be provided by the vendor by request.

Specifications:

- Model: MMP-0970-00048 for the Black, 1219mm (4ft) model
- Material: Cast aluminum ends; Orange peel texture high density polyethylene seat and back (Black)
- Installation: Surface mounted

- Finish: Black powder coat for aluminum ends; Anti-graffiti finish

Figure 5 - Backless Bench by Maglin (900 Series)

7.1.4 'Galet' Backless Concrete Seat, by Ed's Concrete

A backless concrete seat will be a versatile feature for small parkettes along the corridor, acting as a stable landscape element or an informal seating solution for one or more users.

Specifications:

- Model: Galet I through III
- Manufacturer: Ed's Concrete
- Material: Concrete
- Size: Varies, at 457 mm (18') high
- Finish:
    - Anti-graffiti coating APP-HDN
    - Anti-slip sandblast finish

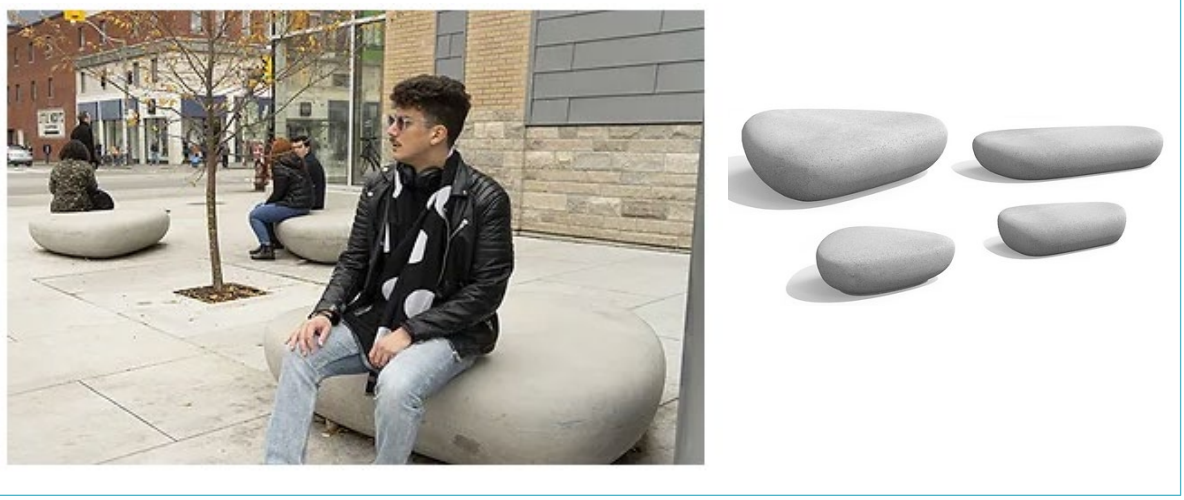


Figure 6 - Galet Bench by Ed's Concrete

7.1.5 Wall-mounted benches

See the **Forestry and Horticulture - Design and Preservation Manual for Assets on Public Property** specifications appendix for wall-mounted bench solutions and raised curb planting bed design for streetscapes. These features should be selected in consultation with the Horticulture and Forestry group.

7.2 Bollards

Bollards should be installed as a semi-permeable physical barrier and safety feature along the edge of those areas where pedestrian pathways are adjacent to vehicular movement and are not separated by a vertical curb, or other buffers.

Bollards may be high or low-impact resistant. The document specifies low-impact resistant models. For areas with high-speed or high-volume vehicular traffic engineered crash-rated bollards may be required. They should be selected based on specific safety requirements and should be similar in terms of design and color (as feasible) with the models listed in this catalogue.

Typical locations and conditions for bollard placement:

- Depressed curb streetscapes or shared-space type of plazas/parkettes where some vehicular movement or parking is still permitted (such as the International Village segment)
- Typical 1m to 1.5m spacing between elements. Diverse applications may require different spacing configurations.
- Lighted bollards may be spread at larger intervals among regular bollards or placed individually in locations where additional pedestrian lighting is needed.

The models listed below provided two installation options – base plate mounted or in-ground threaded rod (anchor), to allow removal and replacement in case of damage.

For those scenarios where regular removal of the bollards is desirable, such as multi-functional parking areas or parkettes where loading or service access is required, special removable bollards should be considered. Reliance Foundry provides bollards with lid-covered receivers or slide-in receivers; products may be selected and sourced from the vendor, subject to consultation with future asset owners.

Flexible physical barrier solutions at parks entrances should be selected in consultation with the Parks and Cemeteries group, in Public Works.

7.2.1 Lighted or Nonlighted Bollard ‘The Silhouette’ by StressCrete

The model, from Stresscrete is provided in two options, lighted, or nonlighted, for a base-plate type of installation.

Specifications:

- Material: Heavy wall round extruded aluminum; 1066 mm (42”) height
- Mounting options: Base Plate Mounted
- Lighting options: Lighted or Non-Lighted, as directed by City staff
- Optical Systems Options: LED
- Finish: KingCoat Black powder coat

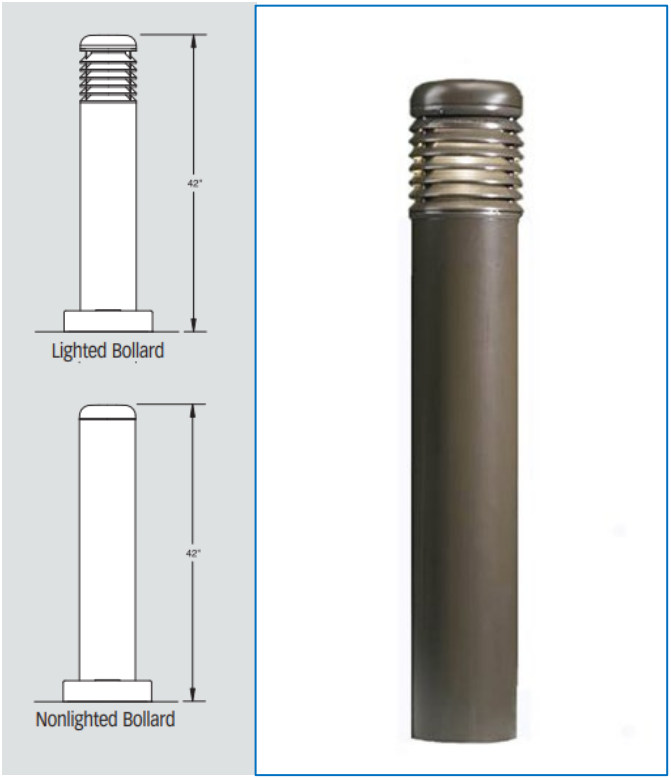


Figure 7 – Lighted or Nonlighted Bollard 'The Silhouette' by StressCrete

7.2.2 Alternative - Series 500 Bollard by Maglin (black powder coat)

The alternative model from Maglin provides in-ground installation, with a threaded rod set into concrete. Bollard is screwed onto rod and may be replaced.

Specifications:

- Model: MBO-0500-00004, Base Type 2
- Material: 114mm (4 ½”) diameter, 867mm (34 ½”) height, H.S. steel tube
- Finish: E-Coat rust proofing, black powder coat finish

- Installation: Base Type – B2 Threaded rod is set into concrete. Bollard is screwed onto rod and tightened.
- Weight: 14.8kg (32.66 lbs)

Figure 8 - Series 500 Maglin Bollard (shown in silver, proposed in black finish)

7.3 Waste containers

Waste receptacles should be placed as needed, in areas with higher pedestrian traffic, near accessible public or commercial entrances, close to public benches and bus stops, and near pedestrian crosswalks.

Waste container solutions for areas overseen by the Parks and Cemeteries group in Public Works should be selected in consultation with the group's staff.

7.3.1 '600 Series - 650' Waste Container by Maglin (Black finish)

Specifications:

- Model: MTR-0650-00011 Legacy # MLWR650-32-M-LBK
- Material: Steel sheet metal / No pattern
- Other: Delivered pre-assembled.
- Installation: Holes (0.5") are provided in each mounting foot for securing to base. (See installation cut sheet in the appendix.)
- Size: 606.4mm (23 7/8") width, 1049.3mm (41 5/16") height
- Finish: E-Coat rust proofing, black powder coat, anti-graffiti finish
- Liner: 121.1 liter (32 gal) black plastic bin. If available, liner with handles is preferred.
- Weight: 69 kg (151.6 lbs)

Figure 9 – 600 Series - 650 Waste Container by Maglin

7.4 Bicycle parking

The following models are recommended for typical or place-specific placement.

Several Hamilton Bike Share parking hubs are currently installed along the LRT Corridor and should be replaced per specifications (for bike racks, signage) specific to the program. (Hamilton Bike Share Inc. is the local not-for-profit organization that operates the City of Hamilton's bike share system.) This catalogue does not include rack models for this program.

7.4.1 Galvanized Hammer Hoop by NorthStar Technical

The galvanized Hammer Hoop is currently used City wide and shall be chosen for typical applications within the LRT Corridor streetscape. Please consult City staff for updates on the program and model in use.

Specifications:

- Material: Steel
- Finish: Galvanized
- Installation: Surface mount
- Size: 708 mm (27 7/8") height, 304 mm (12") diameter

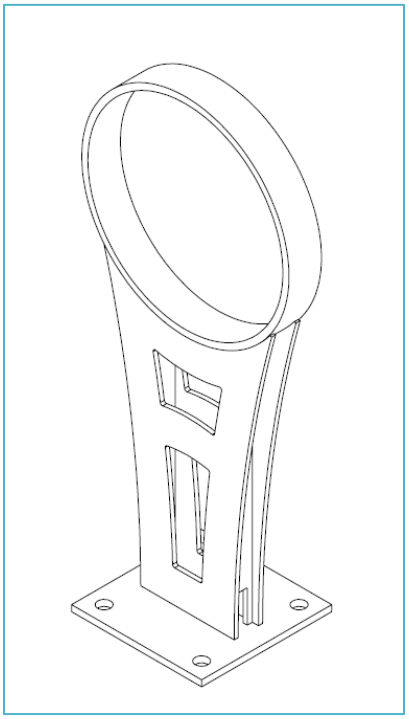


Figure 10 - Hammer Hoop Bike Rack

7.4.2 Alternative – 'Iconic' Bike Rack 2300 Series by Maglin

An alternative bike rack model like the 'Iconic' model from Maglin, or similar, may be introduced in small plazas, pedestrianized side streets, or parkettes, as a special feature. This model may also be considered for typical streetscape applications, pending updates to the City's bicycle parking program.

Specifications:

- Model: MBR-2300-00001
- Material/configuration: Cast Aluminum, 2 Bike Configuration
- Finish: Black powder coat
- Installation: Surface mount
- Size: 67.3cmx52cmx5.1cm (HxLxW)
- Weight: 8kg

Figure 11 - Iconic Bike Rack by Maglin

7.5 Tree Grates

Tree grate selection should generally be used in tandem with soil cells, to facilitate adequate tree planting soil volumes, in areas where the pedestrian zone dimensions do not support open tree planting beds. Tree grate selection will depend on context and width of street tree/furniture zone. For constrained conditions, a narrower rectangular grate will maximize surface environmental exposure. A wider model should be considered in other conditions.

7.5.1 'Starburst-2' Tree Grate by Ironsmith (Black finish)

The tree grate selection should reflect criteria in the **Forestry and Horticulture - Design and Preservation Manual for Assets on Public Property** standards and specifications appendix.

