Weston & Sampson℠

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Schematic Design Submission

June 21, 2024

New Department of Public Works Facility

Shadbush Road

TOWN OF
Nantucket
MASSACHUSETTS

Town of Nantucket, MA

New Department of Public Works Facility

Schematic Design Submission

June 21, 2024

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Town of Nantucket
New Department of Public Works Facility
Schematic Design Submission

1. Review and Confirmation

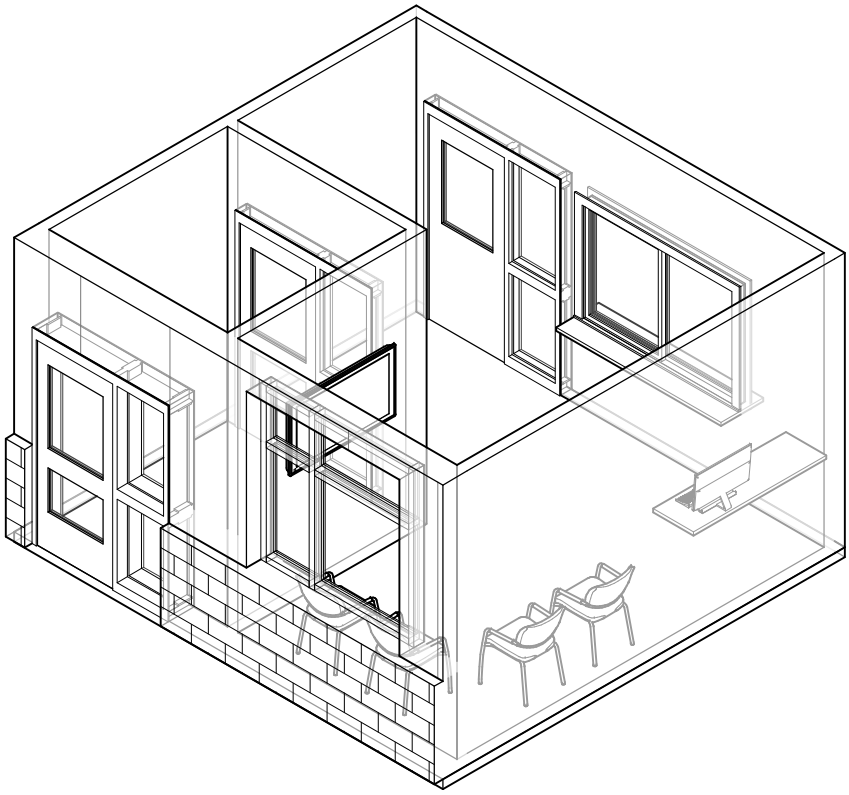
June 21, 2024

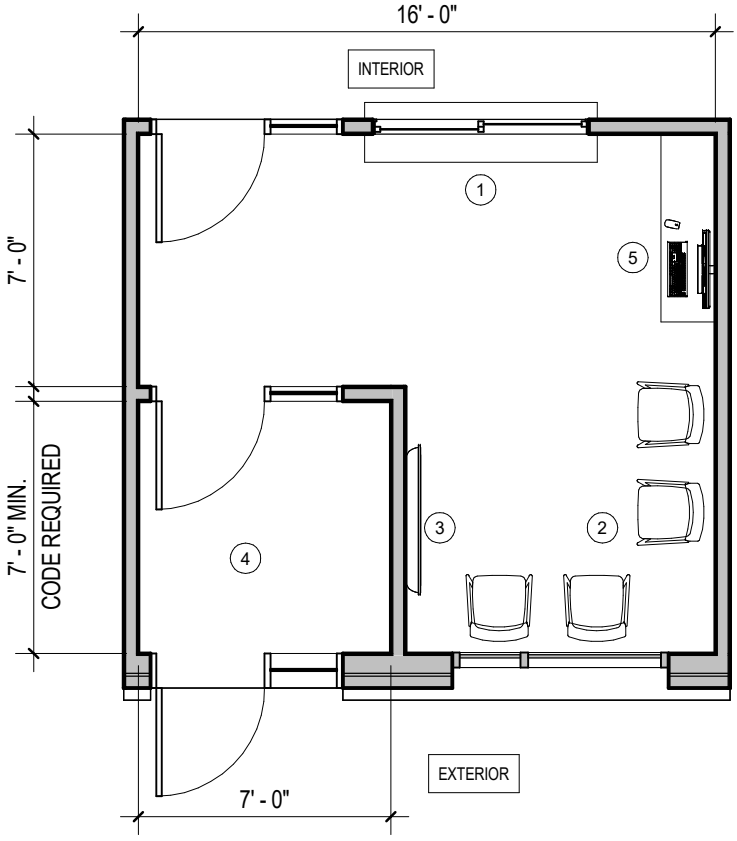
Town of Nantucket
New Department of Public Works Facility
Schematic Design Submission

Review and Confirmation

Room Data Sheets

June 21, 2024





PUBLIC LOBBY - 224 SF

3/16" = 1'-0"

ROOM FINISHES:

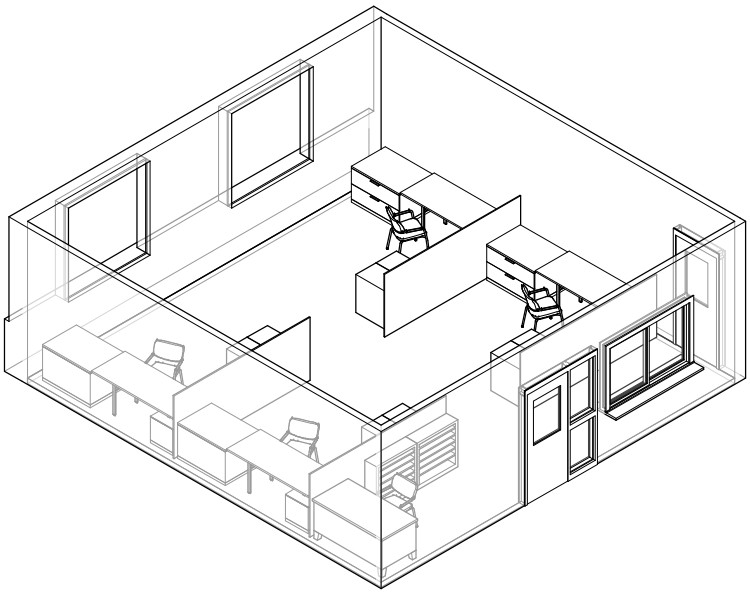
CEILING:	GYPSUM BOARD, PAINTED
WALLS:	GYPSUM WALL BOARD, PAINTED
FLOORS:	CERAMIC TILE

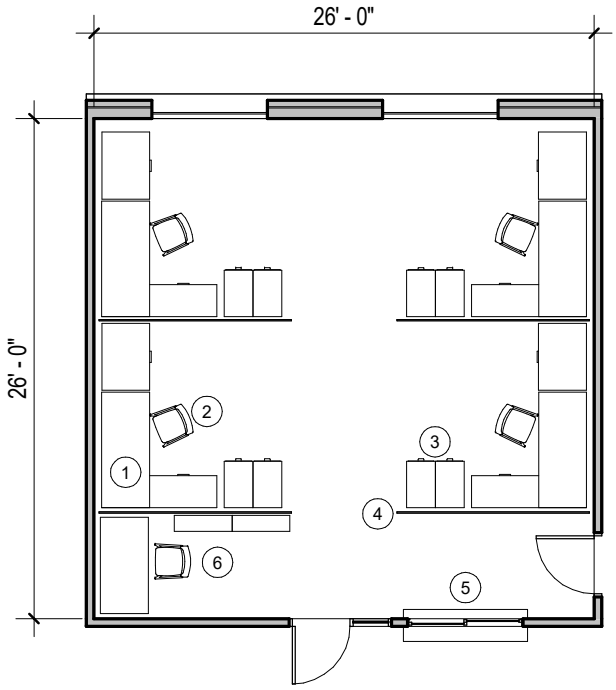
MEP/DATA REQUIREMENTS:

- ELECTRICAL OUTLETS
- TEL / DATA OUTLET JACKS
- HEATING / COOLING
- OCCUPANCY SENSORS FOR LIGHTING CONTROLS

COMPONENTS:

1. CHECK-IN COUNTER AND SLIDE WINDOW
2. (4) WAITING CHAIRS
3. TV MONITOR
4. VESTIBULE
5. PUBLIC INFORMATION KIOSK





ADMIN AREA - 657 SF
1" = 10'-0"

ROOM FINISHES:

CEILING:	ACOUSTICAL CEILING TILE
WALLS:	GYPSUM BOARD, PAINTED
FLOORS:	CARPET TILE

MEP/DATA REQUIREMENTS:

ELECTRICAL OUTLETS

TEL/DATA OUTLET JACKS

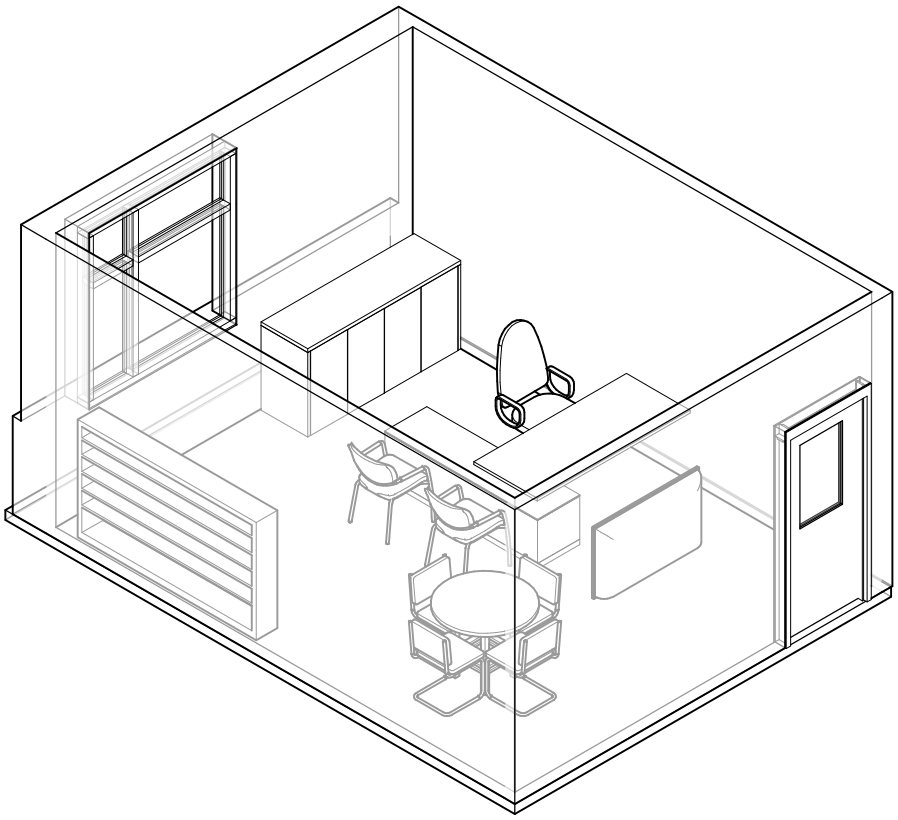
NATURAL LIGHTING W/ WINDOWS

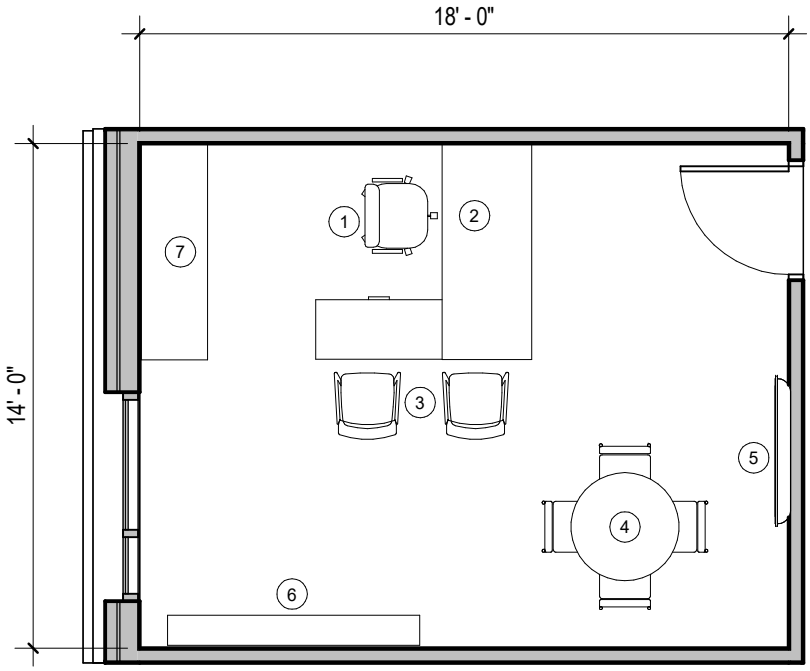
OCCUPANCY SENSORS FOR LIGHTING CONTROLS

HEATING / COOLING

COMPONENTS:

1. (4) WORKSTATIONS
2. (4) EXECUTIVE CHAIR
3. FILE STORAGE
4. PARTITION
5. RECEPTION WINDOW & COUNTER
6. INTERN WORKSTATION





DPW DIRECTOR OFFICE - 252 SF

3/16" = 1'-0"

ROOM FINISHES:

CEILING:	ACOUSTICAL CEILING TILE
WALLS:	GYPSUM WALL BOARD, PAINTED
FLOORS:	CARPET TILE

MEP/DATA REQUIREMENTS:

DUPLEX ELECTRICAL OUTLETS

TEL/DATA OUTLET JACKS

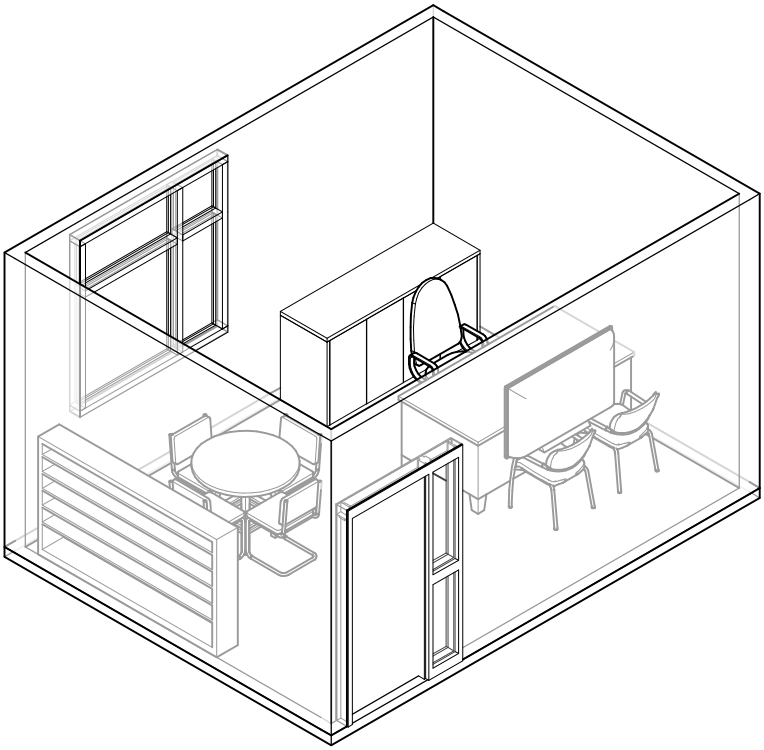
NATURAL LIGHTING W/ WINDOWS

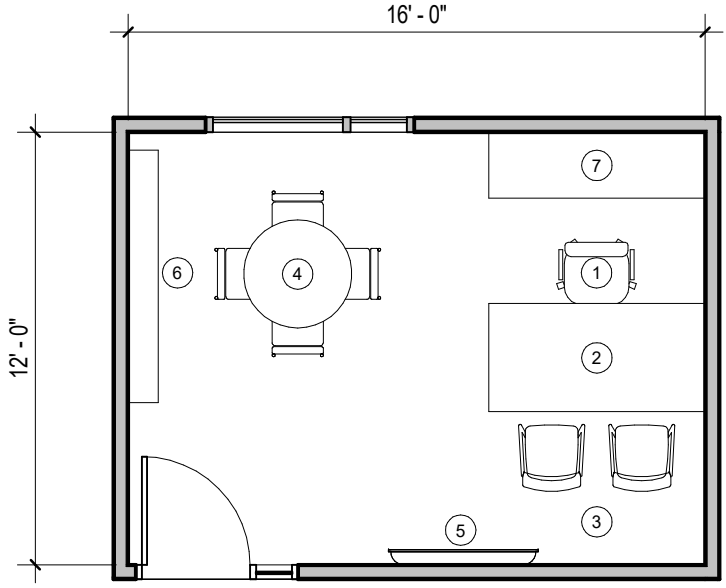
OCCUPANCY SENSORS FOR LIGHTING CONTROLS

HEATING / COOLING

COMPONENTS:

1. EXECUTIVE CHAIR
2. WORKSTATION
3. GUEST CHAIRS (2)
4. MEETING TABLE & (4) CHAIRS
5. TV MONITOR
6. BOOKCASE
7. CREDENZA





DEPUTY DIRECTOR OFFICE - 192 SF

3/16" = 1'-0"

ROOM FINISHES:

CEILING:	ACOUSTICAL CEILING TILE
WALLS:	GYPSUM WALL BOARD, PAINTED
FLOORS:	CARPET TILE

MEP/DATA REQUIREMENTS:

DUPLEX ELECTRICAL OUTLETS

TEL/DATA OUTLET JACKS

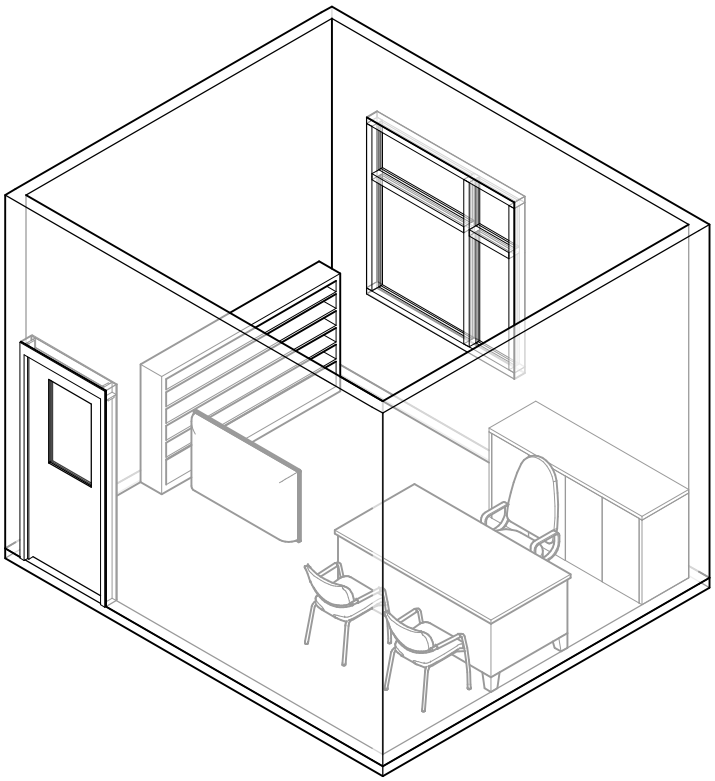
NATURAL LIGHTING W/ WINDOWS

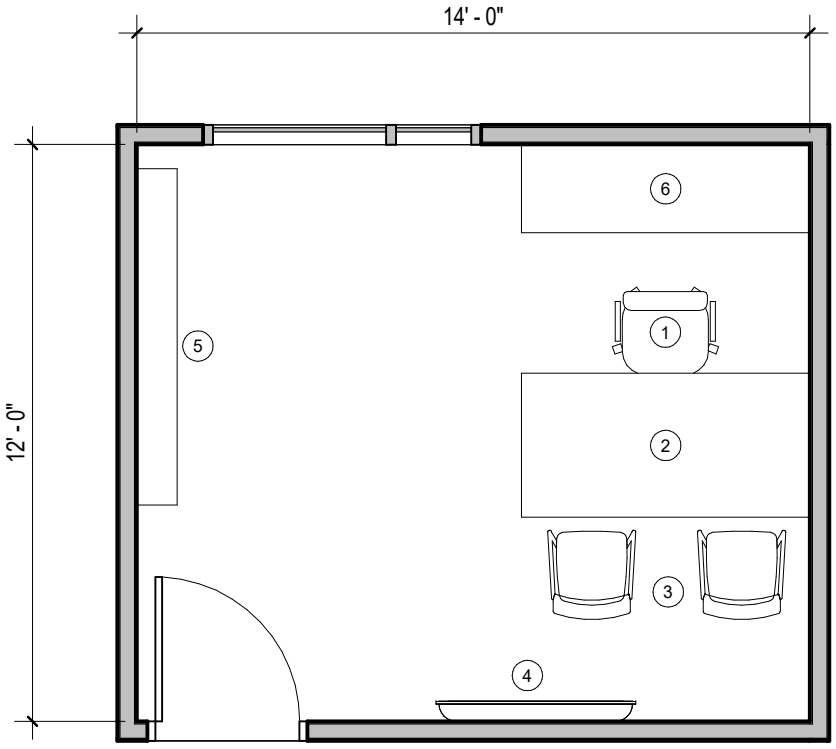
OCCUPANCY SENSORS FOR LIGHTING CONTROLS

HEATING / COOLING

COMPONENTS:

1. EXECUTIVE CHAIR
2. WORKSTATION
3. GUEST CHAIRS (2)
4. MEETING TABLE & (4) CHAIRS
5. TV MONITOR
6. BOOKCASE
7. CREDENZA





MANAGER OFFICE - 168 SF

1/4" = 1'-0"

ROOM FINISHES:

CEILING:	ACOUSTICAL CEILING TILE
WALLS:	GYPSUM BOARD, PAINTED
FLOORS:	CARPET TILE

MEP/DATA REQUIREMENTS:

DUPLEX ELECTRICAL OUTLETS

TEL/DATA OUTLET JACKS

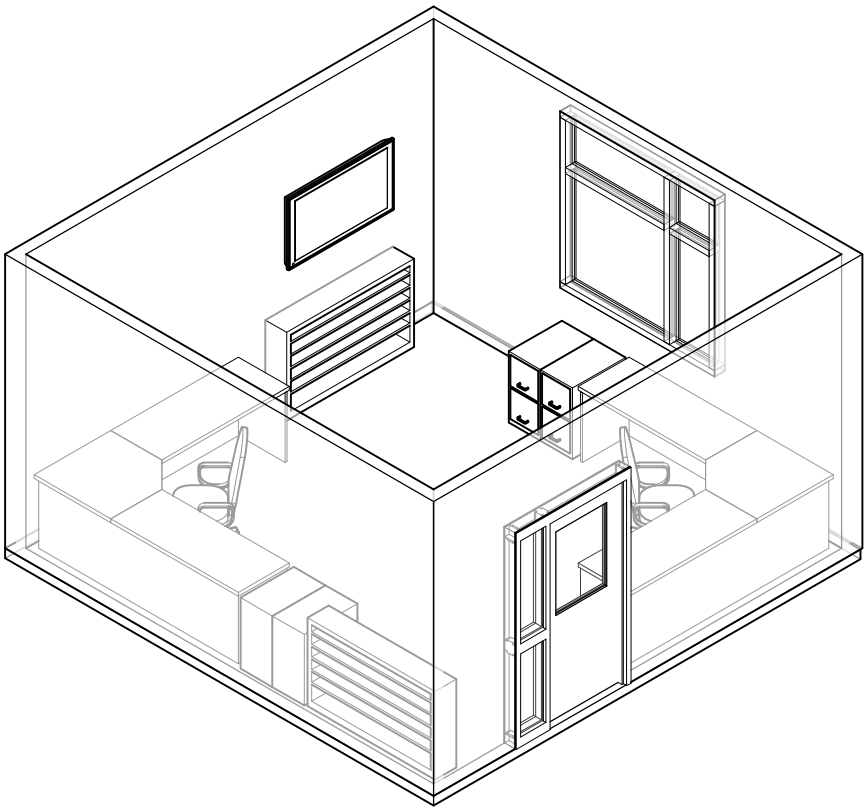
NATURAL LIGHTING W/ WINDOWS

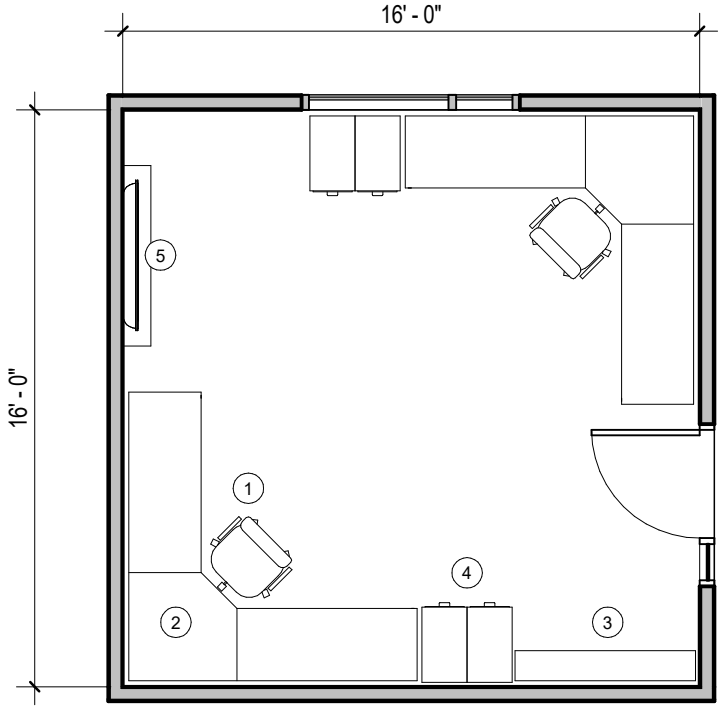
OCCUPANCY SENSORS FOR LIGHTING CONTROLS

HEATING / COOLING

COMPONENTS:

1. EXECUTIVE CHAIR
2. WORKSTATION
3. GUEST CHAIRS (2)
4. TV MONITOR
5. BOOKCASE
6. CREDENZA





SHARED OFFICE (2) - 256 SF

3/16" = 1'-0"

ROOM FINISHES:

CEILING:	ACOUSTICAL CEILING TILE
WALLS:	GYPSUM WALL BOARD, PAINTED
FLOORS:	CARPET TILE

MEP/DATA REQUIREMENTS:

DUPLEX ELECTRICAL OUTLETS

TEL/DATA OUTLET JACKS

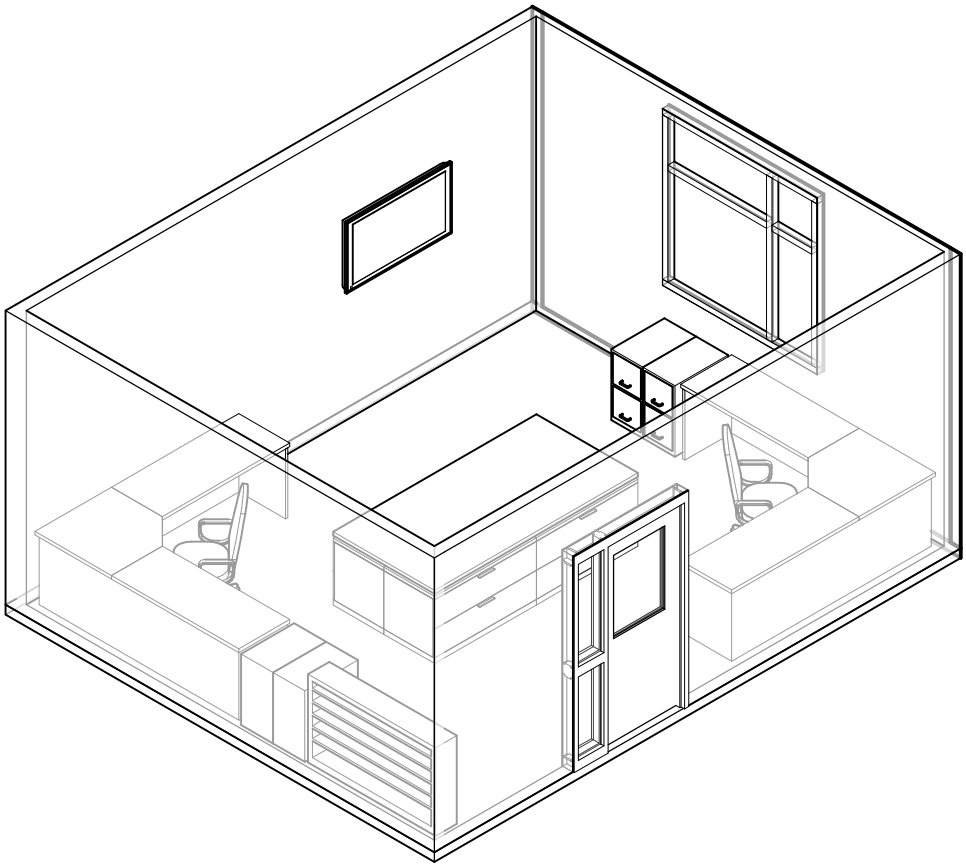
NATURAL LIGHTING W/ WINDOWS

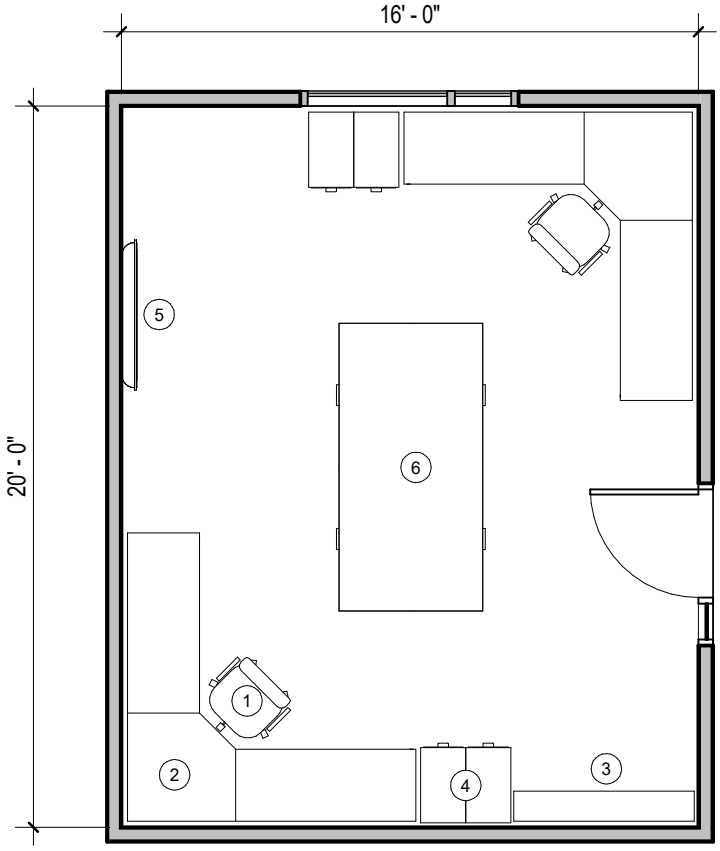
OCCUPANCY SENSORS FOR LIGHTING CONTROLS

HEATING / COOLING

COMPONENTS:

1. (2) EXECUTIVE CHAIRS
2. (2) WORKSTATIONS
3. BOOKCASE
4. FILE CABINET
5. TV MONITOR





SHARED OFFICE (2) W/ LAYOUT AREA - 320 SF

3/16" = 1'-0"

ROOM FINISHES:

CEILING:	ACOUSTICAL CEILING TILE
WALLS:	GYPSUM WALL BOARD, PAINTED
FLOORS:	CARPET TILE

MEP/DATA REQUIREMENTS:

DUPLEX ELECTRICAL OUTLETS

TEL/DATA OUTLET JACKS

NATURAL LIGHTING W/ WINDOWS

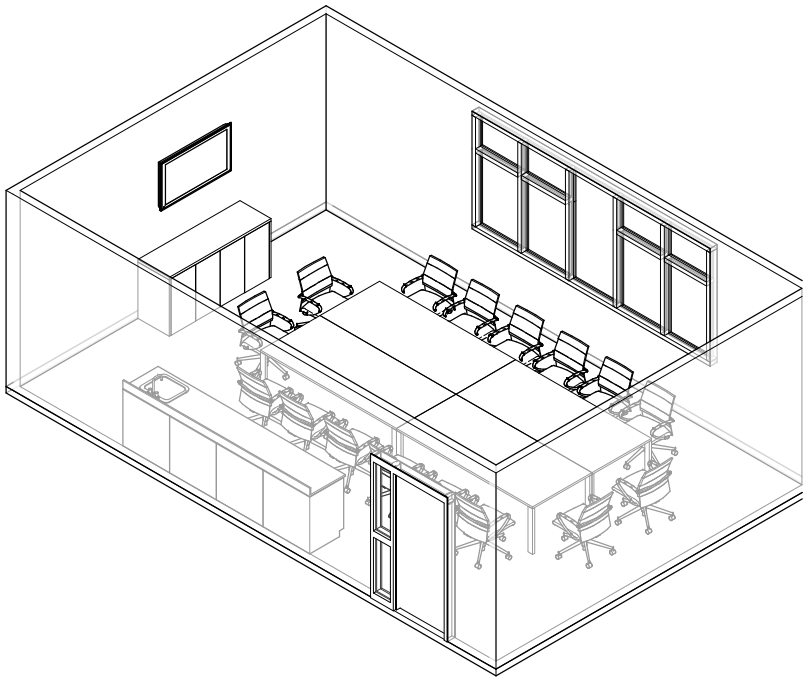
OCCUPANCY SENSORS FOR LIGHTING CONTROLS

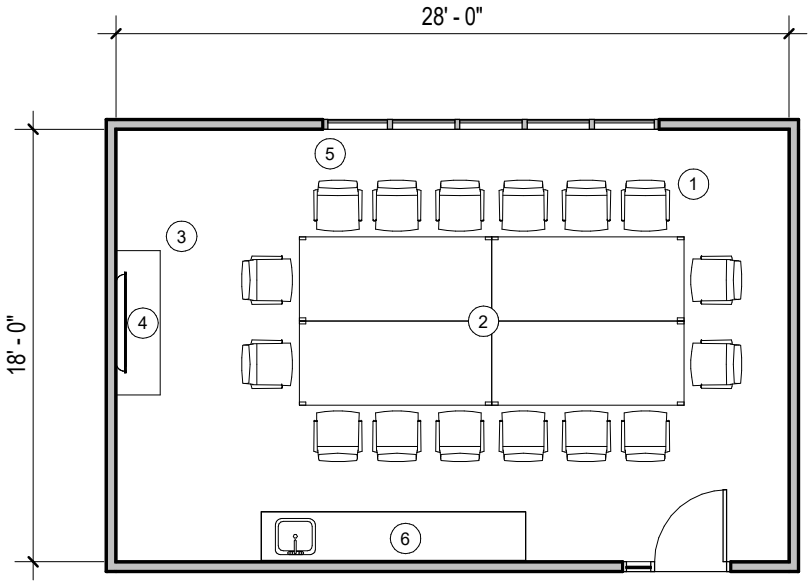
HEATING / COOLING

COMPONENTS:

1. (2) EXECUTIVE CHAIRS
2. (2) WORKSTATIONS
3. BOOKCASE
4. FILE CABINET
5. TV MONITOR
6. LAYOUT AREA

Weston & Sampson	NANTUCKET DPW June 21, 2024	**SHARED OFFICE (2) W/ LAYOUT AREA - 320 SF**	A6.1





LARGE CONFERENCE ROOM - 504 SF
1/8" = 1'-0"

ROOM FINISHES:

CEILING:	ACOUSTICAL CEILING TILE
WALLS:	GYPSUM WALL BOARD, PAINTED
FLOORS:	CARPET TILE

MEP/DATA REQUIREMENTS:

DUPLEX ELECTRICAL OUTLETS

TEL/DATA OUTLET JACKS

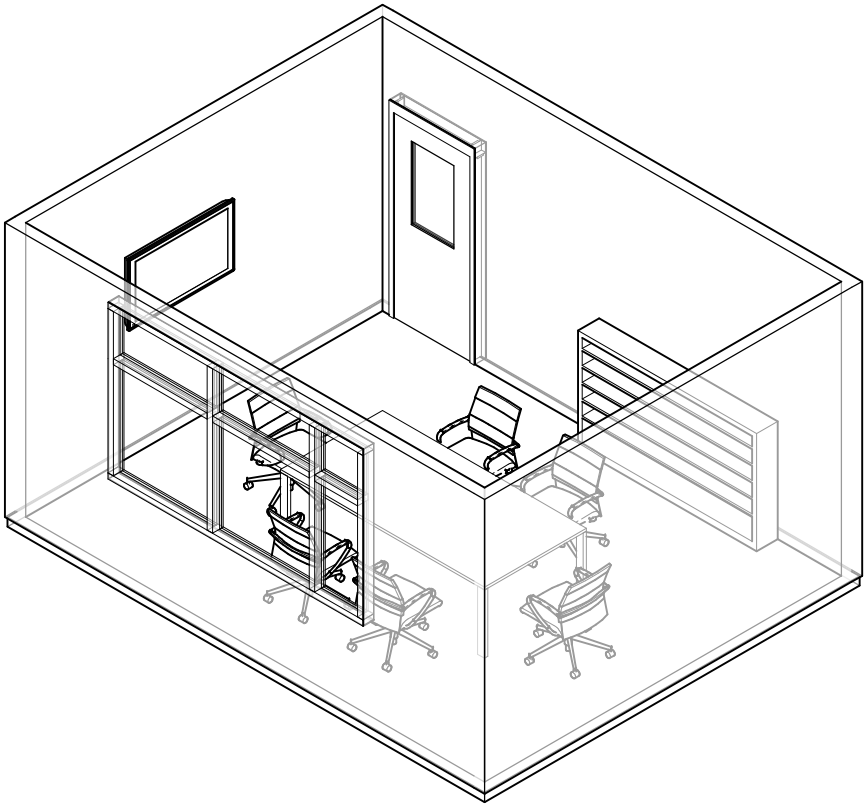
NATURAL LIGHTING W/ WINDOWS

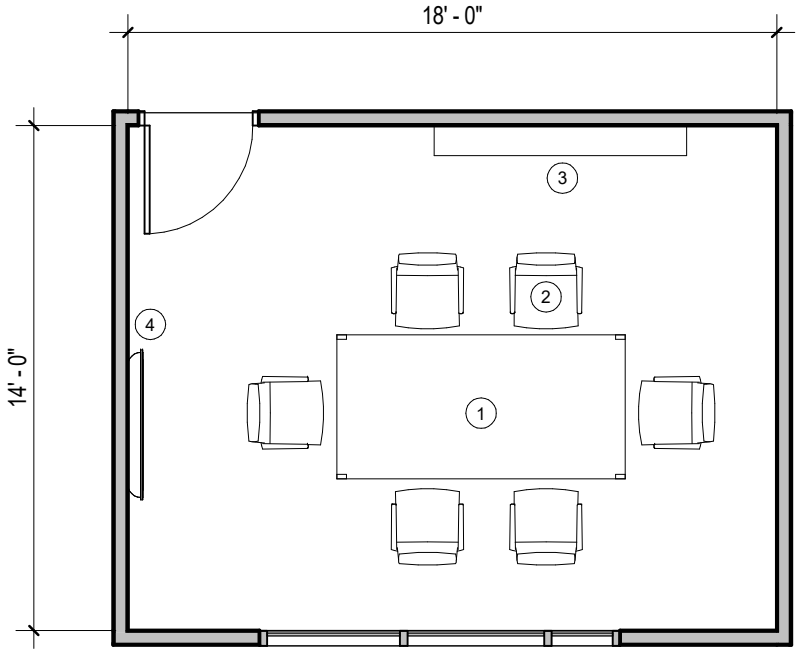
OCCUPANCY SENSORS FOR LIGHTING CONTROLS

HEATING / COOLING

COMPONENTS:

1. (16) CHAIRS
2. CONFERENCE TABLE W/ CENTRAL POWER/DATA CONSOLE
3. CREDENZA
4. LARGE FORMAT TV/MONITOR
5. ROOM DARKENING SHADES FOR PRESENTATION
6. KITCHENETTE W/ SINK AND UC FRIDGE





SMALL CONFERENCE ROOM - 252 SF

3/16" = 1'-0"

ROOM FINISHES:

CEILING:	ACOUSTICAL CEILING TILE
WALLS:	GYPSUM WALL BOARD, PAINTED
FLOORS:	CARPET TILE

MEP/DATA REQUIREMENTS:

DUPLEX ELECTRICAL OUTLETS

TEL/DATA OUTLET JACKS

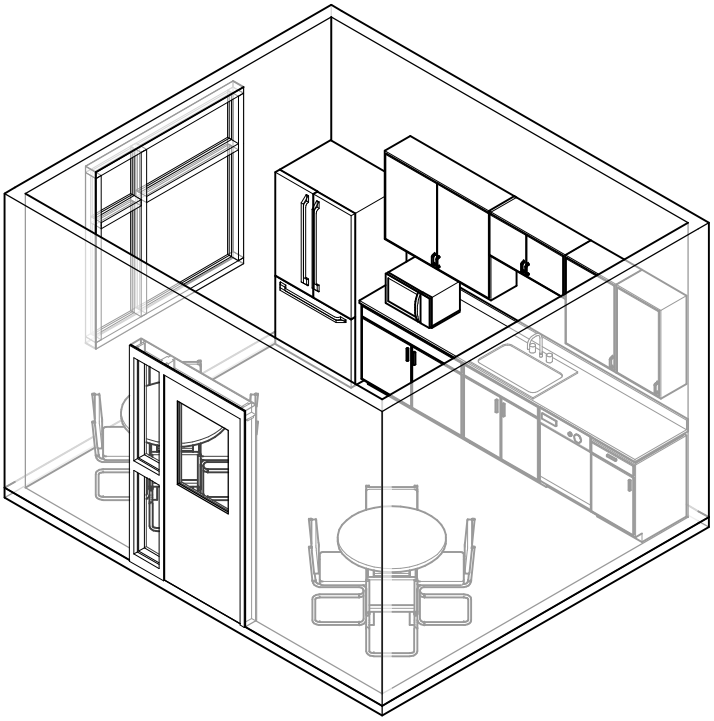
NATURAL LIGHTING W/ WINDOWS

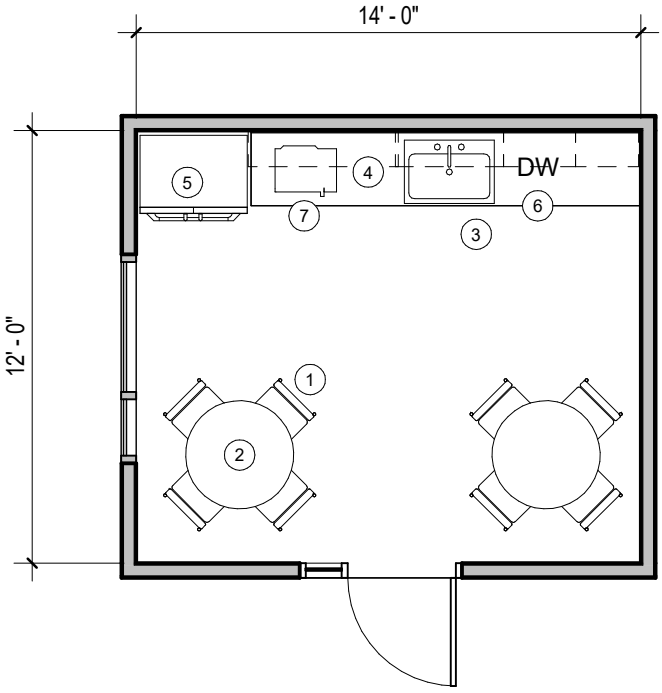
OCCUPANCY SENSORS FOR LIGHTING CONTROLS

HEATING / COOLING

COMPONENTS:

1. CONFERENCE TABLE
2. (6) CHAIRS
3. BOOKCASE
4. TV MONITOR





ADMIN BREAK ROOM - 168 SF

3/16" = 1'-0"

ROOM FINISHES:

CEILING:	ACOUSTICAL CEILING TILE
WALLS:	GYPSUM WALL BOARD, PAINTED
FLOORS:	RESILIENT FLOORING

MEP/DATA REQUIREMENTS:

DUPLEX ELECTRICAL OUTLETS

TEL/DATA OUTLET JACKS

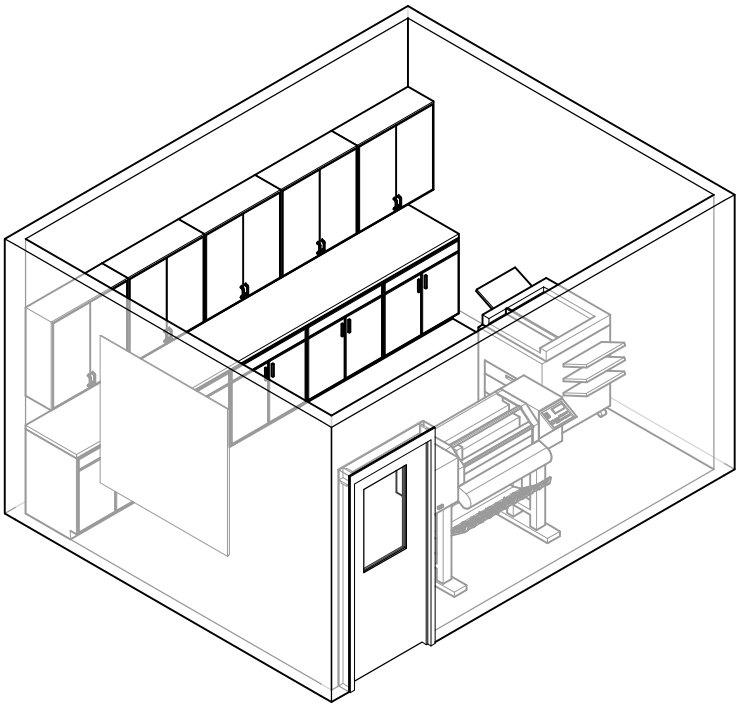
NATURAL LIGHTING W/ WINDOWS

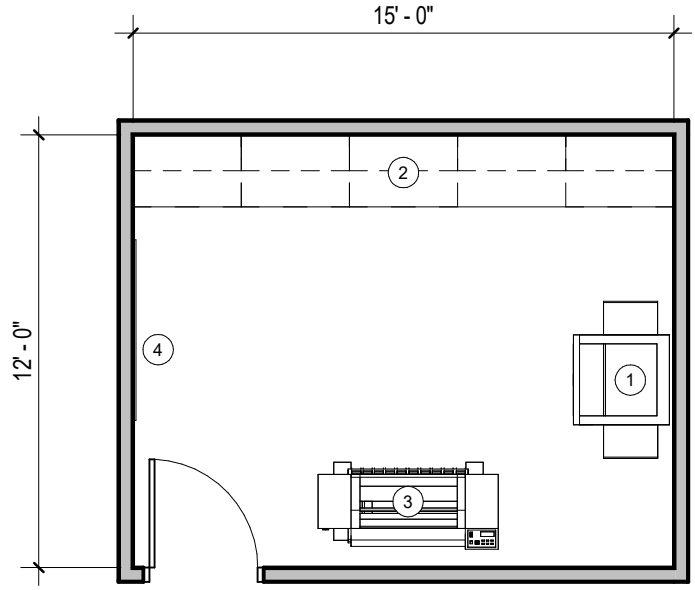
OCCUPANCY SENSORS FOR LIGHTING CONTROLS

HEATING / COOLING

COMPONENTS:

1. (8) CHAIRS
2. (2) 36" DIA TABLE
3. STAINLESS STEEL KITCHEN SINK
4. BASE CABINETS, COUNTER, & WALL HUNG CABINETS
5. REFRIGERATOR
6. DISHWASHER
7. MICROWAVE





COPY/ FILE/ MAIL ROOM - 180 SF

3/16" = 1'-0"

ROOM FINISHES:

CEILING:	ACOUSTICAL CEILING TILE
WALLS:	GYPSUM WALL BOARD, PAINTED
FLOORS:	RESILIENT FLOORING

MEP/DATA REQUIREMENTS:

HEATING

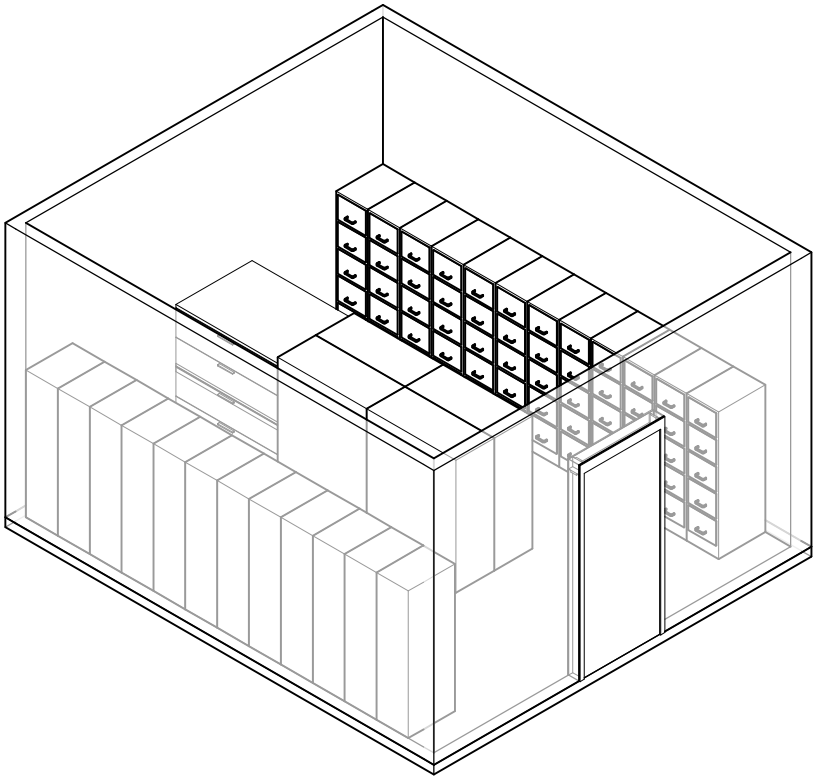
COOLING

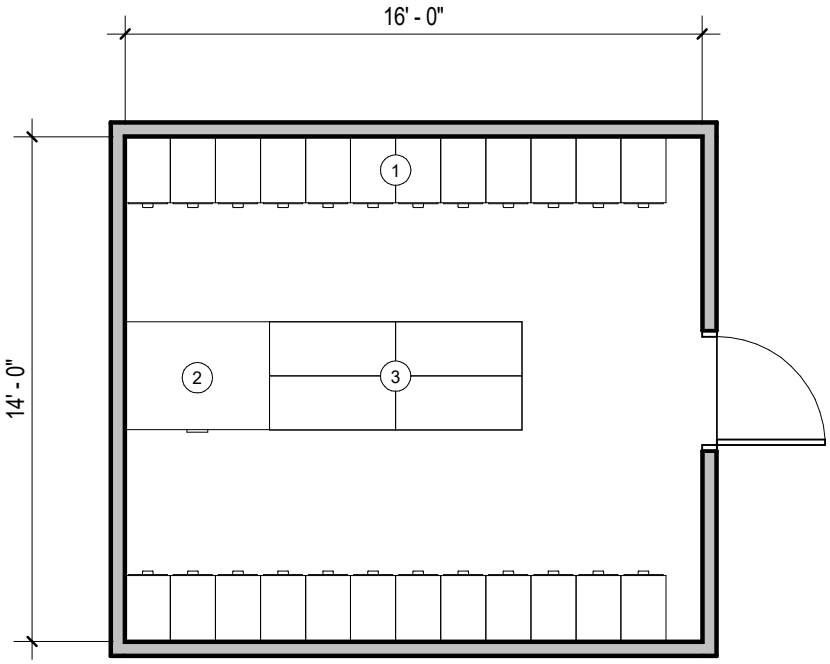
DUPLEX ELECTRICAL OUTLETS

DATA OUTLET JACKS

COMPONENTS:

1. COPY MACHINE
2. WORK COUNTER & CABINETS (BELOW & ABOVE)
3. PLOTTER
4. BULLETIN BOARD





FILE STORAGE - 224 SF

3/16" = 1'-0"

ROOM FINISHES:

CEILING:	ACOUSTICAL CEILING TILE
WALLS:	GYPSUM WALL BOARD, PAINTED
FLOORS:	RESILIENT FLOORING

MEP/DATA REQUIREMENTS:

DUPLEX ELECTRICAL OUTLETS

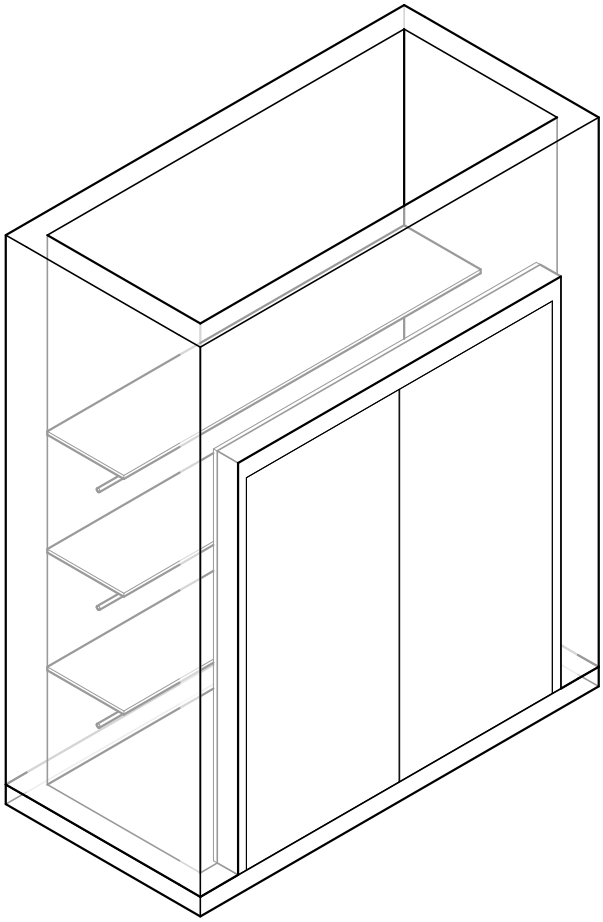
TEL/DATA OUTLET JACKS

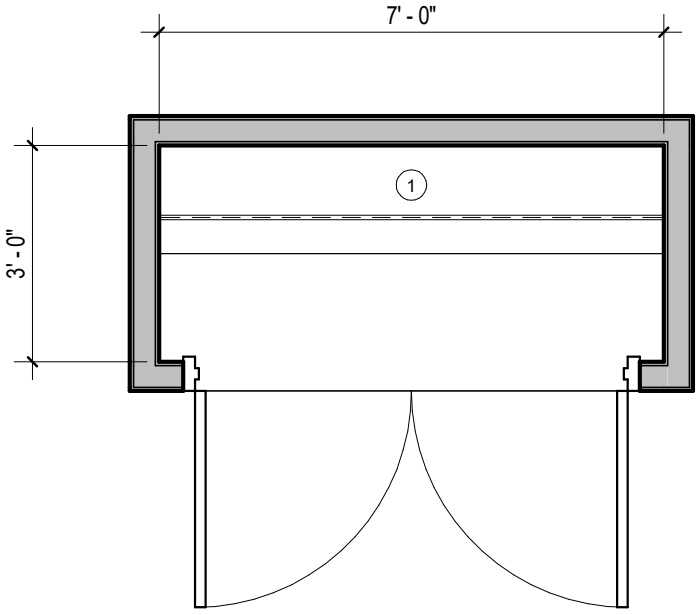
OCCUPANCY SENSORS FOR LIGHTING CONTROLS

HEATING / COOLING

COMPONENTS:

1. (24) 5-DRAWER FILE CABINETS
2. (4) FLAT FILES, STACKED 3-HIGH
3. (4) LATERAL FILE CABINETS 42" W x 18" D x 54" H





SMALL STORAGE CLOSET - 21 SF

3/8" = 1'-0"

ROOM FINISHES:

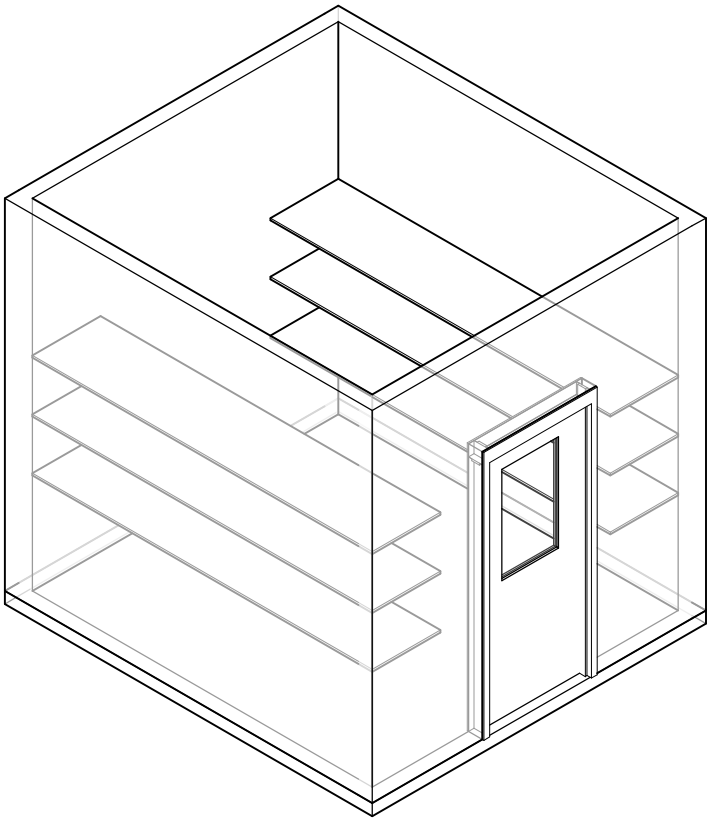
CEILING:	ACOUSTICAL CEILING TILE
WALLS:	GYPSUM WALL BOARD, PAINTED
FLOORS:	RESILIENT FLOORING

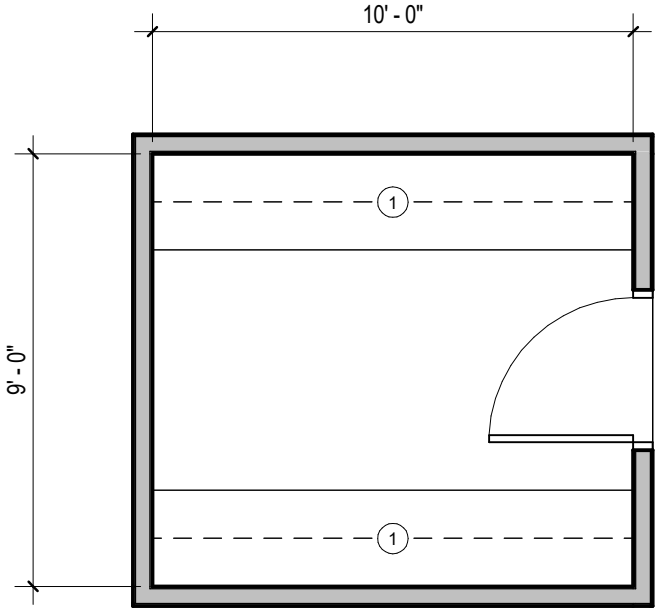
MEP/DATA REQUIREMENTS:

- ELECTRICAL OUTLETS

COMPONENTS:

1. WALL MOUNTED SHELVING





LARGE STORAGE CLOSET - 90 SF
1/4" = 1'-0"

ROOM FINISHES:

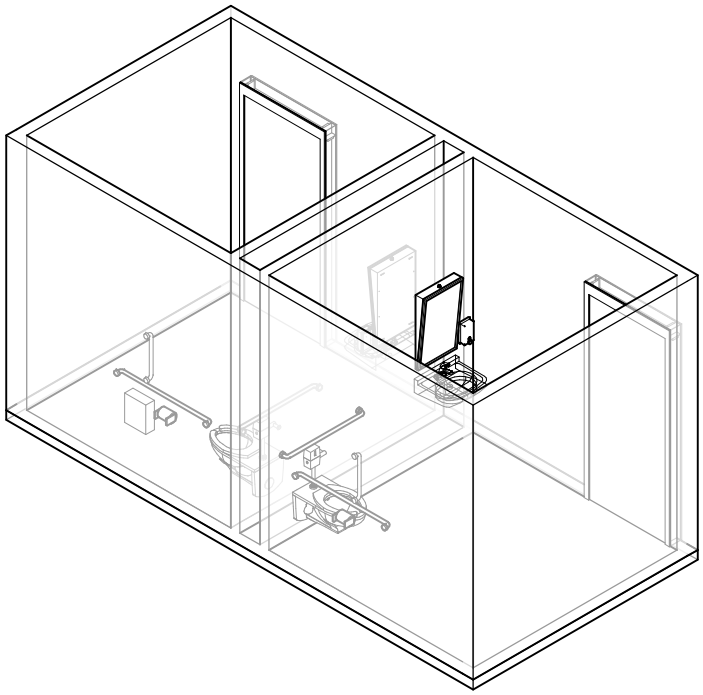
CEILING:	ACOUSTICAL CEILING TILE
WALLS:	GYPSUM WALL BOARD, PAINTED
FLOORS:	RESILIENT FLOORING

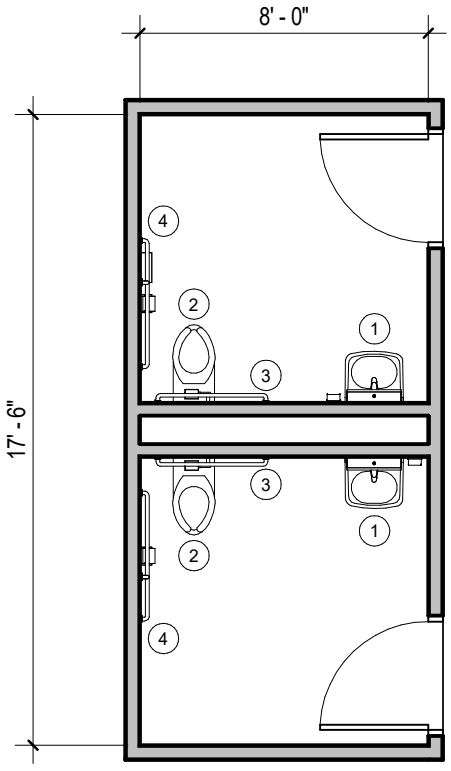
MEP/DATA REQUIREMENTS:

- ELECTRICAL OUTLETS

COMPONENTS:

1. WALL MOUNTED SHELVING





MALE & FEMALE TOILET FACILITIES - 140 SF
3/16" = 1'-0"

ROOM FINISHES:

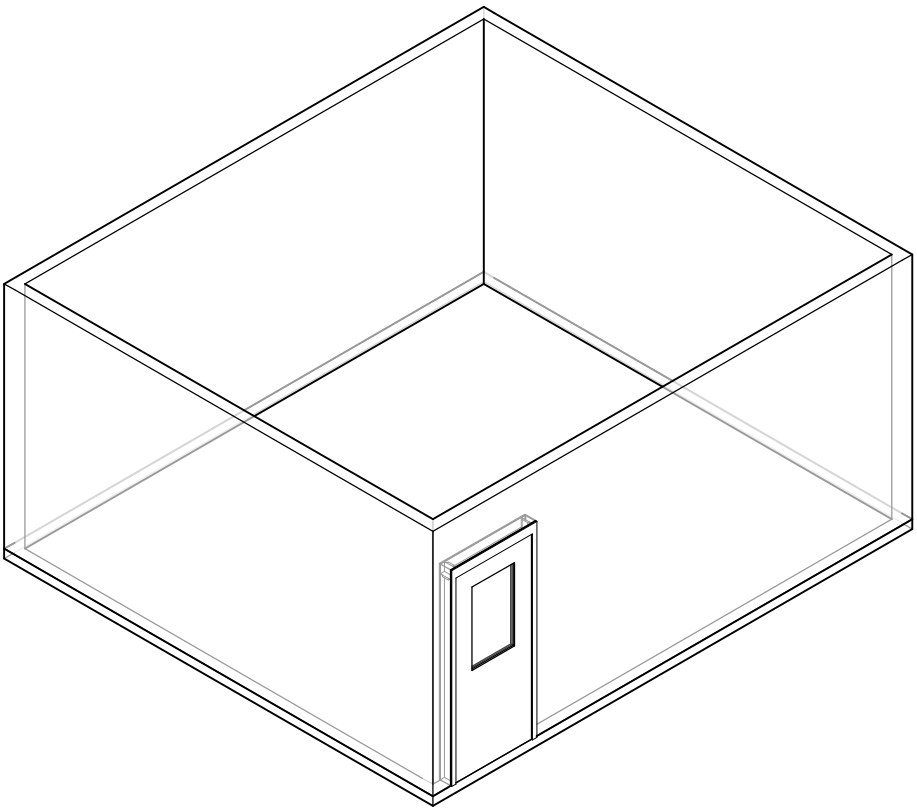
CEILING:	MOISTURE RESISTANT ACT TILE
WALLS:	CERAMIC TILE / MOISTURE RESISTANT GYPSUM WALL BOARD, PAINTED
FLOORS:	CERAMIC TILE

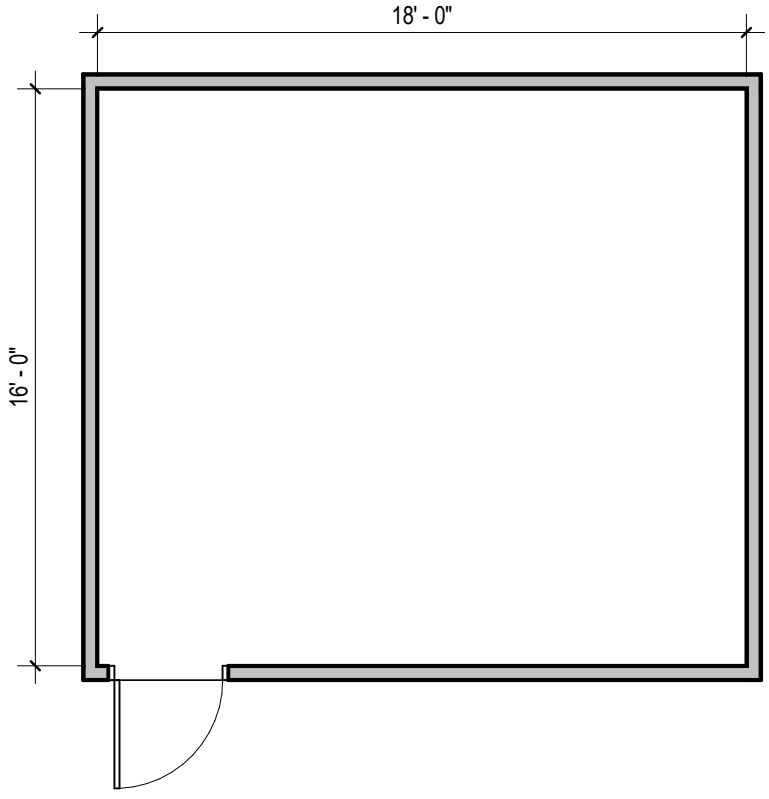
MEP/DATA REQUIREMENTS:

- GFI ELECTRICAL OUTLETS
- HEATING / COOLING
- OCCUPANCY SENSORS FOR LIGHTING CONTROLS

COMPONENTS:

1. (2) WALL HUNG SINK
2. (2) WALL HUNG TOILET
3. (2) 36" GRAB BAR
4. (2) 48" GRAB BAR





MECHANICAL ROOM - 288 SF

3/16" = 1'-0"

ROOM FINISHES:

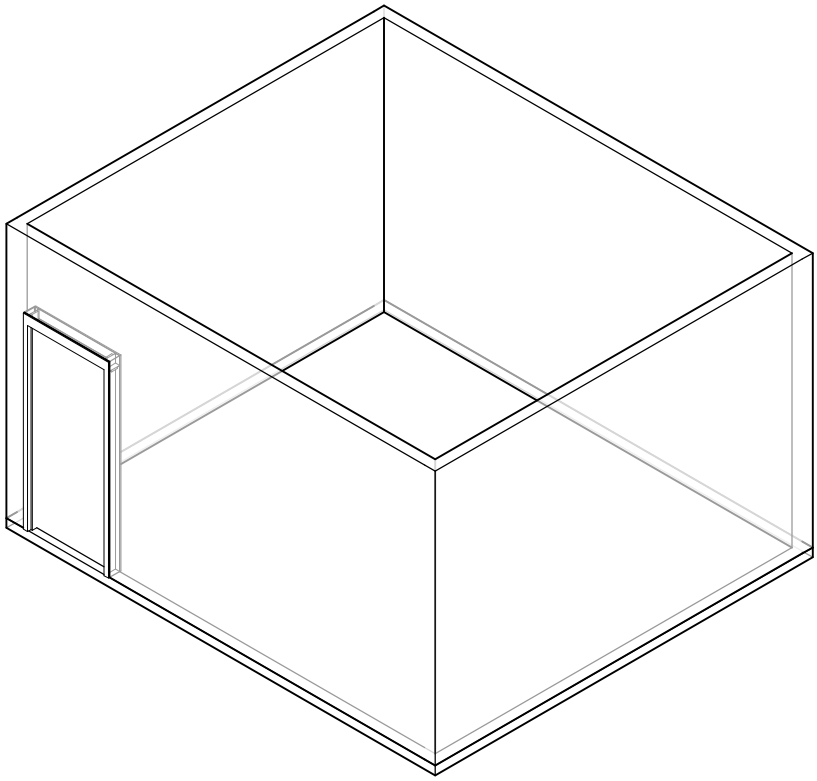
CEILING:	ACOUSTICAL CEILING TILE
WALLS:	GYPSUM WALL BOARD, PAINTED
FLOORS:	SEALED CONCRETE

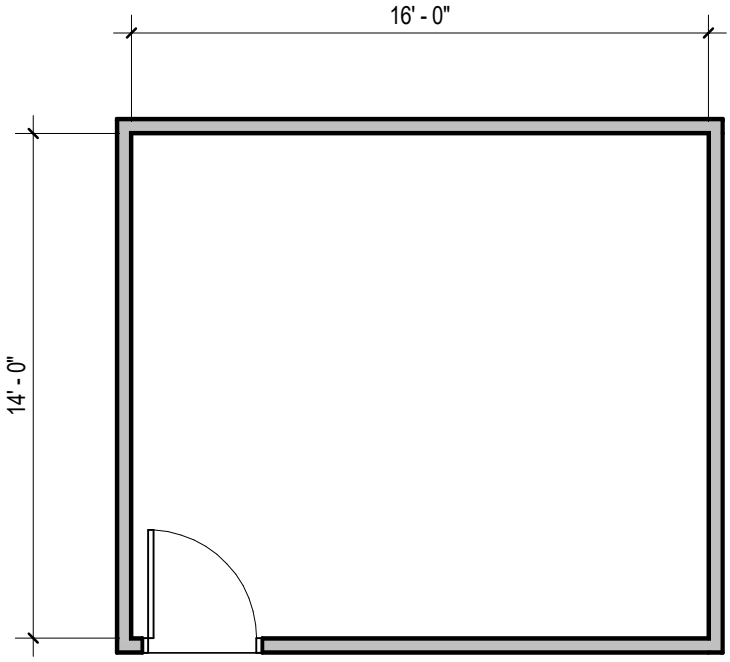
MEP/DATA REQUIREMENTS:

DUPLEX ELECTRICAL OUTLETS

DATA OUTLET JACKS

COMPONENTS:





ELECTRIC ROOM - 224 SF
3/16" = 1'-0"

ROOM FINISHES:

CEILING:	ACOUSTICAL CEILING TILE
WALLS:	GYPSUM WALL BOARD, PAINTED
FLOORS:	SEALED CONCRETE

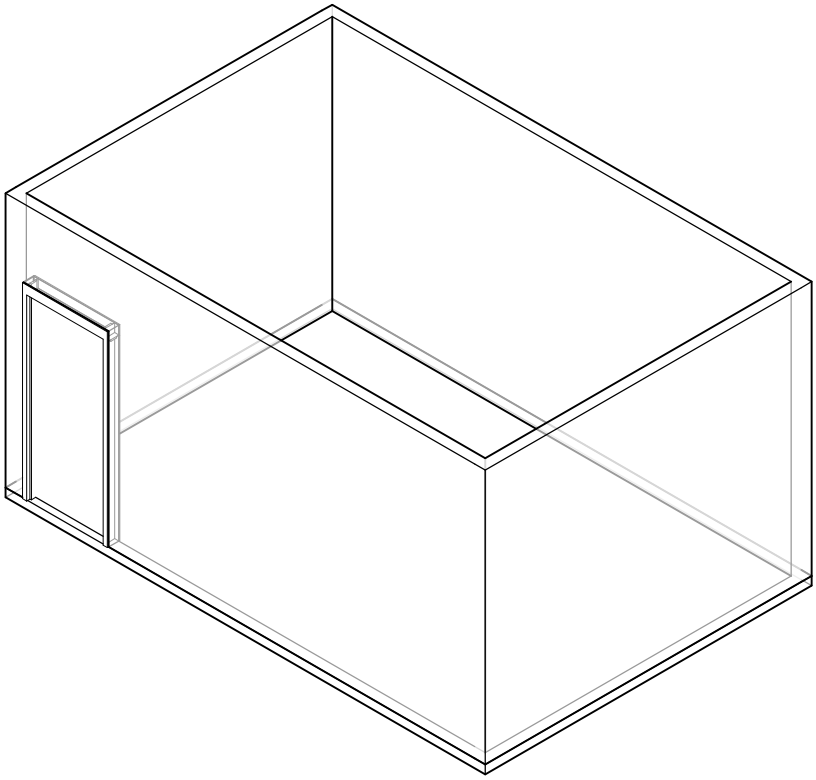
MEP/DATA REQUIREMENTS:

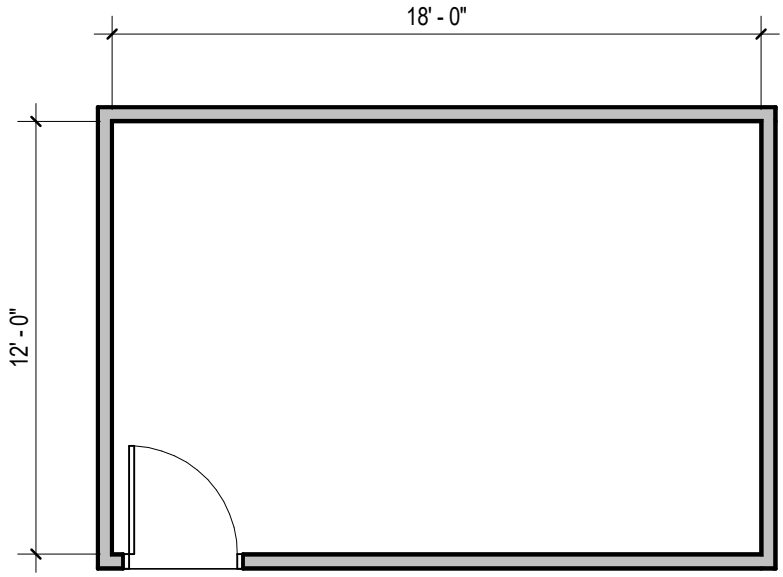
DUPLEX ELECTRICAL OUTLETS

DATA OUTLET JACKS

COMPONENTS:

1. WALL MOUNTED PANELS





PL / FIRE PROTECTION ROOM - 216 SF
3/16" = 1'-0"

ROOM FINISHES:

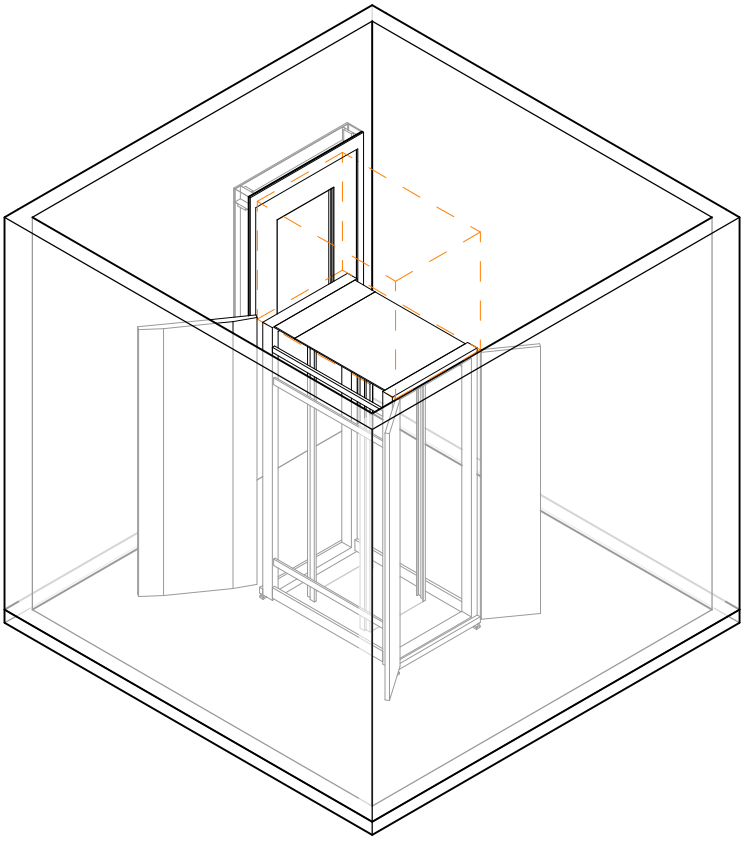
CEILING:	ACOUSTICAL CEILING TILE
WALLS:	GYPSUM WALL BOARD, PAINTED
FLOORS:	SEALED CONCRETE

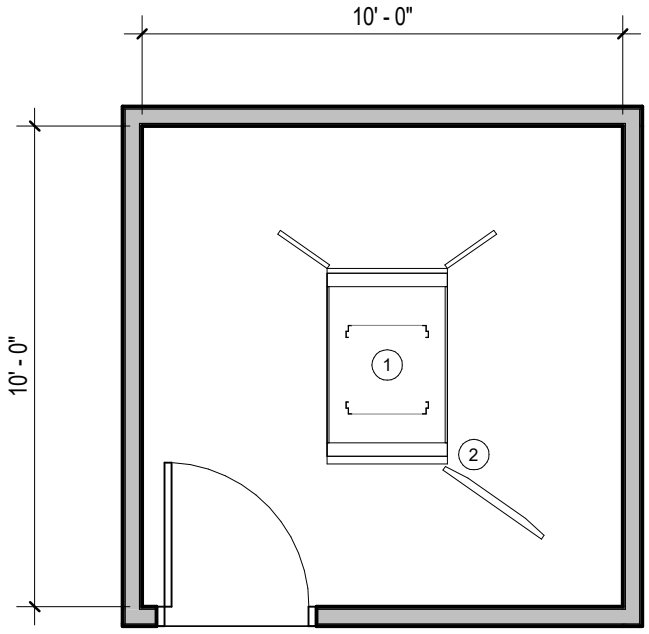
MEP/DATA REQUIREMENTS:

DUPLEX ELECTRICAL OUTLETS

DATA OUTLET JACKS

COMPONENTS:





TEL / DATA ROOM - 100 SF

1/4" = 1'-0"

ROOM FINISHES:

CEILING:	ACOUSTICAL CEILING TILE
WALLS:	GYPSUM WALL BOARD, PAINTED
FLOORS:	RESILIENT FLOORING

MEP/DATA REQUIREMENTS:

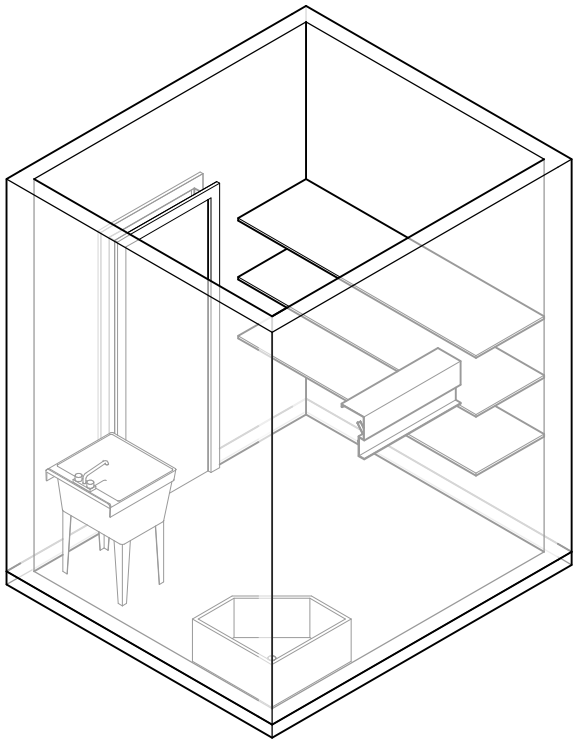
DUPLEX ELECTRICAL OUTLETS

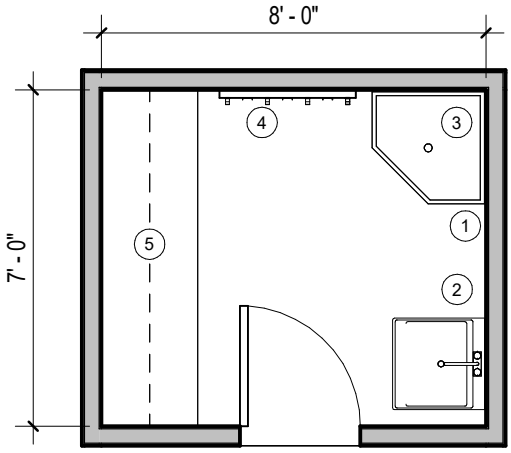
DATA OUTLET JACKS

RACK-MOUNTED POWER

COMPONENTS:

1. DATA RACK
2. PLYWOOD BACK BOARD FOR BUILDING SYSTEM COMPONENTS (SECURITY, CABLE, ETC.)





JANITOR CLOSET - 56 SF
1/4" = 1'-0"

ROOM FINISHES:

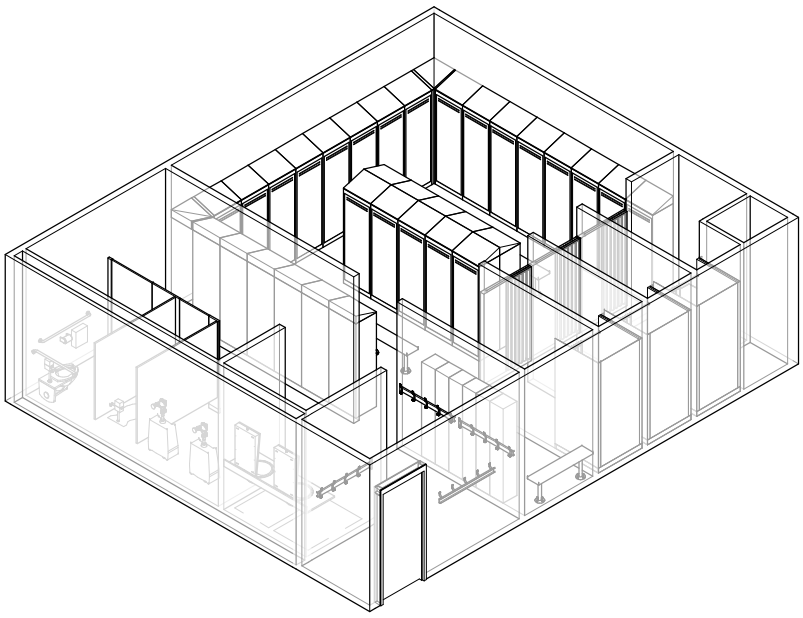
CEILING:	MOISTURE RESISTANT ACT TILE
WALLS:	CERAMIC TILE / MOISTURE RESISTANT GYPSUM WALL BOARD, PAINTED
FLOORS:	RESILIENT FLOORING

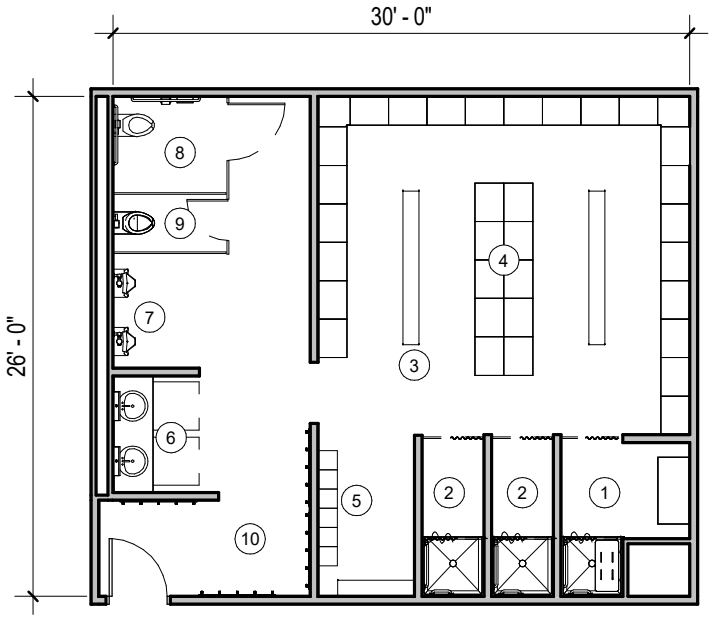
MEP/DATA REQUIREMENTS:

DUPLEX ELECTRICAL OUTLETS

COMPONENTS:

1. FRP PANELING AT SINK
2. UTILITY SINK
3. MOP BASIN
4. UTILITY SHELF W/ MOP & BROOM HOLDERS
5. FACILITIES SUPPLY CLOSET





MALE LOCKER ROOM - 780 SF

1" = 10'-0"

ROOM FINISHES:

CEILING:	MOISTURE RESISTANT ACT TILE
WALLS:	CERAMIC TILE / MOISTURE RESISTANT GYPSUM WALL BOARD, PAINTED
FLOORS:	RESINOUS EPOXY

MEP/DATA REQUIREMENTS:

GFI ELECTRICAL OUTLETS

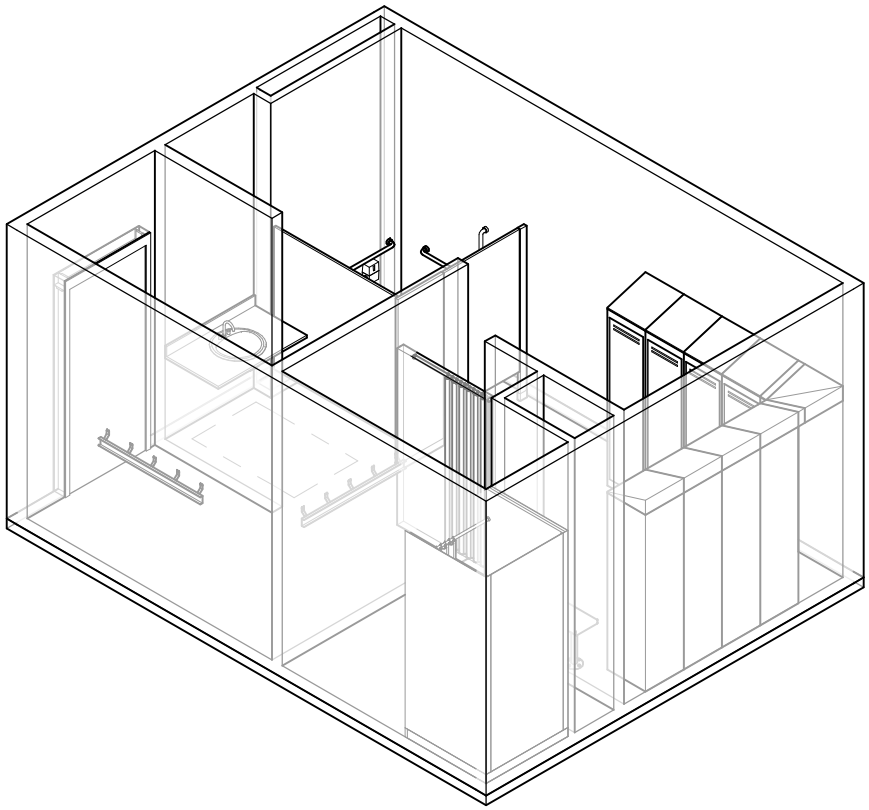
OCCUPANCY SENSORS FOR LIGHTING CONTROLS

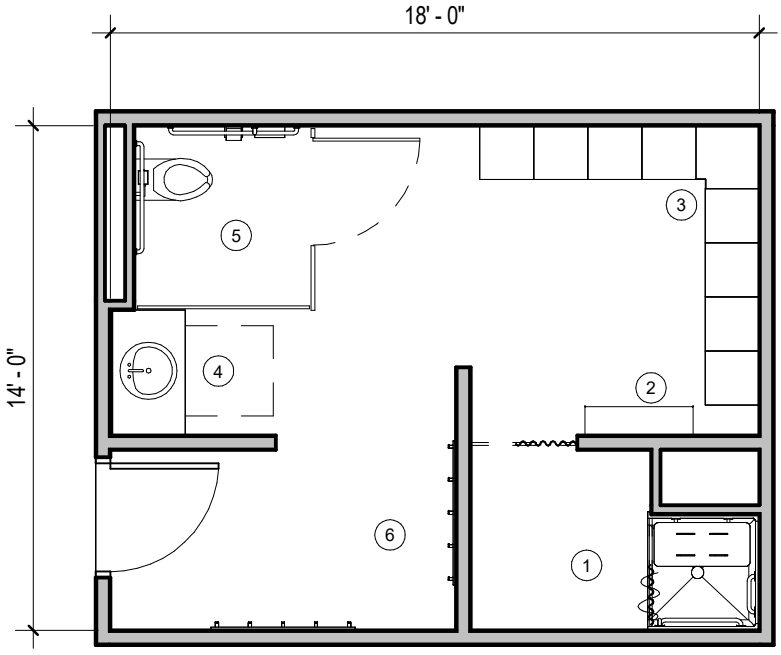
HEATING

COOLING

COMPONENTS:

1. ADA SHOWER STALL
2. (2) STANDARD SHOWER STALLS
3. BENCH
4. (32) 18" X 24" LOCKERS
5. (6) 12" X 12" SEASONAL LOCKERS
6. COUNTER, SINK & MIRROR
7. WALL HUNG URINAL
8. ADA STALL
9. STANDARD STALL
10. WET GEAR ALCOVE W/ HOOKS





FEMALE LOCKER ROOM (4) - 252 SF

3/16" = 1'-0"

ROOM FINISHES:

CEILING:	MOISTURE RESISTANT ACT TILE
WALLS:	CERAMIC TILE / MOISTURE RESISTANT GYPSUM WALL BOARD, PAINTED
FLOORS:	RESINOUS EPOXY

MEP/DATA REQUIREMENTS:

GFI ELECTRICAL OUTLETS

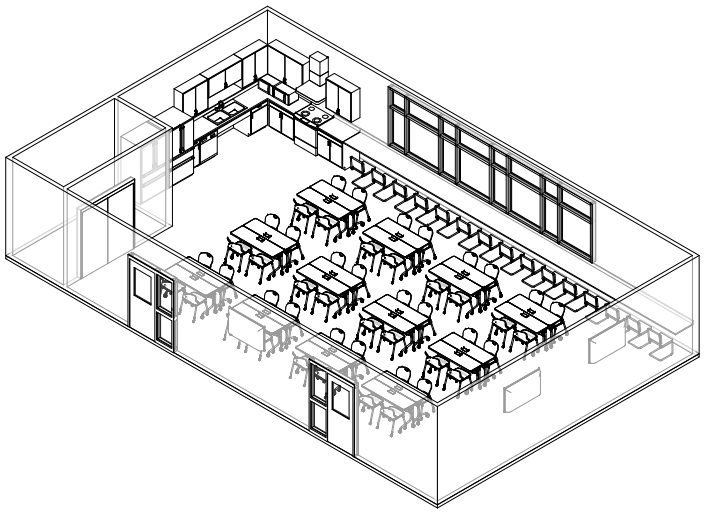
OCCUPANCY SENSORS FOR LIGHTING CONTROLS

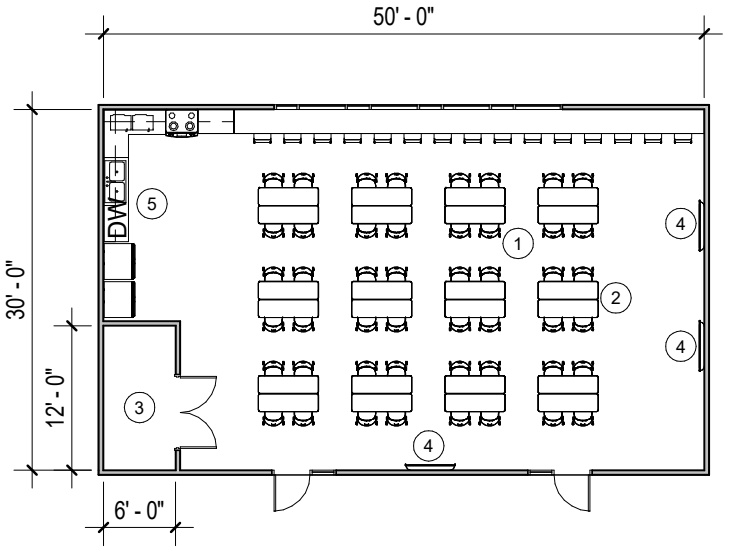
HEATING

COOLING

COMPONENTS:

1. ADA SHOWER STALL
2. BENCH
3. (8) 18" X 24" LOCKERS
4. COUNTER, SINK & MIRROR
5. ADA STALL
6. WET GEAR ALCOVE W/ HOOKS





MUSTER ROOM - 1,500 SF
1/16" = 1'-0"

ROOM FINISHES:

CEILING:	ACOUSTICAL CEILING TILE
WALLS:	GYPSUM WALL BOARD, PAINTED
FLOORS:	RESILIENT FLOORING

MEP/DATA REQUIREMENTS:

DUPLEX ELECTRICAL OUTLETS

TEL/DATA OUTLET JACKS

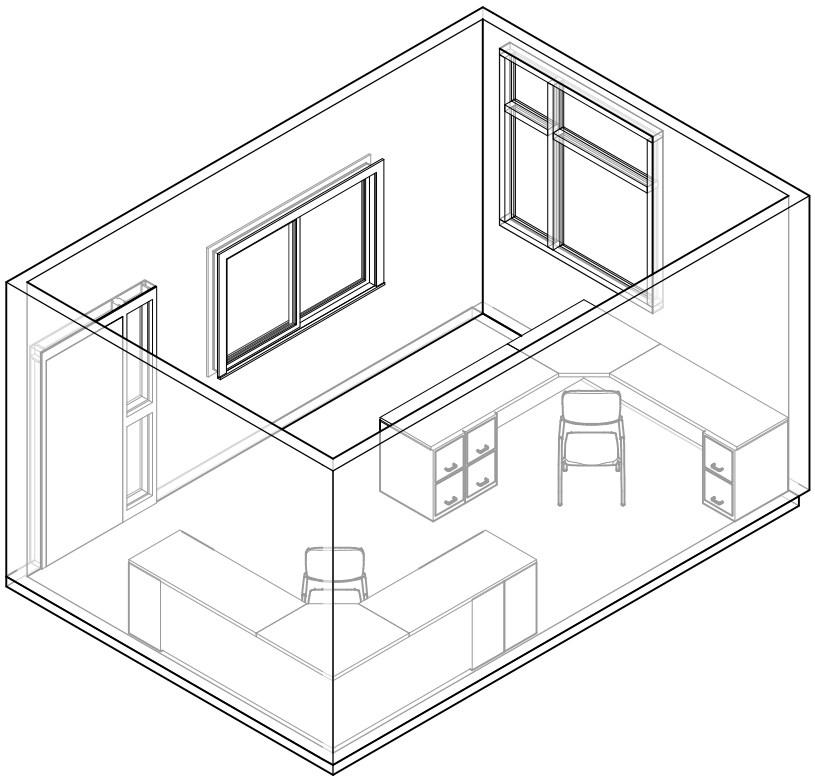
NATURAL LIGHTING W/ WINDOWS

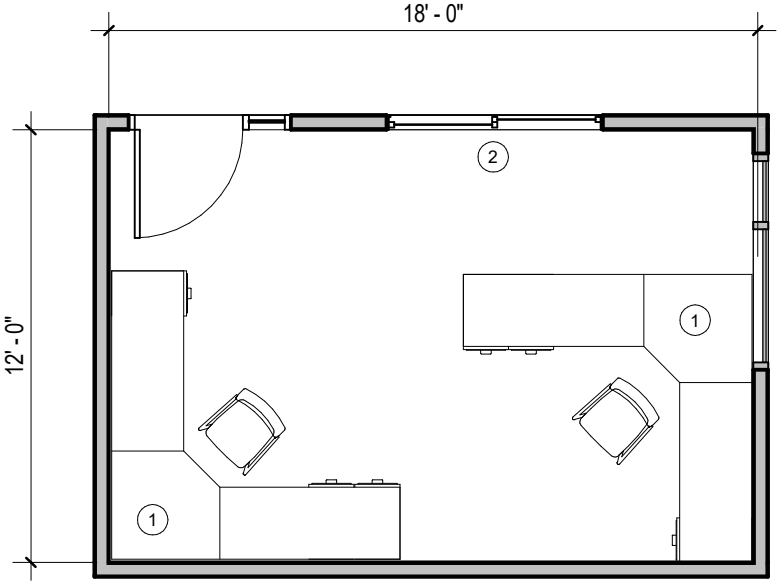
OCCUPANCY SENSORS FOR LIGHTING CONTROLS

HEATING / COOLING

COMPONENTS:

1. (63) TASK CHAIRS
2. (24) TASK TABLES
3. COT STORAGE CLOSET
4. WALL MOUNTED TELEVISION
5. KITCHEN, INCLUDES:
- SOLID SURFACE COUNTERS
- BASE & WALL CABINETS
- STAINLESS STEEL SINK
- REFRIGERATOR (2)
- DISHWASHER
- ELECTRIC COOKTOP W/ HOOD
- WALL OVEN
- MICROWAVE (2)





SHARED FOREMAN OFFICE - 240 SF

3/16" = 1'-0"

ROOM FINISHES:

CEILING:	ACOUSTICAL CEILING TILE
WALLS:	GYPSUM WALL BOARD, PAINTED
FLOORS:	RESILIENT FLOORING

MEP/DATA REQUIREMENTS:

HEATING

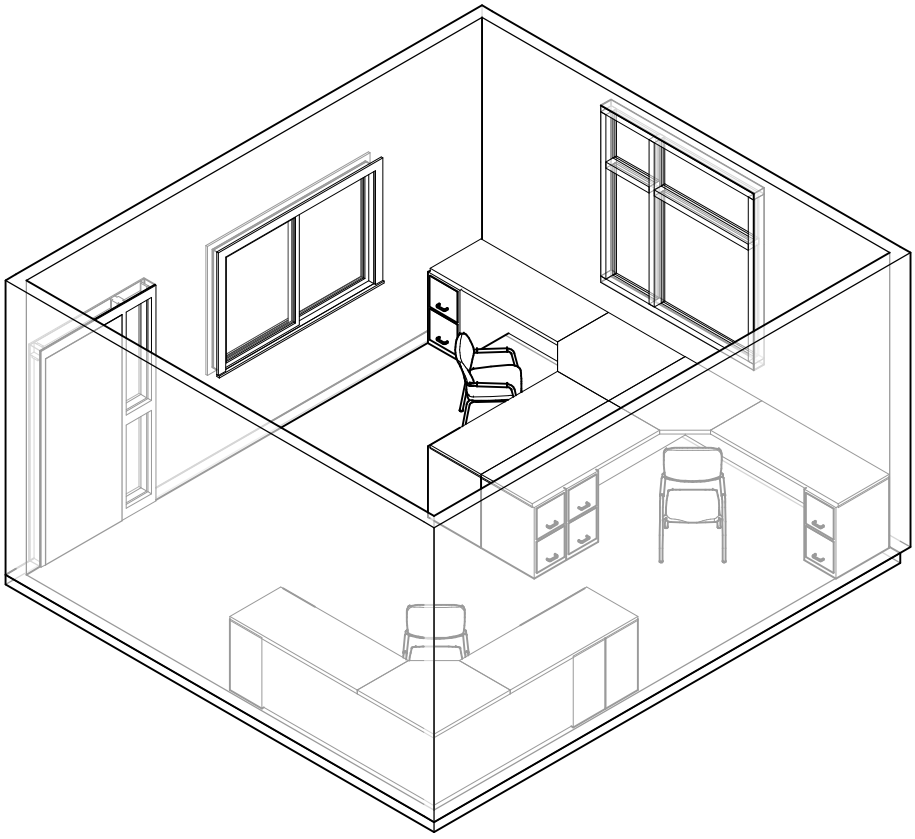
COOLING

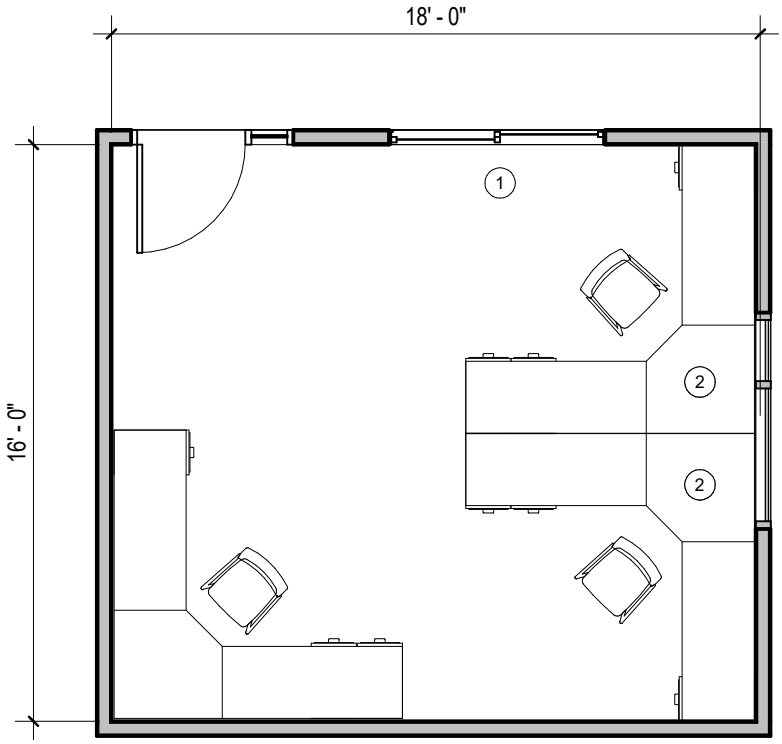
DUPLEX ELECTRICAL OUTLETS

DATA OUTLET JACKS

COMPONENTS:

1. WINDOW TO FLEET
2. WORK STATION





SHARED FOREMAN OFFICE (3) - 288 SF

3/16" = 1'-0"

ROOM FINISHES:

CEILING:	ACOUSTICAL CEILING TILE
WALLS:	GYPSUM WALL BOARD, PAINTED
FLOORS:	RESILIENT FLOORING

MEP/DATA REQUIREMENTS:

HEATING

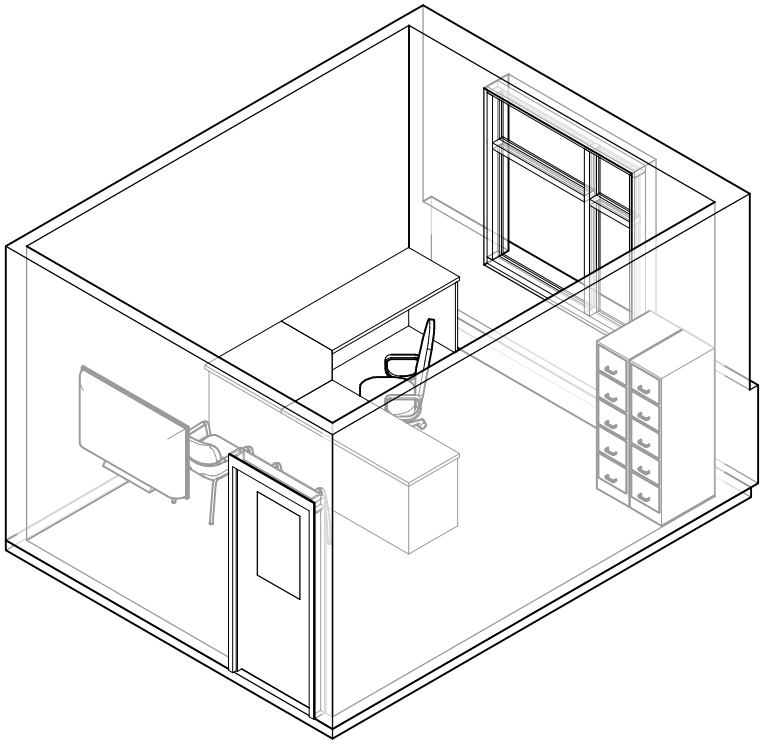
COOLING

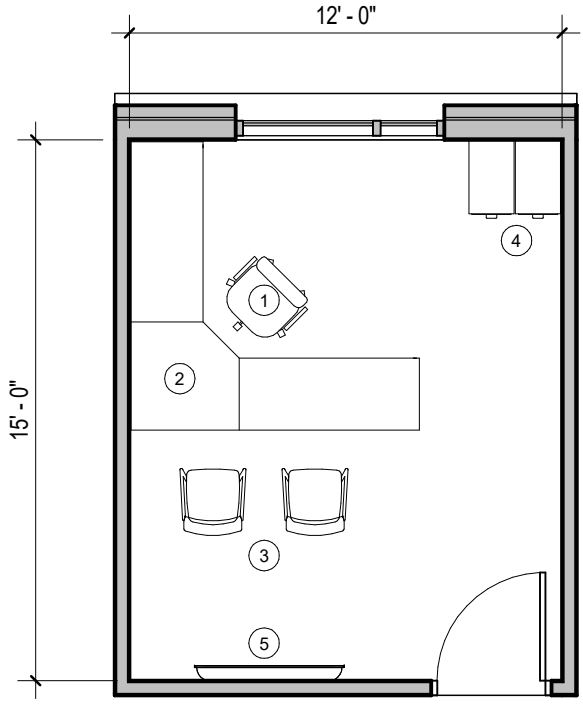
DUPLEX ELECTRICAL OUTLETS

DATA OUTLET JACKS

COMPONENTS:

1. WINDOW TO FLEET
2. WORK STATION





GENERAL FOREMAN OFFICE - 180 SF
3/16" = 1'-0"

ROOM FINISHES:

CEILING:	ACOUSTICAL CEILING TILE
WALLS:	GYPSUM WALL BOARD, PAINTED
FLOORS:	RESILIENT FLOORING

MEP/DATA REQUIREMENTS:

DUPLEX ELECTRICAL OUTLETS

TEL/DATA OUTLET JACKS

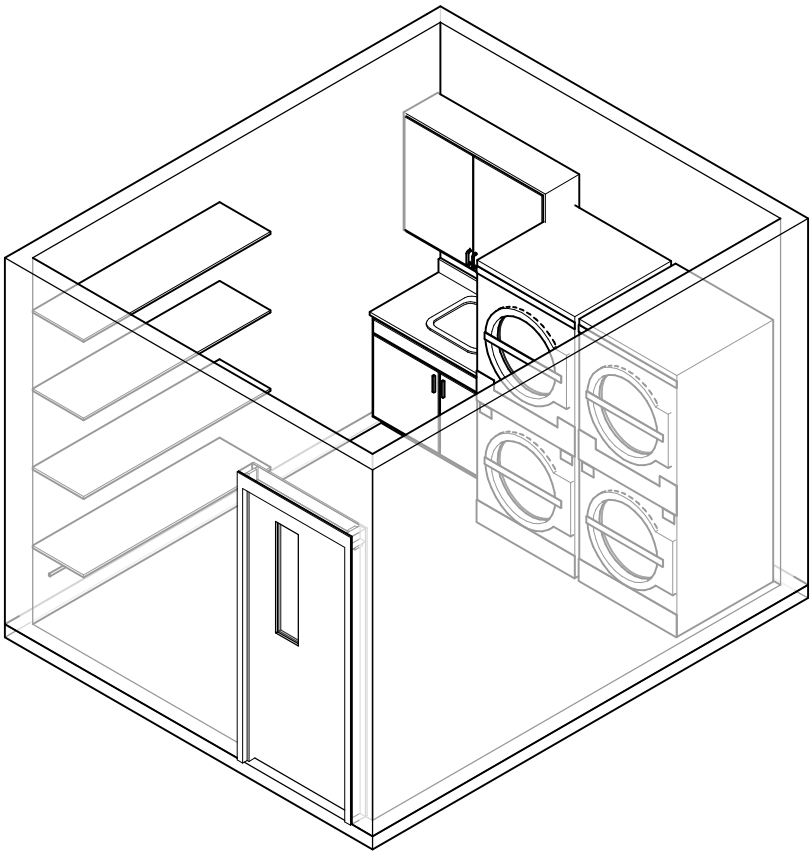
NATURAL LIGHTING W/ WINDOWS

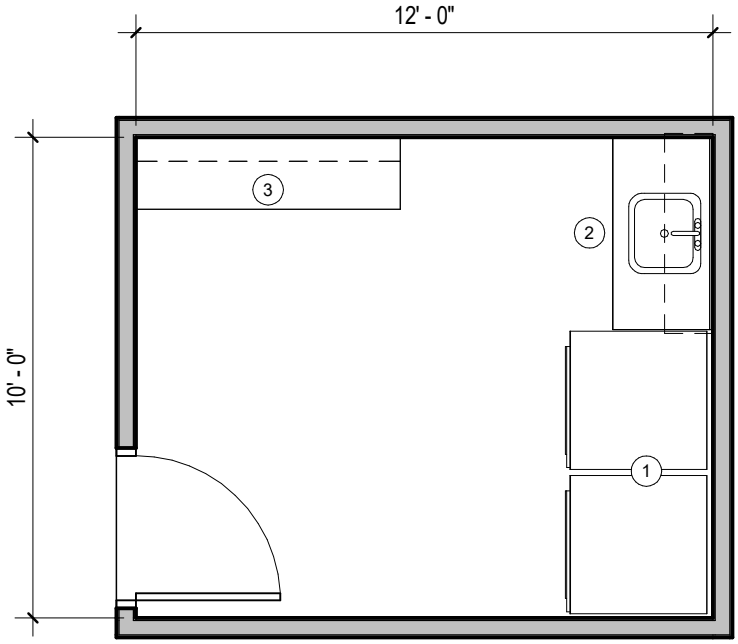
OCCUPANCY SENSORS FOR LIGHTING CONTROLS

HEATING / COOLING

COMPONENTS:

1. EXCETUTIVE CHAIR
2. WORKSTATION
3. GUEST CHAIRS
4. FILE CABINETS
5. TV MONITOR





LAUNDRY ROOM - 120 SF
1/4" = 1'-0"

ROOM FINISHES:

CEILING:	MOISTURE RESISTANT ACT TILE
WALLS:	CERAMIC TILE / MOISTURE RESISTANT GYPSUM WALL BOARD, PAINTED
FLOORS:	RESINOUS EPOXY

MEP/DATA REQUIREMENTS:

GFI ELECTRICAL OUTLETS

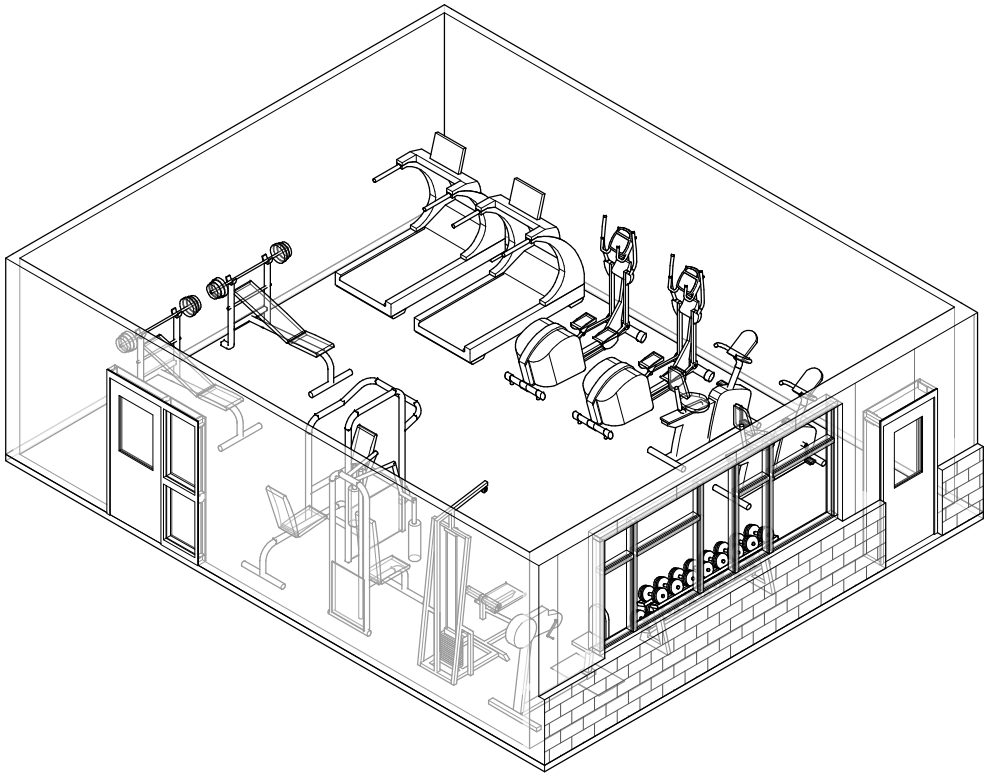
OCCUPANCY SENSORS FOR LIGHTING CONTROLS

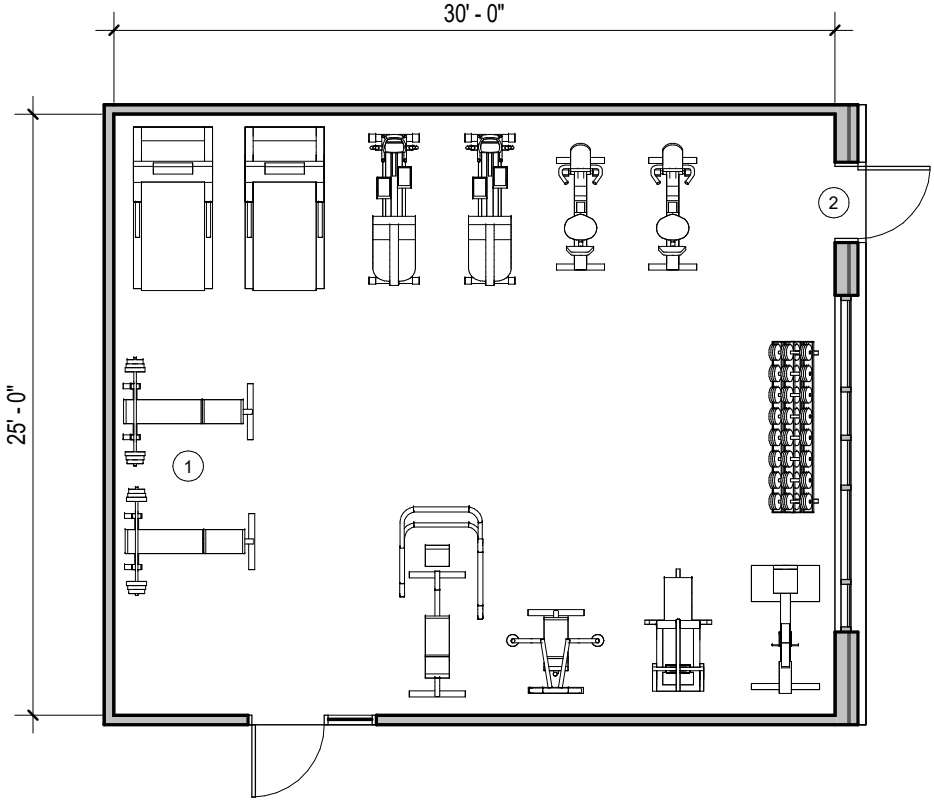
HEATING

COOLING

COMPONENTS:

1. STACKABLE WASHER / DRYER (2)
2. COUNTER, SINK, & CABINETS (BELOW & ABOVE)
3. WALL MOUNTED UNIFORM RACK





FITNESS / TRAINING ROOM - 750 SF

1/8" = 1'-0"

ROOM FINISHES:

CEILING:	ACOUSTICAL CEILING TILE
WALLS:	GYPSUM WALL BOARD, PAINTED
FLOORS:	RESILIENT FLOORING

MEP/DATA REQUIREMENTS:

DUPLEX ELECTRICAL OUTLETS

TEL/DATA OUTLET JACKS

NATURAL LIGHTING W/ WINDOWS

OCCUPANCY SENSORS FOR LIGHTING CONTROLS

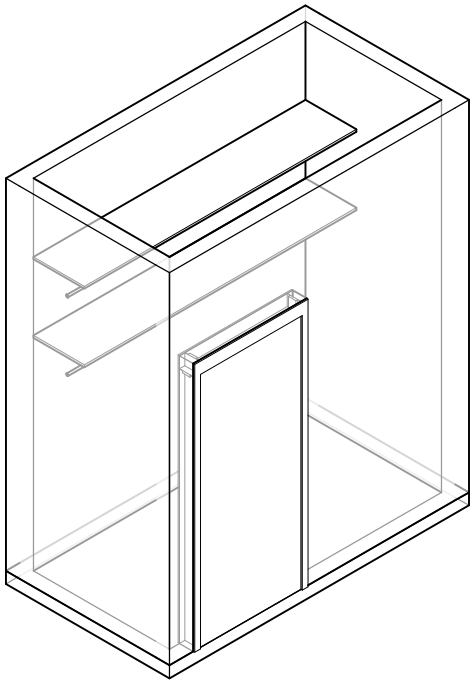
HEATING / COOLING

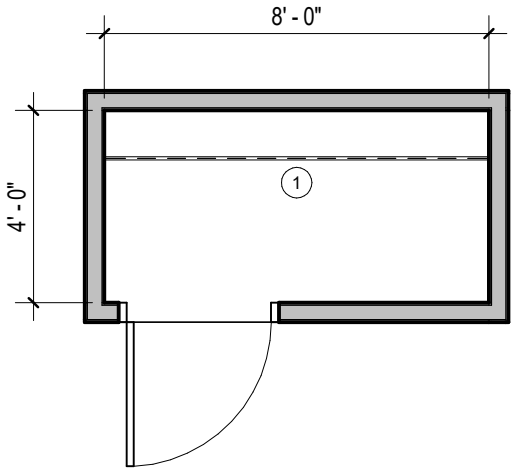
SECURITY CAMERA

KEY CARD ACCESS

COMPONENTS:

1. FITNESS EQUIPMENT TBD
2. EXTERIOR ACCESS DOOR





SAFETY EQUIPMENT STORAGE CLOSET - 32 SF
1/4" = 1'-0"

ROOM FINISHES:

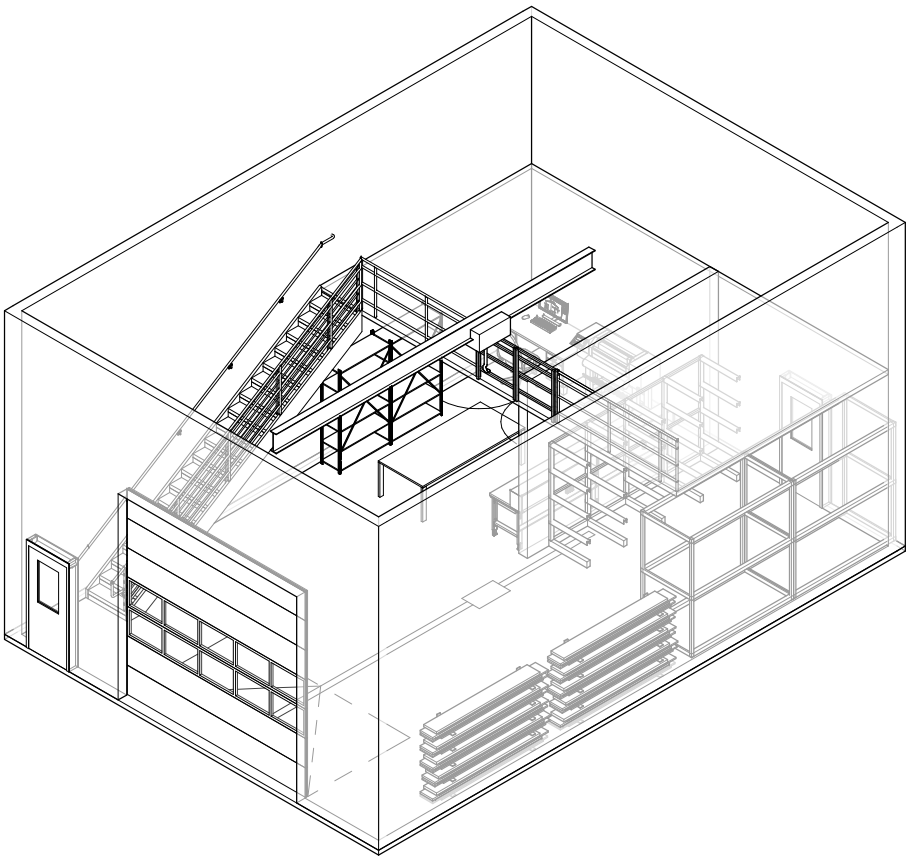
CEILING:	ACOUSTICAL CEILING TILE
WALLS:	GYPSUM WALL BOARD, PAINTED
FLOORS:	RESILIENT FLOORING

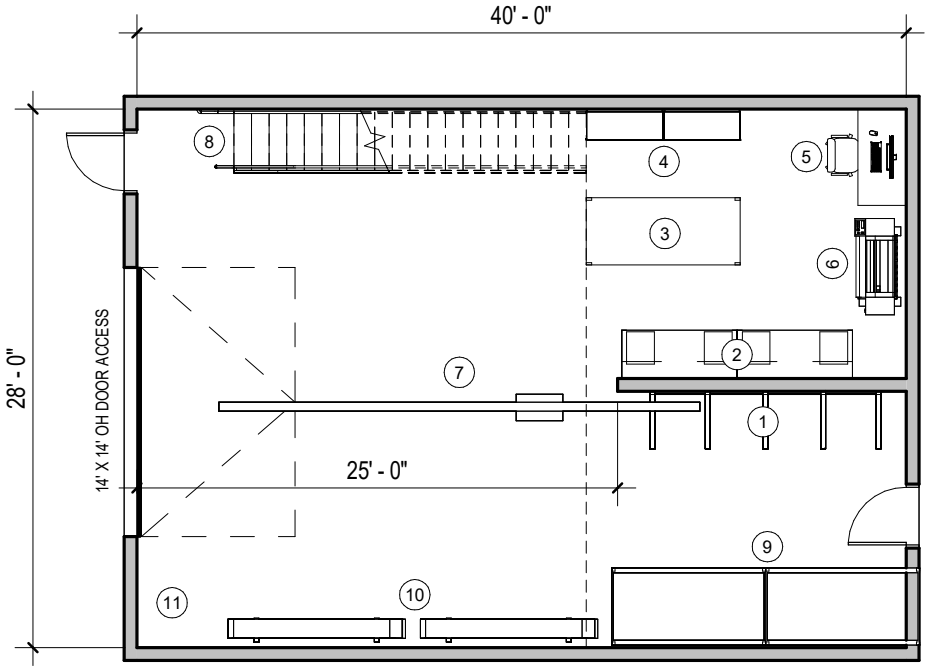
MEP/DATA REQUIREMENTS:

- ELECTRICAL OUTLETS

COMPONENTS:

1. WALL MOUNTED SHELVING





SIGNS & LINES SHOP - 1,120 SF

1" = 10'-0"

ROOM FINISHES:

CEILING: OPEN TO STRUCTURE

WALLS: CMU, PAINTED

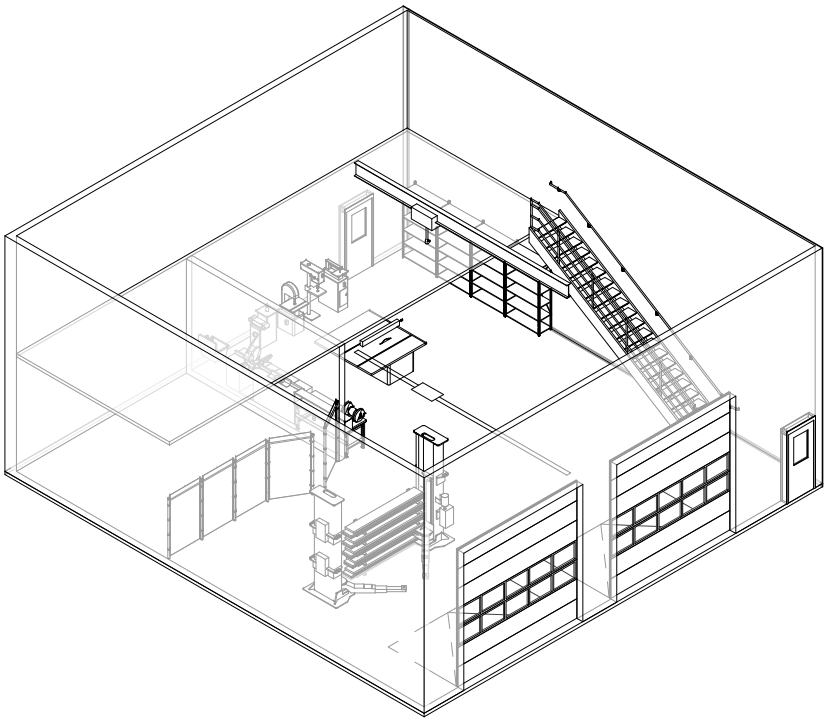
FLOORS: SEALED CONCRETE

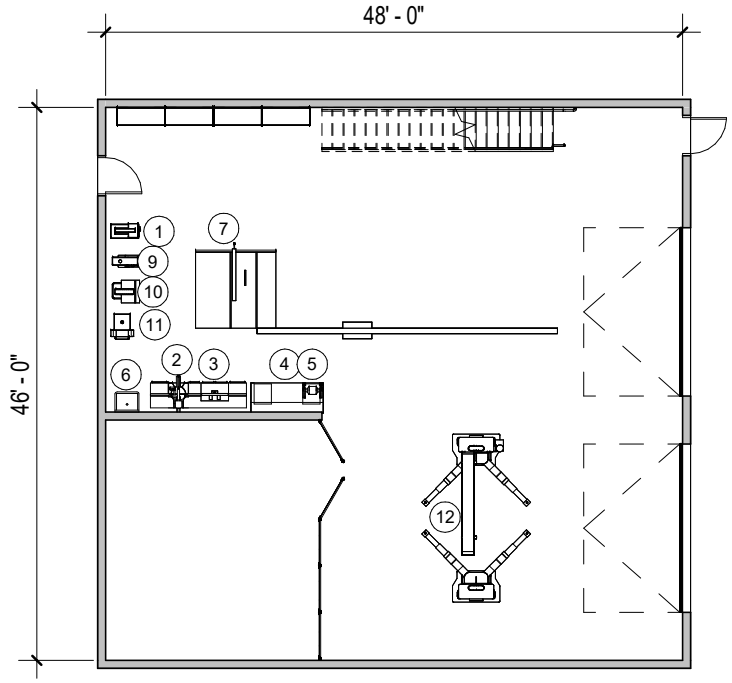
MEP/DATA REQUIREMENTS:

- HEATING / COOLING
- DUPLEX ELECTRICAL OUTLETS
- DUST COLLECTION

COMPONENTS:

1. SIGN STORAGE RACKS
2. WORKBENCH
3. LAYOUT / WORK TABLE
4. SHELVING / SUPPLY STORAGE
5. COMPUTER WORK STATION
6. SIGN PRINTER
7. MONORAIL
8. MEZZANINE STORAGE ABOVE
9. PALLET RACK
10. LUMBER RACK
11. VERTICAL LUMBER STORAGE





FACILITIES WORKSHOP (2-BAY) - 2,208 SF

1/16" = 1'-0"

ROOM FINISHES:

CEILING: OPEN TO STRUCTURE

WALLS: CMU, PAINTED

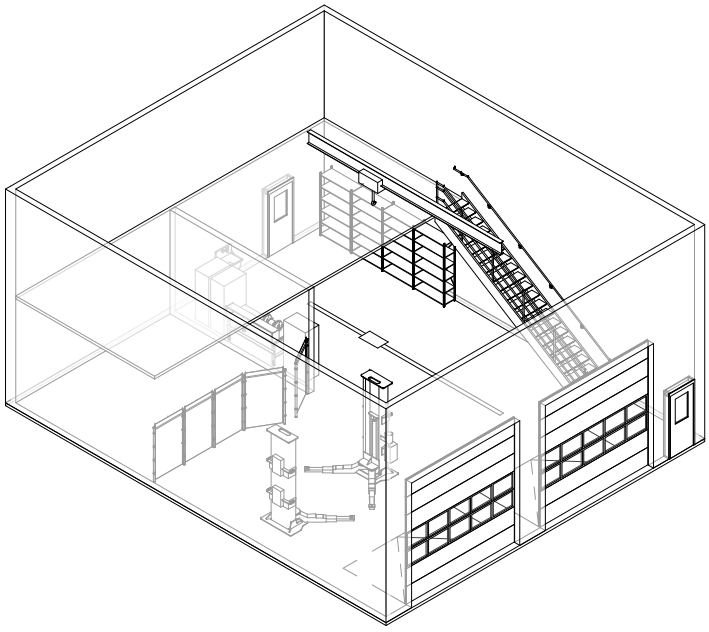
FLOORS: SEALED CONCRETE

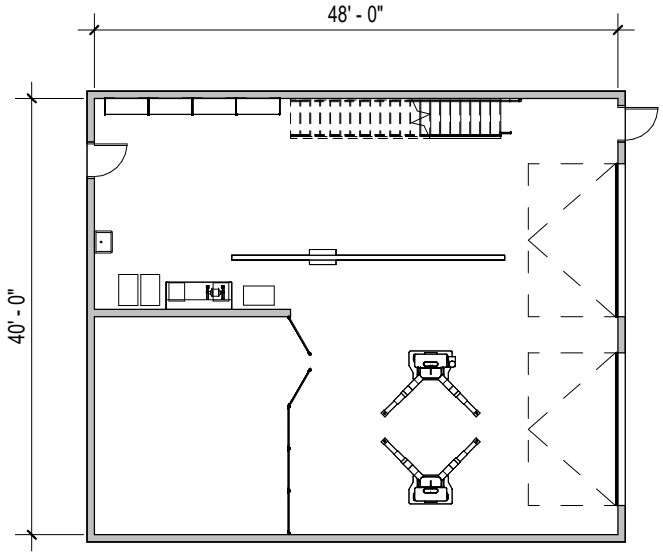
MEP/DATA REQUIREMENTS:

- HEATING / COOLING
- DUPLEX ELECTRICAL OUTLETS
- DUST COLLECTION

COMPONENTS:

1. VEHICLE LIFT
2. 1-TON MONORAIL
3. RACK STORAGE FOR PARTS & MATERIALS
4. WORK BENCH & CARPENTRY OPERATIONS
5. SHOP SINK
6. SECURE HAND TOOL STORAGE CRIB
7. POTENTIAL PROVISIONS FOR PARTS CLEANERS





WORKSHOP (2-BAY) - 1,920 SF
1/16" = 1'-0"

ROOM FINISHES:

CEILING: OPEN TO STRUCTURE

WALLS: CMU, PAINTED

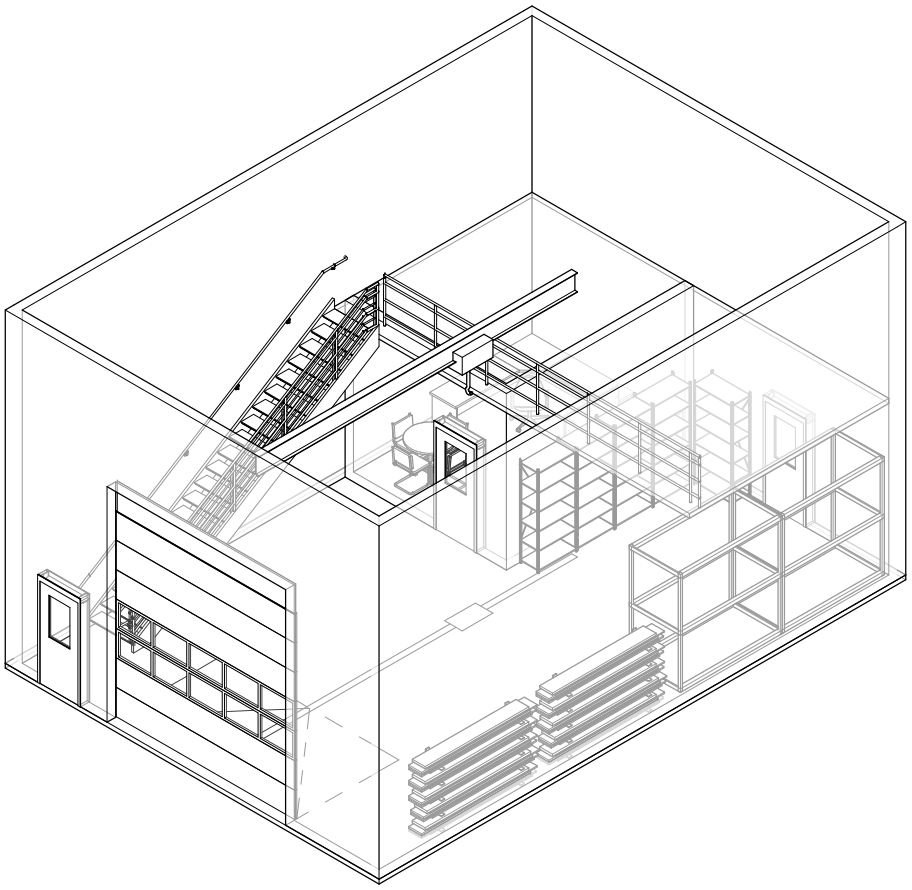
FLOORS: SEALED CONCRETE

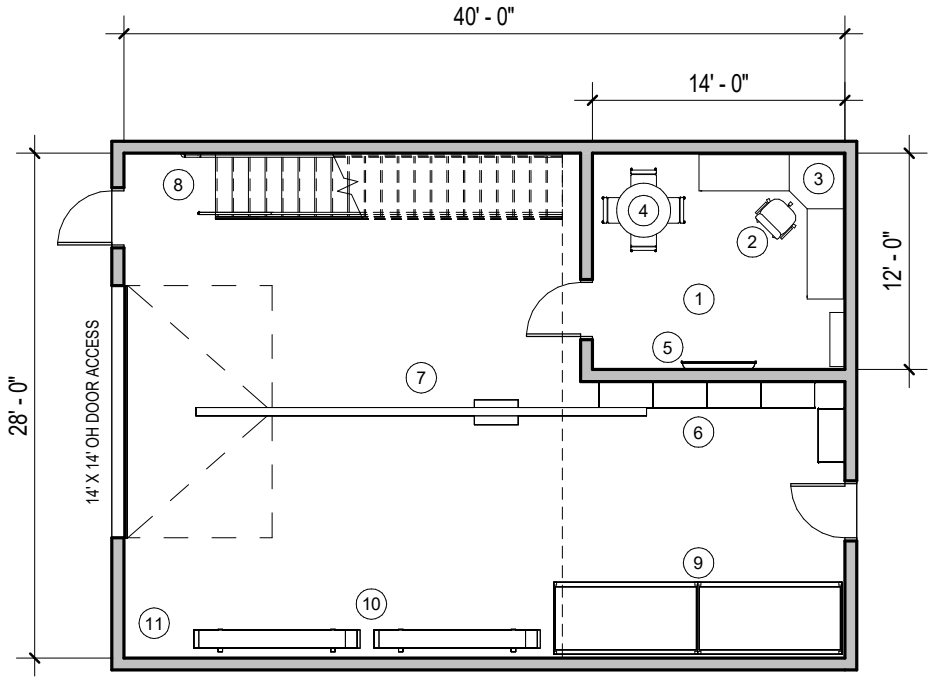
MEP/DATA REQUIREMENTS:

- HEATING / COOLING
- DUPLEX ELECTRICAL OUTLETS
- DUST COLLECTION

COMPONENTS:

1. VEHICLE LIFT
2. 1-TON MONORAIL
3. RACK STORAGE FOR PARTS & MATERIALS
4. WORK BENCH & CARPENTRY OPERATIONS
5. SHOP SINK
6. SECURE HAND TOOL STORAGE CRIB
7. POTENTIAL PROVISIONS FOR PARTS CLEANERS





PARKS & REC AND TREE WORKSHOP - 1,120 SF SF

3/32" = 1'-0"

ROOM FINISHES:

CEILING: OPEN TO STRUCTURE

WALLS: CMU, PAINTED

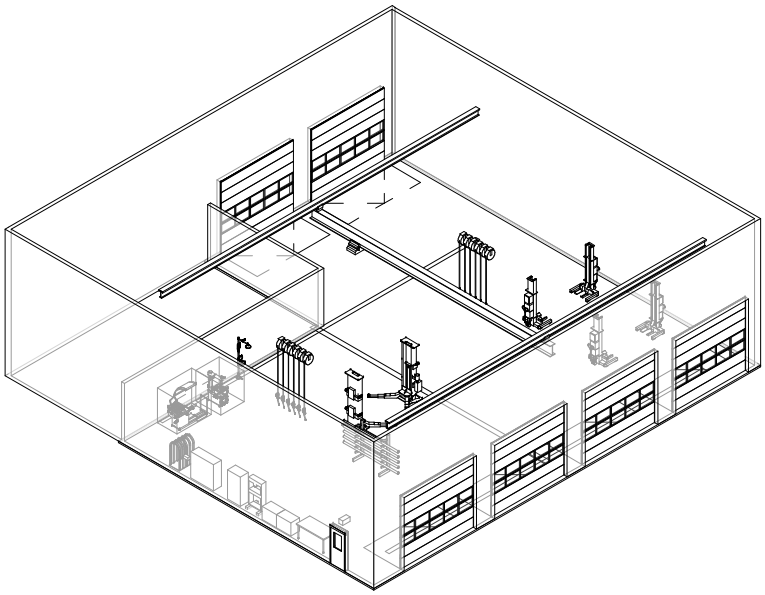
FLOORS: SEALED CONCRETE

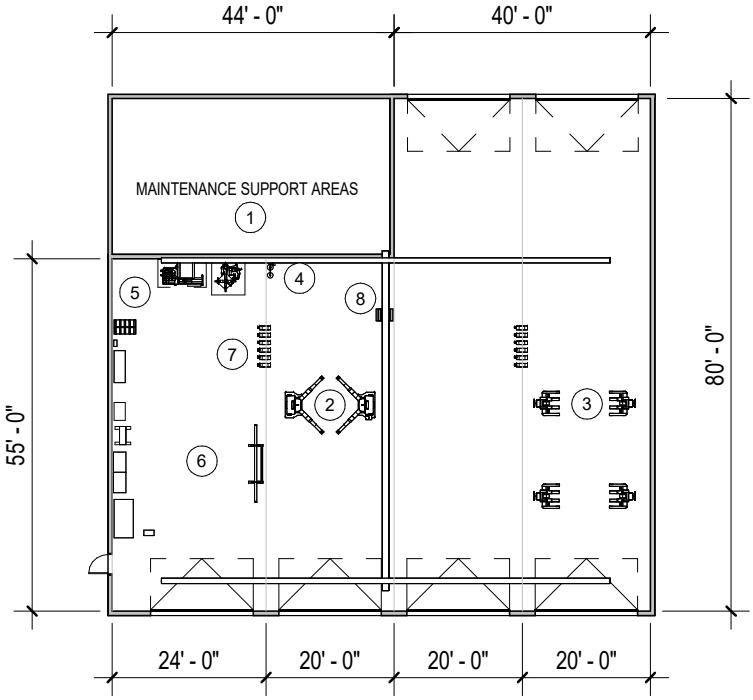
MEP/DATA REQUIREMENTS:

- HEATING / COOLING
- DUPLEX ELECTRICAL OUTLETS
- DUST COLLECTION

COMPONENTS:

1. WORKSHOP OFFICE
2. EXECUTIVE CHAIR
3. WORKSTATION
4. GUEST TABLE & CHAIRS (4)
5. TV MONITOR
6. UTILITY SHELVING
7. MONORAIL
8. MEZZANINE STORAGE ABOVE
9. PALLET RACK
10. LUMBER RACK
11. VERTICAL LUMBER STORAGE





MAINTENANCE BAYS - 5,620 SF

1" = 30'-0"

ROOM FINISHES:

CEILING: OPEN TO STRUCTURE

WALLS: METAL PANEL / CONCRETE, PAINTED

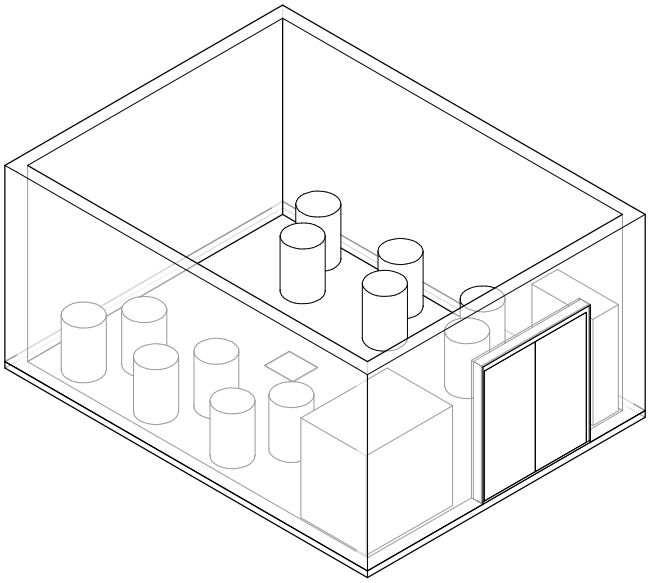
FLOORS: SEALED CONCRETE

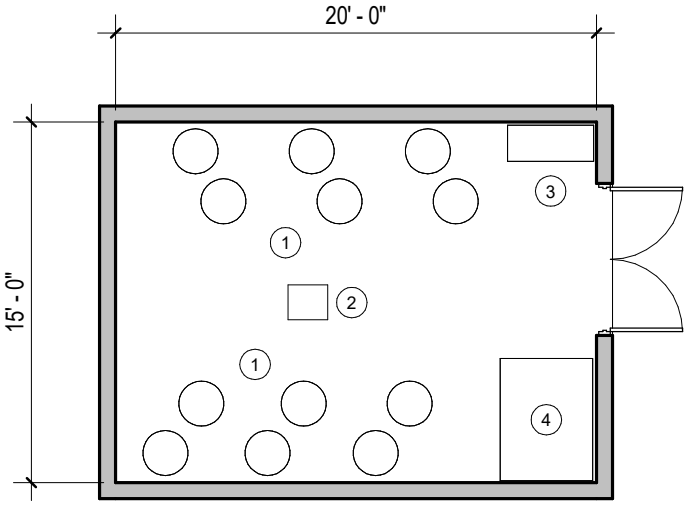
MEP/DATA REQUIREMENTS:

- HEATING (RADIANT FLOOR)
- DUPLEX ELECTRICAL OUTLETS
- SPECIALITY EQUIP. ELECTRICAL OUTLETS
- DATA OUTLET JACKS
- VENTILATION

COMPONENTS:

1. MAINTENANCE SUPPORT AREAS TBD
2. 2-POST LIFTS (2)
3. MOBILE COLUMN LIFTS
4. EYE WASH STATION / E-SHOWER
5. TIRE SHOP AREA (20' X 20")
6. WELDING BAY
7. FLUID AND VEHICLE EXHAUST REELS
8. 5-TON BRIDGE CRANE





FLUID ROOM - 300 SF
1/8" = 1'-0"

ROOM FINISHES:

CEILING: OPEN TO STRUCTURE

WALLS: CMU, PAINTED

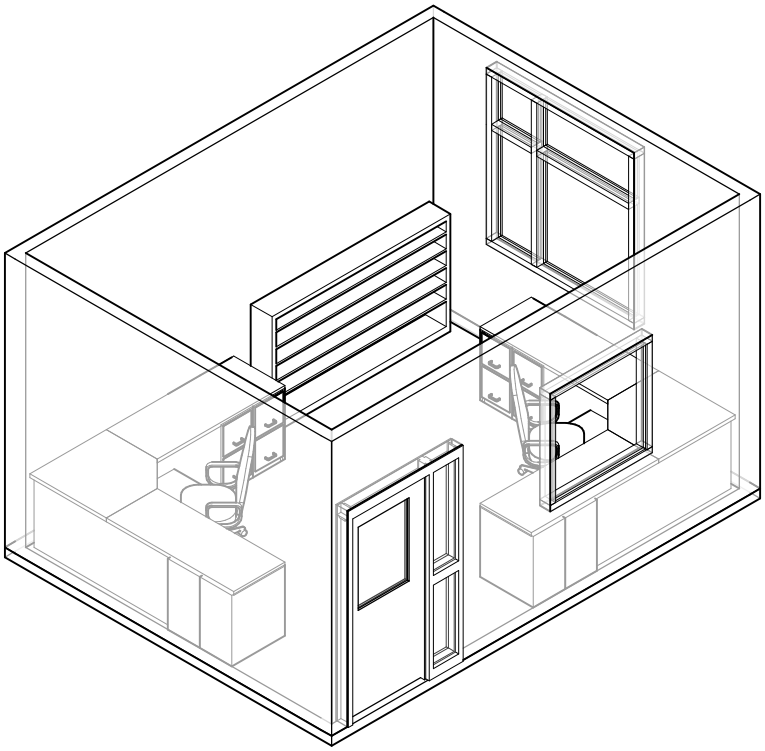
FLOORS: SEALED CONCRETE

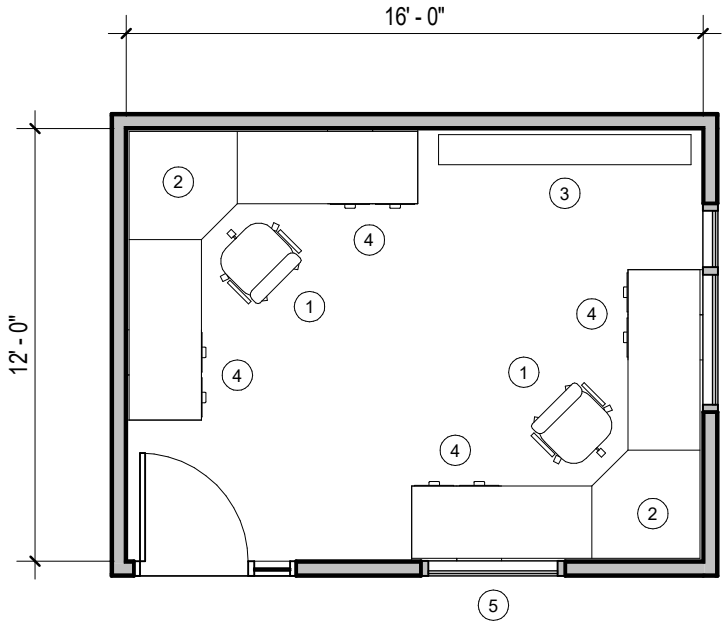
MEP/DATA REQUIREMENTS:

- HEATING
- GFI ELECTRICAL OUTLETS
- DEDICATED EXHAUST SYSTEM
- COMPRESSED AIR FOR PHNEUMATIC PUMPS
- CONTAINMENT SUMP

COMPONENTS:

1. (12) 55 GAL FLUID STORAGE DRUM
2. FLUID SPILL CONTAINMENT SUMP
3. FLAMMABLE STORAGE CABINET
4. WASTE OIL





CENTRAL FLEET OFFICE -160 SF

3/16" = 1'-0"

ROOM FINISHES:

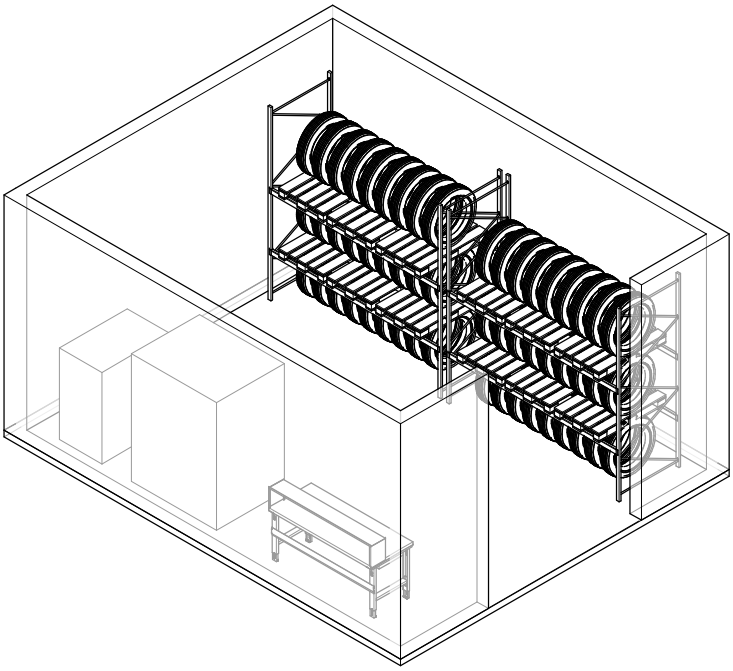
CEILING:	ACOUSTICAL CEILING TILE
WALLS:	GYPSUM WALL BOARD, PAINTED
FLOORS:	RESILIENT FLOORING

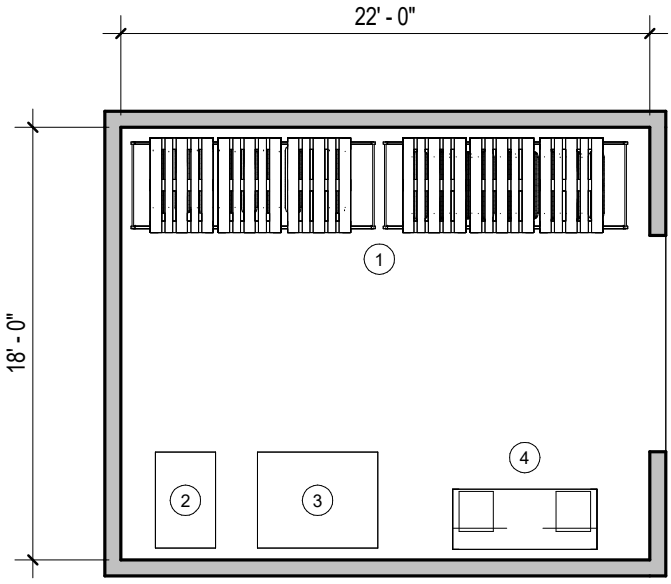
MEP/DATA REQUIREMENTS:

- HEATING / COOLING
- DUPLEX ELECTRICAL OUTLETS

COMPONENTS:

1. (2) EXECUTIVE CHAIRS
2. (2) WORKSTATIONS
3. BOOKCASE
4. FILE CABINET
5. WINDOW VIEWING TO MAINTENANCE BAYS





TIRE STORAGE & REPAIR AREA - 396 SF
1/8" = 1'-0"

ROOM FINISHES:

CEILING: OPEN TO STRUCTURE

WALLS: CMU, PAINTED

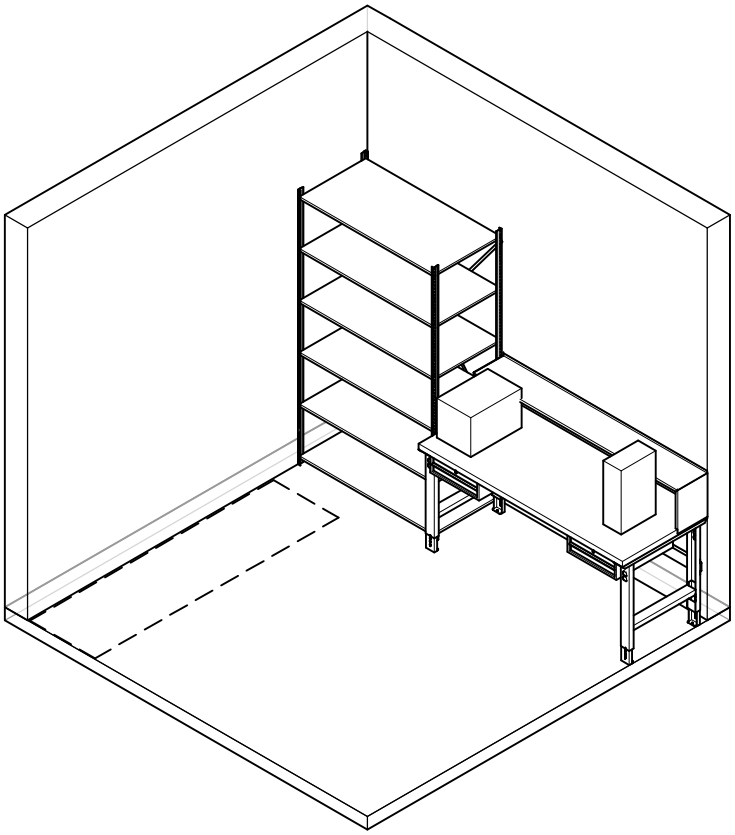
FLOORS: SEALED CONCRETE

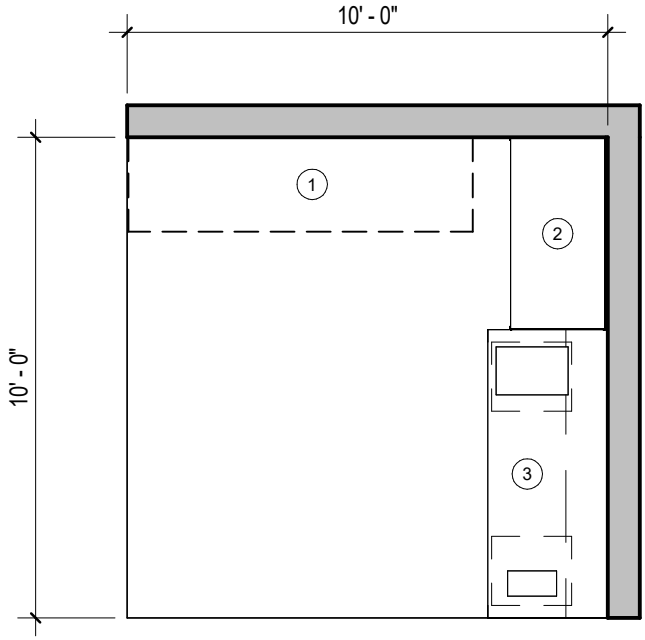
MEP/DATA REQUIREMENTS:

- DUPLEX ELECTRICAL OUTLETS
- DATA OUTLET JACKS

COMPONENTS:

1. TIRE STORAGE RACKS
2. TIRE INFLATION MACHINE
3. TIRE CHANGER MACHINE
4. WORKBENCH





HYDRAULIC HOSE SHOP - 100 SF

1/4" = 1'-0"

ROOM FINISHES:

CEILING: OPEN TO STRUCTURE

WALLS: CMU, PAINTED

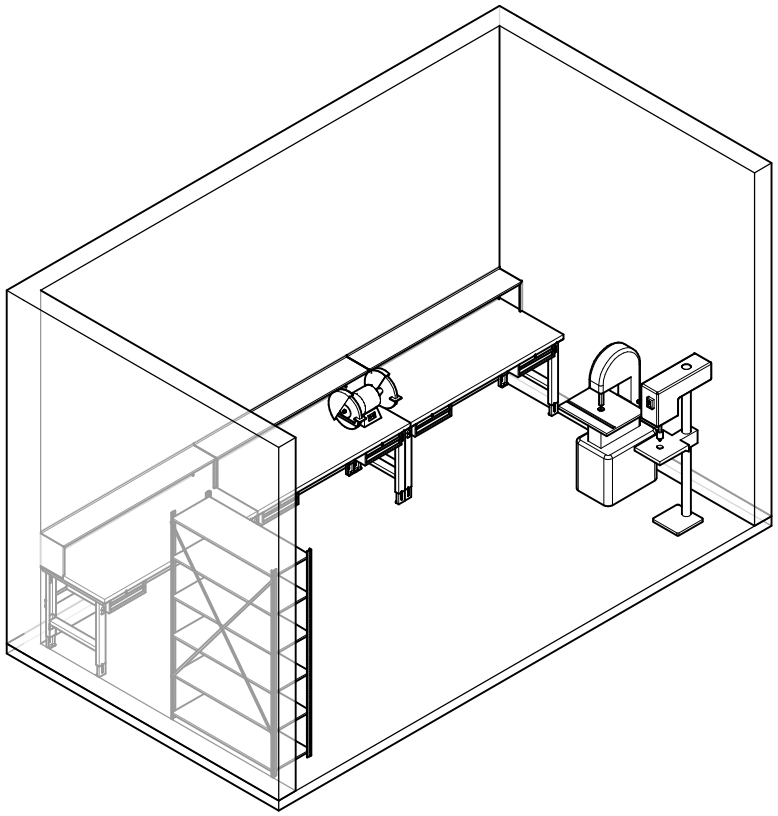
FLOORS: SEALED CONCRETE

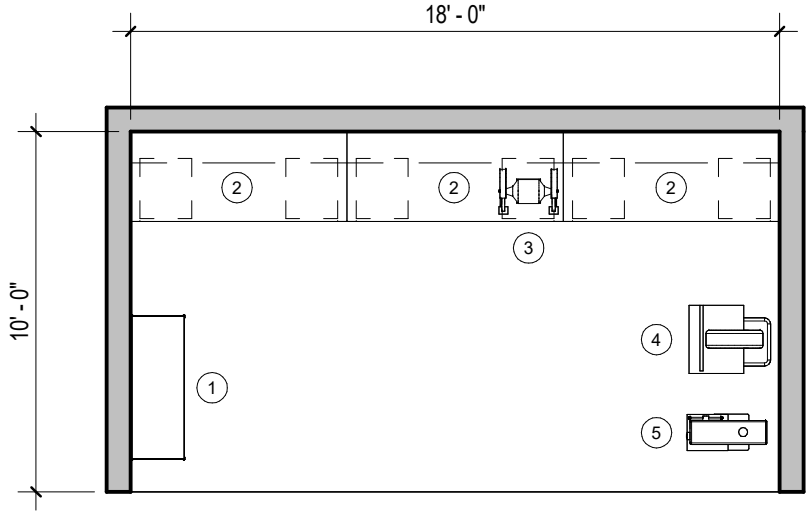
MEP/DATA REQUIREMENTS:

- HEATING / COOLING
- DUPLEX ELECTRICAL OUTLETS

COMPONENTS:

1. (3) HANGING REELS FOR HOSES
2. CHOP SAW WORKBENCH
3. (3) UTILITY SHELVING FOR PARTS STORAGE





MAINTENANCE WORKSHOP - 180 SF
3/16" = 1'-0"

ROOM FINISHES:

CEILING: OPEN TO STRUCTURE

WALLS: CMU, PAINTED

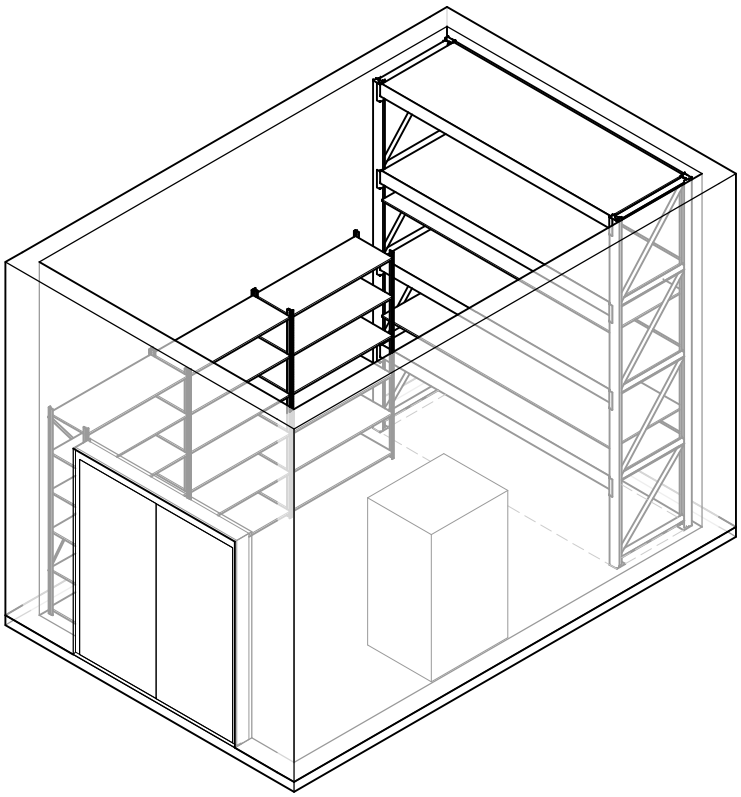
FLOORS: SEALED CONCRETE

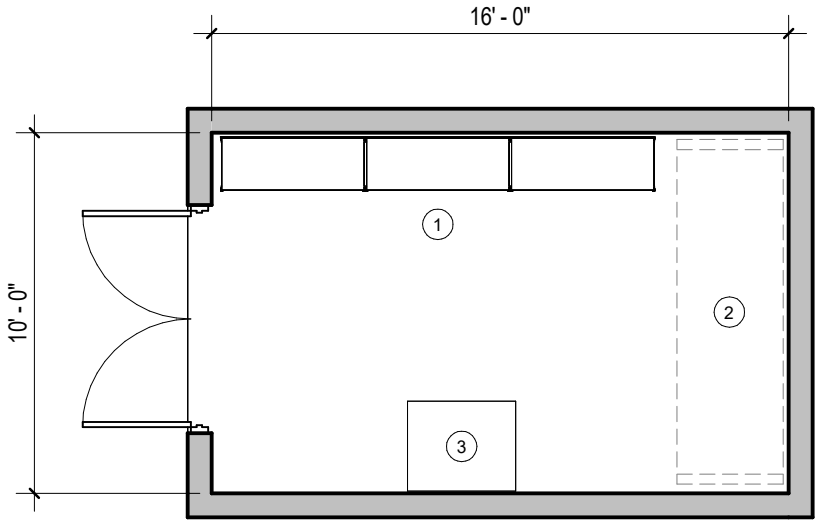
MEP/DATA REQUIREMENTS:

- HEATING / COOLING
- DUPLEX ELECTRICAL OUTLETS
- DUST COLLECTION

COMPONENTS:

1. UTILITY SHELVING
2. WORKBENCH
3. BENCH GRINDER
4. BAND SAW
5. DRILL PRESS





SECURED TOOL CRIB - 160 SF
3/16" = 1'-0"

ROOM FINISHES:

CEILING: OPEN TO STRUCTURE

WALLS: CMU, PAINTED OR WIRE CAGE

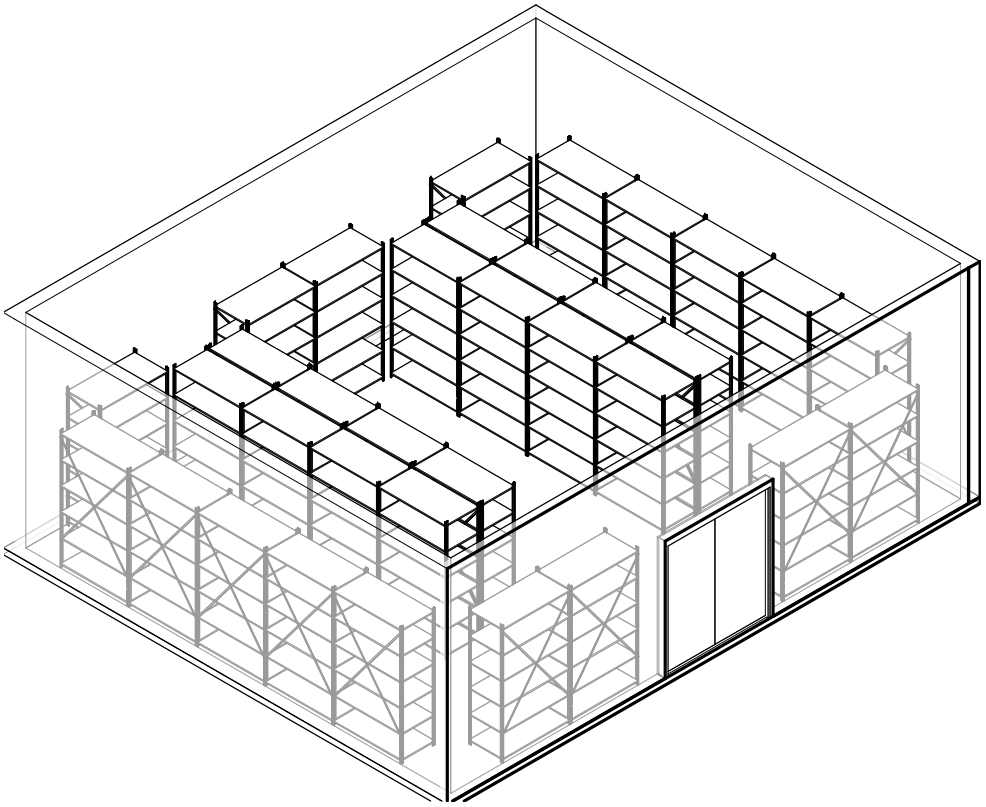
FLOORS: SEALED CONCRETE

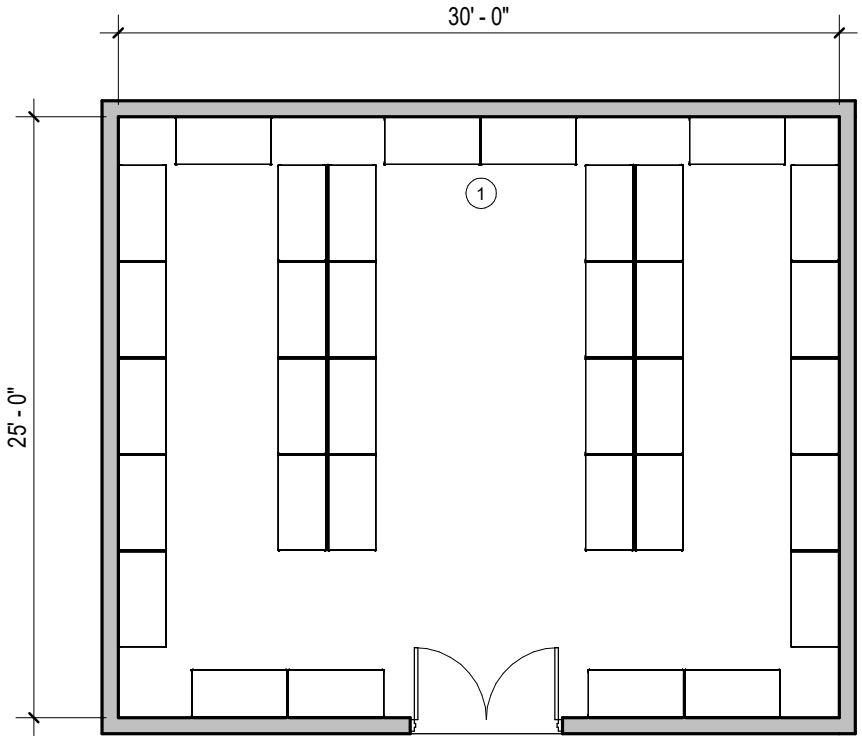
MEP/DATA REQUIREMENTS:

- DUPLEX ELECTRICAL OUTLETS

COMPONENTS:

1. UTILITY SHELVING
2. 3' DEEP HEAVY DUTY STORAGE SHELVING
3. TOOL BOX





PARTS & MATERIAL STORAGE - 750 SF

1/8" = 1'-0"

ROOM FINISHES:

CEILING: OPEN TO STRUCTURE

WALLS: CMU, PAINTED

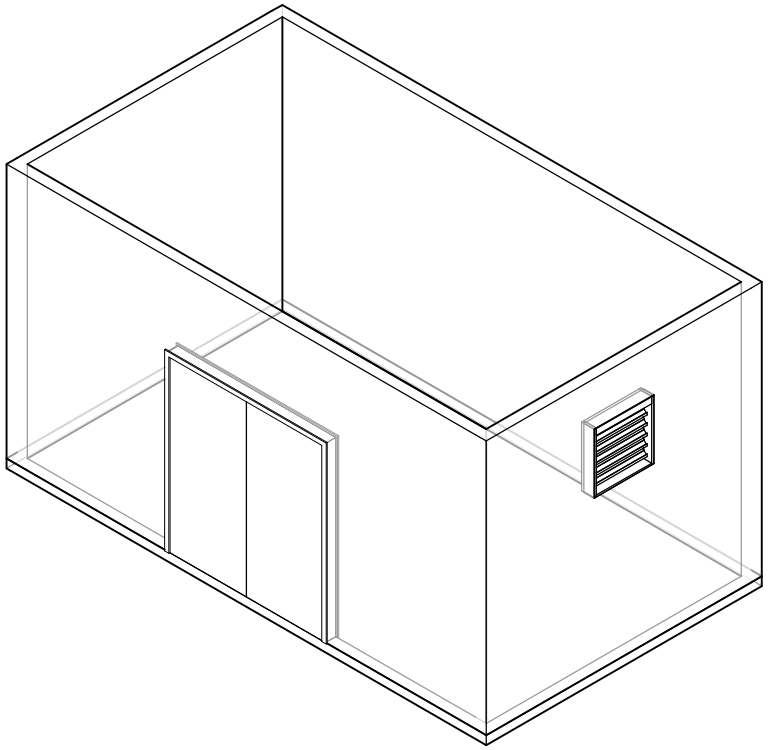
FLOORS: SEALED CONCRETE

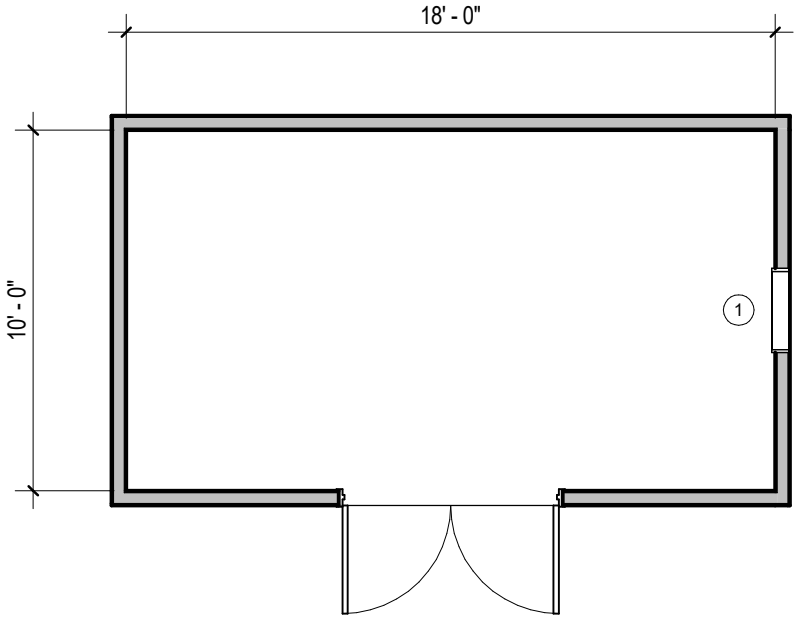
MEP/DATA REQUIREMENTS:

- DUPLEX ELECTRICAL OUTLETS

COMPONENTS:

1. (34) 48" W X 24" D UTILITY SHELVING





COMPRESSOR ROOM - 180 SF
3/16" = 1'-0"

ROOM FINISHES:

CEILING: OPEN TO STRUCTURE

WALLS: CMU, PAINTED

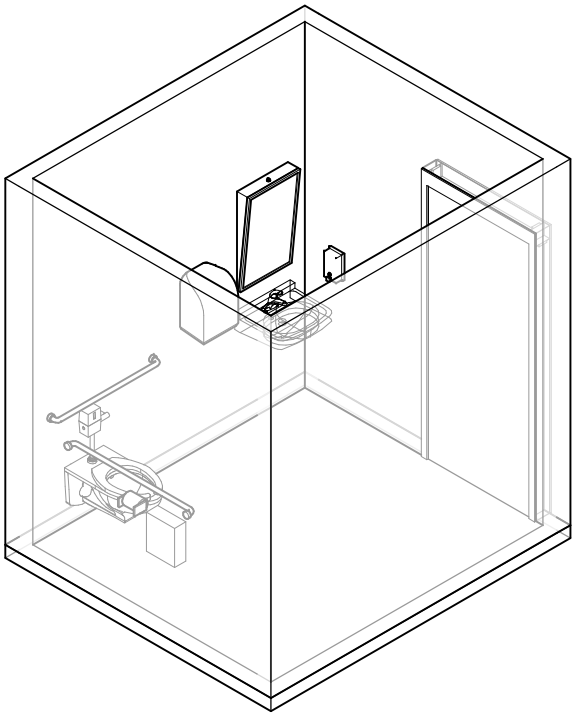
FLOORS: SEALED CONCRETE

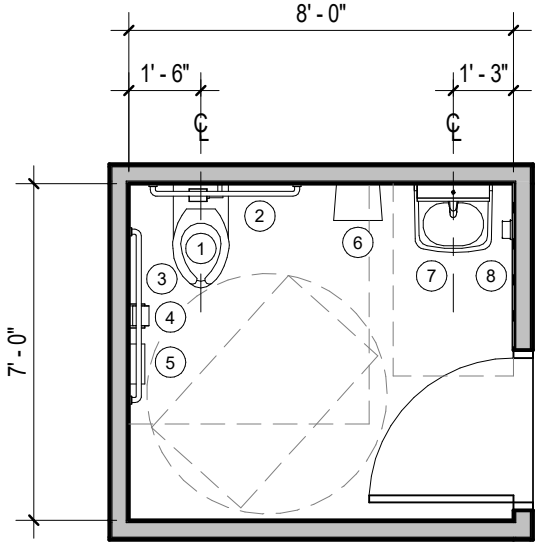
MEP/DATA REQUIREMENTS:

- HEATING
- DUPLEX ELECTRICAL OUTLETS

COMPONENTS:

1. LOUVER





MAINTENANCE TOILET FACILITY - 56 SF
1/4" = 1'-0"

ROOM FINISHES:

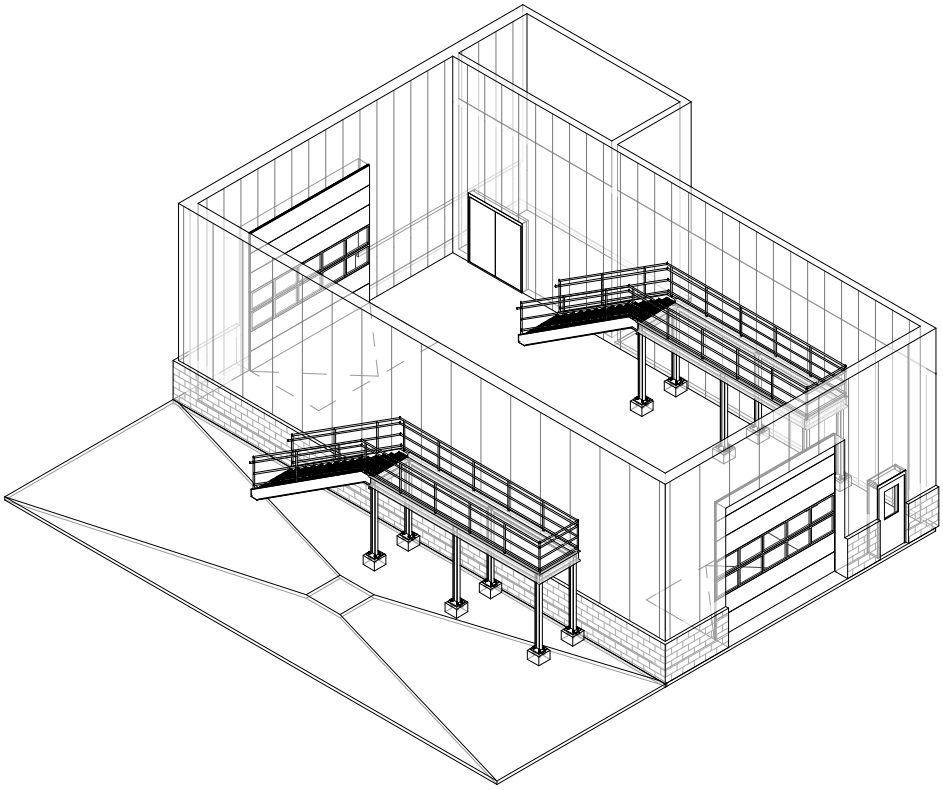
CEILING:	MOISTURE RESISTANT ACT TILE
WALLS:	CERAMIC TILE / MOISTURE RESISTANT GYPSUM WALL BOARD, PAINTED
FLOORS:	CERAMIC TILE

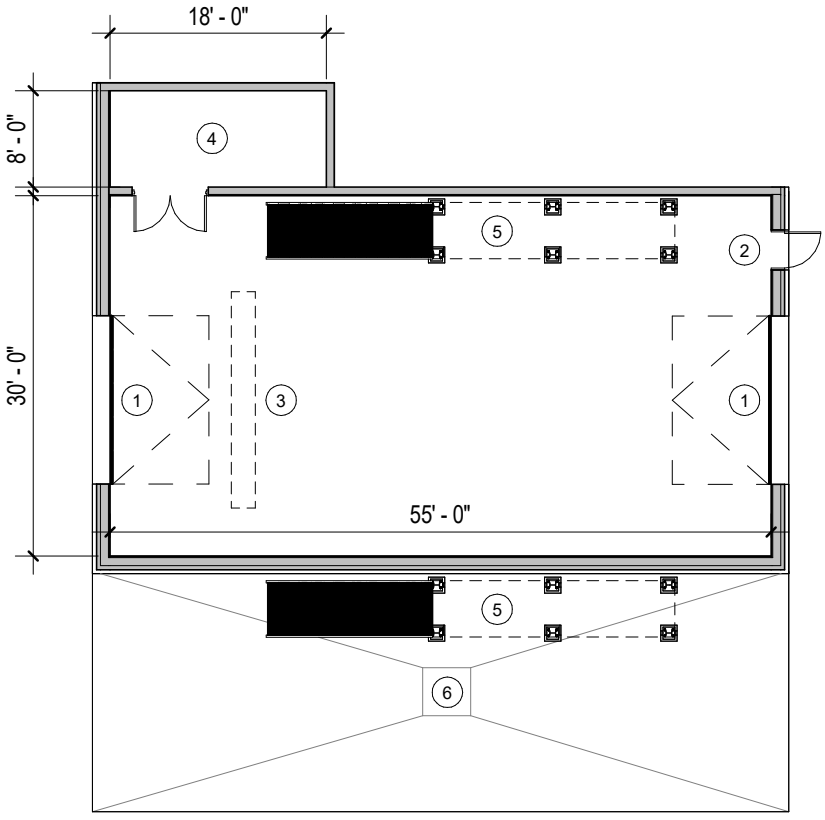
MEP/DATA REQUIREMENTS:

- GFI ELECTRICAL OUTLETS
- HEATING / COOLING
- OCCUPANCY SENSORS FOR LIGHTING CONTROLS

COMPONENTS:

1. WALL HUNG TOILET
2. 36" GRAB BAR
3. 42" GRAB BAR
4. TOILET PAPER DISPENSER
5. SANITARY NAPKIN DISPOSAL RECEPTICLE
6. PAPER TOWEL DISPENSER
7. WALL HUNG SINK & MIRROR
8. SOAP DISPENSER





WASH BAY - 1,794 SF
1/16" = 1'-0"

ROOM FINISHES:

CEILING: PVC PANEL

WALLS: PVC PANEL

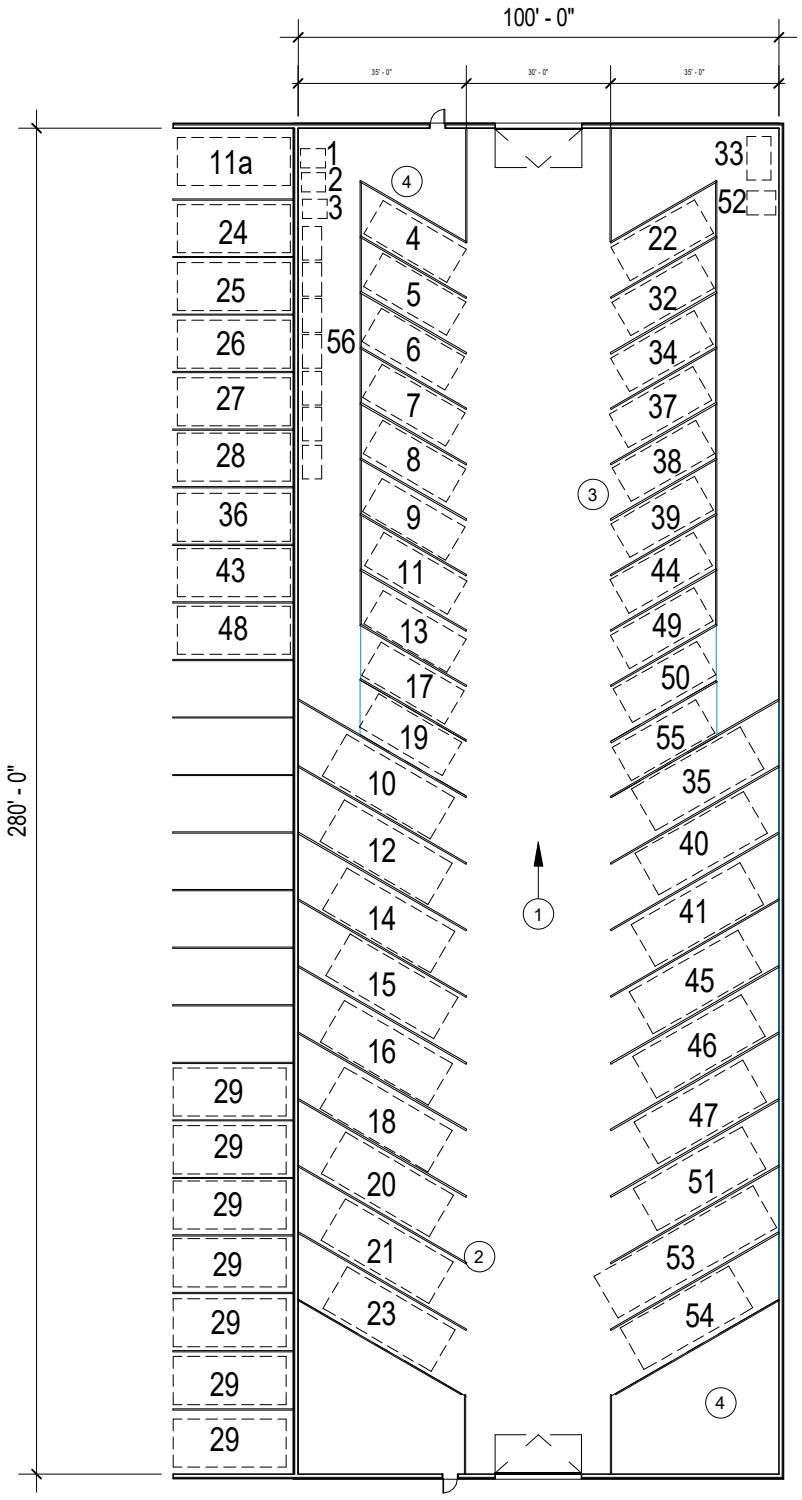
FLOORS: SEALED CONCRETE

MEP/DATA REQUIREMENTS:

- HEATING
- GFI ELECTRICAL OUTLETS
- VENTILATION
- WATERPROOF DEVICES
- 2" WATER SUPPLY

COMPONENTS:

1. POLYCARBONATE SECTIONAL DOORS
2. STAINLESS STEEL DOORS AND FRAMES
3. UNDERCARRIAGE WASH
4. MANUAL WASH EQUIP. PACKAGE
5. FIXED CATWALKS
6. EXTERIOR KNOCKDOWN PAD



1 Vehicle & Equipment Storage - 28,000sf
1" = 40'-0"

ROOM FINISHES

FLOORS: SEALED CONCRETE

WALLS: CMU TO 5'-4",
MTL PANEL ABOVE

CEILING: OPEN TO STRUCTURE

MEP/DATA REQUIREMENTS

HEATING (MINIMALLY)

COOLING

VENTILATION

COMPONENTS:

1. DRIVE-THRU AISLE
2. LARGE VEHICLE & EQUIPMENT PARKING
3. SMALL VEHICLE & EQUIPMENT PARKING
4. OPEN FLOOR STORAGE FOR SMALL EQUIPMENT

Weston & Sampson	NANTUCKET DPW June 21, 2024	**Vehicle & Equipment Storage - 28,000sf**	F1

Nantucket DPW Vehicle and Equipment List - Per Site Visit on 3-6-21																			
W&S Number	DPW Number	Location	Vehicle Description	Make	Model	Tag Plate	DPW Division	Length (FT)	Width (FT)	Height	Plow (Y/N)	Plow Length	Plow Depth	Vehicle Stored	Small Storage	Small Space	Large Space	Canopy	Comments
1	N/A	DPW Building C	Sweeper	Hydra 36	Power Brook	N/A		5	4	N/A	N/A	N/A	N/A	Small Storage	1				
2	N/A	DPW Building C	Sweeper	Hydra 37	Power Brook	N/A		5	4	N/A	N/A	N/A	N/A	Small Storage	1				
3	N/A	DPW Building C	Sweeper	Hydra 38	Power Brook	N/A		5	4	N/A	N/A	N/A	N/A	Small Storage	1				
4	3-6004	DPW Yard	Pick Up	Chevy	Silverado	M94168		20	8	N/A	N/A	N/A	N/A	Small Space		1			
5		DPW Yard	Box Truck	Ford	Transit 250	M93219		20	9	N/A	N/A	N/A	N/A	Small Space		1			
6	13-6337	DPW Yard	Pick Up	Ford	Ranger	M75516		16	8	N/A	N/A	N/A	N/A	Small Space		1			
7	4632	DPW Yard	Pick Up	Ford	Ranger	M75366		16	8	N/A	N/A	N/A	N/A	Small Space		1			
8	7-5512	DPW Yard	Pick Up	Ford	Ranger	M64565		16	8	N/A	N/A	N/A	N/A	Small Space		1			
9	6825	DPW Yard	Pick Up	Ford	Ranger	M75692		16	8	N/A	N/A	N/A	N/A	Small Space		1			
10	21-6476	DPW Yard	Dump Truck	Ford	F550	M5228A		22	9	N/A	N			Large Space			1		
11		DPW Yard	Mini Excavator w/ Auger Attachment	Bobcat	T590	M89213		16	7	N/A	N			Small Space		1			
11a		DPW Yard	Trailer			M1748A		20	8	N/A	N			Canopy				1	
12		DPW Yard	Tractor	Milton	6SE Turbo	M98729		26	10	N/A	N			Large Space			1		
13	18-5896	DPW Yard	Pick Up	Ford	F350	M94161		19	8	N/A	N			Small Space		1			
14	T3-6181	DPW Yard	Dump Truck	Freightliner		M98737		25	10	N/A	N			Large Space			1		
15	23-6542	DPW Yard	Pick Up	Ford	F550	M69674		22	9	N/A	N			Large Space			1		
16	14	DPW Yard	Pick Up	Ford	F550	M89223		25	9	N/A	N			Large Space			1		
17	2-6250	DPW Yard	Dump Truck	Ford	F350	M98726		19	8	N/A	N			Small Space		1			
18	T2-5535	DPW Yard	Dump Truck	International	MaxxForce	M92033		28	11	N/A	Y	6	11	Large Space			1		
19	6743	DPW Yard	Pick Up	Ford	F150	M79520		18	8	N/A	N			Small Space		1			
20	24	DPW Yard	Dump Truck	Ford	F550	M98727		22	9	N/A	N			Large Space			1		
21	20	DPW Yard	Dump Truck	Ford	F550	M94157		22	9	N/A	N			Large Space			1		
22		DPW Yard	Mini Excavator	CAT	299D2	M17461		14	7	N/A	N			Small Space		1			
23	3652	DPW Yard	Fire Truck	GMC		FIRE 3652		25	10	N/A	N			Large Space			1		They use this to spray down equipment
24		DPW Yard	Trailer			Pictures		26	10	N/A	N			Canopy				1	
25		DPW Yard	Trailer			Pictures		26	10	N/A	N			Canopy				1	
26		DPW Yard	Trailer			Pictures		22	10	N/A	N			Canopy				1	
27		DPW Yard	Trailer			Pictures		22	10	N/A	N			Canopy				1	
28		DPW Yard	Trailer			Pictures		22	10	N/A	N			Canopy				1	
29		DPW Yard	Sander Body					17	7	N/A	N			Small Storage	1				5 Total in the Yard, Can be stored in trucks or under canopy
30		DPW Yard	Compost/Recycling Bins					6	3	6.5	N			Small Storage	1				24 of them Total, Will Store Outside
31		DPW Yard	Large Wooden Box					6	4.5	N/A	N			Small Storage	1				5 of them Total, Will Store Outside
32	5945	DPW Yard	Street Sweeper	Elgin	Pelican	M94162		17	11	N/A	N			Small Space		1			Ordering another, plan for 2 total
33		DPW Yard	Generator	Lincoln	Generator			9	5	N/A	N			Small Storage	1				
34		DPW Yard	Roller	CAT	CS44B			17	7	N/A	N			Small Space		1			
35	T5	DPW Yard	Tree Truck	Freightliner		M1740A		27	11	N/A	N			Large Space			1		
36		DPW Yard	Wood Chipper	Verner	BC100	M90996		14	11	N/A	N			Canopy				1	
37		DPW Yard	Asphalt Trailer					20	8	N/A	N			Small Space		1			
38		DPW Yard	Asphalt Trailer					20	8	N/A	N			Small Space		1			
39		DPW Yard	Tractor	John Deere	5085M	M91462		15	8	N/A	N			Small Space		1			
40	11	DPW Yard	Catch Basin Truck	International		M79284		23	10	N/A	N			Large Space			1		
41		DPW Yard	Surf Rake			M88351		26	10	N/A	N			Large Space			1		
43		DPW Yard	Plow Trailer			455005		20	10	N/A	N			Canopy				1	
44		DPW Yard	Sidewalk Plow	Luigi	Trackless	49452		20	4	N/A	N			Small Space		1			
45		DPW Yard	Front End Loader	CAT				25	10	N/A	N			Large Space			1		
46		DPW Yard	Loader	Volvo	L70E	M74992		24	9	N/A	N			Large Space			1		
47		DPW Yard	Loader	Volvo	Nicky	M63700		24	9	N/A	N			Large Space			1		
48		DPW Yard	Trailer					16.5	8	N/A	N			Canopy				1	
49		DPW Yard	Pick Up	Ford	F350	M91461		21	8	N/A	Y	8	4	Small Space		1			
50		DPW Yard		Bobcat	S185	M79276		12	5	N/A	N			Small Space		1			
51		DPW Yard	Excavator	CAT	938M	M5020A		25	10	N/A	N			Large Space			1		
52		DPW Yard		Elterra				6	5	N/A	N			Small Storage	1				
53		DPW Building B	Vacuum Truck	Freightliner		M749A		38	10	13'-3"	N			Large Space			1		
54		DPW Building B	Dump Truck	Sterling		M75521		24	9	N/A	N			Large Space			1		
55		DPW Yard	Mini Excavator	CAT	305.5E			16	8	N/A	N			Small Space		1			
56		DPW Yard	Mowers					7	4										7 of these in the container, dimensions are approx as not able to get into the containe
															8	20	18	9	

General Equipment																			
		DPW Yard	Spreader	Fisher	PolyCaster			10	4										There are 8 of these total in the yard
		DPW Yard	Plow Blades					10	4										There are 10 of these total in the yard
42		DPW Yard	Hazmat Storage Areas					20	12	N/A	N								2 of these areas
		DPW Yard	Container of Mowers etc					48	8										
		DPW Yard	Hydro Blowers																2 of these in the contatiner
		DPW Yard	Paint Machines																2 of these in the contatiner
		DPW Yard	Asphault Roller																2 of these in the contatiner
		DPW Yard	Mower Head					6	5										

Total Units 64

Large Spaces 18
Small Spaces 20
Canopy Spot 9

Town of Nantucket
New Department of Public Works Facility
Schematic Design Submission

Review and Confirmation

Space Needs Matrix

June 21, 2024

Nantucket DPW
Space Needs Summary

June 21, 2024
Final Program

Area	Description	2022 Study SF	12/12/2023 Proposed SF	12/20/2023 Proposed SF	1/9/2024 Proposed SF	Room Data #	Room / Area length	Room / Area width	Dims. size
Office & Office Support Areas	Vestibule/Waiting/Reception	128	224	224	224	A1	14	16	224
	Admin Open Office (4 Admin Staff, 1 Intern Workstation)	252	676	676	676	A2	26	26	676
	~~Office Manager~~	~~180~~	~~-~~	-	-				
	DPW Director Office	270	252	252	252	A3	14	18	252
	Deputy Director Office (Facilities)	180	192	192	192	A4	12	16	192
	Deputy Director Office (Operations)	180	192	192	192	A4	12	16	192
	Facilities Manager Office	168	168	168	168	A5	12	14	168
	DPW Contract Manager Office	168	68	168	168	A5	12	14	168
	Parks & Rec Manager Office	-		168	168	A5	12	14	168
	~~Facilities Contracts Staff Area (4 Staff)~~	~~252~~	~~-~~	-	-				
	Operations Manager Office	168	~~-~~	-	168	A5	12	14	168
	Permit Coordination & Field Inspector Shared Office (2)	-	256	256	256	A6	16	16	256
	Town Engineer & **Project / Asset Manager** Shared Office (2)	180	256	320	320	A6.1	16	20	320
	Solid Waste Manager & Recycling Coordinator Shared Office (2)	48	256	256	256	A6	16	16	256
	~~Engineering Staff Area (3 Staff)~~	~~252~~	~~-~~	-	-				
	~~Engineering Layout Area~~	~~-~~	~~225~~	-	-	~~A7~~	~~15~~	~~15~~	~~225~~
	~~Seasonal Intern Workstation~~	~~48~~	~~48~~	-	-	~~A8~~	~~6~~	~~8~~	~~48~~
	Large Conference Room	350	384	504	504	A9	18	28	504
	Small Conference Room	192	288	252	252	A10	14	18	252
	Admin Kitchen / Break Room	192	168	168	168	A11	12	14	168
	Copy / File / Mail Room	112	180	180	180	A12	12	15	180
	File Storage	196	224	224	224	A13	14	16	224
	~~Archive Storage~~	~~288~~	~~-~~	-	-				
	Small Supply Closet	21	21	21	21	A14	3	7	21
	Large Supply Closet	36	90	90	90	A15	9	10	90
	Admin Toilet Facilities	160	140	140	140	A16	8	17.5	140
Utility Rooms	Mechanical Room	192	288	288	288	A17	16	18	288
	Electrical Room	140	224	224	224	A18	14	16	224
	Plumbing / Fire Protection Room	-	216	216	216	A19	12	18	216
	Telephone / Data Room	80	100	100	100	A20	10	10	100
	Janitor Closet	36	56	56	56	A21	7	8	56
	Subtotal:	4,469	5,192	5,335	5,503				
	Area Grossing Factor (10%)	670	519	534	550	15% used in 2022			
	Circulation (30%):	894	1,713	1,761	1,816	20% used in 2022			

Weston & Sampson

Nantucket DPW
Space Needs Summary

June 21, 2024
Final Program

Area	Description	2022 Study SF	12/12/2023 Proposed SF	12/20/2023 Proposed SF	1/9/2024 Proposed SF	Room Data #	Room / Area length	Room / Area width	Dims. size
	TOTAL:	6,033	7,425	7,629	7,869				
Employee Facilities	Male Locker/Shower/Toilet	588	780	780	780	B1	26	30	780
	Female Locker/Shower/Toilet	234	252	252	252	B2	14	18	252
	Muster Room	1,312	1,500	1,500	1,500	B3	30	50	1,500
	~~Multipurpose / Storm Event Room~~	~~912~~	~~420~~	~~-~~	~~-~~	~~B4~~			
	Shared Foreman Office (Facilities - 2 Worksations)	252	240	288	216	B5	12	18	216
	Shared Foreman Office (Operations - 2 Worksations)	126	240	216	216	B5	12	18	216
	General Foreman Office	168	180	180	180	B6	12	15	180
	Laundry Room	48	120	120	120	B7	10	12	120
	~~Mudroom~~	~~192~~	~~-~~	-	-				
	Fitness / Training Room	324	750	750	750	B8	25	30	750
	Safety Equipment Storage Closet	21	32	32	32	B9	4	8	32
	Subtotal:	4,177	4,514	4,118	4,046				
	Area Grossing Factor (10%):	418	451	412	405				
	Circulation (30%):	835	1,490	1,359	1,335	20% used in 2022			
	TOTAL:	5,430	6,455	5,889	5,786				
Work Shops & Material Storage	Sign Shop	1,170	672	1,120	1,120	C1	28	40	1,120
	~~Carpentry Shop~~	~~690~~	~~750~~	-	-	~~C2~~			~~-~~
	Facilities Workshop (2-Bay)	1,380	1,920	2,208	2,208	C3.1	46	48	2,208
	Operations Workshop (2-Bay)	1,380	1,920	1,920	1,920	C3	40	48	1,920
	Parks & Recreation and Tree Workshop	858	1,120	1,120	1,120	C4	28	40	1,120
	Subtotal:	5,478	6,382	6,368	6,368				
	Area Grossing Factor (5%):	548	319	318	318	10% used in 2022			
	Circulation (10%):	548	670	669	669				
	TOTAL:	6,574	7,371	7,355	7,355				

Weston & Sampson

Nantucket DPW
Space Needs Summary

June 21, 2024
Final Program

Area	Description	2022 Study SF	12/12/2023 Proposed SF	12/20/2023 Proposed SF	1/9/2024 Proposed SF	Room Data #	Room / Area length	Room / Area width	Dims. size
Vehicle Maintenance	Welding Bay	1,210	1,320	1,320	1,440	D1	24	60	1,440
	Maintenance Bay	1,210	1,100	1,100	1,200	D1	20	60	1,200
	Maintenance Bay	1,100	1,600	1,600	1,600	D1	20	80	1,600
	Maintenance Bay	1,100	1,600	1,600	1,600	D1	20	80	1,600
	Maintenance Bay				**1,600**	**D1**	**20**	**80**	**1,600**
	Fluid Storage Room	352	300	300	300	D2	15	20	300
	Central Fleet Office (2 Workstations)	168	192	160	160	D3	10	16	160
	Maintenance Tire Storage & Shop	200	396	396	396	D4	18	22	396
	Hydraulic Hose Shop	180	100	100	100	D5	10	10	100
	Maintenance Workshop	160	180	180	180	D6	10	18	180
	Secured Tool Crib	120	160	160	160	D7	10	16	160
	Parts Storage Room	700	750	750	750	D8	25	30	750
	Compressor Room	60	180	180	180	D9	10	18	180
	Maintenance Toilet Facility	56	56	56	56	D10	7	8	56
	Subtotal:	6,616	7,934	7,902	9,722				
	Area Grossing Factor (5%):	662	397	395	486	10% used in 2022			
	Circulation (10%):	662	833	830	1,021				
	TOTAL:	7,939	9,164	9,127	**11,229**	Updated 2/2/24 following Industrial review			
Wash Area	Wash Bay	1,375	1,650	1,650	1,650	E1	30	55	1,650
	Wash Equipment Room	120	144	144	144	E1	8	18	144
	Subtotal:	1,495	1,794	1,794	1,794				
	Area Grossing Factor (5%):	75	n/a	n/a	n/a				
	Circulation:	n/a	n/a	n/a	n/a				
	TOTAL:	1,570	1,794	1,794	**1,794**				

Area	Description	2022 Study SF	12/12/2023 Proposed SF	12/20/2023 Proposed SF	1/9/2024 Proposed SF	Room Data #	Room / Area length	Room / Area width	Dims. size
Vehicle & Equipment Storage	Vehicle / Equipment Storage	28,000	28,000	28,000	28,000	F1	100	280	28,000
	Subtotal:	28,000	28,000	28,000	28,000				
	Area Grossing Factor (5%):	1,400	1,400	1,400	1,400				
	Circulation:	n/a	n/a	n/a	n/a				
	TOTAL:	29,400	29,400	29,400	29,400				
	PROPOSED FACILITY TOTAL:	56,946	61,609	61,194	63,433				

Town of Nantucket
New Department of Public Works Facility
Schematic Design Submission

Review and Confirmation

Conceptual Site Plan Alternatives

June 21, 2024

SUMMARY OF PROPOSED DPW PROGRAM / SITE AMENITIES:

OFFICES & SUPPORT AREAS: 7,629 SF

EMPLOYEE FACILITIES: 5,786 SF

WORKSHOPS: 7,355 SF

VEHICLE MAINTENANCE: 9,127 SF

WASH BAY: 1,794 SF

VEHICLE STORAGE: 29,400 SF

CANOPY: 8,700 SF

SALT SHED: 3,500 SF

FUEL FACILITY

MATERIAL STORAGE BINS

EMPLOYEE PARKING / PUBLIC PARKING

NANTUCKET DPW
1 SHADBUSH RD NANTUCKET, MA

NORTH / SOUTH SCHEME

JANUARY 29, 2024

Weston & Sampson

SUMMARY OF PROPOSED DPW PROGRAM / SITE AMENITIES:

- OFFICES & SUPPORT AREAS: 7,629 SF
- EMPLOYEE FACILITIES: 5,786 SF
- WORKSHOPS: 7,355 SF
- VEHICLE MAINTENANCE: 9,127 SF
- WASH BAY: 1,794 SF
- VEHICLE STORAGE: 29,400 SF
- CANOPY: 8,700 SF
- SALT SHED: 3,500 SF
- FUEL FACILITY
- MATERIAL STORAGE BINS
- EMPLOYEE PARKING / PUBLIC PARKING

NANTUCKET DPW
1 SHADBUSH RD NANTUCKET, MA

BAR SCHEME

JANUARY 29, 2024

Weston & Sampson

SUMMARY OF PROPOSED DPW PROGRAM / SITE AMENITIES:

OFFICES & SUPPORT AREAS: 7,629 SF

EMPLOYEE FACILITIES: 5,786 SF

WORKSHOPS: 7,355 SF

VEHICLE MAINTENANCE: 9,127 SF

WASH BAY: 1,794 SF

VEHICLE STORAGE: 29,400 SF

CANOPY: 8,700 SF

SALT SHED: 3,500 SF

FUEL FACILITY

MATERIAL STORAGE BINS

EMPLOYEE PARKING / PUBLIC PARKING

NANTUCKET DPW
1 SHADBUSH RD NANTUCKET, MA

NORTH / SOUTH SCHEME (ROAD)

JANUARY 29, 2024

Weston & Sampson

Town of Nantucket
New Department of Public Works Facility
Schematic Design Submission

Review and Confirmation

Preferred Conceptual Site Plan Alternative

June 21, 2024

SUMMARY OF PROPOSED DPW PROGRAM / SITE AMENITIES:

ADMIN / EMPLOYEE FACILITIES: 10,900 SF

WORKSHOPS: 7,600 SF

VEHICLE MAINTENANCE: 11,000 SF

WASH BAY: 2,100 SF

KNOCKDOWN PAD

VEHICLE STORAGE: 29,400 SF

CANOPY: 8,700 SF

SALT SHED: 3,500 SF

FUEL FACILITY

MATERIAL STORAGE BINS

EMPLOYEE PARKING / PUBLIC PARKING

40

20

1 SITE PLAN - FLOOR PLAN OPTION 2
1" = 60'-0" 1/ A201

Project:
TOWN OF NANTUCKET DPW
SHADBUSH ROAD
TOWN OF NANTUCKET, MA

Weston & Sampson
Weston & Sampson Engineers, Inc.
55 Walkers Brook Drive, Suite 100
Reading, MA 01867
978.532.1900 800.SAMPSON
www.westonandsampson.com

Consultants:

Revisions:

No.	Date	Description

COA:

Seal:

Issued For:
PROGRESS

Scale: NTS 60'-0"

Key Plan:

TO CREATE KEYPLAN, EDIT THE KEYPLAN FAMILY WITHIN THE TITLEBLOCK FAMILY AND INSERT CAD TO TRACE OVER.

NORTH

Date:	June 21, 2024
Drawn By:	Author
Reviewed By:	Checker
Approved By:	Approver
W&S Project No.:	ENG20-0542
W&S File No.:	XXX

Drawing Title:
PREFERRED CONCEPTUAL SITE LAYOUT

Sheet Number:

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4/17/2024 9:06:23 AM

Town of Nantucket
New Department of Public Works Facility
Schematic Design Submission

2. Schematic Design Drawings

June 21, 2024

Town of Nantucket
New Department of Public Works Facility
Schematic Design Submission

Schematic Design Plans

Site / Civil Plans

June 21, 2024

GENERAL NOTES

1. TOPOGRAPHICAL INFORMATION FOR MAIN DPW SITE IS BASED ON AN AERIAL FLIGHT LIDAR TOPOGRAPHIC MAPPING SURVEY PERFORMED BY BLUESKY GEOSPATIAL LTD IN JANUARY 2024.
2. REFER TO EXISTING CONDITIONS FOR SURVEY LEGEND. ALL BIDDERS ARE REQUIRED TO INSPECT THE PROJECT SITE IN ITS ENTIRETY PRIOR TO SUBMITTING THEIR BID, AND BECOME FAMILIAR WITH ALL CONDITIONS AS THEY MAY AFFECT THEIR BID. CONTRACTOR AND SUB-CONTRACTOR SHALL BE FAMILIAR WITH ALL DRAWINGS AND SPECIFICATIONS PRIOR TO COMMENCING THE CONSTRUCTION.
3. LOCATIONS OF ANY UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE ONLY. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF SUCH UTILITIES, PROTECTING ALL EXISTING UTILITIES AND REPAIRING ANY DAMAGE DONE DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ON-SITE COORDINATION WITH UTILITY COMPANIES AND PUBLIC AGENCIES AND FOR OBTAINING ALL REQUIRED PERMITS AND PAYING ALL REQUIRED FEES. IN ACCORDANCE WITH M.G.L. CHAPTER 82, SECTION 40, INCLUDING AMENDMENTS, CONTRACTORS SHALL NOTIFY ALL UTILITY COMPANIES AND GOVERNMENT AGENCIES IN WRITING PRIOR TO EXCAVATION. CONTRACTOR SHALL ALSO CALL "DIG SAFE" AT (888) 344-7233 NO LESS THAN 72 HOURS, (EXCLUSIVE OF WEEKENDS AND HOLIDAYS), PRIOR TO SUCH EXCAVATION. DOCUMENTATION OF REQUESTS SHALL BE PROVIDED TO PROJECT REPRESENTATIVE PRIOR TO EXCAVATION WORK.
4. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
5. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY OWNER AT NO ADDITIONAL COST TO THE OWNER.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING ALL DRAWINGS AND SPECIFICATIONS TO DETERMINE THE EXTENT OF EXCAVATION AND DEMOLITION REQUIRED TO RECEIVE SITE IMPROVEMENTS.
7. ANY DISCREPANCIES OR CONFLICTS BETWEEN THE DRAWINGS AND EXISTING CONDITIONS, EXISTING CONDITIONS TO REMAIN, TEMPORARY CONSTRUCTION, PERMANENT CONSTRUCTION AND WORK OF ADJACENT CONTRACTS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER BEFORE PROCEEDING. ITEMS ENCOUNTERED IN AREAS OF EXCAVATION THAT ARE NOT INDICATED ON THE DRAWINGS, BUT ARE VISIBLE ON SURFACE, SHALL BE THE CONTRACTOR'S RESPONSIBILITY AND SHALL BE REMOVED AT NO ADDITIONAL COST TO THE OWNER.
8. ANY ALTERATIONS TO THESE DRAWINGS MADE IN THE FIELD DURING CONSTRUCTION SHALL BE RECORDED BY THE GENERAL CONTRACTOR ON "AS-BUILT" DRAWINGS.
9. ALL AREAS DISTURBED BY THE CONTRACTOR'S OPERATIONS OUTSIDE THE PROJECT LIMITS, SHALL BE RESTORED TO THE ORIGINAL CONDITION BY THE CONTRACTOR AT NO ADDITIONAL COST AND TO THE SATISFACTION OF THE OWNER.
10. ALL WORK SHOWN ON THE PLANS AS BOLD SHALL REPRESENT PROPOSED WORK. THE TERM "PROPOSED (PROP)" INDICATES WORK TO BE CONSTRUCTED USING NEW MATERIALS OR, WHERE APPLICABLE, RE-USING EXISTING MATERIALS IDENTIFIED AS "REMOVE AND RESET (R&R)", OR REMOVE, RELOCATE, RESET, (R,R&R).
11. ALL KNOWN EXISTING STATE, COUNTY AND TOWN LOCATION LINES AND PRIVATE PROPERTY LINES HAVE BEEN ESTABLISHED FROM AVAILABLE INFORMATION AND ARE INDICATED ON THE PLANS.
12. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT HIS EMPLOYEES, AS WELL AS PUBLIC USERS FROM INJURY DURING THE ENTIRE CONSTRUCTION PERIOD USING ALL NECESSARY SAFEGUARDS, INCLUDING BUT NOT LIMITED TO, THE ERECTION OF TEMPORARY WALKS, STRUCTURES, PROTECTIVE BARRIERS, COVERING, OR FENCES AS NEEDED.
13. THE CONTRACTOR SHALL SUPPLY THE OWNER WITH THE NAME OF THE OSHA "COMPETENT PERSON" PRIOR TO CONSTRUCTION.
14. FILLING OF EXCAVATED AREAS SHALL NOT TAKE PLACE WITHOUT THE PRESENCE OR PERMISSION OF THE OWNER.
15. EXISTING TREES TO REMAIN SHALL BE PROTECTED FROM CONSTRUCTION ACTIVITIES. NO STOCKPILING OF MATERIAL, EQUIPMENT OR VEHICULAR TRAFFIC SHALL BE ALLOWED WITHIN THE DRIP LINE OF TREES TO REMAIN. NO GUYS SHALL BE ATTACHED TO ANY TREE TO REMAIN. WHEN NECESSARY OR AS DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL ERECT TEMPORARY BARRIERS FOR THE PROTECTION OF EXISTING TREES DURING CONSTRUCTION.
16. TREES AND SHRUBS WITHIN THE LIMITS OF WORK SHALL BE REMOVED ONLY UPON THE APPROVAL OF THE ENGINEER OR AS NOTED ON THE PLANS.
17. NO FILLING SHALL OCCUR AROUND EXISTING TREES TO REMAIN WITHOUT THE APPROVAL OF THE OWNER OR OWNER REPRESENTATIVE.
18. THE CONTRACTOR SHALL REMOVE ALL SURFACE VEGETATION PRIOR TO GRADING THE SITE. TEMPORARY EROSION CONTROL MEASURES SHOWN ON THE DRAWINGS (INCLUDING SILT FENCE AND COMPOSITE FILTER TUBES) SHALL BE INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THESE TEMPORARY EROSION CONTROL MEASURES THROUGHOUT THE PROJECT WHICH COST SHALL BE INCIDENTAL TO THE PROJECT.
19. ALL SURPLUS AND/OR UNSUITABLE MATERIAL FROM CONSTRUCTION ACTIVITIES SHALL BE DISPOSED OF BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE TOWN IN ACCORDANCE WITH SPECIFICATION 02 61 00.16 - HANDLING, TRANSPORTATION, REUSE AND OFF-SITE DISPOSAL OF SURPLUS EXCAVATED MATERIAL. SUITABLE SOIL EXCAVATION AS PART OF THE PROJECT MUST MEET ONE OR MORE OF THE MATERIAL REQUIREMENTS SPECIFIED IN 31 00 00 - EARTHWORK. ON-SITE FILL MATERIALS, WHICH DO NOT CONFORM TO SPEC 31 00 00, SHALL NOT BE USED BELOW ANY STRUCTURES. IF THE CONTRACTOR PROPOSES TO USE THE EXISTING FILL ON SITE BELOW PAVEMENT AREAS, OR FOR THE EARTHEN BERM, IT MUST BE DEMONSTRATED THAT THE FILL MEETS THE REQUIREMENTS PER 31 00 00. ALL EXCAVATED FILL MATERIAL WHICH DOES NOT MEET THE REQUIREMENTS OF THE CONTRACT DOCUMENTS SHALL BE REMOVED AND DISPOSED OF OFF-SITE AT NO ADDITIONAL COST TO THE OWNER IN ACCORDANCE WITH SPECIFICATION 02 61 00.16.
20. CONTRACTOR IS RESPONSIBLE FOR STAKING CONSTRUCTION BASELINES IN FIELD. NO CONSTRUCTION WILL BE PERFORMED WITHOUT THE PROPOSED BASELINES AND LAYOUTS APPROVED BY THE ENGINEER.
21. NO FILL SHALL CONTAIN HAZARDOUS MATERIALS.
22. CONTRACTOR SHALL PROVIDE TEMPORARY FENCING AROUND PERIMETER OF WORK AREA (LIMIT OF WORK). FENCE SHALL NOT IMPEDE TRAVEL WAYS.
23. ANY QUANTITIES SHOWN ON PLANS ARE FOR COMPARATIVE BIDDING PURPOSES ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VISIT THE PROJECT SITE TO VERIFY ALL QUANTITIES AND CONDITIONS PRIOR TO SUBMITTING BID.
24. ALL EXISTING DRAINAGE FACILITIES TO REMAIN SHALL BE MAINTAINED FREE OF DEBRIS, SOIL, SEDIMENT, AND FOREIGN MATERIAL AND OPERATIONAL THROUGHOUT THE LIFE OF THE CONTRACT. REMOVE ALL SOIL, SEDIMENT, DEBRIS AND FOREIGN MATERIAL FROM ALL DRAINAGE STRUCTURES, INCLUDING BUT NOT LIMITED TO, DRAINAGE INLETS, MANHOLES AND CATCH BASINS WITHIN THE LIMIT OF WORK AND DRAINAGE STRUCTURES OUTSIDE THE LIMIT OF WORK THAT ARE IMPACTED BY THE WORK FOR THE ENTIRE DURATION OF CONSTRUCTION.
25. CONTRACTOR'S STAGING AREA MUST BE WITHIN THE CONTRACT LIMIT LINE AND IN AREAS APPROVED BY OWNER. ANY OTHER AREAS THAT THE CONTRACTOR MAY WISH TO USE FOR STAGING MUST BE COORDINATED WITH THE OWNER.
26. THE CONTRACTOR SHALL KEEP ALL STREETS, PARKING LOTS AND SIDEWALKS THAT ARE NOT RESTRICTED FROM PUBLIC USE DURING CONSTRUCTION BROOM CLEAN AT ALL TIMES. THE CONTRACTOR SHALL USE ACCEPTABLE METHODS AND MATERIALS TO MAINTAIN ADEQUATE DUST CONTROL THROUGHOUT CONSTRUCTION.
27. CONTRACTOR SHALL COORDINATE ALL WORK WITH THE OWNER.
28. CONTRACTOR SHALL DEWATER AS NECESSARY TO PERFORM THE PROPOSED WORK. SEE SPECIFICATION SECTION 003132 SUBSURFACE DATA).
29. THE LIMIT OF WORK SHALL BE DELINEATED IN THE FIELD PRIOR TO THE START OF SITE CLEARING OR CONSTRUCTION.
30. DEEP SUMP CATCH BASINS AND STORMWATER BASIN SHALL BE CLEANED FOLLOWING CONSTRUCTION AND SHALL FOLLOW THE OPERATION AND MAINTENANCE PLAN THEREAFTER.
31. HAULING OF EARTH MATERIALS TO AND FROM THE SITE SHALL BE RESTRICTED TO THE HOURS OF 7 AM TO 4 PM MONDAY THROUGH FRIDAY.
32. ANY BOULDERS 3 CY OR SMALLER SHALL BE CONSIDERED UNDOCUMENTED FILL AND SHALL BE DISPOSED OF AT NO ADDITIONAL COST TO THE TOWN.
33. WORK ON SATURDAYS SHALL ONLY BE CONDUCTED IF PRIOR WRITTEN PERMISSION IS PROVIDED BY THE OWNER.
34. THE TERM "AS DIRECTED" AS USED IN THE CONTRACT DRAWINGS SHALL BE REPLACED WITH "AS REQUIRED".

