June 2019

TOWN OF
Truro
Massachusetts

New Public Works Facility
Feasibility Study
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Section 1
Report Narrative
I. Introduction

Town of Truro retained the services of Weston & Sampson to prepare a feasibility study to identify the current and future needs of the Department of Public Works (DPW). The goal of the study was to develop an objective program of buildings and site features which are needed to cost effectively and efficiently support the services offered by the Department to the community. The study included inspecting existing facilities, identifying deficiencies, interviewing staff, identifying current and future needs, conducting a site selection analysis, developing conceptual alternatives, and preparing budget cost estimates for a new facility.

II. Space Needs Assessment

The Project Team prepared a space needs assessment to identify the current and future needs of the Department of Public Works. The assessment included analyzing current services offered to the community and current deficiencies in the facility which need to be corrected with the construction of a new facility. The assessment also included interviewing key staff to learn first-hand the operational issues with the existing buildings and site. The staff interviews were supplemented with support by the project team’s knowledge of industry practices and familiarity with solutions which have been successfully implemented on recently constructed public works facilities.

Operational Analysis

The operational analysis was based on inspection of the existing facilities which are used to support the Department of Public Works’ operations, and a determination of the functional inadequacies and space limitations of the existing buildings and site. The following is a summary of some of the deficiencies and/or inefficiencies associated with the existing facilities:
• The Vehicle Storage facilities are undersized and are unable to safely and efficiently support current operations.

• Inadequate storage facilities result in a large portion of the multi-million dollar fleet being stored outdoors. This impacts DPW response times during cold and inclement weather conditions. It also contributes to the rapid deterioration of high value Town owned equipment and increases vehicle maintenance costs.

• The facilities do not have a vehicle wash facility to properly care for vehicles which are exposed to corrosive chemicals. This decreases vehicle life expectancy and increases vehicle maintenance costs.

• Building lacks a code required fire suppression (sprinkler) system.
- The employee facilities are undersized and lack adequate employee support spaces (locker/shower/toilet facilities and muster/training/storm event room).

- Vehicle maintenance area is undersized to safely and efficiently maintain the Town vehicles. The space does not have adequate height to lift vehicles for maintenance.

- Inadequate working environment, including:
  - Poor ventilation
  - Inadequate lighting
  - Confined workshop areas
  - Inadequate facilities for state mandated training

These deficiencies directly impact operations and the efficiency of service that the DPW is able to provide to the town.
Staff Interviews
The staff interviews conducted by the project team focused on identifying all DPW functions, identifying current deficiencies, and identifying current and future space requirements. The information obtained during these interviews included detailed accounts of space deficiencies in the existing facilities which affect day-to-day operations. A summary of the departmental/division organization identified during the staff interviews is as follows:

<table>
<thead>
<tr>
<th>DIVISION/DEPARTMENT</th>
<th>Administration Full Time</th>
<th>Workforce Full Time</th>
<th>Part Time or Seasonal</th>
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Refer to Section 2 for a copy of the staff interview notes and a copy of the vehicle/equipment inventory list.

Space Needs Assessment
The data obtained from the operations analysis and interviews were compiled and analyzed by Weston & Sampson. The analysis consisted of individually identifying the space needs for the operations of each function. The spaces were assembled into a space needs matrix identifying each space and providing a recommended program size. The space needs assessment identified an initial requirement of 36,689 square feet. The results of the initial
space needs were then compared to DPW Facility Guidelines which provided a recommended range of 29,317 square feet - 34,491 square feet. Using this data, the Project Team and DPW staff attended a meeting to determine if the spaces could be reduced without negatively impacting operations. Based on input from DPW, the team was able to reduce, and in some cases combine, spaces in an effort to control the size and cost of the building program. These reductions resulted in a modified space needs projection of 32,487 square feet. This reflected an overall reduction in the space needs of 4,202 square feet, or approximately 11.5%. Refer to Section 3 for the initial space needs matrix, associated programming sketches, and space needs guidelines and Section 4 for the final modified space needs matrix.

III. Site Selection

Weston & Sampson reviewed potential sites with the Town and developed a list of sites for further evaluation as follows:

- Site 1 - 340/344 Route 6 (Town owned)
- Site 2 & 3 combination - 5 Town Dump Road Transfer Station Site & Lot 104 Route 6 Adjacent State Parcel (Town owned & State owned)
- Site 4 - 24 Town Hall Road Existing DPW Site (Town owned)

An environmental and human receptor map was prepared for each site to identify potential permitting restrictions. Using this data, Weston & Sampson prepared “test-fit” conceptual alternatives to determine if each parcel was capable of supporting the proposed program. Refer to Section 5 for a copy of the receptor maps and the test-fit conceptual plans.

Based on an evaluation of the receptor maps and test-fit conceptual plans, it was determined that the combined site 3 & 4 was not suitably sized to support the proposed program. In addition, although Site 4 was suitably sized to fit the proposed program, it was determined
that the location was not suitable due to the proximity to an existing drinking water well. Consequently, Site 1 was identified to be the most viable site for a new public works facility.

III. Conceptual Design Alternatives

Utilizing the results of the final space needs assessment and site selection analysis, the Project Team prepared conceptual alternatives for Site 1 - 340/344 Route 6 for a new Public Works Facility. The alternatives were prepared with the following operational considerations in mind:

- Arrange interior space to provide efficient circulation patterns.
- Arrange building spaces to allow for optimal building massing in accordance with the Town’s aesthetic preferences.
- Provide visual screening of DPW Yard operations from surrounding abutters.
- Attempt to segregate small/public vehicle traffic from heavy truck traffic.
- Providing adequate parking for public and employees.
- Provide full access and safe vehicle movement around the facility.
- Maintain safe and functional access to/from the salt/sand operations area and relocated fueling facility.
- Maintain a counterclockwise circulation pattern to promote safe turning movements for large vehicles.

The conceptual alternatives were prepared by developing “Block Building Plans”. These Block Building Plans were developed for each of the major space categories for the new / renovated facility as follows:

- Administration & Employee Facilities
- Shops
- Vehicle Maintenance
- Vehicle / Equipment Storage
- Wash Bay
The configuration and size of the planning “block” for each building was developed by assembling the individual programming spaces identified during the space needs assessment. Four (4) initial concepts were developed utilizing the approved space needs program. In addition, a conceptual floor plan was developed for Alternative No. 1. This floor plan can be revised to reflect the preferred concept as part of the next phase of development for the project. It should be noted that the site has some significant grade changes running north to south. These grading challenges will be addressed once a preferred alternative is selected and more detailed topographical information is obtained. Refer to Section 6 for a copy of the initial alternatives, conceptual building massing models, and conceptual floor plan.

These initial alternatives will become the basis for developing a final preferred alternative which incorporates input from DPW staff in the next phase of design.

IV. Conceptual Cost Estimate

A conceptual cost estimate was prepared for the preferred alternative, using square foot costs based on historical data for similar DPW facilities. In general, the cost estimate assumes cost effective building systems, finishes, and equipment as identified in the estimate spreadsheet and as described as follows:

- Construction of a conventionally framed building for the administration and employee facility areas with higher-end finishes meeting local aesthetic vernacular.
- Construction of a new pre-engineered metal building with partial masonry wall finish and concrete protection wall for the vehicle storage area, shops areas, and wash bay.
- Factory foam insulated architectural metal panel system for the pre-engineered metal building component.
- Primary industrial support equipment for vehicle maintenance operations.
- Site improvements, including storm water management, utilities, fencing, and paving upgrades.
Contingency allowance for unanticipated design and construction costs, pending final design.

Pricing contingencies to account for the early nature of the project.

The estimated costs for 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 prices are based on 2019 costs. The following is a summary of the anticipated total project costs:

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**TOTAL PROJECT COST:** $19,545,000

Additional escalation factors should be included if the Town does not move forward with funding of the initial design phase of the project in Spring 2020. Escalation factors will vary depending on the construction market. As a guideline, the Town should expect escalation to range from 4% - 6%. A copy of the conceptual cost estimate is included Section 7 of this report.
Section 2

Staff Interview Notes, Organization Chart, and Vehicle / Equipment Inventory
MEMORANDUM

TO: Truro MA Study File
FROM: Jeff Alberti
DATE: November 21, 2018
SUBJECT: Staff Interview Notes

Attendees: Weston & Sampson: Jeff Alberti, Della Donahue, Dave Steeves, Joe Fitzpatrick
Town of Truro: Jarrod Cabral, Kyle Halvorsen, Mike Locke, Timmy King, Trudi Brazil

Staff Summary:

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<tr>
<th>DIVISION/DEPARTMENT</th>
<th>Administration Full Time</th>
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<td><strong>17</strong></td>
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Site Requirements:

- Would like provisions for a Stock Yard for the following materials:
  - Stone
  - Reclaimed Asphalt
  - Patch
  - Loam
  - Compost
  - Mulch
  - Breakout / Waste Cuts
- Salt / Sand Storage Structure
  - 130-ton annual salt usage
  - Sand
- Existing fuel system to be relocated if DPW moves
- Employee and public parking
Building Requirements:

Office / Employee Facilities:
- DPW Director’s Office
- Administrative Assistant (one workstation)
- Entry/Vestibule
- File storage
- Copy/File-Mail (set up tabletop over flat files to provide plan layout area)
- No separate kitchen/kitchenette for office staff
- Supply closet(s)
- Conference room with seating for 6-8 people
- Would like a break/training/muster room setup to support workforce staff with an alcove area for report writing (up to 2 computers).
- Provide a closet off of the muster room for storm event equipment (cots, etc.)
- Provide a locker/shower/toilet area (male & female facilities). Provide two water closets, 2 urinals, and 1 shower (no gang sink required) in male facilities. Would like 2’ wide x 18” deep lockers. Although transfer station staff will not report to the new facility, it is recommended that 2 extra lockers be provided.

Shops:
- Need a carpentry shop for the Building Division. Current carpentry shop is 16’x24. Would like 2 to 3 times this size.
  - Carpentry equipment - table saw, miter box, sanding equipment, etc.
  - Dust collection system
  - Small parts paint booth
  - Lumber storage
- Provide a supervisor office with a window which opens up to the Carpentry Shop.
- Need a sign shop for the Building Division. Shop should be set up for sign making (climate controlled) and should have a sign storage system (high density storage).
- Provide a storage area for Building Division supplies and equipment:
  - Floor cleaning equipment
  - +/- 20’x20’
- Would like a garage bay for custodial equipment storage (+/- 20’x40’) - floor equipment, scissor lift, supply storage, etc.

Vehicle Maintenance:
- Tire machine and balancer (near small maintenance bay)
- Tire storage for small, medium, and large tires
- Dedicated welding area (within a bay)
- Three (3) maintenance bays
  - Small
  - Large (should be long enough to support tractor trailer arrangement)
  - Long term
- 5-ton bridge crane
- 16’ wide doors
- Light duty lift (2-post)
- Heavy duty lift
- Small equipment lift for mowers
- Fluid distribution system with fluid room:
  - 55 gal - Hydraulic Oil
  - Bulk oil - type 1
  - Bulk oil - type 2
  - 55 gal - ANFR
- Bulk waste ANFR
- Bulk waste oil
- Parts storage room
- Small workshop area
- Mechanics Office
- Provide a compressor in a separate room (on mezzanine if possible)
- Would like radiant floor heating in maintenance bays

Vehicle/Equipment Storage:
- See vehicle inventory for vehicle/equipment storage requirements
- Make provisions to store Transfer Station equipment
  - 2 forklifts
  - 5 - Tractor trailers (covered only - not enclosed)
  - 2 small roll-offs
  - 3 - Cass tractors
  - 1 - Loader
- Provide room for Harbor Master equipment

Wash Bay:
- Provide wash system with manual pressure washer and automatic undercarriage provisions.

