FROM: Allied Engineering, Inc.
160 Veranda Street
Portland, Maine 04103
Telephone: (207) 221-2260

TO: Prospective Bidders, Suppliers, and Other Parties

RE: Addendum No**. Four (4)** to the Bidding Documents for:

NEW York Vehicle Storage Garage, York, ME

This Addendum forms a part of the Contract Documents and modifies the original Bidding Documents dated March 28, 2023. Acknowledge receipt of this Addendum in the space provided on the Proposal Form. Failure to do so may subject Bidder to disqualification.

GENERAL - None

CONTRACTOR QUESTIONS/RESPONSES

1. **Question**: The Notice to Contractors states that all work shall be governed by the DOT Standard Specifications Revision of March 2014, and Standard Details Revision of March 2014. The Prebid Meeting Outline part M states that we are to adhere to the Standard Details Revision of March 2020. When you reach the website for either of those documents, the website states "ALL projects advertised after April 29, 2020 will need to meet the specifications of the March 2020 Edition, NOT the 2014." Please clarify which Standard Specifications and Standard Details shall govern the work.

   Response: All work shall be governed by the Maine DOT Standard Specifications Revisions of March 2014, Maine DOT Standard Details for Highways and Bridges March 2020, and Maine DOT Erosion and Sediment Control, latest revision.

2. **Question**: Will Hot Rubber Joint Sealant be required?

   Response: No.

3. **Question**: Considering the estimated value of the project, the $5,000,000 Owner's Protective Policy detailed in 110.3.5 of the Supplemental Specifications seems to be larger than necessary and is higher than a GC would typically carry. Please advise if this policy is going to be required. If it is to remain, we would ask that it be reduced to a $2M limit.

   Response: No

4. **Question:** Since the Contractor is not responsible for providing Builder's Risk insurance, per Addendum 02, will the Owner be providing it? If so, what is the deductible?

   Response: No.

5. **Question:** Addendum 2 clarified that the PV panel load has been removed from the scope, but the required uniform collateral load has not been provided. Please clarify the required collateral load (typically 5 psf is used in a facility such as this).

Response: The required lateral load for this facility is 3 psf.

SPECIFICATIONS

1. **DELETE** Section 00 TABLE OF CONTENTS in its entirety. **ADD** in its place "TABLE OF CONTENTS_Addendum 4_5-17-2023".
2. **DELETE** Bid Form in its entirety. **ADD** in its place "Bid Form_Addendum 4_5-17-2023".
3. **DELETE** PART II - SPECIAL PROVISIONS in its entirety. **ADD** in its place "PART II - SPECIAL PROVISIONS_Addendum 4_5-17-2023".
4. **ADD** Specification "Section 024110 – SELECTIVE DEMOLITION Addendum 4_5-17-2023"
5. **CHANGE** Section 077253, 2.2.A.3 to read "Color match the ice guards to the roof color"
6. **DELETE** Section 01200 – Allowances in its entirety. **ADD** in its place "Allowances-Addendum 4"
7. **DELETE** Section 263213 – Engine Generators in its entirety. **ADD** in its place "Engine Generators – Addendum 4"

PLANS SHEETS & SKETCHES

1. Drawing C-002 (Sheet 3 of 33), **DELETE** this drawing. **ADD** Drawing C-002 Revised May 17, 2023 – Addendum 4 in its place.
2. Drawing C-100 (Sheet 4 of 33), **DELETE** this drawing. **ADD** Drawing C-100 Revised May 17, 2023 – Addendum 4 in its place.
3. Drawing C-101 (Sheet 5 of 33), **DELETE** this drawing. **ADD** Drawing C-101 Revised May 17, 2023 – Addendum 4 in its place.
4. Drawing C-401 (Sheet 7 of 33), **DELETE** this drawing. **ADD** Drawing C-401 Revised May 17, 2023 – Addendum 4 in its place.
5. Drawing C-403 (Sheet 9 of 33), **DELETE** this drawing. **ADD** Drawing C-403 Revised May 17, 2023 – Addendum 4 in its place.
6. Drawing PP-100 (Sheet 26 of 33), **DELETE** this drawing. **ADD** Drawing PP-100 Revised May 17, 2023 – Addendum 4 in its place.
7. Drawing ES-100 (Sheet 28 of 33), **DELETE** this drawing. **ADD** Drawing ES-100 Revised May 17, 2023 – Addendum 4 in its place.
8. Drawing EL-100 (Sheet 31 of 33), **DELETE** this drawing. **ADD** Drawing EL-100 Revised May 17, 2023 – Addendum 4 in its place.
9. Drawing EP-100 (Sheet 32 of 33), **DELETE** this drawing. **ADD** Drawing EP-100 Revised May 17, 2023 – Addendum 4 in its place.
10. Drawing EP-500 (Sheet 33 of 33), **DELETE** this drawing. **ADD** Drawing EP-500 Revised May 17, 2023 – Addendum 4 in its place.

ATTACHMENTS

A.	Addendum Summary Document	(2 Pages)
B.	General	(0 Pages)
C.	Specifications	(69 Pages)
D.	Plan Sheets and Sketches	(10 Pages)
	Total Page Count	**81 Page**

MAINE TURNPIKE AUTHORITY

YORK VEHICLE STORAGE GARAGE

BID FORM

CONTRACT 2023.06

TO MAINE TURNPIKE AUTHORITY:

The work consists of the following:

1. Construction of an approximate 6,600 square foot pre-engineered building consisting of six (6) equipment storage garage bays.

2. All site work, grading, drainage, underground power, power utility services and site utilities.

The work includes all building structure, mechanical, electrical, and plumbing, as well as all site work, grading, pavement, lighting, utilities, and all other work incidental thereto in accordance with the Plans and Specifications.

This Work will be done under a Contract known as Contract 2023-06 according to the Plans and Specifications which are on file in the office of the Maine Turnpike Authority, 2360 Congress Street, Portland, Maine.

On the acceptance of this Proposal for said Work, the undersigned will give the required bond with good security conditioned for the faithful performance of said Work, according to said Plans and Specifications, and the doing of all other work required by said Specifications for the consideration herein named and with the further condition that the Maine Turnpike Authority shall be saved harmless from any and all damages that might accrue to any person, persons or property by reason of the carrying out of said Work, or any part thereof, or by reason of negligence of the undersigned, or any person or persons under his employment and engaged in said Work.

The undersigned hereby declares that he/she has carefully examined the Plans, Specifications and other Contract Documents, and that he/she will contract to carry out and complete the said Work as specified and delineated at the price per unit of measure for each scheduled item of Work stated in the Schedule of Prices as follows:

It is understood that the TOTAL AMOUNT stated by the undersigned in the following Schedule of Prices is based on approximate quantities and will be used solely for the comparison of bids, and that the quantities stated in the Schedule of Prices for the various items are estimates only and may be increased or decreased all as provided in the Specifications.

Item No	**Item Description**	**Units**	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
Item No	**Item Description**	**Units**	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
	VEHICLE STORAGE GARAGE	LS	1				
203.20	COMMON EXCAVATION	CY	50				
203.25	GRANULAR BORROW	CY	50				
203.2333	DISPOSAL/TREATMENT OF SPECIAL EXCAVATION	T	50				
203.2334	DISPOSAL/TREATMENT OF GROUNDWATER	GAL	500				
631.12	EXCAVATOR (INCLUDING OPERATOR)	HOURS	20				
631.13	BULLDOZER (INCLUDING OPERATOR)	HOURS	20				
631.172	TRUCK - LARGE (INCLUDING OPERATOR)	HOURS	20				
631.22	FRONT END LOADER (INCLUDING OPERATOR)	HOURS	20				
631.36	FOREMAN	HOURS	20				
631.37	CONSTRUCTION LABORER	HOURS	20				
					TOTAL:		

Acknowledgment is hereby made of the following Addenda received since issuance of the Plans and

Specifications:
_____
_____
_____

Accompanying this Proposal is an original bid bond, cashiers or certified check on_____
_____ Bank, for _____

, payable to the Maine Turnpike Authority. In case this Proposal shall be accepted by the Maine Turnpike Authority and the undersigned should fail to execute a Contract with, and furnish the security required by the Maine Turnpike Authority as set forth in the Specifications, within the time fixed therein, an amount of money equal to Five (5%) Percent of the Total Amount of the Proposal for the Contract awarded to the undersigned, but not less than $500.00, obtained out of the original bid bond, cashier's or certified check, shall become the property of the Maine Turnpike Authority; otherwise the check will be returned to the undersigned.

The performance of said Work under this Contract will be completed during the time specified in Subsection 107.1.

It is agreed that time is of the essence of this Contract and that I (we) will, in the event of my (our) failure to complete the Work within the time limit named above, pay to Maine Turnpike Authority liquidated damages in the amount or amounts stated in the Specifications.

The undersigned is an Individual/Partnership/Corporation under the laws of the State of _____,
having principal office at _____,
thereunto duly authorized.

_____ (SEAL)

_____ (SEAL)

_____ (SEAL)

Affix Corporate Seal or Power of Attorney
Where Applicable

By: _____

Its:_____

Information below to be typed or printed where applicable:

INDIVIDUAL:

(Name)	(Address)

PARTNERSHIP - Name and Address of General Partners:

(Name)	(Address)
(Name)	(Address)
(Name)	(Address)
(Name)	(Address)

INCORPORATED COMPANY:

(President)	(Address)
(Vice-President)	(Address)
(Secretary)	(Address)
(Treasurer)	(Address)

MAINE TURNPIKE AUTHORITY

SPECIFICATIONS

PART II – SPECIAL PROVISIONS

YORK VEHICLE STORAGE GARAGE

Issued for Bid
March 28, 2023

CONTRACT 2023.06

MAINE TURNPIKE AUTHORITY

SPECIFICATIONS

PART II - SPECIAL PROVISIONS

All work shall be governed by the Maine Department of Transportation Standard Specifications, Revision of November 2014, except for that work which applies to sections of the Maine Department of Transportation Standard Specifications which are amended by the Maine Turnpike Supplemental Specifications and the following modifications, additions and deletions.

General Description of Work

NEW VEHICLE STORAGE GARAGE:

a. The building is anticipated to be a high-bay vehicle storage garage. The main floor being a concrete slab-on-grade, and generally constructed of durable and appropriate materials. The documents indicate a pre-engineered metal building for the primary structure. Insulated metal overhead doors and personnel doors will provide access. Windows are shown as double-hung aluminum units.

b. 6,600 SF building footprint with 6 vehicle garage bays.

c. Site/Civil Scope includes all site work as shown on the plans including:
   1) Approximately 18,000 sf paved parking and facility operation areas at the York Maintenance Yard.
   2) Exterior 6,000 gallon holding tank for floor drains with electrical conduit connection to existing building.
   3) Electrical conduit from new generator location to new building
   4) Exterior H-20 oil/water separator.
   5) Exterior propane tanks with connection to new building.
   6) Domestic water service connecting the new building to the existing well service.
   7) Domestic water service from the new building to the existing sand shed.

d. The pre-engineered metal building structure is clad with draped insulation roof panel assemblies for the roof and insulated metal wall panels. The exterior overhead and pass doors will be R-15 minimum. The exterior windows will be R-2.2 minimum.

Plans

The drawings included in these Contract Documents, and referred to as the Plans, show the general character of the work to be done under this Contract. They bear the general title **"Maine Turnpike – Contract 2023.06 – York Vehicle Storage Garage"**. The right is reserved by the Resident to make such minor corrections or alterations in the Plans as he deems necessary without change in the unit prices on the Schedule of Prices of the Proposal.

101.2 Definition

Holidays

The following is added after Memorial Day in the Supplemental Specifications:

Christmas Day 2023	12:01 p.m. (Noon) preceding Friday to 6:00 a.m. the following Thursday.
New Year's Day 2024	12:01 p.m. (Noon) preceding Friday to 6:00 a.m. the following Thursday.
Independence Day 2024 (Fourth of July)	12:01 p.m.(Noon) preceding Friday to 6:00 a.m. the following Tuesday.
Christmas Day 2024	12:01 p.m. (Noon) preceding Friday to 6:00 a.m. the following Friday.

103.4 Notice of Award

The following sentence is added:

The Maine Turnpike Authority Board is scheduled to consider the Contract Award on **June 22, 2023**.

104.3.8 Wage Rates and Labor Laws

Section 104.3.8 Wage Rates and Labor Laws has been amended as follows:

The fair minimum hourly rates determined by the State of Maine Department of Labor for this Contract are provided on the next page:

THIS DOCUMENT MUST BE CLEARLY POSTED AT ALL CONSTRUCTION SITES FUNDED IN PART WITH STATE FUNDS

State of Maine
Department of Labor
Bureau of Labor Standards
Augusta, Maine 04333-0045
Telephone (207) 623-7906

Wage Determination - In accordance with 26 MRS §1301 et. seq., this is a determination by the Bureau of Labor Standards, of the fair minimum wage rate to be paid to laborers and workers employed on the below titled project.

2023 Fair Minimum Wage Rates
Building 2 York County
(other than 1 & 2 family homes)

Occupational Title	Minimum Wage	Minimum Benefit	Total
Brickmasons And Blockmasons	$33.00	$3.21	$36.21
Bulldozer Operator	$30.00	$7.29	$37.29
Carpenter	$32.59	$12.38	$44.97
Cement Masons And Concrete Finisher	$24.00	$4.02	$28.02
Construction And Maintenance Painters	$24.00	$2.79	$26.79
Construction Laborer	$22.00	$3.10	$25.10
Control And Valve Installers And Repairers - Except Mechanical Door	$31.00	$9.86	$40.86
Crane And Tower Operators	$31.50	$10.63	$42.13
Drywall And Ceiling Tile Installers	$26.50	$3.91	$30.41
Earth Drillers - Except Oil And Gas	$28.25	$4.94	$33.19
Electrical Power - Line Installer And Repairers	$54.08	$25.81	$79.89
Electricians	$29.64	$6.41	$36.05
Elevator Installers And Repairers	$65.62	$43.13	$108.75
Excavating And Loading Machine And Dragline Operators	$24.00	$6.73	$30.73
Excavator Operator	$28.00	$5.41	$33.41
Fence Erectors	$24.00	$4.59	$28.59
Floor Layers - Except Carpet/Wood/Hard Tiles	$24.00	$6.32	$30.32
Glaziers	$22.75	$4.75	$27.50
Grader/Scraper Operator	$24.76	$3.96	$28.72
Hazardous Materials Removal Workers	$26.00	$4.27	$30.27
Heating And Air Conditioning And Refrigeration Mechanics And Installers	$31.60	$4.80	$36.40
Heavy And Tractor - Trailer Truck Drivers	$23.50	$2.86	$26.36
Industrial Machinery Mechanics	$33.43	$2.38	$35.81
Insulation Worker - Mechanical	$27.00	$5.74	$32.74
Ironworker - Ornamental	$27.22	$5.55	$32.77
Light Truck Or Delivery Services Drivers	$22.00	$3.17	$25.17
Millwrights	$33.90	$10.37	$44.27
Mobile Heavy Equipment Mechanics - Except Engines	$25.00	$4.32	$29.32
Operating Engineers And Other Equipment Operators	$26.63	$7.17	$33.80
Pipelayers	$25.50	$3.54	$29.04
Plasterers And Stucco Masons	$42.18	$19.67	$61.85
Plumbers Pipe Fitters And Steamfitters	$32.00	$4.76	$36.76
Reinforcing Iron And Rebar Workers	$50.30	$24.67	$74.97
Riggers	$28.00	$9.74	$37.74
Roofers	$24.00	$3.94	$27.94
Sheet Metal Workers	$26.40	$2.47	$28.87
Structural Iron And Steel Workers	$32.02	$24.67	$56.69
Tapers	$28.00	$4.18	$32.18
Telecommunications Equipment Installers And Repairers - Except Line Installers	$33.00	$11.29	$44.29
Telecommunications Line Installers And Repairers	$24.00	$4.13	$28.13
Tile And Marble Setters	$25.00	$5.03	$30.03

Welders are classified as the trade to which welding is incidental (e.g. welding structural steel is Structural Iron and Steel Worker)

Apprentices – The minimum wage rates for registered apprentices are the rates recognized in the sponsorship agreement for registered apprentices working in the pertinent classification.

For any other specific trade on this project not listed above, contact the Bureau of Labor Standards for further clarification.

Title 26 §1310 requires that a clearly legible statement of all fair minimum wage and benefits rates to be paid the several classes of laborers, workers and mechanics employed on the construction on the public work must be kept posted in a prominent and easily accessible place at the site by each contractor and subcontractor subject to sections 1304 to 1313.

Appeal – Any person affected by the determination of these rates may appeal to the Commissioner of Labor by filing a written notice with the Commissioner stating the specific grounds of the objection within ten (10) days from the filing of these rates.

A true copy

Attest: Scott R. Cotnoir
Scott R. Cotnoir
Wage & Hour Director
Bureau of Labor Standards

Expiration Date: 12-31-2023

104.4.6 Utility Coordination

This Subsection is amended by the addition of the following:

These Special Provisions outline the arrangements which have been established by the Authority for coordination of the work to be accomplished by the utilities. The scope and schedule of utility relocation work is noted herein. The Contractor shall plan and conduct his work accordingly.

General

Utility working days are Monday through Friday, conditions permitting. Times are estimated on the basis of a single crew for each utility. Any times and dates mentioned are estimates only and are dependent upon favorable weather, working conditions, and freedom from emergencies. The Contractor shall have no claim against the Authority if they are exceeded.

The Contractor shall plan and conduct his operations in accordance with the following utility schedule. The Contractor must comply with all OSHA regulations pertaining to work adjacent to utility wires. The Contractor shall plan and conduct his work accordingly.

The following utilities are located within the Project limits. The Contractor shall ascertain the location of the existing utilities and any other necessary information by direct inquiry at the office of the following utility owners:

AERIAL AND UNDERGROUND UTILITIES

ELECTRIC:
Central Maine Power Company
83 Edison Drive
Augusta, ME 04336
(207) 626-9443
ATTN: Tim Robbins

WATER: N/A

CENTRAL MAINE POWER (CMP)

The contractor shall be responsible for the conduit and junction boxes from the existing generator pad to the new building. All work involving the existing overhead wires as depicted on the electrical plan shall be coordinated with CMP.

The contractor shall notify CMP ten (10) working days prior to the utility coordination meeting. The coordination effort is to relay contractor's construction schedule, determine possible covering of aerial conductors and schedule of the new service.

104.4.6.1 Temporary Utilities

The Contractor will be required to maintain all services and utilities to the existing facility throughout construction. Existing services and utilities include, but are not necessarily limited to, power, telephone,

water, sewer, propane, heat and site/roadway lighting.

The Contractor shall be responsible for all temporary connections, service runs, relocation, disconnections, reconnections, etc. required to maintain these services due to phasing of construction and constraints of the site and work area. This includes any needed temporary services for the building. Temporary power can be provided on wooden poles located outside the clear zone or protected. The contractor shall coordinate with the Resident and MTA on a temporary service.

Prior to start of construction, the Contractor shall submit a plan and schedule for maintaining existing services and utilities. The plan shall identify all proposed temporary connections, service runs, relocations, disconnections, reconnections, etc. and shall reflect construction phasing and the Contractor's proposed sequence of work. Maintaining existing services and utilities and all temporary utility work, including proposed temporary connections, service runs, relocations, disconnections, reconnections, etc. shall be incidental to Contract 2023.06.

107.1 Contract Time and Contract Completion Date

All work for Contract 2023.06 shall be completed within 240 days of starting the work or by the following dates, whichever comes first:

- Substantial Completion: **September 6, 2024**
- Final Completion: **September 27, 2024**

MTA will entertain a start date for this work that fits within the contractor's schedule beginning after a successful MTA approval on **June 22, 2023** and completed on or before the above completion dates. Liquidated damages will occur for each day after 240 days from start date or following the above completion dates.

107.1.1 Substantial Completion

This subsection is amended by the addition of the following:

Substantial completion is defined as having completed the following work:

1. Substantially completed construction of the Vehicle Storage Garage including construction of all building foundation, framing and insulation, roofing, siding, doors, and commissioning of all building electrical, mechanical, heating, and plumbing.
2. Completion of Interior finish carpentry and painting.
3. Base pavement and surface pavement have been placed to lines and grades shown on plans.

Supplemental Liquidated damages on a calendar day basis in accordance with Supplemental Specifications Subsection 107.8 shall be assessed for each calendar day that substantial completion is not achieved. The Contractor will be responsible for paying the per diem costs listed in the Supplemental Specifications Subsection 107.7.2 Schedule of Liquidated Damages for each day that substantial completion is not achieved by the specified date.

107.4.6 Limitations of Operations

Construction of the York Vehicle Storage Garage shall not interfere with Highway and Equipment Maintenance operations at any time.

The Contractor shall submit his proposed staging and storage areas for approval by the Resident. All stored equipment must be located to not interfere with Highway and Equipment maintenance operations.

Once pavement removal and regrading activities are commenced, a minimum of base pavement installation must be achieved by winter of 2023-2024 if project is not complete.

SPECIAL PROVISION

ALL SECTIONS

GENERAL INFORMATION

All sections of the Maine DOT Standard Specifications (November 2014) and the Maine Turnpike Authority 2016 Supplemental Specification, not modified by other Special Provisions within this contract, shall apply with the following additions and modifications:

All Sections - Method of Measurement

These paragraphs shall be deleted in their entirety.

All Sections - Basis of Payment

These paragraphs shall be deleted in their entirety and replaced with the following:

All work completed under this this section, shall be paid for as part of the lump sum bid for the project.

SPECIAL PROVISION

SECTION 203

EXCAVATION AND EMBANKMENT

The provisions of Section 203 of the Maine DOT Standard Specifications (November 2014) and the Maine Turnpike Authority 2016 Supplemental Specification shall apply with the following additions and modifications:

203.01 Description

The following paragraph is added:

The work shall consist of cutting, removing, and disposing of the existing bituminous concrete pavement as shown on the Plans, or as approved by the owner/resident.