Specifications:

- Materials: Cast from 100% recycled gray iron
- Slot opening: Maximum 3/8" slots for pedestrian safety
- Size: A range of sizes available
    - Preferred - square 1524mm (60"), and
    - For constrained areas - rectangular 1220mm (48") x 1828mm (72")
- Tree opening:
    - Grates must be ordered with expandable rings.
    - For new trees - 457.2mm (18"), and
    - For later transition to maturing trees – 711.2mm (28").
- Finish: Black polyurethane paint over zinc undercoat

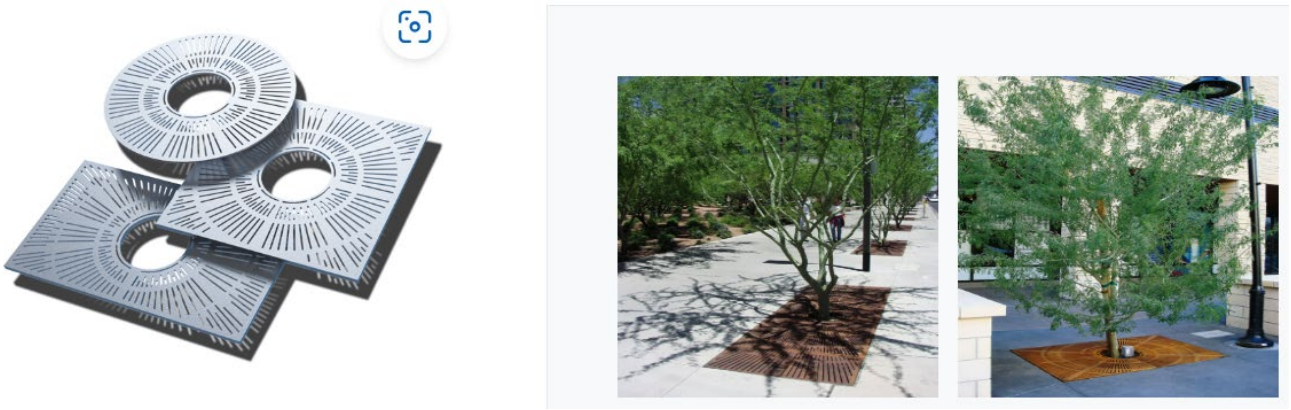


Figure 12 - Parkway Tree Grate by Ironsmith

7.6 Tree Guards

7.6.1 'M6' Tree Guard by Ironsmith (Black finish)

Tree guards are only required where significant vandalism may occur and need not be considered outside of those scenarios. The tree guard should match the tree grate selection, for shape and opening. It should be used for small to medium sized trees, to protect their growth.

Specifications:

- Material: Steel
- Structure: Tree guard, welded steel construction, in halves for greater rigidity and quick labor-saving assembly, with grate attaching hardware.
- Size: 1524mm (60") high
- Opening: Customized opening of 457.2mm (18"), to match tree grate opening.
- Finish: Black polyurethane paint

Figure 13 - M6 Tree Guard by Ironsmith

7.7 Planters

Planters provide an alternative to open planting beds or other tree planting solutions for those areas where there is limited or no space for appropriate soil volumes underground, in areas with higher pedestrian and commercial activity. They also act as physical barriers, acting as space organizers in open areas with different uses (such as small plazas, parkettes or pedestrianized streets), or as a safety buffer between pedestrians and vehicles.

Planting conditions, including soil types and plant selection should reflect criteria in the **Forestry and Horticulture - Design and Preservation Manual for Assets on Public Property** and its standards and specifications appendix. The appendix also includes planting bed design and construction standards, including construction details for curbed beds and decorative rail or fencing features.

7.7.1 'Square Series' Concrete Planters from Ed's Concrete

Specifications:

- Material: Concrete
- Recommended size:
  - 610 x 1219 x 610mm (24x48x24") for perennial type plant material
  - 1067 x 1067 x 762mm (42x42x30") for small decorative trees
- Drainage: Planter includes 1.25" drainage holes
- General planting conditions: Min 9" clear stone fill at base
- Color and finish: Standard grey smooth precast concrete

Figure 14 - 'Square Series' Concrete Planters from Ed's Concrete

7.7.2 ’1500 Series’ Planters by Maglin (Black finish)

This alternative metal planter provides a smaller and lighter option for small tree/large shrub plantings. It could be placed in pedestrianized areas, parkettes, or used as a temporary, moveable amenity feature.

Specifications:

- Model: MPL-1500-00011
- Material: Formed steel with a polyurethane/polyurea waterproof interior coating
- Recommended size:
  - 762 x 762 x 762 mm (30x30x30”)
- Drainage: Removable plug in the base
- Color and finish: E-Coat rust proofing; Black powder coat; Anti-graffiti finish.

Figure 15 - '1500 Series' Metal Planter by Maglin

7.8 Poles, luminaires, and arms

7.8.1 'The Canterbury' Pole by StressCrete

Poles should be included in the street tree/street furniture zone in association with luminaires, banner arms, and/or, flower basket arms, in those areas where additional pedestrian lighting is required for safe use, or in other areas where poles are needed for signage and/or decorative arms. The recommended model, or similar, should replace existing pole models along the corridor, pending LRT final design and reconstruction.

Note: Any electrical plugs should be located high up the pole so that they are not tampered with should seasonal lights be considered.

Specifications:

- Material: Spun concrete
- Pole height: 3048mm (12 ft) to 9144mm (30 ft)
- Footing options: Direct buried
- Finish: Etched Eclipse Black with anti-graffiti coat

Figure 16 - The Canterbury Pole (Spun Concrete) by StressCrete

7.8.2 Luminaire ‘Eclipse’ K551 by StressCrete (Vertical)

The ‘StressCrete’ model, or similar, is recommended for areas with narrow horizontal clearance, such as alleyways, or in other areas such as pedestrianized side streets and street-adjacent parkettes where more dispersed lighting over seating areas is desirable.

Specifications:

- Material: Heavy duty aluminum casting with vented finial
- Size: 813mm (32 3/16”) height, 689mm (27 3/8”) width
- Finish: Black powder coat

Figure 17 - Luminaire Eclipse by StressCrete

7.8.3 Alternative - Luminaire ‘Moderne’ K728 Jr by StressCrete

This option will fit more spacious areas, streetscapes, and other locations where focused lighting on the pedestrian path is desirable. The luminaire should be used with the StressCrete KA94 ‘The Bronte’ Arm.

Specifications:

- Material: Heavy cast aluminum housing
- Size: 603mm (23 ¾”) high

- Finish: KingCoat Black powder coat
- Light option: LED

Figure 18 - Luminaire 'Moderne' K728 by StressCrete

7.8.4 Decorative ‘The Bronte’ Arm for Luminaire and Banner by StressCrete

The long arm will support a luminaire and the short arm incorporates hooks for hanging banners.

Specifications:

- Model: KA94
- Material: Aluminum
- Mounting type: Side
- Arm lengths: 1829mm (72”) (recommended) and 2438mm (96”)
- Weight: 9.5-12.2 kg (21-27 lbs)
- Finish: Black powder coat

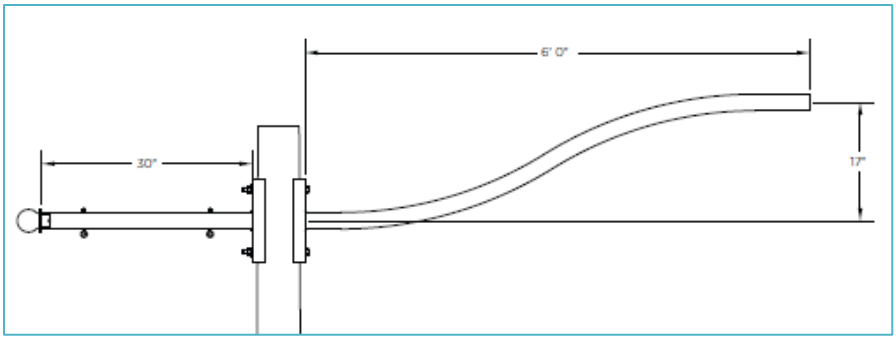


Figure 19 - Decorative 'The Bronte' Arm for Luminaire and Banner or Planter by StressCrete

7.8.5 Flower Basket Arm by Stresscrete

Specifications:

- Model: K64FPH-S
- Material: Cast aluminum
- Finish: Textured black paint
- Maximum plant basket weight: 22.67 (50 lbs) wet

Figure 20 - Decorative Flower Basket Arm by Stresscrete

STREET DESIGN & FURNITURE STANDARDS

FOR THE HAMILTON LRT CORRIDOR

APPENDICES

January 3, 2025

900 SERIES

BACKED - HDPE


MBE-0970-00060


MBE-0970-00061


MBE-0970-00062


MBE-0970-00063


MBE-0970-00064


MBE-0970-00065

DESCRIPTION: 900 Series - 970 Backed Bench: 70inL, Cast Aluminum Ends, Orange Peel Texture High Density Polyethylene Seat and Back, Two End Arms

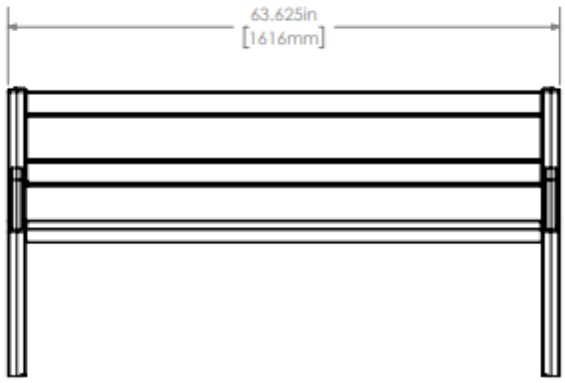
FINISH: All steel components are protected with E-Coat Rust Proofing. The Maglin Powdercoat System provides a durable finish on all metal surfaces.

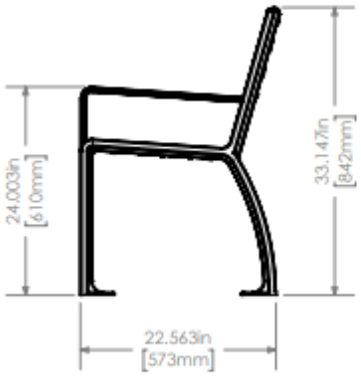
INSTALLATION: The bench is delivered pre-assembled. Holes (0.5") are provided in each foot for securing to base.

TO SPECIFY: Select Model:
- MBE-0970-00060 (Orange)
- MBE-0970-00061 (Green)
- MBE-0970-00062 (Black)
- MBE-0970-00063 (Grey)
- MBE-0970-00064 (Brown)
- MBE-0970-00065 (Blue)

Choose:
- Powdercoat Color

HEIGHT: 33.15" (84.2cm) LENGTH: 63.63" (161.6cm) DEPTH: 22.56" (57.3cm) WEIGHT: 94.6lbs (42.9kg)





MAGLIN Site Furniture

T 800 716 5506
F 877 260 9393
www.maglin.com
sales@maglin.com

900 SERIES

MBE-0970-00109

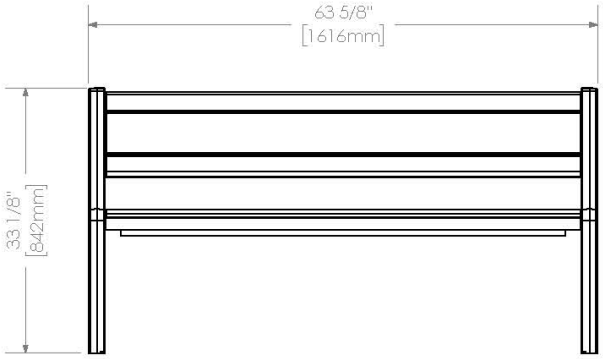
DESCRIPTION: 900 Series – 970 Backed Bench: 63.63in L, Cast Aluminum Ends, Orange Peel Texture High Density Polyethylene Seat and Back – Black Color, No End Arms - Both Arms Removed

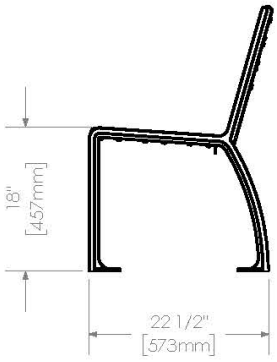
FINISH: All steel components are protected with E-Coat Rust Proofing. The Maglin Powdercoat System provides a durable finish on all metal surfaces.

INSTALLATION: The bench is delivered pre-assembled. Holes (0.5") are provided in each foot for securing to base.

