

construction bid document addendum 01



project: Southern Maine Community College - Horticulture Greenhouse
Midcoast Campus, Brunswick, Maine BGS # 3674

pages: 02 plus attachments

date: 12 November 2024

The Contract Documents govern all aspects of the project. Information conveyed during pre-bid meetings, telephone, email or text with the Owner and/or Architect are informational only. Official instructions, clarifications and/or changes made to the Contract Documents during the bid phase are made only by addenda. The following information, clarifications, changes and additional instructions are hereby made as part of the Project Manual and Construction Drawings dated September 2024.

items: GENERAL: Project Manual

1. SECTION 001113 Notice to Contractors. OMIT: Bid to be received on 5 November 2024.
ADD: Bid to be received on 19 November 2024.
2. SECTION 003100 Available Project Information. See attached Geotechnical Report
3. SECTION 004113 Contractor Bid Form See attached updated form.
4. SECTION Greenhouse Specifications. OMIT: Thermal Curtain and/or Shading Curtain systems, Section G. Equipment - Mechanical Systems in its entirety.
REVISE: Section 1. HVAC, 3. Ventilation. See Response Question 9.
OMIT: Section L. 2. Hydroponics, 3. Fertigation Tanks and 4. Water Filtration System. Contractor to provide a price to supply and install benches only as an Alternate. **All grow equipment to be purchased separately by the Owner including grow lights - see Response Questions 15 for additional electrical information. Owner maintains the option to work directly with the selected Greenhouse manufacturer (or other supplier) on design and selection of grow systems and equipment under separate a contract.**
5. SECTION Preload Monitoring Plan. Incorrectly located after Fire Extinguisher and before Plumbing specification sections.

Pre Bid Information and Responses to Questions

6. Pre bid conference attendees list provided by Architect.
7. **Is the contractor responsible for the building permit?** The Owner has procured state and local building, life safety and barrier-free permits and have completed submissions to the Midcoast Regional Redevelopment Administration (MRRA) including Navy approval to dig. Contractor is responsible for site utilities including fees for the Sewer District estimated at \$2,979.29, water and electricity (if applicable), and cost associated with all inspections during construction. See inspection fee schedule on the Town of Brunswick website.
8. **Hollow Metal Doors and Frames Specification SECTION 081113.**
OMIT: Cold Rolled Steel Sheet material.
ADD: Aluminum standard doors and frames provided by the Greenhouse manufacturer including transparent polycarbonate multi-wall glazing.
9. **Ventilation system.** Revisions as follows and as noted on attached drawings.
OMIT: West side of motorized gull-wing ridge vent. Maintain east side of motorized ridge vent on both bays.
OMIT: Manually operated wall ventilation.
OMIT: South elevation upper exhaust fans. Maintain (2) two lower exhaust fans on both bays per Greenhouse manufacturers sizing and specifications.
OMIT: North elevation upper intake dampers. Maintain (2) two lower intake dampers on both bays per Greenhouse manufacturers sizing and specifications.

10. **Who will be responsible for parking lot stripping?** The Owner will restripe the parking lot after asphalt installation by Contractor.
11. **Is this a Buy America project?** Yes, with a provision of around 5% foreign material source.
12. **Status of existing trees?** Contractor to relocate existing parking lot island trees with root balls to the east side of the new Greenhouse and along the ballfield fence.
13. **Will there be water and electricity available on site during construction?** Yes. Temporary connections can be provided from the existing MATEC building.
14. **Can rain-tight EMT be run throughout each side of the space?** Rain tight EMT would be acceptable.
15. **Grow lights are to be supplied by the owner, but is there any info showing the number of lights, location, and circuiting?** Grow lights will be installed at a later date and powered from the panelboards provided in this project.
16. **As far as the generator is concerned, would a Generac generator be a suitable alternative?** Generac would be acceptable as long as it is from their industrial product line.

DRAWINGS Civil

C3 SITE LAYOUT PLAN - Water supply pipe to be 4 inch to main water line connection at the street.

Architectural

A10 GROUND LEVEL & FURNITURE PLANS: Column dimension string to match S1.1 with equal 12'-0" center lines. Tank storage omitted. Exhaust and dampers shown.

A11 ROOF PLAN: Ridge ventilation revised.

A20 EXTERIOR ELEVATIONS: Wall ventilation removed, ridge ventilation revised and exhaust fans and dampers revised.

A30 BUILDING SECTIONS & DETAILS: Revised ventilation system.

Structural [Not Used]

Mechanical

M101 MECHANICAL PLAN: OMIT: Water storage tanks, pipe and valves associated with installation.

Electrical

E12 ELECTRICAL SITE PLAN: Underground electrical conduit and transformer coordinate with Enterprise Electric/MRRA.

ATTACHMENTS:

1. Revised SECTION 001113 Notice to Contractors.
2. Updated SECTION 004113 Contractor Bid Form.
3. Summit Geoengineering - Exploration Data Package.
4. Pre Bid Conference Attendee Sheet.
5. Drawing sheets A10, A11, A20 and A30.

00 11 13
Notice to Contractors

Southern Maine Community College, Horticulture Greenhouse, Midcoast Campus, Brunswick, MEBGS #3674

1. Sitework preparation includes removal of a portion of existing asphalt parking lot and preloading the grade in preparation for a new concrete foundation and slab. Trenching and installation of electrical service, water, sewer, propane gas and internet fiber utilities.

2. Construction includes installation of a 2-bay pre-manufactured greenhouse comprised of an aluminum frame and polycarbonate wall and roof panels anchored to the concrete foundation. Systems installation includes sewer and water piping, electrical conduit and wire, interior and exterior lighting, mechanical equipment to heat both water and the building. Carpentry includes wall partition framing, door installation, and built-in counters with sinks, complete and ready for use

The contract shall designate the Substantial Completion Date on or before *15 July 2025*, and the Contract Final Completion Date on or before *5 August 2025*.

1. Submit bids on a completed Contractor Bid Form (section 00 41 13), provided in the Bid Documents, include bid security when required, and scan each item as an attachment to an email addressed to: BGS.Architect@Maine.gov, so as to be received no later than **2:00:00 p.m. on 19 November 2024**. The email subject line shall be marked **Bid for Southern Maine Community College, Horticulture Greenhouse, Midcoast Campus, Brunswick, ME., BGS Project #3674**.

Bid submissions will be opened and read aloud at the time and date noted above at the Bureau of General Services office, accessible as a video conference call. Those who wish to participate in the call must submit a request for access to BGS.Architect@Maine.gov.

Any bid received after the noted time will not be considered a valid bid and will remain unopened. Any bid submitted by any other means will not be considered a valid bid. In certain circumstances, the Bureau of General Services may require the Bidder to surrender a valid paper copy of the bid form or the bid security document. The Owner reserves the right to accept or reject any or all bids as may best serve the interest of the Owner.

2. Questions and comments on the *bid opening process* shall be addressed to: Division of Planning, Design & Construction, Bureau of General Services, 77 State House Station, Augusta, Maine 04333-0077, BGS.Architect@Maine.gov.
3. Questions and comments regarding the *project* design specifications or drawings shall be directed in writing to the Consultant during the bid period prior to the question and comment deadline of 4:00 p.m. on *13 November 2024*.

ARCADIA designworks
Patric Santerre, Architect
patric@arcadiadesignworks.com

00 11 13
Notice to Contractors

4. ☒ Bid security is required on this project.

The Bidder shall include a satisfactory Bid Bond (section 00 43 13) or a certified or cashier's check for 5% of the bid amount with the completed bid form submitted to the Owner. The Bid Bond form is available on the BGS website.

or

- ☐ Bid security is not required on this project.

5. ☒ Performance and Payment Bonds are required on this project.

If noted above as required, or if any combination of Base Bid and Alternate Bids amounts selected in the award of the contract exceeds \$125,000.00, the selected Contractor shall furnish a 100% contract Performance Bond (section 00 61 13.13) and a 100% contract Payment Bond (section 00 61 13.16) in the contract amount to cover the execution of the Work. Bond forms are available on the BGS website.

or

- ☐ Performance and Payment Bonds are not required on this project.

6. Filed Sub-bids *are not required* on this project.

7. ☐ Pre-qualified General Contractors are utilized on this project.

insert the company name, city and state for each

or

- ☒ Pre-qualified General Contractors are not utilized on this project.

8. ☒ An on-site pre-bid conference (☐ *mandatory* or ☒ *optional*) will be conducted for this project.

The pre-bid conference is intended for General Contractors. Subcontractors and suppliers are welcome to attend. Contractors who arrive late or leave early for a mandatory meeting may be prohibited from participating in this meeting and bidding.

10:00 AM, 5 November 2024

Southern Maine Community College,

Midcoast Campus, Brunswick, ME.,

or

- ☐ An on-site pre-bid conference will not be conducted for this project.

9. Bid Documents - full sets only - will be available on or about *23 October 2024* and may be obtained at no cost from:

ARCADIA designworks

199 Prospect Street, Suite A

Portland, Maine 04103

(207) 347-5252 ideate@arcadiadesignworks.com

00 11 13
Notice to Contractors

10. Bid Documents may be examined at:

AGC Maine

188 Whitten Road, Augusta, ME 04330

207-622-4741

Construction Summary

734 Chestnut Street, Manchester, NH 03104

603-627-8856

00 41 13
Contractor Bid Form

Southern Maine Community College, Horticulture Greenhouse

BGS #3674

Bid Form submitted by: *email only to email address below*

Bid Administrator:

Deane Rykerson
Bureau of General Services
111 Sewall Street, Cross State Office Building, 4th floor
77 State House Station
Augusta, Maine 04333-0077

BGS.Architect@Maine.gov

Bidder:

Signature: _____

Printed name and
title: _____

Company name: _____

Mailing address: _____

City, state, zip code: _____

Phone number: _____

Email address: _____

State of
incorporation,
if a corporation: _____

List of all partners,
if a partnership: _____

The Bidder agrees, if the Owner offers to award the contract, to provide any and all bonds and certificates of insurance, as well as Schedule of Values, Project Schedule, and List of Subcontractors and Suppliers if required by the Owner, and to sign the designated Construction Contract within twelve calendar days after the date of notification of such acceptance, except if the twelfth day falls on a State of Maine government holiday or other closure day, or a Saturday, or a Sunday, in which case the aforementioned documents must be received before 12:00 noon on the first available business day following the holiday, other closure day, Saturday, or Sunday.

As a guarantee thereof, the Bidder submits, together with this bid, a bid bond or other acceptable instrument as and if required by the Bid Documents.

00 41 13
Contractor Bid Form

1. The Bidder, having carefully examined the Southern Maine Community College, Horticulture Greenhouse, Midcoast Campus Project Manual dated October 2024, prepared by ARCADIA designworks, as well as Specifications, Drawings, and any Addenda, the form of contract, and the premises and conditions relating to the work, proposes to furnish all labor, equipment and materials necessary for and reasonably incidental to the construction and completion of this project for the **Base Bid** amount of:

\$ _____ .00

2. Allowances *are included* on this project.
Bid amount above includes the following Allowances
Not used.

\$ 0.00

3. Alternate Bids *are included* on this project.
Alternate Bids are as shown below
 Any dollar amount line below that is left blank by the Bidder shall be read as a bid of **\$0.00**.