Common excavation shall include all excavation (over excavation) within the project limits. This shall include the complete removal and disposal of all material unsuitable for re-use on the project, existing pavement, topsoil, organics, foundations, utilities, relic materials, and structures that are located under the proposed building footprint as defined in the Geotechnical Report completed by S.W. Cole on May 27, 2020, and as noted on the Typical Sections.

During excavation if suitable material is encountered, it may be left in place or re-used on other portions of the project with approval from the resident.

Fill to raise grades, in landscaped and/or seeded areas should be non-organic compactable earth meeting the requirements of the Maine DOT Standard Specification (November 2014) 703.18 Common Borrow.

Fill to raise grades, in paved areas and in areas of backfill for over excavations, should be sand meeting the requirements of the Maine DOT Standard Specification (November 2014) 703.19 Granular Borrow for underwater backfill.

Crushed Stone as noted on the plans, used for underdrain aggregate shall be washed ¾ inch crushed stone meeting the requirements of Maine DOT Standard Specifications (November 2014) 703.22 Underdrain Backfill Material Type C.

Concrete pads to be removed as shown on the Plans.

203.04 General

The following sentence is added to the end of the third paragraph.

There are no approved waste storage areas or waste areas within the Project limits unless shown on the Plans. Unsuitable materials shall be disposed of off-site in accordance with Subsection 203.06.

All excavations shall be accomplished in accordance with the applicable OSHA Standards. The Resident reserves the right to request the Contractor to prepare an excavation plan. This plan shall include, but not necessarily be limited to, the limit and depth of excavation, side slope, shoring, trench box and utility

support.

The on-site soils may be suitable for reuse as common borrow in landscaped and/or seeded areas, provided they are at a compactable moisture content at the time of reuse. Portions of the existing sandy soils may be suitable for reuse as granular borrow, provided they are free of organics and deleterious material, and are at a compactable moisture content at the time of reuse. S.W. Cole recommends additional test pits be performed to assess suitability for reuse of existing material. Test pits to determine the suitability of existing materials will be considered incidental to the project. Relic buried organic materials are unsuitable for reuse.

The MTA has an existing stockpile (approximately 1,000 CY) of material classified as granular borrow (by the MTA). The Contractor shall utilize the existing stockpiled material on the site prior to ordering additional material. The Contractor will be responsible for confirming the quantity of the stockpiled material prior to bidding. No additional payment will be issued for any discrepancy between the estimated quantity and the contractors quantity. No additional payment will be issued for surveying, loading, or hauling the material from the stockpile to the site. The contractor shall provide their own equipment and personnel to haul and load the material.

203.10 Embankment Construction - General

The thirteenth and fourteenth paragraphs are deleted and replaced with the following:

All portions of the embankment shall be compacted in accordance with the designated embankment compaction requirements specified for the Project.

General Benching Requirements for proposed fills (common borrow, granular borrow, structural fill): The existing slopes should be benched prior to placing additional fill of any kind. Embankment fill of any kind, should be placed in lifts which extend laterally beyond the limits of the design side slopes such that the specified degree of compaction is achieved within the limits of the completed embankment. The slopes should then be trimmed back to design dimensions.

General Compaction Requirements for proposed fills (common borrow, granular borrow, structural fill): Fill of any kind should be placed in horizontal lifts and compacted such that the desired density is achieved throughout the lift thickness with 3 to 5 passes of the compaction equipment. Loose lift thicknesses for grading, fill and backfill activities should not exceed 12 inches. S.W. Cole recommends that fill and backfill be compacted to at least 95% of its maximum dry density as determined by ASTM D-1557. Crushed Stone should be compacted with 3 to 5 passes of a vibratory plate compactor having a static weight of at least 500 pounds.

203.16 Winter Construction of Embankments

The word “core” is deleted from the first and second sentences in the first paragraph.

203.18 Method of Measurement

These paragraphs shall be deleted in their entirety and replaced with the following:

The costs for overexcavation related to the removal of uncontrolled or unsuitable material encountered below building footprint as defined in the Geotech report and as directed by the Resident, shall be paid at the unit price of Pay Item 203.20 Common Excavation.

The costs for additional fill related to the removal of uncontrolled or unsuitable material

encountered below building footprint as defined in the Geotech report and as directed by the Resident, shall be paid at the unit price of Pay Item 203.25 Granular Borrow.

203.19 Basis of Payment

These paragraphs shall be deleted in their entirety and replaced with the following:

All work under Section 203, Excavation and Embankment, shall be paid for as part of the lump sum bid for the project.

If the Resident determines that additional excavation is necessary, the excavation shall be paid for under Item 203.20 Common Excavation at the contract unit price per 50 cubic yards.

If the Resident determines that additional fill is necessary, the fill shall be paid for under Item 203.25 Granular Borrow at the contract unit price per 50 cubic yards.

Payment will be made under:

Pay Item		Pay Unit
203.20	Common Excavation	Cubic Yards
203.25	Granular Borrow	Cubic Yards

SPECIAL PROVISION

SECTION 203

EXCAVATION AND EMBANKMENT

(Contaminated Soil and Groundwater Management)

203.01 General

Contaminated Soil and Groundwater is not known to be present within the project limits. Unanticipated soil and groundwater contamination, if encountered, shall be managed in accordance with this Specification.

The work under this Specification shall be performed in conformance with the procedures and requirements described herein for the following activities: contaminated soil handling, reuse, temporary stockpiling, transportation, storage and disposal and contaminated water handling, storage, treatment, and disposal. This Specification also addresses contaminated soil location, identification and classification. The intent of this Specification is to ensure that contaminated soil and/or water encountered during construction will be managed in a manner that protects worker health and safety, public welfare and the environment.

203.02 Unanticipated Contamination

If the Contractor encounters previously undiscovered contamination or potentially hazardous conditions related to contamination, the Contractor shall suspend work and secure the area. The Contractor will then notify the Resident immediately. The Resident will then notify the Authority. Potentially hazardous conditions include, but are not limited to, buried containers, drums, tanks, oil saturated soils, strong odors, or the presence of petroleum sufficient to cause a sheen on the groundwater. The area of potential hazard shall be secured to minimize health risks to workers and the public and to prevent a release of contaminants into the environment. The source of the suspected contamination will be evaluated by the Resident (or MTA Environmental representative). As appropriate, the Resident will notify the Maine Department of Environmental Protection's Response Services Unit in Augusta and the Authority's Environmental Services Coordinator. The Contractor will evaluate the impact of the hazard on construction, Prepare a Heath and Safety Plan (HASP) and, with the Resident's approval, restart work in accordance with the procedures of this Special Provision.

203.03 General Procedure for Excavating Contaminated Soils and Groundwater

- The MTA and Resident Engineer will engage an environmental professional including a Maine Certified Geologist to oversee facility removal work, provide field screening services with a Photo-Ionization Detector (PID) and oleophilic dye tests in accordance with DEP SOP TS004, and prepare appropriate UST closure reports for MTA to submit to DEP in accordance with Chapter 691.

- The Contractor shall assume any groundwater encountered during excavation is contaminated and properly containerize and dispose of the groundwater offsite at a licensed disposal facility.

- Based on field screening results, the Contractor shall segregate soils for reuse onsite or offsite disposal. In accordance with TS004, the following criteria shall be used to characterize soils (based on using a MiniRAE PID):

    - Soils for unrestricted reuse (i.e. "clean" soil)
        - Any soil with no visual indications of contamination
        - Any soil with an oleophilic dye test yielding a "negative" result, and
        - Any soil with a PID reading less than 40 parts per million (ppm), i.e. the leaching to groundwater field screening guideline

    - Lightly contaminated soil
        - Any soil with slight discoloration related to contamination
        - Any soil with an oleophilic dye test yielding a "positive or slightly positive" result
        - Any soil with a PID reading exceeding 40 ppm but less than 1,500 ppm

    - Highly contaminated or petroleum saturated soil
        - Any soil with visible gross contamination
        - Any soil with an oleophilic dye test yielding a "saturated" result
        - Any soil with a PID reading exceeding 1,500 ppm

The field screening guidelines may be adjusted by the Resident and their environmental planner using TS004 based on the PID instrument in use:

Table 1: Approved PID Field Cleanup and Notification Guidelines

Cleanup Scenario	Soil size [grams]	Ion	Thermo	Passport	Foxboro	MiniRAE	Photon
Leaching to GW/ Notification	200	80	60	60	50	40	40
Resident/ Park User	20	700	275	500	250	350	300
Outdoor Commercial Worker/ Excavation-Construction Worker	5	1200	500	850	375	1500	400

Note: No adjustment is made for set points; the response factor should be 1.0 for all instruments.

Based on these characterizations, the following soil management practices shall be employed:

- Soil characterized for unrestricted use can be relocated and reused as general construction material anywhere at the maintenance yard. If excess soil is generated that

cannot be reused this soil should be appropriately evaluated and/or sampled for laboratory analysis prior to reuse.

- Soil characterized as lightly contaminated should be properly stockpiled, covered, and managed as a contaminated material, but can be reused in the vicinity of the foundation removal and this project's borrow needs. Any excess lightly contaminated soil that is not to be reused should be properly characterized and disposed or recycled offsite.

- Soil characterized as highly contaminated or petroleum saturated should either be live loaded or temporarily stockpiled until sufficient volume has been accumulated and shipped offsite for proper disposal or recycling. The Contractor my request Resident approval for on-site reuse of this material. A final determination will be made in concert with the MTA and MaineDEP Project Manager as to the level of contamination.

- Stockpiled contaminated soils shall be placed on an impervious surface atop polyethylene sheeting, be properly covered with poly sheeting at the end of each work day or during inclement weather, and appropriate erosion/sedimentation controls should be used in the vicinity of the stockpiles to prevent stormwater from leaching or washing contaminants to nearby impervious surfaces or stormwater management systems.

The Authority's designated representative is responsible for signing any manifests or bills of lading required to transport and dispose of contaminated soil. All documentation and paperwork associated with the transport and disposal of lightly or highly contaminated soils (i.e., manifests/bills of lading, weigh slips, invoices, permits, etc.) shall be forwarded to the Maine Turnpike Authority's Environmental Services Coordinator at 2360 Congress Street, Portland, Maine 04102 within 30 days of the last shipment of soil to the licensed facility.

203.04 Secured Stockpile Area

Should the Contractor utilize a Temporary Secured Stockpile Area (hereafter referred to as a "Secured Stockpile"), they shall install a continuous one-foot (0.30 m) high compacted soil berm around the Secured Stockpile (see Secured Stockpile Area – Materials below for Specifications pertaining to soil berm, liner, cover and barricades). The Secured Stockpile shall be placed on a liner of 20-mil polyethylene and securely covered with 20-mil polyethylene. The polyethylene liner and cover shall be placed over the soil berm and be installed to ensure that precipitation water drains directly to the outside of the berm perimeter while leachate from the contaminated soil is retained within the stockpile by covering with a polyethylene. The Secured Stockpile and soil berm shall be enclosed within a perimeter of temporary concrete barriers or security fence. The area within the temporary concrete barriers (or security fence) shall be identified as a "restricted area" to prevent unauthorized access to the contaminated soils. The Contractor shall submit to the Resident a plan (sketch and sections) of the proposed secured stockpile area.

203.05 Secured Stockpile Area - Materials

A. Polyethylene. Polyethylene used for liner and cover in the Secured Stockpile Area shall have a minimum of 20-mil thickness and shall meet the requirements of ASTM D3020.

B. Common Borrow. Fill used in the construction of the Temporary Secured Stockpile Area soil berm shall consist of Common Borrow and meet the requirements of Subsection 703.18.

C. Concrete Barriers or Security Fence. Concrete Barriers or Security Fence to form the sides of the Temporary Secured Stockpile Area shall meet the requirements of Section 526 or Subsection 607.

203.06 Health and Safety/Right-to-Know

Contractors and subcontractors are required to notify their workers of the history of the area and contamination that may be present and to be alert for evidence of contaminated soil and groundwater. The Contractor shall notify the Resident at least 72-hours prior to commencing any excavation.

The Contractor shall prepare a site specific Health and Safety Plan (HASP) for its workers and subcontractors who may work in the contaminated area of the site. A Qualified Health and Safety Professional shall complete the HASP. The HASP shall be submitted to the Authority in accordance with the Submittal section below. The Qualified Health and Safety Professional will be an expert in field implementation of the following federal regulations:

29 CFR 1910.120 or Hazardous Waste Operations, and
29 CFR 1926.65 Emergency Response

29 CFR 1910.134 Respiratory Protection 29

CFR 1926.650 Subpart D - Excavations 29

CFR 1926.651 General Requirements

29 CFR 1926.652 Requirements for Protective Systems

The Contractor shall designate a person to provide direct on-site supervision of the work in the contaminated area. This person shall have the training and medical surveillance under OSHA 1910.120 (e) and (f) respectively, as detailed above and in addition be qualified as a construction Competent Person [OSHA 1926.32 (f) and (l)]. It is the responsibility of this designated person to make those inspections necessary to identify situations that could result in hazardous conditions (e.g., possible cave-ins, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions), and then to ensure that corrective measures are taken.

Work inside contaminated trench sections may be subject to OSHA's permit-required confined space regulations under 29 CFR 1910.146.

Submittals. If contaminated soils are encountered the Contractor shall prepare and submit a site specific Health and Safety Plan (HASP) to the Resident for review, and receive approval, prior to completing any additional excavation work in the vicinity of the contaminated area. The Maine Turnpike and its Environmental Services Coordinator will review and comment on the HASP within five business days.

Health and Safety Monitoring. Within the contaminated area of the Project, the Contractor's designated person shall monitor the worker breathing zone for those constituents specified in the Contractor's HASP. The Contractor shall provide all required health and safety monitoring equipment.

03.07 Dewatering

Groundwater may be encountered during excavation for the foundation and utility work. If encountered and should its removal become necessary to complete work, it will be treated as "contaminated" water. The Contractor shall inform the Resident before any dewatering commences. The "contaminated" water shall be pumped into a temporary holding tank(s). The Contractor will be responsible for the procurement of any holding tank(s). Any testing, treatment and/or disposal of the stored, petroleum contaminated water shall be undertaken by the Contractor in accordance with applicable Federal, State and local regulatory requirements.

203.08 On-Site Water Storage Tanks - Materials

If dewatering within the identified contaminated area becomes necessary the holding tanks used for temporary storage of contaminated water pumped from excavations shall be contamination-free and sized appropriately for Contractor's storage, treatment, and disposal process.

203.09 Dust Control

The Contractor shall employ dust control measures to minimize the creation of airborne dust during construction within the contaminated area. As a minimum, standard dust control techniques shall be employed where heavy equipment and the public will be traveling. These may include techniques such as watering-down the site or spreading hygroscopic salts.

203.10 Method of Measurement

This work will be measured for payment as appropriate, and as approved by the Resident, if potentially contaminated soils are encountered on site.

Health and Safety Plan (HASP) will be measured for payment by the Lump Sum.

Disposal/Treatment of Special Excavation will be measured for payment by the Ton.

Disposal/Treatment of Groundwater will be measured for payment by the Gallon.

203.11 Basis of Payment

Health and Safety Plan (HASP) shall be paid for as part of the lump sum bid for the project.

Disposal/Treatment of Special Excavation (contaminated soils) will be paid for at the Contract unit price per Ton which payment shall be full compensation for excavating, loading, hauling, treatment, placing, grading and compacting, and all necessary equipment and labor. Only soil excavated from within the area shown on the plans or as designated by the Resident will be paid under this pay item.

Disposal/Treatment of Contaminated Groundwater will be paid for at the Contract unit price per Gallon which payment shall be full compensation for pumping excavations, loading hauling,

treatment, and all necessary equipment and labor. Only groundwater pumped, treated and disposed of properly from the site will be paid under this pay item. Any water that is not required to be treated will not be paid for. Contractor is to propose and submit for review measurement and calibration of meter for pumped water.

There will be no measurement for identification and environmental screening of contaminated soil material or groundwater (this will be done by the Resident or Authority's Environmental Services Coordinator).

Construction of a Temporary Secured Stockpile Area, or groundwater holding tank, if necessary, will not be measured separately for payment, but shall be incidental to Items 203.2312, 203.2333, and 203.2334.

Hauling Surplus contaminated soils to the Temporary Secure Stockpile area or placement and removal of contaminated soils in or out of the Temporary Secure Stockpile area will not be measured separately for payment, but shall be incidental to Items 203.2312, 203.2333, and 203.2334.

All hauling and any subsequent management/placement of contaminated soils and/or groundwater shall be incidental to Items 203.2312, 203.2333, and 203.2334.

There will be no separate measurement for additional laboratory testing of contaminated soil that is required by the landfill or treatment facility. Testing shall be incidental to Item 203.2333, and 203.2334.

Payment will be made under:

Pay Item		Pay Unit
203.2333	**Disposal/Treatment of Special Excavation**	**Ton**
203.2334	**Disposal/Treatment of Groundwater**	**Gallon**

SPECIAL PROVISION

SECTION 304

AGGREGATE BASE AND SUBBASE COURSES

The provisions of Section 304 of the Maine DOT Standard Specifications (November 2014) and the Maine Turnpike Authority 2016 Supplemental Specification shall apply with the following additions and modifications:

304.02 General

Sources of Aggregate and preliminary test results shall be submitted ten working days prior to any placement of material on the job. Failure of these preliminary tests will be grounds for rejection of material from that source. Aggregates will be tested on the job and shall meet these specifications as the material is incorporated into the work.

Back fill for foundations, slab base material and material below the footings and exterior entrance slabs and within the frost transition zone as shown in the typical sections should be clean, non-frost susceptible sand and gravel meeting the graduation requirements for structural fill.

Structural Fill	
Sieve Size	**Percent Finer by Weight**
4 inch	100
3 inch	90 to 100
¼ inch	25 to 90
No. 40	0 to 30
No. 200	0 to 6

304.06 Method of Measurement

These paragraphs shall be deleted in their entirety.

304.07 Basis of Payment

These paragraphs shall be deleted in their entirety and replaced with the following:

All work under Section 304, Aggregate Base and Subbase Course, shall be paid for as part of the lump sum bid for the project.

The costs for laboratory testing and source documentation shall be incidental to the project. The costs for all failing tests shall be the responsibility of the contractor.

No additional payment will be made for the temporary placement of gravels during construction.

SPECIAL PROVISION

SECTION 403

HOT MIX ASPHALT PAVEMENT

The provisions of Section 403 of the Maine DOT Standard Specifications (November 2014) and the Maine Turnpike Authority 2016 Supplemental Specification shall apply with the following additions and modifications:

Project Pavement

Course	HMA Grading	Item Number	Total Thickness	No. of Layers	Complimentary Notes
Base	**19.0mm**	**403.207**	**2 ½"**	**1**	**C,I**
Wearing	**12.5mm**	**403.208**	**1 ½"**	**1**	**C,I**

COMPLEMENTARY NOTES

A. The required PGAB for this mixture shall be **64E-28.**
B. RAP may not be used.
C. The MTA will conduct the job mix verification. The aggregate qualities shall meet the design traffic level of 3 to <10 million ESALS for mix placed under this contract. Minimum and Maximum PGAB content limits from 401.21 shall not apply.
D. The MTA will conduct the job mix verification. The aggregate qualities shall meet the design traffic level of 10 to <30 million ESALS for mix placed under this contract. The design verification, Quality Control, and Acceptance tests for this mix will be performed at **75 gyrations**. (N design)
E. A material transfer vehicle (MTV) shall be used for the placement of Hot Mix Asphalt wearing surface on all roadways including acceleration and deceleration lanes and all ramps.
F. Joints shall be constructed as the "notched wedge" type in accordance with Subsection 401.17.
G. Joint density will be measured in accordance with Subsection 401.165.
H. PGAB shall conform to the provisions of 403.02 – Polymer Modified PGAB for HMA
I. The contractor shall furnish a quality control technician equipped with an approved densometer to ensure density requirements are met.
J. Hydrated Lime shall be incorporated into the mixture.
K. The antistrip additive Zycotherm manufactured by Zydex Industries shall be incorporated into the PGAB at a rate of 0.1%.

403.04 Method of Measurement

These paragraphs shall be deleted in their entirety.

403.05 Basis of Payment

These paragraphs shall be deleted in their entirety and replaced with the following:

All work under Section 403, Hot Mix Asphalt Pavement, shall be paid for as part of the lump sum bid for the project.

SPECIAL PROVISION

SECTION 409

BITUMINOUS TACK COAT

The provisions of Section 409 of the Maine DOT Standard Specifications (November 2014) and the Maine Turnpike Authority 2016 Supplemental Specification shall apply with the following additions and modifications:

409.01 Description

This Subsection is deleted and replaced with the following:

This work consists of furnishing and applying one uniform application of RS-1 or RS-1h tack or an approved equal as indicated in this specification and as per manufacturers' recommendation. The application rate shall be 0.06 gal/yd^2.

A tack coat is required between pavement lifts as well as on all sawcut butt joints.

409.05 Equipment

Add "or as determined by the Resident", after the words "gal/yd^2]" in the fourth line of the second paragraph of this Subsection.

409.06 Preparation of Surface

The following paragraph is added:

All existing pavement and shoulder areas on which bituminous concrete mixtures are to be placed shall receive a tack coat. The surface area where the tack coat is to be applied shall be dry and cleaned of all dirt, sand, and loose material. Cleaning shall be accomplished by use of revolving brooms or mechanical sweepers. Undesirable material not removed by the above means shall be cleaned by hand sweeping or scraping, or a combination of both. Small areas otherwise inaccessible may be swept with hand brooms. The tack coat shall be applied only when the existing surface is dry.

409.08 Method of Measurement

These paragraphs shall be deleted in their entirety.

409.09 Basis of Payment

These paragraphs shall be deleted in their entirety and replaced with the following:

All work under Section 409, Bituminous Tack Coat, shall be paid for as part of the lump sum bid for the project.

