



SILVER LINE SHELTER
ENHANCEMENTS



DRAFT
FOR INTERNAL REVIEW



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| DATE | REVISION |
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| 06/16/09 | DRAFT PD PACKAGE |
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SCALE
as noted

GENERAL NOTES



Silver Line Shelter Enhancements Preliminary Design Report

June 16, 2009
rev. June 23, 2009

DRAFT

Concept

This preliminary design package describes the recommended windscreen shelter and heating for the existing Silver Line shelters along Washington Street from Melnea Cass Boulevard to Herald Street. The design described below, and in the attached drawings, is intended to be used at eleven of the fifteen shelters. Inadequate space behind the shelters at four locations prevents this design from being constructed in those cases. These atypical conditions are described in more detail at the end of this report.

In looking at options for adding wind screens to the Silver Line shelters, there are four driving issues:

- Maintaining appropriate accessibility, especially to comply with pertinent regulations;
- Developing a concept of adding to an elegant structure which was neither designed nor engineered to be amended;
- Providing as much protection from wind and rain in all directions as possible; and,
- Preserving the distinctive aesthetics and structural integrity of the original shelter.

A number of design parameters were discussed with the MBTA and provided the basis for this design:

- Leave adequate room between curb and front wind screen for general circulation and bus boarding and alighting. Five feet would be ideal.
- Leave a minimum five-foot clearance between the back of sidewalk or building and the rear wind screen. Generally this dimension ranges from seven to up to twenty feet.

General Description

A high level of transparency is preferred for reasons of light and security. The material recommended for glazing is a glass-polycarbonate laminated product such as DuPont™ SentryGlas®. This is considered a safety glass with a high degree of resistance to vandalism. The typical panel size is slightly smaller than 24 by 48 inches. A frame would be constructed of brushed stainless steel.

The proposed wind screen design would be a storefront system, primarily supported on the ground with supplemental support for lateral (wind) loads provided through attachments to the structural ribs of the existing shelter roof. The attachment members are stainless steel to provide an industrial look that is compatible with the architecture of the existing shelter. The vertical glazing of the wind screen does not extend higher than the top of the existing columns.

Two radiant heaters will be installed in the soffit of the existing shelter roof, in two compartments formerly occupied by lights.

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A solid base panel (stainless steel) finishes the bottom of the glazing and frame and is set off the sidewalk approximately three inches in order to avoid collecting trash and to allow for easy sidewalk cleaning.

The existing benches would be relocated to the rear of the shelter. Placing the back of the benches next to the wind screen will also prevent people from sitting on the backs.

Summary of Alternatives

A series of alternatives were developed that explored a range of variables including:

- Degree of attachment or independence between the wind screen and the existing shelter, in both terms of structure and visual impact;
- Placement of heating units;
- Degree of enclosure provided through the back, sides, front and top of the windscreen; and,
- Size of, transparency of and material for glazing panels.

Illustrations prepared during the exploration of these alternatives are included as Appendix A.

Shelter Context

Generally, the existing structures were placed to impact adjacent land uses as little as possible. In most cases, the shelters are located in front of multi-family residential buildings or open space. The table below provides a brief description of the setbacks and land uses at each of the shelters. In two cases, new buildings have been constructed behind the shelters since the shelters were erected.

| Stop Location | Approx Distance behind Shelter | Condition Behind Shelter | Notes | Shelter Type |
|-------------------------|--------------------------------|--------------------------|--|------------------------------------|
| 1 Melnea Cass Boulevard | IB | 11 | Open space | A |
| | OB | 20 | Vacant parcel | Varies A |
| 3 Lenox Street | IB | 10 | Residential | Mid-rise with set back A |
| | OB | 10 | Lawn | Cooper Community Cen. A |
| 5 Massachusetts Avenue | IB | 20 | Residential over first floor commercial | A |
| | OB | 17 | Residential over first floor commercial | A |
| 7 Worcester Square | IB | 10 | Residential | No shelter A |
| | OB | 13 | Residential | Mid-rise with set back A |
| 9 Newton Street | IB | 10 | Residential | Mid-rise A |
| | OB | 11 | First floor commercial/community gardens | A |

| | | | | | | |
|----|----------------------|----|-----|------------------------|------------------------|----------|
| 11 | Union Park | IB | 3+ | First floor comm | Less than 5-foot clear | B |
| 12 | | OB | 11 | First floor commercial | | A |
| 13 | East Berkeley Street | IB | 1.5 | First floor comm | Less than 5-foot clear | B |
| 14 | | OB | 4+ | First floor comm | Less than 5-foot clear | B |
| 15 | Herald Street | IB | 3.5 | Parking lot | Less than 5-foot clear | B |
| 16 | | OB | 7 | Blank building wall | | A |

| | |
|--------------------------|-----------|
| <u>Total No Shelters</u> | <u>15</u> |
| Number Type A | 11 |
| Number Type B | 4 |

Design Exceptions

Four shelters have less than five-foot clearance between the back of the shelter and the back of sidewalk or building façade. These are listed in the above table as lines 11, 13, 14 and 15, and are generally found at the end of the corridor closest to downtown. The design described above is not workable at these four locations for a number of dimensional reasons, so we are recommending a simplified design for these shelters. This is shown on Drawing A-02 and consists of a windscreen at the back of the bench in its existing location. Radiant heaters will be installed as in the other shelter locations.

