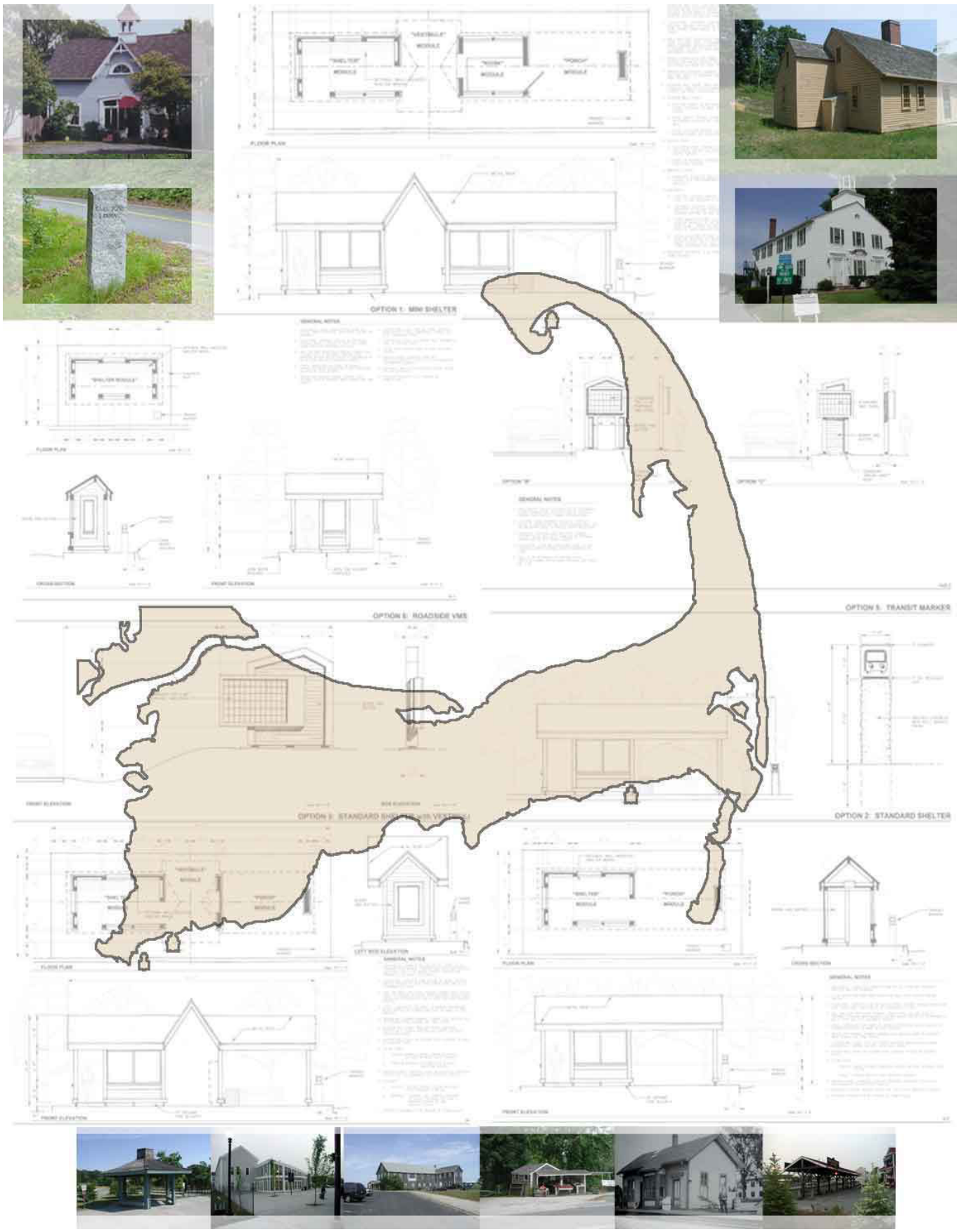
Cape Cod Transit Support Facilities Design Prototypes



Sponsored by: National Park Service & Cape Cod Commission

In Assocation with: PARSONS

February, 2004

CAPE COD TRANSIT SUPPORT FACILITIES DESIGN PROTOTYPES

BACKGROUND

The Cape Cod Transit Task Force has advanced a number of recommended projects and programs focused on improving public transportation through connecting and coordinating existing services and identifying needed new facilities and services. The Task Force, along with the Cape Cod Regional Transit Authority and the Cape Cod Commission, developed the Cape Cod 5-Year Plan for Public Transportation in June of 2002.

This plan was a vision for the future of the Cape's public transportation and includes the proposal of a network of alternative transportation routes linking local bus stops with small transportation centers or "mini-modal" centers located at key transfer points around the Cape. These mini-modal centers would in turn be connected with the new regional transportation hub in Hyannis that would be the gateway to statewide and nationwide air, ground, and water transportation services. The design of these alternative transportation facilities is of key importance, both in establishing the Cape-wide identity of the transportation system, but also in contributing to positive local land use and complementing regional and village growth centers.

THE DESIGN WORKSHOP

To provide a foundation for the design of the transit facilities, a design workshop was held in July of 2003 with invited members of the community, local transportation officials, transit-interest groups, and participants from the Cape Cod Commission, National Park Service, and the U.S. Department of Transportation. Working together with consultant architects and transportation planners, the Team explored the unique qualities of Cape Cod's built environment and applied these qualities to the design of transit facilities that will respond to local needs.

The formal objective of the workshop was to explore a set of alternative Cape Cod - specific design concepts for transit support facilities leading to design prototypes for a system of bus stops and transfer facilities. *Refer to the side-bar for the identified goals that address this objective.*

After preliminary research, investigation, and discussion, participants agreed that the future design work should be guided by a set of conditions and standards. *Refer to the side-bar for the list of identified standards and conditions.*

IDENTIFIED GOALS

- Identify the comfort and convenience requirements for transit users that would guide the design of transit support facilities.
- Develop an identity for the transit system established through high quality and characteristic architectural design, logos, and other means.

IDENTIFIED CONDITIONS AND STANDARDS

- Facilities need to be welcoming for users and meet minimum requirements for orientation, seating, and protection from wind, weather, and sun.
- Architectural elements and materials that represent the entire Cape include rectangular building forms, gable roofs, cedar shingle finishes, dimensioned siding, white trim on windows and siding, and familiar details such as cupolas, clocktowers, weathervanes, and chimneys.
- Architectural prototypes typical of the Cape that may be applied to the design of transit facilities include Cape Cod-style houses and barns (including the "Salt Box" style), lighthouses, traditional railway stations and outbuildings, and roadside vending structures.
- Facility design should address low maintenance and utilize durable materials.
- Facility design must incorporate accessibility and safety features.
- All Cape towns have common elements, yet details of scale, ornamentation, and building materials may vary from town to town. The use of local design variations such as wall finishes, colors, unique architectural elements, and public art will result in transit facilities with a strong sense of local identity and ownership.
- Unifying elements for transit stops could include a common system symbol or logo and consistent facility signage or markers.

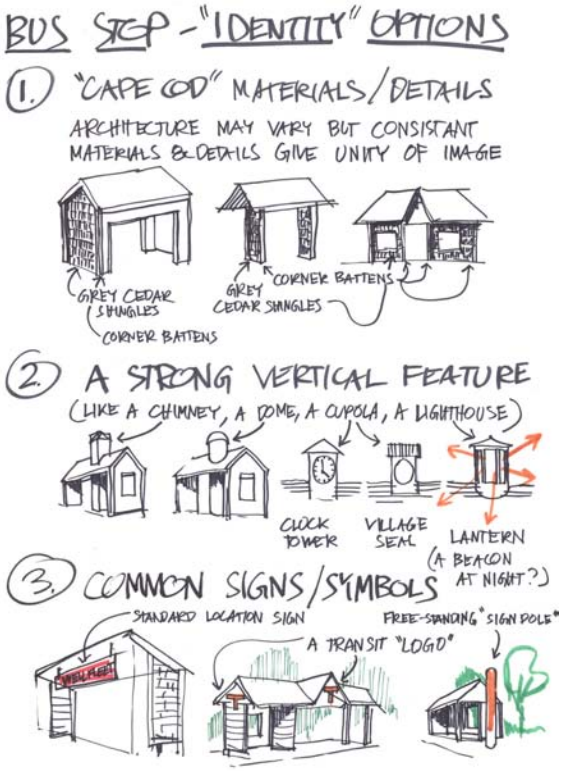
THREE TYPES OF CAPE TRANSIT FACILITIES

At the design workshop, the Team looked at three types, or "scales", of transit stops that work together to provide an easily-accessed, integrated bus system for the Cape. The intent was to develop preliminary design concepts for each of the types and to show how they combine to create a common image for Cape transit. The three types are:

- *Local Bus Stop:* This facility is the basic building block of Cape transit, a location along a road or street where a bus stops to board or discharge passengers. It could be as simple as a bench and a sign but should also provide basic shelter from the weather and essential transit information.

- *Community Bus Transfer Stop:* This facility is a "super bus stop" that serves as a transfer point between local bus routes and longer distance routes that run along the "spine" of the Cape, Highway 6. There may be one of these along Highway 6 at each town or major center of activity. This facility would combine all the features of the local bus stop with greater shelter and more information, including enhanced information for visitors. A minimal amount of bus user parking ("Park & Ride") may be provided at some of these facilities.

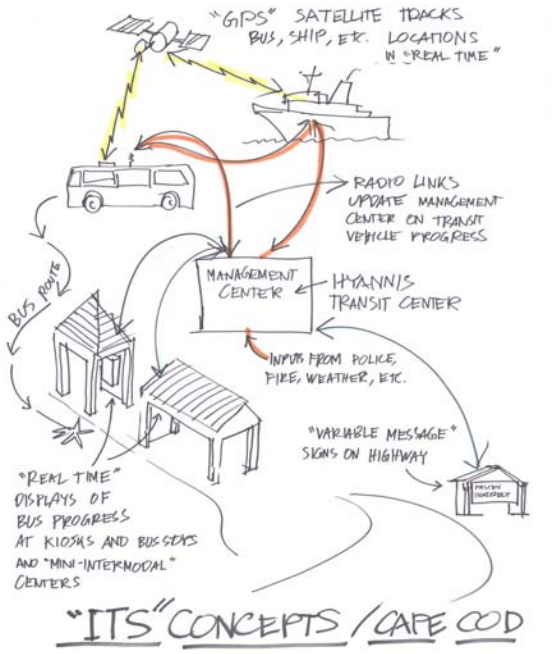
- *Mini-Intermodal Center:* This facility is similar in function to the new Cape-wide intermodal center at Hyannis but on a smaller scale. Three facilities are currently envisioned, one in Provincetown, one in Orleans and one in the Upper Cape *(location to be determined)*. These are major hubs where patrons can transfer between multiple local and regional bus routes. Like at Hyannis, other features may include Park & Ride, patron drop-off zones ("Kiss & Ride"), an indoor ticketing and waiting room, and a full offering of transit system and visitor information.



The Team then took the next step: assembling the elements of shelter and identity into the three types of Cape transit facilities: the Local Bus Stop, the Community Bus Transfer Stop, and the Mini Intermodal Center. A common identity is carried through all three types. The Local Bus Stop is expanded to form the Transfer Stop and elements of both show up in the Intermodal Center. Cape Cod Style unifies them all.

ITS CONCEPTS

ITS means “Intelligent Transportation Systems”. In the past, transit information was conveyed by signs, maps, and printed schedules. Today, these methods are augmented by “real time” information generated by computers, data links, and satellites. Simple displays bring this information right to the bus stop or to the computer in a home or office. On the Cape, this information will come to the public from electronic message signs in bus stops and along highways, and at user-operated kiosks in Transfer Stops and Intermodal Centers. ITS features are already in use at the Hyannis Transportation Center and this is only the beginning. Later in the report, three (3) prototypes will present ideas for the design of both highway and local roadside ITS displays, mixing today’s technology with a Cape Cod Style.



COMMUNITY OUTREACH

After the workshop, the Team presented the initial results at an open house with the local community officials, transit-related groups, and the general public. The design workshop results were then compiled into a workbook that was distributed throughout the Cape along with a comment sheet. The Team then developed final prototypes based on the comments received..

FINAL PROTOTYPES

The following pages represent the prototypes developed based on the designs created during the design workshop. The prototypes have been revised based upon comments received during the communtiy outreach, and from comments received by the National Park Service and the Cape Cod Commission. The following is a list of the prototypes developed:

- Prototype 1: Mini Shelter
- Prototype 2: Standard Shelter
- Prototype 3: Standard Shelter with Vestibule
- Prototype 4: Standard Shelter with Vestibule and Kiosk
- Prototype 5: Transit Marker
- Prototype 6: Roadside VMS-1
- Prototype 6: Roadside VMS-2

Design development did not stop with just the design of the shelters, consideration on site amenities was also part of the design workshop and the final prototypes. The adjacent sidebar provides information regarding the site amenities included in the final prototypes:

Each of the prototypes has been developed in enough detail to provide an initial cost estimate, which is included at the end of this report as Attachment A. However, these costs are preliminary and additional design and details need to be provided for a more accurate construction cost.

SITE AMENITIES

BENCHES: Concrete legs with wood seats and backs (optional recycled plastic or trex may be substituted for wood).
- Petersen Precast Site Furniture, model: PB-W; concrete leg model: CP-BWL; Dove Gray Smooth finish for concrete legs - or approved equal.