Miscellaneous:
- Town Manager would like to create a Town Records Storage area. Consideration should be given to using the old DPW facility for this storage if the DPW is relocated to a new site.
- Aesthetic considerations of local vernacular vs. industrial look.
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Date: 07/02/2018
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## Auto Fleet Schedule

**Description of Information**

**Town of Truro**

**Territory # 13**

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<th>#</th>
<th>Department</th>
<th>Year</th>
<th>Manufacturer &amp; Model</th>
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<th>Plate #</th>
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- 1994 JOHN DEERE EXCAVATOR
- 2017 JOHN DEERE SKIP STEER 12'L X 6'W
- 25'L LONG TRAILER 7 M72601? 30'L LONG W/ SLG LIFT

L : 10  
S : 11  
T : 10  
E : 6
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<th>#</th>
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<th>Plate</th>
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Truro, MA
Vehicle / Equipment Inventory
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<td>Ford - E150 Van</td>
<td>2011</td>
<td>M69359</td>
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<td>Lg</td>
<td>26</td>
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<td>2012</td>
<td>M88710</td>
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<tr>
<td>Sm</td>
<td>T-8 / 27</td>
<td>Ford - F350 Dump Truck</td>
<td>2012</td>
<td>M87297</td>
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<tr>
<td>T</td>
<td>28</td>
<td>Warren - Semi Trailer</td>
<td>2014</td>
<td>M90980</td>
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<tr>
<td>Lg</td>
<td>29</td>
<td>Elgin - Sweeper</td>
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<td>30</td>
<td>Spector - Semi Trailer</td>
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<td>Sm</td>
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<td>Ford - F350</td>
<td>2016</td>
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<td>T-2 / 32</td>
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<td>2016</td>
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<td>Sm V</td>
<td>T-3</td>
<td>Ford - F450 (new)</td>
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<td>T-7 / 33</td>
<td>International - 7400</td>
<td>2016</td>
<td>M94835</td>
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<td>34</td>
<td>Spector - Trailer</td>
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<td>35</td>
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<td>Make/Model/Serial</td>
<td>Location</td>
<td>Length</td>
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<td></td>
<td>T-5 / 47 International - 700 Dump Truck</td>
<td>2007 M72788</td>
<td>HIGHWAY</td>
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<tr>
<td>Lg</td>
<td>John Deere - Excavator</td>
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<td>DPW</td>
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<tr>
<td>Sm Equip</td>
<td>John Deere - Skid Steer</td>
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<td>DPW</td>
<td>12'</td>
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<tr>
<td>T</td>
<td>Tag Along Trailer</td>
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### At Transfer Station:

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<th>Equipment Type</th>
<th>Make/Model</th>
<th>Location</th>
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<th>Width</th>
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<td>GMC - Brigadier Tractor</td>
<td>DPW</td>
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<td>T</td>
<td>Closed Top Ejector Trailer</td>
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<td>38'-6&quot;</td>
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<td>T</td>
<td>Closed Top Ejector Trailer</td>
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<td>38'-6&quot;</td>
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<td>T</td>
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<td>32'</td>
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### Miscellaneous

- No official license plate

Large Vehicles: 12

Small Vehicles: 13

Equipment: 3

Trailers:
Section 3

Initial Space Needs Matrix, Programming Sketches, and Space Needs Guidelines
## Town of Truro
### Department of Public Works
#### Space Needs Summary
1/12/2019

### Building Requirements

<table>
<thead>
<tr>
<th>Area</th>
<th>Description</th>
<th>Size (SF)</th>
<th>Ref #</th>
<th>Room / Area Dimensions</th>
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<tbody>
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<td>Office &amp; Office Support Areas</td>
<td>Vestibule/Waiting/Reception</td>
<td>220</td>
<td>A1</td>
<td>-- -- --</td>
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<tr>
<td></td>
<td>Admin Open Office (1 Admin Staff)</td>
<td>120</td>
<td>A2</td>
<td>10 12 120</td>
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<tr>
<td></td>
<td>DPW Director</td>
<td>224</td>
<td>A3</td>
<td>14 16 224</td>
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<tr>
<td></td>
<td>Copy/File/Mail Area</td>
<td>225</td>
<td>A4</td>
<td>15 15 225</td>
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<tr>
<td></td>
<td>File Storage</td>
<td>225</td>
<td>A5</td>
<td>15 15 225</td>
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<td></td>
<td>Conference Room</td>
<td>320</td>
<td>A6</td>
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<tr>
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<td>Small Supply Closet</td>
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<td>A7</td>
<td>4 6 24</td>
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<td>Large Supply Closet</td>
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<td>Telephone / Data Room</td>
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<td><strong>Employee Facilities</strong></td>
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<td>Male Locker/Shower/Toilet</td>
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<td>Muster Room</td>
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<td>Break/Training/Muster Room Storage Closet</td>
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<td>Report Writing Room</td>
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<td>Sign Shop</td>
<td>500</td>
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## Building Requirements

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<th>Area</th>
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<th>Size (SF)</th>
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<th>Room / Area Dimensions</th>
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<td>D1</td>
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</table>
VESTIBULE

ROOM FINISHES

FLOORS: CERAMIC
WALLS: GWB PAINTED
CEILING: 2’ X 2’ ACT TILE

MEP/DATA REQUIREMENTS

HEATING
COOLING
DUPLEX ELECTRICAL OUTLETS
DATA OUTLET JACKS

COMPONENTS:

1. (2) WAITING CHAIRS
2. ROLL-UP SECURITY GRILL

Vestibule/Waiting 220sf
1/8" = 1'-0"

1 Vestibule/Waiting 220sf

TRURO JAN 2019

Weston Sampson
ROOM FINISHES

FLOORS: CARPET TILE
WALLS: GWB PAINTED
CEILING: 2' X 2' ACT TILE

MEP/DATA REQUIREMENTS

HEATING
COOLING
DUPLEX ELECTRICAL OUTLETS

COMPONENTS:

1. CHAIR & DESK
2. FILE CABINETS

Admin Open Office 120sf

\[
\frac{3}{16}'' = 1'-0''
\]
DPW Director Office - 224sf
3/16" = 1'-0"

ROOM FINISHES

FLOORS: CARPET TILE
WALLS: GWB PAINTED
CEILING: 2X2 ACT TILE

MEP/DATA REQUIREMENTS

HEATING
COOLING
DUPLEX ELECTRICAL OUTLETS
DATA OUTLET JACKS
COAX/HDMI CABLING

COMPONENTS:

1. EXECUTIVE CHAIR & DESK
2. GUEST CHAIRS
3. CONFERENCE TABLE & CHAIRS
4. BOOKCASE
5. FILE CABINETS
6. FLAT SCREEN TV

DPW Director - 224sf
ROOM FINISHES

FLOORS: CARPET TILE
WALLS: GWB PAINTED
CEILING: 2X2 ACT TILE

MEP/DATA REQUIREMENTS

HEATING
COOLING
DUPLEX ELECTRICAL OUTLETS
DATA OUTLET JACKS

COMPONENTS:

1. PLOTTER
2. WORK COUNTER & BASE CABINETS (BELOW)
3. SUPPLY CABINET
4. LAYOUT TABLE
4. BULLETIN BOARD

Copy/File Room - 225sf
3/16" = 1'-0"
ROOM FINISHES

FLOORS: RESILIENT FLOORING
WALLS: GWB PAINTED
CEILING: ACT TILES

MEP/DATA REQUIREMENTS

HEATING

COOLING

DUPLEX ELECTRICAL OUTLETS
DATA OUTLET JACKS

COMPONENTS:

1. FILE CABINETS

2. (4) FLAT FILES (BELOW) WITH TABLE TOP (ABOVE)

File Storage Area 225sf
3/16" = 1'-0"
ROOM FINISHES

FLOORS: CARPET TILE

WALLS: GWB PAINTED

CEILING: 2' x 2' AC T Tiles

MEP/DATA REQUIREMENTS

HEATING

COOLING

DUPLEX ELECTRICAL OUTLETs

DATA OUTLET JACKs

COAX/HDMI CABLING

COMPONENTS:

1. (8) EXECUTIVE CHAIR
2. 5' x 10' CONFERENCE TABLE
3. (1) CREDENZA
4. FLAT SCREEN TV

Conference Room - 320sf

1/8" = 1'-0"
**ROOM FINISHES**

**FLOORS:** CARPET TILE

**WALLS:** GWB PAINTED

**CEILING:** 2’ X 2’ ACT TILE

**MEP/DATA REQUIREMENTS**

**HEATING**

**COOLING**

**DUPLEX ELECTRICAL OUTLETS**

**COMPONENTS:**

1. WALL MOUNTED SHELVING

---

Small Supply Closet - 24sf

1/4" = 1'-0"
ROOM FINISHES

FLOORS: CARPET TILE
WALLS: GWB PAINTED
CEILING: 2' X 2' ACT TILE

MEP/DATA REQUIREMENTS

HEATING
COOLING
DUPLEX ELECTRICAL OUTLETS
DATA OUTLET JACKS

COMPONENTS:

1. UTILITY SHELVING

NOTE:
SIZED TO BE CONVERTED INTO A FUTURE OFFICE IF NEEDED

Large Supply Closet 168sf

1/4" = 1'-0"
ROOM FINISHES

FLOORS: RESILIENT FLOORING
WALLS: GWB PAINTED
CEILING: OPEN TO ABOVE

MEP/DATA REQUIREMENTS

DUPLEX ELECTRICAL OUTLETS
DATA OUTLET JACKS
RACKMOUNTED POWER

COMPONENTS:

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

Telephone/Data Room - 120 sf

1/4" = 1'-0"
**ROOM FINISHES**

**FLOORS:** RESILIENT FLOORING

**WALLS:** GWB PAINTED

**CEILING:** 2X2 ACT TILE

**MEP/DATA REQUIREMENTS**

GFI DUPLEX ELECTRICAL OUTLETS

**COMPONENTS:**

1. UTILITY SINK
2. SHELF WITH POLE
3. FRP PANELING AT SINK

Janitor Closet - 36sf

1/2" = 1'-0"
ROOM FINISHES

FLOORS:  RESINOUS FLOORING

WALLS:  CERAMIC TILE / GWB PAINTED

CEILING:  ACT TILE

MEP/DATA REQUIREMENTS

HEATING

COOLING

SEPARATE TOILET ROOM EXHAUST

GFI DUPLEX ELECTRICAL OUTLETS

TRAP PRIMERS

FLOOR DRAINS

COMPONENTS:

1.  COUNTER & SINKS
2.  URINAL (2)
3.  STANDARD TOILET
4.  ADA TOILET
5.  (16) 18" X 24" LOCKERS
6.  WET GEAR AREA
7.  BENCH
8.  ADA SHOWER
**ROOM FINISHES**

**FLOORS:** RESINOUS EPOXY FLOOR

**WALLS:** CERAMIC TILES & GWB PAINTED

**CEILING:** MOISTURE RESISTANT ACT TILES

**MEP/DATA REQUIREMENTS**

**HEATING**

**COOLING**

**SEPARATE TOILET ROOM EXHAUST**

**GFI ELECTRICAL OUTLETS**

**COMPONENTS:**

1. ADA SHOWER STALL

2. (2) 18" X 24" LOCKERS

3. BENCH

4. ADA TOILET

5. COUNTER & SINK

**Female Locker/Shower/Toilet 180sf**

3/16" = 1'-0"
Muster Room/Storage/Report Writing - 720sf

1" = 10'-0"

