



APPENDICES

APPENDIX A SHADE SUITABILITY
ASSESSMENT SITES

APPENDIX B DETAILS

APPENDIX C SPECIFICATIONS, OPERATIONS
& MAINTENANCE PLANS

APPENDIX A SHADE SUITABILITY ASSESSMENT SITES

Number of DCR Assets within 50 ft of Area	Nearest Distance of an EJ Block Group(Feet)	EJ Criteria of Nearest Block Group	DCR Region	DCR Site Name	Areas of Interest
1	Inside EJ Block Group	Minority	BOSTON	Ed Burns Arena	
5	Inside EJ Block Group	Minority and English isolation	BOSTON	Alewife Brook Reservation	Dilboy stadium and courts area
3	Inside EJ Block Group	Minority	BOSTON	Francis J. McCrehan Swimming Pool	Pool-Cambridge
1	1,010.42	Minority	BOSTON	City Square Park	Charlestown Park, Paths
1	Inside EJ Block Group	Minority	BOSTON	Mystic River Reservation	Draw Seven Park, Somerville-Park, Path, activity field
5	Inside EJ Block Group	Minority	BOSTON	Foss Park	Somerville Pool, Playground, Park
3	Inside EJ Block Group	Minority	BOSTON	Foss Park	Somerville-Playing fields
1	Inside EJ Block Group	Minority and income	BOSTON	Charles River Reservation	Paul Dudley White Bike Path Parking
1	Inside EJ Block Group	Minority	BOSTON	Charles River Reservation	Herter Park parking area
4	32.037	Minority	BOSTON	Charles River Reservation	Artesani, Playground, Spray Deck
1	Inside EJ Block Group	Minority and income	BOSTON	Charles River Reservation	Paul Dudley White Bike Path Parking
1	Inside EJ Block Group	Minority	BOSTON	Southwest Corridor Park	Carleton Street Playground
1	Inside EJ Block Group	Minority	BOSTON	Charles River Reservation	Cannalonga Park, Parking area
1	Inside EJ Block Group	Minority	BOSTON	Charles River Reservation	Watertown Veterans Memorial

Number of DCR Assets within 50 ft of Area	Nearest Distance of an EJ Block Group(Feet)	EJ Criteria of Nearest Block Group	DCR Region	DCR Site Name	Areas of Interest
4	Inside EJ Block Group	Minority	BOSTON	Charles River Reservation	Daly Playing fields
1	Inside EJ Block Group	Minority	BOSTON	Birmingham Parkway	Vacant lot
1	Inside EJ Block Group	Minority	BOSTON	Lieutenant James C Reilly Memorial Recreation Center	Reilly Pool area
3	Inside EJ Block Group	Minority and income	BOSTON	Southwest Corridor Park	Basketball courts behind BPD HQ
3	Inside EJ Block Group	Minority and income	BOSTON	Southwest Corridor Park	Jackson Square Playground, Courts
3	Inside EJ Block Group	Minority and income	BOSTON	Melnea A. Cass Recreational Complex	Pool
3	Inside EJ Block Group	Minority and income	BOSTON	Melnea A. Cass Swimming Pool	Pool
3	Inside EJ Block Group	Minority and income	BOSTON	Melnea A. Cass Recreational Complex	Parking area, front entry
3	Inside EJ Block Group	Minority and income	BOSTON	Melnea A. Cass Swimming Pool	Front entry
3	Inside EJ Block Group	Minority	BOSTON	Corporal Joseph E. Johnson Playground	Playground
3	Inside EJ Block Group	Minority	BOSTON	Southwest Corridor Park	Playground
1	Inside EJ Block Group	Minority	BOSTON	Southwest Corridor Park	Park, Paths adjacent to English HS
3	Inside EJ Block Group	Minority and English isolation	BOSTON	McMorrow Playground	Playground, Playing field, Courts
1	Inside EJ Block Group	Minority	BOSTON	Squantum Point Park	Parking area
1	Inside EJ Block Group	Minority and English isolation	BOSTON	McMorrow Playground	Parking area

Number of DCR Assets within 50 ft of Area	Nearest Distance of an EJ Block Group(Feet)	EJ Criteria of Nearest Block Group	DCR Region	DCR Site Name	Areas of Interest
5	Inside EJ Block Group	Minority	BOSTON	Dorchester Shores Reservation	Tenean Beach, Parking, Courts
3	632.704	Income	BOSTON	Toohig Park	Playground, Playing field, Courts
2	Inside EJ Block Group	Income	BOSTON	Neponset River Reservation	Path, Park near Granite Ave
1	19.154	Minority	BOSTON	Stony Brook Reservation	Maintenance area
3	Inside EJ Block Group	Minority	CENTRAL	Leominster State Pool	Pool-managed by town
1	Inside EJ Block Group	Minority	CENTRAL	Wachusett Reservoir Watershed	Clinton Field Office
3	Inside EJ Block Group	Minority and income	CENTRAL	Shine Pool	Worcester/Vernon Hill pool
1	Inside EJ Block Group	Minority	CENTRAL	Callahan State Park	Paths, parking area
3	1,397.07	Minority	CENTRAL	Cochituate State Park	Park, Pond, Parking area
2	604.294	Minority	CENTRAL	Cochituate State Park	Park, Pond, Parking area
5	Inside EJ Block Group	Minority	CENTRAL	Quinsigamond State Park	Regatta Point-Pond, Park
3	Inside EJ Block Group	Minority	CENTRAL	Petro Pool	Pool-Southbridge
1	Inside EJ Block Group	Minority	CENTRAL	Honorable Charles J. Buffone Skating Rink	
3	Inside EJ Block Group	Minority	CENTRAL	Hopkinton State Park	Pond, Park, Parking area
1	Inside EJ Block Group	Minority	CENTRAL	Hopkinton State Park	Pond, Park, Parking area

Number of DCR Assets within 50 ft of Area	Nearest Distance of an EJ Block Group(Feet)	EJ Criteria of Nearest Block Group	DCR Region	DCR Site Name	Areas of Interest
4	Inside EJ Block Group	Minority	CENTRAL	Quinsigamond State Park	Lake Park-Athletic fields, Paths, Park, Pond
1	Inside EJ Block Group	Minority	CENTRAL	Quinsigamond State Park	Lake Park-Parking area
2	Inside EJ Block Group	Minority	CENTRAL	Senator P. Eugene Casey Memorial Pool	Milford Pool
2	Inside EJ Block Group	Minority	CENTRAL	Bennett Field Pool	Worcester/Bennett Pool
1	2,135.60	Income	CENTRAL	Southern New England Trunkline Trail	Blackstone-Path, Parking Area
1	Inside EJ Block Group	Minority	NORTH	Veterans Memorial Skating Rink - Haverhill	
1	Inside EJ Block Group	Minority	NORTH	Veterans Memorial Skating Rink - Haverhill	
3	Inside EJ Block Group	Minority	NORTH	Geisler Memorial Pool	North Lawrence Pool
4	Inside EJ Block Group	Minority and English isolation	NORTH	Lawrence Riverfront State Park	Path, Playground, Courts
3	Inside EJ Block Group	Minority and English isolation	NORTH	Lieutenant Colonel Edward J. Higgins Memorial Swimming Pool	South Lawrence Pool, installs pop up canopies
3	Inside EJ Block Group	Minority, income and English isolation	NORTH	Lord Pool	Lowell Pool, installs pop up canopies
1	1,234.55	Income	NORTH	James E McVann and Louis F OKeefe Memorial Skating Rink	Peabody rink,

Number of DCR Assets within 50 ft of Area	Nearest Distance of an EJ Block Group(Feet)	EJ Criteria of Nearest Block Group	DCR Region	DCR Site Name	Areas of Interest
1	761.98	Minority	NORTH	Breakheart Reservation	Baseball field behind rink
1	849.031	Minority	NORTH	Breakheart Reservation	Parking area near rink
2	479.186	Minority	NORTH	Lawrence W. Lloyd Swimming Pool	Melrose Pool,
1	1,410.81	Minority	NORTH	Middlesex Fells Reservation	Parking area near Jerry Jingle gazebo
2	Inside EJ Block Group	Minority	NORTH	Lynn Shore Reservation	Parking area, coastal beach, near Ward bathhouse Nahant
1	Inside EJ Block Group	Minority and income	NORTH	Revere Beach Reservation	Coastal beach, picnic
3	Inside EJ Block Group	Minority	NORTH	Lieutenant Dennis C. Holland Memorial Pool	Malden Pool
3	Inside EJ Block Group	Minority and income	NORTH	Everett Allied War Veterans Memorial Recreation Center	Pool, Rink, Parking area
2	Inside EJ Block Group	Minority	NORTH	Revere Beach Reservation	Coastal beach, picnic
3	Inside EJ Block Group	Minority	NORTH	Vietnam Veterans Pool - Chelsea	Chelsea Pool
1	Inside EJ Block Group	Minority	NORTH	Revere Beach Parkway	Cronin Rink area,
5	Inside EJ Block Group	Minority	NORTH	Constitution Beach	Coastal beach, picnic
1	Inside EJ Block Group	Minority	NORTH	Winthrop Shore Reservation	Coastal beach, picnic, a plover beach

Number of DCR Assets within 50 ft of Area	Nearest Distance of an EJ Block Group(Feet)	EJ Criteria of Nearest Block Group	DCR Region	DCR Site Name	Areas of Interest
1	Inside EJ Block Group	Minority	SOUTH	Blue Hills Reservation	Quarry Hills athletic fields
1	Inside EJ Block Group	Minority	SOUTH	Neponset River Reservation	Moynihan ball field
2	Inside EJ Block Group	Minority	SOUTH	Blue Hills Reservation	Shea Rink-parking area, courts
2	Inside EJ Block Group	Minority	SOUTH	Camp Meigs	Playground, basketball court
1	Inside EJ Block Group	Minority	SOUTH	Camp Meigs	Athletic Field
2	Inside EJ Block Group	Minority	SOUTH	Blue Hills Reservation	Shea Rink-parking area, courts
1	2,131.57	Income	SOUTH	Pilgrim Memorial State Park	Park, path
3	Inside EJ Block Group	Minority and income	SOUTH	Vietnam Veterans Pool - Fall River	Pool
1	Inside EJ Block Group	Minority and income	SOUTH	Fall River Heritage State Park	Parking area
1	Inside EJ Block Group	Minority and income	SOUTH	Fall River Heritage State Park	Parking area
2	Inside EJ Block Group	Minority	WATERSHED	Wachusett Aqueduct	Wachusett Watershed Maintenance area
2	Inside EJ Block Group	Minority	WATERSHED	Wachusett Reservoir Watershed	Wachusett Watershed Maintenance area
1	Inside EJ Block Group	Income	WEST	Clarksburg State Forest	Park (inholding in residential area)
1	Inside EJ Block Group	Income	WEST	Western Gateway Heritage State Park	outdoor area

Number of DCR Assets within 50 ft of Area	Nearest Distance of an EJ Block Group(Feet)	EJ Criteria of Nearest Block Group	DCR Region	DCR Site Name	Areas of Interest
1	Inside EJ Block Group	Income	WEST	Western Gateway Heritage State Park	outdoor area
1	Inside EJ Block Group	Income	WEST	Peter W. Foote Vietnam Veterans Memorial Rink	Parking area
1	Inside EJ Block Group	Income	WEST	Peter W. Foote Vietnam Veterans Memorial Rink	Parking area
1	Inside EJ Block Group	Income	WEST	Connecticut River Greenway State Park	Great Falls Discovery Center
1	Inside EJ Block Group	Minority and income	WEST	Connecticut River Greenway State Park	Damon Road HQ
1	Inside EJ Block Group	Minority, income and English isolation	WEST	Holyoke Heritage State Park	Spray deck, paths
1	Inside EJ Block Group	Income	WEST	Otis State Forest	Stone Manufacturing
1	Inside EJ Block Group	Minority, income and English isolation	WEST	Holyoke Heritage State Park	Spray deck, Park
1	Inside EJ Block Group	Minority and income	WEST	Henry J. Fitzpatrick Skating Rink	Parking area- Chicopee
1	Inside EJ Block Group	Minority, income and English isolation	WEST	Sarah Jane Sherman Swimming Pool	Chicopee Pool
2	Inside EJ Block Group	Minority and income	WEST	Chauncey Allen Park	Park, paths in Westfield
1	Inside EJ Block Group	Minority and income	WEST	Ray Smead Memorial Skating Rink	Parking area, basketball courts
1	Inside EJ Block Group	Minority and income	WEST	John H. Thomas Memorial Pool	Springfield Parking area

Table A. DCR shade suitability assessment sites (Credit: DCR)

APPENDIX B DETAILS

Figure B-3	<i>Tree protection fencing - Typical section</i>	<i>p.65</i>
Figure B-4.	<i>Hammock post - Typical section</i>	<i>p.65</i>
Figure B-5	<i>Pavilion - Typical section</i>	<i>p.66</i>
Figure B-6	<i>Pavilion - Plan layout</i>	<i>p.67</i>
Figure B-7	<i>Shelter details - gable roof</i>	<i>p.68</i>
Figure B-8	<i>Shelter details - hip roof</i>	<i>p.69</i>
Figure B-9	<i>Gazebo details - tiered roof</i>	<i>p.70</i>

Table B. *List of plans with pages numbers*



Figure B-1. Tree protection fencing (Source: Internet)



Figure B-2. Hammock post (Source: Internet)

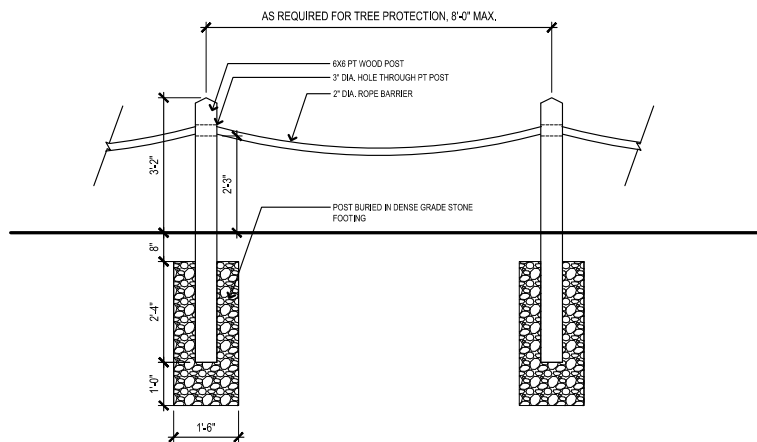


Figure B-3. Tree protection fencing - Typical section

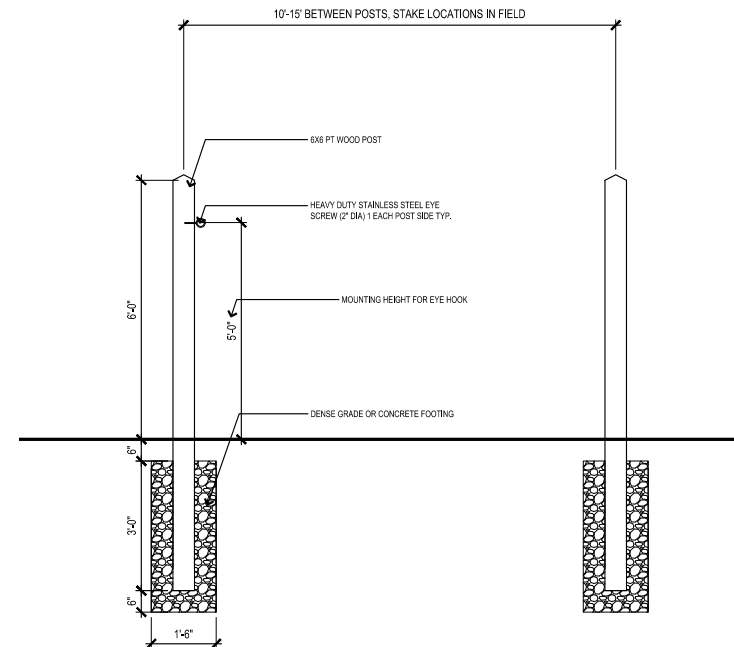


Figure B-4. Hammock post - Typical section

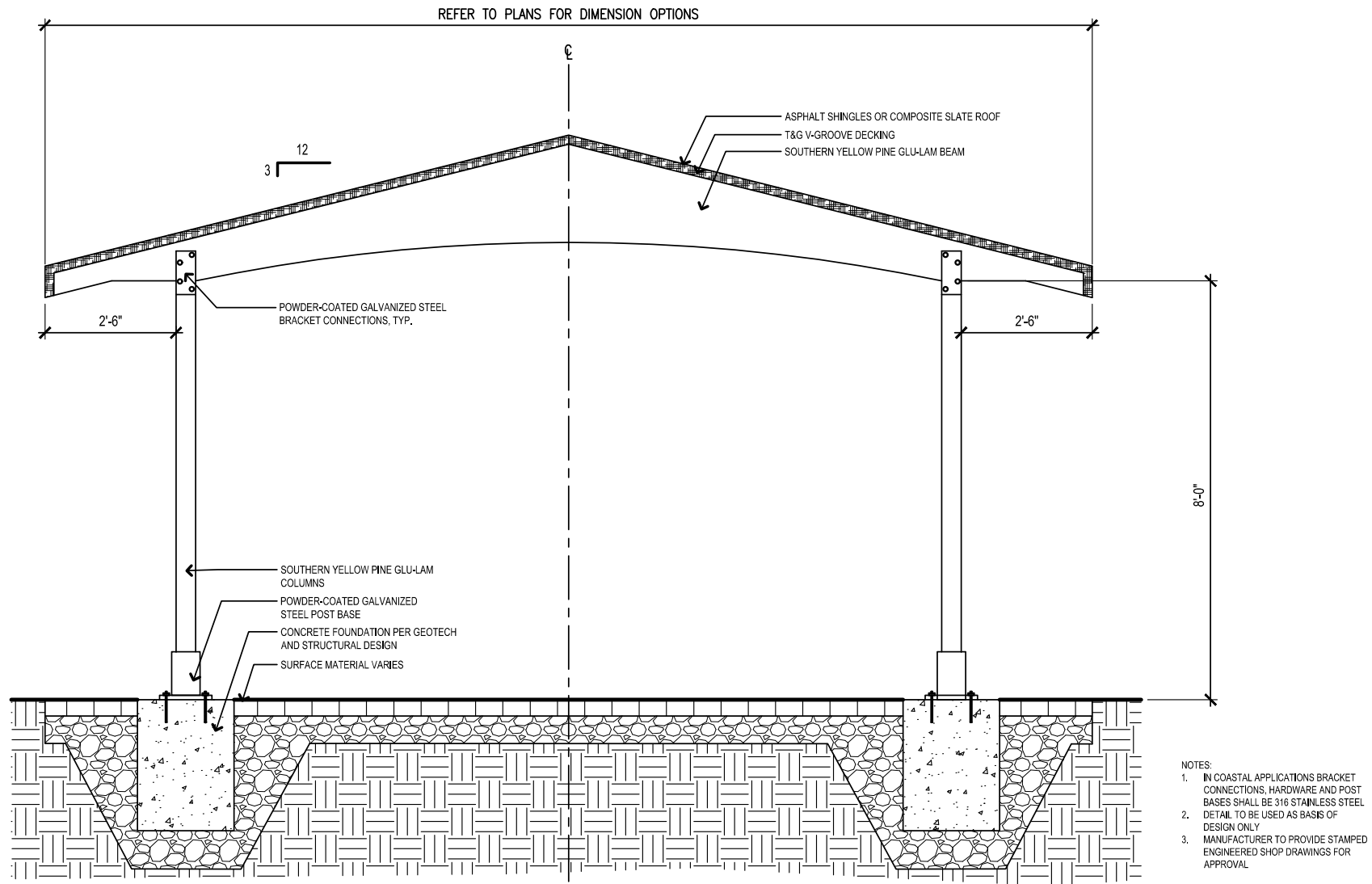


Figure B-5. Pavilion - Typical section

NOTES:

1. IN COASTAL APPLICATIONS BRACKET CONNECTIONS, HARDWARE AND POST BASES SHALL BE 316 STAINLESS STEEL
2. DETAIL TO BE USED AS BASIS OF DESIGN ONLY
3. MANUFACTURER TO PROVIDE STAMPED ENGINEERED SHOP DRAWINGS FOR APPROVAL

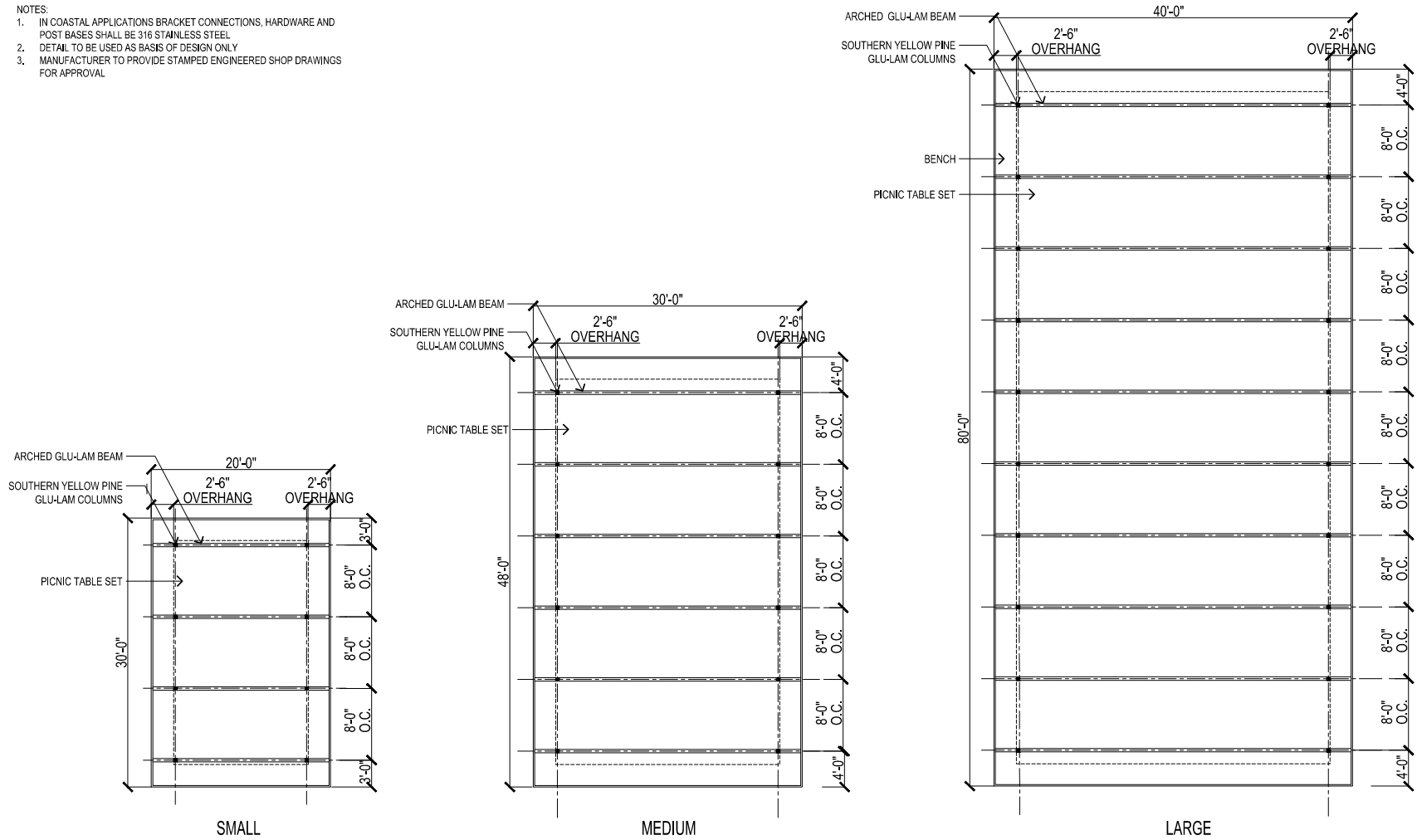


Figure B-6. Pavilion - Plan layout

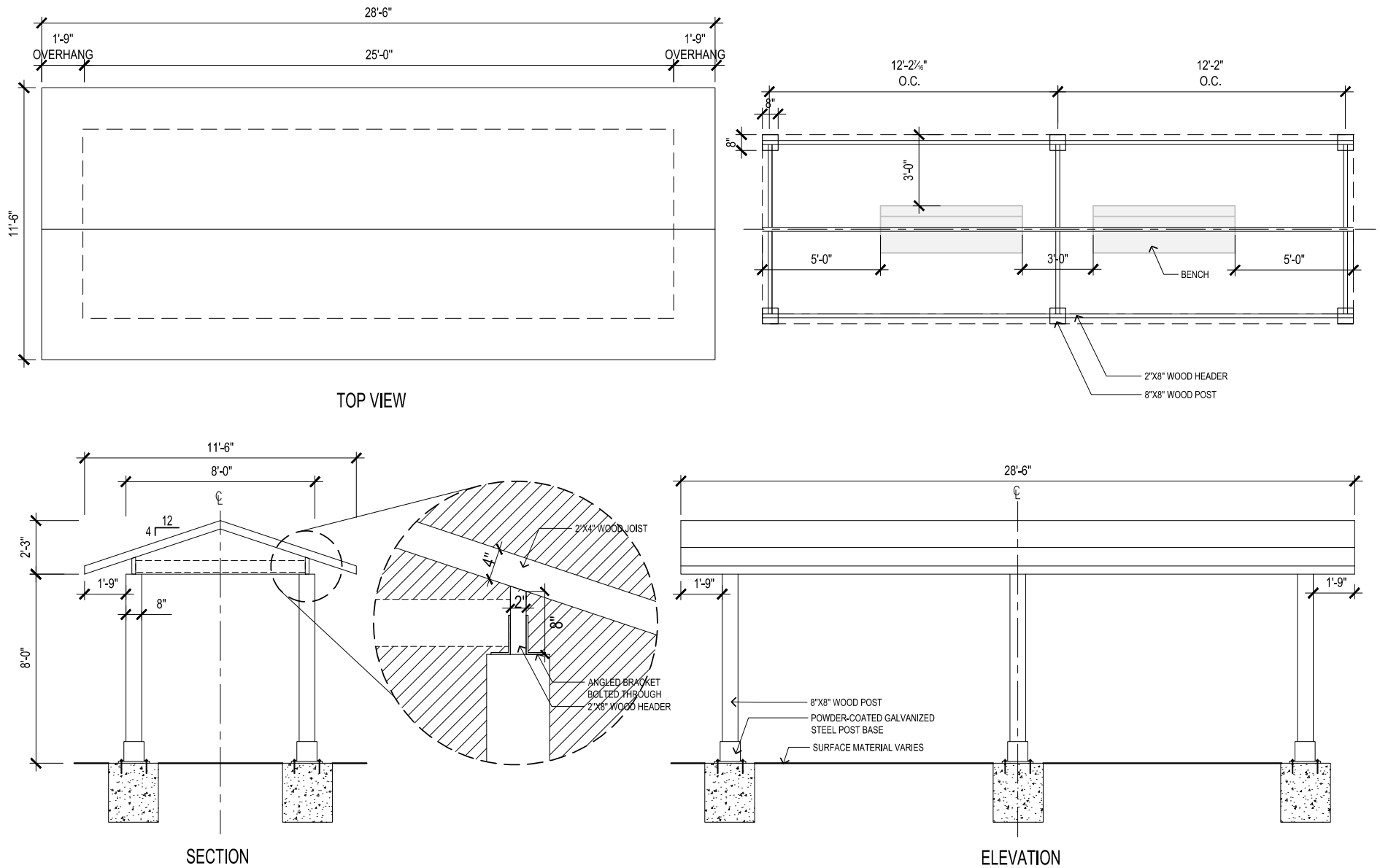


Figure B-7. Shelter details - gable roof

APPENDIX B DETAILS

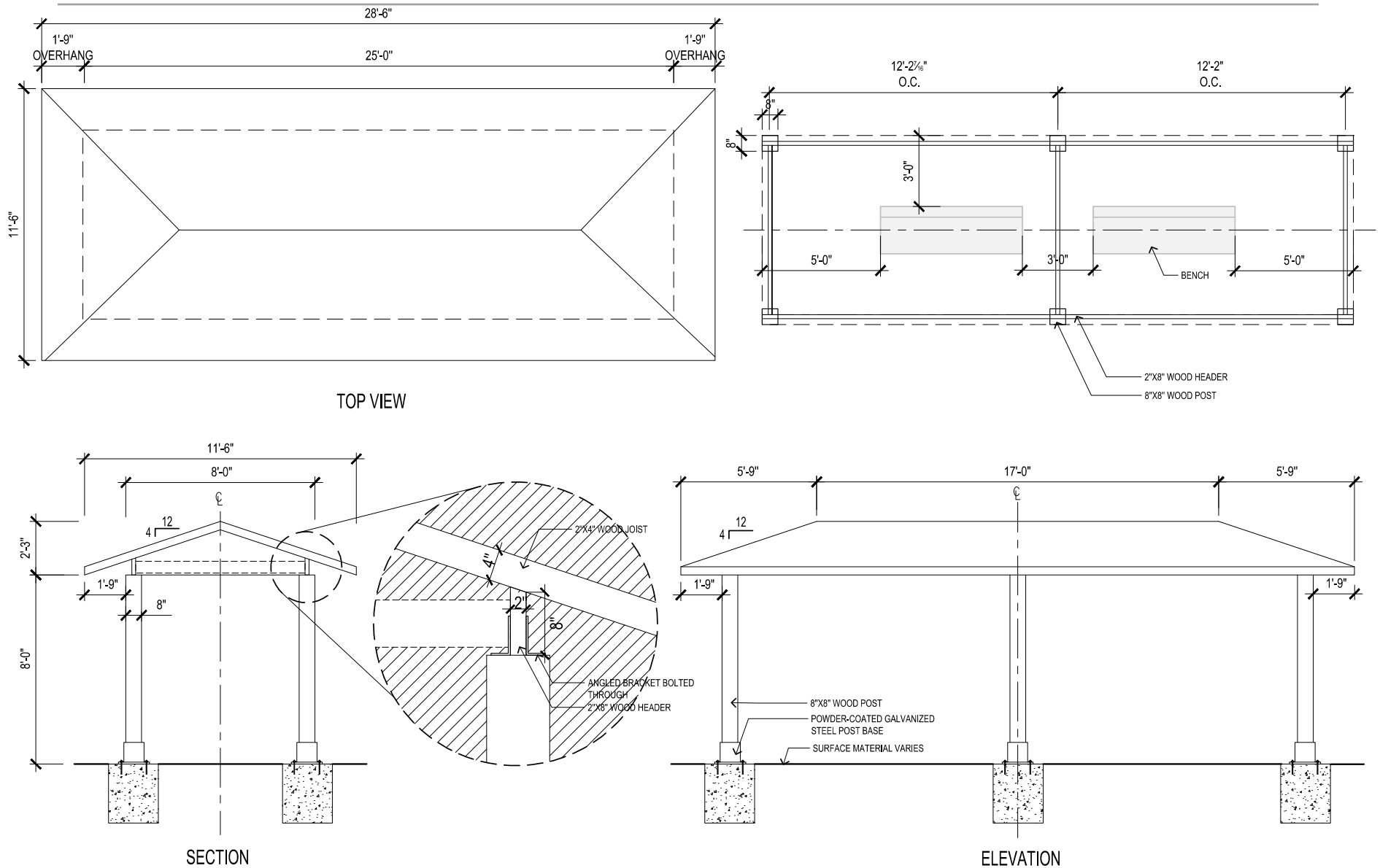


Figure B-8. Shelter details - hip roof

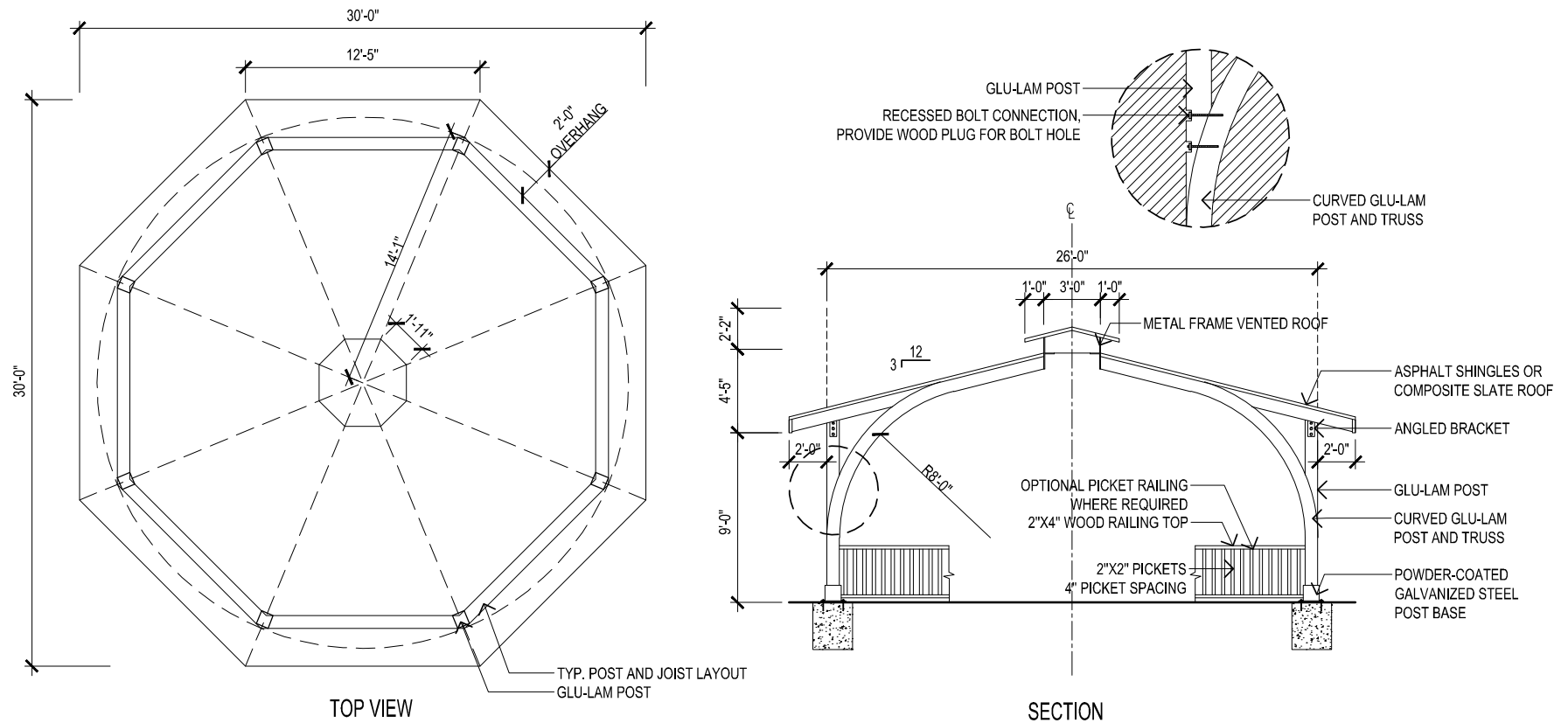


Figure B-9. Gazebo details - tiered roof

APPENDIX C SPECIFICATIONS, OPERATIONS & MAINTENANCE PLANS

CANTILEVER CANOPY

Cantilever Canopies shall be Shade Walk by Shade Systems Inc, www.shadesystemsinc.com or approved equal.

- Dimensions as shown on drawings (standard 10'x30')
- Quantity as shown on drawings
- Cool-Net canopy fabric color shall be selected by Owner from full range of color options
- Posts and Frame shall be powder-coat steel, color to be selected by Owner from full range of color options
- Mounting shall be direct embedment, reinforced concrete footings min. 2' dia. x 4'-6" depth. Or as required by manufacturer.
- Product shall have Turn-n-Slide feature for canopy removal and re-attachment. Alternate equal products shall have comparable feature.

Installation Notes

- Install per manufacturers recommendations

Operations and Maintenance Notes

- Canopy shall be removed each Fall and re-installed in Spring based on DCR maintenance schedule
- 10 year warranty on Cool-Net fabric and Turn-n-Slide feature
- Touch-up paint provided by manufacturer for scratch repair of posts and structure
- Tears to Cool-Net fabric must be sent back to manufacturer for repair

DCR Reference Projects

- Magazine Beach Spray Deck



Figure C-1. Single-post / cantilever canopy at Magazine Beach (Credit: DCR)

MULTI-SIDED FRAME CANOPY

Multi-Sided Frame Canopies shall be Shade Kite by Shade Systems Inc, www.shadesystemsinc.com or approved equal.

- Dimensions as shown on drawings (15'x15' min, 30'x30' max)
- Quantity as shown on drawings
- Cool-Net canopy fabric color shall be selected by Owner from full range of color options
- Posts and Frame shall be powder-coat steel, color to be selected by Owner from full range of color options
- Mounting shall be direct embedment, reinforced concrete footings min. 2' dia. x 4'-6" depth. Or as required by manufacturer.

Installation Notes

- Install per manufacturers recommendations

Operations and Maintenance Notes

- Canopy shall be removed each Fall and re-installed in Spring based on DCR maintenance schedule
- 10 year warranty on Cool-Net fabric and Turn-n-Slide feature
- Touch-up paint provided by manufacturer for scratch repair of posts and structure
- Tears to Cool-Net fabric must be sent back to manufacturer for repair

DCR Reference Projects

- Foss Park



Figure C-2. Multi-sided frame canopy at Foss Park (Credit: DCR)

RETRACTABLE AWNING

Retractable awnings shall be Pro Series 87 with Flexi-pitch by SummerSpace, www.summerspace.com or approved equal.

- Dimensions as shown on drawings (max 26' wide x 13'-2" projection)
- Awning shall be marine-grade Tempotest® high-performance Italian fabric
- Frame, hood, and front bar shall have Proprietary SummerShield™ powder coat component finish

Installation Notes

- Install per manufacturers recommendations for existing structure attachment.
- Wall-mount, soffit, or roof-mounted options

Operations and Maintenance Notes

- 15-year frame warranty
- 10-year fabric warranty
- 7-year motor warranty

DCR Reference Projects

- Melnea A. Cass Recreational Complex

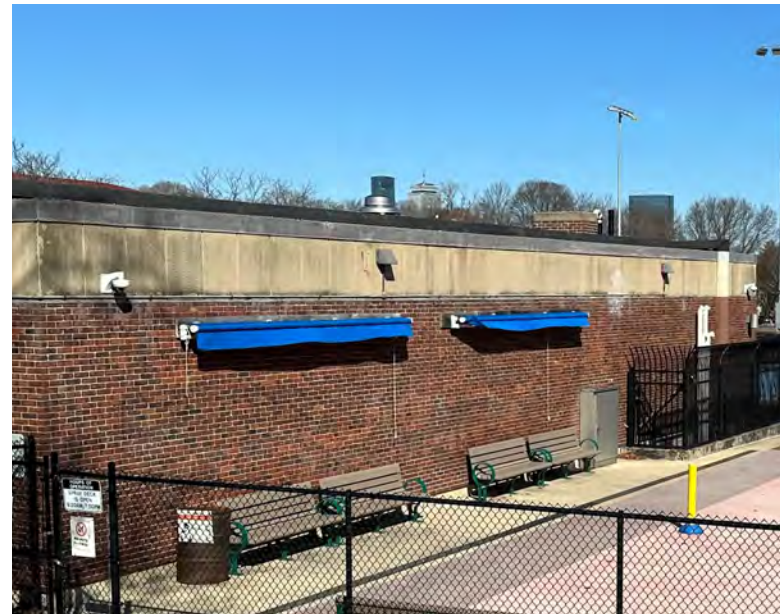


Figure C-3. Retractable awnings at Melnea A. Cass Recreational Complex (Source: Google Map)

SOLAR CANOPY

Solar Canopies shall be the Heavy Duty Solar Canopy by Pvilion, www.pvilion.com, or approved equal.

- Module dimensions are 10'L x 12'W x 11'H, refer to plans for overall dimensions
- Quantity as shown on drawings
- Frame shall be anodized aluminum (optional powder coat finish)
- Canopy shall be Pvilion patented high strength PVC coated polyester fabric. Color shall be selected by Owner from full range of color options.
- Order of Magnitude Cost: \$25,000 (varies based on final accessory selections)

Installation Notes

- Surface mount, ballast and footing options for installation

Operations and Maintenance Notes

- 2 Year warranty on PV Fabric technology
- 20 Year pro-rated warranty on base fabric

DCR Reference Projects

- Fort Phoenix State Reservation



Figure C-4. Heavy duty solar canopy (Credit: Pvilion)

