

INVATATION TO BID

The Department of Children and Families is accepting sealed bids for:

Cottage Sprinkler Systems

Project Number: BI-YS-173

DCF No. 40-RVHC-143

Albert J. Solnit Children's Center, Middletown, CT

Bids must be submitted on the forms supplied and in the manner specified. Complete Bid Documents may be attached to this invitation.

A pre-bid conference will be held at Albert J. Solnit Children's Center, 915 River Road, Middletown, CT, at **10:00 A.M., TUESDAY, JULY 15, 2014** in the maintenance office.

Bid is open only to those current in the State's Supplier Diversity Program (Set-Aside Program)

Bids will be accepted at the Department of Children and Families, Engineering Office, 505 Hudson Street, Hartford, CT 06106 until **1:00 P.M. local time on WEDNESDAY, JULY 30, 2014** at which time they will be publicly opened and read.

The Bid shall be accompanied by a Bid Bond in the amount of ten percent (10%) of the amount bid for any project in excess of \$50,000. All bonds required for this Project shall be acceptable to the DCF and as a minimum, issued through a bonding company licensed to transact such business in the State of Connecticut and named on the current list of "Surety Companies Acceptable on Federal Bonds" as published in the "Treasury Department Circular 570".

The successful Contractor shall be required to provide a Labor and Material Payment Bond and a Performance Bond for one hundred percent (100%) of the Contract price. The right is reserved to reject any or all Bids, in whole or in part, to award any item, group of items, or total Bid, and to waive any informality or technical defects, if it is deemed to be in the best interests of the DCF.

No Bidder may withdraw its Bid within sixty (60) days of the date of the Bid opening. Should there be reasons why the Contract cannot be awarded within the specified period; the time may be extended by mutual agreement between the DCF and the Bidder.

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END OF SECTION

INSTRUCTION TO BIDDERS AND CONDITIONS OF BID

SEALED BIDS

Bids must be submitted in a sealed envelope, clearly marked with the appropriate project number, date, time of bid opening, and name and address of the bidder. All pages of this Invitation & Bid Form must be submitted with your bid. Telephonic, faxed and emailed bids will not be accepted under any circumstances.

SUBMISSION OF BIDS

Bids may be mailed, or delivered in person to the following address to arrive by the bid closing date and time. Late bids will not be accepted and will be returned to the bidder unopened. Extensions will not be granted. All bids shall be marked "Bid Proposal" along with the project name and number.

**Richard Grossman, Engineering Dept.
Department of Children and Families
505 Hudson Street
Hartford, CT 06106**

PRE-BID MEETING

A mandatory pre-bid meeting will be held on-site **Tuesday, October 8, 2013, 10:00AM**. The meeting will be at Albert J. Solnit Children's Center, Maintenance Office, 915 River Road, Middletown, CT. Contractors proposing for this project must visit and examine the site before proposing, to verify the job conditions and dimensions. This meeting is intended to review the Bid requirements and answer any questions that interested bidders may have about this Bid.

BID CLOSING DATE

Bids must be received and stamped into the Maintenance Office no later than **Wednesday, October 23, 2013, 1:00PM** at the "Submission of Bids" location indicated above. All bids will be opened at the stipulated time and place. Any bidder who wishes to attend may do so.

STATES RIGHTS

The State reserves the right to reject any and all bids, and to waive any informality in the bids. No bids may be withdrawn for at least 60 days after the scheduled closing times for receipt of bids.

INSTRUCTION TO BIDDERS AND CONDITIONS OF BID

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**Richard Grossman, Engineering Dept.
Department of Children and Families
505 Hudson Street
Hartford, CT 06106**

PRE-BID MEETING

A mandatory pre-bid meeting will be held on-site **Tuesday, July 15, 2014, 10:00AM**. The meeting will be at Albert J. Solnit Children's Center, Maintenance Office, 915 River Road, Middletown, CT. Contractors proposing for this project must visit and examine the site before proposing, to verify the job conditions and dimensions. This meeting is intended to review the Bid requirements and answer any questions that interested bidders may have about this Bid.

BID CLOSING DATE

Bids must be received and stamped into the Maintenance Office no later than **Wednesday, July 30, 2014, 1:00PM** at the "Submission of Bids" location indicated above. All bids will be opened at the stipulated time and place. Any bidder who wishes to attend may do so.

STATES RIGHTS

The State reserves the right to reject any and all bids, and to waive any informality in the bids. No bids may be withdrawn for at least 60 days after the scheduled closing times for receipt of bids.

STANDARD CONDITIONS

1. Bid Security ó Bid security in the form of a certified check, bank check, or bid bond in the amount equal to 10% of the bid is required on all bids in excess of \$50,000.00. Checks should be made payable to:

Treasure, State of Connecticut

2. Security for faithful performance ó Performance Bond and Labor and Material Bond in the amount of 100% of the purchase order price must be filed by the successful low bidder prior to the start of construction if the bid is in excess of \$50,000.00.
3. Personal liability and property damage insurance is required per the Certificate of Insurance included herein.
4. Contractor shall commence work within two weeks after receiving notice to proceed and continue for ninety (90) calendar days for completion of the project, unless otherwise specified or agreed.
5. Contact Persons: Richard Grossman, Plant Facility Eng, 860-550-6669; Fax 860-560-5019
6. Liquidated Damages: \$350.00 per day.

SUPPLEMENTAL BIDS

Occasionally, the State may request óSupplemental Bidsö to a special project. When listed on the Invitation and Bid Form, each bidder is required to bid on each Supplement Bid.

CONNECTICUT SALES AND USE TAX

All contractors shall familiarize themselves with the current regulations of the Department of Revenue Service. The tax on materials or supplies exempted by such regulations shall not be included as part of the Contractor's bid.

DISCREPANCY IN AMOUNTS

In the event of any discrepancy between the amount written in words and the amount written in numerical figures, the amount written in words will be controlling. In case of error in the extension of prices in the bid, the unit price will govern.

START AND COMPLETION DATES

All work is to be completed within the specified number of days from the starting date, which is to be established at the time the Contract is awarded.

SUBLETTING OR ASSIGNING OF CONTACT

The contract or any portion thereof, or the work provided for therein, or the right, title, or interest of the contractor therein may not be sublet, sold, transferred, assigned or otherwise disposed of to any person, firm, or corporation without the written consent of the Commissioner.

No person, firm, corporation other than the contractor to whom the project was awarded shall be permitted to commence work at the site of the project until such consent has been granted.

BASEBID

The base bid shall be the figure to perform all work associated with the contract documents, excluding any supplemental items. It is the owners' intention the base bid shall cover all plant, labor and materials necessary to complete the work as intended or implied.

AWARD

The award will be determined by the lowest responsible bidder with the lowest total bid price.

END OF SECTION

BID PROPOSAL FORM

TO: Richard Grossman, Engineering Dept.
Department of Children and Families
505 Hudson Street
Hartford, CT 06106

FOR: Cottage Sprinkler System
Albert J. Solnit Children's Center
915 River Road
Middletown, CT 06457
Project: BI-YS-173
DCF No. 40-RVHC-143

DATE: _____

FROM: _____

In compliance with the Instructions to Bidders and Conditions of Bid; and subject to all conditions thereof, the undersigned offers and agrees to furnish the labor and materials and to complete work called for by the project's plans and specifications within the allotted time (90) **ninety calendar days** for the Lump Sum of:

Base Bid Price:

WORDS _____ DOLLARS

Figures:(\$ _____)

The General Contractor on this project will be required to perform not less than (50%) of the completed dollar value of the work with its own forces.

I (we), the undersigned, hereby declare that I am (we are) the only person(s) interested in this proposal: That it is made without any connection with any other person making any bid for the same work: that no person acting for, or employed by, the State of Connecticut is directly or indirectly interested in this proposal, or in any contract which may be under it, or in expected profits to arise there from: that this proposal is made without directly or indirectly influencing or attempting to influence any other person or corporation to bid or to refrain from bidding or to influence the amount of the bid of any other person or corporation: that this proposal is made in good faith without collusion or connection with any other person bidding for the same work; and that this proposal is made with distinct reference and relation to the plans and specifications prepared for this contract.

I (we) further declare that in regard to the conditions affecting the work to be done and the labor and materials needed, this proposal is based solely on my (our) own investigation and research and not in reliance upon any representations of any employee, officer or agent of the State.

Contractor (Owner/Officer): _____

Date: _____

Title: _____

Address: _____

City, State, Zip: _____

(AFFIX CORPORATE SEAL)

END OF SECTION 6 BID FORM

**DEPARTMENT OF CHILDREN AND FAMILIES
STATE OF CONNIECTICUT**

STANDARD BID BOND

KNOW ALL MEN BY THESE PRESENTS, That we, _____

_____, hereinafter called the Principal,

of _____, as Principal,

and _____, hereinafter called the Surety, a corporation organized and existing under the laws of the State of

_____, and duly authorized to transact a surety business in the State of Connecticut, as Surety, are held and firmly bound unto the State of Connecticut, as Obligee, in the penal sum of ten (10) percent of the amount of the bid set forth in a

proposal hereinafter mentioned, _____

_____, lawful money of the United States of America, for the payment of which, well and truly to be made to the Obligee, the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, That, whereas the Principal has submitted or is about to submit a proposal to the Obligee related to a contract for Project No.: 22-CCPP-125

NOW, THEREFORE, if the said contract be awarded to the Principal and the Principal shall, within such time as may be specified, enter into the said contract in writing with the State of Connecticut and give the required bonds, with surety acceptable to the Obligee, or if the Principal shall fail to do so, pay to the Obligee the damages which the Obligee may suffer by reason of such failure not exceeding the penalty of this bond, then this obligation shall be void, otherwise to remain in full force and effect.

SIGNED, SEALED AND DELIVERED this _____ day of _____, 20 _____

PrincipalsøSignature

Surety

(Print Name)

by

Its attorney in fact

Company Name

(Print Name)

EXECUTIVE ORDERS:

This contract is subject the provisions of Executive Order No. Three of Governor Thomas J Meskill, promulgated June 16, 1971, concerning labor employment practices; to Section 6 and 10 of Executive Order No. 7B of Governor M. Jodi Rell, promulgated November 16, 2005, concerning contracting reforms; Executive Order No. Sixteen of Governor John G. Rowland, promulgated August 4, 1999, concerning violence in the workplace, all of which are incorporated into, Executive Order No. Seventeen of Governor Thomas J. Meskill, promulgated February 15, 1973, concerning the listing of employment openings; and are made a part of this contract.

Connecticut General Statute Section 31-53 Summary of Connecticut's Prevailing Wage Law

Connecticut's prevailing wage law is codified in Connecticut General Statutes [Section 31-53](#) and [31-53a](#). The law applies to each contract for the construction, remodeling, refinishing, refurbishing, rehabilitation, alteration or repair of any public works project by the State or its agents, or by any political subdivision of the State.

Coverage

Conn. Gen. Stat. Section [31-53\(g\)](#) provides monetary thresholds which must be met before the law is applicable. The prevailing wage law does not apply where the **total cost of all work to be performed by all contractors and subcontractors** in connection with new construction of a public works project is less than four hundred thousand (\$400,000) dollars. The prevailing wages law does not apply in connection with remodeling, refinishing, refurbishing, rehabilitation, alteration or repair of any public works project under one hundred thousand (\$100,000) dollars.

Prevailing Rate

The prevailing rate consists of a base rate and a fringe benefit rate which may be paid in cash or benefits. Conn. Gen. Stat. Section [31-53\(d\)](#) permits the Labor Commissioner to adopt and use the prevailing wage rate determinations as have been made by the Secretary of Labor of the United States under the provisions of the Davis-Bacon Act, as amended. **The agent empowered to let such contract shall contact the Labor Commissioner at least ten, but not more than twenty days, prior to the date such contracts will be advertised for bid, to ascertain the proper prevailing rate. Under [Public Act 02-69](#) the rates will be adjusted annually on or before July 1st of each year. These new rates will be on Department of Labor website.**

Certifications

Both the Contractor and the Contracting Agent must provide certifications to the Labor Commissioner. Prior to the award of any contract subject to the prevailing wage law, the contracting agent shall certify in writing to the Labor Commissioner the total dollar amount of work to be done in connection with the public works project, regardless of whether such project consists of one or more contracts. Upon the award of a contract subject to the prevailing wage law, the contractor who is awarded the contract shall also certify, under oath, to the Labor Commissioner the pay scale to be used by the contractor and any of his subcontractors for the work to be performed under the contract. Additionally, each employer subject to the prevailing wage law must file certified payrolls with the contracting agent including information, including but not limited to, employee names; occupations; hours worked; rates paid; and the employers compliance with various provisions of law.

Penalties

There are various civil, criminal and administrative penalties for violations of the prevailing wage law. Failure to pay the prevailing rate is a crime which may be a felony depending upon the amount of unpaid wages. Knowingly filing a false certified payroll or failure to file a certified payroll is a Class D felony for which an employer may be fined up to five thousand dollars, imprisoned for up to five years, or both. Disregarding obligations under Conn. Gen. Stat. Section 31-53 may result in an administrative debarment which may preclude any firm, corporation, partnership or association in which such person or firms have an interest from receiving an award of a contract until a period of up to three years have elapsed. Additionally, civil penalties of \$300 per violation of law may also be assessed upon the employer.

**For additional information contact:
Wage and Workplace Standards Division
Public Contract Compliance (860) 263-6790**

Sec. 31-53. Construction, alteration or repair of public works projects by state or political subdivision; wage rates; certified payroll. Penalties for violations. (a)

Each contract for the construction, remodeling, refinishing, refurbishing, rehabilitation, alteration or repair of any public works project by the state or any of its agents, or by any political subdivision of the state or any of its agents, shall contain the following provision: "The wages paid on an hourly basis to any mechanic, laborer or workman employed upon the work herein contracted to be done and the amount of payment or contribution paid or payable on behalf of each such employee to any employee welfare fund, as defined in subsection (h) of this section, shall be at a rate equal to the rate customary or prevailing for the same work in the same trade or occupation in the town in which such public works project is being constructed. Any contractor who is not obligated by agreement to make payment or contribution on behalf of such employees to any such employee welfare fund shall pay to each employee as part of his wages the amount of payment or contribution for his classification on each pay day."

(b) Any person who knowingly or wilfully employs any mechanic, laborer or

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workman in the construction, remodeling, refinishing, refurbishing, rehabilitation, alteration or repair of any public works project for or on behalf of the state or any of its agents, or any political subdivision of the state or any of its agents, at a rate of wage on an hourly basis which is less than the rate customary or prevailing for the same work in the same trade or occupation in the town in which such public works project is being constructed, remodeled, refinished, refurbished, rehabilitated, altered or repaired, or who fails to pay the amount of payment or contributions paid or payable on behalf of each such employee to any employee welfare fund, or in lieu thereof to the employee, as provided by subsection (a), shall be fined not less than two thousand five hundred dollars but not more than five thousand dollars for each offense and (1) for the first violation, shall be disqualified from bidding on contracts with the state or any political subdivision until the contractor or subcontractor has made full restitution of the back wages owed to such persons and for an additional six months thereafter and (2) for subsequent violations, shall be disqualified from bidding on contracts with the state or any political subdivision until the contractor or subcontractor has made full restitution of the back wages owed to such persons and for not less than an additional two years thereafter. In addition, if it is found by the contracting officer representing the state or political subdivision thereof that any mechanic, laborer or workman employed by the contractor or any subcontractor directly on the site for the work covered by the contract has been or is being paid a rate of wages less than the rate of wages required by the contract to be paid as required by this section, the state or contracting political subdivision thereof may (A) by written notice to the contractor, terminate such contractor's right to proceed with the work or such part of the work as to which there has been a failure to pay said required wages and to prosecute the work to completion by contract or otherwise, and the contractor and his sureties shall be liable to the state or the contracting political subdivision for any excess costs occasioned the state or the contracting political subdivision thereby or (B) withhold payment of money to the contractor or subcontractor. The contracting department of the state or the

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political subdivision thereof shall within two days after taking such action notify the Labor Commissioner in writing of the name of the contractor or subcontractor, the project involved, the location of the work, the violations involved, the date the contract was terminated, and steps taken to collect the required wages.

(c) The Labor Commissioner may make complaint to the proper prosecuting authorities for the violation of any provision of subsection (b).

(d) For the purpose of predetermining the prevailing rate of wage on an hourly basis and the amount of payment or contributions paid or payable on behalf of each employee to any employee welfare fund, as defined in subsection (h), in each town where such contract is to be performed, the Labor Commissioner shall (1) hold a hearing at any required time to determine the prevailing rate of wages on an hourly basis and the amount of payment or contributions paid or payable on behalf of each person to any employee welfare fund, as defined in subsection (h), upon any public work within any specified area, and shall establish classifications of skilled, semiskilled and ordinary labor, or (2) adopt and use such appropriate and applicable prevailing wage rate determinations as have been made by the Secretary of Labor of the United States under the provisions of the Davis-Bacon Act, as amended.

(e) The Labor Commissioner shall determine the prevailing rate of wages on an hourly basis and the amount of payment or contributions paid or payable on behalf of such employee to any employee welfare fund, as defined in subsection (h), in each locality where any such public work is to be constructed, and the agent empowered to let such contract shall contact the Labor Commissioner, at least ten but not more than twenty days prior to the date such contracts will be advertised for bid, to ascertain the proper rate of wages and amount of employee welfare fund payments or contributions and shall include such rate of wage on an hourly basis and the amount of payment or contributions paid or payable on behalf of each employee to any employee welfare fund, as defined in subsection (h), or in lieu thereof the amount to be paid directly to each employee for such payment or contributions as provided in subsection (a) for all classifications of

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labor in the proposal for the contract. The rate of wage on an hourly basis and the amount of payment or contributions to any employee welfare fund, as defined in subsection (h), or cash in lieu thereof, as provided in subsection (a), shall, at all times, be considered as the minimum rate for the classification for which it was established. Prior to the award of any contract subject to the provisions of this section, such agent shall certify in writing to the Labor Commissioner the total dollar amount of work to be done in connection with such public works project, regardless of whether such project consists of one or more contracts. Upon the award of any contract subject to the provisions of this section, the contractor to whom such contract is awarded shall certify, under oath, to the Labor Commissioner the pay scale to be used by such contractor and any of his subcontractors for work to be performed under such contract.

(f) Each employer subject to the provisions of this section or section 31-54 shall (1) keep, maintain and preserve such records relating to the wages and hours worked by each employee and a schedule of the occupation or work classification at which each mechanic, laborer or workman on the project is employed during each work day and week in such manner and form as the Labor Commissioner establishes to assure the proper payments due to such employees or employee welfare funds under this section or section 31-54, and (2) submit monthly to the contracting agency a certified payroll which shall consist of a complete copy of such records accompanied by a statement signed by the employer which indicates that (A) such records are correct; (B) the rate of wages paid to each mechanic, laborer or workman and the amount of payment or contributions paid or payable on behalf of each such employee to any employee welfare fund, as defined in subsection (h) of this section, are not less than the prevailing rate of wages and the amount of payment or contributions paid or payable on behalf of each such employee to any employee welfare fund, as determined by the Labor Commissioner pursuant to subsection (d) of this section, and not less than those required by the contract to be paid; (C) the employer has complied with the provisions of this section and section 31-54; (D)

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each such employee is covered by a workers' compensation insurance policy for the duration of his employment, which shall be demonstrated by submitting to the contracting agency the name of the workers' compensation insurance carrier covering each such employee, the effective and expiration dates of each policy and each policy number; (E) the employer does not receive kickbacks, as defined in 41 USC 52, from any employee or employee welfare fund; and (F) pursuant to the provisions of section 53a-157a, the employer is aware that filing a certified payroll which he knows to be false is a class D felony for which the employer may be fined up to five thousand dollars, imprisoned for up to five years, or both. This subsection shall not be construed to prohibit a general contractor from relying on the certification of a lower tier subcontractor, provided the general contractor shall not be exempted from the provisions of section 53a- 157a if he knowingly relies upon a subcontractor's false certification. Notwithstanding the provisions of section 1-210, the certified payroll shall be considered a public record and every person shall have the right to inspect and copy such records in accordance with the provisions of section 1-212. The provisions of sections 31-59(a), 31-59(b), 31- 66 and 31-69 which are not inconsistent with the provisions of this section or section 31-54 shall apply to this section. Failing to file a certified payroll pursuant to subdivision (2) of this subsection is a class D felony for which the employer may be fined up to five thousand dollars, imprisoned for up to five years, or both.

(g) The provisions of this section shall not apply where the total cost of all work to be performed by all contractors and subcontractors in connection with new construction of any public works project is less than four hundred thousand dollars or where the total cost of all work to be performed by all contractors and subcontractors in connection with any remodeling, refinishing, refurbishing, rehabilitation, alteration or repair of any public works project is less than one hundred thousand dollars.

(h) As used in this section, section 31-54 and section 31-89a, "employee welfare fund" means any trust fund established by one or more employers and one or

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more labor organizations or one or more other third parties not affiliated with the employers to provide from moneys in the fund, whether through the purchase of insurance or annuity contracts or otherwise, benefits under an employee welfare plan; provided such term shall not include any such fund where the trustee, or all of the trustees, are subject to supervision by the Commissioner of Banking of this state or any other state or the Comptroller of the Currency of the United States or the Board of Governors of the Federal Reserve System, and "benefits under an employee welfare plan" means one or more benefits or services under any plan established or maintained for employees or their families or dependents, or for both, including, but not limited to, medical, surgical or hospital care benefits; benefits in the event of sickness, accident, disability or death; benefits in the event of unemployment, or retirement benefits.

(1949 Rev., S. 7372; March, 1950, S. 3018d, 3019d; 1961, P.A. 486, S. 1; 1963, P.A. 240, S. 1; 1967, P.A. 494, S. 1; P.A. 73-566, S. 1; P.A. 75-90, S. 1, 2; P.A. 77-442; 77-614, S. 161, 610; P.A. 79-325; P.A. 80-482, S. 200, 348; P.A. 83-537, S. 2; P.A. 85-355, S. 1-3; P.A. 87-9, S. 2, 3; P.A. 91-74, S. 1; 91-407, S. 40, 42; P.A. 93-392, S. 1; 93-435, S. 65, 95; P.A. 97-263, S. 14.)

History: 1961 act added provisions re political subdivision and employee welfare funds and added Subsecs. (f) and (g) re records and schedules which must be kept and re inapplicability of provisions where total cost of work is less than five thousand dollars; 1963 act substituted "alteration" for "remodeling" and "public works project" for references to public buildings; 1967 act added Subsec. (h) defining "employee welfare fund" and "benefits under an employee welfare plan" and substituted references to Subsec. (h) for references to Sec. 31-78; P.A. 73-566 amended Subsec. (b) to add provisions re termination of contract when discovery is made that employees are being paid less than the amount required under contract; P.A. 75-90 added references to remodeling, refurbishing, refurnishing and rehabilitation of projects in Subsecs. (a), (b) and (g); P.A. 77-442 added Subdiv. (2) in Subsec. (d) requiring commissioner to adopt and use appropriate and applicable prevailing wage rate determinations made by U.S.

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Secretary of Labor; P.A. 77-614 replaced bank commissioner with banking commissioner within the department of business regulation and made banking department the division of banking within that department, effective January 1, 1979; P.A. 79-325 replaced former provisions of Subsec. (g) which had rendered section inapplicable where total cost of project is less than fifty thousand dollars with provision rendering provisions inapplicable to new construction projects where total cost is less than fifty thousand dollars and to remodeling, refinishing etc. projects where total cost is less than ten thousand dollars; P.A. 80-482 restored banking division as independent department with commissioner as its head following abolition of business regulation department; P.A. 83-537 amended Subsec. (e) to require the local agent to contact the labor commissioner, to ascertain proper wage rates and payment levels, at least ten but not more than twenty days prior to putting the contract out to bid; P.A. 85-355 amended Subsec. (e) to require the agent to certify the total cost of work to be done on the public works project, and to require the contractor to certify the pay scale to be used on the project after having been awarded the contract and amended Subsec. (g) to make the prevailing wage requirements inapplicable to projects costing less than two hundred thousand dollars if new construction, or to projects costing less than fifty thousand dollars if remodeling; pursuant to P.A. 87-9 "banking commissioner" was changed editorially by the Revisors to "commissioner of banking"; P.A. 91-74 made a technical change in Subsec. (a), amended Subsec. (b) to increase fines from one hundred dollars to not less than two thousand five hundred dollars but not more than five thousand dollars and amended Subsec. (g) by changing the cost thresholds from two hundred thousand dollars to four hundred thousand dollars and from fifty thousand dollars to one hundred thousand dollars; P.A. 91-407 changed effective date of P.A. 91-74 from October 1, 1991, to July 1, 1991; P.A. 93-392 deleted reference to Sec. 51-53 in Subsec. (a) and added Subdiv. (2) in Subsec. (f) requiring employers subject to the state prevailing wage laws to file weekly certified payrolls with the contracting public agency and designating such certified payrolls as public

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records; P.A. 93-435 made technical change in Subsec. (a) to reinstate language in existence prior to amendment made by P.A. 93-392, effective June 28, 1993; P.A. 97-263 amended Subsec. (b) to add Subdivs. (1) and (2) disqualifying bidders from bidding on contracts with the state until certain requirements are met and to add provision permitting the withholding of payment of money to the contractor or subcontractor, amended Subsec. (d) to change "employee" to "person", amended Subsec. (f) to require monthly submission of certified payroll and to make failure to file a certified payroll a class D felony, and amended Subsec. (h) by redefining "employee welfare fund" to include one or more other third parties not affiliated with the employers.

See Sec. 7-112 re applicability of section to construction, remodeling or repair of public buildings by state agencies and political subdivisions of the state.

See Sec. 31-53a re (1) payments to mechanics, laborers and workmen from accrued payments withheld under the terms of a contract terminated pursuant to subsection (b) of this section, and their right of action and intervention, (2) the Labor Commissioner's duty to prepare and distribute lists of persons or firms found to be in violation of this section or barred from federal contracts pursuant to the Davis-Bacon Act, and (3) limitation on awarding of contracts to such persons or firms.

Project: Cottage Sprinkler Installation At Albert J Solnit Children's Center

**Minimum Rates and Classifications
for Building Construction**

ID : B 19338

**Connecticut Department of Labor
Wage and Workplace Standards Division**

By virtue of the authority vested in the Labor Commissioner under provisions of Section 31-53 of the General Statutes of Connecticut, as amended, the following are declared to be the prevailing rates and welfare payments and will apply only where the contract is advertised for bid within 20 days of the date on which the rates are established. Any contractor or subcontractor not obligated by agreement to pay to the welfare and pension fund shall pay this amount to each employee as part of his/her hourly wages.

Project Number: 40-RVHC-143

Project Town: Middletown

State#:

FAP#:

Project: Cottage Sprinkler Installation At Albert J Solnit Children's Center

CLASSIFICATION	Hourly Rate	Benefits
1a) Asbestos Worker/Insulator (Includes application of insulating materials, protective coverings, coatings, & finishes to all types of mechanical systems; application of firestopping material for wall openings & penetrations in walls, floors, ceilings	35.00	27.41
<hr/>		
1b) Asbestos/Toxic Waste Removal Laborers: Asbestos removal and encapsulation (except its removal from mechanical systems which are not to be scrapped), toxic waste removers, blasters.**See Laborers Group 7**		
<hr/>		
2) Boilermaker	35.24	25.01

Project: Cottage Sprinkler Installation At Albert J Solnit Children's Center

3a) Bricklayer, Cement Mason, Concrete Finisher (including caulking), Stone Masons	32.50	27.46 + a
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3b) Tile Setter	33.05	23.28
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3c) Terrazzo Mechanics and Marble Setters	31.69	22.35
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3d) Tile, Marble & Terrazzo Finishers	25.95	19.82
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3e) Plasterer	32.50	27.46
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-----LABORERS-----

Project: Cottage Sprinkler Installation At Albert J Solnit Children's Center

4) Group 1: Laborers (common or general), acetylene burners, carpenter tenders, concrete specialists, wrecking laborers, fire watchers.	27.05	17.80
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4a) Group 2: Mortar mixers, plaster tender, power buggy operators, powdermen, fireproofers/mixer/nozzleman (Person running mixer and spraying fireproof only)..	27.30	17.80
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4b) Group 3: Jackhammer Operators/Pavement Breaker, mason tender (brick) and mason tender (cement/concrete)	27.55	17.80
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4c) **Group 4: Pipelayers (Installation of water, storm drainage or sewage lines outside of the building line with P6, P7 license) (the pipelayer rate shall apply only to one or two employees of the total crew who primary task is to actually perform the mating of pipe sections) P6 and P7 rate is \$26.80	27.30	17.80
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4d) Group 5: Air track operators, Sand blasters	27.80	17.80
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4e) Group 6: Nuclear toxic waste removers, blasters	30.05	17.80
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Project: Cottage Sprinkler Installation At Albert J Solnit Children's Center

4f) Group 7: Asbestos/lead removal and encapsulation (except it's removal from mechanical systems which are not to be scrapped)	28.05	17.80
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4g) Group 8: Bottom men on open air caisson, cylindrical work and boring crew	27.55	17.80
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4h) Group 9: Top men on open air caisson, cylindrical work and boring crew	27.05	17.80
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4i) Group 10: Traffic Control Signalman	16.00	17.80
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5) Carpenter, Acoustical Ceiling Installation, Soft Floor/Carpet Laying, Metal Stud Installation, Form Work and Scaffold Building, Drywall Hanging, Modular-Furniture Systems Installers, Lathers, Piledrivers, Resilient Floor Layers.	31.00	22.50
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5a) Millwrights	31.60	22.75
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Project: Cottage Sprinkler Installation At Albert J Solnit Children's Center

6) Electrical Worker (including low voltage wiring) (Trade License required: E1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9)	37.60	22.22+3% of gross wage
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7a) Elevator Mechanic (Trade License required: R-1,2,5,6)	47.15	26.785+a+b
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-----LINE CONSTRUCTION-----

Groundman	24.37	6.5%+10.04
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Linemen/Cable Splicer	44.30	6.5%+17.70
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8) Glazier (Trade License required: FG-1,2)	34.18	17.75
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Project: Cottage Sprinkler Installation At Albert J Solnit Children's Center

9) Ironworker, Ornamental, Reinforcing, Structural, and Precast Concrete Erection	33.50	28.98
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----OPERATORS----

Group 1: Crane handling or erecting structural steel or stone, hoisting engineer 2 drums or over, front end loader (7 cubic yards or over); work boat 26 ft. and over. (Trade License Required)	36.80	22.30 + a
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Group 2: Cranes (100 ton rate capacity and over); Excavator over 2 cubic yards; Piledriver (\$3.00 premium when operator controls hammer); Bauer Drill/Caisson. (Trade License Required)	36.48	22.30 + a
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Group 3: Excavator; Backhoe/Excavator under 2 cubic yards; Cranes (under 100 ton rated capacity), Grader/Blade; Master Mechanic; Hoisting Engineer (all types of equipment where a drum and cable are used to hoist or drag material regardless of motive power of operation), Rubber Tire Excavator (Drott-1085 or similar); Grader Operator; Bulldozer Fine Grade. (slopes, shaping, laser or GPS, etc.). (Trade License Required)	35.74	22.30 + a
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Group 4: Trenching Machines; Lighter Derrick; Concrete Finishing Machine; CMI Machine or Similar; Koehring Loader (Skooper).	35.35	22.30 + a
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Project: Cottage Sprinkler Installation At Albert J Solnit Children's Center

Group 5: Specialty Railroad Equipment; Asphalt Paver; Asphalt Reclaiming Machine; Line Grinder; Concrete Pumps; Drills with Self Contained Power Units; Boring Machine; Post Hole Digger; Auger; Pounder; Well Digger; Milling Machine (over 24" Mandrell)	34.76	22.30 + a
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Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller; Pile Testing Machine.	34.76	22.30 + a
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Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer).	34.45	22.30 + a
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Group 7: Asphalt roller, concrete saws and cutters (ride on types), vermeer concrete cutter, Stump Grinder; Scraper; Snooper; Skidder; Milling Machine (24" and under Mandrell).	34.11	22.30 + a
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Group 8: Mechanic, grease truck operator, hydroblaster; barrier mover; power stone spreader; welding; work boat under 26 ft.; transfer machine.	33.71	22.30 + a
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Group 9: Front end loader (under 3 cubic yards), skid steer loader regardless of attachments, (Bobcat or Similar): forklift, power chipper; landscape equipment (including Hydroseeder).	33.28	22.30 + a
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Project: Cottage Sprinkler Installation At Albert J Solnit Children's Center

Group 10: Vibratory hammer; ice machine; diesel and air, hammer, etc. 31.24 22.30 + a

Group 11: Conveyor, earth roller, power pavement breaker (whiphammer), robot demolition equipment. 31.24 22.30 + a

Group 12: Wellpoint operator. 31.18 22.30 + a

Group 13: Compressor battery operator. 30.60 22.30 + a

Group 14: Elevator operator; tow motor operator (solid tire no rough terrain). 29.46 22.30 + a

Group 15: Generator Operator; Compressor Operator; Pump Operator; Welding Machine Operator; Heater Operator. 29.05 22.30 + a

Project: Cottage Sprinkler Installation At Albert J Solnit Children's Center

Group 16: Maintenance Engineer/Oiler. 28.40 22.30 + a

Group 17: Portable asphalt plant operator; portable crusher plant operator; portable concrete plant operator. 30.60 22.30 + a

Group 18: Power safety boat; vacuum truck; zim mixer; sweeper; (Minimum for any job requiring a CDL license). 30.29 22.30 + a

-----PAINTERS (Including Drywall Finishing)-----

10a) Brush and Roller 30.62 17.75

10b) Taping Only/Drywall Finishing 31.37 17.75

Project: Cottage Sprinkler Installation At Albert J Solnit Children's Center

10c) Paperhanger and Red Label	31.12	17.75
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10e) Blast and Spray	33.62	17.75
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11) Plumber (excluding HVAC pipe installation) (Trade License required: P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2)	39.31	26.27
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12) Well Digger, Pile Testing Machine	33.01	19.40 + a
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13) Roofer (composition)	31.70	17.36
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14) Roofer (slate & tile)	32.20	17.36
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Project: Cottage Sprinkler Installation At Albert J Solnit Children's Center

15) Sheetmetal Worker (Trade License required for HVAC and Ductwork: 33.84 31.18
SM-1,SM-2,SM-3,SM-4,SM-5,SM-6)

16) Pipefitter (Including HVAC work) (Trade 39.31 26.27
License required: S-1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4, G-1, G-2, G-8 &
G-9)

-----TRUCK DRIVERS-----

17a) 2 Axle 28.33 19.14 + a

17b) 3 Axle, 2 Axle Ready Mix 28.43 19.14 + a

17c) 3 Axle Ready Mix 28.48 19.14 + a

Project: Cottage Sprinkler Installation At Albert J Solnit Children's Center

17d) 4 Axle, Heavy Duty Trailer up to 40 tons	28.53	19.14 + a
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17e) 4 Axle Ready Mix	28.58	19.14 + a
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17f) Heavy Duty Trailer (40 Tons and Over)	28.78	19.14 + a
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17g) Specialized Earth Moving Equipment (Other Than Conventional Type on-the-Road Trucks and Semi-Trailers, Including Euclids)	28.58	19.14 + a
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18) Sprinkler Fitter (Trade License required: F-1,2,3,4)	39.76	19.87 + a
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19) Theatrical Stage Journeyman	22.22	6.53
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<i>A</i>	<i>W</i>
	Crane with 150 ft. boom (including jib) - \$1.50 extra
	Crane with 200 ft. boom (including jib) - \$2.50 extra
	Crane with 250 ft. boom (including jib) - \$5.00 extra
	Crane with 300 ft. boom (including jib) - \$7.00 extra
	Crane with 400 ft. boom (including jib) - \$10.00 extra

All classifications that indicate a percentage of the fringe benefits must be calculated at the percentage rate times the "base hourly rate".