ROOM FINISHES

FLOORS: RESILIENT FLOORING
WALLS: GWB PAINTED
CEILING: 2X2 ACT TILE

MEP/DATA REQUIREMENTS

HEATING
COOLING
DUPLEX ELECTRICAL OUTLETS
DATA OUTLET JACKS
COAX/HDMI CABLEING

COMPONENTS:

1. PANTRY
2. (3) 6' LONG TABLES
3. DOUBLE SINK
4. (18) CHAIRS
5. COUNTER & CABINETS
6. REFRIGERATOR
7. FLAT SCREEN TV

TRURO JAN 2019

Muster Room / Storage / Report Writing - 720sf

B3
ROOM FINISHES

FLOORS:  CONCRETE

WALLS:  GWB PAINTED

CEILING:  OPEN TO STRUCTURE

MEP/DATA REQUIREMENTS

HEATING

COOLING

DUPLEX ELECTRICAL OUTLETS

DATA OUTLET JACKS

SEPARATE EXHAUST

COMPONENTS:

1.  WALL MOUNTED PANELS

Main Electric Room - 140sf

3/16" = 1'-0"
ROOM FINISHES

FLOORS:  SEALED CONCRETE
WALLS:  CMU PAINTED
CEILING:  OVEN TO STRUCTURE

MEP/DATA REQUIREMENTS

DUPLEX ELECTRICAL OUTLETS
FLOOR DRAIN

COMPONENTS:

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

1 Plumbing/Fire Protection Room - 192sf
   3/16" = 1'-0"
Sign Shop - 500sf

1. 42" DEEP STORAGE RACK FOR BLANKS, SHEET VINYL & ROLL VINYL
2. HEAVY DUTY SHELVING
3. PLOTTER
4. HANGING VINYL ROLLS
5. 4’ X 8’ ROLL PRESS
6. DESK & CHAIR

ROOM FINISHES

FLOORS: RESILIENT FLOORING
WALLS: CMU PAINTED
CEILING: OPEN

MEP/DATA REQUIREMENTS

HEATING
COOLING
DUPLEX ELECTRICAL OUTLETS
DATA OUTLET JACKS
COMPRRESSED AIR PROVISIONS

COMPONENTS:

1/8" = 1'-0"
NOTE:
EQUIP. LIST IS FOR PLANNING PURPOSES ONLY. FINAL CARPENTRY EQUIP. TO BE COORDINATED WITH TOWN.
ROOM FINISHES

FLOORS: RESILIENT FLOORING
WALLS: CMU PAINTED
CEILING: 2' x 2' ACT TILES

MEP/DATA REQUIREMENTS

HEATING
COOLING (MINI-SPLIT)
DUPLEX ELECTRICAL OUTLETS
DATA OUTLET JACKS

COMPONENTS:

1. DESK & CHAIR
2. FILE CABINETS
3. BOOKCASE

Shop Support Office - 144sf
3/16" = 1'-0"
## Room Finishes

### Floors:
- Sealed Concrete

### Walls:
- CMU Painted

### Ceiling:
- Open to Structure

## MEP/Data Requirements

### Components:
1. 24" Deep Utility Shelving
2. 12" Deep Utility Shelving

### Other:
- Material/Supply Storage (Custodial) - 400sf
  - 1/8" = 1'-0"

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**Draft**

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**Weston & Sampson**
**TRURO**
**JAN 2019**

**Material/Supply Storage (Custodial) - 400sf**

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**C4**
**Room Finishes**

**Floors:** Sealed Concrete

**Walls:** CMU Painted

**Ceiling:** Open to Structure

**MEP/Data Requirements**

**Components:**

1. Work Bench
2. Table Grinder
3. Secured Storage Cage
4. Pallet Racks (2)

Material/Supply Storage (Carpentry Maint.) - 1120sf

1" = 10'-0"
Vehicle/Equipment Maintenance Bays - 4900sf

ROOM FINISHES

FLOORS: SEALED CONCRETE

WALLS: CONCRETE BLOCK (PAINTED)

CEILING: OPEN

MEP/DATA REQUIREMENTS

DUPLEX ELECTRICAL OUTLETS

DATA OUTLET JACKS

SPECIALTY EQUIP ELEC. OUTLETS

HEATING (RADIANT FLOOR HEATING)

VENTILATION

COMPONENTS:

1. WORK BENCH
2. GRINDER
3. DRILL PRESS
4. SERVICE SINK
5. INDUSTRIAL BRIDGE CRANE
6. RECESSED PLATFORM LIFT
7. 2-POST LIGHT DUTY LIFT
8. PORTABLE POST LIFT
9. SMALL EQUIPMENT PLATFORM LIFT
**ROOM FINISHES**

**FLOORS:** SEALED CONCRETE

**WALLS:** CMU PAINTED

**CEILING:** GWB PAINTED

**MEP/DATA REQUIREMENTS**

**HEATING**

DEDICATED EXHAUST SYSTEM

GFI ELECTRICAL OUTLETS

COMPRESSED AIR FOR PNEUMATIC PUMPS

CONTAINMENT SUMP

**COMPONENTS:**

1. WASTE OIL (BULK)
2. WASTE ANFR (BULK)
3. MOTOR OIL (BULK)
4. MOTOR OIL (BULK)
5. HYDRAULIC OIL (55 GAL)
6. ANFR (55 GAL)
7. SPARE STORAGE

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16' - 0" 16' - 0"

**Fluids Room - 256sf**

1/8" = 1'-0"

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Truro

Jan 2019

**Fluids Room - 256sf**

D2
ROOM FINISHES

FLOORS: RESILIENT FLOORING

WALLS: GWB PAINTED

CEILING: 2x2 act tile

MEP/DATA REQUIREMENTS

DUPLEX ELECTRICAL OUTLETS
DATA OUTLET JACKS
HEATING
COOLING (MINI-SPLIT)

COMPONENTS:

1. DESK & TASK CHAIRS
2. FILE CABINETS
3. BOOKCASE

Maintenance Office/Reference Room - 120sf
1/4" = 1'-0"
ROOM FINISHES

FLOORS: SEALED CONCRETE

WALLS: CMU PAINTED

CEILING: OPEN TO ABOVE

MEP/DATA REQUIREMENTS

HEATING

VENTILATION

SPECIALTY EQUIP. ELEC. OUTLETS

COMPONENTS:

1. WORK BENCH
2. CHOP SAW WORK BENCH
3. DRILL PRESS
4. TABLE GRINDER
5. PARTS CLEANER
6. HYDRAULIC PRESS
**ROOM FINISHES**

- **FLOORS:** SEALED CONCRETE
- **WALLS:** CMU PAINTED
- **CEILING:** OPEN TO STRUCTURE

**MEP/DATA REQUIREMENTS**

**COMPONENTS:**

1. TIRE MACHINE
2. TIRE BALANCER
3. TIRE STORAGE RACK

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**Maintenance Tire Storage & Shop - 396sf**

1/8" = 1'-0"

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<table>
<thead>
<tr>
<th>1</th>
<th>Maintenance Tire Storage &amp; Shop - 396sf</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1/8&quot; = 1'-0&quot;</td>
</tr>
</tbody>
</table>
Parts Storage Room - 750sf

1. HEAVY DUTY SHELVING
   (48" W X 24" D X 84" H)
2. SMALL PARTS BIN
3. WALL STORAGE
4. FLAMMABLE CABINET
5. WORK BENCH
Vehicle & Equipment Wash Bay - 1750sf

1/16" = 1'-0"

1. UNDERCARRIAGE WASH
2. MANUAL WASH EQUIP. PACKAGE

ROOM FINISHES

FLOORS: SEALED CONCRETE
WALLS: PVC PANELS
CEILING: PVC PANELS

MEP/DATA REQUIREMENTS

2" WATER SUPPLY
HEATING
VENTILATION
WATERPROOF DEVICES
GFI ELECTRICAL OUTLETS

COMPONENTS:

1. UNDERCARRIAGE WASH
2. MANUAL WASH EQUIP. PACKAGE
**Room Finishes**

**Floors:** Sealed Concrete

**Walls:** CMU to 3'-4", Metal Panel (Above)

**Ceiling:** Open

**MEP/Data Requirements**

**Components:**

1. Large Vehicle/Equip. Storage (12)
2. Small Vehicle/Equip. Storage (13)
3. Dedicated Small/Towed Equipment & Attachment Storage
4. Equipment & Trailers
5. (5) Semi-Trailer Storage

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Vehicle/Equipment Storage - 18,620sf

1" = 50'-0"
These guidelines have been prepared by Weston & Sampson based upon our experience with more than 100 public works facility projects in the last 15 years.

Guidelines (as developed from similar completed DPW projects):

<table>
<thead>
<tr>
<th></th>
<th>Ideal</th>
<th>Minimum</th>
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</thead>
<tbody>
<tr>
<td>Administration</td>
<td>670</td>
<td>570</td>
</tr>
<tr>
<td>Employee Facilities</td>
<td>130</td>
<td>111</td>
</tr>
<tr>
<td>Shops (including Maintenance)</td>
<td>3,554</td>
<td>3,021</td>
</tr>
<tr>
<td>Vehicle / Equipment Storage (for centre drive-thru)</td>
<td>817</td>
<td>694</td>
</tr>
<tr>
<td>Vehicle / Equipment Storage (for stacked parking)</td>
<td>695</td>
<td>591</td>
</tr>
<tr>
<td>Wash / Other</td>
<td>2,955</td>
<td>2,512</td>
</tr>
</tbody>
</table>

Note: Average SF guidelines include all common spaces including circulation, toilets, common reception, etc.

**TARGET SPACE NEEDS (upper)**

<table>
<thead>
<tr>
<th></th>
<th>Qty</th>
<th>SF</th>
<th>Upper Target SF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administration</td>
<td>2</td>
<td>x 670</td>
<td>1,340</td>
</tr>
<tr>
<td>Employee Facilities</td>
<td>12</td>
<td>x 130</td>
<td>1,560</td>
</tr>
<tr>
<td>Shops</td>
<td>3</td>
<td>x 3,554</td>
<td>10,662</td>
</tr>
<tr>
<td>Vehicle / Equipment Storage</td>
<td>22</td>
<td>x 817</td>
<td>17,974</td>
</tr>
<tr>
<td>Wash / Other Miscellaneous Support Space (canopies)</td>
<td>1</td>
<td>x 2,955</td>
<td>2,955</td>
</tr>
</tbody>
</table>

**TOTAL SF:** 34,491

**TARGET SPACE NEEDS (lower)**

<table>
<thead>
<tr>
<th></th>
<th>Qty</th>
<th>SF</th>
<th>Lower Target SF</th>
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<tbody>
<tr>
<td>Administration</td>
<td>2</td>
<td>x 570</td>
<td>1,139</td>
</tr>
<tr>
<td>Employee Facilities</td>
<td>12</td>
<td>x 111</td>
<td>1,326</td>
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<tr>
<td>Shops</td>
<td>3</td>
<td>x 3,021</td>
<td>9,063</td>
</tr>
<tr>
<td>Vehicle / Equipment Storage</td>
<td>22</td>
<td>x 694</td>
<td>15,278</td>
</tr>
<tr>
<td>Wash / Other Miscellaneous Support Space</td>
<td>1</td>
<td>x 2,512</td>
<td>2,512</td>
</tr>
</tbody>
</table>

**TOTAL SF:** 29,317

Notes:
1. When determining number of vehicles, include all pickups, sedans, medium & large trucks, large tractors, and construction equipment. Do not include small equipment such as trailers, sidewalk plows, mowers, etc. This smaller equipment is built into the guidelines.
Section 4
Final Modified Space Needs Matrix
## Building Requirements