TO SPECIFY: Select MBE-0970-00109:
Choose:
- Powdercoat Color

HEIGHT: 33.15" (84.2cm) LENGTH: 63.63" (161.6cm) DEPTH: 22.5" (57.3cm) WEIGHT: 107lbs (48.5kg)





MAGLIN
Site Furniture

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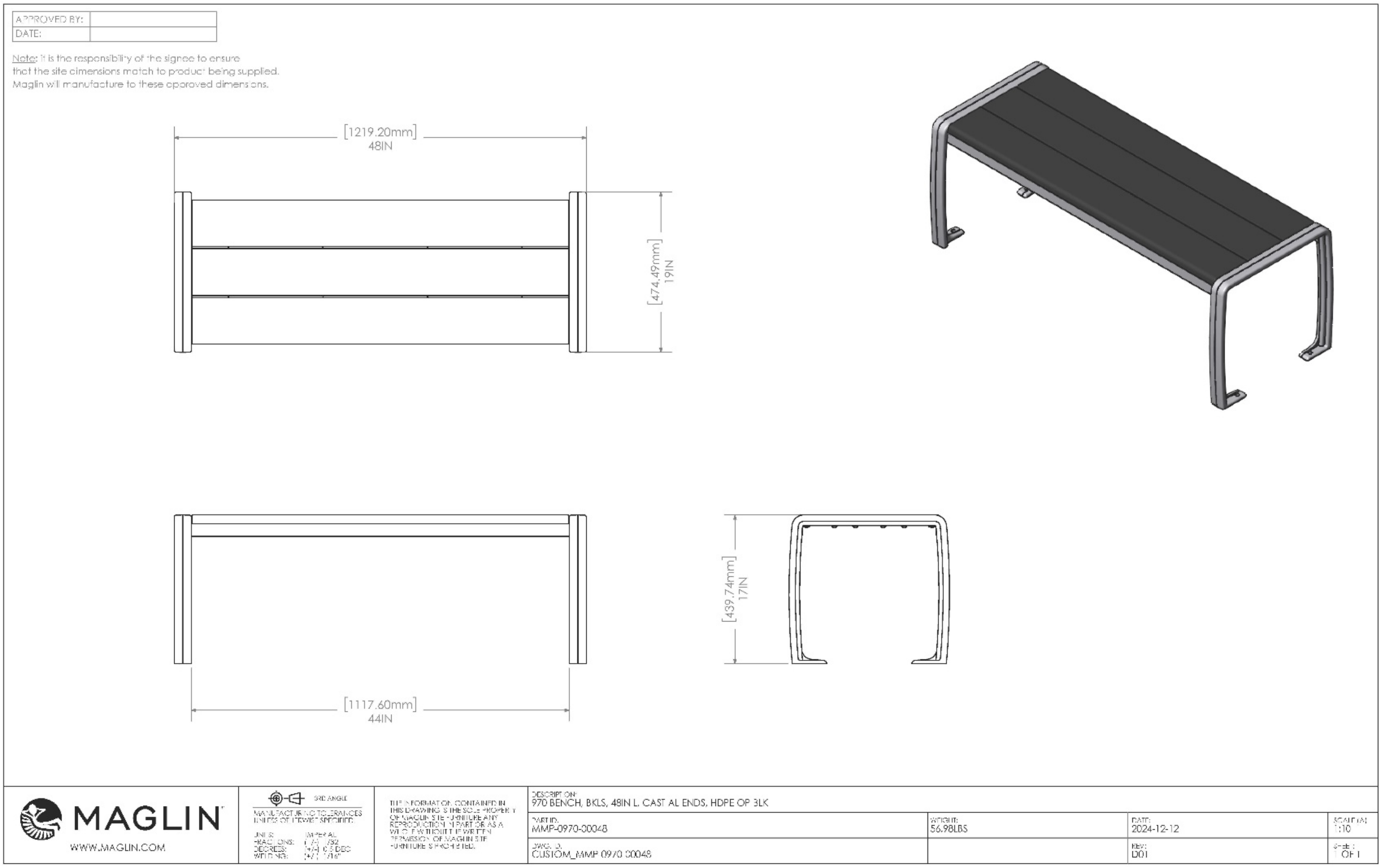
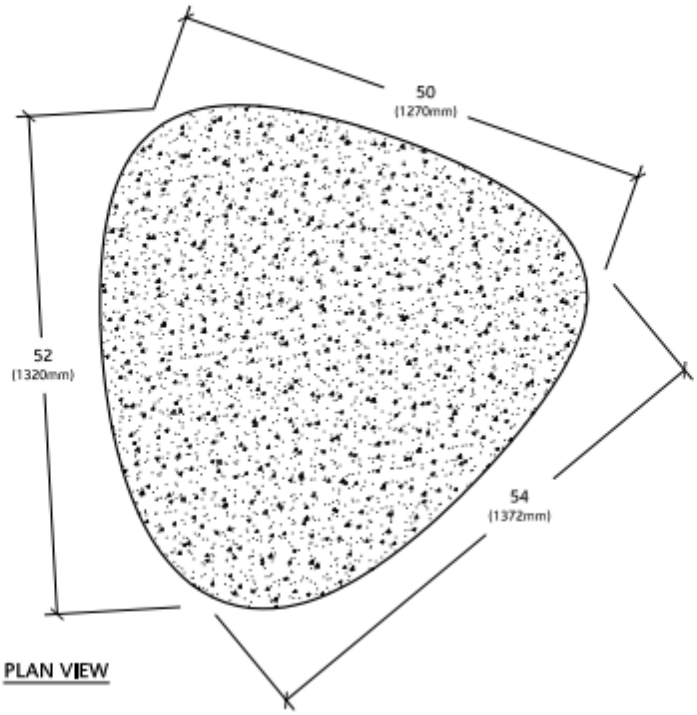
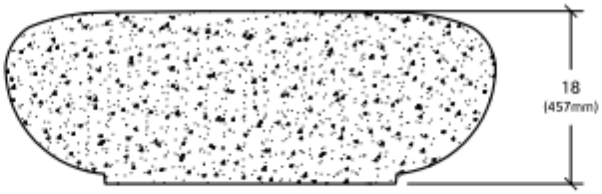

APPROVED BY:
DATE:
Note: It is the responsibility of the signee to ensure that the site dimensions match to product being supplied. Maglin will manufacture to these approved dimensions.
[1219.20mm]
48IN
[474.49mm]
19IN
[439.74mm]
17IN
[1117.60mm]
44IN
MAGLIN
WWW.MAGLIN.COM
3RD ANGLE
MANUFACTURING TOLERANCES UNLESS OTHERWISE SPECIFIED:
UNITS: IMPERIAL
FRACTIONS: (+/-) 1/32
DEGREES: (+/-) 0.5 DEG
WELDING: (+/-) 1/16"
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF MAGLIN SITE FURNITURE. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF MAGLIN SITE FURNITURE IS PROHIBITED.
DESCRIPTION:
970 BENCH, BKLS, 48IN L, CAST AL ENDS, HDPE OP BLK
PART ID:
MMP-0970-00048
WEIGHT:
56.98LBS
DATE:
2024-12-12
SCALE (A):
1:10
DWG. ID:
CUSTOM_MMP 0970 00048
REV:
D01
SHEET:
1 OF 1



PLAN VIEW



SECTION VIEW

NOTES:

1. CONTRACTOR TO REFER TO ARCHITECTURAL SPECIFICATIONS FOR COLOUR, FINISH AND VALUE ADDED FEATURES
2. SUBMIT COLOUR AND FINISH SAMPLES FOR APPROVAL
3. WEIGHT OF GALET 1 SEAT- 2730 lbs

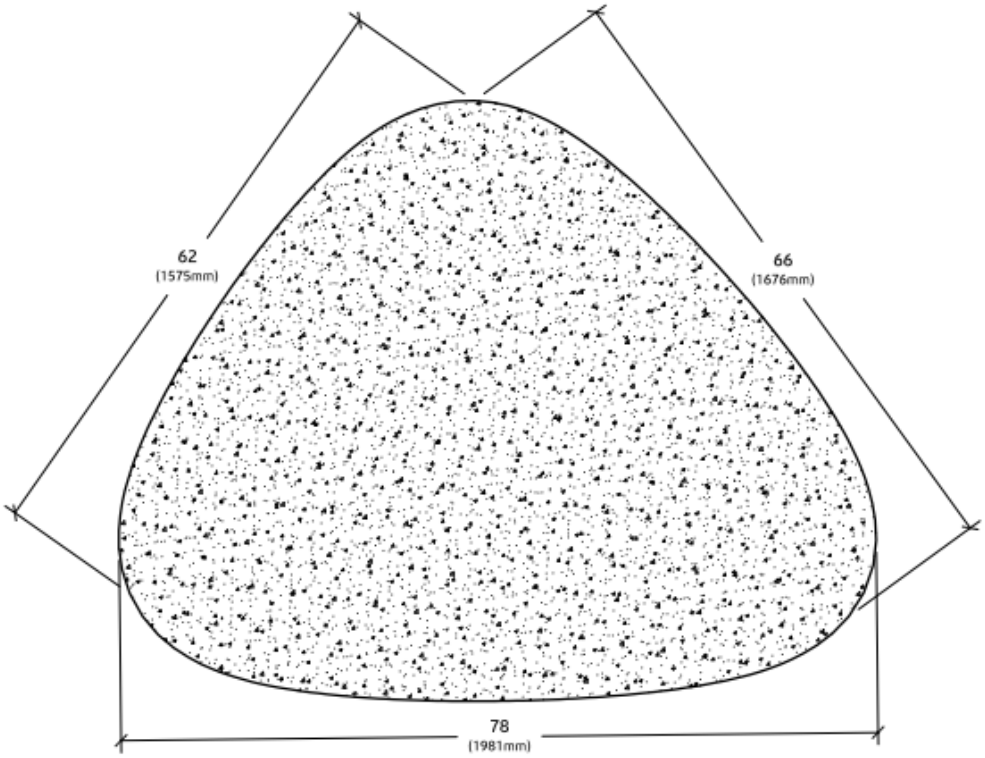
EDS CONCRETE PRODUCTS

URBASTYLE

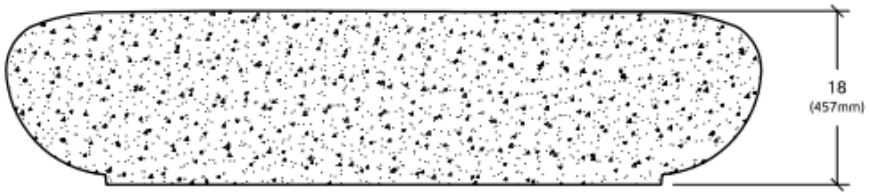
GALET I

ED'S CONCRETE PRODUCTS
1266 ERIE STREET
STRATFORD, ONTARIO
N4Z 0A1

1-877-265-6590
www.edsconcrete.com
info@edsconcrete.com



PLAN VIEW



SECTION VIEW

NOTES:

1. CONTRACTOR TO REFER TO ARCHITECTURAL SPECIFICATIONS FOR COLOUR, FINISH AND VALUE ADDED FEATURES
2. SUBMIT COLOUR AND FINISH SAMPLES FOR APPROVAL
3. WEIGHT OF GALET II SEAT - 2880 lbs

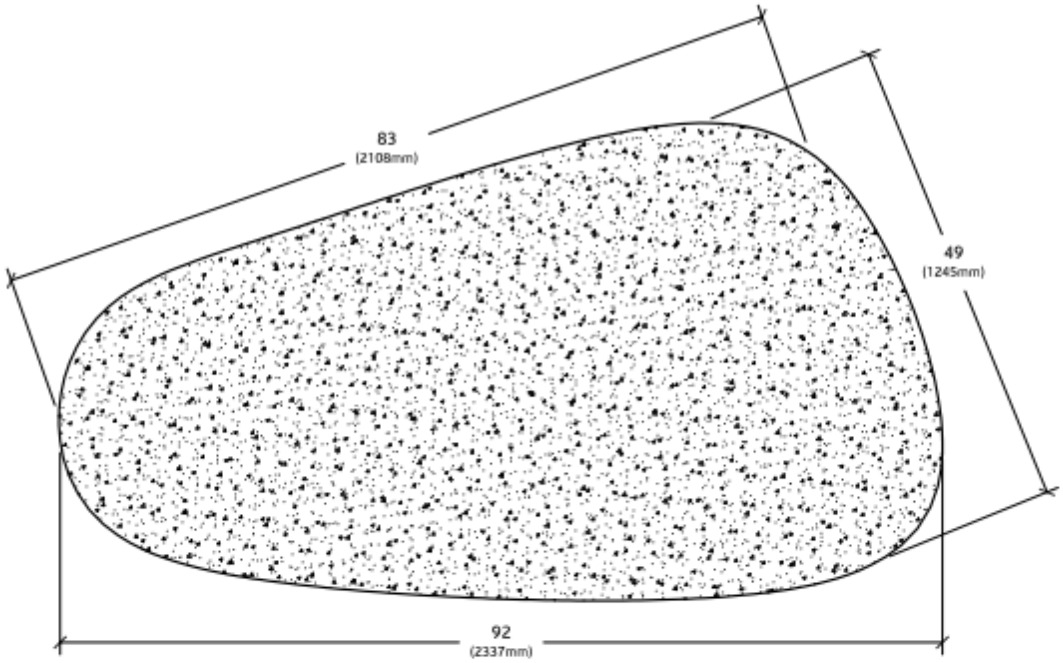
EDS CONCRETE PRODUCTS

URBASTYLE

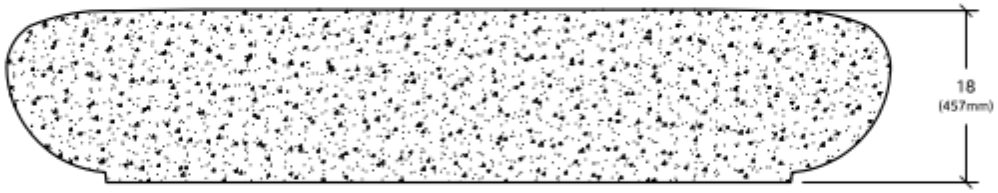
GALET II

ED'S CONCRETE PRODUCTS
1266 ERIE STREET
STRATFORD, ONTARIO
N4Z 0A1

1-877-265-6590
www.edsconcrete.com
info@edsconcrete.com



PLAN VIEW



SECTION VIEW

NOTES:

1. CONTRACTOR TO REFER TO ARCHITECTURAL SPECIFICATIONS FOR COLOUR, FINISH AND VALUE ADDED FEATURES
2. SUBMIT COLOUR AND FINISH SAMPLES FOR APPROVAL
3. WEIGHT OF GALET III SEAT - 3800 lbs

EDS CONCRETE PRODUCTS

URBASTYLE

GALET III

ED'S CONCRETE PRODUCTS
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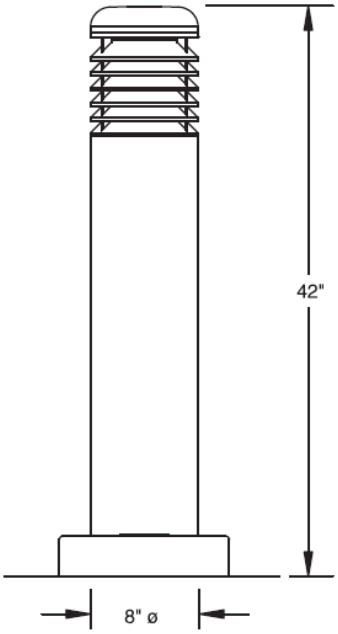
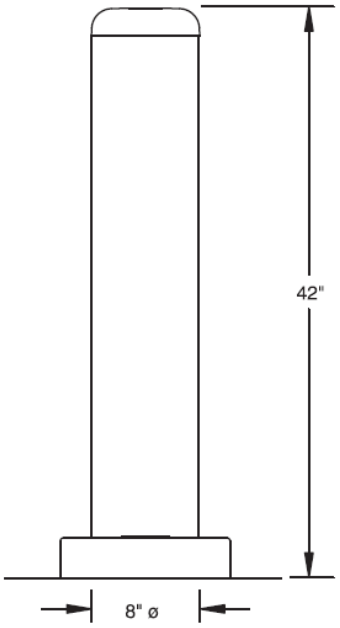
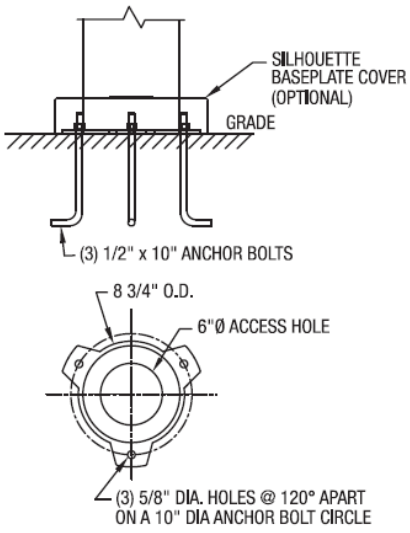
Silhouette







MOUNTING DETAIL #1

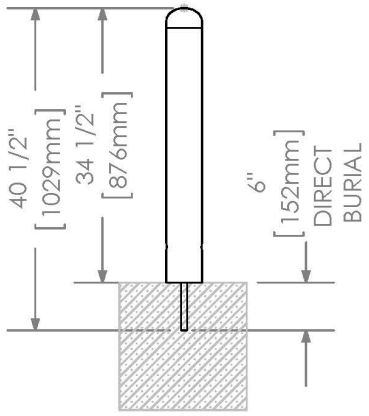
500 SERIES

MBO-0500-00004

Legacy # MTB500-B2

MATERIALS:	The bollard is constructed of H.S. steel tube.
FINISH:	The bollard is protected with E-Coat rust proofing and finished with the Maglin Powdercoat System.
INSTALLATION:	Base Type – B2 Threaded rod is set into concrete. Bollard is screwed onto rod and tightened.
TO SPECIFY:	Select MBO-0500-00004 Choose: - Powdercoat Color

HEIGHT: 34.5" (87.6cm) DIAMETER: 4.5" (11.4cm) WEIGHT: 32.66lbs (14.8kg)



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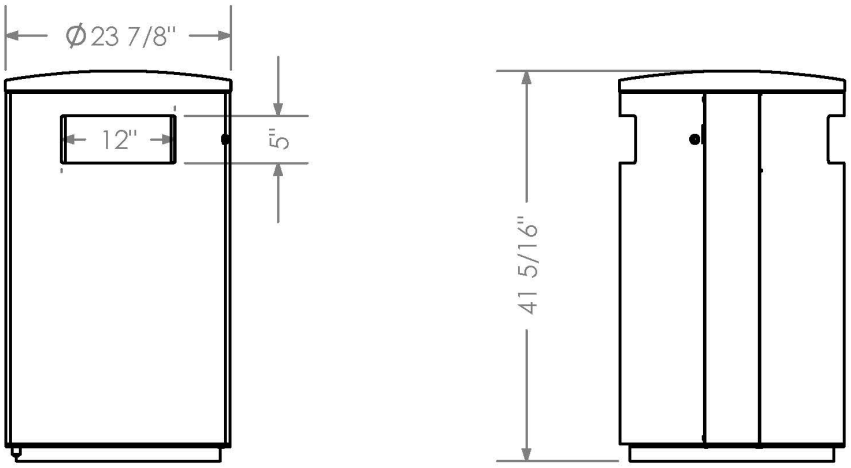
600 SERIES

MTR-0650-00011

Legacy # MLWR650-32-M-LBK

MATERIALS:	This side opening trash container is constructed using laser cut sheet metal. A 32 gallon commercial grade plastic liner and spun metal lid are provided.
FINISH:	All steel components are protected with E-Coat rust proofing. The Maglin Powdercoat System provides a durable finish on all metal surfaces.
INSTALLATION:	The trash container is delivered pre-assembled. Holes (0.5") are provided in each mounting foot for securing to base.
TO SPECIFY:	Select MTR-0650-00011 Choose: - Powdercoat Color

HEIGHT: 41.31" (104.9cm) DIAMETER: 23.9" (60.6cm) WEIGHT: 151.6lbs (69kg) LINER CAPACITY: 32.0gal (121.0L)



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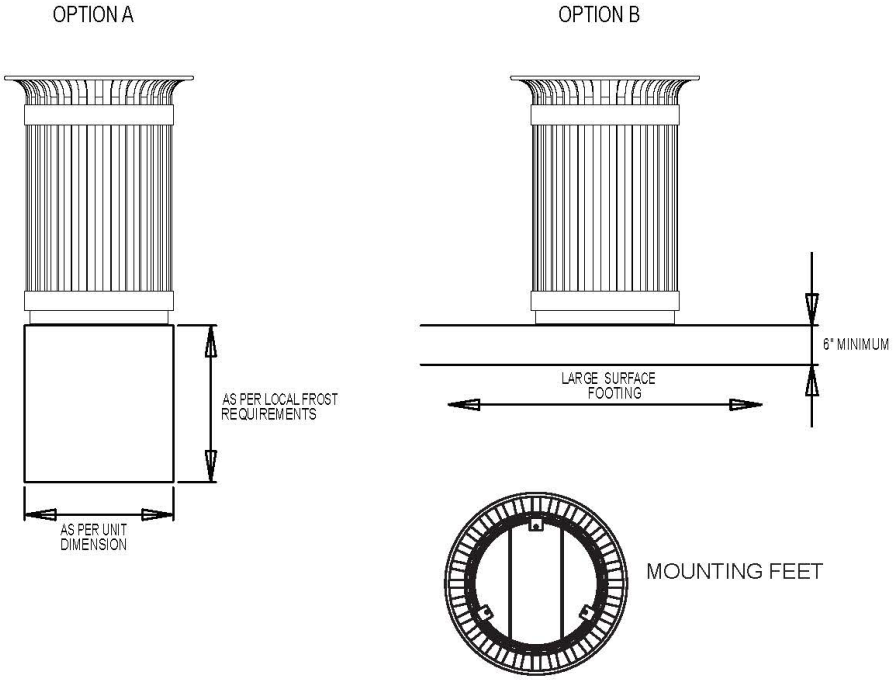
Note: Bin model is for illustration purposes only.

TRASH CONTAINERS

TRASH CONTAINER INSTALLATION

- Anchoring hole layouts vary slightly by model type.
- Place trash container on foundation and mark for drilling to ensure proper installation.
- Unless otherwise noted, there are 3 - 1/2" mounting holes per container.
- We suggest 3/8" concrete anchors.

Concrete Pad



Paving Stones

Trash Containers can be lagged to the paving stones directly. For a more secure installation, we suggest pouring a concrete footing beneath the pavers. To install furniture, drill through the pavers and into the concrete. Using long lag bolts, furniture can be bolted down through the pavers and lagged into the concrete footing. Concrete footing can also be poured to bring mounting surface up to the same level as the pavers.

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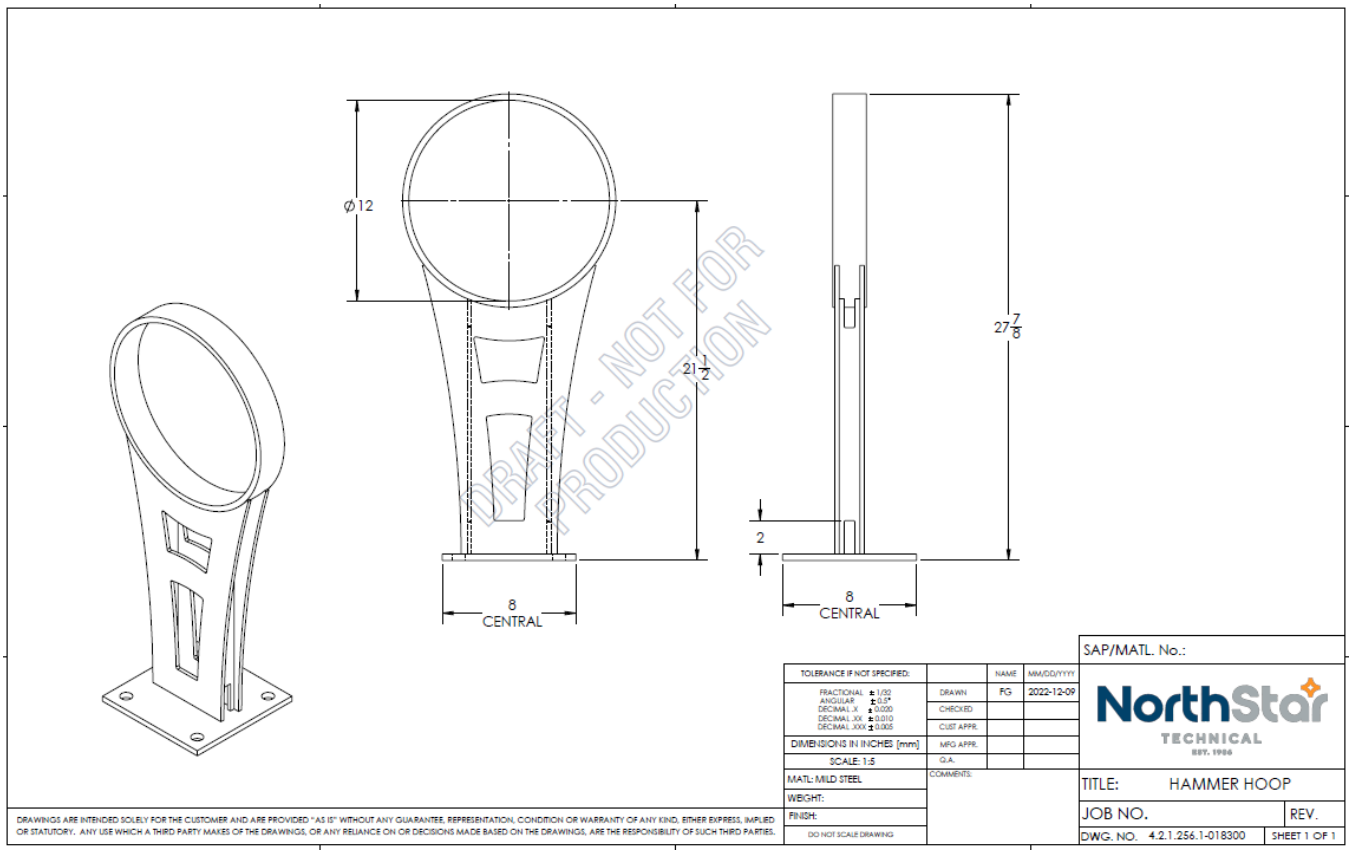
Note: Specifications for reference; Vendor TBD



TOLERANCE IF NOT SPECIFIED:		NAME	MM/DD/YYYY
FRACTIONAL ± 1/32 ANGULAR ± 0.5° DECIMAL .X ± 0.030 DECIMAL .XX ± 0.010 DECIMAL .XXX ± 0.005	DRAWN	FG	2022-12-09
	CHECKED		
	CUST APPR.		
DIMENSIONS IN INCHES [mm]	MFG APPR.		
SCALE: 1:5	Q.A.		
MATL: MILD STEEL	COMMENTS:		
WEIGHT:			
FINISH:			
DO NOT SCALE DRAWING			

SAP/MATL. No.:

NorthStar TECHNICAL EST. 1986

TITLE: HAMMER HOOP

JOB NO. | REV.