Next Steps

Materials Investigation

- Glazing - We will contact DuPont and other manufactures of glass-polycarbonate laminate, arrange for samples and set up a meeting with the manufactures and various MBTA representatives.
- Wind Screen Framing – We will look into stainless steel storefronts/fabrication as well as aluminum storefront systems.

Structural Issues

- Design foundations for windscreen frame.
- Investigate effect of additional lateral loads on existing roof structure
- Design foundation for relocated benches

Electrical Issues

- Identify power requirements for radiant heaters and, if existing service is not adequate, design necessary upgrade
- Design programmable on-off switch with patron-activated sensor

GENERAL NOTES

1. THIS DRAWING COVERS GENERAL NOTES FOR THE ARCHITECTURAL DISCIPLINES ONLY.
2. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING AND BE KNOWLEDGEABLE OF CONDITIONS THEREIN. THE CONTRACTOR SHALL INVESTIGATE, VERIFY AND BE RESPONSIBLE FOR ALL CONDITIONS OF THE PROJECT AND SHALL NOTIFY THE ARCHITECT ANY CONDITIONS REQUIRING MODIFICATIONS BEFORE PROCEEDING WITH THE WORK.
3. THE CONTRACTOR SHALL COORDINATE ALL REQUIREMENTS FOR SIDEWALKS, DRIVEWAYS, CURBS, GUTTERS, STREET AND SITE LIGHTS, EASEMENTS, UTILITIES, ETC., ADJACENT TO THE PROPERTIES WITH STANDARDS INDICATED AND OBTAIN ALL PERMITS, IF REQUIRED, PRIOR TO DOING ANY WORK.
4. ALL DIMENSIONS SHALL BE FIELD COORDINATED WITH ALL OTHER DISCIPLINES BY THE CONTRACTOR. ANY DISCREPANCIES SHALL BE REPORTED TO THE ARCHITECT PRIOR TO PROCEEDING WITH THE WORK.
5. CONTRACTOR SHALL VERIFY ALL PROPOSED AND EXISTING CONDITIONS, DIMENSIONS AND ELEVATIONS IN THE FIELD. NOTIFY THE ARCHITECT IMMEDIATELY AND PRIOR TO PROCEEDING WITH RELEVANT ASPECT OF THE WORK OF ANY LAYOUT CONDITION THAT IS NOT CONSISTENT WITH THE INTENT OF THE DRAWINGS OR THAT WILL IMPAIR LAYOUT OR ATTACHMENT OF FINISHES.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ACCURATE PLACEMENT OF THE BUILDING ON THE SITE.
7. DO NOT SCALE DRAWINGS. USE INDICATED OR CALCULATED DIMENSIONS AND ELEVATIONS IN THE FIELD.
8. DETAILS NOT SHOWN ARE SIMILAR IN CHARACTER TO DETAILS SHOWN. WHERE SPECIFIC DETAILS, DIMENSIONS OR DESIGN INTENT CANNOT BE DETERMINED, CONSULT WITH THE ARCHITECT PRIOR TO PROCEEDING WITH THE WORK.
9. ISOLATE DISSIMILAR METALS AND CORROSIVE MATERIALS FROM DIRECT CONTACT AS INDICATED OR BY THE USE OF NEOPRENE OR EPDM WASHERS/GASKETS OR BY OTHER SUITABLE MEAN TO ELIMINATE OPPORTUNITIES FOR GALVANIC ACTION.

10. CONTRACTOR SHALL BE SOLEY RESPONSIBLE FOR THE SAFETY OF ALL CONSTRUCTION PERSONNEL AND AUTHORIZED VISITORS.
11. CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL CONSTRUCTION AND DEMOLITION DEBRIS.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR THE MEANS METHODS AND SEQUENCES OF CONSTRUCTION – SCHEDULING SHALL CONSIDER EXIISTING STRUCTURE TO BE OPERATIONAL DURING CONSTRUCTION.
13. SHOP DRAWINGS, PRODUCT SUBMITTALS AND SAMPLES SHALL BE PROVIDED FOR THE WORK, INCLUDING, BUT NOT LIMITED TO:
 - STOREFRONT
 - GLAZING

REGULATORY AGENCY SUMMARY

1. ALL REQUIREMENTS OF MAAB/ADAAG SHALL APPLY TO THE INSTALLATION OF THE WORK. NOTIFY ARCHITECT OF ANY INCONSISTENCIES OR DISCREPANCIES WITH THE REQUIREMENTS OF THESE AGENCIES.
2. CONTRACTOR SHALL PERFORM WORK IN ACCORDANCE WITH ALL APPLICABLE BUILDING CODES, REGULATIONS, ORDINANCES, UTILITY REQUIREMENTS AND SIMIALR STANDARDS.