WASTE RECEPTACLES: Wood slats with a metal frame (optional recycled plastic or trex may be substituted for wood).
- DuMor model: Receptacle 70 - or approved equal.

BICYCLE RACKS: Powder coated 2-3/8” O.D. schedule 40 steel pipe.
- DuMor model: 130-20 - or approved equal.

SITE LIGHTING: Additional site lighting should match adjacent existing styles based upon its location so that new styles are not introduced into an area.

PATHWAYS / SIDWALKS: Additional pathways or sidewalks required to arrive at the facilities shall be furnished and installed by the City and/or Town.

The Mini Shelter is a smaller or "Mini" version of the Standard Shelter, which is the basic building block of all the prototypes, and is ideal for local community and rural bus routes or minor stops with limitied right-of-way off pavement. The Mini Shelter will provide basic services for people waiting for a bus, such as shelter from the weather during all seasons of the year. The adjacent sidebar describes, in detail, the minmum components which make up the Mini Shelter.

ANATOMY OF THE MINI SHELTER

APPLICABILITY: Local community and rural bus routes: minor stops with limited right-of-way off pavement.

FOUNDATION: Concrete slab on ubc on grade, integral spread footings or slab turn-downs under walls, as determined by loads.
- *204 SF Minimum concrete pad, 4" thick, reinforced*

WALL AND ROOF STRUCTURAL FRAMING: Formed steel sections sized to resemble standard wood members, welded and/or bolted (as determined by mix of shop and field assembly), painted.

ROOFS: Corrugated (or ribbed or seamed) proprietary metal roofing on plywood sheathing on wood or steel rafters.

WINDOW AND DOORWAY FRAMING: Formed steel sections sized to resemble wood framing and trim, painted.

EXTERIOR WALL FINISH: Trex (or other) composite wood/plastic planks, horizontally lapped, on steel structural frame.
- *Board and Batten*

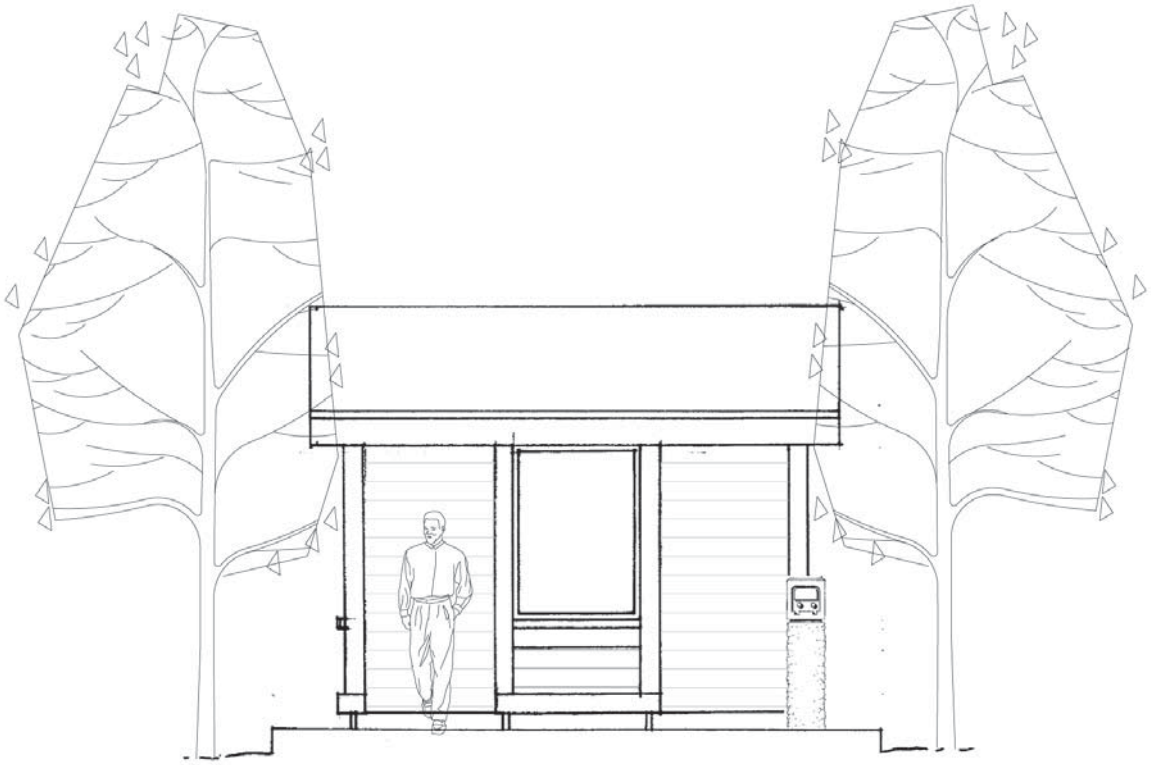
INTERIOR WALL FINISH: No interior finish (exposed to back of exterior finish).

CEILING FINISH: Exposed back of roof sheathing, painted.

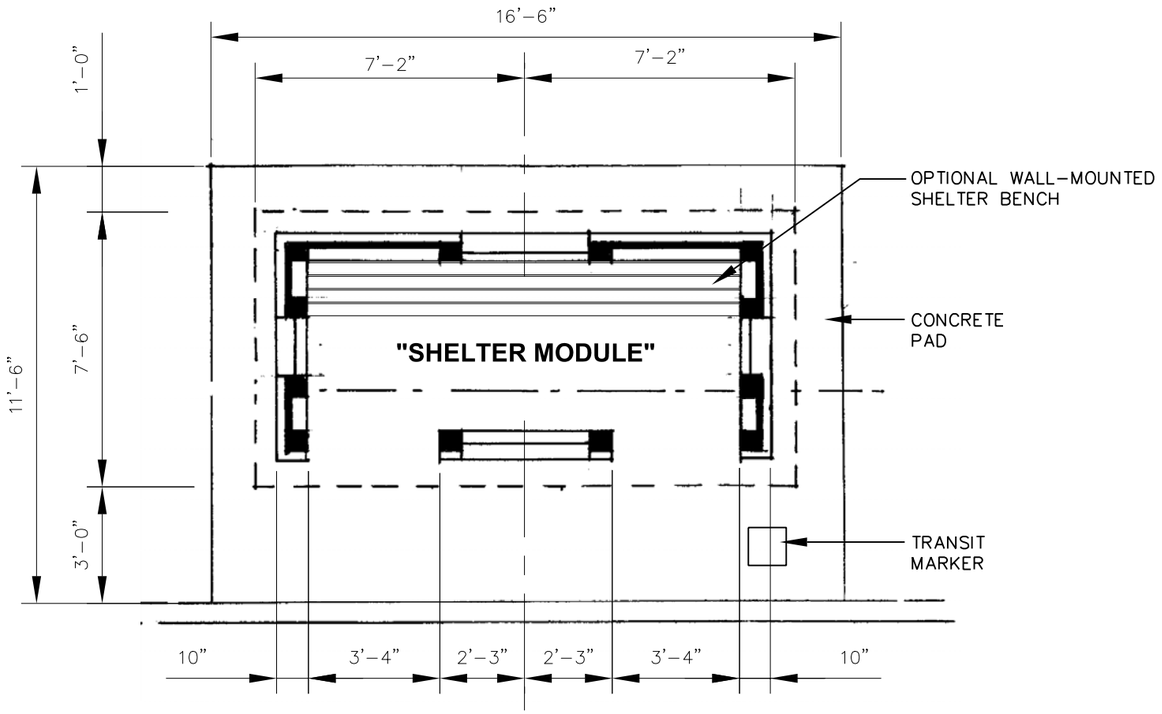
WINDOW GLAZING: Laminated glass or projectile-resistant plastic (e.g. polycarbonate or stretched acrylic).

EQUIPMENT: None

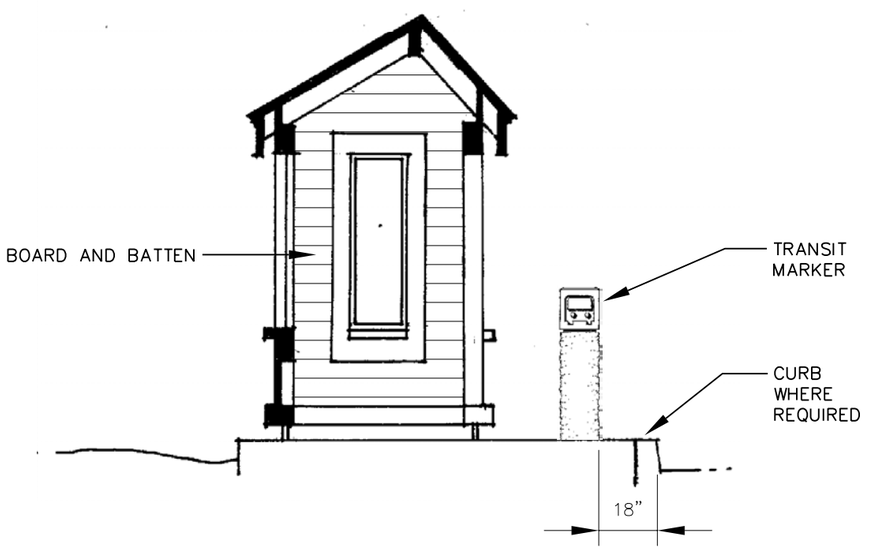
OPTIONS:
- *Wall-mounted shelter bench*
- *Ceiling-mounted radiant heater*
- *Ceiling-mounted light*



PROTOTYPE 1: MINI SHELTER



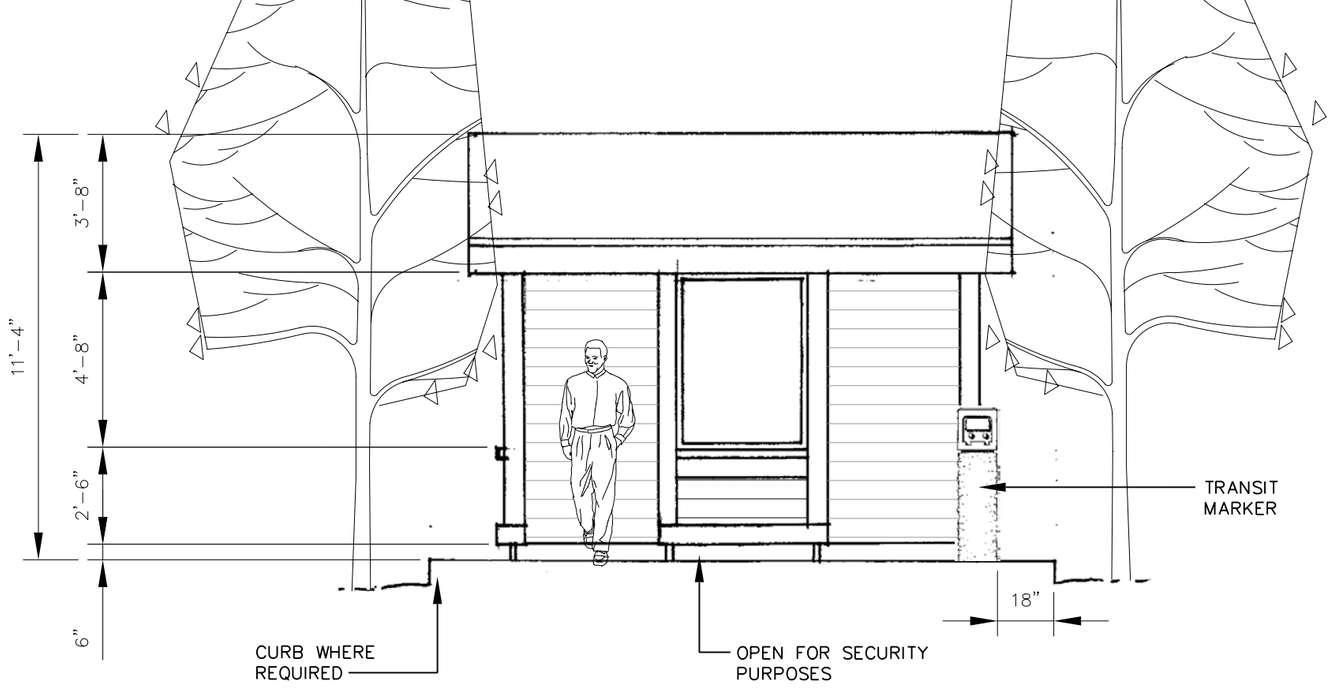
FLOOR PLAN Scale: 1/4" = 1' - 0"



CROSS-SECTION Scale: 1/4" = 1' - 0"

GENERAL NOTES

1. APPLICABILITY: LOCAL COMMUNITY AND RURAL BUS ROUTES: MINOR STOPS WITH LIMITED RIGHT–OF–WAY OFF PAVEMENT.
2. FOUNDATION: CONCRETE SLAB ON UBC ON GRADE, INTEGRAL SPREAD FOOTINGS OR SLAB TURN–DOWNS UNDER WALLS, AS DETERMINED BY LOADS.
3. WALL AND ROOF STRUCTURAL FRAMING: FORMED STEEL SECTIONS SIZED TO RESEMBLE STANDARD WOOD MEMBERS, WELDED AND/OR BOLTED (AS DETERMINED BY MIX OF SHOP AND FIELD ASSEMBLY), PAINTED.
4. ROOFS: ASPHALT SHINGLE OR CEDAR SHAKE ROOFING ON PLYWOOD SHEATHING ON WOOD OR STEEL RAFTERS.
5. WINDOW AND DOORWAY FRAMING: FORMED STEEL SECTIONS SIZED TO RESEMBLE WOOD FRAMING AND TRIM, PAINTED.
6. EXTERIOR WALL FINISH: TREX (OR OTHER) COMPOSITE WOOD/PLASTIC PLANKS, HORIZONTALLY LAPPED, ON STEEL STRUCTURAL FRAME.
7. INTERIOR WALL FINISH: NO INTERIOR FINISH (EXPOSED TO BACK OF EXTERIOR FINISH).
8. CEILING FINISH: EXPOSED BACK OF ROOF SHEATHING, PAINTED.
9. WINDOW GLAZING: LAMINATED GLASS OR PROJECTILE–RESISTANT PLASTIC (E.G. POLYCARBONATE OR STRETCHED ACRYLIC).
10. EQUIPMENT: NONE (CEILING–MOUNTED RADIANT HEATER OR LIGHT OPTIONAL).
11. APPROACH PATHWAYS TO BE PROVIDED BY TOWN/VILLAGE.