1 Propane powered back-up generator, pad, and ATS connection. \$ _____ .00

2 16 mm polycarbonate roof and wall panels. \$ _____ .00

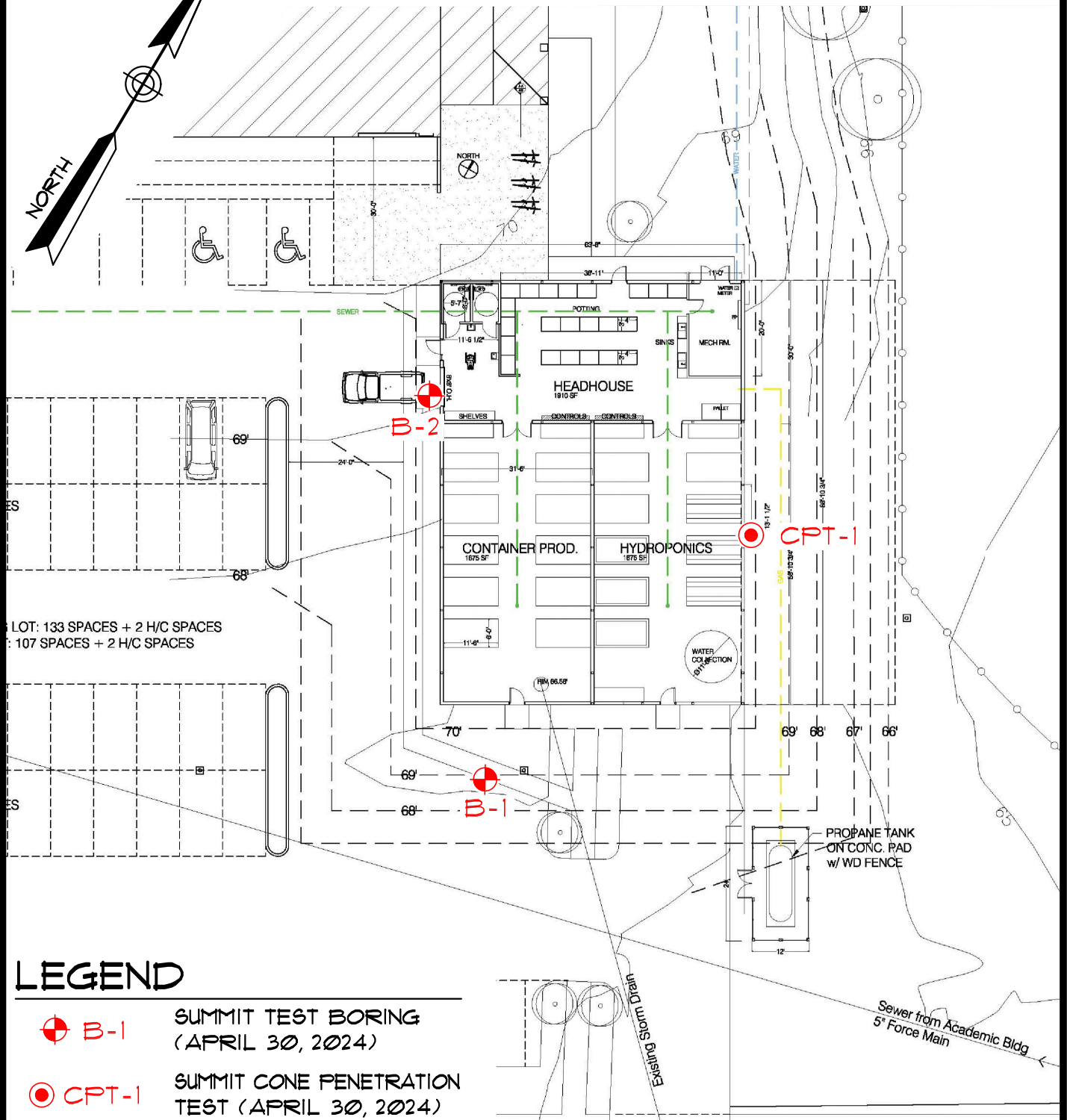
3 Benching as shown on drawings. \$ _____ .00

4 Not used \$ _____ .00

4. Bid security *is required* on this project.
 If noted above as required, or if the Base Bid amount exceeds \$125,000.00, the Bidder shall include with this bid form a satisfactory Bid Bond (section 00 43 13) or a certified or cashier's check for 5% of the bid amount with this completed bid form submitted to the Owner.
5. Filed Sub-bids *are not required* on this project.
 If noted above as required, the Bidder shall include with this bid form a list of each Filed Sub-bidder selected by the Bidder on the form provided (section 00 41 13F).

PLAN REFERENCE

"SITE PLAN, SMCC-MIDCOAST GREENHOUSE FACILITY", DATED
APRIL 2024, PREPARED BY ARCADIA DESIGNWORKS.



LEGEND



B-1 SUMMIT TEST BORING
(APRIL 30, 2024)



CPT-1 SUMMIT CONE PENETRATION
TEST (APRIL 30, 2024)

EXPLORATION LOCATION PLAN HORTICULTURE GREENHOUSE

SMCC MIDCOAST CAMPUS - BRUNSWICK, ME

PREPARED FOR
ARCADIA DESIGNWORKS

OFFICE: 210 MAINE AVENUE
FARMINGDALE, MAINE
TEL.: (207) 446-3360

MAIL: P.O. BOX 515
GARDINER, ME 04345

SUMMIT
GEOENGINEERING SERVICES
www.summitgeoeng.com

DATE: 5-14-2024	DRAWN BY: KRF	CHECKED BY: CRS
JOB: 24056	SCALE: 1" = 30'	FILE: 24056

EXPLORATION COVER SHEET

The exploration logs are prepared by the geotechnical engineer from both field and laboratory data. Soil descriptions are based upon the Unified Soil Classification System (USCS) per ASTM D2487 and/or ASTM D2488 as applicable. Supplemental descriptive terms for estimated particle percentage, color, density, moisture condition, and bedrock may also be included to further describe conditions.

Drilling and Sampling Symbols:

S = Split Spoon Sample	Hyd = Hydraulic Advancement of Drilling Rods
UT = Thin Wall Shelby Tube	Push = Direct Push of Drilling Rods
SSA = Solid Stem Auger	WOH = Weight of Hammer
HSA = Hollow Stem Auger	WOR = Weight of Rod
RW = Rotary Wash	PI = Plasticity Index
SV = Lab Shear Vane (Torvane)	LL = Liquid Limit
PP = Pocket Penetrometer	MC = Natural Moisture Content
C = Rock Core Sample	USCS = Unified Soil Classification System
FV = Field Vane Shear Test	Su = Undrained Shear Strength
SP = Concrete Punch Sample	Su(r) = Remolded Shear Strength

Water Level Measurements:


Water levels indicated on the boring logs are the levels measured in the boring at the times indicated. In pervious soils, the indicated elevations are considered reliable groundwater levels. In impervious soils, the accurate determination of groundwater elevations may not be possible, even after several days of observations. Groundwater monitoring wells may be required to record accurate depths and fluctuation.


Gradation Description and Terminology:



Boulders:	Over 12 inches	Trace:	Less than 5%
Cobbles:	12 inches to 3 inches	Little:	5% to 15%
Gravel:	3 inches to No.4 sieve	Some:	15% to 30%
Sand:	No.4 to No. 200 sieve	Silty, Sandy, etc.:	Greater than 30%
Silt:	No. 200 sieve to 0.005 mm		
Clay:	less than 0.005 mm		


Density of Granular Soils and Consistency of Cohesive Soils:

CONSISTENCY OF COHESIVE SOILS		DENSITY OF GRANULAR SOILS	
SPT N-value blows/ft	Consistency	SPT N-value blows/ft	Relative Density
0 to 2	Very Soft	0 to 4	Very Loose
2 to 4	Soft	5 to 10	Loose
5 to 8	Firm	11 to 30	Compact
9 to 15	Stiff	31 to 50	Dense
16 to 30	Very Stiff	>50	Very Dense
>30	Hard		