Apprentices duly registered under the Commissioner of Labor's regulations on "Work Training Standards for Apprenticeship and Training Programs" Section 31-51-d-1 to 12, are allowed to be paid the appropriate percentage of the prevailing journeymen hourly base and the full fringe benefit rate, providing the work site ratio shall not be less than one full-time journeyman instructing and supervising the work of each apprentice in a specific trade.

Project: Cottage Sprinkler Installation At Albert J Solnit Children's Center

Effective October 1, 2005 - Public Act 05-50: any person performing the work of any mechanic, laborer, or worker shall be paid prevailing wage

All Person who perform work ON SITE must be paid prevailing wage for the appropriate mechanic, laborer, or worker classification.

All certified payrolls must list the hours worked and wages paid to All Persons who perform work ON SITE regardless of their ownership i.e.: (Owners, Corporate Officers, LLC Members, Independent Contractors, et. al)

Reporting and payment of wages is required regardless of any contractual relationship alleged to exist between the contractor and such person.

~~Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clause (29 CFR 5.5 (a) (1) (ii)).

Please direct any questions which you may have pertaining to classification of work and payment of prevailing wages to the Wage and Workplace Standards Division, telephone (860)263-6790.

ACORD™ CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

PRODUCER	THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.	
INSURED	INSURERS AFFORDING COVERAGE INSURER A: INSURER B: INSURER C: INSURER D: INSURER E:	NAIC #

COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR	ADD'L LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS
		GENERAL LIABILITY <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> Owner's & Contractor's Prot. <hr/> GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC				EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ MED EXP (Any one person) \$ 10,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000
		AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> NON-OWNED AUTOS				COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$
		GARAGE LIABILITY <input type="checkbox"/> ANY AUTO				AUTO ONLY - EA ACCIDENT \$ OTHER THAN AUTO ONLY: EA ACC \$ AGG \$
		EXCESS/UMBRELLA LIABILITY <input type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS MADE <input type="checkbox"/> DEDUCTIBLE RETENTION \$				EACH OCCURRENCE \$ AGGREGATE \$ \$ \$ \$
		WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? <input checked="" type="checkbox"/> Yes If yes, describe under SPECIAL PROVISIONS below				<input checked="" type="checkbox"/> WC STATUTORY LIMITS <input type="checkbox"/> OTHER E.L. EACH ACCIDENT \$ 100,000 E.L. DISEASE - EA EMPLOYEE \$ 100,000 E.L. DISEASE - POLICY LIMIT \$ 500,000
		OTHER				

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS

(Indicate the Project and Project number in this space.)

The State of Connecticut is endorsed as an Additional Insured on all of the above policies except Automobile Liability and Workers' Compensation. If Builders Risk is indicated, The State of Connecticut is endorsed as Loss Payee

CERTIFICATE HOLDER

State of Connecticut
 Department of Children and Families
 505 Hudson Street
 Hartford, CT 06106

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE

IMPORTANT

If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

DISCLAIMER

The Certificate of Insurance on the reverse side of this form does not constitute a contract between the issuing insurer(s), authorized representative or producer, and the certificate holder, nor does it affirmatively or negatively amend, extend or alter the coverage afforded by the policies listed thereon.

Agreement Between Owner and Contractor

Owner

Department of Children and Families
Connecticut Children's Place
36 Gardner Street.
East Windsor, CT 06088

Contractor

Project

Cottage Sprinkler Systems
Project # BI-YS-173
DCF No.:40-RVHC-143

The Owner and the Contractor for the considerations named herein as set forth below:

1. **Agreement Date:**
2. **Contract Sum:**
3. **Payment Schedule:**
Owner will pay Contractor one payment, less 10% retention.
Retention will be released 30 days after completion and when all close-out documents have been received and approved.
4. **Documentation required for payment:**
Application for Payment (detailed invoice) of work completed to date. Waiver of lien for the amount of payment due. Supporting documents from suppliers and subcontractors. Inspection reports, signed approving work performed (where applicable). Signed change orders.
5. **Completion Schedule:** Start and Completion Date: Determined by the Notice to Proceed.
 - a. Late Completion, the Owner will penalize the Contractor:
\$350 per calendar day
6. **Scope of Work:**
Install sprinkler systems as described within the Contract Documents.
7. **Work NOT to be performed:**
n/a

8. **Licenses, permits and bonds to be supplied and paid by the as follows:**
Contractor to acquire and pay for permits and bonds related to the work to be performed.
9. **Warranty:**
Contractor's Labor and Material warranty, 18 months.
Manufacturer's warranty, where applicable.
10. **Insurance Requirements:**
Certificate of Insurance, naming the owner as ADDITIONAL INSURED.
Worker's Compensation and General Liability in the amounts as stated in the project specifications.
Vehicle Coverage as stated in the project specifications.
11. **General Provisions:** Contractor is to include all labor and approved materials, Appliances and services of every kind necessary for the execution of work. Contractor shall re-execute any work that fails to conform to the requirements of the contract. Contractor will remove all of his construction debris from the site and leave premises in broom-cleaned condition. All work shall be completed in a workmanship like manner and in accordance with all codes and other applicable laws. To the extent required by law, all work shall be performed by individuals duly licensed and authorized by law to perform said work. Contractor has the right to let other contracts in connection with the work contracted for so long as the comply with all the requirements of the documents. Contractor shall adequately protect the work, adjacent property and the public and shall be responsible for any damages or injury due to his act or neglect. Change Orders shall be in writing and signed by both parties to this agreement.

12. Contract Documents include this Agreement and others as follows:

Plans dated 10/13/2011
Specifications dated 10/13/2011
Addendum none

13. See attachment(s): yes no

Owner

Contractor:

By: _____ By: _____
Date Date

Name and Title

Name and Title

Witness

Witness

Name and Title

Name and Title

LABOR AND MATERIAL BOND

Know all men by these presents

THAT _____ of the
Town of _____, Country of _____ and
State of _____, as Principal (hereinafter called the Principal), and _____

(a surety company authorized to transact business in the State of Connecticut), as Surety (hereinafter called the Surety), are held and firmly bound unto the State of Connecticut (hereinafter called the Obligee) in the full penal sum of _____
(\$ _____) Dollars, lawful money of the United States, to be paid to said State of Connecticut, to the which payment well and truly to be made and done, the said Principal binds himself, his heirs, executors, administrators and assigns (or itself, its successors and assigns), and the said Surety binds itself its successors and assigns jointly and severally firmly by these presents.

Signed, sealed and delivered this _____ day of _____ A. D. 20 _____

THE CONDITION OF THIS OBLIGATION IS SUCH THAT

Principal will enter into a certain written contract with said Obligee, to be dated the _____ day of _____ A. D. 20 _____ which written contract shall provide for the following:

which contract, including any hereafter made extension, modification or alteration thereof is hereby referred to, incorporated in and made a part of this bond as though herein fully set forth.

NOW, THEREFORE if the said Principal shall promptly pay for all materials furnished and labor supplied or performed in the prosecution of the work included in and under the aforesaid contract, as it may be extended, modified or altered, whether or not the material or labor enters into and becomes a component part of the real asset, then this obligation shall be null and void, otherwise it shall remain and be in full force and effect.

Any party, whether a subcontractor or otherwise, who furnishes materials or supplies or performs labor or services in the prosecution of the work under said contract, as it may be extended, modified or altered, and who is not paid therefore, may bring suit on this bond in the name of the person suing and prosecute the same to final execution and judgment for such sum or sums as may be justly due.

IN TESTIMONY WHEREOF the said Principal has hereunto set his / its hand and seal, and the said Surety has caused this instrument to be signed by its attorney in fact and its corporate seal to be hereunto affixed, the day and year first written.

Witnesses as to Principal

SEAL

,Its Duly Authorized

(Print Name)

(Print Name)

Witnesses as to Surety

SEAL

by

Its attorney in fact

(Print Name)

(Print Name)

PERFORMANCE BOND

Know all men by these presents

THAT _____ of the
Town of _____, Country of _____ and
State of _____, as Principal (hereinafter called the Principal), and _____

(a surety company authorized to transact business in the State of Connecticut), as Surety (hereinafter called the Surety), are held and firmly bound unto the State of Connecticut (hereinafter called the Obligee) in the full penal sum of _____
(\$ _____) Dollars, lawful money of the United States, to be paid to said State of Connecticut, to the which payment well and truly to be made and done, the said Principal binds himself, his heirs, executors, administrators and assigns (or itself, its successors and assigns), and the said Surety binds itself its successors and assigns jointly and severally firmly by these presents.

Signed, sealed and delivered this _____ day of _____ A. D. 20 _____

THE CONDITION OF THIS OBLIGATION IS SUCH THAT

Principal will enter into a certain written contract with said Obligee, to be dated
the _____ day of _____ A. D. 20 _____ which written contract shall provide for the following:

which contract, including any hereafter made extension, modification or alteration thereof is hereby referred to, incorporated in and made a part of this bond as though herein fully set forth.

NOW, THEREFORE if the said Principal shall well and truly keep, perform and execute all the terms, conditions and stipulations of said contract, as it may be extended, modified or altered, according to its provisions on his or its part to be kept and performed or shall indemnify and reimburse the Obligee for any loss that it may suffer through the failure of the Principal to faithfully observe and perform each and every obligation and duty imposed upon the Principal by the said contract, as it may be extended, modified or altered, at the time and in the manner therein specified, then this obligation shall be null and void, otherwise it shall remain and be in full force and effect.

Any such. extension, modification or alteration or any forbearance on the part of either the Obligee or the Principal, one to the other, shall not in any way release the Principal and/or the Surety, their heirs, executors, administrators, successors or assigns from liability hereunder, notice to the Surety of any such extension, modification, alteration or forbearance being hereby specifically and absolutely waived.

IN TESTIMONY WHEREOF the said Principal has hereunto set his / its hand and seal, and the said Surety has caused this instrument to be signed by its attorney in fact and its corporate seal to be hereunto affixed, the day and year first written.

Witnesses as to Principal

SEAL

,Its Duly Authorized

(Print Name)

(Print Name)

Witnesses as to Surety

SEAL

**by _____
Its attorney in fact**

(Print Name)

(Print Name)

DIVISION 0

Bidding Requirements, Contract Forms, and Conditions of the Contract

Section 00415 ó Performance Bond

Page 3 of 3

**COMMISSION ON HUMAN RIGHTS AND OPPORTUNITIES
CONTRACT COMPLIANCE REGULATIONS
NOTIFICATION TO BIDDERS**

The contract to be awarded is subject to contract compliance requirements mandated by Sections 4a-60 and 4a-60a of the Connecticut General Statutes; and, when the awarding agency is the State, Sections 46a-71(d) and 46a-81i(d) of the Connecticut General Statutes. There are Contract Compliance Regulations codified at Section 46a-68j-21 through 43 of the Regulations of Connecticut State Agencies, which establish a procedure for awarding all contracts covered by Sections 4a-60 and 46a-71(d) of the Connecticut General Statutes.

According to Section 46a-68j-30(9) of the Contract Compliance Regulations, every agency awarding a contract subject to the contract compliance requirements has an obligation to “aggressively solicit the participation of legitimate minority business enterprises as bidders, contractors, subcontractors and suppliers of materials.” “Minority business enterprise” is defined in Section 4a-60 of the Connecticut General Statutes as a business wherein fifty-one percent or more of the capital stock, or assets belong to a person or persons: “(1) Who are active in daily affairs of the enterprise; (2) who have the power to direct the management and policies of the enterprise; and (3) who are members of a minority, as such term is defined in subsection (a) of Section 32-9n.” “Minority” groups are defined in Section 32-9n of the Connecticut General Statutes as “(1) Black Americans . . . (2) Hispanic Americans . . . (3) persons who have origins in the Iberian Peninsula . . . (4) Women . . . (5) Asian Pacific Americans and Pacific Islanders; (6) American Indians . . .” An individual with a disability is also a minority business enterprise as provided by Section 4a-60g of the Connecticut General Statutes. The above definitions apply to the contract compliance requirements by virtue of Section 46a-68j-21(11) of the Contract Compliance Regulations.

The awarding agency will consider the following factors when reviewing the bidder’s qualifications under the contract compliance requirements:

- (a) the bidder’s success in implementing an affirmative action plan;
- (b) the bidder’s success in developing an apprenticeship program complying with Sections 46a-68-1 to 46a-68-17 of the Administrative Regulations of Connecticut State Agencies, inclusive;
- (c) the bidder’s promise to develop and implement a successful affirmative action plan;
- (d) the bidder’s submission of employment statistics contained in the “Employment Information Form”, indicating that the composition of its workforce is at or near parity when compared to the racial and sexual composition of the workforce in the relevant labor market area; and
- (e) the bidder’s promise to set aside a portion of the contract for legitimate minority business enterprises. See Section 46a-68j-30(10)(E) of the Contract Compliance Regulations.

INSTRUCTIONS AND OTHER INFORMATION

The following BIDDER CONTRACT COMPLIANCE MONITORING REPORT must be completed in full, signed, and submitted with the bid for this contract. The contract awarding agency and the Commission on Human Rights and Opportunities will use the information contained thereon to determine the bidders compliance to Sections 4a-60 and 4a-60a CONN. GEN. STAT., and Sections 46a-68j-23 of the Regulations of Connecticut State Agencies regarding equal employment opportunity, and the bidders’ good faith efforts to include minority business enterprises as subcontractors and suppliers for the work of the contract.

1) Definition of Small Contractor

Section 4a-60g CONN. GEN. STAT. defines a small contractor as a company that has been doing business under the same management and control and has maintained its principal place of business in Connecticut for a one year period immediately prior to its application for certification under this section, had gross revenues not exceeding ten million dollars in the most recently completed fiscal year, and at least fifty-one percent of the ownership of which is held by a person or persons who are active in the daily affairs of the company, and have the power to direct the management and policies of the company, except that a nonprofit corporation shall be construed to be a small contractor if such nonprofit corporation meets the requirements of subparagraphs (A) and (B) of subdivision 4a-60g CONN. GEN. STAT.

2) Description of Job Categories (as used in Part IV Bidder Employment Information) (Page 2)

<p>MANAGEMENT: Managers plan, organize, direct, and control the major functions of an organization through subordinates who are at the managerial or supervisory level. They make policy decisions and set objectives for the company or departments. They are not usually directly involved in production or providing services. Examples include top executives, public relations managers, managers of operations specialties (such as financial, human resources, or purchasing managers), and construction and engineering managers.</p> <p>BUSINESS AND FINANCIAL OPERATIONS: These occupations include managers and professionals who work with the financial aspects of the business. These occupations include accountants and auditors, purchasing agents, management analysts, labor relations specialists, and budget, credit, and financial analysts.</p> <p>COMPUTER SPECIALISTS: Professionals responsible for the computer operations within a company are grouped in this category. Examples of job titles in this category include computer programmers, software engineers, database administrators, computer scientists, systems analysts, and computer support specialists</p> <p>ARCHITECTURE AND ENGINEERING: Occupations related to architecture, surveying, engineering, and drafting are included in this category. Some of the job titles in this category include electrical and electronic engineers, surveyors, architects, drafters, mechanical engineers, materials engineers, mapping technicians, and civil engineers.</p> <p>OFFICE AND ADMINISTRATIVE SUPPORT: All clerical-type work is included in this category. These jobs involve the preparing, transcribing, and preserving of written communications and records; collecting accounts; gathering and distributing information; operating office machines and electronic data processing equipment; and distributing mail. Job titles listed in this category include telephone operators, payroll clerks, bill and account collectors, customer service representatives, files clerks, dispatchers, shipping clerks, secretaries and administrative assistants, computer operators, mail clerks, and stock clerks.</p>	<p>BUILDING AND GROUNDS CLEANING AND MAINTENANCE: This category includes occupations involving landscaping, housekeeping, and janitorial services. Job titles found in this category include supervisors of landscaping or housekeeping, janitors, maids, grounds maintenance workers, and pest control workers.</p> <p>CONSTRUCTION AND E TRACTION: This category includes construction trades and related occupations. Job titles found in this category include boilermakers, masons (all types), carpenters, construction laborers, electricians, plumbers (and related trades), roofers, sheet metal workers, elevator installers, hazardous materials removal workers, paperhangers, and painters. Paving, surfacing, and tamping equipment operators; drywall and ceiling tile installers; and carpet, floor and tile installers and finishers are also included in this category. First line supervisors, foremen, and helpers in these trades are also grouped in this category..</p> <p>INSTALLATION, MAINTENANCE AND REPAIR: Occupations involving the installation, maintenance, and repair of equipment are included in this group. Examples of job titles found here are heating, ac, and refrigeration mechanics and installers; telecommunication line installers and repairers; heavy vehicle and mobile equipment service technicians and mechanics; small engine mechanics; security and fire alarm systems installers; electric/electronic repair, industrial, utility and transportation equipment; millwrights; riggers; and manufactured building and mobile home installers. First line supervisors, foremen, and helpers for these jobs are also included in the category.</p> <p>MATERIAL MOVING WORKERS: The job titles included in this group are Crane and tower operators; dredge, excavating, and lading machine operators; hoist and winch operators; industrial truck and tractor operators; cleaners of vehicles and equipment; laborers and freight, stock, and material movers, hand; machine feeders and offbearers; packers and packagers, hand; pumping station operators; refuse and recyclable material collectors; and miscellaneous material moving workers.</p>
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3) Definition of Racial and Ethnic Terms (as used in Part IV Bidder Employment Information)

<p><u>White</u> (not of Hispanic Origin)- All persons having origins in any of the original peoples of Europe, North Africa, or the Middle East.</p> <p><u>Black</u>(not of Hispanic Origin)- All persons having origins in any of the Black racial groups of Africa.</p> <p><u>Hispanic</u>- All persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.</p>	<p><u>Asian or Pacific Islander</u>- All persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands. This area includes China, India, Japan, Korea, the Philippine Islands, and Samoa.</p> <p><u>American Indian or Alaskan Native</u>- All persons having origins in any of the original peoples of North America, and who maintain cultural identification through tribal affiliation or community recognition.</p>
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BIDDER CONTRACT COMPLIANCE MONITORING REPORT

PART I - Bidder Information

(Page 3)

Company Name Street Address City & State Chief Executive	Bidder Federal Employer Identification Number _____ Or Social Security Number _____
Major Business Activity (brief description)	Bidder Identification (response optional/definitions on page 1) -Bidder is a small contractor. Yes__ No__ -Bidder is a minority business enterprise Yes__ No__ (If yes, check ownership category) Black__ Hispanic__ Asian American__ American Indian/Alaskan Native__ Iberian Peninsula__ Individual(s) with a Physical Disability__ Female__
Bidder Parent Company (If any)	- Bidder is certified as above by State of CT Yes__ No__
Other Locations in Ct. (If any)	- DAS Certification Number _____

PART II - Bidder Nondiscrimination Policies and Procedures

1. Does your company have a written Affirmative Action/Equal Employment Opportunity statement posted on company bulletin boards? Yes__ No__	7. Do all of your company contracts and purchase orders contain non-discrimination statements as required by Sections 4a-60 & 4a-60a Conn. Gen. Stat.? Yes__ No__
2. Does your company have the state-mandated sexual harassment prevention in the workplace policy posted on company bulletin boards? Yes__ No__	8. Do you, upon request, provide reasonable accommodation to employees, or applicants for employment, who have physical or mental disability? Yes__ No__
3. Do you notify all recruitment sources in writing of your company's Affirmative Action/Equal Employment Opportunity employment policy? Yes__ No__	9. Does your company have a mandatory retirement age for all employees? Yes__ No__
4. Do your company advertisements contain a written statement that you are an Affirmative Action/Equal Opportunity Employer? Yes__ No__	10. If your company has 50 or more employees, have you provided at least two (2) hours of sexual harassment training to all of your supervisors? Yes__ No__ NA__
5. Do you notify the Ct. State Employment Service of all employment openings with your company? Yes__ No__	11. If your company has apprenticeship programs, do they meet the Affirmative Action/Equal Employment Opportunity requirements of the apprenticeship standards of the Ct. Dept. of Labor? Yes__ No__ NA__
6. Does your company have a collective bargaining agreement with workers? Yes__ No__ 6a. If yes, do the collective bargaining agreements contain non-discrimination clauses covering all workers? Yes__ No__ 6b. Have you notified each union in writing of your commitments under the nondiscrimination requirements of contracts with the state of Ct? Yes__ No__	12. Does your company have a written affirmative action Plan? Yes__ No__ If no, please explain. 13. Is there a person in your company who is responsible for equal employment opportunity? Yes__ No__ If yes, give name and phone number. _____ _____

Part III - Bidder Subcontracting Practices

1. Will the work of this contract include subcontractors or suppliers? Yes__ No__ 1a. If yes, please list all subcontractors and suppliers and report if they are a small contractor and/or a minority business enterprise. (defined on page 1 / use additional sheet if necessary)	1b. Will the work of this contract require additional subcontractors or suppliers other than those identified in 1a. above? Yes__ No__
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PLEASE COMPLETE REVERSE SIDE

PART IV - Bidder Employment Information

Date:

(Page 4)

JOB CATEGORY	OVERALL TOTALS	WHITE (not of Hispanic origin)		BLACK (not of Hispanic origin)		HISPANIC		ASIAN or PACIFIC ISLANDER		AMERICAN INDIAN or ALASKAN NATIVE	
		Male	Female	Male	Female	Male	Female	Male	Female	male	female
Management											
Business & Financial Ops											
Computer Specialists											
Architecture/Engineering											
Office & Admin Support											
Bldg/ Grounds Cleaning/Maintenance											
Construction & Extraction											
Installation , Maintenance & Repair											
Material Moving Workers											
TOTALS ABOVE											
Total One Year Ago											
FORMAL ON THE JOB TRAINEES (ENTER FIGURES FOR THE SAME CATEGORIES AS ARE SHOWN ABOVE)											
Apprentices											
Trainees											

PART V - Bidder Hiring and Recruitment Practices

1. Which of the following recruitment sources are used by you? (Check yes or no, and report percent used)				2. Check (X) any of the below listed requirements that you use as a hiring qualification (X)		3. Describe below any other practices or actions that you take which show that you hire, train, and promote employees without discrimination
SOURCE	YES	NO	% of applicants provided by source			
State Employment Service					Work Experience	
Private Employment Agencies					Ability to Speak or Write English	
Schools and Colleges					Written Tests	
Newspaper Advertisement					High School Diploma	
Walk Ins					College Degree	
Present Employees					Union Membership	
Labor Organizations					Personal Recommendation	
Minority/Community Organizations					Height or Weight	
Others (please identify)					Car Ownership	
					Arrest Record	
					Wage Garnishments	

Certification (Read this form and check your statements on it CAREFULLY before signing). I certify that the statements made by me on this BIDDER CONTRACT COMPLIANCE MONITORING REPORT are complete and true to the best of my knowledge and belief, and are made in good faith. I understand that if I knowingly make any misstatements of facts, I am subject to be declared in non-compliance with Section 4a-60, 4a-60a, and related sections of the CONN. GEN. STAT.

(Signature)	(Title)	(Date Signed)	(Telephone)
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**Affidavit for Certification of Subcontractors
as Minority Business Enterprises (MBE)**
*(to be completed only for subcontractors not certified as MBE's
by the Department of Administrative Services)*

To document the **Agood faith efforts@** of the below named state contractor to include minority business enterprises as subcontractors (for services and/or material suppliers) on the state contract also identified below, I certify that the following subcontractors meet the criteria for minority business enterprises set forth in CONN. GEN. STAT. § 4a-60(b). I attest that each named minority business enterprise will be contracted by the named state contractor to participate on the identified state contract as a subcontractor.

The subcontractors being identified to be bona fide minority business enterprises are:

Subcontractor Name	Complete Address	Subcontractor's Principal Officer's Name

(use additional sheets as necessary)

I further certify and affirm that I have read and understand the contract compliance requirements codified at CONN. GEN. STAT. Sections 4a-60 & 46a-71(d), and the Contract Compliance Regulations codified at Sections 46a-68j-21 through 43 of the Administrative Regulations of Connecticut State Agencies. I also understand that any false statements made herein are punishable by law.

_____ state contractor legal name

_____ type full printed name and title of official
submitting this affidavit on behalf of
contractor

_____ state contract number

_____ signature of official

_____ state contract awarding agency

_____ date of affidavit

Subscribed and sworn to before me, this _____ day of _____ 20_____

Notary Public/Commissioner of the Superior Court
My Commission expires _____

**STATE OF CONNECTICUT
COMMISSION ON HUMAN RIGHTS AND OPPORTUNITIES**

NOTICE CONCERNING CONTRACT COMPLIANCE RESPONSIBILITIES

TO ALL LABOR UNIONS, WORKER-S REPRESENTATIVES AND VENDORS:

Any contract this contractor has with the State of Connecticut or political subdivisions of the state other than municipalities shall be performed in accordance with CONN. GEN. STAT. Section 4a-60 and Section 4a-60a.

This means that this contractor:

1. Agrees to provide the Commission on Human Rights and Opportunities (CHRO) with any information concerning this contractor's employment practices and procedures which relates to our responsibilities under CONN. GEN. STAT. Sections 4a-60 or 46a-56 or Section 4a-60a.; and
2. Agrees to include the provisions of CONN. GEN. STAT. Section 46a-60(a) and Section 4a-60a in each and every subcontract and purchase order and to take whatever action the CHRO deems necessary to enforce these provisions.

WITH REGARD TO RACE, COLOR, RELIGIOUS CREED, AGE, MARITAL STATUS, NATIONAL ORIGIN, ANCESTRY, SEX, MENTAL RETARDATION OR PHYSICAL DISABILITY, this means that this contractor:

1. Shall not discriminate or permit discrimination against anyone;
2. Shall take affirmative action so that persons applying for employment are hired on the basis of job-related qualifications and that employees once hired are treated without regard to their race, color, religious creed, age, marital status, national origin, ancestry, sex, mental retardation or physical disability, unless the contractor can show that the disability prevents performance of the work involved;
3. Shall state in all advertisements for employees that it is an affirmative action-equal opportunity employer@;
4. Shall comply with CONN. GEN. STAT. Sections 4a-60, 46a-68e and 46a-68f and with each regulation or relevant order issued by the CHRO under CONN. GEN. STAT. Sections 46a-56, 46a-68e and 46a-68f; and
5. Shall make, if the contract is a public works contract, good faith efforts to employ minority business enterprises as subcontractors and suppliers of materials.

WITH REGARD TO SEXUAL ORIENTATION, WHICH INCLUDES HOMOSEXUALITY, BISEXUALITY AND HETEROSEXUALITY:

1. The contractor will not discriminate or permit discrimination against anyone, and employees will be treated without regard to their sexual orientation once employed; and
2. The contractor agrees to fully comply with Section 4a-60a and each regulation or relevant order issued by the CHRO under CONN. GEN. STAT. Section 46a-56.

Persons having questions about this notice or their rights under the law are urged to contact the:

**COMMISSION ON HUMAN RIGHTS AND OPPORTUNITIES
DIVISION OF AFFIRMATIVE ACTION, MONITORING & CONTRACT COMPLIANCE**

21 Grand Street
Hartford, Connecticut 06106
(860) 541-3400

COPIES OF THIS NOTICE SHALL BE POSTED IN CONSPICUOUS PLACES
AVAILABLE TO ALL EMPLOYEES AND APPLICANTS FOR EMPLOYMENT

**General Conditions of the Contract for Construction
Department of Public Works
State of Connecticut**

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Article 1
DEFINITIONS

Whenever the following terms, or pronouns in place of them, are used the intent and meaning shall be as follows:

1.1 ADDITIONAL OR DELETED WORK: Work required by the Department that, in the judgment of the Commissioner, involves any addition to, deduction from, or modification of the Work required by the Contract Documents.

1.2 AGENCY: The (User) Agency of the State of Connecticut having administrative authority of the facility in which the Work is being performed.

1.3 APPLICATION FOR PAYMENT, PARTIAL PAYMENT OR REQUISITION: Contractor's certified request for payment for completed portions of the Work and, if the Contract so provides, for materials or equipment suitably stored pending their incorporation into the Work.

1.4 ARCHITECT OR ENGINEER: An individual, partnership, firm, corporation or other business organization under contract with the Owner, commissioned to prepare Contract Drawings and specifications, to advise the Owner and in certain cases, to perform regular inspections during construction and when authorized to perform the duties of the Construction Administrator.

1.5 BASE BID: Monetary value stated in the Bid Proposal form as the sum for which the bidder offers to perform the Work described in the Bidding Documents, exclusive of adjustments for Supplemental Bids.

1.6 BID BOND: Form of bid security executed by the Bidder as Principal and by a Surety to guarantee that the Bidder will enter into a Contract within a specified time and furnish any required bond as mandated by Connecticut General Statute Section 4b-92.

1.7 BIDDER: An individual, partnership, firm, corporation or other business organization submitting a Bid on the Bid Proposal Form for the Work contemplated.

1.8 BIDDING DOCUMENTS: Collectively, the Bidding Requirements and the proposed Contract Documents, including any addenda issued prior to receipt of Bids.

1.9 BID OR BID PROPOSAL FORM: A complete and duly signed proposal to perform Work (or a designated portion thereof) for a stipulated sum submitted in accordance with the Bidding Documents.

1.10 BID SECURITY: Certified check or Bid Bond submitted with Bid Proposal Form, which provides that the Bidder, if awarded the Contract, will execute such Contract in accordance with the requirements of the Bidding Documents.

1.11 BUILDER'S RISK INSURANCE: A specialized form of property insurance which provides coverage for loss or damage to the Work pursuant to the Contract Documents.

1.12 CASH ALLOWANCE: An amount established in the Contract Documents for inclusion in the Contract Sum to cover the cost of prescribed items not specified in detail, and as shown in the Allowance Schedule.

1.13 CERTIFICATE of COMPLETION: A document issued by the Construction Administrator to the Owner stating that the Contractor has met all contractual obligations.

1.14 CERTIFICATE of COMPLETION and ACCEPTANCE: A document issued by the Owner to the Contractor stating that all Work has been completed and that the Work is accepted by the Owner.

1.15 CERTIFICATE of COMPLIANCE: A document issued to the Owner by the design professional stating that for the portion of the project completed, either the design portion or the construction portion, has been performed in substantial compliance with all applicable building codes

1.16 CERTIFICATE OF OCCUPANCY: Document issued by the authority having jurisdiction certifying that all or a designated portion of a building is approved for its designated use.

1.17 CERTIFICATE OF SUBSTANTIAL COMPLETION: A document prepared by the Architect and approved by the Owner on the basis of an inspection stating :

1.17.1 that the Work, or a designated portion thereof, is determined to be Substantially Complete;

1.17.2 the date of Substantial Completion;

1.17.3 the responsibilities of the Owner and the Contractor for security maintenance, heat, utilities, damage to the Work and insurance; and

1.17.4 the time within which the Contractor shall complete the remaining work .

1.18 CHANGE ORDER: Written authorization signed by the Owner, authorizing a modification in the Work, an adjustment in the Contract Sum, or an adjustment in the Contract Time.

1.19 COMMISSIONER: The State of Connecticut, Department of Public Works (DPW) Commissioner acting di-

rectly or through specifically authorized DPW personnel or agent(s) having authority to perform duties defined in Article 25.

1.20 CONSTRUCTION ADMINISTRATOR: An individual, partnership, firm, corporation or other business organization, under contract or employed by the Owner commissioned and/or authorized to oversee the fulfillment of all requirements of the Contract Documents. The authorized Construction Administrator may be a Department of Public Works Assistant Project Manager, Department of Public Works Project Manager, a Clerk of the Works, an Architect, a Consulting Architect, a Consulting Construction Administrator, a Consulting Engineer etc. or any other designee as authorized and identified by the Owner.

1.21 CONSTRUCTION CHANGE DIRECTIVE: A written authorization signed by the Owner, directing a modification in the Work and stating a proposed basis for adjustment, if any, in the Contract Sum, Contract Time or both.

1.22 CONTRACT DOCUMENTS OR CONTRACT: The Agreement between Owner and Contractor, Conditions of the Contract (General Conditions, Supplementary Conditions, General Requirements and other Conditions), Drawings, Specifications, and Addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications issued after execution of the Contract, all of which shall constitute the Contract.

1.23 CONTRACTOR OR GENERAL CONTRACTOR: An individual, partnership, firm or Corporation, under direct contract with the Department of Public Works, responsible for performing the Work under the Contract Documents. Whenever the words "Contractor" or "General Contractor" are used it shall be understood to mean Contractor.

1.24 CONTRACTOR'S LIABILITY INSURANCE: Insurance purchased and maintained by the Contractor that insures the Contractor for claims for property damage, bodily injury or death.

1.25 CONTRACT START DATE OR DATE OF COMMENCEMENT OF THE WORK: The date, specified by the Owner in the Notice to Proceed, on which the Contractor is required to start the Work.

1.26 CONTRACT SUM: The sum stated in the Contract, which is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

1.27 CONTRACT TIME: The period of time allotted in the Contract Documents for Substantial Completion of the

Work, including authorized adjustments thereto. The days specified, calendar or working days, are stipulated in the Bidding Documents.

1.28 DAY: Whenever the word Day is used it shall be understood to mean calendar day or working day as stated on the Bidding Documents, unless stated otherwise.

1.29 DEPARTMENT OF PUBLIC WORKS PROJECT MANAGER or PROJECT MANAGER: The individual employed by the Owner, designated and authorized by the Commissioner, to be responsible for the overall management and oversight of the Project, and to represent the (User) Agency.

1.30 EQUAL (S):: A replacement for the specified material, device, procedure, equipment, etc., which has been determined by the Architect and the Owner to be substantially identical to the first listed manufacturer or first listed procedure specified in terms of cost, quality and performance for the Project. The Equal does not constitute a modification in the scope of Work, the Schedule or Architect/Engineer's design intent of the specified material, device, procedure, equipment, etc.

1.31 FINAL ACCEPTANCE: The Owner's written approval and acceptance of the Work issued to the Contractor upon written certification by the Architect of Final Completion.

1.32 FINAL COMPLETION: A written statement by the Architect to the Owner that the Work has been completed in accordance with the terms and conditions of the Contract Documents.

1.33 FINAL INSPECTION: Review of the Work by the Architect and Owner to determine whether Final Completion has been achieved.

1.34 FINAL PAYMENT: The last payment made by the Owner to the Contractor, made after notice of the Final Acceptance. Payment shall include the entire unpaid balance of the Contract Sum as adjusted by Modifications.

1.35 GENERAL CONDITIONS: The General Conditions of the Contract for Construction, part of Division 0 of the Specifications.

1.36 GENERAL REQUIREMENTS: That part of the Contract Documents entitled General Requirements, which is Division 1.

1.37 LIQUIDATED DAMAGES: A sum established in a Contract, usually as a fixed sum per day, as the predeter-

mined measure of damages to be paid to the Owner due to the Contractor's failure to complete the Work within the Contract Time.

1.38 LUMP SUM: An item or category priced as a whole rather than broken down into its elements.

1.39 MINOR CHANGES IN THE WORK: Changes in the Work not involving an adjustment in the Contract Sum or an extension of the Contract Time and not inconsistent with the intent of the Contract Documents, which shall be affected by written order issued by the Architect.

1.40 MODIFICATION OR AMENDMENT:

1.40.1 A written change to the Contract Documents.

1.40.2 A Change Order.

1.40.3 A Construction Change Directive.

1.40.4 Supplemental Instructions for minor changes in the Work and/or additional instructions to the Work.

1.41 NOTICE TO BIDDER: A notice contained in the Bidding Document informing prospective Bidders of the opportunity to submit Bids on a Project.

1.42 NOTICE TO PROCEED: Written notice, issued by the Commissioner or the Commissioner's authorized representative, to the Contractor authorizing the Contractor to proceed with the Work and establishing the date for commencement of the Contract Time.

1.43 OWNER OR DEPARTMENT: The State of Connecticut, Department of Public Works acting through its Commissioner or specifically authorized Department personnel or agent.

1.44 PAYMENT BOND, LABOR BOND OR MATERIAL BOND: A bond in which the Contractor and the Contractor's surety guarantee to the Owner that the Contractor will pay for labor and materials furnished for use in the performance of the Contract, as required by Connecticut General Statutes Section 49-41.

1.45 PERFORMANCE BOND OR SURETY BOND: A bond in which the Contractor and the Contractor's surety guarantee to the Owner that the Work will be performed in accordance with the Contract Documents, as required by Connecticut General Statutes Section 41.

1.46 PERFORMANCE SPECIFICATION: A description of the desired results or performance of a product, material, assembly, procedure, or a piece of equipment with criteria for identifying the standard.

1.47 PLANS OR DRAWINGS: All drawings or reproductions of drawings pertaining to the construction of the Work contemplated and its appurtenances.

1.48 PROJECT: The total construction of which the Work performed under the Contract Documents may be the whole or a part.

1.49 PROJECT MANUAL: The set of documents assembled for the Work which includes, but is not limited to, Contract Documents, Bidding Requirements, Sample Forms, Conditions of the Contract, General Requirements and the Specifications.

1.50 PROPRIETARY SPECIFICATION: A specification that describes a product, procedure, function, material, assembly, or piece of equipment by trade name and/or by naming the manufacturer(s) or manufacturer's procedure, exact model number, item, etc., of those products acceptable to the Owner.

1.51 RECORD DOCUMENTS OR AS-BUILT DRAWINGS: Construction Drawings revised to show all significant Modifications made during the construction process.

1.52 SCHEDULE: A Critical Path Method (CPM) or Construction Schedule as required by the Contract Documents which shall be a diagram, graph or other pictorial or written schedule showing all events expected to occur and operations to be performed and indicating the contract time, start dates, durations and finish dates and their relationship to Substantial Completion and Final Completion of the Work, rendered in a form permitting determination of the optimum sequence and duration of each operation.

1.53 SCHEDULE OF VALUES: A document furnished by the Contractor to the Architect and Owner stating the portions of the Contract Sum allocated to the various portions of the Work, which is to be used for reviewing the Contractor's Applications for Payment.

1.54 SECONDARY SUBCONTRACTOR: An individual, partnership, firm or Corporation under direct contract with the Subcontractor to the General Contractor.

1.55 SHOP DRAWINGS: Drawings provided to Architect and Owner by a Contractor that illustrate construction, materials, dimensions, installation, and other pertinent information for the incorporation of an element or item into the construction as detailed Contract Documents.

1.56 SPECIFICATIONS: The description, provisions and other requirements pertaining to the method and manner of

performing the Work and/or to the quantities and quality of materials to be furnished under the Contract.

1.57 SUBCONTRACTOR: A person, partnership, corporation or other business organization under direct contract with the Contractor supplying labor and/or materials for the Work at the site of the Project.

1.58 SUBMITTALS: Documents including, but not limited to, samples, manufacturer's data, shop drawing, or other such items submitted to the Owner and Architect by the Contractor for the purpose of approval or other action, as required by the Contract Documents.

1.59 SUBSTANTIAL COMPLETION: The stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so the Owner can occupy or utilize the Work for its intended use.

1.60 SUBSTITUTION: A material, device, procedure, equipment, etc., which has been determined by the Architect and the Owner to be not an Equal to the first manufacturer or procedure listed in the Specification in terms of cost, quality and performance but which may be used in place of that item specified. The Substitution constitutes a modification in the Work, the Schedule or the Architect/Engineer's design intent of the specified material, device, procedure, equipment, etc.

1.61 SUPPLEMENTAL BID: The monetary value stated in the Bid to be added to the amount of the Base Bid if the corresponding Work, as described in the Bidding Documents, is accepted.

1.62 SUPPLEMENTARY CONDITIONS: An extension of the General Conditions applicable to any and all portions of Work under the Contract Documents.

1.63 THRESHOLD LIMIT BUILDING: Any proposed (new) structures or additions as defined by the Connecticut General Statutes Section 29-276b.

1.64 UNIT PRICE: The monetary value stated by the Owner or the Contractor, as a price per unit of measure for materials or services as described in the Contract Documents and/or Bidding Documents.

1.65 WORK: The construction and services required by the Contract Documents, and including all labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

Article 2 CONDITIONS OF WORK

2.1 The Contractor shall carefully examine and study the conditions under which the Work is to be performed and the site of the Work, and compare the Contract Documents with each other and to information furnished by the Owner including but not limited to the plans and specifications, the form of the Contract, General Conditions, Supplementary Conditions, General Requirements, Bonds and all other Contract Documents associated with the Work.

2.2 The Contractor shall report to the Construction Administrator all errors, inconsistencies or omissions discovered. The Contractor shall not be liable to the Owner for damage resulting from errors, inconsistencies or omissions in the Contract Documents unless the Contractor recognized such errors, inconsistencies or omission and failed to report it to the Construction Administrator. If the Contractor performs any actions or construction activity knowing it involves an error, inconsistency or omission in the Contract Documents without notice to the Construction Administrator, the Contractor shall assume responsibility for such performance and related costs for the correction and shall not be allowed to submit any claim related to error, inconsistencies or omission.

2.3 The Contractor shall take field measurements and verify field conditions and shall carefully compare such field measurements and conditions and other information known to the Contractor with the Contract Documents before commencing activities. Errors, inconsistencies or omissions discovered shall be reported to the Construction Administrator at once; and it will be assumed that the Contractor has been satisfied as to all requirements of the Contract Documents. Any deterrent conditions at the site of the Work which are obvious and apparent upon examination of the site but are not indicated on the plans shall be corrected by the Contractor without additional compensation.

2.4 In performing the Work, the Contractor must employ such methods or means as will not cause any interruption of or interference with the Work of any other Contractor, nor any inordinate disruption with the normal routine of the Owner, Institution or Agency operating at the site.

2.5 No claims for additional compensation will be considered when additional costs result from conditions made known to, discovered by, or which should have been discovered by, the Contractor prior to Contract signing.

2.6 The Contractor shall perform the Work in accordance with the Contract Documents and approved submittals pursuant to Article 5.

Article 3
CORRELATION OF CONTRACT DOCUMENTS

3.1 The Contract Documents are complementary, and what is called for by any one shall be as binding as if called for by all. Where discrepancies of conflict occur in the Contract Documents the following order of precedence shall be utilized:

- 3.1.1** Amendments and addenda shall take precedence over previously issued Contract Documents.
- 3.1.2** The General Requirements take precedence over the Supplementary Conditions.
- 3.1.3** The Supplementary Conditions take precedence over the General Conditions.
- 3.1.4** The General Requirements take precedence over the General Conditions.
- 3.1.5** The Specifications shall take precedence over the Plans.
- 3.1.6** Stated dimensions shall take precedence over scaled dimensions.
- 3.1.7** Large-scale detail drawings shall take precedence over small-scale drawings.
- 3.1.8** The schedules contained in the Contract Documents shall take precedence over other data on the Plans.

3.2 Neither party to the Contract shall take advantage of any obvious error or apparent discrepancy in the Contract Documents. The Contractor shall give immediate written notification of any error or discrepancy discovered to the Construction Administrator, who shall take the necessary actions to obtain such corrections and interpretations as may be deemed necessary for the completion of the Work in a satisfactory and acceptable manner. The Contractor shall then promptly proceed under the direction of the Owner and the provisions of Article 13. The Contractor's failure to provide immediate notice shall mean the Contractor will not be entitled to any additional compensation, either monetary or contract time adjustment, with respect to any discrepancy.

3.3 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

3.4 Organization of the Specifications into divisions, sections and articles, and arrangement of drawings, shall not control the Contractor in dividing the Work among Subcon-

tractors or in establishing the extent of Work to be performed by any trade.

3.5 Unless otherwise stated in the Contract Documents, words which have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

Article 4
COMMENCEMENT AND PROGRESS OF WORK

4.1 The Work shall start upon the date given in the Notice to Proceed. The Contractor shall complete all the Work necessary for Final Completion, including but not limited to Substantial Completion, Contract close-out, testing and demonstration of all systems as required for acceptance, punchlist Work, training and submission of Record Documents, manuals, guarantees and warranties as stated in the Bidding Document.

4.2 Time is of the essence with respect to the Contract Time. By executing the Contract, the Contractor confirms and agrees that the Contract Time is a reasonable period to perform the Work. The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time. The Contractor may, at his discretion, plan to complete the work and achieve Substantial Completion in less time than the Contract Time.

4.3 The Contractor's early completion schedule notwithstanding, the Owner reserves the right to order Modifications to the Work in accordance with Article 13 at any time during the Contract Time.

4.4 The Contractor shall not be entitled to costs for delay due to Owner ordered Modifications or any other circumstances for the period of time between the Contractor's elected early completion and the end of the Contract Time. Costs include, but are not limited to, delays extended home or field office costs, supervisory and management costs incurred in performance of the Work. Early completion of the Work shall not merit additional compensation.

4.5 If the Contractor is delayed at any time in the progress of Work by acts of God such as fire or flood or any action, injunction or stop order issued by any court, judge or officer of the court or any other court action beyond the Owner's control, then the Contract Time may be extended by Change Order for such reasonable time as demonstrated by the Contractor's Schedule and as the Owner may determine that such event has delayed the Work. In any event, the granting of an extension of time shall be solely within the discretion of the Owner.

4.6 Except as otherwise may be provided herein, extensions of time shall be the Contractor's sole remedy for such delay. No payment or compensation of any kind shall be made to the Contractor for damages because of hindrance in the orderly progress of Work caused by the aforesaid causes.

4.7 The Contractor acknowledges that the Contract amount includes and anticipates any and all delays, whether avoidable or unavoidable, from said orders, which may issue from any court, judge, court officer, or act of God, and that such delays shall not, under any circumstances, be construed as compensable delays.

4.8 Any extension of the Contract Time shall be by Change Order pursuant to Article 13.

Article 5
SUBMITTALS, PRODUCT DATA, SHOP
DRAWINGS AND SAMPLES

5.1 Contractor shall review, approve and submit to the Construction Administrator all submittals including but not limited to Product Data, Shop Drawing and Sample Manufacturers, with such promptness as to cause no delay in the Work.

5.2 Correction or approval of such submittals, Shop Drawings, Product Data sample will be made with reasonable promptness by the Architect. Approval will be general only and shall not relieve the Contractor from responsibility for errors in dimensions, for construction and field coordination of the Work or for any departure from the Contract Documents unless such departure has received the Owner's written approval.

5.3 No Work governed by such drawings, schedules or samples shall be fabricated, delivered or installed until approved by the Architect.

5.4 No damages for delays or time extensions will be granted even if approvals deviate from the approved Schedule.

Article 6
SEPARATE CONTRACTS

6.1 The Owner reserves the right to perform Work in con-

nection with the Contract with the Owner's own forces, or to let separate contracts relating to the Contract (Project) site or in connection with work on adjoining sites. In such cases, the Contractor shall afford such parties reasonable opportunity for storage of materials and equipment and coordinate and connect the Work with the work on adjoining sites or other projects, and shall fully cooperate with such parties in the matter required under Article 7 herein.

6.2 Contractors working in the same vicinity shall cooperate with one another and, in case of dispute, decision of the Owner shall be final and binding to all Contractors involved, including Contractors under separate Contracts.

6.3 The Contractor shall assume all liability, financial or otherwise, in connection with this Contract and shall protect and hold harmless the Owner from any and all damages or claims that may arise because of inconvenience or delay which the Contractor may cause other Contractors. If the Contractor experiences a loss because of the presence and operations of other Contractors working adjacent to or within the limits of the same project, then as between the Owner and the Contractor, the Contractor shall bear such loss.

6.4 Insofar as possible, the Contractor shall arrange the Work and shall place and dispose of the materials being used so as not to interfere with the operations of other Contractors adjacent to or within the limits of the same project. The Contractor shall join its Work with that of others in an acceptable manner, and perform the Work in proper accordance with that of the others.

6.5 In no event shall the Owner be responsible for any claim or damages that are the result of the Contractor's failure to coordinate the work with any Contractor or Subcontractor.

Article 7
COOPERATION OF TRADES

7.1 The Contractor shall be responsible for and shall control all activities of their Subcontractors. The Subcontractors shall consult and cooperate with one another. Each Subcontractor shall furnish all necessary information to other Subcontractors and shall lay out and install their own Work so as to avoid any delays or interference with the Work of others.

7.2 Any cost or changes, cutting and/or repairing, made necessary by the failure to observe the above requirements shall be borne by the party or parties responsible for such failure or neglect or their faulty Work installed.

Article 8
DAMAGES

8.1 The Liquidated Damages, provided in the Bidding Documents, will be assessed for each day beyond the date given for Substantial Completion of the Contract according to the Contract Time.

8.2 The Liquidated Damages or any portion thereof may be waived at the sole discretion of the Commissioner.

8.3 No payment by the Owner, either partial or final, shall be construed to waive the Owner's right to seek liquidated damages.

8.4 In the event a court determines that the contract herein is null and void for any reason, Contractor agrees that Contractor will not seek or pursue any lawsuit or claim for damages, including, but not limited to, claims for loss of overhead or anticipated profits, against the Owner and the Owner shall not be liable for any damages which Contractor may incur as a result of such decision. In addition, if the court enjoins the Owner from entering into or proceeding with the contract herein, the Owner shall not be liable for any damages arising out of or relating to the award of such contract which Contractor may have incurred as a result of the injunction.

Article 9
MINIMUM WAGE RATES

In accordance with the provisions of the Connecticut General Statutes Section 31-53, the following applies:

"The wages paid on an hourly basis to any mechanic, laborer or workman employed upon the work herein contracted to be done and the amount of payment or contribution paid or payable on behalf of each such employee to any employee welfare fund, as defined in subsection (h) of section 31-53 of the general statutes, shall be at a rate equal to the rate customary or prevailing for the same work in the same trade or occupation in the town in which such public works project is being constructed. Any contractor who is not obligated by agreement to make payment or contribution on behalf of such employees to any such employee welfare fund shall pay to each employee as part of his wages the amount of payment or contribution for his classification on each pay day."

Article 10
POSTING MINIMUM WAGE RATES

10.1 The Contractor shall post at conspicuous points on the site of the Contract a Schedule showing all determined wage rates for all trades and all authorized deductions, if any, from wages to be paid.

10.2 The Contractor shall provide weekly certified payrolls to the Owner for all persons working on the site.

Article 11
CONSTRUCTION SCHEDULES

11.1 Unless otherwise specified in the Contract Documents, within twenty-one (21) calendar days from the contract start date, the Contractor shall submit the following to the Owner for approval:

11.1.1 A comprehensive schedule of Submittals required by the Specifications. Said schedule shall include Submittal dates, required approval dates and date material must be on site.

11.1.2 The Contractor shall allow a minimum of two weeks for the Owner and its agents' review of Submittals. No extension of the Contract Time shall be granted for revisions and resubmission. Further, the Contractor shall allow a minimum of eight weeks for testing and acceptance of the Work by the Owner and its agents.

11.1.3 When the Contract Documents specify a "CPM Schedule" a detailed Critical Path Method Schedule is required using software approved by the Owner with as many activities as necessary to make the Schedule an effective tool for planning and monitoring the progress of the Work. The Contractor shall show all pertinent activities requiring coordination between trades.

11.1.4 When the Contract Documents specify a "Construction Schedule" a detailed Construction Schedule is required using software approved by the Owner as a horizontal bar chart with a separate bar for each major portion of the Work or operation to make the Schedule an effective tool for planning and monitoring the progress of the Work.

11.2 Unless otherwise specified under the Contract Documents, the Contractor shall provide a monthly update of the CPM Schedule or Construction Schedule in the format required by the Owner as well as a disk of the updated Schedule and program. If, in the opinion of the Owner, the Work is falling behind Schedule, the Contractor shall submit a revised Schedule demonstrating a recovery plan to ensure Substantial Completion of the Work within the Contract Time.

11.3 Requisitions for partial payment will not be processed until the Contractor has complied with this requirement.

**Article 12
PREFERENCE IN EMPLOYMENT**

12.1 Should this Contract be for the construction or repair of any building, then in the employment of labor to perform the Work specified herein, preference shall be given to citizens of the United States, who are, and continuously for at least three (3) months prior to the date hereof, have been residents of the labor market area, as established by the State of Connecticut Labor Commissioner, in which such Work is to be done, and if no such qualified person is available, then to citizens who have continuously resided in the county in which the Work is to be performed for at least three (3) months prior to the date hereof, and then to citizens of the state who have continuously resided in the State at least three months prior to the date hereof.

12.2 Should this Contract be for a public works project other than for the construction, remodeling or repairing of public buildings covered by Connecticut General Statutes Section 31-52, then in the employment of mechanics, laborers or workmen to perform the Work specified herein, preference will be given to residents of the state who are, and continuously for at least six (6) months prior to the date hereof have been residents of this State, and if not such person is available then to residents of other states.

12.3 The provisions of this Article shall not apply where the state or any sub-division thereof may suffer the loss of revenue granted or to be granted from any agency or department of the federal government as a result of this Article or regulations related thereto.

**Article 13
COMPENSATION FOR CHANGES
IN THE WORK**

13.1 At any time, without invalidating the Contract and by a written order and without notice to the sureties, the Owner, through the Construction Administrator, may order modifications in the Work consisting of additions, deletions or other revisions. Upon request, the Contractor shall supply the Construction Administrator promptly with a detailed proposal for the same, showing quantities of and unit prices for the Work and that of any Subcontractor involved.

13.2 Modifications to the Work will be authorized by a written Change Order, or if necessary to expedite the Work, a written Construction Change Directive, issued by the Owner as provided for in Article 26. Change Orders and Construction Change Directives shall be processed in accordance with the terms of the Contract Documents. Upon receipt of the

written Change Order, the Contractor shall proceed with the Work when and as directed.

13.3 If such Change Orders make the Work less expensive for the Contractor, the proper deductions shall be made from the Contract Sum, said deductions to be computed in accordance with the provisions listed in this Article 13.

13.4 The Contractor and the Owner agree that the Contract Time specified for the performance of the Contract shall include not only the Work of the original Contract but also any Additional Work ordered by the Owner by Change Order. No extension of time will be granted if it is the opinion of the Owner that the additional Work can be performed concurrently with the original Work.

13.5 The Contractor may request, and the Owner may grant additional contract time when, in the opinion of the Owner, the Contractor has demonstrated that such additional work cannot be performed concurrently with the original Work.

13.6 The amount of compensation to be paid to the Contractor for any Additional or Deleted Work that results in a Change Order shall be determined in one of the following manners:

13.6.1 AMOUNT OF COMPENSATION FOR CHANGE ORDER COSTS: LABOR, EQUIPMENT, BENEFITS AND MATERIAL

13.6.1.1 Unit Price: As stated in the Contract Documents.

13.6.1.2 Unit Price: As subsequently agreed upon by the Contractor and Owner.

13.6.1.3 Lump Sum: Agreed upon sum by the Owner and the Contractor. The Lump Sum must be based upon the following itemized costs:

13.6.1.3.1 Labor (Contractor's or Subcontractor's own forces)

13.6.1.3.2 Material (Used by Contractor's or Subcontractor's own forces).

13.6.1.3.3 Benefits: (The established rates of the following benefit costs inherent to the particular labor involved):

13.6.1.3.3.1 Workers Compensation.

13.6.1.3.3.2 Federal Social Security.

13.6.1.3.3.3 Connecticut Unemployment Compensation.

13.6.1.3.3.4 Fringe Benefits.

13.6.1.3.4 Rented Equipment (Used directly on the Work and by the Contractor's or Subcontractor's own forces).

13.6.1.3.5 Owned Equipment (Used directly on the Work and by the Contractor's or Subcontractor's own forces). Daily rate is not to exceed 3% of the monthly

rental rate as identified by a nationally recognized construction cost estimating guide or service.

13.6.1.3.6 Trade related equipment, hand tools and power tools, normally supplied with the labor are not compensable.

13.6.2 OVERHEAD AND PROFIT PERCENTAGES:
(Maximum allowable percentages applied to labor, equipment, benefits and material)

13.6.2.1 Contractor's markup for Work performed by their own forces:

Change Order Amount	Overhead and Profit
\$0 to \$ 5,000	20%
\$5,001 to \$15,000	17%
\$15,001 to \$25,000	15%
\$25,000 and greater	12%

13.6.3 OVERHEAD AND PROFIT PERCENTAGES:
(Maximum allowable percentages applied to labor, equipment, benefits and material)

13.6.3.1 Contractor's markup for Work performed by their Subcontractors forces.:

Change Order Amount	Overhead and Profit
\$0 and greater	6%

13.6.4 OVERHEAD AND PROFIT PERCENTAGES:
(Maximum allowable percentages applied to labor, equipment, benefits and material)

13.6.4.1 Subcontractor's markup for Work performed by their own forces:

Change Order Amount	Overhead and Profit
\$0 to \$ 5,000	20%
\$5,001 to \$15,000	17%
\$15,001 to \$25,000	15%
\$25,000 and greater	12%

13.6.5 OVERHEAD AND PROFIT PERCENTAGES:
(Maximum allowable percentages applied to labor, equipment, benefits and material)

13.6.5.1 Subcontractor's markup for Work performed by their Secondary Subcontractor's forces.

Change Order Amount	Overhead and Profit
\$0 and greater	6%

13.7 Actual additional bonding costs associated with the value of the Change Order will be compensable only when supported by a written documentation by the bonding company that the Change Order requires an increase to the original Performance, Payment, Labor or Material Bond.

13.8 On Work performed by a Secondary Subcontractor, the Owner recognizes no markup by the Secondary Subcontractor.

13.9 If Unit Prices are not applicable and the parties cannot agree upon a lump sum, then the Commissioner, through the Construction Administrator, may at the option of the Commissioner take the following action(s):

13.9.1 Issue a Construction Change Directive for the Additional or deleted Work. The amount of compensation shall be computed by the actual net costs to the Contractor based upon the following:

13.9.1.1 Labor (Contractor's or Subcontractor's own forces)

13.9.1.2 Material (Used by Contractor's or Subcontractor's own forces).

13.9.1.3 Benefits: (The established rates of the following benefit costs inherent to the particular labor involved):

13.9.1.3.1 Workers Compensation.

13.9.1.3.2 Federal Social Security.

13.9.1.3.3 Connecticut Unemployment Compensation.

13.9.1.3.4 Fringe Benefits.

13.9.1.4 Rented Equipment (Used directly on the Work and by the Contractor's or Subcontractor's own forces).

13.9.1.5 Owned Equipment (Used directly on the Work and by the Contractor's or Subcontractor's own forces).

Daily rate is not to exceed 3% of the monthly rental rate that can be identified by a nationally recognized construction cost estimating guide or service.

13.9.2 Issue a Change Order adjusting the Contract Sum in the amount as determined by the Commissioner.

13.10 For any Change Order or Construction Change Directive the Contractor shall, when requested, promptly furnish in a form satisfactory to the Construction Administrator and the Owner a complete detailed accounting of all costs relating to the Additional Work, including but not limited to certified payrolls and copies of accounts, bills and vouchers to substantiate actual costs. Further, the Owner reserves the right to access and make copies of the Contractor's records at any time upon written request from the Commissioner.

13.11 If the Contractor wishes to make a claim for an increase in the Contract Sum for any damages sustained as a result of Additional Work, then the Contractor shall give the Owner, through the Construction Administrator, written notice thereof within seven (7) calendar days after the occurrence of the event giving rise to such claims.

13.12 No such claims shall be valid if the written notice is submitted after the required seven (7) calendar days. In addition, the Contractor shall file with the Owner through the Construction Administrator daily or weekly itemized statements of the details and cost of such Work performed or damage sustained as may be required by the Owner.

13.13 Failure of the Contractor to negotiate in good faith issues of time and costs and failure to provide requested documentation within (14) fourteen calendar days, or a time period accepted by the Commissioner, shall constitute a waiver by the Contractor of any claim. In such cases the Owner may elect to issue a unilateral Change Order in an amount deemed to be fair and equitable by the Commissioner. The provisions hereof shall not affect the power of the Contractor to act in case of emergency, threatened injury to persons, or damage to Work on any adjoining property. In this case the Commissioner, through the Construction Administrator, shall issue a written order for such amount as the Commissioner finds to be reasonable cost of such Work.

Article 14
DELETED WORK

14.1 Without invalidating any of the terms of the Contract, the Commissioner may order deleted from the Contract any items or portions of the Work deemed necessary by the Commissioner.

14.2 The compensation to be deducted from the Contract Sum for such deletions shall be determined in the manner provided for under the provisions of Article 13 or in the event none of the provisions of Article 13 are applicable than by the value as estimated by the Owner.

Article 15
MATERIALS: STANDARDS

15.1 Unless otherwise specifically provided for in the Specifications, all equipment, materials and articles incorporated in the Work are to be new and of the best grade of their respective kinds for the purposes. Wherever in the Contract Documents a particular brand, make of material, device, or equipment is shown or specified, the first manufacturer listed in the specification section is to be regarded as the standard. When the specification is proprietary and only one manufacturer is listed, the Contractor shall use the named manufacturer and no Substitutions or Equals will be allowed.

15.2 Any other brand, make of material, device, equipment, procedure, etc. which is a deviation from the specified requirement is prohibited from use but may be considered by the Owner for approval as an Equal or Substitution. The Contractor is to adhere to the specific requirements of the Contract Documents. Substitutions are discouraged and are only approved by the Commissioner as an exception.

15.3 Each request for an Equal or Substitution shall be submitted, with the appropriate documentation, as detailed in

the Contract Documents, to the Construction Administrator. All requests will be compared to the first manufacturer or first procedure listed in the specific Specification section with reference to all of the following areas: the substance and function considering quality, workmanship, economy of operation, durability and suitability for purposes intended including the size, rating and cost. All submissions must include all the required data for the first listed manufacturer or procedure as specified, as well as the proposed Equal or Substitution. The submission of all Equals or Substitutions to those specified must be made within the days listed below after the contract start date. After that time period, the Contractor shall provide what is specified unless otherwise allowed within the sole discretion of the Commissioner.

15.3.1 30 days for projects having a Contract Time duration of 180 days or less

15.3.2 60 days for projects having a Contract Time duration of 181 days to 360 days

15.3.3 90 days for projects having a Contract Time duration of 361 days or greater

15.4 Contractor shall submit each request for Equal or Substitution to the Architect who shall review each request and make the following recommendations to the Owner:

15.4.1 Acceptance or non-acceptance of the adequacy of the submission and required back-up,

15.4.2 Determination of the category of the request for Substitution or Equal, and

15.4.3 Overall recommendation for approval or rejection of the Substitution or Equal. The determination of the category as a Substitution may be grounds for an immediate rejection by the Owner.

15.5 Approval of the Owner, for each Equal or Substitution shall be obtained before the Contractor proceeds with the Work. The decision of the Commissioner, in this regard, shall be final and binding on the Contractor.

15.6 No extension of time will be allowed for the time period required for consideration of any Substitution or Equal. No extension of time will be allowed and no responsibility will be assumed by the Owner when a Contractor submits a request for Substitution or Equal, whether such request be approved or denied.

15.7 If the Contractor submits any request for an Equal or a Substitution, he shall bear the burden of proof that such requested Equal or Substitution meets the requirements of the plans and specifications.

15.8 The Contractor shall purchase no materials or supplies for the Work which are subject to any chattel mortgage or which are under a conditional sale or other agreement by which an interest is retained by the seller. The Contractor

warrants that the Contractor has good title to all materials and supplies used by him in the Work.

15.9 All Products and systems supplied to the State as result of a purchase by a contractor shall be certified that, to the best of the supplier's knowledge there are no materials that are classified as hazardous materials being used within the assembly. Hazardous materials include, but are not limited to, products such as asbestos, lead and other materials that have proven to cause a health risk by their presence.

Article 16
INSPECTION AND TESTS

16.1 The purpose of the inspections will be to assure that the Work is performed in accordance with the Contract Documents. These inspections shall include, but not be limited to all inspections and testing as required by the Owner, and any authorities have jurisdiction.

16.2 All material and workmanship, if not otherwise designated by the Specifications, shall be subject to inspection, examination and test by the Commissioner at any and all times during manufacture and/or construction and at any and all places where such manufacture and/or construction is carried on. The Contract Documents additionally identify the parties responsible for performing and paying for the required testing and inspections. All required tests performed in a laboratory will be obtained and paid for by the Owner except when the tests show the Work to be defective. The Contractor shall pay for all the costs associated with re-tests and re-inspections for all tests and inspections which fail. The Owner will issue a deduct Change Order to recover said retesting costs from the Contractor. All other tests, unless otherwise specified, shall be made at the Contractor's expense. Notice of the time of all tests to be made at the site shall be given to all interested parties, including the Owner.

16.3 Without additional cost to the Owner, the Contractor shall promptly furnish facilities, labor and materials necessary to coordinate and perform operational tests and check-out of the Work. The Contractor shall furnish promptly all reasonable facilities, labor and materials necessary to make all such testing safe and convenient.

16.4 If, at any time before Final Completion and Final Acceptance of the Work, the Commissioner considers it necessary or advisable to examine of any portion of the Work already completed by removing or tearing out the same, the Contractor shall, upon request, furnish promptly all necessary facilities, labor and materials. If such Work is found to be defective in any material respect, as determined by the Owner, because of a fault of the Contractor or any of the Contractor's Subcontractors, or if any Work shall have been

covered without the approval or consent of the Commissioner (whether or not it is found to be defective), the Contractor shall be liable for testing costs and all costs of correction, including removal and/or demolition of the defective work, including labor, material, and testing, including labor, material, re-testing or re-inspecting, services of required consultants, additional supervision, the Commissioner's and the Construction Administrator's administrative costs, and other costs for services of other consultants.

Article 17
ROYALTIES AND PATENTS

17.1 If the Contractor desires to use any design, device, material or process covered by a patent or copyright, the Contractor shall provide for such use by suitable legal agreement with the holder of said patent or copyright. The Contractor shall furnish a copy of this legal agreement to the Owner.

17.2 The Contractor shall indemnify and hold harmless the Owner and Construction Administrator for any costs, expenses and damage which it may be obliged to pay by reason of any infringement of a patent or a copyright, at any time during the prosecution or after the Final Completion of the Work.

Article 18
SURVEYS, PERMITS AND REGULATIONS

18.1 Unless otherwise provided for, the Contractor shall furnish surveys necessary for the execution of the Work. The Owner will furnish the Contractor with two base lines and a benchmark.

18.2 The Contractor shall obtain and pay for permits and licenses necessary for the execution of the Work and the occupancy and use of the completed Work.

18.3 The Contractor shall give all notices and comply with all laws, ordinances, rules and regulations including building and fire safety codes relating to the performance of the Work.

18.4 If underground utilities may involve part of the Work, the Contractor shall obtain the services of a qualified underground utility locating firm, at no cost to the Owner, to verify locations of underground utilities, to provide safety, protect the Work and protect the workmen as necessary to perform the Work.

Article 19

**PROTECTION OF THE WORK,
PERSONS AND PROPERTY**

19.1 The Contractor shall continuously and adequately protect the Work against damage from any cause, and shall protect materials and supplies furnished by the Contractor or Subcontractors, whether or not incorporated in the Work, and shall make good any damage unless it be due directly to errors in the Contract Documents or is caused by agents or employees of the Owner.

19.2 To the extent required by law, by public authority, or made necessary in order to safeguard the health and welfare of the personnel or occupants of any of the state institutions, the Contractor shall adequately protect adjacent property and persons, and provide and maintain all facilities, including but not limited to passageways, guard fences, lights, and barricades necessary for such protection.

19.3 The Contractor shall take all necessary precautions for the safety of employees on the Work and shall comply with applicable provisions of federal and state safety laws and building codes to prevent accidents or injury to persons on, about or adjacent to the premises where the Work is being performed. The Contractor shall also comply with the applicable provisions of the Associated General Contractors' Manual of Accident Prevention in Construction, the standards of the Connecticut Labor Department and Occupational Safety and Hazard Association (OSHA).

19.4 The Contractor shall erect and properly maintain at all times, as required by the conditions and progress of the Work, all necessary safeguards for the protection of employees of the State and the public, and shall post danger signs warning against any dangerous condition or hazard created by such things as protruding nails, well holes, elevator hatchways, scaffolding, window openings, excavations, tripping hazards or slipping, stairways and falling materials.

19.5 The Contractor shall designate a qualified and responsible on site staff person, whose duty shall be the prevention of accidents. The name and position of the designated person shall be reported to the Owner by the Contractor at the commencement of the Contract.

19.6 The Contractor shall at all times protect excavation, trenches, buildings and all items of Work from damage by rain, water from melted snow or ice, surface water run off and subsurface water usual for the vicinity at the time of operations; and provide all pumps and equipment and enclosures to insure such protection.

19.7 The Contractor shall construct and maintain all necessary temporary drainage and do all pumping necessary to

keep excavation, basements, footings and foundations free of water.

19.8 The Contractor shall remove all snow and ice as may be required for access to the site and proper protection and prosecution of the Work.

19.9 The Contractor shall install bracing, shoring, sheathing, sheet piling, caissons and any other underground facilities as required for safety and proper execution of the Work, and shall remove this portion of the Work when no longer necessary.

19.10 During cold weather the Contractor shall protect all Work from damage. If low temperature makes it impossible to continue operations safely in spite of cold weather precautions, the Contractor may cease Work upon the written approval of the Commissioner.

Article 20
TEMPORARY UTILITIES

20.1 Unless expressly provided for otherwise in the Contract Documents, the Contractor shall include in the bid the costs of all temporary utilities required for project completion and protection of the Work. Said temporary utilities include but are not limited to lighting, heating, cooling, electrical power, water, telephone, sanitary facilities, and potable water.

Article 21
CORRECTION OF WORK

21.1 The Contractor shall promptly and without expense to the Owner remove from the premises all materials rejected by or unacceptable to the Commissioner as failing to conform to the Contract Documents, whether incorporated in the Work or not.

21.2 The Contractor shall promptly and without expense to the Owner replace any such materials which do not conform to the Contract Documents, and shall bear the expense of making good all Work of other Contractors or Subcontractors destroyed or damaged by such removal or replacement.

21.3 If the Contractor, after receipt of notice from the Owner, shall fail to remove such rejected or unacceptable materials within a reasonable time as fixed in said notice, the Owner may remove and store such materials at the expense of the Contractor.

21.4 Such action shall not affect the obligation of the Contractor to replace and complete assembly and installation of

the Work and to bear the expenses referred to above. Prior to the correction of rejected or unacceptable Work or if the Commissioner deems it inexpedient or undesirable to correct any portion of the Work which was rejected, deemed unacceptable or not done in accordance with the Contract Documents, the Contract sum shall be reduced by such amount as, in the judgment of the Commissioner, shall be equitable.

21.5 No extension of time will be given to the Contractor for correction of rejected or unacceptable Work. All significant punchlist Work shall be completed before Substantial Completion is determined. The remaining minor punchlist Work, as determined by the Commissioner, shall be completed within 60 days of established Substantial Completion date.

21.6 Final Payment shall not relieve the Contractor of responsibility for the defects in material or workmanship.

21.7 Unless expressly provided for otherwise in the Contract Documents, the Contractor shall remedy any rejected or unacceptable Work, and any Work found to be not conforming to the Contract Documents which is discovered within 18 Months after the date of Substantial Completion. The Contractor shall pay for any damage to other Work caused by such nonconforming Work or any damage created in correcting the nonconforming Work.

Article 22
GUARANTEES and WARRANTIES

22.1 Unless expressly provided for otherwise in the Contract Documents, the Contractor shall provide a warranty on the Work for an 18-Month period from the date of Substantial Completion. The Contractor shall warrant that the equipment, materials and workmanship are of good quality and new, unless permitted elsewhere by the Contract Documents, and that the Work shall be free from defects not inherent in the quality required or permitted and that the Work conforms to the Contract Documents.

22.2 Disclaimers and limitations from manufactures, Subcontractors, suppliers or installers to the Contractor shall not relieve the Contractor of the Warranty on the Work. The Contract Documents detail the related damages, reinstatement of warranty, replacement cost and Owner's recourse.

Article 23
CUTTING, FITTING, PATCHING AND DIGGING

23.1 The Contractor will perform or will cause the Subcontractors to perform all cutting, fitting or patching of the por-

tion(s) of the Work that may be required to make the several parts thereof joined and coordinated in a manner satisfactory to the Commissioner and in accordance with the Plans and Specifications.

23.2 The responsibility for defective or ill-timed Work shall be with the Contractor, but such responsibility shall not in any way relieve the Subcontractor who performed such Work. Except with the consent of the Commissioner, neither the Contractor nor any of its Subcontractors shall cut or alter the Work of any other Contractor or Subcontractor.

Article 24
CLEANING UP

24.1 The Contractor shall, on a daily basis, keep the premises free from accumulations of waste material or rubbish.

24.2 Prior to Final Completion of the Work, the Contractor shall remove from and about the site of the Work, all rubbish and all temporary structures, tools, scaffolding and surplus materials, supplies and equipment which may have been used in the performance of the Work. If the Commissioner in his sole discretion determines that the Contractor has failed to clean the work site, the Owner may remove the rubbish and charge the cost of such removal to the Contractor. A deduct Change Order will be issued by the Owner to recover such cost.

Article 25
ALL WORK SUBJECT TO CONTROL OF THE COMMISSIONER

25.1 The Commissioner hereby declares that the Department of Public Works Project Manager is the Commissioner's only authorized representative to act in matters involving the Owner's or Architect's ability to revoke, alter, enlarge or relax any requirement of the Contract Documents; to settle disputes between the Contractor and the Construction Administrator; and act on behalf of the Commissioner. In all such matters, the provisions of Articles 13 and 14 herein shall guide the Project Manager.

25.2 In no event may the Contractor act on any instruction of the Agency without written consent of the Owner. In the event the Contractor acts without such consent, he does so at his own risk and at his own expense, not only for the Work performed, but for the removal of such Work as determined necessary by the Commissioner.

25.3 In the performance of the work, The Contractor shall abide by all orders, directions, and requirements of the Commissioner at such time and places and by such methods and in such manner and sequence as the Commissioner may require.

25.4 The Commissioner shall determine the amount, quality, acceptability and fitness of all parts of the work, shall interpret the plans, specifications, Contract Documents and extra work orders and shall decide all other questions in connection with the Work.

25.5 The Contractor shall employ no plant, equipment, materials, methods or persons to which the Commissioner objects and shall remove no plant materials, equipment or other facilities from the site of the Work without the permission of the Commissioner. Upon request, the Commissioner shall confirm in writing any oral order, direction, requirement or determination.

**Article 26
AUTHORITY OF THE CONSTRUCTION
ADMINISTRATOR**

26.1 The Construction Administrator employed by the Commissioner is authorized to inspect all Work for conformance to the Contract Documents. The Construction Administrator is authorized to reject all Work found to be defective, unacceptable and nonconforming to the Contract Documents. Such inspections and rejections may extend to all or any part of the Work, and to the preparation or manufacture of the material to be used.

26.2 The Construction Administrator is not empowered to revoke, alter, enlarge or relax any requirements of the Contract Documents, or to issue instructions contrary to the Contract Documents. The Construction Administrator shall in no case act as foreman or perform other duties for the Contractor, nor shall the Construction Administrator interfere with the management of the Work by the Contractor. Any advice, which the Construction Administrator may give the Contractor, shall in no way be construed as binding the Commissioner or Owner in any way, nor releasing the Contractor from the fulfillment of the terms of the Contract.

26.3 In any dispute arising between the Contractor and the Construction Administrator with reference to inspection and rejection of the Work, the Construction Administrator may suspend work on the noncompliant portion of the Work until the dispute can be referred to and decided by the Commissioner.

**Article 27
SCHEDULE OF VALUES,
APPLICATION FOR PAYMENT**

27.1 Immediately after the signing of the Contract, the Contractor shall furnish for the use of the Commissioner as a basis for estimating partial payments, a certified Schedule of Values, totaling the contract sum and broken down into quantities and unit costs, as outlined in the Contract Documents and as directed by the Owner. The Schedule of Values must reflect true costs and be in sufficient detail to be an effective tool for monitoring the progress of the Work. Upon request of the Commissioner, the Contractor shall supply copies of signed Contracts, vendor quotations, etc. as back up to the Schedule of Values.

27.2 Approval of the Schedule of Values by the Commissioner is required prior to any payment by the Owner.

27.3 The Schedule of Values shall include a breakdown of the Contractor's general condition costs.

27.3.1 Non-recurring costs, (i.e. mobilization costs, utility hook-ups, temporary heat) will be paid at the time of occurrence.

27.3.2 Reoccurring costs will be paid in proportion to the percent of completion of the project.

27.4 The Schedule of Values shall include a breakdown of Contract closeout costs including systems certification testing and acceptance, training, warranties, guarantees, as-builts and attic stock.

27.5 The Contractor shall make periodic applications for payment, which shall be subdivided into categories corresponding with the approved Schedule of Values and shall be in such numbers of copies as may be designated by the Commissioner.

**Article 28
PARTIAL PAYMENTS**

28.1 The Commissioner will examine the Contractor's applications for payments to determine, in the opinion of the Commissioner, the amounts that properly represent the value of the Work completed and for the materials suitably stored on the site.

28.2 In making such Application For Payment for the Work, there shall be deducted (10%) ten percent of the amount of each payment to be retained by the Owner until Final Completion.

28.3 At the sole discretion of the Commissioner, and after

completion and acceptance of (60%) sixty percent of the value of the Work, and if the character and progress of the Work remain satisfactory, the retained portion of the Application for Payments may be reduced to five percent (5%) of total payments. The minimum total amount of payment retained, prior to the Final Payment shall not be less than five percent (5%) of the Contract Sum.

28.4 The decision of the Commissioner to reduce the retainage rate will be based upon the Contractor's performance for completed portions of the Work as set out below and other factors the Commissioner may find appropriate:

28.4.1 The Contractor's timely submission of an appropriate and complete CPM Schedule or Construction Schedule and Schedule of Values, in compliance with the Contract requirements and the prompt resolution of the Owner's and/or Architect's comments on the submitted material resulting in an appropriate basis for progress of the Work.

28.4.2 The Contractor's timely and proper submission of all Contract required submissions: including but not limited to shop drawings, material certificates and material samples and the prompt resolution of the Owners and/or Architect's comments on the submitted material resulting in an appropriate progress of the Work.

28.4.3 The Contractor's provision of proper and adequate supervision and home office support of the Project and any Subcontractor Work resulting in coordinated progress and proper quality control for the Work.

28.4.4 The Work completed to date has been installed or finished in an acceptable manner which is satisfactory to the Owner.

28.4.5 The progress of the Work is consistent with the approved CPM Schedule or Construction Schedule.

28.5 No payments will be made for improperly stored or protected materials or unacceptable Work.

Article 29

DELIVERY OF STATEMENT SHOWING AMOUNTS DUE FOR WAGES, MATERIALS AND SUPPLIES

29.1 For each Application for Payment under this Contract, the Owner reserves the right to require the Contractor and every Subcontractor to submit a written verified statement, in a form satisfactory to the Owner, showing in detail all amounts then due and unpaid by such Contractor or Subcontractor for daily or weekly wages to all laborers employed by him for the performance of the Work or to other persons for materials, equipment or supplies delivered at the site.

29.2 The term laborers as used herein shall include workmen, workwomen, and mechanics.

29.3 Failure to comply with this requirement may result in the Owner withholding the application for payment pursuant to Article 28.

Article 30

COMPLETION AND ACCEPTANCE

30.1 Substantial Completion:

30.1.1 When the Contractor considers that the Work, or a portion thereof is Substantially Complete, the Contractor shall request an inspection of said Work to the Construction Administrator.

30.1.2 Upon receipt of the request, the Architect, Construction Administrator and Owner, will make an inspection to determine if the Work or designated portion thereof is Substantially Complete. If the inspection discloses any item, whether or not included on the inspection list, which is not in accordance with the requirements of the Contract Documents, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item.

30.1.3 The Contractor shall then submit a request for another inspection. The determination of Substantial Completion is solely within the discretion of the Owner.

30.1.4 When the Work or designated portion thereof is determined to be Substantially Complete, the Contractor will be provided a Certificate of Substantial Completion from the Owner. The Certificate of Substantial Completion, shall establish the date when the responsibilities of the Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, are transferred to the Owner and shall fix the time within which the Contractor shall finish all items on the inspection list accompanying the Certificate.

30.1.5 The Certificate of Substantial Completion shall be signed by the Construction Administrator, Owner, and Architect.

30.1.6 Upon Substantial Completion of the Work or designated portion thereof and upon application by the Contractor and certification by the Construction Administrator and Architect, the Owner shall make payment reflecting adjustment in retainage, if any, for such Work or portion thereof as provided in the Contract Documents.

30.2 Final Completion:

30.2.1 Upon Final Completion of the Work, the Contractor shall forward to the Construction Administrator a written notice that the Work is ready for Final Inspection and Acceptance and shall also forward to the Construction Administrator, a Final Application for Payment. Upon de-

termination by the Owner that all the Work is complete, the Owner will issue a Certificate of Completion and Acceptance.

30.2.2 When the Work has been completed in accordance with terms and conditions of the Contract Documents a Certificate of Completion shall be issued to be signed by the Contractor.

Article 31 **FINAL PAYMENT**

31.1 The Owner reserves the right to retain for a period of thirty (30) days after filing of the Certificate of Completion and Acceptance the amount therein stated less all prior payments and advances whatsoever to or for the account of the Contractor.

31.2 All prior estimates and payments, including those relating to extra or additional Work, shall be subject to correction by the Final Payment.

31.3 No Application for Payment, Final or Partial, shall act as a release to the Contractor or the Contractor's sureties from any obligations under this Contract.

31.4 The Architect and Construction Administrator will promptly issue the Certificate for Payment, stating that to the best of their knowledge, information and belief, and on the basis of their observations and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents and that the entire balance found to be due the Contractor and noted in said Final Payment is due and payable.

31.5 Final Payment shall not be released until a Certificate of Completion and Acceptance and a Certificate of Compliance have been issued.

31.6 Neither Final Payment nor any remaining retained percentage shall become due until the Contractor submits to the Owner the following:

31.6.1 An affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied.

31.6.2 A certificate evidencing that insurance required by the Contract Documents to remain in force after Final Payment is currently in effect and will not be canceled or allowed to expire without at least 30 days prior written notice to the Owner.

31.6.3 A written statement that the Contractor knows of no substantial reason that the insurance will not be renew-

able to cover the period required by the Contract Documents.

31.6.4 Written consent of surety, if any, to Final Payment.

31.6.5 If required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorney's fees.

31.6.6 If, after Substantial Completion of the Work, Final Completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting Final Completion and the Construction Administrator and Architect so confirm, the Owner shall, upon application by the Contractor and certification by the Construction Administrator and Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Owner prior to Final Payment. Such payment shall be made under terms and conditions governing Final Payment, except that it shall not constitute a waiver of Claims.

Article 32 **OWNER'S RIGHT TO WITHHOLD PAYMENTS**

32.1 The Commissioner may withhold a portion of any Payment due the Contractor that may, in the judgment of the Commissioner, be necessary:

32.1.1 To assure the payment of just claims then due and unpaid to any persons supplying labor or materials for the Work.

32.1.2 To protect Owner from loss due to defective, unacceptable or non-conforming Work not remedied by the Contractor.

32.1.3 To protect the Owner from loss due to injury to persons or damage to the Work or property of other Contractors, Subcontractors, or others caused by the act or neglect of the Contractor or any of its Subcontractors.

32.2 The Owner shall have the right to apply any amount

withheld under this section as the Owner may deem proper to satisfy protection from claims. The amount withheld shall be considered a payment to the Contractor.

32.3 The Owner has the right to withhold payment if the Contractor fails to provide accurate submissions of submittals, up date the status including but not limited to the following: as-built documents, request for information (RFI) log, Schedule, submittal log, change order log, certified payrolls and daily reports and all other requirement of the Contract Documents.

32.4 Neither Final Payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect through the Construction Administrator:

32.4.1 An affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied,

32.4.2 A certificate evidencing that insurance required by the Contract Documents to remain in force after Final Payment is currently in effect and will not be canceled or allowed to expire until at least 30 days prior written notice has been given to the Owner,

32.4.3 A written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents,

32.4.4 Consent of surety, if any, to Final Payment and

32.4.5 If required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner.

32.5 If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorney's fees.

Article 33
OWNER'S RIGHT TO STOP WORK OR
TERMINATE CONTRACT

33.1 The Commissioner shall have the authority to suspend the Work wholly or in part, for such period or periods as the Commissioner considers to be in the best interests of the State, or in the interests of public necessity, convenience or

safety. During such periods the Contractor shall store all materials and equipment, in such a manner to prevent the materials and equipment from being damaged in any way, and the Contractor shall take precautions to protect the Work from damage.

33.1.1 If the Commissioner, in writing, orders the performance of all or any portion of the Work to be suspended or delayed for an unreasonable period of time (i.e. not originally anticipated, customary, or inherent in the construction industry) and the Contractor believes that additional compensation and/or Contract Time is due as a result of such suspension or delay, the Contractor shall submit to the Commissioner in writing a request for a Contract adjustment within 7 calendar days of receipt of the notice to resume Work. The request shall set forth the specific reasons and support for said adjustment.

33.1.2 The Commissioner shall evaluate any such requests received. If the Commissioner agrees that the cost and/or time required for the performance of the Contract has increased as a result of such suspension and that the suspension was caused by conditions beyond the control of and not the fault of the Contractor, its suppliers, or Subcontractors, and was not caused by weather, then the Commissioner will make a reasonable adjustment, excluding profit, of the Contract terms. The Commissioner will notify the Contractor of the determination as to what adjustments of the Contract, if any, that the Commissioner deems warranted.

33.1.3 No Contract adjustment will be made unless the Contractor has submitted the request for adjustment within the time prescribed.

33.1.4 No contract adjustment will be made under this Article to the extent that performance would have been suspended or delayed by any other cause within the Contractor's control or by any factor for which the Contractor is responsible under the Contract; or that such an adjustment is provided for or excluded under other term or condition of this Contract.

33.2 Notwithstanding any provision or language in the Contract to the contrary, the State may terminate the Contract whenever the Commissioner determines at his sole discretion that such termination is in the best interests of the State. Any such termination shall be effected by delivery to the Contractor of a written Notice of Termination specifying the extent to which performance of Work under the Contract is terminated, and the date upon which such termination shall be effective.

33.2.1 In the event of such termination, the Contractor shall be entitled to reasonable compensation as determined by the Commissioner, however, no claim for lost overhead or profits shall be allowed.

33.2.2 Materials obtained by the Contractor for the Work that have been inspected, tested as required, and accepted

by the Commissioner, and that are not incorporated into the Work, shall, at the option of the Commissioner, be purchased from the Contractor at actual cost as shown by receipted bills. To this cost shall be added all actual costs for delivery at such points of delivery as may be designated by the Commissioner, as shown by actual cost records.

33.2.3 Termination of the Contract shall not relieve the Contractor or its Surety of their responsibilities for the completed Work, nor shall it relieve the Contractor's Surety of its obligations to ensure completion of the Work and to pay legitimate claims arising out of Work.

Article 34

SUBLETTING OR ASSIGNING OF CONTRACT

34.1 The Contract or any portion thereof, or the Work provided for therein, or the right, title or interest of the Contractor therein may not be sublet, sold, transferred, assigned, or otherwise disposed of to any person, firm or corporation without the written consent of the Commissioner.

34.2 No person, firm or corporation other than the Contractor to whom the Contract was awarded shall be permitted to commence Work at the site of the Contract until such consent has been granted.

Article 35

CONTRACTOR'S INSURANCE

35.1 The Contractor shall not start Work under the Contract until they have obtained insurance as stated in SECTIONS 00300 CERTIFICATE OF INSURANCE and 00020 BID PROPOSAL FORM, subsections 4.4.2 and 4.4.3, of this Project Manual and until the insurance has been approved by the Owner. The Contractor shall not allow any Subcontractor to start Work until the same insurance has been obtained by the Subcontractor and approved by the Owner or the Contractor's insurance provides coverage on behalf of the Subcontractor. The Contractor shall send Certificates of Liability Insurance to the Bidding and Contracts Unit, Department of Public Works, 165 Capitol Avenue, Room G-9A, Hartford, CT 06106 unless otherwise directed in writing. Presented below is a narrative summary of the insurance required.

35.1.1 Commercial General Liability insurance including contractual liability, products/completed operations, broad form property damage and independent Contractors. The limits shall be no less than \$1,000,000 each occurrence and \$2,000,000 annual aggregate. Coverage for hazards of explosion, collapse and underground (X-C-U)

must also be included when applicable to the Work to be performed. The State of Connecticut shall be named as an Additional Insured. This coverage shall be provided on a primary basis.

35.1.2 Owner's and Contractor's Protective Liability insurance providing a total limit of \$1,000,000 for all damages arising out of bodily injury or death of persons in any one accident or occurrence and for all damages arising out of injury or destruction of property in any one accident or occurrence and subject to a total (aggregate) limit of \$2,000,000 for all damages arising out of bodily injury to or death of persons in all accidents or occurrences and out of injury to or destruction of property during the policy period. This coverage shall be for and in the name of the State of Connecticut.

35.1.3 The operation of all motor vehicles including those owned, non-owned and hired or used in connection with the Contract shall be covered by **Automobile Liability** insurance providing for a total limit of \$1,000,000 for all damages arising out of bodily injuries to or death of all persons in any one accident or occurrence and for all damages arising out of injury to or destruction of property in any one accident or occurrence. In cases where an insurance policy shows an aggregate limit as part of the automobile liability coverage, the aggregate limit must be at least \$2,000,000. This coverage shall be provided on a primary basis. Should the Contractor not own any automobiles, the automobile & liability requirement shall be amended to allow the Contractor to maintain only hired and non-owned liability.

35.1.4 Workers' Compensation and Employer's Liability as required by Connecticut Law and **Employers' Liability** with a limit of not less than \$100,000 per occurrence, \$500,000 disease policy limit and \$100,000 disease each employee. When Work is on or contiguous to navigable bodies of waterways and ways adjoining, the Contractor shall include Federal Act endorsement for U.S. Longshoremen's and Harbor Workers Act.

35.1.5 Special Hazards insurance, if required, will be stated in SECTION 00020 BID PROPOSAL FORM, subsection 4.4.2 of this Project Manual. This includes coverage for explosion, collapse or underground damage and shall be no less than \$1,000,000 each occurrence.

35.1.6 Builder's Risk insurance, if required, will be stated in SECTION 00020 BID PROPOSAL FORM, subsection 4.4.3 of this Project Manual.

35.1.7 Inland Marine/Transit Insurance: With respect to property with values in excess of \$100,000 which is

rigged, hauled or situated at the site pending installation, the Contractor shall maintain inland marine/transit insurance provided the coverage is not afforded by a Builder's Risk policy.

35.2 Satisfying Limits Under an Umbrella Policy: If necessary, the Contractor may satisfy the minimum limits required above for either Commercial General Liability, Automobile Liability, and Employer's Liability coverage under an Umbrella or Excess Liability policy. The underlying limits may be set at the minimum amounts required by the Umbrella or Excess Liability policy provided the combined limits meet at least the minimum limit for each required policy. The Umbrella or Excess Liability policy shall have an Annual Aggregate at a limit not less than two (2) times the highest per occurrence minimum limit required above for any of the required coverages. The State of Connecticut shall be specifically endorsed as an Additional Insured on the Umbrella or Excess Liability policy, unless the Umbrella or Excess Liability policy provides continuous coverage to the underlying policies on a complete "Follow-Form" basis.

35.3 Each insurance policy required to be maintained by the Contractor except Workers' Compensation and Automobile Liability shall endorse the State of Connecticut as an Additional Insured. Additional Insured endorsements shall provide coverage on a primary basis.

35.4 When required to be maintained, the Builder's Risk and Inland Marine/Transit Insurance policy shall endorse the State of Connecticut as a Loss Payee.

35.5 The Contractor shall, at its sole expense, maintain in full force and effect at all times during the life of the Contract or the performance of Work hereunder, insurance coverage as described herein. Certificates shall include a minimum thirty (30) day endeavor to notify requirement to the Owner prior to any cancellation or non-renewal.

35.6 The Contractor shall be fully and solely responsible for any costs or expenses as a result of a coverage deductible, coinsurance penalty, or self-insured retention, including any loss not covered because of the operation of such deductible, coinsurance penalty, or self-insured retention.

35.7 The requirement contained herein as to types and limits of insurance coverage to be maintained by the Contractor are not intended to and shall not in any manner limit or qualify the liabilities and obligations assumed by the Contractor.

35.8 Hold Harmless Provisions: The Contractor shall at all times indemnify and save harmless the State of Connecticut, the Department of Public Works, and their respective

officers, agents, and employees, on account of any and all claims, damages, losses, litigation, expenses, counsel fees and compensation arising out of injuries (including death) sustained by or alleged to have been sustained by the officers, agents, and employees of said State or Department, or of the Contractor, his Subcontractor, or materialmen and from injuries (including death) sustained by or alleged to have been sustained by the public, any or all persons on or near the Work, or by any other person or property, real or personal (including property of said State or Department) caused in whole or in part by the acts, omissions, or neglect or the Contractor including but not limited to any neglect in safeguarding the Work or through the use of unacceptable materials in constructing the Work of the Contractor, any Subcontractor, materialman, or anyone directly employed by them or any of them while engaged in the performance of the Contract, including the entire elapsed time from the date of the Notice to Proceed or the actual commencement of the Work whichever occurs first until its completion as certified by the Department of Public Works.

Article 36 FOREIGN MATERIALS

36.1 Preference shall be given to articles or materials manufactured or produced in the United States, conditions of quality and price with duty being equal.

36.2 Only domestic articles or materials will be used unless a statement is submitted with the proposal that enumerates the foreign articles of materials proposed to be used and such proposal is accepted by the Owner. The foregoing provisions shall not apply to foreign articles or materials required by the Contract Documents.

Article 37 HOURS OF WORK

37.1 No person shall be employed to work or be permitted to work more than eight (8) hours in any day or more than forty (40) hours in any week for any Work provided in the Contract, in accordance with Connecticut General Statute Section 31-57.

37.2 The operation of such limitation of hours of work may be suspended during an emergency, upon the approval of the Commissioner, in accordance with Connecticut General

Statute Section 31-57.

**Article 38
DAYS OF WORK**

38.1 Working Calendar Days include all days that the Contractor is permitted to execute the Work or employ any person to execute the Work within the Contract Time.

38.2 Non-working Calendar Days include all Saturdays, Sundays, Legal State Holidays and any other days identified in the Contract Documents that the Contractor is not permitted to execute the Work or employ any person to execute the Work. The restriction of non-working Calendar Days may be suspended upon the approval or direction of the Commissioner.

**Article 39
CONTRACT TIME**

39.1 The Contract Time is the number of calendar days, allotted in the Bidding Documents, for execution and Substantial Completion of the Work, including authorized adjustments thereto. The Contract Time is the sum of all working and non-working calendar days.

39.2 If weather conditions prevent the Contractor from executing the Work., the Contract Time may be extended by Change Order, for such reasonable time as may be determined by the Owner.

**Article 40
CALENDAR DAY**

40.1 This is each day of the calendar.

End of Section

Informational Bulletin

THE 10-HOUR OSHA CONSTRUCTION SAFETY AND HEALTH COURSE, PROGRAM OR TRAINING

(Applicable to public works contracts as described by Conn. Gen. Stat. § 31-53(g)
entered into)

- (1) This requirement was created by Public Act No. 08-83, which is codified in Section 31-53b of the Connecticut General Statutes;
- (2) The course, program or training is required for public works contracts as described by Conn. Gen. Stat. § 31-53(g) entered into on or after July 1, 2009;
- (3) It is required of private workers (not state or municipal workers) and apprentices who perform the work of a mechanic, laborer or worker pursuant to the classifications of labor under Conn. Gen. Stat. § 31-53 on a public works project as described by Conn. Gen. Stat. § 31-53(g);
- (4) The ten-hour construction safety and health course, program or training pertains to the ten-hour Outreach Course conducted in accordance with federal OSHA Training Institute standards, a new mining training program approved by the Federal Mine Safety and Health Administration in accordance with 30 C.F. R. 48, or, for telecommunications workers, a ten-hour training course conducted in accordance with federal OSHA standard, 29 CFR 1910.268;
- (5) The internet website for the federal OSHA Training Institute is http://www.osha.gov/fso/ote/training/edcenters/fact_sheet.html;
- (6) The statutory language leaves it to the contractor and its employees to determine who pays for the cost of the ten-hour Outreach Course;
- (7) Proof of course, program or training completion shall be demonstrated through the presentation of a “completion document” (card, document, certificate or other written record issued by federal OSHA or by the Federal Mine Safety and Health Administration) as defined by Conn. State Agencies Regs. § 31-53b-1(2).
- (8) Any completion document with an issuance date more than 5 years prior to the commencement date of the public works project shall not constitute proof of compliance with § 31-53b;
- (9) For each person who performs the duties of a mechanic, laborer or worker on a public works project, the contractor shall affix a copy of the completion document

- to the certified payroll required to be submitted to the contracting agency for such project on which such worker's name first appears;
- (10) Any mechanic, laborer or worker on a public works project found to be in non-compliance shall be subject to removal from the project if such employee does not provide satisfactory proof of course completion to the Labor Commissioner by the fifteenth day after the date the employee is determined to be in noncompliance;
 - (11) Any such employee who is determined to be in noncompliance may continue to work on a public works project for a maximum of fourteen consecutive calendar days while bringing his or her status into compliance;
 - (12) The statute provides the minimum standards required for the completion of a construction safety and health course, program or training by employees on public works contracts; any contractor can exceed these minimum requirements.;
 - (13) Regulations pertaining to § 31-53b are located at Conn. State Agencies Regs. §31-53b-1, and are effective May 5, 2009. The regulations are posted on the CTDOL website;
 - (14) Any questions regarding this statute or the regulations may be directed to the Wage and Workplace Standards Division of the Connecticut Labor Department via the internet website of <http://www.ctdol.state.ct.us/wgwkstnd/wgmenu.htm>; or by telephone at (860)263-6790.

THE ABOVE INFORMATION IS PROVIDED EXCLUSIVELY AS AN EDUCATIONAL RESOURCE, AND IS NOT INTENDED AS A SUBSTITUTE FOR LEGAL INTERPRETATIONS WHICH MAY ULTIMATELY ARISE CONCERNING THE CONSTRUCTION OF THE STATUTE OR THE REGULATIONS.

Sec. 31-53b. Construction safety and health course. New miner training program. Proof of completion required for mechanics, laborers and workers on public works projects. Enforcement. Regulations. Exceptions. (a) Each contract for a public works project entered into on or after July 1, 2009, by the state or any of its agents, or by any political subdivision of the state or any of its agents, described in subsection (g) of section 31-53, shall contain a provision requiring that each contractor furnish proof with the weekly certified payroll form for the first week each employee begins work on such project that any person performing the work of a mechanic, laborer or worker pursuant to the classifications of labor under section 31-53 on such public works project, pursuant to such contract, has completed a course of at least ten hours in duration in construction safety and health approved by the federal Occupational Safety and Health Administration or, has completed a new miner training program approved by the Federal Mine Safety and Health Administration in accordance with 30 CFR 48 or, in the case of telecommunications employees, has completed at least ten hours of training in accordance with 29 CFR 1910.268.

(b) Any person required to complete a course or program under subsection (a) of this section who has not completed the course or program shall be subject to removal from the worksite if the person does not provide documentation of having completed such course or program by the fifteenth day after the date the person is found to be in noncompliance. The Labor Commissioner or said commissioner's designee shall enforce this section.

(c) Not later than January 1, 2009, the Labor Commissioner shall adopt regulations, in accordance with the provisions of chapter 54, to implement the provisions of subsections (a) and (b) of this section. Such regulations shall require that the ten-hour construction safety and health courses required under subsection (a) of this section be conducted in accordance with federal Occupational Safety and Health Administration Training Institute standards, or in accordance with Federal Mine Safety and Health Administration Standards or in accordance with 29 CFR 1910.268, as appropriate. The Labor Commissioner shall accept as sufficient proof of compliance with the provisions of subsection (a) or (b) of this section a student course completion card issued by the federal Occupational Safety and Health Administration Training Institute, or such other proof of compliance said commissioner deems appropriate, dated no earlier than five years before the commencement date of such public works project.

(d) This section shall not apply to employees of public service companies, as defined in section 16-1, or drivers of commercial motor vehicles driving the vehicle on the public works project and delivering or picking up cargo from public works projects provided they perform no labor relating to the project other than the loading and unloading of their cargo.

(P.A. 06-175, S. 1; P.A. 08-83, S. 1.)

History: P.A. 08-83 amended Subsec. (a) by making provisions applicable to public works project contracts entered into on or after July 1, 2009, replacing provision re total cost of work with reference to Sec. 31-53(g), requiring proof in certified payroll form that new mechanic, laborer or worker has completed a 10-hour or more construction safety course and adding provision re new miner training program, amended Subsec. (b) by substituting "person" for "employee" and adding "or program", amended Subsec. (c) by adding "or in accordance with Federal Mine Safety and Health Administration Standards" and setting new deadline of January 1, 2009, deleted former Subsec. (d) re "public building", added new Subsec. (d) re exemptions for public service company employees and delivery drivers who perform no labor other than delivery and made conforming and technical changes, effective January 1, 2009.

SUPPLEMENTAL CONDITIONS

ARTICLE - 1. - SCOPE OF WORK:

- (a) The Contractor shall furnish all labor, materials, equipment, plant, power, water, light, heat, fuel, tools, appliances, supplies and all other means of construction necessary or proper for executing and completing the project; he shall do all work including extra and additional work and pay all costs connected therewith; restore to their original conditions all surfaces disturbed; pay cost of all insurance; bear all losses due to the nature of the work and costs incidental to suspension or discontinuance of the work except as otherwise provided; assume all responsibility of whatever nature of kind, indemnify the Owner from all claims; secure and pay for all permits unless otherwise provided; conform to all county, state, municipal or federal legislation and requirements; he shall do all work necessary to conform the project to the Contract Documents and shall leave intact the work of any adjoining contractors unless otherwise ordered by the Owner; perform and complete the work in a manner best calculated to permit rapid construction, consistent with safety of a life and property and satisfactory to the Owner and in strict accordance with the Contract Documents; he shall protect the work during construction, clean up the work during and after construction and maintain it until final acceptance, as hereinafter provided.
- (b) The Contractor shall do all work and pay all costs of protecting, supporting, maintaining, repairing if damaged, relocating and restoring all surface, subsurface or overhead structures and all other property including pipes, conduits, ducts, tubes, chambers and appurtenances, public or private, in the vicinity of the work, except as otherwise specified.

ARTICLE - 2. SUPERINTENDENCE AND WORKERS:

- (a) The employment of competent superintendent, foremen and experienced mechanics and laborers and others skilled in the particular duties entrusted to them will be required. Whenever the Owner shall inform the Contractor or his representative in charge that any man on the job is incompetent or disorderly or is working contrary to the specifications or the instructions of the Owner, or that the Owner knows that he/she has been incompetent or disorderly on this or any previous work, that person shall thereupon be immediately dismissed from the job and shall not be given employment on any work connected with the contract.
- (b) If requested, the Contractor shall deliver to the Owner each week a record of the numbers and classifications of workers employed upon the project each day of the previous week.

ARTICLE 3. INSPECTION:

Authorized representatives and agents of the Owner, shall be permitted to inspect all work, materials, payrolls, records of personnel, invoices of materials, and other relevant data and records.

ARTICLE 4. REPORTS, RECORDS AND DATA:

The Contractor and each of his subcontractors shall submit to the Owner such schedules of quantities and costs, progress schedules, payrolls, reports, estimates, records and other data as the Owner may request concerning work performed or to be performed under this Contract.

ARTICLE 5. WEATHER CONDITIONS:

In the event of temporary suspension of work, or during inclement weather, or whenever the Owner shall direct, the Contractor shall, and shall cause his subcontractors to protect carefully his and their work and materials against damage or injury from the weather. If, in the opinion of the Owner, any work or material was damaged or injured by reason of failure on the part of the Contractor or any of his subcontractors so to protect his work, or otherwise damaged by the negligence of the Contractor, subcontractors or their agents or servants, or is otherwise defective, such materials shall be removed and replaced at the expense of the Contractor.

ARTICLE 6. ENUMERATION OF DRAWINGS, SPECIFICATIONS AND ADDENDA:

Following are the drawings, specifications and addenda which form a part of this contract, as set forth in Article I of the Contract and General Conditions, "CONTRACT AND CONTRACT DOCUMENTS":

- (a) Drawings: 1 to 7
- (b) Specifications:

General Conditions of the Contract for Construction - Pages 1 through 21,
Supplemental Conditions - Pages SC-1 through SC-5, Special Conditions - Pages 1 and 2, Technical Specifications 6 1 through 58

(c) Addenda:

No.	Date	No.	Date
No.	Date	No.	Date

ARTICLE 7. PROTECTION OF LIVES AND HEALTH:

- (a) In order to protect the lives and health of his employees under the contract, the Contractor shall comply with all safety provisions of applicable laws, building and construction codes and all pertinent provisions of the "Manual of Accident Prevention in Construction" issued by the Associated General Contractors of America, Incorporated, and shall maintain an accurate record of all cases of death, occupational disease, and injury requiring medical attention or causing loss of time from work, arising out of and in the course of employment on work under this contract.
- (b) The Contractor alone shall be responsible for the safety, efficiency and adequacy of his plant, appliances and methods, and for any damage, which may result from their failure or their improper construction, maintenance or operation.
- (c) The Contractor shall be solely responsible for the acts and omissions of his agents, employees and his subcontractor and their agents and employees and shall hold the Owner harmless and defend the Owner against damages or claims for damages arising out of injuries to other or property of others which result from said acts or omissions.

ARTICLE 8. WORK TO BE ACCOMPLISHED IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATION

The work, during its progress and at its completion, shall conform to the lines and grades shown on the drawings and to the directions given by the Owner from time to time, subject to such modifications or additions as he shall determine to be necessary during the execution of the work; and in no case will any work be paid for which is performed in excess of such requirements.

ARTICLE 9. CONTRACTOR TO CHECK DIMENSIONS AND SCHEDULES:

The Contractor will be required to check all dimensions and quantities shown on the drawings or schedules given to him by the Owner, and shall notify the Owner of all errors therein which he may discover by examining and checking the same.

The Contractor shall not take advantage of any error or omission in these specifications, drawings and schedules. The Owner will furnish all instructions should such error or omission be discovered, and the Contractor shall carry out such instructions as if originally specified.

ARTICLE 10. SEQUENCE OF WORK:

The Contractor shall be required to prosecute his work in accordance with a schedule prepared by him in advance in accordance with additional requirements specified herein and approved by the Owner. This schedule shall state the methods and shall forecast the times for doing each portion of the work. Before beginning any portion of the work, the Contractor shall give the Owner advance notice and ample time for making the necessary preparations.

ARTICLE 12. STREETS AND SIDEWALKS TO BE KEPT OPEN:

- (a) The Contractor shall at all times keep the streets and sidewalks open for pedestrian and vehicular traffic. If, in the opinion of the Owner, the interest of abutters and public requires it, the Contractor shall bridge or construct plank crossings over the trenches at street crossings, roads or private ways. The Contractor shall conduct his work for this objective in such manner as the Owner may direct from time to time. No sidewalk shall be obstructed where it is possible to avoid it. No additional payment shall be made to the Contractor for such work.
- (b) The Contractor shall provide all necessary Fire Crossings at principal intersection or ways usually traveled by fire apparatus with provisions for the apparatus to have access to all areas which require fire protection.
- (c) All work shall be conducted in such a manner as to provide minimum interference with facility and its daily operation.

ARTICLE 13. LIGHTS, BARRIERS, FENCES, WATCHMEN AND INDEMNITY:

- (a) The Contractor shall put up and maintain such barriers, fences, lighting and warning lights, danger-warning signals and signs necessary to prevent accidents during the construction work and protect the work and insure the safety of personnel and the public at all times and places; and the Contractor shall defend, indemnify and save harmless the Owner and their agents in every respect from any injury or damage whatsoever caused by any act, omission or neglect of the Contractor or his Subcontractor, or their servants or agents, including any claims arising out of failure to erect and maintain sufficient railing or fence as required by Section 13a11, Connecticut General Statutes.

The fact that the Owner may retain control of the premises, or that it or its agents may take action to erect or maintain railings or fences shall not relieve the Contractor's obligations hereunder.

- (b) The Contractor at his own expense shall furnish, maintain and use, and cause all his Subcontractors to furnish, maintain and use all necessary safety devices and safe practices in prosecution of the work and to adopt, follow and maintain such additional safety measures as in the opinion of the Owner are conducive to safe operation by the Contractor and the Subcontractors. The Owner shall have the right to order any or all work suspended where, in the Owner's opinion, such work is not being carried on in a safe and proper manner, or where persons and property are not being properly protected or safeguarded and such work shall not be resumed until the Owner's requirements have been met and the Owner has directed that work be resumed. The work required by the preceding paragraph shall be totally at the Contractor's expense.
- (c) In addition to the above, when and as necessary, or when required by the Owner, the Contractor shall post signs and employ watchmen or flagmen for the direction of traffic at the site and for excluding at all times unauthorized persons from the project. The Contractor will not be paid additional compensation for this work.
- (d) The Contractor shall be responsible for excluding at all times from lands within project limits, all persons not directly connected with the work or authorized by the Owner to be within the project areas.

ARTICLE 14. FACILITIES:

The Contractor is responsible for providing and maintaining all necessary facilities whether temporary or permanent for all those employed by the Contractor. The locations of such temporary facilities must be approved by the Owner. Under no circumstances will the Contractor nor any of his Subcontractors or Venders be allowed to use any of the Owners facilities.

ARTICLE 15. UTILITIES:

The provision and costs for all electrical, water, telephone, etc. utilized by the Contractor and his Subcontractors and venders shall be by the Contractor. Under no circumstances shall the Contractor use any of the Facilities utilities or resources without approval of the Owner.

SPECIAL CONDITIONS

Outside Contractors Working with-in the Facility

POLICY:

Any employee who plans to work on grounds must be cleared first by the Department of Children and Families. Social Security numbers are required for this link check. Please provide this information sufficiently in advance of construction. Any change in personel during the project will require the same clearance. Any individual not clear to be on site will be escorted from the site.

All outside contractors will coordinate all work with the Maintenance Supervisor or designee before beginning work.

PROTOCOL:

- Before beginning work, all outside contractors shall check in at the Maintenance Office. The outside contractor will supply the following information: scope of work, authorization, duration and any pertinent information that is required. He will also sign in and be issued a visitors badge that must be displayed at all times.
- **All** contractors shall work as professionally as possible so as not to aggravate students, staff and visitors.
- **All** contractors shall follow the Facility no smoking policy.
- If special parking is required, permission shall be granted and coordinated through the Maintenance Supervisor office.
- **All** contractors are to maintain their work area as clean as possible while working and clean up thoroughly when finished.
- If any utilities or critical systems are to be interrupted, notification to the Maintenance Supervisor is mandatory. Engineering Department personnel will in turn assist.
- **All** contractors are expected to use courtesy. Loud and abusive language will not be tolerated.
- Contractors must provide assurance not to block corridors and fire exits.

Upon completion of daily activities contractors are asked to check out and report progress to the Maintenance Supervisor's office.

When working in the building and on the grounds, it is important to remember that Riverview is a State of Connecticut Facility.

- Contact between residents and workers is to be avoided whenever possible. It is difficult to predict the reactions of our students to novel situations or unknown persons. A worker and student should never be alone without staff.
- All workers must assure that tools and supplies are maintained in a secure manner. Tools should not be left unattended.
- Please do not report to resident areas.
- MSDS sheets must be provided for any materials used on grounds before materials are brought on grounds.
- Contractors must show proof of proper licenses before the start of work.

SUBJECT: Outside Contractors - Hazard Communications Program

POLICY:

It is the responsibility of the **Maintenance Supervisor** to provide on-site contractors with the following information:

- Hazardous chemicals to which they may be exposed while on the job site. Precautions the contractor and his/her employees may take to lessen the possibility of exposure to lead or asbestos by usage of appropriate protective measures.

- It is the responsibility of the **Maintenance Supervisor** to contact each contractor before work is started to gather and disseminate information concerning hazards that the contractor will bring into the workplace. MSDS sheets must be given to the **Maintenance Supervisor before materials are received on site.**

Compliance with the OSHA Hazard Communications Standard is certified by:

Maintenance Supervisor

Date

Signature

Contractors

Date

Signature



State of Connecticut

Department of Children and Families
505 Hudson Street, Hartford, Connecticut 06106

CERTIFICATE OF COMPLETION

Project No.: 40-RVHC-143, DCS # BI-YS-173

Type of Project (emergency, bid, T&M): Bid 6 Cottage Sprinkler Systems

Final Contract Value: \$

Specific Location: Albert J Solnit Children's Center
915 River Road, Middletown, CT

As the duly authorized representative of the State of Connecticut, owner of the project above referenced, I hereby certify that work has been entirely completed for this project on contracts as follows:

Contractor	Description/Location of Work
	Install sprinkler systems in the three cottages

in accordance with all approved plans, specifications and contract documents, and these contracts are accepted as of _____.

Date: _____

DCF Engineering

By: _____
R. Toledo



Department of Public Works
State of Connecticut

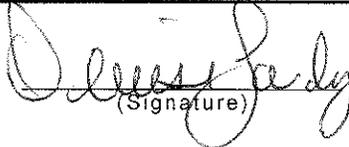
Certificate of Compliance for Agency Administered Projects (Non-threshold Projects Only)

Date Submitted to DPW:

To:	John Nolan DCS/Special Projects Coordinator	Project No:	BI-YS-173 40-RVHC-143
Address:	Department of Construction Services 165 Capitol Avenue Hartford, CT 06106	Project Name: (Location)	Cottage Sprinkler Systems, Albert J. Solnit Children's Center, 915 River Road, Middletown, CT
Attn Client Team:	n/a	Contract For: (Type of Construction)	Furnish and Install Sprinler Systems
From Agency:	Department of Children and Families		
Address:	505 Hudson Street, Hartford, CT 06106		

PART "1" - Design Phase (Prior to Bid Phase):

THIS IS TO CERTIFY THAT to the best of my knowledge, information, and belief, the above-described project has been designed in substantial compliance with requirements of the State of Connecticut Basic Building Code and all other applicable codes as required by Chapter 541, General Statutes of Connecticut.

Commissioner's Agent:	Denise Landry _____ (Typed Name)	 _____ (Signature)	9/30/13 _____ (Date)
Architect/Engineer:	_____ (Typed Name)	_____ (Signature)	_____ (Date)

Registration Number: _____

PART "2" - Construction Completion (Prior to Agency Occupancy and/or Certificate of Occupancy Application):

THIS IS TO CERTIFY THAT to the best of my knowledge, information, and belief the completed project -described above is in substantial compliance with the approved plans and specifications and the requirements of the State of Connecticut Basic Building Code and all other applicable codes as required by Chapter 541, General Statutes of Connecticut.

Architect/Engineer:	_____ (Typed Name)	_____ (Signature)	_____ (Date)
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Registration Number: _____

General Contractor:	_____ (Typed Name)	_____ (Signature)	_____ (Date)
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License Number: _____

Commissioner's Agent:	Denise Landry _____ (Typed Name)	_____ (Signature)	_____ (Date)
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Copies : DPW (Original) DPS/OSBI General Contractor Architect/Engineer File

TECHNICAL
SPECIFICATIONS

DIVISION 1
GENERAL REQUIREMENTS

SECTION 01010 - SUMMARY OF WORK

PART 1 GENERAL

1.01 LOCATION OF WORK

- A. The proposed work is located within the City of Middletown, Connecticut at the Albert J. Solnit Children’s Center, as shown on the Drawings.

1.02 DESCRIPTION OF WORK

- A. The work to be done under this contract includes all labor, material and equipment necessary to install interior fire sprinkler systems in three (3) separate buildings in the Children’s Center complex and to install approximately 400 linear feet of 4-inch fire service main, 250 linear feet of 8-inch water main and appurtenances including tapping sleeves and gate valves, valve boxes, hydrants, pipe fittings, couplings, services, and including all excavation, backfill, and pavement replacement necessary for satisfactory completion of the above unless specifically excepted herein.
- B. The work shall also consist of all other miscellaneous related and incidental work required to complete the above items and work as shown on the Contract Drawings or specified herein.

1.03 WORK TO BE DONE BY THE OWNER

- A. The Department of Children and Families (DCF) Facilities Department will perform the following work:
 - 1. Operate all existing line gate valves, hydrants, and service stops.

1.04 DRAWINGS

- A. The work is located and described further on the Drawings which are listed and numbered below:

<u>SHEET NO.</u>	<u>TITLE</u>
1	Title Sheet – Location Plan, Index to Drawings, Legend, Abbreviations and General Notes.
2	Sprinkler Layout – Lacota Building
3	Sprinkler Layout – Kiwani Building

4	Sprinkler Layout – Quinnipiac Building
5	Fire Protection Notes and Details
6	Site Plan
7	Site Details

1.05 INTERRUPTION OF WATER SERVICE

- A. The Contractor shall interrupt water service and disrupt the normal functioning of the distribution system as little as possible. He shall notify the DCF 48 hours in advance of any requirement for water main shutdown. The Owner reserves the right to limit the amount of system piping that may be shut down at any one time.
- B. If it appears that water service will be interrupted for an extended period, the Engineer will order the Contractor to provide temporary service lines. Inconvenience of water users shall be kept to a minimum, consistent with existing conditions. The safety and integrity of the system is of prime importance in scheduling work.

1.06 WATER FOR CONSTRUCTION PURPOSES

- A. In locations where water supply is available, the Contractor may be allowed to use water without charge for dust control and other construction purposes, provided that adequate and appropriate measures are taken to prevent contamination of water supply from backflow and back siphonage. No water will be allowed for jetting of the trench.
- B. The express approval of the DCF shall be obtained before water is used. Waste of water by the Contractor shall be sufficient cause for withdrawing the privilege of unrestricted use. Hydrants shall only be operated by DCF personnel.

1.07 OPEN EXCAVATIONS

- A. All open excavations shall be adequately safeguarded by providing temporary barricades, caution signs, lights and other means to prevent accidents to persons, and damage to property. The Contractor shall, at his own expense, provide suitable and safe bridges and other crossings for accommodating travel by pedestrians and workmen. Open excavations shall be closed each day and roads and driveways left in such a condition to allow the passage of emergency vehicles. This will be performed at no cost to the Owner.

1.08 BARRICADES AND WARNING SIGNS

- A. Prior to crossing a driveway or walkway, the Contractor MUST request permission from the DCF.
- B. Driveways and walkways wholly or partly closed to traffic shall be protected by suitable barricades, barrier fences, traffic signs, and other traffic devices, furnished and erected by the Contractor at no cost to the Owner.
- C. The Contractor shall at his own expense provide and erect acceptable barricades, barrier fences, traffic signs, and all other traffic devices to protect the work from traffic, pedestrians, or animals. He shall at his own expense provide sufficient temporary lighting, such as flares, bombs, lanterns, or other approved illuminated traffic signs and devices to afford adequate protection to the public. The Contractor shall be held responsible for all damage to the work due to any failure or barricades, barrier fences, warning signs or lights to properly protect the work from traffic, pedestrians, or other causes.

1.09 WEATHER CONDITIONS

- A. No work shall be done when, in the opinion of the Engineer, the weather is unsuitable. No mortar, earth backfill, embankment or pavement shall be placed during freezing weather or upon frozen material. If there is delay or interruption in the work due to weather conditions, the necessary precautions must be taken to protect completed work.

1.10 MAINTENANCE OF TRAFFIC

- A. Vehicular traffic shall be maintained in at least one direction at all times during construction. Care shall be exercised in the placement of equipment and excavated material so that general vehicular and pedestrian traffic shall be maintained at all times, and that emergency vehicles shall still be able to gain access to any location along the street. Maintenance of traffic with all related barricades, signs, etc., shall be at the expense of the Contractor at no cost to the Owner. All necessary barricades and signs will be provided by the Contractor.

1.11 PROTECTION AND RESTORATION OF PROPERTY

- A. The Contractor shall, at his own expense, preserve and protect from injury all property either public or private along and adjacent to the proposed work, and he shall be responsible for and repair at his own expense any and all damage and injury thereto, arising out of or in consequence of any act of omission, neglect, or misconduct in the execution of the work, or in consequence of the non-execution thereof by the Contractor or his employees or Subcontractors in the performance of the work covered by the Contract prior to completion and acceptance thereof. He shall exercise special care during his operations to avoid injury to underground structures, such as water mains, pipes, conduits, manholes, catch basins, gas mains

and services, etc.

- B. All surfaces that are disturbed by the Contractor's operations shall be restored to their original condition by the use of similar or comparable materials. All curbing shall be restored in a condition equal to the original construction and in accordance with the best modern practice.
- C. Along the location of this work, all fences, walks, bushes, trees, shrubbery, and other physical features shall be protected and restored in a thoroughly workmanlike manner. Fences and other features removed by the Contractor shall be replaced in the location indicated by the Engineer as soon as conditions permit. All grass areas beyond the limits of construction, which have been damaged by the Contractor, shall be regraded and seeded at the Contractor's expense.
- D. The protection, removal, and replacement of existing physical features along the line of work shall be a part of the work under the Contract, and all costs in connection therewith shall be included in the unit and/or lump sum prices established under the items in the Schedule of Prices of the Proposal.

1.12 PROTECTION AND RELOCATION OF EXISTING STRUCTURES AND UTILITIES

- A. Prior to Construction. Notice shall be given to CALL BEFORE YOU DIG at 1-800-922-4455 and the DCF at least 72 hours prior to any excavation under this contract. .
- B. The Contractor shall assume full responsibility for the protection of all buildings, structures, and utilities, public or private, including poles, signs, services to buildings, utilities in the street, gas pipes, water pipes, hydrants, sewers, drains, and electric and telephone cables, whether or not they are shown on the Drawings. The Contractor shall carefully support and protect all such structures and utilities from injury of any kind. Any damage resulting from the Contractor's operations shall be repaired at his expense.
- C. Assistance will be given by the DCF to the Contractor in determining the location of existing water services. The Contractor, however, shall bear full responsibility for obtaining all locations of underground structures and utilities (including existing water services, drain lines, and sewers). Services to buildings shall be maintained, and all costs or charges resulting from damage thereto shall be paid by the Contractor.
- D. Protection and temporary removal and replacement of existing utilities and structures as described in this section shall be a part of the work under the Contract and all costs in connection therewith shall be included in the unit or lump sum prices established in the Bid.

- E. If, in the opinion of the Engineer, permanent relocation of a private or public utility is required, the Engineer may direct the Contractor, in writing to perform the work. Work so ordered will be paid for at the contract unit or lump sum prices, if applicable, or as extra work.
- F. If relocation of any other utility is required, except as specified in the various sections and payment items herein, the Owner will notify the utility to perform the work as expeditiously as possible at their own expense. The Contractor shall fully cooperate with the Owner and Utility, and shall have no claim for delay due to such relocation.
- G. Any damage to or breakage of gas mains or gas odor occurring during construction shall be reported immediately by the Contractor to "Yankee Gas," 1-877-944-5325

1.13 WORK BY OTHERS

- A. Other Contractors and utility companies may require access over the site and the Contractor shall do his work in cooperation with them.
- B. The Contractor's attention is directed to the fact that work by utility companies and other contractors may be carried on concurrently within and adjacent to the limits of the Contract.
- C. Certain constructions shall be worked out mutually with the companies or contractors concerned, and the Contractor shall schedule his work accordingly. Any delay occasioned by work of this nature shall be absorbed by the Contractor unless circumstances beyond the normal anticipated time cause serious interference with the Contractor's schedule of operations. If such be the case, the Contractor shall submit a request in writing to the Engineer, outlining the facts and reasons therefor, for an extension of contract time.

1.14 MAINTENANCE OF FLOW

- A. The Contractor shall at his own cost provide for the flow of sewers, drains and water courses interrupted during the progress of the work, and shall immediately remove all offensive materials. The entire procedure of maintaining existing flow shall be fully discussed with the Engineer well in advance of the interruption of any flow.

1.15 COOPERATION WITHIN THIS CONTRACT

- A. All firms or persons authorized to perform any work under this Contract shall cooperate with the General Contractor and his subcontractors or trades, and shall assist in incorporating the work of other trades where necessary or required.

1.16 HOURS OF CONSTRUCTION

- A. The Contractor shall limit the hours of construction to 7:00 AM to 4:00 PM Monday through Friday unless otherwise approved by the Owner.

1.17 REJECTED MATERIALS AND DEFECTIVE WORK

- A. Materials furnished by the Contractor and condemned by the Engineer as unsuitable or not in conformity with the specifications shall forthwith be removed from the work by the Contractor and shall not be made use of elsewhere in the work.
- B. Any errors, defects or omissions in the execution of the work or in the materials furnished by the Contractor, even though they may have been passed or overlooked or have appeared after the completion of the work, discovered at any time before the final payment is made hereunder, shall be forthwith rectified and made good by and at the expense of the Contractor and in a manner satisfactory to the Engineer.
- C. The Contractor shall reimburse the Owner for any expense, losses or damages incurred in consequence of any defect, error, omission or act of the Contractor or his employees, as determined by the Engineer, occurring previous to the final payment.

1.18 HAZARDOUS WASTE

- A. Should the Contractor, while performing work under this contract, uncover hazardous materials as defined in Connecticut's Resource Conservation and Recovery Act (RCRA), which are not specifically noted on the Drawings, he shall immediately notify the Engineer. The Contractor is not, and has no authority to act as, a handler, generator, operator or disposer of hazardous or toxic substances found or identified at the site, and the Owner shall undertake all such functions.

** END OF SECTION **

SECTION 01200 - PROJECT MEETINGS

PART 1 GENERAL

1.01 EXTENT OF WORK

- A. Owner and/or representative shall schedule and administer a preconstruction meeting and shall:
1. Prepare agenda for meeting.
 2. Notify all parties required to attend meeting.
 3. Make arrangements for meeting.
 4. Preside at meeting.
 5. Record minutes, including significant proceedings and decisions.
 6. Reproduce and distribute copies of minutes within three days after the meeting to participants in the meeting and any other parties affected by the decisions made at the meeting.
- B. Owner and/or representative shall schedule and administer periodic meetings, and specifically call meetings throughout the progress of the work. The Owner and/or representative shall:
1. Prepare agenda for meetings.
 2. Distribute written notice and agenda of each meeting three days in advance of meeting date.
 3. Make arrangements for meetings.
 4. Preside at meeting.
 5. Record the minutes: Include significant proceedings and decisions.
 6. Reproduce and distribute copies of the minutes within three days after each meeting.
 - a. To participants in the meeting.
 - b. To parties affected by decisions made at the meeting.
 - c. Furnish three copies of the minutes for the Owner.
- C. Representatives of Contractor and Subcontractors attending meetings shall be qualified and authorized to act on behalf of the entity each represents.
- D. The Owner may attend project meetings to ascertain that work is expedited consistent with Contract Documents and construction schedules.
- E. When requested by the Owner, the Contractor and subcontractors shall attend public meetings held to inform local residents of the progress of the work and shall be prepared to assist the Owner in responding to questions regarding the project.

1.02 PRECONSTRUCTION MEETING

- A. Contractor shall attend a preconstruction meeting, which shall be scheduled within five days after date of contract execution.
- B. The meeting shall be held at a location to be determined by the Owner.
- C. Attendance:
 - 1. Owner and/or Representative.
 - 2. Contractor.
 - 3. Contractor Superintendent(s).
 - 4. Other as appropriate.
- D. Suggested Agenda:
 - 1. Distribution and discussion of:
 - a. List of major Subcontractors.
 - b. Proposed construction schedule.
 - 2. Critical work sequencing.
 - 3. Project coordination.
 - a. Designation of responsible personnel.
 - 4. Procedures and processing:
 - a. Field decisions.
 - b. Proposal requests.
 - c. Change orders.
 - d. Application for payment.
 - 5. Record Documents.
 - 6. Use of premises:
 - a. Office, work and storage areas.
 - b. Owner's requirements
 - 7. Construction facilities.
 - 8. Temporary utilities.
 - 9. Safety and first aid procedures.
 - 10. Security procedures/traffic control.
 - 11. Environmental monitoring & protection procedures.
 - 12. Place, date and time for regular progress meetings.

1.03 PROGRESS MEETINGS

- A. Contractor shall attend regular scheduled progress meetings at place, dates and times agreed upon at the preconstruction meeting.
- B. Contractor shall attend additional meetings as progress of the work dictates.

C. Attendance:

1. Owner or representative, when required.
2. Contractor
3. Subcontractors as appropriate to the agenda.
4. Team's superintendent.
5. Others.

D. Suggested Agenda:

1. Review approval of minutes from previous meetings.
2. Review of work progress since previous meeting.
3. Review of plan of upcoming work.
 - a. Problems which impede maintenance schedule
 - b. Corrective measures and procedures to regain projected schedule.
 - c. Revisions to work schedule.
4. Field observations, problems, conflicts.
5. Pending change orders/extra work orders.
6. Safety concerns.
7. Site clean up/paving.
8. Environmental issues.
9. Pay estimates/certified payroll.
10. Other business.
11. Place, date and time for next meeting.

** END OF SECTION **

DIVISION 2
SITE WORK

SECTION 02200 - EARTHWORK

PART 1 GENERAL

1.01 DESCRIPTION OF WORK

- A. The work to be done under this Section consists of furnishing all materials, labor, tools and equipment, and performing all operations necessary to complete excavation of all types of material encountered, placing of excavated material in embankments, or backfill, disposal of unsuitable and/or surplus material, and furnishing and placing borrow materials; all as shown on the Drawings or necessitated by conditions encountered in the course of the work and as herein specified.
- B. The work shall include power and/or hand excavation, stockpiling, rehandling and all incidental work.
- C. The work includes, but is not limited to, the following items:
 - 1. Miscellaneous and extra earth excavation and backfilling.
 - 2. Excavation of rock or boulders, existing paving, foundations, or other underground structures, and pipe lines.
 - 3. Control of water by ditching, pumping, well point systems or other methods.
 - 4. Sheet piling, shoring and bracing to support trench walls, sides of excavations, existing structures or utilities.
 - 5. Compaction of embankment, fills, and backfills.
 - 6. Furnishing, placing and compacting bank run gravel, crushed stone, and controlled density fill.
 - 7. Disposal of surplus and/or unsuitable materials. Such materials shall be hauled off the site.
 - 8. Excavation below grade as specified when necessitated by type of material encountered, as ordered by the Engineer.
 - 9. Silt and erosion control.
 - 10. Topsoil removal, stockpiling, reuse.

1.02 STANDARDS

A. The following standards form a part of these Specifications:

1. AASHTO T238-86 Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
2. AASHTO T239-91 Moisture Content of Soil and Soil Aggregate in Place by Nuclear Methods (Shallow Depth).
3. ASTM D 1557 The Moisture-Density Relations of Soils and Soil Aggregate Mixture Using a 10 lb. (4.5 kg) Rammer and an 18-in. (145 mm) Drop.

PART 2 PRODUCTS

2.01 MATERIALS

A. Common Fill. Material imported or excavated on site which is friable, natural soil composed of gravel, sand, or silty or clayey gravel and sand; free from debris, concrete or other rubble, organic matter muck, peat, excavated rock or boulders over 4 inches in maximum dimension.

B. Bank Run Gravel. Bank run gravel for backfill, pavement foundations and/or replacement of unsuitable material in trenches, shall be either graded bank-run gravel or screened gravel consisting of hard, durable particles, practically free from loam or clay.

1. Bank run gravel shall conform to the following gradation and plasticity requirements:

<u>Square Mesh Sieves</u>	<u>Percent Passing by Weight</u>
Pass 3 1/2"	100
Pass 1 1/2"	55-95
Pass 3/4"	25-60
Pass #10	15-45
Pass #40	5-25
Pass #100	0-10
Pass #200	0-5

D. Crushed Stone.

1. Crushed stone shall conform to the requirements of Article M.01, No. 6 Gradation, CONN DOT Form 816 and Subarticle M.02.02.2 (a), CONN

DOT Form 816, for loss on abrasion.

- E. Lumber. Lumber used for sheeting, shoring, bracing, and other construction purposes shall be sound, straight grained, and free from shakes, loose knots and other defects liable to impair its strength or durability. Lumber and sheeting may be reused, if in good condition. Lumber shall be spruce, fir or approved equal thereto.
- F. Steel Sheeting. Steel sheeting shall be an approved standard section, either new or used, weighing not less than 22 pounds per square foot of wall.
- G. Steel Plates. To provide unrestricted traffic use and for public safety, the Contractor shall furnish, install, and maintain steel plates over all street openings when access to the pits is not required during working hours, and during all nonworking hours. The plates and supports shall be of sufficient strength to carry a load of 200 psi over the entire plate area or 10 tons on an axle with wheels five (5) ft. on center without exceeding the allowable stress specified in the AASHTO Standard Specifications for Highways and Bridges.
- H. Straw Wattles for Silt Control. Straw wattles for silt control shall be free from primary noxious weed seeds or rough or woody material.

PART 3 EXECUTION

3.01 GENERAL

- A. All equipment and methods for excavation shall be submitted to the Engineer for review, particularly as to adequacy and suitability to accomplish the work in a safe and satisfactory manner.
- B. Prior to doing any excavation in roadways, the Contractor shall cut the pavement by means of pneumatic hammers, power saw or cutting roller disc. This cut shall penetrate through the pavement to the base material. Under no circumstances will the Owner allow the lifting and/or cracking of pavement adjacent to the trench during excavation. The old broken pavement shall be removed and disposed of without mixing into the excavation.
- C. All excavations shall be kept as small as safety-operating conditions will permit, so as to require a minimum of surface repair and be of the least obstruction to traffic. Pavement cuts shall be straight, smooth and vertical. The Contractor shall excavate all test pits necessary for locating the water main as directed by the Engineer.
- D. Grade line for pipes and masonry is 6 inches below the pipe or masonry except as otherwise specified or shown on the Drawings.

- E. No pipeline or structures shall be constructed in areas to be filled until the fill has been placed and compacted to at least 2 feet above the grade line of the pipe or bottom of the slab of the structure.
- F. Subgrade at the bottom of excavation shall be undisturbed, or restored at the Contractor's expense. Unauthorized over excavation shall be replaced with compacted bank run gravel as approved by the Engineer.
- G. All suitable excavated material shall be used for topsoil, fill or embankment to the extent needed. Suitability of materials shall be determined by the Engineer. Such use of excavated materials may include stockpiling until needed.
- H. All unsuitable or surplus excavated material shall be removed from the site as directed by the Engineer. The Contractor shall be wholly responsible for the disposal of such excavated material. Such disposal shall be in strict compliance with all State rules, regulations, ordinances and laws which regulate and control the dumping on and filling of land.
- I. All disposal of excavated material is included in the prices for the various categories of excavation.
- J. Except when otherwise specifically approved, all excavation shall be performed in the dry.
- K. On paved surfaces the Contractor shall not use or operate tractors, bulldozers, or other power-operated equipment with treads or wheels, which are shaped so as to cut or otherwise damage such surfaces. The Contractor shall replace or repair any paved surfaces damaged by such equipment at his own expense.

3.02 EARTH EXCAVATION BELOW GRADE

- A. Wherever, in the opinion of the Engineer, the material at or below grade line as shown on the Drawings is unsuitable for pipe bedding, it shall be excavated to such additional depths as authorized in writing by the Engineer, and shall be refilled with gravel borrow. This material shall be compacted to not less than 95 percent of maximum dry density determined by AASHTO T238-86.

3.03 MISCELLANEOUS AND EXTRA EARTH EXCAVATION AND BACKFILL

- A. Wherever authorized by the Engineer, the Contractor shall do excavation and backfilling in addition to the excavation and backfilling needed to perform the work indicated on the Drawings. Miscellaneous earth excavation and backfilling may be authorized for test pits or for other unforeseen purposes. It may include hand excavation. Extra earth excavation may be authorized because of filling and

grading work, which has taken place since completion of the Drawings, or because of design changes. Miscellaneous and extra earth excavation shall be subject to all requirements for other excavation previously stated herein.

3.04 TOPSOIL

- A. Topsoil shall be stripped from all areas to be occupied by buildings, structures, roadways, and all areas to be excavated or filled. Care shall be taken to avoid mixing topsoil with subsoil. Topsoil shall be stockpiled in areas on the site designated or approved by the Engineer, free from brush, trash, large stones and other extraneous material and protected until placed as specified under SECTION 02586 - TOPSOILING AND SEEDING. Any surplus topsoil remaining shall be disposed of by the Contractor where and as designated by the Engineer.
- B. The Engineer has the authority to limit the area to be stripped at any one time in order to prevent erosion.

3.05 TRENCH EXCAVATION

- A. Trenches and related excavations shall be of sufficient width and depth at all points to allow pipes to be laid, joints to be formed, and appurtenant structures to be built in a workmanlike manner, and when needed, to allow for sheeting and shoring, pumping and draining, and/or for removing and replacing any materials unsuitable for foundations.
- B. Trenches shall be at least 12 inches wider than the outside dimension of the pipe or structures they are to contain except as otherwise specified or shown on the Drawings.
- C. Trenches shall not be unnecessarily wide, so as to increase excessively the load on the pipe resulting from backfill.
- D. Bottoms of trenches shall be carried to lines and shapes approved by the Engineer. Bottoms of trenches shall be shaped to conform to the outside of pipes insofar as the material will admit, so that pipes shall have a continuous and even bearing. Bottoms of trenches shall be shaped so that bells of pipes will not bear on the ground.
- E. No tunneling shall be permitted in place of open trench construction, unless specifically authorized by the Engineer.
- F. Excavations adjacent to existing underground utility lines and other underground structures shall be done by hand to insure against possible damage.
- G. Excavation just above the bottom of structures in trenches shall be done by hand

so that foundations will rest on undisturbed earth, or disturbed subgrade re-compacted to the 95 percent of maximum dry density as determined by AASHTO T238-86.

- H. Side slopes of excavation shall be less than the angle of repose of the material excavated, and flat enough to prevent slides or cave-ins.
- I. Any extra excavation required as a result of slides or cave-ins shall be done by the Contractor at his own expense.
- J. Final trimming excavation at bottom of trenches shall not be done until the ground has been dewatered and the Contractor is ready to install pipe or construct foundations of the appurtenant structures.
- K. Trenches shall only be opened at such times and to such extent as approved by the Engineer.

3.06 SHEETING, SHORING AND BRACING

- A. Such measures shall always be taken where required for the protection of workmen and to conform with all governing safety regulations. The adequacy of the shoring shall be the responsibility of the Contractor. Shoring, bracing, and sheeting shall be removed as the excavation is backfilled, in a manner to avoid damage or disturbance to the work, unless left in place as hereinafter provided. The following detailed requirements shall be met:
 - 1. Sheeting shall be driven and excavation work conducted in such a manner as to prevent the material in back of the sheeting from running under the sheeting and into the excavation.
 - 2. Care shall be taken to prevent voids outside of the sheeting, but, if voids occur, they shall be filled immediately with bank run gravel well compacted, at the Contractor's expense.
 - 3. Special precautions such as sheeting, shoring and bracing, shall be taken to guard against any damage to or settlement of existing buildings, walls or other structures adjacent to the work.
 - 4. Sheeting shall not be unnecessarily driven below pipe inverts to necessitate its being left permanently in place.
 - 5. Sheeting, shoring, bracing or parts thereof, shall be left in place after the completion of the work only in locations indicated on the Drawings or where authorized in writing by the Engineer. The Engineer may require sheeting left in place at intervals to support existing structures and other

sheeting removed. The Engineer may permit sheeting to be left at the Contractor's option without cost to the Owner.

6. All sheeting left in place, for whatever reason, shall be cut off at least 2 feet below the finished ground surface, unless otherwise approved by the Engineer.

3.07 DEWATERING

- A. The Contractor shall remove by pumping, draining, bailing or otherwise, any water which may accumulate in trenches and other excavations made under this contract. If an unacceptable quickening condition of bottom and walls of the excavation occurs, preventing the construction of the pipe line and structures in a satisfactory manner, the Contractor shall lower the water level a sufficient depth below the bottom of the excavation to remedy the condition. The Contractor shall form all pump wells, sumps, dams, flumes or other works necessary to lower the water level below the bottom of the excavation or to keep trenches and other excavations entirely clear of water while pipe lines and structures and their foundations are being built. Pipe underdrains, or well systems may be used for dewatering, if approved by the Engineer. They will not be paid for separately except as provided specifically. The following requirements shall be met, as applicable:
 1. The Contractor shall furnish, install and maintain all drainage systems and pumping equipment necessary to keep the ground water level at an elevation low enough so that no structures shall move or float on account of uplift pressure during construction. The Contractor shall make all necessary computations for the weights of the structures during the various stages of construction and be responsible for preventing damage from uplift.
 2. The Contractor shall at all times have upon the work and operate sufficient pumping machinery so that pipe lines and structures will be built in the dry by lowering the water level below the bottom of the excavation if necessary.
 3. Final trimming excavation or grading shall not be done until the Engineer is satisfied that the manner of dewatering meets his approval.
 4. All water pumped or drained from the work shall be disposed of in a manner, which will not result in undue interference with other work or damage to adjacent properties, pavements and other surfaces, buildings, structures and utilities. Suitable temporary pipes, flumes or channels shall be provided for water that may flow along or across the site of the work.

- B. Wherever the construction area crosses a stream, drainage ditch, or where there is a cross flow of surface water, the water shall be channeled in a stone lined ditch or suitable culvert. In either case, no silting or erosion shall result.
- C. When pumping is performed, whether across the construction area or from the trench or other excavations, pump discharges shall pass through stilling wells prior to discharging onto natural ground or drainage systems. The effluent shall be free from silt. The Contractor shall take special care that the existing surface is not eroded or otherwise damaged by any pumped or natural discharge.
- D. When underdrains are used, pipe shall be of ample size to dewater the areas during the construction work. The underdrain areas shall be excavated to such additional depth as required to lay the pipe in a bed of clean, free-draining gravel or broken stone.
- E. Pipe lines, fresh masonry and other structures shall be protected from damage from dewatering operations by proper covering and other approved methods.

3.08 LENGTH OF TRENCH

- A. The length of trench allowed to be open shall be determined by the Engineer. The total running length of all work in each section shall be kept as short as is practicable.
- B. The Contractor shall provide and maintain flashing barricades around all open or soft trenches, parked equipment within all Public Right of Way, in areas where personal injury could result, or as required by the Engineer.

3.09 PROTECTING EXISTING UNDERGROUND STRUCTURES

- A. Wherever culverts, sewers, drains, manholes, catch basin connections, water mains, valve chambers, gas mains, electric conduits, telephone conduits, or any other underground constructions are encountered in excavating, they shall be protected and firmly supported by the Contractor, at his own expense, until the excavation is backfilled and the existing structures are made secure. Injury to any such structures caused by or resulting from the Contractor's operations shall be repaired at the Contractor's expense. The Authority having charge of any particular underground structure shall be notified promptly of injury to its structure.
- B. Whenever approved by the Engineer, pipes or other underground structures encountered in excavating or trenching shall be supported permanently with supports across the excavation or trench. Lumber so used and left in place will be paid for the same as any shoring left in place, as authorized.

- C. If underground utility structures are encountered which are not shown on the Drawings, they shall be reported to the Engineer immediately and to the appropriate authority, if known. The Engineer shall decide whether any change in the work to be done is involved and what measures are required to deal with such unforeseen obstructions.

3.10 ROCK EXCAVATION

- A. Rock excavation shall mean boulders exceeding 1 cubic yard in volume or solid rock, which, in the opinion of the Engineer, requires drilling, hammering and blasting for its removal. No hard pan, no soft or disintegrated rock, no loose or previously blasted rock or broken stone smaller than one cubic yard, and no rocks exterior to the maximum limits of excavation which may fall into the excavation, will be allowed as rock excavation.
- B. Rock in Trenches. Wherever the bottom of a trench consists of boulders or solid rock, it shall be excavated to 8 inches below the underside of the pipe, and to a width of 12 inches greater on each side than the outside dimensions of said pipe. The trench shall be refilled to a depth of 12 inches over the pipe with crushed stone compacted to the satisfaction of the Engineer. Compaction operations shall be continued until stones are firmly interlocked and the surface is unyielding.

3.11 EXPLOSIVES AND BLASTING

- A. The responsibility of the Contractor to comply with all laws, rules and regulations with respect to the work to be done is set forth in the General Conditions and shall conform to all Local regulations and/or State regulation 527 CMR 13.00. All operations involving the handling, storage and use of explosives shall be conducted with every precaution by a few trained, reliable men under satisfactory, experienced supervision. Blasts shall not be fired until all persons in the vicinity have had ample notice and have reached positions out of danger therefrom. The Contractor will be held responsible for and shall make good any damage caused by blasting or by accidental explosions. The Contractor shall maintain insurance as stated in the General Conditions.
- B. The Contractor shall notify the Engineer and Fire Chief in advance of his intention to store and use explosives. Explosives shall be stored in a secure manner and separate from all tools. Caps or detonators shall be safely stored at a point over 100 ft. distance from the explosives. When the need for explosives has ended, all remaining explosives and related materials shall be promptly removed from the premises.
- C. All blasting operations shall be conducted by an experienced, licensed blaster in full compliance with the requirements specified herein, and with all local ordinances, and all supplementary requirements of this specification. In addition,

blasting shall be conducted with all possible care to avoid injury to persons and property. For all blasting operations within 250 ft. of any structure, the rock shall be well covered with blasting mats to prevent flying debris. Sufficient warning shall be given to all persons in the vicinity of the work before blasting to permit safe evacuation of the blast area.

- D. The Contractor shall control his charge sizes and blasting methods so that air and ground transmitted vibrations within and outside of the property limits are at all times within normally acceptable limits and are of such a level that items under construction and items completed prior to the blast are not adversely affected. Specific blast vibration limits are specified below in the paragraphs under Section “Blasting - Special Requirements”.
- E. Prior to beginning any blasting operations, the Contractor shall submit to the Engineer for review a detailed description of the proposed method of blasting. The submittal shall include, but not be limited to, specific details on the Contractor’s proposed blast hole pattern, delay time and pattern, charge size and spacing, hole depth, and methods to minimize overbreak of the rock below the design bearing level.
- F. If necessary the Contractor shall engage a firm experienced in preblast survey work to make a preblast survey of all existing structures within 250 ft. of the proposed blasting locations. All information pertinent to any defective conditions of the structures, such as existing cracks in the interior or exterior of the structures, foundation problems, or the like, shall be contained in the report. For concrete structures which are under construction, or which have been recently completed, the age of the concrete at the time of the survey shall be noted. Documentation shall include photographs, sketches, and written or dictated comments.
- G. Review by the Engineer of the Contractor’s blast design shall not relieve the Contractor of his responsibility for obtaining adequate rock breakage, reducing overbreakage to a minimum, maintaining blasting vibrations within the specified limits, and any other specified responsibility.
- H. Prior to blasting, the Contractor shall remove all overburden and shall cross-section the exposed bedrock surface at intervals and locations to be determined by the Engineer. The cross sections shall be provided to the Engineer prior to blasting and the Engineer shall be given the opportunity to make his own cross sections if desired. It is explicitly understood that it is the Contractor’s responsibility to provide an open or supported excavation through the overburden as specified.
- I. The Contractor shall maintain accurate records of each blast. These records shall include:

1. Charge weight per delay used.
 2. Plan showing location of all blast points, distance to existing structures, depth of holes and whether loaded or unloaded.
 3. Type of explosive used, size, spacing and stemming used.
 4. Explosive sequence and delays used.
- J. Any damage to ground, structures, retaining walls, utilities, or any other items that may be directly or indirectly affected by blasting and rock excavation shall be the responsibility and liability of the Contractor. Likewise, any damage or injury to a person directly or indirectly caused by blasting or rock excavation shall be the responsibility and liability of the Contractor.
- K. Blasting - Special Requirements: Controlled blasting, such as line drilling and presplitting, shall be required for all new construction. The Contractor shall line drill or presplit the rock as necessary for the proposed excavation prior to the blasting of any rock for removal.
- L. The Contractor shall adjust blasting operations according to the characteristics and structure of the rock formation to obtain the required rock excavation without shattering the rock beyond the line drilled or presplit face.
- M. The Contractor shall drill the line drilling or presplitting holes to the full depth of the rock along the limits of rock excavation or as directed by the Engineer. The spacing of line drilling holes shall not exceed four times the line drilling hole diameter. Presplitting holes shall be drilled at spacings equal to one-half the production burden. The line of fragmentation blast holes immediately adjacent to the line drilling or presplitting holes shall be drilled parallel to the plane of the line drilling or presplitting holes.
- N. Any costs incurred due to the unauthorized removal, shattering or disturbing of the material outside the limits of rock excavation shall be at the expense of the Contractor.
- O. Control of Blasting Vibrations: The Contractor shall control blasting by limiting the charge per delay to that which produces limited levels of ground vibrations as herein specified. The Contractor shall measure the particle velocities during each blast using vibration monitoring equipment approved by the Engineer. The equipment shall be capable of making a permanent trace of the motion recorded and shall measure in three mutually perpendicular directions at the same time. Peak particle velocity, defined as the instantaneous maximum vector sum of the velocity vectors in three mutually perpendicular directions, shall be the measure of

the level of vibration. The Contractor shall limit the vibrations so that the peak particle velocity shall not exceed a maximum of 1.9 inches per second as measured at the ground surface at the nearest building, structure, or utility.

3.12 BACKFILLING TRENCHES

- A. After pipelines and appurtenant structures have been built, the trenches and other areas shall be backfilled with suitable excavated material to the extent available or with bank run gravel when excavated material is not available. All material for backfilling shall be free of roots, stumps, frost and stone weighing over 100 pounds. Backfill shall be placed to meet the following requirements:
1. Backfill around pipe or over pipe cradle shall be deposited in layers not over 6 inches deep, placed evenly on both sides of pipe and each layer firmly compacted by hand tools and/or mechanical compactors to the satisfaction of the Engineer. (See Sub-paragraph 4.) Joints may be left uncovered for inspection or testing as directed by the Engineer, then backfilled as previously specified. Pipe shall be backfilled to a depth of at least 3/4 of the pipe diameter before testing and thereafter to a depth of at least one foot above the top of pipe by the same methods.
 2. For trenches in streets, walks, paved areas, or locations to be paved or landscaped upon completion of trench backfill, the entire depth of trench shall be backfilled and mechanically compacted in the same manner as the portion around the pipe.
 3. For trenches in open areas where no future paving or landscaping/seeding is indicated, backfill shall be placed and compacted by spreading equipment, mechanical compactors, or puddling, to suit the material, and width and depth of trench, and to the approval of the Engineer.
 4. Unless stated otherwise on the Drawings, the above described compaction of trench backfill around pipes and under paved areas will be deemed satisfactory when field density tests show at least 95 percent of maximum dry densities of the same materials, as determined by AASHTO T238-86, except that two feet of depth below finished grade shall have 98 percent of maximum density. Where an envelope of selected material is provided around the pipe for which density tests are not feasible the material shall be well compacted as hereinbefore specified.
 5. Copies of all laboratory sieve analysis tests and proctor tests shall be forwarded to the Engineer.
 6. Controlled density fill shall be used for backfill where indicated on the Drawings or as directed by the Engineer.

- B. Backfill around manholes, pits and other structures in trenches shall be placed and compacted as specified for backfill in trenches. Backfill around concrete or masonry structures shall not be placed until approved by the Engineer and shall be brought up evenly on all sides to prevent excessive pressure or displacement.
- C. Unless otherwise specifically required, all topsoil, sods, shrubs, and other surface material shall be replaced in good condition.

3.13 TESTING

- A. Laboratory testing of bank run gravel, crushed stone and sand cushion, for compliance with the specifications will be performed at the Contractor's expense. Field density tests will be performed at the Owner's expense.

3.14 MAINTENANCE OF SURFACE WATER FLOWS

- A. It shall be the Contractor's responsibility to maintain the flow of drainage at all times and during all phases of construction. The methods used to maintain flows will be left to the discretion of the Contractor but must be reviewed by the Engineer. Full compensation for maintaining said flows will be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed therefor.

3.15 GRADING

- A. All areas covered by the project, including excavated and filled sections and adjacent transition areas, shall be uniformly smooth-graded to the elevations shown. The finished surface shall be reasonably smooth, compacted, and free from irregular surface changes. The degree of finish shall be that ordinarily obtainable from blade-grader operations.

3.14 STRAW WATTLES FOR SILT CONTROL

- A. The straw wattles for silt control shall be placed as directed by the Engineer. The wattles shall be temporary and shall be placed before commencing any work that might result in erosion or spillage of foreign material on site or adjacent to property. The wattles shall be securely fastened in place by staking or pinning as approved by the Engineer. As sediment collects against the wattles, such sediment shall be removed as directed by the Engineer and disposed of by the Contractor. During the course of construction, straw wattles shall be replaced as necessary, as directed by the Engineer.

** END OF SECTION **

SECTION 02510 - PAVEMENTS, WALKS AND CURBING

PART 1 GENERAL

1.01 EXTENT OF WORK

- A. The work to be done under this Section consists of furnishing all materials, labor, tools and equipment, and performing all operations necessary for construction of trench pavements and the replacement of all walks, curbs and driveways disturbed during construction as shown on the Drawings or as directed by the Engineer and as herein specified.
- B. All materials and methods of constructing the trench pavements, walks, curbs and driveways specified in this Section 02510 shall conform to the applicable requirements of the Connecticut DOT Form 816, Specifications for Roads, Bridges, and Incidental Construction.
- C. All work areas, including but not limited to, water main trenches and hydrant trenches shall be paved a minimum of once a week. No trenches are to remain open or unpaved over a weekend. More frequent paving shall be performed as directed by the Engineer.
- D. Any road plates used must be fastened and ramped at all times.

1.02 RELATED WORK

- A. Excavation is specified under SECTION 02200 - EARTHWORK.

1.03 STANDARDS

- A. Specifications for Roads, Bridges, and Incidental Construction Form 816 English & Metric Form 816.
- B. American Society for Testing and Materials (ASTM) Publications:
 - 1. ASTM A185-07: Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete
 - 2. ASTM D6938-10: Standard Test Method for in-place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)
- C. American Association of State Highway and Transportation Officials (AASHTO) Publications:

1. AASHTO M81-92: Standard Specification for Cutback Asphalt (Rapid-Curing Type)
 2. AASHTO M153-06: Standard Specification for Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.
- D. Federal Specifications and Standards Publications:
1. TT-S-00230C-70: Sealing Compound, Elastomeric Type, Single Component (for Calking, Sealing, and Glazing in Buildings and other Structures).

PART 2 PRODUCTS

2.01 BITUMINOUS CONCRETE CURB

- A. Bituminous Concrete Curbing shall be replaced in accordance with the requirements of Section 8.15-Bituminous Concrete Lip Curbing and all of ConnDOT Form 816, as applicable.

2.02 GRANITE CURB

- A. Granite Curbing shall be replaced in accordance with the requirements of Section M.12.06 Stone Curbing and all of ConnDOT Form 816, as applicable.

2.03 BITUMINOUS CONCRETE SIDEWALKS AND DRIVEWAYS

- A. Bituminous Concrete Sidewalks and Driveways shall be replaced in accordance with the requirements of Section 9.22 Bituminous Concrete Sidewalk, Bituminous Concrete Driveway and all of ConnDOT Form 816, as applicable.

2.04 CEMENT CONCRETE SIDEWALKS

- A. Concrete Sidewalks shall be replaced in accordance with the requirements of Section 9.21 Concrete Sidewalks and all of ConnDOT Form 816, as applicable.

2.05 GRAVEL SUBBASE

- A. Gravel subbase shall consist of inert material that is hard durable stone and coarse sand, free from loam and clay, surface coatings and deleterious materials.
- B. Gradation requirements for gravel subbase shall be as specified in SECTION 02200 - EARTHWORK for Bank Run Gravel.

2.06 TACK COAT

- A. Tack Coat shall be replaced in accordance with the requirements of Section 4.06.02 Bituminous Concrete - Materials and all of ConnDOT Form 816, as applicable.

PART 3 EXECUTION

3.01 GENERAL

- A. No pavement shall be constructed during inclement weather and the four-month period from December 1 to April 1, without acceptance in writing from the Engineer. No castings shall be left above existing grade, such that they would interfere with winter road maintenance equipment.

3.02 CURBING

- A. Bituminous Concrete Curbing. Bituminous concrete curbing shall be constructed to replace any bituminous curbing damaged by construction and shall be in accordance with the Connecticut Standard Specifications. The curbing shall be built to the required line and grade. Curbing shall be the same dimensions and material composition as the original curbing. Curbing shall be formed in place, joints between existing and new curbing shall be cut square and the ends painted with bituminous material to improve bond between old and new curbing. Curbing shall be carefully backfilled and tamped to meet the original grade. The curbing shall have a six-inch reveal unless otherwise directed by the Engineer.
- B. Granite Curbing. Granite curbing shall be removed where required and reinstalled in accordance with the Connecticut Standard Specifications.

3.03 WALKS AND DRIVEWAYS

- A. Bituminous Concrete Walks. Bituminous concrete walks shall be constructed in accordance with the Connecticut Standard Specifications. Bituminous concrete walks shall be of a thickness to match the existing thickness after rolling.
- B. Cement Concrete Walks and Driveways. Cement concrete walks and drives shall be constructed in accordance with the Connecticut Standard Specifications. Concrete walks and drives shall be 4 inches thick and 6 inches thick respectively with 6x6-W10-x W10 welded wire fabric at mid-depth. Control joints shall match existing joints. Cement concrete walks shall be replaced in full panels regardless of impacts due to water line excavation.

- 1. Preformed expansion joint filler and joint sealer shall be placed adjacent to or

around all structures as directed by the Engineer.

- C. Bituminous Driveways. Bituminous driveways shall be constructed in accordance with the Connecticut Standard Specifications except the compacted thickness shall be 3-inches, 1-1/2-inch base course and 1-1/2 inch top course.

3.04 BASE COURSE

- A. The base course shall consist of bank run gravel meeting the requirements of Section 02200 of these specifications or a reclaimed material produced from the recycling of bituminous concrete and acceptable granular base/sub-base material meeting the requirements of Section 02200 - Earthwork. The material may either be produced on site or the material may be produced off site and imported. The use of any form of recycled and/or reclaimed hazardous or formerly hazardous material will not be allowed; i.e., material previously contaminated and rendered inert by some process, such as, but not limited to the processing of oil contaminated soil by heat.
- B. Base course to be placed shall be spread and compacted on approved subgrade to a minimum depth of 12 inches for pavements and 8 inches for walks. The base shall be compacted to at least 98 percent of maximum dry density as determined by ASTM D1557. The base material shall be spread and rolled in layers not exceeding 6 inches in compacted thickness. The surface of the base shall be shaped to the cross section of the road. Base courses shall be placed immediately after the subbase has been compacted.

3.05 TRENCH PAVING

- A. All paving shall meet the requirements of Connecticut State Standards.
- B. The Contractor shall maintain the trench pavement so that it is suitable for travel as determined by the Engineer for at least one year after substantial completion.
- C. Telephone Contact. The Contractor shall provide a telephone contact that will be available on a twenty-four hour per day basis to receive and act on problems related to maintenance of paving cuts. Within one hour of notification by any representative of the department, to any person contacted at the designated number, the Contractor shall have labor, material and equipment on site to provide for pedestrian and vehicle safety and to affect a temporary repair. Within twelve hours the Contractor shall cause such repairs to be made as will restore the area to its proper contract status.

** END OF SECTION **

SECTION 02586 - TOPSOILING AND SEEDING

PART 1 GENERAL

1.01 DESCRIPTION OF WORK

- A. The work to be done under this Section consists of furnishing all materials, labor, tools and equipment, and performing all operations necessary to complete all topsoiling and seeding in grassed areas disturbed by the Contractor during construction and as ordered by the Engineer and as herein specified. Method of application shall be hydroseeding.

PART 2 PRODUCTS

- A. Fertilizer. Fertilizer shall be of 10-6-4, 8-6-4 or 7-7-7 grade, uniform in composition, free-flowing, and suitable for application with approved equipment. The fertilizer shall be delivered to the site in bags or other convenient containers, each fully labeled, conforming to the applicable State fertilizer laws, and bearing the name, trade name or trademark, and warranty of the producer.
- B. Lime. Lime shall be agricultural grade limestone ground so that 95 percent of the material will pass a No. 20 sieve and at least 50 per cent will pass a No. 100 sieve.
- C. Seed. Seed shall have the following minimum percentage by weight of pure live seed of each kind in the mixture in each lot:

Seed Kind	Proportion (percent)	Germination Min (percent)	Purity Min (percent)
Kentucky Bluegrass	10	85	90
Merion Bluegrass	20	85	92
Penlawn Red Fescue	50	85	95
Manhattan Perennial Ryegrass	20	90	98

A maximum of one percent weed seed will be permitted.

- D. Topsoil. Topsoil shall be fertile, friable, natural topsoil, characteristic of representative soils in the vicinity that produce heavy growths of crops, grass, or other vegetation. All topsoil shall be free from roots, stiff clay, stones, and other materials that hinder grading, planting, and maintenance operations, and free from objectionable weed seeds and toxic substances. With the approval of the Engineer, topsoil may include local subsoil materials.

2.02 INSPECTION AND TESTS

- A. Fertilizer and Lime. Duplicate copies of invoices shall be furnished. Invoices shall show quantities of each grade of fertilizer, percentage of calcium carbonate or magnesium carbonate, and the percentages of limestone that pass the sieves. Upon completion of the project, a final check of total quantities of fertilizer and limestone used will be made against total area treated, and if minimum rates of application have not been met, additional quantities of these materials to make up minimum application specified shall be distributed as directed.
- B. Seed. The Engineer shall be furnished duplicate signed copies of a statement from the vendor, certifying that each container of seed delivered is labeled in accordance with the Federal Seed Act and is at least equal to requirements previously specified. This certification shall be obtained from the vendor and shall be furnished on or with all copies of seed invoices. Each lot of seed will be sampled and tested, in accordance with the latest Rules and Regulations under the Federal Seed Act, at the discretion of the Engineer.
- C. Topsoil. The Engineer shall be notified of the off-site sources from which topsoil material is to be furnished. The material will be inspected to determine whether the selected soil meets the requirements.

PART 3 EXECUTION

3.01 ALL AREAS having vegetation which are disturbed by the Contractor during construction shall be topsoiled and seeded so as to be similar in all respects to the areas prior to construction, and as directed by the Engineer.

3.02 TILLAGE

- A. After the areas required to be seeded have been brought to the final grades, the soil shall be tilled to a depth of at least 2 inches by plowing, disking, harrowing, or other approved operations until the condition of the soil is acceptable. The work shall be performed only during periods when, in the opinion of the Engineer, beneficial results are likely to be obtained. When drought, excessive moisture, or other unsatisfactory conditions prevail, the work shall be stopped when directed.

3.03 PLACING TOPSOIL

- A. Wherever the subgrade material is sand, gravel or other pervious material with a percolation rate of less than 30 minutes per inch drop, the Contractor shall place a 4-inch layer of clay or other impervious material on the subgrade material before placing the topsoil. The percolation rate shall be determined in a 12-inch square hole, which has been pre-saturated for at least 15 minutes. The impervious material shall be mixed with the subgrade material before placing the topsoil.

- B. Topsoil shall be distributed uniformly and spread evenly with a minimum depth of 4-inches for areas to be seeded.
- C. Topsoil shall be spread so that seeding can proceed with little additional soil preparation or tillage. Surface irregularities resulting from topsoiling or other operations shall be leveled to prevent depressions.
- D. Topsoil shall not be placed where the subgrade is frozen, excessively wet, extremely dry, excessively compacted, or in a condition detrimental to the proposed planting or grading.
- E. Soil compacted by construction equipment or soil on compacted cut slopes or grades shall be pulverized to a minimum depth of 2-inches by disking or plowing before applying topsoil.

3.04 HYDROSEEDING

- A. Apply seeded slurry with a hydraulic seeder at a rate of 15 lbs. per 1,000 sq. ft. evenly in two intersecting directions. Do not hydroseed area in excess of that which can be mulched on same day.
- B. Immediately following seeding, apply mulch to a thickness of 1/8 inch. Apply water with a fine spray immediately after each area has been mulched.
- C. Seed shall be sown between April 1 and June 1 or between August 15 and October 15, unless otherwise directed in writing. When conditions are such, by reason of drought, high winds, excessive moisture, or other factors that satisfactory results are not likely to be obtained, work shall be halted as directed and resumed only when conditions are favorable or when approved alternate or corrective measures and procedures have been effected.
- D. Fertilizer and limestone shall not be mixed together prior to their application, but may be worked into the soil together to a depth of at least one inch. Lime and fertilizer may be mixed into the soil during the tillage operation. At least 24 hours shall elapse between the time fertilizer is incorporated and the seed is planted.
- E. If inspection during seeding operations, or after there is shown of green, indicates that strips or other areas have been left unplanted, additional seed shall be sown if so directed.

3.05 CARE AND MAINTENANCE

- A. The Contractor shall protect all areas from damage until final acceptance of the work. Damaged areas shall be repaired as required by the Engineer. The Contractor shall water all areas as required to keep them moist until final

acceptance of the work. Mowing to a height of 3 inches will be required when the grass reaches a height of 8 inches.

**** END OF SECTION ****

SECTION 02665 – EXTERIOR WATER PIPING, VALVES AND APPURTENANT WORK

PART 1 GENERAL

1.01 DESCRIPTION OF WORK

- A. The work to be done under this Section consists of furnishing all labor, tools, equipment and materials and performing all operations necessary for the installation of water mains and appurtenances as indicated by the Contract Drawings, as specified herein or as required by the Engineer.
- B. All fittings, couplings, gate valves, valve boxes, hydrants, pipe and appurtenances unless otherwise indicated shall be furnished and installed by the Contractor.

1.02 STANDARDS

- A. The following Standards of the American Water Works Association/American National Standards Institute form a part of these Specifications:
 - 1. C104/A21.4-08 Standard for Cement-Mortar Lining for Ductile-Iron Pipe and Fittings
 - 2. C110/A21.10-08 Standard for Ductile-Iron and Gray-Iron Fittings
 - 3. C111/A21.11-06 Standard for Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings
 - 4. C116/A21.16-09 Standard for Protective Fusion-Bonded Epoxy Coatings for Interior and Exterior Surfaces of Ductile Iron and Gray-Iron Fittings
 - 5. C150/A21.50-08 Standard for Thickness Design of Ductile-Iron Pipe
 - 6. C151/A21.51-09 Standard for Ductile-Iron Pipe, Centrifugally Cast
 - 7. C153/A21.53-06 Standard for Ductile-Iron Compact Fittings for Water Service
- B. The following Standards of the American Water Works Association form a part of these Specifications:
 - 1. C502-05 Dry-Barrel Fire Hydrants
 - 2. C509-09 Resilient-Seated Gate Valves for Water Supply Service

3. C515-09 Standard for Reduced-Wall, Resilient-Seated Gate Valves for Water Supply Service
4. C550-05 Protective Epoxy Interior Coatings for Valves and Hydrants
5. C600-10 Standard for Installation of Ductile-Iron Water Mains and Their Appurtenances
6. C651-05 Disinfecting Water Mains
7. C800-05 Underground Service Line Valves and Fittings

C. American Society for Testing and Materials Standards

1. ASTM A36-08 Standard Specification for Carbon Steel
2. ASTM A48-08 Standard Specification for Gray Iron Castings
3. ASTM A536-09 Standard Specification for Ductile Iron Castings
3. ASTM B62-09 Standard Specification for Composition Bronze or Ounce Metal Castings
4. ASTM B88-09 Standard Specification for Seamless Copper Water Tube
5. ASTM C150-09 Standard Specification for Portland Cement
6. ASTM D2000-08 Standard Classification System for Rubber Products in Automotive Applications

PART 2 PRODUCTS

2.01 PIPE, FITTINGS AND COUPLINGS

- A. The kinds of pipe, fittings and couplings to be used for exterior work shall be ductile iron, unless otherwise specified or shown on the Drawings.
- B. Pipe and fittings shall conform to the following specific requirements insofar as they apply:
 1. All pipe and fittings furnished shall be accompanied by the manufacturer's Certificate of Compliance, in addition to meeting the performance tests hereinafter specified.

2. Ductile iron pipe shall conform to AWWA/ANSI Standard C150/A21.50 and C151/A21.51.
3. Ductile iron pipe shall be thickness Class 52 unless otherwise specified.
4. Joints for ductile iron pipe shall be rubber gasket push-on joints conforming to AWWA/ANSI Standard C111/A21.11.
5. Restrained joints for rubber-ring type push-on joint pipe shall be installed at the locations indicated on the Drawings and shall be Talon RJ by Griffin Pipe Company; Fast-Grip by American Cast Iron Pipe Company; Field Lok 350 by U.S. Pipe and Foundry Company; Sure Stop 350 by McWane; or approved equal.
6. Pipe shall have normal laying lengths of 18 or 20 feet.
7. Fittings shall conform to AWWA/ANSI Standard C153/A21.53 "Ductile Iron Compact Fittings for Water Service" with pressure rating of 350-psi. All fittings shall have mechanical joints with retaining glands, bolts, nuts and gaskets in accordance with AWWA/ANSI Standard C153 A21.53.
8. All buried fittings shall have restrained joints. Retaining glands installed on mechanical joints shall be Mega-Lug, Series 1100, manufactured by EBBA Iron, or an approved equal.
9. Tees for hydrant branches and for stubs for future use shall have mechanical joints on the run with a plain end and having an integral rotating gland on the branch. The gland will anchor mechanical joint pipe or valve ends to the plain end of the tee.
10. Foster adaptor shall be constructed of ductile iron and come complete with all accessories.
11. Ductile iron pipe and fittings shall be double thick cement lined in accordance with AWWA/ANSI Standard C104/A21.4. The thickness of cement lining shall be not less than 1/8 inch for 3-inch to 12-inch pipe and not less than 3/16 inch for 14-inch to 24-inch pipe.
12. All ductile iron pipe and fittings (interior and exterior) shall have a seal coat of asphaltic material in conformance with AWWA/ANSI Standard C104/A21.4.
13. All ductile iron pipe and fittings shall be clean, sound and without defects. The castings shall be smooth and free from pinholes, excess iron, etc. The

coatings shall be continuous, smooth and neither brittle or sticky. All ductile iron pipe and fittings shall be manufactured in the U.S.A.

14. Couplings or sleeves shall be used to connect the various parts of the work as indicated on the Drawings or approved by the Engineer. Couplings and sleeves shall consist of a carbon steel or ductile iron body. Couplings may have follower rings and wedge-type gaskets at each end bolted together. Couplings may alternatively be stab type that does not have follower rings. Couplings and sleeve shall be joint suitable for water pressures at least equal to that of the pipeline in which they are to be installed. Couplings shall be furnished with fusion-bonded epoxy or other approved coating.

2.02 GATE VALVES

- A. Gate valves shall be furnished in accordance with the latest ANSI/AWWA Standards' Designation C515 for "Reduced Wall, Resilient-Seated Gate Valves for Water Supply Service," but shall meet the specific requirements and exceptions to the aforementioned specifications, which follow:
 1. Gate valves shall have mechanical joints end complying with ANSI/AWWA C111 and shall have the same mechanical retaining glands as the ductile iron fittings specified herein.
 2. Gate valves shall open by turning counter-clockwise (left). They shall be of the resilient seat, wedge type with iron body and bonnet and shall have a non-rising high strength bronze stem mounted with a thermoplastic cartridge stem seal incorporating "O" rings packed and ready for use. Valves shall be designed for vertical setting and shall be equipped with operating nuts.
 3. Operating nuts shall be 2 inches square at the base and shall be loosely fitted on the stem.
 4. All gate valves shall be suitable for working water pressure of 200 pounds per square inch and shall be tested under a hydrostatic pressure of 400 pounds per square inch and show no leak.
 5. All ferrous surfaces of the valve body, both inside and outside, shall be given a fusion-bonded epoxy coating in compliance with AWWA C550. This coating shall be applied prior to assembly to insure that all exposed interior and exterior surfaces receive the epoxy coating.
 6. All surfaces of the iron gate, including stem hole shall be encapsulated in rubber tightly bonded to the gate.

7. Design and machining of valves shall permit packing of valves without undue leakage while they are wide open and in service.
8. The guide slots of the gate shall have thermoplastic inserts.
9. Gate valves shall be American Flow Control, U.S. Pipe, Mueller, Clow or equal.

2.03 VALVE BOXES AND COVERS

- A. Valve boxes shall be furnished and installed for all valves except as otherwise shown by the Contract Drawings.
- B. Boxes for valves shall be 5-1/2-inch inside diameter, shaft, sliding type. The upper section of each box shall have a flange on top having sufficient bearing area to prevent settling. The bell end of the lower section shall have a minimum inside diameter of 8-inch to enclose the opening nut of the valve.
- C. Boxes shall be adjustable, with a lap of at least 6-inches when in the most extended position.
- D. Valves in general which require valve boxes shall be set to conform to the pipeline depth indicated on the Standard Construction Details or as required by the Engineer.
- E. The castings shall be made of light gray cast iron true to pattern and free from flaws. The valve boxes shall be thoroughly coated with two coats of asphaltum varnish, or coal tar enamel, or other approved coatings.
- F. The covers shall be slotted, have the word WATER cast in the top and weight at least 13-lbs.
- G. Valve boxes and covers shall be from one manufacture and shall be by Tyler Union (Series 6855) or approved equal.

2.04 FIRE HYDRANTS

- A. Hydrants shall be of standard safety barrel design with independent drain rod, tapered lower barrel, "O" ring seal packing plate with integral lubrication chamber, dry top construction, and shall be furnished with two 2-1/2-inch hose connections and one 4-1/2-inch steamer connection with national standard thread detail. Hydrants shall conform to the requirements of AWWA C502.
- B. Hydrant shall be compression type with the main valve opening with the water pressure and have a rising stem to positively indicate open or closed position.

- C. Hydrants shall have 6-inch mechanical joint inlet and shall be suitable for trench depths as shown by the Standard Construction Details.
- D. Hydrants shall be designed for 150 pounds per square inch working pressure and shall open counterclockwise (left), and must be marked with arrow and word “OPEN” to indicate the direction to turn stem to open hydrant.
- E. The valve opening shall have a diameter of 5 ¼-inch.
- F. Hydrants shall be of such design that if the hydrant barrel is broken off, the hydrant will remain closed; there shall be a breakable type joint just above the normal ground line.
- G. All iron work which is to be set below ground, after being thoroughly cleaned and shall be painted with two coats of asphaltum varnish. Iron work to be left aboveground shall be painted with two coats of first quality industrial enamel safety white before shipping.
- H. Hydrant caps and steamer connection shall be painted with two coats of colored paint in accordance with CVH Water Department requirements.
- I. Hydrants shall conform to those presently in use by the CVH Water Department. For purposes of standardization, hydrants shall be model Metropolitan M-94 by U.S. Pipe, or approved equal.

2.05 ANCHOR HARNESS RODS AND CLAMPS

- A. Anchor harness rods and clamps shall be furnished and installed in accordance with the Standard Construction Details or as directed by the Engineer.
- B. Anchor harness rods shall have a minimum diameter of 3/4-inch.
- C. Anchor harness rods and friction clamps shall be as manufactured by Carpenter and Paterson, Inc., Woburn, Mass.; Star National Products, Columbus, Ohio; or approved equal.
- D. Anchor harness rod and clamp assemblies incorporated in the work shall be thoroughly coated with two coats of a heavy duty protective coating.

2.06 TAPPING SLEEVE AND GATE VALVE

- A. Tapping sleeves shall be capable of containing pressure within the full volume of the sleeve. Tapping sleeves shall be designed for providing a safe, efficient means of connecting branch piping to existing lines, while maintaining the service in the

existing line.

- B. Tapping sleeves shall consist of a split cast iron sleeve tee with mechanical joint ends on the main and a flange on the branch. The follower rings shall be of the solid thickness split-ring type, which utilizes two additional bolts to connect the rings.
- C. The Contractor shall be responsible for verifying the outside diameter of the pipe to be tapped. It is recommended that the tapping sleeve and tapping valve be manufactured by the same manufacturer to assure the proper fit of the alignment ring on the tapping valve with the recess on the tapping sleeve.
- D. Tapping valves shall conform to Clause No. 2.02 of this Section of the Specifications insofar as they apply. Valves shall have a mechanical joint on the outlet.

2.07 UNDERGROUND WARNING TAPE

- A. Metallic warning tape for underground piping shall be polyethylene tape with aluminum backing for easy detection and location of piping with a metal detector.
- B. Tape shall be 6-inches wide and made of durable 5-mil thick polyethylene that shall be resistant to acids, alkalis and other soil components.
- C. Tape shall be colored blue as approved by APWA for water piping.
- D. Text shall be stamped with permanent black lettering that is repeated at a maximum interval of 40-inches and read "Caution Buried Water Line Below."
- E. Tape shall be as manufactured by Seton Identification Products, Presco, Blackburn Manufacturing, or approved equal.

PART 3 EXECUTION

3.01 INSTALLATION OF PIPE AND APPURTENANCES

- A. All pipe and appurtenances shall be laid in accordance with AWWA Standard C600 and/or the recommendations or specifications of the manufacturer insofar as they do not conflict with these Specifications.
- B. Pipe and appurtenances shall be examined carefully for cracks or other defects and cleaned of all dirt and debris before laying.
- C. Pipes shall be laid to lines and depths shown on the Drawings or approved by the Engineer and the work shall be done with suitable tools and appliances. An even alignment of the pipes shall be maintained.

- D. All pipe shall be laid upon a trench bottom prepared as specified under Section entitled SECTION 02200 - EARTHWORK of these Specifications and as shown on the Drawings.
- E. Each pipe shall be held firmly in position by carefully and thoroughly tamping backfill material around the barrel of the pipe as hereinbefore specified under SECTION 02200 - EARTHWORK.
- F. The work shall be conducted in such manner that no loose excavation or other foreign material can enter the pipes.
- G. At all times when pipe laying is not actually in progress, the open ends of pipe shall be closed by temporary watertight plugs or by other approved means. If water is in the trench when work is resumed, the plug shall not be removed until all danger of water entering the pipe has passed.
- H. Whenever it is necessary to cut pipe to fit into the pipeline, or to provide additional couplings or sleeves, this work shall be done and the materials shall be provided by the Contractor. So far as practicable, cut pieces of pipe may be used.
- I. Push-on and mechanical joints in ductile iron pipe shall be made in accordance with the recommendations of the manufacturer.
- J. All fittings shall be provided with Mega-Lug retainer glands. Bell restraints shall be provided as indicated on Drawings.
- K. Couplings and sleeves shall be installed in accordance with manufacturers' instructions.
- L. Water mains shall be laid at least 10 feet horizontally from any existing or proposed sewer. The distance shall be measured edge to edge. In cases where it is not practical to maintain a ten foot separation, it is permissible to install a water main closer to a sewer, provided that the water main is laid in a separate trench or on an undisturbed earth shelf located on one side of the sewer at such an elevation that the bottom of the water main is at least 18 inches above the top of the sewer.
- M. Water mains crossing sewers shall be laid to provide a minimum vertical distance of 18 inches between the outside of the water main and the outside of the sewer. It is preferred that the water main cross above the sewer. At crossing, one full length of water pipe shall be located so both joints will be as far from the sewer as possible.
- N All buried pipe and fittings shall be installed with metallic-lined underground warning tape located approximately 18-inch below grade to allow detection by a metal detector.

3.02 VALVES AND VALVE BOXES

- A. Gate valves shall be set with valve shafts in a vertical position and provided with a 2-inch square operating nut and valve box as hereinbefore specified. Valve boxes shall be set on well-compacted earth around the valve without resting on the valve or pipeline.
- B. All valves shall be installed in accordance with manufacturer's recommendations.

3.03 TAPPING SLEEVE AND GATE VALVES

- A. Tapping water mains under pressure is specialized work. The Contractor shall engage the services of an independent company, approved by the CVH Water Department, to perform the installation of all tapping sleeve and gate valve assemblies.
- B. All tapping sleeves and gate valves shall be installed in accordance with manufacturer's recommendations.

3.04 SETTING FIRE HYDRANTS

- A. Hydrants shall be set plumb, shall have steamer nozzle facing the roadway and, in general, shall be set as shown in the Drawings. The Engineer will determine the exact location.
- B. Hydrant breakaway flanges shall be located no higher than 3-inches above the grade or lower than grade.
- C. For hydrants installed in self-draining soils, the space around the hydrant barrel 18 inches in diameter shall be filled to within 6 inches of the ground surface with clean gravel borrow or selected material and shall be covered with suitably graded material to prevent the washing in of the remaining backfill. The backfill around the hydrant shall be thoroughly rammed.
- D. In clayey soil or ground in which the water table would stand above the level of the hydrant drip, the drip shall be plugged and the above described precautions may be dispensed with.
- E. A concrete thrust block as approved by the Engineer shall be placed between the back of the hydrant and the undisturbed trench bank. The concrete thrust block shall be opposite the hydrant inlet and shall bear against at least 9 square feet of undisturbed soil. The concrete must not obstruct the hydrant drip.
- F. Hydrants furnished unsatisfactorily painted by the manufacturer shall be painted

after setting with two coats of paint of quality and color specified hereinbefore.

- G. All hydrants shall be thoroughly flushed out before final acceptance of the work.

3.05 HYDROSTATIC TESTING

- A. The new pipelines shall be tested for strength and leakage prior to disinfection in accordance with AWWA Standard C600, SECTION 4. All pipe shall be subjected to a hydrostatic pressure of at least 1.5 times the working pressure at the point of testing up to a maximum of one hundred seventy five (175) psi, but in no case less than 150 psi. The pressure for the tests shall be maintained by pumping additional water as required into the pipeline and shall not vary by more than ± 5 psi for the duration of the test. The test pressure shall be maintained for at least two hours. Temporary plugs and fittings may be required by the Engineer.
- B. The leakage test shall be conducted concurrently with the pressure test. The additional water needed to maintain the required pressure shall be accurately measured in a manner approved by the Engineer.
- C. Notification: The Engineer and the Owner shall be notified, in writing, at least forty-eight (48) hours prior to the hydrostatic testing of the pipe line.
- D. Tests for strength and leakage shall be made with all hydrants in place with branch gate valves open and all required corporation stops installed and in the closed position.
- E. The rate of leakage shall not exceed 10.49 gallons/inch diameter/mile/day at 150 psi or, for example, 0.99 gallons per hour per 1,000 feet of 12-inch water main, or 0.66 gallons per hour per 1,000 feet of 8-inch water main under test, whichever is less. The Contractor shall repair all leaks discovered under any of the above required tests. The Contractor shall furnish all apparatus, materials, temporary corporation stops, plugs and fittings, and labor necessary for making the tests. Before testing pipelines having flexible joints, the Contractor must make certain that the pipelines are securely held to prevent their movement.
- F. The newly laid pipe shall be tested in valved or plugged sections as determined by the Engineer in the field. Water shall be slowly introduced into the section being tested by means of an approved power-driven high pressure test pump.
- G. The pressure shall be raised to the test pressure required for each section being tested as determined by the Engineer. When the test pressure is reached, the time shall be recorded and the test shall begin. The duration of each pressure test shall be a minimum of two hours. During the test, pressure shall be maintained in the section of pipeline being tested by means of a recirculating by-pass type test pump. Water shall be added in measured amounts from a container of known

volume if required to maintain pressure. The addition of excessive amounts of water shall constitute immediate test failure. The Engineer will approve all gauges and test equipment.

- H. During the test, the line will be examined by the Engineer for visible leaks and breaks. Any defects in the works shall be repaired, and any defective materials shall be removed and replaced by the Contractor as and where directed by the Engineer.
- I. The Contractor shall make all necessary arrangements for securing the water for test purposes and shall stand the expense of these arrangements. The water required for testing may be obtained from water mains belonging to the Owner at no cost to the Contractor.
- J. Payment for testing pipelines, including the installation of temporary corporation stops and plugs if required by the Engineer, is included in the lump sum price and no separate payment will be made therefore. The Engineer may require portions of the pipelines to be tested prior to entire completion of the project.
- K. The Contractor shall provide the Engineer with a written report on the pressure test, to include the date, time, location, stations, pressure, quantity of water applied during test, size of pipe, etc.

3.06 DISINFECTION

- A. After successful completion of pressure and leakage testing, the Contractor shall perform disinfection.
- B. The Contractor shall furnish all equipment and materials necessary to do the work of disinfecting, and shall perform the work in accordance with the procedure outlined in AWWA C651 and all amendments thereto.
- C. Notification: The Engineer and the Owner shall be notified, at least forty-eight (48) hours prior to the collection of bacterial samples. The Water District will collect and analyze all samples.
- D. In general, the procedure of disinfecting the main shall be to apply the chlorine through a tap in one end of the section and bleed it off through a tap at the other end.
- E. The applied dosage shall be such as to produce a chlorine concentration of not less than 10 mg/l after a contact time of not less than 24 hours. The initial chlorine concentration shall be 50 ppm.
- F. During the disinfection period, care shall be exercised to prevent contamination of

water in existing mains.

- G. Installation and removal of any temporary connection to the mains or other facilities required to accomplish the disinfection of the mains shall be at the Contractor's expense.
- H. After treatment, the main shall be flushed with clean water until the residual chlorine concentration is less than 0.2 mg/l.
- I. The Contractor shall dispose of the water used in disinfecting and flushing in an approved manner.
- J. CVH personnel shall provide assistance in flushing and the operation of existing gate valves.
- K. The Contractor shall coordinate the collection of bacteriological samples with the CVH Water Department. A minimum of one (1) sample shall be collected 24-hours after chlorination from each 1,200 foot section of water main or as approved by the Engineer.
- L. Bacteriological sampling and testing shall be done in accordance with AWWA C651 for each main and each branch. Sampling shall be accomplished with sterile bottles treated with sodium thiosulfate as required by Standard Methods. Samples shall be collected upstream of the new work, representing water quality before the construction area, from a public building or residence as well as off the new main. No hose or fire hydrants shall be used in collection of samples. A corporation stop installed on the main, preferably on the existing main upstream of the new main, with a removable copper tube gooseneck assembly, is the recommended method.
- M. Testing shall be done by a laboratory approved by the Engineer, in accordance with Standard Methods, and shall show the absence of coliform organisms. A standard plate count may be required at the option of the Engineer.

** END OF SECTION **

DIVISION 15
MECHANICAL

SECTION 15300 - FIRE PROTECTION

PART 1 GENERAL

1.01 GENERAL REQUIREMENTS

- A. Consult in detail all other sections relative to work.
- B. Consult all drawings that may affect work; Site Work.
- C. Cooperate and coordinate with all trades.
- D. All fire sprinkler work, including all piping and equipment is to be installed by a Connecticut Licensed Sprinkler Contractor.
- E. All workers on the job must be licensed journeyman and apprentices.
- F. The sprinkler contractor shall consult with the engineers (Fay, Spofford & Thorndike, Inc.) regarding any questions associated with the design concepts noted in these Specifications and Fire Protection Drawings (Sheets 2, 3, 4 and 5).

1.02 DESCRIPTION OF WORK

- A. Provide all labor, equipment and material required to furnish and install all Fire Protection work, complete as indicated on the drawings and specifications, without limiting the generality thereof, the following are major items of work:
 - 1. Complete (shop drawings) development of fire protection system layout.
 - 2. All underground fire mains and fire hydrants.
 - 3. A complete operational wet automatic sprinkler system installed throughout the three (3) separate buildings at the Children's Center complex installed in accordance with NFPA-13 (2007 Edition).
 - 4. All sprinkler alarm and supervisory devices.
 - 5. All required hangers, supports and braces.
 - 6. All seismic bracing including branch line restraints as required by NFPA 13.
 - 7. All operational pre-testing and acceptance testing.
 - 8. All cutting and patching related to underground fire mains, standpipe and sprinkler systems.
 - 9. All fire sleeves and associated fire stopping.

1.03 RELATED WORK

- A. The following work shall be performed by other trades indicated:

1. Electrical wiring and control wiring (by electrical subcontractor).
2. Excavation, thrust blocks and backfill (by site work subcontractor). All underground service installation, testing and flushing shall be performed by the site work subcontractor. Limit of work shall be the inside of the building's foundation wall.
3. Fire Alarm (by electrical subcontractor).

1.04 REFERENCES

- A. The following is a partial list of documents to be referenced and utilized as part of this specification document:

NFPA-13, 2007 Edition, Installation of Sprinkler Systems
NFPA-24, 2007 Edition, Private Fire Service Mains and their Appurtenances
NFPA-72, 2007 Edition, National Fire Alarm Code
NFPA-101, 2003 Edition, Life Safety Code
2003 IBC; 2003 IRC (State Building Code, 2005 CT supplement)
2003 IFC; State Fire Safety Code
NFPA 101-2003 for existing buildings

1.05 INTENT

- A. It is the intent of the Contract Documents to require and specify a complete operational automatic fire protection system(s) throughout the three (3) existing buildings. Anything that is not shown or mentioned but reasonably implied shall be furnished by the sprinkler contractor.
- B. The drawings are diagrammatic only and are not intended to indicate all offsets, fittings, valves, etc.
- C. All work shall be accurately laid out and coordinated with other existing trades and building features, such as lights, HVAC equipment, etc., to avoid conflicts and to obtain a neat, workmanship installation. The sprinkler contractor is responsible for all field verification of building dimensions and piping measurements related to his work prior to submission of sprinkler layout shop drawings for engineer's approval.
- D. It is the intent that all piping installed in areas with drop-tile ceilings shall be installed concealed above the tiles where possible and all piping installed in spaces without ceilings shall be exposed.
- E. Piping changes, coordination conflicts or alternatives shall be reviewed with the Engineer for approval prior to proceeding with any work.

1.06 CODES, PERMITS AND FEES

- A. All fire protection work shall be installed in accordance with the Connecticut State Building Code and the applicable NFPA Standards as referenced, along with any local requirements of the building or fire department, as they may apply to the installation.
- B. All necessary permits and fees to the local municipalities shall be provided by the Fire Protection Contractor.

1.07 QUALITY ASSURANCE

- A. Obtain approval of system design prior to fabrication and installation from:
 - 1. Connecticut State Fire Marshal
 - 2. South District Fire Department
 - 3. Department of Children and Families
 - 4. Specifying Engineer.

Note: Any deviation (modifications to design concept as shown on drawings) from bid documents must be submitted to specifying engineer for review and comment prior to any work proceeding.

- B. Upon receipt of comments and approvals from the above stated authorities, forward one properly stamped set to the owner's representative for comments.

1.08 SHOP DRAWINGS AND HYDRAULIC CALCULATIONS

- A. The sprinkler contractor is responsible for preparing and submitting shop drawings (complete system layout) depicting the full extent of the project with respect to fire protection system work and all other associated aspects, including final hydraulic calculations.
- B. Drawings shall be prepared in accordance with the guidelines set forth in NFPA-13, 2007 Edition, *"Installation of Sprinkler Systems"*, Chapter 6.
- C. Drawings shall be 1/8" scale or 1/4" scale AutoCAD Drawing, Version 2004 unless otherwise indicated or approved.
- D. Drawings shall indicate all building elements and features for the proper layout of the system.
- E. The sprinkler system layout shop drawings shall indicate all locations of flexible and fixed couplings and fittings and seismic braces including bracing types and details, seismic calculations, fastener sizes in accordance with NFPA-13, 2007

Edition. The type and location of branch line restraints shall also be provided and shown in accordance with Section 9.3.6 of NFPA 13, 2007 Edition.

- F. Shop drawings shall be submitted to authorities as outlined in the preceding quality assurance section of this specification. Contact each Authority Having Jurisdiction (AHJ) regarding number of sets for submittal.
- G. All shop drawings, hydraulic calculations and supporting design information shall be prepared by a minimum NICET Certified Level III, Automatic Sprinkler System Layout Technician. The shop drawings shall be stamped by a Connecticut Licensed Fire Protection Professional Engineer.
- H. The coordination of the fire protection systems piping with all other existing trades, building structure and interferences and means and methods established by NFPA-13 shall be the responsibility of the sprinkler contractor.

1.09 SUBMITTALS

A. SUBMIT THE FOLLOWING:

1. Shop drawings, design narrative and hydraulic calculations.
2. Dimensional drawings for all equipment
3. Descriptive literature for all equipment
4. Material description
5. Pressure rating for piping appurtenances.
6. Wiring diagrams for electrical components
7. Utility connection details
8. Electrical requirements for electrical components.

- B. Contractor shall keep two sets of the approved shop drawings to be bound and submitted to the owner as a part of the Owner's Operations and Maintenance Manual at the end of the project, before the final payment is made. The Owner's Manual shall be prepared as specified in Part 3 - Execution hereinafter. The Engineer shall review the Owner's Manual, and if found incomplete in his judgment, shall so direct the Contractor to revise. Submittal of a satisfactory Owner's Operations and Maintenance Manual shall be considered an integral part of this contract.

1.10 DESIGN CRITERIA

A. DENSITIES

The automatic sprinkler systems shall be designed to provide the following specified sprinkler discharge density over the specified hydraulically most demanding discharge area: (Note: Design areas of wet-pipe systems may be

reduced in accordance with the allowances of NFPA 13 where applicable).

Location and Occupancy:	Light Hazard Spaces (Office, Corridors, Dwelling Units, etc)
Type of System:	Wet
Sprinkler Discharge Density:	0.10 gpm / sq. ft.
Design Area:	1500 SF
Hose Stream Allowance:	100 gpm
Sprinkler Orifice:	1/2" thread, 5.6 K-Factor
Maximum Sprinkler Head Spacing:	Per sprinkler head listing, not to exceed 225 sf.

B. SAFETY MARGIN

Maintain a minimum 10 psi safety margin where possible on all calculations.

1.11 WATER FLOW TEST DATA

A. The following water supply data was obtained on April 2nd, 2013 at the project site. The test location was on the existing 8" water main in front of Silvermine Hall and was utilized for Hydraulic Calculations. The Contractor shall perform a new hydrant flow test once the proposed 8" extension main and associated fire hydrant has been installed, utilizing the new hydrant to record the available flow for record purposes. Flow Data indicated below may be used in design.

B. Static: 100 psi
 Residual: 70 psi
 Flow: 1130 gpm

C. Refer to contract document drawings for location of flow test results and elevation information.

1.12 WELDING AND CUTTING

A. No welding and cutting operations shall be permitted unless specifically approved and permits obtained from the responding Fire Department.

1.13 CUTTING, PATCHING AND REFINISHING

A. Whether or not specifically called out on the drawings, the sprinkler contractor shall be responsible for all cutting, patching and refinishing of pipe penetrations and other areas requiring coring or cutting. The sprinkler contractor shall also include required fire seals of the minimum fire resistance rating for all wall penetrations.

- B. Use material which is identical to the material to be cut and patched or materials which match the materials to the greatest extent possible.

1.14 GUARANTEE

- A. Refer to General Conditions for requirements, all of which shall be included as part of this specification.
- B. All materials, equipment and work furnished under this section shall be guaranteed against defects in workmanship for a period of eighteen (18) months from date of substantial completion.

PART 2 PRODUCTS AND MATERIAL

2.01 GENERAL

- A. All devices, materials and related system pipe and fittings shall be UL Listed for fire protection.
- B. No substitutions for material and products shall be made unless specifically indicated.
- C. The specifying engineer shall determine "or equal to".

2.02 SPRINKLER SYSTEM

- A. For description of work refer to Section 1.02

2.03 BACKFLOW PREVENTER

- A. DOUBLE CHECK VALVE ASSEMBLY

Backflow preventer shall be a UL listed double-check valve assembly, listed for use on fire protection systems.

The backflow preventer shall be provided with monitored butterfly valves on either side to facilitate testing as indicated on the associated sprinkler drawings. (monitored gate valves will be accepted as an alternative).

Backflow preventer shall be installed in accordance with the CVH Water Department regulations and in accordance with the requirements of the manufacturer.