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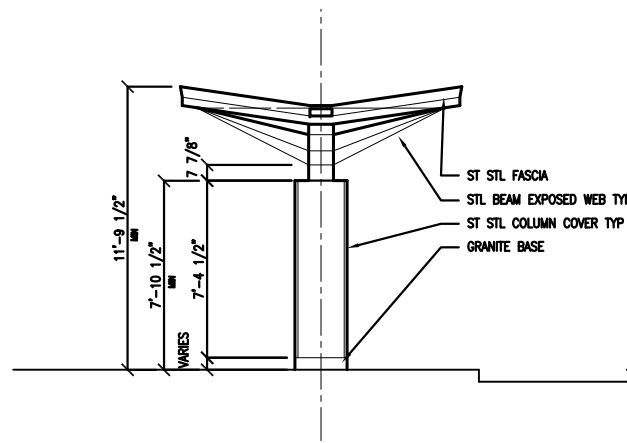


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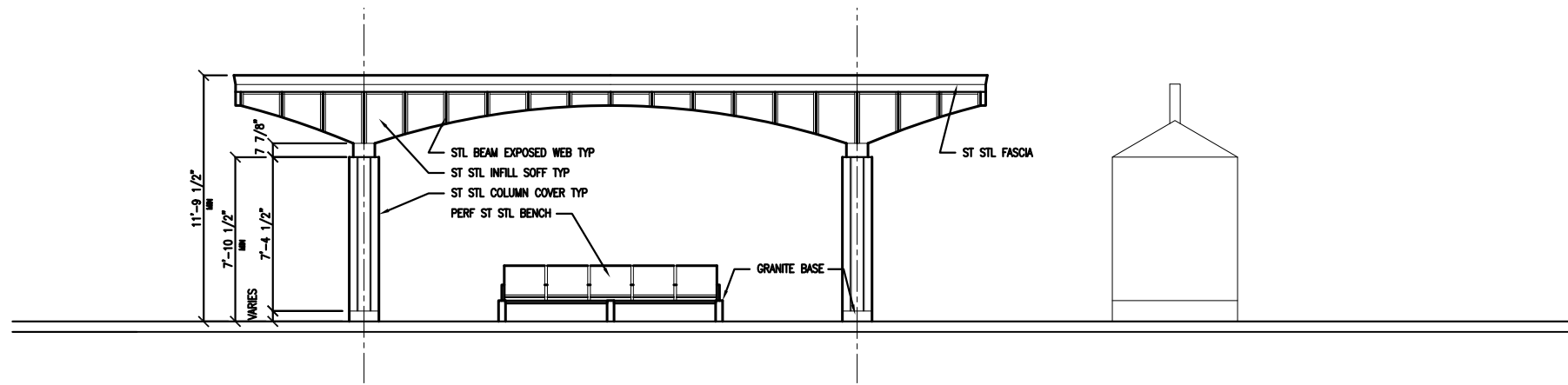
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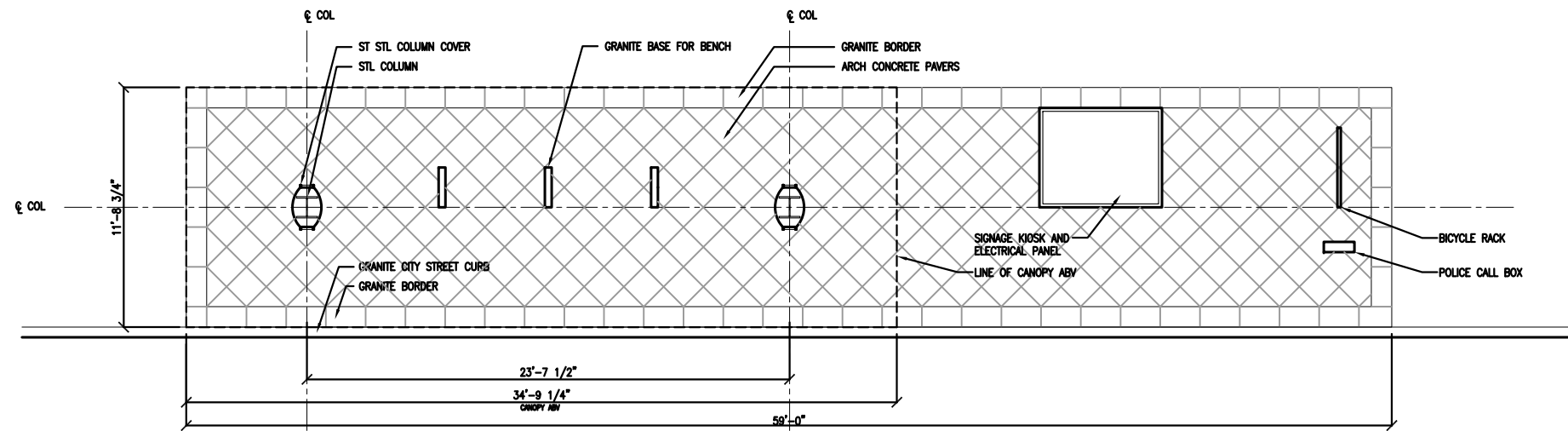
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3 CANOPY SIDE ELEVATION
SCALE: 1/8"=1'-0"