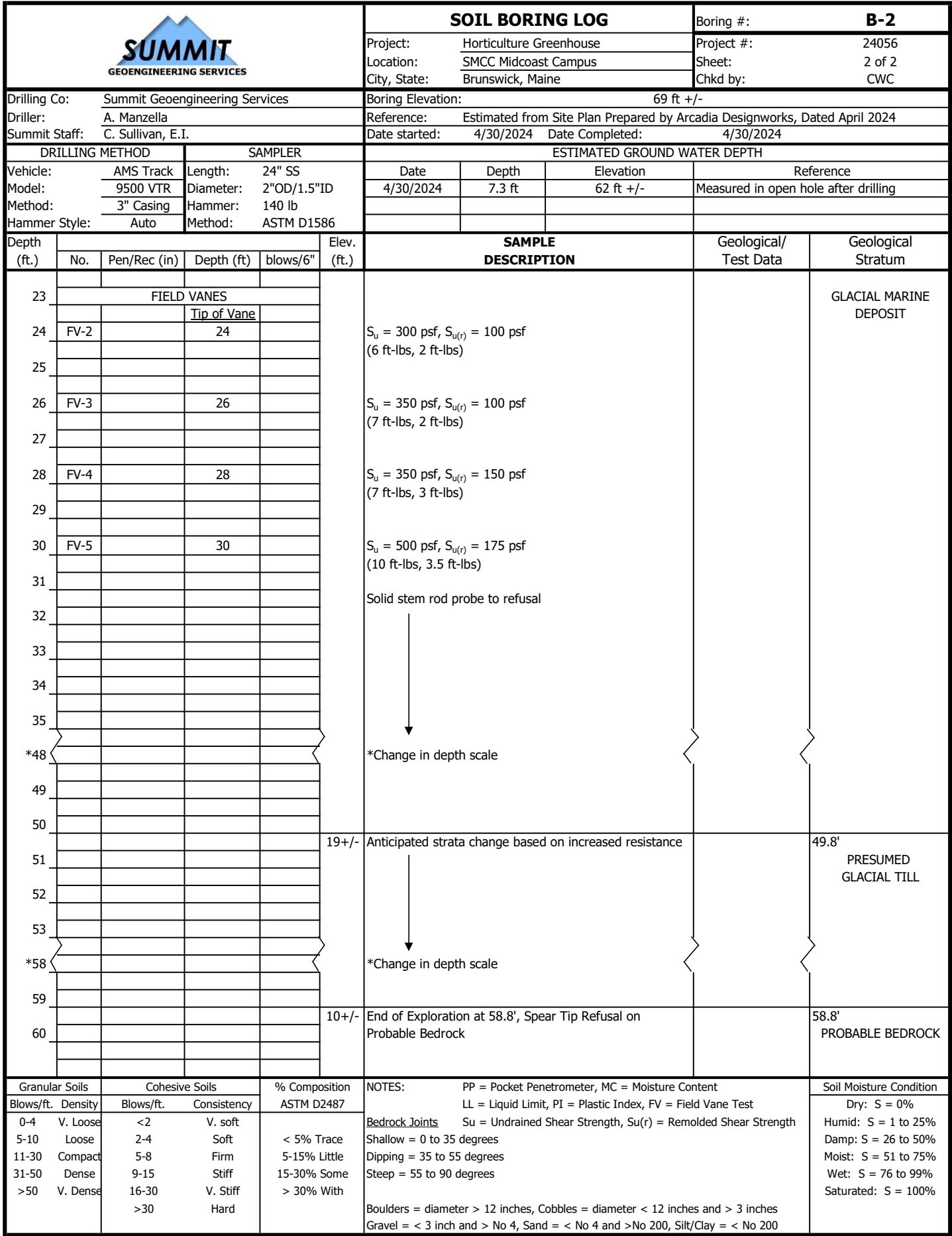
<div></div>					SOIL BORING LOG			Boring #: B-1	
Drilling Co: Summit Geoengineering Services					Project: Horticulture Greenhouse			Project #: 24056	
Driller: A. Manzella					Location: SMCC Midcoast Campus			Sheet: 1 of 3	
Summit Staff: C. Sullivan, E.I.					City, State: Brunswick, Maine			Chkd by: CWC	
Boring Elevation: 67 ft +/-					Reference: Estimated from Site Plan Prepared by Arcadia Designworks, Dated April 2024				
Date started: 4/30/2024					Date Completed: 4/30/2024				
DRILLING METHOD		SAMPLER			ESTIMATED GROUND WATER DEPTH				
Vehicle:	AMS Track	Length:	24" SS		Date	Depth	Elevation	Reference	
Model:	9500 VTR	Diameter:	2"OD/1.5"ID		4/30/2024	6.4 ft	61 ft +/-	Measured in open hole after drilling	
Method:	3" Casing	Hammer:	140 lb						
Hammer Style:	Auto	Method:	ASTM D1586						
Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION	Geological/ Test Data	Geological Stratum	
1	SP-1	12/12	0 - 1	PUSH	67+/-	6" Bituminous Pavement		PAVEMENT	
2	S-1	24/18	1 - 3	6		Brown medium-fine SAND, little-some Gravel, little Silt, loose-compact, damp, SP-SM		0.5' GRANULAR FILL	
				8		Gray Silty SAND, little Gravel, compact, damp, SP-SM		2'	
3				9					
	S-2	24/20	3 - 5	7	Gray medium-fine SAND, little Gravel & Silt, compact, damp, SP-SM		3' +/-		
4				8					
				6					
5				3	63+/-	Dark brown Organic SILT, occasional Organic & wood fibers, soft, damp, OL	MC = 42.6% Org. Matter: 19.9%	4.2' ORGANIC DEPOSITS	
	S-3	24/14	5 - 7	1		Dark brown Organic SILT, frequent organic fibers, wood fibers at 6.2', occasional 1/4" fine Sand seams at 5.5' & 5.6', soft, moist, OL	MC = 43.4% Org. Matter: 18.9%		
6				1					
				2					
7				3					
	S-4	24/12	7 - 9	2	60+/-	Dark brown Silty SAND, frequent Organic fibers, very loose, wet, SM	MC = 28.5% Org. Matter: 4.3%	7' GLACIAL MARINE DEPOSIT	
8				1					
				1					
9				1					
10									
	S-5	24/22	10 - 12	2	Gray SILT, trace Clay & fine Sand, occasional Organic fibers, slightly mottled, firm, moist-wet, ML	MC = 23.5%	11.5'		
11				4	Olive gray SILT-CLAY, trace fine Sand, occasional Organic fibers & fine Sand seams, slightly mottled, firm, wet, ML-CL	PP = 7,000 psf to 8,000 psf			
				4	Same as above, 1/2" fine Sand seams at 12.5', 12.8', & 13.5', moderately mottled, stiff, wet, ML-CL	PP = 6,500 psf to 7,000 psf			
12	S-6	24/20	12 - 14	5					
				7					
13				7					
				6					
14									
15									
	S-7	24/24	15 - 17	WOH	Gray Silty CLAY, 2" fine Sand seam at 16'+/-, soft, wet, CL	MC = 26.5% PP = 2,000 psf to 3,000 psf	15' +/-		
16				1					
				2					
17				2					
18									
19									
20									
21	UT-1	30/26	20 - 22.5	PUSH	Gray Silty CLAY, occasional black Organic streaks, very soft, wet, CL	LL = 32 PI = 9 MC = 37.5%			
22									
Granular Soils		Cohesive Soils		% Composition ASTM D2487	NOTES:				Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency		PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test Bedrock Joints Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength Shallow = 0 to 35 degrees Dipping = 35 to 55 degrees Steep = 55 to 90 degrees Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200				Dry: S = 0% Humid: S = 1 to 25% Damp: S = 26 to 50% Moist: S = 51 to 75% Wet: S = 76 to 99% Saturated: S = 100%
0-4	V. Loose	<2	V. soft	< 5% Trace					
5-10	Loose	2-4	Soft	5-15% Little					
11-30	Compact	5-8	Firm	15-30% Some					
31-50	Dense	9-15	Stiff	> 30% With					
>50	V. Dense	16-30	V. Stiff						
		>30	Hard						

					SOIL BORING LOG			Boring #: B-1				
					Project: Horticulture Greenhouse			Project #: 24056				
					Location: SMCC Midcoast Campus			Sheet: 2 of 3				
					City, State: Brunswick, Maine			Chkd by: CWC				
Drilling Co: Summit Geoengineering Services					Boring Elevation: 67 ft +/-							
Driller: A. Manzella					Reference: Estimated from Site Plan Prepared by Arcadia Designworks, Dated April 2024							
Summit Staff: C. Sullivan, E.I.					Date started: 4/30/2024 Date Completed: 4/30/2024							
DRILLING METHOD			SAMPLER		ESTIMATED GROUND WATER DEPTH							
Vehicle: AMS Track		Length: 24" SS		Date		Depth		Elevation		Reference		
Model: 9500 VTR		Diameter: 2"OD/1.5"ID		4/30/2024		6.4 ft		61 ft +/-		Measured in open hole after drilling		
Method: 3" Casing		Hammer: 140 lb										
Hammer Style: Auto		Method: ASTM D1586										
Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION			Geological/ Test Data	Geological Stratum		
23	FIELD VANES				24 +/-	S _u = 350 psf, S _{u(r)} = 75 psf (7 ft-lbs, 1.5 ft-lbs) S _u = 350 psf, S _{u(r)} = 100 psf (7 ft-lbs, 2 ft-lbs) S _u = 375 psf, S _{u(r)} = 100 psf (7.5 ft-lbs, 2 ft-lbs) S _u = 400 psf, S _{u(r)} = 100 psf (8 ft-lbs, 2 ft-lbs) S _u = 450 psf, S _{u(r)} = 100 psf (9 ft-lbs, 2 ft-lbs) S _u = 550 psf, S _{u(r)} = 125 psf (11 ft-lbs, 2.5 ft-lbs) S _u = 550 psf, S _{u(r)} = 100 psf (11 ft-lbs, 2 ft-lbs) S _u = 650 psf, S _{u(r)} = 125 psf (13 ft-lbs, 2.5 ft-lbs) S _u = 700 psf, S _{u(r)} = 175 psf (14 ft-lbs, 3.5 ft-lbs) Vane push refusal at 41.2' on probable Silt-Sand seam Solid stem rod probe to refusal ↓ Anticipated strata change based on increased resistance				GLACIAL MARINE DEPOSIT		
24	FV-1		24									
25												
26	FV-2		26									
27												
28	FV-3		28									
29												
30	FV-4		30									
31												
32	FV-5		32									
33												
34	FV-6		34									
35												
36	FV-7		36									
37												
38	FV-8		38									
39												
40	FV-9		40									
41												
42												
43												
44												
Granular Soils					Cohesive Soils		% Composition		NOTES:			
Blows/ft. Density		Blows/ft. Consistency		ASTM D2487					PP = Pocket Penetrometer, MC = Moisture Content			
0-4 V. Loose		<2 V. soft		< 5% Trace					LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test			
5-10 Loose		2-4 Soft		5-15% Little					Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength			
11-30 Compact		5-8 Firm		15-30% Some					Bedrock Joints			
31-50 Dense		9-15 Stiff		> 30% With					Shallow = 0 to 35 degrees			
>50 V. Dense		16-30 V. Stiff							Dipping = 35 to 55 degrees			
		>30 Hard							Steep = 55 to 90 degrees			
										Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches		
										Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200		
										Soil Moisture Condition		
										Dry: S = 0%		
										Humid: S = 1 to 25%		
										Damp: S = 26 to 50%		
										Moist: S = 51 to 75%		
										Wet: S = 76 to 99%		
										Saturated: S = 100%		

<div></div>					SOIL BORING LOG			Boring #: B-1		
Drilling Co: Summit Geoengineering Services					Project: Horticulture Greenhouse			Project #: 24056		
Driller: A. Manzella					Location: SMCC Midcoast Campus			Sheet: 3 of 3		
Summit Staff: C. Sullivan, E.I.					City, State: Brunswick, Maine			Chkd by: CWC		
Boring Elevation: 67 ft +/-					Reference: Estimated from Site Plan Prepared by Arcadia Designworks, Dated April 2024					
Date started: 4/30/2024					Date Completed: 4/30/2024					
DRILLING METHOD		SAMPLER			ESTIMATED GROUND WATER DEPTH					
Vehicle: AMS Track		Length: 24" SS			Date	Depth	Elevation	Reference		
Model: 9500 VTR		Diameter: 2"OD/1.5"ID			4/30/2024	6.4 ft	61 ft +/-	Measured in open hole after drilling		
Method: 3" Casing		Hammer: 140 lb								
Hammer Style: Auto		Method: ASTM D1586								
Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION		Geological/ Test Data	Geological Stratum	
45						Solid stem rod probe to refusal 			PRESUMED GLACIAL TILL	
46										
47										
48										
49					19+/-					
50						End of Exploration at 48.3', Spear Tip Refusal on Probable Bedrock			48.3' PROBABLE BEDROCK	
51										
52										
53										
54										
55										
56										
57										
58										
59										
60										
61										
62										
63										
64										
65										
66										
Granular Soils		Cohesive Soils		% Composition ASTM D2487	NOTES: PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength					Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency		Bedrock Joints Shallow = 0 to 35 degrees Dipping = 35 to 55 degrees Steep = 55 to 90 degrees Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200					Dry: S = 0% Humid: S = 1 to 25% Damp: S = 26 to 50% Moist: S = 51 to 75% Wet: S = 76 to 99% Saturated: S = 100%
0-4	V. Loose	<2	V. soft							
5-10	Loose	2-4	Soft	< 5% Trace						
11-30	Compact	5-8	Firm	5-15% Little						
31-50	Dense	9-15	Stiff	15-30% Some						
>50	V. Dense	16-30	V. Stiff	> 30% With						
		>30	Hard							

					SOIL BORING LOG			Boring #: B-2	
Project: Horticulture Greenhouse					Project #:			24056	
Location: SMCC Midcoast Campus					Sheet:			1 of 2	
City, State: Brunswick, Maine					Chkd by:			CWC	
Drilling Co: Summit Geoengineering Services					Boring Elevation: 69 ft +/-				
Driller: A. Manzella					Reference: Estimated from Site Plan Prepared by Arcadia Designworks, Dated April 2024				
Summit Staff: C. Sullivan, E.I.					Date started: 4/30/2024 Date Completed: 4/30/2024				
DRILLING METHOD			SAMPLER		ESTIMATED GROUND WATER DEPTH				
Vehicle: AMS Track			Length: 24" SS		Date	Depth	Elevation	Reference	
Model: 9500 VTR			Diameter: 2"OD/1.5"ID		4/30/2024	7.3 ft	62 ft +/-	Measured in open hole after drilling	
Method: 3" Casing			Hammer: 140 lb						
Hammer Style: Auto			Method: ASTM D1586						
Depth (ft.)	No.	Pen/Rec (in)	Depth (ft)	blows/6"	Elev. (ft.)	SAMPLE DESCRIPTION		Geological/ Test Data	Geological Stratum
1	SP-1	12/12	0 - 1	PUSH	69 +/-	6" Bituminuous Pavement			PAVEMENT
	S-1	24/20	1 - 3	↓		Brown medium-fine SAND, little-some Gravel, trace-little Silt, compact, damp, SP to SP-SM			0.5' GRANULAR FILL
2				15		Brown fine SAND, little Gravel, trace Silt, compact, damp, SP			2'
3				13					
4	S-2	24/16	3 - 5	4		Brown fine SAND, trace Silt, slightly mottled from 4'-5', compact, damp, SP			
5				7					
6				5	63 +/-	Same as above, moderately-heavily mottled, very loose-loose, wet, SP			
7	S-3	24/16	5 - 7	2		Dark brown Organic SILT, occasional Organic fibers & fine Sand seams, soft, moist-wet, OL		MC = 47.4% Org. Matter: 20.6%	5.7' ORGANIC DEPOSITS
8				2		Same as above, occasional Organic & wood fibers, 4" gray fine Sand seam at 8.2'+/-, soft, wet, OL		MC = 47.1% Org. Matter: 22.7%	
9				2					
10				2					
11	S-4	24/20	7 - 9	2					
12				2	60 +/-	Olive brown fine Sandy SILT, little Clay, occasional Organic fibers, soft, wet, ML			9' +/- GLACIAL MARINE DEPOSIT
13				3		Gray SILT, trace fine Sand, occasional fine Sand seams, slightly mottled, firm, wet, ML		MC = 25.7%	10.8'
14				4					
15				6					
16	UT-1	30/0	15 - 17.5	PUSH		No Recovery			
17									
18				↓	Attempted field vane at 19', vane push refusal at 18' on probable Sand-Silt seam				
19									
20									
21	FIELD VANES								
22			Tip of Vane						
	F-1		22						
					Su = 400 psf, Su(r) = 100 psf (8 ft-lbs, 2 ft-lbs)				

