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REPORT

December 16, 2020

TOWN OF
UPTON
MASSACHUSETTS

UPDATE REPORT

New / Renovated Public Works Facility
Feasibility Study



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Executive Summary

Weston & Sampson has been working with the Town of Upton DPW Feasibility Committee to incorporate comments related to the August 2018 feasibility study report to the Board of Selectmen. The objective of the Committee was to review the conclusions of the initial feasibility study and identify an alternate approach to renovating and expanding the public works facility to meet the current and future needs of the DPW.

Based on numerous meetings with the Committee, the project team was able to identify a 10% reduction to the August 2018 proposed program for a new total building size of 28,700 SF. The team then utilized this revised program to develop an updated development plan which consists of a phased approach for a renovated/new DPW facility. The final preferred plan is based on a two (2) phase approach as follows:

Phase 1 (estimated construction start period 2021)

- Construct a portion of the vehicle storage garage (5,500 SF)
- Construct a portion of the Vehicle Maintenance area (3,500 SF)
- Construct a new Wash Bay (2,000 SF)
- Renovate the existing building for offices, employee support space, trade shops, and equipment storage (9,000 SF)
- Construct a new Salt Storage Structure
- Relocate the existing fabric structure
- Construct a portion of the site improvements (drainage, paving, fuel relocation)
- Phase 1 consists of the following:
 - Existing Building: 9,000 SF (includes 3,000 SF for Vehicle Storage)
 - New Building: 11,000 SF (includes 5,500 SF for Vehicle Storage)
 - Total Phase 1: 20,000 SF

Phase 2 (estimated construction start period 2023)

- Construct remainder of Vehicle Maintenance (1,400 SF)
- Construct remainder of Vehicle Storage (7,300 SF)
- Complete remainder of site improvements
- Phase 2 consists of the following:
 - New Building: 8,700 SF (includes 7,300 SF for Vehicle Storage)

Total Phase 1 and 2:

- Existing Building (renovated): 9,000 SF
- New Building: 19,900 SF
- Total: 28,700 SF (includes 15,800 SF for Vehicle Storage)

Using the revised program and preferred concept, the design team prepared an updated conceptual cost estimate. In general, the cost estimate assumes cost effective building systems, finishes, and equipment as identified in the estimate. The estimated costs for renovations, new building construction, and site improvements are based on costs of similar construction for which bid prices are available, supplemented by cost data obtained from published sources. It is assumed that the project will be publicly bid under Chapter 149 requirements and includes standard escalation rates projecting Phase 1 costs to 2021 and Phase 2 costs to 2023. Additional escalation factors should be included if the project timeline changes based on input from Town governing authorities. The following is a summary of the costs by Phase:

Phase 1

- | | |
|-----------------------------|------------------|
| • Construction Cost: | \$7,650,000 |
| • Estimating Contingency: | \$365,000 |
| • Soft Costs: | \$1,200,000 |
| • Construction Contingency: | <u>\$485,000</u> |
| | \$9,700,000 |

Phase 2

• Construction Cost:	\$3,100,000
• Estimating Contingency:	\$135,000
• Soft Costs:	\$725,000
• Construction Contingency:	<u>\$190,000</u>
	\$4,150,000

Appendix E of the report includes a summary of historic cost information for public works facilities. This historic data provides an overview of the cost escalation for similar DPW facility projects. The information also outlines the potential to achieve savings by funding the project during the current pandemic driven recession cycle. These savings could come in the form of lower bid prices associated with a more competitive bidding climate and long-term borrowing at all-time low borrowing costs.

Appendix A

Space Needs Assessment Update

- Staffing List
- Vehicle / Equipment List
- Program Summary
- Room Programming Sketches

DPW Staffing Summary

Position	Full Time	Part Time	Seasonal
Office/Administration	2	-	-
Highway	5	-	-
Forestry/Parks/Cemetery	2	1	4
Fleet Maintenance	1	-	-
Water & Sewer	5	-	-
Total Staff	15	1	4

Weston & Sampson ITEM NO.	DPW INVENTORY NO.	VEHICLES & EQUIPMENT DIMENSIONS	DEPARTMENT	MAKE	PLATE #	COMMENT (plow,attach,etc.)
LARGE DUMP TRUCKS						
Truck 1	24	23' x 9'	HWY	International 5 Ton Dump	M82107	Large Plow
Truck 2	25	23' x 9'	HWY	International 5 Ton Dump	M77853	Large Plow
Truck 3	26	23' x 9'	HWY	International 5 Ton Dump	M88347	Large Plow
Truck 4	27	25' x 9'	HWY	International 10 Wheeler	M90405	Large Plow
Truck 5	28	25' x 9'	HWY	International 10 Wheeler	M90009	Large Plow
Truck 6	29A	21' x 9'	HWY	OSHKOSH	B436	Large Plow
Truck 7	29	21' x 9'	HWY	OSHKOSH	M91426	Large Plow
NEW		21' x 9'	HWY	International 10 Wheeler	NEW	Large Plow
SMALL TRUCKS						
Truck 8	20	16' x 8'	HWY	FORD EXPLORER	M88879	DPW Director Truck Take Home
Truck 9	22	19' x 8'	HWY	CHEVY 1 TON DUMP	M84207	Small Plow
Truck 10	23	19' x 8'	HWY	CHEVY 1 TON DUMP	M94952	Small Plow
Truck 11	50	20' x 8'	HWY	CHEVY 3/4 TON PICKUP	M98309	Small Plow
Truck 12	51	18' x 8'	PARKS	CHEVY 3/4 TON PICKUP	M73407	Small Plow
Truck 13	52	19' x 8'	CEM	FORD F-350 1 TON DUMP	M47356	Small Plow
Truck 14	54	17' x 8'	PARKS	FORD 1 TON FLATBED DUMP	M66258	Small Plow
Truck 15	55 ¹	17' x 8'	PARKS	FORD 3/4 TON PICKUP	M55439	Small Plow
Truck 16	21 ¹	18' x 8'	CEM	CHEVY 3/4 TON PICKUP	M73407	Small Plow
Truck 17	30 ²	18" x 8"	W/WW	CHEVY 3/4 TON PICKUP	M62874	Small Plow
Truck 18	32 ²	22' x 8'	W/WW	CHEVY 3/4 TON PICKUP		Small Plow
Truck 19	31 ²	18' x 8'	W/WW	CHEVY 1/2 TON	M90366	2-wheel drive
NEW	33	18' x 8'	W/WW	CHEVY 3/4 TON PICKUP	NEW	Small Plow

¹ Vehicle currently stored in fabric structure. Vehicle will be stored in new DPW building once constructed.

² Vehicle currently stored outside at Water Treatment Plant. Vehicle will be stored in new DPW building once constructed.

* Vehicle Dimension Estimated

Weston & Sampson ITEM NO.	DPW INVENTORY NO.	VEHICLES & EQUIPMENT DIMENSIONS	DEPARTMENT	MAKE	PLATE #	COMMENT (plow,attach,etc.)
HEAVY EQUIPMENT						
EQ1	B1	22' x 7'-6"	HWY	CAT BACKHOE 420D SN BLN11150	M71234	
EQ2	L1	24' x 8'	HWY	CAT LOADER	M43381	
NEW	T1	22' X 8'	HWY	ROADSIDE MOWER/TRACTOR	NEW	
SMALL EQUIPMENT						
EQ3	58	17'-6" x 5'	HWY	TRACKLESS		
EQ4	59	16' x 4'-4"	HWY	TRACKLESS		
EQ5		4'-6" x 4'-8"	HWY	TRACKLESS SNOW BLOW ATTACH		
EQ6		4'-8" x 6'-0"	HWY	TRACKLESS PLOW ATTACH		
EQ7		10'x4**	HWY	COMPRESSOR		
EQ8		12' X 5'	HWY	CHIPPER	M72092	
EQ9		6' X 3'-6"	HWY	1 TON ROLLER		
EQ10		17' x 6'	HWY	FALCON HOT MIX ASPHLAT MACHINE	M82108	
EQ11		8' x 3'	HWY	SCIZZOR LIFT		
EQ12		14'-6" x 4'	HWY	LIGHT TOWER		
EQ13		9'-6" X 3'-0"	HWY	CLARK FORK LIFT		
EQ14		4' x 6**	HWY	ASPHALT SAW		
EQ15		4' x 10**	HWY	WATER PUMPS		
EQ16		6' x 4**	HWY	LINE PAINTER		
EQ17		13'-6" x 6'-6"	HWY	ATLAS COPCO GENERATOR		
EQ18		5' x 3**	HWY	WELDERS		
EQ19		4' x 3' x 2'	HWY	STEAM CLEANER		
EQ20		16' X 2'	HWY	MISC HAND TOOLS		
EQ21		6'-6" X 7'-6"	HWY	LEAF VAC		
EQ22		8' X 10'	HWY	MOWER		
EQ23		8' X 10'	HWY	MOWER		

3/24/2017

Updated 9/30/2020

Weston & Sampson ITEM NO.	DPW INVENTORY NO.	VEHICLES & EQUIPMENT DIMENSIONS	DEPARTMENT	MAKE	PLATE #	COMMENT (plow,attach,etc.)
TRAILERS						
T1		14' x 8'	HWY	TRAILER NICHOLS	M38961	
T2		17' x 8'	HWY	TRAILER HOMESTEADER	M89944	
T3		13' x 7'	HWY	TRAILER HUDSON	M86767	
T4		17" X 8'	PARKS	BIG TEX TRAILER	M93107	

Note - Trailers are currently stored in the fabric structure. These trailers will continue to be stored under the relocated fabric structure.

Town of Upton
Public Works Facility

August 2018
Presentation to
the Board of
Selectmen

October 2020
Committee
Recommendation

Programming Results

<u>Space Needs Assessment</u>	<u>Original Facility Program</u>	<u>Rev. 1 Facility Program</u>	<u>Rev. 2 * Facility Program</u>	<u>Rev. 3 Facility Program</u>
Administration / Office Support	1,991 SF	1,600 SF	1,934 SF	1,900 SF
Employee Facilities / Staff Support	2,595 SF	2,422 SF	2,574 SF	2,600 SF
Workshops	1,271 SF	1,271 SF	2,541 SF	1,500 SF
Vehicle Maintenance	5,326 SF	4,903 SF	4,903 SF	4,900 SF
Wash Bay	1,838 SF	1,838 SF	1,838 SF	2,000 SF
Vehicle & Equipment Storage	<u>13,760 SF</u>	<u>13,760 SF</u>	<u>18,160 SF</u>	<u>15,800 SF</u>
Subtotal:	26,780 SF	25,794 SF	31,950 SF	28,700 SF
				10% REDUCTION
Reuse of Existing Building	9,000 SF	9,000 SF	9,000 SF	9,000 SF
Total New Construction	17,780 SF	16,794 SF	22,950 SF	19,700 SF

****Note: Rev.2 includes adding Water & Sewer which was previously not included at the site***

Upton, Massachusetts
Department of Public Works
Space Needs Summary
December 2020

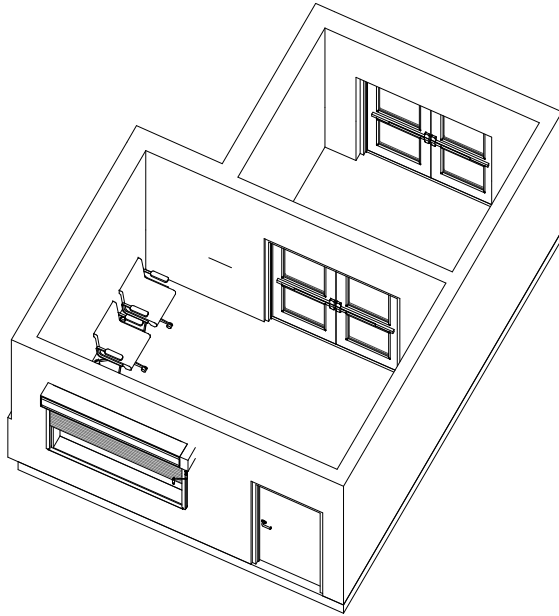
Building Requirements

Area	Description	Sheet No.	Total Size (SF)	Total Revised Size (SF)	Total w/ W&S (SF)	Oct. 2020 Rev. Size (SF)
A. Administration	Entry / Vestibule / Waiting	A1.01	220	220	220	220
	Director's Office	A1.02	224	196	196	196
	Open Office	A1.03	120	120	240	240
	Copy / File / Mail	A1.04	225	225	225	200
	File Storage Area	A1.05	225	(incl. in copy room)	(incl. in copy room)	(incl. in copy room)
	Conference Room	A1.06	288	224	224	224
	Uni-Sex Toilet	A1.07	128	136	136	136
	Supervisor Offices	A1.08	144	144	288	288
	Subtotal:		1,574	1,265	1,529	1,504
	Area Grossing Factor (10%):		157	127	153	150
	Circulation (15%):		260	209	252	246
	TOTAL:		1,991	1,600	1,934	1,900
B. Employee Facilities	Multipurpose Room	B1.01	480	480	480	480
	Male Lockers / Shower / Toilet	B1.02	675	675	675	675
	Female Locker / Shower / Toilet	B1.03	180	180	180	180
	Shared Foremen's Office (Parks/Cemetery)	B1.04	168	168	168	168
	SCADA	B1.05	-	-	120	120
	Laundry Room	B1.06	60	36	36	36
	Janitor Closet	B1.07	36	36	36	36
	Electric Room	B1.08	140	120	120	120
	Tele / Data Room	B1.09	120	100	100	100
	Plumbing / Fire Protection	B1.10	192	120	120	120
	Subtotal:		2,051	1,915	2,035	2,035
	Area Grossing Factor (10%):		205	192	204	220
	Circulation (15%):		338	316	336	345
	TOTAL:		2,595	2,422	2,574	2,600
C. Workshops	Shared General Shop	C1.01	1,050	1,050	1,050	1,300
	Water & Sewer Shop		-	-	1,050	-
	Subtotal:		1,050	1,050	2,100	1,300
	Area Grossing Factor (10%):		105	105	210	100
	Circulation (10%):		116	116	231	100
	TOTAL:		1,271	1,271	2,541	1,500
D. Maintenance	Large Maintenance Bay	D1.01	1,100	1,100	1,100	1,100
	Large Maintenance Bay	D1.01	1,100	1,100	1,100	1,100
	Small Maintenance Bay	D1.01	800	800	800	800
	Maintenance Accessory Storage Area	D1.01	300	300	300	300
	Mechanics Office / Reference Room	D1.02	120	120	120	120
	Uni-Sex Toilet	D1.03	64	64	64	64
	Parts Room	D1.04	750	400	400	400
	Fluids Room	D1.05	168	168	168	168
	Subtotal:		4,402	4,052	4,052	4,052
	Area Grossing Factor (10%):		440	405	405	405
	Circulation (10%):		484	446	446	443
	TOTAL:		5,326	4,903	4,903	4,900

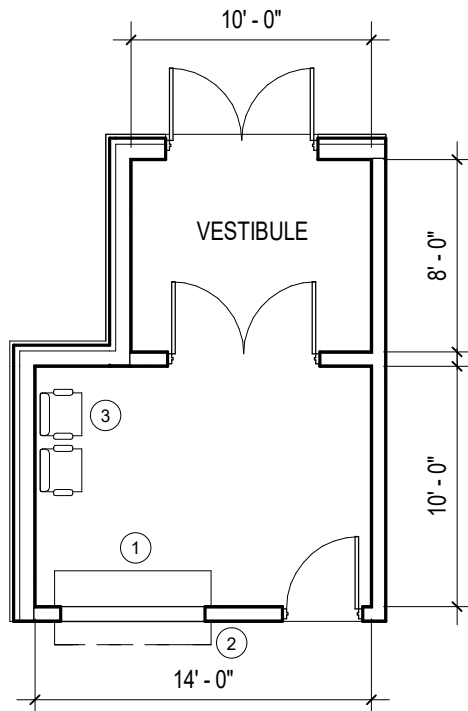
Upton, Massachusetts
Department of Public Works
Space Needs Summary
December 2020

Building Requirements

Area	Description	Sheet No.	Total Size (SF)	Total Revised Size (SF)	Total w/ W&S (SF)	Oct. 2020 Rev. Size (SF)
E. Wash Area						
	Wash Bay	E1.01	1,650	1,650	1,650	1,815
	Wash Equipment Room	E1.01	100	100	100	100
	Subtotal:		1,750	1,750	1,750	1,915
	Area Grossing Factor (5%):		88	88	88	85
	Circulation:		n/a	n/a	n/a	n/a
	TOTAL:		1,838	1,838	1,838	2,000
F. Vehicle and Equipment Storage						
	Vehicle / Equipment Storage	F1.01	13,760	13,760	13,760	15,800
	Water & Sewer Vehicle Storage		-	-	4,400	(included above)
	Subtotal:		13,760	13,760	18,160	15,800
	Area Grossing Factor (5%):		n/a	n/a	n/a	n/a
	Circulation:		n/a	n/a	n/a	n/a
	TOTAL:		13,760	13,760	18,160	15,800
NEW / RENOVATED BUILDING TOTAL:			26,780	25,794	31,950	28,700
EXISTING BUILDING TO BE RENOVATED/REUSED:			9,000	9,000	9,000	9,000
NEW BUILDING SPACE REQUIRED:			17,780	16,794	22,950	19,700



2 A1.01 - ENTRY / VESTIBULE / WAITING



1 A1.01 - ENTRY / VESTIBULE / WAITING - 220SF 1/8" = 1'-0"

ROOM FINISHES

FLOORS: 12X12 VCT TILE

WALLS: GWB PAINTED

CEILING: 2X2 ACT TILE

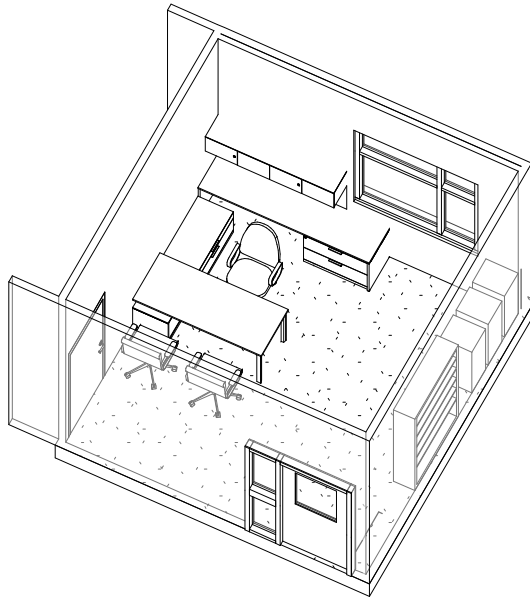
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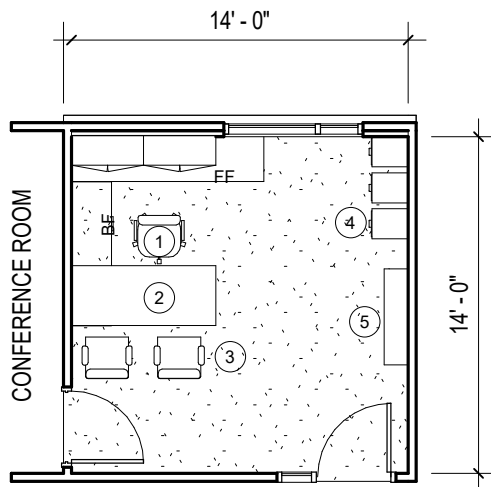
DATA OUTLET JACKS

COMPONENTS:

- ① RECEPTION COUNTER
- ② ROLL-UP SECURITY GRILL
- ③ WAITING CHAIR (2)