### Office & Office Support Areas

<table>
<thead>
<tr>
<th>Area</th>
<th>Description</th>
<th>Original Size (SF)</th>
<th>Rev 1 Size (SF)</th>
<th>Area Dimension</th>
<th>Ref #</th>
<th>Room / Area Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Office &amp; Office Vestibule/Waiting/Reception</td>
<td>220</td>
<td>160</td>
<td>A1</td>
<td>10</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Admin Open Office (1 Admin Staff)</td>
<td>120</td>
<td>100</td>
<td>A2</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>DPW Director</td>
<td>224</td>
<td>196</td>
<td>A3</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>Copy/File/Mail Area</td>
<td>225</td>
<td>120</td>
<td>A4</td>
<td>8</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>File Storage</td>
<td>225</td>
<td>180</td>
<td>A5</td>
<td>12</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Conference Room</td>
<td>320</td>
<td>224</td>
<td>A6</td>
<td>14</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Small Supply Closet</td>
<td>24</td>
<td>24</td>
<td>A7</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Large Supply Closet</td>
<td>168</td>
<td>120</td>
<td>A8</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Telephone / Data Room</td>
<td>120</td>
<td>100</td>
<td>A9</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Janitor Closet</td>
<td>36</td>
<td>36</td>
<td>A10</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>

Subtotal: 1,682                1,260
Area Grossing Factor (10%): 168 126
Circulation (10%): 185 139
TOTAL: 2,035                1,525

### Employee Facilities

<table>
<thead>
<tr>
<th>Area</th>
<th>Description</th>
<th>Original Size (SF)</th>
<th>Rev 1 Size (SF)</th>
<th>Area Dimension</th>
<th>Ref #</th>
<th>Room / Area Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male Locker/Shower/Toilet</td>
<td>540</td>
<td>540</td>
<td>B1</td>
<td>20</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>Female Locker/Shower/Toilet</td>
<td>180</td>
<td>180</td>
<td>B2</td>
<td>10</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Mustert Room</td>
<td>480</td>
<td>440</td>
<td>B3</td>
<td>20</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>Break/Training/Muster Room Storage Closet</td>
<td>120</td>
<td>100</td>
<td>B3</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Report Writing Room</td>
<td>120</td>
<td>100</td>
<td>B3</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Main Electric Room</td>
<td>140</td>
<td>120</td>
<td>B4</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Plumbing/Fire Protection Room</td>
<td>192</td>
<td>120</td>
<td>B5</td>
<td>10</td>
<td>12</td>
</tr>
</tbody>
</table>

Subtotal: 1,772                1,600
Area Grossing Factor (10%): 177 160
Circulation (10%): 195 176
TOTAL: 2,144                1,936

### Work Shops & Material Storage

<table>
<thead>
<tr>
<th>Area</th>
<th>Description</th>
<th>Original Size (SF)</th>
<th>Rev 1 Size (SF)</th>
<th>Area Dimension</th>
<th>Ref #</th>
<th>Room / Area Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sign Shop</td>
<td>500</td>
<td>320</td>
<td>C1</td>
<td>16</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Carpenter Shop</td>
<td>1,400</td>
<td>1,155</td>
<td>C2</td>
<td>33</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>Shop Support Office</td>
<td>144</td>
<td>120</td>
<td>C3</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Material / Supply Storage (Custodial)</td>
<td>400</td>
<td>320</td>
<td>C4</td>
<td>16</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Equipment Storage Bay (Custodial)</td>
<td>1,120</td>
<td>980</td>
<td>C5</td>
<td>28</td>
<td>35</td>
</tr>
</tbody>
</table>

Subtotal: 3,564                2,895
Area Grossing Factor (5%): 178 145
Circulation (5%): 187 152
TOTAL: 3,929                3,192

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Town of Truro  
Department of Public Works  
Space Needs Summary  
2/13/2019
## Building Requirements

<table>
<thead>
<tr>
<th>Area</th>
<th>Description</th>
<th>Original Size (SF)</th>
<th>Rev 1 Size (SF)</th>
<th>Sheet Ref #</th>
<th>Room / Area Dimensions</th>
<th>Size (SF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle Maintenance</td>
<td>Welding Area</td>
<td>600</td>
<td>480</td>
<td>D1</td>
<td>16 30</td>
<td>480</td>
</tr>
<tr>
<td></td>
<td>Maintenance Equipment/Material Storage</td>
<td>500</td>
<td>320</td>
<td>D1</td>
<td>16 20</td>
<td>320</td>
</tr>
<tr>
<td></td>
<td>Maintenance Bay</td>
<td>1,100</td>
<td>1,000</td>
<td>D1</td>
<td>20 50</td>
<td>1,000</td>
</tr>
<tr>
<td></td>
<td>Maintenance Bay</td>
<td>1,100</td>
<td>1,000</td>
<td>D1</td>
<td>20 50</td>
<td>1,000</td>
</tr>
<tr>
<td></td>
<td>Fluid Storage Room</td>
<td>256</td>
<td>196</td>
<td>D2</td>
<td>14 14</td>
<td>196</td>
</tr>
<tr>
<td></td>
<td>Maintenance Office / Reference Room</td>
<td>120</td>
<td>120</td>
<td>D3</td>
<td>10 12</td>
<td>120</td>
</tr>
<tr>
<td></td>
<td>Maintenance Workshop</td>
<td>180</td>
<td>144</td>
<td>D4</td>
<td>8 18</td>
<td>144</td>
</tr>
<tr>
<td></td>
<td>Maintenance Tire Storage &amp; Shop</td>
<td>396</td>
<td>108</td>
<td>D5</td>
<td>6 18</td>
<td>108</td>
</tr>
<tr>
<td></td>
<td>Parts Storage Room</td>
<td>750</td>
<td>450</td>
<td>D6</td>
<td>15 30</td>
<td>450</td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal:</strong></td>
<td><strong>6,602</strong></td>
<td><strong>5,018</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Area Grossing Factor (5%):</strong></td>
<td><strong>330</strong></td>
<td><strong>251</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Circulation (5%):</strong></td>
<td><strong>347</strong></td>
<td><strong>263</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>TOTAL:</strong></td>
<td><strong>7,279</strong></td>
<td><strong>5,532</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wash Area</td>
<td>Wash Bay</td>
<td>1,650</td>
<td>1,250</td>
<td>E1</td>
<td>25 50</td>
<td>1,250</td>
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<tr>
<td></td>
<td>Wash Equipment Room</td>
<td>100</td>
<td>100</td>
<td>E1</td>
<td>10 10</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal:</strong></td>
<td><strong>1,750</strong></td>
<td><strong>1,350</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Circulation:</strong></td>
<td><strong>n/a</strong></td>
<td><strong>n/a</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>TOTAL:</strong></td>
<td><strong>1,750</strong></td>
<td><strong>1,350</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vehicle and Equipment Storage</td>
<td>Vehicle / Equipment Storage</td>
<td>18,620</td>
<td>18,050</td>
<td>F1</td>
<td>95 190</td>
<td>18,050</td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal:</strong></td>
<td><strong>18,620</strong></td>
<td><strong>18,050</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td><strong>Area Grossing Factor (5%):</strong></td>
<td><strong>931</strong></td>
<td><strong>903</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td><strong>Circulation:</strong></td>
<td><strong>n/a</strong></td>
<td><strong>n/a</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>TOTAL:</strong></td>
<td><strong>19,551</strong></td>
<td><strong>18,953</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td><strong>TOTAL:</strong></td>
<td><strong>36,689</strong></td>
<td><strong>32,487</strong></td>
<td></td>
<td></td>
<td><strong>11.5% Reduction</strong></td>
</tr>
</tbody>
</table>
**Vestibule - 160sf**

- FLOORS: CERAMIC
- WALLS: GWB PAINTED
- CEILING: 2’ X 2’ ACT TILE

**MEP/DATA REQUIREMENTS**

- HEATING
- COOLING
- DUPLEX ELECTRICAL OUTLETS
- DATA OUTLET JACKS

**COMPONENTS:**

1. VESTIBULE
2. OPEN TO ADMIN

TRURO  
JAN 2019  

DRAFT
ROOM FINISHES

FLOORS: CARPET TILE

WALLS: GWB PAINTED

CEILING: 2’ X 2’ ACT TILE

MEP/DATA REQUIREMENTS

HEATING

COOLING

DUPLEX ELECTRICAL OUTLETS

COMPONENTS:

1. CHAIR & DESK
2. FILE CABINETS

Admin Open Office - 100sf
3/16" = 1'-0"

10'-0"
ROOM FINISHES

FLOORS:  CARPET TILE
WALLS:  GWB PAINTED
CEILING:  2X2 ACT TILE

MEP/DATA REQUIREMENTS

HEATING
COOLING
DUPLEX ELECTRICAL OUTLETS
DATA OUTLET JACKS
COAX/HDMI CABLE

COMPONENTS:
1. EXECUTIVE CHAIR & DESK
2. GUEST CHAIRS
3. CONFERENCE TABLE & CHAIRS
4. BOOKCASE
5. FILE CABINETS
6. FLAT SCREEN TV

1  DPW Director Office - 196sf
   3/16" = 1'-0"

DRAFT
## Copy/File Room - 120sf

1. **ROOM FINISHES**

   - **FLOORS:** CARPET TILE
   - **WALLS:** GWB PAINTED
   - **CEILING:** 2X2 ACT TILE

2. **MEP/DATA REQUIREMENTS**

   - **HEATING**
   - **COOLING**
   - DUPLEX ELECTRICAL OUTLETS
   - DATA OUTLET JACKS

3. **COMPONENTS:**

   1. COPY MACHINE/PRINTER
   2. WORK COUNTER & BASE CABINETS (BELOW)
   3. BULLETIN BOARD

---

3/16" = 1'-0"
ROOM FINISHES

FLOORS: RESILIENT FLOORING

WALLS: GWB PAINTED

CEILING: ACT TILES

MEP/DATA REQUIREMENTS

HEATING

COOLING

DUPLEX ELECTRICAL OUTLETS

DATA OUTLET JACKS

COMPONENTS:

1. FILE CABINETS

2. (4) FLAT FILES (BELOW) WITH TABLE TOP (ABOVE)

File Storage Area - 180sf

3/16" = 1'-0"
ROOM FINISHES

FLOORS: CARPET TILE
WALLS: GWB PAINTED
CEILING: 2' x 2' AC T Tiles

MEP/DATA REQUIREMENTS

HEATING
COOLING
DUPLEX ELECTRICAL OUTLETS
DATA OUTLET JACKS
COAX/HDMI CABLING

COMPONENTS:
1. (8) EXECUTIVE CHAIR
2. CONFERENCE TABLE
3. CREDENZA
4. FLAT SCREEN TV
ROOM FINISHES

FLOORS:  CARPET TILE
WALLS:  GWB PAINTED
CEILING:  2’ X 2’ ACT TILE

MEP/DATA REQUIREMENTS

HEATING
COOLING
DUPLEX ELECTRICAL OUTLETS

COMPONENTS:

1. WALL MOUNTED SHELVING

Small Supply Closet - 24sf
1/4” = 1'-0”
ROOM FINISHES

FLOORS: CARPET TILE

WALLS: GWB PAINTED

CEILING: 2' X 2' ACT TILE

MEP/DATA REQUIREMENTS

HEATING

COOLING

DUPLEX ELECTRICAL OUTLETS

DATA OUTLET JACKS

COMPONENTS:

1. UTILITY SHELVING

NOTE:
SIZED TO BE CONVERTED INTO A FUTURE OFFICE IF NEEDED

Large Supply Closet 120sf
1/4" = 1'-0"

① Large Supply Closet 120sf
ROOM FINISHES

FLOORS: RESILIENT FLOORING

WALLS: GWB PAINTED

CEILING: OPEN TO ABOVE

MEP/DATA REQUIREMENTS

DUPLEX ELECTRICAL OUTLETS

DATA OUTLET JACKS

RACKMOUNTED POWER

COMPONENTS:

1. DATA RACK

2. PLYWOOD BACKER BOARD FOR BUILDING SYSTEM COMPONENTS (SECURITY, CABLE, ETC.)

Telephone/Data Room - 100 sf

1/4" = 1'-0"
ROOM FINISHES

FLOORS: RESILIENT FLOORING

WALLS: GWB PAINTED

CEILING: 2X2 ACT TILE

MEP/DATA REQUIREMENTS

GFI DUPLEX ELECTRICAL OUTLETS

COMPONENTS:

1. UTILITY SINK
2. SHELF WITH POLE
3. FRP PANELING AT SINK
ROOM FINISHES

FLOORS: RESINOUS FLOORING

WALLS: CERAMIC TILE / GWB PAINTED

CEILING: ACT TILE

MEP/DATA REQUIREMENTS

HEATING

COOLING

SEPARATE TOILET ROOM EXHAUST

GFI DUPLEX ELECTRICAL OUTLETS

TRAP PRIMERS

FLOOR DRAINS

COMPONENTS:

1. COUNTER & SINKS
2. URINAL (2)
3. STANDARD TOILET
4. ADA TOILET
5. (16) 18" X 24" LOCKERS
6. WET GEAR AREA
7. BENCH
8. ADA SHOWER

Male Locker/Shower/Toilet 540sf
1/8" = 1'-0"
**ROOM FINISHES**

**FLOORS:** RESINOUS EPOXY FLOOR

**WALLS:** CERAMIC TILES & GWB PAINTED

**CEILING:** MOISTURE RESISTANT ACT TILES

**MEP/DATA REQUIREMENTS**

**HEATING**

**COOLING**

SEPARATE TOILET ROOM EXHAUST

GFI ELECTRICAL OUTLETS

**COMPONENTS:**

1. ADA SHOWER STALL
2. (2) 18" X 24" LOCKERS
3. BENCH
4. ADA TOILET
5. COUNTER & SINK

---

Female Locker/Shower/Toilet 180sf

\[ \frac{3}{16}'' = 1'-0'' \]
Muster Room/Storage/Report Writing - 640sf

1" = 10'-0"

1. PANTRY
2. (3) 6' LONG TABLES
3. DOUBLE SINK
4. (18) CHAIRS
5. COUNTER & CABINETS
6. REFRIGERATOR
7. FLAT SCREEN TV

ROOM FINISHES

FLOORS: RESILIENT FLOORING
WALLS: GWB PAINTED
CEILING: 2X2 ACT TILE

MEP/DATA REQUIREMENTS

HEATING
COOLING
DUPLEX ELECTRICAL OUTLETS
DATA OUTLET JACKS
COAX/HDMI CABLEING

COMPONENTS:

- RESILIENT FLOORING
- GWB PAINTED
- 2X2 ACT TILE

- DUPLEX ELECTRICAL OUTLETS
- DATA OUTLET JACKS
- COAX/HDMI CABLEING

- PANTRY
- (3) 6' LONG TABLES
- DOUBLE SINK
- (18) CHAIRS
- COUNTER & CABINETS
- REFRIGERATOR
- FLAT SCREEN TV
ROOM FINISHES

FLOORS: CONCRETE
WALLS: GWB PAINTED
CEILING: OPEN TO STRUCTURE

MEP/DATA REQUIREMENTS

HEATING
COOLING
DUPLEX ELECTRICAL OUTLETS
DATA OUTLET JACKS
SEPARATE EXHAUST

COMPONENTS:

1. WALL MOUNTED PANELS

Main Electric Room - 120sf
3/16" = 1'-0"
ROOM FINISHES

FLOORS: SEALED CONCRETE

WALLS: CMU PAINTED

CEILING: OVEN TO STRUCTURE

MEP/DATA REQUIREMENTS

DUPLEX ELECTRICAL OUTLETS

FLOOR DRAIN

COMPONENTS:

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

FLOORS: RESILIENT FLOORING
WALLS: CMU PAINTED
CEILING: OPEN

MEP/DATA REQUIREMENTS

HEATING
COOLING
DUPLEX ELECTRICAL OUTLETS
DATA OUTLET JACKS
COMPRESSED AIR PROVISIONS

COMPONENTS:

1. 42" DEEP STORAGE RACK FOR BLANKS, SHEET VINYL & ROLL VINYL
2. HEAVY DUTY SHELVING
3. PLOTTER
4. HANGING VINYL ROLLS
5. ROLL PRESS TABLE
6. DESK & CHAIR

Sign Shop - 320sf

3/16" = 1'-0"
NOTE:
EQUIP. LIST IS FOR PLANNING PURPOSES ONLY. FINAL CARPENTRY EQUIP. TO BE COORDINATED WITH TOWN.

ROOM FINISHES

FLOORS: SEALED CONCRETE
WALLS: CMU PAINTED
CEILING: OPEN

MEP/DATA REQUIREMENTS

HEATING
VENTILATION
DUPLEX ELECTRICAL OUTLETS
DATA OUTLET JACKS
DUST COLLECTION SYSTEM

COMPONENTS:

1. DUST COLLECTION SYSTEM
2. LUMBER STORAGE
3. FLAMMABLE CABINETS
4. DRILL PRESS
5. BAND SAW
6. JIG SAW
7. BENCH MOUNTED GRINDER
8. WORK BENCH
9. SHOP SINK
10. SMALL PARTS PAINT BOOTH
11. TABLE SAW
12. MITER SAW
13. DRUM Sander
14. ASSEMBLY TABLE

Carpentry Shop - 1155sf
3/32" = 1'-0"

TRURO JAN 2019
Carpentry Shop - 1155sf

DRAFT
ROOM FINISHES

FLOORS: RESILIENT FLOORING

WALLS: CMU PAINTED

CEILING: 2' x 2' ACT TILES

MEP/DATA REQUIREMENTS

HEATING

COOLING (MINI-SPLIT)

DUPLEX ELECTRICAL OUTLETS

DATA OUTLET JACKS

COMPONENTS:

1. DESK & CHAIR
2. FILE CABINETS
3. BOOKCASE

Shop Support Office - 120sf

3/16" = 1'-0"
### ROOM FINISHES

- **Floors:** Sealed Concrete
- **Walls:** CMU Painted
- **Ceiling:** Open to Structure

### MEP/DATA REQUIREMENTS

- **Heating**
- **Ventilation**
- **Duplex Electrical Outlets**

### Components:

1. 24" Deep Utility Shelving
2. 12" Deep Utility Shelving

---

**Material/Supply Storage (Custodial) - 320sf**

1/8" = 1'-0"
Material/Supply Storage Shop
(Carpentry Maint.) - 980sf

1 = 10'-0"

ROOM FINISHES

FLOORS: SEALED CONCRETE

WALLS: CMU PAINTED

CEILING: OPEN TO STRUCTURE

MEP/DATA REQUIREMENTS

DUPLEX ELECTRICAL OUTLETS

COMPONENTS:

1. WORK BENCH
2. TABLE GRINDER
3. SECURED STORAGE CAGE
4. PALLET RACKS (2)
Vehicle/Equipment Maintenance Bays - 4000sf

1" = 20'-0"

ROOM FINISHES

FLOORS: SEALED CONCRETE

WALLS: CONCRETE BLOCK (PAINTED)

CEILING: OPEN

MEP/DATA REQUIREMENTS

DUPLEX ELECTRICAL OUTLETS
DATA OUTLET JACKS
SPECIALTY EQUIP ELEC. OUTLETS
HEATING (RADIANT FLOOR HEATING)
VENTILATION

COMPONENTS:

1. WORK BENCH
2. GRINDER
3. DRILL PRESS
4. SERVICE SINK
5. INDUSTRIAL BRIDGE CRANE
6. RECESSED PLATFORM LIFT
7. 2-POST LIGHT DUTY LIFT
8. PORTABLE POST LIFT
9. SMALL EQUIPMENT PLATFORM LIFT
**ROOM FINISHES**

<table>
<thead>
<tr>
<th>FLOORS:</th>
<th>SEALED CONCRETE</th>
</tr>
</thead>
<tbody>
<tr>
<td>WALLS:</td>
<td>CMU PAINTED</td>
</tr>
<tr>
<td>CEILING:</td>
<td>GWB PAINTED</td>
</tr>
</tbody>
</table>

**MEP/DATA REQUIREMENTS**

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

**COMPONENTS:**

1. WASTE OIL (BULK)
2. WASTE ANFR (BULK)
3. MOTOR OIL (BULK)
4. MOTOR OIL (BULK)
5. HYDRAULIC OIL (55 GAL)
6. ANFR (55 GAL)
7. SPARE STORAGE

---

**Fluids Room - 196sf**

1. **1 Fluids Room - 196sf**

\[
\frac{3}{16''} = 1'-0''
\]
## Room Finishes

**Floors:**
- Resilient Flooring

**Walls:**
- GWB Painted

**Ceiling:**
- 2x2 act tile

## MEP/Data Requirements

- Duplex Electrical Outlets
- Data Outlet Jacks
- Heating
- Cooling (Mini-Split)

## Components:

1. Desk & Task Chairs
2. File Cabinets
3. Bookcase

---

**Maintenance Office/Reference Room - 120sf**

1/4" = 1'-0"
**Room Finishes**

**Floors:**  Sealed Concrete

**Walls:**  CMU Painted

**Ceiling:**  Open to Above

**MEP/Data Requirements**

**Heating**

**Ventilation**

**Specialty Equip. Elec. Outlets**

**Components:**

1. Work Bench
2. Chop Saw Work Bench
3. Drill Press
4. Table Grinder
5. Parts Cleaner
6. Hydraulic Press

---

Maintenance Workshop - 144sf

1 3/16" = 1'-0"
Maintenance Tire Storage & Shop - 108sf

1. TIRE STORAGE

3/16" = 1'-0"
 ROOM FINISHES

FLOORS:  SEALED CONCRETE

WALLS:  CMU PAINTED

CEILING:  OPEN TO STRUCTURE

MEP/DATA REQUIREMENTS

DUPLEX ELECTRICAL OUTLETS

HEATING

VENTILATION

COMPONENTS:

1. HEAVY DUTY SHELVING
   (48" W X 24" D X 84" H)

2. SMALL PARTS BIN

3. WALL STORAGE

4. FLAMMABLE CABINET

5. HEAVY DUTY SHELVING
   (48" W X 12" D X 84" H)

Parts Storage Room - 450sf

1/8" = 1'-0"
**ROOM FINISHES**

**FLOORS:** SEALED CONCRETE

**WALLS:** PVC PANELS

**CEILING:** PVC PANELS

**MEP/DATA REQUIREMENTS**

2" WATER SUPPLY

HEATING

VENTILATION

WATERPROOF DEVICES

GFI ELECTRICAL OUTLETS

**COMPONENTS:**

1. UNDERCARRIAGE WASH

2. MANUAL WASH EQUIP. PACKAGE

Vehicle & Equipment Wash Bay - 1350sf

1/16" = 1'-0"
**ROOM FINISHES**

**FLOORS:** SEALLED CONCRETE

**WALLS:** CMU TO 3'-4", METAL PANEL (ABOVE)

**CEILING:** OPEN

**MEP/DATA REQUIREMENTS**

**COMPONENTS:**

1. LARGE VEHICLE/EQUIP. STORAGE (12)
2. SMALL VEHICLE/EQUIP. STORAGE (14)
3. DEDICATED SMALL/TOWED EQUIPMENT & ATTACHMENT STORAGE
4. EQUIPMENT & TRAILERS
5. (5) SEMI-TRAILER STORAGE