Granular Soils		Cohesive Soils		% Composition ASTM D2487	NOTES:	Soil Moisture Condition
Blows/ft.	Density	Blows/ft.	Consistency			
0-4	V. Loose	<2	V. soft	< 5% Trace 5-15% Little 15-30% Some > 30% With	PP = Pocket Penetrometer, MC = Moisture Content LL = Liquid Limit, PI = Plastic Index, FV = Field Vane Test Su = Undrained Shear Strength, Su(r) = Remolded Shear Strength Bedrock Joints Shallow = 0 to 35 degrees Dipping = 35 to 55 degrees Steep = 55 to 90 degrees Boulders = diameter > 12 inches, Cobbles = diameter < 12 inches and > 3 inches Gravel = < 3 inch and > No 4, Sand = < No 4 and >No 200, Silt/Clay = < No 200	Dry: S = 0% Humid: S = 1 to 25% Damp: S = 26 to 50% Moist: S = 51 to 75% Wet: S = 76 to 99% Saturated: S = 100%
5-10	Loose	2-4	Soft			
11-30	Compact	5-8	Firm			
31-50	Dense	9-15	Stiff			
>50	V. Dense	16-30	V. Stiff			
		>30	Hard			



CPT EXPLORATION COVER SHEET

Piezcone penetration test (CPT) is performed by a cone on the end of a series of rods pushed into the ground at a constant rate (2 cm/s) to obtain near continuous measurements of soil parameters. Parameters obtained during the CPT test include cone tip resistance, sleeve friction, and piezocone pore pressure per ASTM D5778 and shear wave velocity per ASTM D7400. These parameters are presented graphically on the CPT log.

CPT Data Symbols:

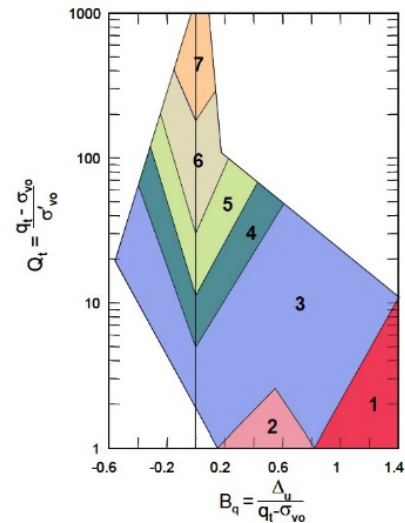
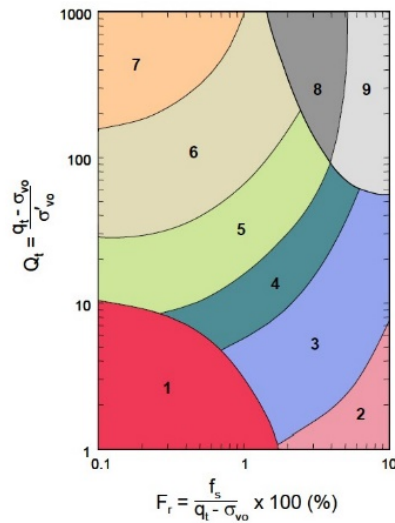
q_c = Tip Resistance
 f_s = Sleeve Friction

u_2 = Pore Pressure
 v_s = Shear Wave Velocity

q_t = Total Resistance
 c_h = Coefficient of Consolidation

Soil Behavior Type:

Soil behavior type is interpreted from CPT data as one of 9 soil behavior types published by Robertson et al. 1990, shown below. Each soil behavior type (SBT) is assigned a color which correlates to the SBT plot on the CPT log.



Zone	Soil Behavior Type
1	Sensitive, Fine Grained
2	Organic Soils-Peats
3	Clays; Clay to Silty Clay
4	Silt Mixtures; Clayey Silt to Silty Clay
5	Sand Mixtures; Silty Sand to Sandy Silt
6	Sands; Clean Sands to Silty Sands
7	Gravelly Sand to Sand
8	Very Stiff Sand to Clayey Sand*
9	Very Stiff Fine Grained*

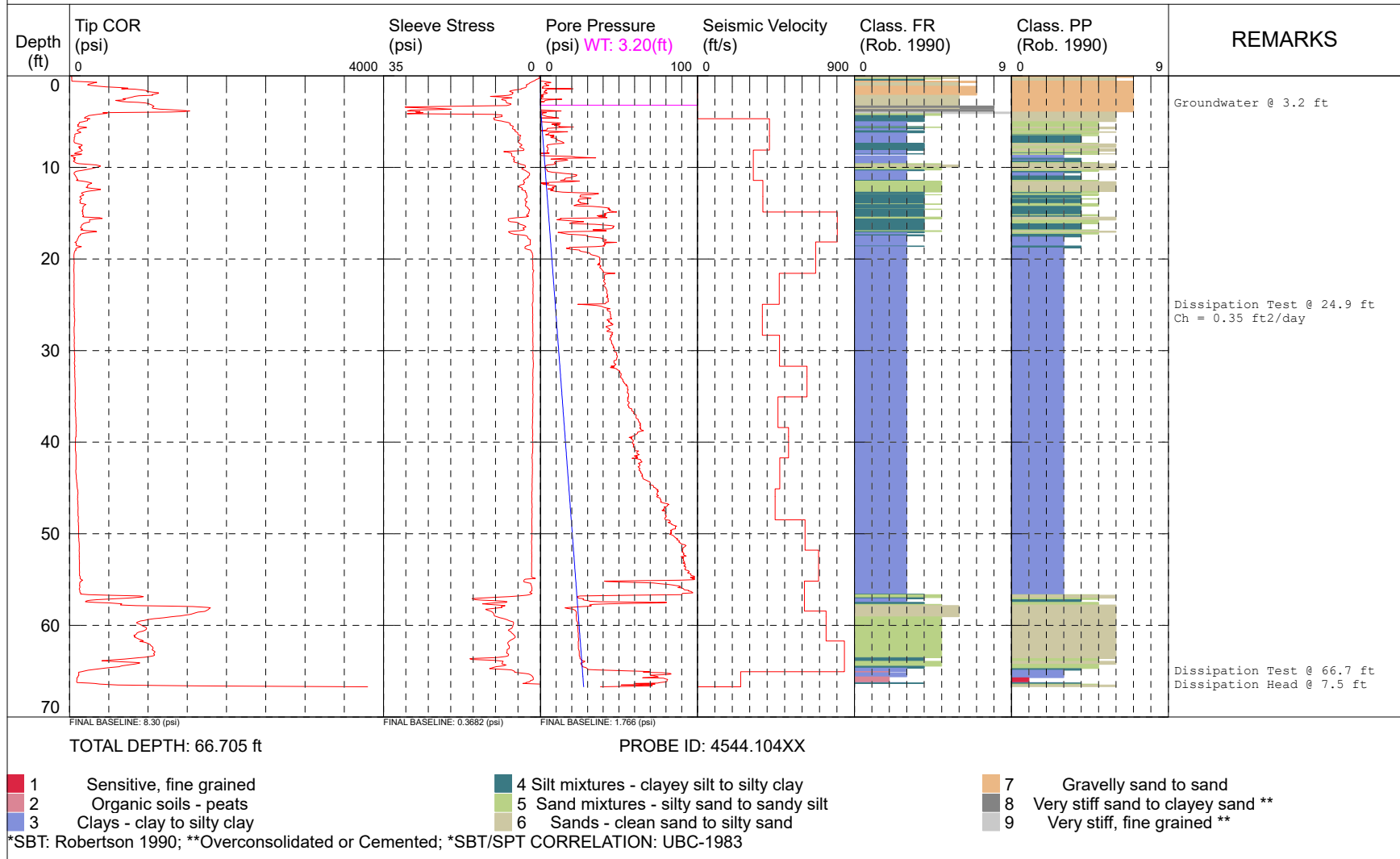
*Overconsolidated or Cemented

CPT-1

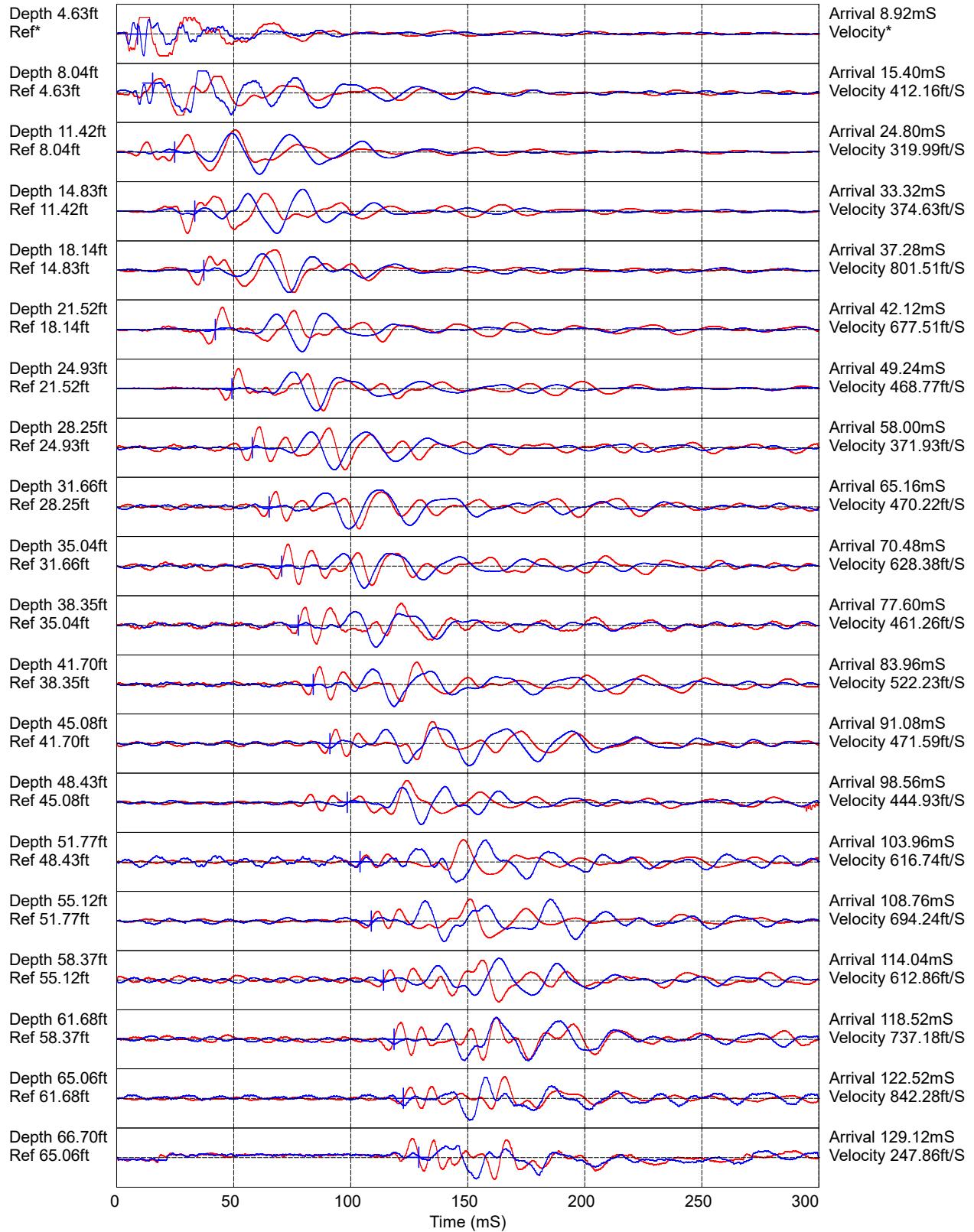


COMPANY: Summit Geoengineering Services
 OPERATOR: S. Floyd
 CREW: C. Sullivan, E.I.
 CLIENT: Arcadia Designworks
 CLIENT REP: Patric Santerre