FRONT ELEVATION Scale: 1/4" = 1' - 0"

The Standard Shelter is the basic building block of all the prototypes and is carried throughout the options in some variation of its original form shown here. Applicable locations for the Standard Shelter include local and community bus routes and stops with adequate right-of-way pavement. The building provides basic shelter from the weather throughout the year. The adjacent sidebar describes, in detail, the minmum components which make up the Standard Shelter.

ANATOMY OF THE STANDARD SHELTER

APPLICABILITY: Local and community bus routes, stops with adequate right-of-way off pavement.
- As an option for stops with limited site area, porch module can be omitted.

FOUNDATION: Concrete slab on ubc on grade, integral spread footings or slab turn-downs under walls, as determined by loads.
- *434 SF Minimum concrete pad, 4" thick, reinforced*

WALL AND ROOF STRUCTURAL FRAMING: Formed steel sections sized to resemble standard wood members, welded and/or bolted (as determined by mix of shop and field assembly), painted.

ROOFS: Corrugated (or ribbed or seamed) proprietary metal roofing on plywood sheathing on wood or steel rafters.

WINDOW AND DOORWAY FRAMING: Formed steel sections sized to resemble wood framing and trim, painted.

EXTERIOR WALL FINISH: Trex (or other) composite wood/plastic planks, horizontally lapped, on steel structural frame.
- *Board and Batten*

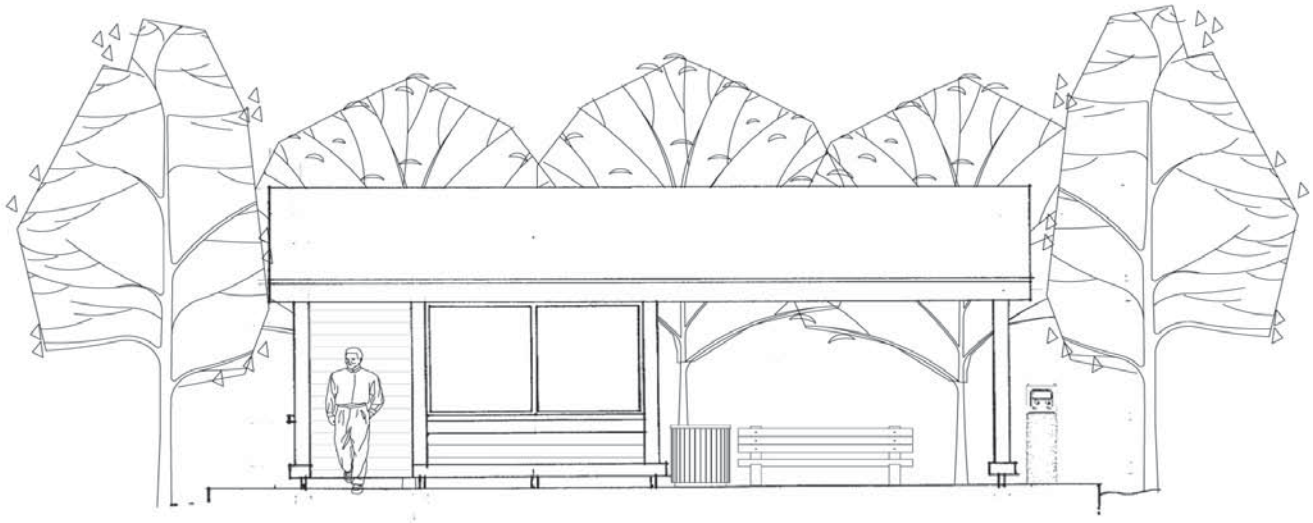
INTERIOR WALL FINISH: No interior finish (exposed to back of exterior finish).

CEILING FINISH:
- Shelter: marine plywood horizontal ceiling, on steel or wood joists, painted.
- Porch: exposed back of roof sheathing, painted.

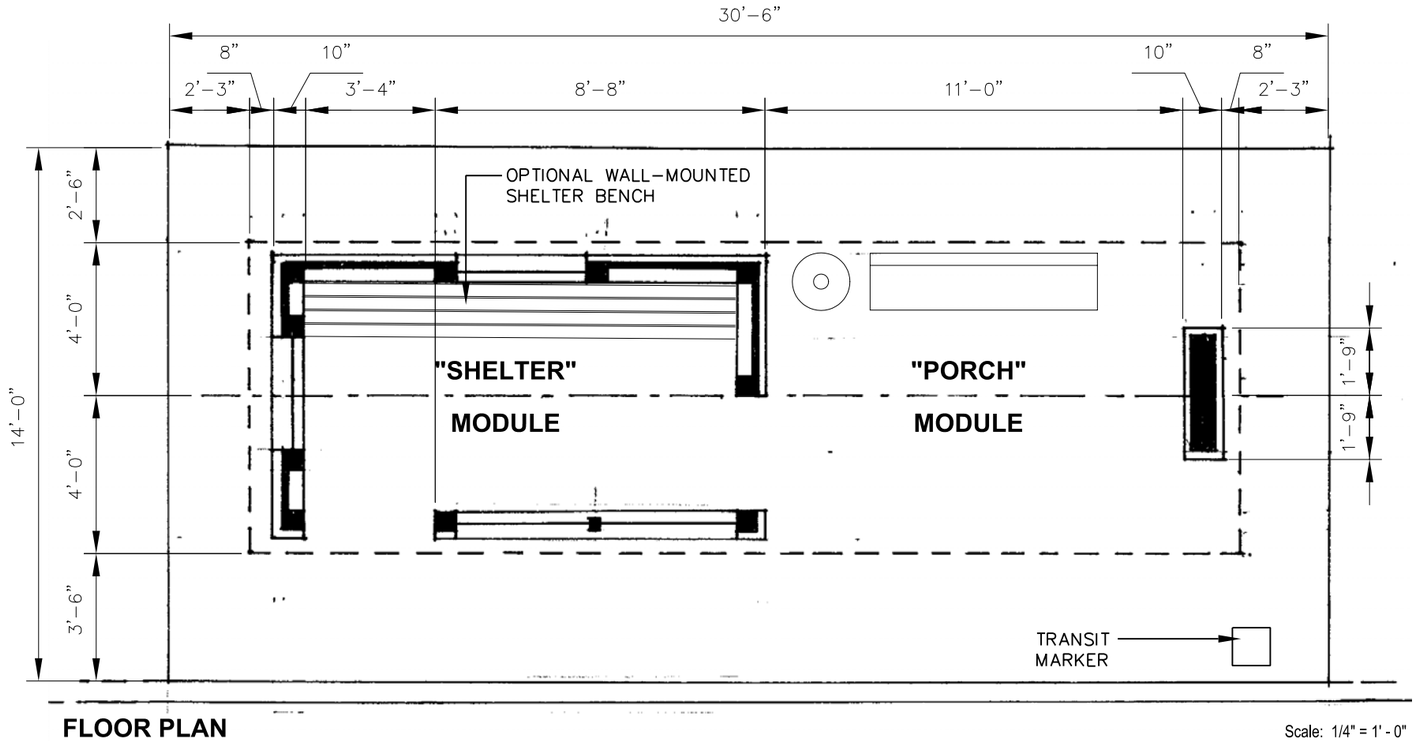
WINDOW GLAZING: Laminated glass or projectile-resistant plastic (e.g. polycarbonate or stretched acrylic).

EQUIPMENT: Electric radiant heater and light, flush-mounted in ceiling.

OPTIONS:
- *Wall-mounted shelter bench*

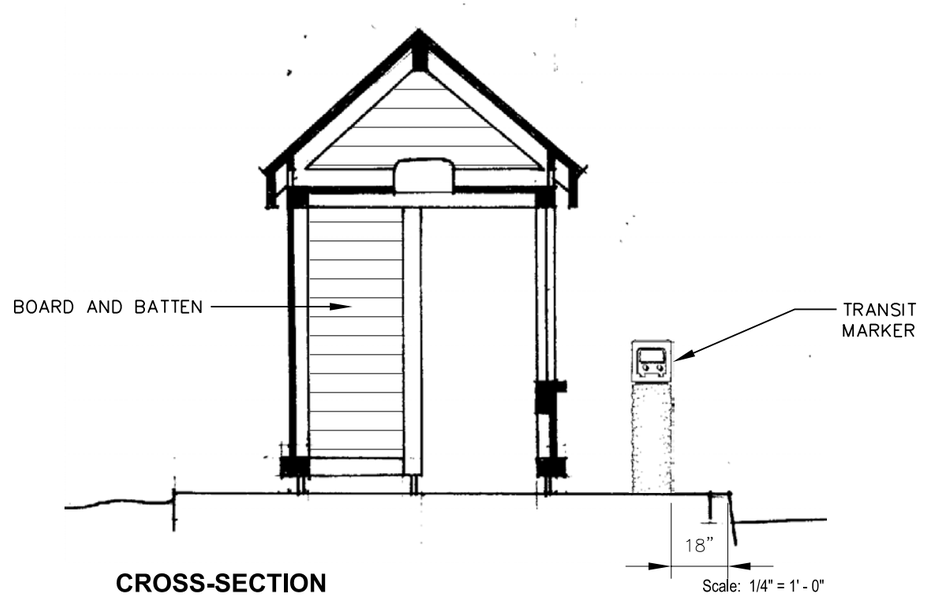


PROTOTYPE 2: STANDARD SHELTER



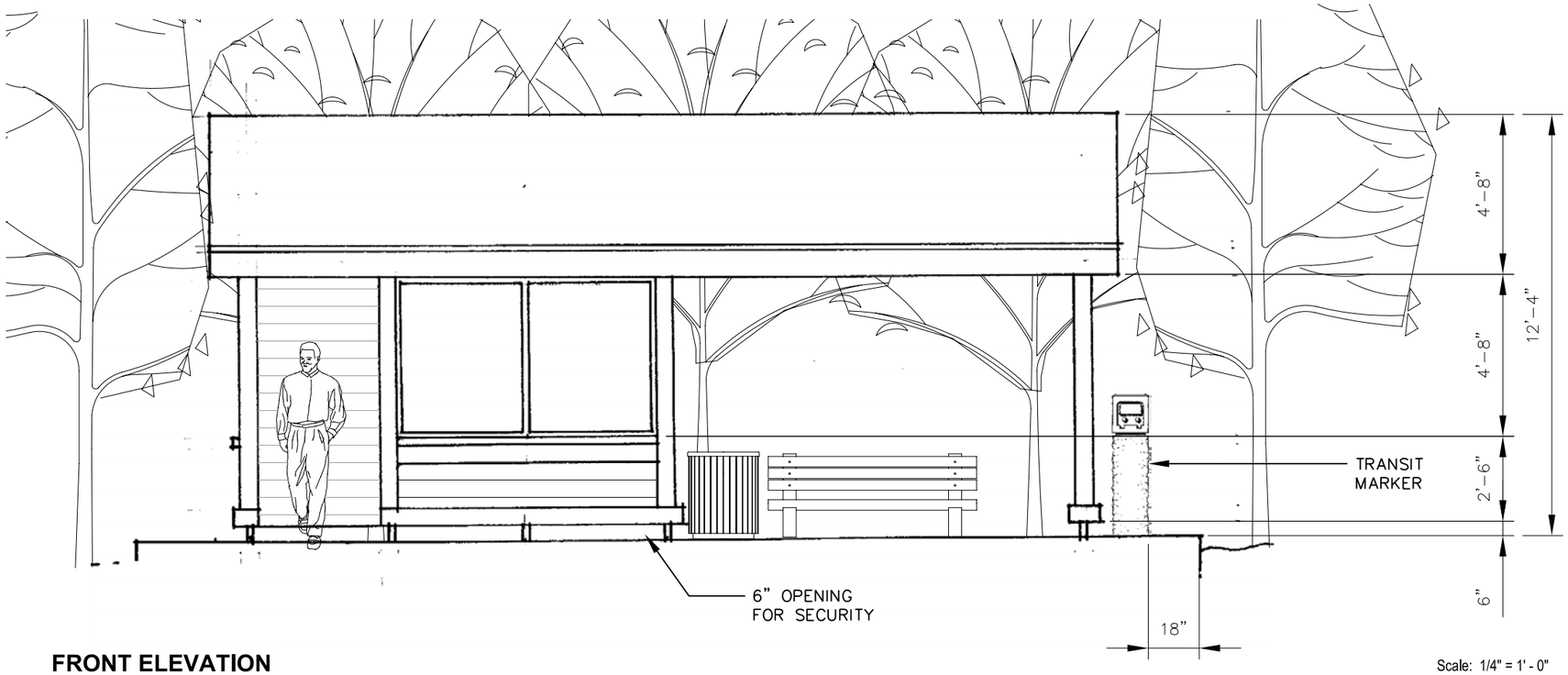
FLOOR PLAN

Scale: 1/4" = 1' - 0"