SPECIAL PROVISION

SECTION 419

SAWING AND SEALING JOINTS IN BITUMINOUS PAVEMENT

(Sawing Bituminous Pavement)

419.01 Description

This work consists of sawing bituminous concrete pavement as shown on the Plans, as specified herein or as approved by the Resident.

419.02 General

The bituminous concrete pavement to be sawed shall be accurately marked before cutting. The marking shall be in accordance with the locations as shown on the Plans or as approved by the Resident. Cutting shall be with an approved power-driven saw with an abrasive blade.

Unless otherwise noted or directed, the sawcut shall be vertical, a minimum of 3/8 inch wide, and extend to the depth as shown on the Plans.

Residue or debris from the sawing operation shall be removed immediately and legally disposed of by the Contractor.

419.03 Method of Measurement

These paragraphs shall be deleted in their entirety.

419.04 Basis of Payment

These paragraphs shall be deleted in their entirety and replaced with the following:

All work under Section 419, Sawing and Sealing Joints in Bituminous Pavement, shall be paid for as part of the lump sum bid for the project.

SPECIAL PROVISION

SECTION 502

STRUCTURAL CONCRETE

(Concrete Propane Tank Pad)

502.01 Description

The following paragraphs are added:

The work shall consist of designing, fabricating and installing cast-in-place or precast concrete pads for the relocated propane tanks in accordance with these Specifications and in conformity with the lines, grades, and dimensions shown on the Plans.

All work shall be completed in accordance with Supplemental Specifications, Section 502, for cast-in-place concrete, and Standard Specifications, Section 534, for precast concrete.

The design and shop drawings for each slab shall be developed and stamped by a professional engineer licensed to practice in the State of Maine and shall be submitted to the Resident for review and approval. The Contractor shall have approved shop drawings prior to beginning any construction relative to this section.

All top and vertical surfaces of the slabs shall be coated with an approved Protective Coating for Concrete Surfaces meeting the requirements of the MTA's Supplemental Specifications, Section 515.

502.02 Materials

All concrete, whether precast or cast-in-place, shall be Class "AAA" meeting the requirements of the MTA's Supplemental Specifications, Section 502.

All reinforcing steel shall be epoxy coated meeting the requirements of Standard Specification, Section 503.

All anchorages and components permanently embedded in the slabs shall be hot dip galvanized after fabrication.

502.09 Design and Construction Requirements

The following subsection is added:

The slab and anchorage designs, whether precast or cast-in-place, shall be in accordance with the provisions of Standard Specification 534, Section 534.04. A subgrade modulus of 100 pounds per cubic inch shall be used unless an alternate value is submitted and approved.

For precast components all lifting devices on the top surface of the slab shall be hot dip galvanized and recessed into the slab. The lifting device recess shall be filled with an approved non-shrink repair material approved by the Resident.

502.18 Method of Measurement

These paragraphs shall be deleted in their entirety.

502.19 Basis of Payment

These paragraphs shall be deleted in their entirety and replaced with the following:

All work under Section 502, Structural Concrete, shall be paid for as part of the lump sum bid for the project.

SPECIAL PROVISION

SECTION 603

PIPE CULVERTS AND STORM DRAINS

(PVC Pipe)

The provisions of Section 603 of the Maine DOT Standard Specifications (November 2014) and the Maine Turnpike Authority 2016 Supplemental Specification shall apply with the following additions and modifications:

603.01 Description

The following paragraphs are added:

This work shall also consist of furnishing and installing various sizes of PVC pipe. No other pipe types within the Option III alternatives will be accepted.

603.02 Materials

All Polyvinylchloride pipe for storm water and drainage systems shall meet the requirements of Subsection 706.08.

603.11 Method of Measurement

These paragraphs shall be deleted in their entirety.

603.12 Basis of Payment

These paragraphs shall be deleted in their entirety and replaced with the following:

All work under Section 603, Pipe Culverts and Stormdrains, shall be paid for as part of the lump sum bid for the project.

SPECIAL PROVISION

SECTION 604

MANHOLES, INLETS AND CATCH BASINS

(6,000 Gallon Holding Tank and H-20 Oil/Water Separator)

The provisions of Section 604 of the Maine DOT Standard Specifications (November 2014) and the Maine Turnpike Authority 2016 Supplemental Specification shall apply with the following additions and modifications:

604.01 Description

This work shall consist of the construction and placement of various drainage structures.

The proposed holding tank shall contain a liquid capacity of 6,000 gallons by American Concrete or equivalent. Conform to the applicable requirements of ASTM C478. Concrete compressive strength shall be 5,000 psi at 28 days. Wire fabric for reinforcement shall conform to the requirements of ASTM A185 and steel reinforcement shall conform to the requirements of ASTM A615 with a minimum yield stress of 40,000 psi.

All joints shall be sealed with Tylox superseal rubber gasket or equivalent.

The contractor shall provide a licensed tank installer for the installation (of both the Oil/Water Separator and the 6,000 gallon Holding Tank) per Maine Department of Environmental Protection requirements.

If required, the Contractor is responsible for submitting all required paperwork to the Maine Turnpike Authority prior to filing with the Maine DEP.

Shop drawings for both the 6,000-gallon holding tank and the H-20 Oil/Water Separator shall be completed, submitted to, and accepted by the Resident prior to any work being completed relative to these items.

604.011 Oil/Water Separator Description:

The Contractor shall submit a shop drawing to the resident for approval for Item 604.159 Utility Vault (H-20 Oil/Water Separator) which shall meet the requirements listed herein:

- The Oil/Water separator shall perform its intended function and have pipe inlets/outlets within reasonable conformity with the special grading detail shown in the contract documents.
- The Oil/Water Separator shall have an approximate maximum volume of 400-500 gallons.
- Provide 30” diameter frame and cover on top of the structure with shiplap joints.
- Concrete: 5,000 PSI @ 28 days.
- Cement shall be type III per ASTM C150-81
- Reinforcing: Grade 60 Per ASTM A615.
- Design Loading: H-20 per ASTM C-478.
- Joints to be sealed watertight with Con-seal.
- Provide inlet/outlet pipe boots to fit 6” PVC pipe.
- Sealant inside or outside of the structure for waterproofing the concrete other than joints.

Example Oil/Water Separator that meets the requirements listed above:

- The George R. Roberts H-20 Oil/Water Separator.

604.02 Materials

Frame and Cover for Manhole and Holding tank shall be Neenah R-1156A or equivalent.

The frame, cover, and risers shall all be 30” in diameter for the 6,000-gallon holding tank as well as the H-20 oil/water separator.

The 18” manhole on the holding tank shall be Universal Multipurpose Manhole Model 98-1810 or approved equal.

604.05 Method of Measurement

These paragraphs shall be deleted in their entirety.

604.06 Basis of Payment

These paragraphs shall be deleted in their entirety and replaced with the following:

All work under Section 604, Manholes, Inlets, and Catch Basins, shall be paid for as part of the lump sum bid for the project.

SPECIAL PROVISION

SECTION 605

UNDERDRAINS

(4” Foundation Drains)

The provisions of Section 605 of the Maine DOT Standard Specifications (November 2014) and the Maine Turnpike Authority 2016 Supplemental Specification shall apply with the following additions and modifications:

605.01 Description

This work shall consist of the construction and placement of an underdrain system to be installed on the outside edge of perimeter footings as well as the drainpipe that outlets on the Northeast side slope of the building. The underdrain pipe should consist of 4-inch diameter, perforated SDR-35 foundation drainpipe bedded in Crushed Stone and wrapped in non-woven geotextile fabric. The underdrain pipe must have a positive gravity outlet protected from freezing, clogging and backflow. Surface grades should be sloped away from the building for positive surface water drainage. General underdrain details are illustrated on the “Foundation Detail Sketch” in the Explorations and Geotechnical Engineering Services Report completed by S.W. Cole Engineering.

605.02 Materials

The material used for all 4” Foundation Drains shall be perforated SDR-35.

605.06 Method of Measurement

These paragraphs shall be deleted in their entirety.

605.07 Basis of Payment

These paragraphs shall be deleted in their entirety and replaced with the following:

All work under Section 605, Underdrains, shall be paid for as part of the lump sum bid for the project.

SPECIAL PROVISION

SECTION 613

EROSION CONTROL BLANKET

The provisions of Section 613 of the Maine DOT Standard Specifications (November 2014) and the Maine Turnpike Authority 2016 Supplemental Specification shall apply with the following additions and modifications:

613.01 Description

This work shall also include seeding, mulching, and watering the side slopes and non-impervious areas as shown on the plans or directed by the Owner.

The following sentences are added:

Seeding shall meet the requirements of Section 618, Seeding, Method Number 2. Mulch shall meet the requirements of Section 619.

613.02 Materials

The following Subsection is added: 613.041 Maintenance and Acceptance

See Section 618.10 for maintenance and acceptance of seeding.

613.042 Mulch

All mulch shall be placed after the area has been seeded and prior to the installation of the Erosion Control Blanket.

613.08 Method of Measurement

These paragraphs shall be deleted in their entirety.

613.09 Basis of Payment

These paragraphs shall be deleted in their entirety and replaced with the following:

All work under Section 613, Stone Fill, Riprap, Stone Blanket, and Stone Ditch Protection, shall be paid for as part of the lump sum bid for the project.

SPECIAL PROVISION

SECTION 631

EQUIPMENT RENTAL

The provisions of Section 631 of the Standard Specifications shall apply with the following additions and modifications:

These items will only be used at the discretion of the Authority's Representative.

627.08 Basis of Payment

Payment will be made under:

Pay Item		**Pay Unit**
631.12	All Purpose Excavator (Including Operator)	Hour
631.13	Bulldozer (Including Operator)	Hour
631.172	Truck – Large (Including Operator)	Hour
631.22	Front End Loader (Including Operator)	Hour
631.36	Foreman	Hour
631.37	Laborer	Hour

SPECIAL PROVISION

SECTION 633

UTILITY – PROPANE
(Propane System)

633.01 Description

New Propane Tanks

Work shall include the connection/hookup and installation of propane gas service from the propane tanks (noted on the plans) to the proposed 6-bay maintenance garage. This work will include excavating, hauling, disposing, backfilling, and compacting of all materials for the construction of the proposed utility trench in reasonably close conformity with the lines, grades, thickness, and details shown on the Plans. This work shall also include laying the pipe, installing all fittings and valves, testing the system, and connecting to the proposed maintenance garage. The contractor shall install a complete and functioning system as approved by the MTA propane supplier.

General Information

Propane tanks, unless otherwise specified on the plans, shall be supplied by the Contractor and shall be new.

The contractor shall be responsible for the installation of all propane tanks and all propane lines.

The contractor shall coordinate this work with the MTA propane supplier. The MTA propane supplier shall inspect and accept the lines that have been installed prior to backfilling the trenches.

633.02 Materials

The Propane Service Line shall be ½" HDPE distribution pipe meeting the requirements of ASTM D2513. Tracer wire shall be installed in all service trenches in accordance with the detail provided in the Plans.

Backfilling shall consist of placing suitable material in all spaces excavated and not occupied by the utility lines up to the loam and/or pavement subbase elevation. Backfill shall be excavated material or select backfill as directed by the engineer, placed at or near optimum moisture content and shall not contain stones larger than three inches, frozen lumps, chunks of clay, organic matter, or other objectionable material.

Sand borrow bedding material shall meet the requirements of Subsection 703.01.

Tanks shall use American Welding and ASME Tank or approved equal.

633.03 Construction

The Contractor shall coordinate the construction of the utility trench with the Authority's propane supplier, and the resident/inspector. Backfill shall be in accordance with Section 206, Structural Excavation. Propane gas lines shall be furnished, installed, and tested by the Contractor. The Authority's propane gas supplier shall inspect the lines prior to backfilling. Excavation, bedding and backfill shall be completed by the Contractor. The Contractor is required to give a 10-day notice to the MTA/Propane supplier for inspection.

Warning tapes shall be a metallic/detectable type made of solid yellow film with continuously printed black-letter caption: "CAUTION—PROPANE GAS BURIED BELOW". The warning tape shall be acid and alkali-resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, six inches wide and four mils thick, continuously inscribed with a description of the utility.

633.04 Method of Measurement

These paragraphs shall be deleted in their entirety.

633.05 Basis of Payment

These paragraphs shall be deleted in their entirety and replaced with the following:

All work under Section 633, Utility-Propane, shall be paid for as part of the lump sum bid for the project.

SPECIAL PROVISION

SECTION 800

Vehicle Storage Garage

800.1 Description

Division 800 specifies materials, procedures, and requirements for the construction of the York Vehicle Storage Garage, complete with all appurtenances, including any and all associated utilities and services within the limits as shown on the Drawings.

The Contractor shall submit to the Resident for approval a cost breakdown of the major components of work for the York Vehicle Storage Garage by standard specification Division lines items from 01 to 41. This breakdown will be used as a basis for monthly pay estimates.

A building walk-thru shall occur 30 days prior to anticipated completion of the building. Contractor shall allow the MTA access to the new building to furnish and install necessary equipment for toll operations. This shall be one week prior to the completion of the building.

The Contractor shall ensure and be responsible for the total and complete coordination of all work in the York Vehicle Storage Garage. The Contractor shall generate coordination drawings for the Building. Coordination drawings shall:

1. Be computer generated.
2. Show a dimensionally accurate representation of all equipment that was approved by the shop drawing process.
3. Show architectural features, structural features, piping, conduit, ductwork, and any other items that require coordination which shall be accurately sized.
4. Be submitted to and approved by the MTA prior to the purchasing of any approved equipment.

800.2 Work Included

The work consists of the following:

1. Construction of an approximate 6,600 square foot pre-engineered building consisting of six (6) equipment storage garage bays.

Construction includes, but is not necessarily limited to, the following:

· The work includes all building structure, mechanical, electrical, and plumbing, as well as all site work, grading, pavement, lighting, utilities, and all other work incidental thereto in accordance with the Plans and Specifications.

· Excavating, filling and backfilling for building utilities, services, foundations.

· Construction of reinforced concrete footings, pier, foundation walls, and slabs-on-grade including exterior concrete aprons and entry foundation/slab systems.

- Construction of the Garage proper, including all equipment and interior and exterior finishes.

- Furnishing and installing plumbing, heating, electrical, and telephone, complete with all appurtenances and accessories.

- Coordinating with the utility to provide a transformer and connections.

- Furnishing and installing secondary power conduit and wiring from the nearby utility transformer to the building including trenching and backfilling, conduit, wire, supports, brackets, junction boxes, etc. required to provide all work.

Note: The conduits outside of these limits are paid for separately.

800.3 Method of Measurement

The York Vehicle Storage Garage will be measured for payment by the lump sum, complete and accepted.

The horizontal pay limit shall within 5 feet of the defined perimeter of the building, entries and concrete aprons. The vertical pay limit for this work shall be above the bottom of footing level or bottom of footing subbase, if required.

All work within this pay limit, including utilities, excavation, backfilling, etc., will be included in this pay item. Work outside of the horizontal pay limit shall be performed under other portions of the Contract documents with the exception of:

- All work associated with the installation of the utility transformer and secondary service line into the building.

The work described above which shall be included in the Building pay item.

800.4 Basis of Payment

Building construction will be paid for at the lump sum price bid which shall be full compensation for the cost of furnishing all materials, equipment, supplies, tools, incidentals, labor and supervision necessary to satisfactorily complete the work in all respects, to the satisfaction of the Resident.

Mobilization shall not be within the lump sum pay limit but will be paid for and meet the specifications of pay item 659.10.

Payment will be made under:

Pay Item		Pay Unit
800.01	York Vehicle Storage Garage	Lump Sum

SPECIAL PROVISIONS

SECTION 800

Concrete Pads
(Propane Tank Pad)

800.01 Description

This work shall consist of installing precast concrete propane tank pads for proposed propane tanks as detailed in the project and these specifications.

Shop drawings for the Precast Concrete Propane Tank Pads shall be stamped by a professional engineer and submitted to the Resident and the MTA for review/approval. The contractor must have approved shop drawings prior to any work being completed relative to this section.

800.02 Materials

Concrete shall be Class “A” concrete (4000 PSI) and shall meet the requirements of Section 502.

Reinforcing steel shall meet the requirements of Section 503.

800.03 Method of Measurement

These paragraphs shall be deleted in their entirety.

800.04 Basis of Payment

These paragraphs shall be deleted in their entirety and replaced with the following:

All work under Section 800, Concrete Pads, shall be paid for as part of the lump sum bid for the project.

SPECIAL PROVISIONS

SECTION 822

WATER SERVICE SUPPLY
(1 ¼" Water Service)

822.01 Description

This work shall consist of installing water service supply lines in reasonably close conformity with the lines and grades shown on the plans or established. The installation shall include the assembly of all components and materials shown on the plans or as directed.

822.02 General

The work in this Section shall also include the following:

- Furnishing and installation of pipe, tubing, valves, service boxes, fittings, insulation, tapping, and any required accessories for a complete water service supply.
- Connection to proposed well system.
- Testing.

822.03 Materials

Water Service Supply Lines

Water service supply lines shall be high density polyethylene plastic tubing and conform to AWWA standard C901-02 (PE 3608 Pressure Class 200), ASTM D3350, ASTM D2737 and be clearly marked. The product shall be rated for a minimum 200 working PSI and the standard dimension ratio (SDR) shall not exceed 9 for tubing size.

Tubing shall be approved for potable water service by the National Sanitation Foundation (NSF) and bear the NSF seal. Stainless steel inserts shall be used at all connections.

Necessary fittings, adaptors and reducers shall be furnished as required.

Fittings

All fittings shall be compression type, designed for use with high density polyethylene plastic tubing (CTS).

Bedding

Bedding material for water service supply lines shall be screened sand consisting of clean, inert, hard, durable grains of quartz or other hard, durable rock, free from loam, clay, surface coatings, frozen or deleterious materials and in conformance with the following gradation:

Sieve (ASTM D422)	Percent Passing by Weight
No. 4	100
No. 8	80 - 95
No. 16	55 - 85
No. 50	0 - 35
No. 200	0 - 5

Bedding material for water service supply lines shall be compacted to a minimum of 92% of the laboratory derived Maximum Density Values at optimum moisture content as determined by ASTM D1557, Method C.

822.04 Installation Service Pipe

Care shall be exercised in placing and laying of services to prevent kinks or sharp bends and to prevent contact with sharp stones or ledge which would damage to the pipe. At least 6 inches of sand shall be placed adjacent to, under, and above the pipe, and no stone larger than 2 inches shall be placed over the pipe until the depth of backfill above the pipe is in excess of 1 foot.

Separation from Structures

Whenever possible, water pipes shall maintain a minimum distance of three (3) feet from underground adjacent unheated structures, such as manholes, catch basins, retaining walls, bridge abutments, parking garages, etc.

When spacing described above is not possible, Contractor shall provide insulation for the water pipe for a minimum of three (3) feet beyond the limits of the adjacent structure.

Testing

Hydrostatic pressure and leakage test shall be conducted in accordance with AWWA Standard C600 Standards. Testing shall be conducted by a certified independent water testing company.

Flushing the System

Before the pipe is placed into service and is accepted for payment, the Contractor shall flush the pipe at a minimum rate of 6 gallons per minute for 15 minutes or until the water is clean and free from discoloration and or debris whichever is longer. The contractor shall coordinate with the resident and MTA to ensure that they are on site during this process to ensure the water is clear of debris prior to accepting the work.

822.05 Method of Measurement

These paragraphs shall be deleted in their entirety.

822.06 Basis of Payment

These paragraphs shall be deleted in their entirety and replaced with the following: All work under Section 822, Water Service Supply Line, shall be paid for as part of the lump sum bid for the project.

SPECIAL PROVISION

SECTION 832

SITE BOLLARDS

832.01 Description

This work shall consist of furnishing and installing Type A Steel Site Bollards with cast in place concrete base with a chamfer edge, 6" schedule 80 steel pipe filled with concrete, and plastic yellow sleeve in accordance with these specifications, and as shown on the Plans.

Shop drawings for **the bollards** shall be completed, submitted to and accepted by the Resident prior to any work being completed relative to this item.

832.02 Materials

Concrete shall be Class "A" concrete (3000 PSI) and shall meet the requirements of Section 502.

Yellow sleeves are available from the sources noted on the plans or an approved equal.

832.03 Method of Measurement

These paragraphs shall be deleted in their entirety.

832.04 Basis of Payment

These paragraphs shall be deleted in their entirety and replaced with the following:

All work under Section 832, Site Bollards, shall be paid for as part of the lump sum bid for the project.