TEST DATE: Tue 30/Apr/2024
 TEST ID: CPT-1
 PROJECT: 24056
 SITE: Horticulture Greenhouse
 LOCATION: SMCC Midcoast Campus, Brunswick, ME



TEST ID: CPT-1



Hammer to Rod String Distance (ft): 4.92

* = Not Determined

PROBE ID: 4544.104XX



Laboratory Determination of Water (Moisture) Content of Soil ASTM D2216

PROJECT NAME:	Horticulture Greenhouse	PROJECT #:	24056
PROJECT LOCATION:	SMCC Midcoast Campus, Brunswick, ME	DRYING METHOD:	Oven Dried
CLIENT:	Arcadia Designworks	DESCRIPTION:	Glacial Marine
SOURCE:	Borings	TECHNICIAN:	Colleen Sullivan, E.I.
COLLECTION DATE:	04/30/24	TESTING DATE:	05/06/24

<u>Location</u>	<u>Sample No.</u>	<u>Depth</u>	<u>Moisture Content</u>	<u>Remarks</u>
B-1	S-2b	4.2' - 5'	42.6%	Organic Silt, Organic fibers (MEL)
B-1	S-3	5' - 7'	43.4%	Organic Silt, Organic fibers (MEL)
B-1	S-4	7' - 9'	28.5%	Silty Sand, Organic fibers (MEL)
B-1	S-5	10' - 12'	23.5%	Silt-Clay
B-1	S-6	12' - 14'	23.8%	Silty Clay
B-1	S-7	15' - 17'	26.5%	Silty Clay
B-1	UT-1	20' - 22.5'	37.5%	(Atterberg Limit)
B-2	S-3b	5.7' - 7'	47.4%	Organic Silt, Organic fibers (MEL)
B-2	S-4	7' - 9'	47.1%	Organic Silt, Organic fibers (MEL)
B-2	S-5b	10.8' - 12'	25.7%	Silt, Organic fibers

REMARKS:

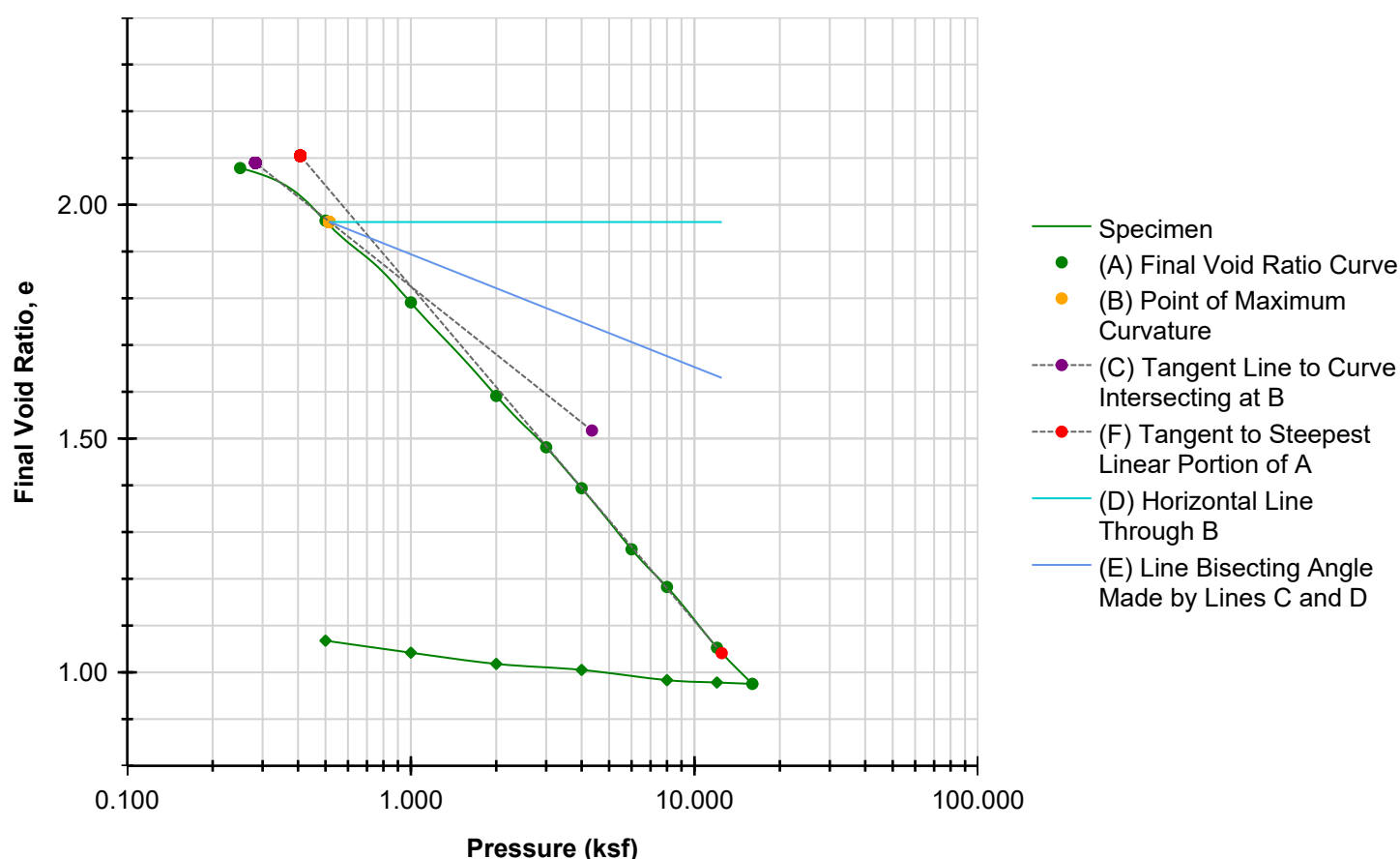
Mailing: PO Box 515, Gardiner, ME 04345
Office: 210 Maine Avenue, Farmingdale, ME 04344

Reviewed By: ELS



Final Voids [Log]

ASTM D2435



Preconsolidation Stress (ksf)		0.717		Cc	0.711	Cr	0.059
	BEFORE	AFTER	Liquid Limits	0	Test Date 5/6/2024		
Moisture (%)	66.5	57.7	Plastic Limits	0			
Dry Density (pcf)	47.4	63.9					
Saturation (%)	73.8	103.1					
Void Ratio	2.16	1.34	Specific Gravity	2.4	ASSUMED		
Sample Description		Dark brown Organic SILT, frequent Organic fibers, occasional fine Sand lenses, OL					
Project Number	24056		Depth (ft)	4.2' - 7'		Remarks	
Sample Number	S-2b+3		Boring Number	B-1			
Project	Horticulture Greenhouse						
Client	Arcadia Designworks						
Location	SMCC Midcoast Campus, Brunswick, ME						

Project Name: Horticulture Greenhouse Project Number: 24056

Technician: Colleen Sullivan, E.I.

Test Date: 5/6/2024

Checked By: _____

Date: _____



THIN WALLED TUBE SAMPLING - ASTM D1587

PROJECT NAME: Horticulture Greenhouse
PROJECT LOCATION: SMCC Midcoast Campus, Brunswick, ME
COLLECTION DATE: 4/30/2024
TEST DATE: 5/9/2024

PROJECT #: 24056
CLIENT: Arcadia Designworks
SAMPLE #: UT-1
TECHNICIAN: Colleen Sullivan, E.I.

Test Boring Information

Boring Number: B-1
Drilling Method: Direct Push
Drilling Tooling: 3-inch Casing
Sampling Method: Tube Push

Sample Information

Tube Length: 30"
Recovery: 26"
Tube Diameter: 2.5"
Depth: 20' - 22.5'

Trial / Specimen Number	Moisture Content	Unit Weight	Torvane
1	37.6%	122 pcf	300 psf
2	36.5%	120 pcf	200 psf
3	38.7%	121 pcf	300 psf
Average	37.6%	121 pcf	260 psf

Visual Description (ASTM D2488):

Gray Silty CLAY, occasional black Organic streaks, very soft, wet, CL



Photograph of cross sectional sample view.



Photograph of longitudinal sample view.

REMARKS:

Reviewed By: ELS

Mailing: PO Box 515, Gardiner, ME 04345
Office: 210 Maine Avenue, Farmingdale, ME 04344



UNCONFINED COMPRESSIVE STRENGTH OF COHESIVE SOILS - ASTM D2166

PROJECT NAME: Horticulture Greenhouse
PROJECT LOCATION: SMCC Midcoast Campus, Brunswick, ME
COLLECTION DATE: 4/30/2024
TEST DATE: 5/9/2024

PROJECT #: 24056
CLIENT: Arcadia Designworks
TECHNICIAN: Colleen Sullivan, E.I.
CHECKED BY: Erika Stewart, P.E.