2 A1.02 - DIRECTOR'S OFFICE



1 A1.02 - DIRECTOR'S OFFICE - 196SF 1/8" = 1'-0"

ROOM FINISHES

FLOORS: CARPET TILE

WALLS: GWB PAINTED

CEILING: 2X2 ACT TILE

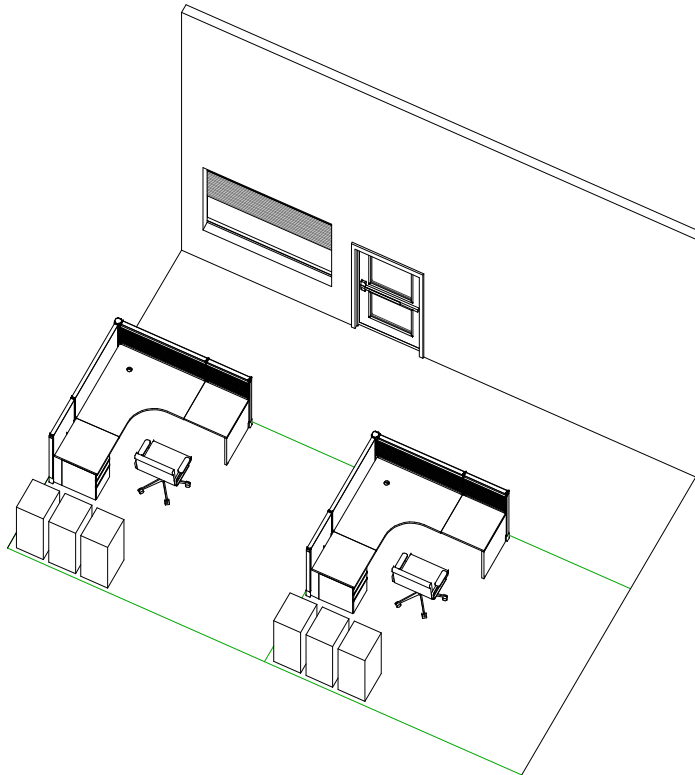
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DUPLEX ELECTRICAL OUTLETS

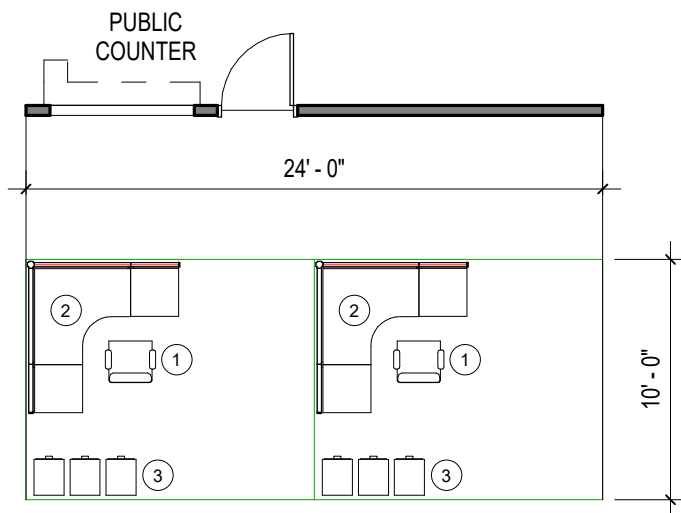
DATA OUTLET JACKS

COMPONENTS:

- ① EXECUTIVE CHAIR
- ② DESK WITH SIDE AND BACK STORAGE CABINETS
- ③ GUEST CHAIRS
- ④ FILE CABINETS
- ⑤ BOOKCASE



2 A1.03 - OPEN OFFICE



1 A1.03 - OPEN OFFICE - 240SF 1/8" = 1'-0"

ROOM FINISHES

FLOORS: CARPET TILE

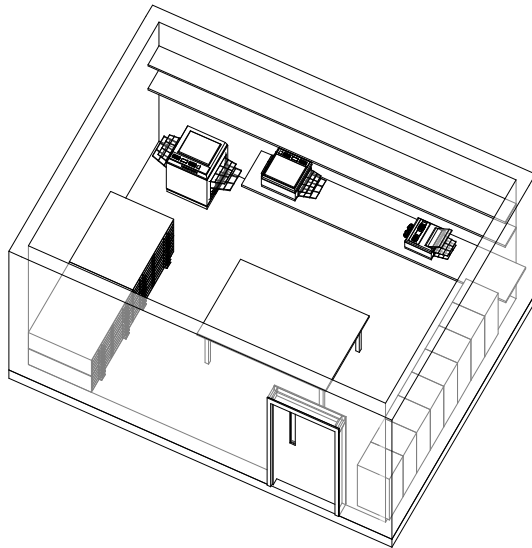
WALLS: GWB PAINTED

CEILING: 2X2 ACT TILE

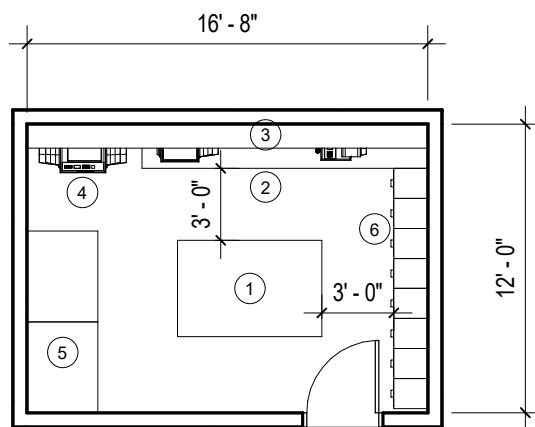
MEP/DATA REQUIREMENTS

COMPONENTS:

- ① (2) TASK CHAIRS
- ② (2) WORKSTATIONS
- ③ (3) LATERAL FILE CABINETS PER WORKSTATION



2 A1.04 - COPY / FILE / MAIL



1 A1.04 - COPY / FILE / MAIL - 200SF 1/8" = 1'-0"

ROOM FINISHES

FLOORS: 12X12 VCT TILE

WALLS: GWB PAINTED

CEILING: 2X2 ACT TILE

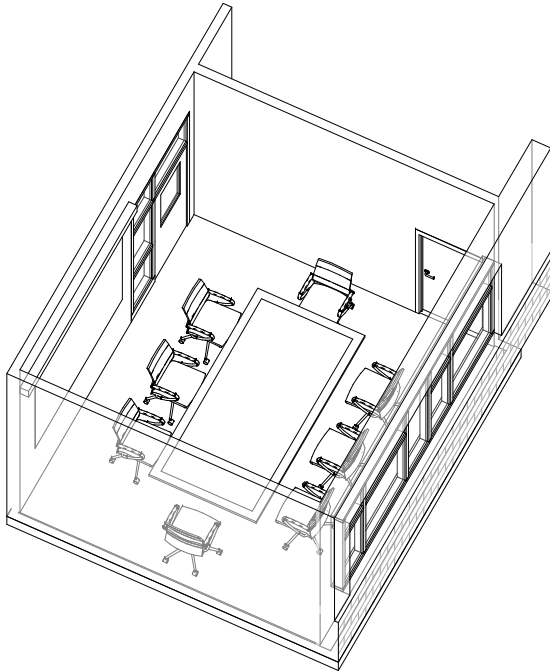
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DUPLEX ELECTRICAL OUTLETS

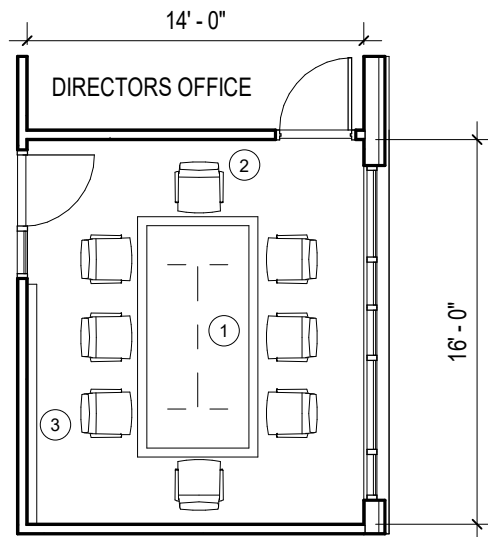
DATA OUTLET JACKS

COMPONENTS:

- 1 TABLE
- 2 COUNTER
- 3 SHELVING
- 4 PRINTER / COPIER
- 5 FLAT FILES
- 6 FILE CABINETS



2 A1.06 - CONFERENCE ROOM



1 A1.06 - CONFERENCE ROOM - 224SF 1/8" = 1'-0"

ROOM FINISHES

FLOORS: CARPET TILE

WALLS: GWB PAINTED

CEILING: 2X2 ACT TILE

MEP/DATA REQUIREMENTS

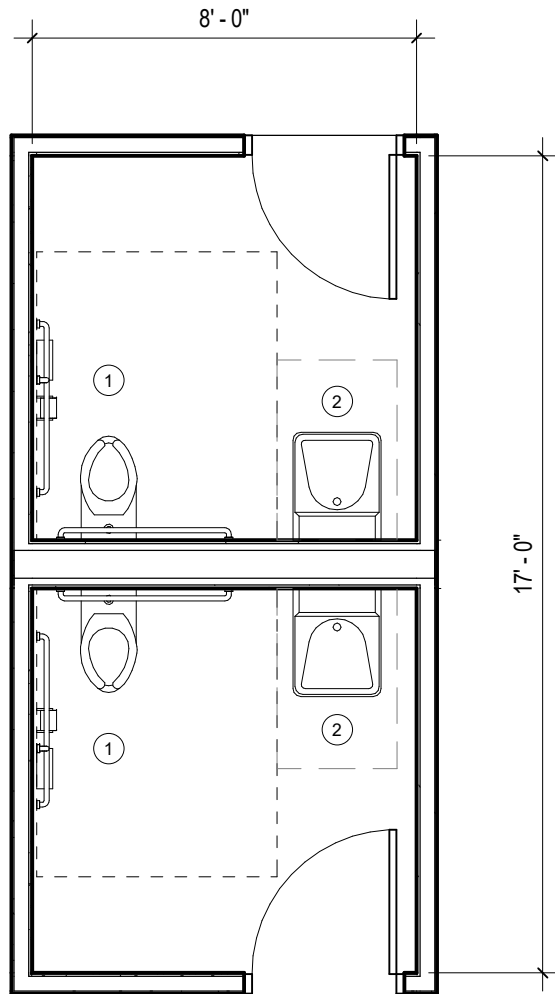
DUPLEX ELECTRICAL OUTLETS

DATA OUTLET JACKS

AV WIRING

COMPONENTS:

- ① CONFERENCE TABLE
- ② CONFERENCE CHAIR (8)
- ③ PROJECTOR



① A1.07 - UNI-SEX TOILETS - 136SF
1/4" = 1'-0"

ROOM FINISHES

FLOORS: CERAMIC TILES

WALLS: CERAMIC TILE TO 6'-0" /
GWB PAINTED

CEILING: 2X2 ACT TILE

MEP/DATA REQUIREMENTS

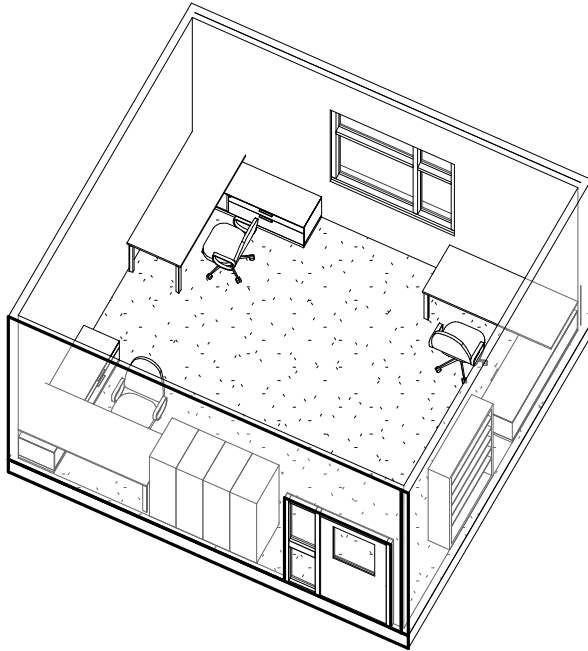
FLOOR DRAINS

TRAP PRIMERS

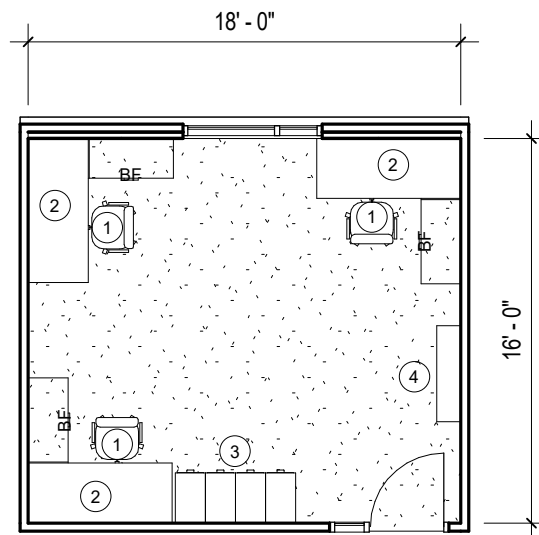
LOW FLOW FIXTURES AND/OR
WATERLESS URINALS

COMPONENTS:

- ① ADA TOILET
- ② ADA SINK



2 A1.08 - SUPERVISOR OFFICES



1 A1.08 - SUPERVISOR OFFICES - 288SF 1/8" = 1'-0"

ROOM FINISHES

FLOORS: CARPET TILE

WALLS: GWB PAINTED

CEILING: 2X2 ACT TILE

MEP/DATA REQUIREMENTS

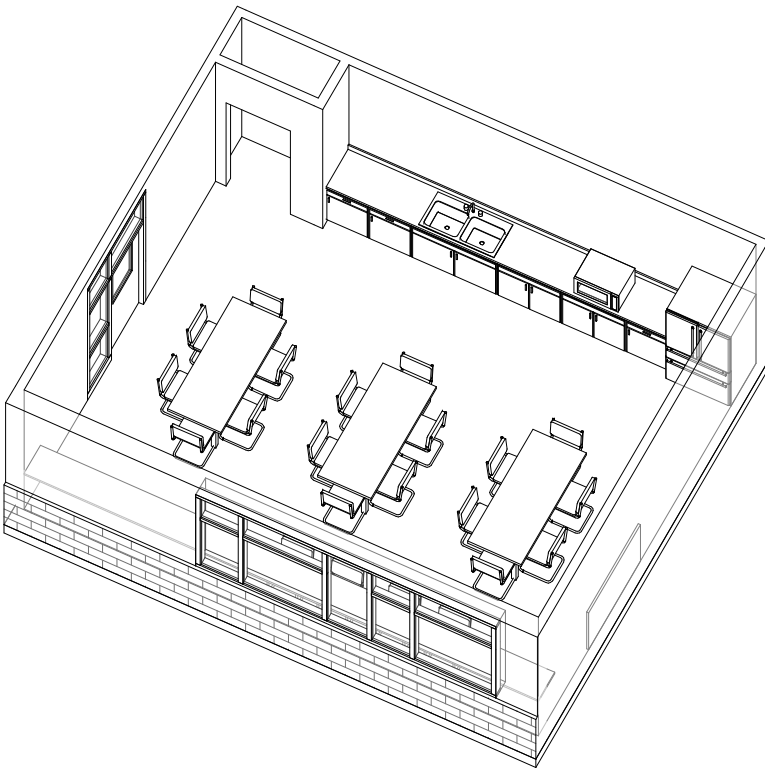
DUPLEX ELECTRICAL OUTLETS

DATA OUTLET JACKS

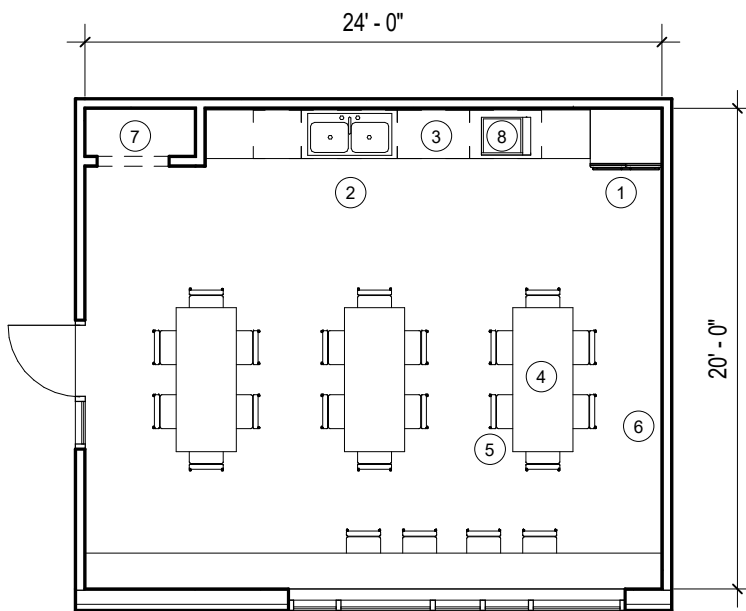
COMPONENTS:

- ① EXECUTIVE CHAIR
- ② DESK WITH SIDE
- ③ LATERAL FILE CABINETS (4)
- ④ BOOKCASE

SPACE SHALL CONSIST OF A
COMBINED / SHARED SPACE
OR TWO (2) 12' x 12' OFFICES



2 B1.01 - MULTI-PURPOSE ROOM



1 B1.01 - MULTI-PURPOSE ROOM - 480SF 1/8" = 1'-0"

ROOM FINISHES

FLOORS: 12X12 VCT TILE

WALLS: GWB PAINTED

CEILING: 2X2 ACT TILE

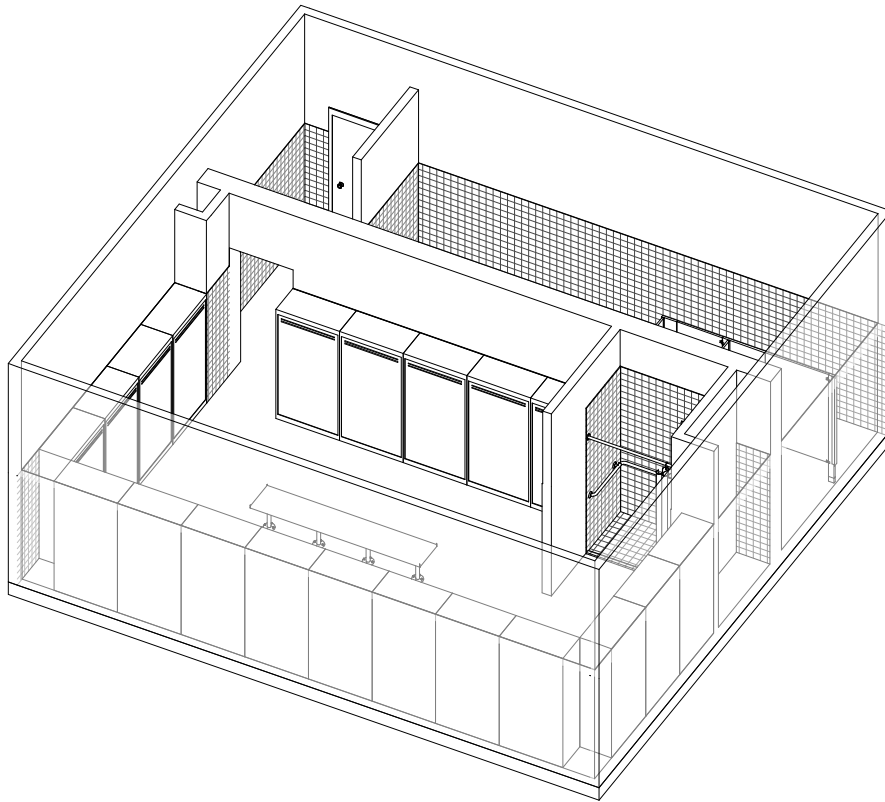
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DUPLEX ELECTRICAL OUTLETS