1 CANOPY FRONT ELEVATION
SCALE: 1/8"=1'-0"



2 TYPICAL STATION PLAN
SCALE: 1/8"=1'-0"

SILVER LINE SHELTER ENHANCEMENTS

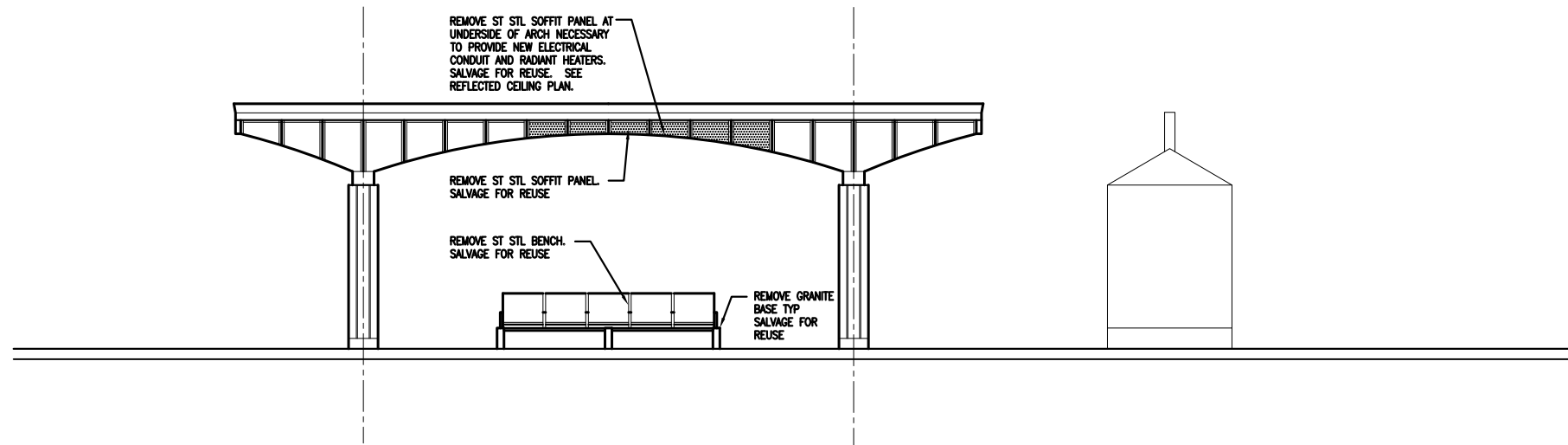


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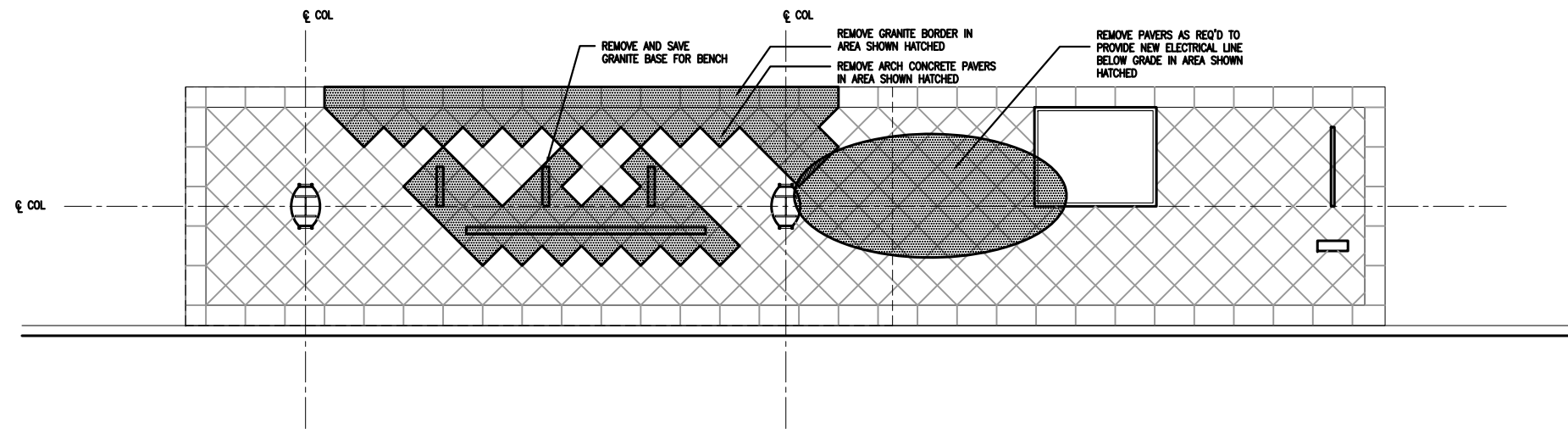
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1 DEMO – FRONT ELEVATION
SCALE: 1/8"=1'-0"