CROSS-SECTION

Scale: 1/4" = 1' - 0"



FRONT ELEVATION

Scale: 1/4" = 1' - 0"

GENERAL NOTES

1. APPLICABILITY: LOCAL AND COMMUNITY BUS ROUTES, STOPS WITH ADEQUATE RIGHT–OF–WAY OFF PAVEMENT.
2. AS AN OPTION FOR STOPS WITH LIMITED SITE AREA, PORCH MODULE CAN BE OMITTED.
3. FOUNDATION: CONCRETE SLAB ON UBC ON GRADE, INTEGRAL SPREAD FOOTINGS OR SLAB TURN–DOWNS UNDER WALLS, AS DETERMINED BY LOADS.
4. WALL AND ROOF STRUCTURAL FRAMING: FORMED STEEL SECTIONS SIZED TO RESEMBLE STANDARD WOOD MEMBERS, WELDED AND/OR BOLTED (AS DETERMINED BY MIX OF SHOP AND FIELD ASSEMBLY), PAINTED.
5. ROOFS: ASPHALT SHINGLE OR CEDAR SHAKE ROOFING ON PLYWOOD SHEATHING ON WOOD OR STEEL RAFTERS.
6. WINDOW AND DOORWAY FRAMING: FORMED STEEL SECTIONS SIZED TO RESEMBLE WOOD FRAMING AND TRIM, PAINTED.
7. EXTERIOR WALL FINISH: TREX (OR OTHER) COMPOSITE WOOD/PLASTIC PLANKS, HORIZONTALLY LAPPED, ON STEEL STRUCTURAL FRAME.
8. INTERIOR WALL FINISH: NO INTERIOR FINISH (EXPOSED TO BACK OF EXTERIOR FINISH).
9. CEILING FINISH:
   - SHELTER: MARINE PLYWOOD HORIZONTAL CEILING, ON STEEL OR WOOD JOISTS, PAINTED.
   - PORCH: EXPOSED BACK OF ROOF SHEATHING, PAINTED.
10. WINDOW GLAZING: LAMINATED GLASS OR PROJECTILE–RESISTANT PLASTIC (E.G. POLYCARBONATE OR STRETCHED ACRYLIC).
11. EQUIPMENT: ELECTRIC RADIANT HEATER AND LIGHT, FLUSH–MOUNTED IN CEILING.
12. APPROACH PATHWAYS TO BE PROVIDED BY TOWN/VILLAGE.

The Standard Shelter with Vestibule is the first of two variations shown of the Standard Shelter that applies to the Community Bus Transfer Stop Facility. Applicable locations for this shelter include corridor bus routes and transfer stops between corridor and local bus routes. Here the need is for a larger facility, where riders may need to transfer between buses or have the opportunity to use a "Park-n-Ride" facility adjacent to the stop. Longer wait times may occur which will increase the need to provide the rider with more services within the facility, such as a heated shelter, vending, additional ITS/Rider and visitor information. The adjacent sidebar describes, in detail, the components which make up the Standard Shelter with Vestibule.

ANATOMY OF THE STANDARD SHELTER with VESTIBULE

APPLICABILITY: Corridor bus routes (as along U.S. 6): transfer stop between corridor and local bus routes, unstaffed facility (or where staffed facilities are provided in adjacent structures).

FOUNDATION: Concrete slab on ubc on grade, integral spread footings or slab turn-downs under walls, as determined by loads.
- *600 SF Minimum concrete pad, 4" thick, reinforced*

WALL AND ROOF STRUCTURAL FRAMING: Formed steel sections sized to resemble standard wood members, welded and/or bolted (as determined by mix of shop and field assembly), painted.

ROOFS: Corrugated (or ribbed or seamed) proprietary metal roofing on plywood sheathing on wood or steel rafters.

WINDOW AND DOORWAY FRAMING: Formed steel sections sized to resemble wood framing and trim, painted.

EXTERIOR WALL FINISH: Trex (or other) composite wood/plastic planks, horizontally lapped, on steel structural frame.
- *Board and Batten*

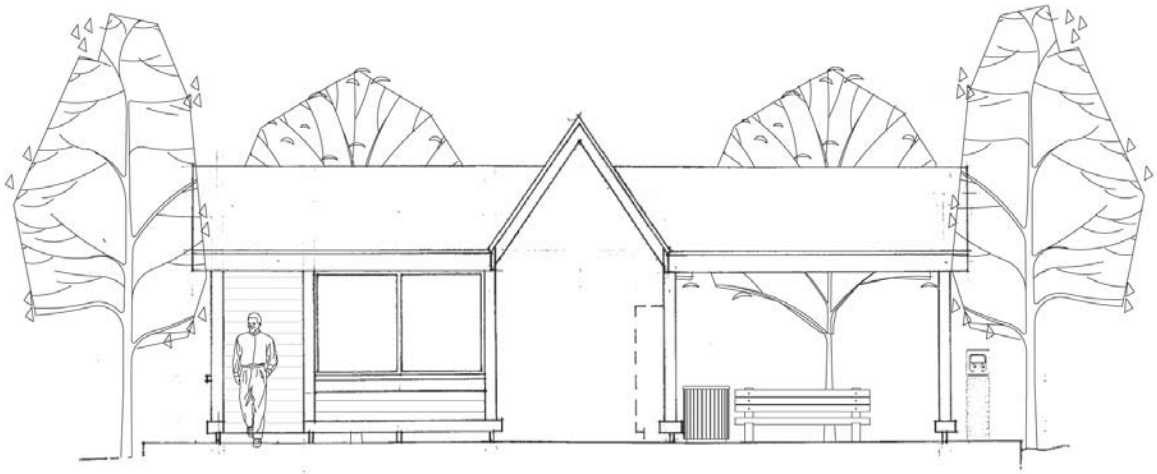
INTERIOR WALL FINISH: No interior finish (exposed to back of exterior finish).

CEILING FINISH:
- Shelter: marine plywood horizontal ceiling, on steel or wood joists, painted.
- Porch: exposed back of roof sheathing, painted.

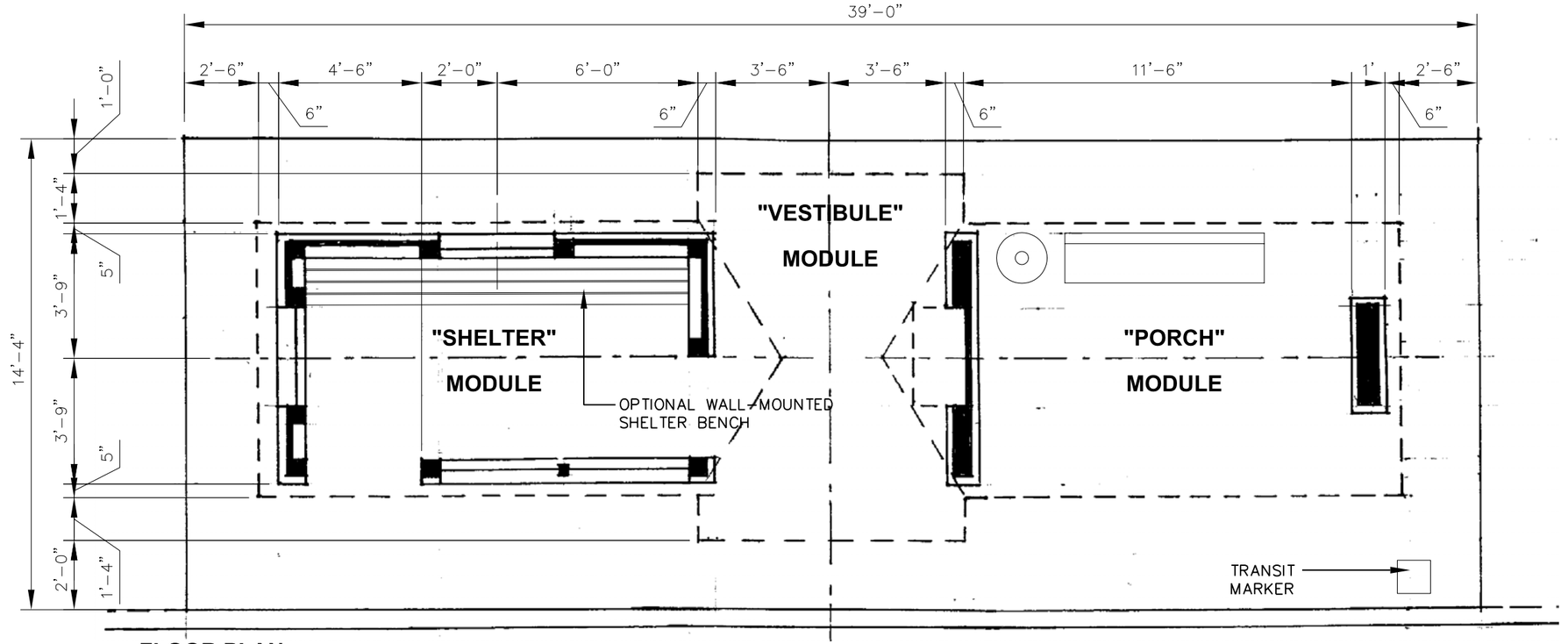
WINDOW GLAZING: Laminated glass or projectile-resistant plastic (e.g. polycarbonate or stretched acrylic).

EQUIPMENT:
- Shelter: flush-mounted in ceiling electric radiant heater and light
- Vestibule: electric light, surface-mounted to ceiling; provision for fare vending machine or vms schedule display.

OPTIONS:
- *Wall-mounted shelter bench*

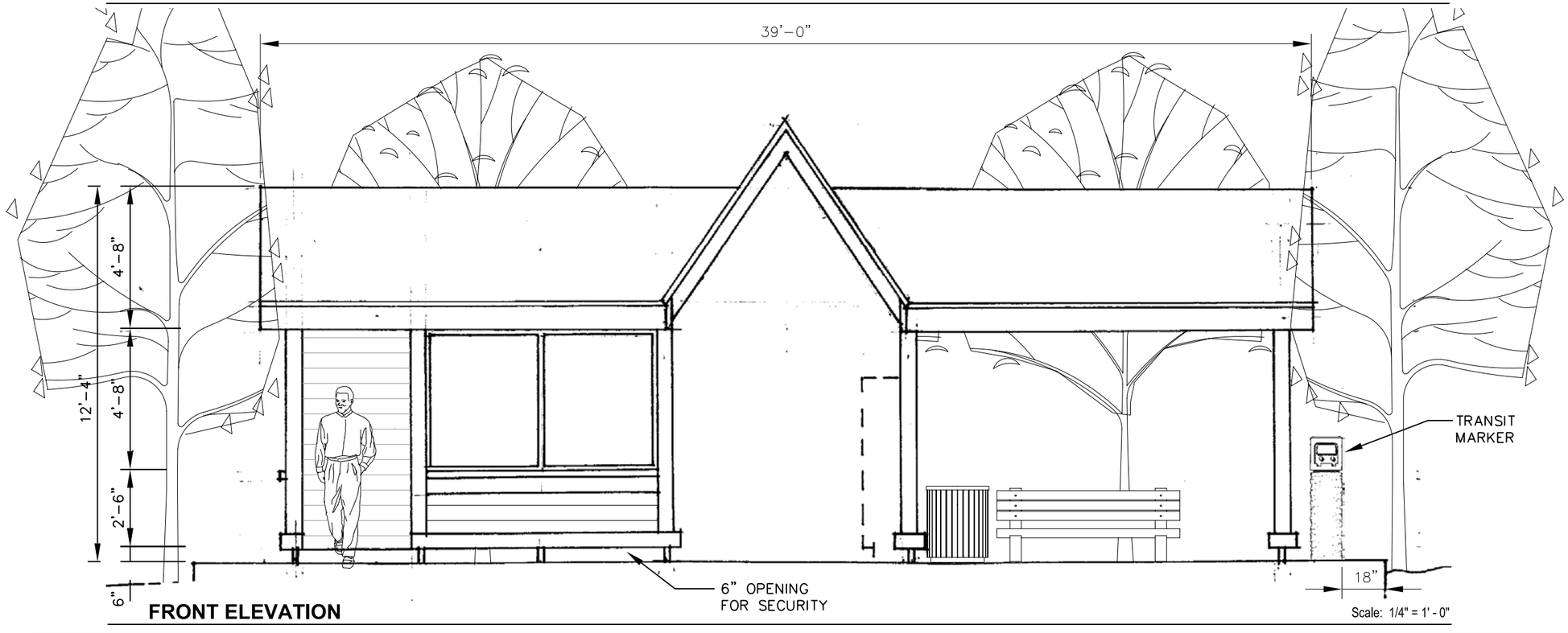


PROTOTYPE 3: STANDARD SHELTER with VESTIBULE



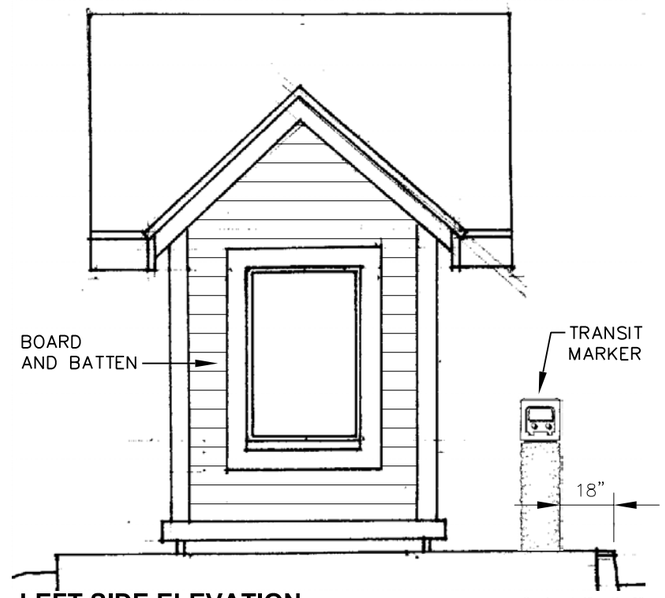
FLOOR PLAN

Scale: 1/4" = 1' - 0"