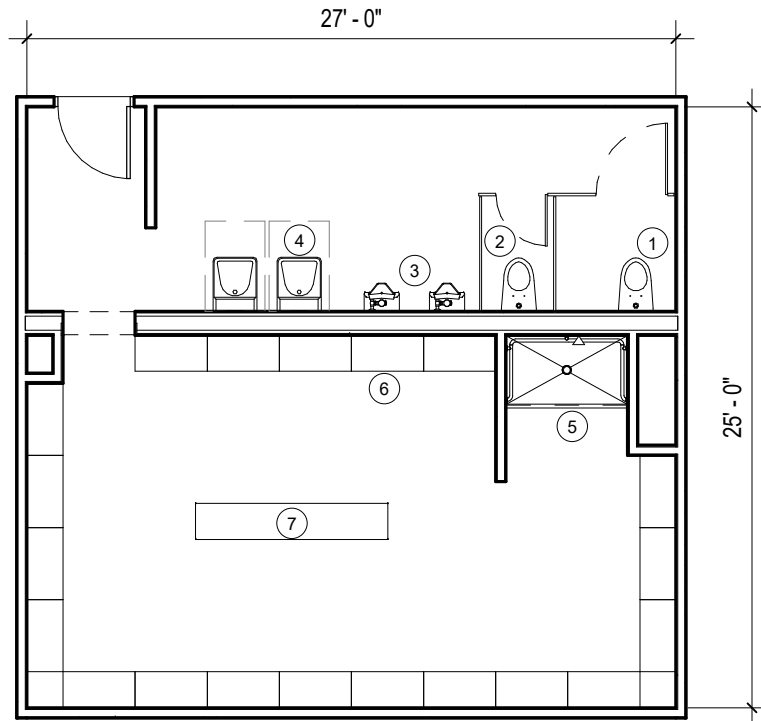
DATA OUTLET JACKS

COMPONENTS:

- ① REFRIGERATOR
- ② DOUBLE SINK
- ③ TOP COUNTER WITH CABINET (UNDER & ABOVE)
- ④ TABLE (3)
- ⑤ CHAIR (22)
- ⑥ FLAT TV SCREEN
- ⑦ PANTRY
- ⑧ MICROWAVE



2 B1.02 - MALE LOCKER/SHOWER/TOILET



B1.02 - MALE LOCKERS / SHOWERS /
TOILET - 675SF
1/8" = 1'-0"

ROOM FINISHES

FLOORS: EPOXY RESINOUS
FLOORING

WALLS: CERAMIC TILE TO 6'-0" /
GWB PAINTED

CEILING: 2X2 ACT TILE

MEP/DATA REQUIREMENTS

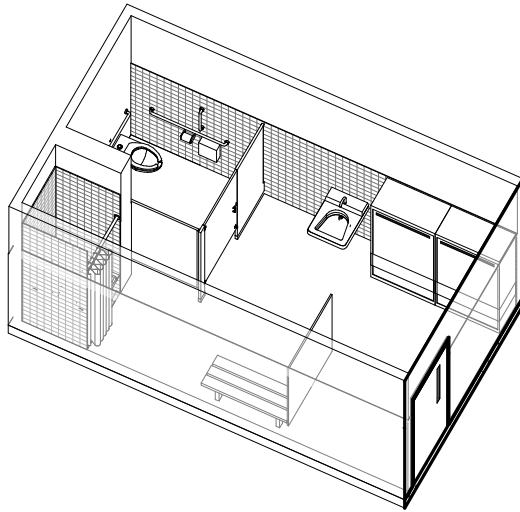
DUPLEX ELECTRICAL OUTLETS

TRAP PRIMERS

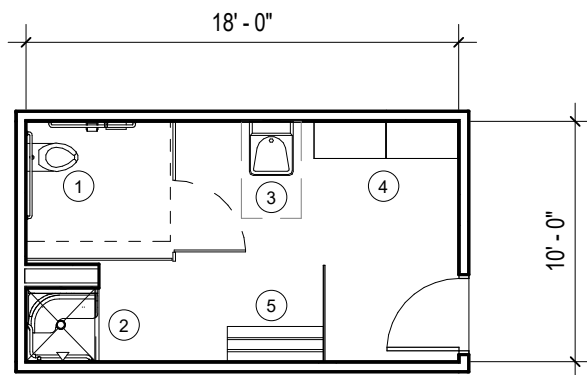
FLOOR DRAINS

COMPONENTS:

- 1 ADA TOILET
- 2 TOILET
- 3 URINAL (2)
- 4 ADA SINK (2)
- 5 ADA SHOWER
- 6 LOCKER (20 - 18" X 36")
- 7 BENCH



2 B1.03 - FEMALE LOCKER / SHOWER / TOILET



1 B1.03 - FEMALE LOCKER / SHOWER / TOILET - 180SF
1/8" = 1'-0"

ROOM FINISHES

FLOORS: EPOXY RESINOUS FLOORING

WALLS: GWB PAINTED

CEILING: 2X2 ACT TILE

MEP/DATA REQUIREMENTS

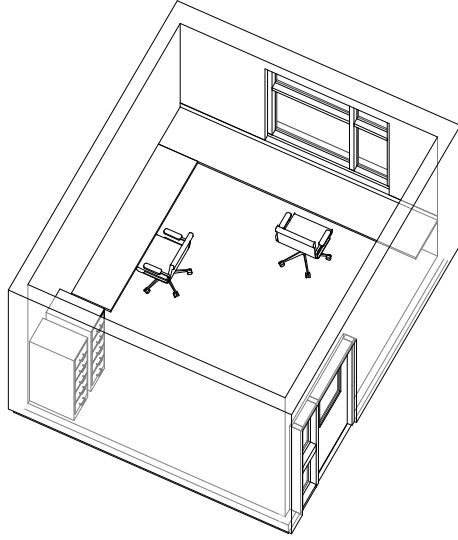
DUPLEX ELECTRICAL OUTLETS

TRAP PRIMERS

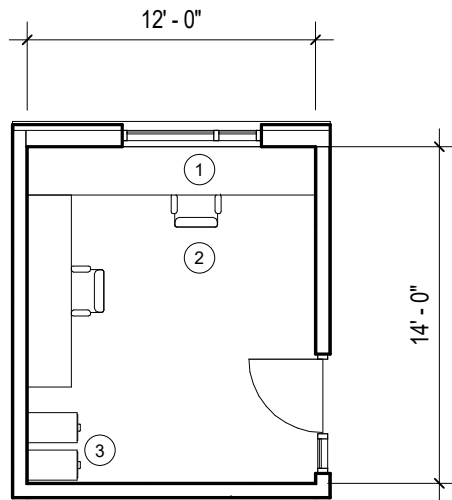
FLOOR DRAINS

COMPONENTS:

- ① ADA TOILET
- ② ADA SHOWER
- ③ ADA SINK
- ④ LOCKER (2)
- ⑤ BENCH



2 B1.04 - SHARED FOREMEN OFFICE



1 B1.04 - SHARED FOREMEN OFFICE - 168SF 1/8" = 1'-0"

ROOM FINISHES

FLOORS: 12X12 VCT TILE

WALLS: GWB PAINTED

CEILING: 2X2 ACT TILE

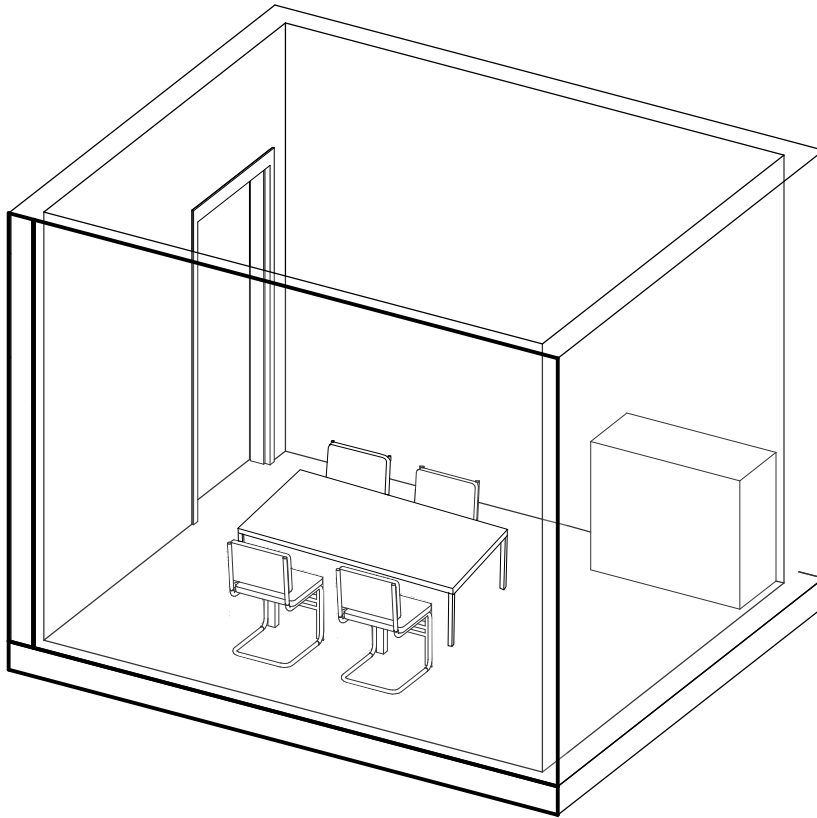
MEP/DATA REQUIREMENTS

DUPLEX ELECTRICAL OUTLETS

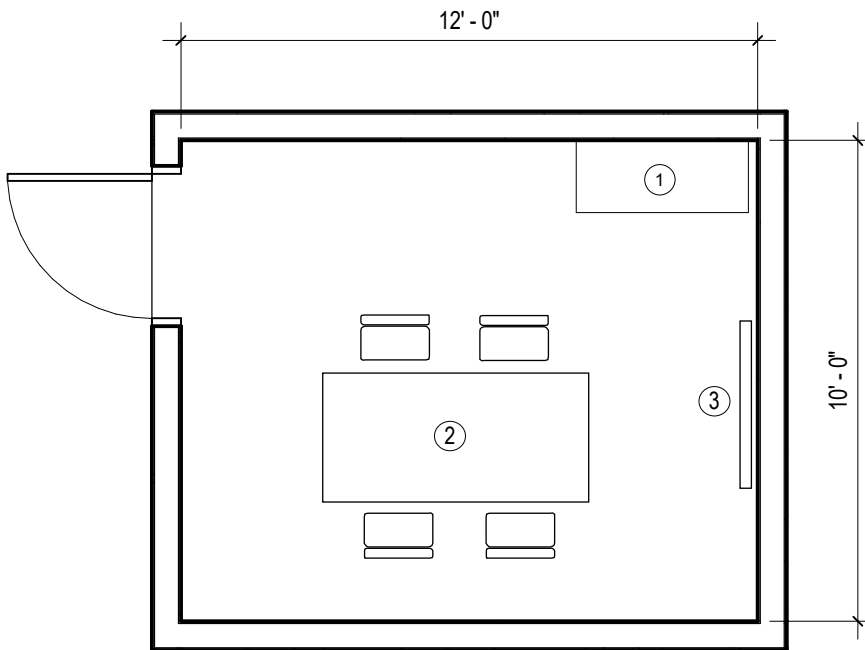
DATA OUTLET JACKS

COMPONENTS:

- ① WALL MOUNTED COUNTER
- ② TASK CHAIR (2)
- ③ LATERAL FILE CABINETS (2)



② B1.05 - SCADA



① B1.05 - SCADA 120SF (MULTI-PURPOSE MEETING / SCADA RM)
1/4" = 1'-0"

ROOM FINISHES

FLOORS: SEALED CONCRETE

WALLS: CONCRETE BLOCK
PAINTED

CEILING: GWB PAINTED

MEP/DATA REQUIREMENTS

DUPLEX ELECTRICAL OUTLETS

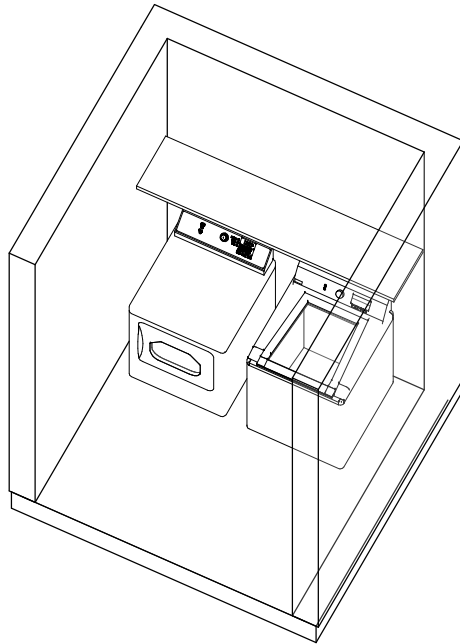
DATA OUTLET JACKS

MEDIA WIRING (HDMI)

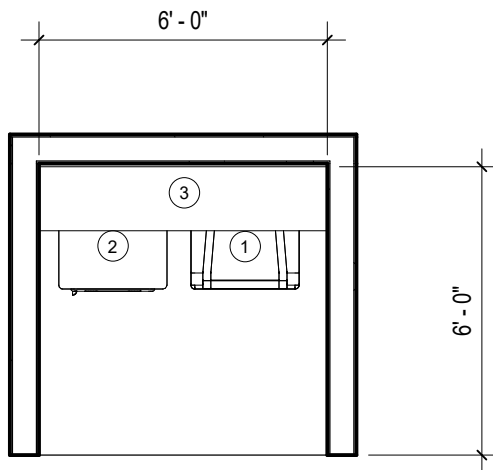
ELEC & DATA TO BE PROVIDED TO
SUPPORT MULTIPLE INTERFACE
LOCATIONS WITHIN SPACE

COMPONENTS:

- ① SCADA EQUIPMENT
- ② MEETING TABLE &
(4) CHAIRS
- ③ TV



2 B1.06 - LAUNDRY ROOM



1 B1.06 - LAUNDRY ROOM - 36SF
1/4" = 1'-0"

ROOM FINISHES

FLOORS: EPOXY RESINOUS FLOORING

WALLS: GWB PAINTED

CEILING: 2X2 ACT TILE

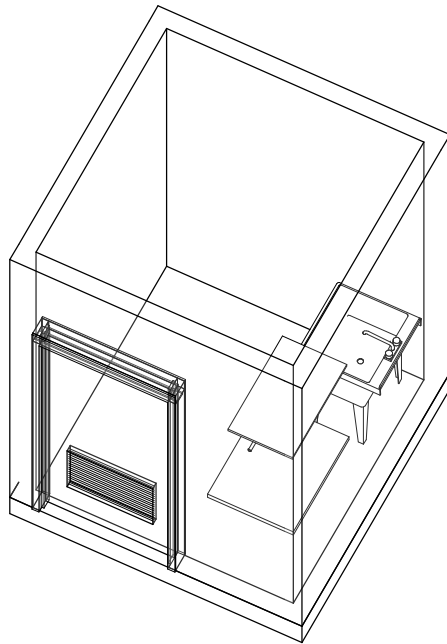
MEP/DATA REQUIREMENTS

DUPLEX ELECTRICAL OUTLETS

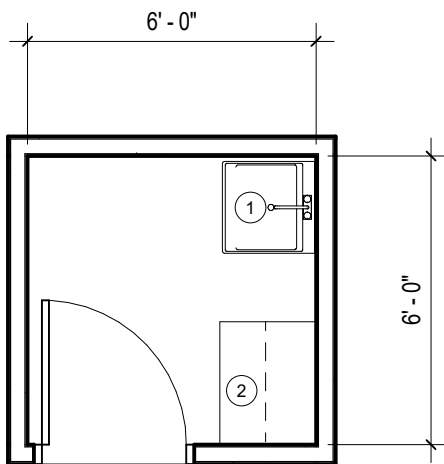
DRYER EXHAUST FAN & DUCT

COMPONENTS:

- 1 WASHER MACHINE
- 2 DRYER MACHINE
- 3 SHELF (ABOVE)



2 B1.07 - JANITOR CLOSET



1 B1.07 - JANITOR - 36SF
1/4" = 1'-0"

ROOM FINISHES

FLOORS: SEALED CONCRETE

WALLS: GWB PAINTED

CEILING: 2X2 ACT TILE

MEP/DATA REQUIREMENTS

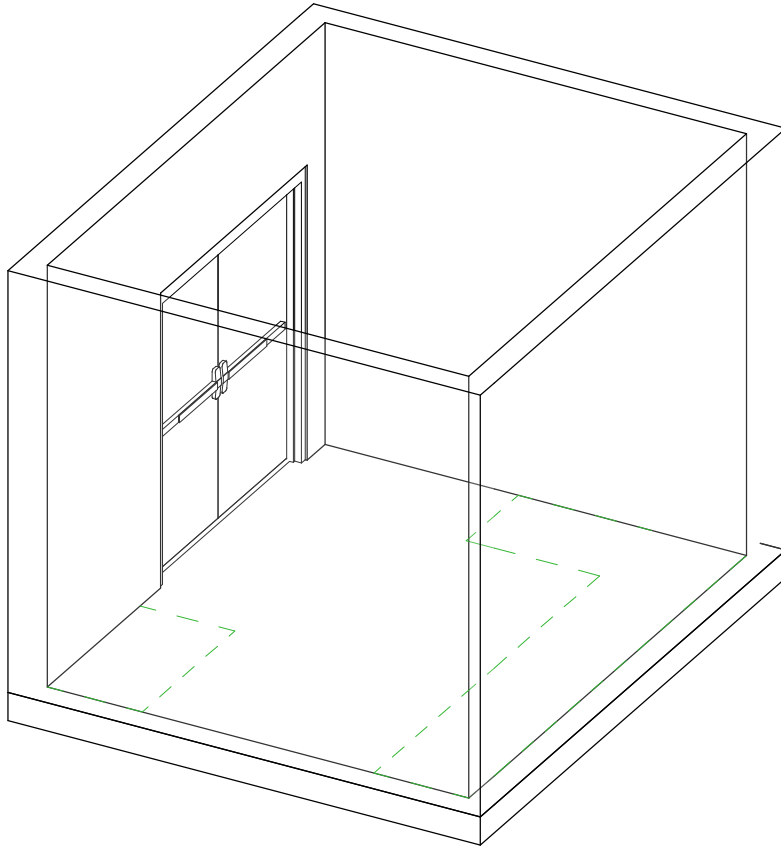
DUPLEX ELECTRICAL OUTLETS

FLOOR DRAINS

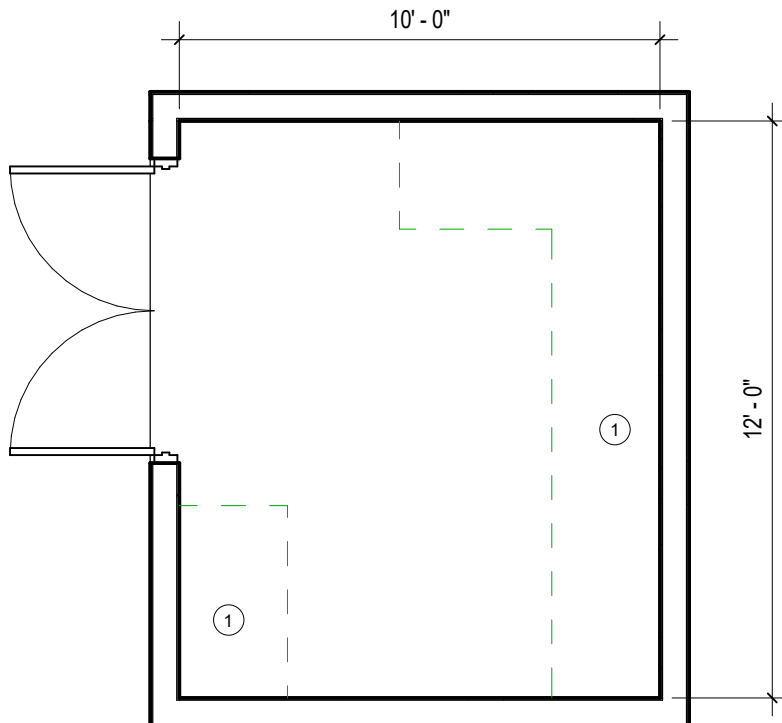
TRAP PRIMER

COMPONENTS:

- 1 UTILITY SINK
- 2 WALL MOUNTED SHELVING



2 B1.08 - ELECTRIC ROOM



1 B1.08 - ELECTRIC ROOM - 120SF
1/4" = 1'-0"

ROOM FINISHES

FLOORS: SEALED CONCRETE

WALLS: CONCRETE BLOCK
PAINTED

CEILING: GWB PAINTED

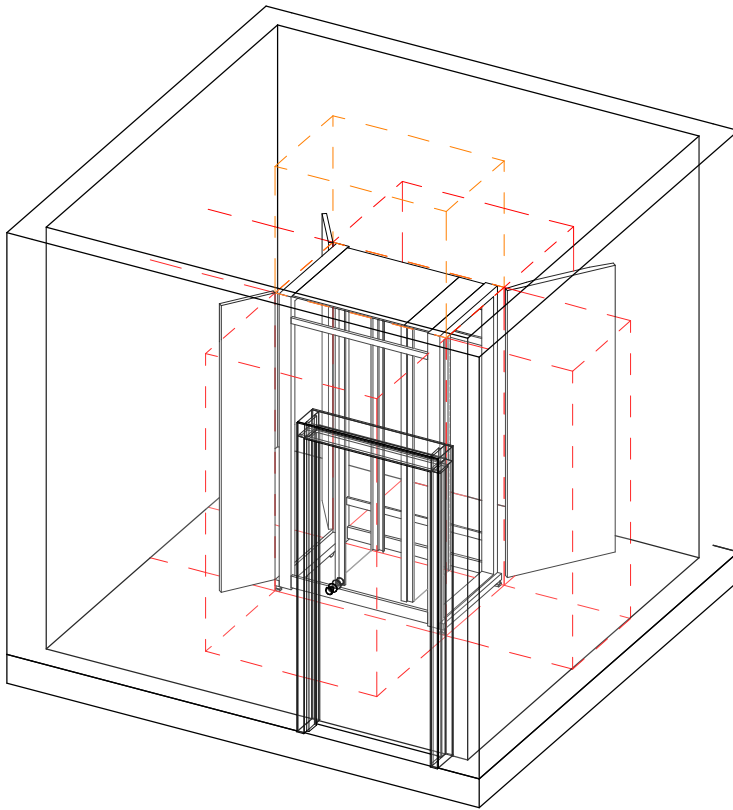
MEP/DATA REQUIREMENTS

DUPLEX ELECTRICAL OUTLETS

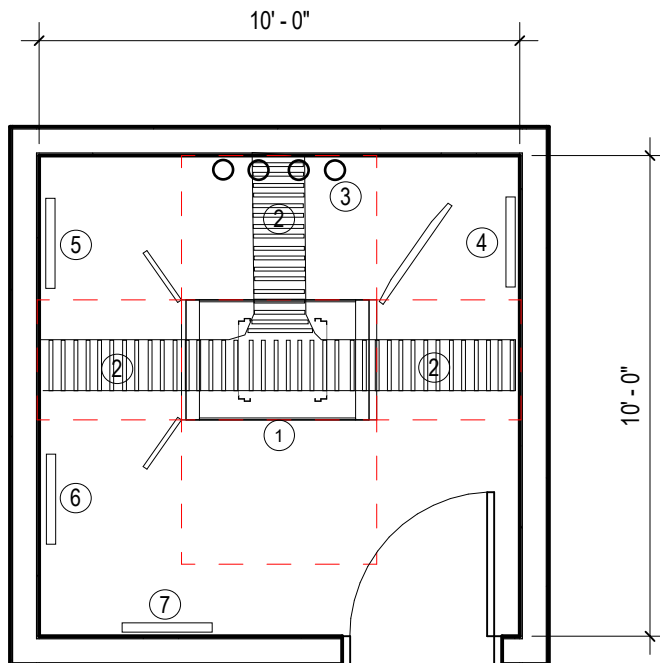
DATA OUTLET JACKS

COMPONENTS:

1 WALL MOUNTED PANELS
(SERIES)



2 B1.09 - TELE / DATA ROOM



1 B1.09 - TELE/DATA ROOM -100SF
1/4" = 1'-0"

ROOM FINISHES

FLOORS: CARPET TILE

WALLS: GWB PAINTED

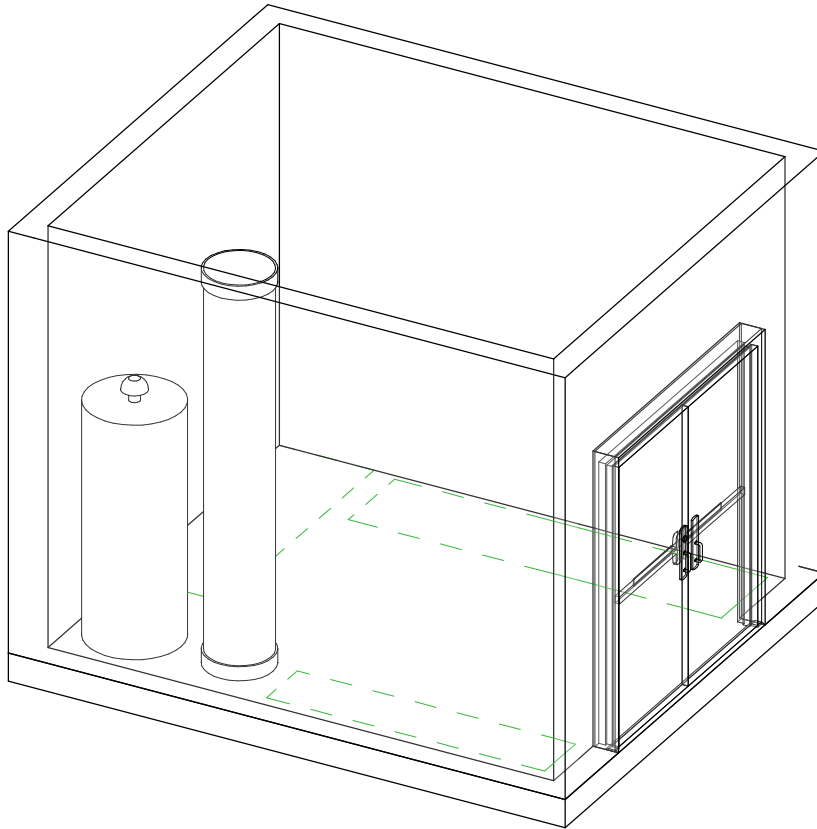
CEILING: 2X2 ACT TILE

MEP/DATA REQUIREMENTS

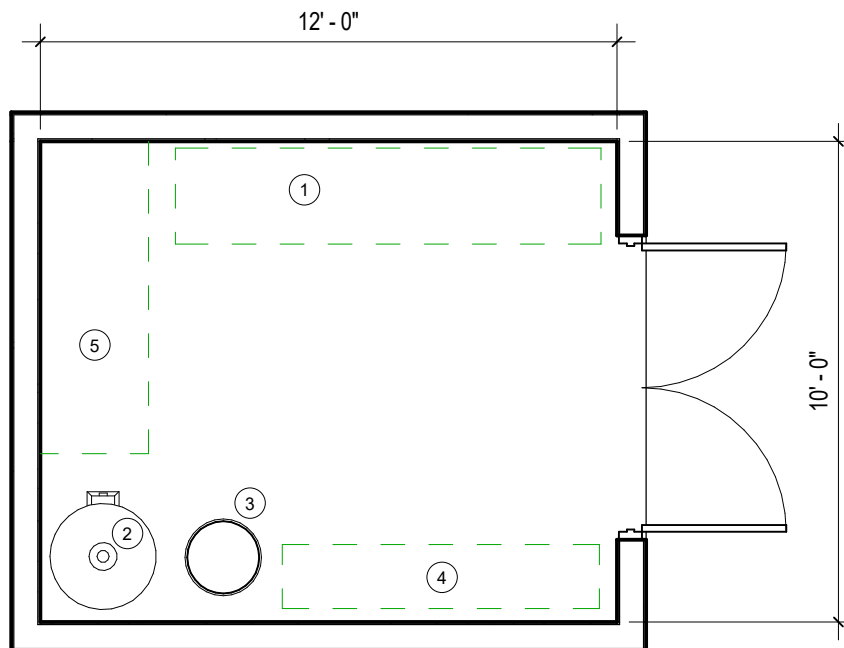
SPECIALTY POWER AS REQUIRED
TO SUPPORT IT EQUIPMENT

COMPONENTS:

- 1 DATA RACKS
- 2 CABLE MANAGEMENT TRAYS
- 3 SERVICE CONDUIT ENTRY
- 4 POTS DEMARC
- 5 FIBER DEMARC
- 6 CABLE DEMARC
- 7 SECURITY DEMARC



2 B1.10 - PLUMBING / FIRE PROTECTION



1 B1.10 - PLUMBING / FIRE PROTECTION - 120SF 1/4" = 1'-0"

ROOM FINISHES

FLOORS: SEALED CONCRETE

WALLS: GWB PAINTED

CEILING: GWB PAINTED

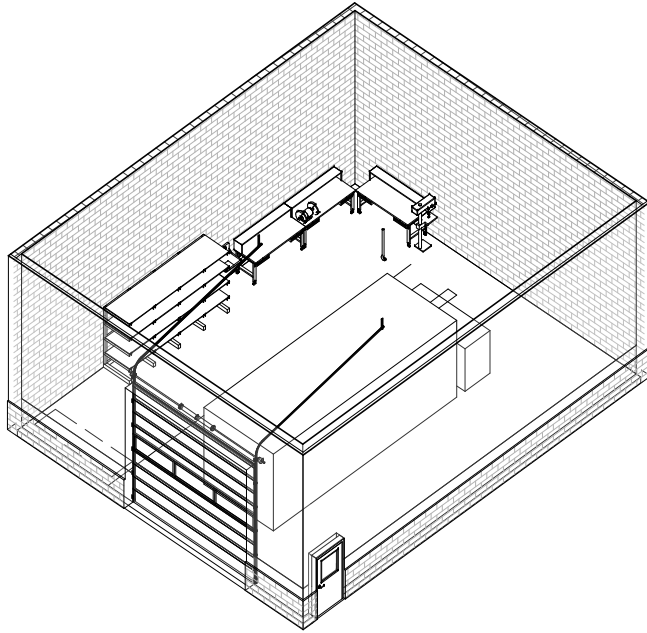
MEP/DATA REQUIREMENTS

DUPLEX ELECTRICAL OUTLETS

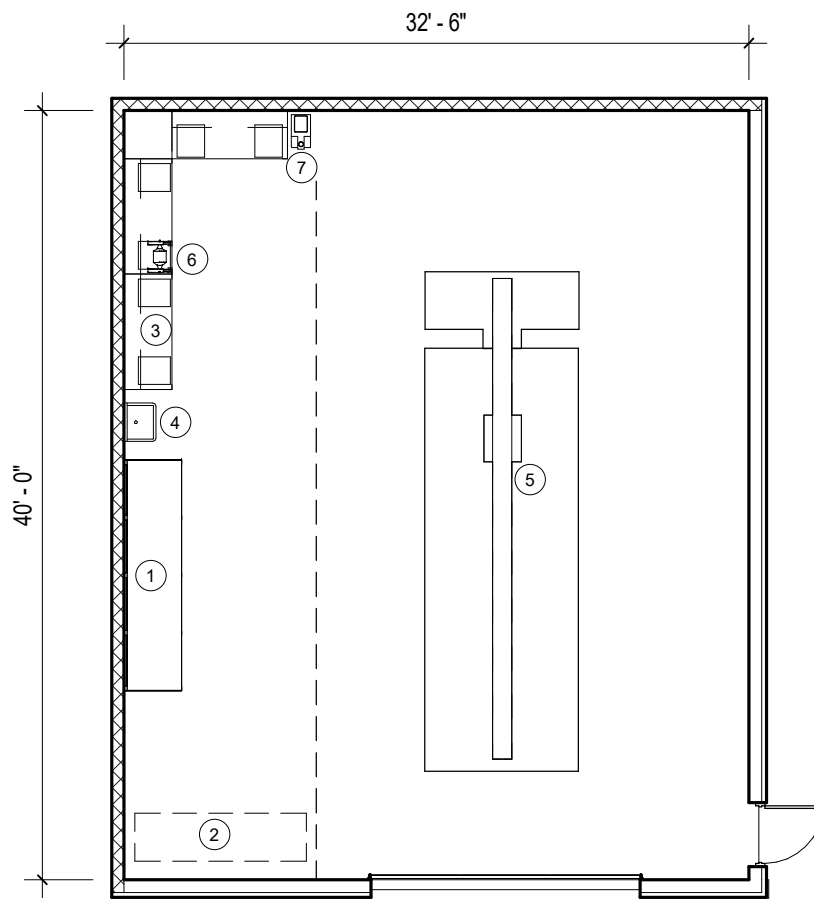
DATA OUTLET JACKS

COMPONENTS:

- ① DOMESTIC SERVICE METER & REDUCED PRESSURE BACKFLOW PREVENTER
- ② WATER HEATER
- ③ EXPANSION TANK
- ④ TEMPERED WATER CONTROL PANEL & MIXING VALVES
- ⑤ FIRE PROTECTION SERVICE (DRY & WET) CHECK VALVE ASSEMBLY



② C1.01 - SHARED GENERAL SHOP



C1.01 - SHARED GENERAL SHOP -

① 1,300SF
1" = 10'-0"

ROOM FINISHES

FLOORS: SEALED CONCRETE

WALLS: CONCRETE BLOCK
PAINTED

CEILING: OPEN TO STRUCTURE

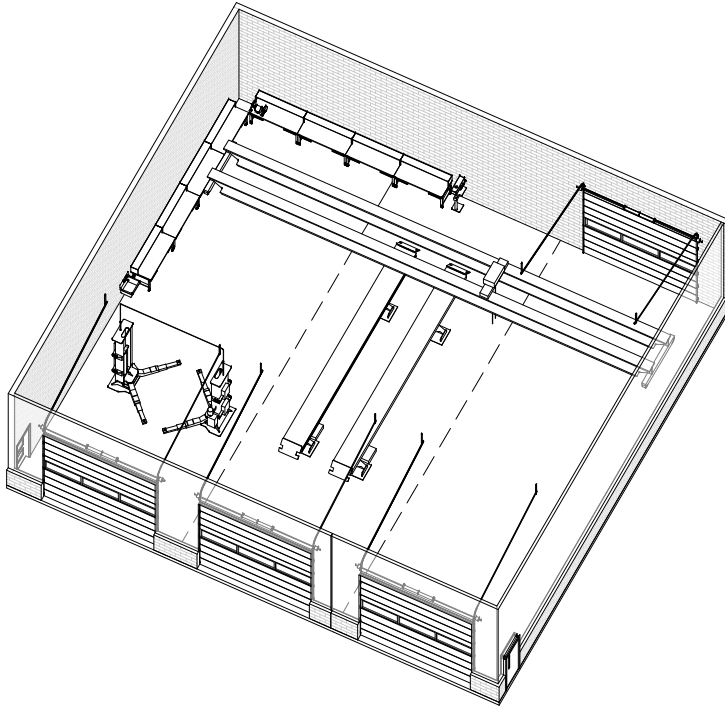
MEP/DATA REQUIREMENTS

DUPLEX ELECTRICAL OUTLETS

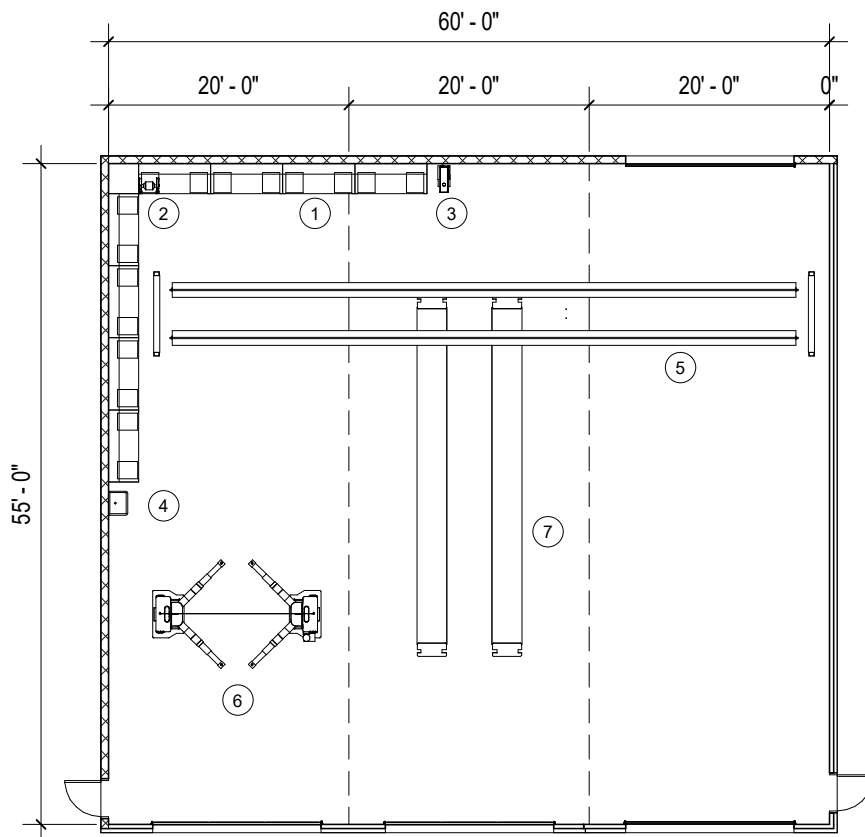
DATA OUTLET JACKS

COMPONENTS:

- ① STORAGE RACK FOR SIGN POSTS
- ② WALL SPACE SIGN STORAGE
- ③ WORKBENCH (3)
- ④ SHOP SINK
- ⑤ MONORAIL
- ⑥ BENCH GRINDER
- ⑦ DRILL PRESS



2 D1.01 - VEHICLE MAINTENANCE



1 D1.01 - MAINTENANCE BAYS - 3,300SF 1/16" = 1'-0"

ROOM FINISHES

FLOORS: SEALED CONCRETE

WALLS: CONCRETE BLOCK
PAINTED

CEILING: OPEN TO STRUCTURE

MEP/DATA REQUIREMENTS

DUPLEX ELECTRICAL OUTLETS

DESTRATIFICATION FANS

COMPRESSED AIR OUTLETS

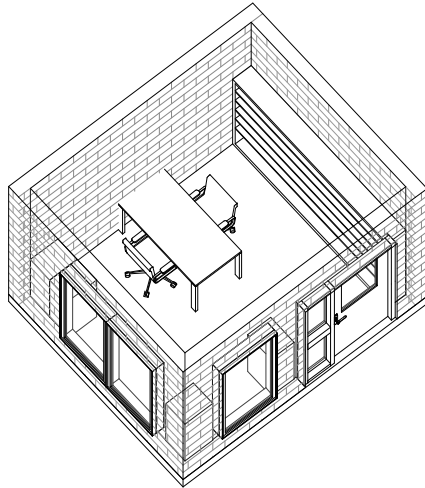
LED LIGHTING

DROP HOSES FOR EXHAUST

SOLENOID VALVE FOR
COMPRESSED
AIR TO FLUID ROOM

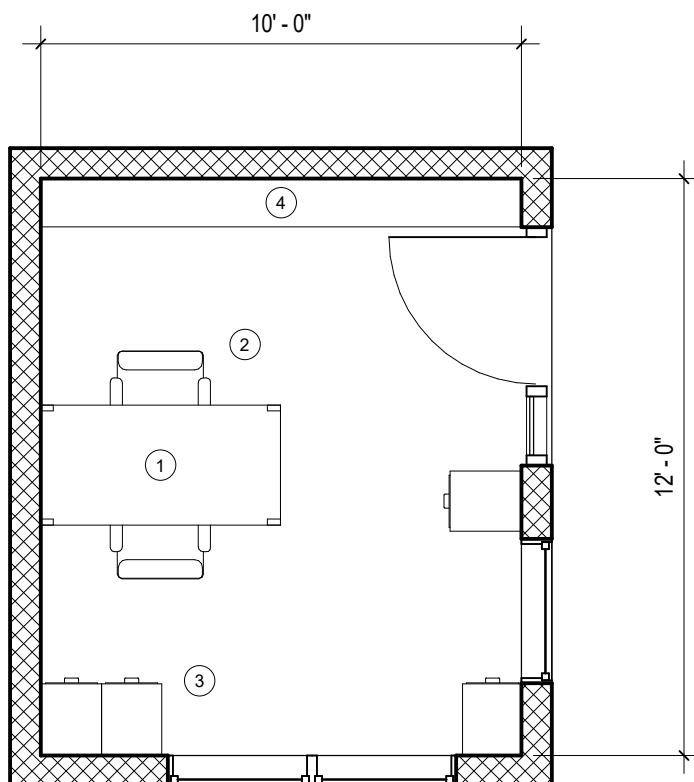
COMPONENTS:

- 1 WORKBENCH (8)
- 2 GRINDER
- 3 DRILL PRESS
- 4 SERVICE SINK
- 5 INDUSTRIAL BRIDGE CRANE
- 6 TWO POST LIGHT DUTY LIFT
- 7 FLUSH MOUNTED SCISSOR LIFT



D1.02 - MECHANICS OFFICE / REFERENCE ROOM

2



D1.02 - MECHANICS OFFICE / REFERENCE ROOM - 120SF

1

1/4" = 1'-0"

ROOM FINISHES

FLOORS: 12X12 VCT TILE

WALLS: CMU PAINTED

CEILING: 2X2 ACT TILE

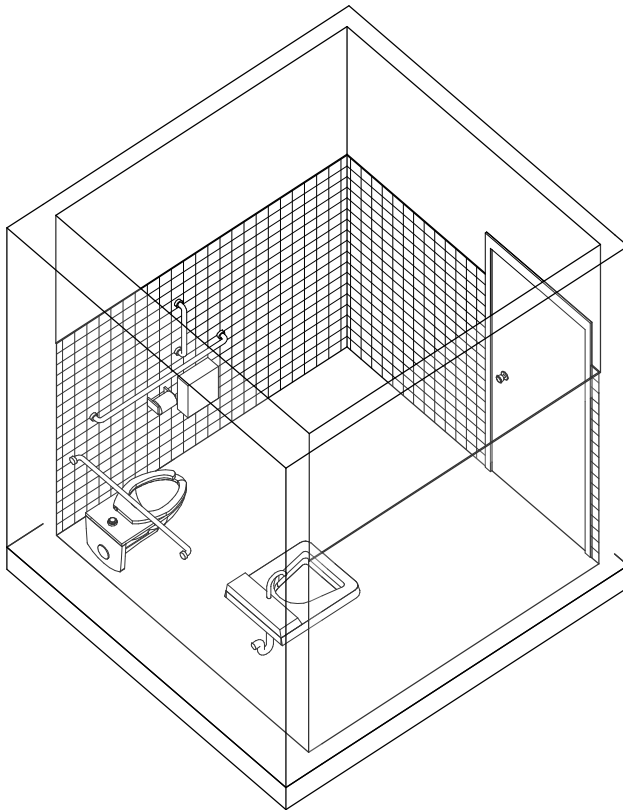
MEP/DATA REQUIREMENTS

DUPLEX ELECTRICAL OUTLETS

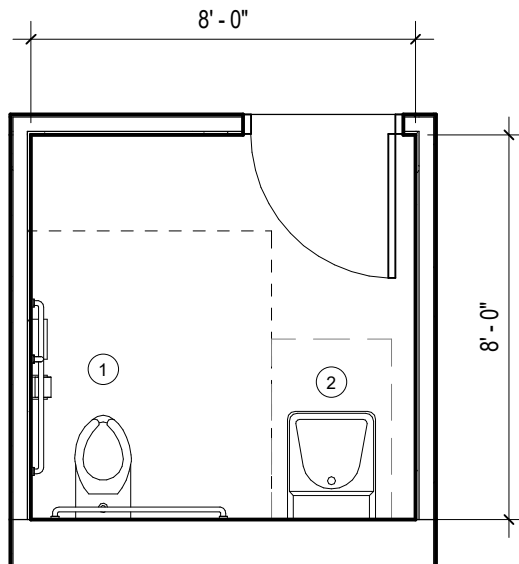
DATA OUTLET JACKS

COMPONENTS:

- ① DESK
- ② TASK CHAIR
- ③ LATERAL FILE CABINETS
- ④ BOOKCASE



② D1.03 - UNI-SEX TOILET



① D1.03 - UNI-SEX TOILET - 64SF
1/4" = 1'-0"

ROOM FINISHES

FLOORS: CERAMIC TILES

WALLS: CERAMIC TILE TO 6'-0" /
GWB PAINTED

CEILING: 2X2 ACT TILE

MEP/DATA REQUIREMENTS

FLOOR DRAINS

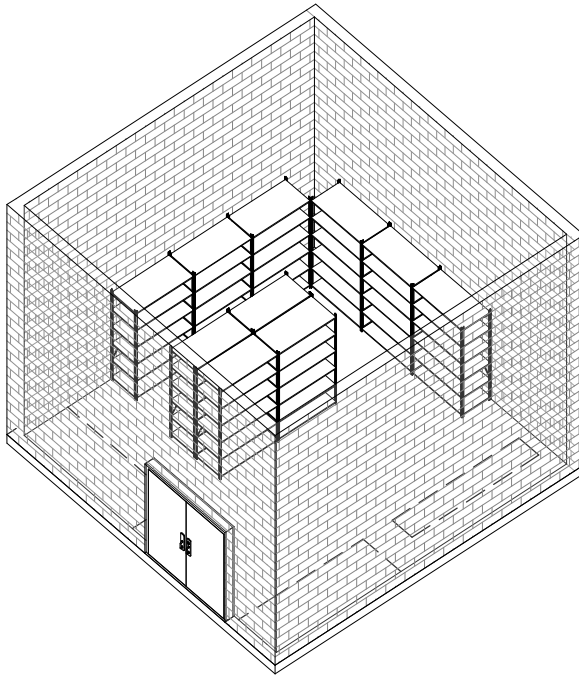
TRAP PRIMERS

LOW FLOW FIXTURES

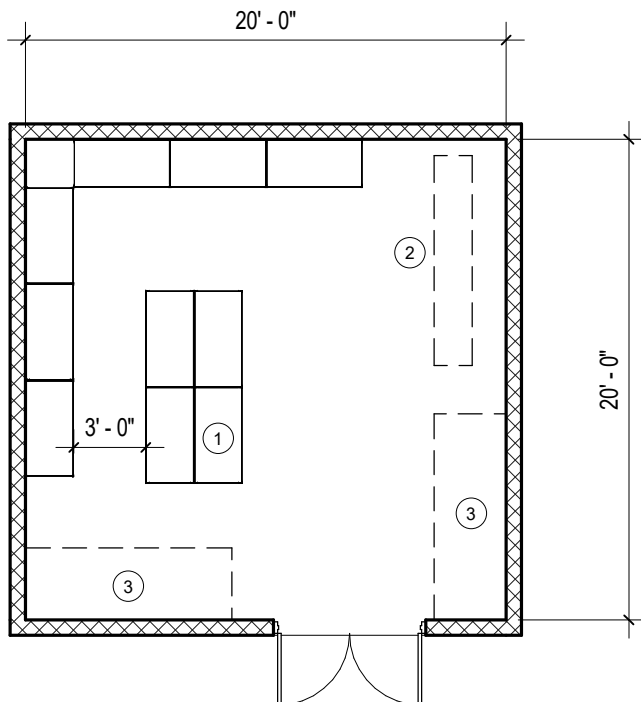
COMPONENTS:

① ADA TOILET

② ADA SINK



2 D1.04 - PARTS ROOM



1 D1.04 - PARTS ROOM - 400SF 1/8" = 1'-0"

ROOM FINISHES

FLOORS: SEALED CONCRETE

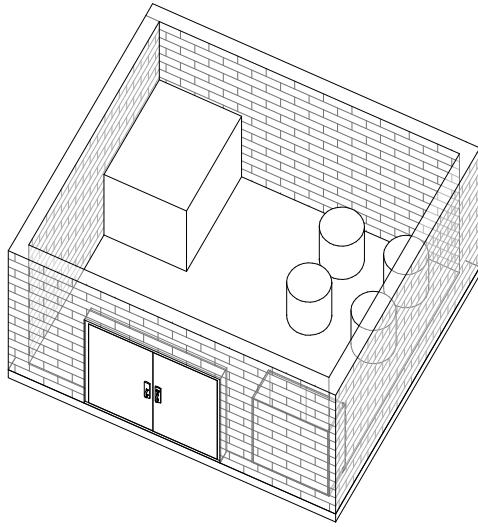
WALLS: CONCRETE BLOCK
PAINTED

CEILING: OPEN TO STRUCTURE

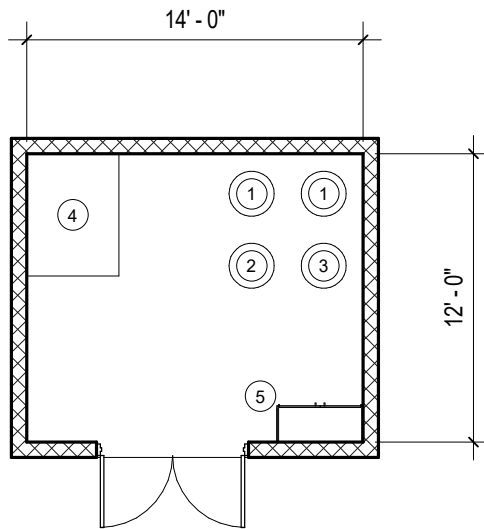
MEP/DATA REQUIREMENTS

COMPONENTS:

- ① (48" W X 24" D X 84" H)
HEAVY DUTY SHELVING (10)
- ② SMALL PARTS BINS
- ③ WALL STORAGE
- ④ FLAMMABLE CABINETS



2 D1.05 - FLUIDS ROOM



1 D1.05 - FLUIDS ROOM - 168SF 1/8" = 1'-0"

ROOM FINISHES

FLOORS: SEALED CONCRETE

WALLS: CONCRETE BLOCK
PAINTED

CEILING: GWB PAINTED

MEP/DATA REQUIREMENTS

CA DROPS FOR PNEUMATIC
PUMPS

COMPONENTS:

- ① 15w-40 Motor Oil - 55 Gal Drum
- ② Transmission Fluid - 55 Gal Drum
- ③ Hydraulic Fluid - 55 Gal Drum
- ④ Waste Oil Tank
- ⑤ Flammable Storage Cabinet

ROOM FINISHES

FLOORS: EPOXY RESINOUS FLOORING

WALLS: PVC PANELS

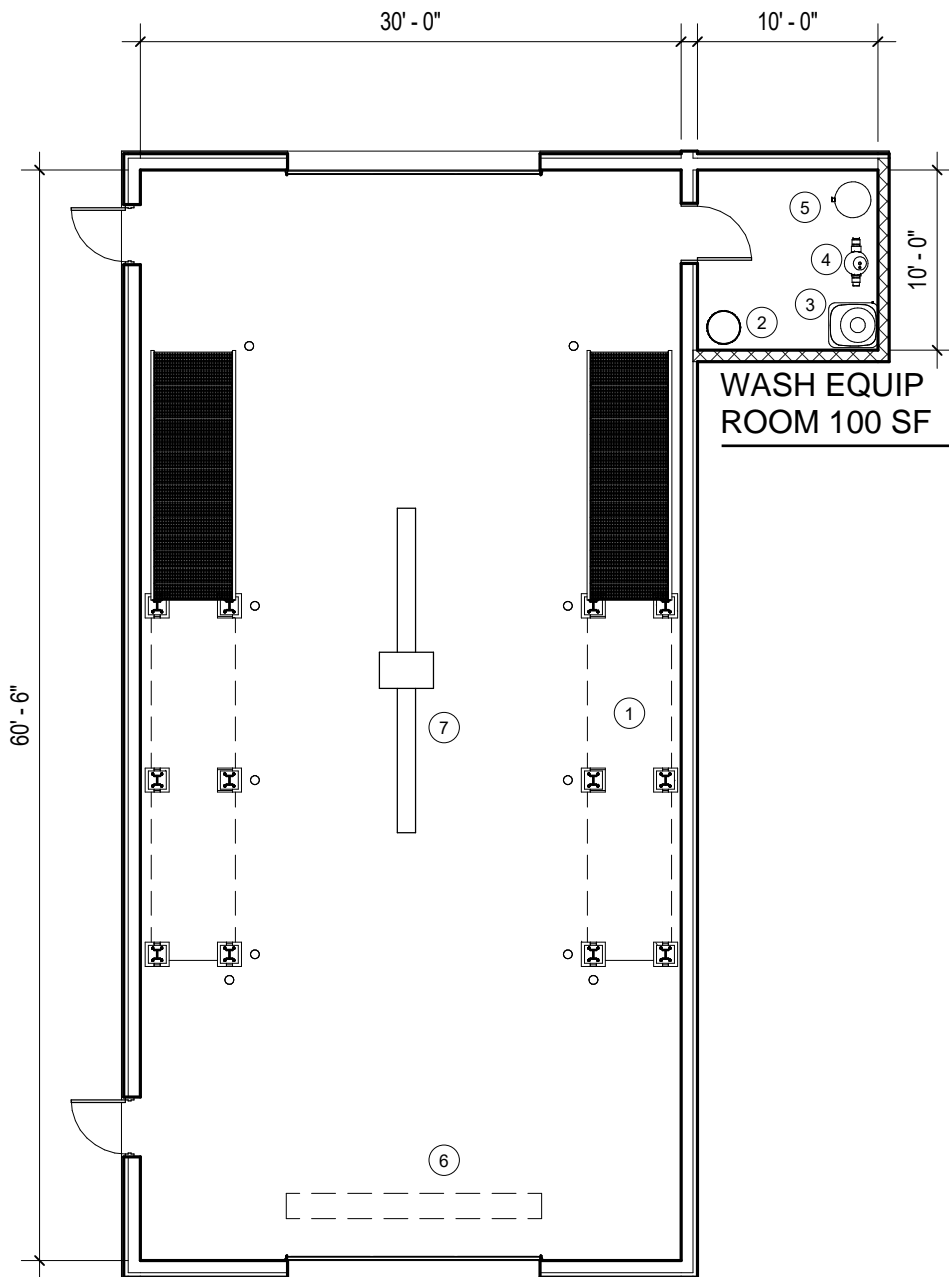
CEILING: PVC PANELS

MEP/DATA REQUIREMENTS

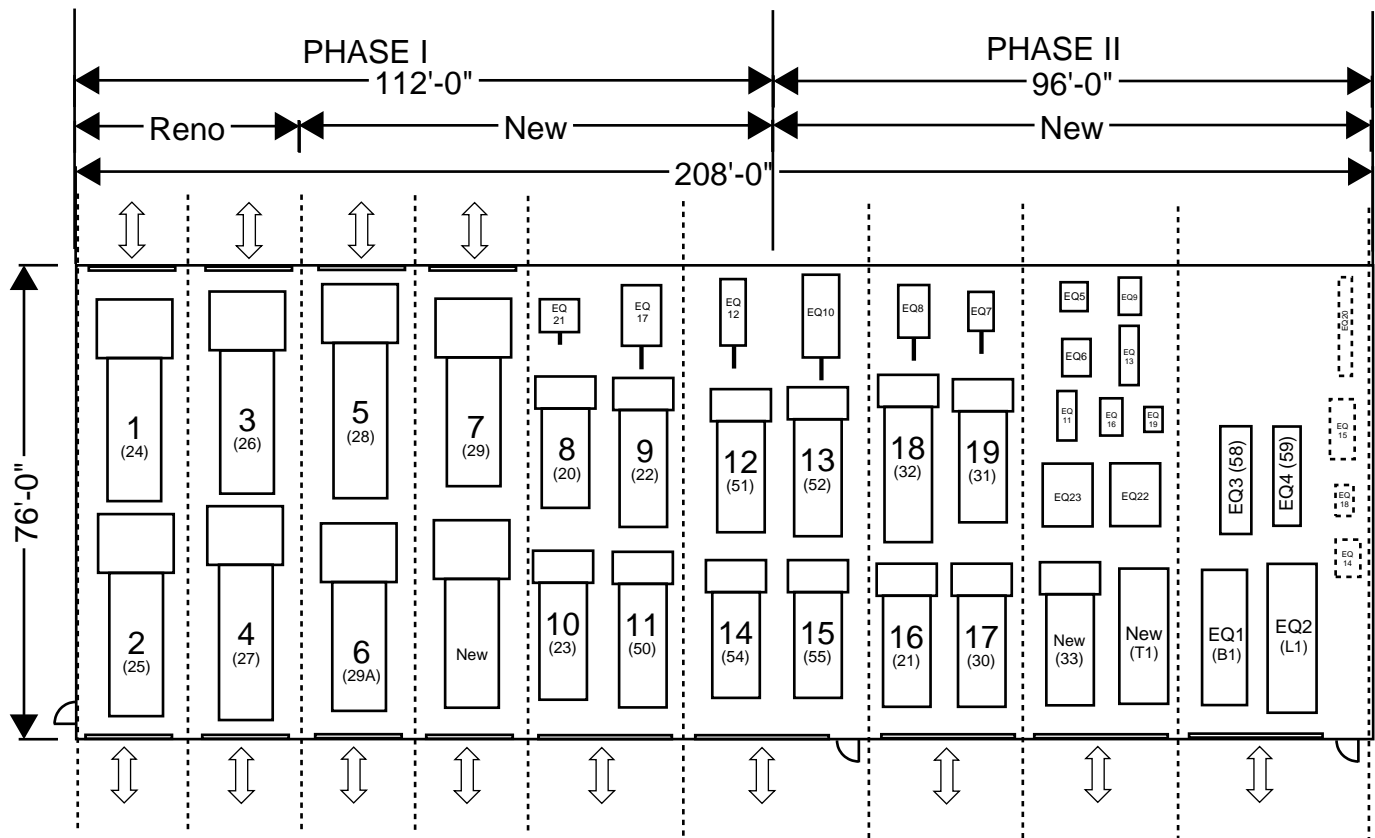
2" WATER SUPPLY (1-1/2" MIN)

COMPONENTS:

- ① CATWALKS
- ② DRUM OF SOAP
- ③ HEAT PUMP
- ④ PRESSUR PUMP
- ⑤ FILTER
- ⑥ UNDERCARRIAGE WASH
- ⑦ FLOOR DRAIN

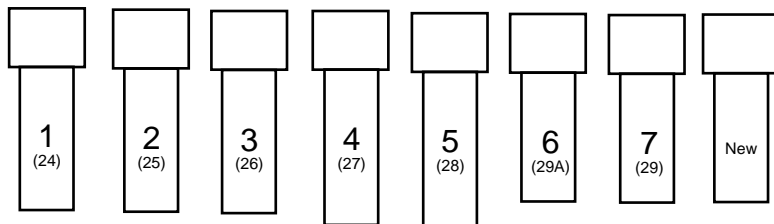


① E1.01 - WASH BAY - 1,815SF
3/32" = 1'-0"

