City of Bristol
Firehouse 3 Building
Committee

INFORMATION TO ACCESS
THIS MEETING

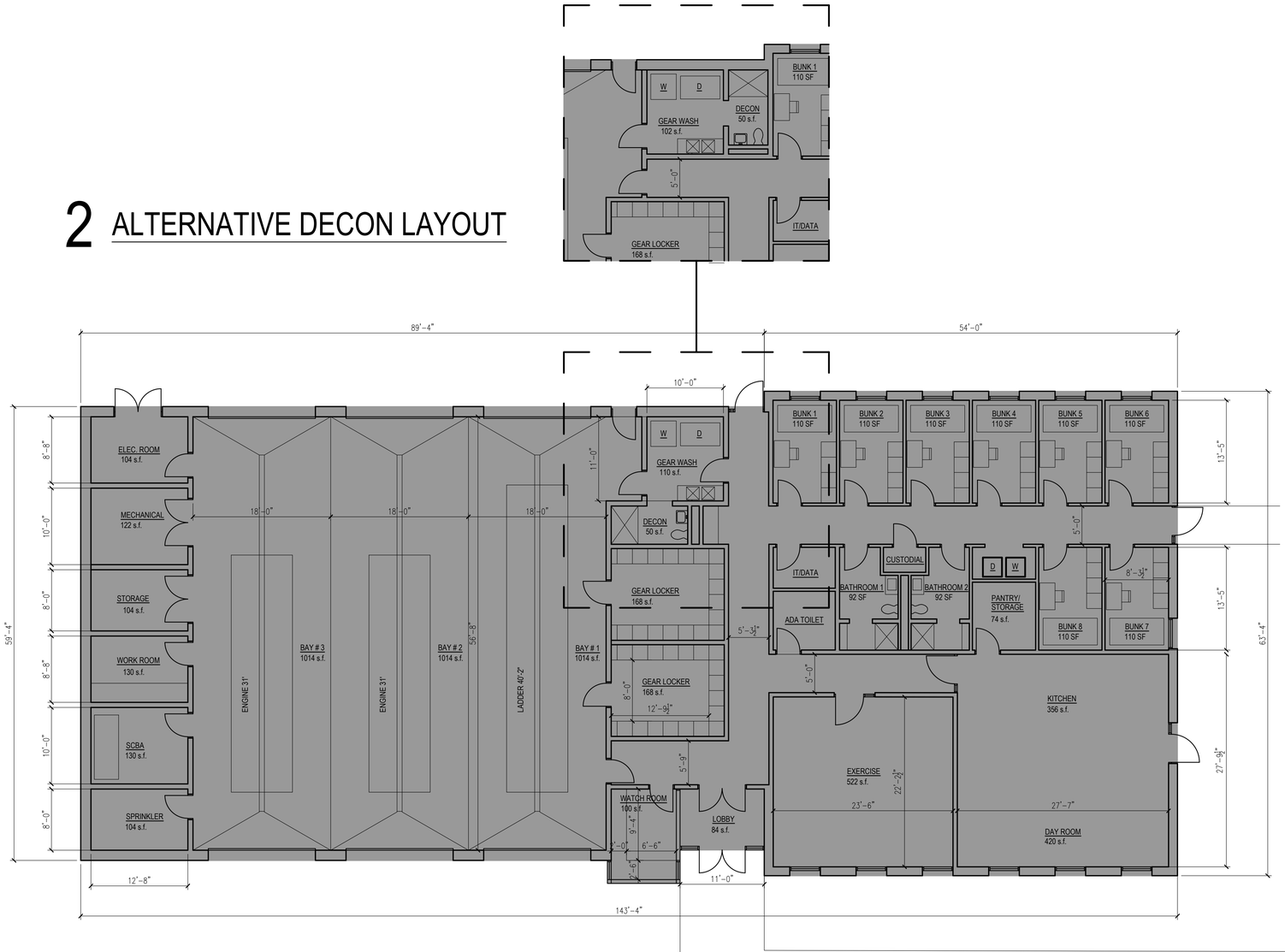
The regular meeting will be held on Wednesday, February 28, 2024, at 6:00 PM. in City Hall, 111 North Main Street, Bristol, CT.