Vehicle/Equipment Storage - 18,050sf

1" = 50'-0"
Section 5
Receptor Maps & Test-Fit Conceptual Plans
FIGURE 2
340 & 344, Route 6
Truro, Massachusetts

ENVIRONMENTAL RECEPTORS
FIGURE 1
340 & 344, Route 6
Truro, Massachusetts

HUMAN RECEPTORS
FIGURE 2
115, Route 6
Truro, Massachusetts

ENVIRONMENTAL RECEPTORS
FIGURE 1
115, Route 6
Truro, Massachusetts

HUMAN RECEPTORS
FIGURE 2
340 & 344, Route 6
Truro, Massachusetts

ENVIRONMENTAL RECEPTORS
PROGRAM - SQUARE FOOTAGE:

- OFFICES & OFFICE SUPPORT AREAS = 1,525 SF
- EMPLOYEE FACILITIES = 1,936 SF
- WORKSHOPS = 3,192 SF
- VEHICLE MAINTENANCE = 5,532 SF
- WASH BAY = 1,350 SF
- VEHICLE & EQUIPMENT STORAGE = 18,953 SF

Weston & Sampson Engineers, Inc.
100 Foxborough Boulevard          Suite 250
Foxborough, MA 02035
(508) 698-3034        (800) SAMPSON
www.westonandsampson.com
TRURO PUBLIC SAFETY

VEHICLE & EQUIPMENT STORAGE

VEHICLE MAINTENANCE

EMP. FAC

ADMIN

WASH BAY

CANOPY

FUEL

SALT SHED

BLK STORAGE

Parker Dr

Fishermans Rd

NEW PUBLIC WORKS FACILITY
TRURO, MA

PROGRAM - SQUARE FOOTAGE:

- OFFICES & OFFICE SUPPORT AREAS = 1,525 SF
- EMPLOYEE FACILITIES = 1,936 SF
- WORKSHOPS = 3,192 SF
- VEHICLE MAINTENANCE = 5,532 SF
- WASH BAY = 1,350 SF
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Weston & Sampson Engineers, Inc.
100 Foxborough Boulevard, Suite 250
Foxborough, MA 02035
(508) 698-3034 (800) SAMPSON
www.westonandsampson.com
SITETWOVERVIEW
-5TOWNDUMP
ROAD

NEW PUBLIC WORKS
FACILITY
TRURO, MA

WESTON & SAMPSON
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PROGRAM - SQUARE FOOTAGE:

OFFices OFFICE SUPPORT AREAS
OFFICE OFFICE SUPPORT AREAS
OFFICE OFFICE SUPPORT AREAS
WORKSHOPS WORKSHOPS
VEHICLE MAINTENANCE VEHICLE MAINTENANCE
WASH BAY WASH BAY
VEHICLE & EQUIPMENT VEHICLE & EQUIPMENT
STORAGE

WESTON & SAMPSON ENGINEERS, INC.
100 FOXBOROUGH BOULEVARD
SUITE 250
FOXBOROUGH, MA 02035
(508) 698-3034 (800) SAMPSON
WWW.WESTONANDSAMPSON.COM

Project: Date: Drawn By: Reviewed By: Approved By: Drawing Title: Sheet Number:

CONSULTANTS: W&S Project No:

PROJECT STAMPS:

SITE 2 OVERVIEW
2.00
PROPOSED AUTOMOBILE WASH BAY

VEHICLE MAINTENANCE

WASH BAY

EXISTING SCALE

VEHICLE AND EQUIPMENT STORAGE

PROGRAM - SQUARE FOOTAGE:

OFFICES & OFFICE SUPPORT AREAS = 1,525 SF
EMPLOYEE FACILITIES = 1,936 SF
WORKSHOPS = 3,192 SF
VEHICLE MAINTENANCE = 5,532 SF
WASH BAY = 1,350 SF
VEHICLE & EQUIPMENT STORAGE = 18,953 SF

THERE IS NO ROOM FOR THE FOLLOWING SPACES:

FUEL

TRURO, MA

NEW PUBLIC WORKS FACILITY

TOWN OF TRURO

PROJECT: NEW PUBLIC WORKS FACILITY

TOWN OF TRURO

SITE 2 - 5 TOWN DUMP ROAD

issue date: 3/15/2019

3:03:17 PM

1" = 30'-0"
EXTENT OF SALT SHED OPERATIONS

SETBACK 25' - 0"

PROGRAM - SQUARE FOOTAGE:

OFFICES & SPACE
1,525 SF

OFFICE SUPPORT AREAS
1,936 SF

EMPLOYEE FACILITIES
3,192 SF

WORKSHOPS
5,532 SF

VEHICLE MAINTENANCE
1,350 SF

WASH BAY
18,953 SF

WESTON & SAMPSON ENGINEERS, INC.
100 Foxborough Boulevard          Suite 250
Foxborough, MA 02035
(508) 698-3034        (800) SAMPSON
www.westonandsampson.com

TOWN OF TRURO
NEW PUBLIC WORKS FACILITY
TRURO, MA

SITE 3 OVERVIEW
- LOT 104 ROUTE 6

COMMONWEALTH OF MASS
PROGRAM - SQUARE FOOTAGE:

- OFFICES & OFFICE SUPPORT AREAS = 1,525 SF
- EMPLOYEE FACILITIES = 1,936 SF
- WORKSHOPS = 3,192 SF
- VEHICLE MAINTENANCE = 5,532 SF
- WASH BAY = 1,350 SF
- VEHICLE & EQUIPMENT STORAGE = 18,953 SF

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100 Foxborough Boulevard          Suite 250
Foxborough, MA 02035
(508) 698-3034        (800) SAMPSON
www.westonandsampson.com
PROGRAM - SQUARE FOOTAGE:

OFFICES & OFFICE SUPPORT AREAS = 1,525 SF
EMPLOYEE FACILITIES = 1,936 SF
WORKSHOPS = 3,192 SF
VEHICLE MAINTENANCE = 5,532 SF
WASH BAY = 1,350 SF
VEHICLE & EQUIPMENT STORAGE = 18,953 SF

Design Firm: Weston & Sampson Engineers, Inc.
100 Foxborough Boulevard          Suite 250
Foxborough, MA 02035
(508) 698-3034        (800) SAMPSON
www.westonandsampson.com

Project: NEW PUBLIC WORKS FACILITY
TRURO, MA
TOWN OF TRURO

Issue Date: 3/15/2019

Issue No: A4.01
Section 6
Initial Alternatives, Massing Models, and Conceptual Floor Plan
Table of Contents:

- Project:
- Sheet Number:
- Date:
- Drawing Title:
- Revisions:
- SQUARE FOOTAGE:
- Approved By:
- West & Sampson Engineers, Inc.

SCHEDULE:

- SETBACK
- A1.01

VEHICLE & EQUIPMENT

- 1,350 SF

WORKSHOPS

- 1,936 SF

OFFICES & OFFICE FACILITY

- 1,350 SF

NEW PUBLIC WORKS

- SITE 1 - STANDARD

- SITE 1 - FRONT ELEVATION

- SITE 1 - ENTRY

- SITE 1 - VEHICLE MAINTENANCE

TOWN OF THURSDAY

TRURO, MA
PROGRESS PRINT DATE: 6/20/2019
12:36:11 PM
NOT FOR CONSTRUCTION

SITE PLAN 2
CONSOLIDATED "L"
1/16" = 1'-0"

OFFICES & OFFICE SUPPORT AREAS = 1,525 SF
EMPLOYEE FACILITIES = 1,936 SF
WORKSHOPS = 3,192 SF
VEHICLE MAINTENANCE = 5,532 SF
WASH BAY = 1,350 SF
VEHICLE & EQUIPMENT STORAGE = 18,953 SF

NEW PUBLIC WORKS FACILITY
TRURO, MA

PROJECT:
TOWN OF TRURO

FACILITY:
NEW PUBLIC WORKS FACILITY
TRURO, MA

TRURO, MA

OFFICE BUILDING

VEHICLE MAINTENANCE

SALT SHED

FUEL

VEHICLE MAINTENANCE

ADMIN

SHOPS

BULK STORAGE

SITE PLAN 2 - CONSOLIDATED "L"
Project: W&S Project No: E2 T29
SITE 3 - FRONT ELEVATION

SQUARE FOOTAGE:
- VEHICLE MAINTENANCE = 5,532 SF
- VEHICLE MAINTENANCE = 3,192 SF

DATE: 9/15/2023

STORAGE

TOWN OF TIBURON
NEW PUBLIC WORKS FACILITY
TIBURON, CA

WESTCOT
SOUTHERN CALIFORNIA DEVICE AND DATA SERVICES (818) 346-6762
15200 YUCAIPA CANYON ROAD, SUITE 101, YUCAIPA, CA 92399

Equipment: 4x4 AREA
- EMPLOYEE FACILITIES = 4,440 SF
- EMPLOYEE FACILITIES = 4,440 SF
- EMPLOYEE FACILITIES = 4,440 SF
- EMPLOYEE FACILITIES = 4,440 SF

Notes:
- TRUE SETBACK
- SETBACK

Site Plan:
- SITE PLAN 1 - ENTRY
- SITE PLAN 2 - MAINTENANCE
- SITE PLAN 3 - CONSOLIDATED BLD
- SITE PLAN 3 - ENTRY
- SITE PLAN 3 - MAINTENANCE
- SITE PLAN 1 - FRONT ELEVATION
Section 7
Conceptual Cost Estimate
### Town of Truro
#### New Public Works Facility
#### Budget Total Project Cost

**6/13/2019**

<table>
<thead>
<tr>
<th>New Construction</th>
<th>Area</th>
<th>Size (SF)</th>
<th>2019 Cost/SF (w/ markups)</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administration / Employee Facilities</td>
<td></td>
<td>3,461</td>
<td>$356</td>
<td>$1,233,207</td>
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<tr>
<td>Shops</td>
<td></td>
<td>3,192</td>
<td>$250</td>
<td>$799,225</td>
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<tr>
<td>Vehicle Maintenance (not including equipment)</td>
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<td>5,532</td>
<td>$250</td>
<td>$1,385,123</td>
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<tr>
<td>Wash</td>
<td></td>
<td>1,350</td>
<td>$473</td>
<td>$639,201</td>
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<tr>
<td>Vehicle/Equipment Storage</td>
<td></td>
<td>18,953</td>
<td>$197</td>
<td>$3,741,662</td>
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<tr>
<td>Added Cost for Specialty Foundations (based on 1st floor area)</td>
<td></td>
<td>32,488</td>
<td>$18</td>
<td>$584,784</td>
</tr>
</tbody>
</table>

Increase for Specialty Finishes / Conventional Construction (25%): x $308,302

**New Construction Subtotal**: 32,488 $8,691,504

Building Cost per SF: 268

**Industrial Equipment**

- Wash Equipment
- Wash Equipment - Undercarriage Wash
- Heavy Duty Vehicle Lift (Portable)
- Light Duty Vehicle Lift (16,000 lb capacity minimum)
- Small Equipment Lift (16,000 lb capacity minimum)
- Small Parts Paint Booth
- Bridge Crane
- Overhead Lubrication System
- Miscellaneous Shop and Support Equipment
- Storage Shelving / Benches / Racks
- Exhaust Removal System (2 units)

Industrial Equipment Subtotal: $588,799

**Fuel System**

- Relocate Existing Fuel System (allowance)
- Bollards
- Fire Suppression
- Concrete Pad & Island
- Startup & Closeout