Sample & Testing Information

Boring Number: B-1	Trimming Method: Tube
Sample Number: UT-1	Liquid Limit (LL): 32
Sample Depth: 20' - 22.5'	Plasticity Index (PI): 9
Sample Type: Shelby Tube	Rate of Strain: 0.1 in/min
Sample State: Intact	H/D Ratio: 2.2

Sample Height: 5.10 in	Sample Mass: 705.4 g
Sample Diameter: 2.34 in	Moisture Content: 38.7%
Sample Volume: 21.87 in ³	Moist Unit Weight: 123 pcf
Cross Sectional Area: 4.29 in ²	Dry Density: 89 pcf

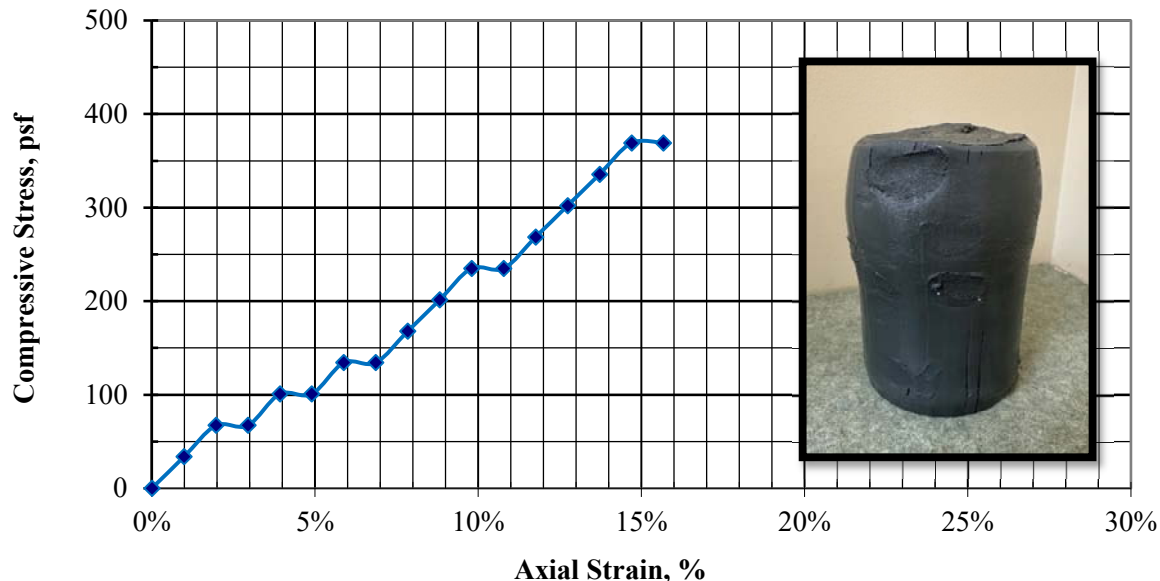
Sample Description & Classification

Gray Silty CLAY, occasional black Organic streaks, very soft, wet, CL

Test Results

Unconfined Compressive Strength: 360 psf	Strain at Failure: 15%
Shear Strength: 180 psf	Failure Type: Bulge

Unconfined Compressive Stress vs. Strain



REMARKS:

Mailing: PO Box 515, Gardiner, ME 04345
Office: 210 Maine Avenue, Farmingdale, ME 04344



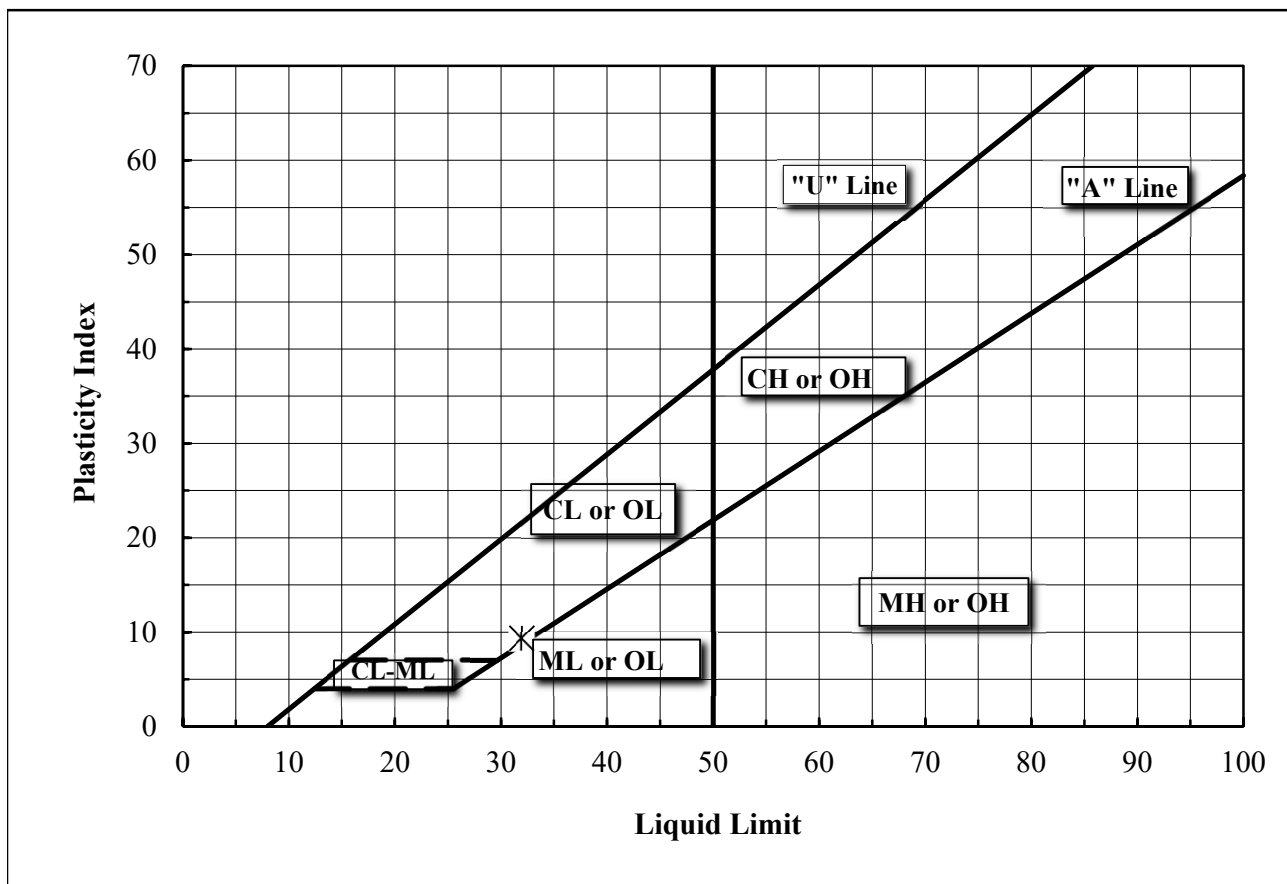
ATTERBERG LIMIT TEST - ASTM D4318

Method "A" (Multi-point)

PROJECT NAME:	Horticulture Greenhouse	PROJECT NUMBER:	24056
LOCATION:	SMCC Midcoast Campus, Brunswick, ME	SAMPLE NUMBER:	UT-1
CLIENT:	Arcadia Designworks	DEPTH:	20' - 22.5'
TEST DATE:	5/9/2024	TECHNICIAN:	Colleen Sullivan, E.I.

DATA

Source	Depth	LL	PL	PI	Classification
B-1	20' - 22.5'	32	23	9	Gray Silty CLAY, occasional black Organic streaks, CL



Notes: Moisture Content = 37.5%

Reviewed By: ELS

Mailing: PO Box 515, Gardiner, ME 04345
Office: 210 Maine Avenue, Farmingdale, ME 04344

May 10, 2024

Report ID:	17370-240510-0911	
Batch ID:	SME	17370
Date received:	05/02/24	
Project ID:	Horticulture Greenhouse	

Sample ID: 24056 B-1,5-2b 4.2'-5'
Sample date: 04/30/24 12:00
Sample matrix: SU
Laboratory ID: 240502K001

Parameter	Results	Units	Date	Time	LOQ	Method	Tech
			Analyzed	Analyzed			
Moisture	42.58	%	05/03/24	16:00	0.01	SM2540G	AD
Organic Matter	19.87	%	05/07/24	13:34	0.01	D2947	AD

Notes:

Maine Environmental Laboratory

One Main Street, Yarmouth, ME 04096

Tel.: 207-846-6569

FAX: 207-846-9066

Report of Analyses

Email: melab@mel-lab.com

Colleen Sullivan
Summit Geoengineering Services
210 Maine Ave.
Farmingdale, ME 04344

May 10, 2024

Report ID: 17370-240510-0911

Sample ID: 24056 B-1,5-3 5'-7'

Batch ID: SME 17370

Sample date: 04/30/24 12:00

Date received: 05/02/24

Sample matrix: SU

Project ID: Horticulture Greenhouse

Laboratory ID: 240502K002

Parameter	Results	Units	Date	Time	LOQ	Method	Tech
			Analyzed	Analyzed			
Moisture	43.39	%	05/03/24	16:00	0.01	SM2540G	AD
Organic Matter	18.92	%	05/07/24	13:34	0.01	D2947	AD

Notes:

May 10, 2024

Report ID:	17370-240510-0911	
Batch ID:	SME	17370
Date received:	05/02/24	
Project ID:	Horticulture Greenhouse	

Sample ID: 24056 B-1,5-4 7'-9'
Sample date: 04/30/24 12:30
Sample matrix: SU
Laboratory ID: 240502K003

Parameter	Results	Units	Date	Time	LOQ	Method	Tech
			Analyzed	Analyzed			
Moisture	28.51	%	05/03/24	16:00	0.01	SM2540G	AD
Organic Matter	4.26	%	05/07/24	13:34	0.01	D2947	AD

Notes:

May 10, 2024

Report ID:	17370-240510-0911	
Batch ID:	SME	17370
Date received:	05/02/24	
Project ID:	Horticulture Greenhouse	

Sample ID: 24056 B-2,5-4 7'-9'