DWG. NO. 4.2.1.256.1-018300 | SHEET 1 OF 1

ICONIC

MBR-2300-00001

Sustainability Facts

Unit Size	**One (1) MBR-2300-00001 Bike Rack**
Carbon footprint (GWP) *Measured in kilograms of carbon dioxide equivalent*	139 kg CO2-Eq
Total energy use (TPE) *Measured in megajoules of energy equivalent*	2480 Mj-Eq
Waster use (WDP) *Measured in cubic metres of water*	1.9 m3 water
Material recyclability	100%

LEED v4.1 Credits

Type III Environmental Product Declaration	☑
Material Inventory	☑
Low VOC finishes	☑
Free of Red List substances	☑

**Full EPD can be referenced for more information: https://www.epdregistration.com/maglin/*

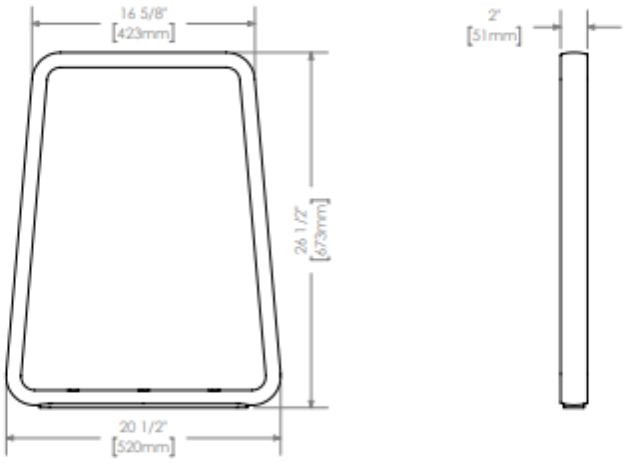
DESCRIPTION: 2300 Series - Iconic Bike Rack: Cast Aluminum, Surface Mount, 2 Bike Configuration

FINISH: The Maglin Powdercoat System provides a durable finish on all aluminum castings.

INSTALLATION: The bike rack is delivered in parts. Reference INSTALL_MBR-2300-00001 PDF for more information.

TO SPECIFY: Select MBR-2300-00001
Choose:
- Powdercoat Color

HEIGHT: 26 1/2" (67.3cm) LENGTH: 20 1/2" (52cm) WIDTH: 2" (5.1cm) WEIGHT: 18 lbs (8kg)



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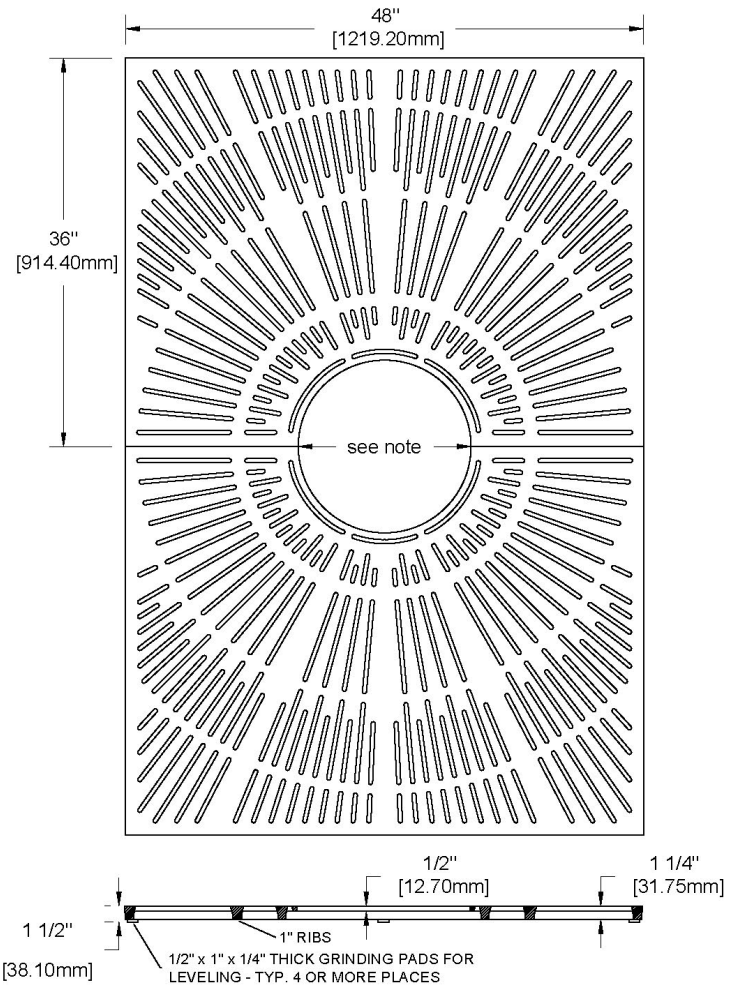


7222-2
STARBURST
TREE GRATE

48" x 72" tree grate in two sections.

3/8 Maximum slot opening for pedestrian safety and A.D.A Compliance. For pedestrian loads only.

Cast from 100% recycled gray Iron, Aluminum, or Bronze

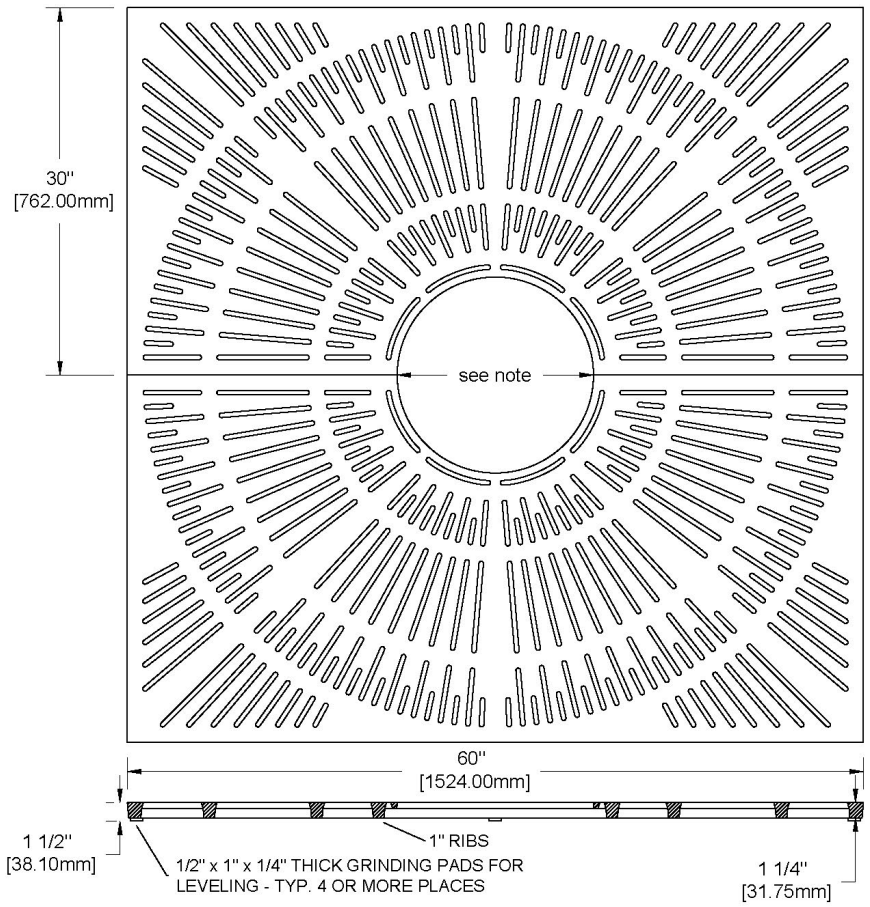
Tree opening:
16",18",28"
Grates can be ordered with or later expanded to these openings. Please specify when ordering.

Finish: unfinished or
Black dip or
Enamel paint or
Polyurethane Paint or
Powder coat
Specify finish and color

Use frame model:
48X72F

Weight:
Iron= 435 lb/ 198 Kg
Aluminum=152 lb/69 Kg

IRONSMITH
41-701 Corporate Way #3
Palm Desert, CA 92260
800.338.4766



6018-2
STARBURST
TREE GRATE

60" x 60" Square tree grate in two sections.

3/8 Maximum slot opening for pedestrian safety and A.D.A Compliance. For pedestrian loads only.

Cast from 100% recycled gray Iron, Aluminum,or Cast C854 Copper Alloy.

Tree opening:
16",18",28"
Grates can be ordered with or later expanded to these openings. Please specify when ordering.

Finish: unfinished or
Black dip or
Enamel paint or
Polyurethane Paint or
Powder coat
Specify finish and color

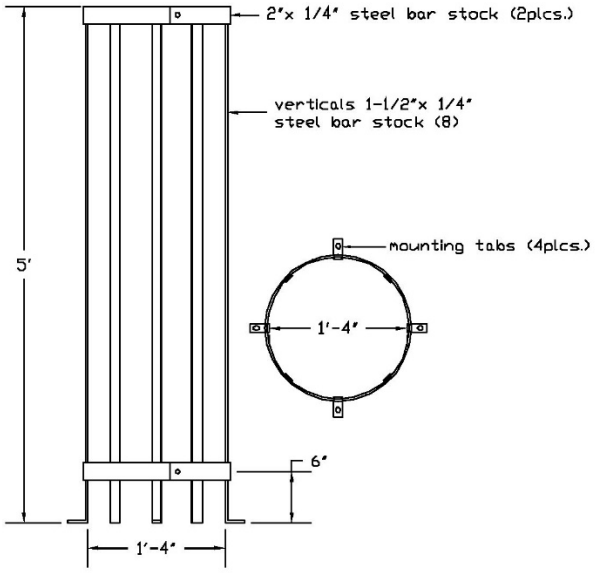
Use frame model:
6000F

Weight:
Iron= 456 lb/ 207 Kg
Aluminum=174 lb/79 Kg

IRONSMITH
41-701 Corporate Way #3
Palm Desert, CA 92260
800.338.4766

TREE GUARD

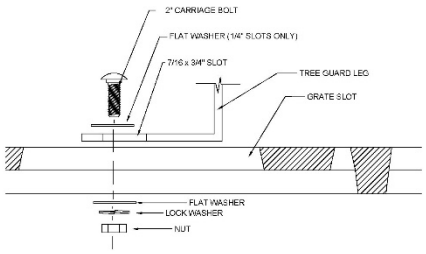
M-6



- Jig welded from hot rolled steel.
- Guards are constructed in halves and bolt together
- 60" height and 16" tree opening standard
  other dimensions available for additional cost
- Alternate attachment methods available
- All hardware provided by IRONSMITH
- Black powder coat standard finish
  other finish options available

IRONSMITH TREE GUARDS
FOR LANDSCAPE ARCHITECTURE
(800) 338-4766

Tree Guard Mount to Tree Grate



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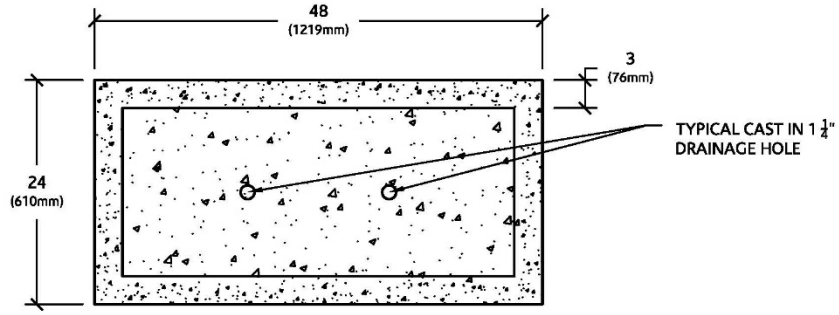
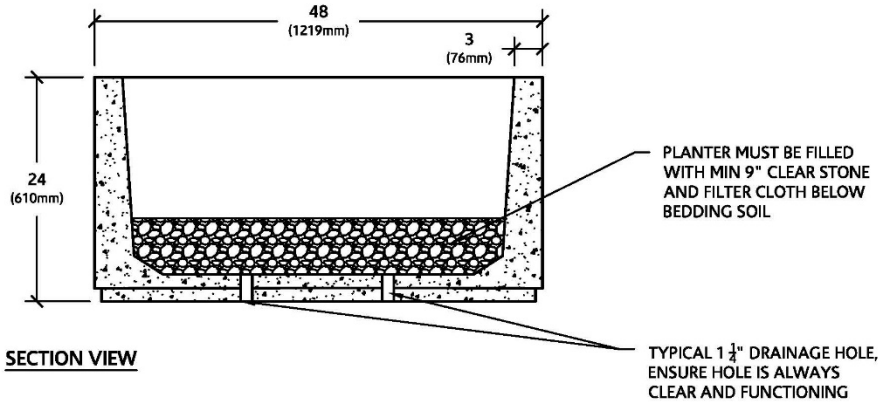
www.ironsmith.biz