FRONT ELEVATION

Scale: 1/4" = 1' - 0"



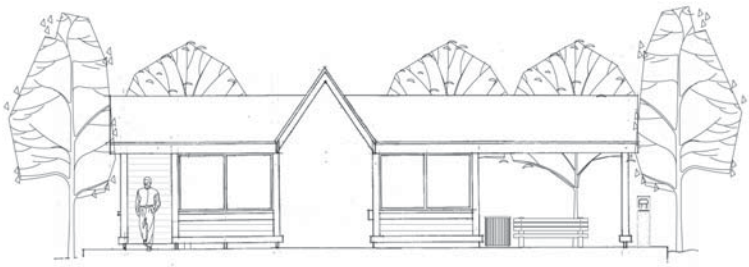
LEFT SIDE ELEVATION

Scale: 1/4" = 1' - 0"

GENERAL NOTES

1. APPLICABILITY: CORRIDOR BUS ROUTES (AS ALONG U.S. 6): TRANSFER STOP BETWEEN CORRIDOR AND LOCAL BUS ROUTES, UNSTAFFED FACILITY (OR WHERE STAFFED FACILITIES ARE PROVIDED IN ADJACENT STRUCTURES).
2. FOUNDATION: CONCRETE SLAB ON UBC ON GRADE, INTEGRAL SPREAD FOOTINGS OR SLAB TURN-DOWNS UNDER WALLS, AS DETERMINED BY LOADS.
3. WALL AND ROOF STRUCTURAL FRAMING: FORMED STEEL SECTIONS SIZED TO RESEMBLE STANDARD WOOD MEMBERS, WELDED AND/OR BOLTED (AS DETERMINED BY MIX OF SHOP AND FIELD ASSEMBLY), PAINTED.
4. ROOFS: ASPHALT SHINGLE OR CEDAR SHAKE ROOFING ON PLYWOOD SHEATHING ON WOOD OR STEEL RAFTERS.
5. WINDOW AND DOORWAY FRAMING: FORMED STEEL SECTIONS SIZED TO RESEMBLE WOOD FRAMING AND TRIM, PAINTED.
6. EXTERIOR WALL FINISH: TREX (OR OTHER) COMPOSITE WOOD/PLASTIC PLANKS, HORIZONTALLY LAPPED, ON STEEL STRUCTURAL FRAME.
7. INTERIOR WALL FINISH: NO INTERIOR FINISH (EXPOSED TO BACK OF EXTERIOR FINISH).
8. CEILING FINISH:
   a. SHELTER: MARINE PLYWOOD HORIZONTAL CEILING, ON STEEL OR WOOD JOISTS, PAINTED.
   b. PORCH & VESTIBULE: EXPOSED BACK OF ROOF SHEATHING, PAINTED.
9. WINDOW GLAZING: LAMINATED GLASS OR PROJECTILE-RESISTANT PLASTIC (E.G. POLYCARBONATE OR STRETCHED ACRYLIC).
10. EQUIPMENT:
    a. SHELTER: ELECTRIC RADIANT HEATER AND LIGHT, FLUSH-MOUNTED IN CEILING.
    b. VESTIBULE: ELECTRIC LIGHT, SURFACE-MOUNTED TO CEILING; PROVISION FOR FARE VENDING MACHINE OR VMS SCHEDULE DISPLAY.
11. APPROACH PATHWAYS TO BE PROVIDED BY TOWN/VILLAGE.

The Standard Shelter with Vestibule and Kiosk is the second of two variations shown of the Standard Shelter that applies to the Community Bus Transfer Stop Facility. Here the need is for an even larger facility, where longer wait times may occur. This will increase the need to provide the rider with more services within the facility, such as a heated shelter, indoor ticketing, restrooms, vending, and additional ITS/Rider information. The facility can also be applied to the third type of Cape Transit Facility, the Mini-Intermodal Center, where other features may include Park & Ride, patron drop-off zones and a full offering of transit system and visitor information. The adjacent sidebar describes, in detail, the components which make up the Standard Shelter with Vestibule and Kiosk.



ANATOMY OF THE STANDARD SHELTER with VESTIBULE and KIOSK

APPLICABILITY: Corridor bus routes (as along U.S. 6): major transfer stop between corridor and local bus routes, or stop serving major activity center or point of interest (kiosk module options include staffed booth or uni-sex lavatory).

FOUNDATION: Concrete slab on ubc on grade, integral spread footings or slab turn-downs under walls, as determined by loads.
- *720 SF Minimum concrete pad, 4" thick, reinforced*

WALL AND ROOF STRUCTURAL FRAMING: Formed steel sections sized to resemble standard wood members, welded and/or bolted (as determined by mix of shop and field assembly), painted.

ROOFS: Corrugated (or ribbed or seamed) proprietary metal roofing on plywood sheathing on wood or steel rafters.

WINDOW AND DOORWAY FRAMING: Formed steel sections sized to resemble wood framing and trim, painted.

EXTERIOR WALL FINISH: Trex (or other) composite wood/plastic planks, horizontally lapped, on steel structural frame.
- *Board and Batten*

INTERIOR WALL FINISH:
- Shelter, Porch & Vestibule: no interior finish (exposed to back of exterior finish).
- Kiosk: (Booth Option): plywood or gypsum wallboard, painted, bat insulation behind wall.
- Kiosk: (Lavatory Option): ceramic tile on backer board, bat insulation behind wall.

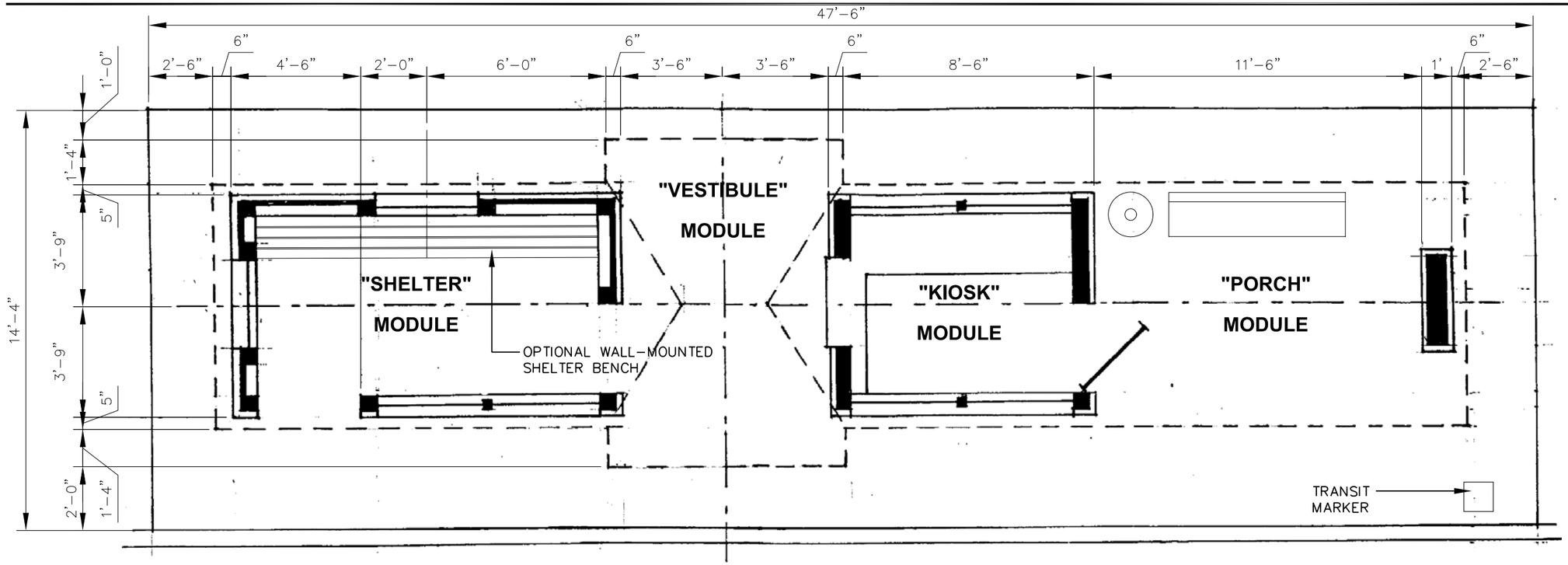
CEILING FINISH:
- Shelter & Kiosk: marine plywood horizontal ceiling, on steel or wood joists, painted.
- Porch & Vestibule: exposed back of roof sheathing, painted.

WINDOW GLAZING: Laminated glass or projectile-resistant plastic (e.g. polycarbonate or stretched acrylic).

EQUIPMENT:
- Shelter: flush-mounted in ceiling electric radiant heater and light
- Vestibule: electric light, surface-mounted to ceiling; provision for fare vending machine or vms schedule display.
- Kiosk (Booth Option): electric light, surface-mounted to ceiling; packaged heat pump. above ceiling; electrical outlets; data circuits (type tbd).
- Kiosk (Lavatory Option): electric light, surface-mounted to ceiling; exhaust fan above ceiling; toilet and sink; combined towel dispenser and waste receptacle.

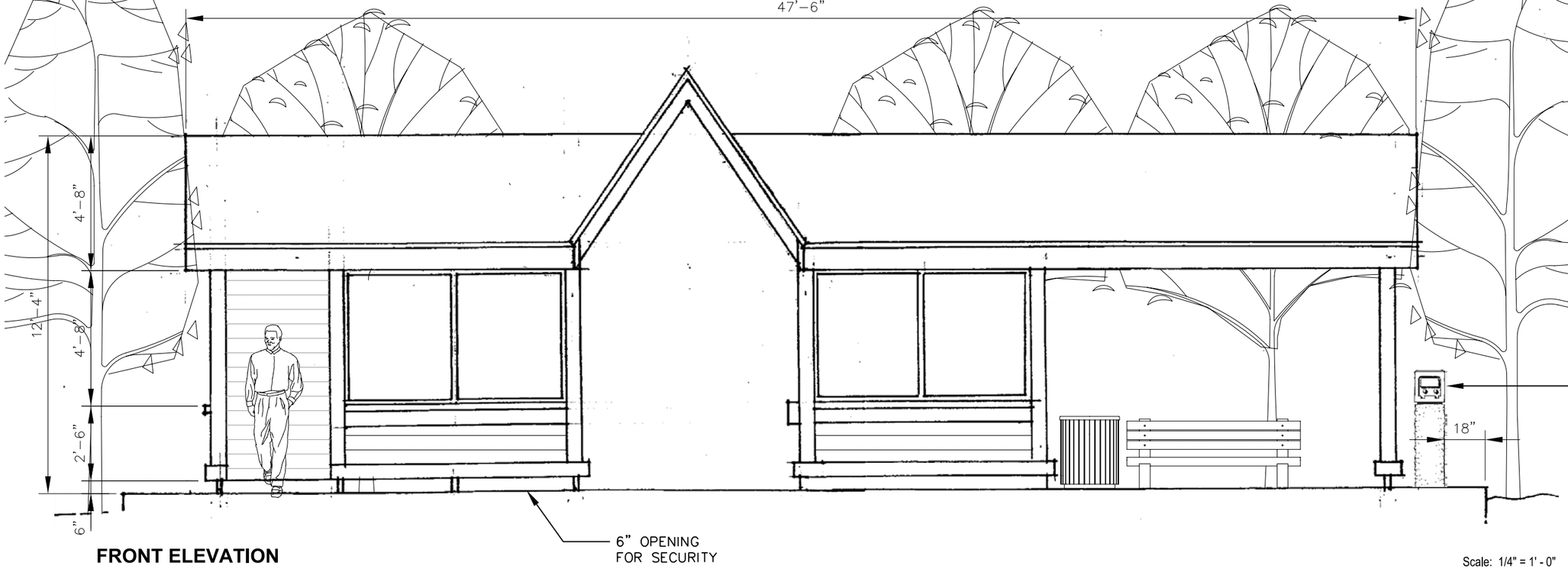
OPTIONS:
- *Wall-mounted shelter bench*

PROTOTYPE 4: STANDARD SHELTER with VESTIBULE and KIOSK



FLOOR PLAN

Scale: 1/4" = 1' - 0"