Fuel System Subtotal: $282,900

**Building & Equipment Total**: $9,563,202
### Town of Truro
#### New Public Works Facility

**Budget Total Project Cost**

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Cost</th>
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</thead>
<tbody>
<tr>
<td>Mezzanines</td>
<td>2,879</td>
<td>$</td>
<td>$339,649</td>
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<tr>
<td>Open Canopy Storage</td>
<td>5,700</td>
<td>$</td>
<td>$519,582</td>
</tr>
<tr>
<td>Site Development (acres) - assumes level site with no contamination, existing structures/utilities, etc.</td>
<td>3.0</td>
<td>$</td>
<td>$1,340,400</td>
</tr>
<tr>
<td>Specialty Sitework (retaining walls &amp; fill)</td>
<td>1</td>
<td>$</td>
<td>$312,500</td>
</tr>
<tr>
<td>Salt/Sand Sheds</td>
<td>2,400</td>
<td>$</td>
<td>$280,476</td>
</tr>
<tr>
<td><strong>Subtotal Bldg, Equip, &amp; Site:</strong></td>
<td></td>
<td></td>
<td>$12,355,809</td>
</tr>
<tr>
<td>2019 Market Adjustment (4%)</td>
<td></td>
<td>$</td>
<td>$494,232</td>
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<tr>
<td>Design Contingency (5%)</td>
<td></td>
<td>$</td>
<td>$642,502</td>
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<tr>
<td>Escalation - 2020 (6% per year)</td>
<td></td>
<td>$</td>
<td>$809,553</td>
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<tr>
<td>Escalation - 2021 (6% per year)</td>
<td></td>
<td>$</td>
<td>$858,126</td>
</tr>
<tr>
<td>Location Factor (4%)</td>
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<td>$</td>
<td>$606,409</td>
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<tr>
<td><strong>Total Construction</strong></td>
<td></td>
<td></td>
<td><strong>$15,766,631</strong></td>
</tr>
</tbody>
</table>

#### Department of Public Works

**Budget Total Project Cost**

**Owner's Soft Costs**

- **A&E Fees (design, bid, const.)** $1,576,663 (Assume 10% of Const. Value)
- **A&E Special Services** $315,333 (Assume 2% of Const. Value)
- **Owner's Project Manager Fees** $630,665 (Avg 4% of Const. Value)
- **Furnishings (FFE)** $80,000 allowance
- **Commun. / Low Voltage System** $120,000 allowance
- **Commissioning** $40,000 allowance
- **Chapter 17 Test & Inspections** $40,000 allowance
- **Moving Costs** $30,000 allowance
- **Construction Contingency (6%)** $945,998 allowance

**Total Soft Costs:** $3,778,659

**TOTAL PROJECT COST:** $19,545,290
Feasibility Study Report
Supplement No. 1

- Updated Preferred Site Plan
- Conceptual Building Elevations
- Conceptual Massing Model
- Conceptual Rendering
- Updated Cost Estimate
Town of Truro
New Public Works Facility

Conceptual Rendering

Weston & Sampson
Town of Truro
New Public Works Facility

Conceptual Cost Estimate

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
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</thead>
<tbody>
<tr>
<td>Building Construction Costs:</td>
<td>$9,210,000</td>
</tr>
<tr>
<td>Mezzanines:</td>
<td>$340,000</td>
</tr>
<tr>
<td>Industrial Equipment:</td>
<td>$589,000</td>
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<tr>
<td>Fuel System Relocation:</td>
<td>$283,000</td>
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<tr>
<td>Site Development:</td>
<td>$1,653,000</td>
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<td>Salt/Sand Storage Structure:</td>
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<td>Market &amp; Location Adjustment Factor:</td>
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<td>Design Contingencies &amp; Escalation:</td>
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</tr>
<tr>
<td>Construction Contingencies:</td>
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<td>Owner’s Project Development Costs:</td>
<td>$2,980,000</td>
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**TOTAL PROJECT COST:** $20,655,000
# Town of Truro

**New Public Works Facility**

## Construction Cost Comparison (Does not include soft costs)

<table>
<thead>
<tr>
<th>Description</th>
<th>Size (SF)</th>
<th>Bid Date</th>
<th>Average Bid Price</th>
<th>2019 Avg Cost per SF</th>
<th>2020 Avg Cost per SF</th>
<th>2021 Avg Cost per SF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wayland Public Works Facility</td>
<td>39,869</td>
<td>2014</td>
<td>$10,519,754</td>
<td>$397</td>
<td>$421</td>
<td>$438</td>
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<tr>
<td>Medford Public Works Facility</td>
<td>45,000</td>
<td>2014</td>
<td>$12,340,333</td>
<td>$413</td>
<td>$438</td>
<td>$455</td>
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<td>Bourne Public Works Facility</td>
<td>39,040</td>
<td>2014</td>
<td>$11,063,598</td>
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<td>$452</td>
<td>$470</td>
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<tr>
<td>Norwood Public Works Facility</td>
<td>53,870</td>
<td>2014</td>
<td>$15,437,343</td>
<td>$431</td>
<td>$457</td>
<td>$476</td>
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<tr>
<td>Boylston Highway Facility</td>
<td>13,926</td>
<td>2015</td>
<td>$3,935,419</td>
<td>$408</td>
<td>$432</td>
<td>$449</td>
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<td>Hopkinton Public Works Facility</td>
<td>42,410</td>
<td>2016</td>
<td>$12,112,833</td>
<td>$395</td>
<td>$419</td>
<td>$435</td>
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<td>Orleans Public Works Facility</td>
<td>42,278</td>
<td>2017</td>
<td>$12,833,834</td>
<td>$373</td>
<td>$396</td>
<td>$412</td>
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<tr>
<td>Andover Municipal Services Facility</td>
<td>54,088</td>
<td>2017</td>
<td>$18,413,675</td>
<td>$418</td>
<td>$443</td>
<td>$461</td>
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<tr>
<td>Longmeadow Public Works Facility</td>
<td>44,858</td>
<td>2018</td>
<td>$14,773,364</td>
<td>$374</td>
<td>$396</td>
<td>$412</td>
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<tr>
<td>Grafton DPW Facility</td>
<td>33,710</td>
<td>2018</td>
<td>$12,399,201</td>
<td>$418</td>
<td>$443</td>
<td>$460</td>
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<tr>
<td>Middleboro DPW Facility</td>
<td>34,000</td>
<td>2019</td>
<td>$14,355,199</td>
<td>$422</td>
<td>$448</td>
<td>$465</td>
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<tr>
<td>Yarmouth DPW Facility</td>
<td>37,990</td>
<td>2019</td>
<td>$16,367,227</td>
<td>$431</td>
<td>$457</td>
<td>$475</td>
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<tr>
<td>Burlington DPW Facility</td>
<td>66,200</td>
<td>2019</td>
<td>$26,074,333</td>
<td>$394</td>
<td>$418</td>
<td>$434</td>
</tr>
</tbody>
</table>

**Average Cost per SF:**

- 2019: $411
- 2020: $436
- 2021: $453

---

Truro DPW 2021 Construction Cost per SF: $513
(higer cost per SF due to location factor & higher contingencies associated with early nature of project)
<table>
<thead>
<tr>
<th>New Construction</th>
<th>Area</th>
<th>2019 Cost/SF (w/ markups)</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administration / Employee Facilities</td>
<td>3,461</td>
<td>$356</td>
<td>$1,233,207</td>
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<tr>
<td>Shops</td>
<td>3,192</td>
<td>$250</td>
<td>$799,225</td>
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<tr>
<td>Vehicle Maintenance (not including equipment)</td>
<td>5,532</td>
<td>$250</td>
<td>$1,385,123</td>
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<tr>
<td>Wash</td>
<td>1,350</td>
<td>$473</td>
<td>$639,201</td>
</tr>
<tr>
<td>Vehicle/Equipment Storage</td>
<td>18,953</td>
<td>$197</td>
<td>$3,741,662</td>
</tr>
<tr>
<td>Added Cost for Specialty Foundations (based on 1st floor area)</td>
<td>32,488</td>
<td>$18</td>
<td>$584,784</td>
</tr>
<tr>
<td>Increase for Specialty Finishes / Conventional Construction (25%):</td>
<td></td>
<td></td>
<td>$308,302</td>
</tr>
<tr>
<td>New Construction Subtotal:</td>
<td>32,488</td>
<td>$8,691,504</td>
<td></td>
</tr>
<tr>
<td>Building Cost per SF:</td>
<td>268</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industrial Equipment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Wash Equipment</td>
<td>$76,300</td>
<td>x</td>
<td>$76,300</td>
</tr>
<tr>
<td>- Wash Equipment - Undercarriage Wash</td>
<td>$48,200</td>
<td>x</td>
<td>$48,200</td>
</tr>
<tr>
<td>- Heavy Duty Vehicle Lift (Portable)</td>
<td>$99,000</td>
<td>x</td>
<td>$99,000</td>
</tr>
<tr>
<td>- Light Duty Vehicle Lift (16,000 lb capacity minimum)</td>
<td>$36,400</td>
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<td>$36,400</td>
</tr>
<tr>
<td>- Small Equipment Lift (16,000 lb capacity minimum)</td>
<td>$26,000</td>
<td>x</td>
<td>$26,000</td>
</tr>
<tr>
<td>- Small Parts Paint Booth</td>
<td>$15,000</td>
<td>x</td>
<td>$15,000</td>
</tr>
<tr>
<td>- Bridge Crane</td>
<td>$66,600</td>
<td>x</td>
<td>$66,600</td>
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<tr>
<td>- Overhead Lubrication System</td>
<td>$90,000</td>
<td>x</td>
<td>$90,000</td>
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<tr>
<td>- Miscellaneous Shop and Support Equipment</td>
<td>$50,700</td>
<td>x</td>
<td>$50,700</td>
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<tr>
<td>- Storage Shelving / Benches / Racks</td>
<td>$40,600</td>
<td>x</td>
<td>$40,600</td>
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<tr>
<td>- Exhaust Removal System (2 units)</td>
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<td>x</td>
<td>$40,000</td>
</tr>
<tr>
<td>Industrial Equipment Subtotal:</td>
<td></td>
<td></td>
<td>$588,799</td>
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<tr>
<td>Fuel System</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Relocate Existing Fuel System (allowance)</td>
<td>$150,000</td>
<td>x</td>
<td>$150,000</td>
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<tr>
<td>- Bollards</td>
<td>$18,500</td>
<td>x</td>
<td>$18,500</td>
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<tr>
<td>- Fire Suppression</td>
<td>$47,200</td>
<td>x</td>
<td>$47,200</td>
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<tr>
<td>- Concrete Pad &amp; Island</td>
<td>$35,000</td>
<td>x</td>
<td>$35,000</td>
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<tr>
<td>- Startup &amp; Closeout</td>
<td>$32,200</td>
<td>x</td>
<td>$32,200</td>
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<tr>
<td>Fuel System Subtotal:</td>
<td></td>
<td></td>
<td>$282,900</td>
</tr>
<tr>
<td>Building &amp; Equipment Total:</td>
<td></td>
<td></td>
<td>$9,563,202</td>
</tr>
</tbody>
</table>
## Town of Truro
### New Public Works Facility

#### Budget Total Project Cost

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
<th>Rate</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mezzanines</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Open Canopy Storage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site Development (acres) - assumes level site with no contamination,</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>existing structures/utilities, etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specialty Sitework (retaining walls &amp; fill)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salt/Sand Sheds</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Subtotal Bldg, Equip, & Site: $12,355,809
- 2019 Market Adjustment (10%): $1,235,581
- Design Contingency (5%): $679,570
- Escalation - 2020 (6% per year): $856,258
- Escalation - 2021 (6% per year): $907,633
- Location Factor (4%): $641,394
- Total Construction: $16,676,244