PLAN VIEW



SECTION VIEW

NOTES:

1. CONTRACTOR TO REFER TO ARCHITECTURAL SPECIFICATIONS FOR COLOUR, FINISH AND VALUE ADDED FEATURES
2. SUBMIT COLOUR AND FINISH SAMPLES FOR APPROVAL
3. WEIGHT OF SQUARE SQ244824 PLANTER - 1400 lbs

EDS CONCRETE PRODUCTS

SQUARE PLANTER

SQ244824

ED'S CONCRETE PRODUCTS
1266 ERIE STREET
STRATFORD, ONTARIO
N4Z 0A1

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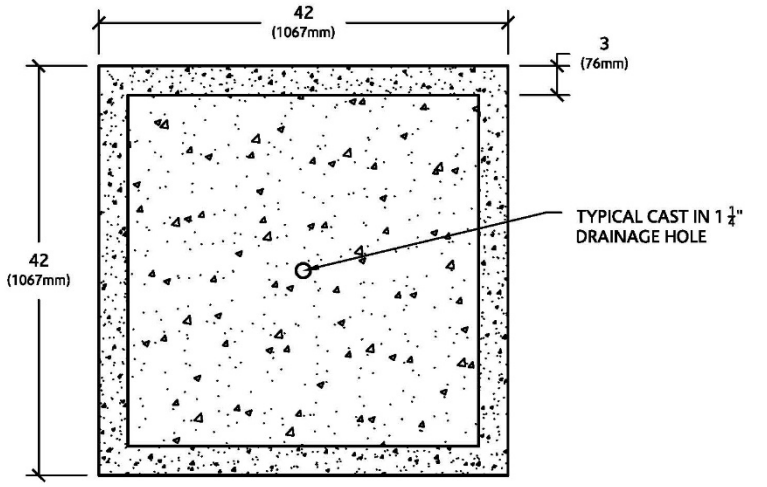
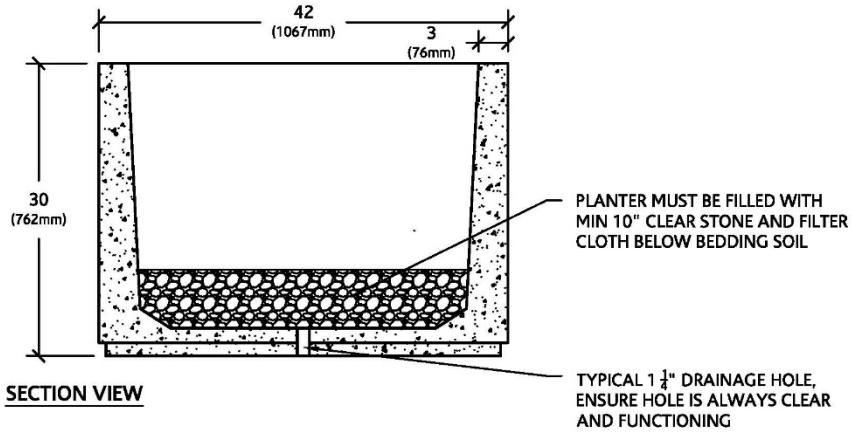


PLAN VIEW



SECTION VIEW

NOTES:

1. CONTRACTOR TO REFER TO ARCHITECTURAL SPECIFICATIONS FOR COLOUR, FINISH AND VALUE ADDED FEATURES
2. SUBMIT COLOUR AND FINISH SAMPLES FOR APPROVAL
3. WEIGHT OF SQUARE SQ424230 PLANTER - 1500 lbs

ED'S CONCRETE PRODUCTS

SQUARE PLANTER

SQ424230

ED'S CONCRETE PRODUCTS
1266 ERIE STREET
STRATFORD, ONTARIO
N4Z 0A1

1-877-265-6590
www.edsconcrete.com
info@edsconcrete.com

1500 SERIES

MPL-1500-00011

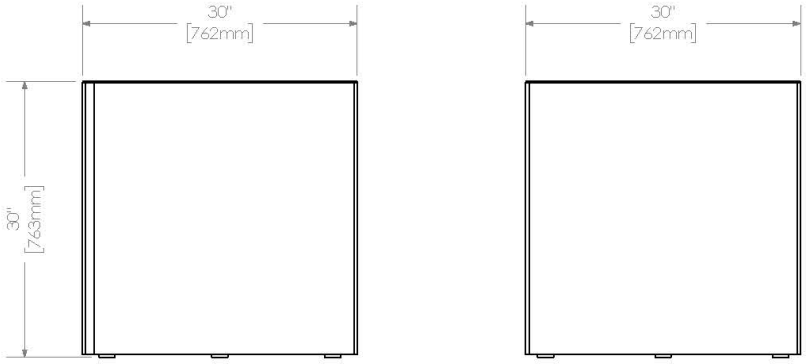
DESCRIPTION: 1500 Series - 1500 Square Planter: 30in H x 30in L x 30in D, Formed Steel Outer Structure, Polyurethane Waterproof Coating

FINISH: All steel components are protected with E-Coat rust proofing.
The Maglin Powdercoat System provides a durable finish on all metal surfaces.

INSTALLATION: Planter comes pre-assembled and can be installed freestanding, or surface mounted.
A plug in the middle can be removed if drainage is desired.

TO SPECIFY: Select MPL-1500-00011
Choose:
- Powdercoat Color

HEIGHT: 30" (76.2cm) LENGTH: 30" (76.2cm) DEPTH: 30" (76.2cm) WEIGHT: 195.15lbs (88.5kg)



MAGLIN Site Furniture

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Specification Details*

Description	Catalog Number	"A" Pole Height Above Grade	"D" Tip Dimension	"C" Stepped Section Height	"E" Flare	"B" Direct Burial Length & "F" Dia.	Pole Weight Direct Burial	Pole Weight Base Plate
Canterbury 10'	KYC10	10' 0"	6 1/8"	46"	18"	5' 0" x 10"	1000 lbs	795 lbs
Canterbury 13'	KYC13	13' 0"	5 5/8"	46"	18"	5' 0" x 10"	1040 lbs	835 lbs
Canterbury 15'	KYC15	15' 0"	5 1/4"	46"	18"	5' 0" x 10"	1100 lbs	895 lbs
Canterbury 18'	KYC18	18' 0"	4 3/4"	46"	18"	5' 0" x 10"	1170 lbs	965 lbs
Canterbury 20'	KYH20	20' 0"	6 3/4"	56"	22"	5' 0" x 12"	1925 lbs	1655 lbs
Canterbury 25'	KYH25	25' 0"	5 7/8"	56"	22"	5' 0" x 12"	2175 lbs	1905 lbs
Canterbury 30'	KYH30	30' 0"	5"	56"	22"	5' 0" x 12"	2425 lbs	2155 lbs

* Bollard specification details can be found on our website

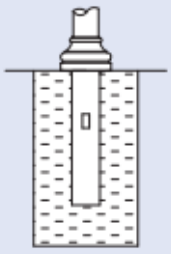
How to Catalog for Canterbury Concrete Pole

Pole Style	Detail		Finish		Footing Details		Coating
KYC KYH	F – Fluted NF – Non Fluted		E – Etched Finish		DB – Direct Buried FBP – Flush Baseplate SBP – Stub Baseplate		NA – Non Acrylic A – Acrylic AG – Anti Graffiti Coating***
KYH	F	30'	E	40	DB	140 30/30	GFI	NA
		Height 5' - 30'		Color** 10 – Midnight Lace 11 – Eclipse Black 30 – Salt & Pepper 40 – Pearl Gray 90 – Saluki bronze		Tenon (Post Top Mount) Specify Tenon Size For example 140 30/30 = 2 7/8" OD & 3" long	Options* DR – Duplex Receptacle GFI – Ground Fault Duplex Receptacle SR – 1 Outlet LRN – Ladder Rest BPC – Base Plate Cover AB – Anchor Bolts BA – Banner Arms FH – Flag Holders

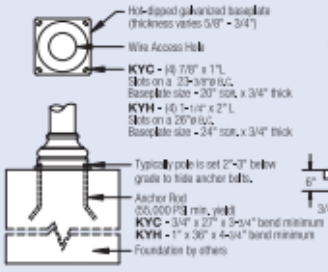
* Consult website for full listings. ** See decor colors on page 2 for full selection of colors.
***Anti Graffiti Coating is extra, consult factory for more details.

Footing Details

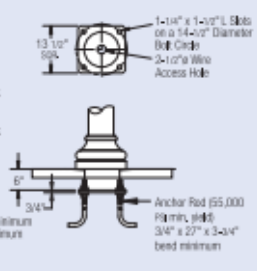
Direct Buried
(Simple and Cost Effective)
1. Auger the setting hole.
2. Set pole in hole and plumb straight.
3. Backfill* with required backfill tamping every 4" to 6".



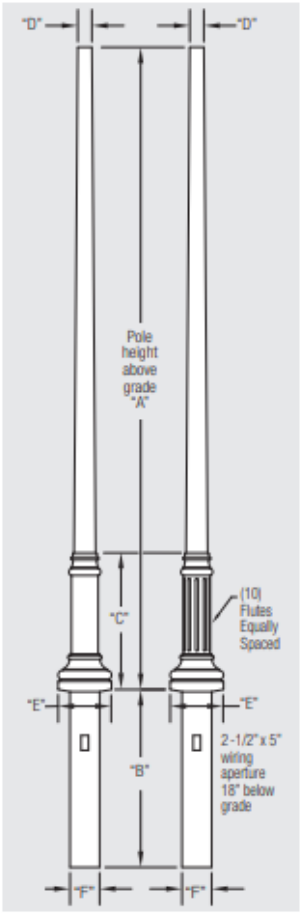
Baseplate Option 1: FBP



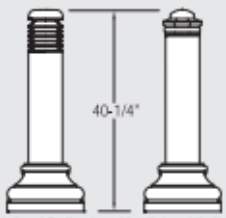
Baseplate Option 2: SBP



*Generally the excavated material can be used for backfill, in some situations better backfill may be required.



Typical Pole Cross Section



Lighted Bollard Nonlighted Bollard

K551 ECLIPSE - LED

With its streamlined modern shape, the K551 Eclipse post top luminaire offers a sleek, clean look that is well suited for one of our concrete poles, or aluminum Agility Series poles to complement any contemporary outdoor space.

King Luminaire

PRODUCT SPECIFICATIONS

LED ENGINE
Light engine shall be an array of 36, 42, 54 or 63 solid state Cree X-Series high power LEDs (light emitting diodes) mounted to a multi-sided, vertical heat sink of highly conductive aluminum. The LED emitters are mounted to removable circuit boards such that they are in full thermal contact with the vertical heat sink. The vertical heat sink is open at the bottom and vented at the top to provide appropriate dynamic airflow cooling for the LED array. The emitters are arranged in various patterns on each face of the vertical heat sink to provide the required light distribution.

OPTICS
The LED arrays include optical baffles constructed of optical grade ABS plastic with a vacuum metallized reflective surface or clear acrylic precision refractors over each diode. Both optical options are designed to efficiently control light distribution in IESNA Type IV & V for the B3 and Type III & V for the R1.

LENS
The lens is a heavy duty 1/4" wall clear acrylic tube that has a diameter of 8.75" and is sealed with a closed cell silicone gasket at both ends.

LUMINAIRE CONSTRUCTION
The K551 Eclipse fixture is comprised of two spun aluminum alloy spinnings with a minimum thickness of 0.09" which are permanently affixed to three heavy duty aluminum struts using stainless steel hardware. The base of each strut is attached to the Rotolock™ globe ring with stainless steel hardware.