FRONT ELEVATION

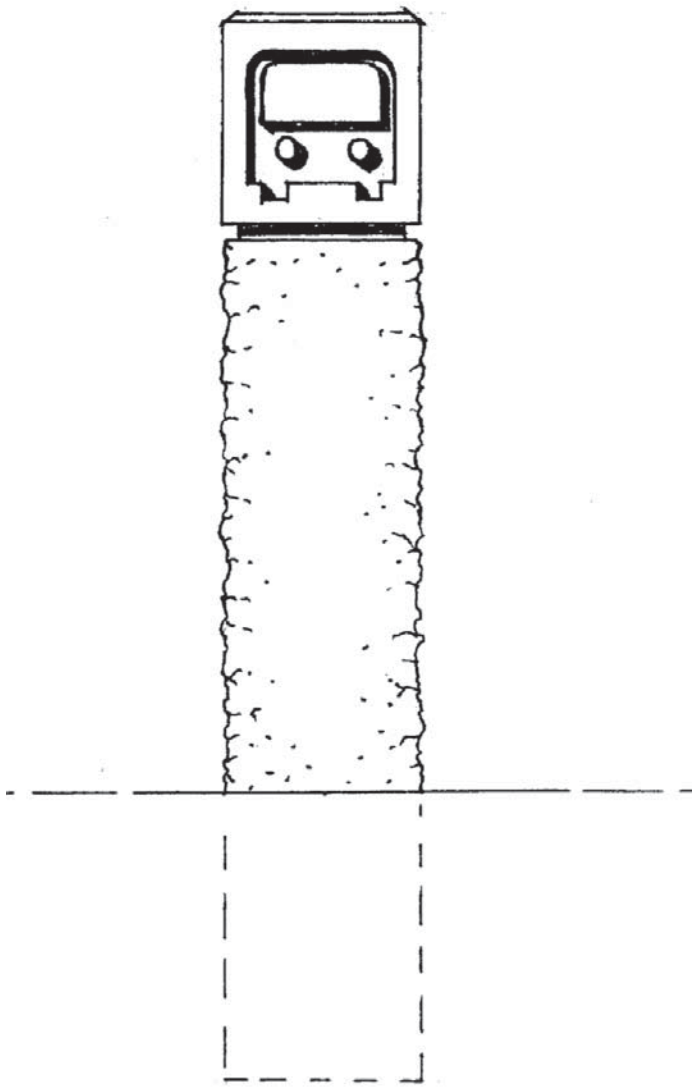
Scale: 1/4" = 1' - 0"

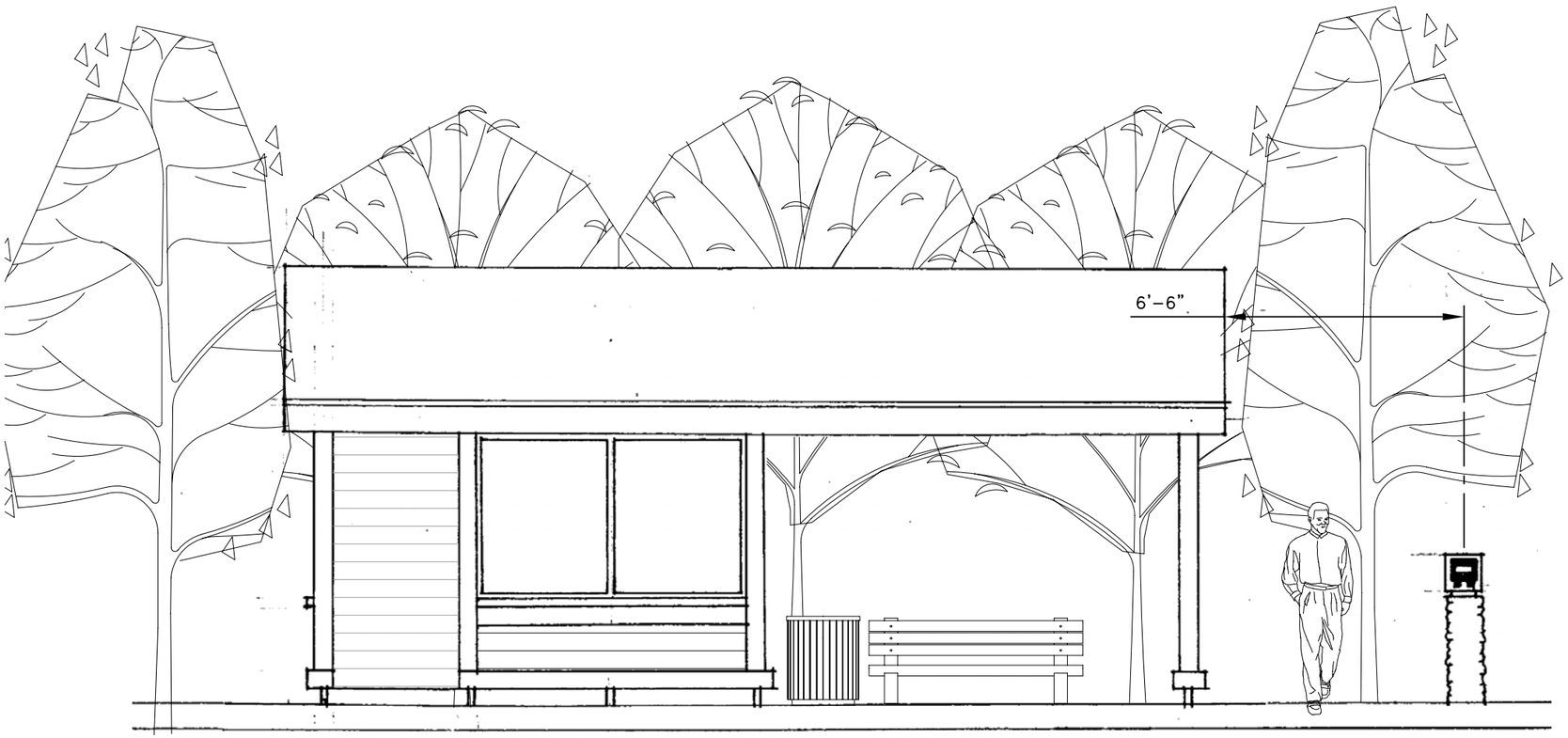
GENERAL NOTES

1. APPLICABILITY: CORRIDOR BUS ROUTES (AS ALONG U.S. 6): MAJOR TRANSFER STOP BETWEEN CORRIDOR AND LOCAL BUS ROUTES, OR STOP SERVING MAJOR ACTIVITY CENTER OR POINT OF INTEREST (KIOSK MODULE OPTIONS INCLUDE STAFFED BOOTH OR UNI–SEX LAVATORY).
2. FOUNDATION: CONCRETE SLAB ON UBC ON GRADE, INTEGRAL SPREAD FOOTINGS OR SLAB TURN–DOWNS UNDER WALLS, AS DETERMINED BY LOADS.
3. WALL AND ROOF STRUCTURAL FRAMING: FORMED STEEL SECTIONS SIZED TO RESEMBLE STANDARD WOOD MEMBERS, WELDED AND/OR BOLTED (AS DETERMINED BY MIX OF SHOP AND FIELD ASSEMBLY), PAINTED.
4. ROOFS: ASPHALT SHINGLE OR CEDAR SHAKE ROOFING ON PLYWOOD SHEATHING ON WOOD OR STEEL RAFTERS.
5. WINDOW AND DOORWAY FRAMING: FORMED STEEL SECTIONS SIZED TO RESEMBLE WOOD FRAMING AND TRIM, PAINTED.
6. EXTERIOR WALL FINISH: TREX (OR OTHER) COMPOSITE WOOD/PLASTIC PLANKS, HORIZONTALLY LAPPED, ON STEEL STRUCTURAL FRAME.
7. INTERIOR WALL FINISH:
   a. SHELTER, PORCH, & VESTIBULE: NO INTERIOR FINISH (EXPOSED TO BACK OF EXTERIOR FINISH).
   b. KIOSK (BOOTH OPTION): PLYWOOD OR GYPSUM WALLBOARD, PAINTED, BAT INSULATION BEHIND WALL.
   c. KIOSK (LAVATORY OPTION): CERAMIC TILE ON BACKER BOARD, BAT INSULATION BEHIND WALL.
8. CEILING FINISH:
   a. SHELTER & KIOSK: MARINE PLYWOOD HORIZONTAL CEILING, ON STEEL OR WOOD JOISTS, PAINTED.
   b. PORCH & VESTIBULE: EXPOSED BACK OF ROOF SHEATHING, PAINTED.
9. WINDOW GLAZING:
   a. LAMINATED GLASS OR PROJECTILE–RESISTANT PLASTIC (E.G. POLYCARBONATE OR STRETCHED ACRYLIC).
10. EQUIPMENT:
    a. SHELTER: ELECTRIC RADIANT HEATER AND LIGHT, FLUSH–MOUNTED IN CEILING.
    b. VESTIBULE: ELECTRIC LIGHT, SURFACE–MOUNTED TO CEILING; PROVISION FOR FARE VENDING MACHINE OR VMS SCHEDULE DISPLAY.
    c. KIOSK (BOOTH OPTION): ELECTRIC LIGHT, SURFACE MOUNTED TO CEILING; PACKAGED HEAT PUMP. ABOVE CEILING; ELECTRICAL OUTLETS; DATA CIRCUITS (TYPE TBD).
    d. KIOSK (LAVATORY OPTION): ELECTRIC LIGHT, SURFACE–MOUNTED TO CEILING; EXHAUST FAN ABOVE CEILING; TOILET AND SINK; COMBINED TOWEL DISPENSER AND WASTE RECEPTACLE.
11. APPROACH PATHWAYS TO BE PROVIDED BY TOWN/VILLAGE.

Transit stops should fit comfortably within their surroundings yet be recognized instantly as places where Cape-wide transit may be boarded. The Design Workshop explored a variety of ways to create a Cape Cod "transit identity". Some examples included, cupolas, weather vanes, common signs or symbols and the transit marker.

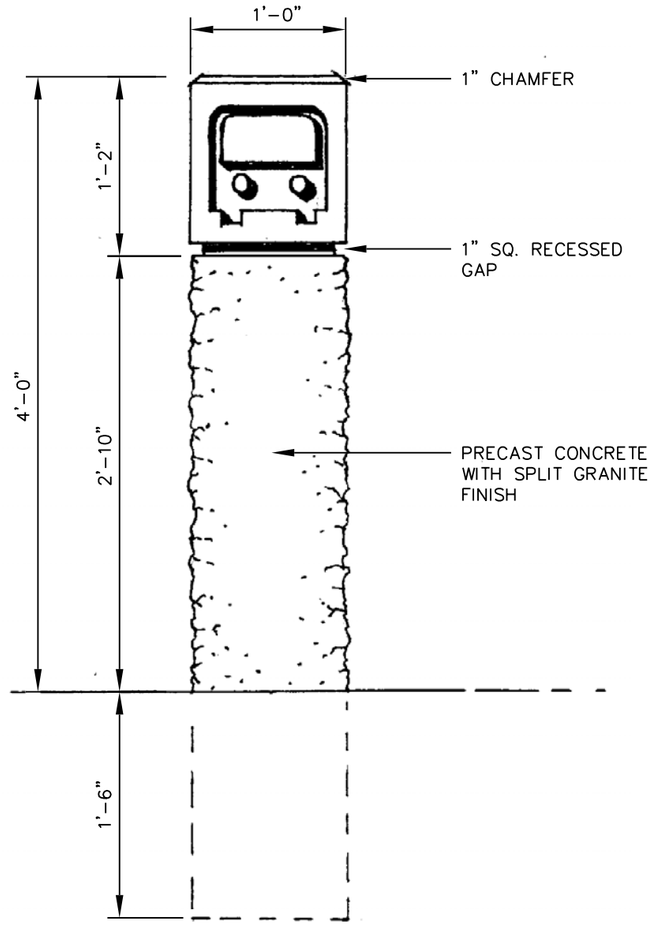
The Transit Marker stood out among all the ideas as one that is easily recognizable from a distance and fits in with the Cape's visual environment. Granite markers can be seen throughout the Cape identifying property corners, street signs and even town lines. Therefore, the Transit Marker takes on the shape and form of the granite marker but at a large size so that it is easily seen and incorporates a universal bus symbol so that even visitors are able to understand where to go for public transportation. Refer to the following graphic for information regarding the location and installation of the transit marker.