#### Department of Public Works

##### Budget Total Project Cost

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owner's Soft Costs</td>
<td></td>
</tr>
<tr>
<td>A&amp;E Fees (design, bid, const.)</td>
<td>$1,667,624</td>
</tr>
<tr>
<td>A&amp;E Special Services</td>
<td>$333,525</td>
</tr>
<tr>
<td>Owner's Project Manager Fees</td>
<td>$667,050</td>
</tr>
<tr>
<td>Furnishings (FFE)</td>
<td>$80,000</td>
</tr>
<tr>
<td>Communic. / Low Voltage System</td>
<td>$120,000</td>
</tr>
<tr>
<td>Commissioning</td>
<td>$40,000</td>
</tr>
<tr>
<td>Chapter 17 Test &amp; Inspections</td>
<td>$40,000</td>
</tr>
<tr>
<td>Moving Costs</td>
<td>$30,000</td>
</tr>
<tr>
<td>Construction Contingency (6%)</td>
<td>$1,000,575</td>
</tr>
</tbody>
</table>

- Total Soft Costs: $3,978,774
- TOTAL PROJECT COST: $20,655,018
Feasibility Study Report
Supplement No. 2

- Modified Space Needs Assessment based on 12/10/19 Select Board Discussion
- Updated Cost Estimate based on 12/10/19 Select Board Discussion
MEMORANDUM

TO: Town of Truro
FROM: Jeff Alberti, Weston & Sampson
DATE: December 19, 2019
SUBJECT: Truro Public Works Facility

Following the recent Select Board meeting, Weston & Sampson has completed an analysis of the facility program and associated cost estimate to identify cost reduction measures as discussed at the meeting. The following is a brief summary of the measures which have been implemented:

- Reduced the overall program by another +/- 8%
- Deferred several industrial equipment purchases (potential bid alternates)
- Reduced mezzanine area by +/- 13%
- Reduced canopy area by +/- 10%
- Adjusted site development costs based on a detailed estimate for the anticipated site development (basic site development work was reduced and specialty site work increased)
- Reduced Market Adjustment from 10% to 8%
- Reduced Design Contingency from 5% to 4% (based on the development of a detailed site estimate which accounts for potential unknown conditions typically covered by the design contingency)
- Reduced Year 1 escalation from 6% to 5% and Year 2 from 6% to 4% (based on discussions of anticipated escalation rates with four separate contractors - consensus is that escalation has been running approximately 1 to 1.5 points per quarter)
- Reduced A&E Fee and OPM Fee allowances

Based on these adjustments, the total project cost presented at the 12/10/19 Select Board meeting of $20.6 Million has been revised down to $18.6 Million.
<table>
<thead>
<tr>
<th>Area</th>
<th>Description</th>
<th>Original Size (SF)</th>
<th>Rev 1 Size (SF)</th>
<th>Rev 2 Size (SF)</th>
<th>Sheet Ref #</th>
<th>Room / Area Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office &amp; Office Support Areas</td>
<td>Office &amp; Office Vestibule/Waiting/Reception</td>
<td>220</td>
<td>160</td>
<td>120</td>
<td>A1</td>
<td>10 12 120</td>
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<tr>
<td></td>
<td>Admin Open Office (1 Admin Staff)</td>
<td>120</td>
<td>100</td>
<td>100</td>
<td>A2</td>
<td>10 10 100</td>
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<tr>
<td></td>
<td>DPW Director</td>
<td>224</td>
<td>196</td>
<td>190</td>
<td>A3</td>
<td>12 15 180</td>
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<td>Copy/File/Mail Area</td>
<td>225</td>
<td>120</td>
<td>96</td>
<td>A4</td>
<td>8 12 96</td>
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<tr>
<td></td>
<td>File Storage</td>
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<td>180</td>
<td>144</td>
<td>A5</td>
<td>12 12 144</td>
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<tr>
<td></td>
<td>Conference Room</td>
<td>320</td>
<td>224</td>
<td>224</td>
<td>A6</td>
<td>14 16 224</td>
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<tr>
<td></td>
<td>Small Supply Closet</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>A7</td>
<td>4 6 24</td>
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<tr>
<td></td>
<td>Large Supply Closet</td>
<td>168</td>
<td>120</td>
<td>120</td>
<td>A8</td>
<td>10 12 120</td>
</tr>
<tr>
<td></td>
<td>Telephone / Data Room</td>
<td>120</td>
<td>100</td>
<td>100</td>
<td>A9</td>
<td>10 10 100</td>
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<tr>
<td></td>
<td>Janitor Closet</td>
<td>36</td>
<td>36</td>
<td>36</td>
<td>A10</td>
<td>6 6 36</td>
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<tr>
<td>Subtotal:</td>
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<td>1,682</td>
<td>1,260</td>
<td>1,144</td>
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<td></td>
<td>Area Grossing Factor (10%):</td>
<td>168</td>
<td>126</td>
<td>114</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Circulation (10%):</td>
<td>185</td>
<td>139</td>
<td>126</td>
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<tr>
<td></td>
<td><strong>TOTAL:</strong></td>
<td><strong>2,035</strong></td>
<td><strong>1,525</strong></td>
<td><strong>1,384</strong></td>
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<tr>
<td>Employee Facilities</td>
<td>Male Locker/Shower/Toilet</td>
<td>540</td>
<td>540</td>
<td>500</td>
<td>B1</td>
<td>20 25 500</td>
</tr>
<tr>
<td></td>
<td>Female Locker/Shower/Toilet</td>
<td>180</td>
<td>180</td>
<td>160</td>
<td>B2</td>
<td>10 16 160</td>
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<tr>
<td></td>
<td>Muster Room</td>
<td>480</td>
<td>440</td>
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<td>B3</td>
<td>20 22 440</td>
</tr>
<tr>
<td></td>
<td>Break/Training/Muster Room Storage Closet</td>
<td>120</td>
<td>100</td>
<td>80</td>
<td>B3</td>
<td>8 10 80</td>
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<tr>
<td></td>
<td>Report Writing Room</td>
<td>120</td>
<td>100</td>
<td>80</td>
<td>B3</td>
<td>8 10 80</td>
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<tr>
<td></td>
<td>Main Electric Room</td>
<td>140</td>
<td>120</td>
<td>120</td>
<td>B4</td>
<td>10 12 120</td>
</tr>
<tr>
<td></td>
<td>Plumbing/Fire Protection Room</td>
<td>192</td>
<td>120</td>
<td>120</td>
<td>B5</td>
<td>10 12 120</td>
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<tr>
<td>Subtotal:</td>
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<td>1,600</td>
<td>1,500</td>
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<td></td>
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<tr>
<td></td>
<td>Area Grossing Factor (10%):</td>
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<td>160</td>
<td>150</td>
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<tr>
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<td>Circulation (10%):</td>
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<td>176</td>
<td>165</td>
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<td></td>
<td><strong>TOTAL:</strong></td>
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<td><strong>1,936</strong></td>
<td><strong>1,815</strong></td>
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<tr>
<td>Work Shops &amp; Material Storage</td>
<td>Sign Shop</td>
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<td>320</td>
<td>320</td>
<td>C1</td>
<td>16 20 320</td>
</tr>
<tr>
<td></td>
<td>Carpenter Shop</td>
<td>1,400</td>
<td>1,155</td>
<td>1,050</td>
<td>C2</td>
<td>30 35 1,050</td>
</tr>
<tr>
<td></td>
<td>Shop Support Office</td>
<td>144</td>
<td>120</td>
<td>100</td>
<td>C3</td>
<td>10 10 100</td>
</tr>
<tr>
<td></td>
<td>Material / Supply Storage (Custodial)</td>
<td>400</td>
<td>320</td>
<td>320</td>
<td>C4</td>
<td>16 20 320</td>
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<tr>
<td></td>
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## Building Requirements

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<td><strong>TOTAL</strong></td>
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<td><strong>32,487</strong></td>
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**18.3% Reduction**
## Town of Truro
### New Public Works Facility
#### Budget Total Project Cost

**12/15/2019**

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<tbody>
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<td></td>
<td>(w/ markups)</td>
<td>Cost</td>
<td>Cost</td>
<td>Notes</td>
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<td>Administration / Employee Facilities</td>
<td>3,461 $</td>
<td>356 $</td>
<td>1,233,207 $</td>
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<td>Shops</td>
<td>3,192 $</td>
<td>250 $</td>
<td>799,225 $</td>
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<td>Vehicle Maintenance (not including equipment)</td>
<td>5,532 $</td>
<td>250 $</td>
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<td>Wash</td>
<td>1,350 $</td>
<td>473 $</td>
<td>639,201 $</td>
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<td>Vehicle/Equipment Storage</td>
<td>18,953 $</td>
<td>197 $</td>
<td>3,741,662 $</td>
<td>3,347,813 Reduced size to 16,958 SF</td>
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<td>Added Cost for Specialty Foundations (based on 1st floor area)</td>
<td>32,488 $</td>
<td>18 $</td>
<td>584,784 $</td>
<td>539,586 Adjusted based on revised SF</td>
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<td>$8,691,504 $</td>
<td>$8,072,166 Reduced bldg size to 29,977 SF</td>
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**Building Cost per SF:** $268

**Industrial Equipment**

- Wash Equipment $76,300 x $76,300 $76,300
- Wash Equipment - Undercarriage Wash $48,200 x $48,200 $48,200
- Heavy Duty Vehicle Lift (Portable) $99,000 x $99,000 $99,000
- Light Duty Vehicle Lift (16,000 lb capacity minimum) $36,400 x $36,400 $36,400
- Small Equipment Lift (16,000 lb capacity minimum) $26,000 x $26,000 $26,000
- Small Parts Paint Booth $15,000 x $15,000 $15,000
- Bridge Crane $66,600 x $66,600 $66,600
- Overhead Lubrication System $90,000 x $90,000 $90,000
- Miscellaneous Shop and Support Equipment $50,700 x $50,700 $38,025 Defer partial equipment purchase
- Storage Shelving / Benches / Racks $40,600 x $40,600 $30,450 Defer partial equipment purchase
- Exhaust Removal System (2 units) $40,000 x $40,000 $40,000

**Industrial Equipment Subtotal:** $588,799 $539,974
## Town of Truro
### New Public Works Facility
#### Budget Total Project Cost

12/15/2019

<table>
<thead>
<tr>
<th>New Construction</th>
<th>Area</th>
<th>2019 Cost/SF (w/ markups)</th>
<th>12/2/2019 Cost</th>
<th>12/15/2019 Updated Cost Estimate Notes</th>
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<td>- Relocate Existing Fuel System (allowance)</td>
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<td>- Bollards</td>
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<td>- Fire Suppression</td>
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<td>- Concrete Pad &amp; Island</td>
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<td><strong>Building &amp; Equipment Total:</strong></td>
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<td>Mezzanines</td>
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<td>Open Canopy Storage</td>
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<td>$ 519,582</td>
<td>$ 464,889</td>
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<td>Site Development (acres) - assumes level site with no contamination, existing structures/utilities, etc.</td>
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<td>Specialty Sitework (retaining walls &amp; fill)</td>
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<td>Department of Public Works Budget Total Project Cost</td>
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<td>Owner's Soft Costs</td>
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**Overall Reduction:** $2,046,542
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<td>HMA Berm</td>
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## Site Specific Site Development Cost Estimate

**Town of Truro**  
**New Public Works Facility**  

12/15/2019

<table>
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<tr>
<th>Description</th>
<th>Unit</th>
<th>2019 Cost</th>
<th>Quantity</th>
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**Retaining Walls & Fill:** $690,250  
**Remaining Site Development:** $1,279,000  
**TOTAL CONSTRUCTION COST:** $1,969,250
Feasibility Study Report
Supplement No. 3

- Existing DPW Facility Size Information (Building & Site)
TRURO – EXISTING DPW FACILITY

Existing Facility Size: 11,700 SF
Exterior Storage Size: 8,300 SF
Total Building & Exterior: 20,000 SF