Sample date: 04/30/24 15:00

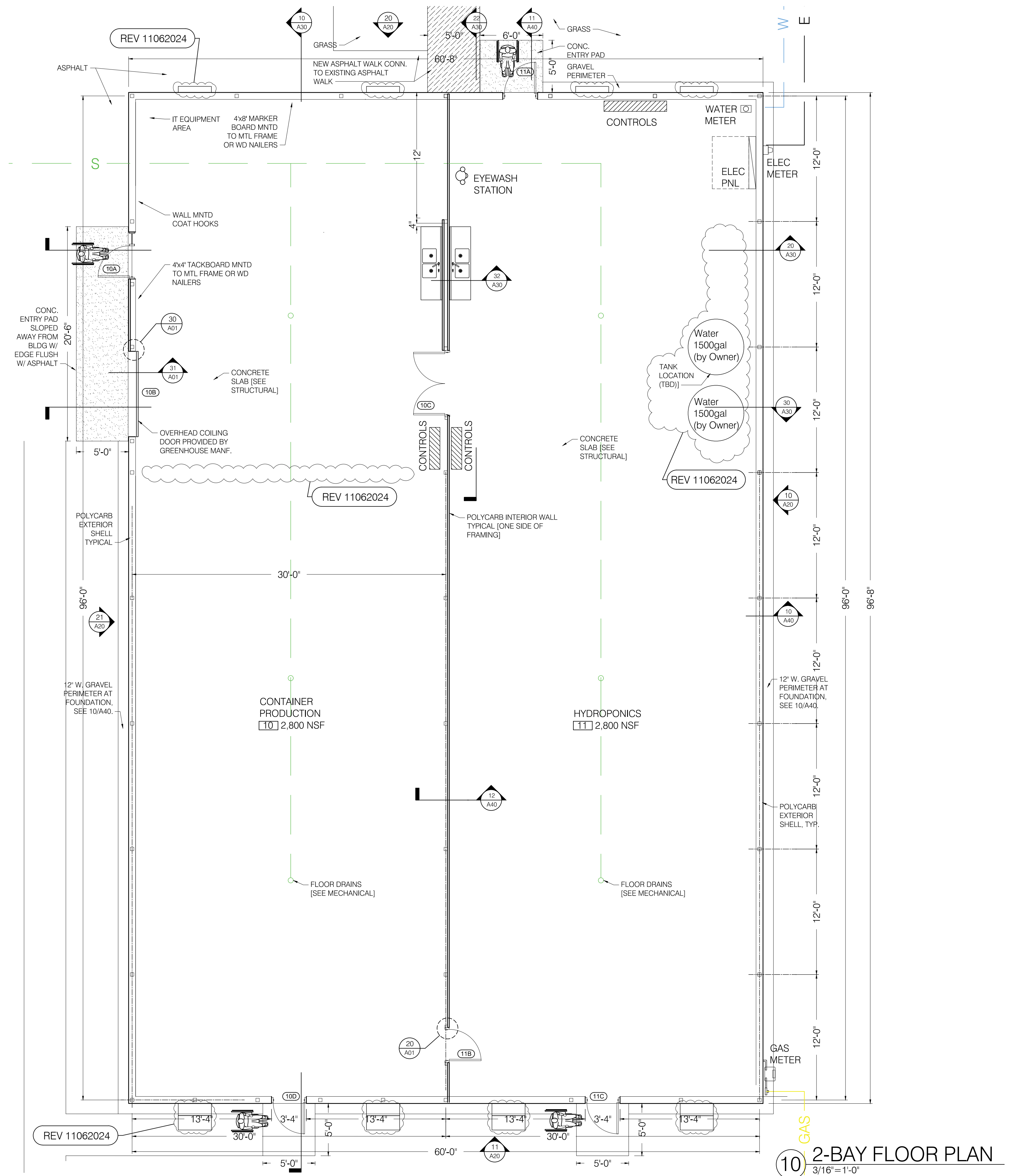
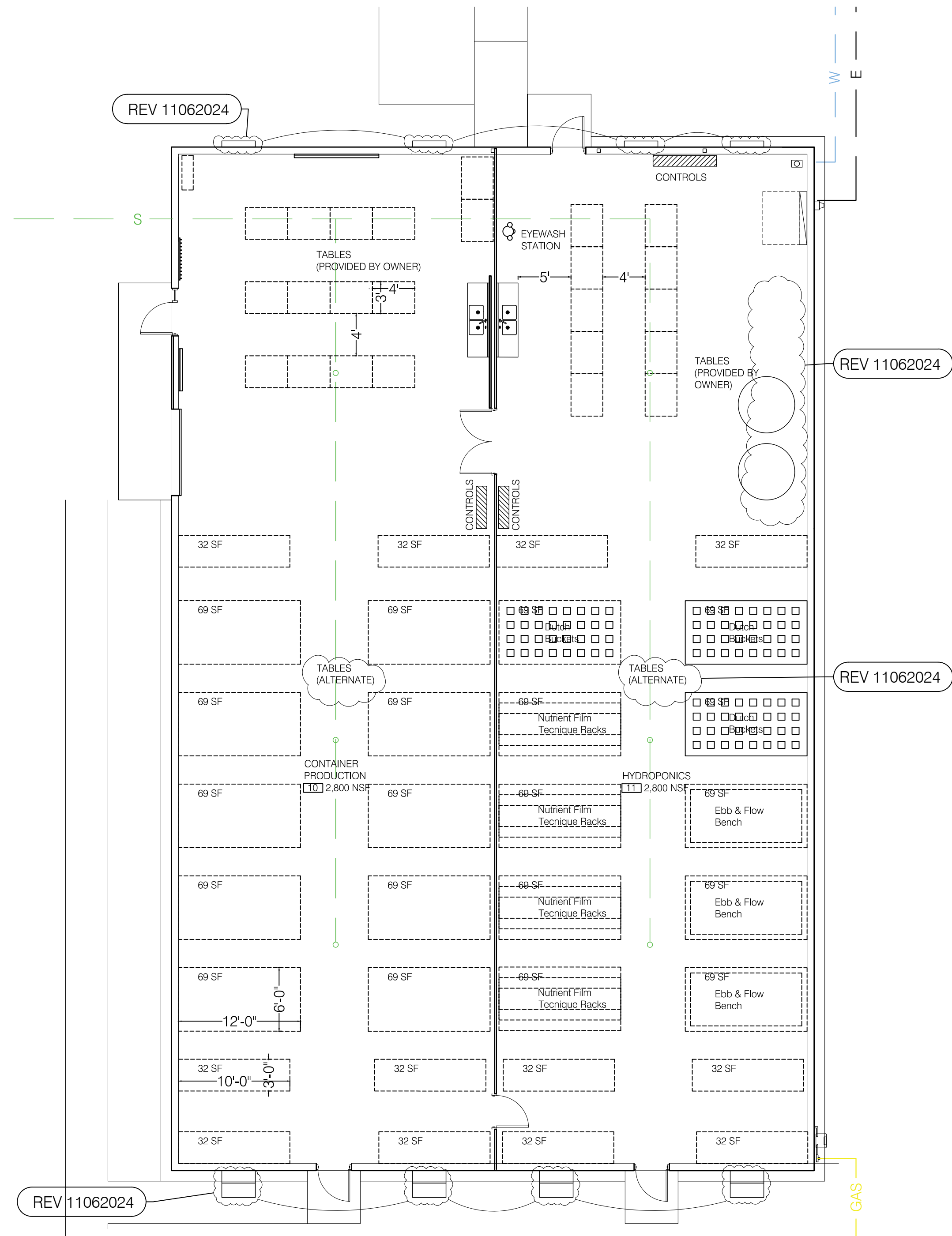
Sample matrix: SU

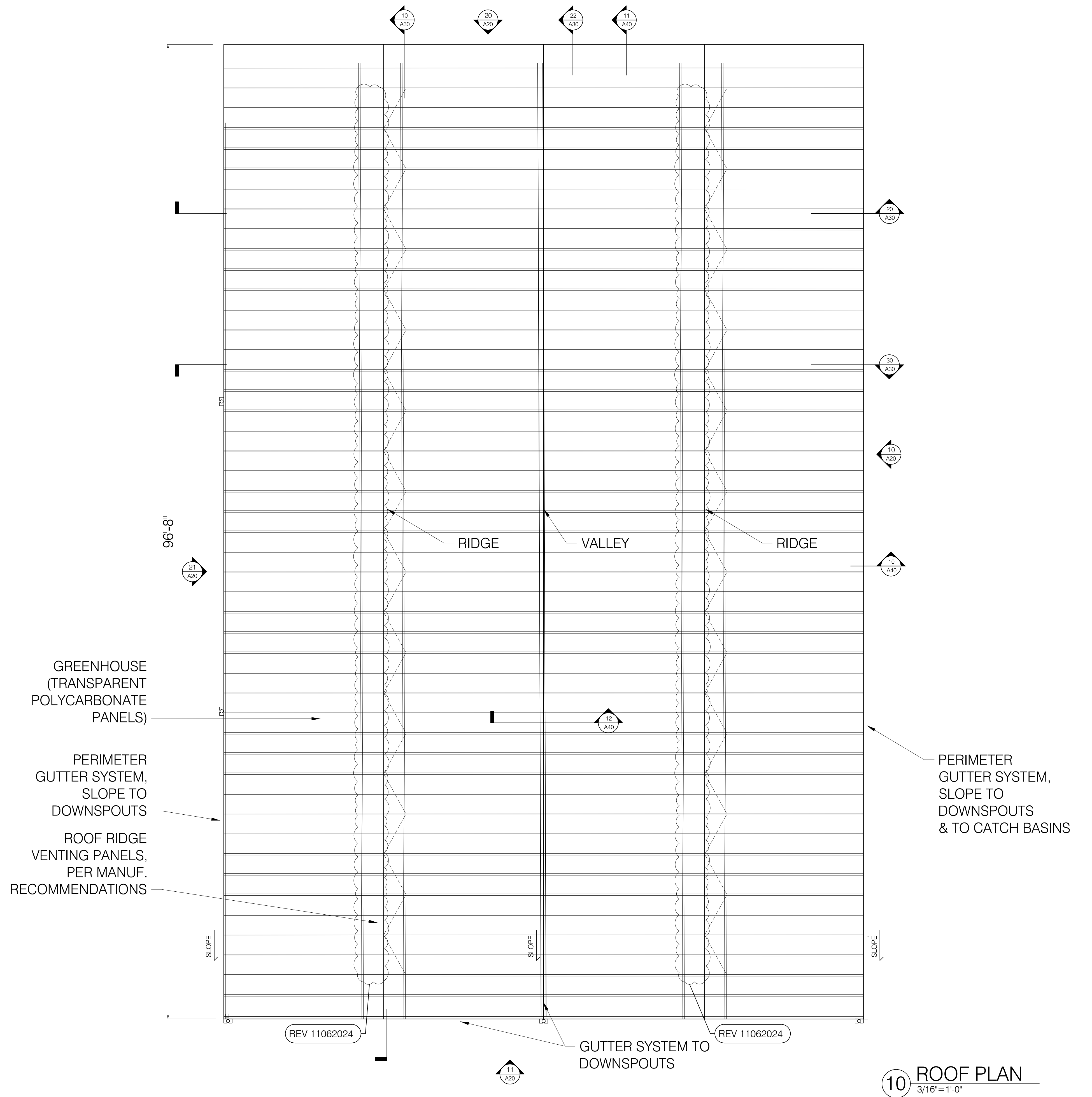
Laboratory ID: 240502K005

Parameter	Results	Units	Date	Time	LOQ	Method	Tech
			Analyzed	Analyzed			
Moisture	47.12	%	05/03/24	16:00	0.01	SM2540G	AD
Organic Matter	22.68	%	05/07/24	13:34	0.01	D2947	AD