FRONT ELEVATION

Scale: 1/4" = 1' - 0"



TRANSIT MARKER ENLARGEMENT

Scale: 1" = 1' - 0"

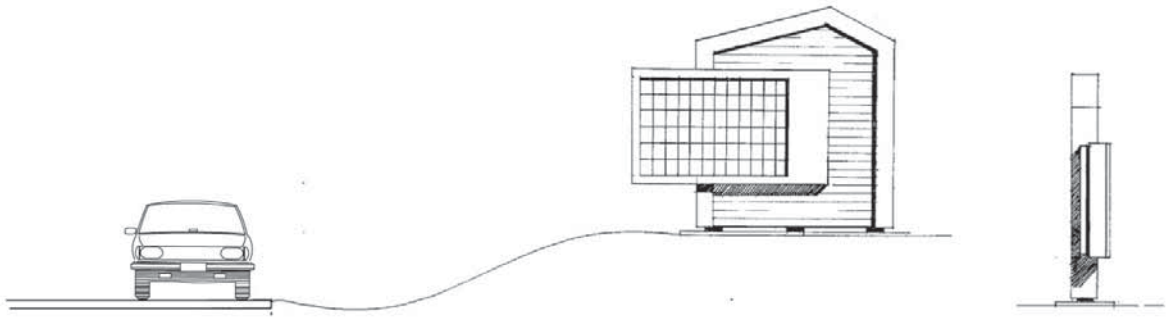
GENERAL NOTES

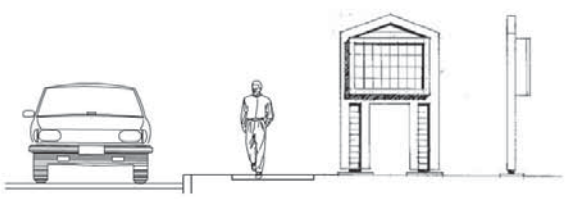
1. APPLICABILITY: TO BE PLACED AT ALL LOCAL AND CORRIDOR TRANSIT STOPS (INCLUDING STOPS WITHOUT SHELTERS) AND AT COMMUNITY INTERMODAL HUBS (AS AT PROVINCETOWN OR ORLEANS).
2. LOCATION: AT POINT OF HIGH VISIBILITY FROM ROADWAYS OR PEDESTRIAN PATHS, TYPICALLY IN "LEADING" POSITION RELATIVE TO TRANSIT STOP (I.E., VIEWED BEFORE STOP FROM APPROACHING TRAFFIC ON STOP SIDE OF ROAD).
3. MATERIALS: PRE-CAST CONCRETE PYLON WITH INTEGRAL TRANSIT "LOGO CUBE" AND "SPLIT GRANITE" FINISH, LOGO BAS RELIEF PAINTED (REFLECTIVE PAINT).
4. FOUNDATION: PYLON SET IN POST HOLE, BACKFILLED AND COMPACTED.

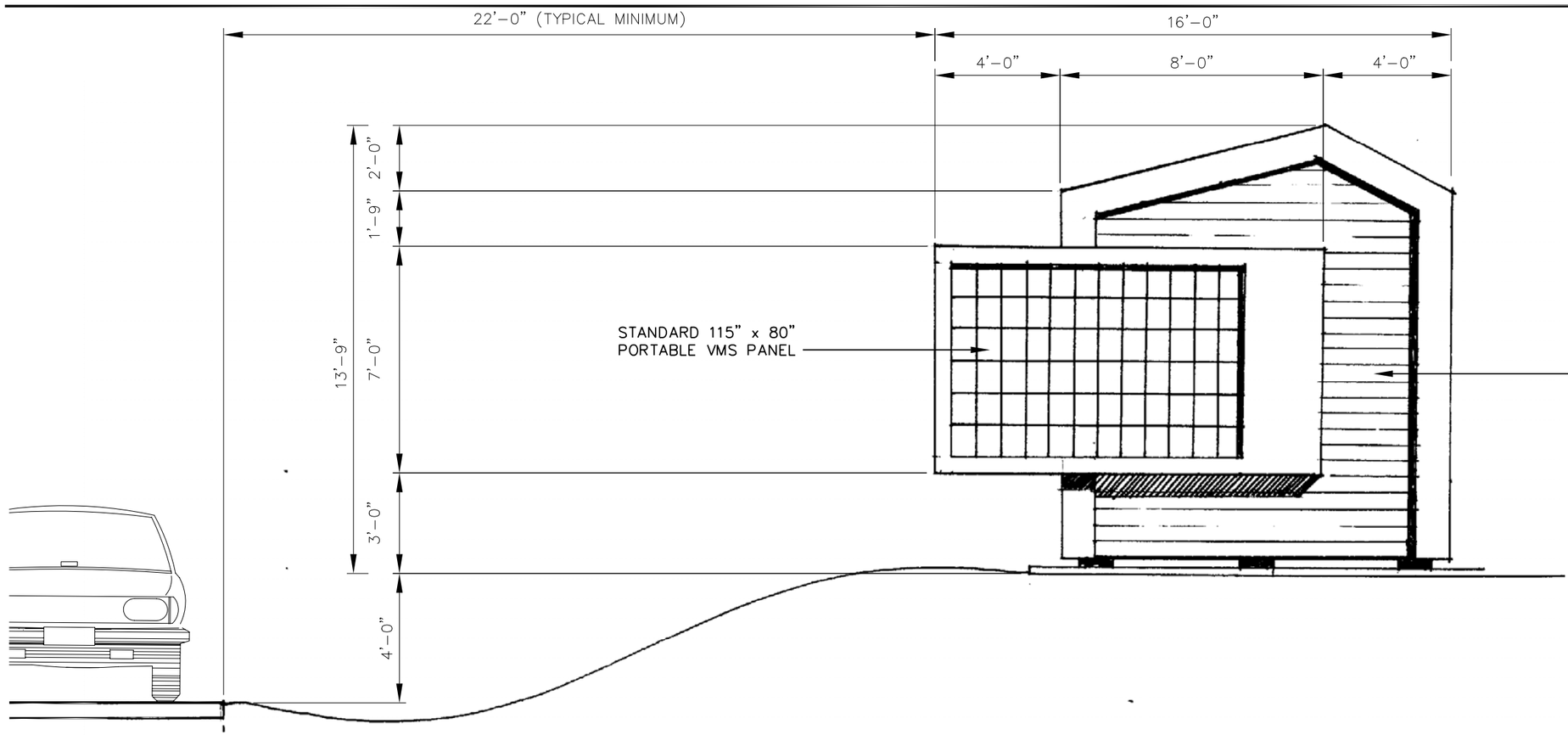
Part of Cape Cod's Five-Year Vision is to allow people to get to and around the Cape without a car. To make this vision a reality within the next five years is to have a network of transportation centers supported by a real-time information network to enable users to easily plan a trip to the local grocery store or to their favorite vacation spot.

Communication tools such as variable message boards/signs (VMS) will help improve traffic flow and provide advisories for Cape attractions (e.g., "Parking Lot A Full, proceed north to Lot B"). However, design of these VMS systems has not kept up with the technology. Massive steel structures that do not "fit-in" with their surroundings are being used as the means to display the VMS systems. Cape Cod and the National Seashore need these VMS systems but their designs need to be compatable with the area's unique visual character.

The following prototypes are designed to display the VMS system but allow the structure to "blend-in", as much as possible, understanding these are large signs that need to be open and highly visible to be effective. Using similiar building materials, and/or having a similiar form to the transit facilities creates a more unified transportation system.

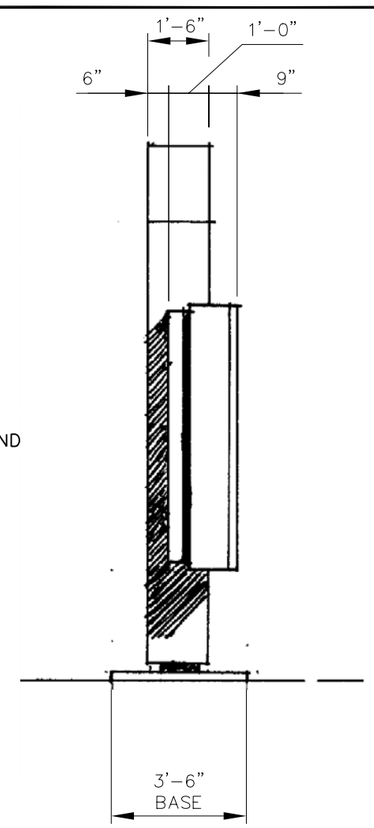






FRONT ELEVATION

Scale: 1/4" = 1' - 0"

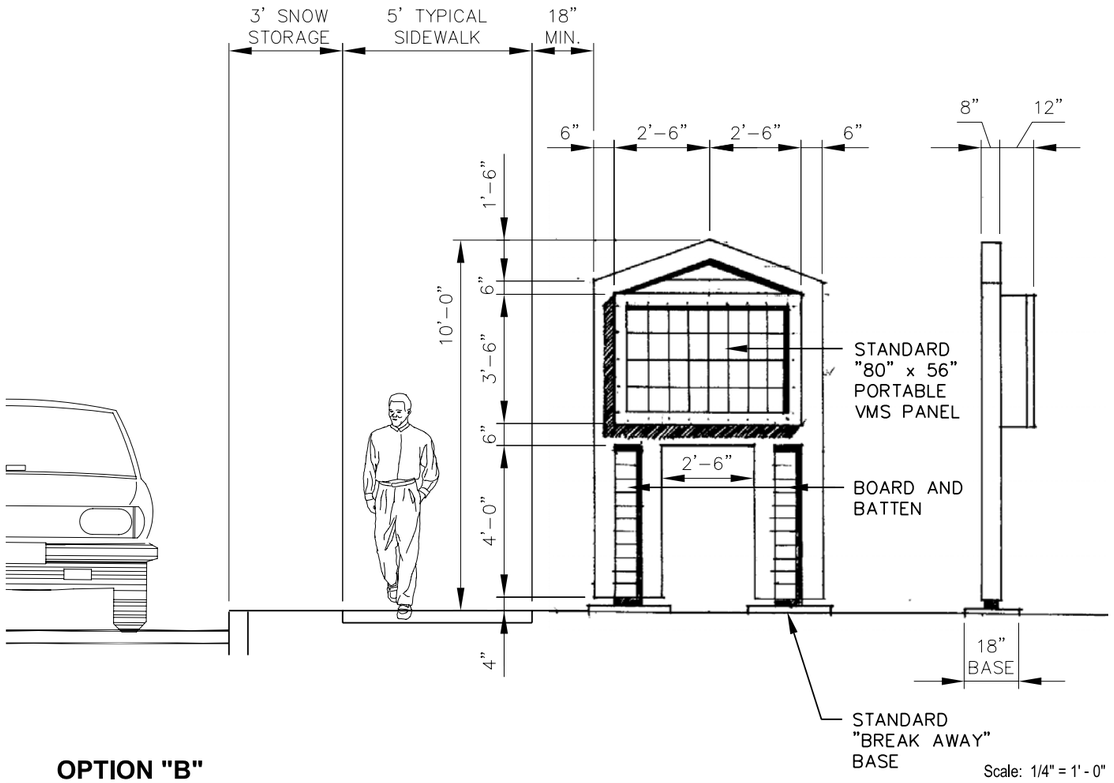


SIDE ELEVATION

Scale: 1/4" = 1' - 0"

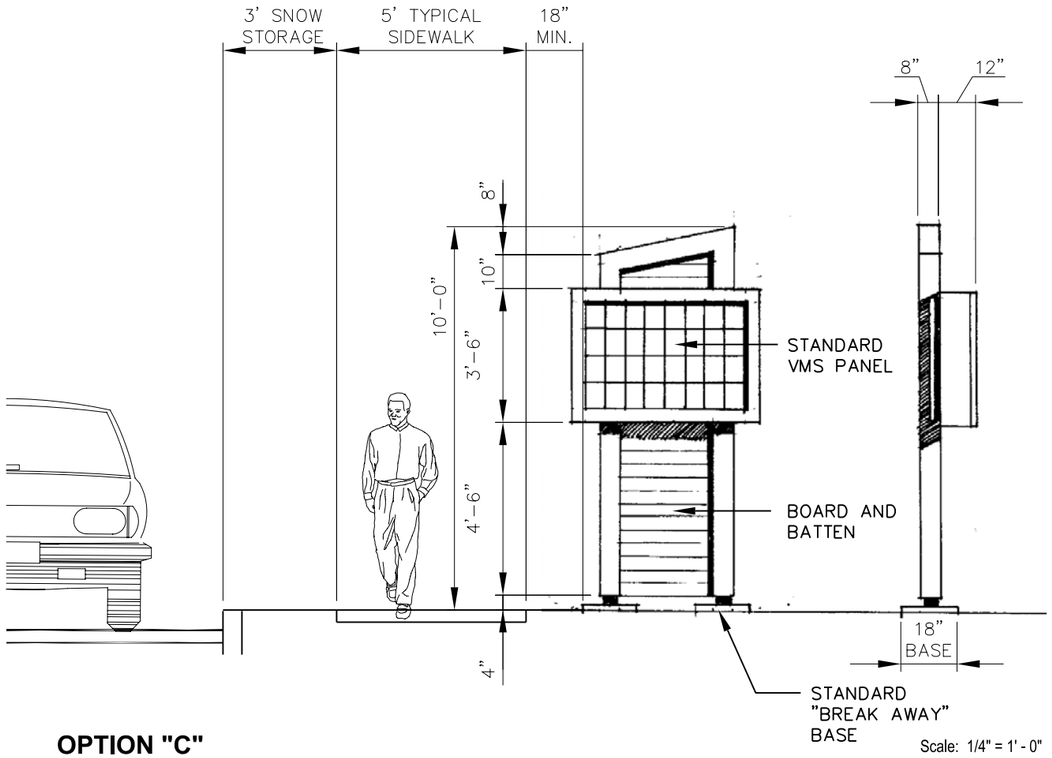
GENERAL NOTES

1. APPLICABILITY: SELECT LOCATIONS (TO BE DETERMINED) ALONG EXPRESSWAY PORTION OF ROUTE 6 (WEST OF ORLEANS), EASTBOUND DIRECTION.
2. LOCATION: ALONG ROADWAY SHOULDER, TYPICALLY AHEAD OF INTERCHANGE OR OTHER DECISION POINT, SET BACK FROM ROAD EDGE OR ON BERM (AS SHOWN) TO PROVIDE CRASH PROTECTION.
3. MATERIALS: PACKAGED VMS UNIT, STEEL FRAMED SUPPORT PYLON WITH METAL PANELING TO RESEMBLE "BOARD AND BATTEN" SIDING, PAINTED.
4. FOUNDATION: PYLON SET ON CONCRETE SPREAD FOOTING, DEPTH DETERMINED BY LOAD.
5. SIZE: TO BE DETERMINED BY FURTHER STUDY, PROTOTYPE BASED ON CALTRANS PORTABLE VMS PANEL, 115" X 80".