The capital shall have an opening at the base tenon body to allow the luminaire to be mounted to a tenon of 3 1/2" maximum diameter. The luminaire shall be locked in place by means of heavy duty, stainless-steel set-screws.

DRIVER
The LED universal dimmable driver will be class 2 and capable of 120 - 277V or 347 - 480V input voltage, greater than 0.9 power factor, less than 20% total harmonic distortion. The case temperature of the driver can range from -40°C up to 70°C. Each LED system comes with a standard surge protection designed to withstand up to 20kV/10kA of transient line surge as per IEEE C62.41.2 C High. An in-line ferrite choke is utilized to provide protection against EFT's. Dimming capable using 1-10vdc (10% to 100%), 10v PWM, or resistance.

PHOTOMETRICS
Fixtures are tested to IESNA LM79 specifications. These reports are available upon request.

CHROMATICITY
High output LEDs come standard at 3000K & 4000K (+/- 300K) with a minimum nominal 70 CRI. Additional CCT emitters are available upon request.

LUMEN MAINTENANCE
Reported (TM21) and Calculated (L70) reports are available upon request with a minimum calculated value of 100,000 hrs.

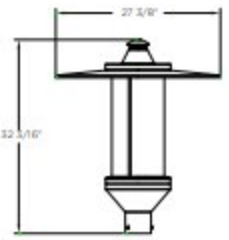
WIRING
All internal wiring and connections shall be completed so that it will be necessary only to attach the incoming supply connectors to Mate-N-Lok connectors or to a terminal block. Mate-N-Lok shall be certified for 600V operation. Internal wire connectors shall be crimp connector only and rated at 1000V and 150°C. All wiring to be CSA certified and/or UL listed, type SFF-2, SEWF-2, or SEW-2 No. 14 gauge, 150°C, 600V, and color coded for the required voltage.

THERMALS
Fixtures tested by a DOE sanctioned test facility to determine the maximum in-situ solder-point or junction-point temperatures of the LED emitters. This report is available upon request.

FINISH
Housing is finished with a 13 step KingCoat™ SuperDurable polyester TGIC powder coat. Standard colors include strobe white, brown metal, marina blue, gate gray, Chicago bronze, standard gold, standard black, federal green and rain forest. Please see our website for a complete list of colors. RAL and custom color matches are available.

MISCELLANEOUS
All exterior hardware and fasteners, wholly or partly exposed, shall be stainless steel alloy. All internal fasteners are stainless steel or zinc coated steel. All remaining internal hardware is stainless steel, aluminum alloy, or zinc coated steel.

WARRANTY
The K551 Eclipse LED luminaire comes with a 7 year limited warranty.



CERTIFICATION:
CSA US Listed
Suitable for wet locations
ISO 9001
IP66
ARRA Compliant
LM79 / LM80 Compliant

DRIVER INFO:
>0.9 Power Factor
<20% Total Harmonic Distortion
120 - 277V & 347 - 480V
-40°C Min. Case Temperature
70°C Max. Case Temperature
Surge Protection: ANSI 136.2 extreme level 20 kV/10 kA
Dimming Capable: 1-10vdc

EPA:
1.57 sq. ft.

FIXTURE WEIGHT:
39 lbs

C US SGS

Contact King Luminaire for product specifications that are exempt from CSA Certification.
08-27-2021

K728 MODERNE JR. - LED

A 3/4 scaled version of the K828, the K728 Moderne Jr. is a sleek, smooth fixture designed to be used on its own in a street or area lighting system, or in combination with its matching K800 luminaire. This allows both roadway and pedestrian concerns to be individually met without any compromise.

King Luminaire

PRODUCT SPECIFICATIONS

LED ENGINE
Light engine shall include an array of 30 solid state Cree X-Series high power LEDs (light emitting diodes). The emitters shall be mounted to a metal core circuit board using SMT technology. The LEDs and circuit boards shall then be mounted to a high performance heat sink which is vented to the outside ambient air to provide dynamic airflow for cooling the system.

OPTICS
External light control shall consist of high precision refractive lenses mounted above the LED emitter arrays in such a way to achieve optimum uplight control. The lenses shall also control horizontal light distribution so that Type II, III, IV or V IESNA distribution patterns are achieved.

LENS
The K728 Moderne Jr. pendant is available with or without a lens. Lens options include; sag glass lens; shallow glass lens; rippled acrylic shallow lens; or rippled acrylic deep dish lens. The glass lens shall be made of #9000 clear borosilicate glass (fully annealed). It shall maintain a minimum thickness of 0.16". The acrylic lens shall be moulded of rippled acrylic Acrylite Plus Acrylic Polymer, or equivalent, having a minimum thickness of 0.15". The lens is secured by means of a cast A319 aluminum holding ring that is sealed to provide an IP66 Ingress rating. Additionally, a continuous circular gasket rated for 270°F must hold the lens into place within the cast ring assembly and assist in sealing the fixture.

LUMINAIRE CONSTRUCTION
The luminaire shall consist of a heavy cast aluminum housing that acts as the enclosure for the engine and is of adequate thickness to give structural rigidity. The engine must be affixed to the inside of the housing with stainless steel screws.

PLUMBIZER
The K728 Moderne Jr. comes with multiple mounting options including the KPL10, KPL11, KPL20, KPL21, KPL30, KPL31 and KPL40. Please contact King Luminaire for more details and specifications.

DRIVER
The LED universal dimmable driver will be class 2 and capable of 120 - 277V or 347 - 480V input voltage, greater than 0.9 power factor, less than 20% total harmonic distortion. The case temperature of the driver can range from -40°C up to 70°C. Each LED system comes with a standard surge protection designed to withstand up to 20kV/10kA of transient line surge as per IEEE C62.41.2 C High. An in-line ferrite choke is utilized to provide protection against EFT's. The driver assembly will be mounted on a fabricated aluminum bracket to allow complete tool-less maintenance. Dimming capable using 1-10vdc (10% to 100%), 10v PWM, or resistance.

PHOTOMETRICS
Fixtures are tested to IESNA LM79 specifications. These reports are available upon request.

CHROMATICITY
High output LEDs come standard at 3000K & 4000K (+/- 300K) with a minimum nominal 70 CRI. Additional CCT emitters are available upon request.

LUMEN MAINTENANCE
Reported (TM21) and Calculated (L70) reports are available upon request with a minimum calculated value of 100,000 hrs.

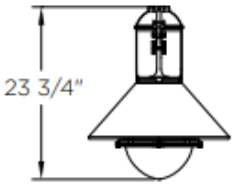
WIRING
All internal wiring and connections shall be completed so that it will be necessary only to attach the incoming supply connectors to Mate-N-Lok connectors or to a terminal block. Mate-N-Lok shall be certified for 600V operation. Internal wire connectors shall be crimp connector only and rated at 1000V and 150°C. All wiring to be CSA certified and/or UL listed, type SFF-2, SEWF-2, or SEW-2 No. 14 gauge, 150°C, 600V, and color coded for the required voltage.

THERMALS
Fixtures tested to DOE sanctioned standards to determine the maximum in-situ solder-point or junction-point temperatures of the LED emitters. This report is available upon request.

FINISH
Housing is finished with a 13 step KingCoat™ SuperDurable polyester TGIC powder coat. Standard colors include strobe white, brown metal, marina blue, gate gray, Chicago bronze, standard gold, standard black, federal green and rain forest. Please see our website for a complete list of colors. RAL and custom color matches are available.

MISCELLANEOUS
All exterior hardware and fasteners, wholly or partly exposed, shall be stainless steel alloy. All internal fasteners are stainless steel or zinc coated steel. All remaining internal hardware is stainless steel, aluminum alloy, or zinc coated steel.

WARRANTY
The K728 Moderne Jr. LED luminaire comes with a 7 year limited warranty.



CERTIFICATION:
CSA US Listed
Suitable for wet locations
ISO 9001
IP66
ARRA Compliant
LM79 / LM80 Compliant

DRIVER INFO:
>0.9 Power Factor
<20% Total Harmonic Distortion
120 - 277V & 347 - 480V
-40°C Min. Case Temperature
70°C Max. Case Temperature
Surge Protection: ANSI 136.2 extreme level 20kV/10kA
Dimming Capable: 1-10vdc

EPA:

Flat:	0.55 sq. ft.
Sag Lens:	0.58 sq. ft.
Shallow Lens:	0.67 sq. ft.
Deep Dish Lens:	0.82 sq. ft.

FIXTURE WEIGHT:

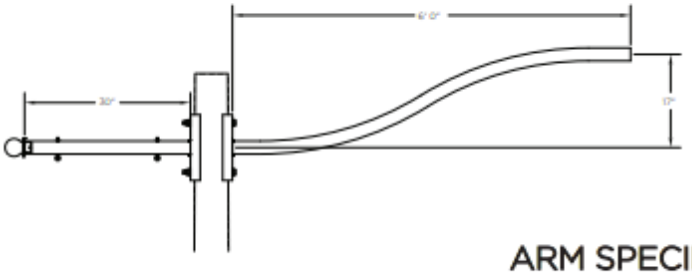
Flat:	19 lbs
Sag Lens:	22 lbs
Shallow Lens:	23 lbs
Deep Dish Lens:	23 lbs

Not all product variations listed on this page are DLC qualified. Visit www.designlights.org/search to confirm qualification.
08-11-2021

KA94 // THE BRONTE

DECORATIVE ARM

King Luminaire



The King Luminaire KA94 Aluminum Arm is a modern design with minimal detail. This aluminum arm is available in a variety of lengths in single and double arm configurations. The KA94 provides a sleek solution for any street lighting project.

ARM SPECIFICATIONS

MATERIAL:
Aluminum

MOUNTING TYPE:
Side

ARM QUANTITY:
Single

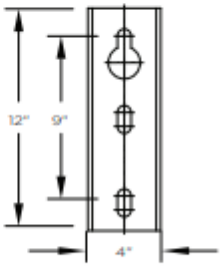
ARM LENGTHS:
6' and 8'

FINISH:
Available in textured or smooth.

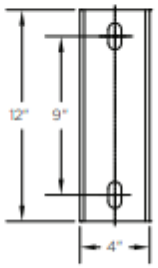
EPA
2.00 - 2.86 sq. ft.

WEIGHT
21 - 27 lbs

MOUNTING TYPES:



Side Mount Details
4" x 1 3/4" x 12"L



Accessory Mount Details
4" x 1 3/4" x 12"L

LEVELING DEVICE:

KPL20

KPL30

*See leveling device spec sheet for more options

ARM DIMENSIONS:

Run	Rise
6'	17"
8'	27 1/8"

HOW TO ORDER

ARM STYLE
KA94

MOUNTING TYPE
S - Side

LENGTH
6 - 6 Feet
8 - 8 Feet

KA94 - A - S - 1 - ☐

MATERIAL
A - Aluminum

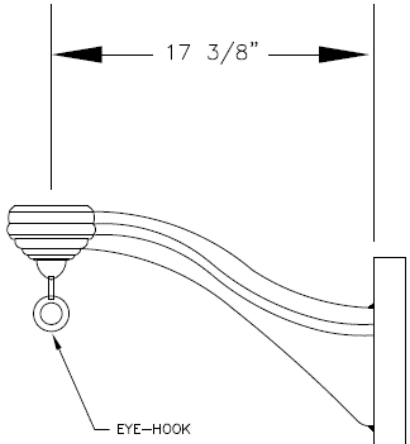
 # OF ARMS
1 - SIngle

EPA & WEIGHT

Catalog Number	Mount Type	# Of Arms	L (ft)	EPA (sq ft)	Wt. (lbs)
KA94-A-S-1-6	Side	1	6	2.00	21
KA94-A-S-1-8	Side	1	8	2.86	27

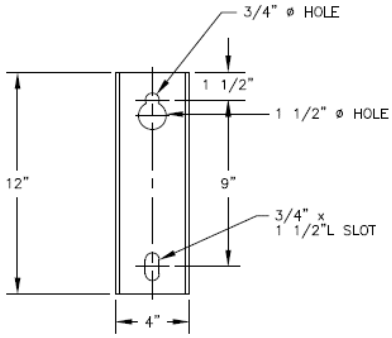
10-31-2023

REV.	ALTERATION	DATE	BY



MAX FLOWER POT
WEIGHT OF 50LBS WET

ARM SPECIFICATIONS
CATALOGUE NO.: K64FPH–S
QUANTITY:
MATERIAL: CAST ALUMINUM
PAINT: TEXTURED BLACK
OPTIONS:



CHANNEL DETAIL

CUSTOMER APPROVAL & DATE:

CUSTOMER ORDER No:	
STRESSCRETE ORDER No:	–
KMFG. ORDER No:	
KING U.S. ORDER No:	–

King Luminaire • StressCrete • Est. 1953
STRESSCRETE GROUP

Manufacturing Locations:
Burlington, Ontario 1–800–268–7809
Northport, Alabama 1–800–435–6563
Atchison, Kansas 1–800–837–1024
Jefferson, Ohio 1–800–268–7809

PROJECT/CUSTOMER: HAMILTON PARTS

DRAWN BY:	AT:	CHECKED BY:	DATE:	REVISION:
GR	SC1		06/12/20	

DRAWING TYPE:	DRAWING NUMBER:
APPROVAL/MFG. DWG.	KSSFF–K118–KA64–5

Hamilton

Hamilton Light Rail Transit (LRT) Project

Street Design and Furniture Standards for the Hamilton LRT Corridor

LRT Sub-Committee

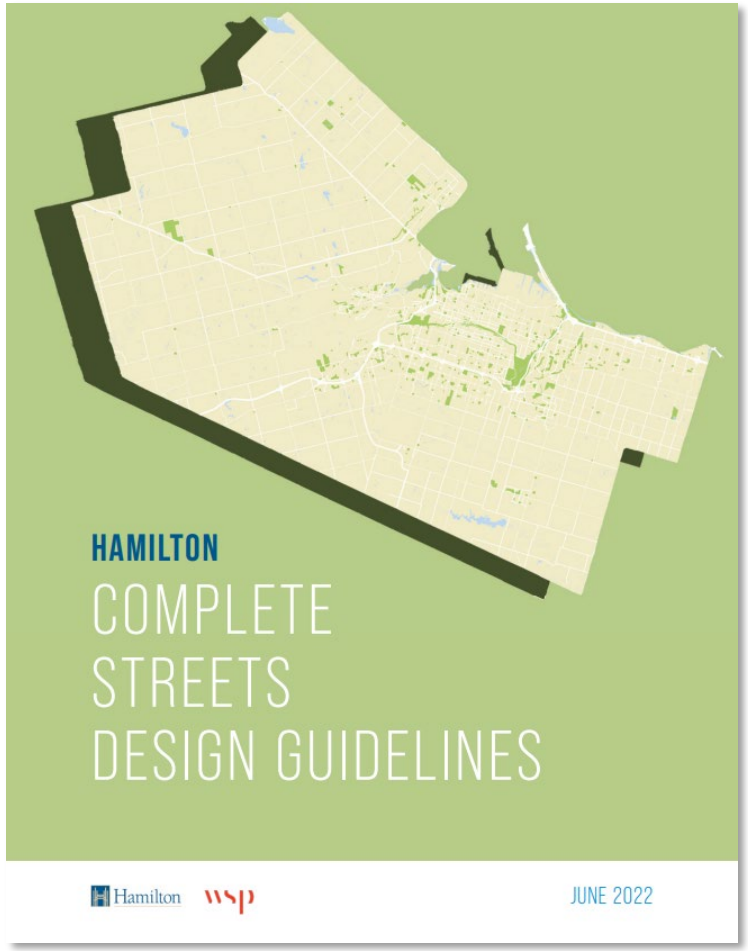
February 20, 2025

Agenda

- Policy Implementation
- Standards Document - Summary
  - Introduction, objectives, principles
  - Reference to current standards
  - Implementation of Complete Streets
  - Pavement & landscaping
  - Design guidelines for special areas
  - Placement recommendations
  - Street furniture catalogue
  - Advertising furniture program
- Financial Considerations
- Next Steps

Policy Implementation

- Independent chapter and update of “City of Hamilton Co-ordinated Street Furniture Guidelines” (August 2015)
  - Responds to Section 2.5.3 recommendation to improve the image of transit and the experience of transit passengers along higher order corridors through unique and consistent street furniture selection.
- Supports implementation of the “Complete Streets Design Manual” (July 2022) (along with the guidelines).
- In accordance with Council recommendation associated with Staff Report PED21020(a)/PW21002(a), directing staff to update roadway design manuals and guidelines to reflect the Complete Streets Design Manual.



Standards Document – Introduction, objectives, principles

Introduction

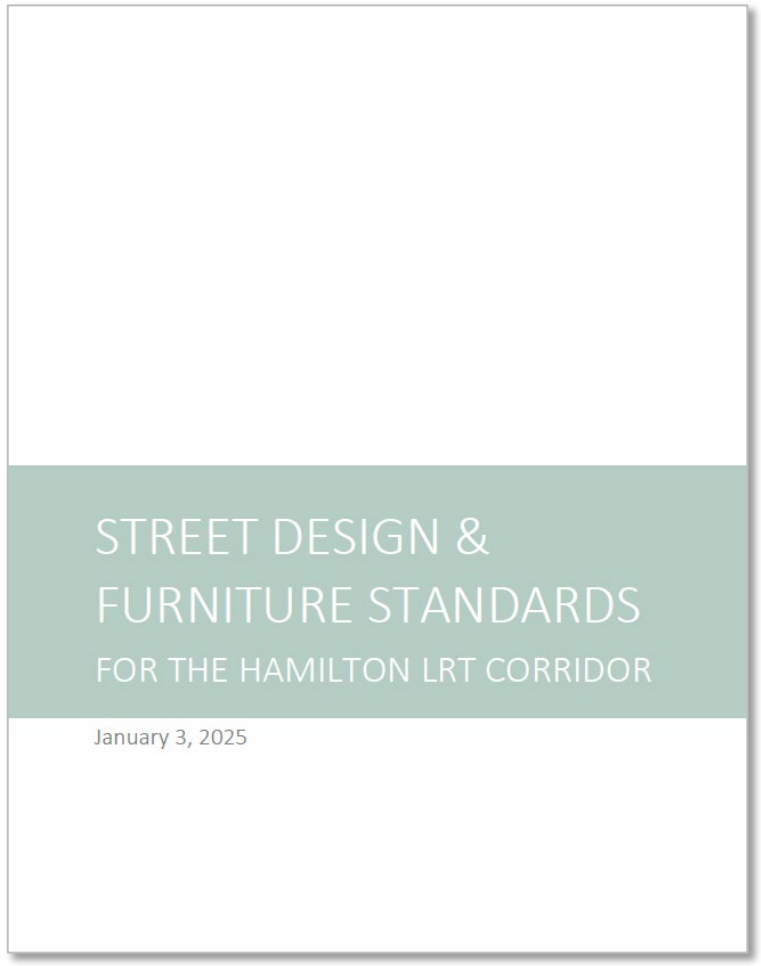
- 2023 assessment: Gaps in streetscaping standards; mix of furniture types installed; multiple standard and policies sources

Objectives

- Identify preferred street furniture solutions to help build and support Hamilton's civic identity, and establish a continuous, quality streetscape along the LRT Corridor.

Principles

- Modularity/flexibility
- Style/design coordination across family of elements
- Accessibility
- Safety
- Durability and ease of maintenance



Standards Document – References to current standards

Includes references to established City policies, guidelines, and standards related to streetscaping:

- Hamilton Complete Streets Design Guidelines (July 2022);
- City of Hamilton Co-Ordinated Street Furniture Guidelines (August 2015);
- Forestry and Horticulture - Design and Preservation Manual for Assets on Public Property (December 2024);
- Barrier-Free Design Guidelines (2006);
- Urban Braille design standards; and
- Parking pay stations placement and sizing requirements.

Standards Document – Implementation of Complete Streets

- Identifies Complete Streets Design Manual recommendations:
  - Typical pedestrian zone configuration
  - Direction to prioritize green infrastructure
- Types of streetscapes and preferred design elements:
  - Substandard (<3m):
    - Sidewalk and reduced buffer zone with minimal furnishings.
  - Constrained (3m to 4.75m):
    - Reduced street tree/furniture zone.
    - May include street furniture (benches, bike racks)
    - May include street trees (if soil volume available)
  - Preferred (equal or >4.75m):
    - Most permissive to include street trees, landscaping, furniture.

Illustration of pedestrian zones in the Complete Streets Design Manual (p.54)

Standards Document – Pavement & landscaping

Pavement

- Typical: Concrete pavement for hard surface elements with Urban Braille for walkways.
- Special areas (wider and active public realm):
  - Decorative pavers for buffer/furnishing/frontage zones, to accent, delineate, and organize different areas in the pedestrian boulevard.
  - Decorative road pavement for certain enhanced street design segments (based on **The Gore Standard: Hardscape Design**)

Landscaping

- Reference to standards in the **Forestry and Horticulture Design and Preservation Manual**: Planting beds; street trees planting solutions; plant material selection

Google image of Gore Park improvements based on 'The Gore Standard: Hardscape Design'

Standards Document – Design guidelines for special areas

- BIA areas
  - Discourages variations to street furniture standards (for visual continuity along corridor streetscape)
  - Potential customized enhancements: Signage, decorative banners, public art features, enhanced landscaping
- International Village
  - Custom implementation of **The Gore Standard: Hardscape Design**
  - Special design of pedestrianized side streets or parkettes
- Sites with wider streetscape/public realm: McMaster University, Jackson Square, Eastgate Square, and future parkettes (pending detailed LRT design)
  - Encourages unique site design inclusive of special features compatible with core line of standards

Google image of King St E, in International Village, viewing west from Mary St

Standards Document – Placement recommendations

- Typical locations: pedestrian crosswalks, bus stops, important destinations (grocery store, schools, community center, parks, commercial streets, etc.)
- General spacing of benches: 5 min walk (‘pedestrian shed’) or ~400m (3-4 blocks distance)
- Preferred placement for benches
  - Good microclimatic conditions (shade, protection from wind)
  - Near building faces or buffered from vehicular lanes
- Recommended elements and configurations for type of location

Pedestrian oriented streetscape on Argyle St (Halifax NS)

Standards Document – Street furniture catalogue

- Selection of types and models (availability from vendors with local or regional contacts):
  - Benches: backed, backless, armless, or multi-purpose
  - Bollards: lighted or non-lighted
  - Waste containers
  - Bicycle parking
  - Tree grates, tree guards
  - Planters
  - Poles, luminaires, pole arms (for banners or planters)
- Notes for selection, alternative options

Vendor photos of selected street furniture models: Bench by Maglin; Waste container by Maglin; Tree grates by Ironsmith

Standards Document – Advertising furniture program

- Advertising program details:
  - Special benches, waste receptacles, or combined
  - Location: visibility, near areas with pedestrian traffic
  - Feature procured/installed/maintained by advertising vendors; Yearly revenue (~$147/feature/year)

- Impacts
  - Document discourages advertising furniture on corridor, to achieve continuous and quality streetscaping.

- Options
  - Placement on side streets, to support the local bus network and future pedestrian flows.

- Space availability on corridor may be reconsidered in the future.

Google image of advertising bench and waste receptacle combination, near intersection of Queenston Rd and Nash Rd

Financial Considerations

- Memorandum of Understanding (MOU) for the Hamilton Light Rail Transit (LRT) ratified in September 2021
  - MOU requires Metrolinx to build City infrastructure in accordance with City standards and guidelines in force three months prior to request for proposal (RFP) issuance.
- As this becomes a new City standard, staff will negotiate the cost of street furniture with Metrolinx through the implementation of the LRT project.
- Note: City has allocated a budget for enhancements items for the LRT project.
- Incremental maintenance costs will be subject to Council approval, closer to project substantial completion.

Next Steps

- Re-assessment of existing street furniture inventory on the LRT corridor.
- Negotiations of the cost of street furniture with Metrolinx through implementation of LRT project.
- For any cost contribution from the City to be used from City's allocated budget for enhancement items, staff will bring information to Council for approval.
- Incremental maintenance costs to be assessed closer to project substantial completion and brought to Council for approval.

Hamilton

THANK YOU

9.1

CITY OF HAMILTON

MOTION

Light Rail Transit Sub-Committee Meeting: February 20, 2025

MOVED BY COUNCILLOR N. NANN……

SECONDED BY COUNCILLOR……

Request that Staff from Metrolinx Attend the Light Rail Transit Sub-Committee

WHEREAS, as owner of the Hamilton Light Rail Transit project, Metrolinx is responsible for project procurement, scheduling and delivery; and

WHEREAS, the Hamilton Light Rail Transit Sub Committee's mandate includes providing input and guidance to the LRT Office project team on significant issues and decisions, as well as, engages the broader community on a regular basis throughout the design, planning and construction process of the LRT; and

WHEREAS, the Light Rail Transit Sub-Committee is the most direct source of official updates for the residents of Hamilton.

THEREFORE, BE IT RESOLVED:

That the City of Hamilton request that staff from Metrolinx attend the Light Rail Transit Sub-Committee on a regular basis to provide updates on project milestones and the overall progress of the project, to inform and educate residents about the project, and to leverage an opportunity to understand better the areas impacted.