







CT DEP # B-2020 NYSDEC# 13326 P.O. Box 874 Madison, CT 06443 Phone:203.245.1212 Fax:203.245.2981 www.allhabitat.com

March 25, 2020

Mark W. Friend Megson, Heagle & Friend Civil Engineers & Land Surveyors 81 Rankin Road Glastonbury, Connecticut 06033

Dear Mark,

Thank you for your interest in All Habitat Services, LLC for the Japanese Knotweed (Fallopia japonica) management project behind St. Paul Church. The site is located at 2577 Main Street in Glastonbury, CT. Based on our previous experience, site walk and discussions, we are pleased to submit the following proposal for your consideration.

In order to restore the wetland adjacent to the parking lot, we must first control the current infestation of Japanese Knotweed (Fallopia japonica). Japanese Knotweed is best controlled by applying the aquatic herbicide Polaris AC Complete® (Imazapyr) using a thin invert emulsion application technique. The herbicide will efficiently translocate into the plant's rhizome system, immediately arresting the growth cycle and limiting the extent of their above ground biomass. It will significantly reduce stem density and effectively control these stands. The herbicide will be selectively applied to avoid non-target injury. This will allow any suppressed species to flourish once these competitive species are eliminated. Application is conducted by spot spray on foot using low-pressure backpack sprayers. This is to avoid any possible drift or overspray that could harm the native vegetation.

Due to the maturity of this stand, we anticipate continued re-growth in following years. We strongly recommend planning for a minimum of three years of management, with ongoing monitoring and maintenance in the years to follow. Year One will significantly reduce the current population by roughly 80-90%. This will provide a more suitable surface for reintroducing native plants/seed to the site. After the initial year's management, and the native plant reintroduction, All Habitat Services will transition to a more selective hand-wipe method to ensure only invasive regrowth is treated and no recently introduced species are harmed.

After the third year of management, we anticipate being prepared for a smooth transition to our "Early Detection, Rapid Response (EDRR) Monitoring and Maintenance Program". This program provides multiple visits throughout the growing season to ensure no new invasive species have encroached or been re-introduced to the site. It avoids the concern of re-infestation to the site; maximizing the results of the original restoration plan.

We are confident that we can provide highly effective control services and that further management needs should decline significantly in the following seasons. Knotweed has been identified as persistent invasive

species known for recovering from its prolific seed production and underground perennial rhizomes. It is prudent to plan for a multi-year control commitment to ensure a successful program for this site.

Activity	Activity Timing	
Early Season Treatment	Late May/Early June	\$800.00
Late Season Treatment	Late July/Early August	\$800.00
	Total Cost 2020	\$1,600.00
Early Season Treatment	Late May/Early June	\$600.00
Late Season Treatment	Late July/Early August	\$600.00
	Total Cost 2021	\$1,200.00
Early Season Treatment	Late May/Early June	\$600.00
Late Season Treatment	Late July/Early August	\$600.00
***************************************	Total Cost 2022	\$1,200.00

*All prices subject to CT state sales tax (not included in this pricing) unless a tax exemption is applicable.

The above prices are inclusive of all labor, materials, specialized equipment, GIS support, and spray mapping, mobilization and demobilization costs, unless otherwise specified.

It is a pleasure to have the opportunity to continue with this project and hope that this proposal meets with your approval. Please feel free to contact us again if you should have any questions or if we may be of any further assistance to you.