EROSION AND SEDIMENT CONTROL NOTES

1. ALL SEDIMENT AND EROSION CONTROL DEVICES SHALL BE PUT INTO PLACE PRIOR TO BEGINNING ANY CONSTRUCTION OR DEMOLITION. REFER TO PLAN FOR APPROXIMATE LOCATION OF EROSION AND SEDIMENT CONTROL. REFER TO SPECS AND DETAILS FOR TYPE OF EROSION AND SEDIMENT CONTROL.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTINUAL MAINTENANCE OF ALL CONTROL DEVICES THROUGHOUT THE DURATION OF THE PROJECT.
3. CONTRACTOR SHALL MEET ALL OF THE STATE OF MASSACHUSETTS D.E.P. AND THE TOWN OF NANTUCKET WETLAND ORDINANCE REGULATIONS FOR SEDIMENT AND EROSION CONTROL.
4. EXCAVATED MATERIAL STOCKPILED ON THE SITE SHALL BE SURROUNDED BY A RING OF UNBROKEN SEDIMENT AND EROSION CONTROL FENCE. THE LIMITS OF ALL GRADING AND DISTURBANCE SHALL BE KEPT TO A MINIMUM WITHIN THE APPROVED AREA OF CONSTRUCTION. ALL AREAS OUTSIDE OF THE LIMIT OF CONTRACT SHALL REMAIN TOTALLY UNDISTURBED UNLESS OTHERWISE APPROVED BY OWNER'S REPRESENTATIVE.
5. ALL CATCH BASINS AND DRAIN GRATES WITHIN LIMIT OF CONTRACT SHALL BE PROTECTED WITH FILTER FABRIC DURING THE ENTIRE DURATION OF CONSTRUCTION.
6. EROSION CONTROL BARRIERS TO BE INSTALLED AT THE TOE OF SLOPES. SEE GRADING & DRAINAGE PLANS, NOTES, DETAILS AND SPECIFICATIONS.
7. ANY AREA OUTSIDE THE PROJECT LIMIT THAT IS DISTURBED SHALL BE RESTORED TO ITS ORIGINAL CONDITION AT NO COST TO THE OWNER.
8. THE CONTRACTOR SHALL PROVIDE DUST CONTROL FOR CONSTRUCTION OPERATIONS AS APPROVED BY OWNER.
9. ALL POINTS OF CONSTRUCTION EGRESS OR INGRESS SHALL BE MAINTAINED TO PREVENT TRACKING OR FLOWING OF SEDIMENT ON TO PUBLIC/PRIVATE ROADS.

GRADING, UTILITIES & DRAINAGE NOTES

1. ALL WORK RELATING TO INSTALLATION, RENOVATION OR MODIFICATION OF WATER, DRAINAGE AND/OR SEWER SERVICES SHALL BE PERFORMED IN ACCORDANCE WITH THE STANDARDS OF THE TOWN OF NANTUCKET.
2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND GRADES ON THE GROUND AND REPORT ANY DISCREPANCIES IMMEDIATELY TO THE OWNER.
3. ALL GRADING IS TO BE SMOOTH AND CONTINUOUS WHERE PROPOSED GRAVEL SURFACE MEETS EXISTING SURFACE, BLEND THE TWO PAVEMENTS AND ELIMINATE ROUGH SPOTS AND ABRUPT GRADE CHANGES AND MEET LINE AND GRADE OF EXISTING CONDITIONS WITH NEW IMPROVEMENTS.
4. CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE (1.5% MINIMUM) AWAY FROM ALL BUILDING FOUNDATIONS AND STRUCTURES.
5. CONTRACTOR SHALL ENSURE ALL AREAS ARE PROPERLY PITCHED TO DRAIN, WITH NO SURFACE WATER PONDING OR PUDDLING.
6. ALL NEW WALKWAYS / ACCESS PATHS MUST CONFORM TO CURRENT AMERICANS WITH DISABILITIES ACT (ADA) REGULATIONS: WALKWAYS SHALL MAINTAIN A CROSS PITCH OF NOT MORE THAN ONE AND A HALF PERCENT (1.5%) AND THE RUNNING SLOPE (PARALLEL TO THE DIRECTION OF TRAVEL) BETWEEN 1% MIN. AND 5% MAX.
7. MINIMUM SLOPE ON ALL WALKWAYS WILL BE 1:100 OR 1% TO PROVIDE POSITIVE DRAINAGE. ANY DISCREPANCIES NOT ALLOWING THIS TO OCCUR SHALL BE REPORTED TO THE ENGINEER PRIOR TO CONTINUING WORK.
8. ALL UTILITY GRATES, COVERS OR OTHER SURFACE ELEMENTS INTENDED TO BE EXPOSED AT GRADE SHALL BE FLUSH WITH THE ADJACENT FINISHED GRADE AND ADJUSTED TO PROVIDE A SMOOTH TRANSITION AT ALL EDGES.
9. THE CONTRACTOR SHALL SET SUBGRADE ELEVATIONS TO ALLOW FOR POSITIVE DRAINAGE AND PROVIDE EROSION CONTROL DEVICES, STRUCTURES, MATERIALS AND CONSTRUCTION METHODS TO DIRECT SILT MIGRATION AWAY FROM DRAINAGE AND OTHER UTILITY SYSTEMS, PUBLIC/PRIVATE STREETS AND WORK AREAS. CLEAN BASINS REGULARLY AND AT THE END OF THE PROJECT.
10. EXCAVATION REQUIRED WITHIN PROXIMITY OF KNOWN EXISTING UTILITY LINES SHALL BE DONE BY HAND. CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING UTILITY LINES OR STRUCTURES INCURRED DURING CONSTRUCTION OPERATIONS AT NO COST TO THE OWNER.
11. WHERE NEW EARTHWORK MEETS EXISTING EARTHWORK, CONTRACTOR SHALL BLEND NEW EARTHWORK SMOOTHLY INTO EXISTING, PROVIDING VERTICAL CURVES OR ROUNDS AT ALL TOP AND BOTTOM OF SLOPES.
12. WHERE A SPECIFIC LIMIT OF WORK LINE IS NOT OBVIOUS OR IMPLIED, BLEND GRADES TO EXISTING CONDITIONS WITHIN 5 FEET OF PROPOSED CONTOURS.
13. RESTORE ALL DISTURBED AREAS AND LIMITS OF ALL REMOVALS TO LOAM AND SEED (L&S) UNLESS OTHERWISE NOTED.
14. SEE EARTHWORK SECTION OF SPECIFICATIONS FOR SPECIFIC EXCAVATION AND FILLING PROCEDURES.

DEMOLITION & SITE PREPARATION NOTES

1. THE CONTRACTOR SHALL INCLUDE IN THE BID THE COST OF REMOVING ANY EXISTING SITE FEATURES AND APPURTENANCES NECESSARY TO ACCOMPLISH THE CONSTRUCTION OF THE PROPOSED SITE IMPROVEMENTS. THE CONTRACTOR SHALL ALSO INCLUDE IN THE BID THE COST NECESSARY TO RESTORE SUCH ITEMS IF THEY ARE SCHEDULED TO REMAIN AS PART OF THE FINAL SITE IMPROVEMENTS. REFER TO PLANS TO DETERMINE EXCAVATION, DEMOLITION AND TO DETERMINE THE LOCATION OF THE PROPOSED SITE IMPROVEMENTS.
2. THE OWNER RESERVES THE RIGHT TO REVIEW ALL MATERIALS DESIGNATED FOR REMOVAL AND TO RETAIN OWNERSHIP OF SUCH MATERIALS. IF THE OWNER RETAINS ANY MATERIAL THE CONTRACTOR SHALL MAKE ARRANGEMENTS WITH THE OWNER TO HAVE THOSE MATERIALS REMOVED OFF SITE AT NO ADDITIONAL COST.
3. UNLESS SPECIFICALLY NOTED TO BE SAVED / STOCKPILED (R&S) OR REUSED / RELOCATED (R&R), ALL SITE FEATURES CALLED FOR REMOVAL (REM) SHALL BE REMOVED WITH THEIR FOOTINGS, ATTACHMENTS, BASE MATERIAL, ETC, TRANSPORTED FROM THE SITE TO BE DISPOSED OF IN A LAWFUL MANNER AT AN ACCEPTABLE DISPOSAL SITE AND AT NO ADDITIONAL COST TO THE OWNER.
4. ALL EXISTING SITE FEATURES TO REMAIN SHALL BE PROTECTED THROUGHOUT THE CONSTRUCTION PERIOD. ANY FEATURES DAMAGED DURING CONSTRUCTION OPERATIONS SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE AT NO ADDITIONAL COST.
5. DURING EARTHWORK OPERATIONS, CONTRACTOR SHALL TAKE CARE TO NOT DISTURB EXISTING MATERIALS TO REMAIN, OUTSIDE THE LIMITS OF EXCAVATION AND BACKFILL AND SHALL TAKE WHATEVER MEASURES NECESSARY, AT THE CONTRACTOR'S EXPENSE, TO PREVENT ANY EXCAVATED MATERIAL FROM COLLAPSING. ALL BACKFILL MATERIALS SHALL BE PLACED AND COMPACTED AS SPECIFIED TO THE SUBGRADE REQUIRED FOR THE INSTALLATION OF THE REMAINDER OF THE CONTRACT WORK.
6. IT SHALL BE THE CONTRACTOR'S OPTION, WITH CONCURRENCE OF THE OWNER, TO REUSE EXISTING GRAVEL IF IT MEETS THE REQUIREMENTS OF THE SPECIFICATIONS FOR GRAVEL BORROW.
7. ALL ITEMS CALLED FOR REMOVAL SHALL BE REMOVED TO FULL DEPTH INCLUDING ALL FOOTINGS, FOUNDATIONS, AND OTHER APPURTENANCES, EXCEPT AS SPECIFICALLY NOTED OTHERWISE.
8. 'CLEAR AND GRUB VEGETATION' SHALL INCLUDE REMOVAL OF GRASS, SHRUBS, AND UNDERBRUSH, REMOVAL OF ROOTS, STUMPS, ROUGH GRADING, INSTALLATION OF LOAM (IF APPLICABLE), FINE GRADING, SEEDING AND TURF ESTABLISHMENT BY THE CONTRACTOR.
9. TREES DESIGNATED FOR REMOVAL SHALL BE TAGGED BY CONTRACTOR AND APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO COMMENCEMENT OF CONSTRUCTION.
10. THE STORAGE OF MATERIALS AND EQUIPMENT WILL BE PERMITTED AT LOCATIONS DESIGNATED BY OWNER OR OWNER'S REPRESENTATIVE. PROTECTION OF STORED MATERIALS AND EQUIPMENT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
11. STRIP & STORE EXISTING TOPSOIL FOR LATER REUSE WHERE APPROPRIATE, AND AS NOTED ON PLAN, WITH APPROPRIATE EROSION AND SEDIMENT CONTROLS.
12. THE CONTRACTOR SHALL PROTECT EXISTING TREES TO REMAIN, CONTRACTOR SHALL INSTALL TREE PROTECTION BARRIER AFTER CLEARING UNDERBRUSH AND TAKE DUE CARE TO PREVENT INJURY TO TREES DURING CLEARING OPERATIONS.

LAYOUT & MATERIALS NOTES

1. REFER TO EXISTING CONDITIONS PLANS FOR SURVEY INFORMATION (SHEET C101).
2. COORDINATE ALL LAYOUT ACTIVITIES WITH THE SCOPE OF WORK CALLED FOR BY DEMOLITION, GRADING AND UTILITIES OPERATIONS ENCOMPASSED BY THIS CONTRACT. SET, PROTECT AND REPLACE REFERENCE STAKES AS NECESSARY OR AS REQUIRED BY THE OWNER'S REPRESENTATIVE.
3. ALL WORK SHALL BE PERFORMED BY CONTRACTOR UNLESS SPECIFICALLY INDICATED THAT THE WORK WILL BE PERFORMED "BY TOWN".
4. THE LAYOUT OF SITE AMENITIES AND FENCES MUST BE APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
5. THE LAYOUT OF ALL NEW PATHWAYS / WALKWAYS AND THE GRADING OF ALL SLOPES AND CROSS SLOPES SHALL CONFORM TO THE COMMONWEALTH OF MASSACHUSETTS RULES AND REGULATIONS FOR HANDICAP ACCESS CMR 521, AND THE AMERICANS WITH DISABILITIES ACT (ADA), TITLE 3. THE CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY OF ANY DISCREPANCIES BETWEEN ACTUAL CONDITIONS AND THOSE REQUIRED.
6. ALL LAYOUT LINES, OFFSETS, OR REFERENCES TO LOCATING OBJECTS ARE EITHER PARALLEL OR PERPENDICULAR UNLESS OTHERWISE DESIGNATED WITH ANGLE OFFSETS NOTED.
7. ALL PROPOSED SITE FEATURES SHALL BE LAID OUT AND STAKED FOR REVIEW AND APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO COMMENCEMENT OF INSTALLATION. ANY REQUIRED ADJUSTMENTS TO THE LAYOUT SHALL BE UNDERTAKEN AS DIRECTED, AT NO ADDITIONAL COST TO THE OWNER.
8. ALL PROPOSED PAVEMENTS SHALL MEET THE LINE AND GRADE OF EXISTING ADJACENT PAVEMENT SURFACES AND SHALL BE TREATED WITH AN RS-1 TACK COAT AT POINT OF CONNECTION. ALL PATHWAY WIDTHS SHALL BE AS NOTED ON THE LAYOUT AND MATERIALS PLAN.
9. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND GRADES ON THE GROUND AND REPORT ANY DISCREPANCIES IMMEDIATELY TO THE OWNER.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD MEASUREMENT OF ALL PROPOSED FENCES AND GATES.
11. THE DEPTH OF LOAM BORROW FOR ALL PROPOSED LAWN AREAS SHALL BE 6" MINIMUM. ALL DISTURBED AREAS SHALL BE RESTORED WITH LOAM AND SEED UNLESS OTHERWISE NOTED
12. ALL REFERENCES TO LOAM AND SEED (L&S) REFER TO HYDROMULCH SEEDED LAWN.
13. REFER TO DETAIL DRAWINGS FOR CONSTRUCTION DETAILS.

ABBREVIATIONS

GENERAL

ABAN	ABANDON
ADJ	ADJUST
B	BASELINE
BIT. CONC.	BITUMINOUS CONCRETE
B.M.	BENCH MARK
BWLL	BROKEN WHITE LANE LINE
CEM. CONC.	CEMENT CONCRETE
CLF	CHAIN LINK FENCE
CTE	CONNECT TO EXISTING
E.C.	ELECTRICAL CONTRACTOR
EOP	EDGE OF PAVEMENT
EQ	EQUIPMENT
EN	ENTRANCE
EV	ELECTRIC VEHICLE CHARGING STATION
EXIST. (OR EX.)	EXISTING
GRAN. CURB	GRANITE CURB
FDN	FOUNDATION
FFE	FINISHED FLOOR ELEVATON
F.L. (OR F)	FLOW LINE
G.C.	GENERAL CONTRACTOR
H.C.	HANDICAP
HMA	HOT MIX ASPHALT
L.O.W	LIMIT OF WORK
MB	MAIL BOX
M.H.B.	MASSACHUSETTS HIGHWAY BOUND
NIC	NOT IN CONTRACT
N.T.S.	NOT TO SCALE
P	PROPERTY LINE
P.C.	PLUMBING CONTRACTOR
PROP	PROPOSED
PROT	PROTECT
PVMT	PAVEMENT
P.W.W.	PAVED WATERWAY
RC	REINFORCED CONCRETE
REM	REMOVE
REMOD	REMODEL
RL	ROOF LEADER
RET	RETAIN
R&R	REMOVE AND RESET
R,R&R	REMOVE, RELOCATED AND RESET
R&D	REMOVE AND DISPOSE
R.O.W.	RIGHT-OF-WAY
R&S	REMOVE AND STACK
SB	STONE BOUND
SB/DH	STONE BOUND/ DRILL HOLE
STKF	STOCKADE FENCE
SWEL	SOLID WHITE EDGE LINE
SYEL	SOLID YELLOW EDGE LINE
TEMP.	TEMPORARY
TYP.	TYPICAL
VIF	VERIFY IN FIELD
WCR	WHEELCHAIR RAMP

UTILITIES

ACCM PIPE	ASPHALT COATED CORRUGATED METAL PIPE
CB	CATCH BASIN
CBCI	CATCH BASIN W/ CURB INLET
CI	CURB INLET
CI	CAST IRON
C.I.T.	CHANGE IN TYPE
CIP	CAST IRON PIPE
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
DI	DUCTILE IRON PIPE
DMH	DRAIN MANHOLE
DS	DOWN SPOUT
GICI	GUTTER INLET W/ CURB INLET
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
GI	GUTTER INLET
GV	GATE VALVE
GW	GARAGE WASTE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HH	HANDHOLE
HYD	HYDRANT
INV. ELEV.	INVERT ELEVATION
LB	LEACHING BASIN
LC	LEACHING CHAMBER
LG	LEACHING GALLEY
LP	LIGHT POLE
OCS	OUTLET CONTROL STRUCTURE
OGT	OIL AND GRIT TRAP
OHW	OVERHEAD WIRE
PVC	POLYVINYL CHLORIDE
RCP	REINFORCED CONCRETE PIPE
SMH	SEWER MANHOLE
SWTU	STORM WATER TREATMENT UNIT
UP	UTILITY POLE
UPLP	UTILITY POLE WITH LIGHT
VC	VITRIFIED CLAY PIPE
WG	WATER GATE

ALIGNMENT/GRADING

BC	BOTTOM OF CURB
BW	BOTTOM OF WALL
CC	CENTER OF CURVE
ELEV	ELEVATION
L.P.	LOW POINT
H.P.	HIGH POINT
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PI	POINT OF INTERSECTION
PT	POINT OF TANGENCY
PRC	POINT OF REVERSE CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVC	POINT OF VERTICAL CURVATURE
PVT	POINT OF VERTICAL TANGENCY
R	RADIUS OF CURVATURE
S.S.D.	STOPPING SIGHT DISTANCE
STA	STATION
TC	TOP OF CURB
TW	TOP OF WALL

GENERAL SYMBOLS

EXISTING	PROPOSED	
SEE EXISTING CONDITIONS PLAN FOR EXISTING SYMBOL LEGEND	CB	CATCH BASIN
		CATCH BASIN CURB INLET
		EDGE OF ROAD
		HANDHOLE (NUMBER AS NOTED)
		ELECTRIC MANHOLE
		TELEPHONE MANHOLE
		SEWER MANHOLE
		DRAINAGE MANHOLE
		GAS GATE
		WATER GATE VALVE
		HYDRANT
		WELL
	OR	LIGHTPOLE
		DRAIN PIPE
S S		SEWER MAIN
S		SEWER MAIN BY P.C.
E E		ELECTRIC DUCT
T T		TELEPHONE/COMMUNICATIONS/FIRE ALARM
GW GW		GARAGE WASTE LINE
GW		GARAGE WASTE LINE BY P.C.
V		VENTS BY P.C.
G		GAS MAIN
W		WATER MAIN
OHW		OVERHEAD WIRES
	OR	GUARD RAIL (SIZE AND TYPE NOTED)
		PROPERTY LINE
		WHEELCHAIR RAMP (WCR)
		FENCE (SIZE AND TYPE NOTED)
	EV	ELECTRIC VEHICLE CHARGING STATION
	B-1	BORING
	TP-1	TEST PIT
		MONITORING WELL
OHW OHW		UTILITY POLE
		GUY POLE
		FLAG POLE
		SIGN
		TREE LINE
		BOLLARD
	OR	BIKE RACK
		SAWCUT
		EROSION CONTROL (SPECIFIED ON PLANS)
	OW	OBSERVATION WELL
LOW		LIMIT OF WORK
		WETLAND BUFFER
		TEMPORARY FENCE
		CONCRETE BOUND FOUND
		TEMPORARY BENCHMARK (TBM)

Project:
NANTUCKET DEPARTMENT OF PUBLIC WORKS FACILITY

1 SHADBUSH ROAD
NANTUCKET, MA 02554

Weston & Sampson
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Consultants:

Revisions:

No.	Date	Description

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SCHEMATIC DESIGN NOT FOR CONSTRUCTION

Scale: AS NOTED

Date: 06 / 21 / 2024
Drawn By:
Reviewed By:
Aporoved By:

W&S Project No.: ENG22-00542
W&S File No.:

Drawing Title:

GENERAL NOTES AND LEGEND

Sheet Number:

C001

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N

CURRENT ZONING CLASSIFICATION:
Limited Use General 3 (L.U.G.-3)

MINIMUM LOT SIZE:	120,000 S.F.
MINIMUM FRONTAGE:	200 FT.
FRONT YARD SETBACK:	35 FT.
REAR/SIDE SETBACK:	20 FT.
GROUND COVER % :	3%

NOTES:

1) THE INFORMATION SHOWN HEREON IS BASED ON AN AERIAL FLIGHT LIDAR TOPOGRAPHIC MAPPING SURVEY PERFORMED BY BLUESKY GEOSPATIAL LTD IN JANUARY 2024.

2) UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE ONLY. ACTUAL LOCATIONS MUST BE DETERMINED IN THE FIELD.

3) PROPERTY LINES SHOWN ARE HEREON ARE FROM A PROPERTY SURVEY PREPARED BY BLACKWELL & ASSOCIATES, INC. DATED SEPTEMBER 3, 2009 AND RECORDED AT THE NANTUCKET REGISTRY OF DEEDS AS PLAN NO.: 2009-44/ LOT 3. LOT 3 CONTAINS 27.00 ACRES.

4) TEST PITS TP K-1, K-2, A-1, A-2, RANGE WERE OBSERVED BY BLACKWELL & ASSOCIATES, INC. ON 2/7/12. NO PERC TEST WERE PREFORMED, AS APPROVED BY THE BOARD OF HEALTH INSPECTOR, BECAUSE THE 15-MIN PRE-SOAK WAS UNOBTAINABLE DUE TO THE MED-FINE SAND EXISTING SOIL TYPE.

5) TEST PIT TP-201 WAS OBSERVED BY BLACKWELL & ASSOCIATES, INC. ON 4/22/24.

6) TEST PITS TP101-108 AND TP1-9 WERE OBSERVED BY WESTON & SAMPSON, INC. ON 4/22/24 - 4/24/24.

69-04
N/F
N.C.F., INC.

69-05
N/F
NANTUCKET CONSERVATION FOUNDATION, INC.
DEED: 356/329
SHARE 17, PP Bk. 1, Pg. 40

69-06
N/F
TOWN OF NANTUCKET
PROP. BK:7, PGS.: 146-148,186-187
PL. NO.:02-26
(VFW-LEASE)

70-04
N/F
NANTUCKET CONSERVATION FOUNDATION, INC.
DEED: 144/247
SHARE 18, PP Bk. 1, Pg. 40

NEW SOUTH ROAD
OLD SOUTH ROAD
HINSDALE (N.C.) ROAD
HINSDALE ROAD (SEE NOTE BELOW)
INDUSTRY ROAD
SHADBUSH ROAD
NEW YORK ROAD (FORM. MEAD'S WAY) (NEW LAYOUT)
EXISTING C.L.F.
CONSERVATION RESTRICTION DEED BK. 1187, PG. 99
(N.C.) (STATUS UNDETERMINED)
VFW BUILDING
FLAG POLE
LUG-3
CI
CRB w/Disk Fnd.
dhCB Not Fnd.
dhCB Fnd.
FOUND REBAR W/CAP
.02'
.06'
33.00'
231.00'
N14°11'21"E 33.00'
PCC = 23+52.06
PT=25+71.14
R=25.00' L=39.27'
R=380.00' L=87.51' Δ =13°11'38"
R=420.00' L=96.72' Δ=13°11'38"
R=40.00' L=62.83'
R=40.00' L=62.83' Δ=90°00'03"
R=25.00' L=37.79'
R=60.00' L=89.14' Δ=85°07'03"
R=185.50' L=188.50'
S84°48'26"W 261.43'
N86°18'26"E 324.63'
N84°48'26"E 585.06'
990.00'
200.00'
3,734 S.F.±
LOT G-1 OPEN SPACE EASEMENT 30,447 S.F.±
LOT H OPEN SPACE EASEMENT 14,539 S.F.±
LOT G-1 50,781 SF.±
69-295.9 N/F TOWN of NANTUCKET DEED BK. 1229, PG. 100 PL.No.:2016-59 LOT G-1
N/F N.I.L.B. LOT A-1.1 43,507 S.F.± PL. NO.: 2010-15
EXIST. CAPE TRANSIT STATION BUILDING
EXIST. SHOP & SHED
EXIST. SHED
EXIST. GAZEBO
EXIST. SEPTIC
EXIST. LEACH PIT
EXIST. GAS TANK
EXIST. GAS PUMPS
EXIST. CANOPY
EXIST. UTILITY POLE
69-294 N/F INDUSTRY ROAD TRUST MYLES REIS TRUSTEE DEED: 1276/056 PLAN NO.: 2010-62 LOT H
69-295 N/F ISLAND GAS, LLC DEED BK. 1696, PG. 073 PLAN NO. 2016-59 LOT G-2
69-295 N/F TOWN of NANTUCKET DEED BK. 1229 PG.100 PLAN NO. 2016-59 LOT G-3 to G-6
G-3 15,020 SF±
G-4 15,020 SF±
G-5 15,020 SF±
G-6 17,456 SF±
240.00' 20' WIDE ACCESS EASEMENT
169.66' 20' WIDE ACCESS EASEMENT
69-292 10 INDUSTRY LLC LOT N-1 16,447 sf± DEED: 1755/43 PLAN NO.: 2010-62
69-292.1 10 INDUSTRY LLC LOT N-2 18,322 sf± DEED: 1755/43 PLAN NO.: 2010-62
69-291 N/F N.I.L.B LOT A-1.2 PL. NO.: 2010-15
LOT H 5,376 sf±
20' ZONING SETBACK
35' ZONING SETBACK
20' WIDE DRAINAGE & UTILITY EASEMENT
PUBLIC - 40.00' WIDE ORDER OF TAKING DEED: 1229-124 PLAN:2010-16
2.5 STORY STEEL FRAME BLDG. 5000 S.F.± #7 SHADBUSH RD.
COMMUNITY SAILING
78-04.5 N/F TOWN OF NANTUCKET DEED: 1286, PAGE:132 PLAN NO.: 2010-62 LOT F
69-294 N/F 10 INDUSTRY LLC DEED: 1566/327 PLAN NO.: 2010-62 LOT M
78-04.4 N/F TOWN OF NANTUCKET (LEASED PARCEL-N.C.S.) DEED: 1286, PAGE:132 PLAN NO.: 2010-62 LOT I
78-028 N/F N.I.L.B. DEED: 1230/167 LOT1 PLAN NO.: 2009-644 13.612 AC±
LOT 3 78-05 N/F TOWN OF NANTUCKET PLAN NO. 2009-44 27.000 AC.±
78-026 N/F NCF, INC. CERT.: 12,236 L.C.C.14990-J LOT 62
78-027 N/F NILB LOT 4 PLAN NO. 2009-44 13.612 AC.±
620.00' .02' dhCB Fnd./Tipped
N 7°26'14" E 620.00'
N82°38'40"E 185.33'
dhCB Fnd./Held
dhCB Fnd. Set
S 75°48'39" E 991.81' 1222.81'
S31°37'14"E 342.00'
N 0°08'46" W 1450.00'
S05°56'41"E 244.87'
S84°48'26"W 173.85' 200.00'
N84°48'26"E 200.00'
N82°35'10"W 36.14'
S16°00'16"W 182.68'
S17°23'15"W 194.66'
S16°00'16"W 385.26'
S05°11'34"E 219.99'
S05°11'31"E 156.64'
N 05°11'31" W 156.64'
N 05°11'34" W 273.70'
N 05°11'34" W 346.00'
N 05°11'34" W 176.18'
S 05°11'34" E 176.18'
S84°48'26"W 120.00'
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S84°48'26"W 120.72'
S84°48'26"W 120.00'
S84°48'26"W 160.00'
S84°48'26"W 120.00'
10.66'
N 05°11'34" W 129.41'
20.00'
20' WIDE DRAINAGE & UTILITY EASEMENT

0 60 100 200 300
SCALE: 1" = 60'

Project:
NANTUCKET DEPARTMENT OF PUBLIC WORKS FACILITY

1 SHADBUSH ROAD
NANTUCKET, MA 02554

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Consultants:

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Reviewed By:
Aporoved By:

W&S Project No.: ENG22-00542
W&S File No.:

Drawing Title:

EXISTING CONDITIONS PLAN

Sheet Number:

C101

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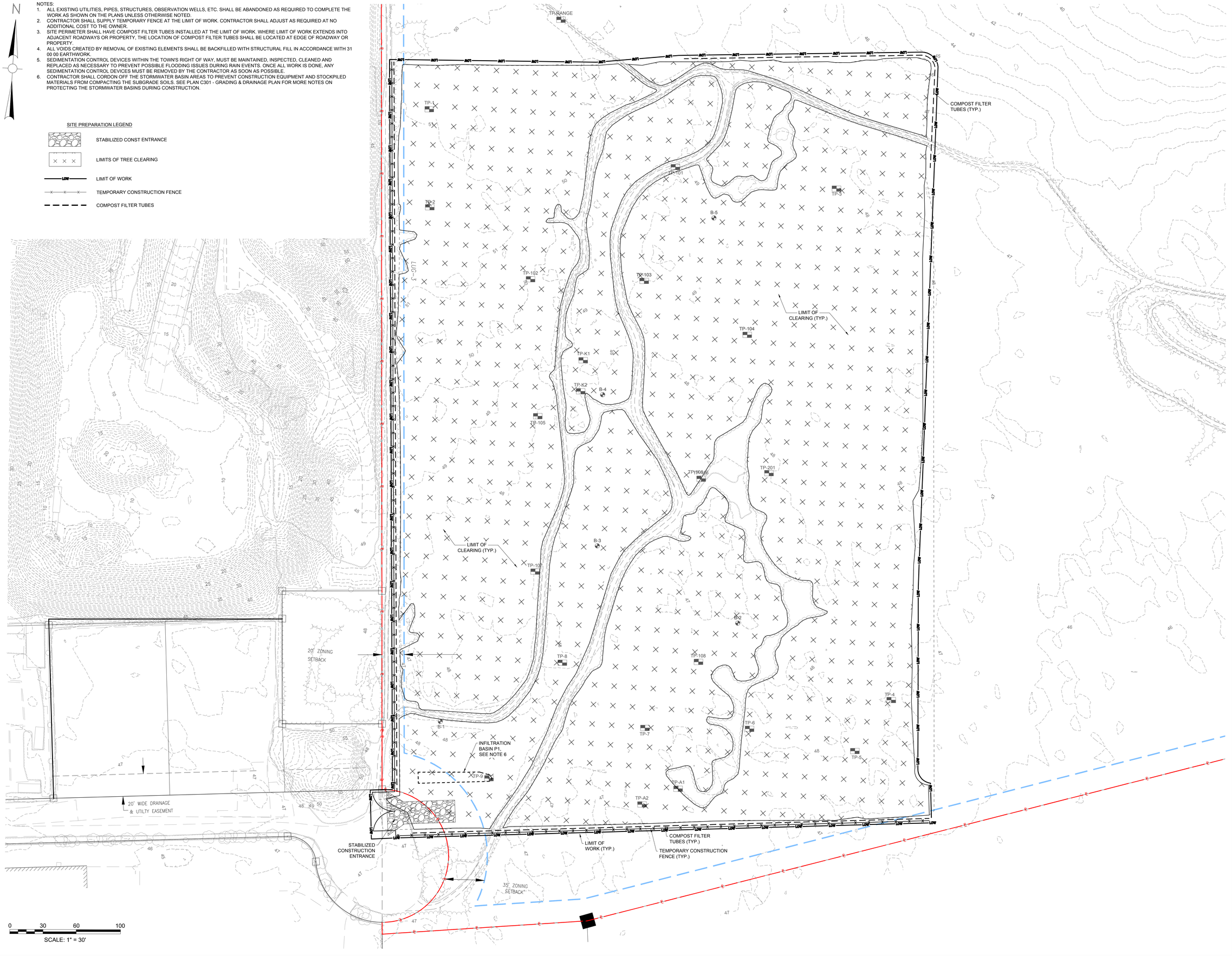
NOTES:

1. ALL EXISTING UTILITIES, PIPES, STRUCTURES, OBSERVATION WELLS, ETC. SHALL BE ABANDONED AS REQUIRED TO COMPLETE THE WORK AS SHOWN ON THE PLANS UNLESS OTHERWISE NOTED.
2. CONTRACTOR SHALL SUPPLY TEMPORARY FENCE AT THE LIMIT OF WORK. CONTRACTOR SHALL ADJUST AS REQUIRED AT NO ADDITIONAL COST TO THE OWNER.
3. SITE PERIMETER SHALL HAVE COMPOST FILTER TUBES INSTALLED AT THE LIMIT OF WORK. WHERE LIMIT OF WORK EXTENDS INTO ADJACENT ROADWAYS OR PROPERTY, THE LOCATION OF COMPOST FILTER TUBES SHALL BE LOCATED AT EDGE OF ROADWAY OR PROPERTY.
4. ALL VOIDS CREATED BY REMOVAL OF EXISTING ELEMENTS SHALL BE BACKFILLED WITH STRUCTURAL FILL IN ACCORDANCE WITH 31 00 00 EARTHWORK.
5. SEDIMENTATION CONTROL DEVICES WITHIN THE TOWN'S RIGHT OF WAY, MUST BE MAINTAINED, INSPECTED, CLEANED AND REPLACED AS NECESSARY TO PREVENT POSSIBLE FLOODING ISSUES DURING RAIN EVENTS. ONCE ALL WORK IS DONE, ANY SEDIMENTATION CONTROL DEVICES MUST BE REMOVED BY THE CONTRACTOR AS SOON AS POSSIBLE.
6. CONTRACTOR SHALL CORDON OFF THE STORMWATER BASIN AREAS TO PREVENT CONSTRUCTION EQUIPMENT AND STOCKPILED MATERIALS FROM COMPACTING THE SUBGRADE SOILS. SEE PLAN C301 - GRADING & DRAINAGE PLAN FOR MORE NOTES ON PROTECTING THE STORMWATER BASINS DURING CONSTRUCTION.

SITE PREPARATION LEGEND

- STABILIZED CONST ENTRANCE
- LIMITS OF TREE CLEARING
- LIMIT OF WORK
- TEMPORARY CONSTRUCTION FENCE
- COMPOST FILTER TUBES



Project:
NANTUCKET DEPARTMENT OF PUBLIC WORKS FACILITY

1 SHADBUSH ROAD
NANTUCKET, MA 02554

Weston & Sampson

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EROSION & SEDIMENT CONTROL PLAN

Sheet Number:

C201

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N

LEGEND

- HEAVY DUTY BITUMINOUS PAVEMENT
- CONCRETE
- BIORETENTION GRASSES AND PERENNIALS
- LOAM & SEED
- LIMIT OF WORK

MATERIAL STORAGE BINS 20x20 (TYP OF 5)
PROPOSED TREELINE
6' CHAINLINK PERIMETER FENCE
HMA CURB START
TP-RANGE
GRASS SWALE
HMA CURB END
MATERIAL STORAGE BINS 20x20 (TYP OF 7)
KNOCKDOWN PAD
CATCH BASIN (TYP.)
VEHICLE WASH BAY
DIRECTIONAL ARROW SEE NOTE 2
HEAVY DUTY BITUMINOUS PAVEMENT
DRAIN MANHOLE (TYP.)
FLEET MAINTENANCE BAYS
HMA CURB START
162.7
12.0
6' CHAINLINK PERIMETER FENCE
114.6
GASOLINE
DIESEL
FUEL ISLAND
SHOPS
CANOPY
VEHICLE STORAGE
HEAVY DUTY HMA PAVEMENT UNDER CANOPY
HEAVY DUTY BITUMINOUS PAVEMENT
"AUTHORIZED VEHICLES ONLY" SIGN
POSTS 35' O.C. AT GATE OPENING
CANTILEVER SLIDE GATE WITH GATE OPERATOR
HEAVY DUTY BITUMINOUS PAVEMENT
100.0
BOLLARD (TYP.)
ADMIN/EMPLOYEE FACILITIES
35.0
HMA CURB END
6' CHAINLINK FENCE
LOAM & SEED
R7-8 IN BOLLARD (TYP OF 3)
WCR
5' CONC. SIDEWALK
LOAM & SEED
20' ZONING SETBACK
SALT SHED LOADING RAMP
HMA CURB START
6" HMA PAVEMENT INSIDE SALT SHED
EV CHARGING PARKING STALLS (TYP OF 6)
4" PAVEMENT STRIPING (TYP.)
58 TOTAL SPACES
9'x20' PARKING STALL (TYP.)
107.0
30.0
SALT SHED
POSTS 35' O.C. AT GATE OPENING
HMA CURB
35.0
INFILTRATION BASIN P1
VGC
CANTILEVER SLIDE GATE WITH GATE OPERATOR
STOP SIGN
STOP SIGN
STOP SIGN
20' WIDE DRAINAGE & UTILITY EASEMENT
SHADBUSH ROAD
RIP RAP APRON AT CURB CUT (TYP)
"AUTHORIZED VEHICLES ONLY" SIGN
35' ZONING SETBACK

0 30 60 100
SCALE: 1" = 30'

Project:
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SITE LAYOUT & MATERIALS PLAN DEPARTMENT OF PUBLIC WORKS

Sheet Number:
C302

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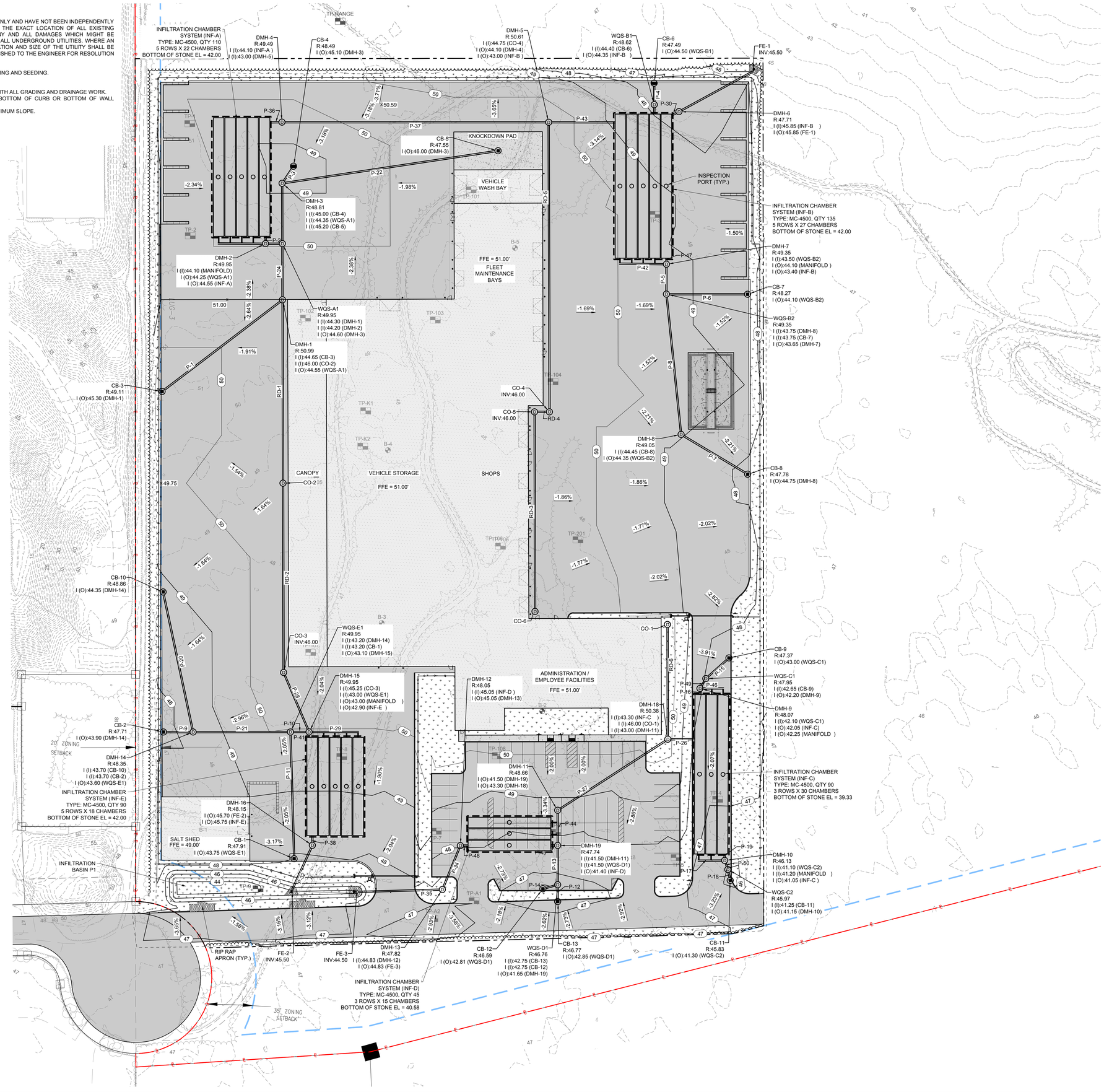
NOTES:
1. UNLESS OTHERWISE NOTED, ALL DRAIN MANHOLES SHALL BE 4' DIAMETER.
2. ALL RIM ELEVATIONS SHALL BE FLUSH WITH FINISH GRADE.
3. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
4. ALL CATCH BASINS SHALL BE SET FLUSH AGAINST THE GRANITE CURBING.
5. EROSION CONTROL FABRIC SHALL BE USED FOR ALL SLOPES 3:1 OR STEEPER PER 32 91 19 LOAMING AND SEEDING.
6. REFER TO THE UTILITY PLAN FOR CROSSING OF DRAINAGE PIPING AND PROPOSED UTILITIES.
7. REFER TO EXISTING CONDITIONS PLAN FOR BENCHMARK LOCATIONS.
8. REFER TO UTILITY PLAN FOR PROPOSED UTILITY LOCATIONS AND COORDINATE ACCORDINGLY WITH ALL GRADING AND DRAINAGE WORK.
9. UNLESS NOTED AS TOP OF CURB (TOC) AND ALL SPOT ELEVATIONS ARE SHOWN AS THE BOTTOM OF CURB OR BOTTOM OF WALL ELEVATION. TOP OF CURB ELEVATIONS ARE 6" HIGHER THAN BOTTOM OF CURB.
10. GRASSED AREAS ADJOINING THE BUILDING SHALL SLOPE AWAY FROM THE BUILDING AT A 1% MINIMUM SLOPE.



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GRADING & DRAINAGE PLAN

Sheet Number:

C401

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NOTES:

1. THE PLUMBING CONTRACTOR (P.C.) IS RESPONSIBLE FOR THE CONSTRUCTION OF THE DOMESTIC WATER LINES & SANITARY SERVICES INSIDE THE BUILDING AND EXTENDING TO 10' FROM THE FACE OF THE BUILDING UNLESS OTHERWISE NOTED (SEE P-SERIES DRAWINGS). GENERAL CONTRACTOR (G.C.) IS RESPONSIBLE FOR EXTENDING SANITARY/SEPTIC SERVICES INTO THE SITE AND CONNECTING TO THE PLUMBER'S WORK.
2. P.C. SHALL PROVIDE & INSTALL ALL SANITARY PIPING FROM THE BUILDING TO THE GAS OIL SAND SEPARATOR AND TO THE TIGHT TANK (INCLUDING FINAL CONNECTIONS TO THE TANK) AS SHOWN ON PLUMBING PLANS. G.C. SHALL EXCAVATE & BACKFILL FOR ALL EXTERIOR PIPING, INCLUDING VENT PIPING, & GAS OIL SAND SEPARATOR. THE CONTRACTOR SHALL PATCH EXISTING PAVED AREAS WITH BITUMINOUS PAVEMENT FOLLOWING UTILITY INSTALLATION.
3. THE G.C. IS RESPONSIBLE FOR EXCAVATION AND BACKFILL FOR ALL UNDERGROUND UTILITIES WITHIN THE BUILDING. COORDINATE LOCATIONS, ROUTING, DEPTH, ETC. WITH EACH SUBCONTRACTOR.
4. THE G.C. SHALL COORDINATE BOLLARD LOCATIONS FOR ELECTRICAL TRANSFORMER WITH UTILITY COMPANY PRIOR TO INSTALLATION.
5. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE G.C. SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE G.C. FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE G.C. AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
6. THE G.C. SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY OWNER.
7. THE G.C. IS RESPONSIBLE FOR ADJUSTING HORIZONTAL AND VERTICAL ALIGNMENT OF PROPOSED UTILITIES AS REQUIRED TO COMPLETE THE PROPOSED DRAINAGE AND SEWER WORK.
8. THE G.C. SHALL PROVIDE ALL NECESSARY FITTINGS TO ACHIEVE WATER SERVICE LAYOUT AS SHOWN ON THE DRAWINGS.
9. THE G.C. IS RESPONSIBLE FOR PROVIDING PROPER TRANSITION MATERIAL AND FITTINGS TO PROVIDE A TIGHT TRANSITION FROM DISSIMILAR PIPE MATERIALS FROM PLUMBING & FIRE PROTECTION WORK TO G.C. WORK.
10. THE G.C. SHALL BE RESPONSIBLE FOR THE EXCAVATION, SAND PIPE BEDDING, AND BACKFILL OF THE GAS LINE. THE PIPE INSTALLATION WILL BE THE RESPONSIBILITY OF THE GAS COMPANY FROM THE MAIN TO THE METER. THE GAS COMPANY WILL DETERMINE IN THE FIELD THE EXACT LOCATION FOR PROPER CONNECTION TO THE EXISTING GAS MAIN.
11. THE G.C. IS RESPONSIBLE FOR EXCAVATION, BACKFILL, CONCRETE ENCASEMENT, AND REINFORCEMENT FOR ALL UNDERGROUND CONDUITS/DUCTBANKS, HANDHOLES, PLUMBING, AND FIRE PROTECTION WORK. COORDINATE LIMITS OF WORK WITH FP, P, E, AND TC DRAWINGS FOR WORK NOT SHOWN ON THIS DRAWING.
12. THE FIRE PROTECTION CONTRACTOR IS RESPONSIBLE FOR THE CONSTRUCTION OF THE FIRE PROTECTION SERVICE INSIDE THE BUILDING AND EXTENDING FROM THE FACE OF THE BUILDING TO THE GATE VALVE AT THE"TEE (SEE FP-SERIES DRAWINGS). GC IS RESPONSIBLE FOR EXTENDING NEW WATER SERVICE INTO THE SITE AND FOR CONNECTION TO THE FIRE PROTECTION CONTRACTOR'S WORK.
13. REFER TO ELECTRICAL SITE PLANS FOR LIGHT POLE CONDUIT QUANTITY & ROUTING. G.C. TO PROVIDE & INSTALL LIGHT POLE FOUNDATIONS & E.C. TO PROVIDE & INSTALL LIGHT POLES. G.C. TO EXCAVATE AND BACKFILL FOR ALL CONDUITS. E.C. TO PROVIDE AND INSTALL CONDUITS.
14. CONDUITS FOR AUTOMATIC GATES NOT SHOWN. COORDINATE QUANTITY AND LOCATION WITH E002. E.C. TO PROVIDE AND INSTALL CONDUITS. G.C. TO EXCAVATE AND BACKFILL FOR CONDUITS.

CONNECT TO EXISTING 12" D.I. WATER MAIN IN BUNKER ROAD

PROPOSED 8" D.I. WATER LINE (APPROX 2,220 LF)

INFILTRATION CHAMBER SYSTEM (INF-A)

INFILTRATION CHAMBER SYSTEM (INF-B)

INFILTRATION CHAMBER SYSTEM (INF-C)

INFILTRATION CHAMBER SYSTEM (INF-D)

INFILTRATION CHAMBER SYSTEM (INF-E)

INFILTRATION BASIN P1

CONCEPTUAL SEPTIC SYSTEM LOCATION TO BE DESIGNED BY BLACKWELL & ASSOCIATES, INC.

PROPOSED HYDRANT

FUEL ISLAND

CANOPY

VEHICLE WASH BAY

FLEET MAINTENANCE BAYS

VEHICLE STORAGE

SHOPS

ADMINISTRATION/ EMPLOYEE FACILITIES

SALT SHED

2.5 STORY STEEL FRAME BLDG. 5000 S.F.± #7 SHADBUSH RD.

69-06 N/F TOWN OF NANTUCKET PROP. BK:7, PGS.: 146-148,186-187 PL. NO.:02-26 (VFW-LEASE)

69-295.9 N/F TOWN of NANTUCKET DEED BK. 1229, PG. 100 PL.No.:2016-59 LOT G-1

69-295 N/F ISLAND GAS, LLC DEED BK. 1696, PG. 073 PLAN NO. 2016-59 LOT G-2

69-295 N/F TOWN of NANTUCKET DEED BK. 1229 PG.100 PLAN NO. 2016-59 LOT G-3 to G-6

69-294 N/F INDUSTRY ROAD TRUST MYLES REIS TRUSTEE DEED: 1276/056 PLAN NO.: 2010-62 LOT H

69-292 10 INDUSTRY LLC DEED: 1755/43 PLAN NO.: 2010-62

69-292.1 10 INDUSTRY, LLC DEED: 1755/43 PLAN NO.: 2010-62

69-294 N/F 10 INDUSTRY LLC DEED: 1566/327 PLAN NO.: 2010-62

69-291

78-026 N/F NCF, INC. CERT.: 12,236 L.C.C.14990-J LOT 62

LOT 3 78-05 N/F TOWN OF NANTUCKET PLAN NO. 2009-44 27.000 AC.±

N/F N.U.L.B. LOT A-1.1 43,507 S.F.± PL. NO.: 2010-15

CONSERVATION RESTRICTION DEED BK. 1187, PG. 99

EXISTING C.L.F.

HINSDALE (N.C.) ROAD

VFW BUILDING

FLAG POLE

OLD SOUTH ROAD

SHADBUSH ROAD

EXIST. CONCRETE PLANT

EXIST. GAS TRANSFER STATION BUILDING

EXIST. SHOP & OFFICE

EXIST. SHED

3,734 S.F.±

R=25.00 L=39.27'

20' WIDE DRAINAGE & UTILITY EASEMENT

20' WIDE ACCESS EASEMENT

20' ZONING SETBACK

35' ZONING SETBACK

90.00' S85°58'13"W

20' WIDE DRAINAGE & UTILITY EASEMENT

40' WIDE ORDER OF TAKING DEED: 1229-124, PLAN:2010-16

22.0

620.00' .02' 3.7' dhCB Fnd./Tipped

0 50 100 150 200

SCALE: 1" = 50'

Project:
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1 SHADBUSH ROAD
NANTUCKET, MA 02554

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UTILITY PLAN

Sheet Number:

C501

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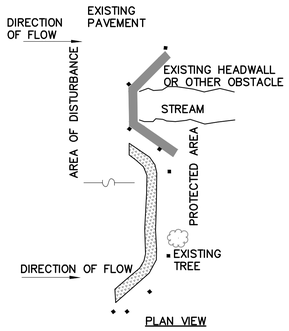


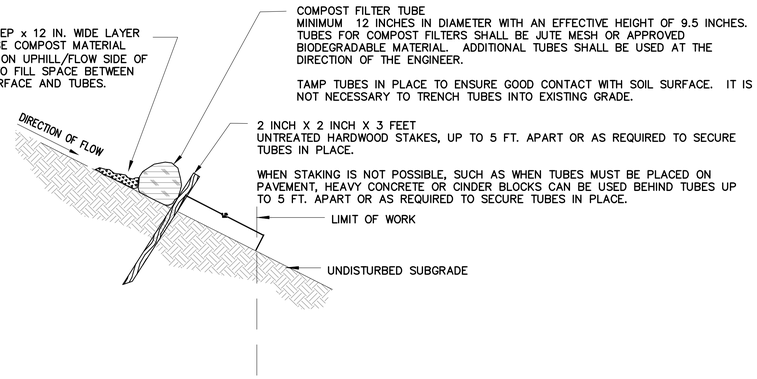
PLAN VIEW

PLACING TUBES AGAINST THE UPHILL SIDE OF WELL– ANCHORED, STATIONARY FEATURES SUCH AS EXISTING TREES CAN PROVIDE ADDITIONAL BRACING.

CURVE ENDS UPHILL TO PREVENT DIVERSION OF UNFILTERED RUN–OFF.

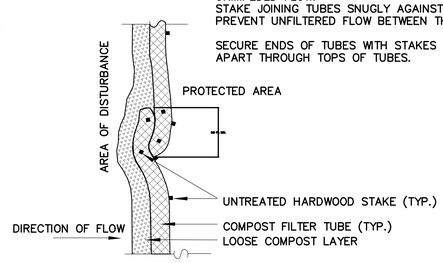
GENERAL NOTES:

1. PROVIDE A MINIMUM TUBE DIAMETER OF 12 INCHES FOR SLOPES UP TO 50 FEET IN LENGTH WITH A SLOPE RATIO OF 3H:1V OR STEEPER. LONGER SLOPES OF 3H:1V MAY REQUIRE LARGER TUBE DIAMETER OR ADDITIONAL COURSING OF FILTER TUBES TO CREATE A FILTER BERM. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR SITUATIONS WITH LONGER OR STEEPER SLOPES.
2. INSTALL TUBES ALONG CONTOURS AND PERPENDICULAR TO SHEET OR CONCENTRATED FLOW.
3. DO NOT INSTALL IN PERENNIAL, EPHEMERAL OR INTERMITTENT STREAMS.
4. CONFIGURE TUBES AROUND EXISTING SITE FEATURES TO MINIMIZE SITE DISTURBANCE AND MAXIMIZE CAPTURE AREA OF STORMWATER RUN–OFF.
5. MULCH MATERIAL FOR THE FILTER TUBES SHALL BE WEED–FREE STRAW, WOOD EXCELSIOR, COMPOST, OR WOOD CHIPS, OR COIR. STRAW SHALL BE WEED FREE AND DERIVED FROM THRESHING OF GRAIN CROP.



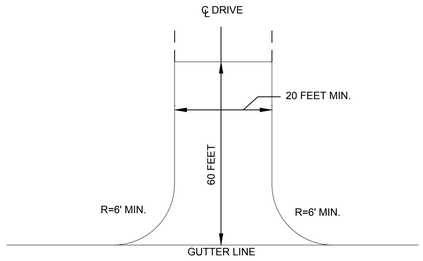
PROVIDE A 3 FT. MINIMUM OVERLAP AT ENDS OF TUBES TO JOIN IN A CONTINUOUS BARRIER AND MINIMIZE UNIMPEDED FLOW.
STAKE JOINING TUBES SNUGLY AGAINST EACH OTHER TO PREVENT UNFILTERED FLOW BETWEEN THEM.

SECURE ENDS OF TUBES WITH STAKES SPACED 18 IN. APART THROUGH TOPS OF TUBES.



PLAN VIEW – JOINING DETAIL

1 EROSION CONTROL MEASURE: SINGLE COMPOST FILTER TUBE DETAIL
SCALE: N.T.S.



PLAN

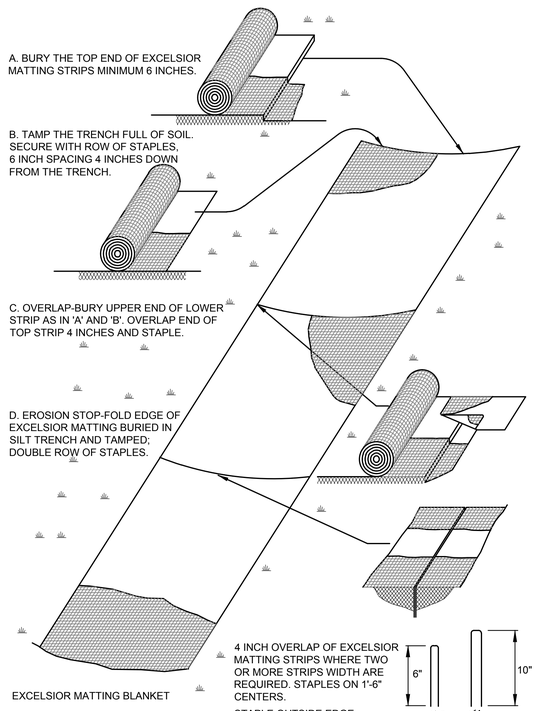
NOTES:

1. AT LEAST ONE CONSTRUCTION ENTRANCE SHALL BE PLACED AT EACH ENTRANCE TO THE SITE, THROUGHOUT CONSTRUCTION ACTIVITIES.
2. THE LOCATION OF THE CONSTRUCTION ENTRANCE(S) SHALL BE APPROVED BY THE OWNER PRIOR TO PLACEMENT.
3. CONSTRUCTION ENTRANCE(S) SHALL CONSIST OF 2" CRUSHED STONE PLACED AT A DEPTH OF A MINIMUM 8 INCHES PLACED OVER GEOTEXTILE FABRIC.
4. CONTRACTOR IS RESPONSIBLE FOR DAILY INSPECTION AND ALL NECESSARY MAINTENANCE OF ALL ENTRANCES.
5. CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF SEDIMENTS OR ANY OTHER MATERIALS TRACKED ONTO THE STREET, AS WELL MAINTENANCE OF EROSION CONTROL MEASURES.

2 STABILIZED TEMPORARY CONSTRUCTION ENTRANCE
SCALE: N.T.S.

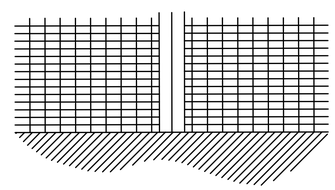
PLAN VIEW

1. EROSION CONTROL MEASURES SHALL BE INCORPORATED IN THE SEQUENCE OF CONSTRUCTION TO PREVENT SEDIMENT LADEN WATER FROM LEAVING THE SITE.
2. AREAS SUBJECT TO EROSION SHALL BE MINIMIZED IN TERMS OF TIME AND AREA.
3. IN GENERAL, WORK REQUIRING EROSION CONTROL INCLUDES EXCAVATIONS, FILLS, DRAINAGE, SWALES AND DITCHES, ROUGH AND FINISH GRADING, AND STOCKPILING OF EARTH.
4. DO NOT DISTURB VEGETATION AND TOPSOIL BEYOND THE PROPOSED LIMIT OF SILT FENCE ACTIVITIES.
5. TEMPORARY SILT CONTROLS SHALL BE PLACED AS SHOWN ON THE PLAN. PERMANENTLY STABILIZE EACH COMPLETED SEGMENT OF CONSTRUCTION.
6. THE CONTRACTOR SHALL REMOVE TEMPORARY SILT CONTROLS AND ALL ACCUMULATED SILT AND DEBRIS AFTER COMPLETION OF CONSTRUCTION OPERATIONS.
7. SILT CONTROLS SHALL BE IN PLACE AT ALL TIMES DURING CONSTRUCTION.
8. THE CONTRACTOR SHALL REMOVE AND LEGALLY DISPOSE OF ALL SILT AND DEBRIS FROM EACH DRAINAGE STRUCTURE UPON COMPLETION OF THE PROJECT.
9. OBJECTS AND/OR AREAS DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION.
10. ALL DISTURBED AREAS SHALL BE RESTORED TO EXISTING GRADE. INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE AS NEEDED.
11. SILT CONTROLS SHALL BE REMOVED UPON THE SATISFACTORY COMPLETION OF ALL WORK SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
12. SITE PERIMETER SHALL HAVE COMPOST FILTER TUBES INSTALLED AS SHOWN ON C201.



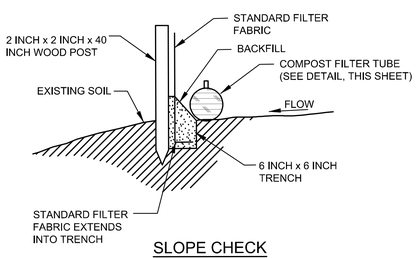
3 EROSION CONTROL BLANKET
SCALE: N.T.S.

NOTE:
JUTE NETTING TO BE USED ON ALL SLOPES GREATER THAN 4H:1V AS INDICATED ON GRADING PLANS



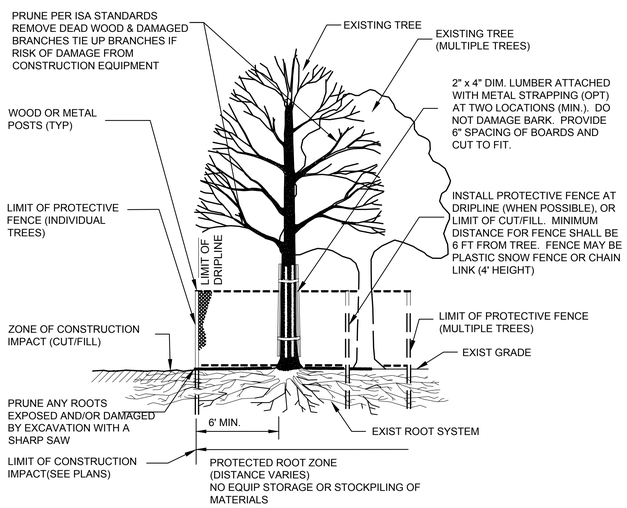
WHEN JOINING TWO OR MORE SILTATION FENCES TIE THE TWO END POSTS TOGETHER WITH NYLON CORD.

DITCH CHECK

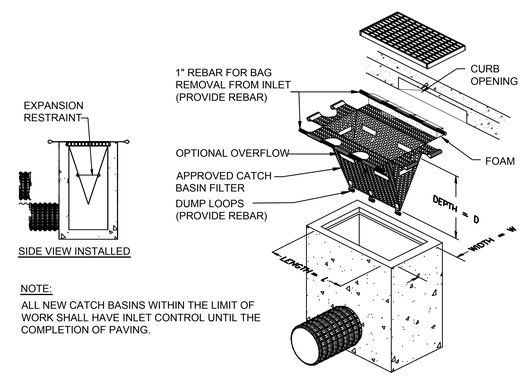


SLOPE CHECK

4 SILT FENCE- EROSION CONTROL
SCALE: N.T.S.



5 EXISTING TREE PROTECTION
SCALE: N.T.S.



NOTE:
ALL NEW CATCH BASINS WITHIN THE LIMIT OF WORK SHALL HAVE INLET CONTROL UNTIL THE COMPLETION OF PAVING.

6 INLET SEDIMENT CONTROL
SCALE: N.T.S.

\\net1\cad\WP\Projects\Nantucket MUSEDPW\1 - Nantucket DPW 1 staff\Project_Z\CIVIL\CAD\Nantucket DPW Remove\Mill\MUSDPW-CivilSheetSet(TCW).TCT dwg

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Drawing Title:
CIVIL DETAILS I

Sheet Number:
C601

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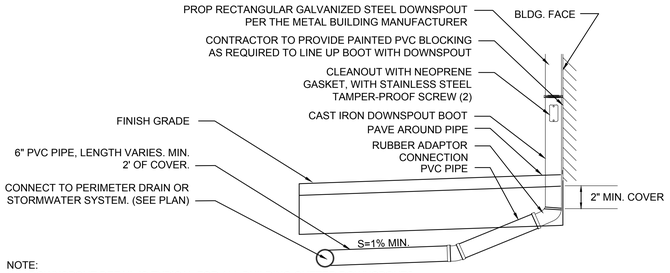
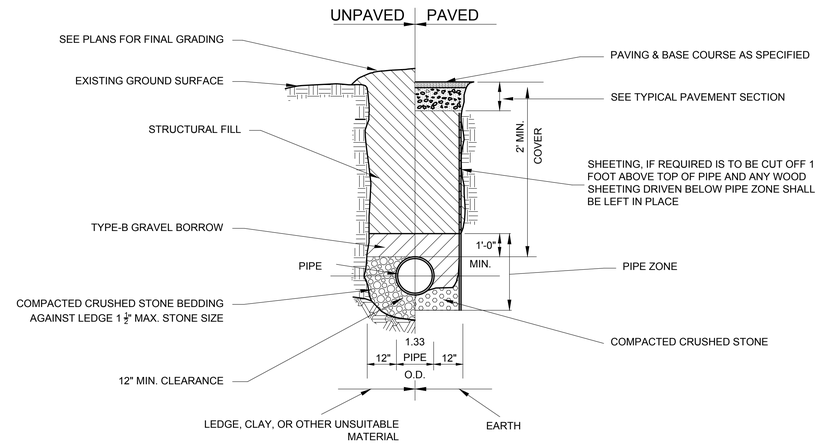
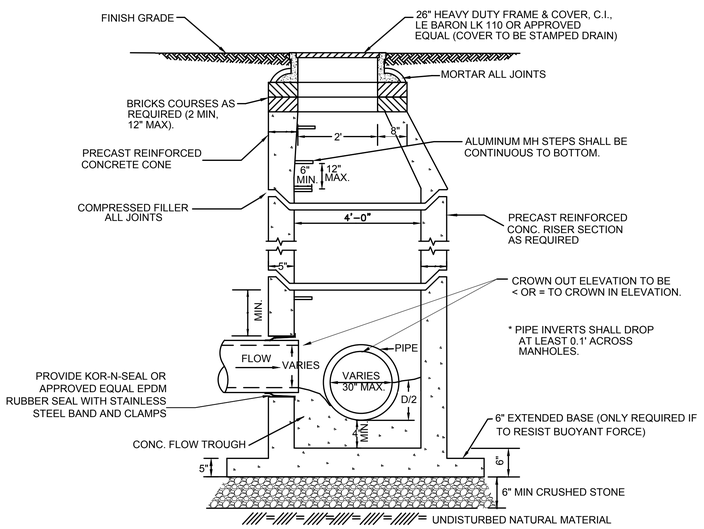


NOTE:
1. DOWNSPOUT DETAIL IS TYPICAL FOR ALL BUILDING GUTTER DOWNSPOUTS.
2. REFER TO ARCHITECTURAL PLANS FOR EXACT QUANTITY & LOCATION.
3. COORDINATE WITH CIVIL SITE PLANS FOR CONNECTIONS TO STORM SYSTEM.
4. PROVIDE A DOWNSPOUT BOOT AT EACH DOWNSPOUT TO ALLOW THE RECTANGULAR DOWNSPOUT TO TRANSITION TO THE ROUND CAST IRON RECEPTOR PIPE.
5. PAINT DOWNSPOUT ADAPTER BY PAINTING SUBCONTRACTOR. COLOR AS SELECTED BY THE ARCHITECT (CONFIRMED BY OWNER).
6. DOWNSPOUT ADAPTER SHALL BE MANUFACTURED BY J.R. HOE AND SONS, NEENAH FOUNDRY, PIEDMONT MANUFACTURING OR APPROVED EQUAL.

1 GUTTER DOWNSPOUT CONNECTION DETAIL (EXTERNAL)
SCALE: N.T.S.



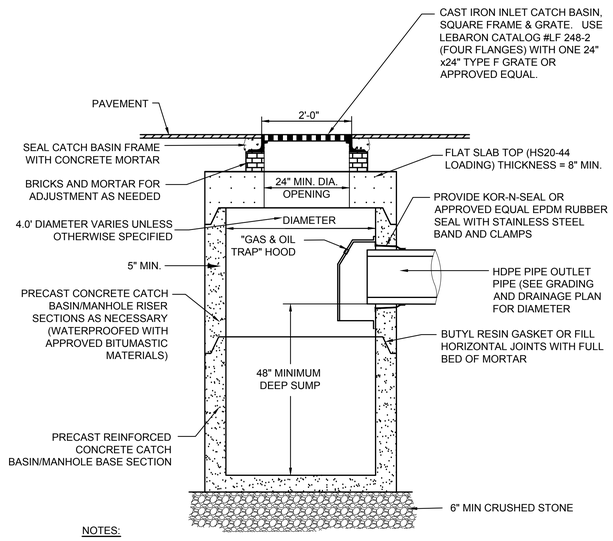
2 TYPICAL STORM DRAIN TRENCH DETAIL
SCALE: N.T.S.



NOTE:
1. THE DRAIN MANHOLE SHALL BE DESIGNED TO RESIST BUOYANCY. ASSUMING GROUNDWATER IS AT GRADE, MANUFACTURER SHALL PROVIDE BUOYANCY CALCULATIONS, STAMPED BY A MASSACHUSETTS P.E.

2. MANHOLE FRAME AND COVER SHALL BE H-20 WHEEL LOAD RATED.

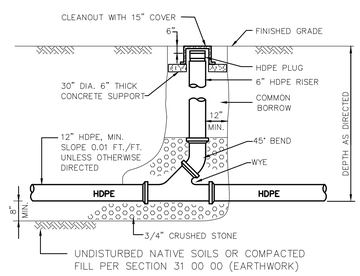
3 TYPICAL PRECAST CONCRETE MANHOLE
SCALE: N.T.S.



NOTES:

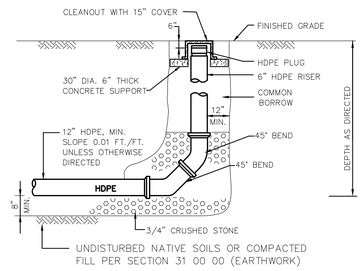
1. FOR DOUBLE CATCH BASINS, STRUCTURE SHALL BE 6' IN DIAMETER.
2. THE CATCH BASIN SHALL BE DESIGNED TO RESIST BUOYANCY. ASSUMING GROUNDWATER IS AT GRADE, MANUFACTURER SHALL PROVIDE BUOYANCY CALCULATIONS, STAMPED BY A MASSACHUSETTS P.E.
3. MANHOLE FRAME AND COVER SHALL BE H-20 WHEEL LOAD RATED.

4 STANDARD CATCH BASIN
SCALE: N.T.S.



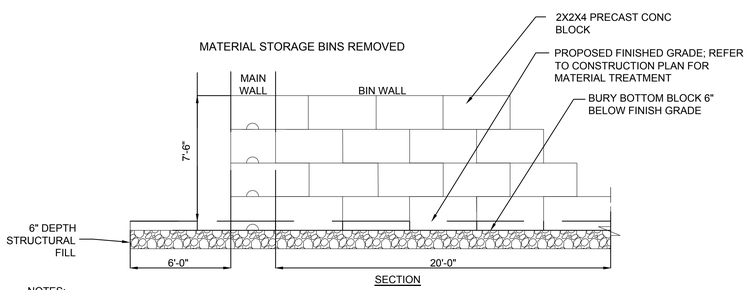
5 WYE CLEANOUT
SCALE: N.T.S.

NOTES:
1. REFER TO PLAN FOR PIPE DIAMETER.
2. CLEANOUTS LOCATED IN PAVED AREAS SHALL BE H-20 WHEEL LOAD RATED



6 END CLEANOUT
SCALE: N.T.S.

NOTES:
1. REFER TO PLAN FOR PIPE DIAMETER.
2. CLEANOUTS LOCATED IN PAVED AREAS SHALL BE H-20 WHEEL LOAD RATED



NOTES:
1. PRECAST BLOCKS SHALL BE INTERLOCKING AT ALL INTERSECTING WALLS.
2. PAINTING CONTRACTOR SHALL PAINT A 4" MARKER AT 6' ABOVE FINISHED GRADE ALONG THE INTERIOR PERIMETER OF EACH BULK MATERIAL STORAGE BIN.
3. CONTRACTOR SHALL PROVIDE A SIGN IN ACCORDANCE WITH MASSDOT STANDARD SPECIFICATION SECTION 828. THE SIGN SHALL BE 8 INCHES TALL AND HAVE LETTERING SIMILAR TO STREET NAME SIGN TYPE D3, AS DESCRIBED IN THE MUTCD (LATEST EDITION). THE SIGN SHALL STATE "MAXIMUM FILL HEIGHT 6 FEET" FOR EACH STORAGE BIN.
4. 2"Wx8"Lx1/2" THICK GALVAN. STEEL PLATE BOLTED TO EACH BLOCK AT VERTICAL JOINT. (TYP) PLATE PROVIDED AND INSTALLED BY G.C. PROVIDE PRE-DRILLED HOLES FOR SELF TAPPING CONCRETE SCREWS.
5. THE CONTRACTOR SHALL SUBMIT WALL DESIGN STAMPED BY A MASSACHUSETTS REGISTERED PROFESSIONAL ENGINEER. THE SUBMITTAL MUST BE APPROVED BY THE DESIGN ENGINEER PRIOR TO CONSTRUCTION.

7 PRECAST CONCRETE BLOCK STORAGE BIN WALL DETAIL
SCALE: N.T.S.

Project:
NANTUCKET DEPARTMENT OF PUBLIC WORKS FACILITY

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Revisions:

No.	Date	Description

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W&S Project No.:	ENG22-00542
W&S File No.:	

Drawing Title:

CIVIL DETAILS II

Sheet Number:

C602

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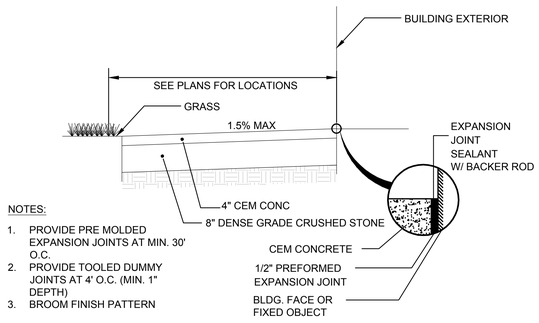
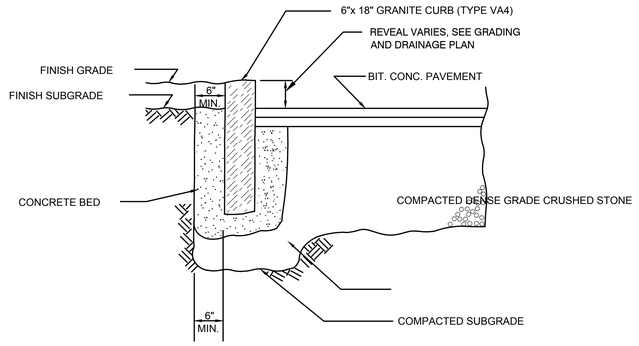
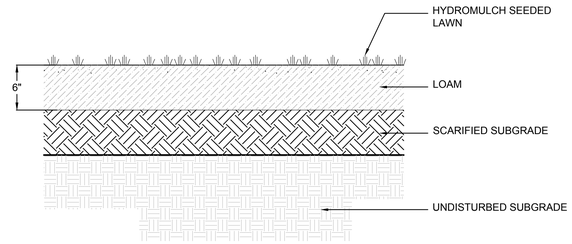


1 CEMENT CONCRETE WALK
SCALE: N.T.S.



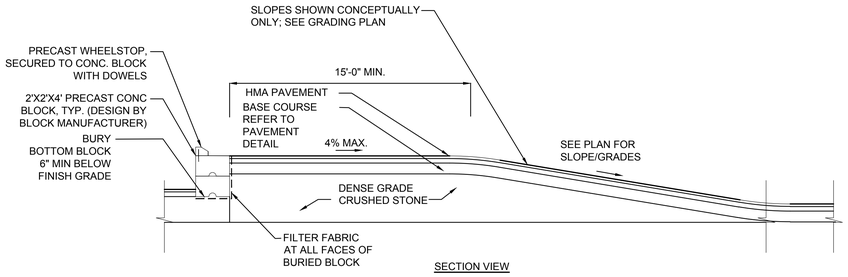
2 GRANITE CURB DETAIL
SCALE: N.T.S.

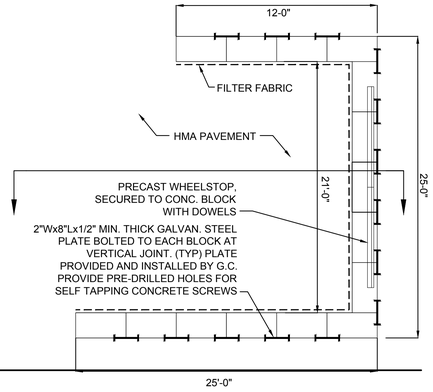


3 LOAM & SEED
SCALE: N.T.S.

NOTES:

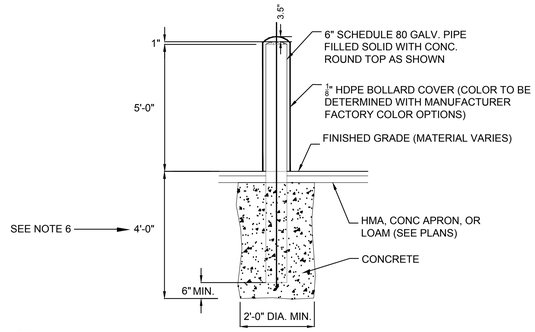
1. REFER TO THE LANDSCAPING PLAN FOR ADDITIONAL INFORMATION AND LOCATION OF LOAM AND SEED AREAS.





4 SALT SHED CONCRETE BLOCK LOADING RAMP
SCALE: N.T.S.

NOTES:
1. CONCRETE BLOCKS SHALL BE COATED WITH A SALT RESISTANT SEALER.
2. THIS TYPICAL DETAIL IS SHOW FOR ILLUSTRATIVE PURPOSES. THE CONTRACTOR SHALL SUBMIT LOADING RAMP DESIGN STAMPED BY A MASSACHUSETTS REGISTERED PROFESSIONAL ENGINEER. THE SUBMITTAL MUST BE APPROVED BY THE DESIGN ENGINEER PRIOR TO CONSTRUCTION.
3. REFER TO SPECIFICATION SECTION 32 34 81 "BULK MATERIAL STORAGE BINS" FOR FURTHER DETAIL.



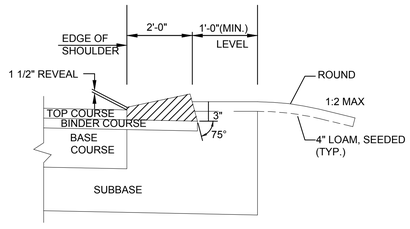
NOTES:

1. SEE C103 SERIES FOR BOLLARD LOCATIONS.
2. BOLLARD FOUNDATION CONCRETE TO BE 3000 PSI MIN.
3. EXACT LOCATION TO BE DETERMINED IN THE FIELD AND APPROVED BY TOWN BEFORE INSTALLATION.
4. 6" GALVANIZED PIPE PROVIDED BY MISC. METALS CONTRACTOR. INSTALLATION AND CONCRETE BY GENERAL CONTRACTOR.
5. HDPE BOLLARD SLEEVE WITH 6 ⅝" DIAMETER TO BE INSTALLED OVER STEEL BOLLARD USING TWO FOAM EXPANSION STRIPS BY GENERAL CONTRACTOR.
6. CONCRETE DEPTH AND OVERALL BOLLARD HEIGHT VARIES FOR BOLLARDS AT FACE OF BUILDING. SEE STRUCTURAL DRAWING S303 FOR DETAIL AT FOUNDATION.
7. BOLLARDS AT OVERHEAD DOORS SHALL ALIGN WITH DOOR JAMBS AND SHALL BE LOCATED 2'-0" FROM THE FACE OF THE BUILDING.

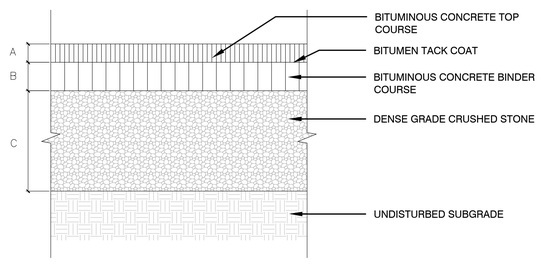
5 EXTERIOR STEEL PIPE BOLLARD
SCALE: N.T.S.

PAVEMENT DEPTH SCHEDULE

	TOP (A)	BINDER (B)	BASE COURSE (C)
HEAVY DUTY	2.0"	3.0"	16"

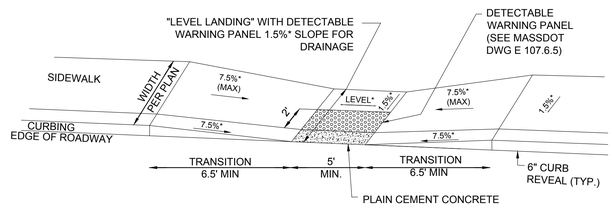


6 HMA BERM
SCALE: N.T.S.



7 HMA PAVEMENT SECTION DETAIL
SCALE: N.T.S.

NOTES:
1. CONTRACTOR TO PROVIDE SMOOTH TRANSITION WHERE NEW PAVEMENT ABUTS EXISTING PAVEMENT, TYP.



9 WHEEL CHAIR RAMP (TYPE B)
SCALE: N.T.S.

Project:
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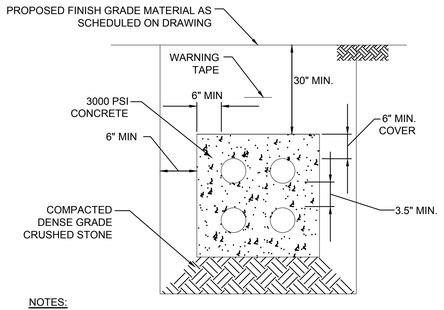
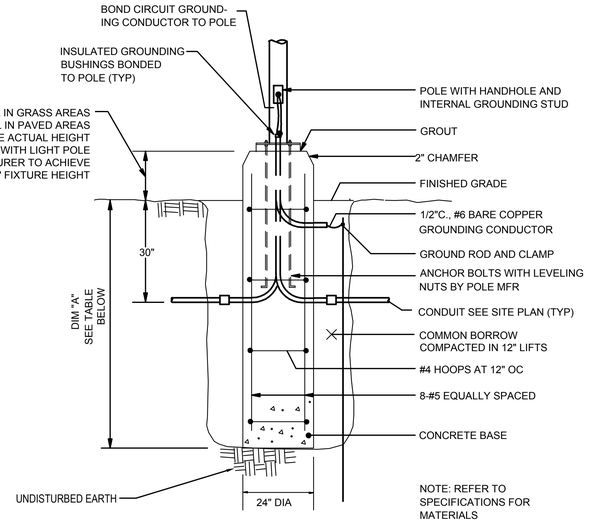


NOTES:

1. G.C. IS RESPONSIBLE FOR EXCAVATION, CONCRETE ENCASEMENT, REINFORCEMENT AND BACKFILL. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING THE CONDUITS & SPACERS. SEE E-SERIES DRAWINGS FOR DUCTBANK REINFORCEMENT REQUIREMENTS.
2. PROVIDE REINFORCEMENT PER LOCAL UTILITY COMPANY REQUIREMENTS.
3. QUANTITY & SIZE OF CONDUITS VARY. DUCTBANK SIZE SHALL BE ADJUSTED BASED ON CONDUIT TYPES & SIZES IDENTIFIED ON THE E-SERIES DRAWINGS.
4. CONTRACTOR SHALL COORDINATE DEPTH OF PROPOSED DUCTBANK WITH PROPOSED UTILITY & DRAINAGE SYSTEMS TO AVOID CONFLICTS.
5. BACKFILL AROUND DUCTBANK WITH GRAVEL BORROW BACKFILL MATERIAL.

1 ELECTRIC/COMMUNICATION DUCTBANK DETAIL

SCALE: N.T.S.



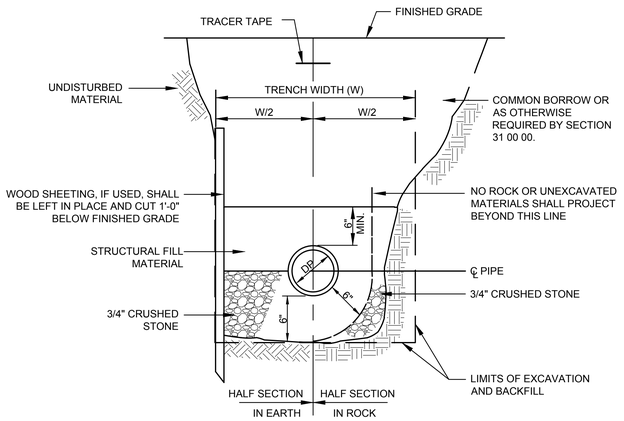
POLE HEIGHT	DIMENSION "A"
10' TO 20'	4'-6"
20' TO 30'	5'-6"
30' TO 40'	6'-6"

2 LIGHT POLE FOUNDATION DETAIL

SCALE: N.T.S.

NOTES:

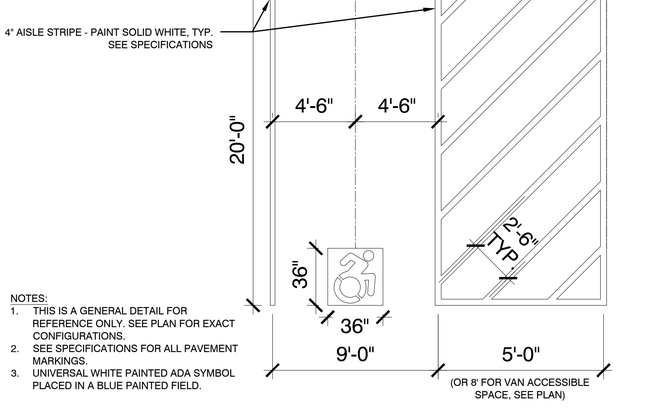
1. THE CONTRACTOR SHALL PROVIDE A LIGHT POLE BASE SUITABLE FOR A 25 FOOT TALL POLE LIGHT.



DEPTH TO INVERT	DIAMETER OF PIPE (DP)	MAX. TRENCH WIDTH BELOW LINE OF NARROW TRENCH LIMIT (SHEETED OR UNSHEETED) (W)
0-12'	TO 4"	5'-0"

3 SEWER TRENCH DETAIL

SCALE: N.T.S.

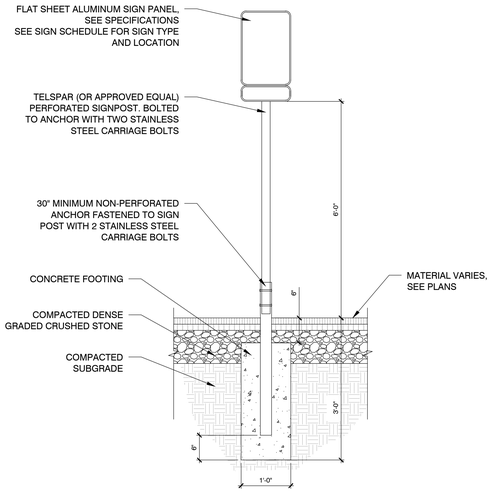


NOTES:

1. THIS IS A GENERAL DETAIL FOR REFERENCE ONLY. SEE PLAN FOR EXACT CONFIGURATIONS.
2. SEE SPECIFICATIONS FOR ALL PAVEMENT MARKINGS.
3. UNIVERSAL WHITE PAINTED ADA SYMBOL PLACED IN A BLUE PAINTED FIELD.

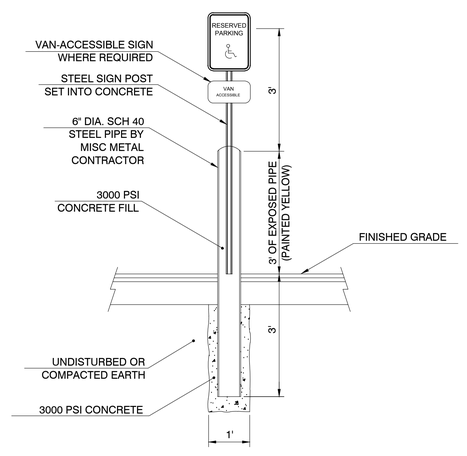
4 HANDICAP PARKING SPACE MARKING

SCALE: N.T.S.



5 TYPICAL SIGN POST DETAIL

SCALE: N.T.S.



NOTE:

1. LOCATE CENTER OF 6" STEEL PIPE 1' FROM EDGE OF PARKING.
2. ALL SIGNS TO BE CENTERED ON PARKING SPACE.

6 ACCESSIBLE SIGN IN BOLLARD

SCALE: N.T.S.

IDENTIFI-CATION NUMBER	TEXT	PANEL SIZE					NUMERALS & LETTERS				COLOR COMB.	NUMBER OF SIGNS REQUIRED	TOTAL AREA SQ. FT.	POST SIZE AND NUMBER REQUIRED
		WIDTH	HEIGHT	CORNER RADII	BORDER WIDTH	MARGIN WIDTH	NUM. IN.	UPPER CASE	LOWER CASE	SERIES				
R1-1	STOP	30"	30"	SEE MUTCD, INCLUDING STANDARD HIGHWAY SIGNS, LATEST EDITION							WHITE ON RED	3	5.16	P5-1 3
R7-8	RESERVED PARKING	12"	18"								WHITE ON BLUE	3	1.50	P5-1 3
R7-8b	VAN ACCESSIBLE	12"	6"								WHITE ON BLUE	1	0.50	P5-1 1
R5-11	AUTHORIZED VEHICLES ONLY	30"	24"								BLACK ON WHITE	2	5.00	P5-1 2

7 PERMANENT TRAFFIC SIGN SUMMARY

SCALE: N.T.S.

Project:
NANTUCKET DEPARTMENT OF PUBLIC WORKS FACILITY

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W&S File No.:

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CIVIL DETAILS IV

Sheet Number:

C604

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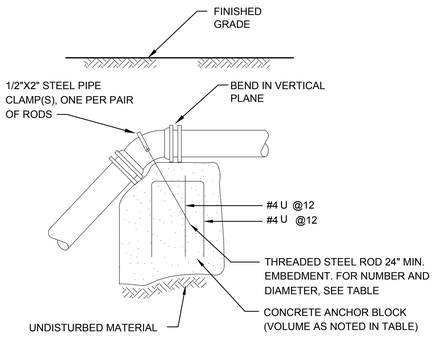
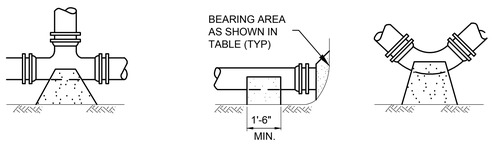


TABLE OF DIMENSIONS FOR ANCHOR BLOCKS		NO. AND SIZE OF THREADED RODS	
BEND SIZE	Volume	NO.	DIAM.
6"-22.5°	0.6 C.Y.	2	1/2"
6"-45°	1.0 C.Y.	2	1/2"
8"-22.5°	1.0 C.Y.	2	1/2"
8"-45°	1.8 C.Y.	2	3/4"
12"-22.5°	2.5 C.Y.	2	3/4"
12" 45°	4.0 C.Y.	4	3/4"

1 ANCHOR BLOCK DETAIL
SCALE: N.T.S.

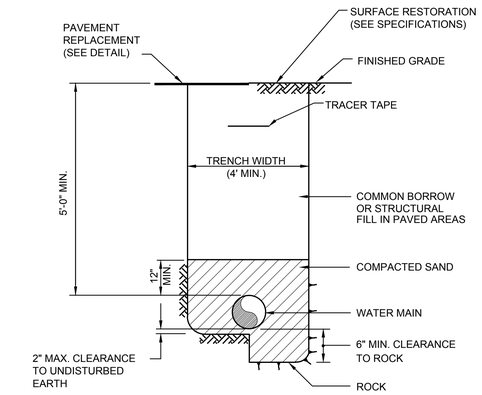


TEE DETAIL (PLAN VIEW) — CAP DETAIL (PLUG SIMILAR) (SECTION VIEW) — BEND DETAIL (PLAN VIEW)

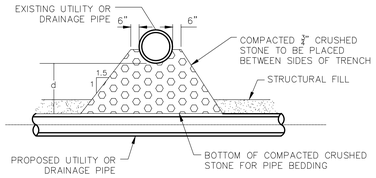
TABLE OF CONCRETE THRUST RESTRAINT MINIMUM BEARING AREAS IN SQUARE FEET AGAINST UNDISTURBED MATERIAL FOR WATER MAIN FITTINGS				
SIZE OF MAIN	90° BENDS, TEES, CAPS AND PLUGS	45° BENDS AND WYES	22-1/2° BENDS	11-1/4° BENDS
6", 8"	5	4	2	2
10", 12"	12	9	5	2
16"	20	15	8	4
20"	36	24	13	7

NOTES: 1. ALL WATER MAIN FITTINGS SHALL HAVE CONCRETE BACKING FOR
2. CONTRACTOR SHALL USE CARE TO AVOID PLACEMENT OF

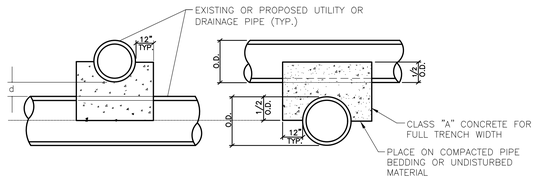
4 CONCRETE THRUST RESTRAINT FOR FITTINGS
SCALE: N.T.S.



2 WATER MAIN TRENCH DETAIL
SCALE: N.T.S.



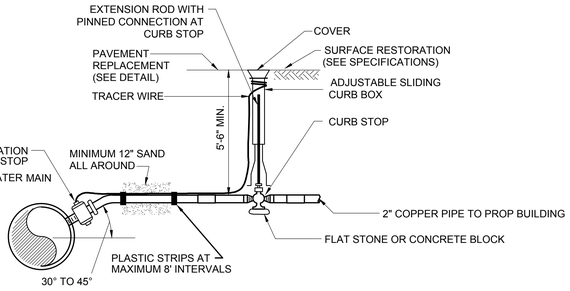
CRUSHED STONE SUPPORT WHEN d ≥ 12"



CONCRETE PIPE CRADLE WHEN d < 12"

NOTES:
1. d = DISTANCE BETWEEN UTILITY AND DRAINAGE PIPES.
2. SUPPORTS SHALL BE INSTALLED WHERE SPECIFIED ON THE PLANS AND WHERE DIRECTED BY THE ENGINEER.
3. CRUSHED STONE SUPPORTS SHALL BE INCLUDED IN THE COST OF THE PROPOSED UTILITY OR DRAINAGE PIPE AND CONCRETE PIPE CRADLES SHALL BE PAID FOR AS "FIELD CONCRETE."

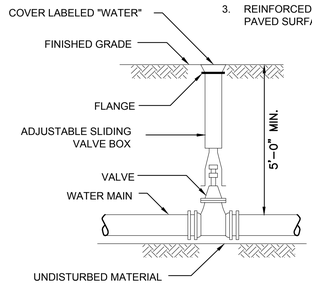
5 TYPICAL UTILITY SUPPORTS
SCALE: N.T.S.



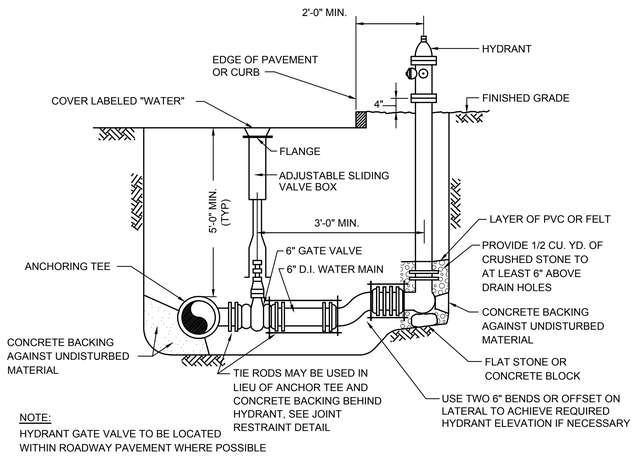
3 WATER SERVICE DETAIL/CORPORATON STOP
SCALE: N.T.S.

NOTES:
1. PROVIDE SADDLE FOR ALL AC AND PVC MAINS AND ALL 2" OR LARGER STOPS.
2. TRACER WIRE SHALL BE #12 AWG SOLID COPPER WITH 30 MIL BLUE HDPE INSULATION.
3. IF CURB IS IN LAWN AREA, EXTEND TRACER WIRE UP THE OUTSIDE OF BOX, WRAP END THREE TIMES AROUND BOX AND LEAVE APPROXIMATELY ONE INCH BELOW THE OUTSIDE TOP OF BOX. IF CURB BOX IS IN PAVEMENT AREA, EXTEND TRACER WIRE UP THE INSIDE OF BOX LEAVING THREE FEET COILED UP INSIDE TOP OF BOX.
4. TRACER WIRE SHALL BE CONNECTED TO CORPORATION STOP WITH BRASS THAW WIRE NUT COMPRESSION ASSEMBLY WITH SET SCREW.
5. REINFORCED CONCRETE COLLAR REQUIRED WHEN INSTALLED ON PAVED SURFACES.

NOTES:
1. GATE VALVE TO BE LOCATED WITHIN ROADWAY PAVEMENT WHERE POSSIBLE.
2. PROPER SIZE VALVE BOX SHALL BE INSTALLED WHERE GATE VALVES ARE SHOWN ON PLANS.
3. REINFORCED CONCRETE COLLAR REQUIRED WHEN INSTALLED IN PAVED SURFACE.

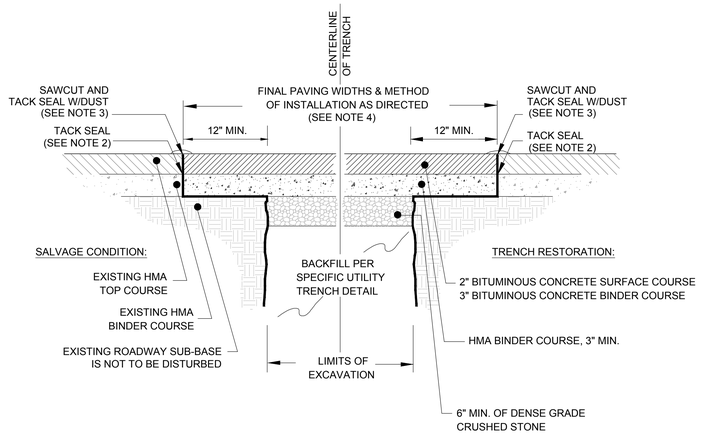


6 VALVE AND BOX DETAIL
SCALE: N.T.S.



NOTE:
HYDRANT GATE VALVE TO BE LOCATED WITHIN ROADWAY PAVEMENT WHERE POSSIBLE

7 HYDRANT AND VALVE DETAIL
SCALE: N.T.S.



1. ALL INSTALLATION AND MATERIAL SPECIFICATIONS PER MASSACHUSETTS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, LATEST EDITION.
2. ALL EXPOSED HMA IS TO BE TACKED PER MHD PRIOR TO NEW BITUMINOUS CONCRETE INSTALLATION.
3. ALL EXPOSED JOINTS ARE TO BE SEALED WITH TACK AND STONE DUST.
4. ANY TOP COURSE APPLIED AT A WIDTH OF 6' WIDE OR GREATER IS TO BE PLACED BY MACHINE/BOX SPREADER WHEN & AS DIRECTED BY THE TOWN NANTUCKET.

8 TYPICAL TRENCH REPAIR & PAVEMENT SECTION DETAIL
SCALE: N.T.S.

Project:
NANTUCKET DEPARTMENT OF PUBLIC WORKS FACILITY

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W&S File No.:

Drawing Title:

CIVIL DETAILS V

Sheet Number:

C605

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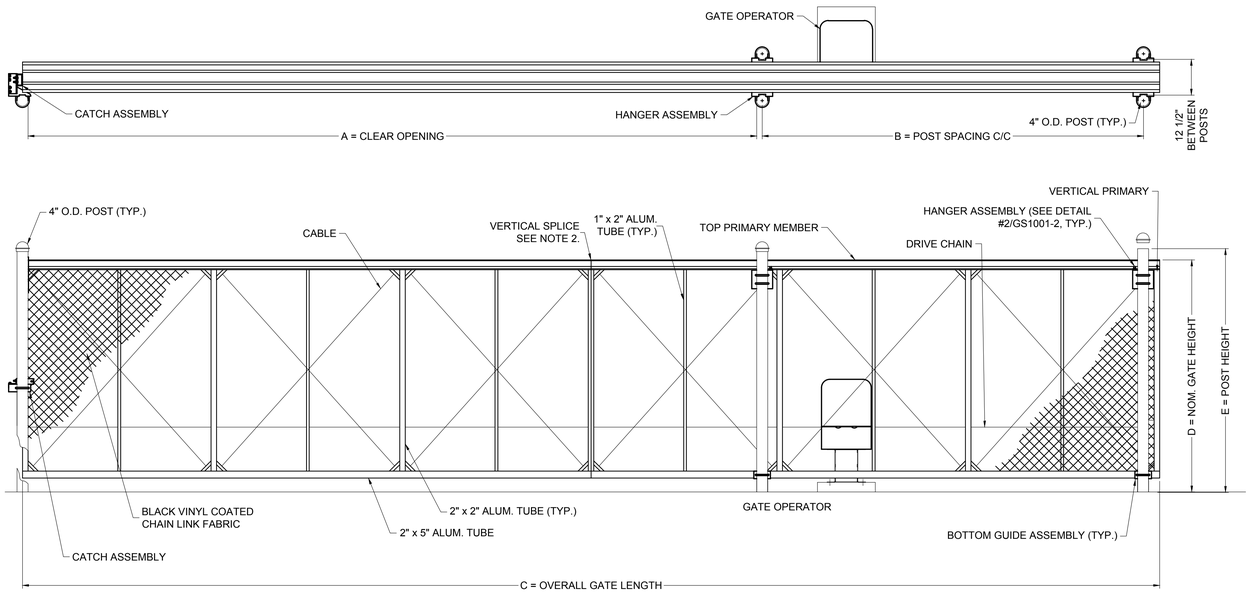
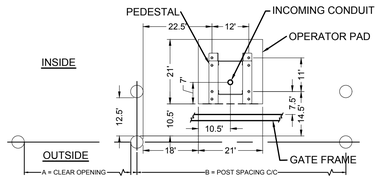


NOTES:

1. ALL FITTINGS PROVIDED FOR 4" O.D. POSTS. OTHER SIZES ARE AVAILABLE UPON REQUEST.
2. FOR GATES THAT REQUIRE TWO PIECE FABRICATION, A 5" ALUMINUM CHANNEL WILL BE SUBSTITUTED FOR THE 2" x 5" ALUM. TUBE, AND A VERTICAL SPLICE WILL BE ADDED.
3. POWDER COATED BLACK.
4. THE CONTRACTOR SHALL SUBMIT FINAL GATE FOUNDATION DESIGNS STAMPED BY A MASSACHUSETTS PE.

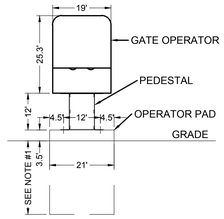
GATE DIMENSIONS	
A	35'
B	16'-7"
C	52'-6"
D	8'-0"
E	6'-6"

1 CANTILEVER SLIDE GATE
SCALE: N.T.S.

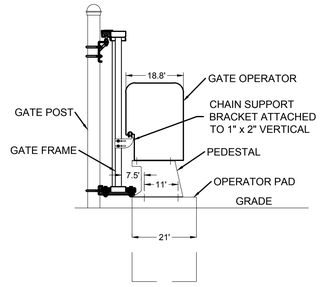


NOTES:
1) OPERATOR PAD DEPTH TO BE MINIMUM OF 24" AND IN ACCORDANCE WITH ALL LOCAL CODES AND SOIL CONDITIONS.

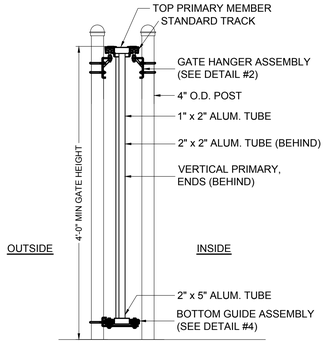
2 SLIDE GATE OPERATOR PAD LAYOUT PLAN
SCALE: N.T.S.



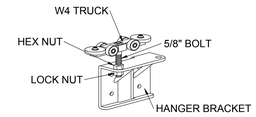
3 SLIDE GATE OPERATOR FRONT ELEVATION
SCALE: N.T.S.



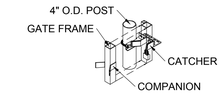
4 SLIDE GATE OPERATOR SIDE ELEVATION
SCALE: N.T.S.



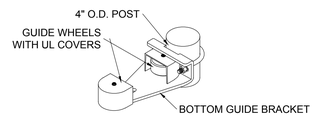
5 SLIDE GATE ASSEMBLY SECTION
SCALE: N.T.S.



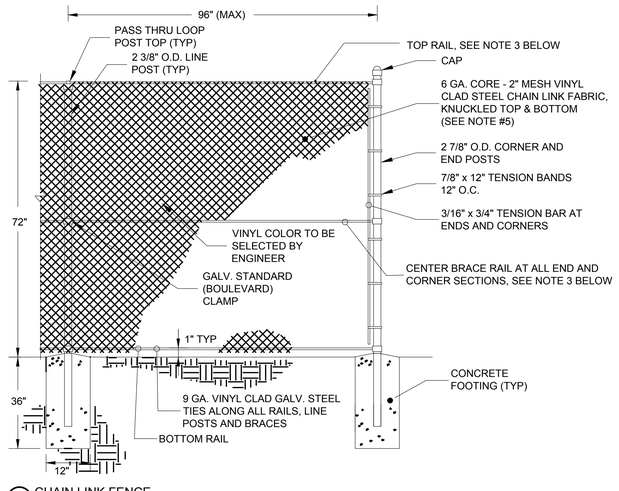
6 SLIDE GATE HANGER
SCALE: N.T.S.



7 SLIDE GATE CATCH ASSEMBLY
SCALE: N.T.S.

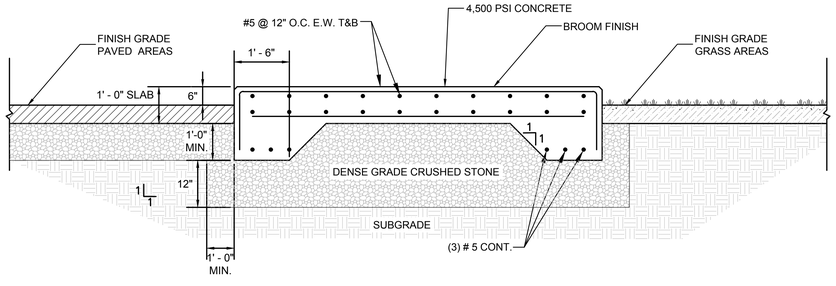


8 SLIDE GATE BOTTOM GUIDE
SCALE: N.T.S.



9 CHAIN LINK FENCE
SCALE: N.T.S.

NOTES:
1. ALL FENCE PIPE SHALL BE SCH. 40, VINYL CLAD HOT DIP GALV. STEEL PIPE.
2. ALL LINE POSTS SHALL BE INSTALLED EQUALLY SPACED BETWEEN END & CORNER POSTS.
3. ALL RAILS SHALL BE 1.66" O.D. PIPE
4. ALL CLAMPS, TIES, POST TOPS, BANDS, POSTS, ETC. SHALL BE VINYL CLAD TO MATCH FABRIC.
5. PRIVACY SLATS SHALL BE USED FOR ALL ENCLOSURES. COLOR TO BE DETERMINED BY OWNER.



BRINE TANK PAD: 20'-6"L x 8'-0"W x 12"H
GENERATOR PAD: 26'-10"L x 9'-3"W x 12"H (CONFIRM FINAL SIZE WITH MANUFACTURER)
TRANSFORMER PAD: 10'-0"L x 9'-0"W x 12"H (SEE NOTE 5)
CHILLER PAD: 8'-0"L x 10'-0"W x 12"H
GAS METER PAD: 1'-6"L x 2'-3"W (CONFIRM FINAL SIZE WITH GAS PROVIDER)
HEAT PUMP CU-1 PAD: 2'-0"L x 4'-0"W x 8"H (CONFIRM FINAL SIZE WITH HVAC)
HEAT PUMP CU-2 PAD: 2'-0"L x 4'-0"W x 8"H (CONFIRM FINAL SIZE WITH HVAC)
DUMPSTER PAD: 13'-6"L x 30'-0"W x 12"H

10 TYPICAL EQUIPMENT PAD DETAIL
SCALE: N.T.S.

NOTES:

1. GENERAL CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION OF ALL CONCRETE PADS.
2. SEE LAYOUT AND GRADING PLANS FOR FINISH GRADE
3. COORDINATE WITH ALL CONTRACTORS AND ADJUST PAD LOCATIONS AND DIMENSIONS IN FIELD
4. SLABS 8" OR LESS IN THICKNESS SHALL HAVE ONE LAYER OF REINFORCING PLACED IN THE TOP ONE THIRD OF THE SLAB.
5. THE EXACT SIZE, SHAPE AND LOCATION OF EQUIPMENT (HOUSEKEEPING) PAD(S) SHALL REQUIRE APPROVAL OF SHOP DRAWINGS FOR EQUIPMENT. ANCHOR BOLTS, WHERE REQUIRED, SHALL BE SIZED AND LOCATED ACCORDING TO THE MANUFACTURER'S REQUIREMENTS.
6. CONTRACTOR SHALL PROVIDE CAULK WITH POLYSULFIDE SEALANT AND PREFORMED JOINT FILLER WHERE EQUIPMENT PADS ADJOIN THE BUILDING.
7. EQUIPMENT PAD DETAIL SHALL BE USE FOR, BUT NOT LIMITED TO, THE ELECTRICAL TRANSFORMER PAD, EMERGENCY GENERATOR PAD, PROPANE TANK PAD AND KNOCKDOWN PAD.
8. CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR FOR CONDUIT PENETRATIONS IN EQUIPMENT PADS

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Sheet Number:
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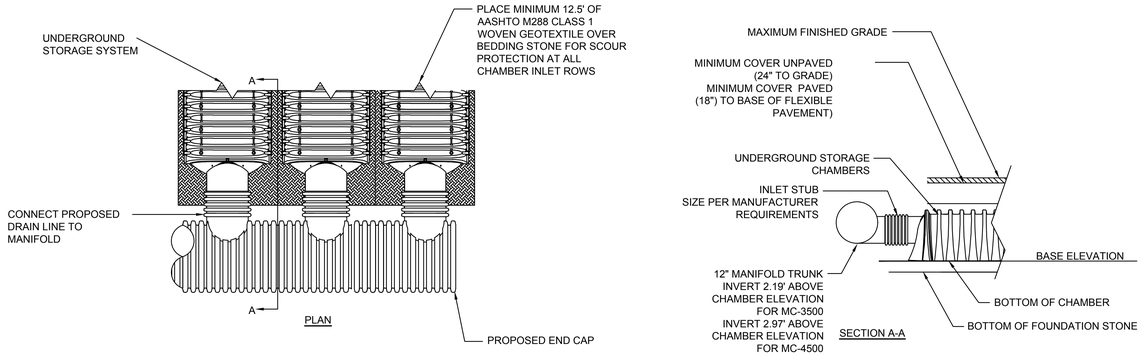
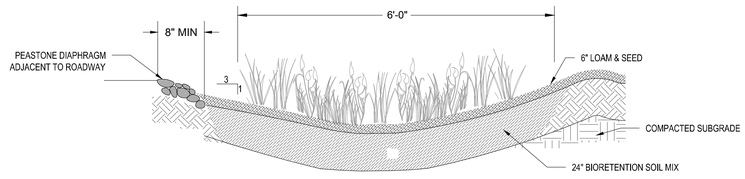
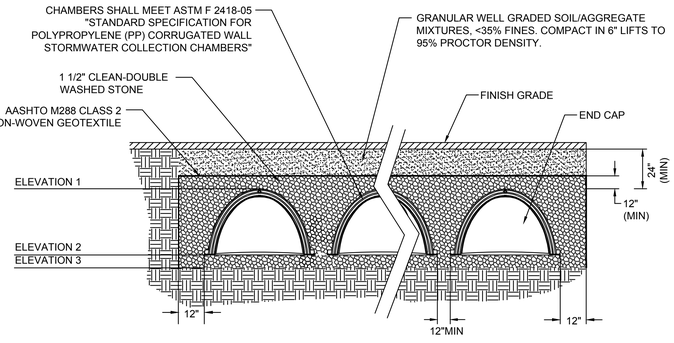


1 INFILTRATION/RECHARGE CHAMBER - MANIFOLD CONNECTION
SCALE: N.T.S.



2 GRASS SWALE
SCALE: N.T.S.

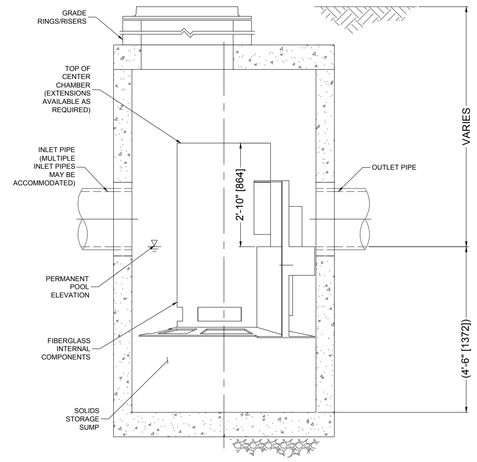


FIELD	INF-A INF-B INF-E	INF-C	INF-D
ELEV			
1	47.75	45.08	46.33
2	42.75	40.08	41.33
3	42.00	39.33	40.58

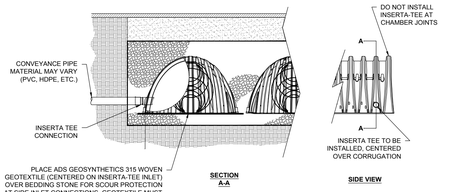
3 INFILTRATION/RECHARGE CHAMBER - SECTION
SCALE: N.T.S.

NOTES:

1. WATER QUALITY STRUCTURES SHALL BE CONTECH MODEL OR APPROVED EQUAL:
   - WQS-A1 MODEL CDS2025-4
   - WQS-B1 MODEL CDS1515-3
   - WQS-B2 MODEL CDS2025-4
   - WQS-C1 MODEL CDS2025-4
   - WQS-C2 MODEL CDS1515-3
   - WQS-D1 MODEL CDS2025-4
   - WQS-E1 MODEL CDS2025-4
2. WATER QUALITY STRUCTURES SHALL BE DESIGNED TO RESIST BUOYANCY. ASSUMING GROUNDWATER IS AT GRADE, MANUFACTURER SHALL PROVIDE BUOYANCY CALCULATIONS, STAMPED BY A MASSACHUSETTS P.E.
4. WQS FRAME AND COVERS SHALL BE H-20 WHEEL LOAD RATED.
5. PROVIDE COLLAR AT BOTTOM OF STRUCTURE FOR ANT-BUOYANCY IF NEEDED.



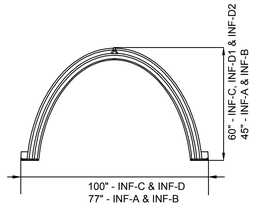
4 WATER QUALITY STRUCTURE (WQS)
SCALE: N.T.S.



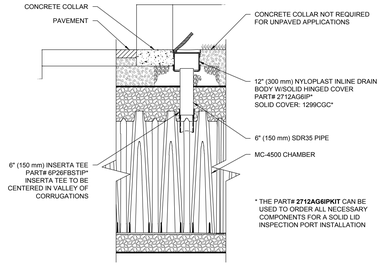
NOTE:
PART NUMBERS WILL VARY BASED ON INLET PIPE MATERIALS. CONTACT STORMTECH FOR MORE INFORMATION.

CHAMBER	MAX DIAMETER OF INSERTA TEE	HEIGHT FROM BASE OF CHAMBER (X)
MC-4500	12" (300 mm)	8" (200 mm)
INSERTA TEE FITTINGS AVAILABLE FOR SDR 26, SDR 35, SCH 40 IPS GASKETED & SOLVENT WELD, N-12, HP STORM, C-900 OR DUCTILE IRON		

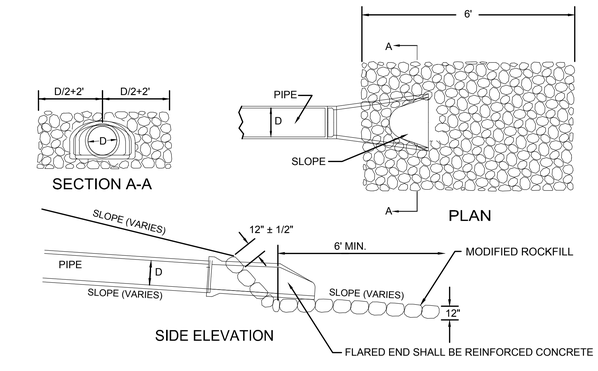
5 INSERTA TEE DETAIL
SCALE: N.T.S.



6 CHAMBER UNIT DETAIL
SCALE: N.T.S.



7 6" PVC INSPECTION PORT DETAIL
SCALE: N.T.S.



8 FLARED END PIPE DETAIL
SCALE: N.T.S.

Project:
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CIVIL DETAILS VII

Sheet Number:
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Town of Nantucket
New Department of Public Works Facility
Schematic Design Submission

Schematic Design Plans

Architectural Plans

June 21, 2024

TOWN OF NANTUCKET, MA

NEW PUBLIC WORKS FACILITY
SHADBUSH ROAD

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Location Map

Vicinity Map

DRAWING LIST

EQ103	DETAILS
GENERAL	
G000	TITLE SHEET
G101	CODE SUMMARY
G102	CODE SUMMARY - PLANS
G103	CODE SUMMARY - ENERGY
CIVIL	
C302	SITE LAYOUT & MATERIALS PLAN
ARCHITECTURAL	
A011	ABBREVIATIONS, SYMBOLS, LEGEND & GENERAL NOTES
A031	PARTITION TYPES
A032	EXTERIOR WALL ASSEMBLIES
A101	OVERALL FLOOR PLAN
A102	OVERALL MEZZANINE PLAN
A103	OVERALL REFLECTED CEILING PLAN
A104	OVERALL ROOF PLAN
A111	LARGE SCALE FLOOR PLAN - ADMIN & EMPLOYEE FACILITIES
A112	LARGE SCALE FLOOR PLAN - MAINTENANCE & WORKSHOPS
A113	LARGE SCALE FLOOR PLAN - VEHICLE STORAGE
A201	OVERALL ELEVATIONS
A211	LARGE SCALE PARTIAL EXTERIOR ELEVATIONS - ADMIN & EMPLOYEE FACILITIES
A231	3D VIEWS
A301	BUILDING SECTIONS
A921	FURNITURE LAYOUT
EQUIPMENT	
EQ101	EQUIPMENT LAYOUT PLAN
EQ102	SHOPS LAYOUT PLAN

Issue Date: JUNE 21, 2024

Issued For: SCHEMATIC DESIGN

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PARTITION LETTERING: IBC 2015 - 703.7 MARKING AND IDENTIFICATION

4 HOUR FIRE WALL - PROTECT ALL OPENINGS 0'-3"

3 HOUR FIRE WALL - PROTECT ALL OPENINGS 0'-3"

2 HOUR FIRE WALL - PROTECT ALL OPENINGS 0'-3"

1 HOUR FIRE WALL - PROTECT ALL OPENINGS 0'-3"

1 HOUR SMOKE BARRIER - PROTECT ALL OPENINGS 0'-3"

SMOKE BARRIER PARTITIONS - PROTECT ALL OPENINGS 0'-3"

APPLICABILITY:
- APPLY TO OUTSIDE OF FIRE RATED SHAFTS AND TO BOTH SIDES OF PARTITIONS AT INTERVALS NOT TO EXCEED 30'-0" FOR ENTIRE LENGTH OF PARTITION OR WALL OR TWICE ANY PARTITION 30'-0" IN LENGTH OR LESS. MINIMUM 15'-0" FROM EACH END OF PARTITION ALSO.
- LOCATE IDENTIFICATION IN ALL ACCESSIBLE FLOOR, FLOOR-CEILING AND ATTIC SPACES. LOCATE IDENTIFICATION WITHIN 12 - 18 INCHES ABOVE FINISHED CEILINGS
- APPLY STENCILED LETTERING BY SPRAY OR BRUSH OR PROVIDE PERMANENT SIGNAGE. IDENTIFICATION SHALL BE WATERPROOF, FADE-PROOF, AND NON-COMBUSTIBLE. SIGNAGE SHALL BE MECHANICALLY FASTENED OR PERMANENTLY ADHERED TO PARTITION OR SHAFT.
- STENCIL CHARACTER HEIGHT - 3" MINIMUM
- COLOR - EASILY IDENTIFIABLE COLOR, CONTRASTING WITH BACKGROUND ACCEPTABLE TO OWNER

1 CHAPTER 7 CODE RATED WALL LABELS1
1 1/2" = 1'-0"

USE GROUP LEGEND

USE GROUP: S-1 STORAGE

USE GROUP: B BUSINESS

USE GROUP: S-2 STORAGE

MEZZANINE

DEFERRED SUBMITTALS IBC 107.3.4.1

SPECIFICATION NUMBER

DIVISION 5
05 50 00 – METAL FABRICATIONS
- MEZZ GUARDRAILS
- STAIRS
- HOSE REEL SUPPORTS
- SHIPS LADDERS
- EXTERIOR ROOF ACCESS LADDER
- BOLLARDS

DIVISION 11
11 42 23 – FALL PROTECTION
- ROOF FALL PROTECTION

DIVISION 13
13 42 00 – PRE-ENGINEERED METAL BUILDING

DIVISION 21
21 13 13 – WET PIPE SPRINKLER SYSTEMS
21 13 16 – DRY PIPE SPRINKLER SYSTEMS

DIVISION 22
22 11 13 – FACILITY NATURAL-GAS PIPING
- ANCHOR / RESTRAINTS

DIVISION 23
23 05 29 – HANGERS AND SUPPORTS FOR HVAC PIPING AND EQUIPMENT
23 05 48 – VIBRATIONS AND SEISMIC CONTROLS FOR HVAC
23 21 13 – HYDRONIC PIPING
23 31 13 – METAL DUCTS
23 34 24 – HVAC POWER VENTILATORS
23 52 16 – CONDENSING BOILERS
23 72 00 – AIR TO AIR ENERGY RECOVERY EQUIPMENT
23 74 16.11 – PACKAGED, SMALL CAPACITY ROOFTOP AIR-CONDITIONING UNITS

DIVISION 27
27 05 36 – CABLE TRAYS FOR COMMUNICATIONS SYSTEMS
- ANCHORS AND SUPPORTS FOR CABLE TRAYS

WARNING: THROUGH-PENETRATION FIRESTOP SYSTEM - DO NOT DISTURB

NOTIFY FACILITY MANAGER / OWNER OF ANY DAMAGE

- *CONTRACTOR'S NAME, ADDRESS, PHONE NUMBER*
- *THROUGH-PENETRATION FIRESTOP SYSTEMS DESIGNATION OF APPLICABLE TESTING AND INSPECTION AGENCY*
- *DATE OF INSTALLATION*
- *THROUGH-PENETRATION FIRESTOP SYSTEMS MANUFACTURER'S NAME*
- *INSTALLER'S NAME*

PRESSURE-SENSITIVE, SELF ADHESIVE PRE-PRINTED VINYL LABELS

FOR ALL RATED WALL ASSEMBLIES, BOTH SIDES
- REFER TO "FIRESTOPPING" SPECIFICATION FOR ADDITIONAL INFORMATION

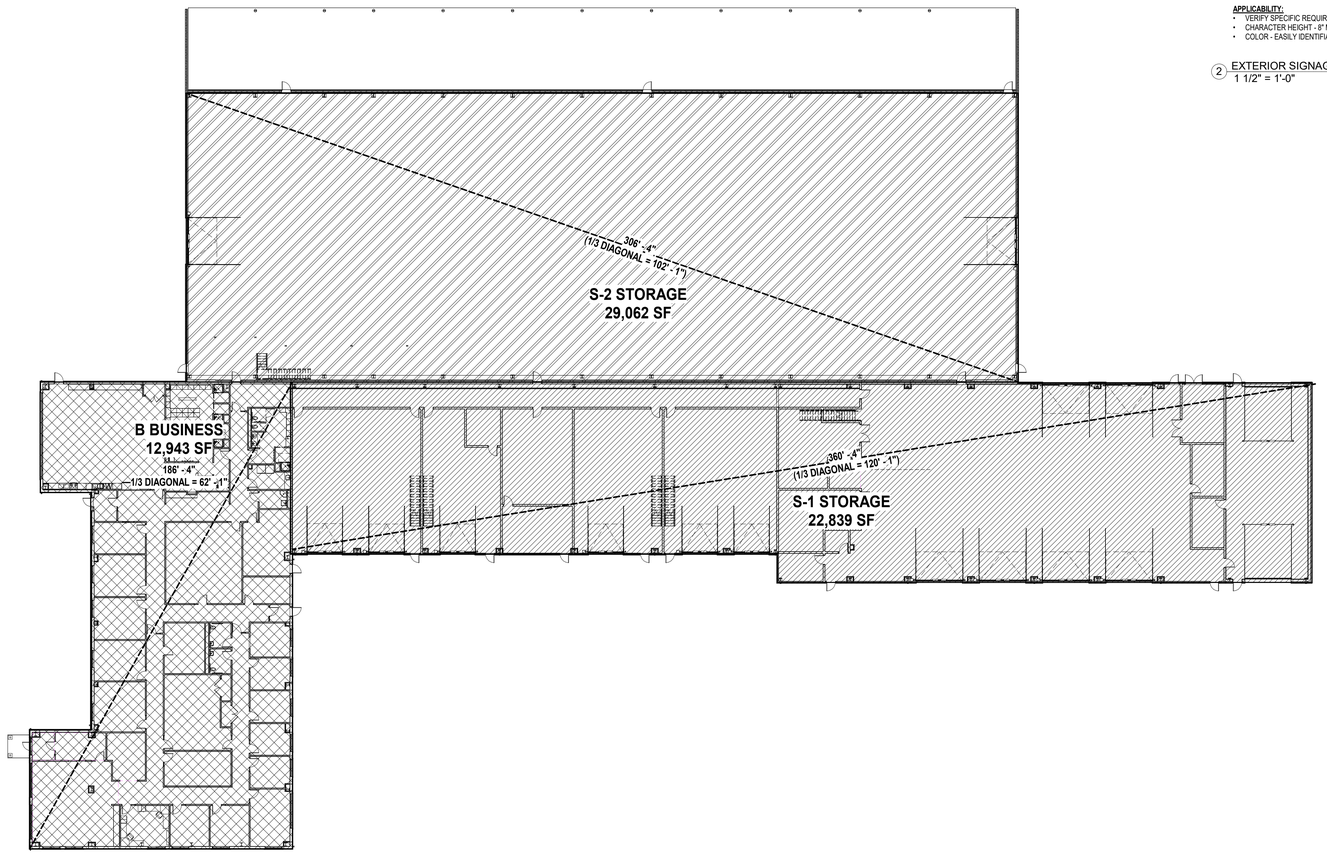
3 RATED WALL LABEL1
1 1/2" = 1'-0"

ADDRESS IDENTIFICATION SIGNAGE: IBC 502.1

1 0'-8"

APPLICABILITY:
- VERIFY SPECIFIC REQUIREMENTS WITH LOCAL FIRE CODE OFFICIAL
- CHARACTER HEIGHT - 8" MINIMUM W/ 1/2" STROKE MINIMUM
- COLOR - EASILY IDENTIFIABLE COLOR, CONTRASTING WITH BACKGROUND

2 EXTERIOR SIGNAGE - ADDRESS
1 1/2" = 1'-0"



4 OVERALL FIRST FLOOR - USE GROUP
3/64" = 1'-0" 1/ A201

CODE SUMMARY:

THE PROPOSED NANTUCKET DEPARTMENT OF PUBLICS WORKS FACILITY CONSISTS OF A NON-SEPARATED "MIXED-USE" BUILDING PROGRAM, INCLUDING THREE (3) MAIN OPERATIONAL COMPONENTS, AS FOLLOWS:

1. **USE GROUP "B", BUSINESS**: A ONE-STORY ADMINISTRATION WING, CONSISTING OF EMPLOYEE SUPPORT SPACES (E.I. LUNCH/TRAINING ROOM, MEN'S & WOMEN'S LOCKER ROOM ETC.), DIRECTORS' OFFICES, SHARED ADMINISTRATIVE OFFICE, PUBLIC SERVICE COUNTERS AND OFFICE SUPPORT SPACES.

2. **USE GROUP "S-1" MODERATE HAZARD USE**: SINGLE-STORY, DOUBLE-HEIGHT VEHICLE MAINTENANCE AND DEPARTMENT SHOP AREAS AND ADJACENT VEHICLE WASH-BAY. MAINTENANCE AND SHOP AREAS HAVE ASSOCIATED OPEN MEZZANINE SPACE.

3. **USE GROUP "S-2" LOW HAZARD USE**: SINGLE-STORY, MINIMALLY HEATED VEHICLE & EQUIPMENT STORAGE GARAGE AREA.

THE BUILDING IS STEEL-FRAMED WITH CONCRETE SLAB FLOORS AND MEZZANINE LEVEL STEEL DECK AND CONCRETE SLAB. THE BUILDING ENCLOSURE CONSISTS OF A INSULATED STANDING SEAM METAL ROOF SYSTEM, FACTORY FOAMED IN PLACE INDUSTRIAL METAL PANEL WALL SYSTEM AND BRICK VENEER ON METAL STUD BACKUP WALL WITH AN INSULATED CMU BASE WALL. ALUMINUM STOREFRONT GLAZING IS PROVIDED AT THE ADMINISTRATION WING AND TRANSLUCENT PANEL DAYLIGHT SYSTEMS ARE INCORPORATED INTO THE WALL PANEL SYSTEM AT THE INDUSTRIAL SHOP AREAS.

SPECIFIC ASPECTS OF THIS BUILDING TO NOTE ARE AS FOLLOWS:

1. A 1-HOUR FIRE-RESISTANCE RATED FLUID STORAGE ROOM IS PROVIDED TO STORE FLAMMABLE / HAZARDOUS FLUIDS USED FOR THE MAINTENANCE & REPAIR OF VEHICLES.
2. A STANDBY GENERATOR, WHICH IS HOUSED WITHIN A SOUND-ATTENUATED ENCLOSURE IS LOCATED ON THE EAST SIDE OF THE EXTERIOR OF THE BUILDING AND IS SIZED TO PROVIDE FULL OPERATIONAL POWER TO THE FACILITY.
3. THE BUILDING IS FULLY SPRINKLED PER NFPA 13 REQUIREMENTS, AND WILL HAVE AN EMERGENCY VOICE / ALARM COMMUNICATION SYSTEM.
4. WITH EXCEPTIONS OF MEZZANINES, THE BUILDING AND FACILITY ARE FULLY ACCESSIBLE AND MEET ADA AND CMR 521 MASSACHUSETTS ARCHITECTURAL ACCESS BOARD REGULATIONS.

GENERAL BUILDING INFORMATION:
ALL AREAS ARE SHOWN IN GROSS SQUARE FEET (GSF).

BUILDING FOOTPRINT AREA (NOT INCLUDING VEHICLE CANOPY):	**64,808 GSF**
1. USE GROUP "B" , BUSINESS (ADMINISTRATION / STAFF WING)	**12,943 GSF**
2. USE GROUP "S-1", MODERATE HAZARD STORAGE (VEHICLE MAINTENANCE / WASH / WORKSHOPS):	**22,839 GSF**
3. USE GROUP "S-2", LOW HAZARD STORAGE (VEHICLE & EQUIPMENT STORAGE GARAGE)	**29,062 GSF**
BUILDING HEIGHT (TO ROOF RIDGE AT VEHICLE STORAGE AREA):	**34' - 0"**

APPLICABLE CODES AND STANDARDS:
- MASSACHUSETTS STATE BUILDING CODE & APPROPRIATE AMENDMENTS:
  - 780 CMR NINTH EDITION
  - IBC 2015
- 2015 INTERNATIONAL MECHANICAL CODE (IMC)
- 248 CMR 10.00 UNIFORM STATE PLUMBING CODE (USPC)
- 2023 NATIONAL ELECTRICAL CODE
- 2023 MASSACHUSETTS ENERGY CODE
  - 2021 INTERNATIONAL ENERGY CONSERVATION CODE (IECC)
  - 225 23.00 CMR STRETCH ENERGY CODE
  - STRETCH COMMUNITY AS OF 9/1/2019
- 2022 MASSACHUSETTS COMPREHENSIVE FIRE CODE
  - 527 CMR, BOARD OF FIRE PREVENTION REGULATIONS
  - NFPA 1 FIRE CODE, 2015 EDITION
- 271 CMR: BOARD OF EXAMINERS OF SHEET METAL WORKERS
- 521 CMR ARCHITECTURAL ACCESS BOARD REGULATIONS

BUILDING CODE ANALYSIS:

CHAPTER 3 - USE AND OCCUPANCY CLASSIFICATION

(SECT. 304) USE GROUP B (BUSINESS):	**12,943 GSF**
(SECT. 311.2) USE GROUP S-1 (MODERATE-HAZARD STORAGE):	**22,839 GSF**
(SECT. 311.3) USE GROUP S-2 (LOW-HAZARD STORAGE):	**29,062 GSF**
TOTAL BUILDING:	**64,808 GSF**

CHAPTER 5- GENERAL BUILDING HEIGHTS AND AREAS

(SECT. 504.3) ALLOWABLE BUILDING HEIGHT
TYPE IIB CONSTRUCTION
"B" AND "S" OCCUPANCY, SPRINKLED

ALLOWABLE HEIGHT:	**38' - 0" ***
PROPOSED HEIGHT (COMPLIANT):	**36' - 6"**

(SECT. 504.4) ALLOWABLE NUMBER OF STORIES
"S-1" OCCUPANCY (MOST RESTRICTIVE)

ALLOWABLE STORIES:	**3 STORIES**
PROPOSED STORIES (COMPLIANT):	**1 STORY**

(SECT. 506.2) ALLOWABLE BUILDING AREA

GROUP "S-1" (MOST RESTRICTIVE): (FOR 1-STORY STRUCTURE OF TYPE IIB CONSTRUCTION, W/ SPRINKLER SYSTEM)	**70,000 SF**
PROPOSED AREA FOR TOTAL BUILDING:	**63,091 GSF**
PROPOSED HEIGHT FOR TOTAL BUILDING:	**1 STORY**

(SECT. 505.2.1) MEZZANINES

MEZZANINE 1: (VEHICLE STORAGE)		
VEHICLE STORAGE AREA:	=	29,062 SF
ALLOWABLE MEZZANINE AREA:	=	29,062 x 1/2 = 14,531 SF
ACTUAL MEZZANINE AREA:	=	1,637 SF
MEZZANINE 2: (FACILITIES WORKSHOP)		
FACILITIES WORKSHOP AREA:	=	2,234 SF
ALLOWABLE MEZZANINE AREA:	=	2,234 x 1/2 = 1,117 SF
ACTUAL MEZZANINE AREA:	=	1,036 SF
MEZZANINE 3: (SIGN SHOP)		
SIGN SHOP AREA:	=	1,335 SF
ALLOWABLE MEZZANINE AREA:	=	1,389 x 1/2 = 668 SF
ACTUAL MEZZANINE AREA:	=	631 SF
MEZZANINE 4: (MECHANICAL / UTILITIES)		
MECHANICAL / UTILITIES AREA:	=	1,207 SF
ALLOWABLE MEZZANINE AREA:	=	1,207 x 1/2 = 604 SF
ACTUAL MEZZANINE AREA:	=	553 SF
MEZZANINE 5: (PARK & REC / TREE SHOP)		
PARKS & REC / TREE SHOP AREA:	=	1,529 SF
ALLOWABLE MEZZANINE AREA:	=	1,529 x 1/2 = 765 SF
ACTUAL MEZZANINE AREA:	=	714 SF
MEZZANINE 6: (OPERATIONS WORKSHOP)		
OPERATIONS WORKSHOP AREA:	=	1,960 SF
ALLOWABLE MEZZANINE AREA:	=	1,960 x 1/2 = 980 SF
ACTUAL MEZZANINE AREA:	=	913 SF
MEZZANINE 7: (VEHICLE MAINTENANCE)		
VEHICLE MAINTENANCE AREA:	=	8,673 SF
ALLOWABLE MEZZANINE AREA:	=	8,673 x 1/2 = 4,337 SF
ACTUAL MEZZANINE AREA:	=	1,734 SF

(SECT. 508.3.2) MIXED USE AND OCCUPANCY, NON-SEPARATED OCCUPANCIES
GROUP "S-1" (MOST RESTRICTIVE OCCUPANCY)

ALLOWABLE AREA FOR USE GROUP S:	**70,000 SF**
ALLOWABLE HEIGHT FOR USE GROUP S:	**1 STORY, SPRINKLED**

(SECT. 509) INCIDENTAL USES
AUTOMATIC SPRINKLER SYSTEM PROVIDED
FURNACE ROOM WITH > 400,000 BTUh
BOILER ROOM WITH > 15 PSI AND > 10 HORSEPOWER

INCIDENTAL USES - 1 OR 2 HOUR SEPARATION PROVIDED AT ELECTRICAL ROOM > KVA - AUTOMATIC SPRINKLER SYSTEM AND 1-HOUR SEPARATION PROVIDED AT FLUID STORAGE ROOM.

CHAPTER 6 - TYPES OF CONSTRUCTION

(TABLE 601) FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS

CONSTRUCTION TYPE IIB - BUILDING ELEMENTS

STRUCTURAL FRAME, (INC. COLUMNS, GIRDERS AND TRUSSES):	0 HRS
BEARING WALLS - EXTERIOR:	0 HRS
BEARING WALLS - INTERIOR:	0 HRS
NON BEARING WALLS AND PARTITIONS - EXTERIOR:	0 HRS
NON BEARING WALLS AND PARTITIONS - INTERIOR:	0 HRS
FLOOR CONSTRUCTION:	0 HRS
ROOF CONSTRUCTION:	0 HRS

(TABLE 602) FIRE RESISTANCE RATING REQUIREMENTS FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE

CONSTRUCTION TYPE IIB
FIRE SEPARATION DISTANCE = X
SEPARATION DISTANCE TO FUELING FACILITY: X > 30

OCCUPANCY USE GROUP S-1:	0 HRS
OCCUPANCY USE GROUP S-2:	0 HRS

(SECT. 602.2) CONSTRUCTION TYPE IIB, NONCOMBUSTIBLE, FULLY SPRINKLED

CHAPTER 9 - FIRE PROTECTION SYSTEMS

(SECT. 903.2.9) USE GROUP S-1
REQUIRE AUTOMATIC SPRINKLER SYSTEMS WHERE FIRE AREAS EXCEED 12,000 SF, OR WHERE FIRE AREAS USED FOR THE STORAGE OR REPAIR OF COMMERCIAL MOTOR VEHICLES EXCEED 5,000 SF.

(SECT. 903.3.1.1) ALTERNATIVE PROTECTION
AN NFPA-13 COMPLIANT AUTOMATIC SPRINKLER SYSTEM WILL BE PROVIDED AT ALL INTERIOR BUILDING AREAS. SHOP AND VEHICLE STORAGE AREA WILL HAVE DRY-PIPE ZONES.

(SECT. 907.5.2.2) EMERGENCY VOICE / ALARM COMMUNICATION SYSTEM
AS REQUIRED UNDER SECTION 505.2.1, EXCEPTION #2, AN NFPA-72 COMPLIANT EMERGENCY VOICE / ALARM COMMUNICATION SYSTEM WILL BE PROVIDED.

CHAPTER 10 - MEANS OF EGRESS

(TABLE 1004.1.2) MAXIMUM FLOOR AREA ALLOWANCE PER OCCUPANT

STORAGE AREA S-1		=	300 GSF / OCC
STORAGE AREA S-2		=	300 GSF / OCC
BUSINESS / OFFICE AREA B		=	100 GSF / OCC
ASSEMBLY (MUSTER ROOM)		=	15 NSF / OCC
LOCKER ROOM		=	50 GSF / OCC
MEZZANINES (S-1, S-2)		=	300 GSF / OCC
MECHANICAL ROOM		=	300 GSF / OCC

(SECT. 1004) OCCUPANT LOAD

STORAGE AREA S-1 :	22,839 SF (+ 300 SF/OCC)	=	52 OCCUPANTS
MEZZ: 2	1,036 SF (+ 300 SF/OCC)	=	4 OCCUPANTS
MEZZ: 3	631 SF (+ 300 SF/OCC)	=	3 OCCUPANTS
MEZZ: 4	553 SF (+ 300 SF/OCC)	=	2 OCCUPANTS
MEZZ: 5	714 SF (+ 300 SF/OCC)	=	3 OCCUPANTS
MEZZ: 6	913 SF (+ 300 SF/OCC)	=	4 OCCUPANTS
MEZZ: 7	1,734 SF (+ 300 SF/OCC)	=	6 OCCUPANTS
STORAGE AREA S-2:	29,062 SF (+ 300 SF/OCC)	=	65 OCCUPANTS
MEZZ: 1	1,637 SF (+ 300 SF/OCC)	=	6 OCCUPANTS
BUSINESS / OFFICE AREA B:	12,943 SF (+ 100 SF/OCC)	=	130 OCCUPANTS
MUSTER ROOM:	1,503 NSF (+ 15 SF/OCC)	=	101
LOCKER ROOMS:	1,059 SF (+ 50 SF/OCC)	=	22
MECHANICAL ROOM:	810 SF (+ 300 SF/OCC)	=	3 OCCUPANTS
TOTAL:		=	**401 OCCUPANTS**

(SECT. 1005) MEANS OF EGRESS SIZING

STORAGE AREA S-1 (INCLUDING MEZZANINES AND MECHANICAL ROOM):

DOORWAY WIDTH REQUIRED MIN.	61 OCC @ 0.2 IN. PER OCC	=	12 IN
DOORWAY WIDTH PROVIDED	34" (x 10 DOORS)	=	340 IN
DOORWAY WIDTH PROVIDED	68" (x 1 DOORS)	=	68 IN

STORAGE AREA S-2 (INCLUDING MEZZANINE):

DOORWAY WIDTH REQUIRED MIN.	72 OCC @ 0.2 IN. PER OCC	=	14 IN
DOORWAY WIDTH PROVIDED	34" (x 4 DOORS)	=	136 IN

BUSINESS / OFFICE AREA B:

DOORWAY WIDTH REQUIRED MIN.	206 OCC @ 0.2 IN PER OCC	=	41 IN
DOORWAY WIDTH PROVIDED	34" (x 4 DOORS)	=	136 IN

(SECT. 1006) NUMBER OF EXISTS AND EXIT ACCESS DOORWAYS

(TABLE 1006.2.1) MAXIMUM COMMON PATH OF EGRESS TRAVEL DISTANCE (FT)

B AND **S** OCCUPANCIES, WITH SPRINKLER SYSTEM		=	100 FT
MAXIMUM PROVIDED		=	99FT

(TABLE 1006.2.1) SPACE WITH ONE EXIT

S OCCUPANCY (MOST RESTRICTIVE) MAXIMUM OCCUPANCY		=	29
MAXIMUM PROVIDED		=	8

(TABLE 1006.3.1) MINIMUM NUMBER OF EXITS PER STORY

REQUIRED FOR 1-500 OCCUPANTS		=	2
PROVIDED		=	17

(SECT. 1007) EXIT AND EXIT ACCESS DOORWAY CONFIGURATION
1007.1.1 EXCEPTION #2: WHERE A BUILDING IS EQUIPPED THROUGHOUT WITH AN AUTOMATIC SPRINKLER SYSTEM, THE SEPARATION DISTANCE OF THE EXIT DOORS OR EXIT ACCESS DOORWAYS SHALL NOT BE LESS THAN ONE-THIRD OF THE LENGTH OF THE MAXIMUM OVERALL DIAGONAL DIMENSIONS OF THE AREA SERVED.

(SECT. 1016.2) EGRESS THROUGH INTERVENING SPACES
1016.2.2 EXCEPTION - MEANS OF EGRESS ARE PERMITTED THROUGH ADJOINING OR INTERVENING ROOMS OR SPACES WHEN THE ADJOINING OR INTERVENING ROOMS OR SPACES ARE THE SAME OR LESSER HAZARD OCCUPANCY GROUP.

(SECT. 1017) EXIT ACCESS TRAVEL DISTANCE
EXITS SHALL BE SO LOCATED ON EACH STORY THAT THE MAXIMUM LENGTH OF EXIT ACCESS TRAVEL, MEASURED FROM THE MOST REMOTE POINT WITHIN A STORY ALONG THE NATURAL AND UNOBSTRUCTED PATH OF EGRESS TRAVEL TO THE EXTERIOR EXIT DOOR AT THE LEVEL OF EXIT DISCHARGE SHALL NOT EXCEED THE DISTANCE GIVEN IN TABLE 1017.2.

(TABLE 1017.2) EXIT ACCESS TRAVEL DISTANCE (WITH SPRINKLER SYSTEM)

USE GROUP S-1 ALLOWABLE (MOST RESTRICTIVE):		=	250 FT MAX
MAXIMUM PROVIDED:		=	138 FT

(TABLE 1020.1) CORRIDORS FIRE-RESISTANCE RATING
OCCUPANCY B AND S, OCCUPANT LOAD > 30 WITH SPRINKLER SYSTEM = 0 HR

FIRE PREVENTION REGULATIONS - CMR 527

SECT. 4: OIL BURNING EQUIPMENT
(SECT. 4.03, 6b) UNENCLOSED TANKS: INSTALLATION INSIDE BUILDINGS
FLUID STORAGE FIRE RESISTANCE RATING: = 1 HR*

*(NOTE: THE AGGREGATED CAPACITY OF ANY UNENCLOSED TANKS, INSTALLED INSIDE A BUILDING SEPARATED FROM ANOTHER PORTION OF A BUILDING BY A FIRE SEPARATION, SHALL BE 1320 GALLONS. THE FIRE SEPARATION WALL SHALL CONSIST OF TWO-HOUR RATED FIRE RESISTIVE ASSEMBLIES WITH OPENING PROTECTION AND CONTINUITY IN CONFORMANCE).

0' 8' 16' 32'
SCALE: 3/64" = 1'-0"

Project:
NEW PUBLIC WORKS FACILITY
SHADBUSH ROAD

TOWN OF NANTUCKET, MA

Weston & Sampson

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Consultants:

Revisions:

No.	Date	Description

COA:

Seal:

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SCHEMATIC DESIGN

Scale: As indicated

Key Plan:

Date:	Issue Date
Draw By:	Author
Reviewed By:	Checker
Approved By:	Approver
W&S Project No.:	ENG20-0542
W&S File No.:	XXX

Drawing Title:

CODE SUMMARY

Sheet Number:

G101

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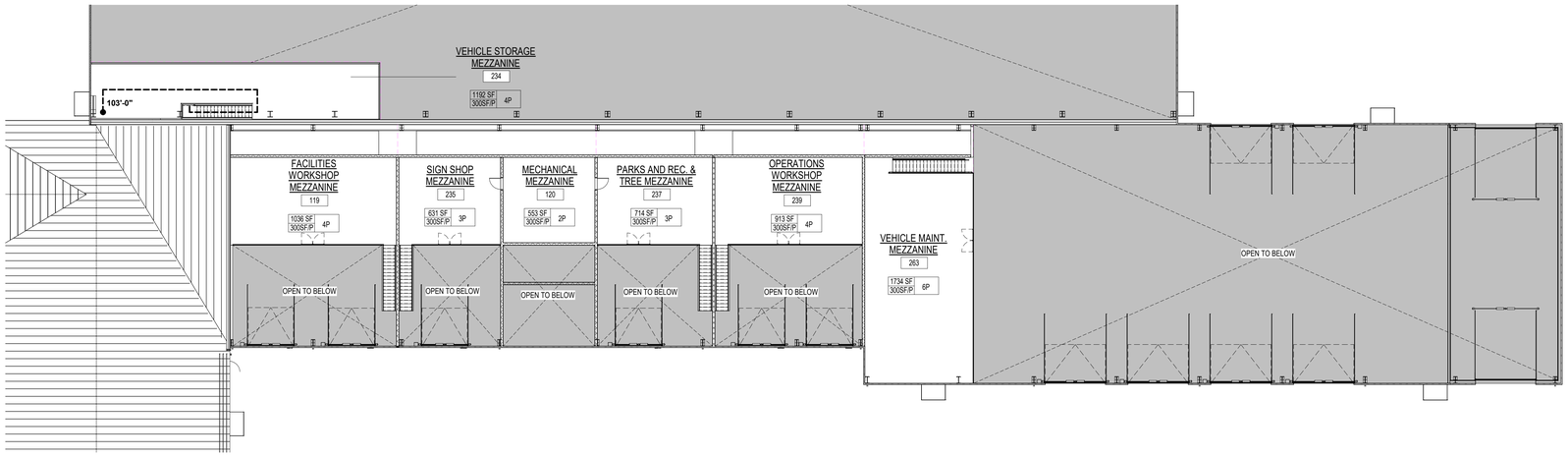
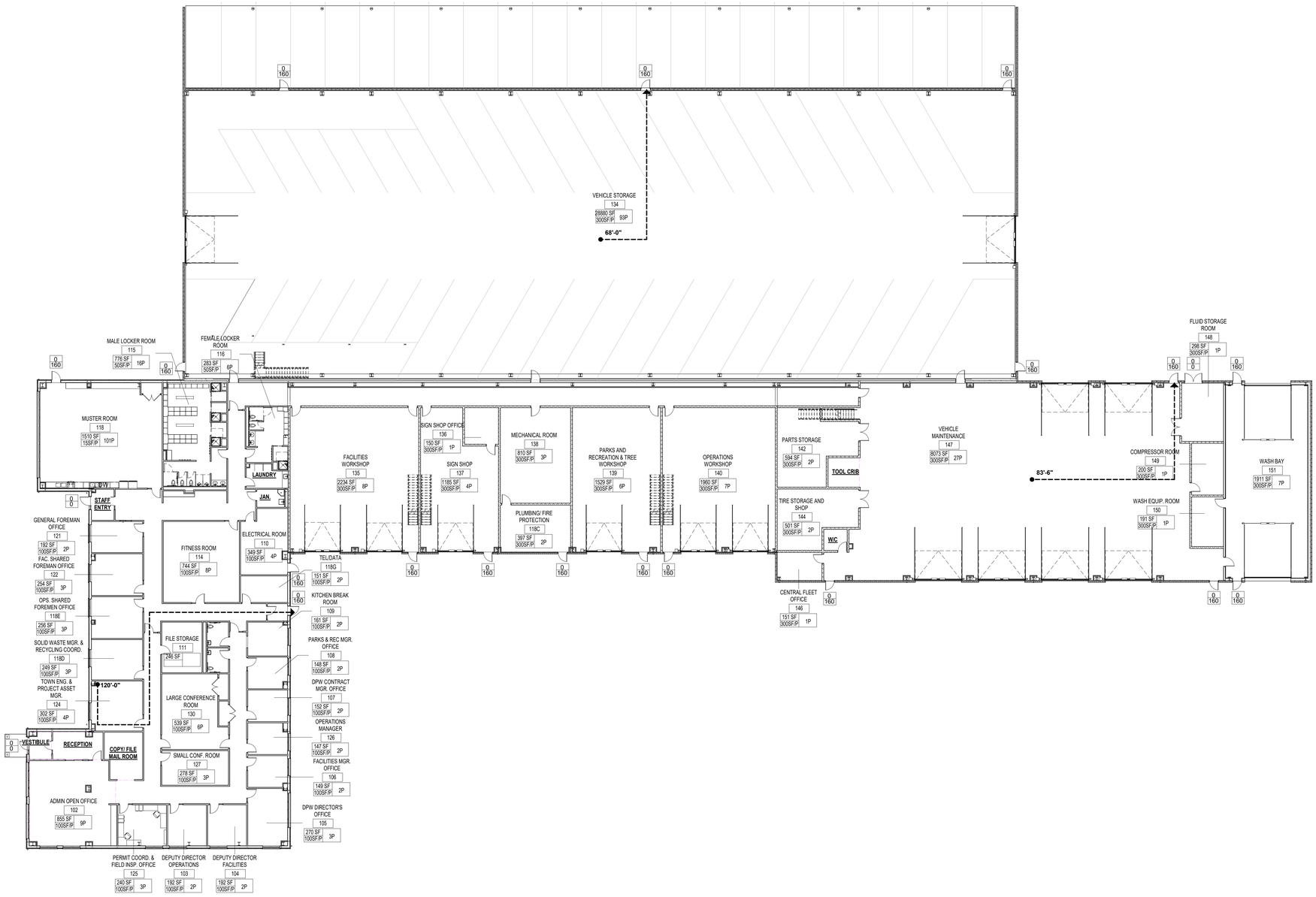


2 MEZZANINE OCCUPANCY PLAN
1/16" = 1'-0" 1/ A201



1 OVERALL FIRST FLOOR OCCUPANCY PLAN
1/16" = 1'-0" 1/ A201

0' 8' 16' 32'
SCALE: 1/16" = 1'-0"

CODE PLAN LEGEND

EXIT CAPACITY
XX / XX — ACTUAL EGRESS OF DOOR OR STAIR / MAXIMUM ALLOWABLE EGRESS CAPACITY OF DOOR OR STAIR

ROOM NAME
101 — ROOM NUMBER

150 / 50SF/P / 3P — MAXIMUM NUMBER OF ALLOWABLE OCCUPANTS; AREA IN NET SQUARE FEET (GROSS SQUARE FEET); OCCUPANCY LOAD FACTOR

115' — PATH OF MAXIMUM TRAVEL DISTANCE TO EXIT

15 — DIRECTION OF TRAVEL TO EXIT

FIRE EXTINGUISHERS:
FE = FIRE EXTINGUISHER, BRACKET MOUNTED
FEC = FIRE EXTINGUISHER, CABINET MOUNTED (SEMI-RECESSED)

SEPARATIONS ARE DESIGNATED AS FOLLOWS:
2 HOUR FIRE-RESISTANCE RATED FIRE BARRIER
1 HOUR FIRE-RESISTANCE RATED FIRE BARRIER
SMOKE RESISTANT SEPARATION

CODE PLAN NOTES

NEW & EXISTING CONSTRUCTION

A. ALL SPACES, FACILITIES AND PROGRAMS REQUIRED BY CODE TO BE ACCESSIBLE TO PHYSICALLY DISABLED PERSONS SHALL BE ACCESSIBLE.

- WHERE A WORKSTATION IS PROVIDED, AN ACCESSIBLE WORKSTATION IS REQUIRED.
- WHERE A SINK IS PROVIDED, AN ACCESSIBLE SINK WITH PIPE PROTECTION IS REQUIRED.
- ALL LABS AND SHOPS SHALL HAVE AN ACCESSIBLE EYE AND BODY WASH.
- ALL ACCESSORIES SHALL MEET REACH RANGES FOR FRONT OR SIDE APPROACH.
- ALL ACCESSIBLE ROUTES THROUGH BUILDING SHALL PROVIDE A MINIMUM 32 INCHES CLEARANCE (DOORWAYS IN PARTICULAR).
- ALL ACCESSIBLE SPACES, FURNISHING FIXTURES AND EQUIPMENT, AND ALL OPERATIONAL AND ACCESSIBLE ROUTE CLEARANCES SHALL MEET REQUIREMENTS OF SECTION 504, REHABILITATION ACT 1973 INCLUDING UNIFORM FEDERAL ACCESSIBILITY STANDARDS (UFAS) AND 504 REGULATIONS, ICC/ANSI A117.1 - 2003, AND THE AMERICANS WITH DISABILITIES ACT, TITLE II, INCLUDING THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG) AND ADA REGULATIONS.
- REFER TO A012 FOR MOUNTING HEIGHTS FOR ACCESSIBLE FIXTURES.

B. NEW AND EXISTING SMOKE PARTITIONS, INCLUDING STORAGE ROOMS OVER 100 SQUARE FEET, SHALL HAVE PENETRATIONS AND VOIDS FIRESTOPPED IN ACCORDANCE WITH DIVISION 07 SPECIFICATION SECTION "PENETRATION FIRESTOPPING". ALL HEAD-OF-WALL JOINTS AND FLOOR-TO-WALL JOINTS AT NEW AND EXISTING SMOKE RESISTANT PARTITIONS SHALL BE SEALED IN ACCORDANCE WITH DIVISION 07 SPECIFICATION SECTION "FIRESTOPPING".

C. NEW AND EXISTING FIRE-RESISTANCE RATED WALLS SHALL HAVE PENETRATIONS AND VOIDS FIRESTOPPED IN ACCORDANCE WITH DIVISION 07 SPECIFICATION SECTION "FIRESTOPPING". ALL HEAD-OF-WALL JOINTS AND FLOOR-TO-WALL JOINTS AT NEW AND EXISTING FIRE-RATED WALLS SHALL BE SEALED IN ACCORDANCE WITH DIVISION 07 SPECIFICATION SECTION "FIRESTOPPING".

D. ALL PENETRATIONS THROUGH FLOORS, INCLUDING FLOOR OF DUCTWORK ENCLOSURES, SHALL BE FIRESTOPPED IN ACCORDANCE WITH DIVISION 07 SECTION "FIRESTOPPING". PENETRATIONS THROUGH FLOORS OF RATED ROOMS OR FLOOR SYSTEMS SHALL BE FIRESTOPPED TO MEET RATING OF ROOM OR FLOOR SYSTEM.

FOR INTERIOR FINISHES

INTERIOR FINISHES SHALL BE PROVIDED AND CONFIRMED TO HAVE THE FOLLOWING CLASSIFICATION RATINGS :

WALLS AND CEILINGS (OTHER THAN TEXTILE)
BUSINESS AND EDUCATIONAL OCCUPANCIES:
- VERTICAL EXITS AND EXIT PASSAGEWAYS - CLASS A
- EXIT ACCESS CORRIDORS AND OTHER EXIT WAYS - CLASS B
- ROOMS AND ENCLOSED SPACES - CLASS C

ASSEMBLY OCCUPANCIES A-1, A-2:
- VERTICAL EXITS AND EXIT PASSAGEWAYS - CLASS A
- EXIT ACCESS CORRIDORS AND OTHER EXIT WAYS - CLASS A (LOBBIES CLASS B)
- ROOMS AND ENCLOSED SPACES - CLASS B (CLASS C IF <300) PEOPLE)

ASSEMBLY OCCUPANCIES A-3, A-4, A-5:
- VERTICAL EXITS AND EXIT PASSAGEWAYS - CLASS A
- EXIT ACCESS CORRIDORS AND OTHER EXIT WAYS - CLASS A
- ROOMS AND ENCLOSED SPACES - CLASS C

WALLS - TEXTILE
IBC 803.6.1.1 OR 803.6.1.2

CEILINGS - TEXTILE
CLASS A

FLOOR FINISH
OCCUPANCIES A, B, E, H, I-4, M, R-1, R-2, S
- VERTICAL EXITS, EXIT PASSAGEWAYS, AND EXIT ACCESS CORRIDORS - CLASS II
- OTHER AREAS - DOC FF-1 (CPSC 16 CFR, PART 1630)

OCCUPANCIES I-2, I-3
- VERTICAL EXITS, EXIT PASSAGEWAYS, AND EXIT ACCESS CORRIDORS - CLASS I
- OTHER AREAS - DOC FF-1 (CPSC 16 CFR, PART 1630)

Project:
NEW PUBLIC WORKS FACILITY
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Revisions:

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CDA:

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Scale: As indicated

Key Plan:

TO CREATE KEYPLAN, EDIT THE KEYPLAN FAMILY WITHIN THE TITLEBLOCK FAMILY AND INSERT CAD TO TRACE OVER.

NORTH

Date:	Issue Date
Draw By:	Author
Reviewed By:	Checker
Approved By:	Approver
W&S Project No.:	ENG20-0542
W&S File No.:	XXX

Drawing Title:

CODE SUMMARY - PLANS

Sheet Number:

G102

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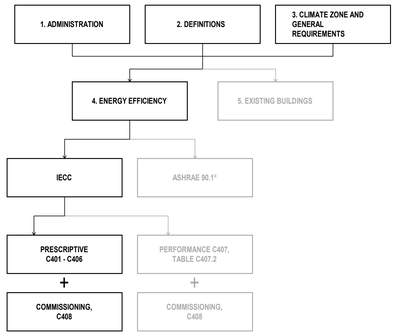
ENERGY COMPLIANCE PATH C103.2



[a] ANSI/ASHRAE/IES Standard 90. 1-2019

ENERGY EFFICIENCY CERTIFICATE

C401.3 THERMAL ENVELOPE CERTIFICATE

CODE EDITION	IECC 2021 + MA STRETCH ENERGY CODE
COMPLIANCE PATH	PRESCRIPTIVE
CLIMATE ZONE	5A, COOL HUMID

INSULATION RATING		R-VALUE		R-VALUE
CEILING / ROOF		R- EXAMPLE		R- EXAMPLE
WALLS	FRAME	R- EXAMPLE	MASS	R- EXAMPLE
	BASEMENT	R- EXAMPLE	CRAWL SPACE	R- EXAMPLE
FLOORS	OVER UNCONDITIONED SPACE	R- EXAMPLE	SLAB EDGE	R- EXAMPLE
DUCTS	ATTIC	R- EXAMPLE	OTHER	R- EXAMPLE

AIR LEAKAGE TESTING RESULTS					
ENVELOPE TESTING	EXAMPLE	ACH	EXAMPLE Pa	DUCT TESTING	EXAMPLE cfm/100ft²

FENESTRATION RATING	NFRC U-Factor	NFRC SHGC
FIXED WINDOWS	U- EXAMPLE	EXAMPLE
OPERABLE WINDOWS	U- EXAMPLE	EXAMPLE
TRANSLUCENT PANELS	U- EXAMPLE	EXAMPLE
ENTRANCE DOORS	U- EXAMPLE	EXAMPLE
OPAQUE DOOR	U- EXAMPLE	EXAMPLE
OPAQUE DOOR (NON-SWINGING)	U- EXAMPLE	EXAMPLE
OPAQUE DOOR (GARAGE DOOR < 14% GLAZING)	U- EXAMPLE	EXAMPLE
OPAQUE DOOR (SWINGING DOOR)	U- EXAMPLE	EXAMPLE
SKYLIGHT	U- EXAMPLE	EXAMPLE
WEIGHTED AVERAGE	U- EXAMPLE	EXAMPLE

DESIGNER / BUILDER:	EXAMPLE	DATE:	EXAMPLE

THIS CERTIFICATE IS TO BE POSTED IN ACCORDANCE WITH SECTION C401.3 OF THE INTERNATIONAL ENERGY CONSERVATION CODE.

COMPONENT PERFORMANCE TABLE

C402.1.5

BUILDING NARRATIVE: THIS BUILDING IS A 1-STORY BUILDING, APPROXIMATELY 65,000 SF WITH 10,000 EXTERIOR WALL AREA, NO BASEMENT WALLS, AND 20% VERTICAL GLAZING. THE EXTRA GLAZING IN THIS CASE IS TRIPLE PANE WITH A VERY LOW U-VALUE.

	FORMULA: (A + B + C + D + E ≤ ZERO)	AREA	PROPOSED U-VALUE	PROPOSED UA (U x AREA)	TABLE U-FACTOR	TABLE UA (U x AREA)	UA Dif (PROPOSED UA - TABLE UA)	TOTALS
	ROOF - INSULATION ABOVE DECK	10,000 SF	0.03	300	0.034	340	-40	
	WALL 1 - MASS WALL	10,000 SF	0.03	300	0.034	340	-40	
	WALL 2 - STEEL STUD	10,000 SF	0.03	300	0.034	340	-40	
	FLOOR	10,000 SF	0.03	300	0.034	340	-40	
	SKYLIGHTS	10,000 SF	0.03	300	0.034	340	-40	
	VERT. GLAZING - ALUMINUM CURTAIN WALL	10,000 SF	0.03	300	0.034	340	-40	
	VERT. GLAZING - ALUMINUM WINDOW	10,000 SF	0.03	300	0.034	340	-40	
A	SUM OF THE (UA Dif) VALUES FOR THE ENVELOPE ASSEMBLIES						-40	-448

		LENGTH OF SLAB EDGE	PROPOSED F-VALUE	PROPOSED F x LENGTH	TABLE F-FACTOR	TABLE F x LENGTH	FL Dif	
	ROOF - INSULATION ABOVE DECK	200	0.03	300	0.034	340	-40	
	ROOF - INSULATION ABOVE DECK	200	0.03	300	0.034	340	-40	
B	SUM OF THE (UA Dif) VALUES FOR THE ENVELOPE ASSEMBLIES						-40	-448

C	NO BASEMENT WALLS IN THIS DESIGN		0
	Uwall	0.076	= Area-weighted avg U-value of above-grade wall assemblies
	UAV	960	= Sum of the (UA Proposed) values of each vertical glazing assembly
	UV	0.24	= UAV / total vertical glazing area
	DA	1,000	= (Proposed VG Area) - (VG Area allowed by Section C402.3.1)
	VGA	4,000	= Proposed Vertical Glazing Area
	Allow VG Area	960	= 30% max from Section C402.3.1
	Wall Area	960	= Gross wall area
	UA Wall	960	= Uwall x Wall Area
D	Excess Vert Glazing Area	960	= (DA x UVG) - (DA x UWall) - Zero if ≤ Zero -448
E	Excess Skylight Area		(Proposed skylight area is less than allowable area, so value is zero) 0
	Component Performance (A + B + C + D + E) - OK since less than Zero.		-200

INTERNATIONAL ENERGY CONSERVATION CODE 2021 (IECC) - ZONE 5

ENERGY CODE: WALL TYPE VALUES

TABLE C402.1.4 - IECC 2021

CMU VENEER ON METAL STUD BACK-UP WALL

MATERIAL	DEPTH	R-VALUE
CMU VENEER	4.00"	0.69
CAVITY	1.75"	1.67
CONT. RIGID INSULATION	3.00"	15.41
VAPOR RETARDER	0.06"	0.12
GYPSUM SHEATHING	0.63"	0.67
MTL STUD	8.00"	0.02
GYPSUM BOARD	0.63"	0.57
TOTAL R-VALUE PROVIDED		19.15
COMPUTED U-VALUE: 1/R-VALUE = 1/19.15 = 0.052		
REQUIRED U-VALUE = 0.064 FOR A METAL FRAMED WALL EQUIVALENT COMPUTED R-VALUE		15.6

INSULATED METAL WALL PANEL ON GIRTS

MATERIAL	DEPTH	R-VALUE
INSULATED METAL WALL PANEL	4.00"	26.00
TOTAL R-VALUE PROVIDED		26.00
COMPUTED U-VALUE: 1/R-VALUE = 1/26.00 = 0.038		
REQUIRED U-VALUE = 0.052 FOR A METAL BUILDING WALL EQUIVALENT COMPUTED R-VALUE		17.2

CEDAR SHINGLE SIDING ON CONTINUOUS RIGID INSULATION ON METAL STUD BACKUPWALL

MATERIAL	DEPTH	R-VALUE
CEDAR SHINGLE SIDING	0.25"	0.50
WEATHER BARRIER	0.06"	0.12
EXTERIOR SHEATHING	0.625"	0.56
CONT. RIGID INSULATION	2.00"	10.00
		11.18
VAPOR RETARDER	0.06"	0.12
MTL STUD W/ FIBERGLASS INSULATION	6.00"	21.00
TOTAL R-VALUE PROVIDED:		21.12 (R13 MIN REQ'D)
CONTINUOUS INSULATION:		+ 11.18 (R7.5ci MIN REQ'D)
COMPUTED U-VALUE: 1/R-VALUE = 1/32.30 = 0.030		32.30
REQUIRED R-VALUE: R13 + R7.5ci		
REQUIRED U-VALUE = 0.064 FOR A METAL FRAMED WALL EQUIVALENT COMPUTED R-VALUE		15.62

ENERGY CODE: ROOF TYPE VALUES

TABLE C402.1.4 - IECC 2021

STANDING SEAM METAL ROOF W/ THERMAL BLOCKS & LINER SYSTEM

MATERIAL	DEPTH	R-VALUE
STANDING SEAM METAL ROOF PANEL	N / A	0.00
THERMAL BLOCKS (UPPER INSULATION LAYER)	4"	13
BATT INSULATION (STRUCTURE LAYER)	8"	25
FABRIC LINER SYSTEM	0"	0.00
TOTAL R-VALUE		R-38
COMPUTED U-VALUE: 1/R-VALUE = 1/38 = 0.0263		
REQUIRED U-VALUE = 0.035 FOR A METAL BUILDING		

ASPHALT SHINGLE ROOF ASSEMBLY - NEW WITH STEEL DECK

MATERIAL	DEPTH	R-VALUE
ASPHALT SHINGLES	.100"	0.44
SYNTHETIC ROOF MEMBRANE	N/A	0.06
AIR SPACE	1 1/2"	1.51
RIGID INSULATION - 5" MINIMUM (R-30 MIN ci)	5"	30.00
VAPOR RETARDER	N/A	0.06
SHEATHING	1/2"	11
INSIDE AIR VALUE	N/A	0.61
TOTAL R-VALUE		R-32.68
COMPUTED U-VALUE: 1/R-VALUE = 1/32.68 = 0.0306		
REQUIRED U-VALUE = 0.032 (R30ci)		
FOR INSULATION ENTIRELY ABOVE ROOF DECK		

ENERGY CODE: FENESTRATION VALUES

TABLE C402.4 - IECC 2021

BUILDING ENVELOPE FENESTRATION - U-FACTORS

MATERIAL		SPECIFIED U-VALUE	MAX ALLOWED U-VALUE
FIXED FENESTRATION	0.27 SUMMER / 0.30 WINTER		0.38
OPERABLE FENESTRATION	0.27 SUMMER / 0.30 WINTER		0.45
ENTRANCE DOORS (PERSONNEL)		0.33	0.77
OPAQUE DOORS (OVERHEAD / NON-SWINGING)		0.057	0.37
OPAQUE DOORS (OVERHEAD / NON-SWINGING)		0.40	0.37

SOLAR HEAT GAIN COEFFICIENT (SHGC)	SHGC SPECIFIED	SOUTH, EAST, WEST	NORTH
ORIENTATION			
PROJECTION FACTOR - PF < 0.2	0.37	0.40	0.53
PROJECTION FACTOR - 0.2 ≤ PF < 0.5	0.37	0.48	0.58
PROJECTION FACTOR - PF ≥ 0.5	0.37	0.64	0.64

IECC CLIMATE ZONE MAP

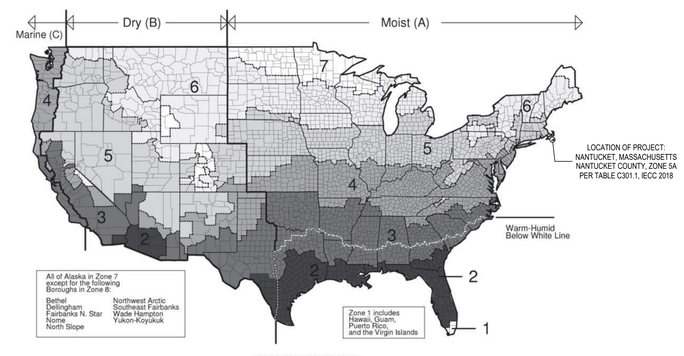


FIGURE C301.1CLIMATE ZONES

Project:
NEW PUBLIC WORKS FACILITY
SHADBUSH ROAD

TOWN OF NANTUCKET, MA

Weston & Sampson

Weston & Sampson Engineers, Inc.
100 Foxborough Boulevard, Suite 250
Foxborough, MA 02035
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Consultants:

Revisions:

No.	Date	Description

COA:

Seal:

Issued For:

SCHEMATIC DESIGN

Scale:

Key Plan:

TO CREATE KEYPLAN, EDIT THE KEYPLAN FAMILY WITHIN THE TITLEBLOCK FAMILY AND INSERT CAD TO TRACE OVER.

NORTH

Date:	Issue Date
Draw By:	Author
Reviewed By:	Checker
Approved By:	Approver
W&S Project No.:	ENG20-0542
W&S File No.:	XXX

Drawing Title:

CODE SUMMARY - ENERGY

Sheet Number:

G103

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MINIMUM CLEARANCE ENVELOPE:

DESCRIPTION	LOCATION	MIN CLEARANCE FROM FF TO ANY STRUCTURE OR SYSTEM
WASH BAY	OPERATIONS BUILDING	23' - 0"
VEHICLE MAINTENANCE	OPERATIONS BUILDING	23' - 0"
VEHICLE STORAGE	OPERATIONS BUILDING	19' - 8"
VEHICLE MAINT. AT MEZZ.	OPERATIONS BUILDING	7' - 0"
VEHICLE STOR. AT MEZZ.	OPERATIONS BUILDING	7' - 0"
SHOP AREAS	OPERATIONS BUILDING	19' - 0"
CANOPY	OPERATIONS BUILDING	21' - 8"

NOTES:
1. THIS IS A LIST OF MINIMUM CLEARANCE ENVELOPES FOR THE MAINTENANCE, MATERIAL STORAGE, WORKSHOPS, VEHICLE STORAGE AND WASH BAY AREAS. ALL STRUCTURE AND SYSTEMS LOCATED IN THESE AREAS MUST BE INSTALLED ABOVE THESE LIMITS UNLESS NOTED OTHERWISE OR APPROVED BY ENGINEER.
2. MECHANICAL DUCTWORK DROPS (VERTICAL LEG) TO FLOOR FOR EXHAUST ARE NOT SUBJECT TO THIS TABLE.

TYPICAL DEVICE MOUNTING HEIGHTS:

ELECTRICAL EQUIPMENT MOUNTING HEIGHT DIMENSIONS ARE TO CENTER OF DEVICE UNLESS OTHERWISE NOTED:

- RECEPTACLES: 18" A.F.F. AT LOCATIONS ABOVE CASEWORK, MOUNT BOTTOM OF RECEPTACLE AT 2" ABOVE BACKSPLASH. AT LOCATIONS BELOW CASEWORK, MOUNT AT 24" A.F.F.
- EXTERIOR RECEPTACLES: 24" A.F.F.
- SWITCHES: 48" A.F.F.
- BOILER EMERGENCY SWITCH: 60" A.F.F.
- DATA/PHONE OUTLETS: 18" A.F.F.
- WALL MOUNTED CLOCKS AND SPEAKERS: COORDINATE LOCATION ABOVE DOOR WITH CEILING HEIGHT. IF THE CLOCK AND SPEAKER DO NOT FIT, PLACE AT 7'-6" A.F.F. NEXT TO DOOR. COORDINATE WITH BLOCK COURSING AS OCCURS. CONSULT DESIGNER IF CONDITIONS DIFFER.
- FIRE ALARM PULL STATIONS: 48" A.F.F.
- AREA OF REFUGE CALL STATION: 48" A.F.F.
- EMERGENCY SHUT-OFF SWITCH/PUSH BUTTON: 48" A.F.F.
- EMERGENCY CALL SWITCH: 36" A.F.F.
- EMERGENCY CALL BELL/LIGHT: 7'-6" A.F.F.
- FIRE ALARM VISUAL/AUDIO INDICATING UNITS: 6'-8" TO BOTTOM OF DEVICE.
- WALL MOUNTED EXIT SIGNS: 8" ABOVE DOOR OR 7'-6" A.F.F.
- EMERGENCY CALL SYSTEM FOR TOILET ROOMS: LOCATE ALARM PULL SWITCH WITHIN 3' OF WATERCLOSET. EXTEND PULL CORD TO WITHIN 12" OF THE FLOOR.

DOOR HARDWARE MOUNTING HEIGHT DIMENSIONS ARE TO CENTER OF HARDWARE:

- PULL: 42"
- PUSH PLATE: 45"

TOILET ACCESSORY SCHEDULE - DIV 10

FURNISHED BY OWNER - INSTALLED BY CONTRACTOR:

MARK	DESCRIPTION	MFR	QTY
SD	SOAP DISPENSER	OWNER REQ'S	PER PLANS
PTD	PAPER TOWEL DISPENSER	OWNER REQ'S	PER PLANS
TTD	TOILET TISSUE DISPENSER	OWNER REQ'S	PER PLANS
TB	TRASH BARREL	OWNER REQ'S	PER PLANS

FURNISHED AND INSTALLED BY CONTRACTOR:

MARK	DESCRIPTION	MFR	QTY
SRWR	SEMI-RECESSED WASTE RECEPTICLE	PER SPEC	PER PLANS
SNV	SANITARY NAPKIN VENDOR	PER SPEC	PER PLANS
SND	SANITARY NAPKIN DISPOSAL	PER SPEC	PER PLANS
CH	COAT / ROBE HOOK	PER SPEC	PER PLANS
GB	GRAB BAR (DIMENSION PER PLANS)	PER SPEC	PER PLANS
MIRR	MIRROR	PER SPEC	PER PLANS
M/BH	MOP/BROOM HOLDER	PER SPEC	PER PLANS
JS	JANITOR'S SHELVING	PER SPEC	PER PLANS
SC	SHOWER CURTAIN	PER SPEC	PER PLANS
CR	CURTAIN ROD FOR SHOWER	PER SPEC	PER PLANS

GENERAL NOTES:

1. PROVIDE BULLNOSE TOP COURSE / MTL EDGE TRIM AND CEMENTITIOUS TILE BACK BOARD / CEMENT BOARD AT ALL CERAMIC TILE LOCATIONS, TYPICAL. INSTALLATION OF CERAMIC TILE OVER GYPSUM BOARD EXCEPT FOR A KITCHENETTE BACKSPLASH IS NOT ACCEPTABLE.
2. PROVIDE CONT. BLOCKING AT SHELVING, ACCESS PANELS, DISPLAY MONITORS, MARKER BOARDS ETC. COORDINATE LOCATION IN FIELD.
3. MOISTURE RESISTANT (MR) GYPSUM BOARD TO BE USED IN ALL TOILET ROOM / RESTROOM FACILITIES.
4. PROVIDE PVC SHIMS AS NECESSARY TO MAKE TOILET ROOM ACCESSORIES SUCH AS PTD'S, MIRRORS, SDS, TOILET PARTITIONS, ETC... FLUSH ON WALL OVER CERAMIC TILE WAINSCOT. SHIMS TO BE PAINTED BY PAINTING FSB. THICKNESS TO MATCH CERAMIC WALL TILE.

GENERAL NOTES:

1. COORDINATE THE ARCHITECTURAL DRAWINGS WITH STRUCTURAL, PLUMBING, FIRE PROTECTION, MECHANICAL, AND ELECTRICAL / FIRE ALARM DRAWINGS FOR THE VERIFICATION OF ALL PROJECT REQUIREMENTS.
2. FINISH FIRST FLOOR SLAB ELEVATION HIGH POINT IS 0'-0" FOR THIS PROJECT.
3. ALL INTERIOR DIMENSIONS ARE TAKEN FROM FACE OF STUD / FACE OF MASONRY / CENTERLINE OF COLUMN TO FACE OF STUD / FACE OF MASONRY / CENTERLINED OF COLUMN UNLESS SPECIFICALLY NOTED OTHERWISE. DO NOT SCALE DRAWINGS. REFER TO ENLARGED PLANS AND DETAILS FOR FURTHER DIMENSIONING INFORMATION. ALL WORK LINES AND LEVELS SHALL BE LAID OUT BY WRITTEN DIMENSIONS. ANY DEVIATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGNER. ALL DEVIATIONS AND DISCREPANCIES SHALL BE CORRECTED BY THE CONTRACTOR BEFORE HE BEGINS HIS PORTION OF THE WORK.
4. FIRE EXTINGUISHER AND CABINET QUANTITIES AND LOCATIONS TO BE COORDINATED WITH THE TOWN FIRE DEPARTMENT PRIOR TO ORDERING AND INSTALLATION. CONFORM TO THE STATE FIRE REGS AND NFPA.
5. COORDINATE MASTER BOX, KNOX BOX, AND BEACON LOCATIONS WITH THE ELECTRICAL / FIRE ALARM DRAWINGS AND THE TOWN FIRE DEPARTMENT REQUIREMENTS. ELECTRICAL CONTRACTOR TO PROVIDE KNOX BOX THAT MEET THE TOWN FIRE DEPARTMENT REQUIREMENTS.
6. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS & CONDITIONS PRIOR TO THE WORK AND SHALL NOTIFY THE DESIGNER REGARDING ANY DISCREPANCIES.
7. THE CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS, SAMPLES, CATALOG CUTS ETC., INCLUDING COLOR CHARTS FOR PAINTS, FOR ALL INTERIOR FINISHES, TO THE DESIGNER FOR SELECTION, REVIEW AND APPROVAL WITH THE OWNER PRIOR TO FABRICATION OR INSTALLATION. THE COLORS MUST BE SUBMITTED IN A TIMELY MANNER AND TOGETHER FOR REVIEW AND COLOR BOARDS. FAILURE TO DO SO IN A TIMELY MANNER WILL FALL ON THE CONTRACTOR'S RESPONSIBILITY AND NOT ON THE OWNER. REFER TO EACH INDIVIDUAL SPECIFICATIONS FOR SIZE, QUANTITY AND TYPE OF COLOR SELECTION.
8. PERFORM ALL WORK IN ACCORDANCE WITH THE STATE BUILDING CODE, AS WELL AS LOCAL CODES AND ORDINANCES.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PERMITS, BACKCHARGES AND FEES AS REQUIRED BY THE TOWN.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAILY REMOVAL AND LEGAL DISPOSAL OF ALL DEBRIS OFF SITE.
11. THE CONTRACTOR SHALL SEAL ALL THROUGH-WALL & FLOOR PENETRATIONS WITH 3M BARRIER CAULK (O.A.E.) AND SEALANT ON USG SAFING 2500 PSI GROUT. U.N.O. INSTALL ANY REQUIRED FIRE RATED PARTITIONS TO UNDERSIDE OF FLOOR AND ROOF DECK, INCLUDING DEFLECTION HEAD FIRE SAFING.
12. INSTALL A CONTINUOUS SEALANT BEAD ON BACKER ROD AT ALL JUNCTURES OF DISSIMILAR MATERIALS (E.G.: METAL TO CMU, STEEL TO ALUMINUM) AND ALL MATERIAL JOINTS AS REQUIRED BY THE MANUFACTURER'S SPECIFICATION AND RECOMMENDATIONS, INDUSTRY STANDARDS AND GOOD PRACTICE.
13. PROVIDE CONTINUOUS GALVANIZED METAL EDGE TRIM AT ALL GWB WORK.
14. THE CONTRACTOR SHALL INSTALL ALL INTERIOR FINISHES AT ALL SURFACES INDICATED ON THE DRAWINGS IN CONFORMANCE TO STATE BUILDING CODE. ALL DOORS SHALL HAVE LEVER HARDWARE TO CONFORM TO 521 CMR.
15. INSTALL USG .093 (OR APPROVED EQUAL) CONTROL JOINTS AT 30'-0" O.C. MAX. OR AS PER MANUFACTURER'S SUGGESTED DETAILS AND SPECIFICATIONS.
16. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING A GAP FILLING SYSTEM OR OTHER SYSTEM WHICH SPANS ANY GAP IN THE EXTERIOR WALL SYSTEM WHICH DOES NOT MEET THE MAXIMUM SPAN OF THE APPROVED AIR BARRIER MEMBRANE SYSTEM. THIS SYSTEM SHALL BE PROVIDED TO ALLOW FOR A COMPLETE AIR BARRIER MEMBRANE INSTALLATION. THE SYSTEM SHALL BE COMPATIBLE WITH THE APPROVED AIR BARRIER PRODUCT AND SHALL BE APPROVED BY THE DESIGNER PRIOR TO INSTALLATION.
17. THE ELECTRICAL CONTRACTOR SHALL PROVIDE DISCONNECT SWITCHES, STARTERS AND ALL LINE VOLTAGE WIRING AND CONDUIT TO OH DOOR OPERATORS. THE HAND-OFF-AUTO SWITCH, PUSH BUTTON CONTROL STATION (MOMENTARY UP-STOP-DOWN) AND CONTROLLER IS FURNISHED BY THE OVERHEAD DOOR MANUFACTURER AND INSTALLED BY THE ELECTRICAL CONTRACTOR. THE ELECTRICAL CONTRACTOR IS TO PROVIDE CONDUIT AND WIRING BETWEEN THE HAND-OFF-AUTO SWITCH, THE PUSH BUTTON CONTROL STATION AND CONTROLLER PER OVERHEAD DOOR MANUFACTURER REQUIREMENTS. FURNISHING AND INSTALLATION OF THE MOTOR UNIT, OPTICAL SENSORS, PNEUMATIC DOOR SAFETY BOTTOM, LOW VOLTAGE WIRING AND ALL OTHER ACCESSORIES ASSOCIATED WITH THE OVERHEAD DOORS SHALL BE THE RESPONSIBILITY OF THE OVERHEAD DOOR CONTRACTOR.
18. ALL STRUCTURAL ELEMENTS WHICH PASS IN FRONT OF WINDOWS / CLERESTORIES SHALL BE BACK PAINTED.
19. ALL STRUCTURAL ELEMENTS SHOWN ON THE ARCHITECTURAL DRAWINGS ARE FOR INFORMATION ONLY. REFER TO STRUCTURAL DRAWINGS FOR EXACT SIZES AND LOCATION OF STRUCTURAL ELEMENTS.
20. THE CONTRACTOR SHALL PROVIDE SUPPLEMENTAL FRAMING AND OR BLOCKING AS NECESSARY TO SUPPORT ALL EXTERIOR WALL MOUNTED ELEMENTS.
21. ALL OPENINGS IN EXTERIOR WALLS FOR PLUMBING, FIRE PROTECTION, MECHANICAL, AND ELECTRICAL / FIRE ALARM SYSTEMS SHALL BE SEALED WEATHER-TIGHT BY THE CONTRACTOR. CONTRACTOR TO PROVIDE FIRE RATED SEALANTS AS REQUIRED AT FIRE RATED WALL, FLOOR, CEILING, AND ROOF ASSEMBLIES.
22. THE CONTRACTOR IS TO FIELD MEASURE OH DOOR OPENINGS TO ENSURE PROPER FIT OF OH DOORS.
23. ALL EXPOSED SURFACES (INCLUDING, BUT NOT LIMITED TO; WALLS, UNDERSIDE OF EXPOSED ROOF AND FLOOR DECK, STRUCTURAL STEEL, MISCELLANEOUS METALS, DOORS/FRAMES, DUCTWORK, CONDUIT, AND PIPING) SHALL BE PRIMED AND PAINTED.
24. BLOCKING SHALL BE PROVIDED FOR ALL WALL MOUNTED EQUIPMENT (INCLUDING, BUT NOT LIMITED TO; PLUMBING FIXTURES, TOILET ACCESSORIES, UTILITY SINKS, FIRE EXTINGUISHER CABINETS, SHELVING, COUNTERS, CASEWORK, CABINETS, MEDIA EQUIPMENT, AND WINDOW TREATMENTS). PROVIDE ADDITIONAL METAL STUD FRAMING AS REQUIRED TO SUPPORT BLOCKING.
26. THE AIR BARRIER MEMBRANE (ABM) SHALL BE CONTINUOUS THROUGH THE BUILDING ENVELOPE AND BETWEEN THE WALL AND ROOF SYSTEMS INSTALLED ON THE WINTER WARM SIDE OF THE INSULATION. OPENINGS AND PENETRATIONS IN THE BUILDING ENVELOPE SHALL BE SEALED WITH SEALANT MATERIALS OR CLOSED WITH GASKETING SYSTEMS WHICH IS COMPATIBLE WITH THE ABM SYSTEM AND MEETS THE PERFORMANCE REQUIREMENTS IN THE SPEC. SYSTEM SHALL BE COMPATIBLE WITH THE CONSTRUCTION MATERIALS AND LOCATION. JOINTS AND SEAMS SHALL BE SEALED IN THE SAME MANNER OR TAPED OR COVERED WITH A MOISTURE VAPOR-PERMEABLE WRAPPING MATERIAL. SEALING MATERIALS SPANNING JOINTS BETWEEN CONSTRUCTION MATERIALS SHALL ALLOW FOR EXPANSION AND CONTRACTION OF THE CONSTRUCTION MATERIALS. AT ALL OH DOOR JAMBS AND HEADERS, THE ABM SHALL TERMINATE AT THE STEEL FACE WHERE THE INSULATION ABUTS STEEL FRAMED OPENINGS. TERMINATE ABM ON THE INSIDE FACE OF EXTERIOR WALL SYSTEM AT DOORS, WINDOWS, LOUVERS, AND CLERESTORIES. THE TERMS VAPOR RETARDER, AND AIR MOISTURE BARRIER ARE SYNONYMOUS WITH ABM.
27. METAL BUILDING SYSTEM SHALL BE A SINGLE SOURCE MANUFACTURED SYSTEM. ALL ACCESSORIES, NOT LIMITED TO; PRIMARY FRAMING, WALLS, ROOF INSULATION, EXTRUSIONS, TRIMS, FASTENERS, GASKETS, SUBGRT FRAMING, ETC SHALL BE PROVIDED BY THE METAL BUILDING SYSTEM MANUFACTURER. METAL WALL PANEL COLOR TO BE SELECTED BY THE DESIGNER FROM THE MANUFACTURES STANDARD COLOR SELECTION WITH FINISH PROTECTIONS AS SPECIFIED.
28. ALL WALL/PARAPET FLASHING SHALL TERMINATE WITH A MINIMUM 8" VERTICAL LEG TO ALLOW FOR PROPER INTERFACE WITH THE ABM. ABM SHALL BE INSTALLED BEHIND FLASHING AND THE FLASHING SHALL BE INTEGRATED INTO THE ABM SYSTEM USING A SELF-ADHERED MEMBRANE FLASHING WITH MINIMUM OVERLAP REQUIREMENTS PER MANUFACTURER.
29. ALL EXTERIOR AND INTERIOR MATERIAL SURFACE COLOR AND TEXTURES SHALL BE SELECTED BY THE DESIGNER FROM THE MANUFACTURES STANDARD & PREMIUM FINISH / COLOR SELECTIONS. ONCE ALL COLORS HAVE BEEN SUBMITTED, THE OWNER WILL REVIEW AND PROVIDE GUIDANCE ON COLORS FOR INCLUSION IN THE MOCK-UP REFERENCED IN DIVISION 1 OF THE SPECIFICATIONS.
30. DETAILS AND NOTES SHOWN ON THE ARCHITECTURAL DRAWINGS SHALL BE APPLICABLE TO ALL PARTS OF THE ARCHITECTURAL WORK EXCEPT WHERE SPECIFICALLY REQUIRED OTHERWISE BY THE CONTRACT DOCUMENTS. CONDITIONS NOT SPECIFICALLY SHOWN SHALL BE SIMILAR TO THOSE SHOWN FOR LIKE CONDITIONS AS DETERMINED BY THE DESIGNER.
31. PROVIDE ALL ACCESSIBLE FIXTURES, CONTROLS & ACCESSORIES, AND APPROPRIATE CLEARANCES, AS REQUIRED FOR COMPLIANCE W/ STATE BUILDING CODE W/ ALL AMENDMENTS, TYP.
32. SEALANT DEPTH AT ALL EXTERIOR OPENINGS SHALL BE EQUAL TO THE WIDTH OF THE JOINT.
33. THE CONTRACTOR TO PROVIDE CANE PROTECTION AT ALL PANELS IN EGRESS PATHS (AS DETERMINED BY THE DESIGNER) WHICH EXTEND 4" OR MORE FROM FACE OF WALL AND ARE GREATER THAN 27" ABOVE FINISHED FLOOR.
34. FOR SITE LEGEND REFER TO DRAWING SERIES CX.00.
35. FOR STRUCTURAL LEGEND REFER TO DRAWING SERIES SX00.
36. FOR WALL TYPES, REFER TO DRAWING SERIES A000.
37. FOR CEILING LEGEND AND SOFFIT DETAILS REFER TO DRAWING SERIES A100.
38. FOR ROOF DETAILS, REFER TO DRAWING SERIES A600.
39. FOR LARGE SCALE TOILET AND STAIR PLANS, REFER TO DRAWING SERIES A700.
40. FOR INTERIOR ELEVATIONS, REFER TO DRAWING SERIES A700.
41. FOR DOOR NUMBERS AND DETAILS, REFER TO DRAWING SERIES A800.
42. FOR FINISH SCHEDULE, REFER TO DRAWING SERIES A900.
43. FOR CASEWORK ELEVATIONS, REFER TO DRAWING SERIES A900.
44. FOR FIRE PROTECTION LEGEND, REFER TO DRAWING SERIES FPX00.
45. FOR PLUMBING LEGEND, REFER TO DRAWING SERIES PX00.
46. FOR MECHANICAL LEGEND, REFER TO DRAWING SERIES MX00.
47. FOR ELECTRICAL LEGEND, REFER TO DRAWING SERIES EX00.
48. ALL NOTES AND DIMENSIONS DESIGNATED "TYPICAL" APPLY TO ALL LIKE OR SIMILAR CONDITIONS THROUGHOUT THE PROJECT.
49. SIGNAGE TO BE MOUNTED ON THE WALL, ADJACENT TO THE LEVER SIDE OF THE DOOR, AT A HEIGHT OF FIVE (5) FEET A.F.F. REFER TO THE FLOOR PLANS FOR LOCATIONS OF DIRECTIONAL SIGNAGE.
50. CONTRACTOR(S) TO TAKE AND VERIFY ALL DIMENSIONS AND CONDITIONS OF THE WORK AND BE RESPONSIBLE FOR COORDINATION OF THE SAME. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO START OF WORK.
51. GENERAL CONTRACTOR TO PROVIDE EXCAVATION & TRENCHING AT ALL UNDERGROUND UTILITIES IN EXISTING AND NEW BUILDINGS AS REQUIRED FOR MEP/FP UTILITIES AND COORDINATION. REFER TO MEP / FP DRAWINGS FOR OVERALL REQUIREMENTS. GENERAL CONTRACTOR TO COORDINATE INVERTS AND COMPACT ALL MATERIALS FOR PLACEMENT OF CONCRETE SLAB INFILL IN ACCORDANCE WITH ASTM D1557. GC TO PROVIDE SOIL COMPACTION, DOWELS, WWF MESH, VAPOR RETARDER AND TIE-INS, CONCRETE PLACEMENT AND ALL REQUIREMENTS TO CLOSE UP TRENCH ONCE MEP/FP SUB-TRADE WORK IS COMPLETE.
52. PROVIDE AN ACCENT WALL AT ALL ROOMS. ARCHITECT / ENGINEER TO PROVIDE LOCATION DURING CONSTRUCTION FOR ACCENT WALL IF NOT IDENTIFIED ON PROJECT PLANS.

ABBREVIATIONS:

A	
A/C	AIR CONDITION
AC	ACOUSTICAL
ACT	ACOUSTICAL CEILING TILE
ADJ	ADJACENT
AFF	ABOVE FINISH FLOOR
ALT	ALTERNATE
ALUM	ALUMINUM
ANC.BLT	ANCHOR BOLT
ANOD	ANODIZED
APPROX	APPROXIMATE
ARCH	ARCHITECT
ARGB	ABUSE RESISTANT GYPSUM BOARD
ASPH	ASPHALT
AVB	AIR VAPOR BARRIER
B	
BC	BASE CABINET
BD	BOARD
BF	BRACE FRAME
BITUM	BITUMINOUS
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BM	BENCH MARK
BOF	BOTTOM OF FOOTING
BOS	BOTTOM OF STEEL
BOTT	BOTTOM
BPL	BEARING PLATE
BRG	BEARING
BRK	BRICK
BS	BRICK SHELF
BSMT	BASEMENT
BVL	BEVELED
C	
CAB	CABINET
CB	CEMENT BOARD / CATCH BASIN
CDM	CAVITY DRAINAGE MATERIAL
CF	CUBIC FEET
CH	CEILING HEIGHT
CIP	CAST IN PLACE
CJ	CONTROL JOINT
CL	CENTER LINE / COLUMN LINE
CL	CLOSET / CHAIN LINK
CLG	CEILING
CLOS	CLOSET
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
CNTR	COUNTER
CO	CASED OPENING
COL	COLUMN
COMP	COMPOSITION
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
CONTC	CONTRACTOR
CONV	CONVECTOR
COORD	COORDINATE
CORR	CORRIDOR
CPET	COMMON PATH OF EGRESS TRAVEL
CPT	CARPET
CT	CERAMIC TILE
CTR	CENTER
CW	COLD WATER
CWT	CERAMIC WALL TILE
CY	CUBIC YARD
D	
D	DRYER
D-PART	DEMOUNTABLE PARTITION
DBL	DOUBLE
DEMO	DEMOLITION
DF	DRINKING FOUNTAIN
DH	DOUBLE HUNG
DI	DRAIN IN.ET
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DIST	DISTANCE
DL	DRAIN LEADER
DN	DOWN
DR	DOOR
DS	DOWNSPOUT
DTL	DETAIL
DW	DISHWASHER
DWG	DRAWING
E	
EA	EACH
EF	EACH FACE
EIFS	EXTERIOR INSULATED FINISH SYSTEM
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRIC
ELEV	ELEVATOR
EMER	EMERGENCY
ENCL	ENCLOSURE
EOC	EDGE OF CONCRETE
EP	ELECTRICAL PANEL
EQ	EQUAL
EQUIP	EQUIPMENT
ER	EXISTING TO REMAIN
ES	EXPOSED STRUCTURE
EW	EACH WAY
EXH	EXHAUST
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
F	
FA	FIRE ALARM
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
FAK	FIRST AID KIT
FB	FIRE BLANKET
FC	FILE CABINET
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FF	FINISH FLOOR
FFE	FINISH FLOOR ELEVATION
FG	FIBERGLASS
FIN	FINISH
FLASH	FLASHING
FLR	FLOOR
FLUOR	FLUORESCENT
FOC	FACE OF CONCRETE
FOF	FACE OF FINISH
FOM	FACE OF MASONRY
FOS	FACE OF STUD
FOUND	FOUNDATION
FP	FIREPROOF(ING)
FR	FIRE RETARDANT
FRP	FIBERGLASS REINFORCED WALL PANEL
FRTW	FIRE RETARDANT TREATED WOOD
FSB	FILED SUB BID
FT	FEET
FTG	FOOTING
FUR	FURRING
G	
GA	GAUGE
GALV	GALVANIZED
GB	GRAB BAR
GC	GENERAL CONTRACTOR
GDRL	GUARD RAIL
GL	GLASS
GLAZ	GLAZED BLOCK
GLB	GLASS BLOCK
GN	GOOSENECK
GRT	GROUT
GWB	GYPSUM WALL BOARD
H	
HB	HOSE BIB
HC	HANDICAP
HD	HEAVY DUTY
HDWR	HARDWARE
HM	HOLLOW METAL
HOR	HORIZONTAL
HP	HIGH POINT
HT	HEIGHT
HTR	HEATER
HVAC	HEATING, VENTILATING, & AIR CONDITIONING
HW	HOT WATER
I	
ID	INSIDE DIAMETER
IN	INCH
INCL	INCLUDED
INFO	INFORMATION
INSUL	INSULATION
INT	INTERIOR
INV	INVERT
IRGWB	IMPACT-RESISTANT GWB
J	
JAN	JANITOR
JST	JOIST
JT	JOINT
K	
KD	KNOCK-DOWN
KIP	1,000 LBS
KO	KNOCKOUT
KPLT	KICKPLATE
L	
L	LENGTH
LAM	LAMINATE
LAV	LAVATORY
LBL	LABEL
LC	LEAD COATED
LCC	LEAD COATED COPPER
LGMF	LIGHT-GAUGE METAL FRAMING
LIN	LINOLEUM
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LP	LOW POINT
LSC	LIFE SAFETY CODE
LT	LIGHT
M	
M	METER
MANUF	MANUFACTURER
MAS	MASONRY
MAT	MATERIAL
MAX	MAXIMUM
MB	MOISTURE BARRIER
MBL	MARBLE
MBM	METAL BUILDING MANUFACTURER
MBR	MEMBER
MC	MEDICINE CABINET
MDF	MEDIUM DENSITY FIBERBOARD
MDO	MEDIUM DENSITY OVERLAY
MECH	MECHANICAL
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MIR	MIRROR
MISC	MISCELLANEOUS
ML	MATCH LINE
MLDG	MOULDING
MO	MASONRY OPENING
MOD	MODULAR
MR	MOISTURE RESISTANT
MRGB	MOISTURE RESISTANT GYPSUM BOARD
MS	METAL STUD
MTD	MOUNTED
MTL	METAL
MTP	METAL TOILET PARTITION
N	
N/A	NOT APPLICABLE
NAT	NATURAL
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
NUM	NUMBER
NW	NEW
O	
OA	OVERALL
OC	ON CENTER
OD	OUTSIDE DIAMETER
OH	OVERHEAD DOOR
OPNG	OPENING
OPP	OPPOSITE
OPPHAND	OPPOSITE HAND
OSB	ORIENTED STRAND BOARD
OTS	OPEN TO STRUCTURE
OW	OPERABLE WALL
OZ	OUNCE
P	
PART BD	PARTICLE BOARD
PAV	PAVING
PCP	PRECAST CONCRETE PLANK
PERIM	PERIMETER
PL	PROPERTY LINE / PLATE
PLAM	PLASTIC LAMINATE
PLAS	PLASTIC
PLY	PLYWOOD
PMJF	PRE-MOLDED JOINT FILLER
PNT	PAINT
PR	PAIR
PREFIN	PREFINISHED
PRFB	POURED RESIN FLOOR BASE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PRESSURE TREATED
PTD	PAPER TOWEL DISPENSER
PTN	PARTITION
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
Q	
QT	QUARRY TILE
R	
R	RISER
R & D	REMOVE & DISPOSE
R & R	REMOVE AND REPLACE
R & S	REMOVE AND SALVAGE
RAD	RADIUS
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
REF	REFRIGERATOR
REFURB	REFURBISH
REINF	REINFORCEMENT
RELOC	RELOCATED
REM	REMOTE
REQ'D	REQUIRED
RES	RESILIENT
REV	REVISION
RFG	ROOFING
RFI	RIGID FOAM INSULATION
RFS	RESINOUS FLOOR SYSTEM
RH	RIGHT HAND
RL	ROOF LADDER
RM	RUBBER MAT
RM	ROOM
RO	ROUGH OPENING
RT	RUBBER TILE
RTU	ROOF TOP UNIT
RUB	RUBBER
S	
S	SEALANT
S.L.	STRUCTURAL LINE
SACI	SPRAY-APPLIED CELLULOSE INSULATION
SACP	SECURITY ALARM CONTROL PANEL
SAFI	SPRAY-APPLIED FOAM INSULATION
SCHED	SCHEDULE
SCR	SHOWER CURTAIN ROD
SCW	SOLID CORE WOOD
SD	SOAP DISPENSER
SECT	SECTION
SF	SQUARE FEET
SH	SINGLE HUNG
SHR	SHOWER
SIM	SIMILAR
SND	SANITARY NAPKIN DISPENSER
SNV	SANITARY NAPKIN VENDOR
SOLSUR	SOLID SURFACE (COUNTER)
SPC	SPECIAL
SPEC	SPECIFICATION
SQ	SQUARE
SR	SHEET RUBBER
SS	STAINLESS STEEL
STD	STANDARD
STL	STEEL
STOR	STORAGE
STRUCT	STRUCTURE or STRUCTURAL
SUSP	SUSPENDED or SUSPENSION
SV	SHEET VINYL
SYS	SYSTEM(S)
T	
T & B	TOP AND BOTTOM
T & G	TONGUE AND GROOVE
TB	TRASH BARREL
TBA	TO BE ABANDONED
TBB	TILE BACKER BOARD
TBD	TO BE DETERMINED
TBOC	TOP BACK OF CURB
TEL	TELEPHONE
TEMP	TEMPORARY
THK	THICK(NESS)
THRESH	THRESHOLD
TOC	TOP OF CONCRETE
TOF	TOP OF FOOTING
TOL	TOP OF LANDING
TOP	TOP OF PLATE
TOS	TOP OF STEEL
TOW	TOP OF WALL
TP	TRANSLUCENT PANEL
TR	TREAD
TS	TUBULAR STEEL
TTD	TOILET TISSUE DISPENSER
TW	TO WEATHER
TYP	TYPICAL
U	
UC	UNDERCUT
UG	UNDERGROUND
UND	UNDERSIDE (OF DECK)
UNFINN	UNFINISHED
UNO	UNLESS NOTED OTHERWISE
UV	UNIT VENTILATOR
V	
VB	VINYL BASE / VAPOR BARRIER
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
VEST	VESTIBULE
VIF	VERIFY IN FIELD
VPD	VENEER PLASTER BASE
VS	VENT STACK
VT	VINYL TREAD
VTS	VINYL TRANSITION STRIP
VWB	VINYL WALL BASE
VWC	VINYL WALL COVERING
W	
W	WASHER
W/	WITH
W/O	WITHOUT
WB	WOOD BASE
WC	WALL CABINET
WD	WOOD
WDC	WATERPROOFING, DAMPPROOFING, & CAULKING CONTRACTOR
WF	WIRE FABRIC
WG	WIRE GLASS
WH	WALL HUNG
WIN	WINDOW
WP	WATER PROTECTION
WP'G	WATERPROOF(ING)
WR	WATER RESISTANT
WS	WATER STOP
WT	WEIGHT
WWF	WELDED WIRE FABRIC

SYMBOLS:

- EXTERIOR ELEVATION (X / AX.XX)
- INTERIOR ELEVATION (1 / A1.01 / 1)
- BUILDING SECTION (X AX.XX / X AX.XX)
- WALL SECTION (X AX.XX)
- DETAIL (X AX.XX)
- PARTITION TYPE (X)
- EXTERIOR WALL ASSEMBLY (XX)
- DOOR TYPE or VISION PANEL (VP) (X)
- WINDOW TYPE (X)
- ROOF TYPE (X)
- SPECIFIC DEMOLITION NOTE (X)
- SPECIFIC CONSTRUCTION NOTE (X)
- CHANGE IN PLANE
- LEADER
- DIMENSION (3'- 0")
- CHANGE IN ELEVATION
- CONTROL JOINT (C J)
- ELEVATION or WORK POINT (WP)
- COLUMN GRID (A / 1)
- EXISTING COLUMN GRID (A / 1)
- ALIGN SURFACES (ALIGN)
- REVISION MARKER (x)
- ROOM TAG (ADMINISTRATION / 100)
- DRAWING TITLE (1 View Name / 1/8" = 1'-0" / 1/A201 — ORIGINAL TAG REFERENCE LOCATED NEXT TO SCALE)

LEGEND:

- RIGID/SEMI-RIGID INSULATION
- CONCRETE
- SAND

WALL TYPE NOTES:

1. WALL TYPES LISTED REPRESENT SEVERAL TYPES OF WALL CONSTRUCTION, ALL OF WHICH MAY NOT BE USED ON THIS PROJECT. REFER TO FLOOR PLANS FOR WALL TYPE DESIGNATIONS.
2. EXTEND ALL METAL STUDS AND GYPSUM BOARD TO UNDERSIDE OF DECK. WHERE ABUSE RESISTANT GYPSUM BOARD (ARGB) IS USED, EXTEND ARGB TO 6" ABOVE FINISH CEILING, CONTINUE WITH GYPSUM BOARD TO UNDERSIDE OF DECK.
3. AT ALL NON-FIRE RATED PARTITIONS, FILL VOIDS WITH SOUND ATTENUATION INSULATION INCLUDING, BUT NOT LIMITED TO, FLUTES IN METAL FLOOR / ROOF DECK, VOIDS BETWEEN PARTITIONS AND STRUCTURAL MEMBERS, PENETRATIONS OF DUCTWORK, ELECTRICAL CONDUIT, PIPING, ETC.
4. GYPSUM BOARD AND ARGB USED IN A ONE, TWO, OR THREE HOUR FIRE-RESISTANCE RATED PARTITION MUST BEAR THE U.L. CLASSIFICATION MARKING.

SMOKE PARTITIONS:

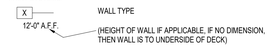
5. NON-FIRE-RESISTANCE RATED PARTITIONS REQUIRED TO RESIST THE PASSAGE OF SMOKE ARE DESIGNATED AS "SMOKE RESISTANT" WITH AN ASTERISK (*) LOCATED BELOW THE WALL TYPE DESIGNATION. EXTEND ALL SMOKE PARTITIONS TO THE UNDERSIDE OF METAL FLOOR / ROOF DECK AND / OR STRUCTURE ABOVE. PENETRATIONS AND VOIDS SHALL BE FIRESTOPPED IN ACCORDANCE WITH DIVISION 07 SPECIFICATION SECTION "FIRESTOPPING" ALL HEAD-OF-WALL JOINTS AND FLOOR-TO-WALL JOINTS SHALL BE SEALED IN ACCORDANCE WITH SPECIFICATION SECTION "FIRESTOPPING".

SMOKE BARRIERS:

6. FOR THE PURPOSE OF SUBDIVIDING BUILDING SPACES, SMOKE BARRIERS ARE FIRE-RESISTANCE RATED PARTITIONS, DESIGNATED WITH AN "S" LOCATED ADJACENT TO THE WALL TYPE DESIGNATION.
7. PROVIDE SMOKE DAMPERS AT DUCTWORK PENETRATIONS IN ALL ONE, TWO, AND THREE HOUR FIRE-RESISTANCE RATED SMOKE BARRIERS.
8. REFER TO FIRE-RESISTANCE RATED CONSTRUCTION FOR ADDITIONAL REQUIREMENTS.

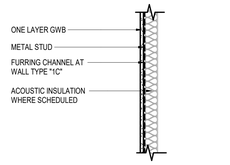
FIRE-RESISTANCE RATED CONSTRUCTION:

9. ALL FIRE-RESISTANCE RATED PARTITIONS RESIST THE PASSAGE OF SMOKE AND ARE CONSIDERED SMOKE RESISTANT WITHOUT THE ASTERISK DESIGNATION. EXTEND ALL FIRE-RESISTANCE RATED PARTITIONS TO THE UNDERSIDE OF METAL FLOOR/ROOF DECK AND/OR STRUCTURE ABOVE. PENETRATIONS AND VOIDS SHALL BE FIRESTOPPED IN ACCORDANCE WITH SPECIFICATION SECTION "FIRESTOPPING". ALL HEAD-OF-WALL JOINTS AND FLOOR-TO-WALL JOINTS SHALL BE SEALED IN ACCORDANCE WITH SPECIFICATION SECTION "FIRE-RESISTIVE JOINT SYSTEMS."



10. GYPSUM BOARD AT EXTERIOR WALLS IS TO GO TO THE UNDERSIDE OF DECK AND HAVE THE ROOF VAPOR BARRIER / FABRIC LINER EXTEND AND SEALED AGAINST THE BACK SIDE OF THE GYPSUM BOARD.

1



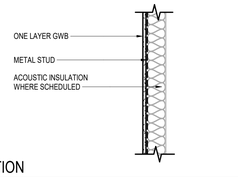
SECTION

PLAN

MARK	CORE SIZE	GWB THICK	GWB HEIGHT	TOTAL PARTITION THICK	ACOUSTIC INSUL	FIRE RATING / UL DESIGN NO.
1	2 1/2"	5/8"	FULL HEIGHT	3 1/8"	NO	-
1A	2 1/2"	5/8"	FULL HEIGHT	3 1/8"	YES	-
1B	2 1/2"	5/8"	6" ABOVE FINISHED CLG	3 1/8"	NO	-
1C	7/8"	5/8"	6" ABOVE FINISHED CLG	1 1/2"	NO	-

2 1/2" METAL STUD

2



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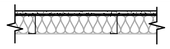
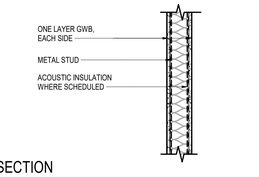


PLAN

MARK	CORE SIZE	GWB THICK	GWB HEIGHT	TOTAL PARTITION THICK	ACOUSTIC INSUL	FIRE RATING / UL DESIGN NO.
2	3 5/8"	5/8"	FULL HEIGHT	4 1/4"	NO	-
2A	3 5/8"	5/8"	FULL HEIGHT	4 1/4"	YES	-
2B	3 5/8"	5/8"	6" ABOVE FINISHED CLG	4 1/4"	NO	-

3 5/8" METAL STUD - 1 LAYER GWB - 1 SIDE

3



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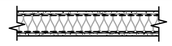
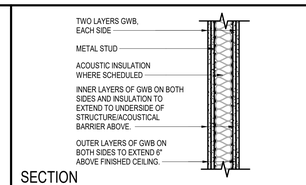


PLAN

MARK	CORE SIZE	GWB THICK	GWB HEIGHT	TOTAL PARTITION THICK	ACOUSTIC INSUL	FIRE RATING / UL DESIGN NO.
3	3 5/8"	5/8"	FULL HEIGHT	4 7/8"	NO	-
3A	3 5/8"	5/8"	FULL HEIGHT	4 7/8"	YES	-
3B	3 5/8"	5/8"	6" ABOVE FINISHED CLG	4 7/8"	NO	-

3 5/8" METAL STUD - 1 LAYER GWB - BOTH SIDES

4



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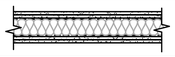
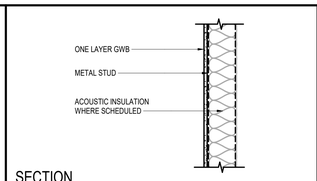


PLAN

MARK	CORE SIZE	GWB THICK	GWB HEIGHT	TOTAL PARTITION THICK	ACOUSTIC INSUL	FIRE RATING / UL DESIGN NO.
4	3 5/8"	(2) 5/8"	FULL HEIGHT	6 1/8"	NO	-
4A	3 5/8"	(2) 5/8"	6" ABOVE FINISHED CLG	6 1/8"	NO	-
4B - 2H	3 5/8"	(2) 5/8"	FULL HEIGHT	6 1/8"	YES	2 HR PARTITION - U419

3 5/8" METAL STUD - 2 LAYER GWB - BOTH SIDES

5



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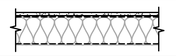
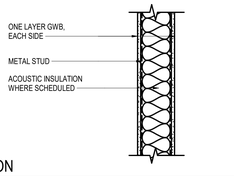


PLAN

MARK	CORE SIZE	GWB THICK	GWB HEIGHT	TOTAL PARTITION THICK	ACOUSTIC INSUL	FIRE RATING / UL DESIGN NO.
5	6"	5/8"	FULL HEIGHT	6 5/8"	NO	-
5A	6"	5/8"	FULL HEIGHT	6 5/8"	YES	-
5B	6"	5/8"	6" ABOVE FINISHED CLG	6 5/8"	NO	-

6" METAL STUD - 1 LAYER GWB - 1 SIDE

6



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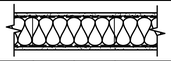
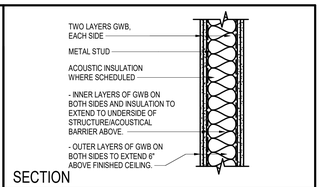


PLAN

MARK	CORE SIZE	GWB THICK	GWB HEIGHT	TOTAL PARTITION THICK	ACOUSTIC INSUL	FIRE RATING / UL DESIGN NO.
6	6"	5/8"	FULL HEIGHT	7 1/4"	NO	-
6A	6"	5/8"	FULL HEIGHT	7 1/4"	YES	-
6B	6"	5/8"	6" ABOVE FINISHED CLG	7 1/4"	NO	-
6C	8"	5/8"	FULL HEIGHT	9 1/4"	NO	-

6" METAL STUD - 1 LAYER GWB - BOTH SIDES

7



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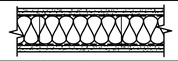
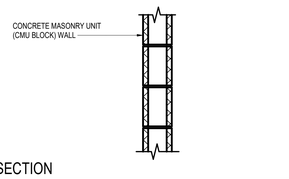


PLAN

MARK	CORE SIZE	GWB THICK	GWB HEIGHT	TOTAL PARTITION THICK	ACOUSTIC INSUL	FIRE RATING / UL DESIGN NO.
7 - 2h	6"	5/8"	FULL HEIGHT	8 1/2"	YES	2 HR PARTITION - U411

6" METAL STUD - 2 LAYERS GWB - BOTH SIDES

8



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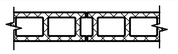
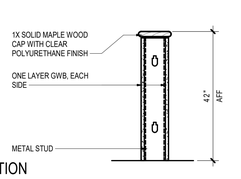


PLAN

MARK	CORE SIZE	GWB THICK	GWB HEIGHT	TOTAL THICK	ACOUSTIC INSUL	FIRE RATING / UL DESIGN NO.
8	6" NOM	-	-	5 5/8"	NO	-
8 - 1H	6" NOM	-	-	5 5/8"	NO	1 HR PARTITION - U356
8A	8" NOM	-	-	7 5/8"	NO	-
8A - 1H	8" NOM	-	-	7 5/8"	NO	1 HR PARTITION - U350
8A - 2H	8" NOM	-	-	7 5/8"	NO	2 HR PARTITION - U905
8B	12" NOM	-	-	11 5/8"	NO	-
8B - 1H	12" NOM	-	-	11 5/8"	NO	1 HR PARTITION - U905
8B - 2H	12" NOM	-	-	11 5/8"	NO	2 HR PARTITION - U905

CMU WALLS

9



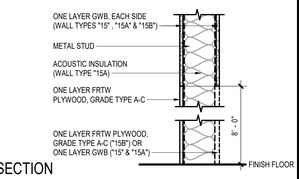
SECTION

PLAN

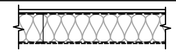
MARK	CORE SIZE	GWB THICK	GWB HEIGHT	TOTAL THICK	ACOUSTIC INSUL	FIRE RATING / UL DESIGN NO.
9	3 5/8"	5/8"	UP TO 41"	4 7/8"	NO	-

PARTIAL HEIGHT WALLS

15



SECTION

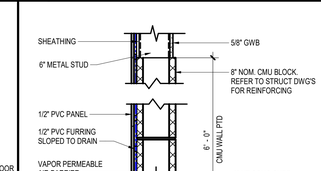


PLAN

MARK	SHEATHING	SHEATHING HEIGHT	CORE SIZE	SHEATHING	SHEATHING HEIGHT	ACOUSTIC INSUL
15	PLY - 1 SIDE, GWB OTHER	UP TO 8'-0"	6" MS	GWB ABOVE	FULL HEIGHT	NO
15A	PLY - 1 SIDE, GWB OTHER	UP TO 8'-0"	6" MS	GWB ABOVE	FULL HEIGHT	YES
15B	PLY - 2 SIDES	UP TO 8'-0"	6" MS	GWB ABOVE	FULL HEIGHT	NO
15C	PLY - 1 SIDE	UP TO 8'-0"	6" MS	GWB ABOVE	FULL HEIGHT	RIGID INSULATION

METAL STUD FULL HEIGHT WITH PLYWOOD UP TO 8'-0", GWB ABOVE PLYWOOD TO UNDERSIDE OF STRUCTURE (SEE PLANS FOR THE LOCATION OF GWB / PLYWOOD)

16



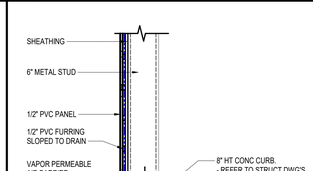
SECTION

PLAN

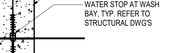
MARK	ASSEMBLY DESCRIPTION
16	PARTITION CMU WALL

VEHICLE WASH BAY WALL ASSEMBLIES

16



SECTION

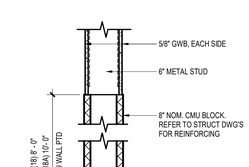


PLAN

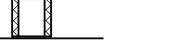
MARK	ASSEMBLY DESCRIPTION
16A	PARTITION CMU WALL

VEHICLE WASH BAY WALL ASSEMBLIES

18



SECTION



PLAN

MARK	CORE SIZE	GWB THICK	GWB HEIGHT	TOTAL PARTITION THICK	ACOUSTIC INSUL	FIRE RATING / UL DESIGN NO.
18	VARIES	5/8"	FULL HEIGHT	VARIES	NO	-
18A	VARIES	5/8"	FULL HEIGHT	VARIES	NO	-

STACKED PARTITION: 8" CMU / 6" METAL STUD - 1 LAYER GWB - BOTH SIDES

0' 6" 1' 2'

SCALE: 1" = 1'-0"

Project:
NEW PUBLIC WORKS FACILITY
SHADBUSH ROAD

TOWN OF NANTUCKET, MA

Weston & Sampson
Weston & Sampson Engineers, Inc.
55 Walkers Brook Drive, Suite 100
Reading, MA 01867
978.532.1900 800.SAMPSON
www.westonandsampson.com

Consultants:

Revisions:

No.	Date	Description

Seal:

Issued For:
SCHEMATIC DESIGN
NOT FOR CONSTRUCTION

Scale: NTS indicated

Key Plan:

NORTH

Date:	JUNE 21, 2024
Draw By:	FS
Reviewed By:	JRC
Aprroved By:	JRC
W&S Project No.:	ENG20-0542
W&S File No.:	XXX

Drawing Title:
PARTITION TYPES

Sheet Number:
A031

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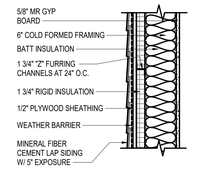
EXTERIOR WALL ASSEMBLIES

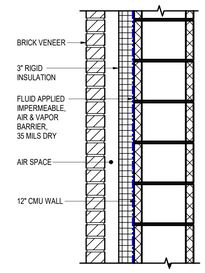
TYPE A UPPER

WALL ASSEMBLY
EXTERIOR
- FIBER CEMENT LAP SIDING - 5" EXPOSURE
- WEATHER BARRIER
- 1/2" PLYWOOD SHEATHING
- 1 3/4" "Z" FURRING CHANNELS AT 24" O.C.
- 1 3/4" RIGID INSULATION, R-VALUE OF 7.5
- 6" COLD FORMED METAL FRAMING AT 16" O.C. MAX
- BATT INSULATION, R-VALUE OF 19.2
- 5/8" MOISTURE RESISTANT GYP BOARD



TYPE A LOWER

WALL ASSEMBLY
(1' - 9" TOTAL THICKNESS)
EXTERIOR
- BRICK VENEER
- AIR SPACE
- 3" RIGID INSULATION
- FLUID APPLIED, CONTINUOUS AIR & VAPOR BARRIER, IMPERMEABLE
- 12" CMU

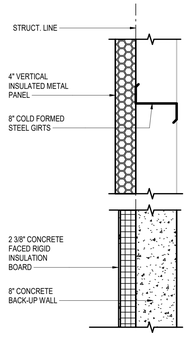


LOWER WALL ASSEMBLY
EXTERIOR
- 2 3/8" CONCRETE FACED RIGID INSULATION BOARD (R-10)
- 8" CONCRETE BACK-UP WALL

INTERIOR

UPPER WALL ASSEMBLY
EXTERIOR
- 4" VERTICAL INSULATED METAL PANEL, MIN R-26, BRAKE METAL TRIM, BY MBM
- 8" COLD FORMED STEEL GIRTS, BY MBM
- STEEL BUILDING FRAME, BY MBM

INTERIOR



LOWER WALL ASSEMBLY
(UP TO 3'-4" HT)
(1'-2 5/8" TOTAL THICKNESS)
EXTERIOR
- 4" NOMINAL CMU VENEER
- AIR SPACE
- 3" RIGID INSULATION
- CONTINUOUS AIR & VAPOR BARRIER
- 1/2" EXTERIOR SHEATHING
- 6" COLD FORMED METAL FRAMING, 16 Ga. @ 16" O.C. MAX.
- 5/8" GYPSUM WALL BOARD

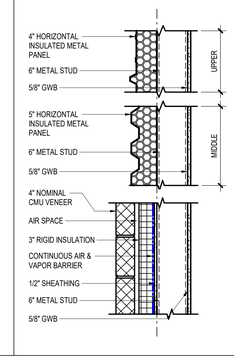
INTERIOR

MIDDEL WALL ASSEMBLY
(11 5/8" TOTAL THICKNESS)
EXTERIOR
- 5" HORIZONTAL INSULATED METAL PANEL, 36" WIDTH, MIN R-26, BREAK METAL TRIM, BY MBM
- 6" COLD FORMED METAL FRAMING, 16 Ga. @ 16" O.C. MAX.
- 5/8" GYPSUM WALL BOARD

INTERIOR

UPPER WALL ASSEMBLY (ABOVE MEZZANINE)
(10 5/8" TOTAL THICKNESS)
EXTERIOR
- 4" HORIZONTAL INSULATED METAL PANEL, 36" WIDTH, MIN R-26, BREAK METAL TRIM, BY MBM
- 6" COLD FORMED METAL FRAMING, 16 Ga. @ 16" O.C. MAX.
- 5/8" GYPSUM WALL BOARD

INTERIOR



LOWER WALL ASSEMBLY
(UP TO 3'-4" HT)
(1'-4" TOTAL THICKNESS)
EXTERIOR
- 4" NOMINAL CMU VENEER
- AIR SPACE
- 3" RIGID INSULATION
- CONTINUOUS AIR & VAPOR BARRIER
- 1/2" EXTERIOR SHEATHING
- 6" COLD FORMED METAL FRAMING W/ BATT INSULATION (R-30 +/-)
- 5/8" GWB

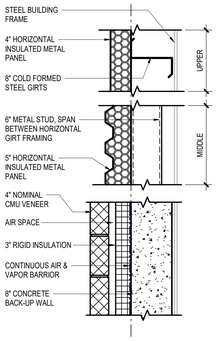
INTERIOR

MIDDEL WALL ASSEMBLY
(1' - 1" TOTAL THICKNESS)
EXTERIOR
- 3" HORIZONTAL INSULATED METAL PANEL, 36" WIDTH, MIN R-26, BREAK METAL TRIM, BY MBM
- 6" COLD FORMED METAL FRAMING, 16 Ga. @ 16" O.C. MAX. TO SPAN BETWEEN HORIZONTAL GIRT FRAMING.

INTERIOR

UPPER WALL ASSEMBLY (ABOVE MEZZANINE)
EXTERIOR
(1'-0" TOTAL THICKNESS)
- 4" VERTICAL INSULATED METAL PANEL, 42" WIDTH, MIN R-26, BREAK METAL TRIM, BY MBM
- 8" COLD FORMED STEEL GIRTS, BY MBM
- STEEL BUILDING FRAME, BY MBM

INTERIOR



EXTERIOR WALL ASSEMBLIES: NOTE: SEE DETAILS ON A6 & A7 SERIES FOR ADDITIONAL INFORMATION. "F" USED FOR FUME SEPERATION WALLS. "I" NOT USED FOR CLARITY.

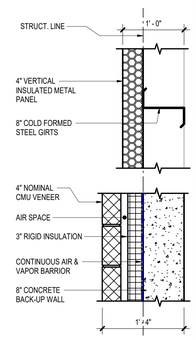
TYPE A

LOWER WALL ASSEMBLY
(UP TO 3'-4" HT AT SHOPS & VEHICLE MAINT.)
(UP TO 5'-5" HT AT VEHICLE STORAGE)
(1'-4" TOTAL THICKNESS)
EXTERIOR
- 4" NOMINAL CMU VENEER
- AIR SPACE
- 3" RIGID INSULATION
- CONTINUOUS AIR & VAPOR BARRIER
- 8" CONCRETE BACK-UP WALL

INTERIOR

UPPER WALL ASSEMBLY
(1'-0" TOTAL THICKNESS)
EXTERIOR
- 4" VERTICAL INSULATED METAL PANEL, MIN R-26, BREAK METAL TRIM, BY MBM
- 8" COLD FORMED STEEL GIRTS, BY MBM
- STEEL BUILDING FRAME, BY MBM

INTERIOR



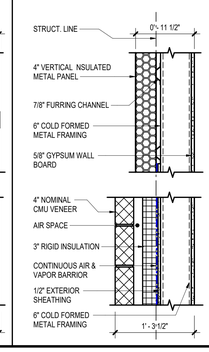
TYPE B

LOWER WALL ASSEMBLY
(UP TO 3'-4" HT)
(1'-3 1/2" TOTAL THICKNESS)
EXTERIOR
- 4" NOMINAL CMU VENEER
- AIR SPACE
- 3" RIGID INSULATION
- CONTINUOUS AIR & VAPOR BARRIER
- 1/2" EXTERIOR SHEATHING
- 6" COLD FORMED METAL FRAMING, AT 16" O.C. MAX.
- 5/8" GYPSUM WALL BOARD

INTERIOR

UPPER WALL ASSEMBLY
(0'-11 1/2" TOTAL THICKNESS)
EXTERIOR
- 4" VERTICAL INSULATED METAL PANEL, MIN R-26, BREAK METAL TRIM, BY MBM
- 7/8" FURRING CHANNEL AT 16" O.C., COORDINATE WITH METAL PANEL FASTENER REQUIREMENTS, BY MBM
- 6" COLD FORMED METAL FRAMING, AT 16" O.C. MAX.
- 5/8" GYPSUM WALL BOARD

INTERIOR



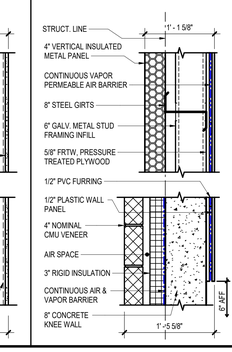
TYPE C

LOWER WALL ASSEMBLY
(UP TO 3'-4" HT)
(1'-4" TOTAL THICKNESS)
EXTERIOR
- 4" NOMINAL CMU VENEER
- AIR SPACE
- 3" RIGID INSULATION
- CONTINUOUS AIR & VAPOR BARRIER
- 8" CONCRETE BACK-UP WALL (3' - 4" HT)
- CONTINUOUS AIR & VAPOR BARRIER
- 1/2" PVC FURRING SLOPED TO DRAIN, SHIM AS NEEDED
- 1/2" PLASTIC WALL PANEL

INTERIOR

UPPER WALL ASSEMBLY
(1'-1 5/8" TOTAL THICKNESS)
EXTERIOR
- 4" VERTICAL INSULATED METAL PANEL, MIN R-26, BREAK METAL TRIM, BY MBM
- 8" COLD FORMED STEEL GIRTS, BY MBM
- 6" GALVANIZED STEEL STUD FRAMING, SPAN BETWEEN HORIZONTAL GIRT FRAMING, TYP.
- 5/8" FIRE RETARDENT TREATED, PRESSURE TREATED A-C PLYWOOD SHEATHING AT ALL WASH BAY WALLS, TYP.
- CONTINUOUS VAPOR PERMEABLE AIR BARRIER
- 1/2" PVC FURRING SLOPED TO DRAIN, SHIM AS NEEDED
- 1/2" PLASTIC WALL PANEL

INTERIOR



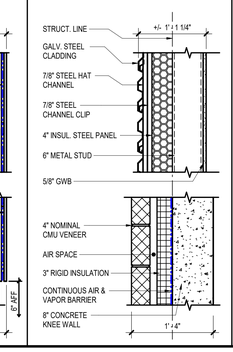
TYPE D

LOWER WALL ASSEMBLY
(1' - 4" TOTAL THICKNESS)
EXTERIOR
- 4" NOMINAL CMU VENEER
- AIR SPACE
- 3" RIGID INSULATION
- CONTINUOUS AIR & VAPOR BARRIER
- 8" CONCRETE BACK-UP WALL

INTERIOR

UPPER WALL ASSEMBLY
(+/- 1'- 1 1/4")
EXTERIOR
- GALV. STEEL CLADDING SYSTEM FACTORY PTD. PROVIDED BY METAL PANEL MANUF. INSTALLED BY METAL BLDG MANUF. G.C. TO COORDINATE INSTALL WITH METAL PANEL MANUF.
- 7/8" VERTICAL, GALV. STEEL HAT CHANNEL 16" O.C. PROVIDED AND INSTALLED BY METAL BLDG MANUF.
- 7/8" HORIZONTAL INTEGRAL GALV. STEEL CHANNEL CLIP PROVIDED AND INSTALLED BY METAL BLDG MANUF.
- 4" INSULATED GALV. STEEL PANEL BACK-UP SYSTEM INSTALLED HORIZONTALLY. PROVIDED AND INSTALLED BY METAL BLDG MANUF.
- 6" COLD-FORMED METAL FRAMING
- 5/8" GYPSUM WALL BOARD

INTERIOR



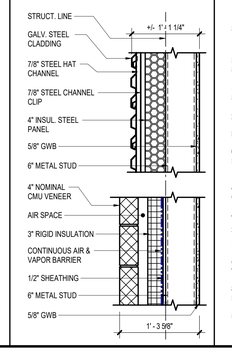
TYPE E

LOWER WALL ASSEMBLY
(1' - 3 5/8" TOTAL THICKNESS)
EXTERIOR
- 4" NOMINAL CMU VENEER
- AIR SPACE
- 3" RIGID INSULATION
- CONTINUOUS AIR & VAPOR BARRIER
- 1/2" EXTERIOR SHEATHING
- 6" COLD FORMED METAL STUD, AT 16" O.C. MAX
- 5/8" GYPSUM WALL BOARD

INTERIOR

UPPER WALL ASSEMBLY
(+/- 1'- 1 1/4")
EXTERIOR
- GALV. STEEL CLADDING SYSTEM FACTORY PTD. PROVIDED BY METAL PANEL MANUF. INSTALLED BY METAL BLDG MANUF. G.C. TO COORDINATE INSTALL WITH METAL PANEL MANUF.
- 7/8" VERTICAL, GALV. STEEL HAT CHANNEL 16" O.C. PROVIDED AND INSTALLED BY METAL BLDG MANUF.
- 7/8" INTEGRAL GALV. STEEL CHANNEL CLIP PROVIDED AND INSTALLED BY METAL BLDG MANUF.
- 4" INSULATED GALV. STEEL PANEL BACK-UP SYSTEM. PROVIDED AND INSTALLED BY METAL BLDG MANUF.
- 6" METAL STUD, REFER TO STRUCT DWG'S FOR SIZING AND SPACING
- 5/8" GYPSUM WALL BOARD

INTERIOR



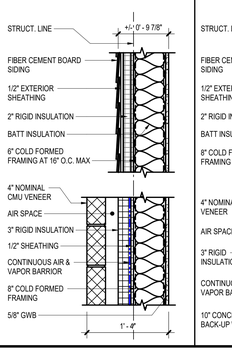
TYPE G

LOWER WALL ASSEMBLY
(1'-4" TOTAL THICKNESS)
EXTERIOR
- 4" NOMINAL CMU VENEER
- AIR SPACE
- 3" RIGID INSULATION
- CONTINUOUS AIR & VAPOR BARRIER
- 1/2" EXTERIOR SHEATHING
- 6" COLD-FORMED FRAMING W/ BATT INSULATION (R-30 +/-)
- 5/8" GWB

INTERIOR

UPPER WALL ASSEMBLY
(+/- 9 7/8" TOTAL THICKNESS)
EXTERIOR
- FIBER CEMENT SIDING
- WEATHER BARRIER
- 1/2" EXTERIOR PLYWOOD SHEATHING
- 2" RIGID INSULATION
- 1/2" EXTERIOR PLYWOOD SHEATHING
- 6" COLD-FORMED FRAMING W/ BATT INSULATION (R-30 +/-)
- 5/8" GWB

INTERIOR



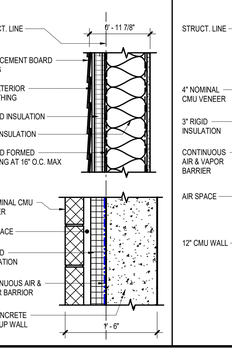
TYPE H

LOWER WALL ASSEMBLY
(1'-6" TOTAL THICKNESS)
EXTERIOR
- 4" NOMINAL CMU VENEER
- AIR SPACE
- 3" RIGID INSULATION
- CONTINUOUS AIR & VAPOR BARRIER
- 10" CONCRETE BACK-UP WALL

INTERIOR

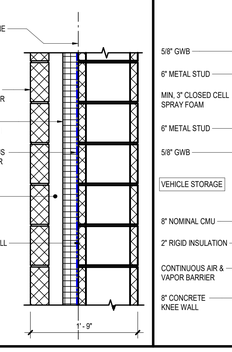
UPPER WALL ASSEMBLY
(+/- 11 7/8" TOTAL THICKNESS)
- FIBER CEMENT SIDING
- WEATHER BARRIER
- 1/2" EXTERIOR PLYWOOD SHEATHING
- 2" RIGID INSULATION
- 1/2" EXTERIOR PLYWOOD SHEATHING
- 8" COLD-FORMED FRAMING W/ BATT INSULATION (R-30 +/-)
- 5/8" GWB

INTERIOR



TYPE J

WALL ASSEMBLY
(1'- 9" TOTAL THICKNESS)
EXTERIOR
- 4" NOMINAL CMU VENEER
- AIR SPACE
- 3" RIGID INSULATION
- CONTINUOUS AIR & VAPOR BARRIER
- 12" CMU

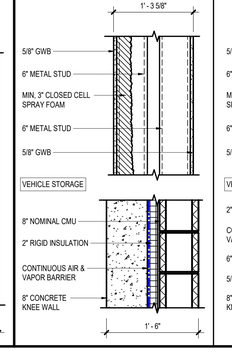


FUME SEPARATION WALL ASSEMBLIES:

TYPE F1 & F1A

LOWER WALL ASSEMBLY
(1'- 6" TOTAL THICKNESS)
(**F1**: UP TO 5'-4" HT)
(**F1A**: UP TO 3'-4" HT)
- 8" CONC. KNEE WALL
- CONTINUOUS AIR & VAPOR BARRIER
- AIR SPACE
- 8" NOMINAL CMU VENEER

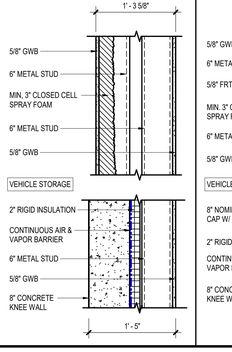
UPPER WALL ASSEMBLY
(1' - 3 5/8" TOTAL THICKNESS)
- 5/8" GYPSUM WALL BOARD
- 6" COLD FORMED METAL FRAMING, AT 16" O.C. MAX.
- MIN. 3" CLOSED CELL SPRAY FOAM BETWEEN STUDS
- 6" COLD FORMED METAL FRAMING, AT 16" O.C. MAX.
- 5/8" GYPSUM WALL BOARD



TYPE F2 & F2A

LOWER WALL ASSEMBLY
(1' - 5" TOTAL THICKNESS)
(**F2**: UP TO 5'-4" HT)
(**F2A**: UP TO 3'-4" HT)
- 8" CONC. KNEE WALL
- CONTINUOUS AIR & VAPOR BARRIER
- AIR SPACE
- 6" COLD FORMED METAL FRAMING, AT 16" O.C. MAX.
- 5/8" GYPSUM WALL BOARD

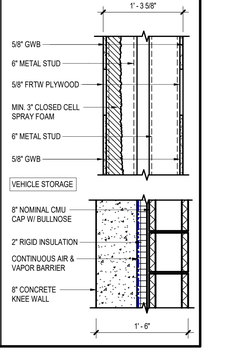
UPPER WALL ASSEMBLY
(1' - 3 5/8" TOTAL THICKNESS)
- 5/8" GYPSUM WALL BOARD
- 6" COLD FORMED METAL FRAMING, AT 16" O.C. MAX.
- MIN. 3" CLOSED CELL SPRAY FOAM BETWEEN STUDS
- 6" COLD FORMED METAL FRAMING, AT 16" O.C. MAX.
- 5/8" GYPSUM WALL BOARD



TYPE F3 & F3A

LOWER WALL ASSEMBLY
(1' - 6" TOTAL THICKNESS)
(**F3**: UP TO 5'-4" HT)
(**F3A**: UP TO 3'-4" HT)
- 8" CONC. KNEE WALL
- CONTINUOUS AIR & VAPOR BARRIER
- 2" RIGID INSULATION
- AIR SPACE
- 8" NOMINAL CMU VENEER

UPPER WALL ASSEMBLY
(1' - 3 5/8" TOTAL THICKNESS)
- 5/8" GYPSUM WALL BOARD ABOVE CMU VENEER UP TO MEZZANINE SLAB. GRADE TYPE A-C FRTW PLYWOOD UP 8' - 0". 5/8" GYPSUM WALL BOARD TO UNDERSIDE OF STRUCTURE
- 6" COLD FORMED METAL FRAMING, AT 16" O.C. MAX.
- MIN. 3" CLOSED CELL SPRAY FOAM BETWEEN STUDS
- 6" COLD FORMED METAL FRAMING, AT 16" O.C. MAX.
- 5/8" GYPSUM WALL BOARD ABOVE CMU VENEER UP TO MEZZANINE SLAB. GRADE TYPE A-C FRTW PLYWOOD UP 8' - 0". 5/8" GYPSUM WALL BOARD TO UNDERSIDE OF STRUCTURE



SCALE: 1" = 1'-0"

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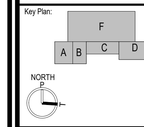
Scale: NTS 1'-0"

Key Plan:



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Draw By:	FS
Reviewed By:	JRC
Approved By:	JRC
W&S Project No.:	ENG20-0542
W&S File No.:	XXX

Drawing Title:
EXTERIOR WALL ASSEMBLIES

Sheet Number:
A032

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UNDERSLAB RIGID INSULATION LEGEND:

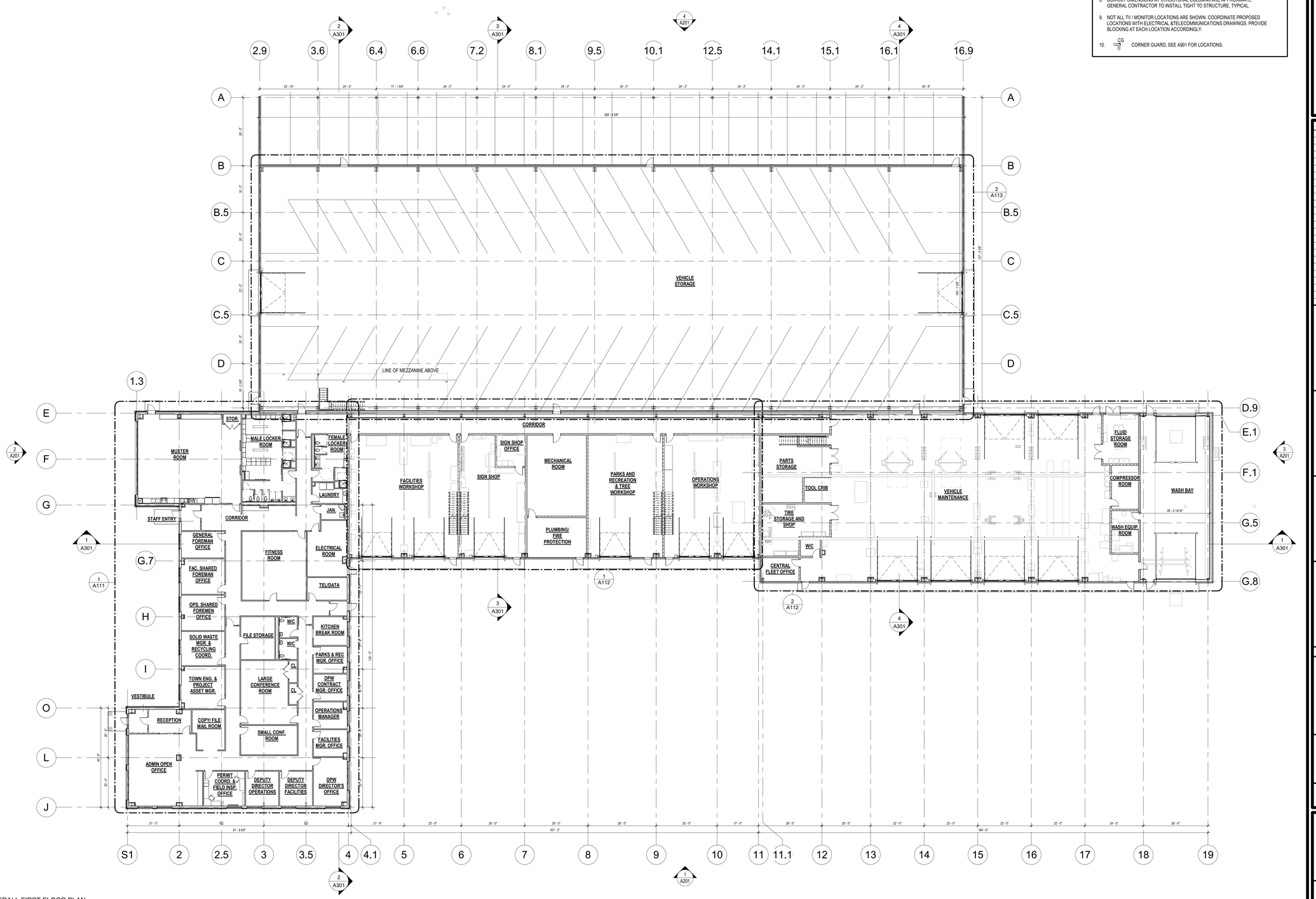
R-10 RIGID INSULATION
- STANDARD COMPRESSIVE STRENGTH - 25 PSI.
- 4'-0" FROM FOUNDATION WALL INWARDS.
- 2'-0" VERTICAL ON EXTERIOR SIDE OF FOUNDATION WALL.

R-10 RIGID INSULATION
- HIGH COMPRESSIVE STRENGTH - 100 PSI.
- 4'-0" FROM FOUNDATION WALL INWARDS.
- 2'-0" VERTICAL ON EXTERIOR SIDE OF FOUNDATION WALL.

R-15 RIGID INSULATION
- HIGH COMPRESSIVE STRENGTH - 100 PSI.
- COMPLETE UNDER SLAB.
- DOWN TO TOP OF FOOTING ON EXTERIOR SIDE OF FOUNDATION WALL.

FLOOR PLAN GENERAL NOTES:

1. EQUIPMENT SHOWN FOR REFERENCE ONLY. SEE EQ DRAWINGS FOR MORE INFO.
2. FURNITURE SHOWN FOR INFORMATION ONLY (N.I.C.). SEE FURNITURE PLAN A921 FOR MORE INFO.
3. F.E. = FIRE EXTINGUISHER.
   F.E.C = FIRE EXTINGUISHER CABINET
   - BRACKET MOUNTED
   - CABINET MOUNTED (SEMI-RECESSED)
4. ALL INTERIOR DIMENSIONS ARE TAKEN FROM FACE OF GYPSUM WALL BOARD TO FACE OF GYPSUM WALL BOARD OR FACE OF CMU UNLESS SPECIFICALLY NOTED OTHERWISE.
5. SEE SHEET A012 FOR PLUMBING FIXTURE SCHEDULE / MOUNTING HEIGHTS.
6. BOLLARDS:
   - EB: EXTERIOR BOLLARD, 6" DIAMETER (SEE CIVIL DWGS)
   - IB: INTERIOR BOLLARD, 6" DIAMETER (SEE DETAIL X / AXXX)
7. FUME SEPARATION PARTITION, SEE A031 - FUME SEPARATION ASSEMBLY, TYPE F1 AND F2.
8. BOX-OUT DIMENSIONS AT STRUCTURAL COLUMNS ARE APPROXIMATE. GENERAL CONTRACTOR TO INSTALL TIGHT TO STRUCTURE, TYPICAL.
9. NOT ALL TV / MONITOR LOCATIONS ARE SHOWN. COORDINATE PROPOSED LOCATIONS WITH ELECTRICAL &TELECOMMUNICATIONS DRAWINGS. PROVIDE BLOCKING AT EACH LOCATION ACCORDINGLY.
10. CG — CORNER GUARD, SEE A901 FOR LOCATIONS.



1 OVERALL FIRST FLOOR PLAN
1/16" = 1'-0" 1/ A201

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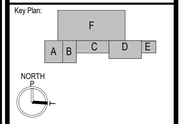

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Drawing Title:
OVERALL FLOOR PLAN

Sheet Number:
A101

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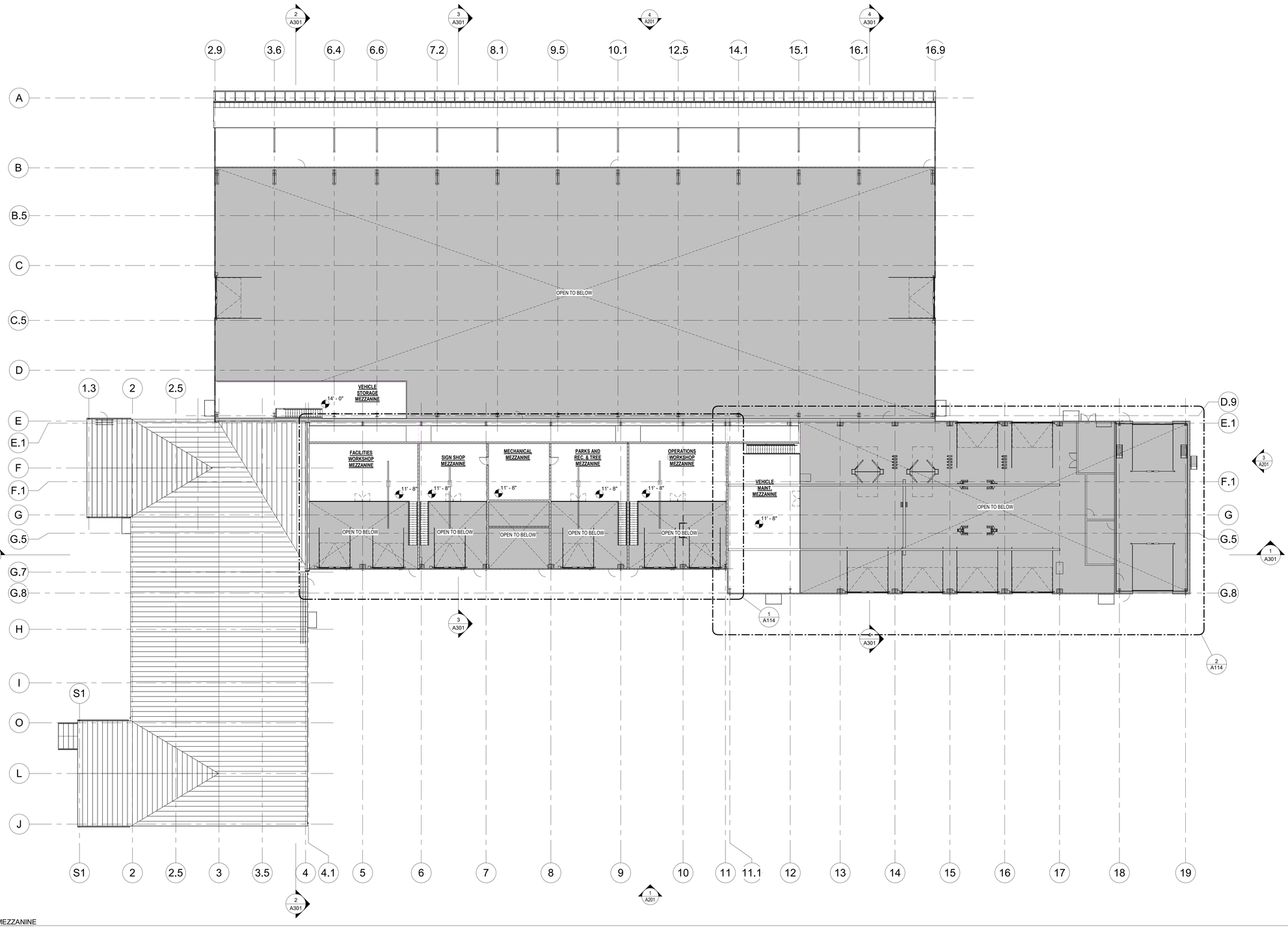
MEZZANINE GENERAL NOTES:

1. AT EACH MEZZANINE SWING GATE LOCATION, PROVIDE 4" H (RED) LETTER SIGNAGE AT MEZZANINE FASCIA TO READ: 200LBS/SF MAXIMUM MEZZANINE LOADING
2. PROVIDE SAFETY CHAIN PER OSHA STANDARDS AT EACH SWING GATE.
3. PROVIDE SAFETY YELLOW PAINT AT MEZZANINE FLOOR AT EACH SWING GATE, AS INDICATED.
4. COORDINATE EXACT LOCATION WITH MECHANICAL, STRUCTURAL AND EQUIPMENT REQUIREMENTS.
5. DO NOT RUN ANY UTILITIES BELOW GATES EXPOSED AND MOUNTED TO WALLS.
6. PROVIDE TIE-OFF POINT FOR OSHA FALL ARREST SYSTEM NEAR MEZZANINE SWING-GATE ON PRIMARY STRUCTURAL ELEMENT.



1 MEZZANINE
1/16" = 1'-0" 1/ A201

SCALE: 1/8" = 1'-0"

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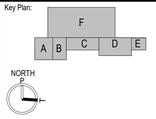

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Drawing Title:

OVERALL MEZZANINE PLAN

Sheet Number:

A102

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REFLECTED CEILING PLAN NOTES:

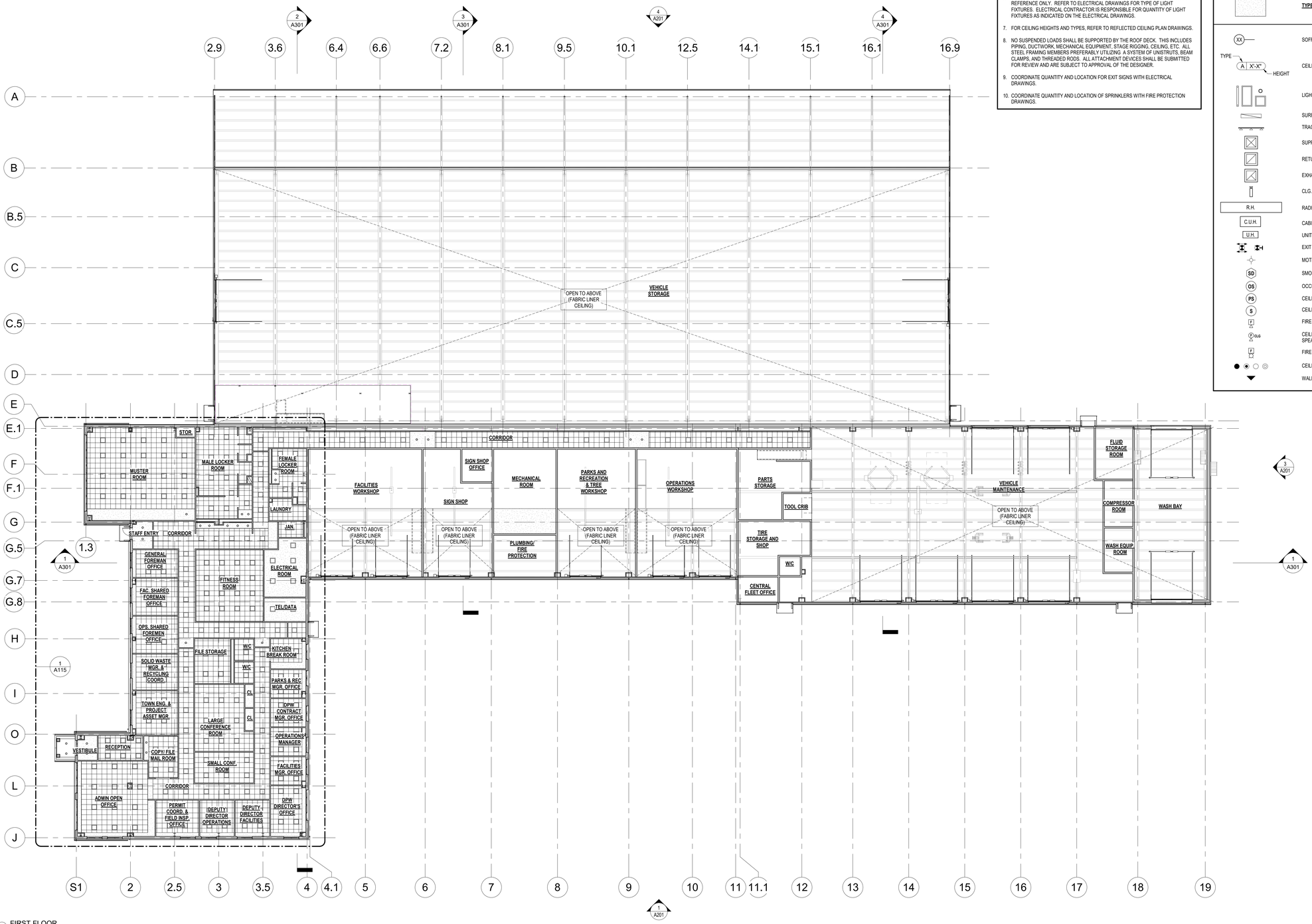
1. REFER TO M.E.P / F.P. DRAWINGS FOR LOCATION OF LIGHT FIXTURES, SPRINKLER HEADS, SUPPLIES, RETURNS AND ADDITIONAL CEILING INFORMATION.
2. ALL DIFFUSERS, SPRINKLER HEADS, ETC. AT ACT AREAS TO BE CENTERED ON TILE.
3. SUSPENDED ACT AT 9'-4" AFF UNLESS NOTED OTHERWISE (U.N.O.)
4. ALL GWB CEILINGS AND SOFFITS AT 9'-4" AFF (U.N.O.)
5. COORDINATE QUANTITY AND LOCATION OF LIGHT FIXTURES WITH ELECTRICAL DRAWINGS.
6. LIGHT FIXTURE SYMBOLS ON REFLECTED CEILING PLANS ARE DIAGRAMMATIC FOR REFERENCE ONLY. REFER TO ELECTRICAL DRAWINGS FOR TYPE OF LIGHT FIXTURES. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR QUANTITY OF LIGHT FIXTURES AS INDICATED ON THE ELECTRICAL DRAWINGS.
7. FOR CEILING HEIGHTS AND TYPES, REFER TO REFLECTED CEILING PLAN DRAWINGS.
8. NO SUSPENDED LOADS SHALL BE SUPPORTED BY THE ROOF DECK. THIS INCLUDES PIPING, DUCTWORK, MECHANICAL EQUIPMENT, STAGE RIGGING, CEILING, ETC. ALL STEEL FRAMING MEMBERS PREFERABLY UTILIZING A SYSTEM OF UNISTRUTS, BEAM CLAMPS, AND THREADED RODS. ALL ATTACHMENT DEVICES SHALL BE SUBMITTED FOR REVIEW AND ARE SUBJECT TO APPROVAL OF THE DESIGNER.
9. COORDINATE QUANTITY AND LOCATION FOR EXIT SIGNS WITH ELECTRICAL DRAWINGS.
10. COORDINATE QUANTITY AND LOCATION OF SPRINKLERS WITH FIRE PROTECTION DRAWINGS.

REFLECTED CEILING PLAN LEGEND:

CEILING TYPES:

- **TYPE A1**: 2' x 2' SUSPENDED ACOUSTICAL PANEL
- **TYPE A2**: 2' x 2' SUSPENDED ACOUSTICAL PANEL - MOISTURE RESISTANT
- **TYPE G1**: GYPSUM BOARD CEILING
- **TYPE G2**: GYPSUM BOARD CEILING - MOISTURE RESISTANT
- **TYPE G3**: 2-HR FIRE RATED CEILING UL DESIGN NO. U415

- XX — SOFFIT DETAIL - REFER TO CEILING SERIES
- TYPE / A / X'-X" / HEIGHT — CEILING TAG
- LIGHT FIXTURES
- SURFACE MTD. LIGHT FIXTURE
- TRACK LIGHTING
- SUPPLY DIFFUSER - REF: MECH DWGS
- RETURN VENT - REF: MECH DWGS
- EXHAUST VENT - REF: MECH DWGS
- CLG. MTD. / EXTERIOR SECURITY CAMERA
- R.H. — RADIANT HEATER
- C.U.H. — CABINET UNIT HEATER
- U.H. — UNIT HEATER
- EXIT SIGN
- MOTION DETECTOR
- SD — SMOKE DETECTOR
- OS — OCCUPANCY SENSOR
- PS — CEILING PHOTO SENSOR
- S — CEILING FLUSH MOUNTED SPEAKER
- F — FIRE ALARM SPEAKER / VISUAL SIGNAL
- F CLG — CEILING MOUNTED FIRE ALARM SPEAKER / VISUAL SIGNAL
- F — FIRE ALARM VISUAL SIGNAL
- CEILING MOUNTED SPRINKLER
- WALL MOUNTED SPRINKLER



1 FIRST FLOOR
1/16" = 1'-0" 1/ A201

0' 4' 8' 16'
SCALE: 1/8" = 1'-0"

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Aprroved By: JRC
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W&S File No.: XXX

Drawing Title:
OVERALL REFLECTED CEILING PLAN

Sheet Number:
A103

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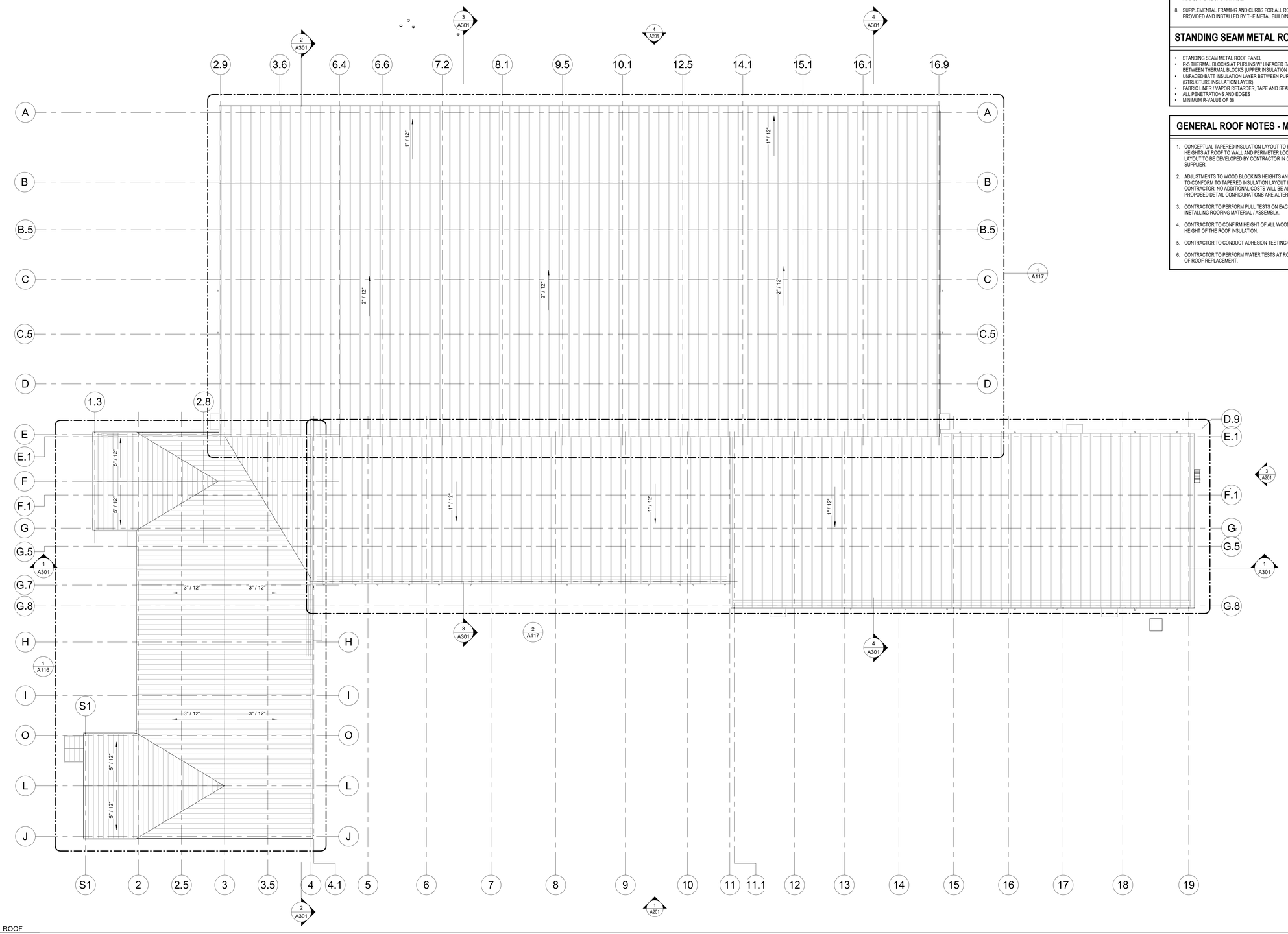

1 ROOF
1/16" = 1'-0" 1/ A201

0' 4' 8' 16'
SCALE: 1/8" = 1'-0"

GENERAL ROOF NOTES - METAL BUILDINGS

1. REFER TO EQUIPMENT, MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR ADDITIONAL ROOF PENETRATIONS AND EQUIPMENT NOT SHOWN. ANY DISCREPANCIES REGARDING LOCATION OF EQUIPMENT SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR RESOLUTION IN FIELD.
2. ROOF SLOPE = 1'-0" : 12'-0"
3. SEE GENERAL NOTES ON A012
4. ALL GUTTERS TO PITCH TOWARDS DOWNSPOUTS AT A MINIMUM 1/16" PER FOOT AND SUPPORTED AS PER METAL BUILDING MANUFACTURER.
5. ROOF PENETRATIONS TO BE CUT AND FLASHED BY METAL BUILDING MANUFACTURER.
6. PROVIDE ROOF FLASHING AT ALL PENETRATIONS INCLUDING BUT NOT LIMITED TO VENT STACKS, FLUES, AND EXHAUST FANS. REVIEW PLUMBING, EQUIPMENT, MECHANICAL, AND ELECTRICAL DRAWINGS FOR CONSTRUCTION NOT INDICATED ON THIS DRAWING.
7. PROVIDE CRICKETS AT ALL ROOFTOP EQUIPMENT AND PENETRATIONS TO CREATE ADEQUATE ROOF DRAINAGE.
8. SUPPLEMENTAL FRAMING AND CURBS FOR ALL ROOFTOP EQUIPMENT SHALL BE PROVIDED AND INSTALLED BY THE METAL BUILDING MANUFACTURER.

STANDING SEAM METAL ROOF ASSEMBLY (BY MBM)

- STANDING SEAM METAL ROOF PANEL
- R-5 THERMAL BLOCKS AT PURLINS W/ UNFACED BATT INSULATION BETWEEN THERMAL BLOCKS (UPPER INSULATION LAYER)
- UNFACED BATT INSULATION LAYER BETWEEN PURLINS (STRUCTURE INSULATION LAYER)
- FABRIC LINER / VAPOR RETARDER, TAPE AND SEAL
- ALL PENETRATIONS AND EDGES
- MINIMUM R-VALUE OF 38

GENERAL ROOF NOTES - MEMBRANE

1. CONCEPTUAL TAPERED INSULATION LAYOUT TO PROVIDE MINIMUM INSULATION HEIGHTS AT ROOF TO WALL AND PERIMETER LOCATIONS. SPECIFIC TAPERED LAYOUT TO BE DEVELOPED BY CONTRACTOR IN CONJUNCTION WITH INSULATION SUPPLIER.
2. ADJUSTMENTS TO WOOD BLOCKING HEIGHTS AND CONFIGURATIONS OF FLASHINGS TO CONFORM TO TAPERED INSULATION LAYOUT IS THE RESPONSIBILITY OF THE CONTRACTOR. NO ADDITIONAL COSTS WILL BE ALLOWED TO THE CONTRACTOR IF PROPOSED DETAIL CONFIGURATIONS ARE ALTERED.
3. CONTRACTOR TO PERFORM PULL TESTS ON EACH SUBSTRATE PRIOR TO INSTALLING ROOFING MATERIAL / ASSEMBLY.
4. CONTRACTOR TO CONFIRM HEIGHT OF ALL WOOD BLOCKING TO ACCOMODATE THE HEIGHT OF THE ROOF INSULATION.
5. CONTRACTOR TO CONDUCT ADHESION TESTING OF ALL SEALANTS.
6. CONTRACTOR TO PERFORM WATER TESTS AT ROOF DRAINS AT THE COMPLETION OF ROOF REPLACEMENT.

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NORTH

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Drawing Title:
OVERALL ROOF PLAN

Sheet Number:
A104

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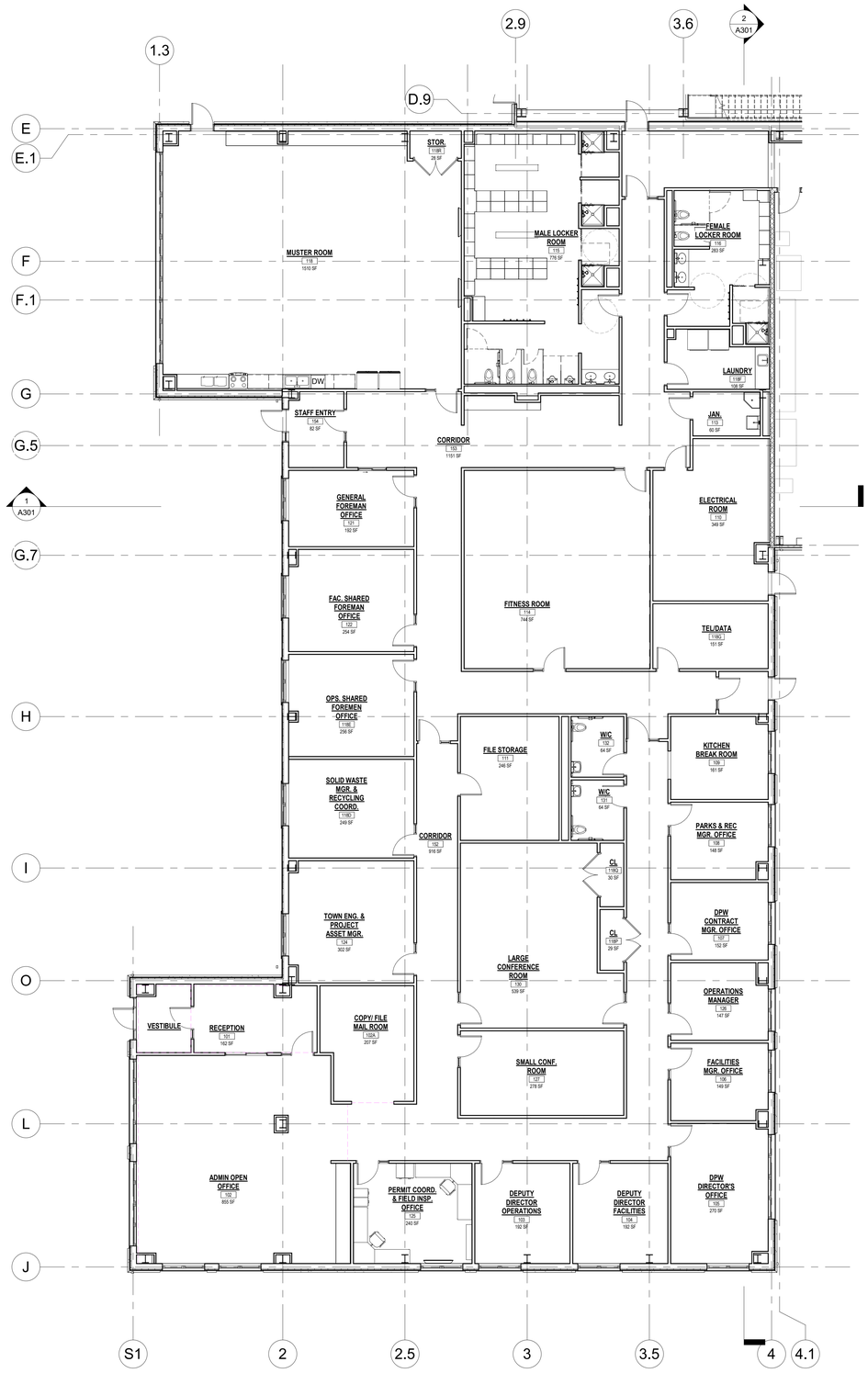
FLOOR PLAN GENERAL NOTES:

1. EQUIPMENT SHOWN FOR REFERENCE ONLY. SEE EQ DRAWINGS FOR MORE INFO.
2. FURNITURE SHOWN FOR INFORMATION ONLY (N.I.C.). SEE FURNITURE PLAN A921 FOR MORE INFO.
3. F.E. = FIRE EXTINGUISHER.
   F.E.C = FIRE EXTINGUISHER CABINET
   - BRACKET MOUNTED
   - CABINET MOUNTED (SEMI-RECESSED)
4. ALL INTERIOR DIMENSIONS ARE TAKEN FROM FACE OF GYPSUM WALL BOARD TO FACE OF GYPSUM WALL BOARD OR FACE OF CMU UNLESS SPECIFICALLY NOTED OTHERWISE.
5. SEE SHEET A012 FOR PLUMBING FIXTURE SCHEDULE / MOUNTING HEIGHTS.
6. BOLLARDS:
   - EB: EXTERIOR BOLLARD, 6" DIAMETER (SEE CIVIL DWGS)
   - IB: INTERIOR BOLLARD, 6" DIAMETER (SEE DETAIL X / AXXX)
7. FUME SEPARATION PARTITION, SEE A031 - FUME SEPARATION ASSEMBLY, TYPE F1 AND F2.
8. BOX-OUT DIMENSIONS AT STRUCTURAL COLUMNS ARE APPROXIMATE. GENERAL CONTRACTOR TO INSTALL TIGHT TO STRUCTURE, TYPICAL.
9. NOT ALL TV / MONITOR LOCATIONS ARE SHOWN. COORDINATE PROPOSED LOCATIONS WITH ELECTRICAL &TELECOMMUNICATIONS DRAWINGS. PROVIDE BLOCKING AT EACH LOCATION ACCORDINGLY.
10. CG — CORNER GUARD, SEE A901 FOR LOCATIONS.



1 PARTIAL FLOOR PLAN - ADMIN & EMPLOYEE FAC.
1/8" = 1'-0" 1/ A101

0' 4' 8' 16'
SCALE: 3/32" = 1'-0"

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Drawing Title:
LARGE SCALE FLOOR PLAN - ADMIN & EMPLOYEE FACILITIES

Sheet Number:
A111

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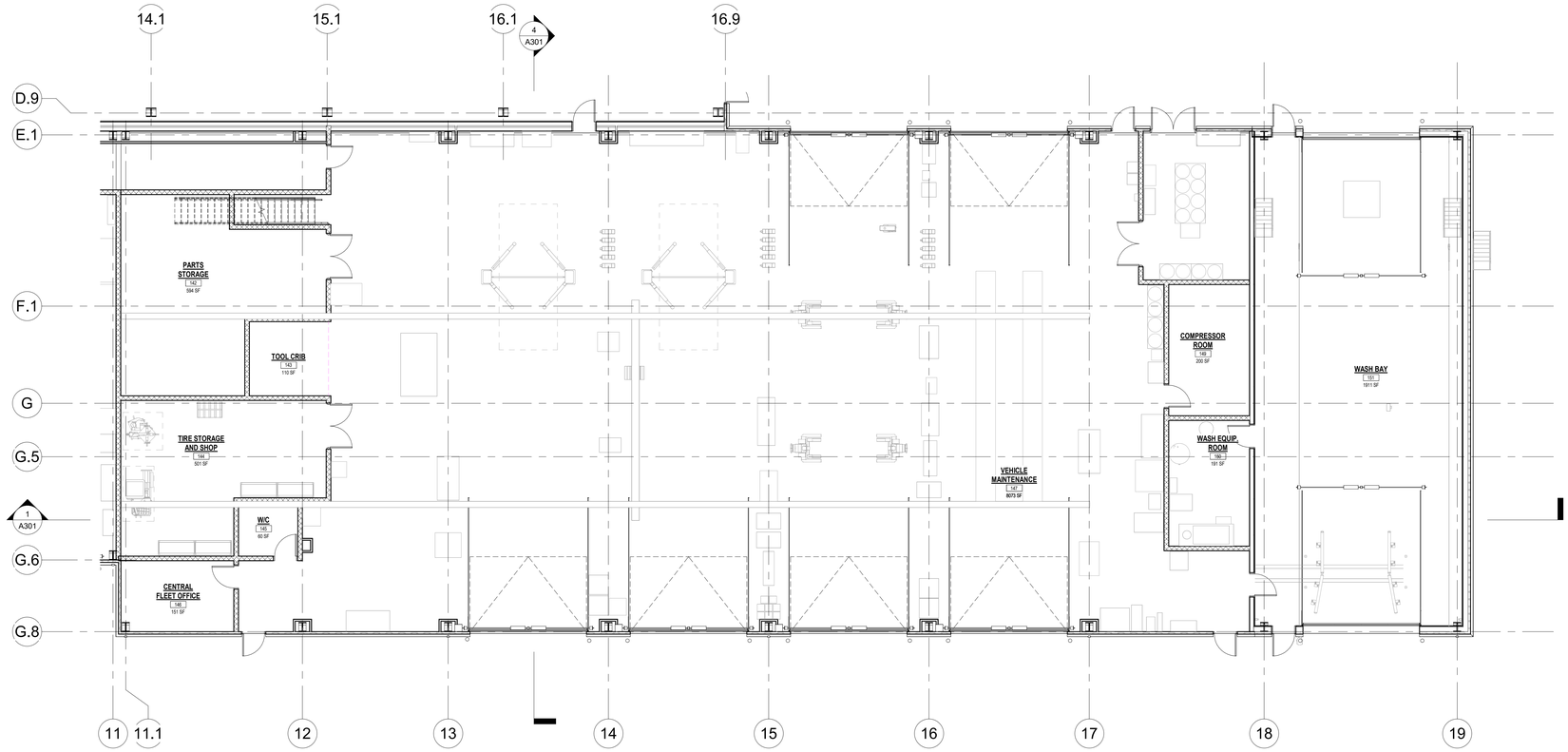
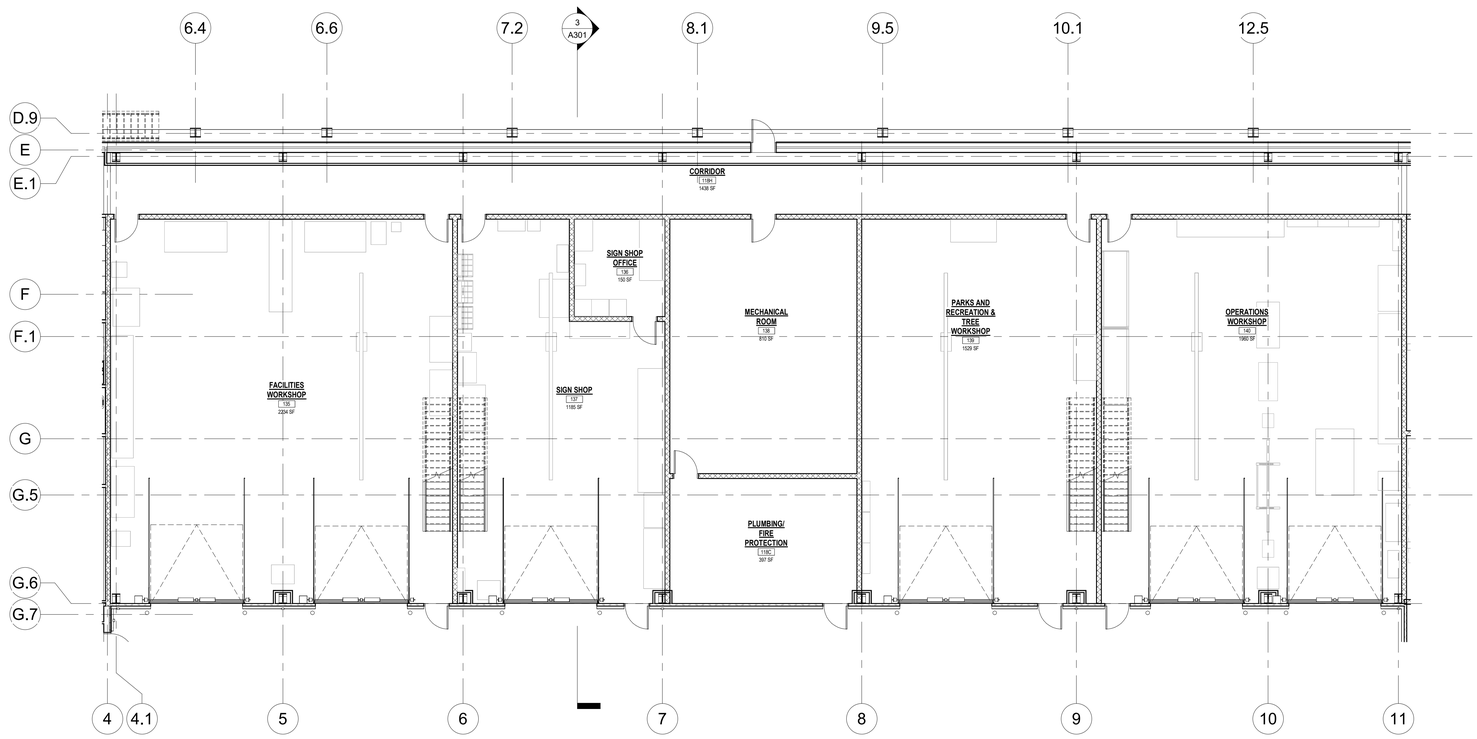


2 PARTIAL FLOOR PLAN - VEHICLE MAINT. & WASH BAY
1/8" = 1'-0" 1/ A101



1 PARTIAL FLOOR PLAN - WORKSHOPS
1/8" = 1'-0" 1/ A101

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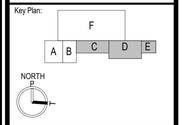

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Drawing Title:

LARGE SCALE FLOOR PLAN - MAINTENANCE & WORKSHOPS

Sheet Number:

A112

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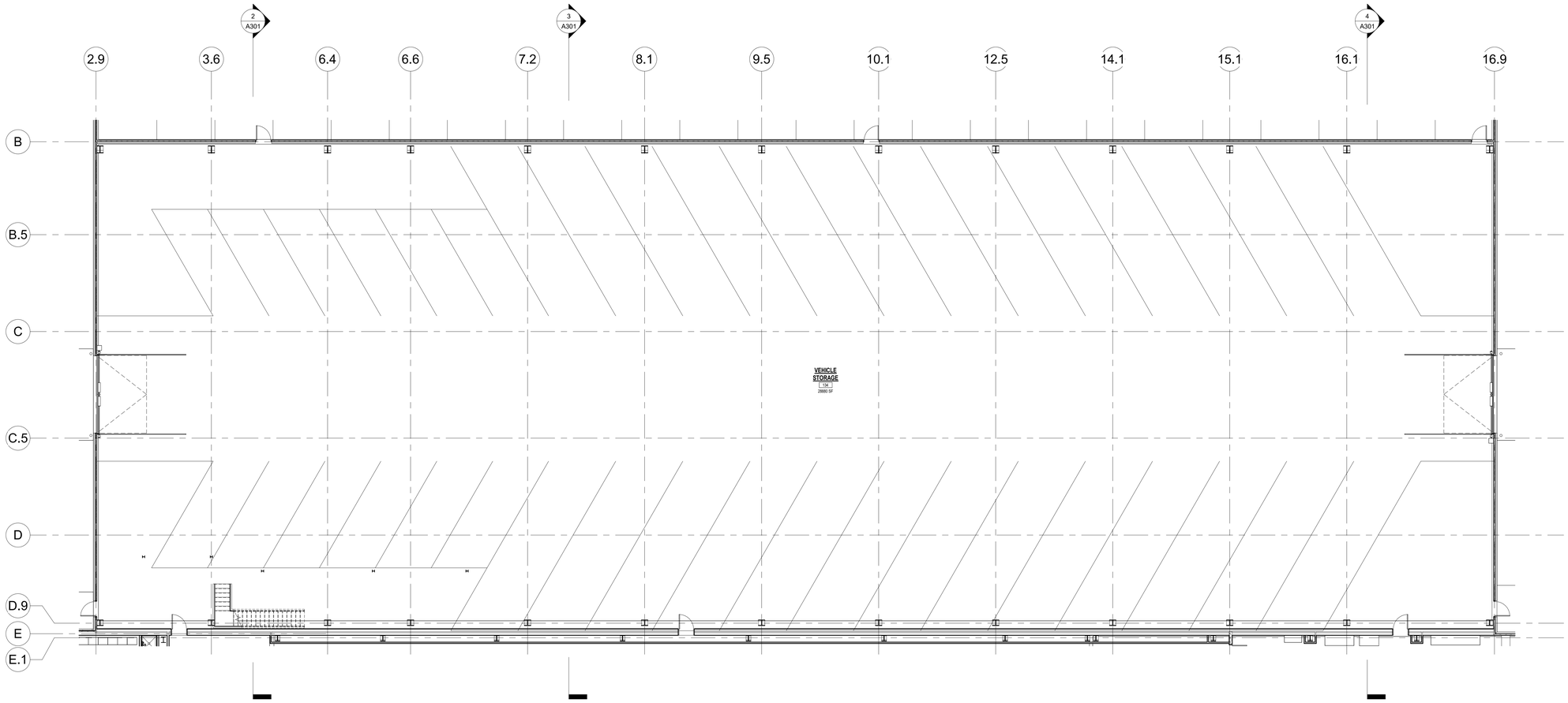

2 OVERALL FIRST FLOOR PLAN - Callout 1
1" = 10'-0" 1/ A101

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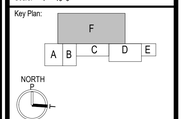

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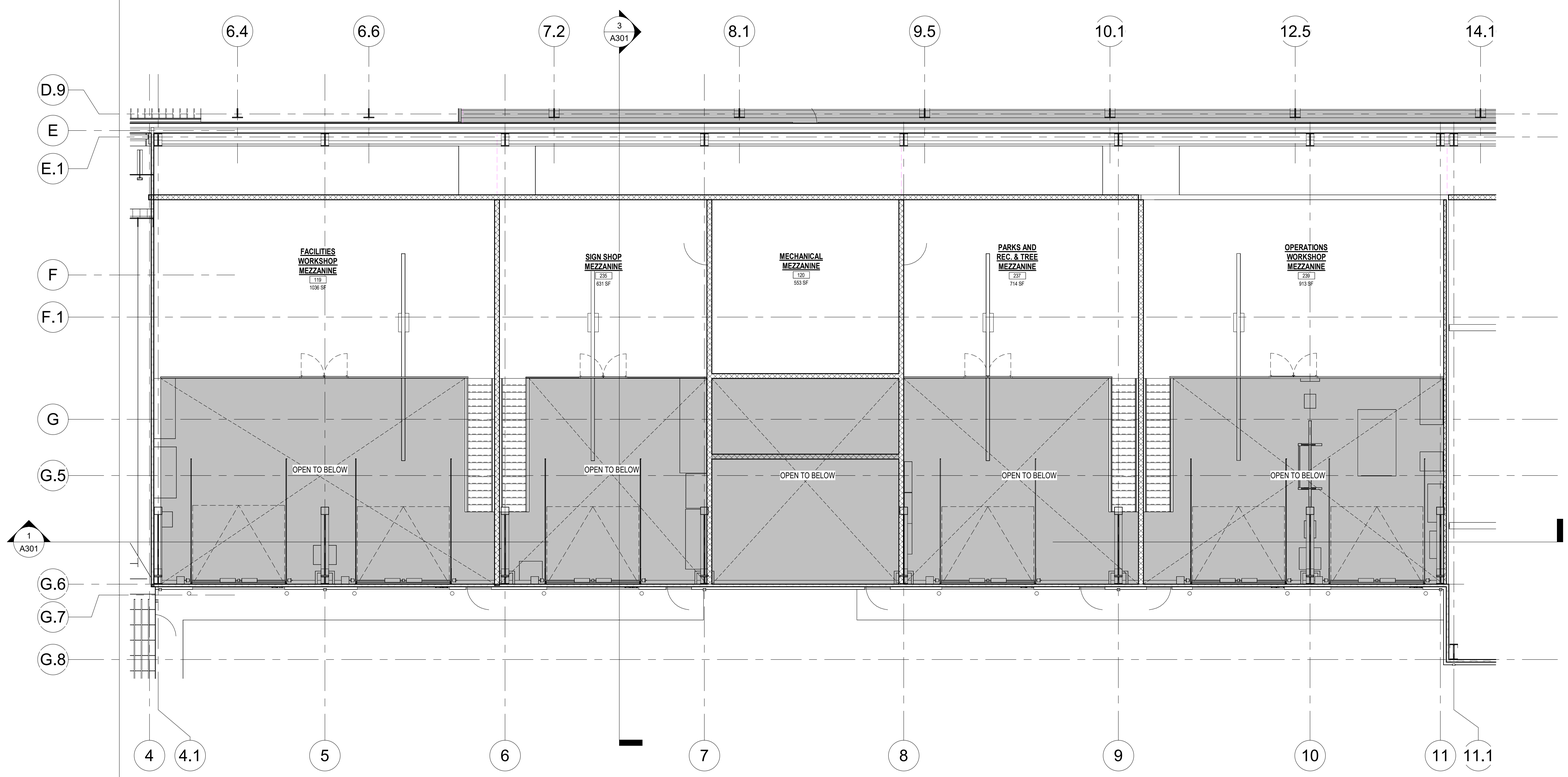
Drawing Title:

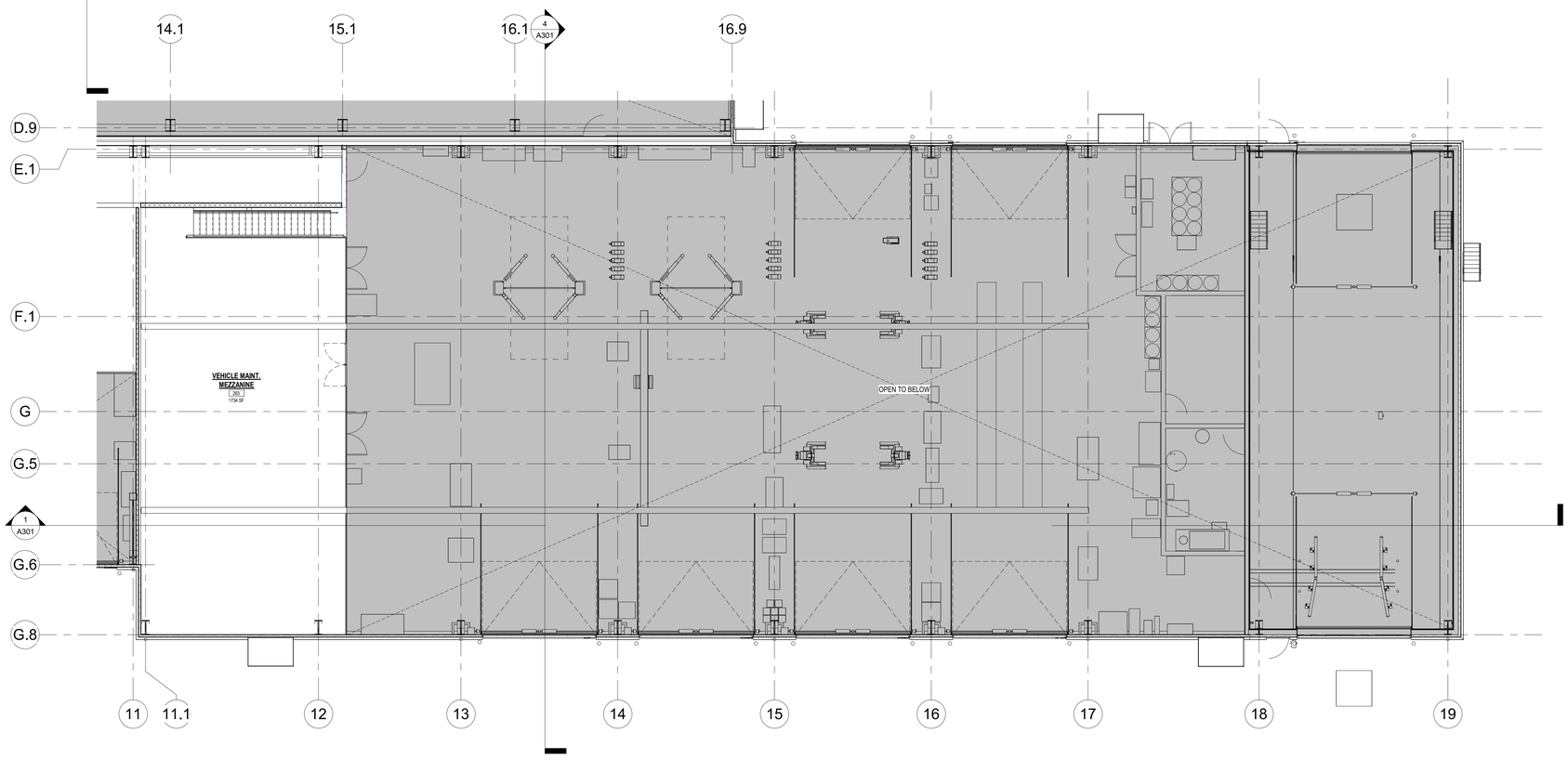
LARGE SCALE FLOOR PLAN - VEHICLE STORAGE

Sheet Number:

A113



1 LARGE SCALE MEZZANINE PLAN - WORKSHOPS
1/8" = 1'-0" 1/ A102



2 LARGE SCALE MEZZANINE PLAN - MAINTENANCE
1/8" = 1'-0" 1/ A102

MEZZANINE GENERAL NOTES:

1. AT EACH MEZZANINE SWING GATE LOCATION, PROVIDE 4" H (RED) LETTER SIGNAGE AT MEZZANINE FASCIA TO READ: 200LBS/SF MAXIMUM MEZZANINE LOADING
2. PROVIDE SAFETY CHAIN PER OSHA STANDARDS AT EACH SWING GATE.
3. PROVIDE SAFETY YELLOW PAINT AT MEZZANINE FLOOR AT EACH SWING GATE, AS INDICATED.
4. COORDINATE EXACT LOCATION WITH MECHANICAL, STRUCTURAL AND EQUIPMENT REQUIREMENTS.
5. DO NOT RUN ANY UTILITIES BELOW GATES EXPOSED AND MOUNTED TO WALLS.
6. PROVIDE TIE-OFF POINT FOR OSHA FALL ARREST SYSTEM NEAR MEZZANINE SWING-GATE ON PRIMARY STRUCTURAL ELEMENT.

SCALE: 3/32" = 1'-0"

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Scale: 1/8" = 1'-0"

Key Plan:
F
A B C D E
NORTH

Date:	JUNE 21, 2024
Draw By:	SP, FS
Reviewed By:	FS
Approved By:	JRC
W&S Project No.:	ENG20-0542
W&S File No.:	XXX

Drawing Title:
LARGE SCALE MEZZANINE PLAN - MAINTENANCE & WORKSHOPS

Sheet Number:
A114

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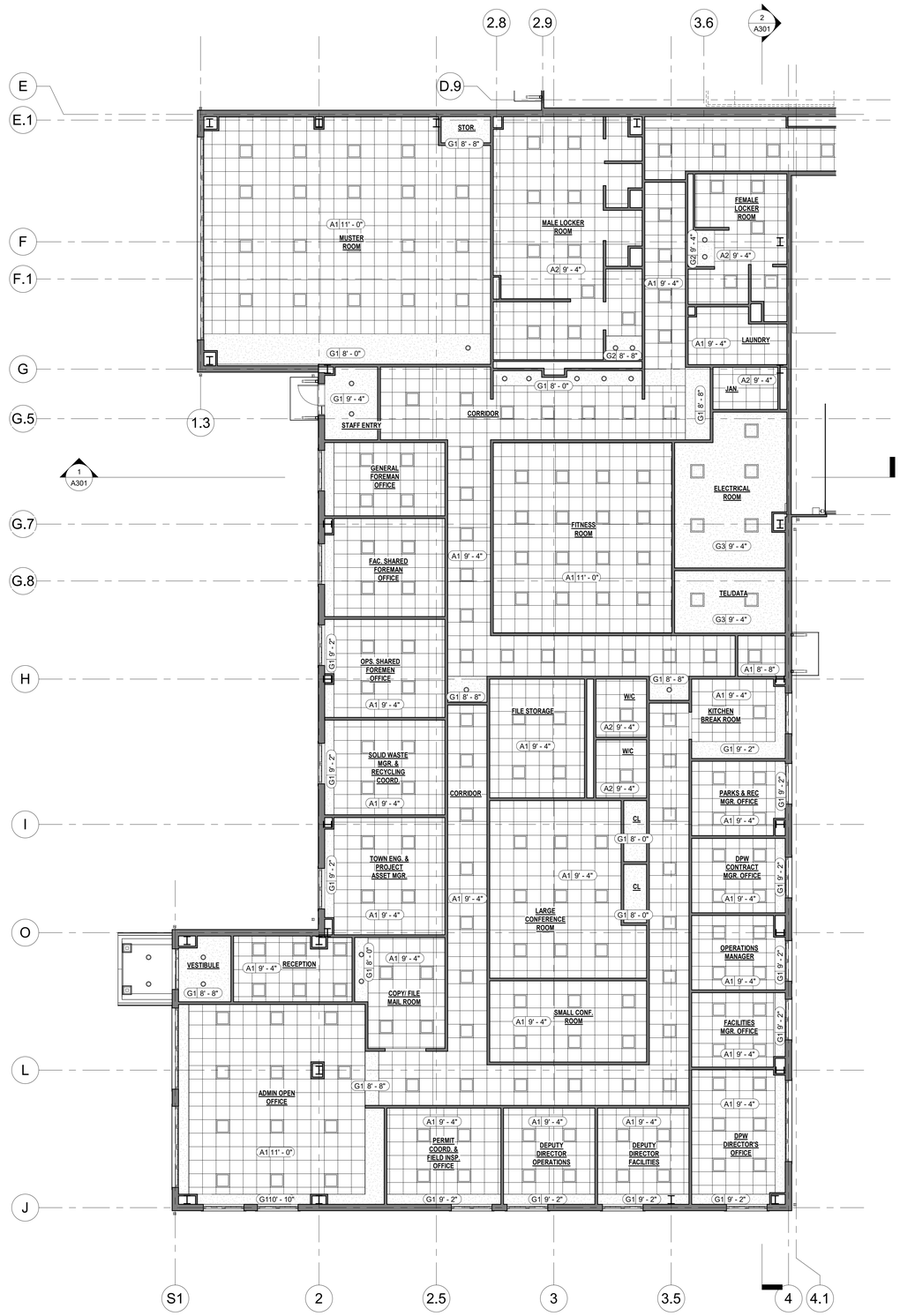

1 FIRST FLOOR - ADMIN
1/8" = 1'-0" 1/ A103

REFLECTED CEILING PLAN LEGEND:

CEILING TYPES:

- **TYPE A1**: 2' x 2' SUSPENDED ACOUSTICAL PANEL
- **TYPE A2**: 2' x 2' SUSPENDED ACOUSTICAL PANEL - MOISTURE RESISTANT
- **TYPE G1**: GYPSUM BOARD CEILING
- **TYPE G2**: GYPSUM BOARD CEILING - MOISTURE RESISTANT
- **TYPE G3**: 2-HR FIRE RATED CEILING UL DESIGN NO. U415

- XX — SOFFIT DETAIL - REFER TO CEILING SERIES
- TYPE / A X'-X" / HEIGHT — CEILING TAG
- LIGHT FIXTURES
- SURFACE MTD. LIGHT FIXTURE
- TRACK LIGHTING
- SUPPLY DIFFUSER - REF: MECH DWGS
- RETURN VENT - REF: MECH DWGS
- EXHAUST VENT - REF: MECH DWGS
- CLG. MTD. / EXTERIOR SECURITY CAMERA
- R.H. — RADIANT HEATER
- C.U.H. — CABINET UNIT HEATER
- U.H. — UNIT HEATER
- EXIT SIGN
- MOTION DETECTOR
- SD — SMOKE DETECTOR
- OS — OCCUPANCY SENSOR
- PS — CEILING PHOTO SENSOR
- S — CEILING FLUSH MOUNTED SPEAKER
- F — FIRE ALARM SPEAKER / VISUAL SIGNAL
- F CLG — CEILING MOUNTED FIRE ALARM SPEAKER / VISUAL SIGNAL
- F — FIRE ALARM VISUAL SIGNAL
- CEILING MOUNTED SPRINKLER
- WALL MOUNTED SPRINKLER

REFLECTED CEILING PLAN NOTES:

1. REFER TO M.E.P./ F.P. DRAWINGS FOR LOCATION OF LIGHT FIXTURES, SPRINKLER HEADS, SUPPLIES, RETURNS AND ADDITIONAL CEILING INFORMATION.
2. ALL DIFFUSERS, SPRINKLER HEADS, ETC. AT ACT AREAS TO BE CENTERED ON TILE.
3. SUSPENDED ACT AT 9'-4" AFF UNLESS NOTED OTHERWISE (U.N.O.)
4. ALL GWB CEILINGS AND SOFFITS AT 9'-4" AFF (U.N.O.)
5. COORDINATE QUANTITY AND LOCATION OF LIGHT FIXTURES WITH ELECTRICAL DRAWINGS.
6. LIGHT FIXTURE SYMBOLS ON REFLECTED CEILING PLANS ARE DIAGRAMMATIC FOR REFERENCE ONLY. REFER TO ELECTRICAL DRAWINGS FOR TYPE OF LIGHT FIXTURES. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR QUANTITY OF LIGHT FIXTURES AS INDICATED ON THE ELECTRICAL DRAWINGS.
7. FOR CEILING HEIGHTS AND TYPES, REFER TO REFLECTED CEILING PLAN DRAWINGS.
8. NO SUSPENDED LOADS SHALL BE SUPPORTED BY THE ROOF DECK. THIS INCLUDES PIPING, DUCTWORK, MECHANICAL EQUIPMENT, STAGE RIGGING, CEILING, ETC. ALL STEEL FRAMING MEMBERS PREFERABLY UTILIZING A SYSTEM OF UNISTRUTS, BEAM CLAMPS, AND THREADED RODS. ALL ATTACHMENT DEVICES SHALL BE SUBMITTED FOR REVIEW AND ARE SUBJECT TO APPROVAL OF THE DESIGNER.
9. COORDINATE QUANTITY AND LOCATION FOR EXIT SIGNS WITH ELECTRICAL DRAWINGS.
10. COORDINATE QUANTITY AND LOCATION OF SPRINKLERS WITH FIRE PROTECTION DRAWINGS.

0' 2' 4' 8'
SCALE: 1/4" = 1'-0"

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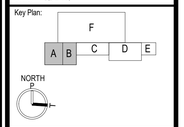
Scale: NTS = 1'-0"

Key Plan:


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Reviewed By:	FS
Approved By:	JRC
W&S Project No.:	ENG20-0542
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Drawing Title:
LARGE SCALE REFLECTED CEILING PLAN - ADMIN & EMPLOYEE FACILITIES

Sheet Number:
A115

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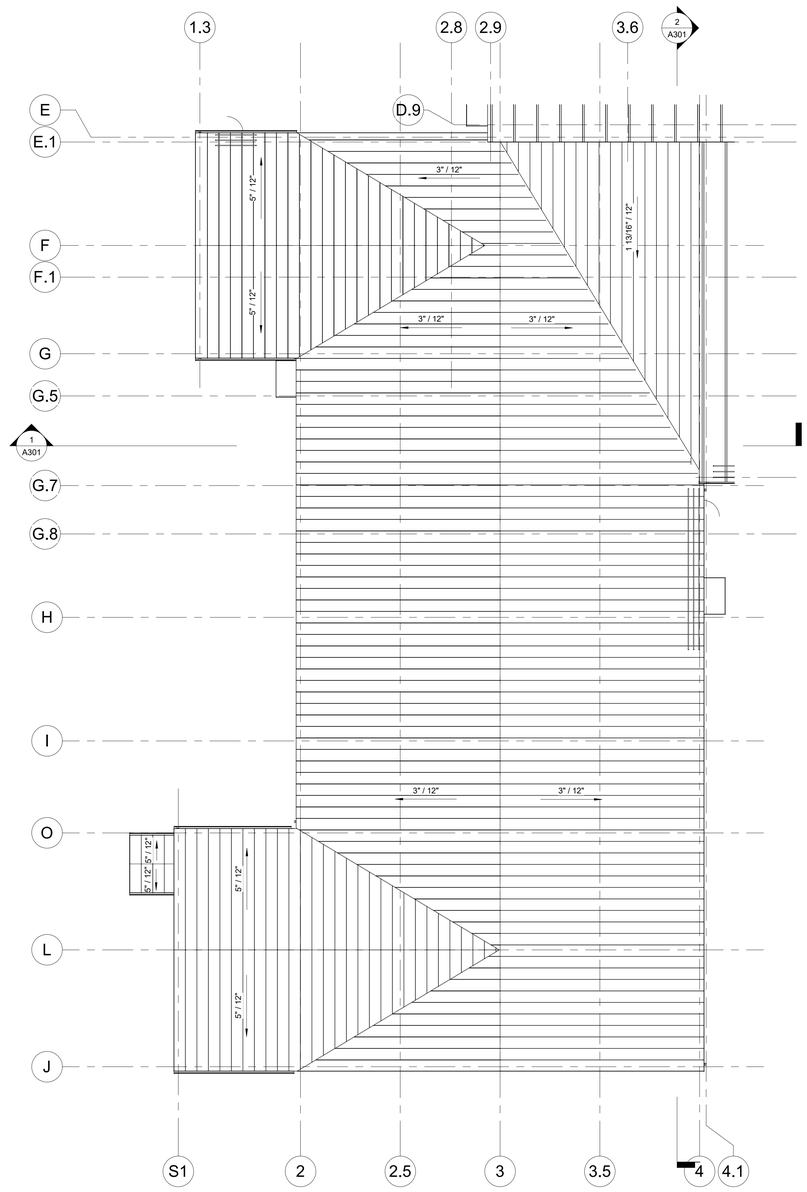
GENERAL ROOF NOTES - METAL BUILDINGS

1. REFER TO EQUIPMENT, MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR ADDITIONAL ROOF PENETRATIONS AND EQUIPMENT NOT SHOWN. ANY DISCREPANCIES REGARDING LOCATION OF EQUIPMENT SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR RESOLUTION IN FIELD.
2. ROOF SLOPE = 1'-0" : 12'-0"
3. SEE GENERAL NOTES ON A012
4. ALL GUTTERS TO PITCH TOWARDS DOWNSPOUTS AT A MINIMUM 1/16" PER FOOT AND SUPPORTED AS PER METAL BUILDING MANUFACTURER.
5. ROOF PENETRATIONS TO BE CUT AND FLASHED BY METAL BUILDING MANUFACTURER.
6. PROVIDE ROOF FLASHING AT ALL PENETRATIONS INCLUDING BUT NOT LIMITED TO VENT STACKS, FLUES, AND EXHAUST FANS. REVIEW PLUMBING, EQUIPMENT, MECHANICAL, AND ELECTRICAL DRAWINGS FOR CONSTRUCTION NOT INDICATED ON THIS DRAWING.
7. PROVIDE CRICKETS AT ALL ROOFTOP EQUIPMENT AND PENETRATIONS TO CREATE ADEQUATE ROOF DRAINAGE.
8. SUPPLEMENTAL FRAMING AND CURBS FOR ALL ROOFTOP EQUIPMENT SHALL BE PROVIDED AND INSTALLED BY THE METAL BUILDING MANUFACTURER.

STANDING SEAM METAL ROOF ASSEMBLY (BY MBM)

- STANDING SEAM METAL ROOF PANEL
- R-5 THERMAL BLOCKS AT PURLINS W/ UNFACED BATT INSULATION BETWEEN THERMAL BLOCKS (UPPER INSULATION LAYER)
- UNFACED BATT INSULATION LAYER BETWEEN PURLINS (STRUCTURE INSULATION LAYER)
- FABRIC LINER / VAPOR RETARDER, TAPE AND SEAL
- ALL PENETRATIONS AND EDGES
- MINIMUM R-VALUE OF 38



1 OVERALL ROOF PLAN - Callout 1
3/32" = 1'-0" 1/ A104

0' 2' 4' 8'
SCALE: 1/4" = 1'-0"

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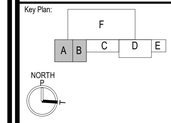

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LARGE SCALE ROOF PLAN - ADMIN & EMPLOYEE FACILITIES

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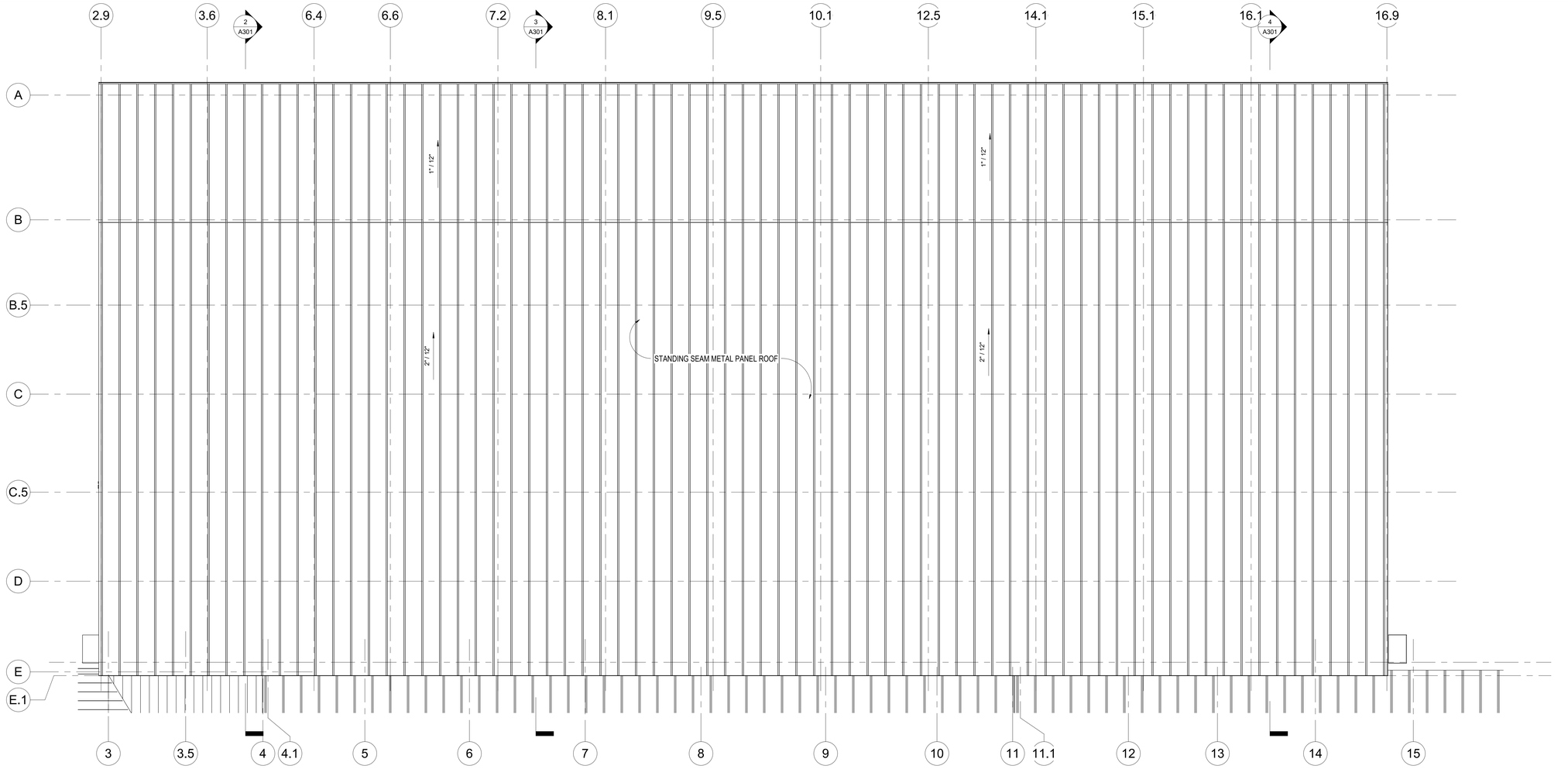
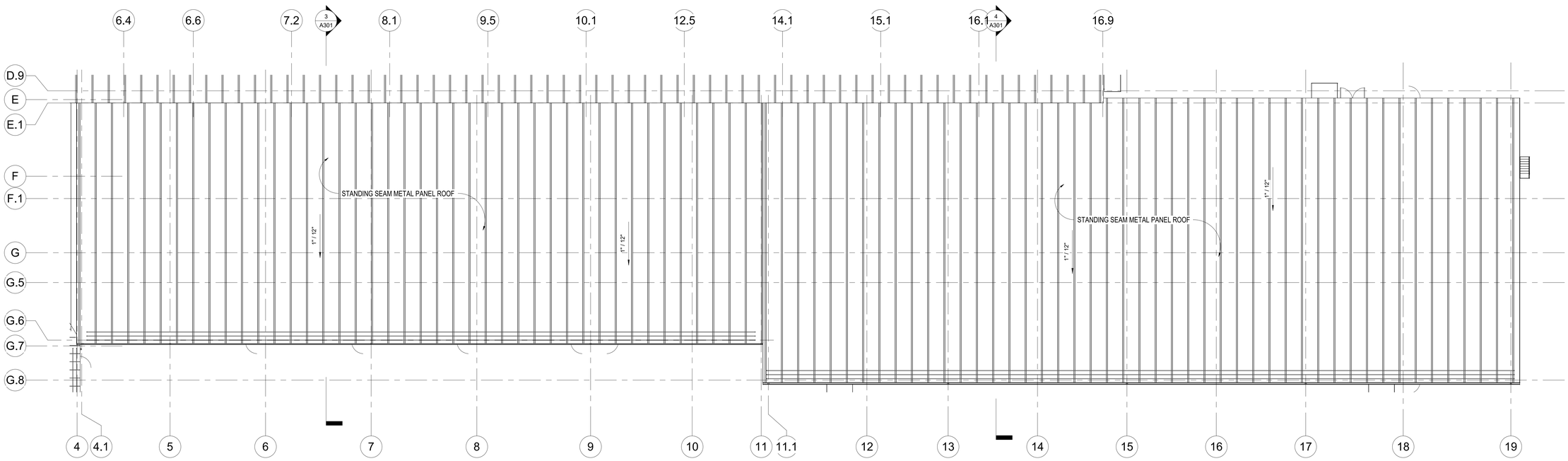


1 OVERALL ROOF PLAN - VEHICLE STORAGE
3/32" = 1'-0" 1/ A104



2 OVERALL ROOF PLAN - Callout 2
3/32" = 1'-0" 1/ A104

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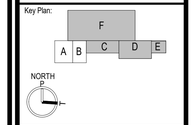

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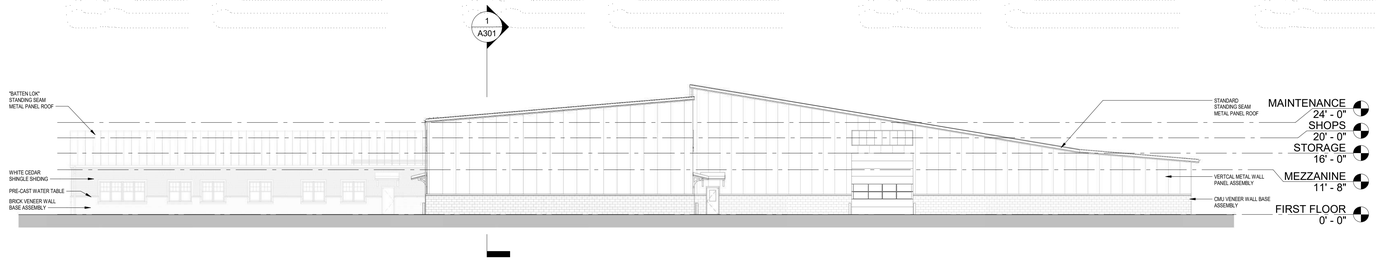
W&S File No.:	XXX

Drawing Title:

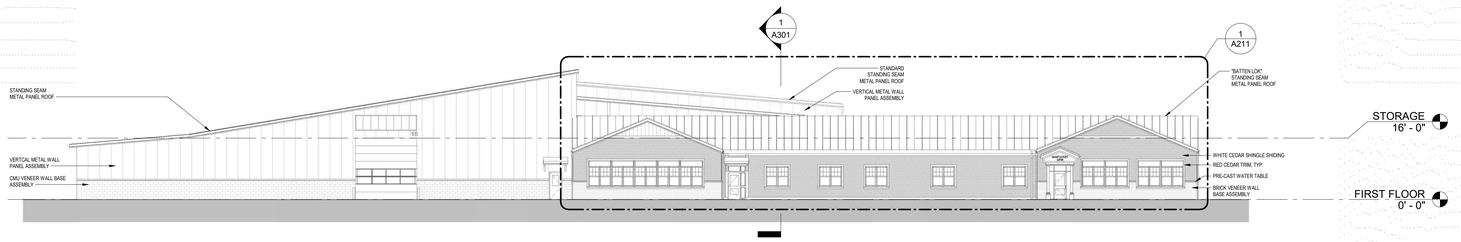
LARGE SCALE ROOF PLAN - MAINTENANCE, WORKSHOPS & VEHICLE STORAGE

Sheet Number:

A117



3 EAST EXTERIOR ELEVATION
1/16" = 1'-0" 1/ A101



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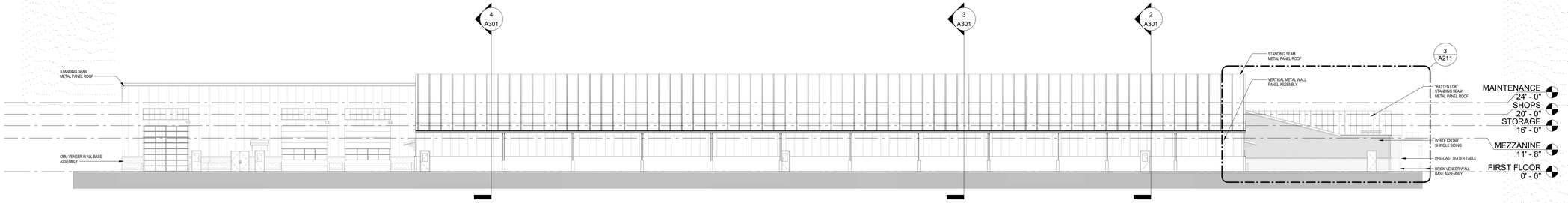
1/16" = 1'-0" 1/ A101



4 NORTH EXTERIOR ELEVATION
1/16" = 1'-0" 1/ A101

1 SOUTH EXTERIOR ELEVATION
1/16" = 1'-0" 1/ A101

WALL PANEL TYPES LEGEND:

EXTENTS OF WALL PANEL - WP-1, INSULATED WALL PANELS

EXTENTS OF WALL PANEL
REFER TO EXTERIOR ELEVATIONS
- WP-2, INSULATED BACK-UP WALL PANELS WITH WP-3, UN-INSULATED WALL PANEL &
WP-4, UN-INSULATED WALL PANEL

WP-2, INSULATED BACK-UP WALL PANELS WITH WP-3, UN-INSULATED WALL PANEL

WP-2, INSULATED BACK-UP WALL PANELS WITH WP-4, UN-INSULATED WALL PANEL

WP-2, INSULATED BACK-UP WALL PANELS WITH WP-3, UN-INSULATED WALL PANEL

CMU VENEER LEGEND:

CONTROL JOINT LOCATION
- REFER TO X / A XXX FOR ADDITIONAL INFO

TYPE 1 - STANDARD GROUND FACE MASONRY BLOCK: 8" X 16"

STONE VENEER LEGEND:

ASHLAR STONE VENEER

CEDAR SHINGLE / SHAKE SIDING LEGEND:

MINERAL FIBER CEMENT SHINGLE / SHAKE WALL PANEL SIDING

NOTES:
1. COORDINATE OPENINGS NOT SHOWN WITH EQUIPMENT AND MEP/FP DRAWINGS.
2. FOR MOCK-UP REQUIREMENTS, SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

SCALE: 1/8" = 1'-0"

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Drawing Title:
OVERALL ELEVATIONS

Sheet Number:
A201

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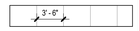
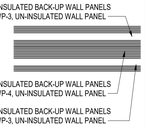
WALL PANEL TYPES LEGEND:

EXTENTS OF WALL PANEL - WP-1, INSULATED WALL PANELS

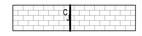


EXTENTS OF WALL PANEL
REFER TO EXTERIOR ELEVATIONS
- WP-2, INSULATED BACK-UP WALL PANELS WITH WP-3, UN-INSULATED WALL PANEL &
WP-4, UN-INSULATED WALL PANEL

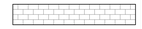


CMU VENEER LEGEND:

CONTROL JOINT LOCATION
- REFER TO X / AXXX FOR ADDITIONAL INFO

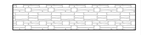


TYPE 1 - STANDARD GROUND FACE MASONRY BLOCK: 8" X 16"



STONE VENEER LEGEND:

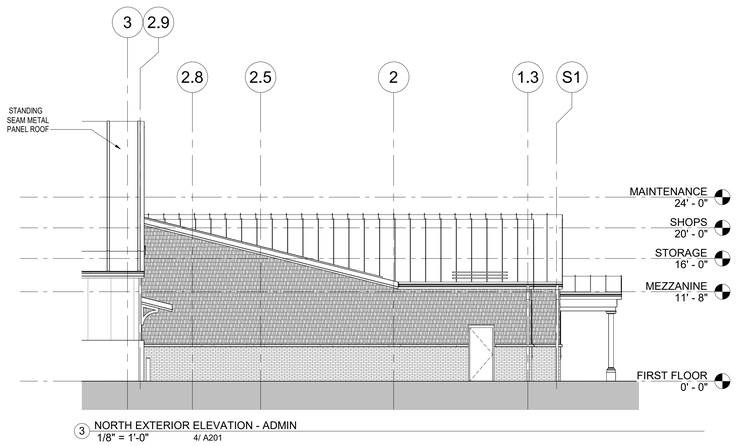
ASHLAR STONE VENEER



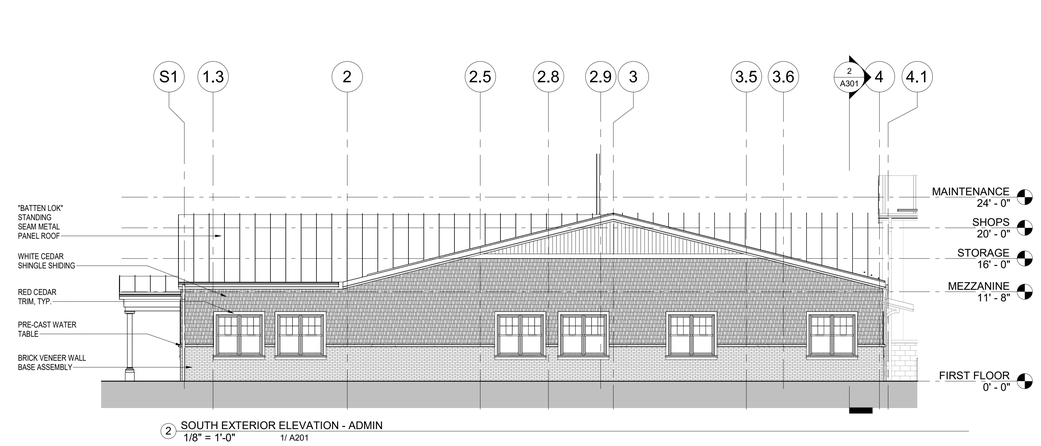
CEDAR SHINGLE / SHAKE SIDING LEGEND:

MINERAL FIBER CEMENT SHINGLE / SHAKE WALL PANEL SIDING

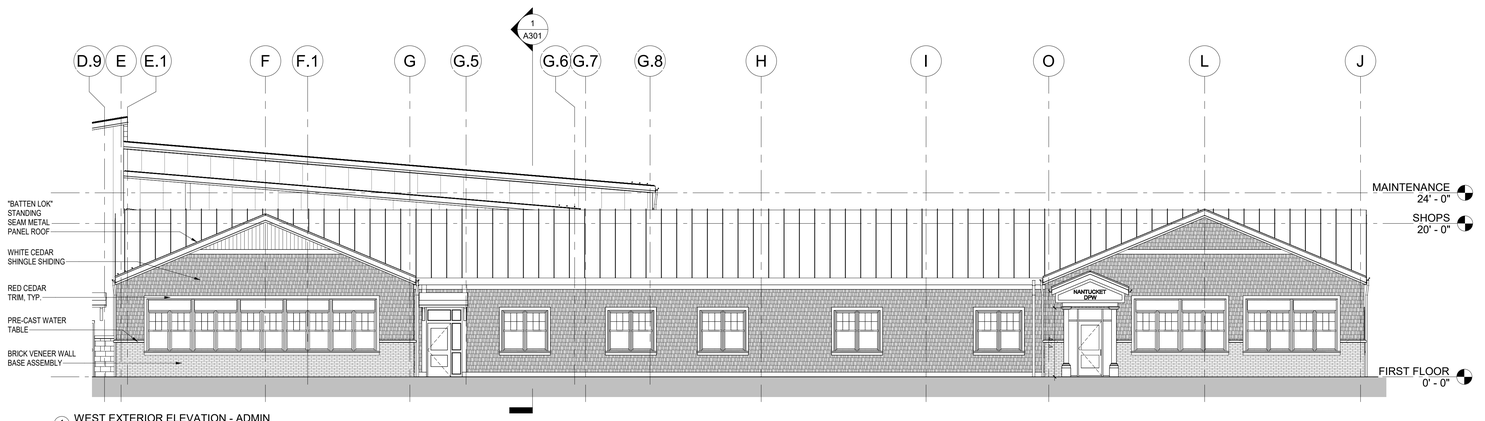
NOTES:
1. COORDINATE OPENINGS NOT SHOWN WITH EQUIPMENT AND MEP/FP DRAWINGS.
2. FOR MOCK-UP REQUIREMENTS, SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.



3 NORTH EXTERIOR ELEVATION - ADMIN
1/8" = 1'-0" 4/ A201



2 SOUTH EXTERIOR ELEVATION - ADMIN
1/8" = 1'-0" 1/ A201



1 WEST EXTERIOR ELEVATION - ADMIN
1/8" = 1'-0" 2/ A201

0' 4' 8' 16'
SCALE: 1/8" = 1'-0"

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Aprroved By:	JRC
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W&S File No.:	XXX

Drawing Title:
LARGE SCALE PARTIAL EXTERIOR ELEVATIONS - ADMIN & EMPLOYEE FACILITIES

Sheet Number:
A211

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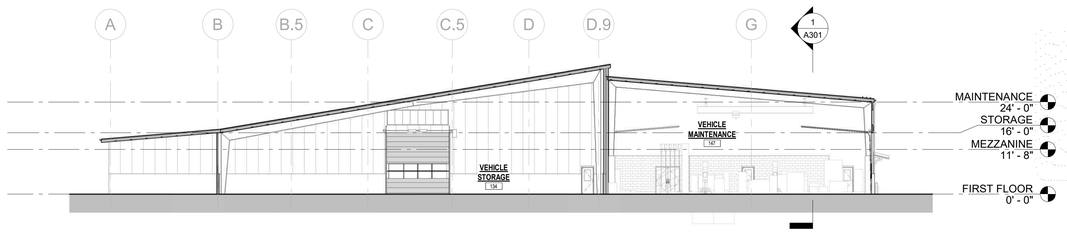
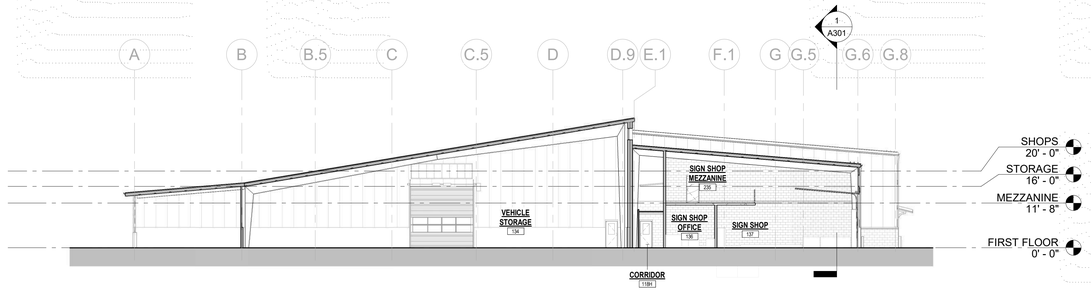


4 OVERALL BUILDING SECTION 4
1/16" = 1'-0" 1/ A101



3 OVERALL BUILDING SECTION 3
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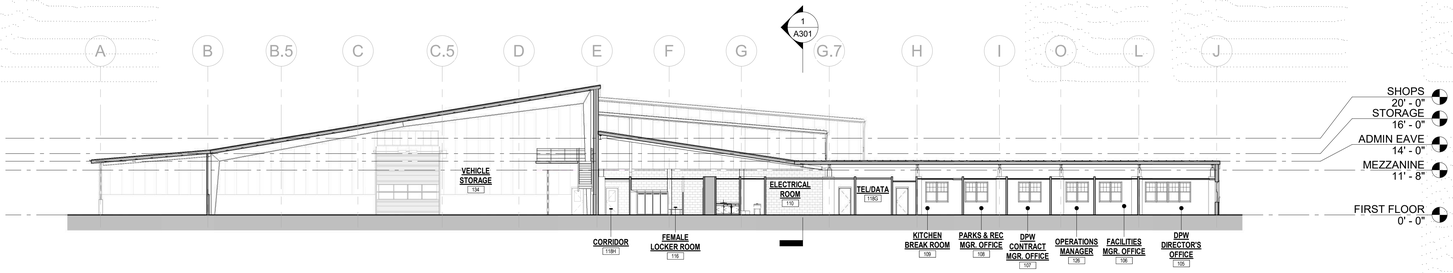
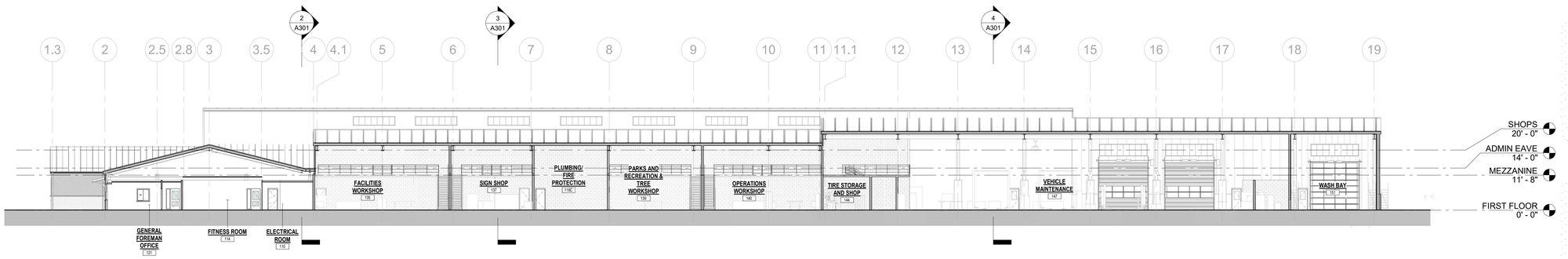


2 OVERALL BUILDING SECTION 2
1/16" = 1'-0" 1/ A101



1 OVERALL BUILDING SECTION 1
1/16" = 1'-0" 1/ A101

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Approved By: Approver
W&S Project No.: ENG20-0542
W&S File No.: XXX

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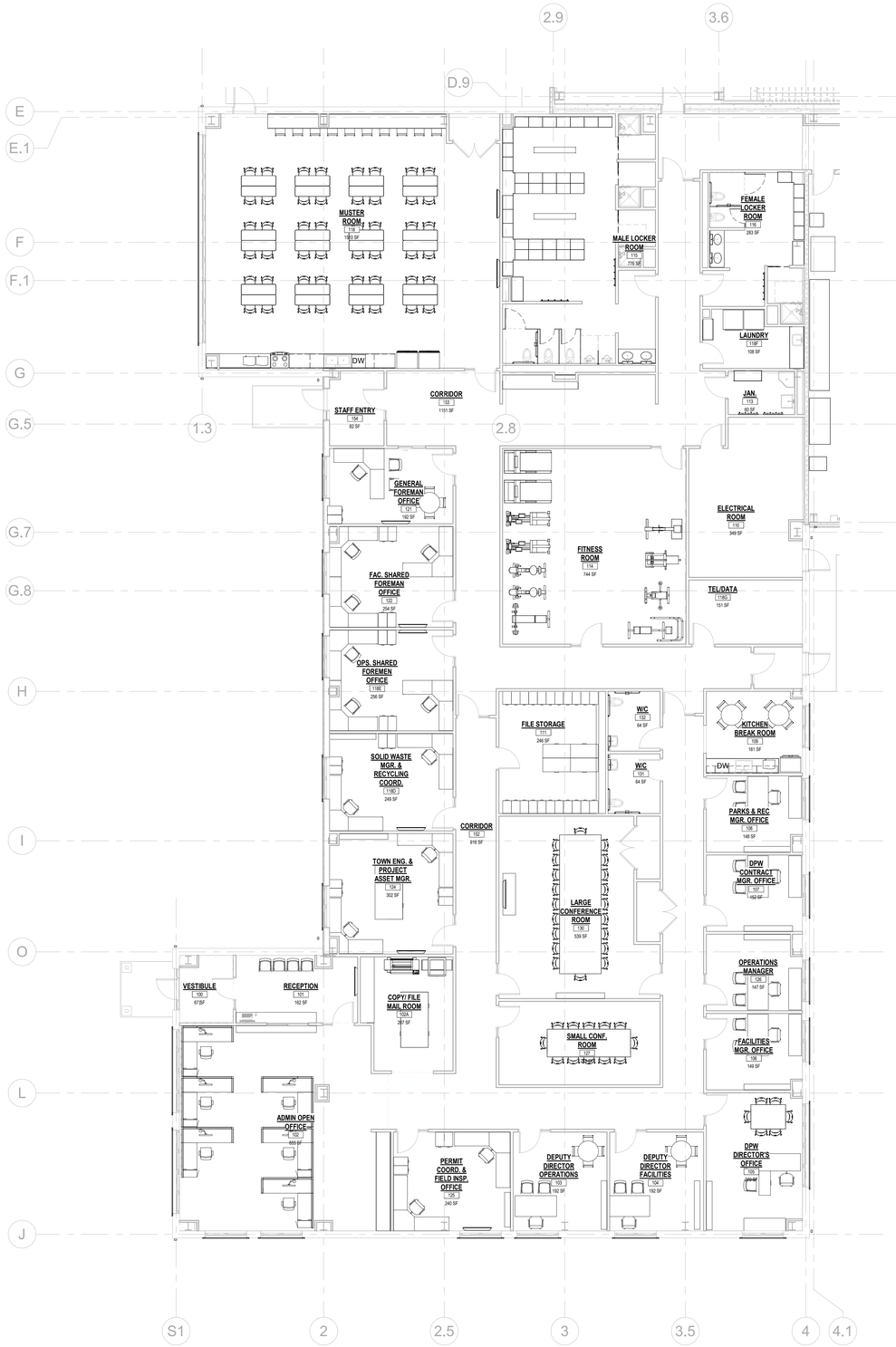
BUILDING SECTIONS

Sheet Number:

A301

NOTE:
- FURNITURE IS SHOWN FOR REFERENCE ONLY.
- OWNER / CLIENT IS PURCHASING UNDER SEPARATE CONTRACT.



1 FURNITURE PARTIAL FLOOR PLAN - ADMIN & EMPLOYEE FAC.
1/8" = 1'-0"

0' 4' 8' 16'
SCALE: 1/8" = 1'-0"

Project:
NEW PUBLIC WORKS FACILITY
SHADBUSH ROAD

TOWN OF NANTUCKET, MA

Weston & Sampson
Weston & Sampson Engineers, Inc.
55 Walkers Brook Drive, Suite 100
Reading, MA 01867
978.532.1900 800.SAMPSON
www.westonandsampson.com

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Revisions:

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Scale: NTS = 1'-0"

Key Plan:
F
A B C D E
NORTH

Date: JUNE 21, 2024
Draw By: FS
Reviewed By: JRC
Aprroved By: JRC
W&S Project No.: ENG20-0542
W&S File No.: XXX

Drawing Title:
FURNITURE LAYOUT

Sheet Number:
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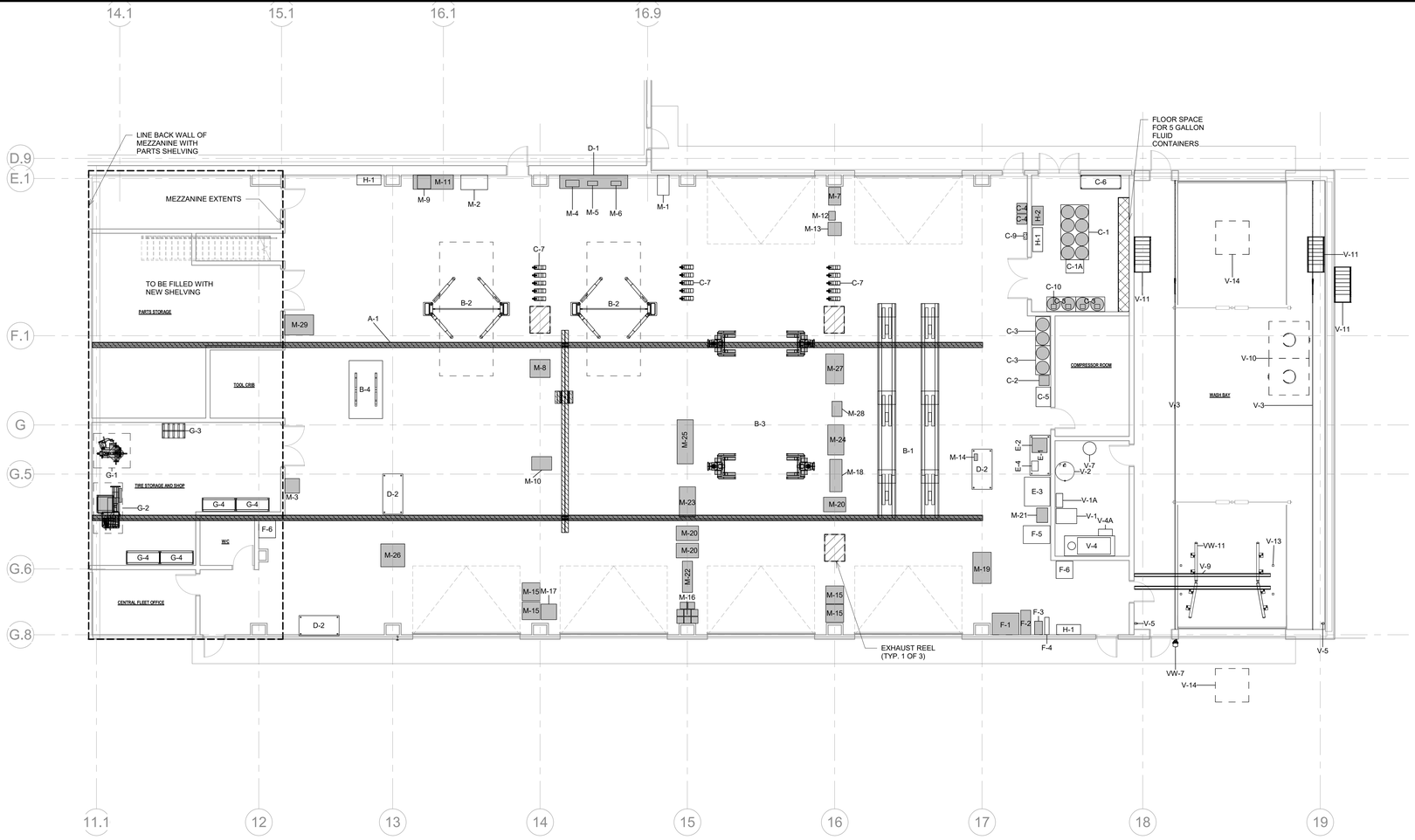
Town of Nantucket
New Department of Public Works Facility
Schematic Design Submission

Schematic Design Plans

Industrial Equipment Plans

June 21, 2024



1 EQUIPMENT LAYOUT PLAN
1/8" = 1'-0"

GENERAL NOTES:

1. EQUIPMENT LAYOUTS ARE SCHEMATIC. GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING EXACT LOCATIONS WITH OWNER AND MANUFACTURER REQUIREMENTS. COORDINATE ALL UTILITY REQUIREMENTS WITH SUB-CONTRACTORS. FINAL EQUIPMENT LOCATIONS SHALL BE CONFIRMED BY THE OWNER PRIOR TO RUNNING UTILITIES AND INSTALLATION EQUIPMENT.
2. GENERAL CONTRACTOR SHALL COORDINATE UTILITY REQUIREMENTS OF EXISTING EQUIPMENT PRIOR TO INSTALLATION OF SERVICES.
3. PRIOR TO RUNNING UTILITIES, GENERAL CONTRACTOR SHALL MARK OUT ALL EQUIPMENT LOCATIONS ON THE FLOOR USING CHALK OR ANOTHER ACCEPTABLE MEANS, AND SHALL REVIEW/REVISE FINAL EQUIPMENT LOCATIONS AS DIRECTED BY THE OWNER AND THE ENGINEER.
4. FIXED LIFTS SHALL BE CENTERED IN THE MAINTENANCE BAYS AS DEFINED BY THE OVERHEAD DOOR OPENING. CONFIRM INSTALLATION LAYOUT DIMENSIONS WITH THE MANUFACTURER. ALSO SEE OWNERS MANUALS.
5. ELECTRICAL, MECHANICAL, AND PLUMBING FSBs SHALL PROVIDE AND CONNECT UTILITIES TO ALL EQUIPMENT AS SHOWN ON THE ELECTRICAL, MECHANICAL AND PLUMBING DRAWINGS AND SPECIFICATIONS, AND IN ACCORDANCE WITH THE MANUFACTURERS REQUIREMENTS IN ORDER TO PROVIDED A COMPLETE AND OPERABLE SYSTEM.
6. THE ELECTRICAL CONTRACTOR SHALL HAVE A MASSACHUSETTS LICENSED ELECTRICIAN CONFIRM THE VOLTS, PHASE, AMPS, AND NEMA PLUG CONFIGURATION FOR EACH PIECE OF EQUIPMENT (INCLUDING EXISTING EQUIPMENT TO BE RELOCATED) IN ADVANCE OF ORDERING MATERIALS AND INSTALLATION.
7. SEE SPECIFICATION SECTION 11 11 29 - FLUID DISTRIBUTION SYSTEM ALONG WITH DETAILS ON EQ102 FOR ADDITIONAL INFORMATION AND SCOPE DELINEATION FOR THE FLUID AND WASTE FLUID DISTRIBUTION SYSTEMS.

ABBREVIATIONS:

N	NEW EQUIPMENT TO BE SUPPLIED AND INSTALLED BY THE CONTRACTOR.
ERO	EXISTING EQUIPMENT TO BE RELOCATED AND INSTALLED BY THE OWNER. UTILITIES FOR ERO EQUIPMENT TO BE PROVIDED BY THE FILED SUB-BID CONTRACTORS.
ERC	EXISTING EQUIPMENT TO BE RELOCATED AND INSTALLED BY THE CONTRACTOR. UTILITIES FOR ERC EQUIPMENT TO BE PROVIDED BY THE FILED SUB-BID CONTRACTORS
NIC	NEW EQUIPMENT PROVIDED AND INSTALLED BY THE OWNER (NOT IN CONTRACT), HOWEVER UTILITIES FOR THIS EQUIPMENT SHALL BE PROVIDED BY THE FILED SUB-BID CONTRACTORS.

Industrial Equipment Schedule

EQ Number	Description	Count	Equipment Type	Spec Number	Notes
A-1	5 Ton Bridge Crane	1	N		
B-1	80K Flush Mounted Platform Lift	1	N	12 40 00	
B-2	16K 2 Post Lift	2	N	12 40 00	
B-3	72,000lbs Four Post Mobile Lift	1	ERO		
B-4	1,800lbs Portable Mower Lift	1	N	12 40 00	
C-1	8-Drum Spill Pallet	1	N	11 11 29	
C-1A	Spill Pallet Ramp	1	N	11 11 29	
C-2	Oil Filter Crusher	1	ERO		
C-3	2-Drum Spill Pallet	4	N	11 11 29	
C-4	Air Powered Waste Oil Caddy	2	ERO		
C-5	Low Profile Waste Oil Caddy	1	N	11 11 29	
C-6	Fluid Storage Room Parts Shelving	1	N	11 11 29	
C-7	Lube Reel Bank	3	N		
C-8	55 gal. Drum	16	ERO	11 00 00	
C-9	Fluid Storage Room Sump Alarm	1	N		
C-10	Wall Mounted Lube Pumps	4	N	11 11 29	
D-1	Workbench	1	ERO		
D-2	Steel Work Bench (72inx36in) (14,000 Lbs Capacity)	3	N	12 40 00	
E-1	Steel Work Bench (72inx36in) (14,000 Lbs Capacity)	1	N	12 40 00	
E-2	Hydraulic Hose Crimper	1	ERO	11 00 00	
E-3	Hydraulic Hose Reel Rack	1	N	12 40 00	
E-4	Hydraulic Hose Cut Off Machine	1	N	12 40 00	
F-1	Lincoln Ideal Arc	1	ERO		
F-2	Miller Millermatic 250	1	ERO		
F-3	Miller Plasma Cutter	1	ERO		
F-4	Multipurpose Welder - Miller Multimatic 255	1	N		
F-5	Portable Weld Fume Extractor	1	N		
F-6	Oxygen/Acetylene Tank Storage Cage	2	N		
G-1	Tire Changer - Hunter	1	ERO		
G-2	Tire Balancer - Hunter	1	ERO		
G-3	Tire Inflation Cage	1	N	12 40 00	
G-4	Tire Storage Rack	4	N		
H-1	Flammable Cabinet (45 Gallons)	3	N		
H-2	Flammable Storage Cabinet	1	ERO		
M-1	Drill Press	1	N	12 40 00	
M-2	Parts Washer	1	N	12 40 00	
M-3	Ice Machine	1	ERO		
M-4	Delta Bench Grinder	1	ERO		
M-5	Key Cutter	1	ERO		
M-6	Bench Grinder	1	ERO		
M-7	Shop Vac	1	ERO		
M-8	Topside Creeper	1	ERO		
M-9	Table Saw	1	ERO		
M-10	Sand Blaster	1	ERO		
M-11	Battery Storage Table	1	ERO		
M-12	Small Battery Charger	1	ERO		
M-13	Large Battery Charger	1	ERO		
M-14	Heavy Duty Anvil Bench Vice	1	ERO		
M-15	Large Jack Stands	4	ERO		
M-16	Small Jack Stands	8	ERO		
M-17	2-Ton Engine Crane	1	ERO		
M-18	Red US General Tool Box	1	ERO		
M-19	Mobile Stairs	1	ERO		
M-20	Tool Carts	3	ERO		
M-21	Torch Cart	1	ERO		
M-22	Blue Town Tool Box	1	ERO		
M-23	Red Snap-On Tool Box	1	ERO		
M-24	Yellow Snap On Tool Box	1	ERO		
M-25	Blue Snap On Tool Box	1	ERO		
M-26	Wheel Dolly	1	ERO		
M-27	Small Mobile Ladder	1	ERO		
M-28	Red Eagle Tool Box	1	ERO		
M-29	Manual Shop Press	1	ERO		
V-1	Manual Wash Pressure Plant	1	N	11 11 26	
V-1A	Manual Wash Control Panel	1	N	11 11 26	
V-2	Vehicle Wash - Hot Water Heater	1	N	11 11 26	
V-3	Festoons	2	N		
V-4	Undercarriage Wash Pressure Plant	1	N	11 11 26	
V-4A	Undercarriage Wash Control Panel	1	N	11 11 26	
V-5	Automatic Undercarriage photo Eye	2	N	11 11 26	
V-7	Vehicle Wash Soap drum	1	N	11 11 26	
V-9	Automatic Undercarriage Pre-Fab Trenches	2	N	11 11 26	
V-10	Vehicle Wash Pre-Treatment Tank (1500gal)	1	N	11 11 26	
V-11	Mobile Platform	3	N	11 11 26	
V-13	Automatic Wheel Washers	1	N	11 11 26	
V-14	Loop Detector	2	N	11 11 26	

Project:
NANTUCKET DEPARTMENT OF PUBLIC WORKS FACILITY

1 SHADBUSH ROAD
NANTUCKET, MA 02554

Weston & Sampson
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Consultants:

Revisions:

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Seal:

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SCHEMATIC DESIGN

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Scale: As indicated

Key Plan:

NORTH

Date: 06/21/2024
Draw By: SMD
Reviewed By: ZDW
Aprroved By:
W&S Project No.: 000000
W&S File No.: XXX

Drawing Title:

EQUIPMENT LAYOUT PLAN

Sheet Number:

EQ101

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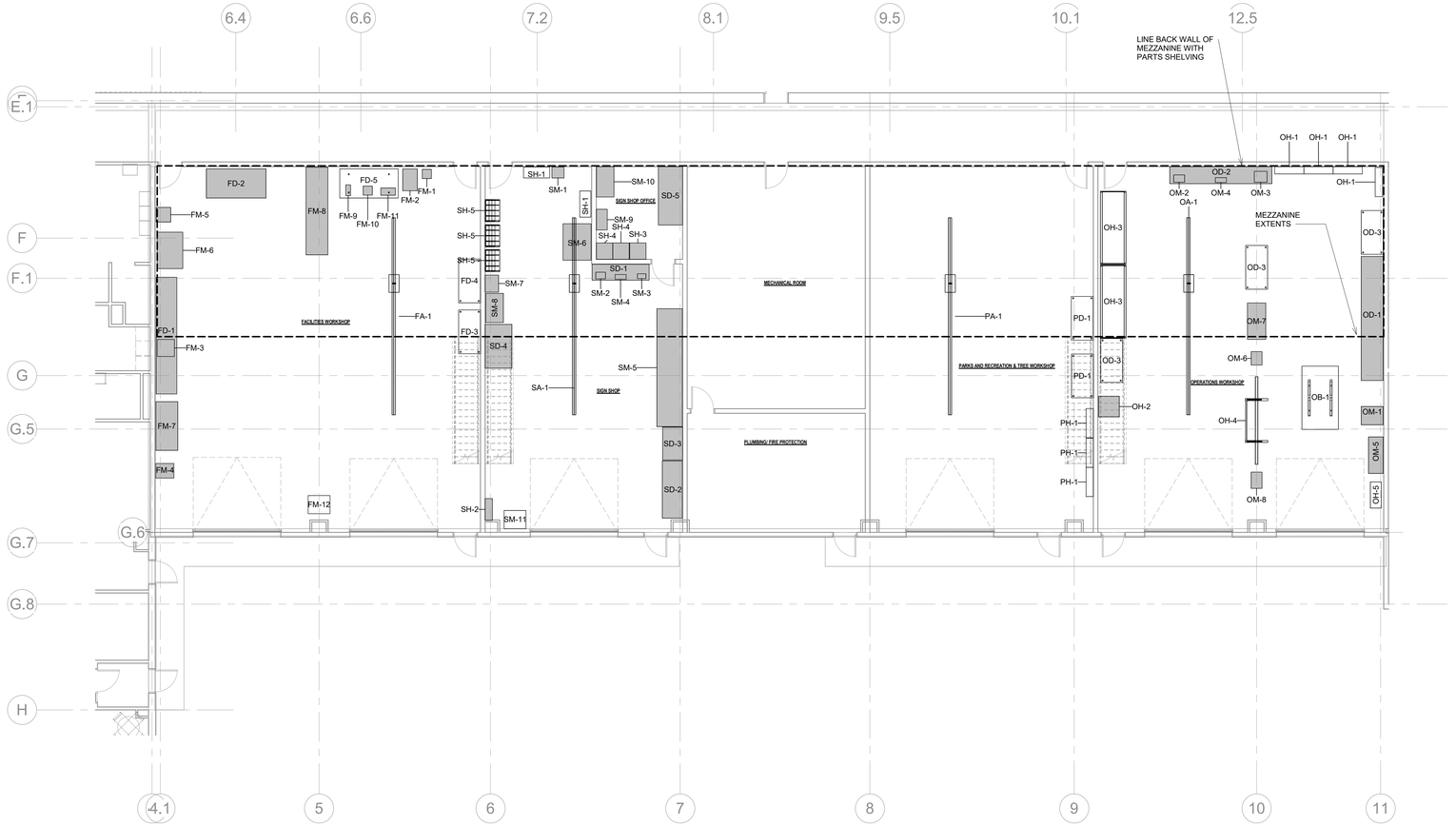

Industrial Equipment Schedule Shops					
EQ Number	Description	Count	Equipment Type	Spec Number	Notes
FA-1	2-Ton Monorail	1	N		
FD-1	Facilities Workbench	1	ERO		
FD-2	Facilities Workbench 2	1	ERO		
FD-3	Steel Work Bench (72inx36in)	1	N	12 40 00	
FD-4	Steel Work Bench w/ Casters & Elec. Shelf	1	N	12 40 00	
FD-5	Wood Topped Workbench	1	N	12 40 00	
FM-1	Small Compressor	1	ERO		
FM-2	Festool System	1	ERO		
FM-3	Delta Radial Arm Saw	1	ERO		
FM-4	Dewalt Planar	1	ERO		
FM-5	Dewalt Cordless Table Saw	1	ERO		
FM-6	Dewalt Cordless Mitre Saw with Table	1	ERO		
FM-7	Left Tilt Table Saw	1	ERO		
FM-8	Compound Mitre Saw	1	ERO		
FM-9	Makita Belt Sander	1	ERO		
FM-10	Disc Sander	1	ERO		
FM-11	Bench Top Drill Press	1	ERO		
FM-12	Portable Dust Collector	1	N		
OA-1	2-Ton Monorail	1	N		
OB-1	1,800lbs Portable Mower Lift	1	N		
OD-1	Workbench with Bench Vice	1	ERO		
OD-2	Operations Workbench	1	ERO	11 00 00	
OD-3	Steel Work Bench (72inx36in)	3	N	N/A	
OH-1	Hanging Tool Storage	4	N	12 40 00	
OH-2	Operations Flammable Cabinet	1	ERO		
OH-3	Pallet Rack	2	N		
OH-4	Cantilever Rack (Flat)	1	N		
OH-5	Flammable Cabinet (45 Gallons)	1	N		
OM-1	Chainsaw Sharpener Workbench	1	ERO		
OM-2	Sears Bench Grinder	1	ERO		
OM-3	Blade Grinder	1	ERO		
OM-4	Delta 8" Drill Press	1	ERO		
OM-5	Grizzly Box Brake	1	ERO		
OM-6	Red Tool Box	1	ERO		
OM-7	Tool Box 2	1	ERO		
OM-8	Craftsman Toolbox	1	ERO		
PD-1	Steel Work Bench (72inx36in)	2	N	N/A	
PH-1	Hanging Tool Storage	3	N	12 40 00	
SD-1	Sign Shop Workbench	1	ERO		
SD-2	Large Wooden Workbench	1	ERO		
SD-3	Small Wooden Workbench	1	ERO		
SD-4	Drafting Table	1	ERO		
SD-5	Office Drafting Table	1	ERO		
SH-1	Flammable Cabinet (45 Gallons)	2	N	12 40 00	
SH-2	Brown Shelving	1	ERO		
SH-3	Hanging Vinyl Storage	1	ERO		
SH-4	Floor Vinyl Storage	2	ERO		
SH-5	Vertical Sign Storage Rack	3	N	12 40 00	
SM-1	Rolling Cart	1	ERO		
SM-2	Northern Industrial Drill Press	1	ERO		
SM-3	Bench Vice	1	ERO		
SM-4	Bench Grinder	1	ERO		
SM-5	Mitre Saw	1	ERO		
SM-6	JET Table Saw	1	ERO		
SM-7	Powermatic Belt Sander	1	ERO		
SM-8	Saw Horses	1	ERO		
SM-9	Laminator Cart	1	ERO		
SM-10	Vinyl Express Printer	1	ERO		
SM-11	Portable Dust Collector	1	N		

Project:
NANTUCKET DEPARTMENT OF PUBLIC WORKS FACILITY

1 SHADBUSH ROAD
NANTUCKET, MA 02554

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SCHEMATIC DESIGN

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Scale: NTS = 1'-0"

Key Plan:

NORTH

Date:	06/21/2024
Draw By:	SMD
Reviewed By:	ZDW
Approved By:	Approver
W&S Project No.:	000000
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Drawing Title:

SHOPS LAYOUT PLAN

Sheet Number:

EQ102

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Town of Nantucket
New Department of Public Works Facility
Schematic Design Submission

3. Schematic Design Narratives

June 21, 2024

Town of Nantucket
New Department of Public Works Facility
Schematic Design Submission

Schematic Design Narrative

Structural

June 21, 2024

100 Foxborough Blvd., Suite 250, Foxborough, MA 02035
Tel: 508.698.3034

Schematic Design Narrative

PROJECT: Nantucket, MA – Department of Public Works

FROM: Kevin Connolly, P.E.

DATE: 06/20/2024

SUBJECT: Schematic Structural Design Narrative

PROJECT UNDERSTANDING

The Nantucket Department of Public Works Building is proposed to be located on Shadbush Road in Nantucket, MA and shall be a pre-engineered metal building consisting of three main structures; an administrative building approximately 13,000 square feet, shops and vehicle storage building which is approximately 40,000 square feet, and a maintenance garage and wash bay which is approximately 13,500 square feet. The storage garage also has an open canopy to the north side for additional vehicle storage.

DESIGN CRITERIA

Codes:

- IBC 2015 “International Building Code”
- IEBC 2015 “International Existing Building Code”
- 780 CMR: Massachusetts Amendments, 9th Edition
- ASCE 7-10 “Minimum Design Loads for Buildings and Other Structures”
- AISC Manual of Steel Construction 14th Edition
- ACI 318-14 “Building Code Requirements for Structural Concrete”
- ACI 530-14 “Building Code Requirements for Masonry Structures”
- MBM “Metal Building Systems Manual”

Design Load Criteria

Building Location: Shadbush Road, Nantucket, MA

Building Risk Category IV

- Dead Loads:
  - Actual Weight of Building Components
  - Collateral Load_____10 psf minimum
  - Solar Allowance_____8 psf

- Live Loads:
  - Office + Partition _____ 65 psf
  - Assembly Areas, Corridor, Stairs _____ 100 psf
  - Mechanical Areas _____ 250 psf
  - Storage Mezzanine _____ 250 psf
  - Vehicle Storage/Maintenance Area _____ 250 psf or HS-20
  - Roof _____ 20 psf
- Snow Load:
  - Ground Snow Load, Pg_____25 psf
  - Snow Importance Factor, Is _____ 1.2
  - Exposure Factor, Ce _____ 1.0
  - Thermal Factor, Ct
    - Main Buildings_____ 1.0
    - Open Canopies_____1.2
  - Terrain Category _____ C
    - Min. Flat Roof Snow Load, Pf_____25 psf
    - Design Snow Load_____25 psf + Drift
- Wind Load:
  - Exposure Category _____ C
  - 50-years MRI Wind Speed _____158 mph
  - Wind Directionality Factor, Kd _____ 0.85
  - Topographic Factor, Kzt _____ 1.0
  - Gust-effect Factor, G _____ 0.85
  - Internal Pressure Coefficient, GCpi _____ +/- 0.18
  - Minimum +Ve Wind _____ 20 psf
- Seismic Load***:
  - Spectral Acceleration Ss_____ 0.113
  - Spectral Acceleration S1_____ 0.047
  - Site Class_____ Assume D**
  - Fa _____1.6
  - Fv _____2.4
  - Sms, Sm1_____0.181, 0.113
  - Sds, Sd1_____0.121, 0.75
  - Seismic Design Category _____ C
  - *Note: Spectral Accelerations from ASCE Hazard Tool*
- Frost Depth _____ 4'-0''

Weston & Sampson Geotechnical Engineers will develop a geotechnical report indicating allowable soil bearing pressures and other geotechnical parameters.

**Geotechnical Report shall also indicate existing soil site class

***Seismic loading will govern from future 10th Edition Loading

Proposed Structures

The Nantucket DPW proposed scope of work includes the following:

1. New Storage & Shops Building: The proposed scope of work consists of the design and development of construction documents for the pre-engineered metal building vehicle storage building, shops, and exterior open canopy storage. The work included shall comprise of, but is not necessarily limited to, design and detailing of concrete spread footings and piers at building frame locations, continuous strip footing around the building perimeter, concrete slab-on-grade, exterior concrete knee walls, primary and secondary roof framing, lateral wind framing, portal frame and cross-bracing locations, steel framed mezzanine with a concrete slab on composite metal decking, and other various structural items. Structural will assist with other items such as standing seam metal decking, interior concrete masonry unit (CMU) walls, and locating interior drains.

   The assumed pre-engineered metal (PEMB) framed structure will consist of a shed roof with 2-1/2" on 12" slope from south to north. The PEMB roof will be standing seam metal roofing supported on cold formed steel purlins spanning between steel bent moment frames. The exterior walls of the building will be comprised of cast-in-place concrete knee wall to elevation 5'-4" and insulated metal panel siding supported by horizontal wind girts spanning from frame to frame. There will be a continuous concrete strip footing and foundation wall along the perimeter of the building areas with large spread footings and concrete piers at each frame column. An 8-inch reinforced concrete slab-on-grade will be designed to support the vehicle loading in the storage garage and will be designed to appropriately pitch to drains while minimizing areas of puddling. The slab-on-grade will be thickened at CMU wall locations, which will be provided by the Architects. A steel framed mezzanine will be located in the garage, comprised of a concrete reinforced deck on composite metal decking, supported by steel wide flange beams.

2. New Vehicular Maintenance & Wash Bay: The proposed scope of work for the Maintenance Garage consists of the design and development of construction documents for the pre-engineered metal building vehicle storage building, shops, and exterior open canopy storage. The work included shall comprise of, but is not necessarily limited to, design and detailing of concrete spread footings and piers at building frame locations, continuous strip footing around the building perimeter, concrete slab-on-grade, exterior concrete knee walls, primary and secondary roof framing, lateral wind framing, portal frame and cross-bracing locations, steel framed mezzanine with a concrete slab on metal composite decking, and other various structural items. Structural will assist with other items such as standing seam metal decking, interior concrete masonry unit (CMU) walls, locating interior drains, and structural support of industrial equipment.

   The assumed pre-engineered metal framed structure will consist of a monoslope roof with 1-1/2" on 12" slope. The PEMB roof will be standing seam metal roofing supported on cold formed steel purlins spanning between steel bent moment frames. The exterior walls of the building will be comprised of cast-in-place concrete knee wall to elevation 3'-4" and insulated metal panel siding supported by horizontal wind girts spanning from frame to frame. There will be a continuous concrete

strip footing and foundation wall along the perimeter of the building areas with large spread footings and concrete piers at each frame column. A 10-inch radiant heated reinforced concrete slab-on-grade will be designed to support the vehicle loading in the maintenance garage and will be designed to appropriately pitch to drains while minimizing areas of puddling. The slab-on-grade will be thickened at CMU wall locations, which will be provided by the Architects. A steel framed mezzanine will be located in the garage, comprised of a concrete reinforced deck on composite metal decking, supported by steel wide flange beams. Concrete foundations will be designed to support hydraulic vehicle lifts at locations as provided by the Industrial Engineers. The wash bay will consist of all hot-dipped galvanized steel.

3. Administration Building: The proposed scope of work for the Maintenance Garage consists of the design and development of construction documents for the pre-engineered metal building vehicle storage building, shops, and exterior open canopy storage. The work included shall comprise of, but is not necessarily limited to, design and detailing of concrete spread footings and piers at building frame locations, continuous strip footing around the building perimeter, concrete slab-on-grade, primary and secondary roof framing, lateral wind framing, portal frame and cross-bracing locations, steel framed mezzanine with a concrete slab on composite metal decking, and other various structural items. Structural will assist with other items such as standing seam metal decking, interior concrete masonry unit (CMU) walls, and locating interior drains.

   The assumed pre-engineered metal framed structure will consist of a long gable framed building sloping east to west with a center ridgeline. The building juts out to the west in two locations where there will be a hip and gable roof spanning perpendicular to the main building. The PEMB roof will be standing seam metal roofing supported on cold formed steel purlins spanning between steel bent moment frames. The exterior walls of the building will be comprised metal panels supported by cold formed metal stud framing, likely 8" deep. There will be a continuous concrete strip footing and foundation wall along the perimeter of the building areas with large spread footings and concrete piers at each frame column. A 6-inch reinforced concrete slab-on-grade will be designed to support the pedestrian traffic and office loading. The slab-on-grade will be thickened at CMU wall locations, which will be provided by the Architects.

4. Factors Yet to be Determined.

There are several factors that could affect the structural design that have not yet been determined, including, but not limited to the following:

- Soil investigations affecting the allowable bearing pressure, site class, water table and potential addition of ground improvements.
- Locations of utility penetrations into and exiting the building
- Locations of any MEP rooftop equipment, hoof hatches, other hung equipment from roof framing.
- Site grading issues/concerns including potential need for site retaining walls

Town of Nantucket
New Department of Public Works Facility
Schematic Design Submission

Schematic Design Narrative

Fire Protection

June 21, 2024

100 Foxborough Blvd., Suite 250, Foxborough, MA 02035
Tel: 508.698.3034

SCHEMATIC DESIGN NARRATIVE

Fire Protection

PROJECT: Nantucket, MA – Nantucket Department of Public Works

FROM: Fire Protection Team

DATE: June 21, 2024

SUBJECT: Schematic Fire Protection Design Narrative

---

1. PROJECT INFORMATION:

The new Nantucket DPW is located at Shadbush Road in the Town of Nantucket, MA. This building consists of an administration space made up of employee support spaces (locker rooms, lunch/training room, etc.), offices, vehicle storage, shops, vehicle maintenance bays and Wash bays. All spaces in the building will include complete code compliant fire sprinkler systems. The proposed project will be fully sprinkled in accordance with the Massachusetts building code and Massachusetts General Law. This schematic design narrative is prepared by Weston & Sampson Engineers, Inc. and shall be used as the basis of design. This document includes anticipated scope for the project as understood at the schematic design level. This document addresses systems to ten (10) feet outside the building but it does not address site utilities. The sprinkler system shall be installed in accordance with NFPA13 requirements. The building will be provided with a fire protection room that will be located in the administration area. The fire protection room shall be heated and conditioned in accordance with Massachusetts building code and NFPA 13. The new fire service shall be extended and fed from the town water main to the building in the fire protection room. The room will consist of a backflow preventer (Double Check Valve), two wet alarm check valves and one dry alarm check valve. One wet alarm check valve for sprinkler coverage in the administration part of the building, and another wet alarm check valve for the shops, workshops, and wash bay. The dry valve will be a part of the sprinkler system that will be used for sprinkler coverage in the vehicle storage area It is assumed at this time of design that the water main has adequate water flow and pressure that is required for sprinkler system demand, and a fire pump is not required. A flow test will be necessary in the following design stage to validate the assumption that a fire pump is not required.

2. CODES:

- Massachusetts State Building Code, 780 CMR, 9th Edition
- Massachusetts 527 CMR 1.00, 2021 Edition (State of Massachusetts Fire Safety Code).
- NFPA 1 - Fire Code
- NFPA 13 - Standard for the Installation of Sprinkler Systems
- NFPA 24 - Standard for the Installation of Private Fire Service Mains and Their Appurtenances

3. DESIGN BASIS:

a. Hazard Classification:

- Light Hazard: Such as corridors, bathrooms, office space, locker rooms.
- Ordinary Hazard Group 1: Storage (less than 8').
- Ordinary Hazard Group 2: Storage (up to 12'), vehicle maintenance, shops, and vehicle storage garage.
- Extra Hazard Group 1: Fluid Storage Room
- It must be ensured that no areas of storage exceed 12' and that no combustible material is stored in excessive quantities.

b. Minimum Density for Automatic-Sprinkler:

- Light Hazard: 0.10 gpm over 1500-sq. ft.
- Ordinary Hazard Group 1: 0.15 gpm over 1500-sq. ft.
- Ordinary Hazard Group 2: 0.20 gpm over 1500-sq. ft.
- Extra Hazard Group 1: 0.3 gpm over 2500-sq.ft. The room design approach can be used to determine the sprinkler demand in the fluid room, which includes a 2-hour fire-rated wall and a self-closing door.
- Design area shall be increased by 30% at the same design water density for dry sprinkler system.
- Total Combined Hose-Stream Demand Requirement: According to NFPA 13 unless otherwise indicated.

c. Maximum Protection Area per Sprinkler:

- Light Hazard: 225 sq. ft.
- Ordinary Hazard: 130 sq. ft.
- Extra Hazard: 100 sq. ft.

4. WATER SERVICES:

The 6" proposed fire protection water service shall be independent of the domestic water service

line and be extended from the water main and enter separately into the fire protection room through the floor slab. The new water service shall be AWWA C151 class 52 double cement lined, piping shall be UL listed and FM approved for fire service. Mechanical joint ductile-iron fittings shall be AWWA C110, ductile-iron standard pattern or AWWA C153, ductile-iron compact pattern. All joints shall be furnished with ductile retainer glans, flanges shall meet ASME 16.1, cast-iron, class to match pipe class rating. A through wall post indicating valve shall be provided, with fire department connection (FDC) and backflow preventer test drain. Hydrant locations shall be reviewed, if a hydrant is not located between 50' and 150' from the facility a new hydrant shall be provided that comply with NFPA 24 requirements.

5. DOUBLE CHECK ASSEMBLY:

UL listed, FM approved double check valve assembly shall be provided with outside stem and yoke (OSY) resilient seated gate valves. The backflow preventer shall be located in the fire protection room with code compliant clearance access to both the front and rear of the valve assembly.

6. FIRE DEPARTMENT CONNECTION:

One exterior Storz FDC termination fitting will be installed to provide auxiliary water supply for the building. The type and location of the fire department connection shall be coordinated with the local Fire department. A fire department connection signage shall be provided in accordance with NFPA 13 requirements. A four 4- inch grooved galvanized pipe with galvanized fittings shall connect the fire department connection with fire protection riser that is located in the fire protection room.

7. WET PIPE SPRINKLER SYSTEM:

The wet sprinkler system will be provided in the administration area, shops, vehicle maintenance garage and wash bay. A wet sprinkler pipe system shall be provided where the heating is sufficient to keep the temperature in the space above freezing temperature (32). Wet pipe sprinklers shall be quick response type, UL listed, and FM approved for their proper application. Pipe size equal or less than NPS 2, shall be Schedule 40 with threaded fittings. Pipe size NPS 2.5 to NPS 6 shall be Schedule 10 with grooved fittings, piping components shall be listed for 175 psig minimum working pressure. Valves shall be UL listed and FM approved, zone valves shall be indicating type butterfly valves with electronic supervision, fittings shall be ductile-iron, cast-iron flanges or grooved joint, with a 175-psig minimum pressure rating. Grooved-End-Pipe Couplings for Steel Piping: AWWA C606 and UL 213, rigid pattern, unless otherwise indicated, for steel-pipe dimensions. Include ferrous housing sections, EPDM-rubber gasket, and bolts and nuts. The alarm valve shall meet UL 193 and include trim sets for bypass, drain, electrical sprinkler alarm switch, pressure and gages. Inspectors test connections will be provided. Sprinklers shall meet UL's fire protection equipment directory listing or Approval Guide published by FM Global listing. Water flow indicators shall be installed on the wet sprinkler system, and it

shall meet UL 346, be electronically supervised, paddle operated, have a 250 psig pressure rating, and be able to be installed in the horizontal and vertical positions.

8. DRY PIPE SPRINKLER SYSTEM:

The dry system will be utilized in the vehicle storage garage. A UL-260 approved dry sprinkler valve with nitrogen generator, and appurtenances shall be provided in the fire protection room. The nitrogen generator shall come with an integrated air compressor that can restore the system pressure in less than 30 minutes. Pipe size equal to or less than NPS 2, shall be Schedule 40 with threaded fittings; pipe size NPS 2.5 to NPS 6 shall be Schedule 40 with grooved fittings. Valves shall be UL listed and FM approved. Sprinklers shall meet UL's Fire Protection Equipment Directory listing or Approval Guide published by FM Global listing. Sprinklers shall be UL listed quick response type. Dry pipe valve shall have a low/high supervisory pressure switch that provides a supervisory signal when the air/nitrogen pressure within the system is out of the design ranges that is required by NFPA13 and manufacturer instructions.

9. STORAGE AREA SPRINKLER COVERAGE:

Storage sprinkler coverage shall comply with NFPA 13. Individual areas shall be reviewed during design development phase, review shall include but not be limited to hazard and commodity classifications, density of storage, shelving type, depth, height, and flue space in accordance with NFPA 13.

Town of Nantucket
New Department of Public Works Facility
Schematic Design Submission

Schematic Design Narrative

Plumbing

June 21, 2024

100 Foxborough Blvd., Suite 250, Foxborough, MA 02035
Tel: 508.698.3034

SCHEMATIC DESIGN NARRATIVE

PLUMBING

PROJECT: Nantucket, MA – Department of Public Works

FROM: Plumbing Team

DATE: June 2024

SUBJECT: Schematic Plumbing Design Narrative

DESIGN BASIS:

New Nantucket Department of Public Works facility including Vehicle Maintenance Bays, Vehicle storage Vehicle Wash, Tire Storage, Fluids Room, Parts Storage, Administration Office, and Toilet/Locker Rooms.

The DPW will include complete code compliant plumbing systems. The plumbing systems will be designed to support the architectural layout including fixtures and equipment. The plumbing systems will be designed at the DPW to include domestic hot and cold water, non-potable cold water, tempered water, recirculated hot water, storm drainage, sanitary drainage and venting, oil waste drainage and venting, and compressed air systems.

This schematic design narrative is prepared by Weston & Sampson Engineers, Inc. and shall be used in conjunction with the Structural, Architectural, Fire Protection, HVAC, and Electrical schematic design documents. This document includes anticipated scope for the project as understood at the schematic design level. This document addresses sanitary/storm systems to ten (10) feet outside the building and water supply systems after utility meter. It does not address site utilities, surface layout and finishes, grading, planting, and irrigation.

DESIGN CRITERIA:

REFERENCED CODES & STANDARDS:

- The Massachusetts State Building Code, 780 CMR, 9th Edition
    - 2018 International Energy Conservation Code (IECC)
    - 2015 International Mechanical Code
- 248 CMR 10.00 Uniform State Plumbing Code
- 522 CMR 7.00 Air Tanks

DOMESTIC WATER SYSTEM DESCRIPTION:

The new domestic water service shall be extended from the water main on Shadbush Road and enter the facility in the FP/Plumbing room to a water meter, this work shall be done by the general contractor and the utility. Plumbing work shall start after the utility water meter where a new reduced pressure principal backflow preventer, pressure reducing valve (if required) shall be installed. Domestic cold water shall be distributed through out the new DPW facility as required to support the plumbing fixtures as shown on the Architectural Drawings.

A heat pump style hot water heater system shall be provided and located in the mechanical room. Hot water distribution and recirculation loops shall be distributed throughout the new DPW facility as required to support the plumbing fixtures shown on the Architectural Drawings. Domestic water equipment, piping and supporting appurtenances shall in installed in accordance with 248 CMR 10.00 Uniform State Plumbing Code. Isolation valves and drain valves shall be provided at each riser.

SANITARY DRAINAGE SYSTEM DESCRIPTION:

The new sanitary drainage system shall be connected to a new septic system.

A new oil water separator (OWS) shall be provided to service the floor drains located in the vehicle storage, shop areas, vehicle wash bay. The OWS shall be provided and sized in accordance with 248 CMR 10.00 Uniform State Plumbing Code. Discharge from the OWS will be plumbed to a tight tank and will not be plumbed to the new septic system.

STORM WATER DRAINAGE SYSTEM DESCRIPTION:

Storm water drainage is not required as all the roof drainage will be via gutters and downspouts piped to a drywell.

COMPRESSED AIR SYSTEM DESCRIPTION:

Compressed air shall be provided by a rotary scroll air compressor. Compressor shall feature a VFD, refrigerated air dryer, inline filtration down to 0.1 micron and oil water separator. A 120-gallon storage tank shall be provided. The compressed air intake shall be ducted to the outside for increased compression efficiency. Heat rejected by the air compressor shall be directed either into the space or outside controlled by a thermostat.

Compressed air drops shall be provided in vehicle maintenance, the workshops, and vehicle storage. Each drop shall include a filter, regulator, and lubricator with a drip leg.

DOMESTIC COLD WATER PIPING DISTRIBUTION:

Domestic cold-water connections shall be provided to all fixtures and equipment in accordance with applicable codes, as required based on the Architectural drawings. Domestic water piping shall be hard copper tube, Type L, ASTM B88 with pressure fittings. Cold water make-up will be provided to HVAC equipment as required with backflow preventers as outlined in 310 CMR 22: The Massachusetts Drinking Water Regulations.

DOMESTIC HOT WATER PIPING DISTRIBUTION:

Domestic hot-water connections shall be provided to all fixtures and equipment in accordance with applicable codes, as required based on the Architectural drawings. Domestic water piping shall be hard copper tube, Type L, ASTM B88 with pressure fittings. Hot water shall be generated via water-to-water heat pump water heaters. The hot water system shall be sized to accommodate the plumbing fixture load and safety shower eyewash stations.

The water shall be stored in the hot water storage tank at 140°F. Check valves, vacuum breakers, heat trap, circulator pumps and expansion tank shall be provided at the hot water heaters. Mixing valves serving handwash sinks shall be tempered to provide maximum 105°F water in accordance with CMR 248 10.00 Uniform State Plumbing Code.

SANITARY DRAINAGE PIPING DISTRIBUTION:

A single 6" sanitary main will collect all sanitary waste stacks, exit the facility at the lowest level and discharge into a septic system. Sanitary waste and vent branch connections will be provided for all plumbing fixtures including toilets, lavatories, urinals, showers, floor drains in mechanical rooms and toilet rooms and drinking fountains. All toilet room waste/vent stacks shall be coordinated to avoid exposed waste piping at the finished ceiling. Vent stacks shall start at the lowest level and exit the facility at the highest point of elevation.

Floor drains/trench drains located in the vehicle storage area, workshops, and wash bay shall drain to an outdoor oil water separator piped to a tight tank.

All floor drains shall be provided with automatic trap priming devices.

EMERGENCY STATIONS/EYEWASH:

Emergency stations/eyewash stations shall be provided in the workshops, fluids rooms, and vehicle maintenance. The water supply shall be 65°F tempered water with re-circulation. A local tepid water mixing valve shall be provided at each safety station, eyewash and handwash sink throughout the facility. Audio and visual alarms shall be provided at each station that will be tied into the building management system in case of activation.

FACTORS YET TO BE DETERMINED:

There are several factors that could affect the plumbing design that have not yet been determined. They are including but not limited to below:

- Locations of utility penetrations into and exiting the building.
- Location of floor drainage and septic system.

Town of Nantucket
New Department of Public Works Facility
Schematic Design Submission

Schematic Design Narrative

HVAC

June 21, 2024

100 Foxborough Blvd., Suite 250, Foxborough, MA 02035
Tel: 508.698.3034

SCHEMATIC DESIGN NARRATIVE

HVAC

PROJECT: Nantucket, MA – Department of Public Works

FROM: HVAC Team

DATE: June 2024

SUBJECT: Schematic HVAC Design Narrative

DESIGN CRITERIA:

Codes:

- The Massachusetts State Building Code, Ninth Edition
  - 2015 International Building Code
  - 2015 International Mechanical Code
  - 2021 International Energy Conservation Code / MA Stretch Energy Code
- ASHRAE Standard 62.1-2013 – Ventilation for Acceptable Indoor Air Quality
- Latest ASHRAE Fundamental Handbook.

DESIGN BASIS

New Nantucket Department of Public Works facility including Vehicle Maintenance Bays, Vehicle storage Vehicle Wash, Tire Storage, Fluids Room, Parts Storage, Administration Office, and Toilet/Locker Rooms.

The DPW addition will include complete code compliant HVAC systems. The HVAC systems will be designed to support the architectural layout and industrial equipment. The HVAC systems will be designed at the DPW to include heating, cooling, exhaust, and ventilation air systems.

This schematic design narrative is prepared by Weston & Sampson Engineers, Inc. and shall be used in conjunction with the Structural, Architectural, Fire Protection, Plumbing, and Electrical schematic design documents. This document includes anticipated scope for the project as understood at the schematic design level.

For the purposes of this report please note the following definitions.

HV or H&V – Heating & Ventilating - An air handling unit that provides outside air mixed with return air with a hot water heating coil. No cooling is provided, no exhaust air is provided.

HRU – Heat Recovery Unit - An air handling unit that provides 100% outside air with the use of a supply air fan, 100% exhaust with the use of an exhaust fan, an air-to-air heat transfer core (preventing cross contamination) to transfer sensible energy between the exhaust and outside air streams, hot water heating coil and chilled water cooling may be provided if called out.

ERU – Energy Recovery Unit - An air handling unit that provides 100% outside air with the use of a supply air fan, 100% exhaust with the use of an exhaust fan, an enthalpy energy recovery wheel to transfer energy and moisture between the exhaust and outside air streams (minor cross contamination possible), hot water heating coil and chilled water cooling may be provided if called out.

OUTDOOR DESIGN CONDITIONS

- Summer: 84.2°F DB / 72.8°F WB
- Winter: 9.6°F DB

Source: Based on ASHRAE 2021 Fundamentals Handbook Summer/Cooling 0.4% DB/WB and Winter/Heating 99.6% DB. Weather Station – Martha's Vineyard

INDOOR DESIGN CONDITIONS

Space Type	Summer Dry Bulb Occupied/Unoccupied (°F)	Summer RH (%)	Winter Dry Bulb Occupied/Unoccupied (°F)	Winter RH (%)
Vehicle Maintenance	**Not Controlled**	**Not Controlled**	**70/55 ± 5**	**Not Controlled**
Maintenance Office	**75/90 ± 5**	**Not Controlled**	**70/55 ± 5**	**Not Controlled**
Parts Storage	**Not Controlled**	**Not Controlled**	**65/55 ± 5**	**Not Controlled**
Fluids Room	**Not Controlled**	**Not Controlled**	**65/55 ± 5**	**Not Controlled**
Vehicle Wash Bay	**Not Controlled**	**Not Controlled**	**65/55 ± 5**	**Not Controlled**
Mechanical Rooms	**Not Controlled**	**Not Controlled**	**60/55 ± 5**	**Not Controlled**
Workshops	**Not Controlled**	**Not Controlled**	**70/55 ± 5**	**Not Controlled**
Administration office	**75/90 ± 5**	**Not Controlled**	**70/55 ± 5**	**Not Controlled**
Compressor Room	**85/85 ± 5**	**Not Controlled**	**55/55 ± 5**	**Not Controlled**
Electrical Rooms	**85/85 ± 5**	**Not Controlled**	**55/55 ± 5**	**Not Controlled**

OUTDOOR AIR VENTILATION:

Minimum outside air will be introduced as required by the greater of ASHRAE Standard 62.1-2013, International Mechanical Code 2015, or the requirement to make up exhaust air.

- Administration Area
  - Office spaces, Conference rooms
    - 5 CFM/Person
    - 0.06 CFM/SF
  - Corridors, Storage
    - 0.06 CFM/SF
  - Training rooms
    - 7.5 CFM/Person
    - 0.06 CFM/SF

    - Locker room
        - 0.25 CFM/SF (Exhaust)
- Vehicle Maintenance
    - 1 CFM/SF (Exhaust)
- Shops
    - 0.5 CFM/SF (Exhaust)
- Vehicle Wash Bay
    - 1 ACH (Exhaust-normal operation)
    - 0.75 CFM/SF (Exhaust-Purge operation)
- Parts & Tire Storage, Fluid Storage
    - 1 CFM/SF (Exhaust)
- Vehicle Storage
    - 0.05 CFM/SF (Exhaust-normal operation)
    - 0.75 CFM/SF (Exhaust-Purge operation)
- Mechanical Room, Plumbing/FP Room, Electrical Room
    - 0.12 CFM/SF
- Tel/Data Room, Scada Room
    - 0.06 CFM/SF

GEOTHERMAL SYSTEMS

The hot water heating and chilled water cooling systems will be accomplished by a water to water heat pump system with the use of geothermal wells located on the site. The geothermal system will be isolated from the heat pumps with the use of a stainless-steel plate and frame heat exchanger. There will be two different geothermal system types that are to be considered.

Base bid (Option 1)

The base bid geothermal system will be provided with a pump and dump approach utilizing ground water. Water is extracted from 5 – 200 foot deep wells pumped through a spin down filter then the heat exchanger thereafter sent to 5 – diffusion wells. The pumps will be located within each well utilizing multistage submersible well pumps. The ground water will not be treated with any sort of chemical/softener in order to maintain integrity of the ground water. The intention of the system is to put back the water in the same condition as it was extracted, with the only difference being a temperature change. The wells shall be located in landscaped areas within the parking lot or the site. It is anticipated that each well will yield approximately 30 tons of cooling.

Alternate Bid (Option 2)

The geothermal well system shall be a closed looped well system. This type of well system utilizes plastic piping embedded in concrete or a slurry that is contained within a well casing. Based on the anticipated load of the new DPW facility, 17 – 800 foot deep wells spaced approximately 30 feet apart are required. It is anticipated that each well will yield approximately 9 tons of cooling. The wells can be located in the parking lot. A set of pumps will be located within the mechanical room to circulate a 30% Propylene glycol solution through the plastic piping to all the wells to transfer the energy to the earth. The glycol solution can be circulated directly to the water-to-water heat pumps without use of a heat exchanger.

Heat Pump System

The load side of the heat pump system will be designed as a primary-secondary pumping system. The primary pumping system will circulate through the heat pumps and through three-way automatic diverting valves as a run around loop. The secondary systems shall be for the heating hot water system and chilled water system depending on the diverting valve position. This allows the heat pumps to operate in either heating or cooling mode depending on the outdoor air temperature but allow the flexibility of having separate four-pipe system for heating and cooling the building.

The primary heat pumps circulation system shall utilize a 30% propylene glycol solution as both heating and chilled water system will require freeze protection.

HOT WATER HEATING SYSTEM DESCRIPTION

The hot water heating system will be provided to the HVAC systems, from the heat pumps when they are in heating mode. The heating hot water will be pumped throughout the facility with the use of two (2) inline pumps with variable speed pump control, each pump will be sized for 100% capacity, one run, and one standby configuration for backup. Hot water piping will be distributed throughout the building to the air handling equipment (H&V unit heating coils, HRV unit heating coil, and unit heaters).

Radiant floor will be provided in the vehicle maintenance bays. A separate Inline pump will be provided with variable speed pump control and matched to the space load.

Miscellaneous heating will be provided using hot water unit-heaters for the mechanical rooms and unit-heaters for the miscellaneous rooms.

All hydronic equipment will have two-way modulating or on-off pressure independent control valves. The furthest unit (with a capacity to meet the minimum pump flow) will be provided with a 3-way control valve to maintain minimum flow through the pump. All flow control components will be in accessible locations for maintenance.

The heating hot water system shall utilize a 30% propylene glycol solution as it may be subjected to freezing temperatures.

CHILLED WATER HEATING SYSTEM DESCRIPTION

The chilled water system will be provided to the HVAC systems, from the heat pumps when they are in cooling mode. The chilled water will be pumped throughout the facility with the use of two (2) inline pumps with variable speed pump control, each pump will be sized for 100% capacity, one run, and one standby configuration for backup. Chilled water piping will be distributed throughout the building to the air handling equipment (ERU unit chilled water coil, and terminal cooling units).

All hydronic equipment will have two-way modulating or on-off pressure independent control valves. The furthest unit (with a capacity to meet the minimum pump flow) will be provided with a 3-way control valve to maintain minimum flow through the pump. All flow control components will be in accessible locations for maintenance.

The chilled water system shall utilize a 30% propylene glycol solution as it may be subjected to freezing temperatures.

WASH BAY SYSTEM DESCRIPTION

The vehicle wash bay will be served by a roof mounted heating and ventilating unit (HV) to provide heating and ventilation to the space. The HV unit will be comprised of the following main components: variable speed supply fan and hot water heating coil. The low-pressure supply ductwork from the HV unit shall run exposed with duct mounted supply grilles to supply conditioned air. The return air ductwork shall be installed along the perimeter of the space dropped down to 12" above the finished floor.

The wash bay will be served by two roof mounted exhaust fans. The first fan shall operate during normal conditions to relieve outdoor air introduced by the HV unit. The second fan shall operate during a purge mode triggered by the CO/NOX gas monitoring system. Ductwork shall be installed with duct drops along the perimeter of the space down to 12" above the floor.

All ductwork, hangers clamps etc. within the wash bay shall be aluminum and corrosion resistant.

VEHICLE MAINTENANCE AND STORAGE SYSTEM DESCRIPTION - (Tire Storage, Parts Storage, Fluids Room)

The vehicle maintenance area will be served by a roof mounted HRU to provide ventilation to the maintenance area, fluid storage room, and tire storage/parts room. The HRU will be comprised of the following main components: variable speed supply fan, variable speed exhaust fan, non-cross contaminating air-to-air plate frame heat exchanger, and hot water heating coil. The HRU shall only operate during occupied hours to maintain the ventilation requirements of the space. Low pressure supply ductwork shall be installed exposed within the space with duct mounted grilles to supply air. Low pressure exhaust ductwork shall be installed exposed within the space with duct drops along the perimeter down to 12" above the finished floor. The vehicle maintenance area shall also include source capture vehicle exhaust fans and hose reels, that can directly connect to a vehicle's exhaust.

The HRU fans will operate in two modes normal operation and purge mode. During normal operation, the fans shall operate at low speed via the variable frequence drives. Purge mode shall be enabled by the CO/NOX gas monitoring system, where the HRU fans shall increase speed to 100%.

The vehicle maintenance area will be heated by an in-floor radiant heating system. The radiant floor system will utilize hot water from the geothermal plant and multiple circuits with control valves and/or pumps to control water supply temperature to the floor loop to maintain the space temperature during occupied and unoccupied hours.

In addition to the HRU, the vehicle maintenance will be provided with a dehumidification unit (DHU). The DHU shall be a self-contained system with remote condenser. During purge mode or when the garage doors are open, the DHU shall be locked out to prevent operation.

The fluid storage room and tire storage/parts room will be served by dedicated exhaust fans and utilize ventilation air from the HRU as the source of make-up air. Hot water unit heaters will provide heat to each space.

High volume low speed destratification fans will be installed in the vehicle maintenance area to provide thermal comfort in the summer and shoulder seasons.

No mechanical cooling will be provided for any of these spaces.

CENTRAL FLEET OFFICE

The office will be cooled by a chilled water/hot water fan coil located within the space located above ceiling and ducted to the space with the use of low pressure ductwork and diffusers. Ventilation air will be provided to the space with the use of the HRU serving the vehicle maintenance area.

MECHANICAL ROOM, PLUMBING/FIRE PROTECTION ROOM, AND COMPRESSOR ROOM SYSTEM DESCRIPTION

The building utility rooms will be installed with hot water unit heaters to provide heating to each space. Ventilation will be provided to each space with an exhaust fan and outdoor air intake roof hood or wall louver.

The ventilation systems serving the compressor room will be sized to accommodate the heat rejection from the compressor. The exhaust fan shall for the compressor room will reject heat to the vehicle storage area or outdoors.

WORKSHOPS (FACILITIES, SIGN, PARKS/RECREATION, OPERATIONS)

Each workshop will be served by an HRU to provide ventilation and heat to the shop. The HRU will be comprised of the following main components: variable speed supply fan, variable speed exhaust fan, non-cross contaminating air-to-air plate frame heat exchanger, and hot water heating coil. The HRU shall only operate during occupied hours to maintain the ventilation requirements of the space. Low pressure supply ductwork shall be installed exposed within the space with duct mounted grilles to supply air. Low pressure exhaust ductwork shall be installed exposed within the space with duct drops along the perimeter down to 12" above the finished floor.

The HRU fans will operate in two modes normal operation and purge mode. During normal operation, the fans shall operate at low speed via the variable frequence drives. Purge mode shall be enabled by the CO/NOX gas monitoring system, where the HRU fans shall increase speed to 100%.

High volume low speed destratification fans shall be installed with each shop area to provide thermal comfort in the summer and shoulder seasons.

VEHICLE STORAGE

The vehicle storage area will be served hot water unit heaters to provide heating to the space during normal ventilation operation.

The vehicle storage area will be served by two sidewall exhaust fans. The first fan will be installed to operate during normal operation to provide ventilation air. The second fan shall operate during a purge mode triggered by the CO/NOX gas monitoring system. During this mode, the unit heaters shall be de-energized, until normal operation resumes.

High volume low speed destratification fans shall be installed with each shop area to provide thermal comfort in the summer and shoulder seasons.

ELECTRIC ROOM SYSTEM DESCRIPTION

A small electric unit heater will be provided to heat the space. A new exhaust fan sized to cool and ventilate the space will be provided.

ADMINISTRATION OFFICE SYSTEM DESCRIPTION

The administration area will be served by fan coil units with hot water and chilled water coils to provide heating, cooling, and an indoor energy recovery unit (ERU) to provide ventilation to the spaces. The ERU will be comprised of the following main components: variable speed supply fan, variable speed exhaust fan, chilled water coil, hot water coil, and energy wheel heat recovery. The energy recovery exhaust fan will be provided with the ERU to relieve the minimum ventilation air introduced during normal operation and during economizer operation. The ERU will be capable of 100% economizer operation and will be controlled based on the comparison between return air and outdoor air enthalpy (dual enthalpy).

The spaces served by the ERU will be controlled by single duct VAV terminal units to provide space demand ventilation based on CO2 levels. Low pressure supply ductwork downstream of the VAV terminal units will deliver air to the fan coil units. The VAV terminal units will be configured to serve individual or multiple spaces depending on the space usage and building exposure.

The ERU exhaust fan will serve the locker rooms, janitor closet, break rooms, etc. The main building vestibule will be heated by a hot water cabinet unit heater. The tel/data room will be served by a dedicated ductless split-system with an indoor wall mounted air conditioning unit and an outdoor condensing unit.

AUTOMATIC TEMPERATURE CONTROL SYSTEM DESCRIPTION

General

- Complete system as manufactured and installed by approved vendors to control and monitor processes as desired.
- Provide power for all control equipment.
- Provide power for all fire dampers, open/closed position monitoring, and interface coordination with fire alarm system. Dampers will be provided by Mechanical Contractor.

Controls

- Direct digital controls from the desired manufacturer and installer will be provided throughout the buildings and will interface to the facility head end.
- All rooms will be individually controlled for maximum user comfort using wall-mounted thermostats.
- All other spaces with dedicated heating and/or cooling will be individually controlled using wall-mounted thermostats.
- Local user controllability set-point adjustment of +/- 2°F will be provided.
- All unit heaters will be individually controlled using wall-mounted thermostats.

DISTRIBUTION SYSTEMS

Ductwork

- In accordance with SMACNA standards.
- Supply, Return, Exhaust, and Outdoor Air:
    - Galvanized sheet metal.
    - Aluminum in all wet environments.
- Supply duct 2-inch W.C. pressure, seal Class A.
- Outdoor air duct 2-inches W.C. negative pressure, seal Class B.
- Return air duct 2-inches W.C. negative pressure, seal Class B.
- General air duct 2-inches W.C. negative pressure, seal Class B.
- Shower Exhaust: Aluminum - minimum 25' from inlet.
- Vehicle Wash Duct: Aluminum, 2-inches W.C.
- General air duct 2-inches W.C. negative pressure, seal Class A.
- Duct Sizing:
    - Supply: 0.08"/100 LF friction drop.
    - Outdoor Air: 0.08"/100 LF friction drop.
    - General Exhaust Air: 0.1"/100 LF friction drop.
- 45-degree branch takeoffs with volume damper for all secondary supply, return and exhaust.
- Architectural supply and exhaust grilles for special function type rooms.
- Duct leakage testing.
- Externally insulated (supply and outdoor air) with 1-1/2" fiberglass and all service jacket (ASJ).
- Acoustically line the first 20 feet of inlet and outlet ductwork of all air handling units and exhaust fans.
- All Aluminum ductwork pitched at 1/4" per foot toward exhaust inlet.

Hot/Chilled Water

- 2" and Smaller: Type "L" copper with 95/5 soldered, threaded, or pressed fittings and valves ends may be used for hydronic systems.
- 2-1/2" and Larger: Schedule 40 black steel piping threaded or flanged fittings and valves ends may be used for hydronic systems.
- Externally insulated with fiberglass insulation, with ASJ and vapor barrier may be used for hydronic.

Refrigerant Piping

- Type ACR copper with brazed fittings and valves ends may be used for refrigerant systems.
- Externally insulated with closed cell foam insulation will be used for refrigerant systems.
- Externally with PVC jacketing will be used for all outdoor refrigerant systems.

MISCELLANEOUS

- Equipment efficiencies will meet ASHRAE 90.1
- Vibration isolation.
- Seismic restraint.
- Test and balance per NEBB or ABCC standards, all new and modified existing systems. Test and balancing will be required for each phase with a final T&B procedure for the entire building upon completion of all phases.

FACTORS YET TO BE DETERMINED

There are several factors that could affect the HVAC design that have not yet been determined. They are including but not limited to below:

- Heat loads of electric room equipment.
- Heat loads from air compressor.
- Heat loads to determine final boiler capacities.
- Special system for the workshops.
- Wash bay equipment room.

Town of Nantucket
New Department of Public Works Facility
Schematic Design Submission

Schematic Design Narrative

Electrical

June 21, 2024

100 Foxborough Blvd., Suite 250, Foxborough, MA 02035
Tel: 508.698.3034

SCHEMATIC DESIGN NARRATIVE

ELECTRICAL

PROJECT: Nantucket, MA – Department of Public Works

FROM: Electrical Team

DATE: June 2024

SUBJECT: Electrical Schematic Design Narrative

Codes & Standards

- The Massachusetts State Building Code, Ninth Edition
  - 2021 International Building Code
  - 2021 International Energy Conservation Code
  - 2023 Massachusetts Stretch Energy Code
- The 2023 National Electric Code with Massachusetts Amendments
- NFPA 101 - Life Safety Code

Project Information

Normal Power Distribution

- The building will be served by an 1200Amp 480/277V 3phase, 4-wire distribution panel which will house the breakers to serve the large mechanical and trade equipment as well as breakers to feed localized branch circuit panelboards.
- 120/208V branch circuit panels shall be located within the electrical room, Vehicle Maintenance, Shops, Wash Bay equipment room and remote Salt Shed. 120/208V panels shall be fed from the main distribution panel via dry type transformers

Standby Power

- A new 400KW, 480V, 3-phase, 4-wire exterior diesel fired standby generator will be provided to provide 100% backup power to the facility. The generator shall be located in an exterior level 2 sound attenuated enclosure. The new generator will feed into the system via an automatic transfer switch located in the main electric room.

Site

- Power and communications are anticipated to be connected to a new utility pole located on the property. Power will be run from the utility pole to a pad mounted transformer via an underground concrete encased ductbank system. Communications will run from the pole to the server room inside the building via a concrete ductbank system.
- Exterior illumination shall be provided utilizing building mounted light fixtures, supplemented with pole mounted LED lighting fixtures with full cut-off and house side shields. Additional wall mounted lights shall be provided at all exterior doors to meet building code egress lighting requirements. Exterior emergency lighting shall be by LED emergency drivers within the fixtures to provide the required emergency illumination from the building to the public way. Exterior fixtures shall be controlled via photocell and through the lighting control system.

Administration and Admin Support / Employee Facilities Areas

- Spaces shall include communication support infrastructure including back boxes and raceways (conduit) throughout the space to facilitate installation of voice/data wiring. Locations and quantities shall be as determined by the Town. Raceway shall extend from the back boxes through the wall cavity up to the ceiling space above. The raceway shall be turned toward the center of the room and shall be terminated with an insulating bushing. All wiring will be run in cable trays or J-hooks from a dedicated telephone / data room to each drop. Provisions for a wireless system shall be incorporated into the building accordingly. Server/IDF rooms shall be located to minimize the wiring runs to 300 feet or less.
- In general, lighting in enclosed offices, open offices, kitchen, conference room and training rooms shall consist of LED recessed fixtures. All fixtures shall be equipped with dimming ballasts. In open office and training areas the row of fixtures closest to the windows shall be provided with ambient daylight dimming ballasts allowing that row of fixtures to dim or brighten based upon the amount of day light entering the space. Occupancy sensors shall control the on-off function of the lights. Dimming switches shall be provided in each space to override the 'on/off' function of the fixtures allowing manual on/off setting of the lights and to allow for multiple light levels or in the event of a desire to have the fixtures off.
- Utility and mechanical spaces shall be provided with industrial LED light fixtures. Light fixtures shall be controlled with manual on/off switching.
- Spaces shall be provided with emergency fixtures. Emergency fixtures shall be equipped with LED emergency drivers. Quantity of fixtures required to have emergency LED drivers shall maintain 1 foot-candle (FC) average during emergency operation.
- The corridor fixtures shall be controlled by area occupancy sensors.
- Toilet rooms shall be provided with recessed LED Fixtures. At least one fixture in toilet rooms shall be equipped with an emergency LED driver. Toilet room lights shall be controlled by area occupancy sensors.

Trade Shops

- Lighting shall be high output LED pendant mounted light fixtures with protective wire guards or lenses. Light fixtures shall be controlled via a lighting control panel with manual override switches. Emergency fixtures shall be equipped with LED emergency drivers.

- Shops shall include a carbon monoxide (CO) and Nitrogen Dioxide (NO2) detection system to monitor the space and provide exhaust system override/activation and alarm locally and to the direct digital control (DDC) system operator workstation(s) if space CO and /or NO2 levels exceed OSHA and ASHRAE Standard 62.1-2004 acceptable levels. A separate CO detector wired to the fire alarm system will be provided in these spaces to monitor and alarm if carbon monoxide levels reach a certain point.
- Shops shall be accessible via overhead sectional doors and personnel doors. Overhead doors shall be electrically operated and shall include the following components:
    - Motor Operator:
    - Remote-Control Station: Momentary-contact three button control station with push button controls labeled “Open”, “Close”, and “Stop.
    - Obstruction Detection Device: Photoelectric sensor and automatic safety sensor edge.
    - Limit Switches: Adjustable switches interlocked with motor controls and set to automatically stop door at fully opened and fully closed positions.

Vehicle Maintenace Area

- Lighting shall be high output LED pendant mounted light fixtures with protective wire guards. Light fixtures shall be controlled via a lighting control panel with manual override switches. Emergency fixtures shall be equipped with LED emergency drivers.
- Shops shall include a carbon monoxide (CO) and Nitrogen Dioxide (NO2) detection system to monitor the space and provide exhaust system override/activation and alarm locally and to the direct digital control (DDC) system operator workstation(s) if space CO and /or NO2 levels exceed OSHA and ASHRAE Standard 62.1-2004 acceptable levels. A separate CO detector wired to the fire alarm system will be provided in these spaces to monitor and alarm if carbon monoxide levels reach a certain point.
- Shops shall be accessible via overhead sectional doors and personnel doors. Overhead doors shall be electrically operated and shall include the following components:
    - Motor Operator:
    - Remote-Control Station: Momentary-contact three button control station with push button controls labeled “Open”, “Close”, and “Stop.
    - Obstruction Detection Device: Photoelectric sensor and automatic safety sensor edge.
    - Limit Switches: Adjustable switches interlocked with motor controls and set to automatically stop door at fully opened and fully closed positions.

Vehicle Storage Area

- Vehicle Storage areas shall be provided with high output LED pendant mounted light fixtures with protective wire guards or lenses. Light fixtures shall be controlled via a lighting control panel with manual override switches. Emergency fixtures shall be equipped with LED emergency drivers.
- Vehicle Storage Area shall be accessible via overhead sectional doors and personnel doors. Overhead doors shall be electrically operated and shall include the following components:

  - Motor Operator:
  - Remote-Control Station: Momentary-contact three button control station with push button controls labeled “Open”, “Close”, and “Stop.
  - Obstruction Detection Device: Photoelectric sensor and automatic safety sensor edge.
  - Limit Switches: Adjustable switches interlocked with motor controls and set to automatically stop door at fully opened and fully closed positions.
- Vehicle storage area shall include a carbon monoxide (CO) and Nitrogen Dioxide (NO2) detection system to monitor the space and provide exhaust system override/activation and alarm locally and to the DDC system operator workstation(s) if space CO and /or NO2 levels exceed OSHA and ASHRAE Standard 62.1-2004 acceptable levels. A separate CO detector wired to the fire alarm system will be provided in these spaces to monitor and alarm if carbon monoxide levels reach a certain point.

Washbay Area

- Lighting shall be weather resistant high output LED pendant mounted light fixtures with protective wire guards or lenses. Light fixtures shall be controlled via a lighting control panel with manual override switches. Emergency fixtures shall be equipped with LED emergency drivers.
- Shops shall include a carbon monoxide (CO) and Nitrogen Dioxide (NO2) detection system to monitor the space and provide exhaust system override/activation and alarm locally and to the direct digital control (DDC) system operator workstation(s) if space CO and /or NO2 levels exceed OSHA and ASHRAE Standard 62.1-2004 acceptable levels. A separate CO detector wired to the fire alarm system will be provided in these spaces to monitor and alarm if carbon monoxide levels reach a certain point.
- Shops shall be accessible via overhead sectional doors and personnel doors. Overhead doors shall be electrically operated and shall include the following components:
  - Motor Operator:
  - Remote-Control Station: Momentary-contact three button control station with push button controls labeled “Open”, “Close”, and “Stop.
  - Obstruction Detection Device: Photoelectric sensor and automatic safety sensor edge.
  - Limit Switches: Adjustable switches interlocked with motor controls and set to automatically stop door at fully opened and fully closed positions.

Additional Considerations

- The maintained foot-candle illumination levels will be in compliance with the values listed in the Illumination Engineering Society of North America handbook. Average lighting foot candle levels will be as follows.
  - Enclosed Office Spaces: 40-50fc
  - Conference and Training Rooms: 30-50fc
  - Corridors: 10-20fc
  - Electrical, Mechanical, Storage Rooms: 30fc.
  - Shops: 50-70fc

  - Vehicle Maintenance Areas: 50-70fc.
  - Washbay: 50fc
  - Vehicle Storage: 30fc
  - Exterior: 1/2-1fc

- All spaces shall have voice and data capabilities.
- 50% of outlets within Enclosed office space, open office space, conference rooms and training rooms shall be automatically switched via local occupancy sensors to meet the latest energy code.
- Fire Alarm system shall be an addressable system. All spaces shall be equipped with fire alarm devices as required by code and the local Fire Department.
- The building shall contain exit signage as necessary to direct occupants to the available egress locations of the facility. Exit signs shall be LED with self-contained batteries and charger.
- All spaces shall be equipped with the appropriate power to support the operations. Receptacles shall be located in workspace and office spaces to serve the equipment located in those spaces. Locations shall be based upon the intended furniture/equipment arrangement. Corridors shall be provided with receptacles at intermediate locations to support floor-cleaning equipment. Toilet rooms shall be provided with a GFI type receptacle adjacent to the vanities. All spaces other than small closets shall be provided with at least one duplex receptacle. Maintenance bays shall be equipped with a minimum of 6 receptacles per bay in addition to specialty power required to support the industrial equipment. Trade shop areas shall be equipped with a minimum of 4 outlets per bay in addition to specialty power required to support trade shop equipment. Kitchenette areas shall be provided with necessary power to support the equipment installed.
- Empty conduits and backboxes shall be provided for owner furnished access control system and security system.
- Each Tel/Data room will be provided with a 4-post rack and patch panels. All other head end equipment shall be furnished by the owner.

4. Appendix

Town of Nantucket
New Department of Public Works Facility
Schematic Design Submission

Appendix

A. Zoning and Permitting Memorandum

June 21, 2024

55 Walkers Brook Drive, Suite 100, Reading, MA 01867
Tel: 978.532.1900

MEMORANDUM

TO: Andrew Patnode, Director, Nantucket Department of Public Works

FROM: Weston & Sampson, Inc.

DATE: June 21, 2024

SUBJECT: Schematic Design: 1 Shadbush Road, Zoning and Permitting Analysis Memo

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SITE INFORMATION:

Parameter	Information	Notes:
Site Address:	1 Shadbush Road	
Map/Lot:	78/5	
Size (acres):	27 AC	
Zoning District	LUG-3	
Book/Page:	00062/0170	

ZONING INFORMATION:

Zoning District: Limited Use General 3 (LUG-3)

Zoning Map Date: May 26, 2023

Zoning By-Law Date: legislation through 06-27-2022

Overlay Districts:

District	Applicable	Notes:
Town Overlay District (TOD)	No	
Country Overlay District (COD)	Yes	
Formula Business Exclusion Overlay District (FBED)	No	
Mid-Island Planned Overlay District (MIPOD)	No	
Village Height Overlay District (VHOD)	No	

Nantucket Cottage Hospital Overlay District (NCHOD)	No	
Public Wellhead Recharge District (PWED)	No	
Flood Hazard Overlay District (FHOD)	No	
Harbor Overlay District (HOD)	No	
Solar Energy Overlay District (SEOD)	No	

DIMENSIONAL REGULATIONS:

DIMENSION	Required	Notes:
Minimum lot size (square feet)	120,000	
Front setback	35	
Side/Rear setback	10	
Minimum frontage	20	
Ground Cover Ratio	3%	
Building Height	30*	***38FT allowable with special permit**

PERMITTING SUMMARY:

1) Site Plan Review (SPR), Nantucket Planning Board
   - Required prior to the issuance of any building or use permit. *Per Zoning Section 139-23.A.*
   - When submitting in adjacent with (MCD) special permit, a stormwater management plan and traffic analysis is required. *Per Zoning Section 139-23.B.2.*

2) **TBD** - Major Commercial Development (MCD) Permit, Nantucket Planning Board
   - Not required if the project is permitted separately from future use of the Nantucket's Hunting Association shooting range.

3) Certificate of Appropriateness, Nantucket Historic District Commission
   - Required building permit application for exterior architectural features to be approved by a certificate of appropriateness issued by the Nantucket Historic District Commission. *Per Zoning Section 124-8.*

Permitting to be completed by Avalon Consulting Group:

- MESA Project Review, Massachusetts Endangered Species (MESA)
- Conservation & Management Permit, Natural Heritage & Endangered Species Program (NHESP)
- Expanded Environmental Notification Form (ENF)

UTILITY NOTES:

1) The nearest sewer is a gravity main by the post office on Old South Road. Shortest routing of a force main to that point requires running new pipe down Shadbush Road, up Industry Road, across a portion of Bunker Road, and then cross country through an apparent, unimproved town R.O.W. corridor crossing a field abutting the north end of the airport's runway. Total length is approximately 4,600 LF. On-site septic may be more feasible for the proposed facility. If desired, additional considerations can be made for siting and sizing a single septic system on the parcel for multiple users which provides an option for other development on the site (such as the proposed firing range facilities) to tie into it later.

2) The nearest water main and hydrant are mapped on Bunker Road. However, other developments are present on Industry and Shadbush Roads which may already have a community water service line to them. Recommend getting confirmation from the town's water department to determine if there is other existing infrastructure present under those roads that the site can utilize. Otherwise, routing for a new water service can be directed to the southwest end of site through Industry Road and then Shadbush Road (approximately 1,900 LF). Further geotechnical study is required to assess whether groundwater wells are a feasible alternative.

3) No overhead wires or poles are visibly present along Bunker Road as of available Google street view imagery from November, 2019. This suggests primary power service lines run underground to this end of the island. More information will be needed from town or National Grid on the availability, phase, and nearest location of primary power service lines. The Nantucket Energy Office has partnered with National Grid on a special 7-year "Non-Wires Alternative" (NWA) pilot project to investigate whether customer-side technologies can be implemented in a targeted way to achieve sustainable load reductions, possibly reducing the amount of backup diesel generation needed and potentially deferring any future plans to construct an additional cable from the mainland. The pilot project was launched in 2015, with the initial phase focusing on a set of exclusive energy efficiency incentives for Nantucket customers. Recommend further discussion of program details and energy options for the future facility with the town during schematic design development.

4) From the Nantucket Energy Office…

> *"Diesel and gasoline are supplied to Nantucket via barges, which offload to a tank farm in the downtown area for storage and distribution to facilities around the island roughly 11 times every year to meet demand, whereas propane and aviation fuel must reach the island via tanker trucks transported over on freighter lines operated by the Steamship Authority, which is the only company providing transportation for vehicles to Nantucket. Yet due to the hazardous nature of the cargo, voyages made with a propane truck aboard cannot transport any other vehicles or passengers. This results in an exceptionally high rate for propane, which is used in lieu of residential natural gas on Nantucket" (http://www.ackenergy.org/brief-history-of-energy-on-nantucket.html).*

GENERAL NOTES:

1) This zoning and permitting analysis review does not include construction permits such as Building, Electrical, Demo permits, etc.

2) The entire parcel is located within the NHESP Priority Habitats of Rare Species and the eastern portion of the parcel is located within the NHESP Estimated Habitats of Rare Wildlife. See above for a list of permits that Avalon Consulting Group will prepare for these resource areas.

3) This parcel is **not** located within the FEMA Flood Hazard Zone.

4) This parcel will require a subsurface septic system. It will need to be determined if the proposed septic system should be oversized to accommodate a future "shared site system" with the Nantucket Hunter's Association.

5) This parcel does not have a water service connection. The nearest hydrant and water main is located on Bunker Road.

6) A small portion of the bottom of the parcel is located within Nantucket's "Wind Debris Impact Zone." No related rules, regulations, or standards were identified in the town's bylaws regarding development within this zone. Recommend seeking additional information from the town to verify their performance standards or other requirements for development in this zone.

7) The Environmental Receptor Map shows an intermittent stream to the eastern side of the parcel. *Per Zoning Section 390-22,* The Nantucket Wetlands Protection regulations **does not** classify intermittent streams as rivers that requires a 200-foot riverfront resource area.

8) There is an unpaved local trail that runs throughout the property. Recommend discussing options with town to reroute the trail.

9) **TBD:** The Nantucket DPW Facility Project is intended to share the parcel with the Nantucket Hunter's Association (NHA) proposed shooting range as a "shared site."

   - Trap field shot fall zone and range construction shall comply with the NRA Range Source Book 2012. See Detail C32 for required trap field dimensions.

   - The Nantucket Hunter's Association (NHA) was working with LEC Environmental Consultants, Inc. to prepare the Conservation and Management Permit Application submittal to NHESP. The draft was dated April 7, 2021, for the previous shooting range layout. This permit application will need to be updated for the DPW/Shooting Range shared site layout.

   - The shot fall curtain can have a height to approximately 39 feet (50-foot poles buried 8-10 feet deep) which will require certain local regulation permits. The Town may consider this structure as a fence, golf course, driving range, recreational facilities etc.

DESIGN AND PERMITTING CONSIDERATIONS:

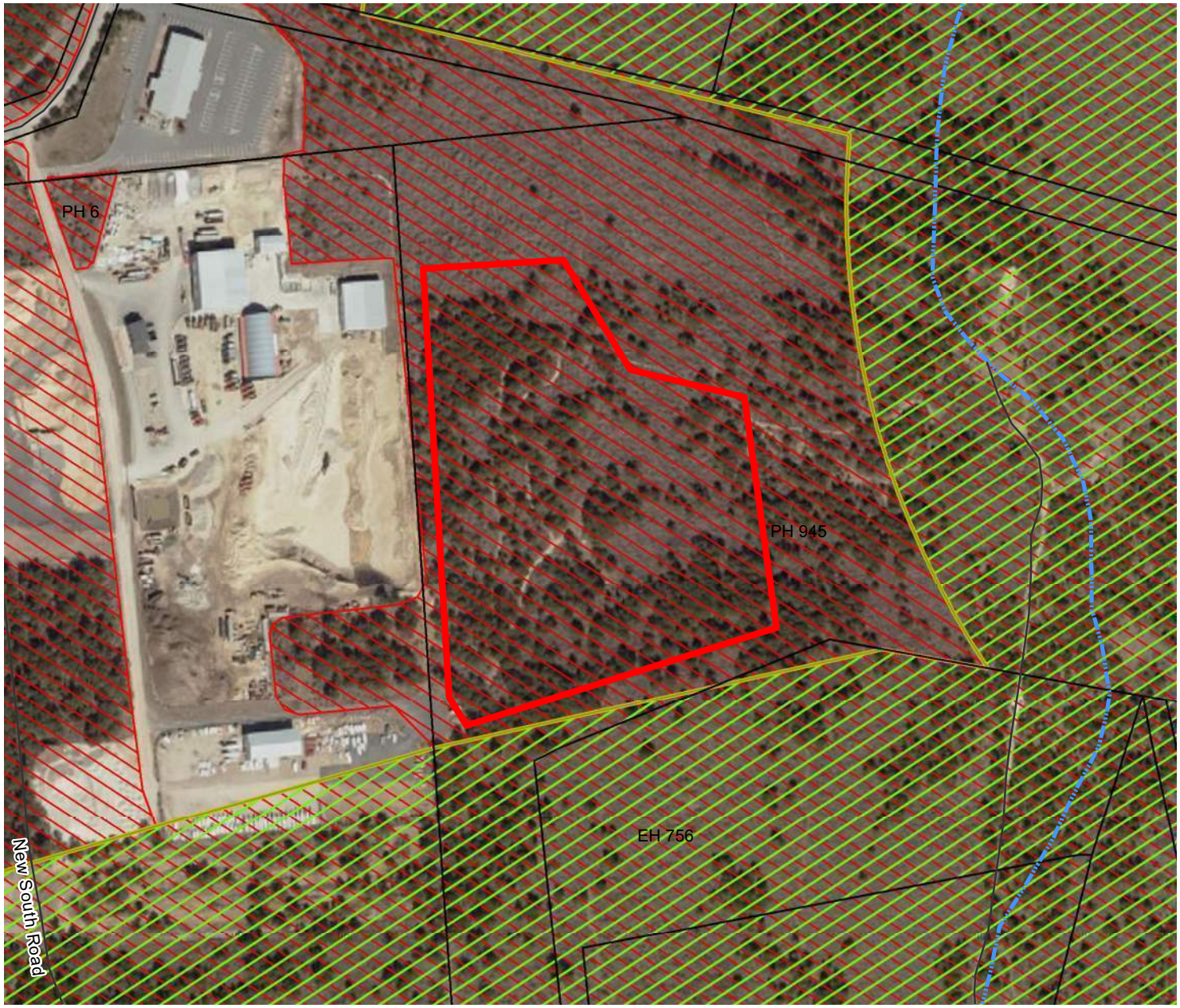
NANTUCKET BYLAWS:

ARTICLE IV Certificates of Appropriateness, Etc	
124-8 Construction conditioned on approval	
Pursuant to Section 9(g) of the Nantucket Historic District Act (Chapter 395, Acts of 1970, as amended, hereinafter referred to as the "HDC Act"), no building or structure shall be constructed or altered within the Nantucket Historic District as defined in Section 4 of the HDC Act in any way that affects its exterior architectural features, unless and until either:	Yes, HDC approval Required for building permit
A. An application for a building permit shall first have been approved as to exterior architectural features, which approval shall be evidenced by a certificate of appropriateness issued by the Nantucket Historic District Commission; or	
Chapter 135 Fuel Storage Tanks	
135-2. Aboveground fuel storage tanks	
B. All new construction where aboveground fuel storage tanks are installed (inside and outside) shall be required to provide a double-walled fuel oil storage tank or shall be required to provide 110% containment capacity to prevent contamination from leaks that may occur.	Fuel storage tank design requirements
Chapter 139 ZONING	
139-7A Attachment 2 Town of Nantucket Use Chart	
Any Municipal use is allowed in LUG3	Municipal Uses allowed
139-11 Major Commercial Development MCD	
A. The Planning Board shall be the special permit granting authority for any “major commercial development” (or “MCD”).	
B. A MCD shall be defined as a single commercial structure or use, or a group of commercial structures or uses, which is proposed to be constructed on a single lot or tract of land or on contiguous tracts of land and held in common ownership or control, meeting, in the aggregate, any one or more of the following criteria:	MCD is required for Nantucket Hunter’s Association (NHA) site (DPW should have municipal exemption)
(1) Five thousand square feet of commercial use, including, but not limited to, the total of the following:	
(a) Gross floor area of commercial use, including roofed-over storage areas;	
(b) Outdoor commercial use, including but not limited to sand, gravel or topsoil borrow operations and asphalt plants; land used commercially for recreation; and land used for the exterior storage or display of merchandise, equipment or material.	
E. Open area for major commercial developments. (1) Except for lots located within the CDT District, a minimum of 20% of the lot(s) shall be landscaped and maintained as open area.	20% Open Space Design requirement
139-12 Country Overlay District (COD)	

139-12.B.(2) The purpose of the Country Overlay District shall be considered by the Planning Board or Zoning Board of Appeals when determining the character and extent of site and infrastructure improvements to be required in a decision on an application for site plan approval pursuant to § 139-23 of this chapter.	
139-16 Intensity Regulations	
B. Exceptions for frontage (1) The Board of Appeals may grant a special permit reducing the minimum frontage required in commercial districts to no less than 20 feet, provided that the use or structure on the lot to be granted such a reduction is a commercial use or structure and that such reduction in frontage will not be substantially more detrimental to the neighborhood.	
E. Open area (4) For major commercial developments, the open area requirement (20%) is set forth in §139-11E above.	20% Open Space Design requirement
139-17 Height Limits	
139-17. A Country Overlay District (LUG-3) Maximum Height 30 feet Notes: With a special permit allowance to 38 feet	Maximum Height Requirement
139-18 Off-street Parking Requirements	
B. Parking requirements Commercial industrial and industrial uses, as specified in the "use chart" in §139-7A (1 for each 900 square feet of gross floor area)	Parking Requirements: There is no category for "municipal use," so commercial industrial appears to be the closest category
139-20.1 Driveway Access	
B. Regulation of Driveway Access (1) No more than one driveway access shall be allowed on a lot. However, the Planning Board may grant a waiver to allow two or more driveway accesses in accordance with §139-20.1C	PB Wavier required if a second site entrance is required
139-23 Site Plan Review (SPR)	
A. This Site Plan Review (SPR) Bylaw is enacted under authority of MGL c. 40A for the purposes of protecting the health, safety, convenience, and general welfare of the inhabitants of the Town of Nantucket, and to ensure compliance with this chapter. SPR is required prior to the issuance of any building or use permit	Yes, Site Plan Review (SPR) required.
B. (2) Additional requirements for major SPR in Connection with a Major Commercial Development (MCD) special permit or a use permit for a project within the Nantucket Cottage Hospital Overlay District (NCHOD) where expansion of the standards established in § 139-16 is requested shall include the following information:	MCD will be submitted with SPR for NHA
(a) Storm drainage system details, including existing and proposed stormwater drainage systems and associated storm drainage calculations;	SW Management Plan is required.

(b) A traffic study, prepared by a Professional Engineer specializing in traffic analysis, identifying internal vehicular circulation patterns; estimated daily and peak hour vehicle trips, generated by the existing use (if applicable), or from the proposed use of the site; the measured daily and peak-hour traffic flows both weekday and weekend (non-holiday), measured during the period between June 15 and September 15, on public and private roads and key intersections expected to be impacted by the project; proposed composite daily and peak-hour traffic on public and private roads and key intersections; a documentation of impacts on level of service; and suggested remedial measures to mitigate the expected impacts of the proposed development.	Traffic Study is required.
327 SEPTIC SYSTEMS	
327-1 Submitted Septage plans	
A submitted septage plan shall show, as a minimum, the lot to be served, location and dimensions of the system (including reserve area), design calculations, existing and proposed contours, location and log of deep observation hole, location and results of percolation tests, approved soils analysis forms, locations of any wetlands, all known sources of water supply within 200 feet of the soil absorption system, location of any proposed potable water supply well to serve the lot, location of water lines on the property, maximum groundwater elevation in the area of the soil absorption system and a profile of the system. The plans shall be prepared by a professional engineer or other professional authorized by law to prepare such plans.	Proposed Septic Plans Required
390 WETLANDS PROTECTION	
390-22 Riverfront Area	
A.(1) Rivers begin at the point an intermittent stream becomes perennial, discharging throughout the year.	intermittent stream definition
A301 SPECIAL ACTS	
A301-4 Historic District Commission.	
"Exterior architectural features," such portions of the exterior of a building or structure, including the size and shape of proposed buildings and structures described in subsection (b) of section 9, as are open to view from a beach, a public way, a traveled way, a street or way shown on a land court plan or shown on a plan recorded in the Registry of Deeds, a proprietor's road, a street or way shown on a plan approved and endorsed in accordance with the Subdivision Control Law, a public park or a public body of water, and shall include but not be limited to, the architectural style and general arrangement and setting thereof; the kind, color and texture of exterior building materials; the color of paint or other materials applied to windows, doors, lights, signs, trim, gutters, leaders, louvers, vents, exterior surfaces and type and style of roofs, porches, decks, staircases, steps, balconies, roof walks and other appurtenant exterior fixtures.	Design Parameter: Exterior architectural features for approval by certificate of appropriateness issued by the Nantucket Historic District Commission

Path: \\wse03.local\WSE\Depts\Water\Water Resources Group\GIS - Constraints Mapping\Nantucket\DPW facility\Environmental Receptor - MA.mxd **User:** GasparA **Saved:** 11/6/2020 1:09:27 PM **Opened:** 12/3/2020 12:27:34 PM



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Feet

Data Source: Office of Geographic and Environmental Information (MassGIS), Commonwealth of Massachusetts Executive Office of Environmental Affairs

Legend

- Work Area
- Perennial Stream
- Intermittent Stream
- Marsh/Bog
- Wooded marsh
- Cranberry Bog
- Salt Marsh
- Open Water
- Reservoir (with PWSID)
- Tidal Flats
- Beach/Dune
- Parcel

ACECs

- ACECs

NHESP Habitats

- NHESP Estimated Habitats of Rare Wildlife
- NHESP Priority Habitats of Rare Species
- NHESP Certified Vernal Pools
- NHESP Potential Vernal Pools

FEMA National Flood Hazard Layer

Flood Zone Designations

- A: 1% Annual Chance of Flooding, no BFE
- AE: 1% Annual Chance of Flooding, with BFE
- AE: Regulatory Floodway
- AH: 1% Annual Chance of 1-3ft Ponding, with BFE
- AO: 1% Annual Chance of 1-3ft Sheet Flow Flooding, with Depth
- VE: High Risk Coastal Area
- D: Possible But Undetermined Hazard
- X: 0.2% Annual Chance of Flooding
- X: Reduced Flood Risk due to Levee
- Area Not Included
- Area with no DFIRM - Paper FIRMs in Effect

FIGURE 1

Department of Public Works
Nantucket, MA

Environmental
Resource Map

Weston & Sampson

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Feet

Data Source: Office of Geographic and Environmental Information (MassGIS), Commonwealth of Massachusetts Executive Office of Environmental Affairs

Legend

Work Area
State Registry of Historic Places
All Underground Storage Tanks

Tier Classified Sites

Tier 1A
Tier 1B
Tier 1C
Tier 1D
Tier II

PUBLIC WATER SUPPLIES

Community Ground Water
Community Surface Water
Surface Distribution Site
Non-Transient Non-Community
Transient Non-Community
Proposed Well

CH21E AUL Sites

CH21E AUL Sites

DEP BWP Major Facilities

Large Quantity Generators (LQG)

EPA/RCRA-regulated Hazard. Waste
MA-regulated Hazard. Waste
MA and EPA/RCRA-regulated Hazard. Waste
Zone I
Solid Waste Facilities - All Landfills
IWPAs
DEP Approved Zone IIs
Zone A
ZONE B
<all other values>

OWNER_TYPE

Conservation Organization
County
Federal
Land Trust
Municipal
Other
Private
Private Non-Profit
Private-Private Dispute
Public Non-Profit
State
State-Municipal Dispute
State-Non-Profit Dispute
State-Private Dispute
State-State Dispute
Unknown

FIGURE 2

Department of Public Works
Nantucket, MA

Human Receptor Map

Weston & Sampson

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FEMA

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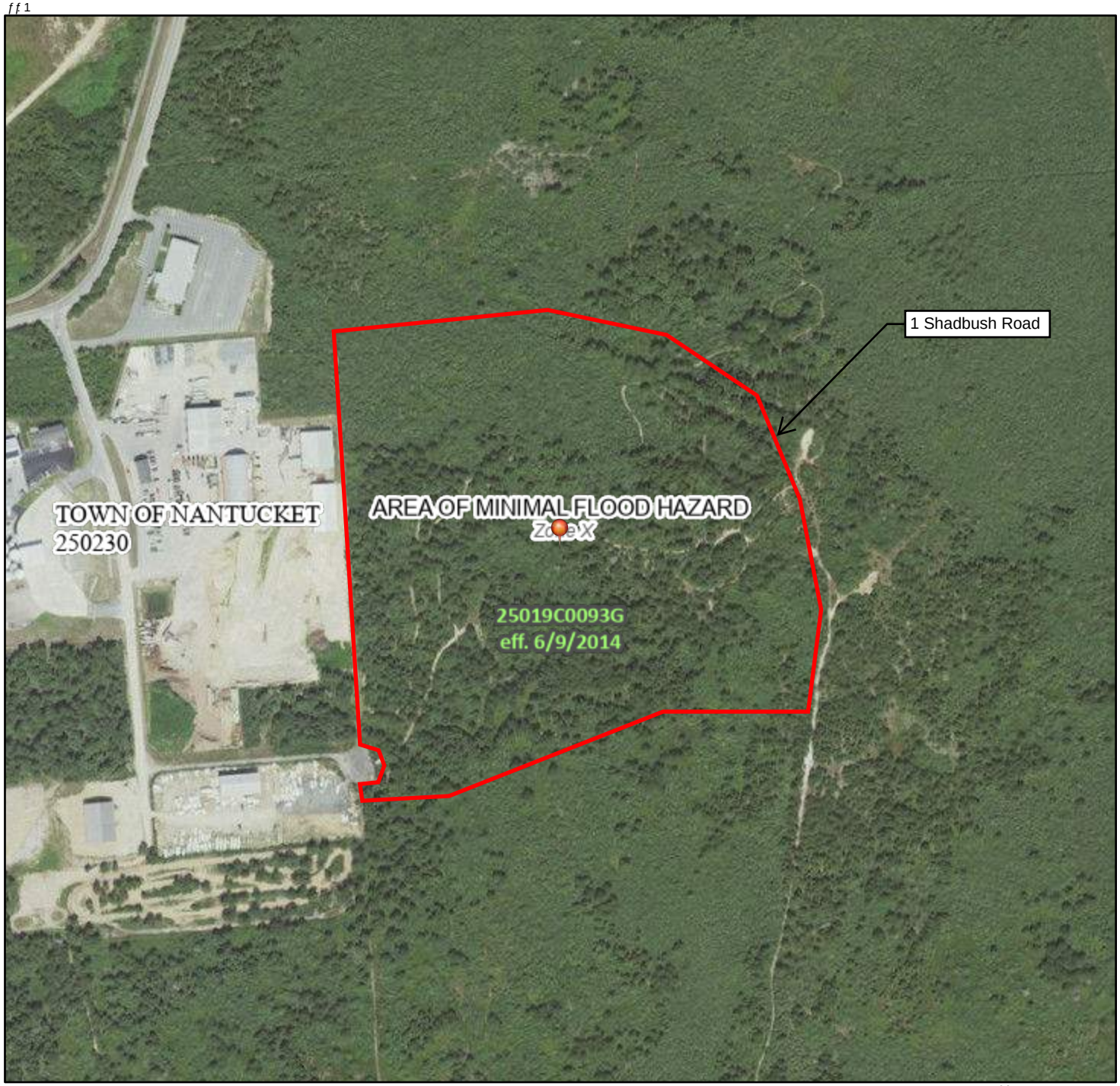

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=RQH$ 9 $
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5HGXFHG5LVN)ORRGDU\)ORRGZD\

$QQXDO &KDQFH)ORRG-HRDUG $UHDV
R DQQXDO FKDQFHIORRGZDWHUDH
G-HSWKOHVV WKDQRQHIRRW RU ZKGUDLQDJH
DUHDVR OHVV WKDQRQH VTXDUHPLOH=RQH;

)WXUH&RQGLWLRQV $QQXDO
&KDQFH)ORRG-HDUG =RQH;
$UHDZK5HGXHG)ORRG5LVNGXHWR
/HYHH 6HH1RWHV =RQH;
$UHDZK)ORRG5LVNGXHWR/HYHH =RQH'

$UHDR DQLBO)ORRG-HDUG =RQH;
(IHFWLYH%V
$UHDR 8QGHWHUPLQHG)ORRG-HDUG =RQH'

&KQQHO &XOYHUW RU 6WUXFWHU
/HYHH L'NH RU)ORRGZDO

&URVV 6HFWLRQV ZKS$QQXDO &KQQH
DWHU 6UIDFH(OHYDWLRQ
&RDWDO 7UDQVHFW
%DVH)ORRG(OHYDWLRQ/LQH %)(
/LPW R 6WUXG
-XULVGLFWLRQ%RXQGDU\
&RDWDO 7UDQVHFW %DVHOLQH
3URFHVV%DVHOLQH
+GURGUDSKF)HDWXUH

L'LWDO DWD$YDLODEOH
1R'LWDO DWD$YDLODEOH
8QPSSHG

7KHSLQGLVSOD\HGRQWKHSLV DQDSSURSULDWH
SRQW VHOHFWHGEWKHXVHU DQGGRHV QRW UHSUHV
DQDWKRULWDWLYHSURFHVVRUW\ORFDWLRQ

7KLVPSFRQWDLQVZLWKSV VWDQGDUGIRU WKHXVHR
GL.LWDO IORRGPS/LI LW LVQRW YRLGV/GHVFULEHGEHORZ
7KHEDVHPS VKRZQFRQWROLHVZLWKSV EDVHPS
DFFXUDWVWDQGDUG/

7KHIORRGKDUGLQRUPWLRQLV GHULYHGGLUHFWO\IURPWKH
DWKRULWDWLYHHZEVHUYLFHV SURYLGHGEV 7KLVPS
ZVHSRUWHGRQ DW $ DQGGRHV QW
UHOHFW FKQJHV RU DMGHQWV VXEVHTXHQW WR WKLVGDWH DQG
WLFI 7KHHDQGHIHFWLYHQRUPWLRQPFKQJHRU
EHFRPVXSHUVHGEQHZGDWDRYHU WLFI

7KLVPSLPHLV YRLGLI WKHIQHRUHR WKHIOORZLQPS
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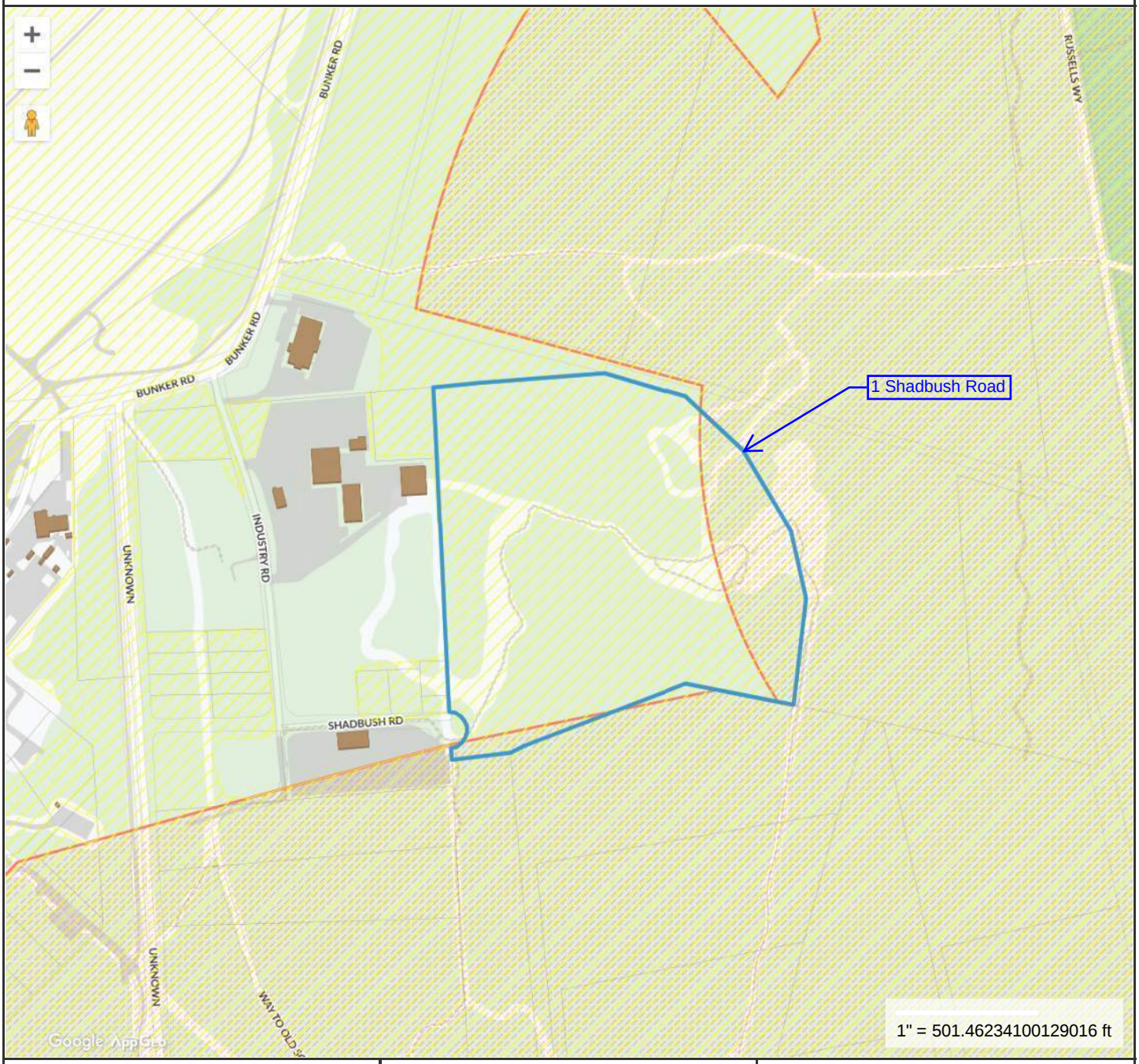
OHHG VFDOHEU PSFUDWLRQGDWH FRQL W\LGHQWLILHUV
)5$DQHO QPEU DQG)5IIHFWLYHGDWH DSLPHV IRU
XQPSSHGDQGXQRGHUQ}GDUHDV FDQQW EHXVHGIRU
UHMODWRU\SUSRVHV

%DVHPS,PDJHU\6RXUFH 86 1DWLRQDO DS

Natural Resource Protection - 1 Shadbush Road



Property Information

Property ID	78 5
Location	1 SHADBUSH RD
Owner	NANTUCKET TOWN OF

Map Theme Legends

Natural Resource Protection

- NHESP Certified Vernal Pools
- NHESP Potential Vernal Pools
- NHESP Priority Habitats of Rare Species
- NHESP Estimated Habitats of Rare Wildlife
- Areas of Critical Environmental Concern

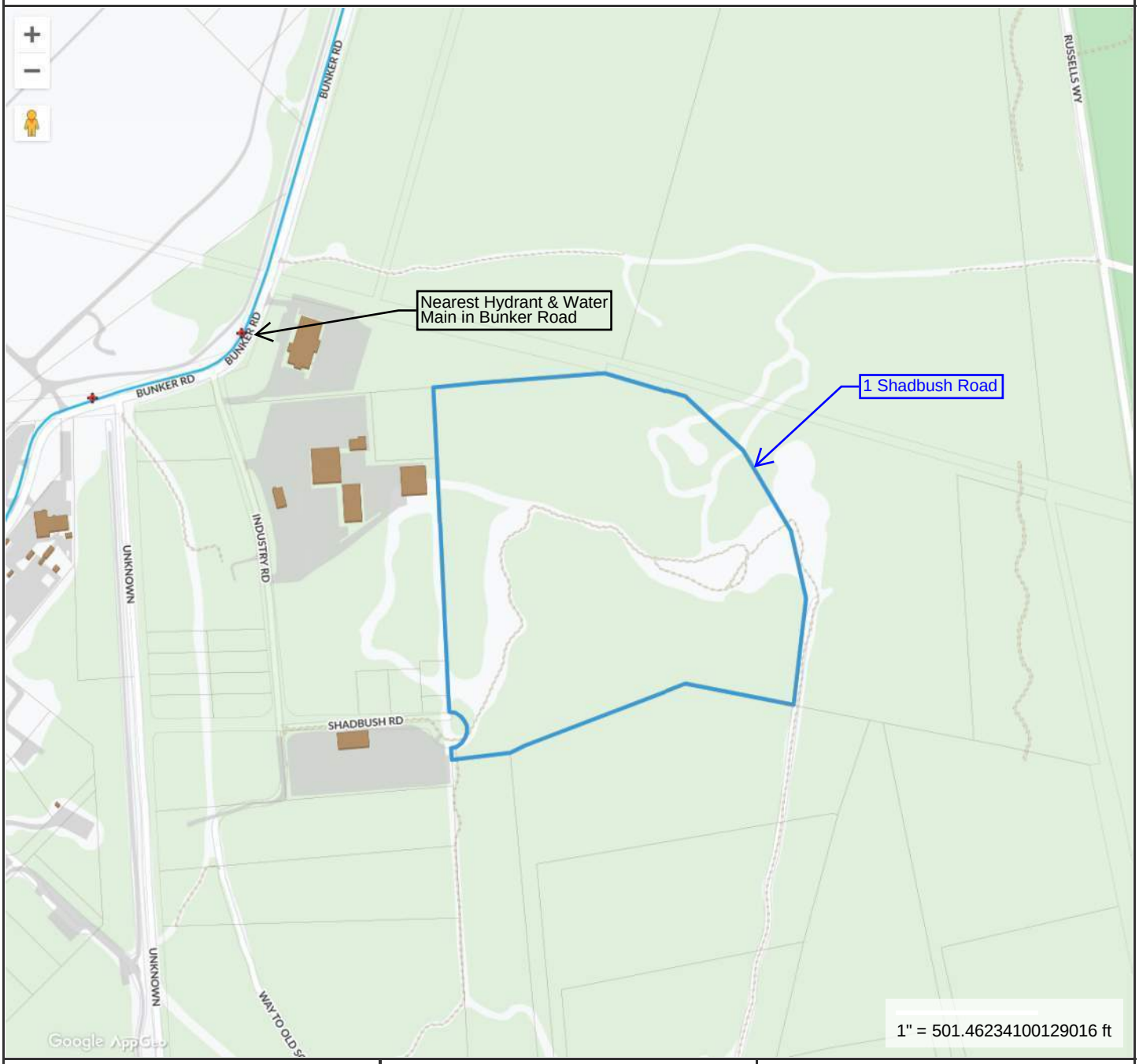
MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

Town and County of Nantucket, MA makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 11/14/2022
Data updated Jan. 2021

Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.

Water Main Map



Property Information

Property ID	78 5
Location	1 SHADBUSH RD
Owner	NANTUCKET TOWN OF

Map Theme Legends

Utilities

Water Main

Sewer Main
- Force Main
- Gravity Main
- Flow Direction

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Geometry updated 11/14/2022
Data updated Jan. 2021

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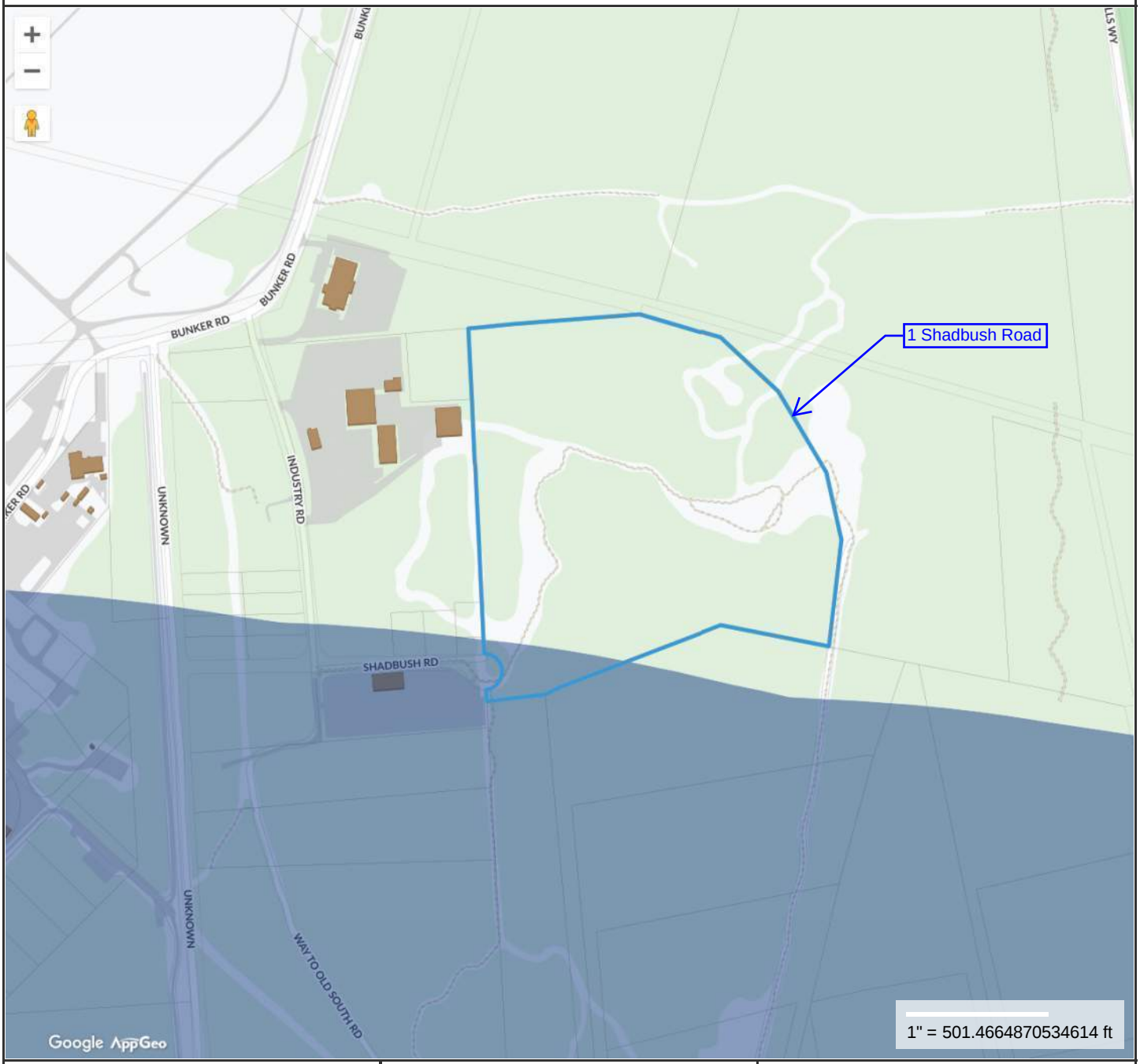
1 Shadbush Road - Wind Debris Impact Zone



Property Information

Property ID	78 5
Location	1 SHADBUSH RD
Owner	NANTUCKET TOWN OF

Map Theme Legends

Construction

- Fire Retardant Roof Shingles
- Wind Debris Impact Zone

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Geometry updated 11/14/2022
Data updated Jan. 2021

Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.

Town of Nantucket
New Department of Public Works Facility
Schematic Design Submission

Appendix

B. Schematic Design Cost Estimate

June 21, 2024

Schematic Design Cost Estimate

Nantucket DPW Facility

Shadbush Road
Town of Nantucket, Ma

Prepared by:

TCi Construction Cost Estimating

Post Office Box 1988
North Falmouth, Ma 02556
www.tortoraconsulting.com
p 781-275-5511

Prepared for:

Weston and Sampson

April 12, 2024

Nantucket DPW Facility
Shadbush Road
Town of Nantucket, Ma

Schematic Design Cost Estimate 12-Apr-24

MAIN CONSTRUCTION COST SUMMARY

Item	Bid Date	Building GSF	$/sf	Estimated Construction Cost
SITEWORK				$9,290,609
SALT SHED				$1,546,736
FUEL ISLAND				$1,328,381
NEW BUILDING		65,700	$846.39	$55,607,840
TOTAL BASE CONSTRUCTION COSTS	**1ST QTR 2025**	**65,700**	**$1,031.56**	**$67,773,566**

Alternates

1	Option 2 Geothermal in lieu of Option 1	ADD	**$804,138**

QUALIFICATIONS

This Schematic Design cost estimate was produced from drawings prepared by Weston and Sampson and their design team dated March 27, 2024. Additional modifications to design directed by W&S have been included. Other engineering changes occurring subsequent to the issue of these documents have not been incorporated in this estimate.

This estimate includes all direct construction costs, general contractor's overhead and profit and design contingency. Cost escalation assumes bid date above with construction start 30 days after.

Bidding conditions are expected to be public bidding to pre-qualified general contractors, and pre-qualified sub-contractors, open specifications for materials and manufactures.

The estimate is based on prevailing wage rates for construction in this market and represents a reasonable opinion of cost. It is not a prediction of the successful bid from a contractor as bids will vary due to fluctuating market conditions, errors and omissions, proprietary specifications, lack or surplus of bidders, perception of risk, etc. Consequently the estimate is expected to fall within the range of bids from a number of competitive contractors or subcontractors, however we do not warrant that bids or negotiated prices will not vary from the final construction cost estimate.

ITEMS NOT CONSIDERED IN THIS ESTIMATE

All professional fees and insurance
All Furnishings, Fixtures and Equipment not identified
Items identified in the design as Not In Contract (NIC)
Items identified in the design as by others
Utility company back charges, including work required off-site
Work to City streets and sidewalks, (except as noted in this estimate)
Construction or occupancy phasing or off hours' work, (except as noted in this estimate)
Temporary facilities
Off hours and phasing
Building Permit
Chapter 149a - CM at risk
Ledge blasting & contaminated soils
Special foundations and or ground improvements

CONSTRUCTION COST SUMMARY IN CSI FORMAT	*SITEWORK*	*SALT SHED*	*FUEL ISLAND*	*NEW BUILDING*	*65,700 $/SF*	*TOTAL*	*65,700 $/SF*
DIV. 3 CONCRETE							
033000 Cast-in-Place Concrete	$192,708	$91,000	$49,614	$3,573,231	*$54.39*	$3,906,553	*$59.46*
DIV. 4 MASONRY							
042000 Unit Masonry (part of 040001 FSB)	$0	$0	$0	$800,280	*$12.18*	$800,280	*$12.18*
DIV. 5 METALS							
055000 Metal Fabrications (part of 050001 FSB)	$28,000	$1,860	$20,110	$908,250	*$13.82*	$958,220	*$14.58*
DIV. 6 WOODS & PLASTICS							
061000 Rough Carpentry	$0	$0	$0	$38,390	*$0.58*	$38,390	*$0.58*
064020 Interior Architectural Woodwork	$0	$0	$0	$84,224	*$1.28*	$84,224	*$1.28*
DIV. 7 THERMAL & MOISTURE PROTECTION							
072100 Thermal Insulation	$0	$0	$0	$378,780	*$5.77*	$378,780	*$5.77*
072700 Air Barriers & Waterproofing (part of 070001 FSB)	$0	$0	$0	$116,865	*$1.78*	$116,865	*$1.78*
074600 Wood Siding and Trim	$0	$0	$0	$158,000	*$2.40*	$158,000	*$2.40*
075400 Membrane Roofing (part of 070002 FSB)	$0	$0	$0	$3,000	*$0.05*	$3,000	*$0.05*
075450 Asphalt Roofing System (part of 070002 FSB)	$0	$142,188	$0	$0	*$0.00*	$142,188	*$2.16*
077200 Roof Accessories	$0	$0	$0	$28,140	*$0.43*	$28,140	*$0.43*
078410 Penetration Firestopping	$0	$0	$0	$29,039	*$0.44*	$29,039	*$0.44*
079200 Joint Sealants (part of 070001 FSB)	$0	$0	$0	$296,000	*$4.51*	$296,000	*$4.51*
DIV. 8 DOORS & WINDOWS							
081110 Doors and Frames	$0	$0	$0	$151,175	*$2.30*	$151,175	*$2.30*
083110 Access Doors and Frames	$0	$0	$0	$0	*$0.00*	$0	*$0.00*
083310 Overhead Coiling Doors	$0	$0	$0	$406,550	*$6.19*	$406,550	*$6.19*
084500 Aluminum Windows and Storefronts	$0	$0	$0	$117,100	*$1.78*	$117,100	*$1.78*
084600 Translucent Windows	$0	$0	$0	$140,400	*$2.14*	$140,400	*$2.14*
087100 Door Hardware	$0	$0	$0	$38,793	*$0.59*	$38,793	*$0.59*
088000 Glazing	$0	$0	$0	$27,600	*$0.42*	$27,600	*$0.42*
089000 Louvers and Vents	$0	$0	$0	$0	*$0.00*	$0	*$0.00*
DIV. 9 FINISHES							
092110 Gypsum Board Assemblies	$0	$0	$0	$1,554,697	*$23.66*	$1,554,697	*$23.66*
093000 Tiling	$0	$0	$0	$58,500	*$0.89*	$58,500	*$0.89*
095100 Acoustical Ceilings	$0	$0	$0	$109,980	*$1.67*	$109,980	*$1.67*
096510 Resilient Flooring and Accessories	$0	$0	$0	$137,490	*$2.09*	$137,490	*$2.09*
096550 Carpet	$0	$0	$0	$21,944	*$0.33*	$21,944	*$0.33*
097300 Resinous flooring and base	$0	$0	$0	$24,960	*$0.38*	$24,960	*$0.38*
099000 Painting and Coating (part of 090007 FSB)	$0	$0	$0	$665,855	*$10.13*	$665,855	*$10.13*
DIV 10 SPECIALTIES							
101400 Signage	$0	$0	$0	$32,060	*$0.49*	$32,060	*$0.49*
102800 Toilet Accessories	$0	$0	$0	$20,043	*$0.31*	$20,043	*$0.31*
104400 Fire Protection Specialties	$0	$0	$0	$4,000	*$0.06*	$4,000	*$0.06*
106500 Toilet Partitions	$0	$0	$0	$11,340	*$0.17*	$11,340	*$0.17*
108500 Lockers	$0	$0	$0	$50,260	*$0.76*	$50,260	*$0.76*
109400 Screen Partitions	$0	$0	$0	$60,480	*$0.92*	$60,480	*$0.92*
109500 Fall Arrest	$0	$0	$0	$93,600	*$1.42*	$93,600	*$1.42*
DIV. 11 EQUIPMENT							
113100 Appliances	$0	$0	$0	$19,500	*$0.30*	$19,500	*$0.30*
118100 Industrial Equipment	$0	$0	$0	$1,179,158	*$17.95*	$1,179,158	*$17.95*
DIV. 12 FURNISHINGS							
122110 Horizontal Louver Blinds	$0	$0	$0	$17,810	*$0.27*	$17,810	*$0.27*
DIV. 13 SPECIAL CONSTRUCTION							
13100 Pre-fabricated Metal Building, Mezzanine Steel and Decking	$0	$0	$0	$8,452,696	*$128.66*	$8,452,696	*$128.66*
13200 Pre-fabricated Building (salt shed)	$0	$656,250	$0	$0	*$0.00*	$656,250	*$9.99*
13300 Fuel Island Equipment and Canopy	$0	$0	$734,504	$0	*$0.00*	$734,504	*$11.18*
DIV. 21 FIRE SUPPRESSION							
210000 Fire Suppression	$0	$0	$0	$1,113,750	*$16.95*	$1,113,750	*$16.95*
DIV. 22 PLUMBING							
220000 Plumbing - FSB	$0	$0	$0	$2,694,919	*$41.02*	$2,694,919	*$41.02*
DIV. 23 HVAC							
220000 HVAC - FSB	$0	$0	$0	$7,930,107	*$120.70*	$7,930,107	*$120.70*
DIV. 26 ELECTRICAL							
260000 Electrical - FSB	$0	$25,000	$39,000	$4,489,885	*$68.34*	$4,553,885	*$69.31*

Nantucket DPW Facility
Shadbush Road
Town of Nantucket, Ma

TCi Construction Cost Estimating

12-Apr-24

Schematic Design Cost Estimate

CONSTRUCTION COST SUMMARY IN CSI FORMAT		*SITEWORK*	*SALT SHED*	*FUEL ISLAND*	*NEW BUILDING*	*65,700 $/SF*	*TOTAL*	*65,700 $/SF*
DIV. 31 EARTHWORK								
311000 Site Clearing		$298,310	$0	$0	$0	*$0.00*	$298,310	*$4.54*
312000 Earthwork		$1,049,240	$64,250	$17,680	$0	*$0.00*	$1,131,170	*$17.22*
312500 Erosion and Sedimentation Controls		$97,500	$0	$0	$0	*$0.00*	$97,500	*$1.48*
315000 Ground Improvements		$0	$0	$0	$0	*$0.00*	$0	*$0.00*
DIV. 32 EXTERIOR IMPROVEMENTS								
321216 Asphalt Paving		$1,941,855	$21,875	$0	$0	*$0.00*	$1,963,730	*$29.89*
321213 Portland Cement Concrete Paving		$53,450	$0	$0	$0	*$0.00*	$53,450	*$0.81*
321613 Curbs and Gutters		$134,400	$0	$0	$0	*$0.00*	$134,400	*$2.05*
323100 Site Improvements		$411,324	$0	$0	$0	*$0.00*	$411,324	*$6.26*
329000 Landscaping		$117,300	$0	$0	$0	*$0.00*	$117,300	*$1.79*
DIV. 33 UTILITIES								
331000 Site Water Distribution		$352,059	$0	$0	$0	*$0.00*	$352,059	*$5.36*
333000 Sanitary Sewerage Utilities		$95,000	$0	$0	$0	*$0.00*	$95,000	*$1.45*
334000 Storm Drainage		$1,250,000	$0	$0	$0	*$0.00*	$1,250,000	*$19.03*
335000 Gas		$0	$0	$0	$0	*$0.00*	$0	*$0.00*
SUBTOTAL DIRECT (TRADE) COST		*$6,021,146*	*$1,002,423*	*$860,908*	*$36,038,851*	*$548.54*	***$43,923,328***	*$668.54*
GC - GENERAL CONDITIONS & REQUIREMENTS	13%	$782,749	$130,315	$111,918	$4,685,051		$5,710,033	
GC - ISLAND PREMIUM	7%	$421,480	$70,170	$60,264	$2,522,720		$3,074,634	
SUBTRADES - ISLAND PREMIUM (Included in trade sections)								
GL INSURANCE	1.6%	$96,338	$16,039	$13,775	$576,622		$702,774	
BONDS	1.5%	$90,317	$15,036	$12,914	$540,583		$658,850	
GC - OVERHEAD & PROFIT	6%	$444,722	$74,039	$63,587	$2,661,830		$3,244,178	
DESIGN AND PRICING CONTINGENCY	10%	$785,675	$130,802	$112,337	$4,702,566		$5,731,380	
ONE YEAR ESCALATION TO 1ST QUARTER 2025	7.5%	$648,182	$107,912	$92,678	$3,879,617		$4,728,389	
TOTAL BASE CONSTRUCTION COSTS		$9,290,609	$1,546,736	$1,328,381	$55,607,840	*$846.39*	**$67,773,566**	***$1,031.56***

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	SITEWORK						
	B SITEWORK						
	Site Contractor general conditions						
312000	Field Engineering	**15**	dy	1,500.00	22,500		
312000	Trench Plates Trench Safety	**1**	ls	7,500.00	7,500		
312000	Mobilization	**1**	ea	7,500.00	7,500		
311000	Site fencing, protection, barricades	**1**	ls	35,000.00	35,000		
	Site prep						
311000	Stabilized Construction Entrance	**1**	ea	7,500.00	7,500		
312500	Compost filter tubes and silt fence	**6,500**	lf	15.00	97,500		
311000	Tree clear, grub, stump and rock wall remove site	**9.4**	acre	15,000.00	141,000		
311000	Strip topsoil, retain portion for landscaping	**8,854**	cy	5.00	44,270		
311000	Export remainder of topsoil	**7,054**	cy	10.00	70,540		
	SUBTOTAL					433,310	
	Earthwork						
312000	Cut and Fills - 2' average	**31,481**	cy	8.00	251,848		
	Structural excavation and backfill						
312000	Excavate and backfill foundation footing and walls	**3,467**	cy	35.00	121,345		
312000	Excavate and backfill foundation column footings	**600**	cy	50.00	30,000		
312000	Import structural fill for under slabs	**4,500**	cy	55.00	247,500		
312000	Import structural fill for under perimeter and column footings	**800**	cy	55.00	44,000		
	Paving and walks prep						
321216	12" Dense Grade	**8,094**	cy	55.00	445,170		
321216	8" Dense Grade	**150**	cy	55.00	8,250		
	SUBTOTAL					1,148,113	
	Paving and curbing						
321216	Repave Industry road - Heavy duty pavement mill and overlay	**52,600**	sf	3.50	184,100		
321216	Heavy duty pavement	**190,100**	sf	4.75	902,975		
321216	Light duty pavement	**26,700**	sf	4.00	106,800		
321613	Bitum berm	**1,500**	lf	25.00	37,500		
321613	Granite curb	**1,615**	lf	60.00	96,900		
	SUBTOTAL					1,328,275	
	Storm						
334000	CB	**16**	ea	5,500.00	88,000		
334000	DMH	**8**	ea	6,000.00	48,000		
334000	OCS	**2**	ea	15,000.00	30,000		
334000	HDPE storm piping	**2,000**	lf	85.00	170,000		
334000	Infiltration basins A, B & C and riprap	**3**	ea	15,000.00	45,000		
334000	Storm water infiltration A - MC-4500 chambers	**110**	ea	1,450.00	159,500		
334000	Storm water infiltration B - MC-4500 chambers	**135**	ea	1,450.00	195,750		
334000	Storm water infiltration C - MC-4500 chambers	**90**	ea	1,450.00	130,500		
334000	Storm water infiltration D - MC-4500 chambers	**45**	ea	1,450.00	65,250		
334000	Storm water infiltration E - MC-4500 chambers	**90**	ea	1,450.00	130,500		
	SUBTOTAL					1,062,500	

Nantucket DPW Facility
Shadbush Road
Town of Nantucket, Ma

TCi Construction Cost Estimating

Schematic Design Cost Estimate 12-Apr-24

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	SITEWORK						
	Water						
331000	8'' DI water main	**2,250**	lf	125.00	281,250		
331000	2'' DI domestic water	**20**	lf	75.00	1,500		
331000	Gates & valves	**1**	ls	5,000.00	5,000		
331000	Hydrants	**1**	ea	5,000.00	5,000		
331000	Water CTE at Bunker road	**1**	ls	6,500.00	6,500		
	SUBTOTAL					299,250	
	Sanitary						
333000	Septic system	**1**	ls	95,000.00	95,000		
	SUBTOTAL					95,000	
	Site Improvements						
323100	20x20 blocks walls at storage bins	**3,300**	sf	42.00	138,600		
323100	35' Cantilever sliding fence with operator	**2**	ea	25,000.00	50,000		
323100	6' Chain link fencing	**1,890**	lf	75.00	141,750		
323100	Parking signs	**6**	ea	250.00	1,500		
05500	Site bollards	**40**	ea	700.00	28,000		
321213	Concrete walks	**1,600**	sf	14.00	22,400		
321213	Concrete knockdown pad	**1,725**	sf	18.00	31,050		
323100	Parking space lines	**60**	ea	75.00	4,500		
323100	Parking symbols	**3**	ea	125.00	375		
323100	Parking hatching	**1,250**	sf	3.00	3,750		
323100	Dumpster enclosure fencing 6' CLF	**90**	lf	75.00	6,750		
323100	Dumpster enclosure gates 6' CLF	**2**	ea	1,200.00	2,400		
03300	Dumpster Pad	**1**	ea	7,500.00	7,500		
03300	Transformer Pad	**1**	ea	5,000.00	5,000		
03300	Generator Pad	**1**	ea	8,500.00	8,500		
03300	Charging station pads	**6**	ea	2,500.00	15,000		
312000	E&B Elec/communication duct banks	**1,600**	lf	55.00	88,000		
03300	Encase duct banks in concrete	**356**	cy	350.00	124,600		
	SUBTOTAL					679,675	
	Landscaping						
329000	Screen stockpile topsoil and spread	**1,800**	cy	15.00	27,000		
329000	Seed and plantings	**1**	ls	75,000.00	75,000		
	SUBTOTAL					102,000	
	Market conditions and Location adjustment (Material delivery costs, travel, room and board, lost productivity)						
312000	Sitework trade	**1**	ls	229,047.00	229,047		
321216	Paving trade	**1**	ls	294,559.50	294,560		
331000	Water utility trade	**1**	ls	52,808.85	52,809		
334000	Storm utility trade	**1**	ls	187,500.00	187,500		
323100	Site improvement trade	**1**	ls	61,698.60	61,699		
03300	Concrete trade	**1**	ls	32,107.50	32,108		
329000	Landscaping trade	**1**	ls	15,300.00	15,300		
	SUBTOTAL					873,023	
	TOTAL - SITEWORK						***6,021,146***

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	SALT SHED						
	C SALT SHED						
	Site Structure						
312000	Site prep, earthwork and underslab material	**3,500**	sf	8.00	28,000		
13200	Hi-Arch gambrel main structure, push walls, siding and trim	**3,500**	sf	150.00	525,000		
07545	Asphalt roofing	**4,550**	sf	25.00	113,750		
03300	Cast in place footings	**8,050**	sf	10.00	80,500		
05500	Bollards	**2**	ea	600.00	1,200		
321216	Heavy duty pavement	**3,500**	sf	5.00	17,500		
312000	E&B Elec duct banks to shed	**100**	lf	60.00	6,000		
03300	Encase duct banks in concrete	**30**	cy	350.00	10,500		
312000	Block retaining walls and ramp at salt shed	**300**	sf	55.00	16,500		
260000	Electrical	**1**	ls	20,000.00	20,000		
	Market conditions and Location adjustment						
260000	Electrical trade	**1**	ls	5,000.00	5,000		
13200	Salt shed trade	**1**	ls	131,250.00	131,250		
07545	Roofing trade	**1**	ls	28,437.50	28,438		
05500	Concrete trade	**1**	ls	300.00	300		
312000	Sitework trade	**1**	ls	13,750.00	13,750		
05500	Misc Metals trade	**1**	ls	360.00	360		
321216	Paving trade	**1**	ls	4,375.00	4,375		
	SUBTOTAL					1,002,423	
	TOTAL - SALT SHED						***1,002,423***

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	FUEL ISLAND						
	C FUEL ISLAND						
	Footings and Slab on grade						
312000	Excavate and backfill	**600**	cy	18.00	10,800		
03300	Rebar reinforcing	**3,354**	sf	3.00	10,062		
03300	Concrete - 8" thick	**89**	cy	185.00	16,465		
03300	Placing concrete	**89**	cy	65.00	5,785		
03300	Finishing and curing concrete	**3,354**	sf	1.50	5,031		
03300	Control joints - saw cut	**3,354**	sf	0.20	671		
05500	Bollards	**26**	ea	685.00	17,810		
05500	U bumpers	**2**	ea	1,150.00	2,300		
03300	Column and piers	**2**	ea	2,500.00	5,000		
	Electrical						
260000	Electrical	**1**	ls	30,000.00	30,000		
	Fuel Island Equipment						
13300	(1) 2,000 gal gas (1) 4000 diesel Fuel tanks and 4 pump single system and associated equip	**1**	ls	475,000	475,000		
13300	Canopy	**1**	ls	60,000	60,000		
13300	Fire Suppression	**1**	ls	45,000	45,000		
312000	E&B Elec duct banks	**80**	lf	35.00	2,800		
03300	Encase duct banks in concrete	**24**	cy	275.00	6,600		
	Market conditions and Location adjustment						
260000	Electrical trade	**1**	ls	9,000.00	9,000		
13300	Fuel Island trade	**1**	ls	145,000.00	145,000		
13300	Concrete trade	**1**	ls	9,503.50	9,504		
312000	Sitework trade	**1**	ls	4,080.00	4,080		
	SUBTOTAL					860,908	
	TOTAL - FUEL ISLAND						***860,908***

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	NEW BUILDING						
	GROSS FLOOR AREA CALCULATION						
	Ground floor			**65,700**			
	Mezzanines			**9,000**			
	Open Canopy			**8,894**			
	TOTAL GROSS FLOOR AREA (does not include mezzanines or open canopy)				**65,700** ***gsf***		
	A10 FOUNDATIONS						
	A1010 STANDARD FOUNDATIONS						
	Strip footings to walls						
03300	Formwork	**4,740**	sf	16.00	75,840		
03300	Re-bar	**22,140**	lbs	3.00	66,420		
03300	Concrete material	**369**	cy	185.00	68,265		
03300	Placing concrete	**369**	cy	45.00	16,605		
	Foundation walls						
03300	Formwork	**28,440**	sf	16.00	455,040		
03300	Re-bar	**53,950**	lbs	3.00	161,850		
03300	Concrete material	**830**	cy	185.00	153,550		
03300	Placing concrete	**830**	cy	45.00	37,350		
07210	Rigid insulation to foundation walls	**11,850**	sf	5.00	59,250		
	Back up knee walls						
03300	Formwork	**18,000**	sf	16.00	288,000		
03300	Re-bar	**15,925**	lbs	3.00	47,775		
03300	Concrete material	**245**	cy	185.00	45,325		
03300	Placing concrete	**245**	cy	45.00	11,025		
	Column footings						
03300	Formwork	**9,600**	sf	16.00	153,600		
03300	Re-bar	**56,025**	lbs	3.00	168,075		
03300	Concrete material	**747**	cy	185.00	138,195		
03300	Placing concrete	**747**	cy	45.00	33,615		
	Piers						
03300	Formwork	**2,400**	sf	16.00	38,400		
03300	Re-bar	**3,525**	lbs	3.00	10,575		
03300	Concrete material	**47**	cy	185.00	8,695		
03300	Placing concrete	**47**	cy	45.00	2,115		
	SUBTOTAL					2,039,565	
	A1030 LOWEST FLOOR CONSTRUCTION						
	8" Slab on grade						
03300	Vapor barrier	**53,270**	sf	1.50	79,905		
03300	Reinforcing	**58,597**	sf	2.50	146,493		
03300	Concrete - 8" thick	**1,409**	cy	185.00	260,665		
03300	Placing concrete	**1,409**	cy	40.00	56,360		
03300	Finishing and curing concrete	**53,270**	sf	1.65	87,896		
03300	Control joints - saw cut	**53,270**	sf	0.50	26,635		
	6" Slab on grade						
03300	Vapor barrier	**12,430**	sf	1.50	18,645		
03300	Reinforcing	**14,295**	sf	1.50	21,443		
03300	Concrete - 6" thick	**242**	cy	185.00	44,770		
03300	Placing concrete	**242**	cy	40.00	9,680		
03300	Finishing and curing concrete	**12,430**	sf	1.65	20,510		
03300	Control joints - saw cut	**12,430**	sf	0.50	6,215		
	Miscellaneous						
07210	Rigid insulation at 4' perimeter	**9,480**	sf	5.00	47,400		
03300	4' haunch under CM walls	**600**	lf	45.00	27,000		
03300	Pits, curbs, pads and misc equipment supports	**1**	ls	15,000.00	15,000		
	Market conditions and Location adjustment (Material delivery costs, travel, room and board, lost productivity)						
07210	Insulation trade	**1**	ls	31,995.00	31,995		
03300	Concrete trade	**1**	ls	560,306.40	560,306		
	SUBTOTAL					1,460,918	
	TOTAL - FOUNDATIONS						***$3,500,483***

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	NEW BUILDING						
	B10 SUPERSTRUCTURE						
	B1010 FLOOR CONSTRUCTION						
	Mezzanine Floor Structure - Steel:						
13100	W columns, beam, bracing, HSS tubes, L angles and Channels	**63**	tons	6,500.00	409,500		
	Mezzanine Floor Structure						
13100	Floor deck - 1 1/2'' deck	**9,000**	sf	6.50	58,500		
03300	WWF reinforcement	**10,350**	sf	2.00	20,700		
03300	Concrete to metal deck	**119**	cy	185.00	22,015		
03300	Place and finish concrete	**9,000**	sf	2.00	18,000		
	Miscellaneous						
05500	Misc metals - overall aded cost for FSB pricing	**65,700**	sf	8.00	525,600		
07841	Firestopping	**65,700**	sf	0.34	22,338		
	Market conditions and Location adjustment (Material delivery costs, travel, room and board, lost productivity)						
13100	PEMB trade	**1**	ls	117,000.00	117,000		
03300	Concrete trade	**1**	ls	12,143.00	12,143		
07841	Firestopping trade	**1**	ls	6,701.40	6,701		
05500	Misc metals trade	**1**	ls	131,400.00	131,400		
	SUBTOTAL					1,343,897	
	B1020 ROOF CONSTRUCTION						
	Pre-fabricated Structure (includes steel, insulated metal panels walls and roof) :						
13100	Main Building - Prefabricated metal building package (galv steel, insulated metal panels, metal roof with fabric liner insulation/VR, gutters, downspouts and snow guards)	**65,700**	sf	90.00	5,913,000		
13100	Open Canopy - Prefabricated metal building package (galv steel, metal panels, metal roof, gutters, downspouts and snow guards)	**8,894**	sf	70.00	622,580		
13100	Main entry premium - Prefabricated metal building package (galv steel, metal panels, metal roof, gutters, downspouts and snow guards)	**1**	ls	25,000.00	25,000		
	Miscellaneous						
05500	Overhead door openings	**16**	ea	1,500.00	24,000		
05500	Window openings	**600**	sf	10.00	6,000		
05500	Translucent window openings	**1,350**	sf	10.00	13,500		
	Market conditions and Location adjustment (Material delivery costs, travel, room and board, lost productivity)						
13100	PEMB trade	**1**	ls	1,307,116.00	1,307,116		
05500	Misc metals trade	**1**	ls	8,700.00	8,700		
	SUBTOTAL					7,919,896	
	TOTAL - SUPERSTRUCTURE						***$9,263,793***
	B20 EXTERIOR CLOSURE						
	B2010 EXTERIOR WALLS						
	Admin exterior wall back-up						
09211	6" LGMF, gyp sheathing	**5,110**	sf	18.00	91,980		
09211	5/8" int gwb	**5,110**	sf	6.00	30,660		
09900	Paint	**4,599**	sf	2.00	9,198		
	CMU veneer at building perimeter						
04200	CMU veneer and trim	**6,850**	sf	52.00	356,200		
07270	Air barrier	**6,850**	sf	8.00	54,800		
07210	Rigid insulation	**6,850**	sf	7.00	47,950		
	Special façade						
07460	White cedar siding and red cedar trim	**3,000**	sf	38.00	114,000		
07460	Vertical composite siding	**1,100**	sf	40.00	44,000		
07270	Air barrier	**4,100**	sf	8.00	32,800		
07210	Rigid insulation	**4,100**	sf	7.00	28,700		
	Market conditions and Location adjustment (Material delivery costs, travel, room and board, lost productivity)						
04200	Masonry trade	**1**	ls	106,860.00	106,860		
07270	Waterproofing trade	**1**	ls	14,385.00	14,385		
07210	Insulation trade	**1**	ls	14,385.00	14,385		
09211	Drywall trade	**1**	ls	36,792.00	36,792		
09900	Paint trade	**1**	ls	2,759.40	2,759		
	SUBTOTAL					985,469	

Schematic Design Cost Estimate GSF 65,700

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	NEW BUILDING						
	B2020 WINDOWS						
	Storefront and windows						
84600	Translucent windows	**1,350**	sf	80.00	108,000		
84500	Aluminum storefront windows & entries	**600**	sf	110.00	66,000		
07920	Backer rod & double sealant	**1,610**	lf	12.00	19,320		
06100	Wood blocking at openings	**1,610**	lf	10.00	16,100		
07920	Waterproofing - overall aded cost for FSB pricing	**65,700**	sf	3.00	197,100		
	Market conditions and Location adjustment (Material delivery costs, travel, room and board, lost productivity)						
84600	Translucent trade	**1**	ls	32,400.00	32,400		
84500	Storefront trade	**1**	ls	19,800.00	19,800		
07920	Caulking and sealants trade	**1**	ls	64,926.00	64,926		
06100	Rough carpentry trade	**1**	ls	4,830.00	4,830		
	SUBTOTAL					528,476	
	B2030 EXTERIOR DOORS						
	Overhead doors						
08331	16x14 OHD	**8**	ea	21,760.00	174,080		
08331	16x16 OHD poly washbay	**2**	ea	25,600.00	51,200		
08331	14x14 OHD	**6**	ea	16,660.00	99,960		
	Man Doors						
08111	Ext 3x7 doors with half lite	**9**	ea	1,800.00	16,200		
08111	Ext 3x7 doors flush	**3**	lvs	1,600.00	4,800		
84500	Alum single door and sidelite at entry	**1**	ea	3,500.00	3,500		
84500	Alum double entry doors	**1**	pr	6,500.00	6,500		
08710	Hardware	**15**	lvs	650.00	9,750		
	Misc						
07920	Backer rod & double sealant	**360**	lf	12.00	4,320		
06100	Wood blocking at openings	**360**	lf	10.00	3,600		
	Market conditions and Location adjustment (Material delivery costs, travel, room and board, lost productivity)						
08331	OHD trade	**1**	ls	81,310.00	81,310		
84500	Storefront trade	**1**	ls	1,050.00	1,050		
08111	Doors & frames trade	**1**	ls	6,300.00	6,300		
08710	Hardware trade	**1**	ls	292.50	293		
07920	Caulking and sealants trade	**1**	ls	1,296.00	1,296		
	SUBTOTAL					464,159	
	TOTAL - EXTERIOR CLOSURE						***$1,978,104***
	B30 ROOFING						
	B3010 ROOF COVERINGS						
	All roofing, gutters, downspouts and snow guards included with Prefabricated metal building						
05500	Secondary entry canopy - structure (framing, decking and turnbuckle)	**1**	ea	4,500.00	4,500		
07540	Secondary entry canopy - membrane roof	**1**	ea	1,500.00	1,500		
07540	Secondary entry canopy - metal panel ceiling, fascia and soffit	**1**	ea	1,500.00	1,500		
	Market conditions and Location adjustment (Material delivery costs, travel, room and board, lost productivity)						
05500	Misc metals trade	**1**	ls	1,800.00	1,800		
07920	Roofing trade	**1**	ls	1,200.00	1,200		
	SUBTOTAL					10,500	
	B3020 ROOF OPENINGS						
07720	Roof hatch and ladder	**2**	ea	6,750.00	13,500		
07720	Roof ladder	**4**	ea	1,650.00	6,600		
10950	Fall arrest system	**120**	ea	650.00	78,000		
	Market conditions and Location adjustment (Material delivery costs, travel, room and board, lost productivity)						
07720	Roof accessories trade	**1**	ls	8,040.00	8,040		
10950	Fall arrest trade	**1**	ls	15,600.00	15,600		
	SUBTOTAL					121,740	
	TOTAL - ROOFING						**$132,240**

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	NEW BUILDING						
	C10 INTERIOR CONSTRUCTION						
	C1010 PARTITIONS						
09211	1/2 Fur-out	**2,250**	sf	12.00	27,000		
09211	3A/B GWB partition	**14,168**	sf	18.00	255,024		
09211	3A/B GWB low wall partition	**80**	sf	30.00	2,400		
09211	8A 2H GWB rated partition	**1,694**	sf	25.00	42,350		
09211	4B 2H GWB rated partition	**1,680**	sf	24.00	40,320		
09211	18- GWB partition at mezz 8' to deck between shops	**3,520**	sf	20.00	70,400		
09211	2B Plumbing wall	**1,540**	sf	22.00	33,880		
04200	8A CMU walls under mezz	**5,625**	sf	35.00	196,875		
04200	8A CMU wall at wash equip	**1,260**	sf	35.00	44,100		
	Fire separapartion walls - lower						
03300	Cast in place 8" concrete knee wall	**62**	cy	800.00	49,600		
07210	2" rigid insulation	**1,680**	sf	6.00	10,080		
09211	6" metal stud	**1,680**	sf	18.00	30,240		
09211	5/8" GWB	**1,680**	sf	6.00	10,080		
	Fire separapartion walls - upper						
03300	5/8" GWB	**10,920**	sf	6.00	65,520		
09211	2 rows 6" metal stud	**21,840**	sf	12.00	262,080		
07210	3" closed cell spray foam	**10,920**	sf	10.00	109,200		
09211	5/8" GWB	**10,920**	sf	6.00	65,520		
	16 - Wash bay separation wall						
03300	Concrete curb	**62**	lf	50.00	3,100		
04200	CMU wall to 6'	**372**	sf	32.00	11,904		
09211	Gyp sheathing	**1,488**	sf	7.00	10,416		
07270	Vapor permeable barrier	**1,488**	sf	8.00	11,904		
09211	6" metal stud	**1,488**	sf	18.00	26,784		
09211	5/8" GWB	**1,488**	sf	6.00	8,928		
	Misc						
09211	Rough blocking	**1,600**	lf	8.00	12,800		
10940	Wire mesh partitions and doors	**1,440**	sf	42.00	60,480		
	Market conditions and Location adjustment (Material delivery costs, travel, room and board, lost productivity)						
09211	Drywall trade	**1**	ls	221,355.50	221,356		
07210	Insulation trade	**1**	ls	29,820.00	29,820		
07270	Waterproofing trade	**1**	ls	2,976.00	2,976		
03300	Concrete trade	**1**	ls	13,175.00	13,175		
04200	Masonry trade	**1**	ls	84,341.25	84,341		
	SUBTOTAL					1,812,653	
	C1020 INTERIOR DOORS						
	Doors & Frames						
08111	Interior doors - single	**44**	ea	950.00	41,800		
08111	Interior doors - double	**2**	ea	1,850.00	3,700		
08111	Single door with sidelight	**20**	ea	2,155.00	43,100		
08111	Interior windows	**3**	ea	3,500.00	10,500		
84500	Interior storefront at vestibule	**140**	sf	80.00	11,200		
84500	Sliding window units	**1**	ls	5,000.00	5,000		
	Hardware						
08710	Hardware	**46**	lvs	500.00	23,000		
	Glazing						
08800	Glazing to doors	**132**	sf	40.00	5,280		
08800	Glazing to frames	**420**	sf	40.00	16,800		
09900	Paint HM frames	**66**	ea	150.00	9,900		
07920	Sealants & caulking	**66**	ea	95.00	6,270		
	Market conditions and Location adjustment (Material delivery costs, travel, room and board, lost productivity)						
08111	Doors and frames trade	**1**	ls	24,775.00	24,775		
84500	Storefront trade	**1**	ls	4,050.00	4,050		
08800	Glazing trade	**1**	ls	5,520.00	5,520		
08710	Hardware trade	**1**	ls	5,750.00	5,750		
07920	Caulking and sealants trade	**1**	ls	1,567.50	1,568		
09900	Painting trade	**1**	ls	2,475.00	2,475		
	SUBTOTAL					220,688	

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	NEW BUILDING						
	C1030 SPECIALTIES / MILLWORK						
06402	Restroom vanities	**16**	lf	435.00	6,960		
06402	Window sills	**70**	lf	50.00	3,500		
06402	Muster base/wall cabinets, counter and shelving	**25**	lf	450.00	11,250		
06402	Breakroom kitchen base/wall cabinets, counter and shelving	**9**	lf	450.00	4,050		
06402	Muster window counter	**26**	lf	300.00	7,800		
06402	Engineering layout counter	**12**	lf	400.00	4,800		
06402	Mail & Copy counters and shelves	**20**	lf	425.00	8,500		
06402	Misc millwork and finish carpentry not shown	**1**	ls	10,000.00	10,000		
06402	Closet poles and shelves	**20**	lf	125.00	2,500		
06402	Low wall cap	**16**	lf	50.00	800		
	Lockers						
10850	24" x 18" Lockers - allowance	**40**	ea	750.00	30,000		
10850	Lockers benches	**4**	ea	650.00	2,600		
10850	ADA benches	**2**	ea	1,650.00	3,300		
	Restrooms						
10280	Shower curtain and rods	**3**	ea	225.00	675		
10650	Toilet partitions HC	**2**	ea	1,350.00	2,700		
10650	Toilet partitions Reg	**4**	ea	1,200.00	4,800		
10650	Toilet partitions urinal screen	**1**	ea	600.00	600		
10280	Soap disp	**10**	ea	25.00	250		
10280	Mirror	**10**	ea	265.00	2,650		
10280	Robe hook	**20**	ea	25.00	500		
10280	Grab bar	**12**	ea	120.00	1,440		
10280	Shower seat and bars	**3**	ea	265.00	795		
10280	Wet gear hooks	**12**	ea	65.00	780		
10280	SRWR	**6**	ea	250.00	1,500		
10280	TTD	**10**	ea	65.00	650		
10280	SND	**4**	ea	150.00	600		
10280	PTD	**6**	ea	285.00	1,710		
10280	Hooks	**12**	ea	35.00	420		
10280	Jan closet MB	**1**	ea	225.00	225		
	Miscellaneous						
06100	Plywood backers, locker bases and misc	**1,500**	sf	5.00	7,500		
10440	Fire extinguisher cabinets	**16**	ea	250.00	4,000		
10140	Town seal	**1**	ea	1,800.00	1,800		
10140	Cast alum letters - main sign	**1**	ls	2,500.00	2,500		
10140	Cast alum letters - OHDs	**16**	ea	175.00	2,800		
10140	Cast alum letters - secondary entry	**12**	ea	150.00	1,800		
10140	Cast alum letters - address	**1**	ls	1,500.00	1,500		
10140	Interior signage	**1**	ls	10,000.00	10,000		
10140	Code signage	**1**	ls	2,500.00	2,500		
	Market conditions and Location adjustment (Material delivery costs, travel, room and board, lost productivity)						
10650	Specialties - Toilet partitions	**1**	ls	3,240.00	3,240		
10280	Specialties - Toilet accessories	**1**	ls	7,848.00	7,848		
10140	Specialties - Signage	**1**	ls	9,160.00	9,160		
10850	Specialties - Lockers and benches	**1**	ls	14,360.00	14,360		
06100	Rough carpentry trade	**1**	ls	3,000.00	3,000		
06402	Finish carpentry trade	**1**	ls	24,064.00	24,064		
	SUBTOTAL					212,427	
	TOTAL - INTERIOR CONSTRUCTION						***$2,245,768***

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	NEW BUILDING						
	C20 STAIRCASES						
	C2010 STAIR CONSTRUCTION						
05500	Mezzanine Stairs	**6**	ea	15,000.00	90,000		
05500	Mezzanine railings	**380**	lf	150.00	57,000		
05500	Gates	**6**	ea	1,200.00	7,200		
03300	Concrete material in pan infill	**6**	ea	850.00	5,100		
	Market conditions and Location adjustment (Material delivery costs, travel, room and board, lost productivity)						
05500	Misc metals trade	**1**	ls	38,550.00	38,550		
03300	Concrete trade	**1**	ls	2,040.00	2,040		
	SUBTOTAL					199,890	
	C2020 STAIR FINISHES						
09900	Paint to mezzanine stairs	**6**	ea	3,500.00	21,000		
09900	Paint to mezzanine rails/gates	**380**	lf	35.00	13,300		
	Market conditions and Location adjustment (Material delivery costs, travel, room and board, lost productivity)						
09900	Painting trade	**1**	ls	13,720.00	13,720		
	SUBTOTAL					48,020	
	TOTAL - STAIRCASES						***$247,910***
	C30 INTERIOR FINISHES						
	C3010 WALL FINISHES						
09900	Paint to GWB	**39,750**	sf	1.75	69,563		
09900	Paint to interior CMU	**17,500**	sf	2.75	48,125		
09300	Wall tile at backsplashes and lockeroom walls	**1,200**	sf	30.00	36,000		
09211	Wash bay PVC panels on furring	**3,550**	sf	25.00	88,750		
06100	FRP to janitor closet	**200**	sf	12.00	2,400		
	Market conditions and Location adjustment (Material delivery costs, travel, room and board, lost productivity)						
09900	Painting trade	**1**	ls	35,306.40	35,306		
09300	Tile trade	**1**	ls	10,800.00	10,800		
09211	Drywall trade	**1**	ls	26,625.00	26,625		
06100	Carpentry trade	**1**	ls	960.00	960		
	SUBTOTAL					318,529	
	C3020 FLOOR FINISHES						
09651	Linoleum at corridors, muster, operations and misc storage rooms	**8,200**	sf	10.00	82,000		
09651	Rubber flooring at Fitness room	**730**	sf	14.00	10,220		
09665	Carpet tile at offices & conf rooms	**1,980**	sf	6.00	11,880		
09730	RF - Resinous Flooring at locker rooms	**1,200**	sf	16.00	19,200		
09900	SC - Sealed Concrete	**63,020**	sf	2.00	126,040		
09665	Walk off mats	**2**	ea	2,500.00	5,000		
09300	Tile at single use restrooms	**300**	sf	30.00	9,000		
09651	Rubber base	**2,650**	lf	6.00	15,900		
	Market conditions and Location adjustment (Material delivery costs, travel, room and board, lost productivity)						
09651	Resilent flooring trade	**1**	ls	29,370.00	29,370		
09665	Carpet flooring trade	**1**	ls	3,564.00	3,564		
09730	Resinous flooring trade	**1**	ls	5,760.00	5,760		
09300	Tile trade	**1**	ls	2,700.00	2,700		
09665	Walk-off trade	**1**	ls	1,500.00	1,500		
09900	Paint trade	**1**	ls	31,510.00	31,510		
	SUBTOTAL					353,644	

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	NEW BUILDING						
	C3030 CEILING FINISHES						
09510	A1 - ACT ceilings; 2' x 2'	**10,200**	sf	8.00	81,600		
09510	A2 - ACT ceilings; 2' x 2'	**300**	sf	10.00	3,000		
09211	G1 - GWB ceilings	**230**	sf	16.00	3,680		
09211	G2 - GWB ceilings	**1,745**	sf	18.00	31,410		
09211	G3 - GWB ceilings	**800**	sf	22.00	17,600		
09211	L gwb soffits	**120**	lf	100.00	12,000		
09211	U gwb soffits	**90**	lf	125.00	11,250		
09211	MR sloped ceiling and framing above wash equipment room	**140**	sf	45.00	6,300		
09211	Drop gwb soffits	**80**	lf	75.00	6,000		
09900	Paint to GWB ceilings and soffits	**4,015**	sf	2.50	10,038		
09211	Wash bay PVC panels on suspension system	**1,900**	sf	24.00	45,600		
09900	Exposed prefab metal columns and beams	**65,700**	sf	3.00	197,100		
	Market conditions and Location adjustment (Material delivery costs, travel, room and board, lost productivity)						
09510	ACT trade	**1**	ls	25,380.00	25,380		
09211	Drywall trade	**1**	ls	26,472.00	26,472		
09900	Painting trade	**1**	ls	75,821.40	75,821		
	SUBTOTAL					553,251	
	TOTAL - INTERIOR FINISHES						***1,225,424***
	D20 PLUMBING						
	D20 PLUMBING						
	Equipment						
220000	Water Meter Install - 4"	**1**	ea	1,457.50	1,458		
220000	Backflow Preventor Assembly - 4"	**1**	ea	5,520.00	5,520		
220000	Backflow Preventor Assembly - 3"	**1**	ea	4,270.00	4,270		
220000	Water Pressure Regulator - 4"	**1**	ea	1,692.50	1,693		
220000	Water Pressure Regulator - 3"	**1**	ea	1,373.75	1,374		
220000	Domestic Water Source Heat Pump	**1**	ea	21,946.25	21,946		
220000	Storage Tank	**1**	ea	10,892.50	10,893		
220000	Recirc Pump	**1**	ea	5,722.50	5,723		
220000	Expansion Tank	**1**	ea	832.50	833		
220000	Thermostatic Mixing Valve	**3**	ea	2,813.75	8,441		
220000	Thermostatic Mixing Valve SS Cabinet	**2**	ea	548.75	1,098		
220000	Reduced Pressure Backflow Preventor - 2"	**1**	ea	2,695.00	2,695		
220000	Reduced Pressure Backflow Preventor - 1"	**1**	ea	1,445.00	1,445		
220000	Oil/Water Seperator	**1**	ea	14,330.00	14,330		
220000	Waste Oil Tank	**1**	ea	6,830.00	6,830		
220000	Air Compressor w/ Dryer	**1**	ea	30,805.00	30,805		
220000	Compressed Air Outlet - CAO 1	**5**	ea	697.50	3,488		
220000	Compressed Air Outlet w/ Hose Reel - CAO 2	**13**	ea	1,296.25	16,851		
220000	Trap Primers	**16**	ea	442.50	7,080		
220000	Make Up Water Station	**1**	ea	1,327.50	1,328		
220000	Plumbing Specialties	**1**	ea	14,698.75	14,699		
220000	Vehicle Wash Equipment Connections	**1**	ea	10,302.50	10,303		
220000	Tank Connections	**8**	ea	2,352.50	18,820		
220000	Equipment Connections	**54**	ea	616.25	33,278		
	Fixtures						
220000	Water Closets	**10**	ea	1,353.75	13,538		
220000	Lavatory	**10**	ea	1,322.50	13,225		
220000	Urinals	**2**	ea	1,291.25	2,583		
220000	Showers	**3**	ea	2,207.50	6,623		
220000	Sink - 1 Bay	**2**	ea	1,303.75	2,608		
220000	Sink - 2 Bay	**1**	ea	1,390.00	1,390		
220000	Sink - Mop	**1**	ea	1,260.00	1,260		
220000	Sink - Utility	**1**	ea	1,541.25	1,541		
220000	Emergency Shower	**1**	ea	3,582.50	3,583		
220000	Drinking Fountian	**1**	ea	3,515.00	3,515		
220000	Water Bottle Fill Station	**1**	ea	2,890.00	2,890		
220000	Wall Hydrant	**14**	ea	348.75	4,883		
220000	Hose Bibbs	**23**	ea	286.25	6,584		
220000	Hose Station - HS	**3**	ea	803.75	2,411		
220000	Washer Box	**1**	ea	336.25	336		
220000	Ice Machine Box	**3**	ea	223.75	671		
220000	Floor Drains	**33**	ea	760.00	25,080		
220000	Floor Sinks	**8**	ea	885.00	7,080		

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	NEW BUILDING						
220000	(7) Trench Drains - TD 1	**210**	lf	317.50	66,675		
220000	(11) Trench Drains - TD 2	**156**	lf	190.00	29,640		
220000	(2) Trench Drains Install - TD 3	**40**	lf	128.75	5,150		
220000	Trench Drain Catch Basin	**3**	ea	1,457.50	4,373		
220000	Clean Outs	**46**	ea	317.50	14,605		
220000	Vent Thru Roof	**25**	ea	255.00	6,375		
220000	Fixture Connections	**58**	ea	697.50	40,455		
	Piping						
220000	UG Water - 2"	**1,330**	lf	67.38	89,615		
220000	UG Water - 4"	**380**	lf	150.63	57,239		
220000	UG Water - 6"	**380**	lf	191.75	72,865		
220000	Water - 1/2"	**1,130**	lf	38.75	43,788		
220000	Water - 3/4"	**1,815**	lf	41.88	76,012		
220000	Water - 1"	**165**	lf	48.25	7,961		
220000	Water - 1 1/4"	**125**	lf	53.38	6,673		
220000	Water - 1 1/2"	**315**	lf	59.13	18,626		
220000	Water - 2"	**760**	lf	67.38	51,209		
220000	Water - 2 1/2"	**120**	lf	83.25	9,990		
220000	Water - 3"	**75**	lf	96.25	7,219		
220000	Water - 4"	**25**	lf	196.75	4,919		
220000	Water - 6	**6**	lf	235.00	1,410		
220000	UG Waste - 2"	**195**	lf	93.13	18,160		
220000	UG Waste - 2 1/2"	**10**	lf	111.13	1,111		
220000	UG Waste - 3"	**145**	lf	122.00	17,690		
220000	UG Waste - 4"	**670**	lf	128.00	85,760		
220000	Waste - 1 1/2"	**45**	lf	70.13	3,156		
220000	Waste - 2"	**70**	lf	93.13	6,519		
220000	Waste - 3"	**65**	lf	122.00	7,930		
220000	Waste - 4"	**100**	lf	134.75	13,475		
220000	UG Vent - 2"	**170**	lf	93.13	15,832		
220000	UG Vent - 3"	**40**	lf	122.00	4,880		
220000	UG Vent - 4"	**60**	lf	128.00	7,680		
220000	Vent - 1 1/4"	**70**	lf	59.25	4,148		
220000	Vent - 1 1/2"	**110**	lf	70.13	7,714		
220000	Vent - 2"	**345**	lf	93.13	32,130		
220000	Vent - 2 1/2"	**105**	lf	111.13	11,669		
220000	Vent - 3"	**220**	lf	122.00	26,840		
220000	UG Oil Waste - 3"	**70**	lf	132.00	9,240		
220000	UG Oil Waste - 4"	**640**	lf	138.00	88,320		
220000	UG Oil Waste - 6"	**685**	lf	163.50	111,998		
220000	UG Oil Vent - 2 1/2"	**590**	lf	116.00	68,440		
220000	UG Oil Vent - 3"	**110**	lf	125.50	13,805		
220000	UG Oil Vent - 4"	**200**	lf	138.00	27,600		
220000	UG Oil Vent - 5"	**105**	lf	153.25	16,091		
220000	Oil Vent - 2 1/2"	**355**	lf	116.00	41,180		
220000	Oil Vent - 3"	**155**	lf	125.50	19,453		
220000	Oil Vent - 4"	**215**	lf	138.00	29,670		
220000	Oil Vent - 5"	**40**	lf	153.25	6,130		
220000	Compressed Air- 1/2"	**240**	lf	41.25	9,900		
220000	Compressed Air - 3/4"	**1,140**	lf	45.00	51,300		
220000	Compressed Air - 1"	**85**	lf	50.75	4,314		
220000	Compressed Air - 2"	**1,290**	lf	70.50	90,945		
220000	Compressed Air - 2 1/2"	**40**	lf	83.25	3,330		
220000	Insulation	**4,536**	lf	14.82	67,224		
	Trade Requirements						
220000	Excavation & Backfill	**2,600**	cy	48.50	126,100		
220000	Project Supervision	**800**	hrs	130.00	104,000		
220000	Coordination	**480**	hrs	130.00	62,400		
	Market conditions and Location adjustment						
220000	Material delivery costs, travel, room and board, lost productivity	**1**	ls	538,983.75	538,984		
	SUBTOTAL					2,694,919	
	TOTAL - PLUMBING						***$2,694,919***

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	NEW BUILDING						
	D30 HVAC						
	D30 HVAC						
	Option 1						
	Equipment						
230000	Water Source Heat Pumps	**150**	tons	2,565.00	384,750		
230000	Energy Recovery Unit	**1,850**	cfm	22.55	41,718		
230000	Heat Recovery Ventilators	**11,525**	cfm	16.93	195,118		
230000	Energy Recovery Ventilator	**1**	ea	4,135.00	4,135		
230000	Fan Coil Units	**18**	ea	3,020.00	54,360		
230000	Ductless Split Air Cooled Heat Pump System - 3 Ton	**1**	ea	5,012.50	5,013		
230000	Ductless Split Air Cooled Heat Pump System - 3/4 Ton	**1**	ea	2,562.50	2,563		
230000	Ductless Split Air Cooled Heat Pump System - 2 Ton	**2**	ea	3,687.50	7,375		
230000	Condensate Pumps	**24**	ea	375.00	9,000		
230000	Inline Exhaust Fans	**8**	ea	4,368.75	34,950		
230000	Side Wall Fans	**7**	ea	2,593.75	18,156		
230000	Kitchen Exhaust Fan	**1**	ea	3,625.00	3,625		
230000	Car-Mon Fans - VEF 1A & 1B	**2**	ea	3,850.00	7,700		
230000	Ceiling Fans - 7' Dia	**1**	ea	2,750.00	2,750		
230000	Ceiling Fans -10' Dia	**3**	ea	3,437.50	10,313		
230000	Ceiling Fans - 16' Dia	**6**	ea	4,500.00	27,000		
230000	Plymovent Hose Reels	**6**	ea	750.00	4,500		
230000	Louvers & Dampers	**100**	sf	185.00	18,500		
230000	Gravity Ventilators	**18**	ea	5,375.00	96,750		
230000	Drum Diffusers	**15**	ea	395.00	5,925		
230000	Linear Diffusers	**30**	ea	465.00	13,950		
230000	RGDs	**200**	ea	285.00	57,000		
230000	Chilled Water Pumps	**2**	ea	7,935.00	15,870		
230000	VFD - Chilled Water Pumps	**2**	ea	2,675.00	5,350		
230000	Air Seperator	**1**	ea	7,906.25	7,906		
230000	Expansion Tank	**1**	ea	6,493.75	6,494		
230000	Chemical Shot Feeder	**1**	ea	2,350.00	2,350		
230000	Glycol Make Up Unit	**1**	ea	3,937.50	3,938		
230000	Glycol	**55**	gal	34.50	1,898		
230000	Hot Water Pumps	**2**	ea	7,935.00	15,870		
230000	VFD - Hot Water Pumps	**2**	ea	2,675.00	5,350		
230000	Air Seperator	**1**	ea	7,906.25	7,906		
230000	Expansion Tank	**1**	ea	6,493.75	6,494		
230000	Chemical Shot Feeder	**1**	ea	2,350.00	2,350		
230000	Glycol Make Up Unit	**1**	ea	3,937.50	3,938		
230000	Glycol	**55**	gal	34.50	1,898		
230000	Hot Water Coils	**6**	ea	4,875.00	29,250		
230000	Electric Unit Heaters	**5**	ea	1,225.00	6,125		
230000	(16) Electric Infrared Heaters	**640**	lf	335.00	214,400		
230000	Radiant Floor Pumps - RP 1 & 2	**2**	ea	8,500.00	17,000		
230000	VFD - Radiant Floor Pumps	**2**	ea	1,650.00	3,300		
230000	Manifolds and Cabinet	**2**	ea	3,356.25	6,713		
230000	Radiant Floor Coverage - Maintenance Bay	**5,493**	sf	18.25	100,247		
	Sheet Metal						
230000	Galvanized	**82,894**	lbs	18.00	1,492,092		
230000	Aluminum	**1,965**	lbs	22.00	43,230		
230000	Sheet Metal Specialties	**1**	ls	71,106.90	71,107		
230000	Equipment Connections	**1**	ls	33,750.00	33,750		
	Piping						
230000	Geo Condenser Water Piping	**800**	lf	81.25	65,000		
230000	Geo Condenser Water Specialties	**1**	ls	3,250.00	3,250		
230000	Chilled Water Piping	**2,000**	lf	109.50	219,000		
230000	Chilled Water Specialties	**1**	ls	10,950.00	10,950		
230000	Hot Water Piping	**4,000**	lf	109.50	438,000		
230000	Hot Water Specialties	**1**	ls	21,900.00	21,900		
230000	Refrigerant Line Set	**4**	ea	1,437.50	5,750		
230000	Refrigerant Specialties	**1**	ls	575.00	575		
230000	Condensate Drain	**1,200**	lf	42.50	51,000		
230000	Condensate Drain Specialties	**1**	ls	2,550.00	2,550		
230000	Equipment Connections	**1**	ls	19,375.00	19,375		

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	NEW BUILDING						
	Geothermal - Option 1						
230000	Geothermal Wells 200 ft Deep w/ Vertical Piping	**10**	ea	25,000.00	250,000		
230000	Geothermal Water - Horizontal Field Side	**800**	lf	85.00	68,000		
230000	Geo Manifold w/ Vault	**1**	ea	17,705.00	17,705		
230000	Glycol Make Up Unit	**1**	ea	3,937.50	3,938		
230000	Glycol	**55**	gal	34.50	1,898		
230000	Geo Heat Exchanger	**1**	ea	13,540.00	13,540		
230000	Control - Geo Heat Exchanger	**1**	ea	8,490.00	8,490		
230000	Multistage Submersible Geo Well Pumps	**10**	ea	10,415.00	104,150		
230000	Control - Multistage Submersible Geo Well Pumps	**10**	ea	2,995.00	29,950		
	Insulation						
230000	Sheet Metal - Galvi	**56,368**	sf	3.95	222,654		
230000	Piping	**8,000**	lf	15.65	125,200		
	Controls						
230000	Water Source Heat Pumps	**4**	ea	2,090.00	8,360		
230000	Energy Recovery Unit	**1**	ea	14,845.00	14,845		
230000	Heat Recovery Ventilator	**6**	ea	12,730.00	76,380		
230000	Energy Recovery Ventilator	**1**	ea	12,730.00	12,730		
230000	Fan Coil Units	**18**	ea	1,497.50	26,955		
230000	Ductless Split Air Cooled Heat Pump Systems	**4**	ea	2,620.00	10,480		
230000	Condensate Pumps	**24**	ea	195.00	4,680		
230000	Inline Exhaust Fans	**8**	ea	1,902.50	15,220		
230000	Side Wall Fans	**7**	ea	2,027.50	14,193		
230000	Kitchen Exhaust Fan	**1**	ea	3,432.50	3,433		
230000	Car-Mon Fans - VEF 1A & 1B	**2**	ea	1,902.50	3,805		
230000	Ceiling Fans - 7' Dia	**1**	ea	1,342.50	1,343		
230000	Ceiling Fans -10' Dia	**3**	ea	1,342.50	4,028		
230000	Ceiling Fans - 16' Dia	**6**	ea	1,342.50	8,055		
230000	Chilled Water Pumps	**2**	ea	1,217.50	2,435		
230000	VFD - Chilled Water Pumps	**2**	ea	1,217.50	2,435		
230000	Hot Water Pumps	**2**	ea	1,217.50	2,435		
230000	VFD - Hot Water Pumps	**2**	ea	1,217.50	2,435		
230000	Electric Unit Heaters	**5**	ea	1,342.50	6,713		
230000	Electric Infrared Heaters	**16**	ea	1,747.50	27,960		
230000	Radiant Floor Pumps	**2**	ea	1,217.50	2,435		
230000	VFD - Radiant Floor Pumps	**2**	ea	1,217.50	2,435		
230000	Radiant Floor Zones - Maintenance Bay	**2**	ea	1,872.50	3,745		
230000	CO2/NO2 Monitoring	**74,700**	sf	3.00	224,100		
230000	BMS Network	**1**	ls	20,575.00	20,575		
230000	Network Integration	**1**	ls	11,200.00	11,200		
	Commissioning						
230000	Start Up	**240**	hrs	130.00	31,200		
230000	Testing, Adjusting, & Balancing	**320**	hrs	135.00	43,200		
230000	3rd Party Cx Assist	**160**	hrs	140.00	22,400		
	Trade Requirements						
230000	Project Supervision	**1,200**	hrs	130.00	156,000		
230000	Coordination	**600**	hrs	130.00	78,000		
230000	Crane	**1**	ls	6,500.00	6,500		
230000	Rigging	**160**	hrs	130.00	20,800		
	Market conditions and Location adjustment						
230000	Material delivery costs, travel, room and board, lost productivity	**1**	ls	2,265,744.80	2,265,745		
	SUBTOTAL					7,930,107	
	TOTAL - HVAC						***$7,930,107***

Schematic Design Cost Estimate GSF 65,700

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	NEW BUILDING						
	D40 FIRE PROTECTION						
	D40 FIRE PROTECTION						
210000	FP service equipment,valves, compressors and misc	**1**	ls	20,000.00	20,000		
210000	Wet and dry sprinkler heads	**880**	ea	300.00	264,000		
210000	Branch sprinkler piping with fittings & hangers	**13,200**	lf	30.00	396,000		
210000	Main sprinkler piping with fittings & hangers	**2,000**	lf	60.00	120,000		
210000	Hydraulic calculations, permits and testing	**1**	ls	25,000.00	25,000		
	Market conditions and Location adjustement						
210000	Material delivery costs, travel, room and board, lost productivity	**1**	ls	288,750.00	288,750		
	SUBTOTAL					1,113,750	
	TOTAL - FIRE PROTECTION						***$1,113,750***
	D50 ELECTRICAL						
	D5010 SERVICE AND DISTRIBUTION						
260000	Power Equipment	**65,700**	sf	8.00	525,600		
260000	Power Circuitry	**65,700**	sf	3.00	197,100		
260000	Lighting	**65,700**	sf	10.00	657,000		
260000	Power devices	**65,700**	sf	6.00	394,200		
260000	Mezzanines and open canopy lighting and power	**17,894**	sf	10.00	178,940		
	SUBTOTAL					1,952,840	
	D5030 COMMUNICATION & SECURITY SYSTEMS						
260000	Telecommunications System - rough-in	**65,700**	sf	2.25	147,825		
260000	BDA Emergency Responder Radio System	**1**	ls	75,000.00	75,000		
260000	Security System allowance	**65,700**	sf	1.50	98,550		
260000	Fire Alarm	**65,700**	sf	4.25	279,225		
260000	Mezzanines and open canopy FA	**17,894**	sf	4.00	71,576		
	SUBTOTAL					672,176	
	D5035 SITE LIGHTING AND POWER						
	Site Light Fixtures						
260000	Site Light poles	**10**	ea	4,000.00	40,000		
260000	Site Lighting Controls	**1**	ls	7,500.00	7,500		
260000	1" PVC, 4#10 UG	**2,100**	lf	8.25	17,325		
	Utilities, Service, Generator Fdrs:						
260000	Utility Pole Riser	**1**	ls	7,000.00	7,000		
260000	350 KW Generator	**1**	ls	275,000.00	275,000		
260000	Primary ductbank	**1,000**	lf	165.00	165,000		
260000	Secondary ductbanks	**600**	lf	135.00	81,000		
260000	Charging stations	**6**	ea	6,500.00	39,000		
	Telecommunications System						
260000	Tel Pole Riser	**1**	ls	5,000.00	5,000		
260000	4" PVC CDT UG (Tel, empty)	**1,600**	lf	15.00	24,000		
	Misc						
260000	Misc Site Demo, Removals, make-safe and temp services	**1**	ls	15,000.00	15,000		
	SUBTOTAL					675,825	
	D5040 OTHER ELECTRICAL SYSTEMS						
260000	Temp Power and Lighting	**1**	ls	25,000.00	25,000		
	Market conditions and Location adjustment						
260000	Material delivery costs, travel, room and board, lost productivity	**1**	ls	1,164,044.35	1,164,044		
	SUBTOTAL					1,189,044	
	TOTAL - ELECTRICAL						***$4,489,885***

Schematic Design Cost Estimate GSF 65,700

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	NEW BUILDING						
	E20 FURNISHINGS						
	E2010 FIXED FURNISHINGS						
12211	Horizontal Louver Blinds/Blackout	**600**	sf	12.00	7,200		
12211	Interior window and door blinds	**1**	ls	6,500.00	6,500		
11310	Kitchen appliances	**1**	ls	15,000.00	15,000		
	Market conditions and Location adjustment (Material delivery costs, travel, room and board, lost productivity)						
12211	Window treatments trade	**1**	ls	4,110.00	4,110		
11310	Appliances trade	**1**	ls	4,500.00	4,500		
	SUBTOTAL					37,310	
	E2020 MOVABLE FURNISHINGS						
	All movable furnishings to be provided and installed by owner					NIC	
	SUBTOTAL						
	TOTAL - FURNISHINGS						***$37,310***
	F10 INDUSTRIAL EQUIPMENT						
	Wash Bay Equipment						
11810	V-1 Manual Wash Pressure Plant	**1**	ls	325,000.00	325,000		
11810	V-1A Manual Wash Control Panel	**1**	ea		inc above		
11810	V-2 Vehicle Wash - Hot Water Heater	**1**	ea		inc above		
11810	V-3 Festoons	**2**	ea		inc above		
11810	V-4 Undercarriage Wash Pressure Plant	**1**	ea		inc above		
11810	V-4A Undercarriage Wash Control Panel	**1**	ea		inc above		
11810	V-5 Automatic Undercarriage photo Eye	**2**	ea		inc above		
11810	V-7 Vehicle Wash Soap drum	**1**	ea		inc above		
11810	V-9 Automatic Undercarriage Pre-Fab Trenches	**2**	ea		inc above		
11810	V-10 Vehicle Wash Pre-Treatment Tank (1500gal)	**1**	ea		inc above		
11810	V-11 Mobile Platform	**3**	ea		inc above		
11810	V-13 Automatic Wheel Washers	**1**	ea		inc above		
11810	V-14 Loop Detector	**2**	ea		inc above		
	SUBTOTAL					325,000	
	Industrial Equipment						
11810	A-1 5 Ton Bridge Crane	**1**	ea	100,000.00	100,000		
11810	B-1 80K Flush Mounted Platform Lift	**1**	ea	185,000.00	185,000		
11810	B-2 16K 2 Post Lift	**2**	ea	30,000.00	60,000		
11810	B-4 1,800lbs Portable Mower Lift	**1**	ea	6,500.00	6,500		
11810	C-1 8-Drum Spill Pallet	**1**	ea	500.00	500		
11810	C-1A Spill Pallet Ramp	**1**	ea	700.00	700		
11810	C-3 2-Drum Spill Pallet	**4**	ea	500.00	2,000		
11810	C-5 Low Profile Waste Oil Caddy	**1**	ea	650.00	650		
11810	C-6 Fluid Storage Room Parts Shelving	**1**	ea	1,500.00	1,500		
11810	C-7 Lube Reel Bank	**3**	ea	2,500.00	7,500		
11810	C-9 Fluid Storage Room Sump Alarm	**1**	ea	600.00	600		
11810	C-10 Wall Mounted Lube Pumps	**4**	ea	750.00	3,000		
11810	D-2 Steel Work Bench (72inx36in) (14,000 Lbs Capacity)	**3**	ea	1,500.00	4,500		
11810	E-1 Steel Work Bench (72inx36in) (14,000 Lbs Capacity)	**1**	ea	1,500.00	1,500		
11810	E-3 Hydraulic Hose Reel Rack	**1**	ea	2,500.00	2,500		
11810	E-4 Hydraulic Hose Cut Off Machine	**1**	ea	3,200.00	3,200		
11810	F-4 Multipurpose Welder - Miller Multimatic 255	**1**	ea	4,500.00	4,500		
11810	F-5 Portable Weld Fume Extractor	**1**	ea	7,500.00	7,500		
11810	F-6 Oxygen/Acetylene Tank Storage Cage	**2**	ea	2,000.00	4,000		
11810	G-3 Tire Inflation Cage	**1**	ea	1,500.00	1,500		
11810	G-4 Tire Storage Rack	**3**	ea	1,200.00	3,600		
11810	H-1 Flammable Cabinet (45 Gallons)	**3**	ea	3,200.00	9,600		
11810	M-1 Drill Press	**1**	ea	2,800.00	2,800		
11810	M-2 Parts Washer	**1**	ea	2,600.00	2,600		

Schematic Design Cost Estimate GSF 65,700

CSI CODE	DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
	NEW BUILDING						
11810	FA-1 2-Ton Monorail	**1**	ea	30,000.00	30,000		
11810	FD-3 Steel Work Bench (72inx36in)	**1**	ea	1,200.00	1,200		
11810	FD-4 Steel Work Bench w/ Casters & Elec. Shelf	**1**	ea	1,400.00	1,400		
11810	FD-5 Wood Topped Workbench	**1**	ea	1,500.00	1,500		
11810	FM-12 Portable Dust Collector	**1**	ea	2,500.00	2,500		
11810	OA-1 2-Ton Monorail	**1**	ea	30,000.00	30,000		
11810	OB-1 1,800lbs Portable Mower Lift	**1**	ea	6,500.00	6,500		
11810	OD-3 Steel Work Bench (72inx36in)	**3**	ea	1,200.00	3,600		
11810	OH-1 Hanging Tool Storage	**4**	ea	850.00	3,400		
11810	OH-3 Pallet Rack	**2**	ea	500.00	1,000		
11810	OH-4 Cantilever Rack (Flat)	**1**	ea	1,850.00	1,850		
11810	OH-5 Flammable Cabinet (45 Gallons)	**1**	ea	3,200.00	3,200		
11810	PD-1 Steel Work Bench (72inx36in)	**2**	ea	1,200.00	2,400		
11810	PH-1 Hanging Tool Storage	**3**	ea	800.00	2,400		
11810	SH-1 Flammable Cabinet (45 Gallons)	**2**	ea	3,200.00	6,400		
11810	SH-5 Vertical Sign Storage Rack	**3**	ea	950.00	2,850		
11810	SM-11 Portable Dust Collector	**1**	ea	2,500.00	2,500		
11810	Allow for relocations and install of owner equipment	**200**	hrs	150.00	30,000		
	Market conditions and Location adjustment						
11810	Material delivery costs, travel, room and board, lost productivity	**1**	ls	305,707.50	305,708		
	SUBTOTAL					854,158	
	TOTAL - INDUSTRIAL EQUIPMENT						***$1,179,158***

DESCRIPTION	QTY	UNIT	UNIT COST	EST'D COST	SUB TOTAL	TOTAL COST
ALTERNATE 1						
Option 2 Geothermal in lieu of Option 1						
B20 EXTERIOR CLOSURE						
Deduct Base						
Option 1	**1**	ls	(7,930,107.00)	(7,930,107)		
SUBTOTAL					(7,930,107)	
Add option 2						
Equipment						
Water Source Heat Pumps	**150**	tons	2,565.00	384,750		
Energy Recovery Unit	**1,850**	cfm	22.55	41,718		
Heat Recovery Ventilators	**11,525**	cfm	16.93	195,118		
Energy Recovery Ventilator	**1**	ea	4,135.00	4,135		
Fan Coil Units	**18**	ea	3,020.00	54,360		
Ductless Split Air Cooled Heat Pump System - 3 Ton	**1**	ea	5,012.50	5,013		
Ductless Split Air Cooled Heat Pump System - 3/4 Ton	**1**	ea	2,562.50	2,563		
Ductless Split Air Cooled Heat Pump System - 2 Ton	**2**	ea	3,687.50	7,375		
Condensate Pumps	**24**	ea	375.00	9,000		
Inline Exhaust Fans	**8**	ea	4,368.75	34,950		
Side Wall Fans	**7**	ea	2,593.75	18,156		
Kitchen Exhaust Fan	**1**	ea	3,625.00	3,625		
Car-Mon Fans - VEF 1A & 1B	**2**	ea	3,850.00	7,700		
Ceiling Fans - 7' Dia	**1**	ea	2,750.00	2,750		
Ceiling Fans -10' Dia	**3**	ea	3,437.50	10,313		
Ceiling Fans - 16' Dia	**6**	ea	4,500.00	27,000		
Plymovent Hose Reels	**6**	ea	750.00	4,500		
Louvers & Dampers	**100**	sf	185.00	18,500		
Gravity Ventilators	**18**	ea	5,375.00	96,750		
Drum Diffusers	**15**	ea	395.00	5,925		
Linear Diffusers	**30**	ea	465.00	13,950		
RGDs	**200**	ea	285.00	57,000		
Chilled Water Pumps	**2**	ea	7,935.00	15,870		
VFD - Chilled Water Pumps	**2**	ea	2,675.00	5,350		
Air Seperator	**1**	ea	7,906.25	7,906		
Expansion Tank	**1**	ea	6,493.75	6,494		
Chemical Shot Feeder	**1**	ea	2,350.00	2,350		
Glycol Make Up Unit	**1**	ea	3,937.50	3,938		
Glycol	**55**	gal	34.50	1,898		
Hot Water Pumps	**2**	ea	7,935.00	15,870		
VFD - Hot Water Pumps	**2**	ea	2,675.00	5,350		
Air Seperator	**1**	ea	7,906.25	7,906		
Expansion Tank	**1**	ea	6,493.75	6,494		
Chemical Shot Feeder	**1**	ea	2,350.00	2,350		
Glycol Make Up Unit	**1**	ea	3,937.50	3,938		
Glycol	**55**	gal	34.50	1,898		
Hot Water Coils	**6**	ea	4,875.00	29,250		
Electric Unit Heaters	**5**	ea	1,225.00	6,125		
(16) Electric Infrared Heaters	**640**	lf	335.00	214,400		
Radiant Floor Pumps - RP 1 & 2	**2**	ea	8,500.00	17,000		
VFD - Radiant Floor Pumps	**2**	ea	1,650.00	3,300		
Manifolds and Cabinet	**2**	ea	3,356.25	6,713		
Radiant Floor Coverage - Maintenance Bay	**5,493**	sf	18.25	100,247		

DESCRIPTION	*QTY*	*UNIT*	*UNIT COST*	*EST'D COST*	*SUB TOTAL*	*TOTAL COST*
ALTERNATE 1						
Option 2 Geothermal in lieu of Option 1						
Sheet Metal						
Galvanized	**82,894**	lbs	18.00	1,492,092		
Aluminum	**1,965**	lbs	22.00	43,230		
Sheet Metal Specialties	**1**	ls	71,106.90	71,107		
Equipment Connections	**1**	ls	33,750.00	33,750		
Piping						
Geo Condenser Water Piping	**800**	lf	81.25	65,000		
Geo Condenser Water Specialties	**1**	ls	3,250.00	3,250		
Chilled Water Piping	**2,000**	lf	109.50	219,000		
Chilled Water Specialties	**1**	ls	10,950.00	10,950		
Hot Water Piping	**4,000**	lf	109.50	438,000		
Hot Water Specialties	**1**	ls	21,900.00	21,900		
Refrigerant Line Set	**4**	ea	1,437.50	5,750		
Refrigerant Specialties	**1**	ls	575.00	575		
Condensate Drain	**1,200**	lf	42.50	51,000		
Condensate Drain Specialties	**1**	ls	2,550.00	2,550		
Equipment Connections	**1**	ls	19,375.00	19,375		
Geothermal - Option 2						
Geothermal Wells 800 ft Deep w/ Vertical Piping	**17**	ea	40,000.00	680,000		
Geothermal Water - Horizontal Field Side	**1,360**	lf	85.00	115,600		
Geo Manifold w/ Vault	**1**	ea	17,705.00	17,705		
Glycol Make Up Unit	**1**	ea	3,937.50	3,938		
Glycol	**55**	gal	34.50	1,898		
Geo Heat Exchanger	**1**	ea	13,540.00	13,540		
Control - Geo Heat Exchanger	**1**	ea	8,490.00	8,490		
Base Mounted Geo Well Pumps	**2**	ea	14,580.00	29,160		
Control - Base Mounted Geo Well Pumps	**2**	ea	2,995.00	5,990		
Insulation						
Sheet Metal - Galvi	**56,368**	sf	3.95	222,654		
Piping	**8,000**	lf	15.65	125,200		
Controls						
Water Source Heat Pumps	**4**	ea	2,090.00	8,360		
Energy Recovery Unit	**1**	ea	14,845.00	14,845		
Heat Recovery Ventilator	**6**	ea	12,730.00	76,380		
Energy Recovery Ventilator	**1**	ea	12,730.00	12,730		
Fan Coil Units	**18**	ea	1,497.50	26,955		
Ductless Split Air Cooled Heat Pump Systems	**4**	ea	2,620.00	10,480		
Condensate Pumps	**24**	ea	195.00	4,680		
Inline Exhaust Fans	**8**	ea	1,902.50	15,220		
Side Wall Fans	**7**	ea	2,027.50	14,193		
Kitchen Exhaust Fan	**1**	ea	3,432.50	3,433		
Car-Mon Fans - VEF 1A & 1B	**2**	ea	1,902.50	3,805		
Ceiling Fans - 7' Dia	**1**	ea	1,342.50	1,343		
Ceiling Fans -10' Dia	**3**	ea	1,342.50	4,028		
Ceiling Fans - 16' Dia	**6**	ea	1,342.50	8,055		
Chilled Water Pumps	**2**	ea	1,217.50	2,435		
VFD - Chilled Water Pumps	**2**	ea	1,217.50	2,435		
Hot Water Pumps	**2**	ea	1,217.50	2,435		
VFD - Hot Water Pumps	**2**	ea	1,217.50	2,435		
Electric Unit Heaters	**5**	ea	1,342.50	6,713		
Electric Infrared Heaters	**16**	ea	1,747.50	27,960		

DESCRIPTION	*QTY*	*UNIT*	*UNIT COST*	*EST'D COST*	*SUB TOTAL*	*TOTAL COST*
ALTERNATE 1						
Option 2 Geothermal in lieu of Option 1						
Radiant Floor Pumps	**2**	ea	1,217.50	2,435		
VFD - Radiant Floor Pumps	**2**	ea	1,217.50	2,435		
Radiant Floor Zones - Maintenance Bay	**2**	ea	1,872.50	3,745		
CO2/NO2 Monitoring	**74,700**	sf	3.00	224,100		
BMS Network	**1**	ls	20,575.00	20,575		
Network Integration	**1**	ls	11,200.00	11,200		
Commissioning						
Start Up	**240**	hrs	130.00	31,200		
Testing, Adjusting, & Balancing	**320**	hrs	135.00	43,200		
3rd Party Cx Assist	**160**	hrs	140.00	22,400		
Trade Requirements						
Project Supervision	**1,200**	hrs	130.00	156,000		
Coordination	**600**	hrs	130.00	78,000		
Crane	**1**	ls	6,500.00	6,500		
Rigging	**160**	hrs	130.00	20,800		
Market conditions and Location adjustment						
Material delivery costs, travel, room and board, lost productivity	**1**	ls	2,417,204.80	2,417,205		
SUBTOTAL					8,460,217	
SUBTOTAL						***$530,110***
GC - GENERAL CONDITIONS & REQUIREMENTS			13%			$68,914
GC - ISLAND PREMIUM			7%			$37,108
GL INSURANCE			1.6%			$8,482
BONDS			1.5%			$7,952
GC - OVERHEAD & PROFIT			6%			$31,807
DESIGN AND PRICING CONTINGENCY			10%			$68,437
ONE YEAR ESCALATION TO 1ST QUARTER 2025			7.5%			$51,328
TOTAL - ALTERNATE 1						***$804,138***

Town of Nantucket
New Department of Public Works Facility
Schematic Design Submission

Appendix

C. Geotechnical Report

June 21, 2024

July 15, 2024

Andrew Patnode
Director
Nantucket Department of Public Works
16 Broad Street, 1st Floor
Nantucket, MA 02554

55 Walkers Brook Drive, Suite 100 Reading, MA 01867 (HQ)
Tel: 978.532.1900

RE: Geotechnical Engineering Report
Proposed Department of Public Works Facility
Nantucket, Massachusetts

Weston & Sampson Engineers, Inc. (Weston & Sampson) is pleased to present our geotechnical engineering report for the proposed Department of Public Works (DPW) facility at 16 Shadbush Road in Nantucket, Massachusetts. Our project understanding is based on Schematic Design Plans prepared by Weston & Sampson dated June 21, 2024. Our services were completed in general accordance with our contract for Design Services and Site Alternatives for the New Public Works Facility (Contract #1486), Amendment #4 which was executed on November 29, 2023.

Information on the use of this report is provided in the document titled "Important Information about this Geotechnical Engineering Report" by Geoprofessional Business Association (GBA), Inc., as described in the Limitations section of this report.

EXISTING CONDITIONS

The project site is currently an undeveloped wooded area located east of the Nantucket Memorial Airport. The project site is generally bordered by an industrial park to the west, and wooded areas to the north, south and east as shown in *Figure 1 – Locus Map*. The project site is accessible by walking paths that originate at the end of Shadbush Road, as shown in *Figure 2 – Site Plan*.

Existing site grades within the proposed 7.96 acre DPW site generally range from about elevation (El.) 46 at the southeastern corner of the site to El. 51 at the northwestern corner of the site. An active sand pit is located west of the DWP which has been excavated down to about El. 10. Vertical elevations in this report are in feet and are based on information presented on the Schematic Design Plans; the datum is not indicated on the plans.

PROJECT UNDERSTANDING

The proposed project includes construction of a 63,500 square foot (SF) DPW facility, an 8,800 SF canopy along the western side of DPW facility, a 3,500 SF salt shed located southwest of the DPW facility, and a 2,000 SF concrete knockdown pad located north of the vehicle wash bay. The DPW facility will be a one-story structure which will include vehicle storage in the central portion of the building, administration and employee facilities on the southern end, and fleet maintenance bay and vehicle wash bay at the northern end. Proposed site improvements will also include new asphalt concrete (AC) pavement driveway and parking areas, material

storage bins, a backup generator, infiltration chamber systems, infiltration basins, grass swales, a septic system, and underground utilities.

The proposed finished floor elevation (FFE) of the DPW facility is El. 51 which will require up to 3 feet of fill to reach the proposed grade. The proposed salt shed has a FFE of El. 49 will require about 1 foot of fill to reach the proposed grade.

SUBSURFACE CONDITIONS

Geologic Setting

Information from the Massachusetts Office of Geographic Information (MassGIS) and the United States Geological Survey (USG) "Surficial Materials Map of the Siasconset Quandrangle" (2018) compiled by Byron D. Stone and Mary L. DiGiacomo-Cohen indicates that the site is located in an area of coarse glacial deposits, composed of variable sand and gravel deposits with cobbles and boulders up to 50 feet thick.

Subsurface Exploration Program

Subsurface conditions were explored between April 22 and 24, 2024 by advancing five borings (B-1 through B-5) and eight test pits (TP-101 through TP-108) at the approximate locations shown in *Figure 2*. Weston & Sampson geotechnical engineering representatives observed boring and test pit activities, measured boring locations relative to existing site features, and prepared logs for each boring and test pit.

The borings were completed by Northern Drill Services, Inc. of Northborough, MA. Standard penetration tests (SPTs) were conducted in each boring by driving a split spoon sampler with an automatic hammer in general accordance with ASTM D1586. The borings were advanced to depths between approximately 22 and 41 feet below existing grade. Following completion of drilling, B-3 was completed as a groundwater observation well. The remaining borings were backfilled with cuttings. Copies of the boring logs along with the Guide to Subsurface Exploration Logs are included in *Appendix A*.

Test pits were excavated by the Town of Nantucket DPW and were advanced to depths ranging from approximately 9.0 to 10.0 feet. The test pits were backfilled with the excavated materials. Test pit logs are included in *Attachment B*.

Encountered Subsurface Conditions

Subsurface conditions generally consisted of surficial topsoil and subsoil underlain by native sand to the depths explored. The subsurface conditions encountered in the borings were generally consistent with mapped surficial geology.

Subsurface soil and groundwater conditions described below have been interpreted based on a limited number of borings and test pits that were observed by Weston & Sampson. Variations may occur and should be expected between locations. The strata boundaries shown in our boring and test pit logs are based on our interpretations and the actual transitions may be gradual. Refer to the boring and test pit logs included in *Attachments A* and *B*, respectively, for detailed descriptions of the soil samples collected. The general Unified Soil Classification System (USCS) designation(s) for each stratum is included in the descriptions below in parentheses. Depths provided below are relative to the existing ground surface at the time of drilling.

Surficial Materials – Surficial materials encountered in the borings and test pits generally consisted of up to 3 inches of topsoil overlying subsoil extending to approximately 2 feet below existing grade.

Native Sand – Medium dense, native sand was encountered below the surface materials fill in each of the borings and test pits. The sand generally consisted of fine to medium SAND with trace non-plastic fines, and up to few gravel (SP). The borings and test pits were terminated in the sand.

Groundwater – Groundwater was measured in the observation well installed in B-3 OW at a depth of approximately 38.7 feet (El. 2.3) one day after installation. Standing water was also observed in the active sand pit located west of the site where the bottom of the excavation is at about El. 10.

We anticipate that groundwater levels will fluctuate with season, variations in precipitation, construction in the area, and other factors. Perched groundwater conditions could exist close to the ground surface, especially during and after extended periods of wet weather.

Laboratory Testing

Selected soil samples were submitted to Thielsch Engineering of Cranston, RI] for laboratory grain size (ASTM D6913) to confirm field classifications and estimate engineering properties. Laboratory test results are included in the boring and test pit logs in *Appendices A* and *B*; the laboratory test results are included in *Appendix C*.

GEOTECHNICAL RECOMMENDATIONS

General

The subsurface conditions at the site generally consist of topsoil and subsoil overlying native medium dense sand. We recommend supporting the proposed buildings on shallow spread footings bearing within the native medium dense (or denser) sand or Structural Fill placed above the native sand. Slabs may be designed and constructed as slabs-on-grade bearing on the native sand or Structural Fill placed above the native sand.

Shallow Foundations

Based on the subsurface conditions encountered in our explorations, the proposed structures can be supported by shallow spread footings bearing on native, undisturbed medium dense (or denser) sand, or on Structural Fill placed directly over the native sand. Foundation subgrade preparation recommendations are provided below.

Footings founded as recommended herein can be designed using an allowable bearing pressure of 4,000 psf. The allowable bearing pressure can be increased by one-third to resist transient wind and seismic loads provided the vertical component of the resultant of all forces due to load eccentricities remains within the middle third of the footing.

Resistance to lateral loads can be obtained by a passive equivalent fluid pressure of 165 pounds per cubic foot (pcf), ignoring the top 12 inches of embedment, and by an ultimate footing base friction coefficient of 0.35 for footings bearing on the native sand and 0.55 for footing bearing on a minimum 1 foot of Structural Fill. We recommend a minimum factor of safety of 1.5 when using sliding friction alone. A larger magnitude of movement is required to engage passive resistance than sliding friction. Therefore, a minimum factor of safety

of 2.0 is recommended when using passive pressure in addition to friction to resist lateral loads. The resistance values discussed above are only applicable where the concrete for footings are either cast directly against undisturbed native soils or Structural Fill and that the trenches created for foundation construction are backfilled with properly compacted soil.

Foundations for proposed structures should be designed in accordance with the provisions of the current edition of the Massachusetts State Building Code (MSBC). Footings should be embedded at least 4 feet below the nearest proposed adjacent ground surface exposed to freezing. Interior foundation bearing surfaces not exposed to freezing can be embedded at least 18 inches below the lowest overlying floor slab elevation but these footings will likely require special frost protection measures if constructed during freezing conditions.

Shallow foundations constructed as recommended herein are anticipated to undergo total and differential settlements of less than 1-inch and ½-inch, respectively. The majority of foundation settlement is expected to occur during construction. We recommend that construction of settlement sensitive building elements such as dry wall and tiling be delayed as long as practicable to reduce the potential for damage due to post-construction settlements.

Seismic Design

Seismic site class is determined in accordance with the International Building Code (IBC) as adapted by the MSBC using a weighted average of SPT blow counts in the upper 100 feet of soil at a site. As our deepest borings extended to a depth of 40 feet (B-3 and B-4), our site class evaluation considered mapped surficial geologic conditions in the site vicinity and assumed SPT blow counts below a depth of 40 feet. Based on the results of explorations and analyses, we recommend that the subject project be evaluated using parameters associated with Site Class D. The structural engineer shall determine the seismic site parameters (S_1 and S_s) based on the site location and site coefficients (F_a and F_v) based on the seismic site parameters and Site Class.

Liquefaction is the sudden drop in shear strength between soil particles that can occur in saturated, cohesionless soils as a result of ground acceleration during a seismic event. Liquefaction typically results in soil densification and subsequent settlement of overlying features and structures. Conditions most likely to contribute to liquefaction include a soil matrix containing loose, uniform medium to fine sand (poorly graded sand) below the groundwater table. Based on the soil and groundwater conditions encountered in our explorations, the risk of liquefaction induced structurally damaging ground deformations is low.

Slabs

Interior and exterior building and equipment slabs should bear on recompacted subgrades of native undisturbed medium dense (or denser) sand, or properly constructed Structural Fill overlying suitable native soils. Based on the subgrade preparation procedures recommended herein and the existing soil conditions, a modulus of subgrade reaction (k_{s1}) of 160 psi/in is recommended for slab design. The value for k_{s1} is for a 1 x 1 square foot area. This value should be adjusted for larger areas using the following expression:

$$Modulus\ of\ Subgrade\ Reacion\ (k_s) = k_{s1} * \left(\frac{B+1}{2B}\right)^2$$

Where:

k_s = Coefficient of vertical subgrade reaction for loaded area,
k_{s1} = Coefficient of vertical subgrade reaction for a 1 x 1 square foot area, and
B = width of loaded area in feet.

Concrete slabs on-grade should be supported on a minimum of 6 inches of clean, well graded, angular crushed stone with no more than 10 percent passing a #200 sieve placed between the prepared subgrade and concrete. If the underslab stone is saturated or trapping water, the water should be removed prior to slab placement.

Some flooring manufacturers require specific slab moisture levels and/or vapor barriers to validate the warranties on their products. A properly installed and protected vapor flow retardant can reduce slab moistures. If a vapor flow retardant is used, care should be taken not to trap moisture within the overlying crushed stone and floor slab concrete.

Drainage

Exterior ground surfaces should be sloped to drain away from all structures including walkways, pavements, and landscaping. Surfaces should also be sloped to drain away from slopes. Drainage elements such as catch basins or strip drains should provide drainage if sloping is not possible. Stormwater should not be discharged on or above slopes.

Gutters and drains should be tight-lined to a suitable erosion protected discharge and maintained as free-flowing. Cleanouts and redundant drain pipes are recommended.

Perimeter foundation drains are recommended where proposed slab elevations are more than 2 feet below existing (pre-construction) grades. Foundation drains should consist of a two-foot wide zone of drainage stone (such as washed angular crushed stone) surrounding a 4-inch diameter perforated pipe (minimum six inches all around) with the stone fully encased with a non-woven filter fabric. The drainage stone should have no more than 2 percent passing a #200 sieve and should extend to within one foot of the ground surface. The geosynthetic should have an AOS of a #70 sieve, a minimum permittivity of 1.0 sec-1, and a minimum puncture resistance of 80 pounds (such as Mirafi 160N or approved equivalent). The perforated drain pipe should be installed with the crown of the pipe at least one foot below the interior building slab level or grade along the toe of the wall. Foundation drains should be routed to a suitable, erosion protected discharge.

EARTHWORK AND CONSTRUCTION CONSIDERATIONS

Site Preparation

Site preparation for earthwork and foundation construction should include removal of existing surficial topsoil and unsuitable (e.g., soft or disturbed) soils from within a 5-foot perimeter around all proposed structures, pavement, and fill areas. Explorations encountered up to about 3 inches of topsoil. Deeper stripping depths and removal of loose surficial organic soil should be anticipated in areas of shrubs and trees. Root balls from trees and brush may extend several feet and grubbing operations can cause considerable subgrade

disturbance. In general, roots greater than 1-inch in diameter should be removed as well as areas of concentrated smaller roots. All disturbed material should be removed to undisturbed subgrade.

Subsoil should also be completely removed from within the zone-of-influence (ZOI) beneath proposed footings down to the intersection with native, undisturbed soils, and the resulting excavation backfilled with compacted Structural Fill. The ZOI is defined by a plane extending horizontally away from the bottom edges of footings and slabs a distance of 2 feet in all directions and then down and away at 1Horizontal:1Vertical (1H:1V) slopes.

Excavations resulting from site preparation should be backfilled as recommended herein. Any existing utilities should be removed or properly abandoned using Structural Fill within the ZOI of proposed structures and with Ordinary Fill below paved areas.

Subgrade Preparation and Protection

Based on the subsurface conditions encountered in our explorations and assuming proposed subgrade elevations are within a few feet of existing grades, stripping and subgrade preparation will likely expose native poorly graded sand. Poorly graded sand is susceptible to disturbance during construction; we therefore recommend placing at least 6 inches of Structural Fill below the footing following proof compaction of the native sand.

Footing and slab subgrades in granular materials should be proof compacted with at least 5 passes by a minimum 12-ton smooth drum vibratory roller. All subgrades should be observed by Weston & Sampson prior to placement of fill, forms and rebar.

If subgrade preparation exposes existing fill in areas outside the zone-of-influence of proposed structures, slabs, and other rigid site improvements, it may be possible to leave the fill in place provided the thickness, composition, and stability of the fill is evaluated by the Geotechnical Engineer. If the fill can be left in place, the surface of the fill should be prepared by scarifying (ripping) the surface of the fill to a minimum depth of 12 inches and recompacting until dense and stable with several passes of a minimum 12-ton vibratory roller.

Soft and/or disturbed areas will require over-excavation and backfilling with compacted angular crushed stone or compacted structural fill. A geosynthetic separation layer between the excavation subgrade and crushed stone backfill may also be required. We recommend that a geosynthetic used for stabilization consist of a woven geosynthetic with an AOS of #70 to # 100 sieve, and a minimum puncture resistance of at least 120 pounds (such as Mirafi FW700 or equivalent).

Subgrade protection should be the responsibility of the contractor and special precautions and protective measures appropriate for the weather and traffic conditions during construction should be used during earthwork and foundation construction to preserve the integrity of subgrades.

Construction traffic should not operate directly on subgrades.

If foundation construction occurs during freezing conditions, insulating blankets, heaters, or other suitable measures should be employed to prevent foundation subgrades from freezing until the foundations are backfilled sufficiently to prevent frost from reaching the footing subgrades and penetrating beneath foundation elements.

Excavation Considerations

Excavation will be required for site preparation, foundation construction, utility construction, site grading, etc. Surface water should be controlled during construction and prevented from eroding slopes and disturbing excavation and subgrade materials. Groundwater was observed at a depth of about 39 feet, therefore it is not anticipated that groundwater will be encountered within the expected excavation depths for foundations.

However, if required, the dewatering system should be capable of lowering the groundwater table at least 2 feet below the anticipated excavation depths and be kept operational until fill placement and compaction and wet well and valve vault construction have been completed to a level of at least 2 feet above the groundwater table elevation. Flow rates for dewatering are likely to vary depending on location, soil type, and the season during which the excavation occurs. The dewatering systems should be designed by the contractor and be capable of adapting to variable flows and conditions.

Temporary excavation support will be required for excavation depths greater than 4 feet where sloping is not feasible or where water seepage is present. Temporary excavation support should be anticipated if excavations approach the zone-of-influence beneath existing footings, structures, site features, or property lines. Foundations and utilities should be designed and constructed so that excavations into zones of influences below footings are not required.

We recommend that the type and design of shoring and dewatering systems be the responsibility of the contractor, who is in the best position to choose a system that fits the overall plan of operation. All excavations should be made in accordance with applicable OSHA safety regulations.

Trenches

Utility trench excavations should be completed as recommended above. Pipe bedding should be installed in accordance with the pipe manufacturers' recommendations. If water seepage or standing water is present in the base of utility trench excavations, we recommend over-excavating the trench by 12 to 18 inches and placing trench stabilization material in the base. Trench stabilization material should consist of well-graded, crushed stone or crushed gravel with a maximum particle size of 4 inches and be free of deleterious materials. The percent passing the U.S. Standard No. 200 Sieve should be less than 5 percent by weight when tested in accordance with ASTM C117. It may be necessary to include a filter fabric separation layer between the stabilization material and the bottom and sides of excavations.

Trench backfill above the pipe zone should consist of well graded, angular crushed stone or sand fill with no more than 6 percent passing a #200 sieve. Trench backfill should be compacted to 92 percent relative to ASTM D1557 and to 95 percent of maximum dry density as determined by ASTM D1557 within 2 feet of finished grades. Construction of hard surfaces, such as sidewalks or pavement, should not occur within two weeks of backfilling.

Fill Materials and Placement

Structural Fill – Well graded sand and gravel with a maximum particle size of 3 inches and less than 10 percent fines (such as MassDOT M1.03.0-type B Gravel Borrow or M2.01.7 Dense-graded Crushed Stone) are recommended for use as Structural Fill beneath proposed structures, within the zone-of-influence beneath

foundations and behind below grade structures, and within two feet below pavements and sidewalks. Structural Fill should be placed in maximum 10-inch-thick lifts (measured prior to compaction) with each lift compacted to at least 95 percent of maximum dry density as determined by ASTM D1557 (modified Proctor) for the specific fill material.

Ordinary Fill – Well graded sand and gravel with a maximum particle size of 6 inches and less than approximately 20 percent fines (such as MassDOT M1.01 Ordinary Borrow) is recommended for use as Ordinary Fill beyond the zone-of-influence beneath foundations and below grade structures, and more than two feet below the top of pavements and sidewalks. Ordinary Fill should be placed in maximum 12-inch-thick lifts (measured prior to compaction) with each lift compacted to at least 92 percent of maximum dry density as determined by ASTM D1557 (modified Proctor) for the specific fill material.

Crushed Stone - Crushed stone shall consist of durable crushed rock or durable crushed gravel stone, free from ice and snow, sand, clay, loam, or other deleterious or organic material. The crushed stone shall be uniformly blended and shall conform to the requirements provided in MassDOT Standard Specifications section M2.01.0. Crushed stone should be placed and compacted to a firm and unyielding condition with at least 4 passes of a vibratory compactor.

Reuse of On-Site Soils - Natural soils excavated from the site meeting free of organics, contamination (including metals, VOCs, SVOCs, etc.), and other deleterious materials may be suitable for reuse as Structural or Ordinary Fill provided the grain size distribution meets the requirements provided above and the material can be compacted to the required degree. Use of on-site materials as Structural or Ordinary Fill should be evaluated on a case-by-case basis during construction by the Geotechnical Engineer.

The moisture content of fill materials should be within 3 percent of the optimum moisture content. Moisture conditioning, if required, could consist of drying by scarification and frequent mixing in thin lifts during warm, dry conditions.

Density testing should be completed on each lift of fill during construction to confirm adequate compaction. In addition to density testing, we recommend that the fill lifts pass a proof roll using a fully loaded 10-wheel dump truck or equipment of similar size and weight and observed by the Geotechnical Engineer. In confined areas and where only hand-guided compaction equipment can be used, the lift thickness should be reduced to not more than six inches and the maximum particle size reduced to three inches.

Slopes

Soil slopes should be excavated with a smooth excavator bucket with the surface repaired if disturbed. Surface runoff should be routed so that it does not run down the face of the slopes. Erosion control is critical to maintaining all slopes and should be in place immediately after construction of all slopes. No outfalls or stormwater discharge points should be located on or above slopes. All slopes and excavations should be constructed in accordance with applicable OSHA and local safety standards.

Temporary slopes up to 10 feet high can be inclined up to 1.5H:1V provided no seepage or sloughing is present. Equipment should not be allowed to induce vibration or infiltrate water above the slopes and no surcharges should be located within 20 feet of slope crests. Temporary slopes should be expected to ravel somewhat, depending on weather conditions, soil conditions, seepage, and duration of exposure. Soft or

loose fill soils and the presence of seepage may require flatter slopes, erosion control measures, drainage elements, and/or temporary excavation support.

Permanent cut and fill slopes up to 10 feet high should be formed at 2H:1V or flatter, however shallower (3H:1V) slopes are recommended for ease of maintenance and mowing. Steeper slopes may be feasible if intact rock is encountered at the cut face, and such conditions should be evaluated by the Geotechnical Engineer during construction. The faces of fill slopes should be overbuilt and cut back into compacted materials with a smooth excavator bucket. If steeper fill slopes are desired, we should be consulted to evaluate use of grid reinforcement, rock blankets, or rock fill buttresses.

The presence of slow seepage may require drainage in the form of a blanket of angular crushed stone or a suitably revegetated reinforced erosion control blanket (such as North American Green SC150 or equivalent). Faster seepage, or the presence of soft or loose sandy soils or layers may require improved erosion control measures, subsurface drainage elements, and/or flatter slopes, and we should be consulted.

LIMITATIONS

Observation of Construction

Satisfactory earthwork and foundation performance depends to a large degree on the quality of construction. Subsurface conditions observed during construction should be compared with those encountered during the subsurface explorations. Recognition of changed conditions often requires experience; therefore, qualified personnel should visit the site with sufficient frequency to evaluate whether actual subsurface conditions differ from those anticipated. In addition, full-time construction observation of the contractor's activities is a key part of determining that the work is completed in accordance with the construction drawings and specifications.

The recommendations in this report are preliminary as actual subsurface conditions may differ from those interpreted based on our subsurface explorations. In order for our recommendations to be considered final, we must be retained to observe the actual subsurface conditions encountered during construction. Our observations will allow us to interpret the actual conditions present during construction and adapt our recommendations if needed.

Variations of Subsurface Conditions and Use of Report

We have prepared this report for use by the owner, members of the design and construction team for the subject project and site, only. The data and report can be used for estimating purposes, but our report, conclusions, and interpretations should not be construed as a warranty of the subsurface conditions and are not applicable to other sites.

Explorations indicate soil conditions only at specific locations and only to the depths penetrated. They do not necessarily reflect subsurface conditions that may exist outside or between exploration locations. If subsurface conditions differing from those described are noted during the course of excavation and construction, reevaluation will be necessary and we should be consulted.

Site development plans and design details were considered preliminary at the time this report was prepared. If changes are made in site grades, configuration, design loads, or type of construction for the structure, the conclusions and recommendations may not be applicable. We should be consulted to review final design

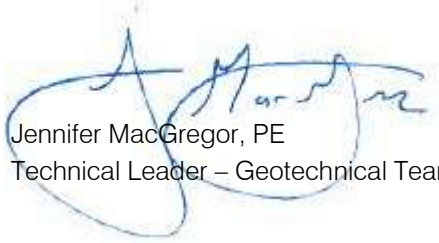
drawings and specifications to see that our recommendations are suitably followed. If design changes are made, we should be retained to review our conclusions and recommendations and provide a written evaluation or modification. Additional geotechnical engineering analyses and explorations may be necessary.

Within the limitations of scope, schedule, and budget, our services have been executed in accordance with generally accepted practices in this area at the time this report was prepared. No warranty or other conditions, expressed or implied, is given. For additional information on the use of this report, please refer to the document titled "Important Information about This Geotechnical-Engineering Report" included in *Appendix D*.

It has been a pleasure assisting you with this project and we look forward to our continued involvement. Please call if you have any questions.

Sincerely,

WESTON & SAMPSON ENGINEERS, INC.



Jennifer MacGregor, PE
Technical Leader – Geotechnical Team

Stephen Spink, PE
Geotechnical Engineering Team Leader

Attachments:
Figure 1 – Locus Plan
Figure 2 – Site Plan
Attachment A – Boring Logs
Attachment B – Test Pit Logs
Attachment C – Laboratory Test Results
Attachment D – Important Information about This Geotechnical-Engineering Report

JACM:STS

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Weston & Sampson

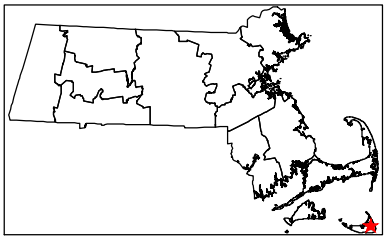
SCALE IN FEET

0 1000 2000

FIGURE 1

LOCUS MAP

NANTUCKET DPW REDESIGN
SHADBUSH ROAD
NANTUCKET, MA 02554
NANTUCKET COUNTY



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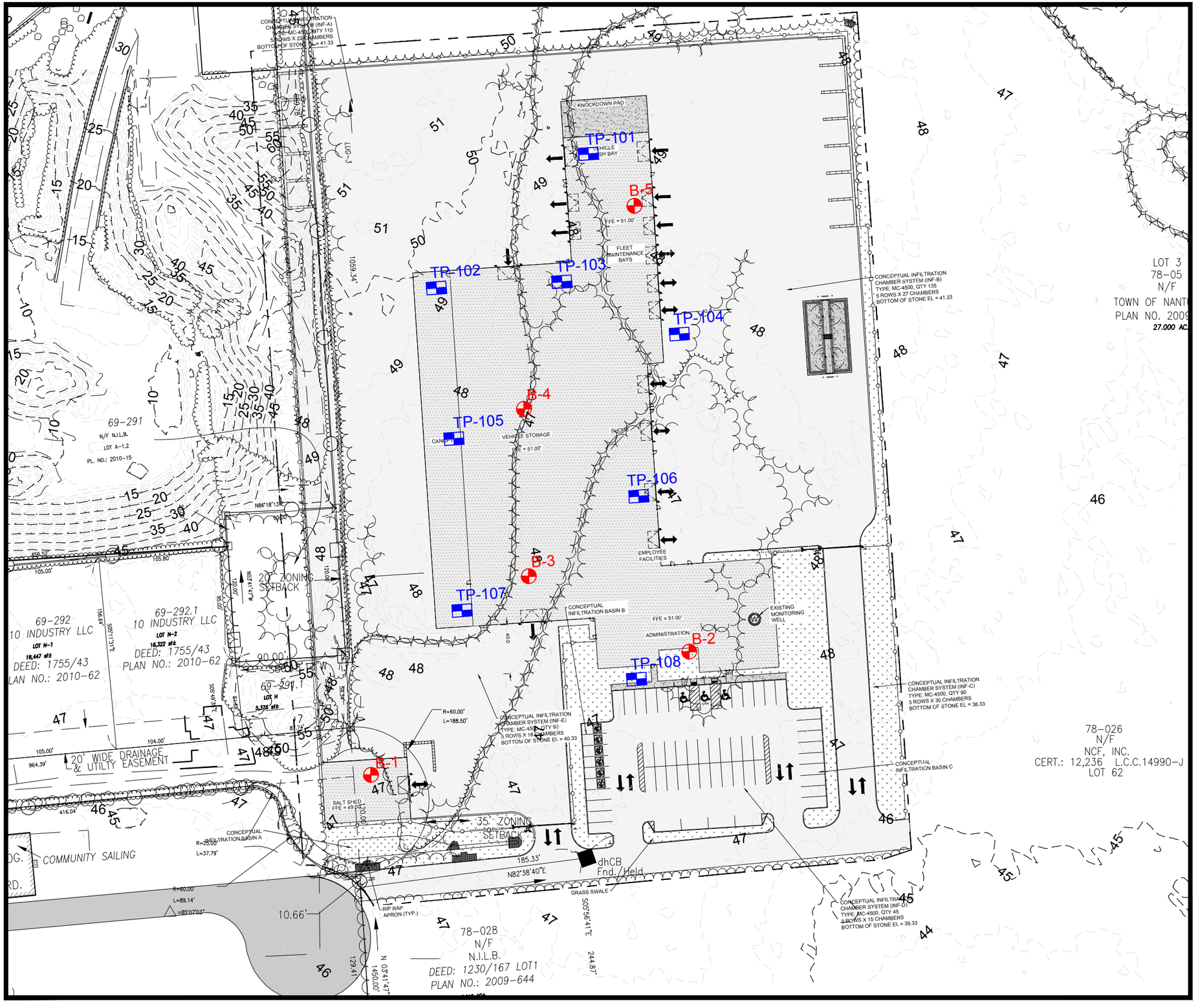


Weston & Sampson

Weston & Sampson Engineers, Inc.
55 Walkers Brook Drive, Suite 100
Reading, MA 01867
978.532.1900 800.SAMPSON
www.westonandsampson.com

NOTES

1. TOPOGRAPHICAL INFORMATION FOR MAIN DPW SITE IS BASED ON AN AERIAL FLIGHT LIDAR TOPOGRAPHIC MAPPING SURVEY PERFORMED BY BLUESKY GEOSPATIAL LTD IN JANUARY 2024.
2. THIS PLAN IS BASED ON A CONCEPTUAL SITE LAYOUT PLANS PREPARED BY WESTON & SAMPSON DATED JUNE, 2024.
3. BORINGS WERE COMPLETED BY NORTHERN DRILL SERVICE, INC. OF STERLING, MA ON APRIL 23 AND APRIL 24, 2024.
4. TEST PITS WERE COMPLETED BY THE TOWN DPW OF NANTUCKET ON APRIL 21 AND APRIL 22, 2024
5. BORINGS AND TEST PITS WERE OBSERVED BY A WESTON & SAMPSON ENGINEER.
6. BORINGS AND TEST PITS SHOWN ARE APPROXIMATE.

LEGEND

B-X — DESIGNATION AND APPROXIMATE LOCATION OF BORING

TP-X — DESIGNATION AND APPROXIMATE LOCATION OF TEST PIT

GRAPHIC SCALE

80 40 0 80 160

SCALE: 1"=80'

ORIENTATION	TITLE
	SITE PLAN
	PROJECT
	NANTUCKET DPW REDESIGN NANTUCKET, MA

DATE	05/24
DRWN BY	KL
CHKD BY	JM
PRJ. NO.	ENG20-0542
REV. NO.	-

FIGURE

FIGURE 2

Attachment A

Boring Logs

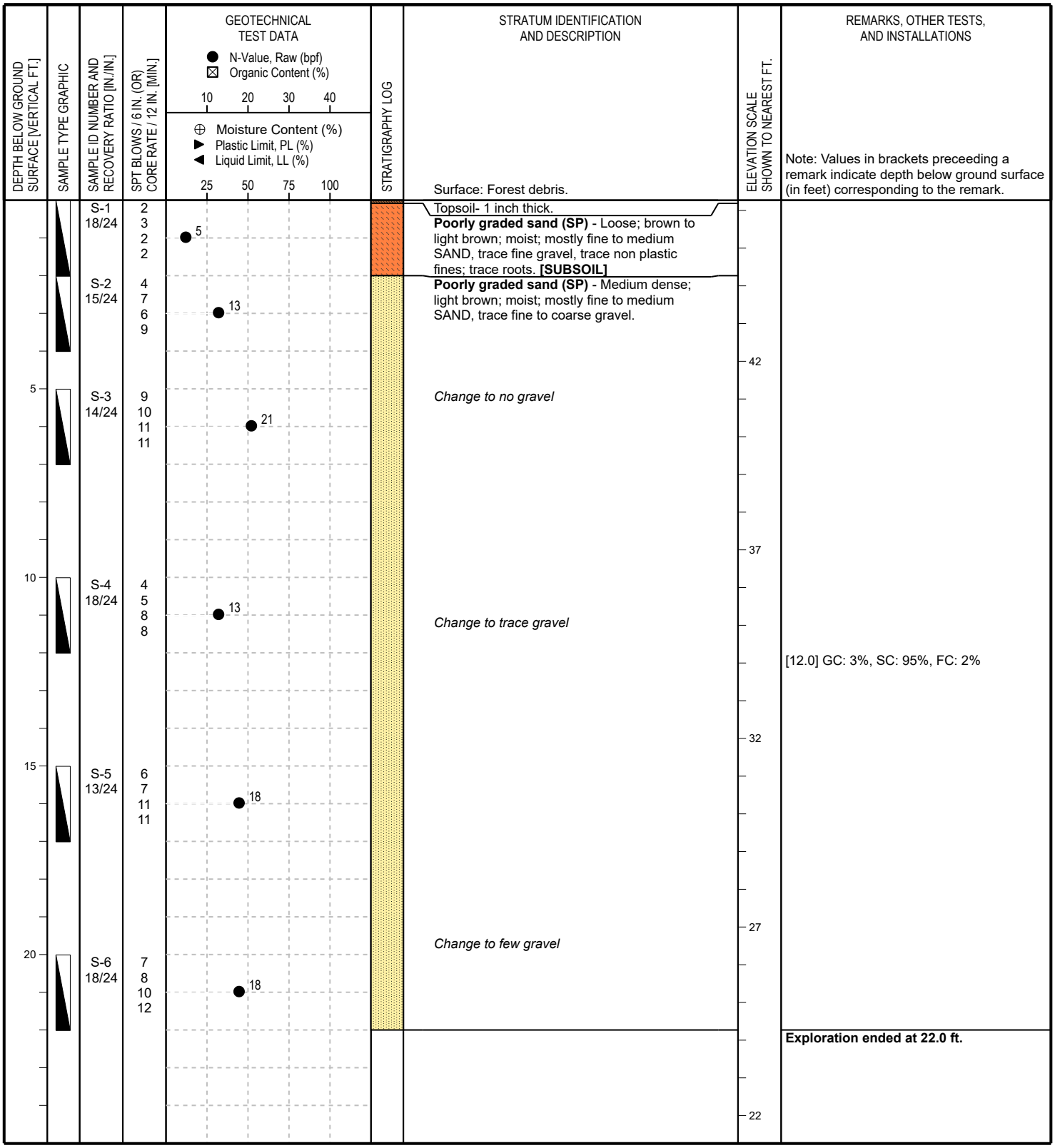
Weston & Sampson

WSE Project: ENG20-0542

Nantucket DPW
16 Shadbush Road, Nantucket

BORING ID: B-1

CONTRACTOR:	**Northern Drill Service, Inc.**	BORING LOCATION:	**See Attached Figure**	DATE START:	**April 23, 2024**
FOREMAN:	**Jon Beirholm**	ADVANCE METHOD:	**Hollow-Stem Auger Drilling**	DATE FINISH:	**April 23, 2024**
LOGGED BY:	**K. Lennon**	AUGER DIAMETER:	**3-1/4" ID (Stem), 6-5/8" OD (Flights)**	GROUND EL:	**46.3 ± (NAVD88)**
CHECKED BY:	**R. Larmouth, PE**	SUPPORT CASING:	**N/A**	FINAL DEPTH:	**22.0 ft.**
EQUIPMENT:	**Mobile B-53, ATV Mounted**	CORING METHOD:	**N/A**	GRID COORDS:	**N:94235.3240 / E:1765298.8420**
SPT HAMMER:	**Automatic (140-lb.)**	BACKFILL MATERIAL:	**Drill Cuttings**	GRID SYSTEM:	**NAD83 State Plane (MA)**



Refer to the attached index sheets for important information about this log including general notes, legends, and guidance on description methods and procedures.

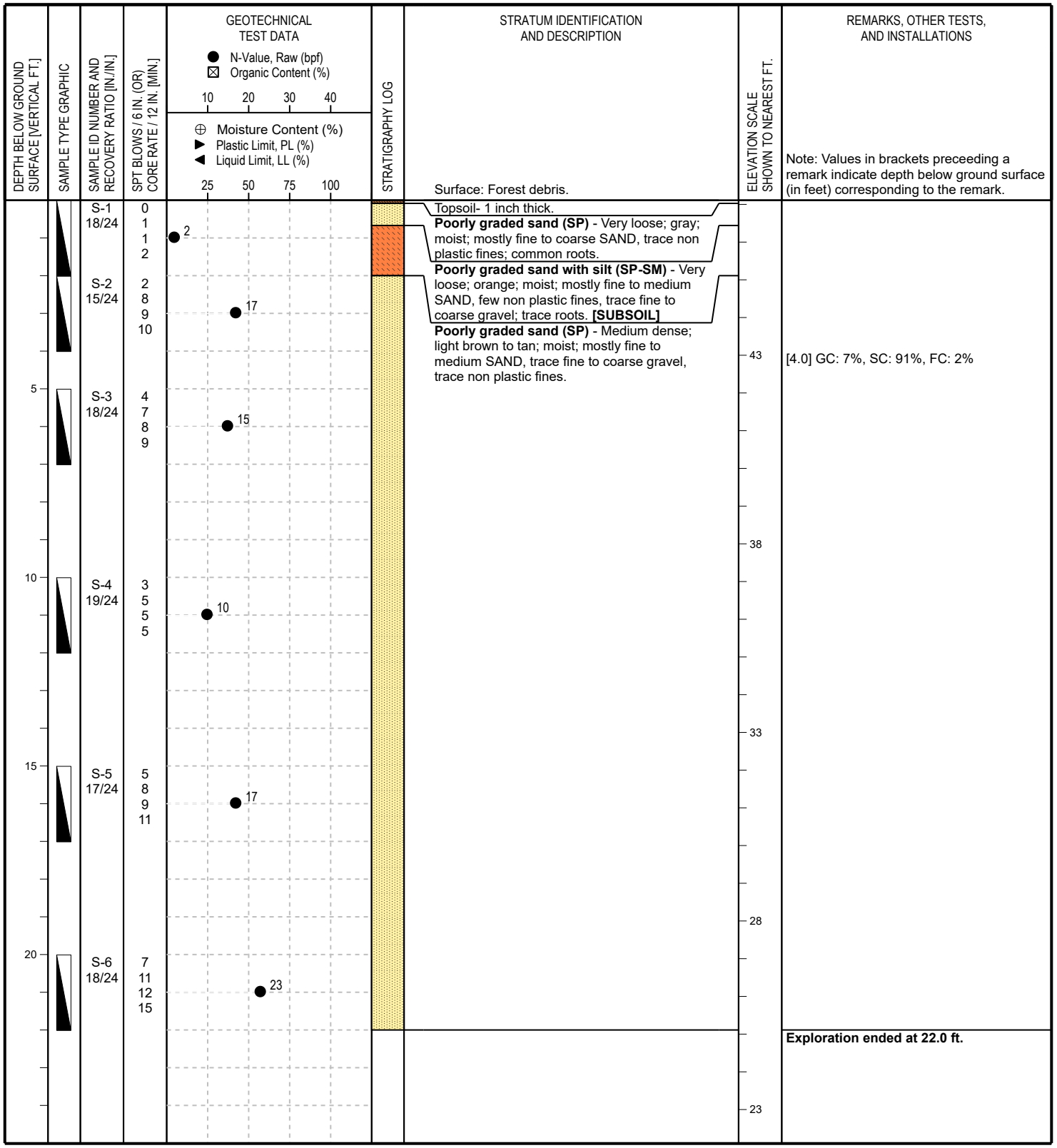
Weston & Sampson

Nantucket DPW
16 Shadbush Road, Nantucket

BORING ID: B-2

WSE Project: ENG20-0542

CONTRACTOR:	Northern Drill Service, Inc.	BORING LOCATION:	See Attached Figure	DATE START:	April 24, 2024
FOREMAN:	Jon Beirholm	ADVANCE METHOD:	Hollow-Stem Auger Drilling	DATE FINISH:	April 24, 2024
LOGGED BY:	K. Lennon	AUGER DIAMETER:	3-1/4" ID (Stem), 6-5/8" OD (Flights)	GROUND EL:	47.1 ± (NAVD88)
CHECKED BY:	R. Larmouth, PE	SUPPORT CASING:	N/A	FINAL DEPTH:	22.0 ft.
EQUIPMENT:	Mobile B-53, ATV Mounted	CORING METHOD:	N/A	GRID COORDS:	N:94341.0590 / E:1765561.1310
SPT HAMMER:	Automatic (140-lb.)	BACKFILL MATERIAL:	Drill Cuttings	GRID SYSTEM:	NAD83 State Plane (MA)



Refer to the attached index sheets for important information about this log including general notes, legends, and guidance on description methods and procedures.

Weston & Sampson

WSE Project: ENG20-0542

Nantucket DPW
16 Shadbush Road, Nantucket

BORING ID: B-3 OW

CONTRACTOR:	**Northern Drill Service, Inc.**	BORING LOCATION:	**See Attached Figure**	DATE START:	**April 23, 2024**
FOREMAN:	**Jon Beirholm**	ADVANCE METHOD:	**Rotary Wash Drilling**	DATE FINISH:	**April 23, 2024**
LOGGED BY:	**K. Lennon**	AUGER DIAMETER:	**N/A**	GROUND EL:	**47.3 ± (NAVD88)**
CHECKED BY:	**R. Larmouth, PE**	SUPPORT CASING:	**Driven Flush-Joint Casing (4" ID)**	FINAL DEPTH:	**41.0 ft.**
EQUIPMENT:	**Mobile B-53, ATV Mounted**	CORING METHOD:	**N/A**	GRID COORDS:	**N:94402.5980 / E:1765430.1750**
SPT HAMMER:	**Automatic (140-lb.)**	BACKFILL MATERIAL:	**Drill Cuttings**	GRID SYSTEM:	**NAD83 State Plane (MA)**

DEPTH BELOW GROUND SURFACE [VERTICAL FT.]	SAMPLE TYPE GRAPHIC	SAMPLE ID NUMBER AND RECOVERY RATIO [IN./IN.]	SPT BLOWS / 6 IN. (OR) CORE RATE / 12 IN. [MIN.]	GEOTECHNICAL TEST DATA (● N-Value, Raw (bpf); ⊠ Organic Content (%); ⊕ Moisture Content (%); ▶ Plastic Limit, PL (%); ◀ Liquid Limit, LL (%))	STRATIGRAPHY LOG	STRATUM IDENTIFICATION AND DESCRIPTION	ELEVATION SCALE SHOWN TO NEAREST FT.	REMARKS, OTHER TESTS, AND INSTALLATIONS
		S-1 8/24	1 1 1 2	2		Surface: Forest debris. Topsoil- 1 inch thick. **Poorly graded sand with silt (SP-SM)** - Very loose; gray; moist; mostly fine to medium SAND, few non plastic fines; common roots.		Note: Values in brackets preceeding a remark indicate depth below ground surface (in feet) corresponding to the remark.
		S-2 5/24	3 4 7 10	11		**Poorly graded sand with silt (SP-SM)** - Very loose; orange; moist; mostly fine to medium SAND, few non plastic fines; trace roots. **[SUBSOIL]**		
5		S-3 12/24	9 12 13 13	25		**Poorly graded sand (SP)** - Medium dense; light brown to tan; moist; mostly fine to medium SAND, trace non plastic fines.	43	[6.0] GC: 5%, SC: 87%, FC: 7%
10		S-4 9/24	4 7 7 8	14		*Change to few fine gravel*	38	
15		S-5 8/24	9 8 9 10	17			33	
20		S-6 10/24	8 10 13 15	23			28	
		S-7 9/24	10 13	26		*Change to no gravel*	23	

Refer to the attached index sheets for important information about this log including general notes, legends, and guidance on description methods and procedures.

Weston & Sampson

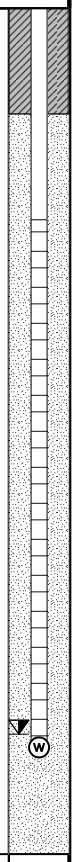
WSE Project: ENG20-0542

Nantucket DPW
16 Shadbush Road, Nantucket

BORING ID: B-3 OW

DEPTH BELOW GROUND SURFACE [VERTICAL FT.]	SAMPLE TYPE GRAPHIC	SAMPLE ID NUMBER AND RECOVERY RATIO [IN./IN.]	SPT BLOWS / 6 IN. (OR) CORE RATE / 12 IN. [MIN.]	GEOTECHNICAL TEST DATA	STRATIGRAPHY LOG	STRATUM IDENTIFICATION AND DESCRIPTION	ELEVATION SCALE SHOWN TO NEAREST FT.	REMARKS, OTHER TESTS, AND INSTALLATIONS
			13 14			**Poorly graded sand (SP)** - Medium dense; light brown to tan; moist; mostly fine to medium SAND, trace non plastic fines.		Note: Values in brackets preceeding a remark indicate depth below ground surface (in feet) corresponding to the remark.
30		S-8 9/24	7 8 11 12	19			18	
35		S-9 0/24	8 9 12 13	21			13	
40		S-10 6/24	9 7 9 10	16		*Change sample moisture to wet*	8	Water level measured at 38.7 ft. on 04/24/24 (well reading).
								Exploration ended at 41.0 ft.
45							3	
50							-2	

GEOTECHNICAL TEST DATA
- ● N-Value, Raw (bpf)
- ⊠ Organic Content (%)
- 10 20 30 40
- ⊕ Moisture Content (%)
- ▶ Plastic Limit, PL (%)
- ◀ Liquid Limit, LL (%)
- 25 50 75 100



Refer to the attached index sheets for important information about this log including general notes, legends, and guidance on description methods and procedures.

Weston & Sampson

Nantucket DPW
16 Shadbush Road, Nantucket

BORING ID: B-4

WSE Project: ENG20-0542

CONTRACTOR:	Northern Drill Service, Inc.	BORING LOCATION:	See Attached Figure	DATE START:	April 23, 2024
FOREMAN:	Jon Beirholm	ADVANCE METHOD:	Rotary Wash Drilling	DATE FINISH:	April 24, 2024
LOGGED BY:	K. Lennon	AUGER DIAMETER:	N/A	GROUND EL:	47.7 ± (NAVD88)
CHECKED BY:	R. Larmouth, PE	SUPPORT CASING:	Driven Flush-Joint Casing (4" ID)	FINAL DEPTH:	41.0 ft.
EQUIPMENT:	Mobile B-53, ATV Mounted	CORING METHOD:	N/A	GRID COORDS:	N:94539.0810 / E:1765426.2800
SPT HAMMER:	Automatic (140-lb.)	BACKFILL MATERIAL:	Drill Cuttings	GRID SYSTEM:	NAD83 State Plane (MA)

DEPTH BELOW GROUND SURFACE [VERTICAL FT.]	SAMPLE TYPE GRAPHIC	SAMPLE ID NUMBER AND RECOVERY RATIO [IN./IN.]	SPT BLOWS / 6 IN. (OR) CORE RATE / 12 IN. [MIN.]	GEOTECHNICAL TEST DATA (N-Value, Raw (bpf); Organic Content (%); Moisture Content (%); Plastic Limit, PL (%); Liquid Limit, LL (%))	STRATIGRAPHY LOG	STRATUM IDENTIFICATION AND DESCRIPTION	ELEVATION SCALE SHOWN TO NEAREST FT.	REMARKS, OTHER TESTS, AND INSTALLATIONS
						Surface: Forest debris.		Note: Values in brackets preceeding a remark indicate depth below ground surface (in feet) corresponding to the remark.
		S-1 11/24	1 1 2 2	3		Topsoil- 3 inches thick. **Poorly graded sand (SP)** - Very loose; gray; moist; mostly fine to medium SAND, trace non plastic fines; common roots.		
		S-2 9/24	5 5 5 5	10		**Poorly graded sand with silt (SP-SM)** - Very loose; orange; moist; mostly fine to medium SAND, few non plastic fines; trace roots. **[SUBSOIL]**		
5		S-3 10/24	5 6 7 8	13		**Poorly graded sand (SP)** - Loose to medium dense; light brown to tan; moist; mostly fine to medium SAND, trace fine gravel, trace non plastic fines.	43	[6.0] GC: 4%, SC: 92%, FC: 3%
10		S-4 8/24	4 4 5 6	9			38	
15		S-5 8/24	8 10 12 14	22			33	
20		S-6 8/24	8 10 14 14	24			28	
		S-7 8/24	10 14	29			23	

Refer to the attached index sheets for important information about this log including general notes, legends, and guidance on description methods and procedures.

DEPTH BELOW GROUND SURFACE [VERTICAL FT.]	SAMPLE TYPE GRAPHIC	SAMPLE ID NUMBER AND RECOVERY RATIO [IN./IN.]	SPT BLOWS / 6 IN. (OR) CORE RATE / 12 IN. [MIN.]	GEOTECHNICAL TEST DATA	STRATIGRAPHY LOG	STRATUM IDENTIFICATION AND DESCRIPTION	ELEVATION SCALE SHOWN TO NEAREST FT.	REMARKS, OTHER TESTS, AND INSTALLATIONS
			15 16			**Poorly graded sand (SP)** - Loose to medium dense; light brown to tan; moist; mostly fine to medium SAND, trace fine gravel, trace non plastic fines.		
30		S-8 7/24	10 11 12 15	23			18	
35		S-9 5/24	10 12 14 24	26			13	
40		S-10 0/24	8 8 7 7	15			8	**Exploration ended at 41.0 ft.**
45							3	
50							-2	

GEOTECHNICAL TEST DATA
- ● N-Value, Raw (bpf)
- ☒ Organic Content (%)
- 10 20 30 40
- ⊕ Moisture Content (%)
- ▶ Plastic Limit, PL (%)
- ◀ Liquid Limit, LL (%)
- 25 50 75 100

Note: Values in brackets preceeding a remark indicate depth below ground surface (in feet) corresponding to the remark.

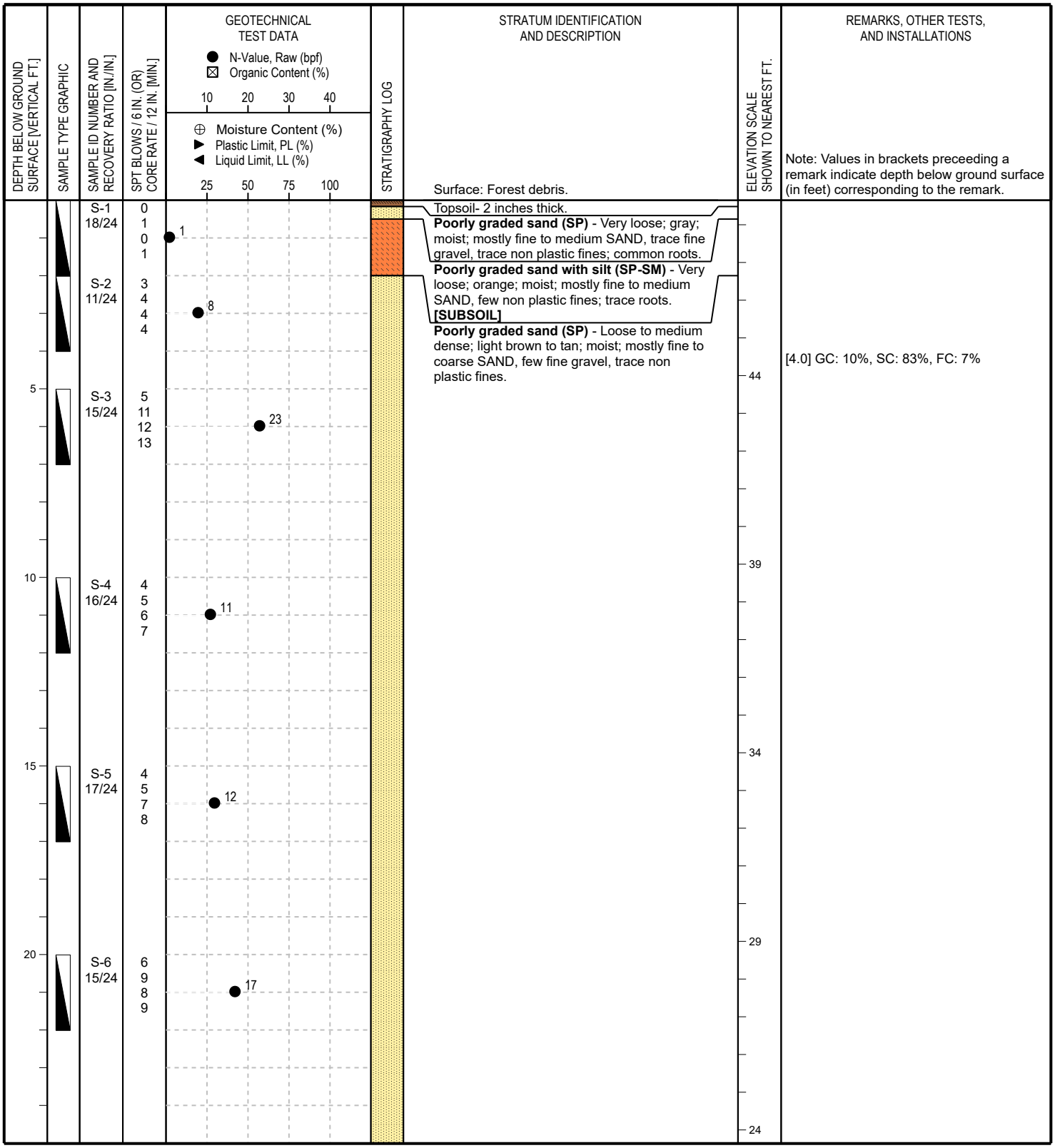
Weston & Sampson

Nantucket DPW
16 Shadbush Road, Nantucket

BORING ID: B-5

WSE Project: ENG20-0542

CONTRACTOR:	**Northern Drill Service, Inc.**	BORING LOCATION:	**See Attached Figure**	DATE START:	**April 24, 2024**
FOREMAN:	**Jon Beirholm**	ADVANCE METHOD:	**Hollow-Stem Auger Drilling**	DATE FINISH:	**April 24, 2024**
LOGGED BY:	**K. Lennon**	AUGER DIAMETER:	**3-1/4" ID (Stem), 6-5/8" OD (Flights)**	GROUND EL:	**48.6 ± (NAVD88)**
CHECKED BY:	**R. Larmouth, PE**	SUPPORT CASING:	**N/A**	FINAL DEPTH:	**27.0 ft.**
EQUIPMENT:	**Mobile B-53, ATV Mounted**	CORING METHOD:	**N/A**	GRID COORDS:	**N:94704.8080 / E:1765516.3540**
SPT HAMMER:	**Automatic (140-lb.)**	BACKFILL MATERIAL:	**Drill Cuttings**	GRID SYSTEM:	**NAD83 State Plane (MA)**



Refer to the attached index sheets for important information about this log including general notes, legends, and guidance on description methods and procedures.

Weston & Sampson

WSE Project: ENG20-0542

Nantucket DPW
16 Shadbush Road, Nantucket

BORING ID: B-5

DEPTH BELOW GROUND SURFACE [VERTICAL FT.]	SAMPLE TYPE GRAPHIC	SAMPLE ID NUMBER AND RECOVERY RATIO [IN./IN.]	SPT BLOWS / 6 IN. (OR) CORE RATE / 12 IN. [MIN.]	GEOTECHNICAL TEST DATA	STRATIGRAPHY LOG	STRATUM IDENTIFICATION AND DESCRIPTION	ELEVATION SCALE SHOWN TO NEAREST FT.	REMARKS, OTHER TESTS, AND INSTALLATIONS
		S-7 21/24	5 7 11 12	● N-Value, Raw (bpf) ☒ Organic Content (%) 10 20 30 40 ⊕ Moisture Content (%) ▶ Plastic Limit, PL (%) ◀ Liquid Limit, LL (%) 25 50 75 100 18		**Poorly graded sand (SP)** - Loose to medium dense; light brown to tan; moist; mostly fine to coarse SAND, few fine gravel, trace non plastic fines.		Note: Values in brackets preceeding a remark indicate depth below ground surface (in feet) corresponding to the remark.
								Exploration ended at 27.0 ft.
30							19	
35							14	
40							9	
45							4	
50							-1	

Refer to the attached index sheets for important information about this log including general notes, legends, and guidance on description methods and procedures.

GUIDE TO SUBSURFACE EXPLORATION LOGS

Weston & Sampson℠

INDEX SHEET 1 GENERAL INFORMATION

GENERAL NOTES AND USE OF LOGS

1.) Explorations were made by ordinary and conventional methods and with care adequate for Weston & Sampson's study and/or design purposes. The exploration logs are part of a specific report prepared by Weston & Sampson for the referenced project and client, and are an integral part of that report. Information and interpretations are subject to the explanations and limitations stated in the report. Weston & Sampson is not responsible for any interpretations, assumptions, projections, or interpolations made by others.

2.) Exploration logs represent general conditions observed at the point of exploration on the date(s) stated. Boundary lines separating soil and rock layers (strata) represent approximate boundaries only and are shown as solid lines where observed and dashed lines where inferred based on drilling action. Actual transitions may be gradual and changes may occur over time.

3.) Soil and rock descriptions are based on visual-manual examination of recovered samples, direct observation in test pits (when permissible), and laboratory testing (when conducted).

4.) Water level observations were made at the times and under the conditions stated. Fluctuations should be be expected to vary with seasons and other factors. Use of fluids during drilling may affect water level observations. The absence of water level observations does not necessarily mean the exploration was dry or that subsurface water will not be encountered during construction.

5.) Standard split spoon samplers may not recover particles with any dimension larger than 1-3/8 inches. Reported gravel conditions or poor sample recovery may not reflect actual in-situ conditions.

6.) Sections of this guide provide a general overview of Weston & Sampson's practices and procedures for *identifying* and *describing* soil and rock. These procedures are predominantly based on ASTM D2488, *Standard Practice for Description and Identification of Soils (Visual-Manual Procedures*), the International Society of Rock Mechanics (ISRM) standards, and the *Engineering Geology Field Manual* published by the Bureau of Reclamation. Not all aspects of this guide relating to description and identification procedures of soil and rock may be applicable in all circumstances.

SAMPLER GRAPHICS

- Split Spoon (Standard) 2" OD, 1-3/8" ID
- Split Spoon (Oversize) 3" OD, 2-3/8" ID
- Shelby or Piston Tube 3" OD, 2-7/8" ID
- Double-Tube Rock Core Barrel 2" Core Diameter
- Direct Push with Acetate Liner Various Liner Sizes
- A — Auger Sample *(from cuttings or hand auger)*
- G — Grab Sample *(manual, from discrete point)*
- C — Composite Sample *(multiple grab samples)*

WELL GRAPHICS

- Cement concrete seal around casing or riser pipe
- Bentonite seal around casing or riser pipe
- Cement grout seal around casing or riser pipe
- Soil backfill around riser pipe or beneath screen
- Gravel backfill around screen or riser pipe
- Sand backfill around screen or riser pipe (filter sand)
- Solid-wall riser; Sch. 40 PVC, 1" ID unless noted otherwise
- Slotted screen; Sch. 40 PVC, 1" ID with machined slots

CAVING / SEEPAGE TERMS

The following caving and/or seepage terms may appear on a test pit log.

Caving Term	Criteria
Minor	less than 1 cubic ft.
Moderate	1 to 3 cubic ft.
Severe	greater than 3 cubic ft.

Seepage Term	Criteria
Slow	less than 1 gpm
Moderate	1 to 3 gpm
Fast	greater than 3 gpm

KEY TO WATER LEVELS

- Observed in exploration during advancement.
- Measured in exploration at completion, prior to backfilling or well installation.
- Measured in exploration after the stated stabilization period, prior to backfilling, or in well installation if noted.

DEFINITIONS OF COMMON TERMS

Sample Recovery Ratio - The length of material recovered in a drive or push type sampler over the length of sampler penetration, in inches (e.g. 18/24).

Standard Penetration Test (*SPT*) - An in-situ test where a standard split-spoon sampler is driven a distance of 12 or 18 inches (after an initial 6-inch seating interval) using a 140-lb. hammer falling 30 inches for each blow.

SPT Blows - The number of hammer blows required to drive a split-spoon sampler each consecutive 6-inch interval during a *Standard Penetration Test*. If no discernable advancement of a split spoon sampler is made after 50 consecutive hammer blows, 50/X indicates *sampler refusal* and is the number of blows required to drive the sampler X inches.

SPT N-Value (*N*) - The uncorrected blow count representation of a soil's penetration resistance over a 12-inch interval after an initial 6-in. seating interval, reported in blows per foot (bpf). The N-value is correlated to soil engineering properties.

Auger Refusal - No discernable advancement of the auger over a period of 5 minutes with full rig down pressure applied.

Casing Refusal (Driven) - Casing penetration of less than 6 inches after a minimum 50 blows of a drop hammer weighing 300 lbs. or a minimum 100 blows of a drop hammer weighing 140 lbs.

PID Measurement - A measurement (electronic reading) taken in the field using a photoionization detector (PID) to detect the presence of volatile organic compounds in a soil sample. Values are reported as benzene equivalent units in parts per million (ppm) unless noted otherwise.

Rock Quality Designation (RQD) - A qualitative index measure of the degree of jointing and fracture of a rock core taken from a borehole. The RQD is defined as the sum length of solid core pieces 4 inches or longer divided by the run (cored) length, expressed as a percentage. Higher RQD values may indicate fewer joints and fractures in the rock mass.

Fill (Made Ground) - A deposit of soil and/or artificial waste materials that has been placed or altered by human processes.

LABORATORY TESTS AND FIELD MEASUREMENTS

MC	Moisture Content	IC	1D Incremental Consolidation
OC	Organic Content	VS	Laboratory Vane Shear
PL	Plastic Limit	US	Unconfined Compression
LL	Liquid Limit	TC	Triaxial Compression
GC	Gravel Content	PP	Pocket (Hand) Penetrometer
SC	Sand Content	TV	Torvane (Hand Vane)
FC	Fines Content	PID	Photoionization Detector
DS	Direct Shear	FID	Flame Ionization Detector

BORING ADVANCEMENT METHODS

Hollow-Stem Auger Drilling - Utilizes continuous flight auger sections with hollow stems to advance the borehole. Drill rods and a plug are inserted into the auger stem to prevent the entrance of soil cuttings into the augers.

Rotary Wash Drilling - Utilizes downward pressure and rotary action applied to a non-coring bit while washing the cuttings to the surface using a circulating fluid injected down the drill rods. The borehole is supported with either steel casing or the drilling fluid. Where a casing is used, the borehole is advanced sequentially by driving the casing to the desired depth and then cleaning out the casing. The process of driving and cleaning the casing is commonly referred to as the 'drive-and-wash' technique.

Continuous Sampling - Includes a variety of methods and procedures during which the borehole is advanced via continuous recovery of soil samples. *Direct Push* sampling is a common method that uses static downward pressure combined with percussive energy to drive a steel mandrel into the ground at continuous intervals while recovering soil samples in disposable acetate liners.

Rock Coring - Utilizes downward pressure and rotary action applied to a core barrel equipped with a diamond-set or tungsten carbide coring bit. During conventional coring, the entire barrel is retrieved from the hole upon completion of a core run. Wireline coring allows for removal of the inner barrel assembly containing the actual core while the the drill rods and outer barrel remain in the hole. Various types and sizes of core barrels and bits are used.

GUIDE TO SUBSURFACE EXPLORATION LOGS

Weston & Sampson℠

INDEX SHEET 2
SOIL DESCRIPTION

SOIL CONSTITUENTS

Naturally occurring soils consist of one or more of the following matrix constituents defined in terms of particle size.

Constituent		U.S. Sieve Size			Observed Size (in.)		
Gravel	(Coarse)	3/4 in.	-	3 in.	3/4	-	3
Gravel	(Fine)	No. 4	-	3/4 in.	1/5	-	3/4
Sand	(Coarse)	No. 10	-	No. 40	1/16	-	1/5
Sand	(Medium)	No. 40	-	No. 10	1/64	-	1/16
Sand	(Fine)	No. 200	-	No. 40	1/300	-	1/64
Fines	(Silt or Clay)	Smaller than		No. 200	Less than		1/300

SOIL IDENTIFICATION

Soil identification refers to the grouping of soils with similar physical characteristics into a category defined by a **group name** and corresponding **group symbol** based on estimation of the matrix soil constituents to the nearest 5% and simple manual tests. Proportions of cobbles, boulders, and other non-matrix soil materials are not considered during this procedure but are included in the overall soil description if observed or thought to be present. Refer to the following descriptions and tables adapted from ASTM D2488.

Coarse-Grained Soil - Coarse-grained soils contain fewer than 50% fines and are identified based on the following table.

Primary Constituent	Fines Percent	Type of Fines and Gradation		Group Symbol	Group Name [1]
GRAVEL	≤ 5%	well graded		GW	Well graded gravel
% gravel		poorly graded		GP	Poorly graded gravel
>	10%	clayey fines	well graded	GW-GC	Well graded gravel with clay
% sand			poorly graded	GP-GC	Poorly graded gravel with clay
		silty fines	well graded	GW-GM	Well graded gravel wth silt
			poorly graded	GP-GM	Poorly graded gravel with silt
	15% to 45%	clay fines		GC	Clayey gravel
		silt fines		GM	Silty gravel
SAND	≤ 5%	well graded		SW	Well graded sand
% sand		poorly graded		SP	Poorly graded sand
≥	10%	clayey fines	well graded	SW-SC	Well graded sand with clay
% gravel			poorly graded	SP-SC	Poorly graded sand with clay
		silty fines	well graded	SW-SM	Well graded sand with silt
			poorly graded	SP-SM	Poorly graded sand with silt
	15% to 45%	clay fines		SC	Clayey sand
		silt fines		SM	Silty sand

[1] If soil is a gravel and contains 15% or more sand, add "with sand" to the group name. If soil is a sand and contains 15% of more gravel, add "with gravel" to the group name.

Inorganic Fine-Grained Soil - Fine-grained soils contain 50% or more fines and are identified based on the following table.

Plasticity Criteria	Dry Strength	Coarse Fraction S = Sand, G = Gravel		Group Symbol	Group Name [1]
Medium	Medium to high	< 15% S + G		CL	Lean clay
		≥ 30%	% S ≥ % G	CL	Sandy lean clay
		S + G	% S < % G	CL	Gravelly lean clay
Non-plastic	None to low	< 15% S + G		ML	Silt
		≥ 30%	% S ≥ % G	ML	Sandy silt
		S + G	% S < % G	ML	Gravelly silt
High	High to very high	< 15% S + G		CH	Fat clay
		≥ 30%	% S ≥ % G	CH	Sandy fat clay
		S + G	% S < % G	CH	Gravelly fat clay
Low to Medium	Low to medium	< 15% S + G		MH	Elastic silt
		≥ 30%	% S ≥ % G	MH	Sandy elastic silt
		S + G	% S < % G	MH	Gravelly elastic silt

[1] If soil contains 15% to 25% sand or gravel, add "with sand" or "with gravel" to the group name.

Organic Fine-Grained Soil - Fine-grained soils that contain enough organic particles to influence the soil properties are identified as Organic Soil and assigned the group symbol **OL** or **OH**.

Highly Organic Soil (Peat) - Soils composed primarily of plant remains in various stages of decomposition are identified as Peat and given the group symbol **PT**. Peat usually has an organic odor, a dark brown to black color, and a texture ranging from fibrous (original plant structure intact or mostly intact) to amorphous (plant structure decomposed to fine particles).

SOIL DESCRIPTION

Soils are *described* in the following general sequence. Deviations may occur in some instances.

Identification Components

(1) Group Name and Group Symbol

Description Components

(2) Consistency (Fine-Grained) or Apparent Density (Coarse-Grained)
(3) Color (*note, the term "to" may be used to indicate a gradational change*)
(4) Soil Moisture
(5) Matrix Soil Constituents (Gravel, Sand, Fines)
  └► Proportion (*by weight*), particle size, plasticity of fines, angularity, etc.
(6) Non-Matrix Soil Materials and Proportions (*by volume*)
(7) Other Descriptive Information (Unusual Odor, Structure, Texture, etc.)
(8) [Geologic Formation Name or Soil Survey Unit]

SPT N-VALUE CORRELATIONS

Consistency	SPT N-Value	Apparent Density	SPT N-Value
Very soft	0 - 2	Very loose	0 - 5
Soft	2 - 4	Loose	5 - 10
Medium stiff	4 - 8	Medium dense	10 - 30
Stiff	8 - 15	Dense	30 - 50
Very stiff	15 - 30	Very dense	> 50
Hard	> 30		

SOIL MOISTURE

Dry..... Apparent absence of moisture; dry to the touch.
Moist..... Damp but no visible water.
Wet..... Visible free water; saturated.

PROPORTIONS / PERCENTAGES

Proportions of gravel, sand, and fines (excluding cobbles, boulders, and other constituents) are stated in the following terms indicating a range of percentages by weight (to nearest 5%) of the minus 3-in. soil fraction and add up to 100%.

Mostly ..... 50% - 100%
Some ..... 30% - 45%
Little ..... 15% - 25%
Few ..... 5% - 10%
Trace..... Less than 5%

Proportions of cobbles, boulders, and other non-matrix soil materials including artificial debris, roots, plant fibers, etc. are stated in the following terms indicating a range of percentages by volume (to the nearest 5%) of the total soil.

Numerous ..... 40% - 50%
Common ..... 25% - 35%
Occasional ..... 10% - 20%
Trace..... Less than 5%

PLASTICITY (FINES ONLY)

Non-plastic.....Dry specimen ball falls apart easily. Cannot be rolled into thread at any moisture content.
Low.....Dry specimen ball easily crushed with fingers. Can be rolled into 1/8-in. thread with some difficulty.
Medium.....Difficult to crush dry specimen ball with fingers. Easily rolled into 1/8-in. thread.
High.....Cannot crush dry specimen ball with fingers. Easily rolled and re-rolled into 1/8-in. thread.

COBBLES AND BOULDERS

Cobbles - Particles of rock that will pass a 12-in. square opening and be retained on a 3-in. sieve.

Boulders - Particles of rock that will not pass a 12-in. square opening.

Note: Where the percentage (by volume) of cobbles and/or boulders cannot be accurately or reliably estimated, the terms "with cobbles", "with boulders", or "with cobbles and boulders" may be used to indicate observed or inferred presence.

GUIDE TO SUBSURFACE EXPLORATION LOGS

Weston & Sampson℠

INDEX SHEET 3
ROCK DESCRIPTION

ROCK DEFINITION

Where reported on an exploration log, *rock* is defined as any naturally formed aggregate of mineral matter occurring in larges masses or fragments. This definition of rock should not be taken as a replacement for any definitions relating to rock and/or rock excavation defined in construction documents. Intensely weathered or decomposed rock that is friable and can be reduced to gravel size particles or smaller by normal hand pressure is identified and described as soil. Poorly indurated formational materials which display both rock-like and soil-like properties are identified and described as rock followed by the soil description. In such cases, the term "poorly indurated" or "weakly cemented" is added to the rock name (e.g. weakly cemented sandstone).

ROCK IDENTIFICATION

Rock is identified by a combination of *rock type* (igneous, metamorphic, or sedimentary) followed by the the *rock name* (e.g. granite, schist, sandstone).

ROCK DESCRIPTION

Rock descriptions are presented in the following general sequence. The detail of description is dictated by the complexity and objectives of the project.

Identification Components

(1) Rock Type and Name

Description Components

(2) Rock Grain Size (*for clastic sedimentary rock*)
(3) Crystal Size (*for igneous and metamorphic rock*)
(4) Bedding Spacing (*for sedimentary rock*)
(5) Color
(6) Hardness and Weathering Descriptors
(7) Fracture Density
(8) [Geologic Formation Name]

ROCK QUALITY DESIGNATION

$$\text{RQD (\%)} = \frac{\Sigma \text{ Length of intact core pieces} \geq 4 \text{ inches}}{\text{Total length of core run (inches)}} \times 100$$

The RQD should correlate with the fracture density in most cases. Higher RDQ values generally indicate fewer joints and fractures.

GRAIN / CRYSTAL SIZE

Grain Size for Clastic Sedimentary Rock

The names of clastic sedimentary rocks are generally based on their predominant clast or grain size (e.g. fine sandstone, medium sandstone, coarse gravel conglomerate, cobble conglomerate, siltstone, claystone).

Crystal Size for Igneous and Metamorphic Rock

Grain Size Description	Average Crystal Size (in.)
Very coarse grained (pegmatitic)	Greater than or equal to 3/8
Coarse-grained	Between 3/16 and 3/8
Medium-grained	Between 1/32 and 3/16
Fine-grained	Between 1/250 and 1/32
Aphanitic	Less than or equal to 1/250

BEDDING SPACING

Bedding Description	Thickness / Spacing
Massive	Less than 10 ft.
Very thickly bedded	3 ft. to 10 ft.
Thickly bedded	1 ft. to 3 ft.
Moderately bedded	4 in. to 1 ft.
Thinly bedded	1 in. to 4 in.
Very thinly bedded	1/4 in. to 1 in.
Laminated	Less than 1/4 in.

Note: Bedding is generally only applicable to sedimentary or bedded volcanic rocks.

HARDNESS

Hardness	Criteria
Extremely hard	Cannot be scratched with a pocketknife or sharp pick. Can only be chipped with repeated heavy hammer blows.
Very hard	Cannot be scratched with a pocketknife or sharp pick with difficulty. Breaks with repeated heavy hammer blows.
Hard	Can be scratched with with a pocketknife or sharp pick with difficulty. Breaks with heavy hammer blows.
Moderately hard	Can be scratched with a pocketknife or sharp pick with light or moderate pressure. Breaks with moderate hammer blows.
Moderately soft	Can be grooved 1/16 in. deep with a pocketknife or sharp pick with moderate or heavy pressure. Breaks with light hammer blow or heavy manual pressure.
Soft	Can be grooved or gouged easily with a pocketknife or sharp pick. Breaks with light to moderate manual pressure.
Very soft	Can be readily indented, grooved, or gouged with fingernail, or carved with a pocketknife. Breaks with light manual pressure.

WEATHERING (INTACT ROCK)

Weathering Description	Discoloration and/or Oxidation	General Characteristics
Fresh	Body of rock and fracture surfaces are not discolored or oxidized.	Rock texture unchanged. Hammer rings when crystalline rocks are struck.
Slightly weathered	Discoloration or oxidation limited to surface of, or short distance from, fractures. Most surfaces exhibit minor to complete discoloration.	Rock texture preserved. Hammer rings when crystalline rocks are struck. Body of rock not weakened.
Moderately weathered	Discoloration or oxidation extends usually throughout. Fe-Mg minerals appear rusty. All fracture surfaces are discolored or oxidized.	Rock texture generally preserved. Hammer does not ring when rock is struck. Body of rock slightly weakened.
Intensely weathered	Discoloration or oxidation throughout. Feldspar and Fe-Mg minerals altered to clay to some extent. All fracture surfaces are discolored or oxidized and friable.	Rock texture altered by chemical disintegration. Can usually be broken with moderate to heavy manual pressure or by light hammer blow . Body of rock is significantly weakened.
Decomposed	Discoloration or oxidation throughout but resistant minerals such as quartz may be unaltered. All feldspar and Fe-Mg minerals are completely altered to clay.	Resembles a soil; partial or complete remnant rock structure may be preserved. Can be granulated by hand. Resistant minerals may present as stringers or dikes.

FRACTURE DENSITY

Description	Observed Fracture Density
Unfractured	No fractures
Very slightly fractured	Core lengths greater than 3 ft.
Slightly fractured	Core lengths mostly from 1 ft. to 3 ft.
Moderately fractured	Core lengths mostly from 4 in. to 1 ft.
Intensely fractured	Core lengths mostly from 1 in. to 4 in.
Very intensely fractured	Mostly chips and fragments

Note: Fracture density is based on the fracture spacing in recovered core, measured along the core axis (excluding mechanical breaks).

Attachment B

Test Pit Logs

Weston & Sampson

Nantucket DPW

TEST PIT ID: TP-101

WSE Project: ENG20-0542

16 Shadbush Road, Nantucket

CONTRACTOR:	**Excavated by Town DPW**	TEST PIT LOCATION:	**See Attached Figure**	DATE START:	**April 22, 2024**
OPERATOR:	**Delroy "Anthony" Grant**	PLAN DIMENSIONS:	**Length: 9.0 ft. , Width: 4.8 ft.**	DATE FINISH:	**April 22, 2024**
LOGGED BY:	**K. Lennon**	SEEPAGE REMARKS:	**No Seepage Observed**	GROUND EL:	**48.0 ± (NAVD88)**
CHECKED BY:	**R. Larmouth, PE**	CAVING REMARKS:	**No Caving Observed**	FINAL DEPTH:	**10.0 ft.**
EQUIPMENT:	**Hydraulic Excavator, Compact**	BACKFILL MATERIAL:	**Excavated Soil**	GRID COORDS:	**N:94748 ± / E:1765479 ±**
BUCKET TYPE:	**Toothed, 20-in. (5.1 cubic-ft.)**	OTHER COMMENTS:		GRID SYSTEM:	**NAD83 State Plane (MA)**

DEPTH BELOW GROUND SURFACE [VERTICAL FT.]	SAMPLE TYPE GRAPHIC	STRATIGRAPHY LOG	STRATUM IDENTIFICATION AND DESCRIPTION	ELEVATION SCALE SHOWN TO NEAREST FT.	REMARKS, OTHER TESTS, AND INSTALLATIONS
			Surface: Forest debris.		Note: Values in brackets preceeding a remark indicate depth below ground surface (in feet) corresponding to the remark.
	G		Topsoil- 1 inch thick.		
	G		**Poorly graded sand (SP)** - Gray; moist; mostly fine to coarse SAND, trace fine to coarse gravel, trace non plastic fines; common roots.		
			Poorly graded sand with silt (SP-SM) - Orange; moist; mostly fine to medium SAND, few non plastic fines; trace roots. **[SUBSOIL]**		
	G		**Poorly graded sand with gravel (SP)** - Light brown to tan; moist; mostly fine to medium SAND, little fine to coarse gravel, trace non plastic fines.		
5				43	
	G		*Change to little gravel*		[8.5] GC: 29%, SC: 69%, FC: 2%
10				38	**Exploration ended at 10.0 ft.**

TEST PIT PHOTOGRAPHS

TP-101 Excavated Soil Pile

TP-101 Sidewall Overview

Refer to the attached index sheets for important information about this log including general notes, legends, and guidance on description methods and procedures.

Weston & Sampson

Nantucket DPW

TEST PIT ID: TP-102

WSE Project: ENG20-0542

16 Shadbush Road, Nantucket

CONTRACTOR:	**Excavated by Town DPW**	TEST PIT LOCATION:	**See Attached Figure**	DATE START:	**April 23, 2024**
OPERATOR:	**Delroy "Anthony" Grant**	PLAN DIMENSIONS:	**Length: 9.0 ft. , Width: 4.2 ft.**	DATE FINISH:	**April 23, 2024**
LOGGED BY:	**K. Lennon**	SEEPAGE REMARKS:	**No Seepage Observed**	GROUND EL:	**49.9 ± (NAVD88)**
CHECKED BY:	**R. Larmouth, PE**	CAVING REMARKS:	**No Caving Observed**	FINAL DEPTH:	**10.0 ft.**
EQUIPMENT:	**Hydraulic Excavator, Compact**	BACKFILL MATERIAL:	**Excavated Soil**	GRID COORDS:	**N:94639 ± / E:1765355 ±**
BUCKET TYPE:	**Toothed, 20-in. (5.1 cubic-ft.)**	OTHER COMMENTS:		GRID SYSTEM:	**NAD83 State Plane (MA)**

DEPTH BELOW GROUND SURFACE [VERTICAL FT.]	SAMPLE TYPE GRAPHIC	STRATIGRAPHY LOG	STRATUM IDENTIFICATION AND DESCRIPTION	ELEVATION SCALE SHOWN TO NEAREST FT.	REMARKS, OTHER TESTS, AND INSTALLATIONS
			Surface: Forest debris.		Note: Values in brackets preceeding a remark indicate depth below ground surface (in feet) corresponding to the remark.
	G		Topsoil- 4 inches thick.		
	G		**Poorly graded sand (SP)** - Gray; moist; mostly fine to coarse SAND, trace non plastic fines; common roots.		
			Poorly graded sand with silt (SP-SM) - Orange; mostly fine to medium SAND, few non plastic fines; trace roots. **[SUBSOIL]**		
	G		**Poorly graded sand (SP)** - Light brown to tan; moist; mostly fine to coarse SAND, few fine to coarse gravel, trace non plastic fines.		
5				45	
10				40	**Exploration ended at 10.0 ft.**

TEST PIT PHOTOGRAPHS

TP-102 Excavated Soil Pile

TP-102 Sidewall Profile

Weston & Sampson

Nantucket DPW

TEST PIT ID: TP-103

WSE Project: ENG20-0542

16 Shadbush Road, Nantucket

CONTRACTOR:	**Excavated by Town DPW**	TEST PIT LOCATION:	**See Attached Figure**	DATE START:	**April 22, 2024**
OPERATOR:	**Delroy "Anthony" Grant**	PLAN DIMENSIONS:	**Length: 8.0 ft. , Width: 4.0 ft.**	DATE FINISH:	**April 22, 2024**
LOGGED BY:	**K. Lennon**	SEEPAGE REMARKS:	**No Seepage Observed**	GROUND EL:	**49.0 ± (NAVD88)**
CHECKED BY:	**R. Larmouth, PE**	CAVING REMARKS:	**No Caving Observed**	FINAL DEPTH:	**10.0 ft.**
EQUIPMENT:	**Hydraulic Excavator, Compact**	BACKFILL MATERIAL:	**Excavated Soil**	GRID COORDS:	**N:94644 ± / E:1765457 ±**
BUCKET TYPE:	**Toothed, 20-in. (5.1 cubic-ft.)**	OTHER COMMENTS:		GRID SYSTEM:	**NAD83 State Plane (MA)**

DEPTH BELOW GROUND SURFACE [VERTICAL FT.]	SAMPLE TYPE GRAPHIC	STRATIGRAPHY LOG	STRATUM IDENTIFICATION AND DESCRIPTION	ELEVATION SCALE SHOWN TO NEAREST FT.	REMARKS, OTHER TESTS, AND INSTALLATIONS
			Surface: Forest debris.		Note: Values in brackets preceeding a remark indicate depth below ground surface (in feet) corresponding to the remark.
	G		Topsoil- 3 inches thick.		
	G		**Poorly graded sand (SP)** - Gray; moist; mostly fine to coarse SAND, trace fine to coarse gravel, trace non plastic fines; common roots.		
			Poorly graded sand with silt (SP-SM) - Orange; mostly fine to medium SAND, few non plastic fines; trace roots. **[SUBSOIL]**		
	G		**Poorly graded sand (SP)** - Mostly fine to medium SAND, trace fine to coarse gravel, trace non plastic fines.		
			Change to fine to coarse		
5				44	
			Change to little gravel		
	G				
10				39	**Exploration ended at 10.0 ft.**

TEST PIT PHOTOGRAPHS

TP-103 Excavated Soil Pile

TP-103 Sidewall Overview

Weston & Sampson

Nantucket DPW

TEST PIT ID: TP-104

WSE Project: ENG20-0542

16 Shadbush Road, Nantucket

CONTRACTOR:	**Excavated by Town DPW**	TEST PIT LOCATION:	**See Attached Figure**	DATE START:	**April 22, 2024**
OPERATOR:	**Delroy "Anthony" Grant**	PLAN DIMENSIONS:	**Length: 8.0 ft. , Width: 3.8 ft.**	DATE FINISH:	**April 22, 2024**
LOGGED BY:	**K. Lennon**	SEEPAGE REMARKS:	**No Seepage Observed**	GROUND EL:	**48.7 ± (NAVD88)**
CHECKED BY:	**R. Larmouth, PE**	CAVING REMARKS:	**No Caving Observed**	FINAL DEPTH:	**10.0 ft.**
EQUIPMENT:	**Hydraulic Excavator, Compact**	BACKFILL MATERIAL:	**Excavated Soil**	GRID COORDS:	**N:94601 ± / E:1765553 ±**
BUCKET TYPE:	**Toothed, 20-in. (5.1 cubic-ft.)**	OTHER COMMENTS:		GRID SYSTEM:	**NAD83 State Plane (MA)**

DEPTH BELOW GROUND SURFACE [VERTICAL FT.]	SAMPLE TYPE GRAPHIC	STRATIGRAPHY LOG	STRATUM IDENTIFICATION AND DESCRIPTION	ELEVATION SCALE SHOWN TO NEAREST FT.	REMARKS, OTHER TESTS, AND INSTALLATIONS
			Surface: Forest debris.		Note: Values in brackets preceeding a remark indicate depth below ground surface (in feet) corresponding to the remark.
	G		Topsoil- 2 inches thick.		
	G		**Poorly graded sand (SP)** - Gray; moist; mostly fine to coarse SAND, trace non plastic fines; common roots.		[1.0] GC: 0%, SC: 89%, FC: 11%
	G		**Poorly graded sand with silt (SP-SM)** - Orange; mostly fine to medium SAND, few non plastic fines; trace roots. **[SUBSOIL]**		
	G		**Poorly graded sand (SP)** - Light brown; moist; mostly fine to medium SAND, trace fine to coarse gravel, trace non plastic fines.		
5			**Poorly graded sand (SP)** - Light brown to tan; moist; mostly fine to coarse SAND, few fine to coarse gravel, trace non plastic fines.	44	
10				39	**Exploration ended at 10.0 ft.**
				34	

TEST PIT PHOTOGRAPHS

TP-104 Excavated Soil Pile

TP-104 Sidewall Overview

Weston & Sampson

Nantucket DPW

TEST PIT ID: TP-105

WSE Project: ENG20-0542

16 Shadbush Road, Nantucket

CONTRACTOR:	**Excavated by Town DPW**	TEST PIT LOCATION:	**See Attached Figure**	DATE START:	**April 22, 2024**
OPERATOR:	**Delroy "Anthony" Grant**	PLAN DIMENSIONS:	**Length: 10.0 ft. , Width: 3.8 ft.**	DATE FINISH:	**April 22, 2024**
LOGGED BY:	**K. Lennon**	SEEPAGE REMARKS:	**No Seepage Observed**	GROUND EL:	**48.0 ± (NAVD88)**
CHECKED BY:	**R. Larmouth, PE**	CAVING REMARKS:	**Moderate Caving Below 3.8 ft.**	FINAL DEPTH:	**9.0 ft.**
EQUIPMENT:	**Hydraulic Excavator, Compact**	BACKFILL MATERIAL:	**Excavated Soil**	GRID COORDS:	**N:94516 ± / E:1765369 ±**
BUCKET TYPE:	**Toothed, 20-in. (5.1 cubic-ft.)**	OTHER COMMENTS:		GRID SYSTEM:	**NAD83 State Plane (MA)**

DEPTH BELOW GROUND SURFACE [VERTICAL FT.]	SAMPLE TYPE GRAPHIC	STRATIGRAPHY LOG	STRATUM IDENTIFICATION AND DESCRIPTION	ELEVATION SCALE SHOWN TO NEAREST FT.	REMARKS, OTHER TESTS, AND INSTALLATIONS
			Surface: Forest debris.		Note: Values in brackets preceeding a remark indicate depth below ground surface (in feet) corresponding to the remark.
			Topsoil- 9 inches thick.		
	G		**Poorly graded sand with silt (SP-SM)** - Brown to orange; moist; mostly fine to medium SAND, few non plastic fines; trace roots. **[SUBSOIL]**		
	G		**Poorly graded sand (SP)** - Light brown to tan; mostly fine to coarse SAND, trace fine gravel, trace non plastic fines.		
5				43	
	G				
10				38	***Collapse at 9.0 ft. (exploration ended).***

TEST PIT PHOTOGRAPHS

TP-105 Excavated Soil Pile

TP-105 Sidewall Overview

Refer to the attached index sheets for important information about this log including general notes, legends, and guidance on description methods and procedures.

Weston & Sampson

Nantucket DPW

TEST PIT ID: TP-106

WSE Project: ENG20-0542

16 Shadbush Road, Nantucket

CONTRACTOR:	**Excavated by Town DPW**	TEST PIT LOCATION:	**See Attached Figure**	DATE START:	**April 22, 2024**
OPERATOR:	**Delroy "Anthony" Grant**	PLAN DIMENSIONS:	**Length: 13.0 ft. , Width: 3.8 ft.**	DATE FINISH:	**April 22, 2024**
LOGGED BY:	**K. Lennon**	SEEPAGE REMARKS:	**No Seepage Observed**	GROUND EL:	**47.1 ± (NAVD88)**
CHECKED BY:	**R. Larmouth, PE**	CAVING REMARKS:	**Minor Caving Below 4.0 ft.**	FINAL DEPTH:	**9.5 ft.**
EQUIPMENT:	**Hydraulic Excavator, Compact**	BACKFILL MATERIAL:	**Excavated Soil**	GRID COORDS:	**N:94469 ± / E:1765520 ±**
BUCKET TYPE:	**Toothed, 20-in. (5.1 cubic-ft.)**	OTHER COMMENTS:		GRID SYSTEM:	**NAD83 State Plane (MA)**

DEPTH BELOW GROUND SURFACE [VERTICAL FT.]	SAMPLE TYPE GRAPHIC	STRATIGRAPHY LOG	STRATUM IDENTIFICATION AND DESCRIPTION	ELEVATION SCALE SHOWN TO NEAREST FT.	REMARKS, OTHER TESTS, AND INSTALLATIONS
			Surface: Forest debris.		Note: Values in brackets preceeding a remark indicate depth below ground surface (in feet) corresponding to the remark.
	G		Topsoil- 4 inches thick.		
	G		**Poorly graded sand (SP)** - Gray; moist; mostly fine to coarse SAND, trace non plastic fines; trace roots.		
	G		**Poorly graded sand (SP)** - Orange; moist; mostly fine to coarse SAND, few fine to coarse gravel, trace non plastic fines; trace roots. **[SUBSOIL]**		
			Poorly graded sand (SP) - Light brown to tan; mostly fine to coarse SAND, trace fine gravel, trace non plastic fines.		
				43	
5			*Occasional cobbles*		
				38	
10					***Collapse at 9.5 ft. (exploration ended).***
				33	

TEST PIT PHOTOGRAPHS

TP-106 Excavated Soil Pile

TP-106 Sidewall Overview

Refer to the attached index sheets for important information about this log including general notes, legends, and guidance on description methods and procedures.

Weston & Sampson

Nantucket DPW

TEST PIT ID: TP-107

WSE Project: ENG20-0542

16 Shadbush Road, Nantucket

CONTRACTOR:	**Excavated by Town DPW**	TEST PIT LOCATION:	**See Attached Figure**	DATE START:	**April 23, 2024**
OPERATOR:	**Delroy "Anthony" Grant**	PLAN DIMENSIONS:	**Length: 10.0 ft. , Width: 4.8 ft.**	DATE FINISH:	**April 23, 2024**
LOGGED BY:	**K. Lennon**	SEEPAGE REMARKS:	**No Seepage Observed**	GROUND EL:	**48.1 ± (NAVD88)**
CHECKED BY:	**R. Larmouth, PE**	CAVING REMARKS:	**No Caving Observed**	FINAL DEPTH:	**10.0 ft.**
EQUIPMENT:	**Hydraulic Excavator, Compact**	BACKFILL MATERIAL:	**Excavated Soil**	GRID COORDS:	**N:94376 ± / E:1765376 ±**
BUCKET TYPE:	**Toothed, 20-in. (5.1 cubic-ft.)**	OTHER COMMENTS:		GRID SYSTEM:	**NAD83 State Plane (MA)**

DEPTH BELOW GROUND SURFACE [VERTICAL FT.]	SAMPLE TYPE GRAPHIC	STRATIGRAPHY LOG	STRATUM IDENTIFICATION AND DESCRIPTION	ELEVATION SCALE SHOWN TO NEAREST FT.	REMARKS, OTHER TESTS, AND INSTALLATIONS
			Surface: Forest debris.		Note: Values in brackets preceeding a remark indicate depth below ground surface (in feet) corresponding to the remark.
	G		Topsoil- 3 inches.		
	G		**Poorly graded sand with silt (SP-SM)** - Gray; moist; mostly fine to coarse SAND, few non plastic fines; common roots.		
	G		**Poorly graded sand with silt (SP-SM)** - Orange; moist; mostly fine to medium SAND, few non plastic fines; trace roots. **[SUBSOIL]**		
			Poorly graded sand (SP) - Light brown to tan; moist; mostly fine to medium SAND, trace fine gravel, trace non plastic fines.		[3.0] GC: 3%, SC: 93%, FC: 4%
5				44	
				39	
10					**Exploration ended at 10.0 ft.**
				34	

TEST PIT PHOTOGRAPHS

TP-107 Excavated Soil Pile

TP-107 Sidewall Overview

Refer to the attached index sheets for important information about this log including general notes, legends, and guidance on description methods and procedures.

Weston & Sampson

Nantucket DPW

TEST PIT ID: TP-108

WSE Project: ENG20-0542

16 Shadbush Road, Nantucket

CONTRACTOR:	**Excavated by Town DPW**	TEST PIT LOCATION:	**See Attached Figure**	DATE START:	**April 22, 2024**
OPERATOR:	**Delroy "Anthony" Grant**	PLAN DIMENSIONS:	**Length: 9.0 ft. , Width: 3.2 ft.**	DATE FINISH:	**April 22, 2024**
LOGGED BY:	**K. Lennon**	SEEPAGE REMARKS:	**No Seepage Observed**	GROUND EL:	**47.3 ± (NAVD88)**
CHECKED BY:	**R. Larmouth, PE**	CAVING REMARKS:	**No Caving Observed**	FINAL DEPTH:	**10.0 ft.**
EQUIPMENT:	**Hydraulic Excavator, Compact**	BACKFILL MATERIAL:	**Excavated Soil**	GRID COORDS:	**N:94320 ± / E:1765518 ±**
BUCKET TYPE:	**Toothed, 20-in. (5.1 cubic-ft.)**	OTHER COMMENTS:		GRID SYSTEM:	**NAD83 State Plane (MA)**

DEPTH BELOW GROUND SURFACE [VERTICAL FT.]	SAMPLE TYPE GRAPHIC	STRATIGRAPHY LOG	STRATUM IDENTIFICATION AND DESCRIPTION	ELEVATION SCALE SHOWN TO NEAREST FT.	REMARKS, OTHER TESTS, AND INSTALLATIONS
			Surface: Forest debris.		Note: Values in brackets preceeding a remark indicate depth below ground surface (in feet) corresponding to the remark.
	G		Topsoil- 4 inches thick.		
	G		**Poorly graded sand (SP)** - Gray; moist; mostly fine to coarse SAND, trace non plastic fines; common roots.		
	G		**Poorly graded sand with silt (SP-SM)** - Orange; mostly fine to medium SAND, few non plastic fines; trace roots. **[SUBSOIL]**		
			Poorly graded sand (SP) - Light brown to tan; moist; mostly fine to coarse SAND, trace fine to coarse gravel, trace non plastic fines.		
				43	
5			*Change to little gravel*		
				38	
10					**Exploration ended at 10.0 ft.**
				33	

TEST PIT PHOTOGRAPHS

TP-107 Excavated Soil Pile

TP-107 Sidewall Overview

Attachment C

Laboratory Test Results

Thielsch
DIVISION OF THE RISE GROUP

195 Frances Avenue
Cranston RI, 02910
Phone: (401)-467-6454
Fax: (401)-467-2398
cts.thielsch.com
Let's Build a Solid Foundation

Client Information:	
Weston & Sampson	
Foxborough, MA	
Project Manager:	Ryan Larmouth
Assigned By:	Ryan Larmouth
Collected By:	Client

Project Information:	
Nantucket DPW	
1 Shadbush Road, Nantucket, MA	
Project Number:	ENG20-0542
Summary Page:	1 of 1
Report Date:	05.07.2024

LABORATORY TESTING DATA SHEET, Report No.: 7424-D-B054

Material Source	Sample ID	Depth (ft)	Laboratory No.	Identification Tests									Proctor / CBR / Permeability Tests								Laboratory Log and Soil Description
				As Rcvd Moisture Content %	LL %	PL %	OD LL	Gravel %	Sand %	Fines %	Org. %	pH	g_d MAX (pcf) W_{opt} (%)	g_d MAX (pcf) W_{opt} (%) (Corr.)	Dry unit wt. (pcf)	Test Moisture Content %	Target Test Setup as % of Proctor	CBR @ 0.1"	CBR @ 0.2"	Permeability cm/sec	
				D2216	D4318			D6913			D2974	D4792	D1557								
B-1	S-4	10-12	24-S-B808					2.9	95.1	2.0											Brown f-m SAND, trace fine Gravel, trace Silt
B-2	S-2	2-4	24-S-B809					7.4	90.6	2.0											Brown f-m SAND, trace f-c Gravel, trace Silt
B-3	S-3	4-6	24-S-B810					5.3	87.3	7.4											Brown f-m SAND, trace Silt, trace fine Gravel
B-4	S-3	4-6	24-S-B811					4.4	92.2	3.4											Brown f-m SAND, trace fine Gravel, trace Silt
B-5	S-2	2-4	24-S-B812					10.0	82.6	7.4											Brown f-c SAND, little fine Gravel, trace Silt
TP-101	GB-4	8-9	24-S-B813					28.7	69.4	1.9											Brown f-m SAND, some f-c Gravel, trace Silt
TP-104	GB-2	0.8-1.5	24-S-B814					0.0	89.2	10.8											Red-Brown f-m SAND, little Silt
TP-107	GB-3	3-5	24-S-B815					2.9	93.4	3.7											Brown f-m SAND, trace Silt, trace fine Gravel

Date Received: **04.30.2024**

Reviewed By: Romilie LaBlanc

Date Reviewed: **05.07.2024**

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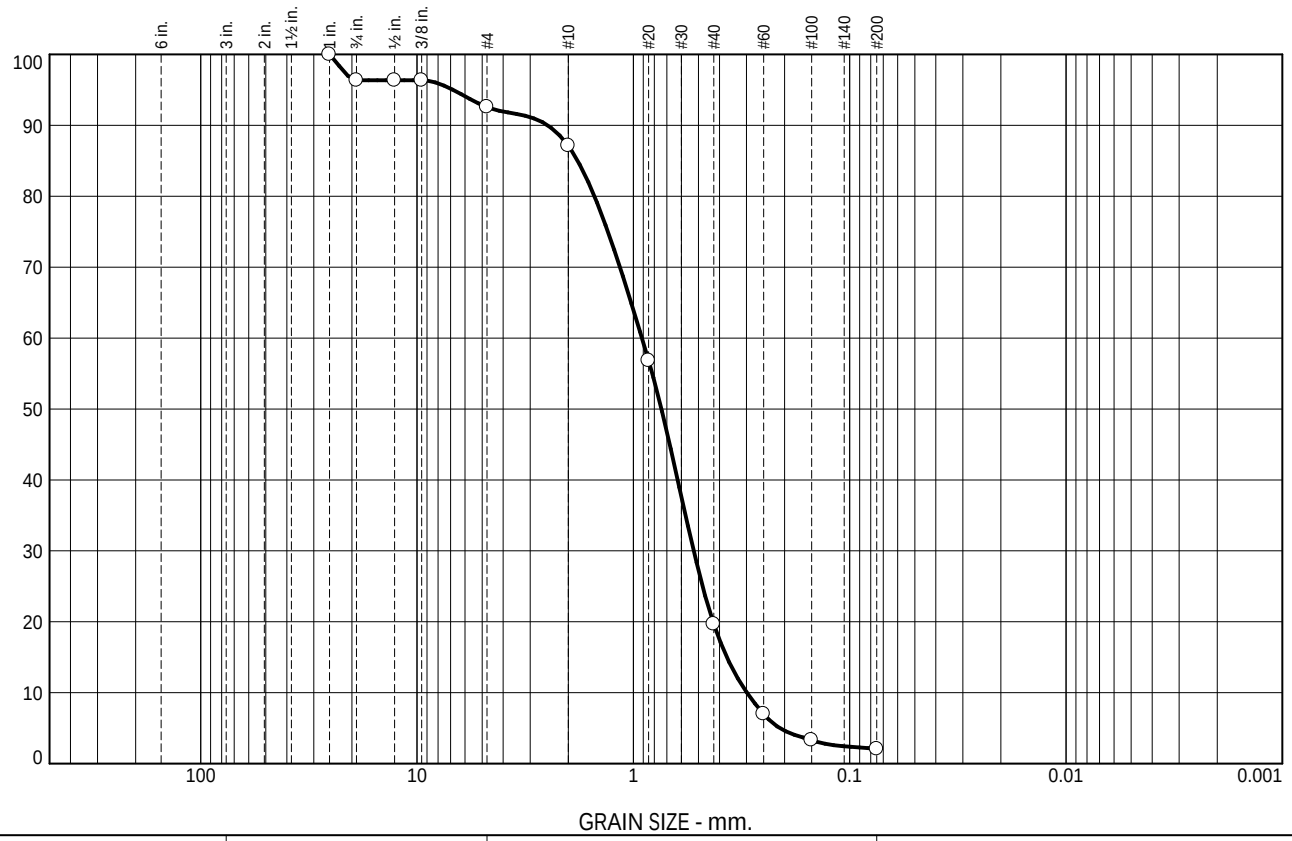
These results are for the exclusive use of the client for whom they were obtained. This report only relates to items inspect and/or tested. No warranty, expressed or implied, is made.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	3.6	3.8	5.5	67.4	17.7	2.0	

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1"	100.0		
3/4"	96.4		
1/2"	96.4		
3/8"	96.4		
#4	92.6		
#10	87.1		
#20	56.8		
#40	19.7		
#60	7.0		
#100	3.3		
#200	2.0		

* (no specification provided)

Soil Description

Brown f-m SAND, trace f-c Gravel, trace Silt

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 2.4881 D_{85}= 1.8083 D_{60}= 0.9132
D_{50}= 0.7418 D_{30}= 0.5261 D_{15}= 0.3699
D_{10}= 0.2988 C_u= 3.06 C_c= 1.01

Classification

USCS= SP AASHTO= A-1-b

Remarks

Source of Sample: B-2 Depth: 2-4'
Sample Number: S-2

Date: 05.06.2024

Thielsch Engineering Inc.

Cranston, RI

Client: Weston & Sampson
Project: Nantucket DPW
1 Shadbush Road, Nantucket, MA
Project No: ENG20-0542 Figure 24-S-B809

Tested By: SF Checked By: Ronelle LeBlanc

These results are for the exclusive use of the client for whom they were obtained. This report only relates to items inspect and/or tested. No warranty, expressed or implied, is made.

Particle Size Distribution Report

% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	5.3	7.7	43.6	36.0	7.4	

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1/2"	100.0		
3/8"	98.8		
#4	94.7		
#10	87.0		
#20	66.5		
#40	43.4		
#60	25.7		
#100	12.8		
#200	7.4		

* (no specification provided)

Soil Description

Brown f-m SAND, trace Silt, trace fine Gravel

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 2.4989 D_{85}= 1.7855 D_{60}= 0.6904
D_{50}= 0.5159 D_{30}= 0.2871 D_{15}= 0.1679
D_{10}= 0.1171 C_u= 5.90 C_c= 1.02

Classification

USCS= SP-SM AASHTO= A-1-b

Remarks

Source of Sample: B-3 Depth: 4-6'
Sample Number: S-3

Date: 05.06.2024

Thielsch Engineering Inc.

Cranston, RI

Client: Weston & Sampson
Project: Nantucket DPW
1 Shadbush Road, Nantucket, MA
Project No: ENG20-0542 Figure 24-S-B810

Tested By: SF Checked By: Ronelle LeBlanc

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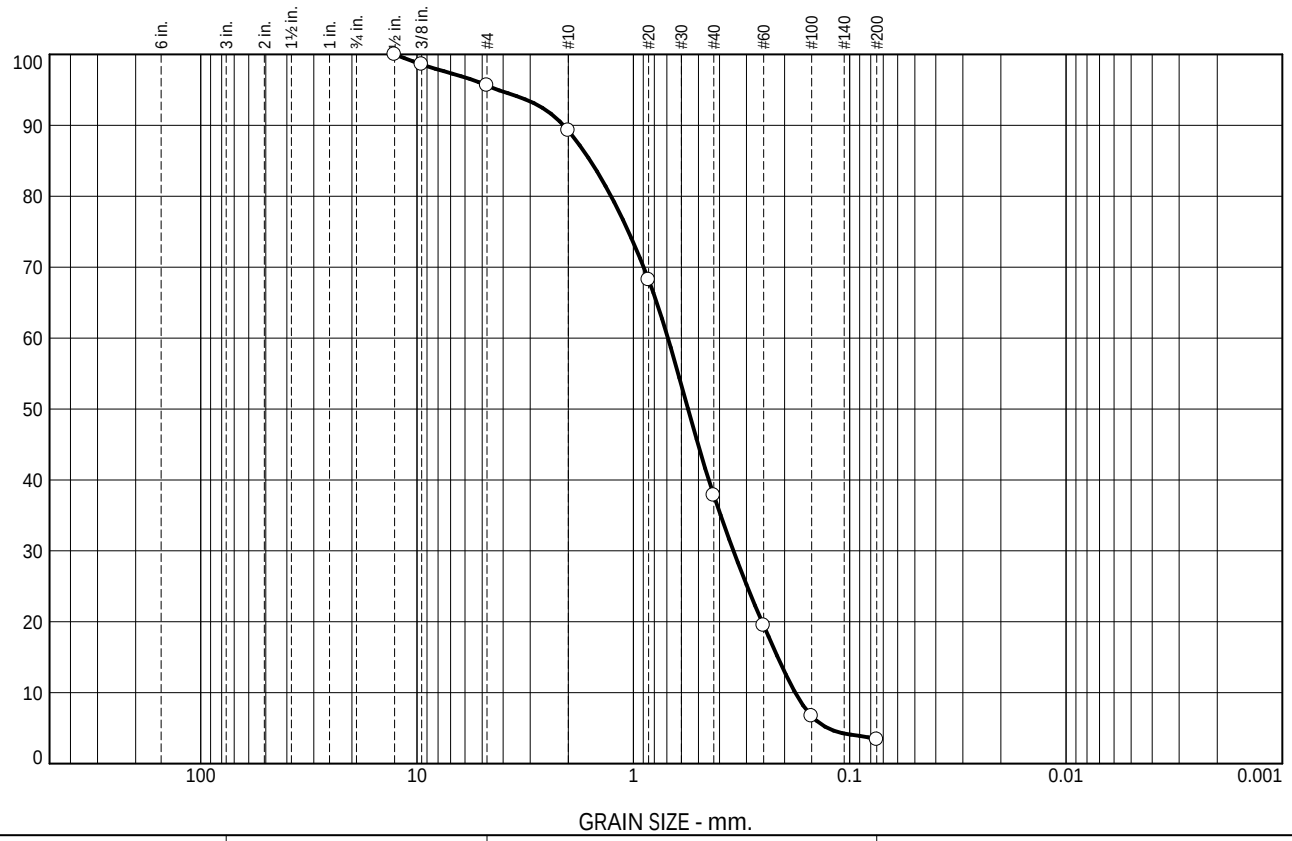
Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	4.4	6.3	51.5	34.4	3.4	

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1/2"	100.0		
3/8"	98.6		
#4	95.6		
#10	89.3		
#20	68.2		
#40	37.8		
#60	19.5		
#100	6.7		
#200	3.4		

* (no specification provided)

Source of Sample: B-4 Depth: 4-6'
Sample Number: S-3

Soil Description

Brown f-m SAND, trace fine Gravel, trace Silt

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 2.1006 D_{85}= 1.5814 D_{60}= 0.6923
D_{50}= 0.5589 D_{30}= 0.3448 D_{15}= 0.2151
D_{10}= 0.1786 C_u= 3.88 C_c= 0.96

Classification

USCS= SP AASHTO= A-1-b

Remarks

Date: 05.06.2024

Thielsch Engineering Inc.
Cranston, RI

Client: Weston & Sampson
Project: Nantucket DPW
1 Shadbush Road, Nantucket, MA
Project No: ENG20-0542 Figure 24-S-B811

Tested By: SF Checked By: Ronelle LeBlanc

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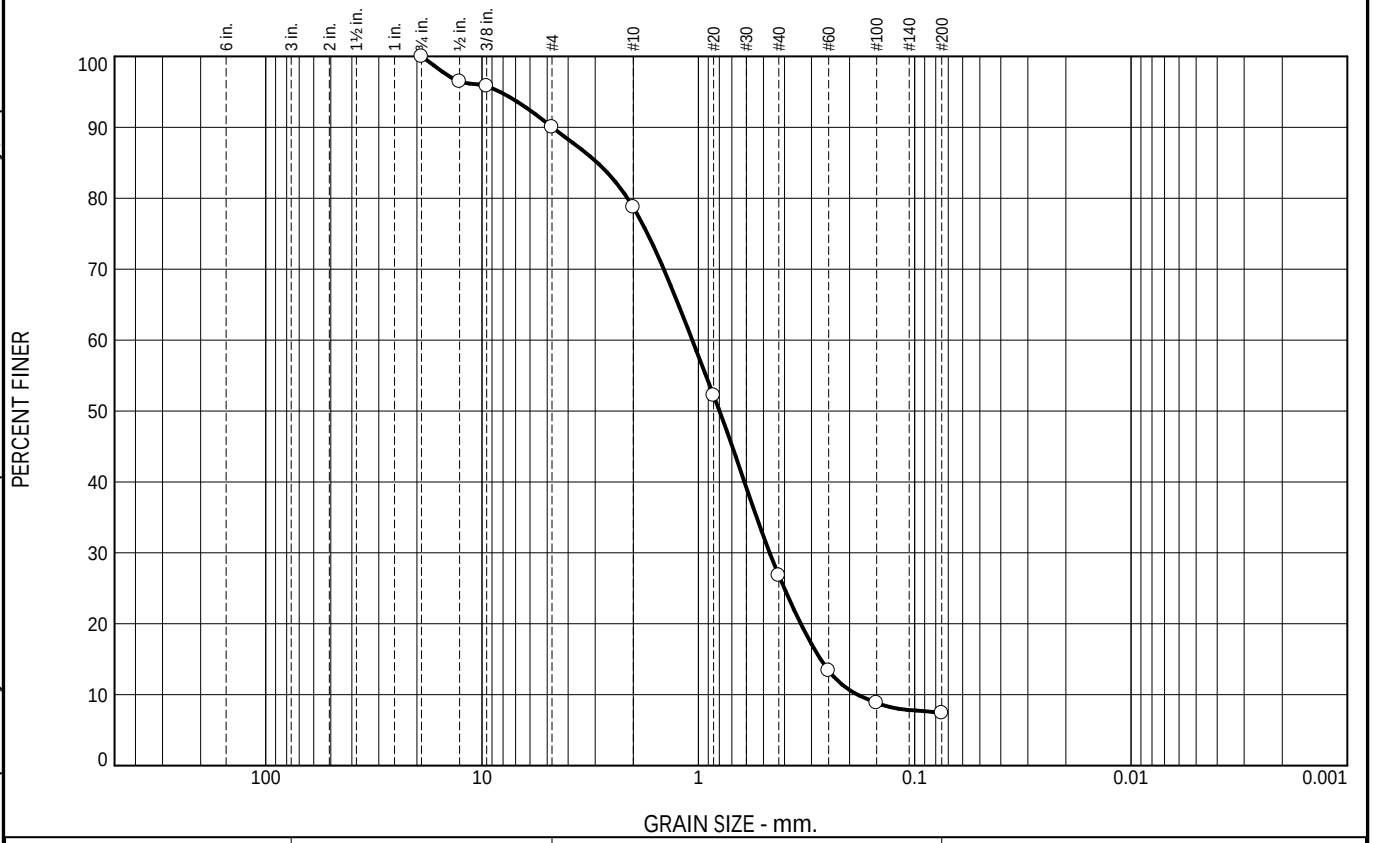
Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	10.0	11.3	51.9	19.4	7.4	

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4"	100.0		
1/2"	96.5		
3/8"	95.8		
#4	90.0		
#10	78.7		
#20	52.2		
#40	26.8		
#60	13.4		
#100	8.8		
#200	7.4		

* (no specification provided)

Source of Sample: B-5 Depth: 2-4'
Sample Number: S-2

Soil Description

Brown f-c SAND, little fine Gravel, trace Silt

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 4.7325 D_{85}= 2.9255 D_{60}= 1.0672
D_{50}= 0.7979 D_{30}= 0.4684 D_{15}= 0.2724
D_{10}= 0.1836 C_u= 5.81 C_c= 1.12

Classification

USCS= SP-SM AASHTO= A-1-b

Remarks

Date: 05.06.2024

Thielsch Engineering Inc.
Cranston, RI

Client: Weston & Sampson
Project: Nantucket DPW
1 Shadbush Road, Nantucket, MA
Project No: ENG20-0542 Figure 24-S-B812

Tested By: SF Checked By: Ronelle LeBlanc

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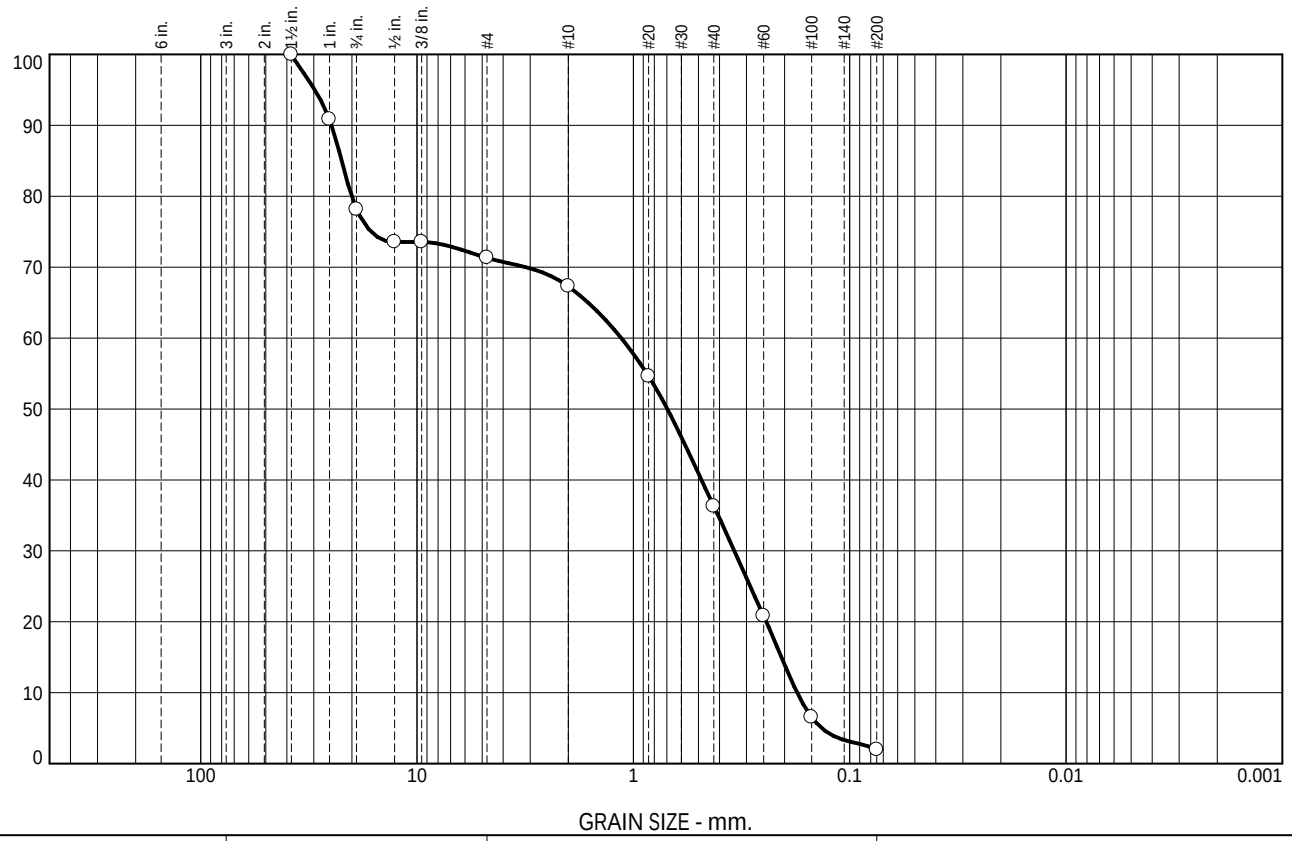
Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	21.8	6.9	4.0	31.0	34.4	1.9	

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1-1/2"	100.0		
1"	90.9		
3/4"	78.2		
1/2"	73.5		
3/8"	73.5		
#4	71.3		
#10	67.3		
#20	54.6		
#40	36.3		
#60	20.8		
#100	6.5		
#200	1.9		

* (no specification provided)

Soil Description

Brown f-m SAND, some f-c Gravel, trace Silt

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 24.8003 D_{85}= 22.2965 D_{60}= 1.1373
D_{50}= 0.6965 D_{30}= 0.3416 D_{15}= 0.2068
D_{10}= 0.1749 C_u= 6.50 C_c= 0.59

Classification

USCS= SP AASHTO= A-1-b

Remarks

Source of Sample: TP-101 Depth: 8-9'
Sample Number: GB-4

Date: 05.06.2024

Thielsch Engineering Inc.

Cranston, RI

Client: Weston & Sampson
Project: Nantucket DPW
1 Shadbush Road, Nantucket, MA
Project No: ENG20-0542 Figure 24-S-B813

Tested By: SF Checked By: Ronelle LeBlanc

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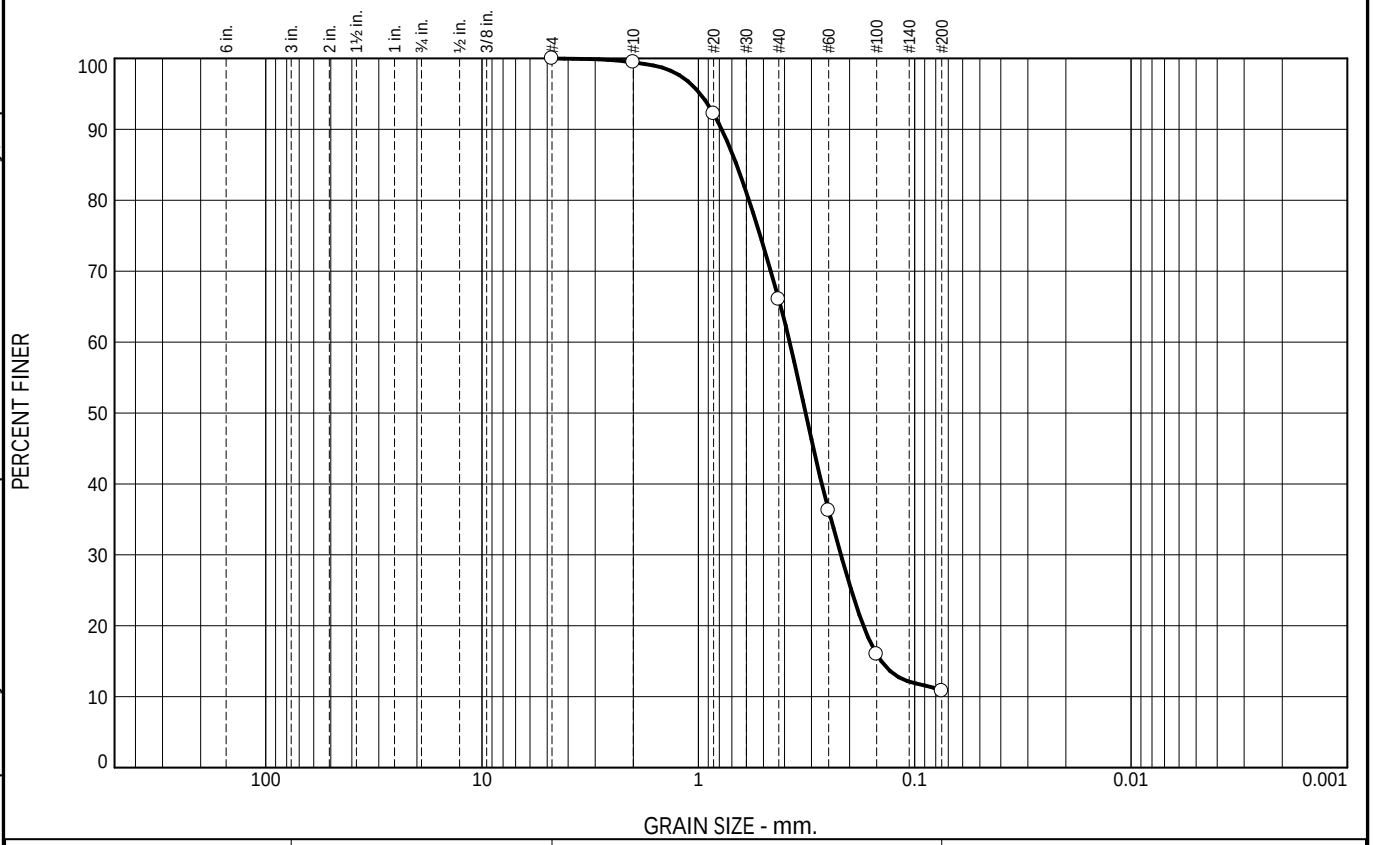
Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.5	33.5	55.2	10.8	

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	99.5		
#20	92.2		
#40	66.0		
#60	36.3		
#100	16.0		
#200	10.8		

* (no specification provided)

Soil Description

Red-Brown f-m SAND, little Silt

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 0.7795 D_{85}= 0.6659 D_{60}= 0.3784
D_{50}= 0.3195 D_{30}= 0.2193 D_{15}= 0.1427
D_{10}= C_u= C_c=

Classification

USCS= SP-SM AASHTO= A-2-4(0)

Remarks

Source of Sample: TP-104 Depth: 0.8-1.5'
Sample Number: GB-2

Date: 05.06.2024

Thielsch Engineering Inc.

Cranston, RI

Client: Weston & Sampson
Project: Nantucket DPW
1 Shadbush Road, Nantucket, MA
Project No: ENG20-0542 Figure 24-S-B814

Tested By: SF Checked By: Ronelle LeBlanc

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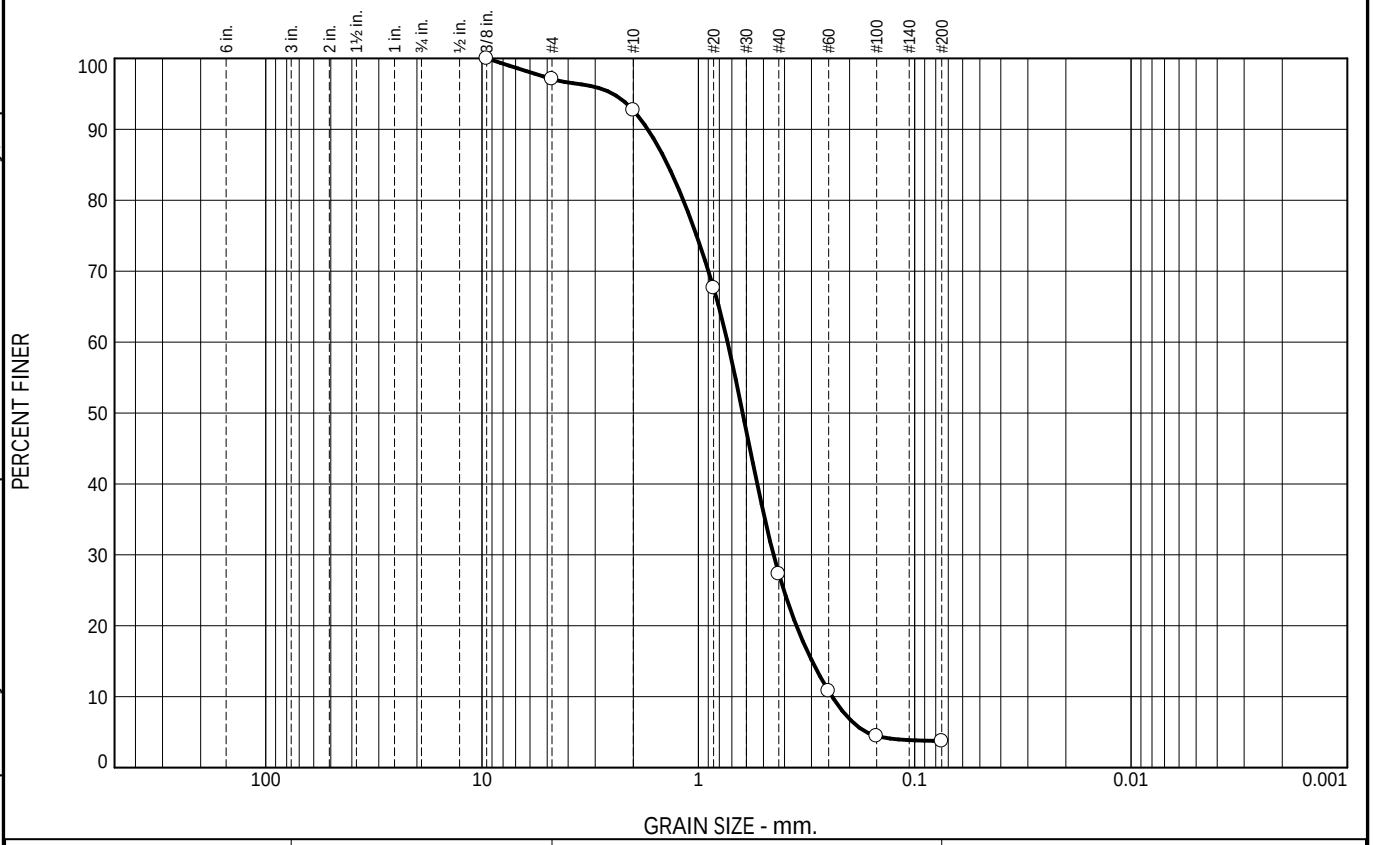
Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.9	4.4	65.4	23.6	3.7	

SIEVE SIZE OR DIAMETER	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8"	100.0		
#4	97.1		
#10	92.7		
#20	67.6		
#40	27.3		
#60	10.8		
#100	4.4		
#200	3.7		

* (no specification provided)

Source of Sample: TP-107 Depth: 3-5'
Sample Number: GB-3

Soil Description

Brown f-m SAND, trace Silt, trace fine Gravel

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 1.7130 D_{85}= 1.3864 D_{60}= 0.7330
D_{50}= 0.6241 D_{30}= 0.4496 D_{15}= 0.2981
D_{10}= 0.2409 C_u= 3.04 C_c= 1.14

Classification

USCS= SP AASHTO= A-1-b

Remarks

Date: 05.06.2024

Thielsch Engineering Inc.
Cranston, RI

Client: Weston & Sampson
Project: Nantucket DPW
1 Shadbush Road, Nantucket, MA
Project No: ENG20-0542 Figure 24-S-B815

Tested By: SF Checked By: Ronelle LeBlanc

Attachment C

Important Information about This Geotechnical-Engineering Report

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, you can benefit from a lowered exposure to problems associated with subsurface conditions at project sites and development of them that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed herein, contact your GBA-member geotechnical engineer. Active engagement in GBA exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Understand the Geotechnical-Engineering Services Provided for this Report

Geotechnical-engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical-engineering services is typically a geotechnical-engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical-engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

Geotechnical-Engineering Services are Performed for Specific Purposes, Persons, and Projects, and At Specific Times

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client.

Likewise, geotechnical-engineering services are performed for a specific project and purpose. For example, it is unlikely that a geotechnical-engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do not rely on an executive summary. Do not read selective elements only. *Read and refer to the report in full.*

You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept*

responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.

Most of the "Findings" Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site's subsurface using various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgement to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

This Report's Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are not final, because the geotechnical engineer who developed them relied heavily on judgement and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals' plans and specifications; and
- be available whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for information purposes only.* To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer's services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, ***proper implementation of the geotechnical engineer's recommendations will not of itself be sufficient to prevent moisture infiltration. Confront the risk of moisture infiltration*** by including building-envelope or mold specialists on the design team. ***Geotechnical engineers are not building-envelope or mold specialists.***

GEOPROFESSIONAL BUSINESS ASSOCIATION

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