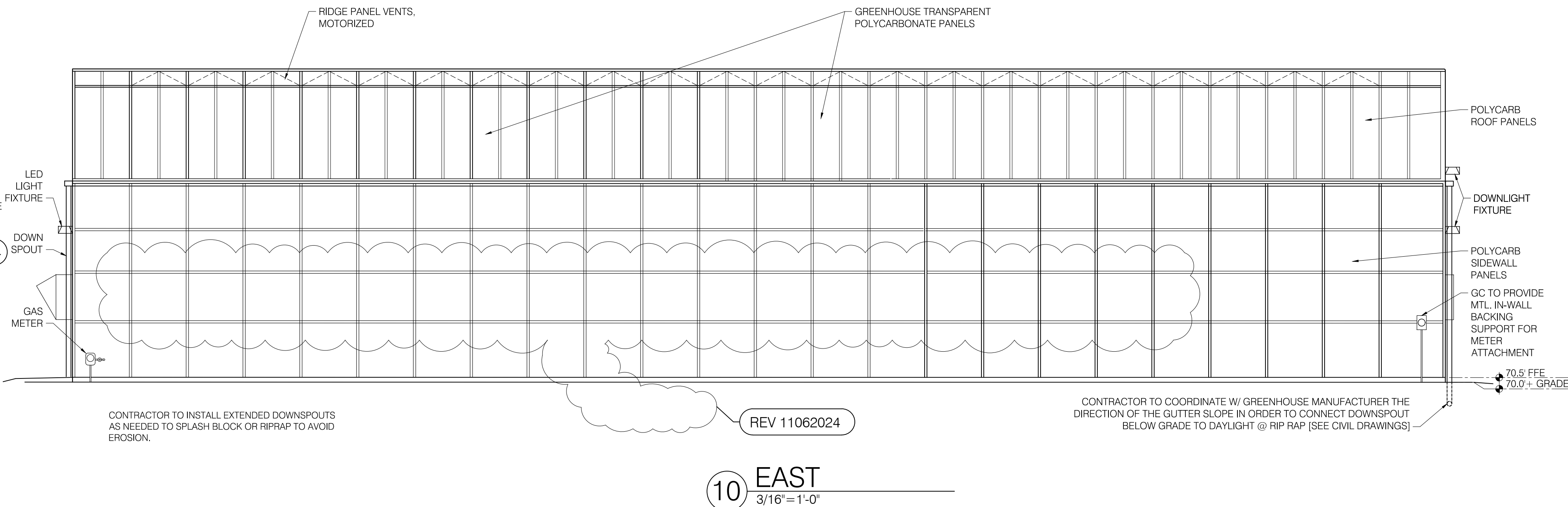
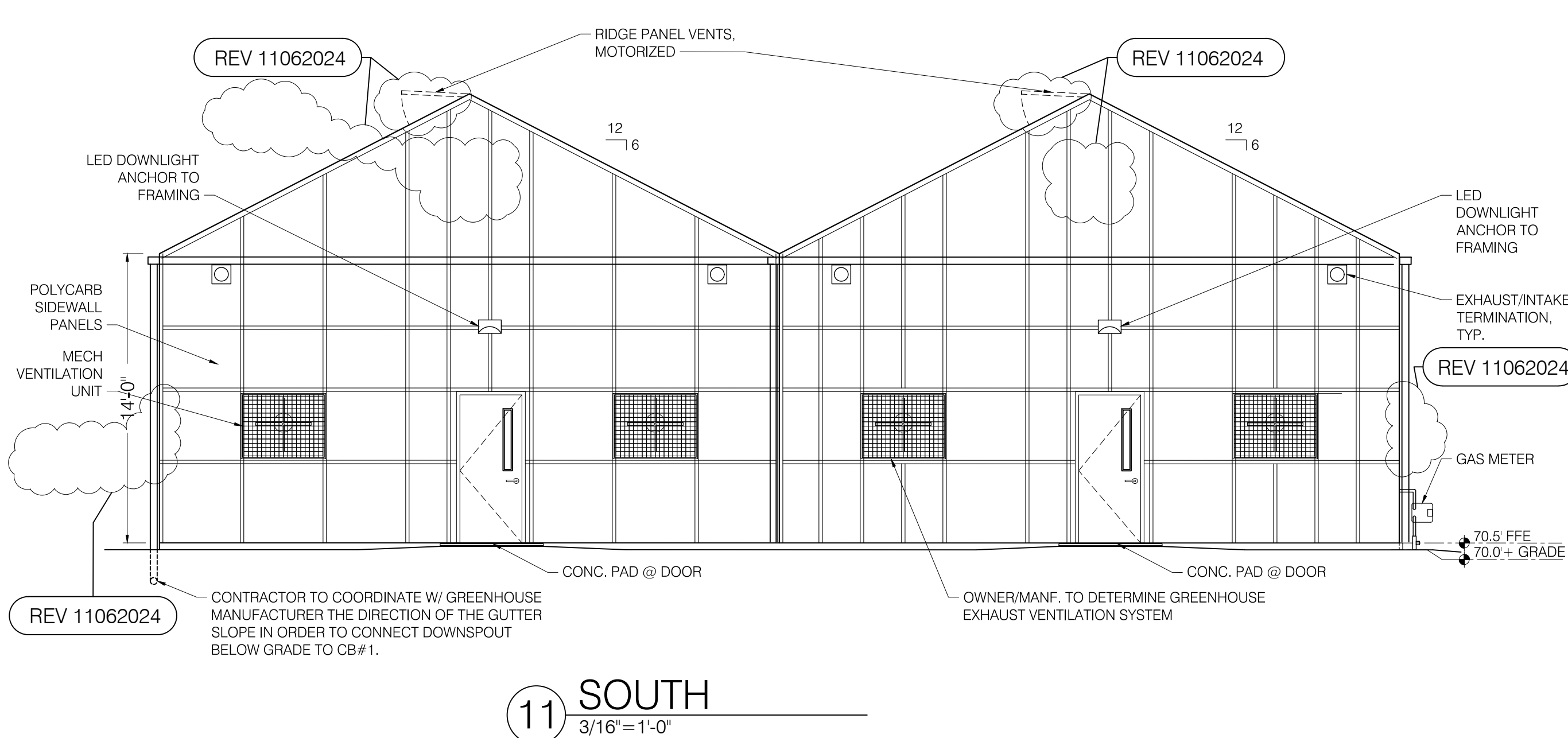
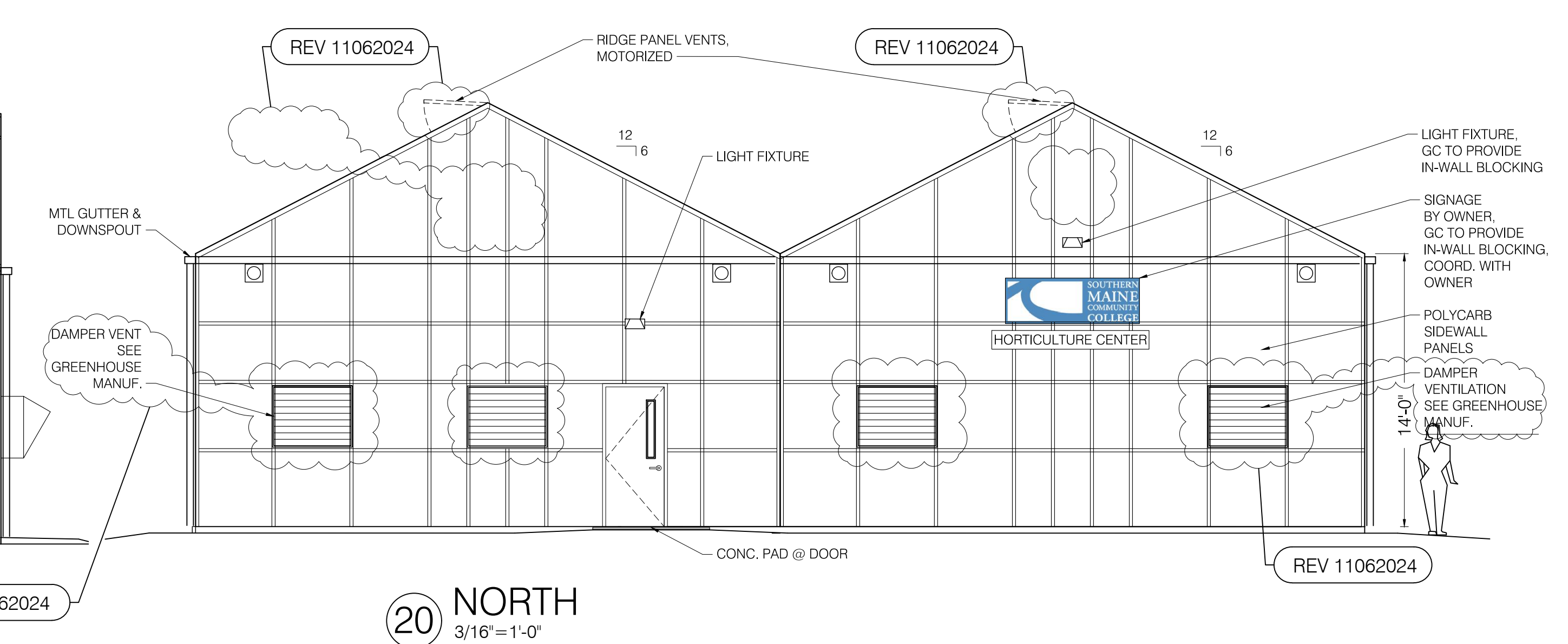
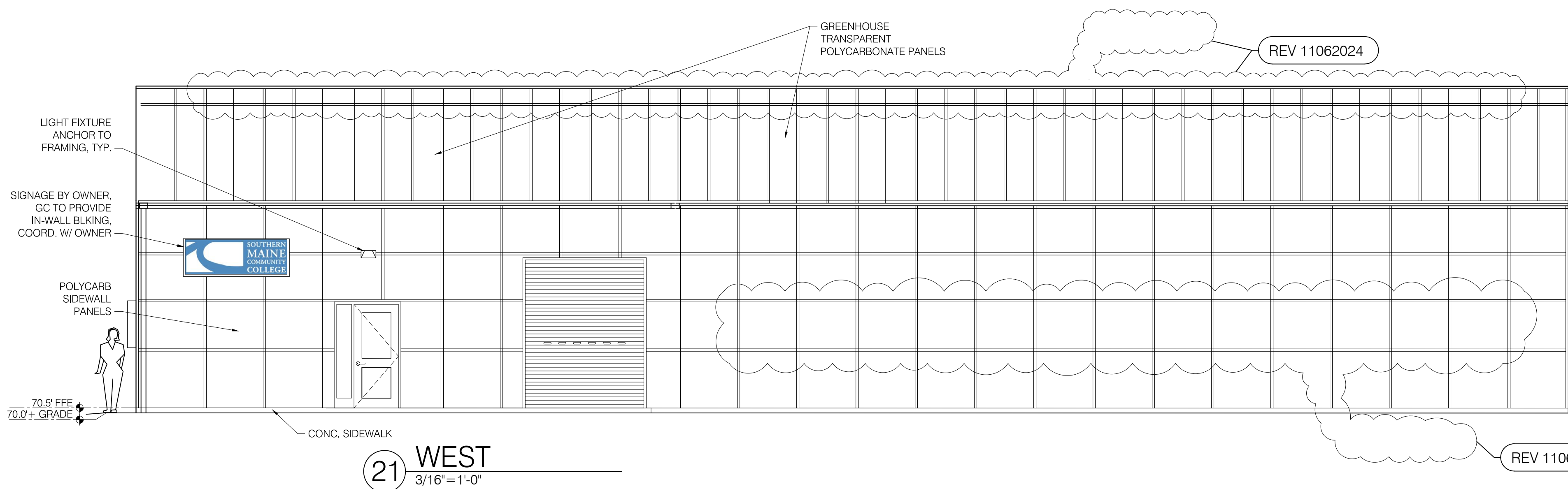
Notes:

COMPANY	ATTENDEE	EMAIL	TELEPHONE
Benchmark Construction	Kyle Stelens	Krice@benchmarkconstruction.org	207-591-7600
Rimol Greenhouse	Mike Bisogno	mbisogno@rimol.com	(802) 495-6197
Hardypand Construction	Deirdre Wadsworth	deirdre@hardypand.com	(207) 450-2212
RAY LABBE & SONS, INC	Philip Abbotts	PHILIP RAY LABBE AND SONS.COM	207-725-7336
Geowspan	Zachery Carr	zcarr@geowspan.com	860-965-3159
Geowspan	Will Hopkins	whopkins@geowspan.com	860-306-9998





10 ROOF PLAN
3/16" = 1'-0"



SOUTH
199 prospect street, suite A
portland, maine 04101
NORTH
22 balsam drive
Millinocket, maine 04462
PH: 207.347.5252 & 207.749.9306
arcadiadesignworks.com



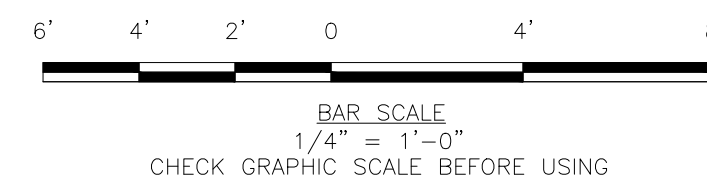
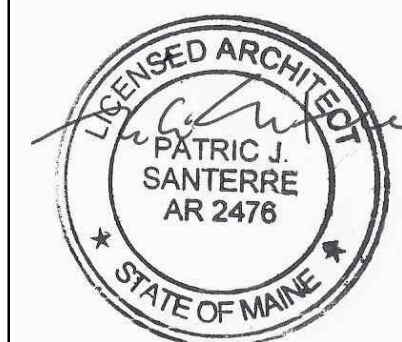
BENNETT
ENGINEERING
MECHANICAL • ELECTRICAL



CONSTRUCTION DRAWINGS
REVISIONS: 11/06/24.

HORTICULTURE GREENHOUSE

MIDCOAST CAMPUS, BRUNSWICK, MAINE



EXTERIOR ELEVATIONS

ADAR202319 - OCT 2024

A20