Best regards,

Luke Johnson S-6145 **Project Supervisor** All Habitat Services

Planting Installation Notes

- 1. A pre-construction meeting shall be conducted including site contractor, landscape contractor, and the project wetland scientist to coordinate invasive removal with grading and construction sequence.
- 2. All installed plants shall be native species from New England sources to the extent feasible. Cultivars or hybrids are not acceptable. Substitutions can be made if approved the wetland scientist.
- 3. Invasive non-native plant species in the basin area and associated upland review area shall be identified and/or tagged by the project wetland scientist to aid in eradicated and removed.
- 4. Herbicide applications necessary for invasive control shall be performed by a State licensed herbicide applicator.
- 5. Disposal of invasive plant material shall comply with CT DEEP "Guidelines" for Disposal of Terrestrial Invasive Plants". Such material may be chipped and composted on site if done prior to flowering. If after flowering shall be
- disposed of offsite by being bagged, transported securely, and incinerated 6. At limit of disturbance protect existing native trees to the extent feasible.
- Use orange construction fencing or equivalent as needed. 7. If the stormwater basin is used for a sediment trap during construction it shall be cleaned out before placement of soil mixes and/or topsoil.
- 8. The stormwater basin shall be amended with at least 6" of organic enriched topsoil (minimum 10% OM) in the basin bottom, which shall be free from Purple Loosestrife (Lythrum salicaria), Common Reed (Phragmites australis), or Reed Canarygrass (Phalaris arundinacea).
- 9. Stormwater basin slopes shall be amended with 6" of topsoil, which shall be free from Purple Loosestrife (Lythrum salicaria), Common Reed (Phragmites australis), or Reed Canarygrass (Phalaris arundinacea).
- 10. A 50:50 mix of weed-free leaf compost and sand shall be an acceptable substitute for natural topsoil. If used, the compost shall be tested for germination of weed seeds.
- 11. Rain Garden soil mix shall consist of 50-60% sand, 20-30% topsoil, and 20-30% weed free leaf compost or equivalent. The soil mix shall be placed 18" deep in the rain garden bottom. Allow soil mixture to settle naturally through rain events or presoak after placement.
- 12. Do not add lime or fertilizer unless soil testing indicates a deficiency. Application rates shall be approved by project wetland scientist prior to
- 13. Hydrology of basin shall be confirmed by project wetland scientist before wetland herbs are ordered. Species and quantities may be adjusted by the wetland scientist according to field conditions.
- 14. Maintain water level no higher than top of vegetative growth of plugs for 10 days minimum.
- 15. Compaction of rain garden and required backfill shall be minimized to the maximum extent feasible by the use of excavation hoes, light equipment with turf type tires, or wide track equipment. If compaction does occur in basins, the compacted zone shall be tilled to refracture at least 12" of natural soil before backfilled with soil mix.
- 16. Plant at least one male Winterberry in the background of each Winterberry grouping at a ratio of approximately 1 male per 5 female.
- 17. Plant trees and shrubs around existing native vegetation in beds and mulch with pine bark mulch. Do not renew unless directed by the wetland scientist. Do not mulch shrubs planted in the basin.
- 18. Average density of shrubs shall be in groupings 4-6 feet o.c.
- 19. Install herbs in basin bottom at an average density of approx. 3' o.c. in natural groupings under the direction of project wetland scientist.
- 20. The plantings will be monitored for a period of three growing seasons and will be assessed using the following success standards: Standard 1: At least 75% of the surface area of the mitigation area shall be established with indigenous species within two growing seasons. Standard 2: The mitigation area is properly stabilized.
- 21. Annual monitoring reports, remedial action plan (if required) and implementation results (if required) shall be submitted to the Town of Glastonbury on or about December 31 of each year.

SEED MIXES

STORMWATER MANAGEMENT BASIN SIDE SLOPES

• NEW ENGLAND EROSION CONTROL/RESTORATION MIX - 1LB./1245 S.F.

STORMWATER MANAGEMENT BASIN BOTTOM

• NEW ENGLAND WET MIX

- 1LB./2,500 S.F.

PARKING LOT SLOPES & RAINGARDEN

• NEW ENGLAND CONSERVATION/WILDLIFE MIX - 1LB./2,500 S.F.