MAINE TURNPIKE AUTHORITY

SPECIFICATIONS

PART III – DIVISION 800

YORK VEHICLE STORAGE GARAGE

Issued for Bid
March 28, 2023

CONTRACT 2023.06

DIVISION 800 - TABLE OF CONTENTS

The specification sections listed below, and all State of Maine Department of Transportation "Standard Specifications for Highways and Bridges" referenced therein, comprise Division 800:

SPECIFICATIONS GROUP

DIVISION 23 - HEATING, VENTILATING, AND AIR CONDITIONING (HVAC)

DIVISION 26 – ELECTRICAL

DIVISION 33 – WATER SUPPLY

DRAWING LIST

SHEET NO.	DESCRIPTION
CIVIL:	
G-000	COVER SHEET
C-001	GENERAL NOTES – ADDENDUM 2
C-002	EXISTING CONDITIONS AND REMOVALS PLAN – ADDENDUM 4
C-100	SEWER AND WELL SEPARATION PLAN – ADDENDUM 4
C-101	SITE AND UTILITY PLAN – ADDENDUM 4
C-102	GRADING, DRAINAGE, EROSION CONTROL PLAN – ADDENDUM 2
C-401	DETAILS-1 – ADDENDUM 4
C-402	DETAILS-2 – ADDENDUM 2
C-403	GENERAL NOTES AND DETAILS-3 – ADDENDUM 4
C-404	TYPICAL SECTIONS
ARCHITECTURAL	
A-0	ARCHITECTURAL COVER SHEET – ADDENDUM 2
A-1	CODE COMPLIANCE PLANS & FIRST FLOOR PLAN – ADDENDUM 2
A-2	ROOF PLAN & DETAILS
A-3	ELEVATIONS – ADDENDUM 2
A-4	BUILDING SECTIONS – ADDENDUM 2
A-5	WALL SECTIONS – ADDENDUM 2
A-6	DOOR, WINDOW & FINISH SCHEDULES
A-7	DETAILS
A-8	ACCESSIBILITY DETAILS & NOTES
STRUCTURAL	
S-000	STRUCTURAL – GENERAL INFORMATION
S-100	STRUCTURAL – FOUNDATION PLAN
SB-500	STRUCTURAL - FOUNDATION DETAILS
SB-501	STRUCTURAL - FOUNDATION DETAILS
PLUMBING	
P-000	PLUMBING AND HVAC NOTES, LEGEND AND ABBREVIATIONS
PL-100	SANITARY PIPING PLAN
PP-100	DOMESTIC PIPING PLAN – ADDENDUM 4
MECHANICAL	
MH-100	MECHANICAL PLAN – ADDENDUM 2
ELECTRICAL	
ES100	ELECTRICAL SITE PLAN
E000	ELECTRICAL LEGENDS
E001	ELECTRICAL GENERAL NOTES AND SCHEDULES
EL100	LIGHTING PLAN – ADDENDUM 4
ES100	ELECTRICAL SITE PLAN – ADDENDUM 4
EP100	POWER AND SYSTEMS PLAN – ADDENDUM 4
EP500	POWER RISER DIAGRAM – ADDENDUM 4

SECTION 012100 – ALLOWANCES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements governing allowances.

1. Certain items are specified in the Contract Documents by allowances. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when direction will be provided to the Contractor. If necessary, additional requirements will be issued by Change Order.

B. Types of allowances include the following:

1. Contingency allowances.

C. Related Requirements:

1. Section 260100 – “Basic Electrical Requirements” for procedures for using unit prices, including adjustment for procedures governing the use of allowances for field testing by an independent testing agency.

1.2 DEFINITIONS

A. Allowance: A quantity of work or dollar amount included in the Contract, established in lieu of additional requirements, used to defer selection of actual materials and equipment to a later date when direction will be provided to Contractor. If necessary, additional requirements will be issued by Change Order.

1.3 SELECTION AND PURCHASE

A. At the earliest practical date after award of the Contract, advise Authority of the date when final Work described by an allowance must be completed to avoid delaying the Work.

1.4 SUBMITTALS

A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.

B. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.

C. Submit time sheets and other documentation to show labor time and cost for installation of allowance items that include installation as part of the allowance.

D. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.5 CONTINGENCY ALLOWANCES

A. Use the contingency allowance only as directed by Authority for Owner's purposes and only by Change Orders that indicate amounts to be charged to the allowance.

B. Contractor's related costs for products and equipment ordered by Owner under the contingency allowance are included in the allowance and are not part of the Contract Sum. These costs include delivery, installation, taxes, insurance, equipment rental, and similar costs.

C. Change Orders authorizing use of funds from the contingency allowance will include Contractor's related costs and reasonable overhead and profit.

D. At Project closeout, credit unused amounts remaining in the contingency allowance to Owner by Change Order.

1.6 COORDINATION

A. Coordinate allowance items with other portions of the Work. Furnish templates as required to coordinate installation.

1.7 ADJUSTMENT OF ALLOWANCES

A. Allowance Adjustment: To adjust allowance amounts, prepare a Change Order proposal based on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place where applicable. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.

1. Submit substantiation of a change in scope of work, if any, claimed in Change Orders related to unit-cost allowances.
2. Owner reserves the right to establish the quantity of work-in-place by independent quantity survey, measure, or count.
3. Do not include Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of work has changed from what could have been foreseen from information in the Contract Documents.

B. Submit claims for increased costs due to a change in the scope or nature of the allowance described in the Contract Documents, whether for the purchase order amount or Contractor's handling, labor, installation, overhead, and profit.

1. Do not include Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of Work has changed from what could have been foreseen from information in the Contract Documents.
2. No change to Contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.3 SCHEDULE OF ALLOWANCES

A. Allowance No. 1 - **$5,000** Carry in the base bid Central Maine Power Company utility construction charges for electrical services as specified in Division 26 Section “Basic Electrical Requirements.”

END OF SECTION 012100

SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Demolition and removal of selected portions of building or structure.
2. Demolition and removal of selected site elements.
3. Salvage of existing items to remain Owner’s property.

B. Related Requirements:

1. Section 011000 "Summary" for restrictions on use of the premises, Owner-occupancy requirements, and phasing requirements.

1.3 DEFINITIONS

A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to be salvaged or reinstalled.

B. Remove and Salvage: Detach items from existing construction, in a manner to prevent damage, and **deliver to Owner**.

C. Remove and Reinstall: Detach items from existing construction, in a manner to prevent damage, prepare for reuse, and reinstall where indicated.

D. Existing to Remain: Leave existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.

E. Dismantle: To remove by disassembling or detaching an item from a surface, using gentle methods and equipment to prevent damage to the item and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

1.4 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition waste becomes property of Contractor.

1.5 PREINSTALLATION MEETINGS

A. Predemolition Conference: Conduct conference at **Project site**.

1. Inspect and discuss condition of construction to be selectively demolished.
2. Review structural load limitations of existing structure.
3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
5. Review areas where existing construction is to remain and requires protection.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For refrigerant recovery technician.

B. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property **for dust control and for noise control**. Indicate proposed locations and construction of barriers.

C. Schedule of Selective Demolition Activities: Indicate the following:

1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.
2. Interruption of utility services. Indicate how long utility services will be interrupted.
3. Coordination for shutoff, capping, and continuation of utility services.

1.7 CLOSEOUT SUBMITTALS

A. Inventory: Submit a list of items that have been removed and salvaged.

1.8 FIELD CONDITIONS

A. Owner will occupy portions of property immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.

B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.

1. Hazardous materials will be removed by Owner before start of the Work.

2. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

E. Storage or sale of removed items or materials on-site is not permitted.

F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

1.9 COORDINATION

A. Arrange selective demolition schedule so as not to interfere with Owner's operations.

B. Phase the demolition work as required to maintain temporary service on line until new service is operational, to the extent practical. The temporary electrical shed shall be dismantled following the installation of the new DP panel to maintain the power connection as long as possible. Refer to Civil and Electrical Site Drawings for additional requirements.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Standards: Comply with ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped before starting selective demolition operations.

B. Verify that hazardous materials have been remediated before proceeding with building demolition operations.

C. Survey of Existing Conditions: Record existing conditions by use of **preconstruction photographs or video**.
1. Inventory and record the condition of items to be removed and salvaged. Provide photographs or video of conditions that might be misconstrued as damage caused by salvage operations.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Refer to Civil and Electrical Site drawings for additional requirements.

B. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.

C. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off utility services and mechanical/electrical systems serving areas to be selectively demolished.

1. Owner will arrange to shut off indicated services/systems when requested by Contractor.
2. Arrange to shut off utilities with utility companies.
3. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
4. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated on Drawings to be removed.

    a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
    b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material and leave in place.
    c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
    d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.

3.3 PROTECTION

A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of the property.

B. Remove temporary barricades and protections where hazards no longer exist.

3.4 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Proceed with selective demolition systematically, from higher to lower level.
2. Do not use cutting torches until work area is cleared of flammable materials. Maintain portable fire-suppression devices during flame-cutting operations.
3. Maintain fire watch during and for at least 2 hours after flame-cutting operations.

4. Maintain adequate ventilation when using cutting torches.
5. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
6. Dispose of demolished items and materials promptly.

B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

C. Removed and Salvaged Items:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Transport items to Owner's storage area **on-site**.
4. Protect items from damage during transport and storage.

D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition.

3.5 DISPOSAL OF DEMOLISHED MATERIALS

A. Remove demolition waste materials from Project site.

1. Do not allow demolished materials to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Burning: Do not burn demolished materials.

3.6 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

3.7 SELECTIVE DEMOLITION SCHEDULE

A. Remove: Existing generator shed above-pad structure in its entirety.

B. Existing to Remain: Existing generator shed concrete pad.

C. Dismantle: Existing temporary electrical shed. Stack on-site for Owner.

END OF SECTION 024119

SECTION 263213 - ENGINE GENERATORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes packaged engine-generator sets for emergency power supply with the following features:

1. Diesel engine.
2. Unit-mounted cooling system.
3. Unit-mounted control and monitoring.
4. Outdoor enclosure.

B. Related Sections include the following:

1. Section 263600 "Transfer Switches" for transfer switches including sensors and relays to initiate automatic-starting and -stopping signals for engine-generator sets.

1.3 DEFINITIONS

A. Operational Bandwidth: The total variation from the lowest to highest value of a parameter over the range of conditions indicated, expressed as a percentage of the nominal value of the parameter.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of packaged engine generator indicated. Include rated capacities, operating characteristics, and furnished specialties and accessories. In addition, include the following:

1. Thermal damage curve for generator.
2. Time-current characteristic curves for generator protective device.

B. Shop Drawings: Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.

1. Dimensioned outline plan and elevation drawings of engine-generator set and other components specified.

2. Design Calculations: Signed and sealed by a qualified professional engineer. Calculate requirements for selecting vibration isolators and seismic restraints and for designing vibration isolation bases.
3. Vibration Isolation Base Details: Signed and sealed by a qualified professional engineer. Detail fabrication, including anchorages and attachments to structure and to supported equipment. Include base weights.
4. Wiring Diagrams: Power, signal, and control wiring.

1.5 INFORMATIONAL SUBMITTALS

A. Manufacturer Seismic Qualification Certification: Submit certification that engine-generator set, batteries, battery racks, accessories, and components will withstand seismic forces defined in Section 260548 "Vibration and Seismic Controls for Electrical Systems." Include the following:

1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.

a. The term "withstand" means "the unit will remain in place without separation of any parts from the device when subjected to the seismic forces specified and the unit will be fully operational after the seismic event."

2. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.
3. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.

B. Qualification Data: For installer and manufacturer.

C. Source quality-control test reports.

1. Certified summary of prototype-unit test report.
2. Certified Test Reports: For components and accessories that are equivalent, but not identical, to those tested on prototype unit.
3. Certified Summary of Performance Tests: Certify compliance with specified requirement to meet performance criteria for sensitive loads.
4. Report of factory test on units to be shipped for this Project, showing evidence of compliance with specified requirements.
5. Report of sound generation.
6. Report of exhaust emissions showing compliance with applicable regulations.
7. Certified Torsional Vibration Compatibility: Comply with NFPA 110.

D. Field quality-control test reports.

E. Warranty: Special warranty specified in this Section.

1.6 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For packaged engine generators to include in emergency, operation, and maintenance manuals. In addition to items specified in Section 017823 "Operation and Maintenance Data," include the following:

1. List of tools and replacement items recommended to be stored at Project for ready access. Include part and drawing numbers, current unit prices, and source of supply.

1.7 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Fuses: One for every 10 of each type and rating, but no fewer than one of each.
2. Filters: One set each of lubricating oil, fuel, and combustion-air filters.

1.8 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.

1. Maintenance Proximity: Not more than four hours' normal travel time from Installer's place of business to Project site.
2. Engineering Responsibility: Preparation of data for vibration isolators and seismic restraints of engine skid mounts, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.

B. Manufacturer Qualifications: A qualified manufacturer. Maintain, within 100 miles of Project site, a service center capable of providing training, parts, and emergency maintenance repairs.

C. Source Limitations: Obtain packaged generator sets and auxiliary components through one source from a single manufacturer.

D. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

E. Comply with ASME B15.1.

F. Comply with NFPA 37.

G. Comply with NFPA 70.

H. Comply with UL 2200.

I. Engine Exhaust Emissions: Comply with applicable state and local government requirements.

J. Noise Emission: Comply with 72 dB(A) @ 23’ under full load for maximum noise level due to sound emitted by generator set including engine, engine exhaust, engine cooling-air intake and discharge, and other components of installation.

1.9 PROJECT CONDITIONS

A. Interruption of Existing Electrical Service: Do not interrupt electrical service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary electrical service according to requirements indicated:

1. Notify Owner no fewer than five days in advance of proposed interruption of electrical service.
2. Do not proceed with interruption of electrical service without Owner's written permission.

B. Environmental Conditions: Engine-generator system shall withstand the following environmental conditions without mechanical or electrical damage or degradation of performance capability:

1. Ambient Temperature: Minus 15 to plus 40 deg C.
2. Relative Humidity: 0 to 95 percent.
3. Altitude: Sea level to 1000 feet (300 m).

1.10 COORDINATION

A. Coordinate size and location of concrete bases for package engine generators. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified with concrete.

B. Selective Coordination: Emergency system overcurrent protective devices shall provide selective coordination as required by code between the emergency source and downstream devices. Coordinate overcurrent protective devices specified in this section with those specified in other division 26 sections to achieve selective coordination.

1.11 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of packaged engine generators and associated auxiliary components that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Five years from date of Substantial Completion.

1.12 MAINTENANCE SERVICE

A. Initial Maintenance Service: Beginning at Substantial Completion, provide 12 months' full maintenance by skilled employees of manufacturer's designated service organization. Include

quarterly exercising to check for proper starting, load transfer, and running under load. Include routine preventive maintenance as recommended by manufacturer and adjusting as required for proper operation. Provide parts and supplies same as those used in the manufacture and installation of original equipment.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis-of-Design Product: Subject to compliance with requirements, provide equipment and services as manufactured by Kohler Co.; Generator Division or a comparable product by one of the following or approved equal:

1. Onan/Cummins Power Generation; Industrial Business Group.
2. Caterpillar, Inc.

2.2 ENGINE-GENERATOR SET

A. Factory-assembled and -tested, engine-generator set.

B. Mounting Frame: Maintain alignment of mounted components without depending on concrete foundation; and have lifting attachments.

1. Rigging Diagram: Inscribed on metal plate permanently attached to mounting frame to indicate location and lifting capacity of each lifting attachment and generator-set center of gravity.

C. Capacities and Characteristics:

1. Power Output Ratings: 80kW @ .8 PF, 240 volts, 1 phase.
2. Output Connections: 120/240 volts, single phase, three wire.
3. Nameplates: For each major system component to identify manufacturer's name and address, and model and serial number of component.

D. Generator-Set Performance:

1. Steady-State Voltage Operational Bandwidth: 3 percent of rated output voltage from no load to full load.
2. Transient Voltage Performance: Not more than 20 percent variation for 50 percent step-load increase or decrease. Voltage shall recover and remain within the steady-state operating band within three seconds.
3. Steady-State Frequency Operational Bandwidth: 0.5 percent of rated frequency from no load to full load.
4. Steady-State Frequency Stability: When system is operating at any constant load within the rated load, there shall be no random speed variations outside the steady-state operational band and no hunting or surging of speed.

5. Transient Frequency Performance: Less than 5 percent variation for 50 percent step-load increase or decrease. Frequency shall recover and remain within the steady-state operating band within five seconds.
6. Output Waveform: At no load, harmonic content measured line to line or line to neutral shall not exceed 5 percent total and 3 percent for single harmonics. Telephone influence factor, determined according to NEMA MG 1, shall not exceed 50 percent.
7. Sustained Short-Circuit Current: For a 3-phase, bolted short circuit at system output terminals, system shall supply a minimum of 300 percent of rated full-load current for not less than 10 seconds and then clear the fault automatically, without damage to generator system components.
8. Start Time: Comply with NFPA 110, Type 10, system requirements.

2.3 ENGINE

A. Fuel: Fuel oil, Grade DF-2

1. Ultra Low Sulphur content as required by the State of Maine

B. Rated Engine Speed: 1800 rpm.

C. Maximum Piston Speed for Four-Cycle Engines: 2250 fpm (11.4 m/s).

D. Lubrication System: The following items are mounted on engine or skid:

1. Filter and Strainer: Rated to remove 90 percent of particles 5 micrometers and smaller while passing full flow.
2. Thermostatic Control Valve: Control flow in system to maintain optimum oil temperature. Unit shall be capable of full flow and is designed to be fail-safe.
3. Crankcase Drain: Arranged for complete gravity drainage to an easily removable container with no disassembly and without use of pumps, siphons, special tools, or appliances.

E. Engine Fuel System:

1. Main Fuel Pump: Mounted on engine. Pump ensures adequate primary fuel flow under starting and load conditions.
2. Relief-Bypass Valve: Automatically regulates pressure in fuel line and returns excess fuel to source.

F. Coolant Jacket Heater: Electric-immersion type, factory installed in coolant jacket system. Comply with NFPA 110 requirements for Level 1 equipment for heater capacity.

G. Governor Adjustable isochronous, with speed sensing.

H. Cooling System: Closed loop, liquid cooled, with radiator factory mounted on engine-generator-set mounting frame and integral engine-driven coolant pump.

1. Coolant: Solution of 50 percent ethylene-glycol-based antifreeze and 50 percent water, with anticorrosion additives as recommended by engine manufacturer.

2. Size of Radiator: Adequate to contain expansion of total system coolant from cold start to 110 percent load condition.
3. Expansion Tank: Constructed of welded steel plate and rated to withstand maximum closed-loop coolant system pressure for engine used. Equip with gage glass and petcock.
4. Temperature Control: Self-contained, thermostatic-control valve modulates coolant flow automatically to maintain optimum constant coolant temperature as recommended by engine manufacturer.
5. Coolant Hose: Flexible assembly with inside surface of nonporous rubber and outer covering of aging-, ultraviolet-, and abrasion-resistant fabric.

    a. Rating: 50-psig (345-kPa) maximum working pressure with coolant at 180 deg F (82 deg C), and noncollapsible under vacuum.
    b. End Fittings: Flanges or steel pipe nipples with clamps to suit piping and equipment connections.

I. Muffler/Silencer: Critical type, sized as recommended by engine manufacturer and selected with exhaust piping system to not exceed engine manufacturer's engine backpressure requirements.

1. Minimum sound attenuation of 25 dB at 500 Hz.
2. Sound level measured at a distance of 10 feet (3 m) from exhaust discharge after installation is complete shall be 85 dBA or less.

J. Air-Intake Filter: Heavy-duty, engine-mounted air cleaner with replaceable dry-filter element and "blocked filter" indicator.

K. Starting System: 24-V electric, with negative ground.

1. Components: Sized so they will not be damaged during a full engine-cranking cycle with ambient temperature at maximum specified in Part 1 "Project Conditions" Article.
2. Cranking Motor: Heavy-duty unit that automatically engages and releases from engine flywheel without binding.
3. Cranking Cycle: As required by NFPA 110 for system level specified
4. Battery: Adequate capacity within ambient temperature range specified in Part 1 "Project Conditions" Article to provide specified cranking cycle at least three times without recharging.
5. Battery Cable: Size as recommended by engine manufacturer for cable length indicated. Include required interconnecting conductors and connection accessories.
6. Battery Rack: Factory fabricated of metal with acid-resistant finish. Thermostatically controlled heater shall be arranged to maintain battery above 10 deg C regardless of external ambient temperature within range specified in Part 1 "Project Conditions" Article. Include accessories required to support and fasten batteries in place.
7. Battery-Charging Alternator: Factory mounted on engine with solid-state voltage regulation and 35-A minimum continuous rating.
8. Battery Charger: Current-limiting, automatic-equalizing and float-charging type. Unit shall comply with UL 1236 and include the following features:

    a. Operation: Equalizing-charging rate of 10 A shall be initiated automatically after battery has lost charge until an adjustable equalizing voltage is achieved at battery

terminals. Unit shall then be automatically switched to a lower float-charging mode and shall continue to operate in that mode until battery is discharged again.

b. Automatic Temperature Compensation: Adjust float and equalize voltages for variations in ambient temperature from minus 40 deg C to plus 60 deg C to prevent overcharging at high temperatures and undercharging at low temperatures.
c. Automatic Voltage Regulation: Maintain constant output voltage regardless of input voltage variations up to plus or minus 10 percent.
d. Ammeter and Voltmeter: Flush mounted in door. Meters shall indicate charging rates.
e. Safety Functions: Sense abnormally low battery voltage and close contacts providing low battery voltage indication on control and monitoring panel. Sense high battery voltage and loss of ac input or dc output of battery charger. Either condition shall close contacts that provide a battery-charger malfunction indication at system control and monitoring panel.
f. Enclosure and Mounting: NEMA 250, Type 1, wall-mounted cabinet.

2.4 FUEL OIL STORAGE

A. Comply with NFPA 30.

B. Base-Mounted Fuel Oil Tank: Factory installed and piped, complying with UL 142 fuel oil tank. Features include the following:

1. Tank level indicator.
2. Capacity: Greater of 300 gallons or Fuel for twenty four (24) hours' continuous operation at 100 percent rated power output whichever is higher amount of gallons.
3. Vandal-resistant fill cap, or within lockable generator enclosure.
4. Containment Provisions: Comply with requirements of authorities having jurisdiction.
5. Division 26 shall provide full tank at job completion after testing is completed.

2.5 CONTROL AND MONITORING

A. Automatic Starting System Sequence of Operation: When mode-selector switch on the control and monitoring panel is in the automatic position, remote-control contacts in one or more separate automatic transfer switches initiate starting and stopping of generator set. When mode-selector switch is switched to the on position, generator set starts. The off position of same switch initiates generator-set shutdown. When generator set is running, specified system or equipment failures or derangements automatically shut down generator set and initiate alarms. Operation of a remote emergency-stop switch also shuts down generator set.

B. Manual Starting System Sequence of Operation: Switching on-off switch on the generator control panel to the on position starts generator set. The off position of same switch initiates generator-set shutdown. When generator set is running, specified system or equipment failures or derangements automatically shut down generator set and initiate alarms. Operation of a remote emergency-stop switch also shuts down generator set.

C. Configuration: Operating and safety indications, protective devices, basic system controls, and engine gages shall be grouped in a common control and monitoring panel mounted on the generator set. Mounting method shall isolate the control panel from generator-set vibration.

D. Indicating and Protective Devices and Controls:

1. AC voltmeter.
2. AC ammeter.
3. AC frequency meter.
4. DC voltmeter (alternator battery charging).
5. Engine-coolant temperature gage.
6. Engine lubricating-oil pressure gage.
7. Running-time meter.
8. Ammeter-voltmeter, phase-selector switch(es).
9. Generator-voltage adjusting rheostat.
10. Fuel tank derangement alarm.
11. Fuel tank high-level shutdown of fuel supply alarm.
12. Generator overload.

E. Indicating and Protective Devices and Controls:

1. AC voltmeter.
2. AC ammeter.
3. AC frequency meter.
4. AC Wattmeter
5. AC Power Factor meter
6. DC voltmeter (alternator battery charging).
7. Engine-coolant temperature gage.
8. Engine lubricating-oil pressure gage.
9. Running-time meter.
10. Ammeter-voltmeter, phase-selector switch(es).
11. Generator-voltage adjusting rheostat.
12. Start-stop switch.
13. Overspeed shutdown device.
14. Coolant high-temperature shutdown device.
15. Coolant low-level shutdown device.
16. Oil low-pressure shutdown device.
17. Fuel tank derangement alarm.

F. Supporting Items: Include sensors, transducers, terminals, relays, and other devices and include wiring required to support specified items. Locate sensors and other supporting items on engine or generator, unless otherwise indicated.

G. Remote Emergency-Stop Switch: box shall be flush wall mounted, unless otherwise indicated; and labeled. Push button shall be protected from accidental operation.

H. Remote emergency stop switch shall be located as directed by owner. Confirm location with owner prior to rough in.

2.6 GENERATOR OVERCURRENT AND FAULT PROTECTION

A. Generator Circuit Breaker: Molded-case, electronic-trip type; 100 percent rated; complying with UL 489.

1. Tripping Characteristics: Adjustable long-time and short-time delay and instantaneous.
2. Trip Settings: Selected to coordinate with generator thermal damage curve.
3. Shunt Trip: Connected to trip breaker when generator set is shut down by other protective devices.
4. Mounting: Adjacent to or integrated with control and monitoring panel.
5. Circuit breaker supplying emergency life-safety loads shall be mounted in a separate enclosure from standby loads.

B. Ground-Fault Indication: Comply with NFPA 70, "Emergency System" signals for ground-fault. Integrate ground-fault alarm indication with other generator-set alarm indications.

2.7 GENERATOR, EXCITER, AND VOLTAGE REGULATOR

A. Comply with NEMA MG 1.

B. Drive: Generator shaft shall be directly connected to engine shaft. Exciter shall be rotated integrally with generator rotor.

C. Electrical Insulation: Class H or Class F.

D. Stator-Winding Leads: Brought out to terminal box to permit future reconnection for other voltages if required.

E. Construction shall prevent mechanical, electrical, and thermal damage due to vibration, overspeed up to 125 percent of rating, and heat during operation at 110 percent of rated capacity.

F. Enclosure: Dripproof.

G. Instrument Transformers: Mounted within generator enclosure.

H. Voltage Regulator: Solid-state type, separate from exciter, providing performance as specified.

1. Adjusting rheostat on control and monitoring panel shall provide plus or minus 5 percent adjustment of output-voltage operating band.

I. Strip Heater: Thermostatically controlled unit arranged to maintain stator windings above dew point.

J. Windings: Two-thirds pitch stator winding and fully linked amortisseur winding.

K. Subtransient Reactance: 12percent, maximum.

2.8 OUTDOOR GENERATOR-SET ENCLOSURE

A. Description: Vandal-resistant, weatherproof steel housing, wind resistant up to 100 mph (160 km/h). Multiple panels shall be lockable and provide adequate access to components requiring maintenance. Panels shall be removable by one person without tools. Instruments and control shall be mounted within enclosure.

B. The complete diesel engine generator set, including generator control panel, engine starting batteries and fuel oil tank, shall be enclosed in a factory assembled, sound attenuated enclosure mounted on the fuel tank base.

1. A weather resistant, sound attenuated enclosure of steel with electrostatically applied powder coated baked polyester paint. The enclosure shall have a resulting sound level of 71.0 dB(A) @ 23 ft with the genset running under full load. It shall consist of a roof, side walls, and end walls. Fasteners shall be either zinc plated or stainless steel.

2. Enclosure Sound Attenuation: Acoustical foam shall be provided between all supports and inside doors and sound baffles on air intake and air discharge.

C. Interior Lights with Switch: Factory-wired, vaporproof-type fixtures within housing; arranged to illuminate controls and accessible interior. Arrange for external electrical connection.

1. DC lighting system for operation when remote source and generator are both unavailable.

D. Convenience Outlet: Factory wired, GFCI. Arrange for external electrical connection.

2.9 VIBRATION ISOLATION DEVICES

A. Elastomeric Isolator Pads: Oil- and water-resistant elastomer or natural rubber, arranged in single or multiple layers, molded with a nonslip pattern and galvanized-steel baseplates of sufficient stiffness for uniform loading over pad area, and factory cut to sizes that match requirements of supported equipment.

2.10 FINISHES

A. Indoor and Outdoor Enclosures and Components: Manufacturer's standard finish over corrosion-resistant pretreatment and compatible primer.

2.11 SOURCE QUALITY CONTROL

A. Project-Specific Equipment Tests: Before shipment, factory test engine-generator set and other system components and accessories manufactured specifically for this Project. Perform tests at rated load and power factor. Include the following tests:

1. Test components and accessories furnished with installed unit that are not identical to those on tested prototype to demonstrate compatibility and reliability.
2. Full load run.
3. Maximum power.

4. Voltage regulation.
5. Transient and steady-state governing.
6. Single-step load pickup.
7. Safety shutdown.
8. Provide 14 days' advance notice of tests and opportunity for observation of tests by Owner's representative.
9. Report factory test results within 10 days of completion of test.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas, equipment bases, and conditions, with Installer present, for compliance with requirements for installation and other conditions affecting packaged engine-generator performance.

B. Examine roughing-in of piping systems and electrical connections. Verify actual locations of connections before packaged engine-generator installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Comply with packaged engine-generator manufacturers' written installation and alignment instructions.

B. Install packaged engine generator to provide access, without removing connections or accessories, for periodic maintenance.

C. Install packaged engine generator on concrete base. Secure sets to anchor bolts installed in concrete bases. Concrete base construction is specified in Section 260529, “Hangers and Supports for Electrical Systems.”

D. Electrical Wiring: Install electrical devices furnished by equipment manufacturers but not specified to be factory mounted.

3.3 CONNECTIONS

A. Piping installation requirements are specified in other Sections. Drawings indicate general arrangement of piping and specialties.

B. Connect fuel, cooling-system, and exhaust-system piping adjacent to packaged engine generator to allow service and maintenance.

C. Connect engine exhaust pipe to engine with flexible connector.

D. Connect fuel piping to engines with a gate valve and union and flexible connector.

1. Diesel storage tanks, tank accessories, piping, valves, and specialties for fuel systems are specified in Section 231113 "Facility Fuel-Oil Piping."

E. Ground equipment according to Section 260526 "Grounding and Bonding for Electrical Systems."

F. Connect wiring according to Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

3.4 IDENTIFICATION

A. Identify system components according to Section 230553 "Identification for HVAC Piping and Equipment" and Section 260553 "Identification for Electrical Systems."

3.5 FIELD QUALITY CONTROL

A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections. Report results in writing.

B. Tests and Inspections:

1. Perform tests recommended by manufacturer and each electrical test and visual and mechanical inspection for "AC Generators and for Emergency Systems" specified in NETA Acceptance Testing Specification. Certify compliance with test parameters.
2. The manufacturer’s local dealer shall provide a temporary resistive 1.0 PF load bank and temporary cable to test the generator set at 100% nameplate rating. All fuel for testing is to be supplied by the contractor.
3. Battery Tests: Equalize charging of battery cells according to manufacturer's written instructions. Record individual cell voltages.
    a. Measure charging voltage and voltages between available battery terminals for full-charging and float-charging conditions. Check electrolyte level and specific gravity under both conditions.
    b. Test for contact integrity of all connectors. Perform an integrity load test and a capacity load test for the battery.
    c. Verify acceptance of charge for each element of the battery after discharge.
    d. Verify that measurements are within manufacturer's specifications.
4. Battery-Charger Tests: Verify specified rates of charge for both equalizing and float-charging conditions.
5. System Integrity Tests: Methodically verify proper installation, connection, and integrity of each element of engine-generator system before and during system operation. Check for air, exhaust, and fluid leaks.
6. Exhaust Emissions Test: Comply with applicable government test criteria.

7. Voltage and Frequency Transient Stability Tests: Use recording oscilloscope to measure voltage and frequency transients for 50 and 100 percent step-load increases and decreases, and verify that performance is as specified.

C. Coordinate tests with tests for transfer switches and run them concurrently.

D. Test instruments shall have been calibrated within the last 12 months, traceable to standards of NIST, and adequate for making positive observation of test results. Make calibration records available for examination on request.

E. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.

F. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation.

G. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

H. Remove and replace malfunctioning units and retest as specified above.

I. Retest: Correct deficiencies identified by tests and observations and retest until specified requirements are met.

J. Report results of tests and inspections in writing. Record adjustable relay settings and measured insulation resistances, time delays, and other values and observations. Attach a label or tag to each tested component indicating satisfactory completion of tests.

K. Infrared Scanning: After Substantial Completion, but not more than 60 days after Final Acceptance, perform an infrared scan of each power wiring termination and each bus connection. Remove all access panels so terminations and connections are accessible to portable scanner.

1. Instrument: Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.
2. Record of Infrared Scanning: Prepare a certified report that identifies terminations and connections checked and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

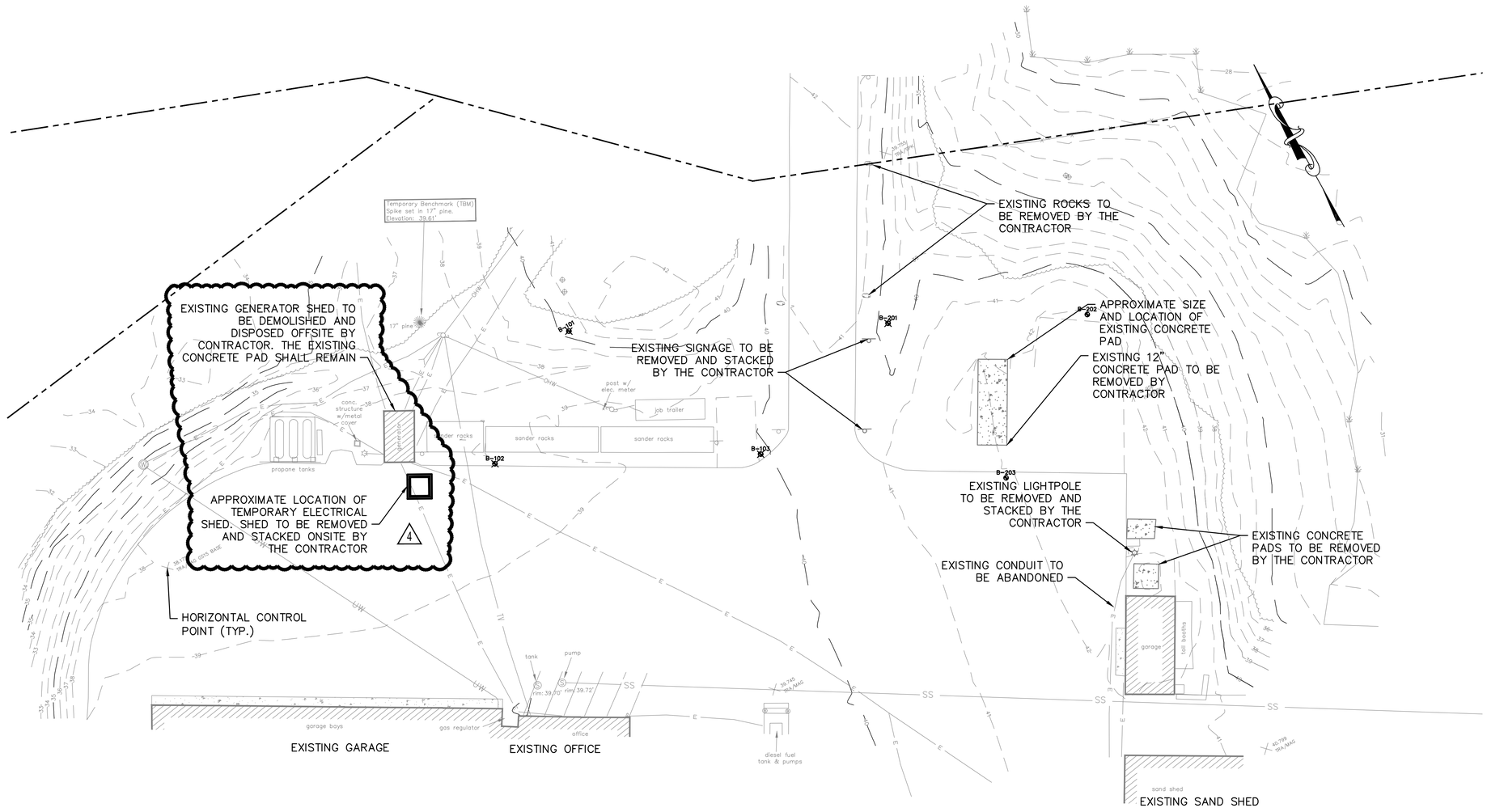
3.6 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain packaged engine generators. Refer to Division 01.

END OF SECTION 263213

CIVIL LEGEND

SYMBOL	DESCRIPTION
	EXISTING RIGHT-OF-WAY
	EXISTING SETBACK
	EXISTING EDGE OF PAVEMENT
	EXISTING TREELINE
x	EXISTING CHAINLINK FENCE
	EXISTING GUARDRAIL
249	EXISTING CONTOUR
	EXISTING BUILDING
UG	EXISTING UNDERGROUND GAS
OHW	EXISTING OVERHEAD WIRE
UC	EXISTING UNDERGROUND CABLE
UW	EXISTING UNDERGROUND WATER
UE	EXISTING UNDERGROUND ELECTRIC
15" RCP SD	EXISTING UNDERGROUND STORM DRAIN
	EXISTING CATCH BASIN
	EXISTING FREE STANDING SIGN
	EXISTING WATER SHUT OFF
	EXISTING LIGHT POLE
	EXISTING PROPANE TANK
	EXISTING UTILITY POLE
	EXISTING HYDRANT
	PROPOSED VERTICAL GRANITE CURB
	PROPOSED EDGE OF BUILDING
	PROPOSED GUARDRAIL
	PROPOSED CONCRETE
	PROPOSED EDGE OF PAVEMENT
240	PROPOSED CONTOUR
	PROPOSED SEWER
W	PROPOSED WATER
	PROPOSED UNDERGROUND ELECTRIC
P	PROPOSED PROPANE LINE
	PROPOSED SILT FENCE
GP11-201	2019 SOIL PROBE LOCATION
B11-101	2019 BORING LOCATION



B-XXX APPROXIMATE LOCATION OF BORING

NOTES

1. NORTH IS REFERENCED TO GRID NORTH, MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE, NAD83.
2. ELEVATIONS ARE BASED ON GPS OBSERVATIONS, NAVD88 DATUM. BENCHMARK IS A SPIKE SET IN A 17" PINE LOCATED NORTHEASTERLY OF THE GENERATOR BUILDING. ELEVATION: 39.61'.
3. UTILITY INFORMATION ON THIS PLAN IS APPROXIMATE, BASED ON LOCATION OF VISIBLE FEATURES.
4. SEE BOUNDARY SURVEY AND EXISTING CONDITIONS PLAN PREPARED BY TITCOMB ASSOCIATES DATED APRIL 2020.

25 0 12.5 25 50
1 inch = 25 ft.

Scale: 1"=25'

No.	Revision	By	Date
2	ADDENDUM 2	AMP	5/5/23
4	ADDENDUM 4	AMP	5/17/23

Designed by: ALTON M. PALMER, P.E.

STATE OF MAINE ALTON M. PALMER III No. 6231 LICENSED PROFESSIONAL ENGINEER

ISSUED FOR BID - NOT FOR CONSTRUCTION

	By	Date		By	Date
Designed:	AMP	03/28/23	Checked:	AMP	03/28/23
Drawn:	CEH	03/28/23			

GORRILL PALMER

PROJ.NO.: 3660 | CAD FILE: 3660-DEMO.dwg

MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: **Brian A. Taddeo, P.E.**

CONTRACT 2023.06
YORK VEHICLE STORAGE GARAGE

EXISTING CONDITIONS AND REMOVALS PLAN

SHEET NUMBER: C-002

CONTRACT: 2023.06

3 OF 33

EXISTING OBSERVATION WELLS

EXISTING OBSERVATION WELLS

Temporary Benchmark (TBM)
Spike set in 17" pine.
Elevation: 39.61'

17" pine

EXISTING WELL

B-101

B-102

B-103

B-203

conc. venture w/metal cover

propane tanks

sander racks

sander racks

sander racks

post w/ elec. meter

job trailer

4

EXISTING 1500 GALLON SEPTIC TANK, PUMP CHAMBER, AND FORCE MAIN

tank

pump

rim: 39.70'

rim: 39.72'

EXISTING GARAGE

garage bays

gas regulator

office

EXISTING OFFICE

EXISTING FUEL PUMPS

diesel fuel tank & pump

2

EXISTING GARAGE

garage

toll booths

EXISTING GAS TANKS

2

steel shed

EXISTING SAND SHED

THE PURPOSE OF THIS PLAN IS TO SHOW THAT THERE IS ADEQUATE SEPARATION BETWEEN THE EXISTING SEWAGE DISPOSAL FIELD AND THE EXISTING WELL LOCATION.
FOR SITE AND UTILITY INFORMATION, SEE SHEET C-101. FOR GRADING, DRAINAGE, AND EROSION CONTROL INFORMATION SEE SHEET C-102.

4

APPROXIMATE 300' RADIUS FROM EXISTING SEPTIC SYSTEMS

Approx. disposal field

APPROXIMATE LOCATION OF EXISTING DISPOSAL FIELD

25 0 12.5 25 50

1 inch = 25 ft.

Scale: 1"=25'

No.	Revision	By	Date
2	ADDENDUM 2	AMP	5/5/23
4	ADDENDUM 4	AMP	5/17/23

Designed by: ALTON M. PALMER, P.E.

STATE OF MAINE ALTON M. PALMER III No. 0231 LICENSED PROFESSIONAL ENGINEER

ISSUED FOR BID - NOT FOR CONSTRUCTION

	By	Date		By	Date
Designed:	AMP	03/28/23	Checked:	AMP	03/28/23
Drawn:	CEH	03/28/23			

GORRILL PALMER

PROJ.NO.: 3660 | CAD FILE: 3660-SP.dwg

MAINE TURNPIKE

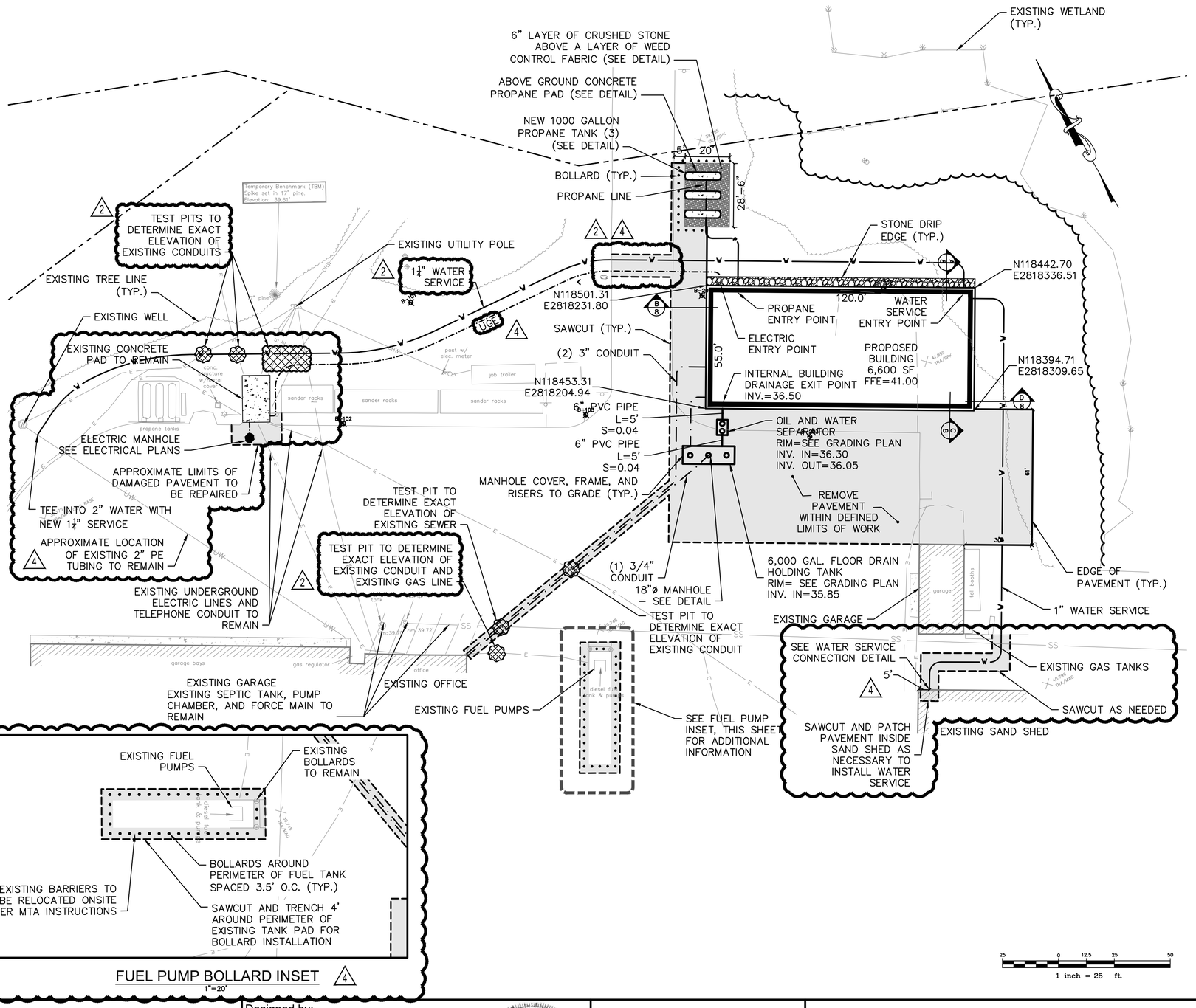
THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: **Brian A. Taddeo, P.E.**

CONTRACT 2023.06
YORK VEHICLE STORAGE GARAGE
SEWER AND WELL SEPARATION PLAN

SHEET NUMBER: C-100

CONTRACT: 2023.06



FUEL PUMP BOLLARD INSET 4
1"=20'

CONCRETE PROPANE TANK PAD – LAYOUT DATA		
LOCATION	NORTHING	EASTING
NORTHWEST CORNER	118550.39	2818247.81
NORTHEAST CORNER	118542.58	2818261.77
SOUTHEAST CORNER	118539.52	2818260.06
SOUTHWEST CORNER	118547.34	2818246.10

CONCRETE PROPANE TANK PAD – LAYOUT DATA		
LOCATION	NORTHING	EASTING
NORTHWEST CORNER	118542.97	2818243.65
NORTHEAST CORNER	118535.16	2818257.62
SOUTHEAST CORNER	118532.10	2818255.91
SOUTHWEST CORNER	118539.92	2818241.95

CONCRETE PROPANE TANK PAD – LAYOUT DATA		
LOCATION	NORTHING	EASTING
NORTHWEST CORNER	118535.56	2818239.50
NORTHEAST CORNER	118527.74	2818253.47
SOUTHEAST CORNER	118524.69	2818251.76
SOUTHWEST CORNER	118532.50	2818237.79

OIL AND WATER SEPARATOR – LAYOUT DATA		
LOCATION	NORTHING	EASTING
NORTHWEST CORNER	118446.46	2818207.02
NORTHEAST CORNER	118444.07	2818211.22
SOUTHEAST CORNER	118438.13	2818207.85
SOUTHWEST CORNER	118440.52	2818203.64

6,000 GALLON HOLDING TANK – LAYOUT DATA		
LOCATION	NORTHING	EASTING
NORTHWEST CORNER	118443.54	2818187.97
NORTHEAST CORNER	118432.21	2818208.21
SOUTHEAST CORNER	118425.23	2818204.31
SOUTHWEST CORNER	118436.56	2818184.06

CONCRETE GENERATOR PAD – LAYOUT DATA		
LOCATION	NORTHING	EASTING
NORTHWEST CORNER	118515.45	2818245.44
NORTHEAST CORNER	118513.01	2818249.80
SOUTHEAST CORNER	118504.28	2818244.92
SOUTHWEST CORNER	118506.72	2818240.56

PAVEMENT LEGEND
HEAVY DUTY BITUMINOUS PAVEMENT
REINFORCED CONCRETE

Scale: 1"=25'

No.	Revision	By	Date
2	ADDENDUM 2	AMP	5/5/23
4	ADDENDUM 4	AMP	5/17/23

Designed by: ALTON M. PALMER, P.E.

STATE OF MAINE ALTON M. PALMER III No. 8231 LICENSED PROFESSIONAL ENGINEER

ISSUED FOR BID - NOT FOR CONSTRUCTION

	By	Date		By	Date
Designed:	AMP	03/28/23	Checked:	AMP	03/28/23
Drawn:	CEH	03/28/23			

GORRILL PALMER

PROJ.NO.: 3660 | CAD FILE: 3660-SP.dwg

MAINE TURNPIKE

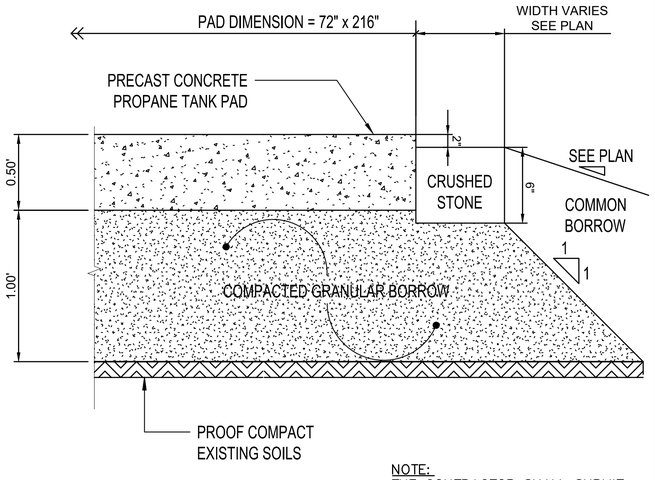
THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: **Brian A. Taddeo, P.E.**

CONTRACT 2023.06
YORK VEHICLE STORAGE GARAGE
SITE AND UTILITY PLAN

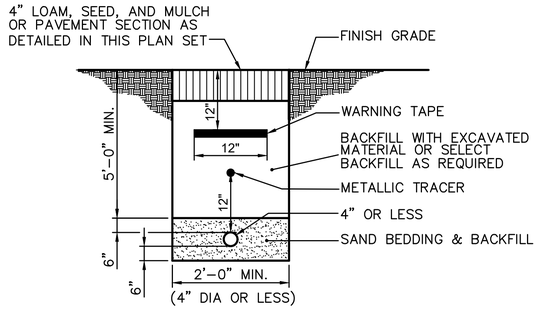
SHEET NUMBER: C-101

CONTRACT: 2023.06



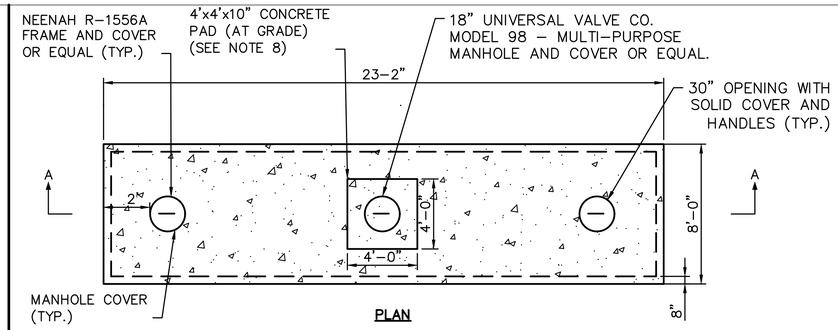
NOTE:
THE CONTRACTOR SHALL SUBMIT DESIGN CALCULATIONS FOR THE CONCRETE PROPANE TANK PAD IN ACCORDANCE WITH SPECIAL PROVISION 502.

PRECAST PROPANE TANK PAD
NOT TO SCALE

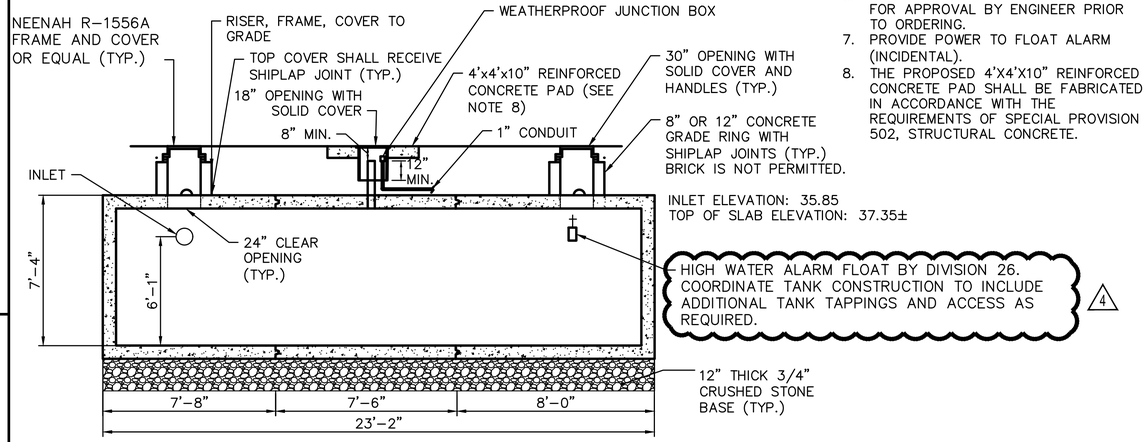


NOTES:
1. CONTRACTOR TO INSTALL TRACER WIRE OVER PIPE.
2. WATER LINE INSTALLATION SHALL COMPLY WITH MTA STANDARDS. SITE CONTRACTOR IS RESPONSIBLE FOR EXCAVATION AND BACKFILL OF THE WATER LINE AND PLACEMENT OF THE WARNING TAPES AND TRACER.

2 WATER SERVICE TRENCH SECTION
NOT TO SCALE



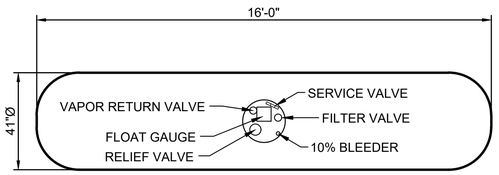
PLAN



SECTION A–A

1. ALL TANKS, RISERS, FRAMES, COVERS SHALL BE DESIGNED FOR H20 LOADING AND PROVIDED TO GRADE.
2. CONCRETE: 5000PSI AFTER 28 DAYS
3. TONGUE AND GROOVE JOINTS ARE SEALED WITH A STRIP OF BUTYL RUBBER
4. INLET PIPE SLEEVE CAST IN
5. COORDINATE WITH WASH BAY MANUFACTURER FOR EXACT SIZES, LOCATIONS OF ALL PLUMBING WITHIN TANKS.
6. SUBMIT SHOP DRAWINGS OF TANKS FOR APPROVAL BY ENGINEER PRIOR TO ORDERING.
7. PROVIDE POWER TO FLOAT ALARM (INCIDENTAL).
8. THE PROPOSED 4'X4'X10" REINFORCED CONCRETE PAD SHALL BE FABRICATED IN ACCORDANCE WITH THE REQUIREMENTS OF SPECIAL PROVISION 502, STRUCTURAL CONCRETE.

6,000 GALLON HOLDING TANK
NOT TO SCALE

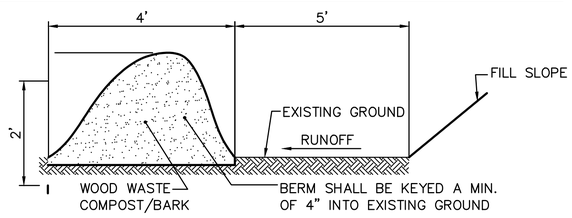


NOTES:
1.) USE AMERICAN WELDING & TANK ASME TANK OR APPROVED EQUAL. TANK INSTALLATION TO BE COORDINATED WITH THE LOCAL GAS UTILITY COMPANY, AND SHALL COMPLY WITH ITS STANDARDS.

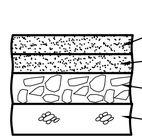
1,000 GALLON PROPANE GAS STORAGE TANK
NOT TO SCALE

NOTES:

1. THE WOOD WASTE COMPOST/BARK MIX SHALL CONFORM TO THE FOLLOWING STANDARDS:
   A. MOISTURE CONTENT – 30–60%.
   B. pH – 5.0 – 8.0.
   C. SCREEN SIZE – 100% LESS THAN 3", MAX. 70% LESS THAN 1".
   D. NO LESS THAN 40% ORGANIC MATERIAL (DRY WEIGHT) BY LOSS OF IGNITION.
   E. NO STONES LARGER THAN 2" IN DIAMETER.
   F. SILTS, CLAYS OR SUGAR SANDS ARE NOT ACCEPTABLE IN THE MIX.
2. THE COMPOST BERM SHALL BE PLACED, UNCOMPACTED, ALONG A RELATIVELY LEVEL CONTOUR.
3. THE WOOD WASTE COMPOST/BARK FILTER BERM MAY BE USED IN LIEU OF SILTATION FENCE, AT THE TOE OF SHALLOW SLOPES, ON FROZEN GROUND, LEDGE OUT CROPS, VERY ROOTED FORESTED AREA OR AT THE EDGE OF GRAVEL PARKING AREAS.
4. BERMS SHALL REMAIN IN PLACE UNTIL UPSTREAM AREA IS COMPLETED OR 70% CATCH OF VEGETATION IS ATTAINED. BERMS SHALL BE REMOVED BY SPREADING SUCH THAT NATIVE EARTH CAN BE SEEN BELOW.



WOOD WASTE COMPOST/BARK FILTER BERM DETAIL
NOT TO SCALE

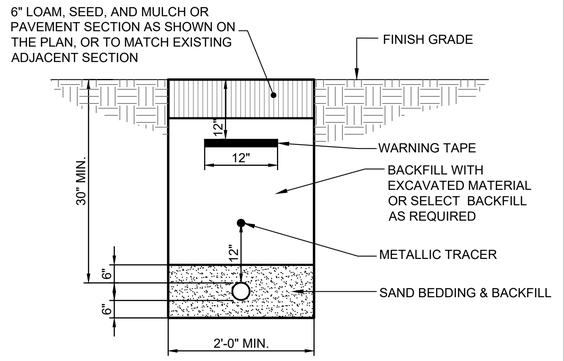


THICKNESS AND ORDER OF LAYERS
1.5" SURFACE COURSE BITUMINOUS 12.5mm HOT MIX ASPHALT
2.5" BASE COURSE BITUMINOUS 19mm HOT MIX ASPHALT
6" AGGREGATE BASE GRAVEL MAINEDOT 703.06 TYPE A
15" AGGREGATE SUBBASE GRAVEL MAINEDOT 703.06 TYPE D

HEAVY DUTY BITUMINOUS PAVEMENT SECTION
NOT TO SCALE

NOTES:

1. COMPACT SUBGRADE TO 95% MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D–1557.
2. IN AREAS OF NEW PAVEMENT THE CONTRACTOR SHALL PROVIDE FULL DEPTH GRAVEL CONSTRUCTION.
3. WITHIN LIMITS OF EXISTING PAVEMENT, AND AS DIRECTED BY THE RESIDENT, THE CONTRACTOR SHALL NOT REMOVE AND REPLACE EXISTING SUBBASE GRAVEL THAT MEETS REQUIREMENTS OF TYPE D GRAVEL. FOLLOWING ACCEPTANCE OF THE SUBBASE MATERIAL THE CONTRACTOR SHALL SHIM THE SUBBASE LAYER AS REQUIRED TO ALLOW FOR THE SPECIFIED PAYMENT THICKNESS USING AGGREGATE BASE COURSE, TYPE A. THE CONTRACTOR WILL BE PAID BASED ON THE ACTUAL QUANTITY OF MATERIAL REMOVED AND REPLACED.



NOTE:
SITE CONTRACTOR IS RESPONSIBLE FOR EXCAVATION, INSTALLATION AND BACKFILL OF THE GAS LINE AND PLACEMENT OF THE WARNING TAPES AND TRACER. GAS LINE TO BE INSPECTED BY MTA GAS INSPECTOR PRIOR TO BACKFILL.

2 GAS SERVICE TRENCH SECTION
NOT TO SCALE

Scale: N/A

No.	Revision	By	Date
2	ADDENDUM 2	AMP	5/5/23
4	ADDENDUM 4	AMP	5/17/23

Designed by: ALTON M. PALMER, P.E.

STATE OF MAINE · ALTON M. PALMER III · No. 6231 · LICENSED PROFESSIONAL ENGINEER

ISSUED FOR BID - NOT FOR CONSTRUCTION

	By	Date		By	Date
Designed:	AMP	03/28/23	Checked:	AMP	03/28/23
Drawn:	CEH	03/28/23			

GORRILL PALMER

PROJ.NO.: 3660 | CAD FILE: 3660-DETAILS.dwg

MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: **Brian A. Taddeo, P.E.**

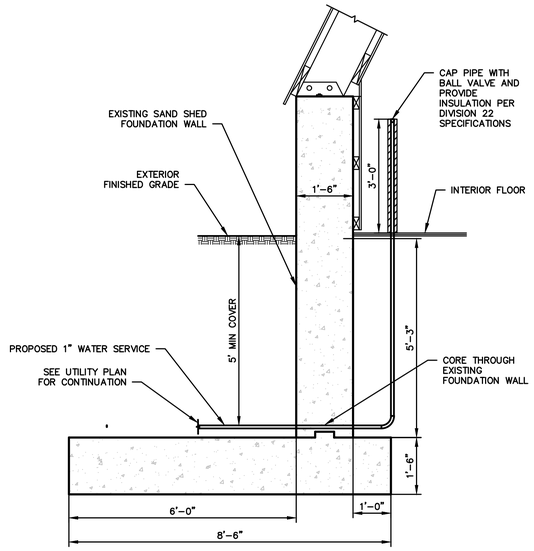
CONTRACT 2023.06
YORK VEHICLE STORAGE GARAGE

DETAILS - 1

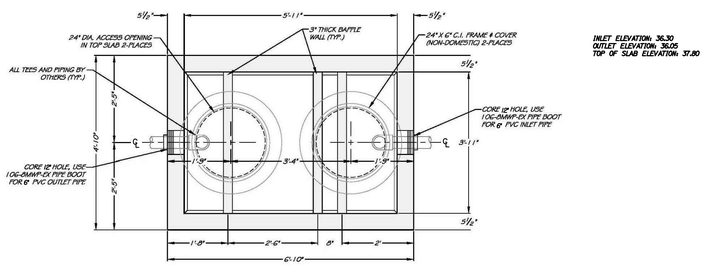
SHEET NUMBER: C-401

CONTRACT: 2023.06

NOTE:
1. ALL FOUNDATION DIMENSIONS ARE APPROXIMATE AND BASED OFF ORIGINAL SAND SHED STRUCTURAL DESIGN PLANS. ACTUAL DIMENSIONS MAY VARY.

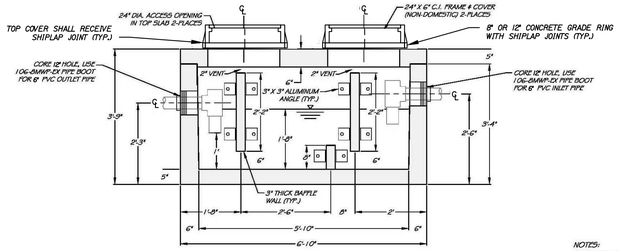


4 WATER SERVICE CONNECTION DETAIL
NOT TO SCALE



PLAN VIEW

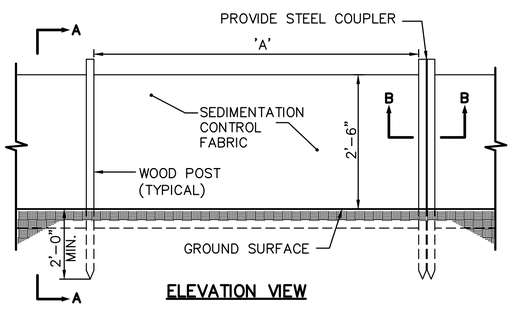
INLET ELEVATION: 36.30
OUTLET ELEVATION: 35.05
TOP OF SLAB ELEVATION: 37.80



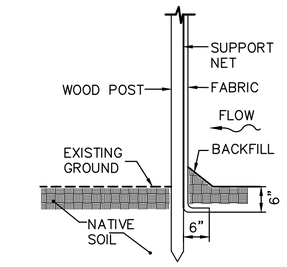
SECTION VIEW

NOTES:
1) CONCRETE: 5,000 PSI @ 28 DAYS.
2) CEMENT: TYPE III PER ASTM C150-81.
3) REINFORCING: GRADE 60 PER ASTM A615.
4) DESIGN LOADING: H-20 PER ASTM C-478.
5) JOINTS TO BE SEALED WATER TIGHT WITH "CON-SEAL".

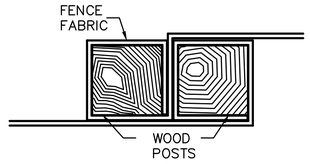
H-20 OIL/WATER SEPARATOR DETAIL
NOT TO SCALE



ELEVATION VIEW



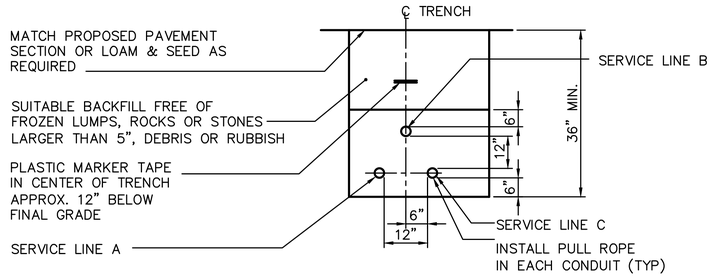
SECTION A-A



SECTION B-B

SILT FENCE	
SILT FENCE REINFORCEMENT	MAXIMUM SPACING "A"
NONE	6"
WIRE REINFORCE,MENT 14 GUAGE,6" MESH	10'

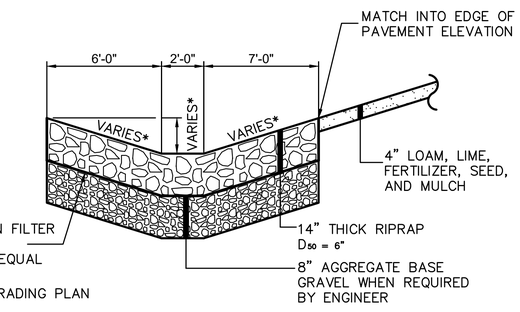
SILTATION FENCE DETAIL
NOT TO SCALE



CONDUIT TYPE SCHEDULE				
SERVICE	CONDUIT SIZE	GRASS & PAVED AREAS	UTILITY	REMARKS
A	2-4"	SCHEDULE 80 PVC ELECTRICAL GRADE	PRIMARY POWER	SEE NOTE
B	2-4"	SCHEDULE 80	TELEPHONE/DATA	SEE NOTE
C	1-1 1/2"	SCHEDULE 80	SPARE	SEE NOTE

NOTE:
ONE CONDUIT CAPPED FOR SPARE, PROVIDE GALVANIZED STEEL LONG SWEEP AT RISER POLE AND EXTEND GALVANIZED CONDUIT TO 10 FT ABOVE GRADE AT POLE WITH STAND-OFF BRACKETS.

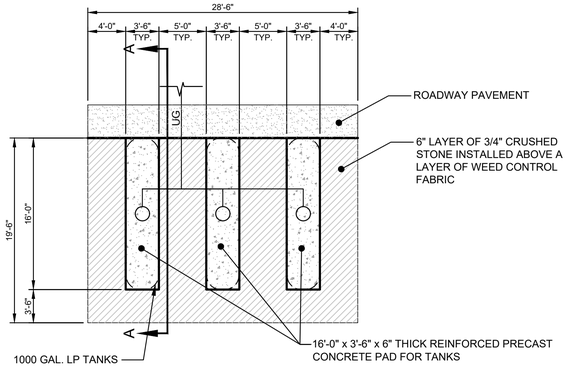
UTILITY TRENCH - PRIMARY AND SECONDARY POWER, TELEPHONE, AND CABLE
NOT TO SCALE



NOTE:
ALL MATERIALS SHALL CONFORM TO THE CURRENT EDITION OF THE MDOT STANDARD SPECIFICATIONS.

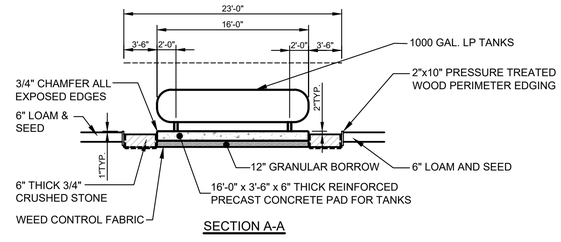
RIPRAP DOWNSPOUT
NOT TO SCALE

2



PLAN VIEW

ABOVE GROUND PROPANE GAS TANK FARM
NOT TO SCALE



SECTION A-A

Scale: N/A

Designed by: ALTON M. PALMER, P.E.

STATE OF MAINE ALTON M. PALMER III No. 6231 REGISTERED PROFESSIONAL ENGINEER

ISSUED FOR BID - NOT FOR CONSTRUCTION

No.	Revision	By	Date
2	ADDENDUM 2	AMP	5/5/23
4	ADDENDUM 4	AMP	5/17/23

	By	Date		By	Date
Designed:	AMP	03/28/23	Checked:	AMP	03/28/23
Drawn:	CEH	03/28/23			

GORRILL PALMER

PROJ.NO.: 3660 CAD FILE: 3660-DETAILS.dwg

MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: Brian A. Taddeo, P.E.

CONTRACT 2023.06
YORK VEHICLE STORAGE GARAGE

DETAILS - 3

SHEET NUMBER: C-403

CONTRACT: 2023.06

9 OF 33

EXPANSION TANK SCHEDULE

SYSTEM	DOMESTIC HOT WATER
PIPE SIZE	3/4"
BLADDER-TYPE EXPANSION TANK	
MFR-MODEL	AMTROL ST-5
TANK DIAMETER	8
TANK HEIGHT	13
ACCEPTANCE VOLUME	2
WEIGHT LBS	5

ELECTRIC WATER HEATER SCHEDULE

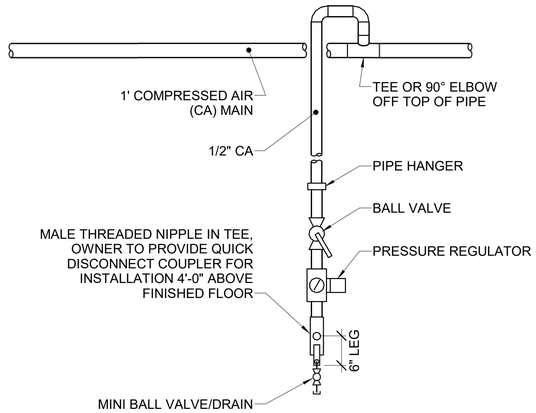
TAG	MANUFACTURER	MODEL	VOLTS	PHASE	HEAT INPUT (KW)	GPH RECOVERY	TEMP RISE (DEG-F)	WATER STORAGE (GAL)	HEIGHT (INCHES)	DIAMETER (INCHES)	APPROX WEIGHT (LBS.)
WH-1	AO SMITH	EJC-10	120	1	1.65	8	90	10	18	16	130
Note: Water Heater suspended in wall pan shelf equal to Holdrite #30-SWHP-M											

AIR COMPRESSOR SCHEDULE

TAG	MANUFACTURER	MODEL	TYPE	MAXIMUM FLOW EA. PUMP (acfm)	MAXIMUM PUMP PRESS. (psig)	RECEIVER			ELECTRICAL				PHYSICAL	NOTES
						SIZE (gal.)	RECEIVER TYPE	DIA. (in.)	MOTOR QUAN.	MOTOR SIZE (hp)	MOTOR SPEED (rpm)	VOLT/PH	LENGTH/ WIDTH/ HEIGHT (in.)	
AC-1	INGERSOLL RAND	2475N7.5	2-STAGE RECIP	24	175	80	VERTICAL	38	1	7.5	---	230/1	38/26/70	

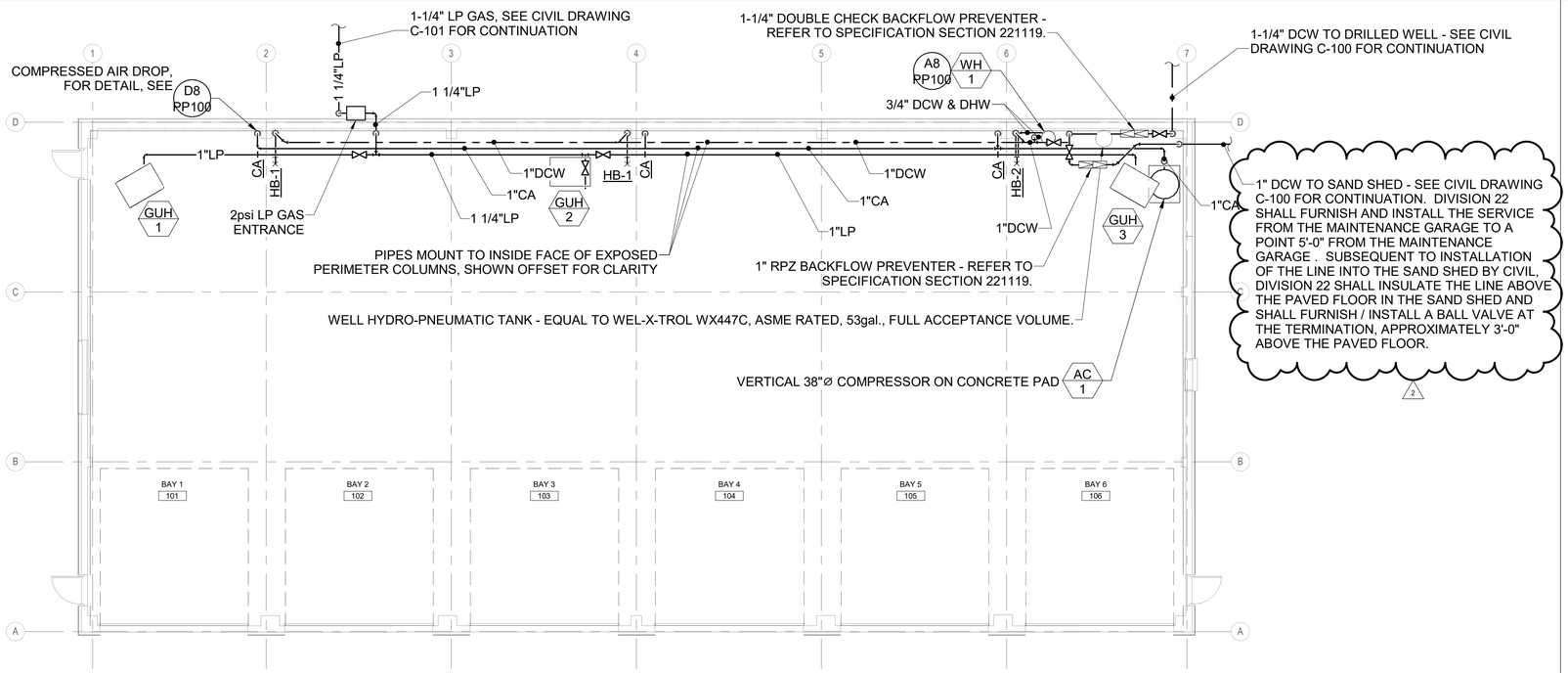
D1 PLUMBING SCHEDULES

NONE



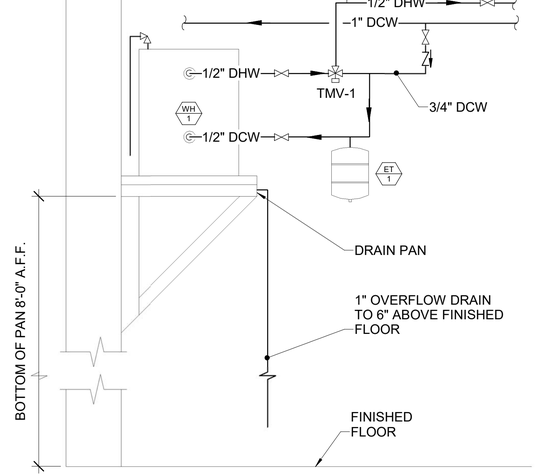
D8 DETAIL ~ COMPRESSED AIR TOOL CONNECTION PIPING

NOT TO SCALE



A1 DOMESTIC PIPING PLAN

1/8" = 1'-0"



A8 DETAIL - DOMESTIC WATER HEATER PIPING SCHEMATIC - WH-1

NOT TO SCALE

Scale: As indicated

Designed by: ANTHONY S. DAVIS, P.E.

ISSUED FOR BID - NOT FOR CONSTRUCTION

No.	Revision	By	Date
1	ISSUED FOR ADDENDUM No. 2	AEI	05/05/2023
2	ISSUED FOR ADDENDUM No. 4	AEI	05/17/2023

	By	Date		By	Date
Designed:	HAG	03/28/23	Checked:	ASD	03/28/23
Drawn:	REW	03/28/23			

Allied Engineering
Structural Mechanical Electrical Plumbing
160 Veranda Street
Portland, Maine 04103
P: 207.221.2260
F: 207.221.2266
Web:www.allied-eng.com

AEI PROJ.NO.: 20020 CAD FILE:

MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: Brian A. Taddeo, P.E.

CONTRACT 2023.06
YORK VEHICLE STORAGE GARAGE
DOMESTIC PIPING PLAN

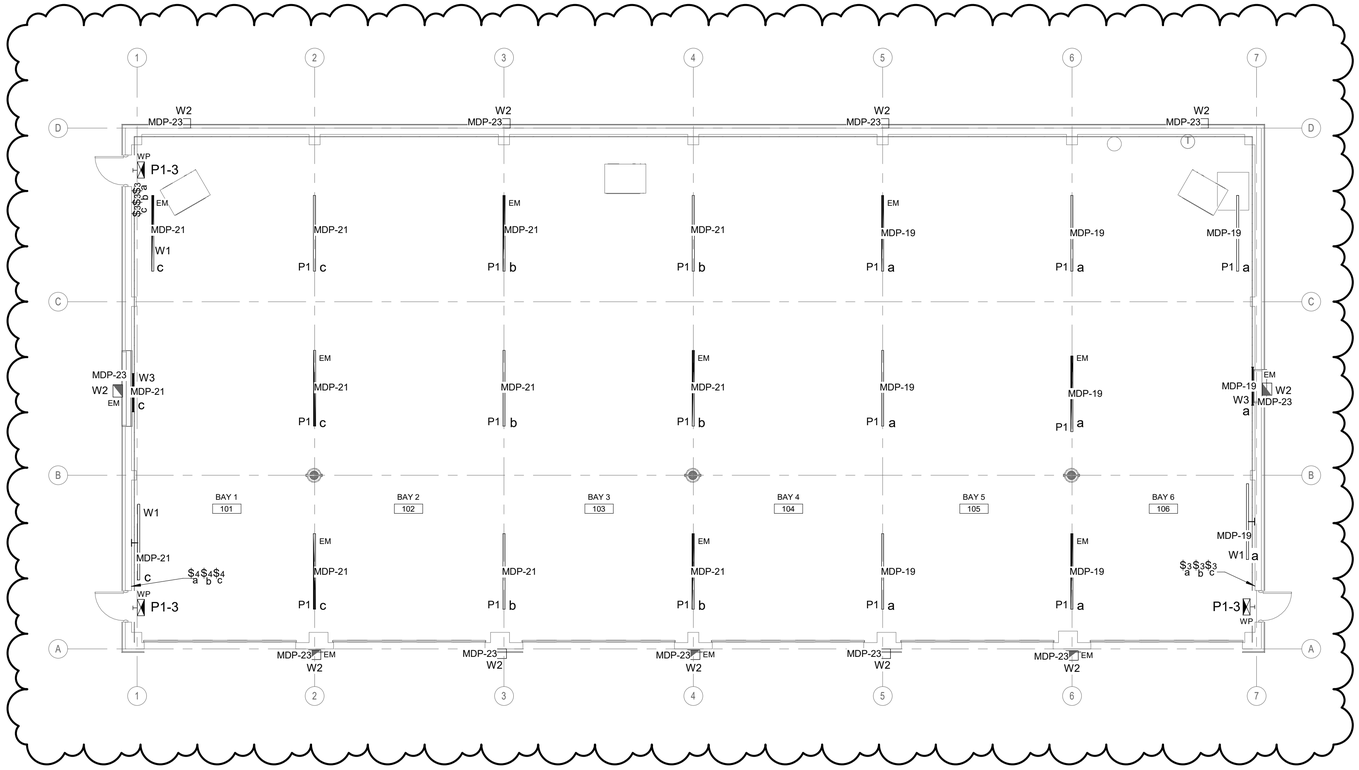
SHEET NUMBER: PP-100

CONTRACT: 2023.06

UPDATES:

- UPDATING LIGHTING CIRCUITS

LUMINAIRE SCHEDULE- KEY NOTE 1,2									
TYPE	DESCRIPTION	MFR	CATALOG SERIES NUMBER - SEE KEY NOTE 1	MOUNTING	VOLTS	LAMP/LIGHT ENGINE			KEY NOTES
						WATTS	DELIVERED...	TYPE	
P1	8' PENDANT	STARTEK	SPW8S	PENDANT 16' AFF	120V	87	12540	LED 5000K	4,5
W1	WALL MOUNT VERSION OF P1			WALL 16' AFF				LED 5000K	4
W2	EXTERIOR WALL MOUNT LED - PROVIDE INTEGRAL PHOTOCELL FOR ON/OFF OPERATION.	MCGRAW EDISON	GWC-SA1-C-740-1-T4W-BZ-CMP-CEC	WALL 17' AFF	120V	59	7502	LED 4000K	6
W3	4' WALL MOUNT	STARTEK	SSF-4	MOUNT 7'-6" AFF	120V	47	6846	LED 5000K	4
	EXIT LIGHT	SURELITES	LPX		120VAC/ 12VDC	1		LED	3
	KEY NOTES								
1	**NOTE THAT THESE NUMBERS ARE NOT COMPLETE CATALOG NUMBERS. PROVIDE ALL REQUIREMENTS ON SCHEDULE, NOTES, SPECS, AND DRAWINGS COMBINED.**								
2	VERIFY CEILING STRUCTURE AND MOUNTING HEIGHT PRIOR TO ORDERING ANY LIGHT FIXTURES.								
3	PROVIDE WALL,CEILING, OR PENDANT MOUNTING AS INDICATED ON PLANS. PROVIDE NUMBER OF FACES AND ARROWS AS INDICATED.								
4	PROVIDE SMOOTH POLYCARBONATE LENS								
5	PROVIDE RIGID STEMS FOR PENDANT MOUNTED FIXTURE.								
6	PROVIDE BATTERY PACK WITH BACK BOX RATED FOR COLD WEATHER ON ALL FIXTURES NOTED FOR EMERGENCY BACK UP USE.								



A1	LIGHTING PLAN
1/8" = 1'-0"	

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

No.	Revision	By	Date
1	ISSUED FOR ADDENDUM No. 4	AEI	05/017/2023

Designed by: ANTHONY S. DAVIS, P.E.

ISSUED FOR BID - NOT FOR CONSTRUCTION

STATE OF MAINE CATHERINE A. FAUCHER No. 7575 LICENSED PROFESSIONAL ENGINEER

	By	Date		By	Date
Designed:	CAF	03/28/23	Checked:	CAF	03/28/23
Drawn:	REW	03/28/23			

Allied Engineering
Structural Mechanical Electrical Plumbing
160 Veranda Street
Portland, Maine 04103
P: 207.221.2260
F: 207.221.2266
Web:www.allied-eng.com

AEI PROJ.NO.: 20020 CAD FILE:

MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: Brian A. Taddeo, P.E.

CONTRACT 2023.06
YORK VEHICLE STORAGE GARAGE
LIGHTING PLAN

CONTRACT: 2023.06

SHEET NUMBER: EL100

UPDATES:

- BUILDING DISTRIBUTION CHANGED FROM 208V, 3PH TO 240V, 1PH.
- UPDATED CIRCUITING
- UPDATED ELECTRICAL SCHEDULE OF MECH EQUIPMENT
- REMOVAL OF PANEL P1

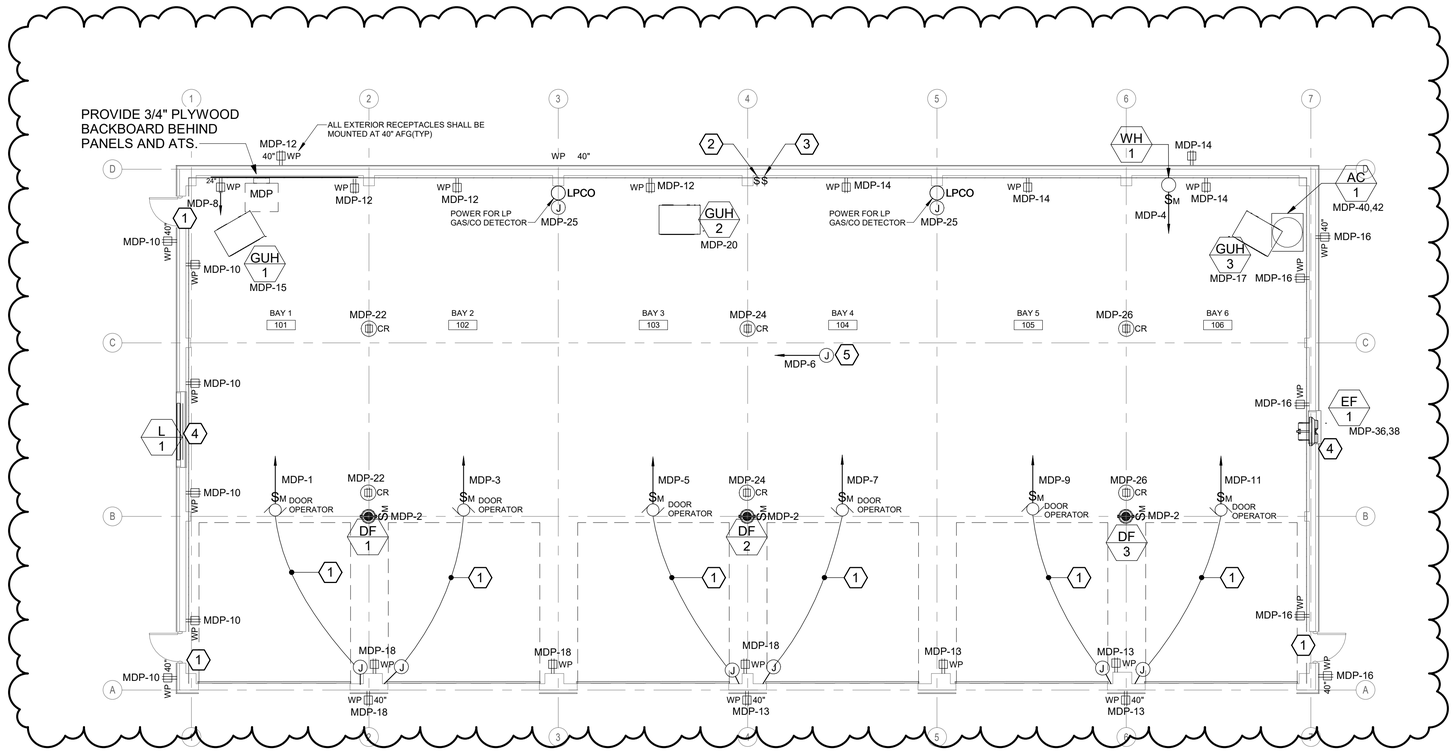
ELECTRICAL SCHEDULE OF MECHANICAL EQUIPMENT- REFER TO PANEL SCHEDULES FOR CIRCUITING

TAG	DESCRIPTION/ AREA SERVED	VOLTS	PH	LOAD	FLA	MCA	MOPD	DISCONNECT SWITCH					STARTER (NEMA)		CBD	WIRING IN CONDUIT (2 #12, 1#12 G UNO)	NOTES
								FRAME	POLES	FUSE	NEMA...	FBD	SIZE/...	FBD			
AC-1	AIR COMPRESSOR	230	1	7.5 HP	40	40	80	60	2		3R	22		22	22	2 #4, 1 #8G	
GUH-1	GAS UNIT HEATER	120	1	1/2 HP	9.8		20	FWE				23		23	23		
GUH-2	GAS UNIT HEATER	120	1	1/2 HP	9.8		20	FWE				23		23	23		
GUH-3	GAS UNIT HEATER	120	1	1/2 HP	9.8		20	FWE				23		23	23		
DF-1,2,3	DESTRATIFICATION FANS	120	1	106W	1.0		15	MRT				26		23	23		
EF-1	EXHAUST FAN	230	1	2 HP	12.0		25	FWE				23		23	23	3 #12, 1 #12G	
WH-1	ELECTRIC WATER HEATER	120	1	1650W	14.0		20	MRT				23		23	23		

NOTES:

ABBREVIATIONS:

FWE	FURNISHED WITH EQUIPMENT
NF	NOT FUSED
SWBD	SWITCHBOARD
FBD	FURNISHED BY DIVISION
CBD	CONTROL WIRING BY DIVISION
MRT	MOTOR RATED TOGGLE SWITCH (VOLTAGE, CURRENT RATING AND POLE QUANTITY AS REQUIRED)



KEYED NOTES:

1. PROVIDE EMPTY J-BOX 44" ABOVE FINISHED FLOOR AND 1-1/2" EMPTY CONDUIT FOR DOOR CONTROLS. CONTROL WIRING AND CONTROLS BY OTHERS.
2. DESTRATIFICATION FAN DF-1 thru DF-3 MANUAL SPEED CONTROLS-CONTROLS BY OTHERS.
3. EXHAUST FAN EF-1/L-1 VENTILATION TIMER AND VARIABLE SPEED CONTROLS LOCATIONS - CONTROL DEVICES SUPPLIED BY DIVISION 23, WIRED BY DIVISION 26.
4. WIRE AND CONNECT L-1/L-1 THROUGH TIMER SWITCH AND VARIABLE SPEED CONTROLLER SUPPLIED BY DIVISION 23. COORDINATE WITH DIVISION 23.
5. PROVIDE 120 VOLT POWER FOR HVAC CONTROLS AT UNDERSIDE OF DECK. CONTROLS BY OTHERS.

A1 | POWER AND SYSTEMS PLAN

1/8" = 1'-0"

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

No.	Revision	By	Date
1	ISSUED FOR ADDENDUM No. 4	AEI	05/17/2023

Designed by: ANTHONY S. DAVIS, P.E.

STATE OF MAINE — CATHERINE A. FAUCHER No. 7575 — LICENSED PROFESSIONAL ENGINEER

ISSUED FOR BID - NOT FOR CONSTRUCTION

	By	Date		By	Date
Designed:	CAF	03/28/23	Checked:	CAF	03/28/23
Drawn:	REW	03/28/23			

Allied Engineering
Structural Mechanical Electrical Plumbing
160 Veranda Street
Portland, Maine 04103
P: 207.221.2260
F: 207.221.2266
Web:www.allied-eng.com

AEI PROJ.NO.: 20020 CAD FILE:

MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: Brian A. Taddeo, P.E.

CONTRACT 2023.06
YORK VEHICLE STORAGE GARAGE
POWER AND SYSTEMS PLAN

SHEET NUMBER: EP100

CONTRACT: 2023.06

Lighting and Appliance Panelboard: DP

Location: | **Volts:** 120/240 Single | **A.I.C. Rating:** 22kAIC
Supply From: | **Phases:** 1 | **Mains Type:** MLO
Mounting: Surface | **Wires:** 3 | **Bus Rating:** 400 A
MCB Rating:

CKT	Circuit Description	Trip Amps	Poles	A (kVA)		B (kVA)		Poles	Trip Amps	Circuit Description	CKT
1	EXISTING BUILDING (1)	100	2	0	0			2	100	EXISTING BUILDING (1)	2
3						0	0				4
5	EXISTING BUILDING (1)	100	2	0	17.9			2	200	MDP - NEW BUILDING (1)	6
7						0	16.9				8
9	Spare	50	2	0	0			2	50	EXISTING SAND SHED (1)	10
11						0	0				12
13	EXISTING SALT SHED (1)	50	2	0	0			2	30	EXISTING COLD SHED (1)	14
15						0	0				16
17	Spare	20	2	0	0			2	50	EXISTING WELL PUMP (1)	18
19						0	0				20
21	EXISTING RECEPTACLE	20	1	0	0			1	20	EXIST FLAMMABLE SHED (1)	22
23	GENERATOR START	20	1			0	0	1	20	GEN BATTERY CHARGER	24
25	GEN JACKET WH/STRIP HEATER	20	1	0	0			1	20	EXISTING LIGHTING (1)	26
27	Receptacle	20	1			0.4	0	1	20	Spare	28
29	Spare	20	1	0	0			1	20	Spare	30
31	Spare	20	1			0	0	1	20	Spare	32
33	Spare	20	1	0	0			1	20	Spare	34
35	Spare	20	1			0	0	1	20	Spare	36
37	Spare	20	1	0	0			1	20	Spare	38
39	Spare	20	1			0	0	1	20	Spare	40
41	Spare	20	1	0	0			1	20	Spare	42
			Total Load:	17.9 kVA		17.3 kVA					
			Total Amp:	149 A		144 A					

Notes:

(1) EXTEND EXISTING WIRING FROM MANHOLE TO PANEL DP

Lighting and Appliance Panelboard: MDP

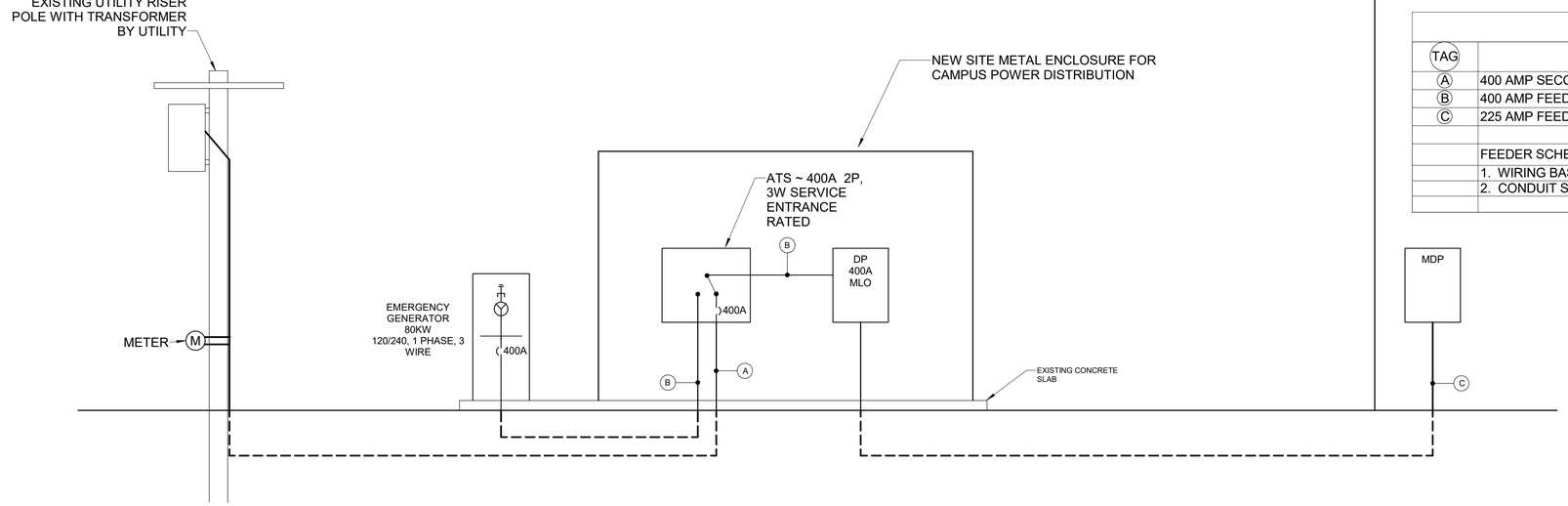
Location: BAY 1 101 | **Volts:** 120/240 Single | **A.I.C. Rating:** 22kAIC
Supply From: DP | **Phases:** 1 | **Mains Type:** MCB
Mounting: Surface | **Wires:** 3 | **Bus Rating:** 225 A
MCB Rating: 200 A

CKT	Circuit Description	Trip Amps	Poles	A		B		Circuit Description	CKT
1	DOOR OPERATOR BAY 1	20	1	1.4	0			DESTRAT FANS	2
3	DOOR OPERATOR BAY 2	20	1			1.4	1.7	WATER HEATER	4
5	DOOR OPERATOR BAY 3	20	1	1.4	0			HVAC CONTROL POWER	6
7	DOOR OPERATOR BAY 4	20	1			1.4	0.2	Receptacles	8
9	DOOR OPERATOR BAY 5	20	1	1.4	0			Receptacles	10
11	DOOR OPERATOR BAY 6	20	1			1.4	0.7	Receptacles	12
13	Receptacles	20	1	0.7	0			Receptacles	14
15	GUH-1	20	1			0.7	0.9	Receptacles	16
17	GUH-3	20	1	0.7	0			Receptacles	18
19	LIGHTING, SWITCH a	20	1			0.7	0.7	GUH-2	20
21	LIGHTING, SWITCHES b,c	20	1	1	0			CORD REELS BAYS 1-2	22
23	EXTERIOR BUILDING LIGHTING	20	1			0.8	0.7	CORD REELS BAYS 3-4	24
25	LP GAS CO DETECTOR	20	1	1	0			CORD REELS BAYS 5-6	26
27	Spare	20	1			0	0	Spare	28
29	Spare	20	1	0	0			Spare	30
31	Spare	20	1			0	0	Spare	32
33	Spare	20	1	0	0			Spare	34
35	Spare	20	1			0	1.4	HVAC - EF-1	36
37	Spare	20	1	0	0				38
39	Spare	20	1			0	4.8	HVAC - AC-1	40
41	Spare	20	1	0	0				42
43	Spare	20	1			0	0	Spare	44
45	Spare	20	1	0	0			Spare	46
47	Spare	20	1			0	0	Spare	48
49	Spare	20	1	0	0			Spare	50
51	Spare	20	1			0	0	Spare	52
53	Spare	20	1	0	0			Spare	54
55	Spare	20	1			0	0	Spare	56
			Total Load:	17.9 kVA		16.9 kVA			
			Total Amp:	149 A		141 A			

Notes:

UPDATES:

- DELETED NEW UTILITY SERVICE TO THE BUILDING, BUILDING TO BE FED FROM CAMPUS MDP.
- BUILDING DISTRIBUTION CHANGED FROM 208V, 3PH TO 240V, 1PH.
- REMOVAL OF GENERATOR AND ASSOCIATED EQUIPMENT/CIRCUITS
- REMOVAL OF WELL PUMP
- ADD CAMPUS GENERATOR, ATS, PANEL DP



FEEDER SCHEDULE

TAG	DESCRIPTION	CONDUCTORS (NOTE 1)	CONDUIT (NOTE...
A	400 AMP SECONDARY FEEDER	(3) #500 KCMIL	3 1/2"
B	400 AMP FEEDER	(3) #500 KCMIL & (1) #3G	3 1/2"
C	225 AMP FEEDER	(3) #4/0 & (1) #4G	2 1/2"
	FEEDER SCHEDULE NOTES:		
	1. WIRING BASED ON COPPER THWN/THHN		
	2. CONDUIT SIZE BASED ON EMT		

A1	POWER RISER DIAGRAM
NONE	

Scale: 12" = 1'-0"

No.	Revision	By	Date
1	ISSUED FOR ADDENDUM No. 4	AEI	05/17/2023

Designed by: ANTHONY S. DAVIS, P.E.

STATE OF MAINE * CATHERINE A. FAUCHER No. 7575 * LICENSED PROFESSIONAL ENGINEER

ISSUED FOR BID - NOT FOR CONSTRUCTION

	By	Date		By	Date
Designed:	CAF	03/28/23	Checked:	CAF	03/28/23
Drawn:	REW	03/28/23			

Allied Engineering
Structural Mechanical Electrical Plumbing
160 Veranda Street
Portland, Maine 04103
P: 207.221.2260
F: 207.221.2266
Web:www.allied-eng.com

AEI PROJ.NO.: 20020 | CAD FILE:

MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

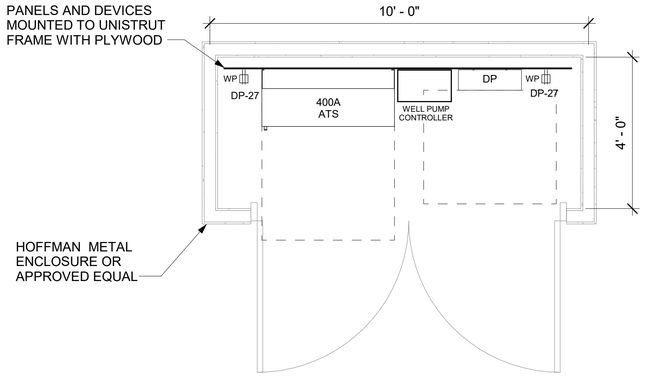
MTA PROJECT MANAGER: Brian A. Taddeo, P.E.

CONTRACT 2023.06
YORK VEHICLE STORAGE GARAGE
POWER RISER DIAGRAM

SHEET NUMBER: EP500

CONTRACT: 2023.06

33 OF 33

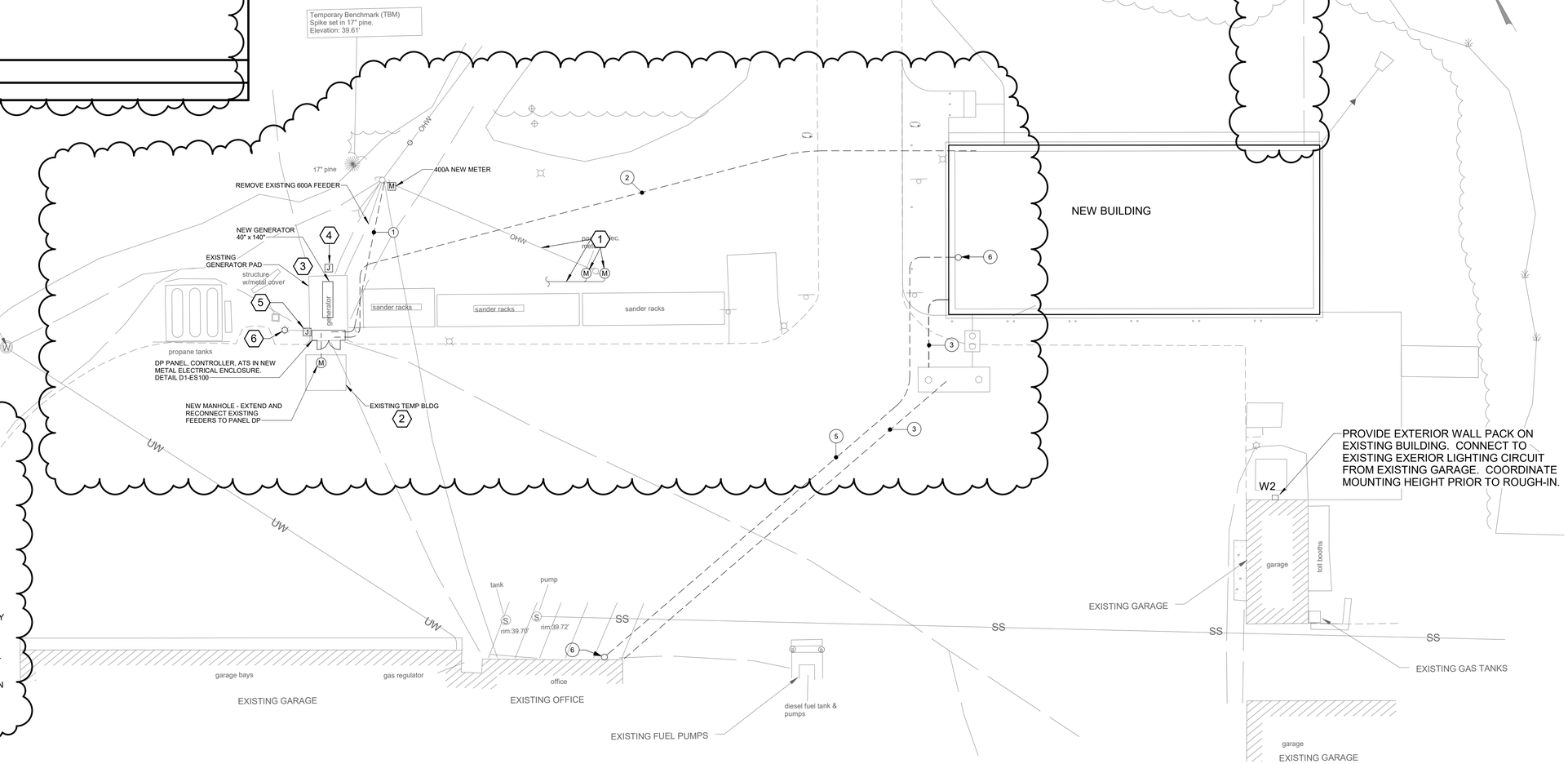


D1	ELECTRICAL ENCLOSURE ENLARGEMENT
1/2" = 1'-0"	

CONDUIT AND WIRING KEY:

1. 400A FEEDER TO ATS - REFER TO RISER
2. FEED TO NEW GARAGE - SEE RISER
3. 3/4" CONDUIT UNDERGROUND WITH PULL STRING FOR TANK MONITORING
   FURNISH AND INSTALL A COMPLETE HIGH LEVEL ALARM MONITORING SYSTEM FOR THE FLOOR DRAIN HOLDING TANK. THE SYSTEM SHALL BE AS MANUFACTURED BY TANK ALERT AB ALARM SYSTEM, PART NUMBER 1011421, MODEL TA AB-01H AND SHALL INCLUDE BUT NOT NECESSARILY BE LIMITED TO THE FOLLOWING COMPONENTS AND OPTIONS:
   - 15' SJE SIGNAL MASTER FLOAT STYLE CONTROL SWITCH WITH MOUNTING CLAMP, JUNCTION BOX, AND HIGH WATER ALARM FLOAT. COORDINATE WITH THE TANK MANUFACTURER FOR TANK OPENING REQUIREMENTS.
   - AUXILIARY ALARM CONTACTS
   - SJE RHOMBUS TANK ALERT AB IN NEMA 1 ENCLOSURE, AUTOMATIC ALARM RESET, RED ALARM LIGHT AND GREEN POWER ON LIGHT, ALARM TEST SWITCH, HORN SILENCE SWITCH.

   THE SYSTEM SHALL BE POWERED WITH 120 VAC PRIMARY VOLTAGE AND 9 VDC SECONDARY VOLTAGE. THE SYSTEM SHALL PROVIDE AUDIBLE ALARM AT 87 DECIBELS AT 10 FEET AND SHALL INCLUDE A 6' POWER CORD
4. NOT USED
5. (2) 3" CONDUIT FOR FUTURE
6. STUB UP AND CAP CONDUITS 24" ABOVE FINISHED FLOOR/FINISHED GRADE. COORDINATE FINAL LOCATION PRIOR TO ROUGH IN.



KEY NOTES:

1. REMOVE EXISTING OVERHEAD WIRING, 2 METERS, METER POLES, AND CONDUIT/WIRING FROM METERS TO TEMP. BUILDING. (CONDUIT IS CURRENTLY LYING ON TOP OF GROUND)
2. PROVIDE NEW MANHOLE AT LOCATION OF EXISTING TEMPORARY PANELS IN EXISTING TEMP. BUILDING.
   EXTEND EXISTING WIRING TO NEW PANEL DP LOCATION AND RECONNECT.
   RELOCATE EXISTING WELL PUMP STARTER TO NEW ELECTRICAL ENCLOSURE. WIRE AND CONNECT.
   REMOVE EXISTING (2) 200 AMP PANELS AND ATS.
   RELOCATE EXISTING WELL PUMP CONTROLLER TO NEW ENCLOSURE AND RECONNECT.
3. REMOVE EXISTING GENERATOR, WIRING, PANELS, ATS WHICH ARE CURRENTLY NOT IN SERVICE DUE TO FIRE DAMAGE. REFER TO CIVIL PLANS FOR BUILDING DEMOLITION UNDER THE PROJECT SCOPE.
4. EXISTING JUNCTION BOX FOR EXTERIOR RECEPTACLE CIRCUIT SHALL REMAIN. WIRE AND CONNECT TO PANEL DP.
5. PROVIDE NEW JUNCTION BOX FOR EXISTING CONTROL WIRING AND MOUNT ON EXTERIOR WALL OF NEW ELECTRICAL ENCLOSURE.
6. EXISTING LIGHT POLE SHALL REMAIN. WIRE AND CONNECT TO PANEL DP.

A1	ELECTRICAL SITE PLAN
1" = 20'-0"	

Scale: As indicated

Designed by: ANTHONY S. DAVIS, P.E.

STATE OF MAINE — CATHERINE A. FAUCHER No. 7575 — LICENSED PROFESSIONAL ENGINEER

ISSUED FOR BID - NOT FOR CONSTRUCTION

No.	Revision	By	Date
1	ISSUED FOR ADDENDUM No. 2	AEI	05/05/2023

	By	Date		By	Date
Designed:	CAF	03/28/23	Checked:	CAF	03/28/23
Drawn:	REW	03/28/23			

Allied Engineering
Structural Mechanical Electrical Plumbing
160 Veranda Street
Portland, Maine 04103
P: 207.221.2260
F: 207.221.2266
Web:www.allied-eng.com

AEI PROJ.NO.: 20020 CAD FILE:

MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: Brian A. Taddeo, P.E.

CONTRACT 2023.06
YORK VEHICLE STORAGE GARAGE
ELECTRICAL SITE PLAN

SHEET NUMBER: ES100

CONTRACT: 2023.06