OPTION "B"

Scale: 1/4" = 1' - 0"



OPTION "C"

Scale: 1/4" = 1' - 0"

GENERAL NOTES

1. APPLICABILITY: SELECT LOCATIONS (TO BE DETERMINED) ALONG HIGHWAYS AND ARTERIAL STREETS, TYPICALLY INBOUND DIRECTION (I.E., TOWARD PROVINCETOWN).
2. LOCATION: ALONG ROADWAY SHOULDER, TYPICALLY AHEAD OF INTERSECTION OR OTHER DECISION POINT, SET ON BREAKAWAY BASE TO PROVIDE CRASH PROTECTION.
3. MATERIALS: PACKAGED VMS UNIT, STEEL FRAMED SUPPORT PYLON WITH METAL PANELING TO RESEMBLE "BOARD AND BATTEN" SIDING, PAINTED.
4. FOUNDATION: PYLON WITH BREAKAWAY BASE SET ON CONCRETE SPREAD FOOTING, DEPTH DETERMINED BY LOAD.
5. SIZE: TO BE DETERMINED BY FURTHER STUDY, PROTOTYPE BASED ON CALTRANS PORTABLE VMS PANEL, 80" X 56".

CAPE COD TRANSIT SUPPORT FACILITIES
DESIGN PROTOTYPES

ESTIMATED CONSTRUCTION COST

February 12, 2004

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT PRICE MAT.& LAB.	ESTIMATED AMOUNT	UNIT PRICE MAT.& LAB.	ESTIMATED AMOUNT
	Prototype 1: Mini Shelter						
1	**Concrete Pad - (12' x 17')**	204	sf	$3.25	$663	$4.50	$918
	4" thick, reinforced						
2	**Bench**	1	ea	$900.00	$900	$900.00	$900
	6' long, concrete bases with wood slats						
3	**Waste Receptacle**	1	ea	$445.00	$445	$445.00	$445
	metal with wood slats						
	metal cover with cable						
4	**Bicycle Rack**	1	ea	$317.00	$317	$317.00	$317
	metal loop system						
	secures 5 bicycles						
5	**Transit Marker**	1	ea	$525.00	$525	$525.00	$525
	precast concrete with split granite finish						
	universal bus symbol engraved / panel insert						
6	**Landscaping**						
	shade trees	2	ea	$350.00	$700	$350.00	$700
	topsoil, fine grade & seed	500	sf	$0.45	$225	$0.75	$375
7	**Shelter Module**						
	8'-6" x 14'-8" = 125 sf facility						
	tubular steel frame structure w/ metal roof	125	sf	$65.00	$8,125	$78.00	$9,750
	powder coated structural steel frame with	125	sf	$55.00	$6,875	$66.00	$8,250
	lap siding, windows, and door frames						
	optional wall-mounted wood bench	1	ea	$550.00	$550	$550.00	$550

SUBTOTAL (incl. O&P)	$19,325	**SUBTOTAL (incl. O&P)**	$22,730
Contingency @ 10%	$1,933	**Contingency @ 10%**	$2,273
	$21,258		$25,003
Gen. Req'ts. @5%	$1,063	**Gen. Req'ts. @5%**	$1,250
TOTAL - Low End	**$22,320**	**TOTAL - High End**	**$26,253**

CAPE COD TRANSIT SUPPORT FACILITIES
DESIGN PROTOTYPES

ESTIMATED CONSTRUCTION COST

February 12, 2004

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT PRICE MAT.& LAB.	ESTIMATED AMOUNT	UNIT PRICE MAT.& LAB.	ESTIMATED AMOUNT
	Prototype 2: Standard Shelter						
1	**Concrete Pad - (14' x 31')**	434	sf	$3.25	$1,411	$4.50	$1,953
	4" thick, reinforced						
2	**Bench**	2	ea	$900.00	$1,800	$900.00	$1,800
	6' long, concrete bases with wood slats						
3	**Waste Receptacle**	1	ea	$445.00	$445	$445.00	$445
	metal with wood slats						
	metal cover with cable						
4	**Bicycle Rack**	1	ea	$317.00	$317	$317.00	$317
	metal loop system						
	secures 5 bicycles						
5	**Transit Marker**	1	ea	$525.00	$525	$525.00	$525
	precast concrete with split granite finish						
	universal bus symbol engraved / panel insert						
6	**Landscaping**						
	shade trees	5	ea	$350.00	$1,750	$350.00	$1,750
	shrub massings	11	ea	$45.00	$495	$45.00	$495
	topsoil, fine grade & seed	700	sf	$0.45	$315	$0.75	$525
7	**Shelter Module ***						
	8'-0" x 13'-6" = 108 sf facility						
	tubular steel frame structure w/ metal roof	108	sf	$65.00	$7,020	$78.00	$8,424
	powder coated structural steel frame with lap siding, windows, and door frames	108	sf	$55.00	$5,940	$66.00	$7,128
	optional wall-mounted wood bench	1	ea	$550.00	$550	$550.00	$550
8	**Porch Module ***						
	8'-0" x 13'-6" = 108 sf facility						
	tubular steel frame structure w/ metal roof	108	sf	$65.00	$7,020	$78.00	$8,424
	powder coated structural steel frame with lap siding (no window or door frames required)	42	sf	$30.00	$1,260	$40.00	$1,680

* Note: Total cost for tubular steel frame structure w/metal roof may be reduced significantly if constructed as one unit rather than as modules.

SUBTOTAL (incl. O&P)	$28,848	**SUBTOTAL (incl. O&P)**	$34,016
Contingency @ 10%	$2,885	**Contingency @ 10%**	$3,402
	$31,732		$37,418
Gen. Req'ts. @5%	$1,587	**Gen. Req'ts. @5%**	$1,871
TOTAL	**$33,319**	**TOTAL - High End**	**$39,288**

CAPE COD TRANSIT SUPPORT FACILITIES
DESIGN PROTOTYPES

ESTIMATED CONSTRUCTION COST

February 12, 2004

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT PRICE MAT.& LAB.	ESTIMATED AMOUNT	UNIT PRICE MAT.& LAB.	ESTIMATED AMOUNT
	Prototype 3: Standard Shelter with Vestibule						
1	**Concrete Pad - (15' x 40')**	600	sf	$3.25	$1,950	$4.50	$2,700
	4" thick, reinforced						
2	**Bench**	2	ea	$900.00	$1,800	$900.00	$1,800
	6' long, concrete bases with wood slats						
3	**Waste Receptacle**	1	ea	$445.00	$445	$445.00	$445
	metal with wood slats						
	metal cover with cable						
4	**Bicycle Rack**	1	ea	$317.00	$317	$317.00	$317
	metal loop system						
	secures 5 bicycles						
5	**Transit Marker**	1	ea	$525.00	$525	$525.00	$525
	precast concrete with split granite finish						
	universal bus symbol engraved / panel insert						
6	**Landscaping**						
	shade trees	5	ea	$350.00	$1,750	$350.00	$1,750
	shrub massings	15	ea	$45.00	$675	$45.00	$675
	topsoil, fine grade & seed	840	sf	$0.45	$378	$0.75	$630
7	**Shelter Module ***						
	8'-0" x 13'-6" = 108 sf facility						
	tubular steel frame structure w/ metal roof	108	sf	$65.00	$7,020	$78.00	$8,424
	powder coated structural steel frame with	108	sf	$55.00	$5,940	$66.00	$7,128
	lap siding, windows, and door frames						
	optional wall-mounted wood bench	1	ea	$550.00	$550	$550.00	$550
8	**Porch Module ***						
	8'-0" x 13'-6" = 108 sf facility						
	tubular steel frame structure w/ metal roof	108	sf	$65.00	$7,020	$78.00	$8,424
	powder coated structural steel frame with lap	42	sf	$30.00	$1,260	$40.00	$1,680
	siding (no window or door frames required)						
9	**Vestibule Module ***						
	11'-0" x 8'-0" = 88 sf facility						
	tubular steel frame structure w/ metal roof	88	sf	$65.00	$5,720	$78.00	$6,864
	powder coated structural steel frame with lap	80	sf	$30.00	$2,400	$40.00	$3,200
	siding (no window or door frames required)						
	includes area for vending system						

* Note: Total cost for tubular steel frame structure w/metal roof may be reduced significantly if constructed as one unit rather than as modules.

SUBTOTAL (incl. O&P)	$37,750	SUBTOTAL (incl. O&P)	$45,112
Contingency @ 10%	$3,775	Contingency @ 10%	$4,511
	$41,525		$49,623
Gen. Req'ts. @5%	$2,076	Gen. Req'ts. @5%	$2,481
TOTAL	**$43,601**	TOTAL - High End	**$52,104**

CAPE COD TRANSIT SUPPORT FACILITIES
DESIGN PROTOTYPES

ESTIMATED CONSTRUCTION COST

February 12, 2004

ITEM NO.	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT PRICE MAT.& LAB.	ESTIMATED AMOUNT	UNIT PRICE MAT.& LAB.	ESTIMATED AMOUNT
	Prototype 4: Standard Shelter with Vestibule &						
1	**Concrete Pad - (15' x 48')**	720	sf	$3.25	$2,340	$4.50	$3,240
	4" thick, reinforced						
2	**Bench**	2	ea	$900.00	$1,800	$900.00	$1,800
	6' long, concrete bases with wood slats						
3	**Waste Receptacle**	2	ea	$445.00	$890	$445.00	$890
	metal with wood slats						
	metal cover with cable						
4	**Bicycle Rack**	2	ea	$317.00	$634	$317.00	$634
	metal loop system						
	secures 5 bicycles						
5	**Transit Marker**	1	ea	$525.00	$525	$525.00	$525
	precast concrete with split granite finish						
	universal bus symbol engraved / panel insert						
6	**Landscaping**						
	shade trees	7	ea	$350.00	$2,450	$350.00	$2,450
	shrub massings	20	ea	$45.00	$900	$45.00	$900
	topsoil, fine grade & seed	936	sf	$0.45	$421	$0.75	$702
7	**Shelter Module ***						
	8'-0" x 13'-6" = 108 sf facility						
	tubular steel frame structure w/ metal roof	108	sf	$65.00	$7,020	$78.00	$8,424
	powder coated structural steel frame with lap siding, windows, and door frames	108	sf	$55.00	$5,940	$66.00	$7,128
	optional wall-mounted wood bench	1	ea	$550.00	$550	$550.00	$550
8	**Porch Module ***						
	8'-0" x 13'-6" = 108 sf facility						
	tubular steel frame structure w/ metal roof	108	sf	$65.00	$7,020	$78.00	$8,424
	powder coated structural steel frame with lap siding (no window or door frames required)	42	sf	$30.00	$1,260	$40.00	$1,680
9	**Vestibule Module ***						
	11'-0" x 8'-0" = 88 sf facility						
	tubular steel frame structure w/ metal roof	88	sf	$65.00	$5,720	$78.00	$6,864
	powder coated structural steel frame with lap siding (no window or door frames required) includes area for vending system	80	sf	$30.00	$2,400	$40.00	$3,200
10	**Kiosk Module ***						
	8'-0" x 9'-0" = 72 sf facility						
	tubular steel frame structure w/ metal roof	72	sf	$65.00	$4,680	$78.00	$5,616
	powder coated structural steel frame with lap siding, including lavatory options	72	sf	$100.00	$7,200	$120.00	$8,640

* Note: Total cost for tubular steel frame structure w/metal roof may be reduced significantly if constructed as one unit rather than as modules.

SUBTOTAL (incl. O&P)	$51,750	**SUBTOTAL (incl. O&P)**	$61,667
Contingency @ 10%	$5,175	**Contingency @ 10%**	$6,167
	$56,925		$67,834
Gen. Req'ts. @5%	$2,846	**Gen. Req'ts. @5%**	$3,392
TOTAL	**$59,771**	**TOTAL - High End**	**$71,225**