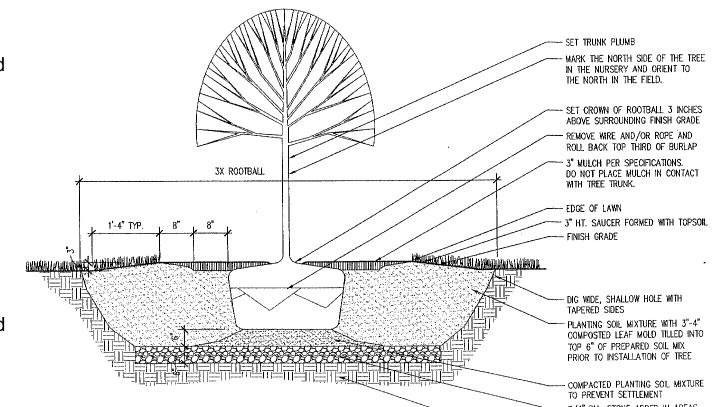
Rain Garden Maintenance Notes

- 1. Remove sediment greater than 1" deep in a manner to minimize damage to vegetation in March-April.
- 2. Remove excess leaves as necessary and cut or mow grasses between November 15-April 1. Plant matter shall be left in place over winter months to insulates the soil and add organic matter to the soil. Removal criteria shall include when plant matter is smothering or killing vegetation and aesthetics.
- 3. Prune trees and shrubs as needed
- 4. Do not add lime, fertilizer, herbicide or pesticides. The use of herbicide is restricted to invasive non-native plant control under the direction of a licensed herbicide applicator.

Invasive Plant Monitoring

Invasive species control requires adaptive management and there must be an ongoing part of the landscape management program. Best invasive plant species control practices shall be determined and implemented from a periodic review of the growing body of scientific literature on management of these species such as The Nature Conservancy website or the Connecticut Invasive Plant Working Group. These methods may include physical, chemical and biological The monitoring phase shall consist of:

- 1. Three-years of post-construction invasive species inspections by a qualified wetland scientist. Inspections will occur within areas of treatment (i.e., the portions of the wetland bordering the limits of disturbance, portions of the URA in and around the proposed plantings, and the stormwater basin and rain garden).
- 2. Monitoring will determine percent cover of invasive plant species in these areas. If invasive cover exceeds 20% a remedial action plan will be
- 3. Annual monitoring reports, remedial action plan (if required) and implementation results (if required) shall be submitted to the Town of Glastonbury on or about December 31 of each year.



2. ALL DISTURBED AREAS NOT COVERED BY STRUCTURES. PAVEMENTS, MULCHES, PLANTING BEDS OR TREE PITS SHALL BE SEEDED LAWN.

3. ALL PLANTING BEDS AND PITS TO RECEIVE APPROVED MULCH TO DEPTHS INDICATED IN PLANTING DETAILS.

4. WHERE DISCREPANCIES OCCUR BETWEEN PLANTING QUANTITIES OR TYPES SHOWN ON PLAN AND IN THE PLANT LIST, THE QUANTITY OF PLANTINGS SHOWN ON THE PLANT LIST SHALL PREVAIL.