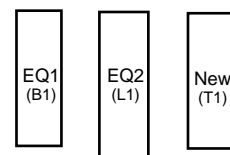


VEHICLE / EQUIPMENT STORAGE GARAGE
76' x 208' = 15,808 SF

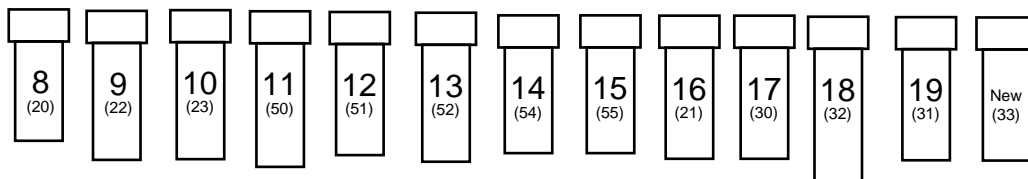
LARGE TRUCKS



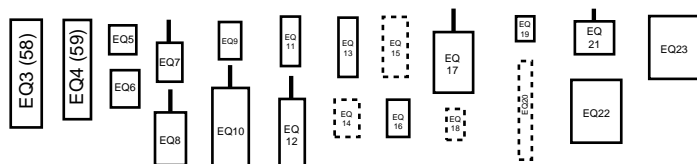
HEAVY EQUIPMENT



SMALL TRUCKS



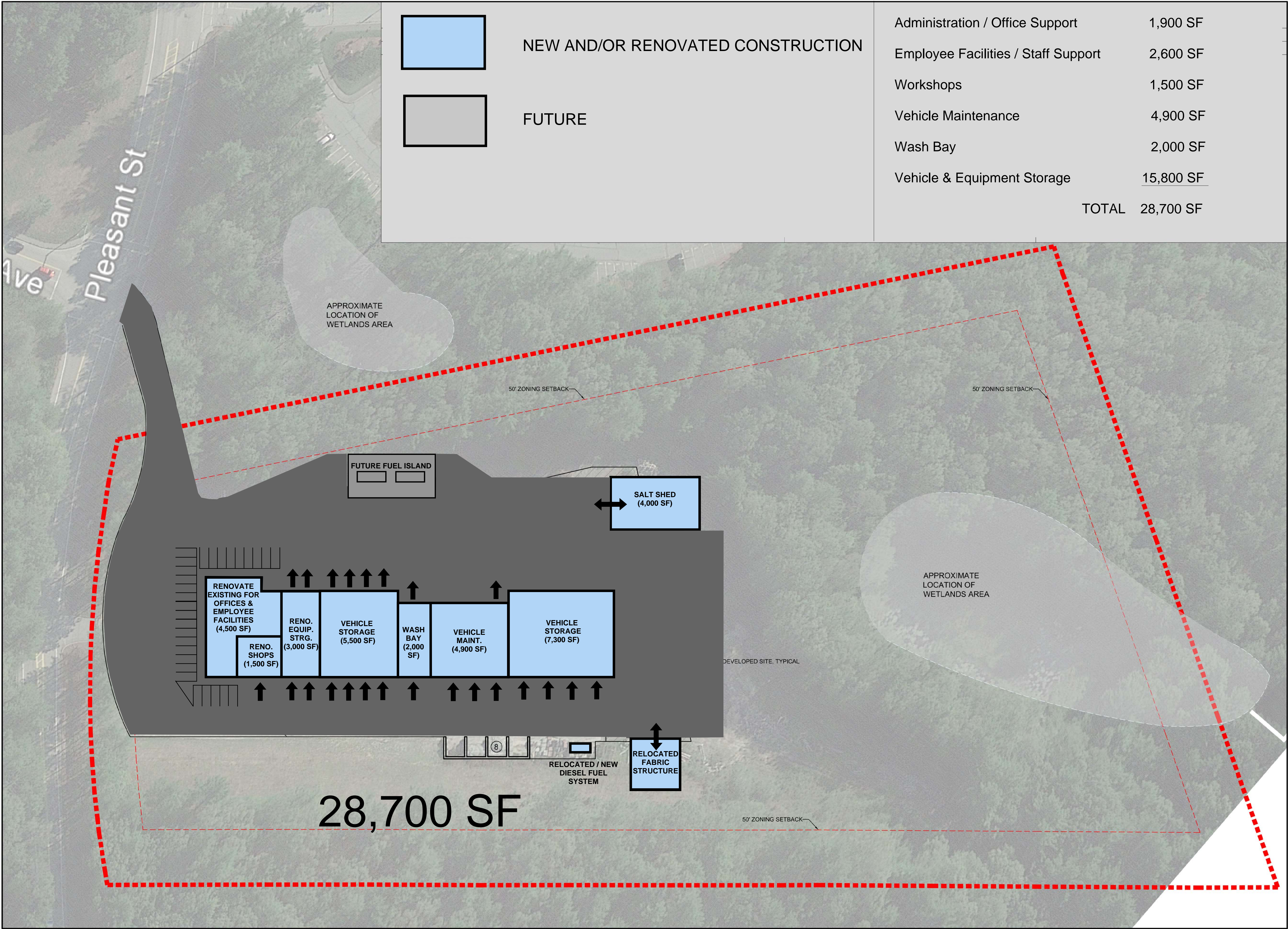
SMALL EQUIPMENT



Town of Upton
Department of Public Works
Vehicle / Equipment Layout
October 05, 2020
Sheet F1.01

Appendix B

Preferred Conceptual Alternative



NEW AND/OR RENOVATED CONSTRUCTION




FUTURE

Administration / Office Support	1,900 SF
Employee Facilities / Staff Support	2,600 SF
Workshops	1,500 SF
Vehicle Maintenance	4,900 SF
Wash Bay	2,000 SF
Vehicle & Equipment Storage	15,800 SF
TOTAL	28,700 SF

Project:

UPTON DPW



DPW Feasibility Study

100 Pleasant Street
Upton, MA

Weston & Sampson

Weston & Sampson Engineers, Inc.
100 Foxborough Boulevard, Suite 250
Foxborough, MA 02035
(508) 668-3034 (800) SAMPSON
www.westonandsampson.com

Consultants:

Seal:

Revisions:		
Rev	Date	Description

Issued For: Conceptual Design



SCALE: 1" = 40'	
Date:	3/14/2017
Drawn By:	JW
Reviewed By:	JA
Approved By:	DT
W&S Project No:	2170116

Drawing Title:

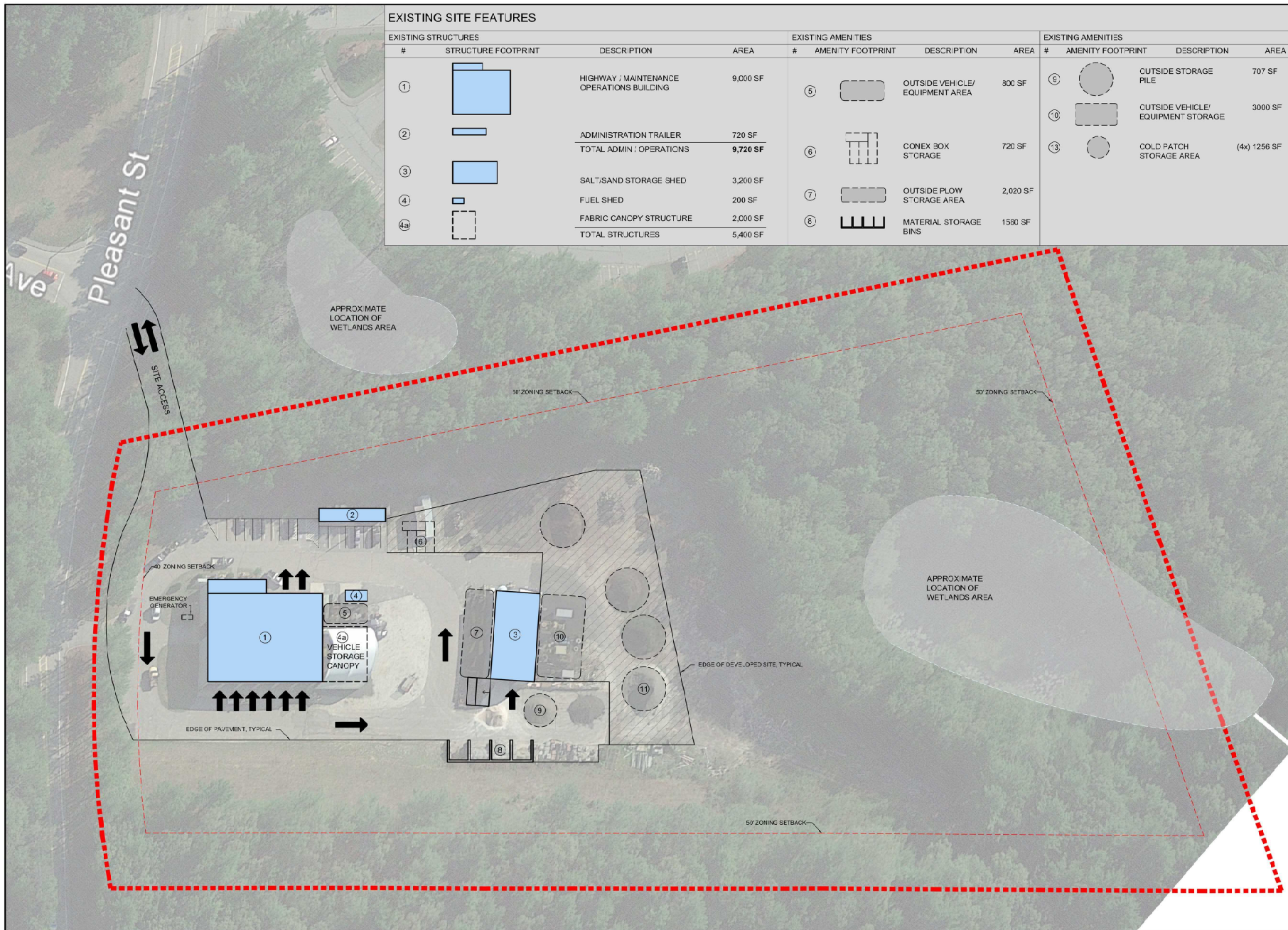
PROPOSED PLAN
FINAL PLAN
(PHASE I & II)

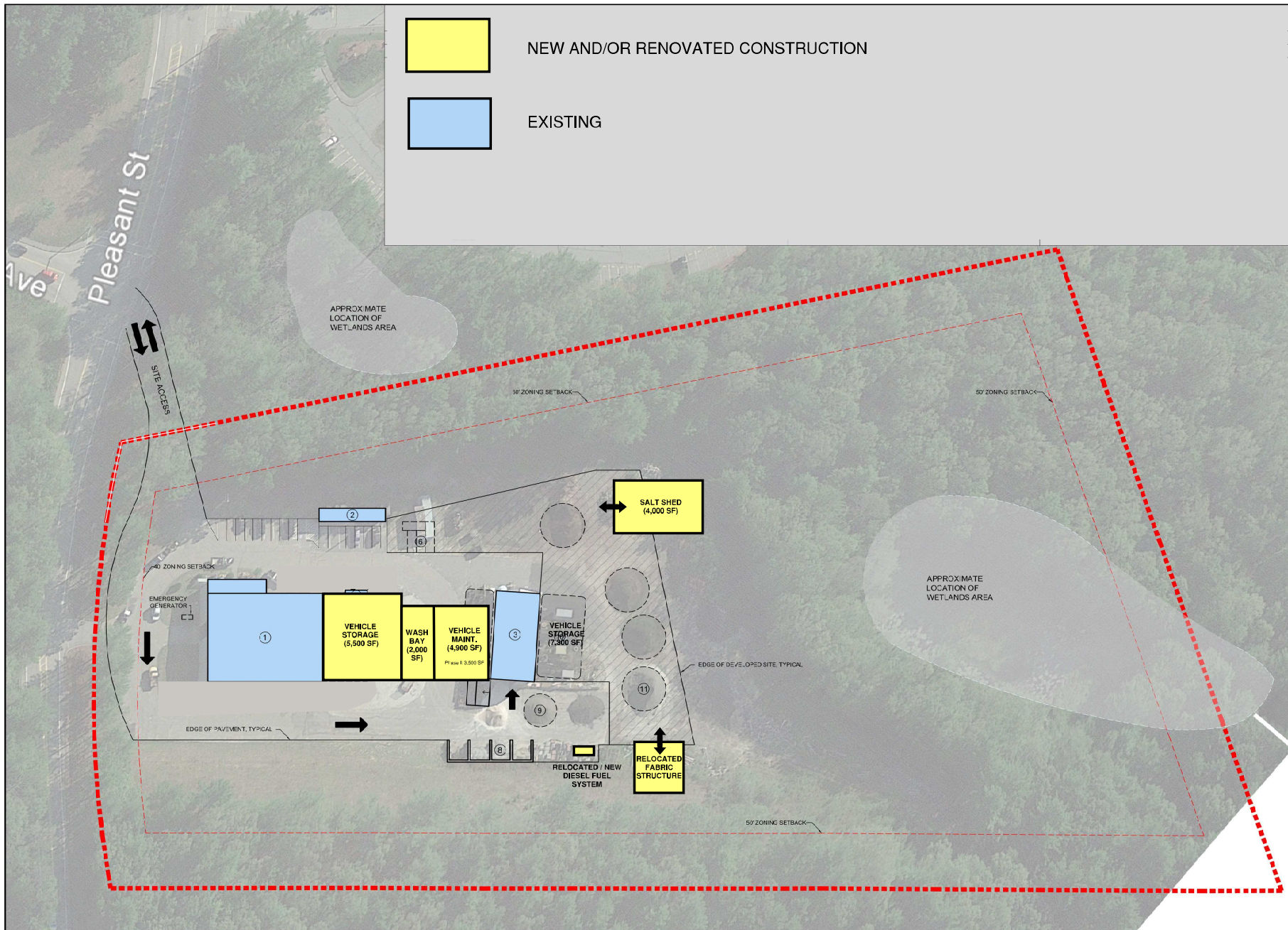
Sheet Number:

A1.01


Appendix C

Phasing Plan





Project:
UPTON DPW



DPW Feasibility Study
100 Pleasant Street
Upton, MA

Weston & Sampson
Weston & Sampson Engineers, Inc.
130 Fenwick Road
Fitchburg, MA 01420
(978) 669-3344 (EXT. 200) FAX (978) 669-3344
www.westonsampson.com


Consultants:

Scale:

Revisions:

Rev	Date	Description

Issued For: Conceptual Design



North

SCALE: 1" = 40'

Date: 3/14/2017
Drawn By: JN
Reviewed By: JA
Approved By: DT
W&S Project No: 2170116

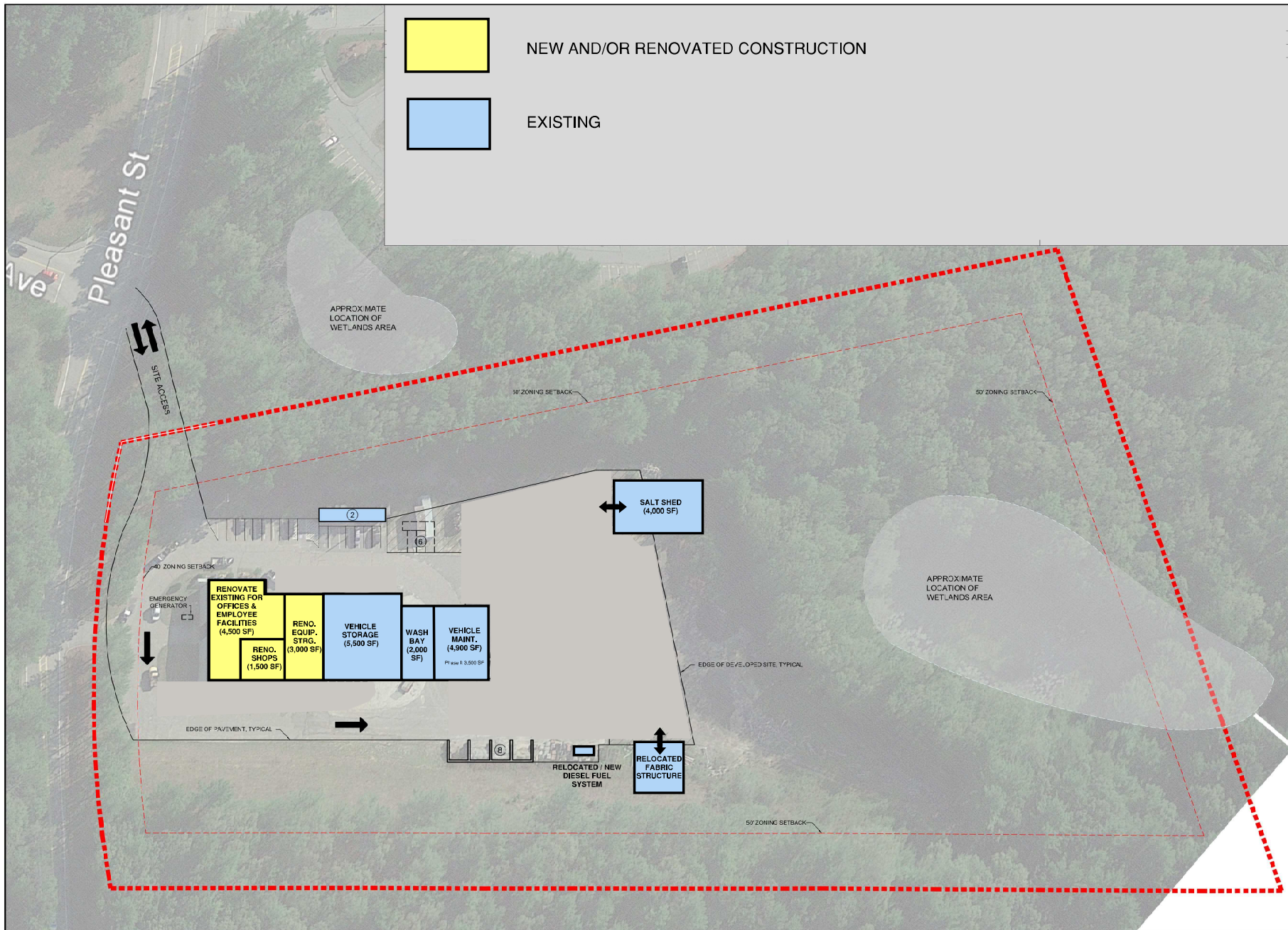
Drawing Title:

**PROPOSED PLAN
PHASE IA**

Sheet Number:


A1.01

WESTON & SAMPSON ENGINEERS, INC.