2 DEMO – TYPICAL STATION PLAN
SCALE: 1/8"=1'-0"

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SHEET NUMBER

D01



1 Melnea Cass Blvd - IB



2 Melnea Cass Blvd - OB



3 Lenox Street - IB



4 Lenox Street - OB



5 Mass Ave - IB



6 Mass Ave - OB



7 Worcester Sq - IB



8 Worcester Sq - OB



9 Newton Street - IB



10 Newton Street - OB



11 Union Park - IB



12 Union Park - OB



13 East Berkeley - IB



14 East Berkeley - OB



15 Herald Street - IB



16 Herald Street - OB

| Stop Location | Approx Distance behind Shelter | Condition Behind Shelter | Notes | Shelter Type |
|-------------------------|--------------------------------|--|------------------------|--------------|
| 1 Melnea Cass Boulevard | IB 11 | Open space | | A |
| 2 Melnea Cass Boulevard | OB 20 | Vacant parcel | Varies | A |
| 3 Lenox Street | IB 10 | Residential | Set back | A |
| 4 Lenox Street | OB 10 | Lawn | | A |
| 5 Massachusetts Avenue | IB 20 | Residential over first floor commercial | | A |
| 6 Massachusetts Avenue | OB 17 | Residential over first floor commercial | | A |
| 7 Worcester Square | IB 10 | Residential | No shelter | A |
| 8 Worcester Square | OB 13 | Residential | Set back | A |
| 9 Newton Street | IB 10 | Open space | | A |
| 10 Newton Street | OB 11 | First floor commercial/community gardens | | A |
| 11 Union Park | IB 3+ | First floor comm | Less than 5-foot clear | B |
| 12 Union Park | OB 11 | First floor commercial | | A |
| 13 East Berkeley Street | IB <1 | First floor comm | Less than 5-foot clear | C |
| 14 East Berkeley Street | OB 4+ | First floor comm | Less than 5-foot clear | B |
| 15 Herald Street | IB 3.5 | Parking lot | Less than 5-foot clear | B |
| 16 Herald Street | OB 7 | Blank building wall | | A |

| | |
|-------------------|----|
| Total No Shelters | 15 |
| Number Type A | 11 |
| Number Type B | 3 |
| Number Type C | 1 |