PLANT SCHEDULE

PARKIN	NG LOT TREES					
Key	Scientific Name	Common Name				
Trees			Size	Spacing	COND	QTY
AOG	ACER RUBRUM	October Glory	2-21/2	N/A	B+B	9
AOG	'October Glory'	Red Maple	2-2/2	INA	טיט	3
	October Giory	Red Maple				
WETLA	ND TREES					
Trees	(select minimum 3 species)		Size	Spacing	COND	
AR	Acer rubrum	Red Maple	6'	25'	B+B、	
CF	Cornus florida	Flowering Dogwood	6'	25'	В+В	
NS	Nyssa sylvatica	Black Gum	6'	25'	B+B	17 TOTAL
pv	Prunus virginiana	Chokecherry	3-4'	25'	B+B	
QB	Quercus bicolor	Swamp White Oak	6'	25'	B+B /	
SI OPE	/EDGE SHRUB ZONE					
	(select minimum 10 species)		Size	Spacing	COND	
Ac	Amelanchier canadensis	Shadblow	3-4'	10'	CONT.	
AA	Aronia arbutifolia	Red Chokeberry	3-4'	10'	CONT.	
CEA	Ceanothus americana	New Jersey Tea	18-24"	10'	CONT.	
CO	Cephalanthus occidentalis	Buttonbush	3-4'	10'	CONT.	
CL	Clethra alnifolia	Sweet Pepperbush	3-4'	10'	CONT.	
CS	Cornus sericea	Red-osier Dogwood	3-4'	10'	CONT.	
DL	Diervilla lonicera	Northern Bush Honeysuckle	18-24"	10'	CONT.	
IV	llex verticillata (female)	Winterberry	3-4'	10'	CONT.	50 TOTAL
IVM	llex verticillata (male)	Winterberry	3-4'	10'	CONT.	OV TOTAL
MP	Morella pensylvanica	Bayberry	18-24"	10'	CONT.	
SC	Sambucus canadensis	Common Elderberry	3-4'	10'	CONT.	
SD SD	Salix discolor	•	3-4	10'	CONT.	
SD SL		Pussy Willow	3-4'			
	Spiraea latifolia	Meadowsweet		10'	CONT.	
Vc	Vaccinium corymbosum	Highbush Blueberry	3-4'	10'	CONT.	
VD	Viburnum dentatum	Arrowwood	3-4'	10'	CONT.	
VL	Viburnum lentago	Nannyberry	3-4'	10'	CONT.	
	ARDEN & STORMWATER BASI	N				
Herbs	(select minimum 10 species)		Size	Spacing		
	Asclepias tuberosa	Butterfly Weed	2" plugs	3'	FACU	rain garden
	Lupinus perennis	Lupine	2" plugs	3'	UPL	rain garden
	Asclepias incarnata	Swamp Milkweed	2" plugs	3'	OBL	basin
	Aster novae angliae	New England Aster	2" plugs	3'	FACW-	basin
	Carex crinita	Fringed Sedge	2" plugs	3'	OBL	basin
	Carex vulpinoidea	Fox Sedge	2" plugs	3'	OBL	basin
	Eupatorium maculatum	Spotted Joe-pye Weed	2" plugs	3'	FACW	rain garden
	Iris versicolor	Blue Flag	2" plugs	3'	OBL	basin
	Juncus effusus	Soft Rush	2" plugs	3'	OBL	basin
	Lobelia cardinalis	Cardinal Flower	2" plugs	3'	FACW+	
	Monarda fistulosa	Wild Bergamot	2" plugs	3'	UPL	rain garden
	Penstemon digitalis	Smooth Beardtongue	2" plugs	3'	J. L	rain garden
	Rudbeckia laciniata	Cut-leaf Coneflower	2" plugs	3'	FACW	basin
	Vernonia noveboracensis	New York Ironweed		3'	FACW	basin
			2" plugs			
	Zizia aurea	Golden Alexanders	2" plugs	3'	FAC	rain garden or basin
	Pontederia cordata	Pickerelweed	2" plugs	3'	OBL	basin
	Sagittaria latifolia	Northern Arrowhead	2" plugs	3'	OBL	basin
	Scirpus cyperinus	Wool Sedge	2" plugs	3'	OBL	basin
	Sparganium americanum	Burreed	2" plugs	3'	OBL	basin
	Area	Size (square feet)	Total			
	Basin botton	4750	609			

SAINTS ISIDORE AND MARIA PARISH	CORPORATION TOWN CENTER ZONE / FLOOD ZONE X
PROJECT/APPLICANT	
#2577 MAIN ST. & LOT W-38A	MAIN STREET
PROJECT ADDRESS	
SPECIAL PERMIT SECTION	TPZ CHAIRMAN
DATE SPECIAL PERMIT APP'D	DIDECTOR OF COMMUNITY REVELOPMENT
DATE SPECIAL PERMIT APP D	DIRECTOR OF COMMUNITY DEVELOPMENT
NOTE: ALL SHEETS OF THIS PLAN S	SET ARE LOCATED IN THE OFFICE OF COMMUNITY DEVELOPMEN
	FILE NO.

- 3/4" DIA. STONE ADDED IN AREAS 1. COORDINATE WORK ON THIS SHEET WITH ALL DRAWINGS WITH POORLY DRAINED SOILS, PERTAINING TO SITE WORK IN THE CONTRACT DOCUMENT SET. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIM OR HERSELF - IINDISTURBED SUBGRADE FAMILIAR WITH THE FULL SET OF DOCUMENTS FOR ALL SITE

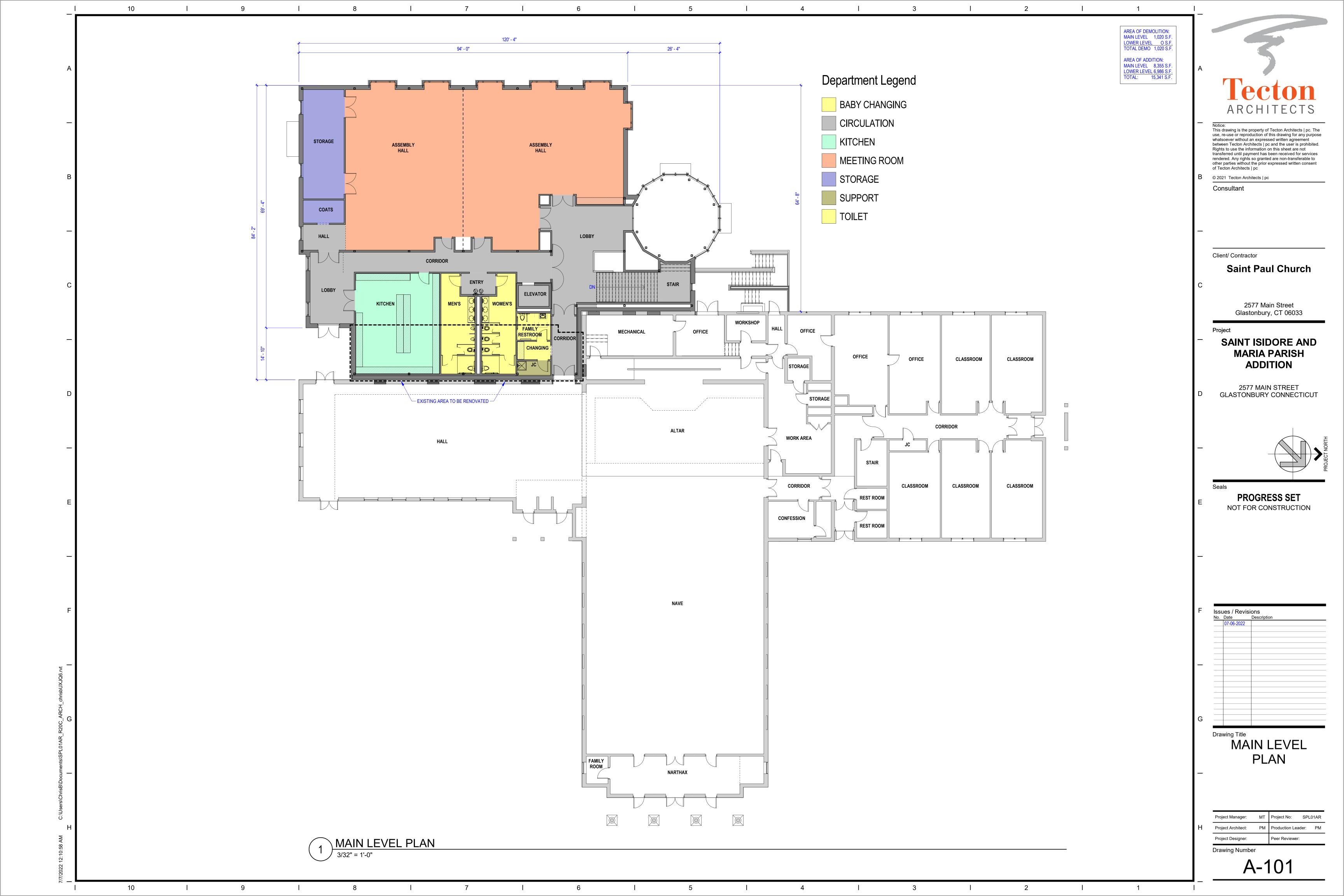
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CK. BY: DRW. BY: PEJ DATE: 8-15-20 NONE SCALE:

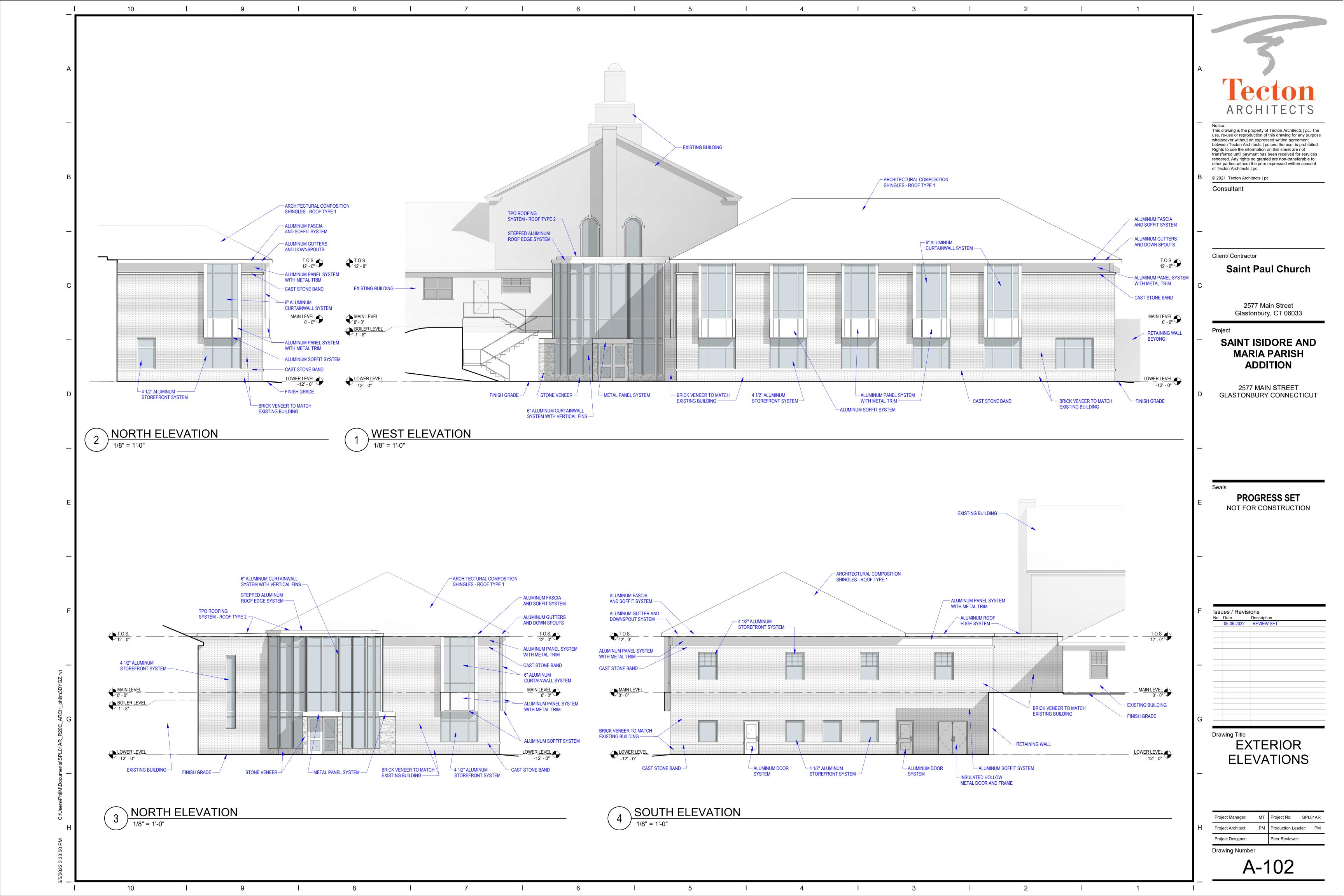
SHEET 11 OF 13 MAP NO. 86-16-1SPN

Floor Plans





Previous Elevations



Revised Elevations & Roof Plan