AGENDA

1. Call to Order
2. Public Participation
3. Approval of Minutes
    a. Approval of Minutes: January 24, 2024
4. Architect Update
    a. Plans as of February 14, 2024
5. Old Business
    a. Review of construction oversight and take any action as neccessary.
6. New Business
7. Adjournment

PER ORDER OF THE CHAIRPERSON

2 ALTERNATIVE DECON LAYOUT



1 FIRST FLOOR PLAN

8,732 G.S.F.

Project Title:
CITY OF BRISTOL / BRISTOL FIRE DEPARTMENT
NEW FIREHOUSE No. 3
CHURCH AVENUE
BRISTOL CONNECTICUT 06010

SILVER PETRUCELLI + ASSOCIATES
3190 WHITNEY AVENUE HAMDEN CT 06518
311 STATE STREET NEW LONDON CT 06320
203 230 9007 silverpetrucelli.com

Revision:	Description:	Date:	Revised By:
	-	-	

Drawing Title: PROPOSED FLOOR PLANS
Date: 01/29/2024
Scale: 1/8" = 1'-0"
Drawn By: CTN
Project Number: 23.017
Drawing Number: A4


BRISTOL FIRESTATION
3
ENGINE 6
LADDER 2
ENGINE 3


ENGINE 6
LADDER 2
ENGINE 3
BRISTOL FIRESTATION
3


3

Subsurface Profile

Elevation (ft)	Depth (ft)	Soil Description	Groundwater	Total Unit Weight (psf)	Buoyant Unit Weight (psf)	Total Vertical Stress (psf)	Static Pore Water Pressure (psf)	Effective Vertical Stress (psf)
242.0	0.0	Ground surface	No	0.0	0.0	0.0	0.0	0.0
241.0	1.0	Fill	No	115.0	115.0	115.0	0.0	115.0
240.0	2.0	Fill	No	115.0	115.0	230.0	0.0	230.0
239.0	3.0	Fill	No	115.0	115.0	345.0	0.0	345.0
238.0	4.0	Fill	No	115.0	115.0	460.0	0.0	460.0
237.0	5.0	Fill	No	115.0	115.0	575.0	0.0	575.0
236.0	6.0	Sand	Yes	120.0	57.6	695.0	0.0	695.0
235.0	7.0	Sand	Yes	120.0	57.6	815.0	62.4	752.6
234.0	8.0	Sand	Yes	120.0	57.6	935.0	124.8	810.2
233.0	9.0	Sand	Yes	120.0	57.6	1055.0	187.2	867.8
232.0	10.0	Sand	Yes	120.0	57.6	1175.0	249.6	925.4
231.0	11.0	Sand	Yes	120.0	57.6	1295.0	312.0	983.0
230.0	12.0	Sand	Yes	120.0	57.6	1415.0	374.4	1040.6
229.0	13.0	Sand	Yes	120.0	57.6	1535.0	436.8	1098.2
228.0	14.0	Sand	Yes	120.0	57.6	1655.0	499.2	1155.8
227.0	15.0	Sand	Yes	120.0	57.6	1775.0	561.6	1213.4
226.0	16.0	Till	Yes	135.0	72.6	1910.0	624.0	1286.0
225.0	17.0	Till	Yes	135.0	72.6	2045.0	686.4	1358.6
224.0	18.0	Till	Yes	135.0	72.6	2180.0	748.8	1431.2
223.0	19.0	Till	Yes	135.0	72.6	2315.0	811.2	1503.8

Notes:

1. Subsurface data was obtained from Boring B-3.
2. Unit weights were estimated using Figure 7 in NAVFAC DM 7.01.
3. Groundwater was assumed to be at El. 236.