Project:

UPTON DPW



DPW Feasibility Study
100 Pleasant Street
Upton, MA

Weston & Sampson

Weston & Sampson Engineers, Inc.
130 Foxborough Boulevard, Suite 200
Foxborough, MA 02035
(508) 548-3344 (FAX) (508) 548-3344
www.westonandsampson.com


Consultants:

Seal:

Revisions:

Rev	Date	Description

Issued For: Conceptual Design



North

SCALE: 1" = 40'

Date: 3/14/2017

Drawn By: JJA

Reviewed By: JJA

Approved By: DT

W&S Project No: 2170116

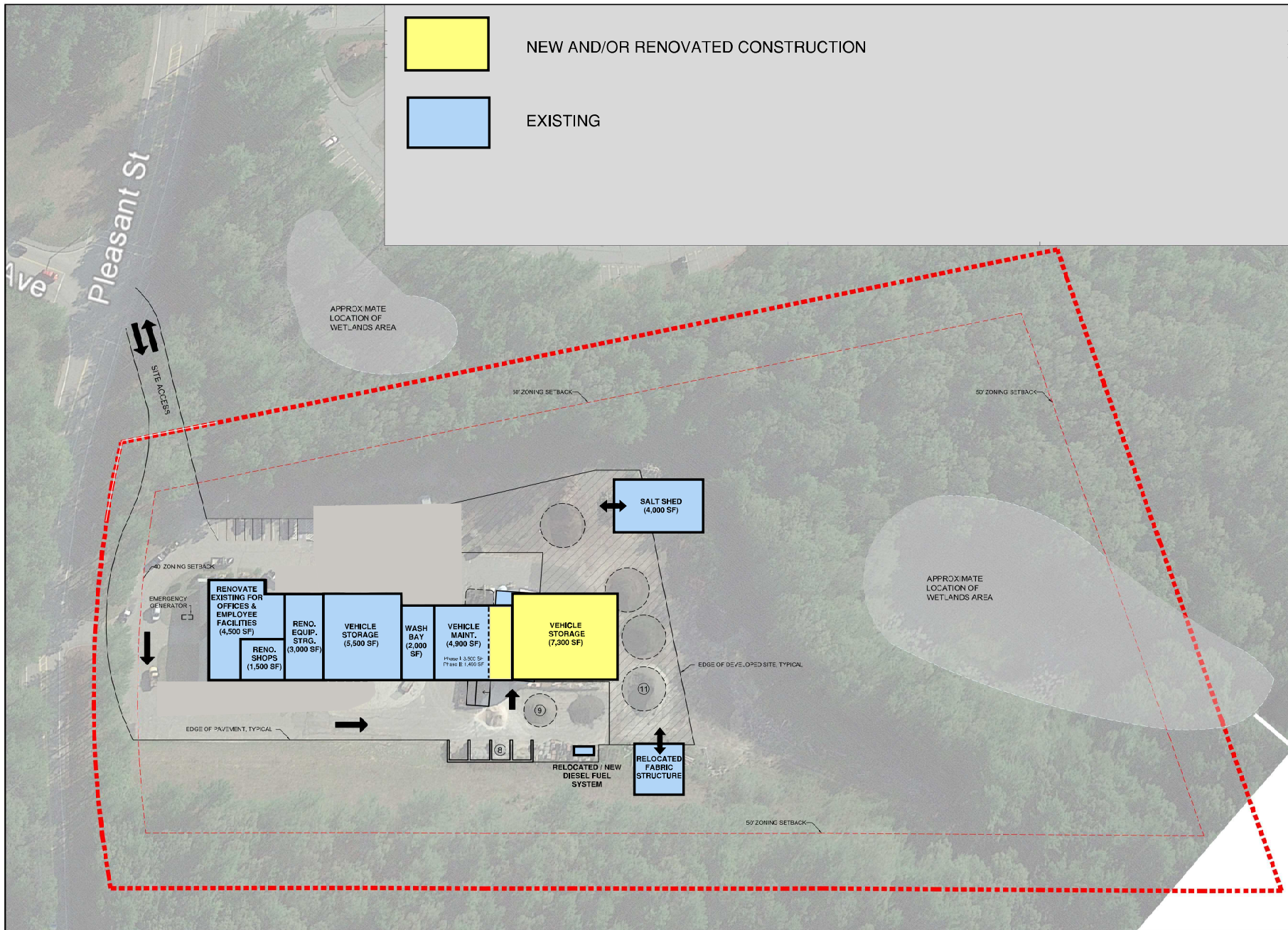
Drawing Title:

**PROPOSED PLAN
PHASE IB**

Sheet Number:

A1.01

WESTON & SAMPSON ENGINEERS, INC.




NEW AND/OR RENOVATED CONSTRUCTION



EXISTING

Project:

UPTON DPW



DPW Feasibility Study
100 Pleasant Street
Upton, MA

Weston & Sampson

Weston & Sampson Engineers, Inc.
130 Foxborough Boulevard, Suite 200
Foxborough, MA 02035
(508) 548-3344 (FAX) 548-3350
www.westonsampson.com

Consultants:

Seal:

Revisions:

Rev	Date	Description

Issued For: Conceptual Design



North

SCALE: 1" = 40'

Date: 3/14/2017

Drawn By: JN

Reviewed By: JA

Approved By: DT

W&S Project No: 2170116

Drawing Title:

PROPOSED PLAN
PHASE II

Sheet Number:

A1.01

WESTON & SAMPSON COPYRIGHT 2017

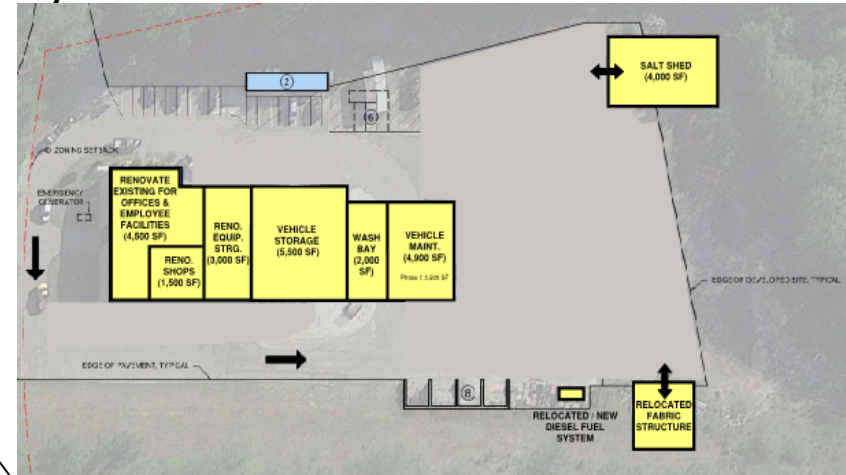
Appendix D

Cost Summary

Town of Upton Public Works Facility

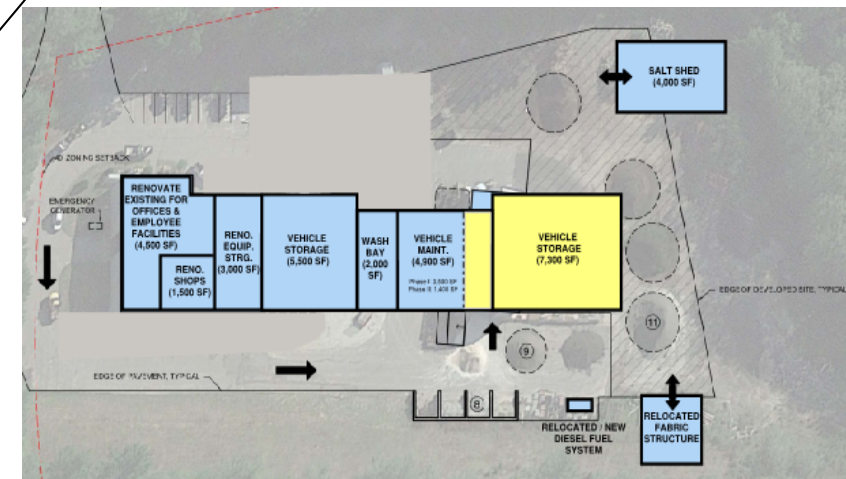
October 2020 Cost Estimate

Phase I Construction Cost	\$7,650,000
Phase I Estimating Contingency	\$365,000
Cost per SF	\$401
Phase I Soft Costs	\$1,200,000
Phase I Construction Contingency	\$485,000
TOTAL PHASE I	\$9,700,000



Average Cost/SF: \$392

Phase II Construction Cost	\$3,100,000
Phase II Estimating Contingency	\$135,000
Cost per SF	\$372
Phase II Soft Costs	\$725,000
Phase II Construction Contingency	\$190,000
TOTAL PHASE II	\$4,150,000



TOTAL PROJECT COST \$13,850,000

Town of Upton
Department of Public Works Facility
Conceptual Cost Estimate

Office / Employee Facilities: 4,500 SF
Shops: 1,500 SF
Vehicle Maintenance: 4,900 SF
Wash Bay: 2,000 SF
Vehicle/Equipment Storage Garage: 15,800 SF
Subtotal: 28,700 SF

11/11/2020

Description	Unit	2020 Cost	Veh. Stg & Site Quantity	Total (No OH&P)	Veh. Maint & Wash Quantity	Total (No OH&P)	Office / Shops Renovations Quantity	Total (No OH&P)
DIVISION 2 - SITE WORK								
<u>GENERAL SITE WORK</u>								
Field Engineering	Day	\$2,800.00	1	\$2,800.00	1	\$2,800.00	1	\$2,800.00
Trench Plated Trench Safety	LS	\$3,800.00	1	\$3,800.00	1	\$3,800.00	1	\$3,800.00
Construction Entrance	LS	\$5,000.00	1	\$5,000.00	1	\$5,000.00	1	\$5,000.00
Dewatering	LS	\$5,000.00	1	\$5,000.00	1	\$5,000.00		\$0.00
Tree Removal	AL	\$5,000.00	1	\$5,000.00	1	\$5,000.00		\$0.00
Stump Removal	EA	\$5,000.00	1	\$5,000.00	1	\$5,000.00		\$0.00
Finish Grading	SY	\$1.20	4,667	\$5,600.00	2,500	\$3,000.00		\$0.00
Seed	SF	\$0.25		\$0.00	6,000	\$1,500.00	5,000	\$1,250.00
Granite Curb	LF	\$45.00		\$0.00		\$0.00	300	\$13,500.00
HMA Berm	LF	\$16.00	60	\$960.00	200	\$3,200.00	500	\$8,000.00
Gravel Pavement Subbase	CY	\$38.00	850	\$32,300.00	750	\$28,500.00	900	\$34,200.00
Bituminous Concrete (Hot Mix Asphalt)	SY	\$28.00	2,500	\$70,000.00	2,500	\$70,000.00	2,700	\$75,600.00
Drainage System - Manhole	EA	\$4,800.00	3	\$14,400.00	2	\$9,600.00	2	\$9,600.00
Drainage System - Catchbasin	EA	\$4,500.00	4	\$18,000.00	2	\$9,000.00	2	\$9,000.00
Storm Piping	LF	\$50.00	600	\$30,000.00	300	\$15,000.00	600	\$30,000.00
OCS	EA	\$5,000.00	1	\$5,000.00	1	\$5,000.00		\$0.00
SWTU	EA	\$8,500.00	1	\$8,500.00		\$0.00		\$0.00
Rip Rap Spillway	EA	\$2,500.00	1	\$2,500.00		\$0.00		\$0.00
Swales	SF	\$3.00		\$0.00	2,600	\$7,800.00	2,000	\$6,000.00
Stormwater Basin	SF	\$4.50	5,000	\$22,500.00		\$0.00		\$0.00
Precast Flared End and Riprap Level Spreader	EA	\$3,000.00	1	\$3,000.00		\$0.00		\$0.00
Drainage System - 6" Perf. PVC Roof Drain System	LF	\$32.00	600	\$19,200.00	330	\$10,560.00	200	\$6,400.00
Water Distribution System - Domestic Tap	LS	\$2,500.00		\$0.00		\$0.00		\$0.00
Water Distribution System - Fire Service Tap	LS	\$2,500.00	1	\$2,500.00		\$0.00		\$0.00
Water Distribution System - 2" Copper	LF	\$40.00		\$0.00		\$0.00		\$0.00
Water Distribution System - 6" DI Fire Service	LF	\$75.00	300	\$22,500.00		\$0.00		\$0.00
Water Distribution System - Hydrant	EA	\$4,200.00	1	\$4,200.00		\$0.00		\$0.00
Water Distribution System - Valves	EA	\$1,700.00	1	\$1,700.00		\$0.00		\$0.00
Water Distribution System - Misc. Accessories	LS	\$6,000.00	1	\$6,000.00		\$0.00		\$0.00

Town of Upton
Department of Public Works Facility
Conceptual Cost Estimate

Office / Employee Facilities: 4,500 SF
Shops: 1,500 SF
Vehicle Maintenance: 4,900 SF
Wash Bay: 2,000 SF
Vehicle/Equipment Storage Garage: 15,800 SF
Subtotal: 28,700 SF

11/11/2020

Description	Unit	2020 Cost	Veh. Stg & Site Quantity	Total (No OH&P)	Veh. Maint & Wash Quantity	Total (No OH&P)	Office / Shops Renovations Quantity	Total (No OH&P)
Electrical - 4x4" Concrete Encased Electrical Conduit	LF	\$80.00		\$0.00		\$0.00		\$0.00
Electrical - 2x2" Concrete Encased Electrical Conduit	LF	\$80.00	360	\$28,800.00		\$0.00		\$0.00
Electrical - Generator Pad	EA	\$4,500.00	1	\$4,500.00		\$0.00		\$0.00
Electrical - Transformer Pad	EA	\$3,800.00		\$0.00		\$0.00		\$0.00
Sanitary Sewer - Oil/Sand Trap	EA	\$8,500.00	1	\$8,500.00		\$0.00		\$0.00
Sanitary Sewer - 6" PVC Service	LF	\$53.00	1,000	\$53,000.00	250	\$13,250.00		\$0.00
Lift Station / System Extension Allowance	AL	\$30,000.00	1	\$30,000.00		\$0.00		\$0.00
Bollards	EA	\$1,000.00	50	\$50,000.00	16	\$16,000.00		\$0.00
Landscaping	AL	\$40,000.00	0.25	\$10,000.00	1	\$10,000.00	1	\$15,000.00
Sedimentation Control	LF	\$23.00	1,200	\$27,600.00	600	\$13,800.00	500	\$11,500.00
Infiltration Filters at CB	EA	\$600.00	4	\$2,400.00	6	\$3,600.00	6	\$3,600.00
Chain Link Fence	LF	\$40.00		\$0.00		\$0.00		\$0.00
Chain Link Fence Gate - Manual Swing Type	LS	\$5,000.00		\$0.00		\$0.00		\$0.00
Pavement Markings	LS	\$2,000.00		\$0.00		\$0.00	1	\$2,000.00
Traffic Signage	EA	\$275.00		\$0.00		\$0.00	4	\$1,100.00
Concrete Wash Pad	CY	\$505.00		\$0.00	75	\$37,875.00		\$0.00
Misc Utility Concrete Pads	CY	\$505.00		\$0.00		\$0.00		\$0.00
Main Entry / Approach Concrete Slabs / Side Walks	CY	\$505.00		\$0.00	45	\$22,725.00	22	\$11,110.00
Flagpole	LS	\$5,000.00		\$0.00		\$0.00	1	\$5,000.00
Site Lighting	EA	\$6,200.00		\$0.00		\$0.00	4	\$24,800.00
Light Pole Bases	EA	\$650.00		\$0.00		\$0.00	4	\$2,600.00
E&B Site Lighting Conduit	LF	\$16.00		\$0.00		\$0.00	250	\$4,000.00
E&B Ancillary Structure Power	LF	\$16.00	360	\$5,760.00		\$0.00		\$0.00
		\$0.00						
DIVISION 2 - DEMOLITION & RELOCATION		\$0.00						
Existing Pavement Removal	SY	\$15.00	2,900	\$43,500.00		\$0.00	2,700	\$40,500.00
Metal Siding Demolition	SF	\$2.50		\$0.00		\$0.00	6,000	\$15,000.00
Metal Roof Demolition	SF	\$3.50		\$0.00		\$0.00	9,000	\$31,500.00
Miscellaneous Ancillary Building Demo	AL	\$40,000.00	1	\$40,000.00		\$0.00		\$0.00
Existing Fuel System Demolition	AL	\$15,000.00	1	\$15,000.00		\$0.00		\$0.00
Relocation / New Diesel Fuel System	AL	\$50,000.00	1	\$50,000.00		\$0.00		\$0.00
DIVISION 2 - ANCILLARY SUPPORT STRUCTURES								
New Hi-Arch Gambrel Salt Structure	SF	\$105.00	4,000	\$420,000.00		\$0.00		\$0.00
Fabric Structure Relocation	LS	\$88,000.00	1	\$88,000.00		\$0.00		\$0.00

Town of Upton
Department of Public Works Facility
Conceptual Cost Estimate

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 Vehicle Maintenance: 4,900 SF
 Wash Bay: 2,000 SF
 Vehicle/Equipment Storage Garage: 15,800 SF
Subtotal: 28,700 SF

11/11/2020

Description	Unit	2020 Cost	Veh. Stg & Site Quantity	Total (No OH&P)	Veh. Maint & Wash Quantity	Total (No OH&P)	Office / Shops Renovations Quantity	Total (No OH&P)
DIVISION 2 - BUILDING SITE WORK								
Earth Excavation - Bldg Foundations	CY	\$15.00	1,150	\$17,250.00	430	\$6,450.00		\$0.00
Earth Excavation - Slab-on-Grade	CY	\$15.00	850	\$12,750.00	250	\$3,750.00		\$0.00
Earth Excavation Haul & Dispose	CY	\$25.00	1,425	\$35,625.00	465	\$11,625.00		\$0.00
Structural Aggregate Backfill	CY	\$35.00	1,425	\$49,875.00	465	\$16,275.00		\$0.00
Backfill Building Foundations	CY	\$8.50	575	\$4,887.50	215	\$1,827.50		\$0.00
Finish Grading	SY	\$2.00	2,700	\$5,400.00	750	\$1,500.00		\$0.00
DIVISION 3 - CONCRETE								
03300 CAST-IN-PLACE CONCRETE								
Slab-on-Grade / Shallow Foundations	SF	\$30.00	12,800	\$384,000.00	6,900	\$207,000.00		\$0.00
Mezzanine Concrete Floor	SF	\$15.00		\$0.00	1,000	\$15,000.00		\$0.00
Misc Concrete Pit & Trenches	CY	\$900.00	4	\$3,600.00	10	\$9,000.00		\$0.00
Concrete Column Encasement	CY	\$500.00		\$0.00		\$0.00		\$0.00
DIVISION 4 - MASONRY								
04200 MASONRY UNITS								
Interior Block Walls	SF	\$25.00		\$0.00	2,200	\$55,000.00	2,000	\$50,000.00
Exterior 4" Veneer CMU Wall	SF	\$32.00	650	\$20,800.00	580	\$18,560.00	1,000	\$32,000.00
DIVISION 5 - METALS								
05100 STRUCTURAL METAL FRAMING								
2nd Floor / Mezzanine Form Deck	SF	\$6.80		\$0.00	1,000	\$6,800.00		\$0.00
Mezzanine Framing	SF	\$22.00		\$0.00	1,000	\$22,000.00		\$0.00
05500 METAL FABRICATIONS								
Miscellaneous Metal Allowance	SF	\$5.50	1	\$25,000.00	6,900	\$37,950.00	6,000	\$33,000.00
Mezzanine Railings	LF	\$200.00		\$0.00	80	\$16,000.00		\$0.00
Interior Bollards	EA	\$590.00	4	\$2,360.00	6	\$3,540.00		\$0.00
Mezzanine Stairs	EA	\$10,500.00		\$0.00	1	\$10,500.00		\$0.00

Town of Upton
Department of Public Works Facility
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Subtotal: 28,700 SF

11/11/2020

Description	Unit	2020 Cost	Veh. Stg & Site Quantity	Total (No OH&P)	Veh. Maint & Wash Quantity	Total (No OH&P)	Office / Shops Renovations Quantity	Total (No OH&P)
DIVISION 6 - WOOD AND PLASTICS								
06100 ROUGH CARPENTRY								
Rough Carpentry (blocking)	SF	\$1.70	1	\$10,000.00	6,900	\$11,730.00	6,000	\$10,200.00
06200 FINISH CARPENTRY								
Bathroom Counters	LF	\$220.00		\$0.00		\$0.00	6	\$1,320.00
Lunch Casework	LF	\$825.00		\$0.00		\$0.00	15	\$12,375.00
Specialty Shelving (built-in)	LF	\$440.00		\$0.00		\$0.00	5	\$2,200.00
07000 THERMAL & MOISTURE PROTECTION								
Air Vapor Barrier	SF	\$5.00	780	\$3,900.00	580	\$2,900.00	1,000	\$5,000.00
Rigid Insulation Slab-on-grade & Foundation Wall	SF	\$3.40	4,240	\$14,416.00	5,740	\$19,516.00	2,400	\$8,160.00
Standard 3" Gutters	LF	\$30.00	450	\$13,500.00	200	\$6,000.00	200	\$6,000.00
Standard 4" Downspouts	LF	\$17.00	240	\$4,080.00	160	\$2,720.00	160	\$2,720.00
Exterior Wall Insulation	SF	\$5.00	650	\$3,250.00	580	\$2,900.00	1,000	\$5,000.00
Roofing & Accessories	SF	\$1.50	1	\$4,000.00	6,900	\$10,350.00	6,000	\$9,000.00
07900 JOINT SEALANTS								
Joint Sealant - Miscellaneous Allowance	SF	\$2.70	15,800	\$42,660.00	6,900	\$18,630.00	6,000	\$16,200.00
08100 DOORS AND FRAMES								
Personnel Doors - Door, Frame, and Hardware Wood	EA	\$1,800.00		\$0.00		\$0.00	14	\$25,200.00
Personnel Doors - Dr, Frame, and Hardware Metal	EA	\$1,500.00	7	\$10,500.00	16	\$24,000.00	10	\$15,000.00
Added Cost for Door Lites	LS	\$1,500.00	1	\$1,500.00	2	\$3,000.00	3	\$4,500.00
08300 SPECIALTY DOORS								
Overhead Sectional Doors (14' - 0" w x 14' - 0" h)	EA	\$12,000.00	24	\$288,000.00		\$0.00		\$0.00
Overhead Sectional Doors (16' - 0" w x 16' - 0" h)	EA	\$16,000.00		\$0.00	6	\$96,000.00		\$0.00
Overhead Polycarbonate Wash Bay Door (16'-0" w x 16'-0" h))	EA	\$18,000.00		\$0.00	2	\$36,000.00		\$0.00
08400 ENTRANCES AND STOREFRONTS								
Main Entrance	LS	\$2,500.00		\$0.00		\$0.00	1	\$2,500.00
08500 WINDOWS								
Exterior Window System (Frame & Glazing)	SF	\$85.00		\$0.00	36	\$3,060.00	340	\$28,900.00
Translucent Wall Panels	SF	\$75.00	800	\$60,000.00	640	\$48,000.00	224	\$16,800.00
Interior Windows	SF	\$65.00		\$0.00	16	\$1,040.00	32	\$2,080.00