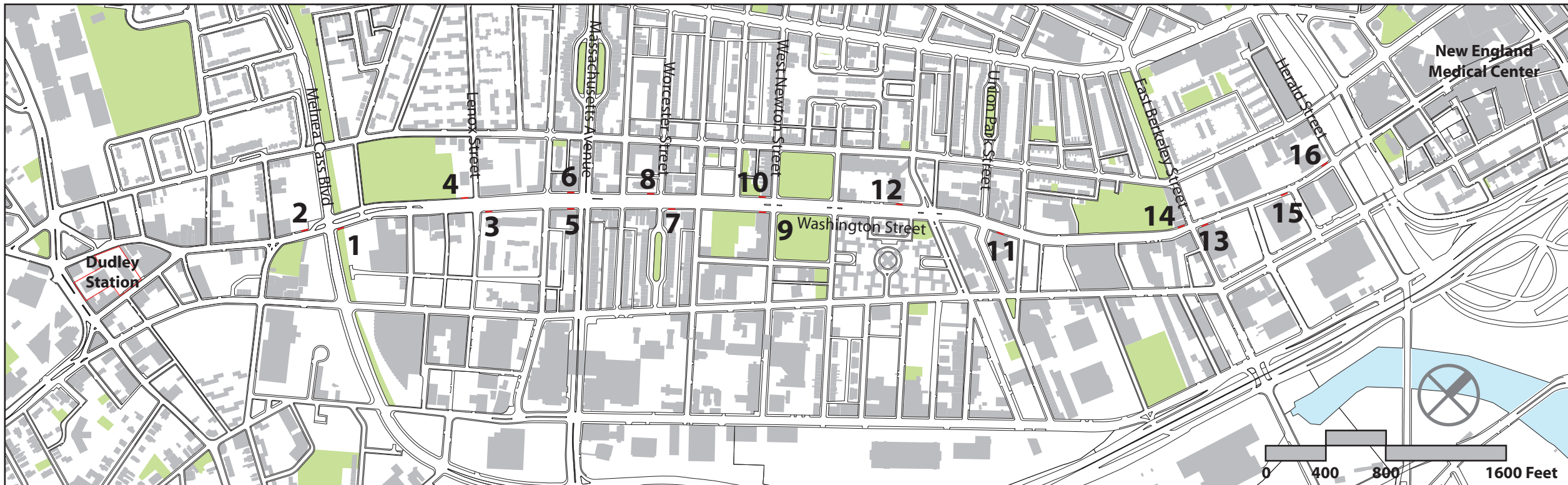
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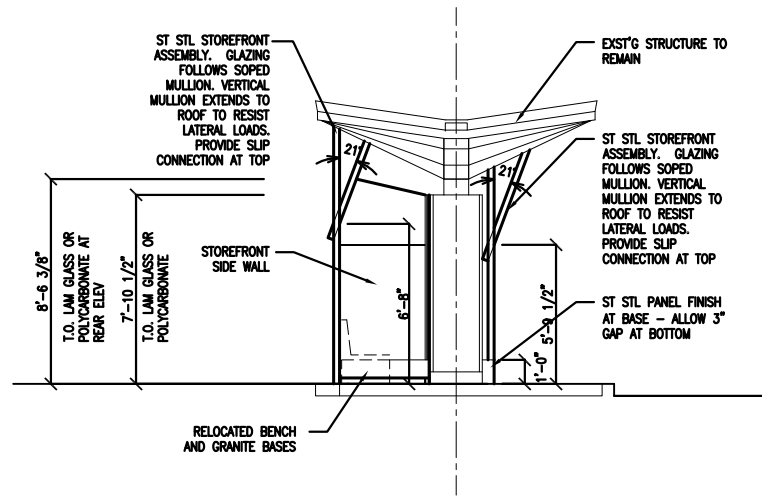


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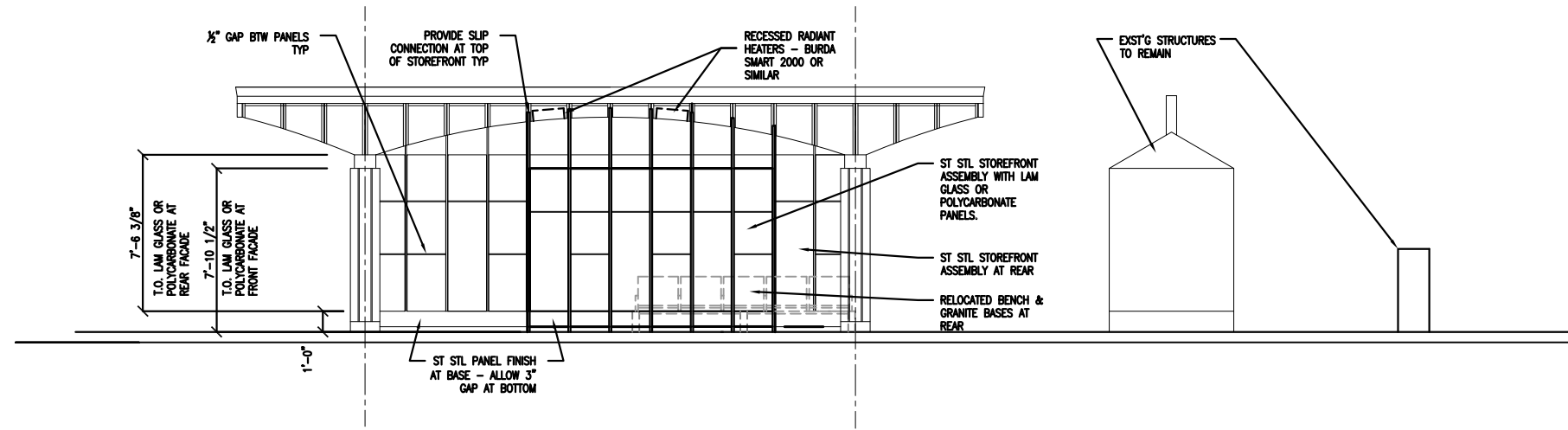
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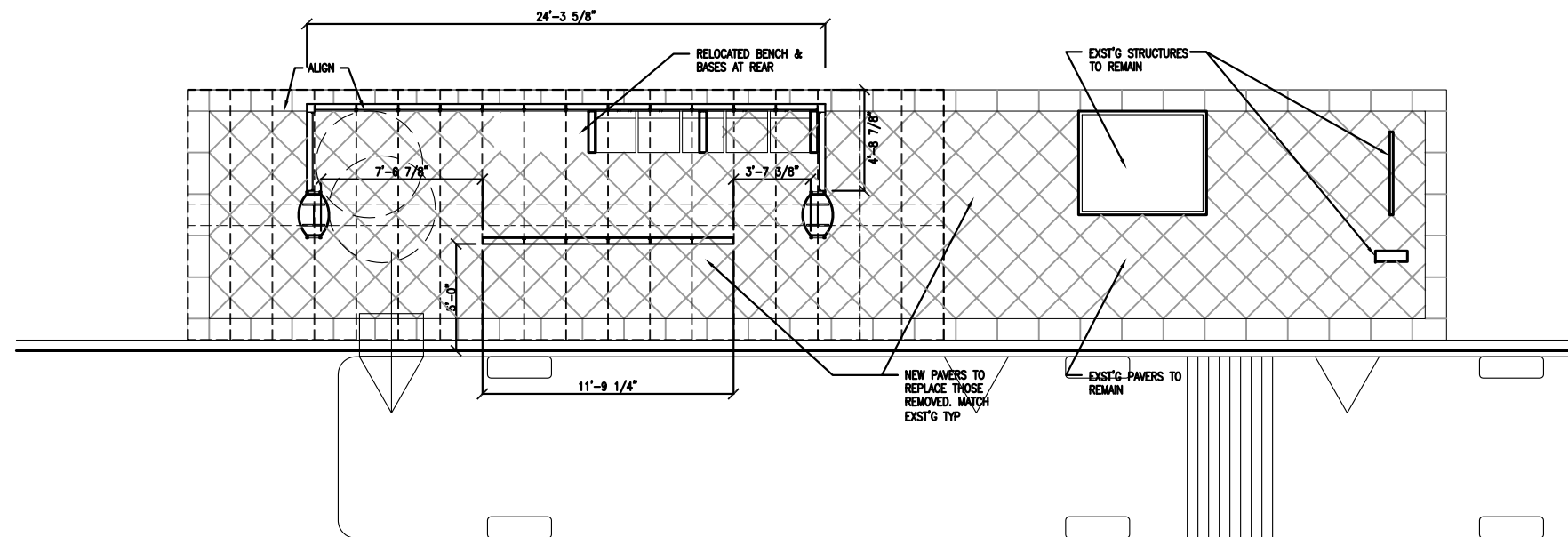
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3 SIDE ELEVATION
SCALE: 1/8"=1'-0"



1 FRONT ELEVATION
SCALE: 1/8"=1'-0"



2 TYPICAL STATION PLAN
SCALE: 1/8"=1'-0"

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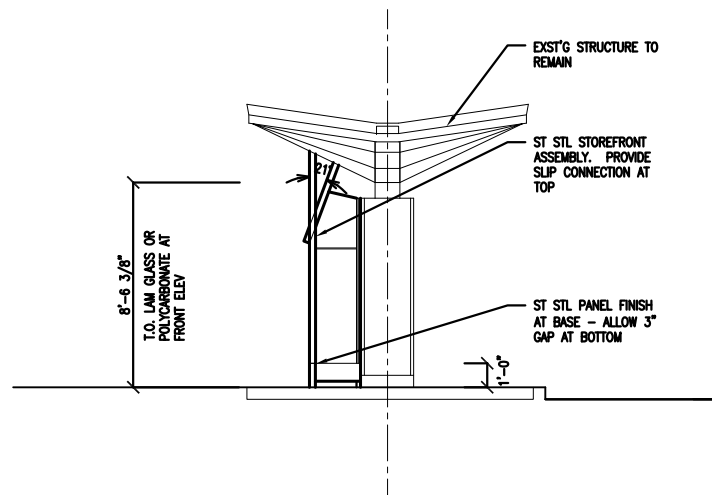
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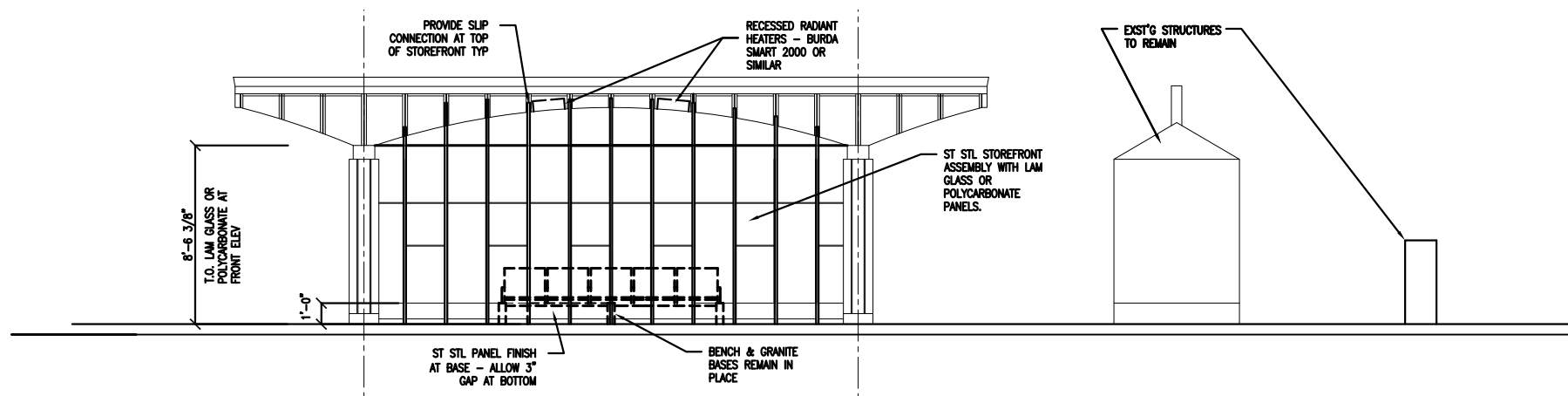
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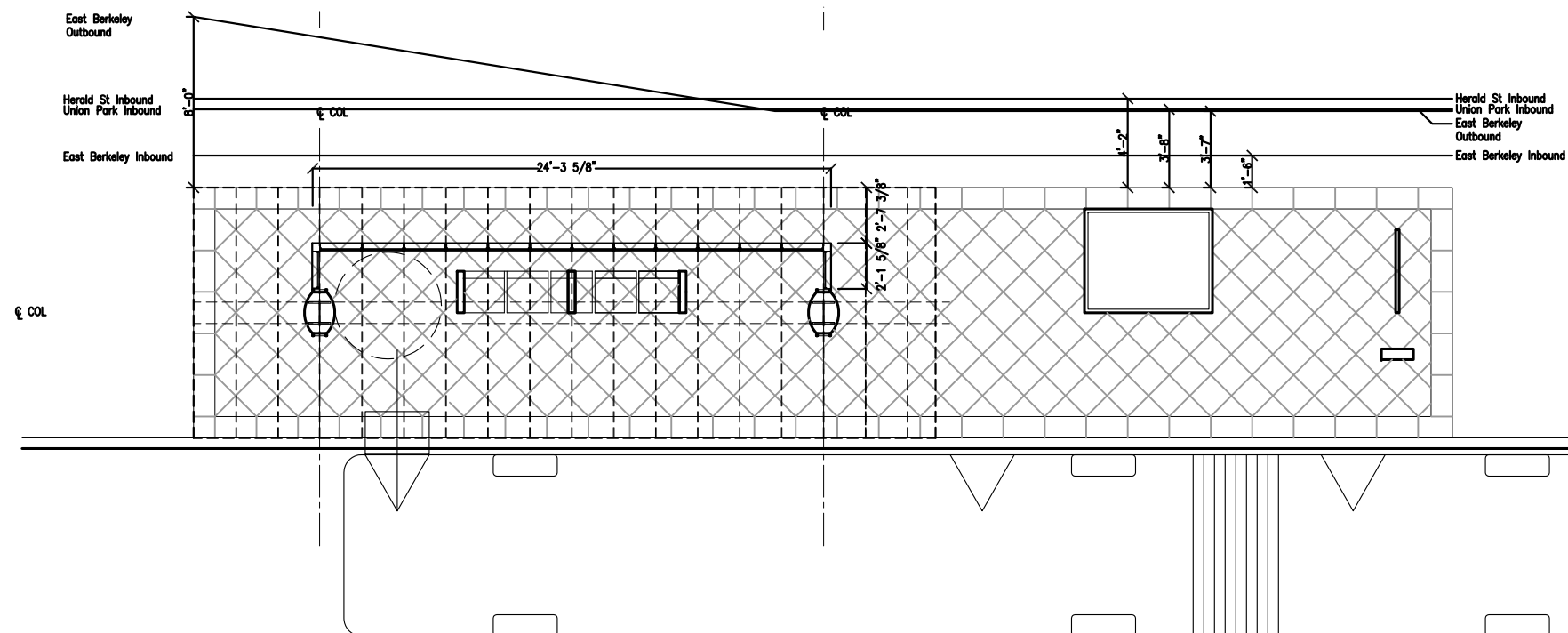
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3 SIDE ELEVATION
SCALE: 1/8"=1'-0"



1 FRONT ELEVATION
SCALE: 1/8"=1'-0"



2 ATYPICAL STATION PLAN 'B'
SCALE: 1/8"=1'-0"

NOTE: No improvements are proposed at Berkeley Street Inbound (Station Type 'C'), except for added heat appliances.

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