Standard Penetration Test Data and Correlated Strength Properties

Elevation (ft)	Depth (ft)	Soil Description	Uncorrected SPT N-Value	Hammer Correction	Borehole Correction	Sampler Correction	Rod Length Correction	Corrected SPT N_{60}	Overburden Correction	Corrected SPT $(N1)_{60}$-Value	Relative Density (%)	Undrained Shear Strength (psf)	Drained Friction Angle (°)
236.0	6.0	Sand	35	0.8	1.0	1.0	0.75	21	1.74	37	78	--	32
231.0	11.0	Sand	54	0.8	1.0	1.0	0.75	32	1.47	48	89	--	34
226.0	16.0	Till	73	0.8	1.0	1.0	0.85	50	1.28	64	103	--	36

Notes:

1. Standard Penetration Test (SPT) data was obtained from Boring B-3.
2. SPT N-Values were corrected using the following equation: $N_{60} = N_m x C_N x C_E x C_B x C_s x C_r$ (FHWA-IF-02-034 - Geotechnical Engineering Circular No. 5)
3. Relative Densities were calculated using Skempton's (1986) correlation (where Dr=100v (($(N_1)_{60}$/60))
4. Undrained shear strengths were estimated using the following equation: Su = (f x N60 x Pa) / 100 ; f = 4.5 for PI = 50 and f = 5.5 for PI = 15 (FHWA-IF-02-034 - Geotechnical Engineering Circular No. 5)
5. Drained friction angles were estimated using Figure 7 in NAVFAC DM 7.01.

B-3

Bearing Capacity of Continuous Footing:

q_{ult} (psf) = (C x N_c x S_c) + (0.5 x γ_2 x B x N_γ x S_γ) + (q x N_q x S_q) = 13,547

$\phi°$ = 32 F_s = 3

C (psf) = 0 q_{all} (tsf) = 2.3

N_C = 35.49

S_c = 1 + [(B/L) x (N_q / N_c)] = 1.0

γ_2 (pcf) = 120

B (ft) = 2

L (ft) = 50

N_γ = 30.22

S_γ = 1 - 0.4 x (B/L) = 0.98

q (psf) = Df x γ_1 = 420

Df (ft) = 3.5

γ_1 (pcf) = 120

N_q = 23.18

S_q = 1 + (B/L) x Tan(ϕ) = 1.0

Notes:

1. Bearing capacity of a single layer system was estimated using the following equation: q (psf) = (C x N_c x S_c) + (0.5 x γ x B x N_γ x S_γ) + (q x N_q x S_q) (Section 4 - Foundations, AASHTO, 17th Edition).

2. The water table was assumed to 2B below the footing.

3. The drained friction angle was assumed to be 32 degrees for footings bearing on natural Sand or Compacted Granular Fill.

Bearing Capacity of Rectangular Footing:

q_{ult} (psf) = (C x N_c x S_c) + (0.5 x γ_2 x B x N_γ x S_γ) + (q x N_q x S_q) = 12,247

$\phi°$ = 32 F_s = 3

C (psf) = 0 q_{all} (tsf) = 2.0

N_C = 35.49

S_c = 1 + (B/L) x (N_q / N_c) = 1.7

γ_2 (pcf) = 125

B (ft) = 2.5

Assume 2.5' x 2.5' footing

L (ft) = 2.5

N_γ = 30.22

S_γ = 1 - 0.4 x (B/L) = 0.6

q (psf) = ΣDf x γ_1 = 250

Df (ft) = 2 (Heated 1st Floor)

γ_1 (pcf) = 125

N_q = 23.18

S_q = 1 + (B/L) x Tan(ϕ) = 1.6

Notes:

1. Bearing capacity of a single layer system was estimated using the following equation: q (psf) = (C x N_c x S_c) + (0.5 x γ x B x N_γ x S_γ) + (q x N_q x S_q) (Section 4 - Foundations, AASHTO, 17th Edition).

2. The water table was assumed to 2B below the footing.

3. The drained friction angle was assumed to be 32 degrees for footings bearing on natural Sand or Compacted Granular Fill.