Town of Upton
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11/11/2020

Description	Unit	2020 Cost	Veh. Stg & Site Quantity	Total (No OH&P)	Veh. Maint & Wash Quantity	Total (No OH&P)	Office / Shops Renovations Quantity	Total (No OH&P)
08600 SKYLIGHTS & ROOF OPENINGS								
Roof Hatch & Ladder	EA	\$6,400.00		\$0.00	1	\$6,400.00		\$0.00
DIVISION 9 - FINISHES								
09200 PLASTER AND GYPSUM BOARD								
Interior Partitions - Gyp. Board w/ 4" Stud System	SF	\$15.00		\$0.00		\$0.00	5,000	\$75,000.00
Interior Partitions - Perimeter GWB (backup wall floor to roof)	SF	\$11.00		\$0.00	560	\$6,160.00	2,600	\$28,600.00
Interior Partitions - Gyp 6" Stud above CMU	SF	\$16.82		\$0.00	1,200	\$20,187.81		\$0.00
09300 TILE								
Ceramic Tile Floor	SF	\$25.00		\$0.00	80	\$2,000.00	160	\$4,000.00
Ceramic Tile Walls	SF	\$25.00		\$0.00	216	\$5,400.00	500	\$12,500.00
Quarry Tile	SF	\$28.00		\$0.00		\$0.00	35	\$980.00
09500 CEILINGS								
Acoustical Ceiling Tile Ceiling System	SF	\$6.00		\$0.00	144	\$864.00	4,800	\$28,800.00
Gypsum Board Ceiling	SF	\$9.00		\$0.00	260	\$2,340.00	1,200	\$10,800.00
09600 FLOORING								
Carpet Tile	SF	\$6.00		\$0.00		\$0.00	4,645	\$27,870.00
Linoleum Flooring	SF	\$8.00		\$0.00	144	\$1,152.00	775	\$6,200.00
Resinous Flooring	SF	\$15.00		\$0.00		\$0.00	580	\$8,700.00
09900 PAINTS AND COATINGS								
Painting - Interior Block Walls/Conc Walls	SF	\$2.50	650	\$1,625.00	4,400	\$11,000.00	4,000	\$10,000.00
Painting - Gypsum Wallboard Walls	SF	\$1.50		\$0.00	1,760	\$2,640.00	12,600	\$18,900.00
Painting - Gypsum Wallboard Ceilings	SF	\$3.30		\$0.00	260	\$858.00	1,200	\$3,960.00
Painting - Structural Steel	SF	\$3.50	15,800	\$55,300.00	6,900	\$24,150.00	3,000	\$10,500.00
DIVISION 10 SPECIALTIES								
10150 COMPARTMENTS AND CUBICLES								
Handicap Toilet Compartments	EA	\$1,200.00		\$0.00		\$0.00	2	\$2,400.00
Urinal Screens	EA	\$450.00		\$0.00		\$0.00	1	\$450.00

Town of Upton
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11/11/2020

Description	Unit	2020 Cost	Veh. Stg & Site Quantity	Total (No OH&P)	Veh. Maint & Wash Quantity	Total (No OH&P)	Office / Shops Renovations Quantity	Total (No OH&P)
10200 LOUVERS AND VENTS								
Wall Louvers	SF	\$85.00	150	\$12,750.00		\$0.00	50	\$4,250.00
10400 IDENTIFICATION DEVICES								
Signage (interior)	LS	\$2,000.00	1	\$2,000.00	1	\$2,000.00	1	\$2,000.00
Signage (exterior)	LS	\$2,000.00	1	\$2,000.00	1	\$2,000.00	1	\$2,000.00
Fire Extinguishers	EA	\$450.00	7	\$3,150.00	6	\$2,700.00	6	\$2,700.00
10800 TOILET, BATH, AND LAUNDRY ACCESSORIES								
Toilet Accessories	LS	\$2,500.00		\$0.00	1	\$2,500.00	2	\$5,000.00
Benches	EA	\$800.00		\$0.00		\$0.00	2	\$1,600.00
DIVISION 11 EQUIPMENT								
Wash Equipment	LS	\$80,100.00		\$0.00	1	\$80,100.00		\$0.00
Undercarriage Wash	LS	\$50,600.00		\$0.00	1	\$50,600.00		\$0.00
Heavy Duty Vehicle Lift	LS	\$100,000.00		\$0.00	1	\$100,000.00		\$0.00
Light Duty Vehicle Lift	LS	\$38,200.00		\$0.00	1	\$38,200.00		\$0.00
Bridge Crane	LS	\$90,000.00		\$0.00	1	\$90,000.00		\$0.00
Overhead Lubrication System	LS	\$85,000.00		\$0.00	1	\$85,000.00		\$0.00
Storage Shelving / Benches / Racks	LS	\$50,000.00		\$0.00	1	\$50,000.00		\$0.00
Exhaust Removal System	EA	\$21,000.00		\$0.00	2	\$42,000.00		\$0.00
DIVISION 12 FURNISHINGS								
Horizontal Louver Blinds	SF	\$10.00		\$0.00	52	\$520.00	372	\$3,720.00
Walk-Off Carpet	SF	\$9.00		\$0.00		\$0.00		\$0.00
DIVISION 13 SPECIAL CONSTRUCTION								
Pre-Engineered Metal Building	SF	\$60.00	12,800	\$768,000.00	6,900	\$414,000.00		\$0.00
Pre-Engineered Metal Building Renovations	SF	\$40.00	3,000	\$120,000.00				
Insulated Flat Metal Wall Panel System	SF	\$30.00		\$0.00		\$0.00	5,000	\$150,000.00
Standing Seam Metal Roof	SF	\$18.00		\$0.00		\$0.00	6,000	\$108,000.00
Wash Bay FRP Liner Panel	SF	\$12.00		\$0.00	3,800	\$45,600.00		\$0.00
Snow Guards	LF	\$15.00	1,100	\$16,500.00	400	\$6,000.00	400	\$6,000.00
Lockers	EA	\$400.00		\$0.00	4	\$1,600.00	22	\$8,800.00
Kitchen Appliances	AL	\$5,000.00		\$0.00		\$0.00	1	\$5,000.00

Town of Upton
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11/11/2020

Description	Unit	2020 Cost	Veh. Stg & Site Quantity	Total (No OH&P)	Veh. Maint & Wash Quantity	Total (No OH&P)	Office / Shops Renovations Quantity	Total (No OH&P)
DIVISION 15 MECHANICAL								
15300 FIRE PROTECTION								
Fire Protection System	SF	\$6.50	18,200	\$118,300.00	7,900	\$51,350.00	6,000	\$39,000.00
15400 PLUMBING								
Plumbing System								
- Administration Area Only	SF	\$42.00		\$0.00		\$0.00	4,500	\$189,000.00
- Maintenance & Shop Areas Only	SF	\$31.00		\$0.00	4,900	\$151,900.00	1,500	\$46,500.00
- Wash Bay Only	SF	\$25.00		\$0.00	2,000	\$50,000.00		\$0.00
- Vehicle/Equipment Storage Garage Area Only	SF	\$6.50	15,800	\$102,700.00		\$0.00		\$0.00
15700 HVAC EQUIPMENT								
HVAC System	SF	\$55.00		\$0.00		\$0.00		\$0.00
- H&V Vehicle Storage Garage	SF	\$15.00	15,800	\$237,000.00		\$0.00		\$0.00
- H&V Shops / Maintenance / Wash	SF	\$34.00		\$0.00	6,900	\$234,600.00	1,500	\$51,000.00
- HVAC Administration/Employee Facilities	SF	\$51.00		\$0.00		\$0.00	4,500	\$229,500.00
- Waste Oil Heating System	LS	\$18,000.00		\$0.00	1	\$18,000.00		\$0.00
DIVISION 16 ELECTRICAL								
16000 ELECTRICAL								
Electrical System	SF	\$36.00		\$0.00		\$0.00		\$0.00
Electrical System for Office/Employee Facilities	SF	\$45.00		\$0.00		\$0.00	4,500	\$202,500.00
Electrical System for Shops	SF	\$26.00		\$0.00		\$0.00	1,500	\$39,000.00
Electrical System for Vehicle Maintenance	SF	\$50.00		\$0.00	4,900	\$245,000.00		\$0.00
Electrical System for Wash Bay	SF	\$36.00		\$0.00	2,000	\$72,000.00		\$0.00
Electrical System for Vehicle Storage Garage	SF	\$28.00	15,800	\$442,400.00		\$0.00		\$0.00
Emergency Generator Provisions	LS	\$120,000.00	1	\$120,000.00		\$0.00		\$0.00
Construction Phasing Allowance - added general conditions, etc.	AL	\$250,000.00	0.25	\$62,500.00	0.25	\$62,500.00	1	\$250,000.00

Town of Upton
Department of Public Works Facility
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11/11/2020

Description	Unit	2020 Cost	Veh. Stg & Site Quantity	Total (No OH&P)	Veh. Maint & Wash Quantity	Total (No OH&P)	Office / Shops Renovations Quantity	Total (No OH&P)
Site/Demo/Ancillary Structures Subtotal				\$1,172,520		\$307,010		\$372,860
Building Subtotal				\$3,081,579		\$2,709,945		\$1,883,385
Subtotal Direct Costs				\$4,254,099		\$3,016,955		\$2,256,245
Insurance (1.3%)				\$55,303		\$39,220		\$29,331
Bonds (2%)				\$85,082		\$60,339		\$45,125
Overhead & Profit (3.5%)				\$153,807		\$109,078		\$81,575
Design & Pricing Contingency (5%)				\$227,415		\$161,280		\$120,614
Escalation				\$103,155		\$101,606		\$101,316
Escalation				\$179,542		\$69,770		
TOTAL CONSTRUCTION COST:				\$5,058,403		\$3,558,248		\$2,634,205
Construction Cost per SF:				\$320		\$516		\$439
Owner's Soft Costs								
A&E Fees (Design, Bid, Construction) - (assume 10% of construction value)				\$505,840		\$355,825		\$263,420
A&E Special Services - (assume 1% of construction value)				\$50,584		\$35,582		\$26,342
Owner's Project Manager Fees - (average 4% of construction value)				\$202,336		\$142,330		\$105,368
Furnishings (FFE)				\$0		\$10,000		\$50,000
Communications / Low Voltage / Security				\$20,000		\$20,000		\$50,000
Commissioning				\$10,000		\$10,000		\$20,000
Chapter 17 Tests & Inspections				\$20,000		\$20,000		\$10,000
Construction Contingency (6%)				\$303,504		\$213,495		\$158,052
TOTAL PROJECT COST:				\$6,170,667		\$4,365,480		\$3,317,388

Town of Upton
Department of Public Works Facility
Conceptual Cost Estimate

SUMMARY BREAKDOWN FOR PHASED CONSTRUCTION

Combined Construction Cost (Phased)	\$11,250,856
Cost/SF	\$392
Combined Total Project Cost (Phased)	\$13,853,535
Combined Building Size	28,700

\$10,741,548 Const	\$10,750,000
\$509,308 Est Conting	\$500,000
\$1,927,628 Soft	\$1,925,000
\$675,051 Const Conting	\$675,000
Total Phase 1 & 2	\$13,850,000
 Phase I Construction Cost	 \$7,650,000
Phase I Estimating Contingency	\$365,000
Cost per SF	\$401
Phase I Soft Costs	\$1,200,000
Phase I Construction Contingency	<u>\$485,000</u>
TOTAL PHASE I	\$9,700,000
 Phase II Construction Cost	 \$3,100,000
Phase II Estimating Contingency	\$135,000
Cost per SF	\$372
Phase II Soft Costs	\$725,000
Phase II Construction Contingency	<u>\$190,000</u>
TOTAL PHASE II	\$4,150,000
 TOTAL PROJECT COST	 \$13,850,000
 Construction Cost only	 \$11,250,000
Construction Cost/SF	\$392

Appendix E

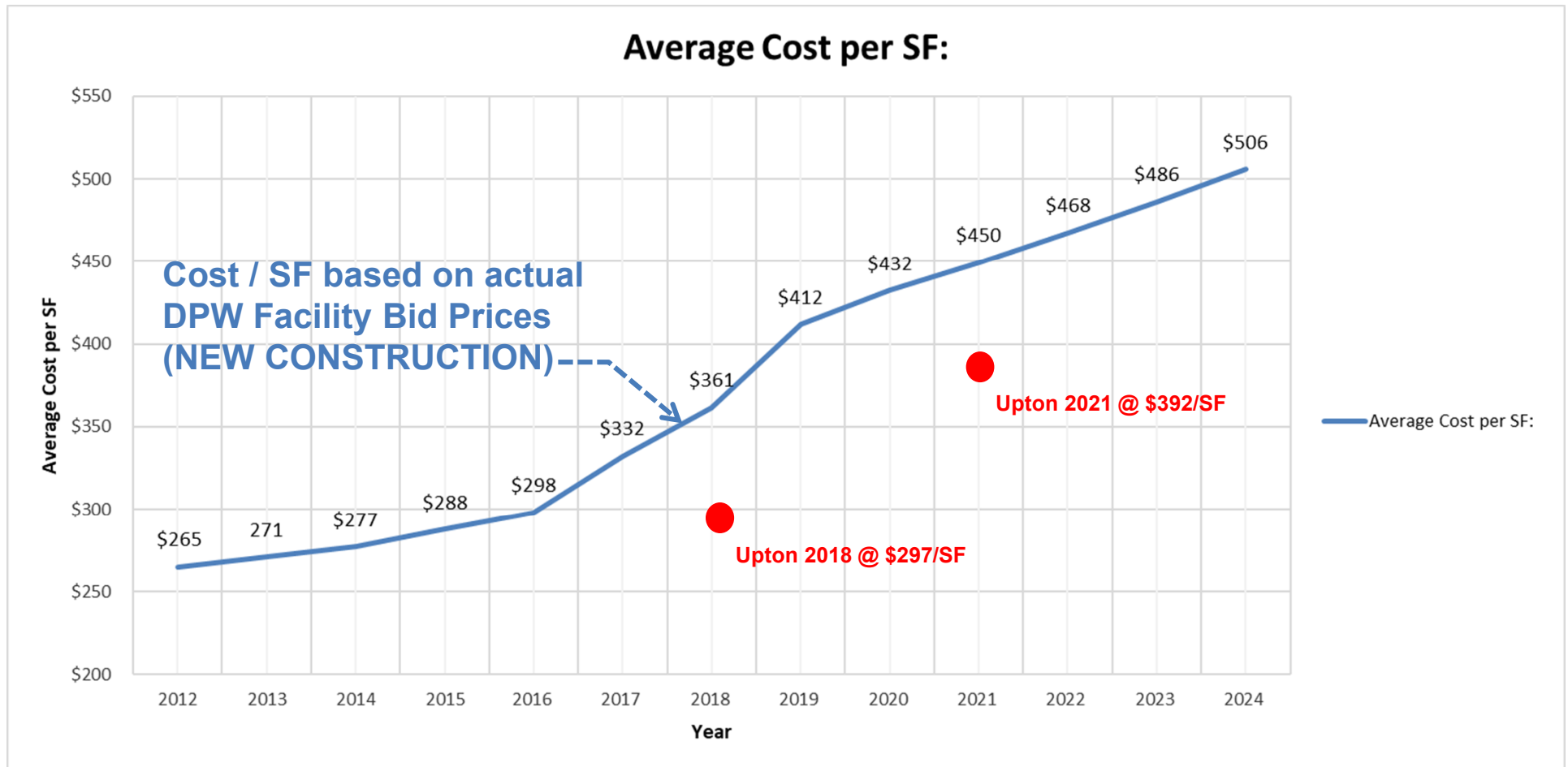
Historic Cost Information

Department of Public Works Facilities
SUMMARY - Recent Cost Data
CONSTRUCTION COST

Description	Size (SF)	Bid Date	Low Bid Price	Average Bid Price	2014 Avg Cost per SF	2015 Avg Cost per SF	2016 Avg Cost per SF	2017 Avg Cost per SF	2018 Avg Cost per SF	2019 Avg Cost per SF	2020 Avg Cost per SF	2021 Avg Cost per SF
Wayland Public Works Facility	39,869	2014	\$ 8,877,000	\$ 10,519,754	\$264	\$275	\$287	\$324	\$351	\$398	\$422	\$439
Medford Public Works Facility	45,000	2014	\$ 12,186,000	\$ 12,340,333	\$274	\$286	\$299	\$336	\$364	\$414	\$439	\$456
Bourne Public Works Facility	39,040	2014	\$ 10,441,002	\$ 11,063,598	\$283	\$296	\$309	\$348	\$377	\$428	\$453	\$471
Norwood Public Works Facility	53,870	2014	\$ 14,902,289	\$ 15,437,343	\$287	\$299	\$312	\$352	\$381	\$432	\$458	\$477
Boylston Highway Facility	13,926	2015	\$ 3,364,000	\$ 3,935,419	--	\$283	\$295	\$332	\$360	\$409	\$433	\$451
Hopkinton Public Works Facility	42,410	2016	\$ 11,532,000	\$ 12,112,833	--	--	\$286	\$322	\$349	\$396	\$420	\$436
Orleans Public Works Facility	42,278	2017	\$ 11,774,000	\$ 12,833,834	--	--	--	\$304	\$329	\$373	\$396	\$412
Andover Municipal Services Facility	54,088	2017	\$ 16,049,000	\$ 18,413,675	--	--	--	\$340	\$368	\$418	\$443	\$461
Longmeadow Public Works Facility	44,858	2018	\$ 12,707,000	\$ 14,773,364	--	--	--	--	\$329	\$374	\$396	\$412
Rye Brook NY Public Works Facility	32,883	2018	\$ 11,193,943	\$ 13,184,654	--	--	--	--	\$401	\$455	\$483	\$502
Grafton DPW Facility	33,710	2018	\$ 11,713,205	\$ 12,399,201	--	--	--	--	\$368	\$418	\$443	\$460
Middleboro DPW Facility	34,000	2019	\$ 13,673,300	\$ 14,355,199	--	--	--	--	--	\$422	\$448	\$465
Yarmouth DPW Facility	37,990	2019	\$ 14,633,435	\$ 16,367,227	--	--	--	--	--	\$431	\$457	\$475
Burlington DPW Facility	66,200	2019	\$ 23,925,000	\$ 26,074,333	--	--	--	--	--	\$394	\$418	\$434
Holden DPW Facility	42,000	2020	\$ 14,519,200	\$ 15,780,624	--	--	--	--	--	--	\$376	\$391
Average Cost per SF:					\$277	\$288	\$298	\$332	\$361	\$412	\$432	\$450

Town of Upton
Public Works Facility

HISTORIC COST DATA FOR DPW FACILITIES



Upton cost/SF is lower than other DPW projects due to the reuse and renovation of the existing 9,000 SF building

Town of Upton
Public Works Facility

HISTORIC COST DATA FOR DPW FACILITIES

Average Cost per SF:

