

TOWN OF SCARBOROUGH
PROJECT MANUAL
FOR
CRANBERRY PINES
ROADWAY IMPROVEMENT PROJECT
SCARBOROUGH, MAINE

July 27, 2011

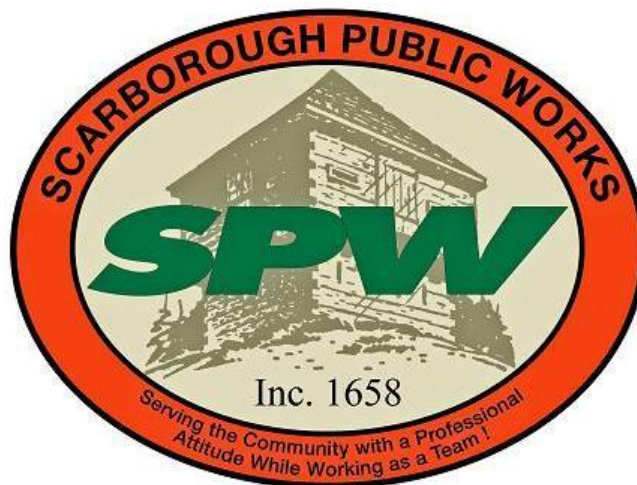


TABLE OF CONTENTS

**CRANBERRY PINES
ROADWAY IMPROVEMENT PROJECT
SCARBOROUGH, MAINE**

<u>PART /SECTION</u>	<u># PAGES</u>
I. - BIDDING REQUIREMENTS	
Request for Bids	1
Information for Bidders	1
Instructions for Bidders	3
Measurement and Payment	4
Bid Proposal	6
II. - SUPPLEMENTAL SPECIFICATIONS	
Roadway Construction	2
Underground Fire Storage Tank	4

PART I
BIDDING REQUIREMENTS

REQUEST FOR BIDS
CRANBERRY PINES
ROADWAY IMPROVEMENT PROJECT
SCARBOROUGH, MAINE

Separate sealed bids for Cranberry Pines Roadway Improvement Project in Scarborough, Maine will be received by the Town of Scarborough at the Office of the Town Clerk, Municipal Building 259 U. S. Route 1, Scarborough, ME 04074 (Telephone 730-4000) until 1:00 P.M. (prevailing time) on Monday, August 8, 2011, and then at said office publicly opened and read.

The project involves roadway and infrastructure improvements on Cranberry Pines in Scarborough. Roadway improvements include the construction of a hammer head turnaround, roadway widenings, and roadway relocation as shown on the plans. Roadway improvements include all work and materials to prepare the areas for paving. Other roadway improvements include ditch maintenance or construction as shown on plans, and select tree removal associated with infrastructure improvements. Infrastructure improvements include the installation of two underground fire suppression systems in accordance with the Scarborough Fire Department Underground Fire Storage Tank Requirements (copy appended).

The Contract Documents may be examined at the following locations:

Scarborough Public Works Department, 20 Washington Avenue, Scarborough, Maine
(Telephone 207-730-4400)

A **mandatory prebid site walk** is scheduled for 9:00 a.m. on Tuesday, August 2, 2011, at Cranberry Pines in Scarborough, Maine.

Michael Shaw
Director, Scarborough Public Works

INFORMATION FOR BIDDERS**CRANBERRY PINES
ROADWAY IMPROVEMENT PROJECT
TOWN OF SCARBOROUGH, MAINE**

Sealed Bids shall be addressed to:

Town of Scarborough
Attention: Tody Justice, Town Clerk
Scarborough Municipal Building
259 U.S. Route 1
P.O. Box 360
Scarborough, ME 04070-0360

and endorsed on the wrapper: Proposal for Cranberry Pines Roadway Improvement Project. Bids will be received by the Town of Scarborough at the Office of the Town Clerk, Scarborough Municipal Building 259 U. S. Route 1, Scarborough, ME until 1:00 P. M. (prevailing time) on Monday, August 8, 2011, and then at said office publicly opened and read. It is requested that all Bid Proposals remain in the project manual and the manual be submitted in its entirety including said Bid Proposal.

The project involves roadway and infrastructure improvements on Cranberry Pines in Scarborough. Roadway improvements include the construction of a hammer head turnaround, roadway widenings, and roadway relocation as shown on the plans. Roadway improvements include all work and materials to prepare the areas for paving. Other roadway improvements include ditch maintenance or construction as shown on plans, and select tree removal associated with infrastructure improvements. Infrastructure improvements include the installation of two underground fire suppression systems in accordance with the Scarborough Fire Department Underground Fire Storage Tank Requirements (copy appended).

For additional information contact: Peter B. Tubbs, PE (Project Engineer) at SYTDesign Consultants, 160 Longwoods Road, Cumberland, Maine 04021 (Telephone (207) 829-6994, Fax (207) 829-2231, e-mail ptubbs@syt design.com).

A **mandatory prebid site walk** is scheduled for 9:00 a.m. on Tuesday, August 2, 2011, at Cranberry Pines in Scarborough, Maine.

Each proposal must be made upon forms provided.

Work shall be governed by this project manual which includes references to the "State of Maine" Department of Transportation, Standard Specifications, Revision of December 2002. Said Standard Specifications shall be considered an integral part of this project manual.

The Town reserves the right to reject any or all proposals.

INSTRUCTIONS FOR BIDDERS
CRANBERRY PINES
ROADWAY IMPROVEMENT PROJECT
SCARBOROUGH, MAINE

STANDARDS, SPECIFICATIONS, AND LAWS

The State of Maine, Department of Transportation, Standard Specifications, revision of December 2002 have been adopted by the Town of Scarborough and are in integral part of these specifications and will govern the materials, methods, and execution of the work.

Whenever reference is made to Standard Specifications in these documents it shall be interpreted to mean the State of Maine, Department of Transportation Standard Specifications, Revision of December 2002.

All work shall comply with the Standard Specifications and all applicable federal, state and local laws, ordinances, rules and regulations.

GENERAL SCOPE OF WORK

The work of this project consists of roadway and infrastructure improvements on Cranberry Pines in Scarborough, Maine (hereinafter referred to as the "Project"). The Owner intends to contract with Dayton Sand & Gravel to provide and install the hot bituminous pavement for the road and driveways. Contractor shall fine grade before paving commences, and coordinate with the Owner and Dayton Sand & Gravel to facilitate the work of this contract and the paving.

SAFETY AND SITE CONDITIONS

Contractor shall maintain the project in a clean and orderly manner and shall maintain the usual safety programs at all times.

CHANGE ORDERS, ADDITIONAL WORK AND CORRECTION OF WORK

Any alteration or deviation from the defined project referred to in the BID PROPOSAL section of this document will be executed upon a written change order issued by Contractor and will be signed by Contractor and Owner prior to the commencement of additional work by the Contractor.

PAYMENT SCHEDULE

Contractor may submit to Owner a monthly request for payment for work done and material delivered to and stored on the site, together with supporting data and evidence to establish Owner's title to such material.

The Engineer shall review any requests and make recommendations to Owner. Any recommendation other than payment of such request shall be accompanied with a written explanation with reasons for the recommendation. A copy of the explanation shall also be sent to Contractor and other parties involved.

Owner, after receiving the recommendation from the Engineer, shall:

1. Make payment within 30 days.
2. Withhold all or part of the request for any of the following reasons:
 - i. Defective Work;
 - ii. Evidence of claims against the contractor that may affect the owner
 - iii. Failure to make payments to subcontractors, material suppliers or employees
 - iv. Damage to another contractor or another contractor's work equipment

Contractor shall present the Engineer with a complete and itemized breakdown of the cost of various aspects of the work, which Contractor will use in monthly estimates of work done.

WARRANTY

Contractor warrants to owner that all materials and equipment furnished by Contractor and any subcontractors under this contract will be new to the extent applicable, and that all work will be of good quality, free of improper workmanship and free of defective materials. Contractor shall also warranty all Contractor and subcontractor work for a period of one year following substantial completion of the project and for a period of one year following the correction of any defective work.

TERMINATION

Either party may terminate this contract for cause after giving the other party written notice and an opportunity to cure. Owner may terminate this contract for convenience by giving Contractor 5 days' notice and equitably compensating Contractor for work performed to the date of termination.

DISPUTE RESOLUTION

Any controversy or claim arising out of or related to this contract that cannot be resolved between the parties shall be submitted to the Superior Court for Cumberland County.

SUBCONTRACTORS

Contractor shall be fully responsible to Owner for the acts and omissions of Contractor's subcontractors and of persons both directly or indirectly employed by subcontractors, and shall hold them to the same terms and conditions as Contractor is held under this contract. Contractor's contract with subcontractors shall inform them that Owner will notify them under 10 MRSA § 3252 that they may not make claims or file liens against the project. In addition, the contracts shall inform subcontractors that they may not look to Owner for payment and that their sole avenues for payment are Contractor.

INSURANCE

The limitations of liability for the insurance required shall provide coverage for not less than the following amounts or greater where required by law:

1. Workers Compensation:

- (a) State: Statutory
- (b) Applicable Federal
(e.g. Longshoreman's): Statutory
- (c) Employer's Liability: \$1,000,000

2. Contractor General Liability:

- (a) Bodily Injury: \$2,000,000 Per Occurrence
\$2,000,000 Products and completed Operations
- (b) Property Damage*: \$1,000,000 Each Occurrence
* Property Damage liability insurance will provide Explosion, Collapse, and Underground Coverages.
- (c) Personal and Advertising Injury limit with Employment Exclusion Removed:
\$3,000,000 Annual Aggregate
\$1,000,000 Each Occurrence
- (d) Fire Damage Limit: \$ 50,000
- (e) Medical Expense: \$ 5,000

3. Automobile Liability:

- (a) Bodily Injury: \$1,000,000 Each Person, \$3,000,000 Annual Aggregate
\$1,000,000 Each Accident, \$3,000,000 Annual Aggregate
- (b) Property Damage: \$1,000,000 Each Occurrence
\$3,000,000 Annual Aggregate

4. Contractual Liability insurance shall be included as part of the coverage afforded under General Liability as described above.

Owner shall be named as additional insured on the comprehensive general and automobile liability policies. Contractor shall provide Owner copies of the actual insurance policies for review and approval before the commencement of work.

INDEMNIFICATION

Contractor will indemnify and hold harmless Owner and its agents and employees, in their public and individual capacities, from and against all claims, damages, losses and expenses, including attorney's fees in their public and individual capacities arising out of or resulting from the performance of the work.

MEASUREMENT & PAYMENT**CRANBERRY PINES
ROADWAY IMPROVEMENT PROJECT
SCARBOROUGH, MAINE****PART 1 - GENERAL****1.01 RELATED DOCUMENTS**

- A. The general provisions of the Contract, including General and Supplementary Conditions and Instructions for Bidders, apply to the work specified in this section.

1.02 GENERAL

- A. All work acceptably completed under the contract will be measured according to United States customary units.
- B. For all items, other than those to be paid for by lump sum, after the work is completed and before final payment is made, the Owner's Representative shall determine the quantities of various items of work accepted as the basis for final payment.
- C. In case of unit price items, the Contractor will be paid the amount for the quantity of work accepted and for the materials placed.
- D. The quantities of work performed shall be computed in accordance with the following methods of measurements.
 - 1. Area measurement, such as square yard, square feet, etc. will be measured along the ground surface.
 - 2. Linear measurement will be along the surface of the object being measured.
 - 3. Actual count (per each) will be the number of individual units installed.

1.03 BASIS OF PAYMENT

- A. Payment items for the work of this contract for which lumps sum and/or unit price payments will be made are listed in the BID PROPOSAL and described hereinafter. All costs for items of work, which are not specifically mentioned to be included in a particular lump sum or unit price payment item, shall be included in the listed lump sum or unit price item that is most closely associated with the work involved. The lump sum and unit prices bid for the respective items will be considered full compensation for all plant, labor, materials, equipment, including all incidentals and performing any associated quality control, environmental protection, safety requirements, tests and

reports and for performing all work required for which separate payment is not otherwise provided.

- B. Measurement of the applicable unit price item shall be the actual quantity of said item furnished and installed or as measured within the limits indicated on the drawings and as described in the Measurement and Payment included herein.

1.04 PAYMENT ITEMS

A. GENERAL CONDITIONS – Item 1

- 1. Payment: Lump Sum Price for General Conditions shall include furnishing all materials, equipment, tools and labor to perform all preparatory work and operations necessary for the movement of personnel, equipment, supplies, and incidentals to the project site; for the establishment of offices, buildings and other facilities necessary for the work; premiums on bonds and insurance for the work; and for other operations performed or costs incurred before the beginning of the work and for the demobilization of same at the end of the work and all other incidental and appurtenant work. Payment shall be made on the percentage of project completion at the end of each payment period.

B. CLEARING – Item 2

- 1. Payment: The Lump Sum Price for Clearing shall constitute full compensation for furnishing all material, equipment, and labor required to clear and grub areas within the limits indicated, specific, or as otherwise required to perform the work. The price shall also include the cutting and disposal of all trees less than 8 inches in diameter, all stumps, shrubs, brush, and all other appurtenant work. Trees 8 inches and larger will be paid for at the appropriate item in the Bid Schedule. Payment shall be made on the percentage of clearing and grubbing completed at the end of each payment period.

C. TREE AND STUMP REMOVAL – Item 3 & 4

- 1. Measurement: Measurement for Tree Removal will be by the actual number of trees cut and removed for the sizes indicated. Multi trunk trees will be measured as one tree.
- 2. Payment: The Unit Price for Tree Removal shall constitute full compensation to furnish all materials, equipment, and labor to cut and remove trees including all stumps from the site as indicated and as specified. The price shall include but not be limited to cutting trees, removal of stumps, and backfilling stump holes after removal and all appurtenant work.

D. UNDERGROUND FIRE SUPPRESSION SYSTEM – Item 5

1. Payment: The Unit Price for Underground Fire Suppression System shall constitute full compensation to furnish all material, equipment, and labor necessary to install an underground fire storage tank as specified in the Supplemental Specifications. The price shall include but not be limited to all required excavation, sand/fill, rock/gravel, loam and seed, prepping the apron for pavement, as well as two 6” cement filled steel bollards.

E. STRUCTURAL ROCK EXCAVATION FOR FIRE TANKS – Item 6

1. Payment: The Unit Price for Rock Excavation shall constitute full compensation to furnish all material, equipment, and labor necessary to remove ledge rock interfering with installation of the fire tanks and appurtenances as specified in the Supplemental Specifications. The price shall include but not be limited to all required cuts, fill, bases, and grading.

F. CONSTRUCTION OF TURNAROUND, ROADWAY WIDENINGS, AND ROADWAY RELOCATION – Item 7

1. Payment: Lump Sum Price for Construction of Turnaround, Roadway Widening, and Roadway Relocation shall constitute full compensation to furnish all material, equipment, and labor necessary to construct a hammer head turnaround, roadway widening, and roadway relocation as shown on the plans and specified in the Supplemental Specifications. The price shall include but not be limited to all required cuts, fill, bases, and grading to prepare the areas for pavement.

G. EROSION AND SEDIMENTATION CONTROL – Item 8

1. Payment: Lump Sum Price for Erosion and Sedimentation Control measures shall constitute full compensation to furnish all material, equipment, and labor necessary to install and maintain all control measures throughout the duration of the project complete as indicated, specified or otherwise required by authorities having jurisdiction. Price shall include permit acquisition costs and all other appurtenant work. Payment shall be made on the percentage of project completion at the end of each payment period.

H. TRAFFIC CONTROL – Item 9

1. Payment: Lump Sum Price for Traffic Control shall constitute full compensation to provide all materials, equipment and labor necessary for traffic control for all schedules of the Work for the entire duration of the work. Payment shall be made on the percentage of project completion at the end of each payment period.

- I. ENTRANCE PILLAR REMOVAL – Item 10
1. Payment: Lump Sum Price for Entrance Pillar Removal shall constitute full compensation to furnish all material, equipment, and labor necessary to remove pillars at the entrance of Cranberry Pines as shown on plans. The price shall include but not be limited to all required cuts, fill, bases, and grading.
- J. CLEAN / RE-ESTABLISH ROADSIDE SWALE – Item 11
1. Payment: The Unit Price for Cleaning / Re-establishing roadside swale shall constitute full compensation to furnish all material, equipment, and labor necessary to re-establish existing roadside swales. The price shall include but not be limited to all required cuts, fill, grading, and loam and seed.
- K. CONSTRUCT DITCH PER TYPICAL SECTION – Item 12
1. Payment: The Unit Price for Constructing Ditches shall constitute full compensation to furnish all material, equipment, and labor necessary to construct ditches per typical section. The price shall include but not be limited to all required cuts, fill, grading, and loam and seed.

BID PROPOSAL

**CRANBERRY PINES
ROADWAY IMPROVEMENT PROJECT
SCARBOROUGH, MAINE**

ARTICLE 1 – BID RECIPIENT

1.01 This Bid Proposal is submitted to the Town of Scarborough, Attention: Tody Justice, Town Clerk, Scarborough Municipal Building, 259 U.S. Route 1, P.O. Box 360, Scarborough, ME 04070-0360.

The following name and address shall be the official name and address of the person, partnership or corporation submitting this bid and must agree with the "Signature of Bidder" in the case of an individual; the "Name of Firm or Partnership" in the case of a firm or partnership; the "Name of Bidder" in the case of a corporation. The Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

Proposal of _____

Address: _____

Name (contact person): _____

Tel. No.: _____

Fax. No.: _____

E-mail: _____

ARTICLE 2 – BIDDER’S ACKNOWLEDGEMENTS

2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

ARTICLE 3 – BIDDER’S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, the other related data identified, and the following Addenda, receipt of which is hereby acknowledged and made a part of these contract documents:

<u>Addendum No.</u>	<u>Addendum Date</u>
_____	_____
_____	_____
_____	_____

B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and is satisfied as to all federal, state and local Laws and Regulations that are applicable to this project and may affect cost, progress and performance of the Work.

D. Bidder has obtained and carefully studied (or accepts the consequences for not doing so) all additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents to be employed by Bidder, and safety precautions and programs incident thereto.

E. Bidder does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents.

F. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.

G. Bidder has correlated the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents.

H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by Engineer is acceptable to Bidder.

I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.

- J. Bidder will submit written evidence of its authority to do business in the state where the Project is located not later than the date of its execution of the Agreement.
- K. The Bidder agrees to perform any extra work, not covered by the above schedule of items, which may be ordered by the Engineer, and to accept as full compensation therefore such prices as may be agreed upon in writing by the Engineer and the Contractor.
- L. The bidder agrees to begin work on the date specified in "Notice of Proceed" and to prosecute said work in such a manner as to complete it within the time limits specified in the Contract Agreement.
- M. The bidder agrees that this proposal will remain in effect until the formal contract is executed by the successful bidder of this work, and the Town may at any time without notice accept this proposal whether any other proposal has previously been accepted or not. Provided, however, that the Town shall accept, in writing, one of the proposals made, or reject all proposals made, within thirty (30) calendar days after the date of opening of the proposals.

3.02 Bidder further represents that:

- A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation;
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- D. Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over Owner.

ARTICLE 4 – BASIS OF BID

- 4.01 Bidder will complete the Work in accordance with the Contract Documents for the prices listed in the Basis of Bid included at the end of this section.
- 4.02 Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities, determined as provided in the Contract Documents.

ARTICLE 5 – TIME OF COMPLETION

- 5.01 Bidder agrees that the Work will be substantially complete on or before September 16, 2011 and will be completed and ready for final payment on or before September 30, 2011.

ARTICLE 6 – RELATED SPECIFICATIONS TO THIS BID

- 6.01 The State of Maine Department of Transportation Standard Specifications, revision December 2002, as referenced and modified are made a condition of this Bid.

ARTICLE 7 – BID SUBMITTAL

7.01 This Bid submitted by:

If Bidder is:

An Individual

Name (typed or printed): _____

By: _____ (SEAL)
(Individual's signature)

Doing business as: _____

A Partnership

Partnership Name: _____ (SEAL)

By: _____
(Signature of general partner – attach evidence of authority to sign)

Name (typed or printed): _____

A Corporation

Corporation Name: _____ (SEAL)

State of Incorporation: _____

Type (General Business, Professional, Service, Limited Liability): _____

By: _____
(Signature – attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____
(CORPORATE SEAL)

Attest: _____
(Signature of Corporate Secretary)

Date of Qualification to do business in Maine is ____________.

**BASIS OF BID
CRANBERRY PINES
SCARBOROUGH, MAINE**

ITEM NO.	DESCRIPTION	UNIT	QTY	UNIT PRICE	BID AMOUNT
1	GENERAL CONDITIONS	LS	1		
2	CLEARING	LS	1		
3	TREE AND STUMP REMOVAL - 8 TO 12 INCH	EACH	4		
4	TREE AND STUMP REMOVAL - OVER 12 INCH	EACH	7		
5	UNDERGROUND FIRE SUPPRESSION SYSTEM	EACH	2		
6	STRUCTURAL ROCK EXCAVATION FOR FIRE TANKS	CY	10		
7	CONSTRUCTION OF TURNAROUND, ROADWAY WIDENINGS, AND ROADWAY RELOCATION	LS	1		
8	EROSION AND SEDIMENTATION CONTROL	LS	1		
9	TRAFFIC CONTROL	LS	1		
10	ENTRANCE PILLAR REMOVAL	LS	1		
	TOTAL BID				

UNIT BID PRICES FOR ADDITIONAL WORK

ITEM NO.	DESCRIPTION	UNIT	QTY	UNIT PRICE
11	CLEAN / RE-ESTABLISH ROADSIDE SWALE	LF	UNKNOWN	
12	CONSTRUCT DITCH PER TYPICAL SECTION	LF	UNKNOWN	

PART II

SUPPLEMENTAL SPECIFICATIONS

ROADWAY CONSTRUCTION

CRANBERRY PINES ROADWAY IMPROVEMENT PROJECT TOWN OF SCARBOROUGH, MAINE

These Roadway Construction Specifications are an amended subset of Section 6 of the “Street Acceptance Ordinance of the Town of Scarborough, Maine” (Chapter 701) intended for the construction of the hammer head turnaround, roadway widenings, and roadway relocation on Cranberry Pines. All provisions which are not so amended or supplemented remain in full force and effect.

Roadway Construction Standards and Specifications

- **Roadway construction materials standards:**
Shall conform to the current “State of Maine Department of Transportation Standard Specifications Highways and Bridges”, Revision of December, 2002, as it may be revised, except as otherwise specified herein.
- **Grading:**
The turnaround, roadway widenings, and relocated roadway shall be graded to full width by the Contractor so that pavement can be constructed on parallel profiles.
- **Preparation:**
Before grading is started, the entire right-of-way area shall be cleared of all stumps, roots, brush and other objectionable material and all trees not intended for preservation.
- **Cuts:**
Tree stumps and other organic materials shall be removed to a depth of 2 feet below the subgrade. Rock and boulders when encountered shall be removed to subgrade.
- **Fill:**
All material used in the construction of embankments shall be of the quality to meet the standards for embankment construction, Sections 203.02 through 203.17 of the Maine Department of Transportation Standard Specifications, except that compaction shall not be less than 95% of maximum density (per ASTM D 1557 Mod.). Excess materials including organic materials, soft clays, wet and noncompatible materials, etc., shall be removed from the street site. The fill shall be spread in layers not to exceed 8 inches loose and then compacted. The filling of utility trenches and other places shall be mechanically tamped.
- **Side Slopes:**
All side slopes shall be at a slope of 4 horizontal to 1 vertical unless shown otherwise on the plan set.

- Bases:
The appropriate sections of the Bases and Pavements Divisions of the Maine Department of Transportation Standards Specifications currently in effect at the date of construction shall be applicable to this section except as follows:
 - Aggregate Sub-base Course – Gravel
Aggregate sub-base shall be 15” deep and not contain particles of rock exceeding 4 inches in any dimension.
 - Aggregate Base Course – Crushed
Aggregate base shall be 3” deep and not contain particles of rock that will not pass the 2 inch square sieve.



Scarborough Fire Department
246 US Route One
Scarborough, Maine 04074
(207) 883-4542 (207) 730-4270

Fire Suppression
Underground Fire Storage Tank Requirements
Updated 11/24/2010

All developer/installers must meet with the Scarborough Fire Department prior to beginning any installation of dry hydrants and/or holding tanks to cover the required criteria. Additionally, the Fire Department must be notified 7 days prior to any such installation to allow scheduling of an on-site inspection.

1. The minimum size accepted will be 10,000 gallons.
2. **Construction:** Construction must be designed to safely withstand the service to which they are subjected. This includes pressure of the earth or pavement above the tank.
3. **Materials:** Suitable materials include concrete, stainless steel, fiberglass, or lined concrete.
4. **Installation:** Tanks should be set on firm foundations and surrounded with soft sand, well compacted into place. Tanks must be anchored or weighted to prevent floating in locations where the water table is high or may rise. Underground tanks must be protected against damaging loads.
5. **Hardware:** Each tank will be provided with a 4.5" National standard male thread Fire Department connection with 2.5" NST cap and chain. This connection will be located within 6 feet from hot top or hard surface suitable for support of, fire apparatus. The center-to-cap elevation shall be 30" from final grade. An appropriate vent must be provided for normal operation (1000 GPM) of any tank to permit filling and emptying and for the maximum expansion or contraction of the tank contents with changes in temperature. A screen shall be provided to prevent clogged vents, which may result in the rupturing of tanks from the internal pressure or collapse due to internal vacuum. Inadequately sized vents may have the same result. The vent shall be a minimum of 6" in circumference (schedule 80 PVC pipe) and terminate a minimum 6 feet above grade. Pipe materials that are resistant to corrosion and have adequate strength to withstand the maximum service pressure, shall be used.
6. **Tank Fill:** A tank fill assembly shall be included in the vent pipe, 18" above final grade. It shall consist of a 6" schedule 80 PVC wye socket, 45 degree street elbow spigot & socket, and 6" x 4" Storz hydrant adaptor with cap and chain as illustrated below:

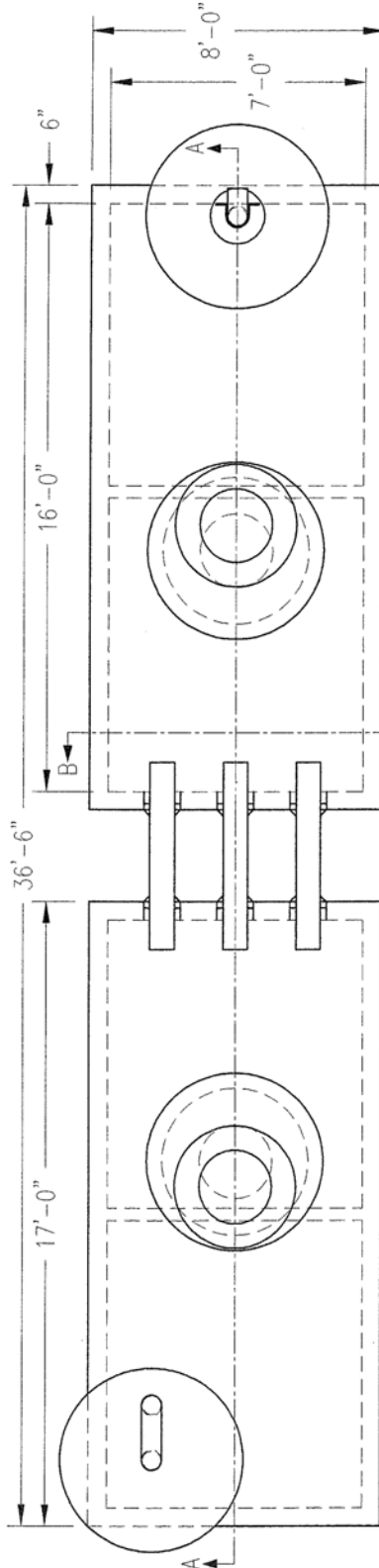


7. The installer, owner, and/or responsible party for the project shall insure in writing to the Planning Board and the Scarborough Fire Department, that the water in the tank and vertical lift of the hydrant will be protected from freezing. To clarify the pond or river water will rise in the vertical lift of the hydrant, equal to the level of the pond or river, and the water in the tank will rise in the hydrant connection exactly to the water level in the tank, and the water in the vertical lift in all cases must not be subject to freezing.
8. The owner or contractor shall be responsible for all maintenance for a one-year period.
9. An inspection cover shall be provided that will allow any required maintenance to be done from the inside.
10. Two tanks may be connected, or the connection of several tanks to hold the required gallons is allowed if approved by the Town Engineers. There shall be 3 (8") cross connections at the bottom of the tanks of (8") schedule 80 PVC pipe. There shall be 2 top cross connection vents of (6") schedule 80 PVC pipe.
11. Dry Hydrants are allowed in lieu of holding tanks if the Town Engineer and the Fire Department approve the water source.
12. The piping for the Fire Department connection MUST be constructed so that it comes through the interior of the tank, not through the end or underside.
13. There must be 6' of level ground around the Fire Department connection.
14. Protective bollards shall be installed and approved by the Fire Department.
15. The suction pipe inside the tank must be 6" Schedule 80 PVC to the top of the water level, then minimum Schedule 40 6" ID iron pipe from the top of the tank to the fire department connection.
16. Threaded or welded connections are acceptable.
17. Tanks are required to be re-inspected internally 30 days after installation.
18. The developer will be responsible for pumping any existing water, totally remove any foreign material of any kind, i.e. gasket material, dirt, leaves, concrete dust, etc., prior to on-site inspection by the Fire Department.
19. The developer will be responsible for filling the tank under Fire Department supervision.
20. A 24" concrete collar around the Fire Department connection shall be poured into place.

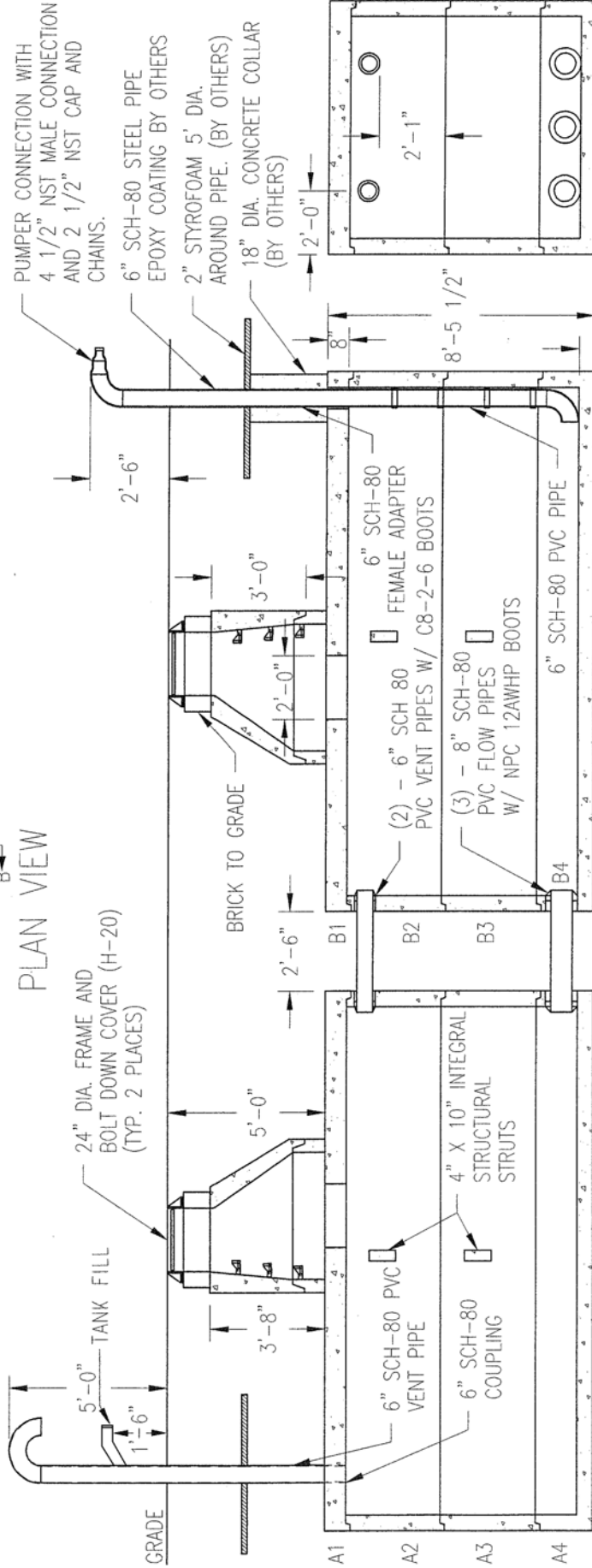
Note: Please see the attached drawings regarding placement requirements off a public or private way and design specifics.

10,000 GALLON FIRE TANK

WEIGHT - 100,400 LBS



PLAN VIEW



SECTION AA

ITEM	WEIGHT
BASE	15,000 LBS
3'-0" RISER	10,800 LBS
TOP	13,600 LBS

DESIGN NOTES:

- 1 - CONCRETE 5000 PSI AT 28 DAYS.
- 2 - SHIPLAP JOINTS ARE SEALED WITH A 2 x 1 1/4" STRIP OF ASPHALTIC BUTYL RUBBER.

1' BARREL TO BE CAST INTO TOP WITH 8" EXPOSED OUT TOP.
8" HOLE ON END WITH CONCRETE COLLAR.

SECTION BB