2.04 FIRE DEPARTMENT CONNECTIONS

- A. A single-inlet 2-1/2" pedestal-mounted fire department connection shall be provided for each of the three (3) buildings as indicated on the associated fire protection drawings. Provide Cap/Chain and escutcheon plate to read Automatic Sprinkler System.
- B. Provide 2'-0"x 2'-0" concrete pad for each fire department connection as indicated on associated fire protection detail drawing.

2.05 RISER ASSEMBLIES

- A. Provide where indicated straight-pipe riser assemblies including pressure gauge, vane-type flow switch, combination test and drain connection. All components of the straight-pipe riser assembly shall be UL Listed for fire protection use. Provide an electric bell to be wired by electrical subcontractor and mounted on exterior of building which will activate upon water flow detected by the vane-type flow switch. Tamper switches shall be wired as "Supervisory" (See fire alarm specification).

2.06 VALVES

- A. GATE VALVES: Shut-off valves with tamper switches shall be of the OS&Y gate type listed for use in fire protection systems.
- C. BUTTERFLY: Indicating type listed for fire protection, grooved ends with built in tamper switch. All butterfly type valves shall have built in tamper switches.
- D. CHECK VALVES: UL listed Brass swing-type check valve with spring-loaded clapper and removable cover.
- E. BALL DRIP: Bronze automatic drain valve installed horizontally at the low point of the fire department connection piping.

2.07 FITTINGS

- A. SCREWED: Fittings shall be cast iron (or malleable).
- B. MECHANICAL: Grooved end.
- C. Other UL Listed and FM Approved piping and fitting methods and alternatives will be considered by the specifying engineer (see Section 2.01-C) upon submittal.

2.08 PIPE - ABOVE AND BELOW GROUND

- A. Pipe and fittings shall conform to the latest ANSI, ASTM, NFPA and AWWA Standards. All piping shall be manufactured in the United States in accordance with the above standards.
- B. Piping for wet sprinkler systems shall be black steel. All 1” piping shall be Schedule 40 threaded piping. Piping 1-1/4” or larger in diameter shall be Schedule 10 grooved piping with grooved couplings or schedule 40 threaded piping with screwed fittings.
- C. Refer to utility (site) specifications for Underground Fire Mains, Valves, Fittings and Fire Hydrant Types. Underground Fire Main installation shall be coordinated with site subcontractor (refer to Specification Section 1.01-D).
- D. Other UL Listed and FM Approved piping and fitting methods and alternatives will be considered upon submittal (see Section 2.01-C).

2.09 PRESSURE GAUGES

- A. Install air-filled pressure gauges as part of the straight-pipe riser assembly at the top of the standpipe risers and where indicated on the drawings, before and after the backflow preventer. Gauges shall be of the Double Spring Bourdon type and have a 6 in. diameter face.

2.10 SPRINKLER HEADS

- A. Sprinkler heads shall be UL Listed.

Note: All sprinkler heads within reach of building occupants shall be institutional type heads.

<u>AREA</u>	<u>SPRINKLER TYPE & FINISH</u>	<u>TEMP. RATING</u>	<u>ORIFICE</u>
Suspended Ceilings/ Corridors	Concealed Flat-Plate White Pendent Quick-Response Tyco Raven Institutional type	155F	5.6 K-Factor 1/2” thread
Dwelling Units	Concealed Flat-Plate White Sidewall Quick-Response Tyco Raven	155F	5.6 K-Factor 1/2” thread

	Institutional type		
High Ceiling Areas (Exposed Piping Out of occupancy reach)	Brass Upright Quick-Response	155F	5.6 K-Factor 1/2" thread
Common Areas	Brass Sidewall heads Quick-Response	155F	5.6 K-Factor

2.11 FLOW SWITCHES

- A. Flow switches shall be vane type for wet systems with retardant control and shall be provided for all sprinkler system zones as indicated on the drawings. Flow switches shall contain the proper contacts to be wired to the building fire alarm system by the electrical subcontractor.

2.12 SUPERVISORY DEVICES

- A. Tamper Switches

All sprinkler system control valves shall be provided with tamper monitoring switches and tamper proof covers and shall contain the proper contacts to be wired to the building fire alarm system.

2.13 HANGERS AND SEISMIC BRACING

- A. The requirements of NFPA-13, 2007 Edition shall govern the installation of hangers, supports, seismic bracing and flexible couplings.

2.14 SLEEVES AND ESCUTCHEON AND FIRE SLEEVES

- A. All pipe passing through floors, walls or partitions shall be provided with sleeves having an internal diameter one inch larger than the outside diameter of the pipe.
- B. Sleeves through outside walls shall be Schedule 40 Black Steel pipe, set flush with surfaces, and shall be painted with one coat of bitumastic paint, inside and outside.
- B. Sleeves through masonry floors and interior masonry walls shall be Schedule 40 Black Steel Pipe. UL listed flexible couplings shall be provided within one foot of both sides of fire rated floor and/or wall penetrations.
- C. Fire sleeves through interior non-masonry walls and partitions shall be Schedule 10 Black Steel, with UL Listed Fire Stopping.

- E. Escutcheons, unless otherwise indicated, shall be cast brass chrome plated type and provided with a set-screw to properly hold escutcheon in place.

2.16 SIGNS AND TAGS

- A. Signs and a corresponding chart shall be provided and placed indicating the purpose of each control valve, test connection, main drain, auxiliary drain, alarm tests, etc. as required. Valve tags, minimum 2 in. diameter with brass hooks and chains shall be provided and numbered as directed. (Flow arrow signs for piping shall be provided on all mains in areas where piping is exposed.)
- B. Coordinate the identification of the valves with the DCF for proper identification.
- C. Submit to specifying engineer for review prior to tag assignment.

2.17 MAIN DRAIN

- A. All sprinkler risers shall have main drain arrangements.
- B. The discharge of the main drains shall be to a safe outside location able to handle the full flow to the main drain valves.

2.18 INSPECTOR TEST VALVE

- A. Provide an inspector's test valve and sight glass with appropriately sized sprinkler orifice for each system zone, including common drain piping and drain to a safe discharge area.

2.19 SPRINKLER CABINETS

- A. Provide for each sprinkler system, a metal cabinet containing spare sprinkler heads and wrenches within each sprinkler room within each building. The cabinet size and number of each type spare sprinkler head shall conform to NFPA-13, 2007 Edition.

2.20 ALARMS

- A. Provide an electric sprinkler alarm bell exterior mounted as indicated for each of the three (3) buildings. Coordinate with Fire Alarm contractor.

PART 3 EXECUTION

3.01 GENERAL

- A. All system installation shall comply with the latest NFPA Standards and referenced material as listed in the specifications.

3.02 INSTALLATION

- A. Install all fire protection work in accordance with applicable NFPA Standards, and the Connecticut State Building Code.
- B. Install piping only after approval of shop drawings layout.

3.03 TESTS

- A. Conduct testing of all fire protection systems in accordance with NFPA Standards. Testing shall include not only hydrostatic testing for piping integrity but also complete operational tests including verification of sprinkler and supervisory alarms.
- B. Provide for witnessing and approval of tests by the owners representative. Provide opportunity for insurance carrier and other authorities to witness and approve tests if applicable. Coordinate witnessing with DCF at least two weeks prior to projected test date.
- C. Complete and submit all necessary certificates and documentation of testing, satisfy all requirements of Connecticut State Building Code

3.04 WORKMANSHIP

- A. Any and all work under this section of the Specification found improper or of poor workmanship shall be removed, repaired, and/or replaced at no additional expense to the Contract.
- B. The Fire Protection work shall be performed in harmony with other work in the building, and at such times as to not interfere with or hold back in an unwarranted manner any other trade. The Fire Protection work shall be installed as fast as conditions will allow. In the event that any changes are required because of the installation of any substitutions, the costs of such shall be borne by the Fire Protection contractor making such substitutions.

3.05 LOSS OR DAMAGE TO EQUIPMENT

- A. Any materials or equipment lost or damaged shall be replaced or repaired to the satisfaction of the Engineer, at no additional cost to the Owner.

3.06 WIRING DIAGRAMS

- A. The Electrical Subcontractor shall furnish wiring diagrams for all equipment furnished under this section for which wiring is to be installed by the Electrical Subcontractor, as directed by the Owner.

3.07 BASES AND SUPPORTS

- A. Except where noted, the Subcontractor shall provide all bases and supports not part of the building structure, of required size, type and strength, as approved by the Engineer, for all equipment and materials furnished by him. All equipment, bases and supports shall be adequately anchored to the building structure or pads to prevent shifting of position under operating conditions.

3.08 OPERATING INSTRUCTIONS

- A. This Subcontractor, upon completion of the project, shall prepare and submit to the Owner three sets of Owner's Manuals in the form of book binders.
 - 1. Each set of the manuals shall contain catalog cuts, installation & maintenance manuals, wiring diagrams, As-Built drawings, and approved shop drawings.
 - 2. Each section shall contain clearly marked tag numbers, appropriate model numbers with accessories, and sales representative address and phone numbers.
 - 3. Last section of the binders shall be reserved for complete sets of the As-Built drawings neatly folded to 8-1/2" x 11" size and bound into the section so that it can be folded out for review without the need for removal from the binder.

3.09 CLEANING

- A. Flush and clean systems in accordance with applicable standards.

** END OF SECTION **

STATE OF CONNECTICUT

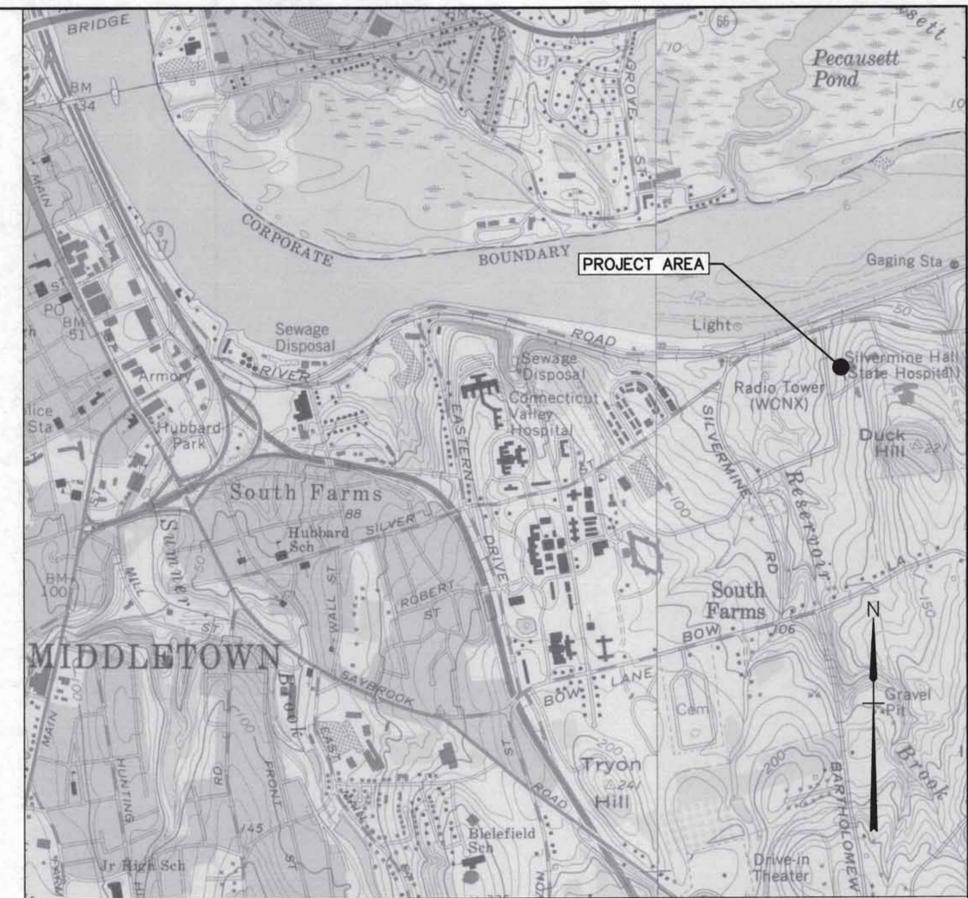
DEPARTMENT OF CHILDREN AND FAMILIES

ALBERT J. SOLNIT CHILDREN'S CENTER

FIRE SPRINKLER SYSTEM DESIGN

MIDDLETOWN, CT

JUNE 2014



LOCATION PLAN
SCALE: 1"=1000'

LEGEND

EXISTING	NEW
⊙ SANITARY SEWER MANHOLE	— WATER MAIN
⊕ STORM DRAIN MANHOLE	— HYDRANT & GATE VALVE
⊞ CATCH BASIN	— GATE VALVE
⊕ TELECOMM MANHOLE	— TAPPING SLEEVE & GATE VALVE
⊞ TELECOMM BOX	— REDUCER
⊕ ELECTRIC MANHOLE	— TEE
— UTILITY POLE W/GUY	— BEND
— UTILITY POLE	— PLUG
— LIGHTPOST	— FIRE DEPARTMENT CONNECTION
— WATER GATE	
— HYDRANT	
— TREE	

SITE NOTES

- GENERAL**
1. THE BASE PLAN IS BASED ON INFORMATION FURNISHED BY THE STATE OF CONNECTICUT DEPARTMENT OF CHILDREN AND FAMILIES.
 2. PROPERTY LINES SHOWN ARE BASED ON PLAN RESEARCH AND ARE NOT BASED ON A PROPERTY LINE SURVEY.
 3. LOCATIONS OF UTILITIES SHOWN HEREON ARE THE RESULT OF SURFACE EVIDENCE AS LOCATED BY FIELD SURVEY, PLANS OF RECORD, AND OTHER AVAILABLE SOURCES.
 4. THIS PLAN DOES NOT NECESSARILY DEPICT THE EXACT LOCATIONS OF ALL UTILITIES WHICH MAY EXIST AT THIS TIME WITHIN THE PREMISES SURVEYED.
 5. THE CONTRACTOR SHOULD VERIFY THE EXISTING CONDITIONS TO HIS SATISFACTION PRIOR TO BEGINNING ANY EXCAVATION. "CALL BEFORE YOU DIG" SHALL BE NOTIFIED AT LEAST 72 HOURS PRIOR TO BEGINNING ANY WORK. DEPTHS OF EXISTING UTILITIES SHOULD BE VERIFIED BY TEST EXCAVATION WHENEVER POSSIBLE PRIOR TO INSTALLATION OF PROPOSED WORK.
 6. CONSTRUCTION DETAILS ARE INCLUDED IN THE CONTRACT DRAWINGS.
 7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ALL UTILITIES DAMAGED DURING THE CONSTRUCTION AT NO COST TO THE OWNER.
 8. THE LOCATION OF EXISTING SUBSURFACE ROCK IS NOT KNOWN. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE HIS OWN DETERMINATION AS TO THE LOCATION OF SUBSURFACE ROCK.
- SURFACE RESTORATION**
1. ANY AREA DISTURBED BY THE CONTRACTOR OUTSIDE THE LIMIT OF WORK SHALL BE RESTORED TO ORIGINAL CONDITION AT NO COST TO THE OWNER.
 2. THE CONTRACTOR SHALL BLEND NEW EARTHWORK SMOOTHLY INTO EXISTING GRADE.
 3. FOR PAVEMENT REPLACEMENT, SEE SPECIFICATION SECTION 02510 - PAVEMENTS, WALKS AND CURBING.
 4. RESTORE ALL DISTURBED PAVEMENT MARKINGS AND REFLECTORS.

- ENVIRONMENTAL**
1. ALL GROUND SURFACES SHALL BE PROTECTED TO PREVENT EROSION AND SEDIMENT RUNNING OFF THE SITE OF WORK.
 2. SEE SPECIFICATION SECTION 02200 FOR EROSION CONTROL.
- WATER**
1. DEFINITE LOCATIONS FOR NEW WATER MAINS, VALVES AND FITTINGS SHALL BE ESTABLISHED IN THE FIELD BY THE ENGINEER.
 2. WATER MAIN SHALL BE LAID WITH 5"-0" MINIMUM, 7"-0" MAXIMUM COVER UNLESS OTHERWISE SPECIFIED OR APPROVED BY THE ENGINEER.
 3. WHEREVER NEW WATER MAINS OR APPURTENANCES ARE TO JOIN OR BE CONNECTED TO EXISTING PIPE, THE CONTRACTOR SHALL CUT AND REMOVE THE EXISTING PIPE AS NECESSARY TO INSTALL THE NEW WORK. PRIOR TO CONSTRUCTION VERIFY ALL EXISTING SIZES AND MATERIAL TYPES.
 4. WHENEVER POSSIBLE THE CONTRACTOR SHALL BEND THE WATER MAIN AROUND CURVES USING JOINT DEFLECTION.
 5. NEW WATER MAINS SHALL BE LAID UNDER EXISTING UTILITIES, DRAINS AND CULVERTS UNLESS OTHERWISE NOTED.
 6. ALL FITTINGS AND VALVES SHALL BE RESTRAINED USING MECHANICAL RESTRAINING TYPE GLANDS UNLESS OTHERWISE APPROVED BY THE ENGINEER.
 7. A MINIMUM OF ONE FULL PIPE LENGTH OF NEW WATER MAIN (18 FEET) IS TO BE INSTALLED BETWEEN A NEW VALVE AND A COUPLING CONNECTING THE NEW AND EXISTING WATER MAINS.
 8. EXISTING PIPE, VALVES, BOXES, AND FITTINGS REMOVED FROM THE WORK SHALL BECOME THE PROPERTY OF THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND DISPOSING OF ALL SALVAGED MATERIALS.

ABBREVIATIONS

ABAN	ABANDON
AC	ASBESTOS CEMENT PIPE
APPROX	APPROXIMATELY
B	BEND
BCC	BIT CONC CURB
BIT	BITUMINOUS
CB	CATCH BASIN
CI	CAST IRON
CIP	CAST IRON PIPE
CC	CONCRETE CURB
CONC	CONCRETE
CLF	CHAIN LINK FENCE
CMP	CORRUGATED METAL PIPE
COMM	COMMERCIAL
C.T.E.	CONNECT TO EXISTING
CI	CURB INLET
DICL	CEMENT LINED DUCTILE IRON
EXIST	EXISTING
FSM	FORCE SEWER MAIN
GV	GATE VALVE
GC	GRANITE CURB
GW	GRANITE WALL
HORZ	HORIZONTAL
LPB	LIGHT POLE BASE
LST	LOOSE STONE WALL
MJ	MECHANICAL JOINT
PVC	POLYVINYL CHLORIDE
RCP	REINFORCED CONCRETE PIPE
RED	REDUCER
R&D	REMOVE & DISPOSE
R&R	REMOVE & REPLACE
R&S	REMOVE & STACK
RW	RETAINING WALL
TS&GV	TAPPING SLEEVE & GATE VALVE
T	TEE
TYP.	TYPICAL
UP	UTILITY POLE
VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL

INDEX TO DRAWINGS

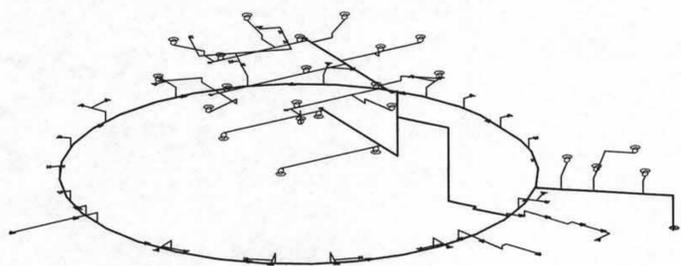
SHEET NO.	TITLE
1.	TITLE SHEET—LOCATION PLAN, INDEX TO DRAWINGS, LEGEND, ABBREVIATIONS AND GENERAL NOTES
2.	SPRINKLER LAYOUT – LACOTA BUILDING
3.	SPRINKLER LAYOUT – KIWANI BUILDING
4.	SPRINKLER LAYOUT – QUINNIAC BUILDING
5.	FIRE PROTECTION NOTES AND DETAILS
6.	SITE PLAN
7.	SITE DETAILS



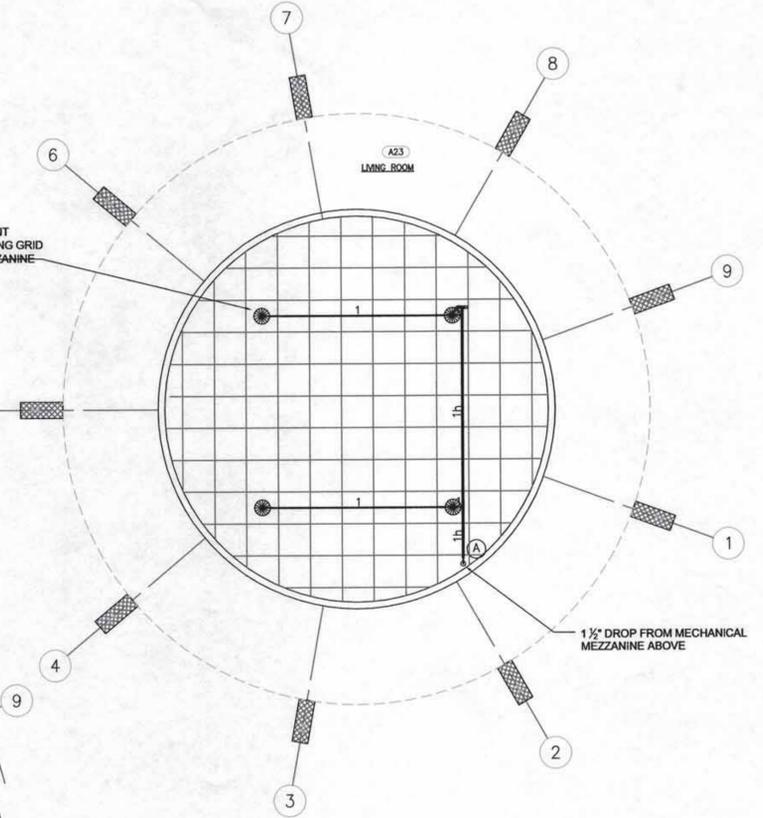
FAY, SPOFFORD & THORNDIKE, LLC
ENGINEERS • PLANNERS • SCIENTISTS
ONE HARTFIELD BLVD SUITE 103, EAST WINDSOR, CT 06088

Dan Mahoney
PROJECT ENGINEER

Dennis P. Brucher
APPROVED



SYSTEM ISOMETRIC
SCALE: NOT TO SCALE



LACOTA - SPRINKLER LAYOUT
(UNDER-MECHANICAL MEZZANINE)
SCALE: 3/16" = 1'-0"

LEGEND:

SYMBOL	DESCRIPTION
	NEW QUICK-RESPONSE COMMERCIAL SIDEWALL SPRINKLER
	NEW QUICK-RESPONSE INSTITUTIONAL SIDEWALL SPRINKLER
	NEW QUICK-RESPONSE CONCEALED INSTITUTIONAL PENDENT SPRINKLER
	NEW QUICK-RESPONSE COMMERCIAL UPRIGHT SPRINKLER
	HYDRAULIC REFERENCE NODE
	FIRE ALARM CONTROL PANEL
	REMOTE ANNUNCIATOR PANEL
	TAMPER SWITCH
	FLOW SWITCH
	ELECTRIC BELL

REV.	DATE	DESCRIPTION	BY	CHK.	APP'D.

STATE OF CONNECTICUT
DEPARTMENT OF CHILDREN AND FAMILIES

**ALBERT J. SOLNIT CHILDREN'S CENTER
FIRE SPRINKLER SYSTEM DESIGN**

SPRINKLER LAYOUT
LACOTA BUILDING

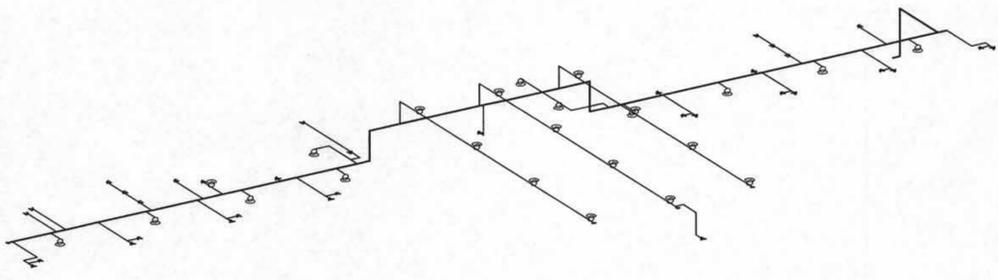
ENGINEERS
FST
FAY, SPOFFORD & THORNDIKE, LLC
ENGINEERS · PLANNERS · SCIENTISTS
1 HARTFIELD BLVD, EAST WINDSOR, CT 06088



FS&T PROJECT NUMBER LG-413A	SCALE: AS NOTED DATE: JUNE 2014	DES. TDJ DR. TDJ	CHK. DPB PROJ. ENGR. TDJ	APPROVED <i>Annina P. Boucher</i>
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LACOTA - SPRINKLER LAYOUT
SCALE: 3/16" = 1'-0"

E:\LG-413A\Cadd\Mech\DCS - FP-FINAL 6-22-2014.dwg 6/26/2014 10:55:57 AM



SYSTEM ISOMETRIC
SCALE: NOT TO SCALE

NEW CEILING WILL BE 2'x2' ACOUSTICAL TILE CEILING GRID. OWNER TO PROVIDE NEW LIGHT FIXTURES. OWNER TO RELOCATE ITEMS IN CONFLICT WITH NEW CEILING HEIGHT.

CONTRACTOR TO REMOVE EXISTING CEILING TILES AND GRID IN CORRIDORS. INSTALL SPRINKLER PIPING AS HIGH AS POSSIBLE AND PROVIDE NEW CEILING GRID AND TILES BELOW (RELOCATE LIGHTS TO NEW CEILING HEIGHT, TYPICAL)

PROVIDE SOFFIT AROUND SPRINKLER PIPING IN BATHROOMS TO FACILITATE THE INSTALLATION OF INSTITUTIONAL HEADS (TYPICAL)

PROVIDE QUICK-RESPONSE COMMERCIAL SIDEWALL SPRINKLERS WITHIN COMMON AREAS AS INDICATED (TYPICAL)

PROVIDE ELECTRIC BELL AT ENTRANCE

NEW 1 1/2" MAIN DRAIN, PIPED TO EXTERIOR
TIE NEW R.A.P. TO EXISTING ELECTRICAL PANEL SP-1

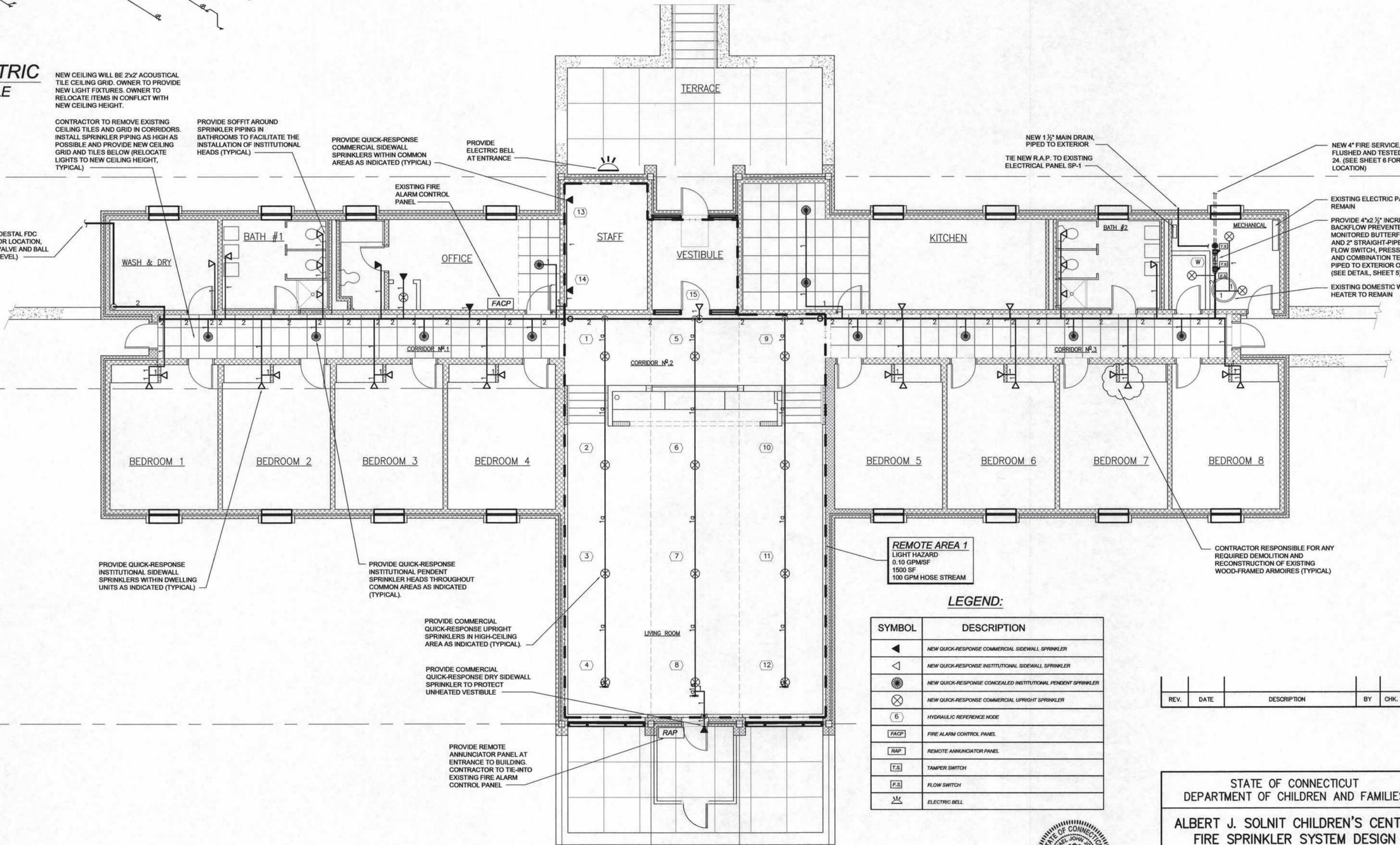
NEW 4" FIRE SERVICE, INSTALLED, FLUSHED AND TESTED PER NFPA 24. (SEE SHEET 6 FOR TIE-IN LOCATION)

EXISTING ELECTRIC PANEL TO REMAIN

PROVIDE 4"x2 1/2" INCREASER, 2 1/2" BACKFLOW PREVENTER WITH MONITORED BUTTERFLY VALVES AND 2" STRAIGHT-PIPE RISER WITH FLOW SWITCH, PRESSURE GAUGE AND COMBINATION TEST & DRAIN PIPED TO EXTERIOR OF BUILDING (SEE DETAIL, SHEET 9)

EXISTING DOMESTIC WATER HEATER TO REMAIN

DROP TO NEW PEDESTAL FDC (SEE SITE PLAN FOR LOCATION, PROVIDE CHECK VALVE AND BALL DRIP AT CEILING LEVEL)



PROVIDE QUICK-RESPONSE INSTITUTIONAL SIDEWALL SPRINKLERS WITHIN DWELLING UNITS AS INDICATED (TYPICAL)

PROVIDE QUICK-RESPONSE INSTITUTIONAL PENDENT SPRINKLER HEADS THROUGHOUT COMMON AREAS AS INDICATED (TYPICAL)

PROVIDE COMMERCIAL QUICK-RESPONSE UPRIGHT SPRINKLERS IN HIGH-CEILING AREA AS INDICATED (TYPICAL)

PROVIDE COMMERCIAL QUICK-RESPONSE DRY SIDEWALL SPRINKLER TO PROTECT UNHEATED VESTIBULE

PROVIDE REMOTE ANNUNCIATOR PANEL AT ENTRANCE TO BUILDING. CONTRACTOR TO TIE-INTO EXISTING FIRE ALARM CONTROL PANEL

REMOTE AREA 1
LIGHT HAZARD
0.10 GPM/SF
1500 SF
100 GPM HOSE STREAM

CONTRACTOR RESPONSIBLE FOR ANY REQUIRED DEMOLITION AND RECONSTRUCTION OF EXISTING WOOD-FRAMED ARMOIRES (TYPICAL)

LEGEND:

SYMBOL	DESCRIPTION
	NEW QUICK-RESPONSE COMMERCIAL SIDEWALL SPRINKLER
	NEW QUICK-RESPONSE INSTITUTIONAL SIDEWALL SPRINKLER
	NEW QUICK-RESPONSE CONCEALED INSTITUTIONAL PENDENT SPRINKLER
	NEW QUICK-RESPONSE COMMERCIAL UPRIGHT SPRINKLER
	HYDRAULIC REFERENCE NODE
	FIRE ALARM CONTROL PANEL
	REMOTE ANNUNCIATOR PANEL
	TAMPER SWITCH
	FLOW SWITCH
	ELECTRIC BELL

REV.	DATE	DESCRIPTION	BY	CHK.	APP'D.

KIWANI - SPRINKLER LAYOUT
SCALE: 3/16" = 1'-0"



STATE OF CONNECTICUT
DEPARTMENT OF CHILDREN AND FAMILIES

**ALBERT J. SOLNIT CHILDREN'S CENTER
FIRE SPRINKLER SYSTEM DESIGN**

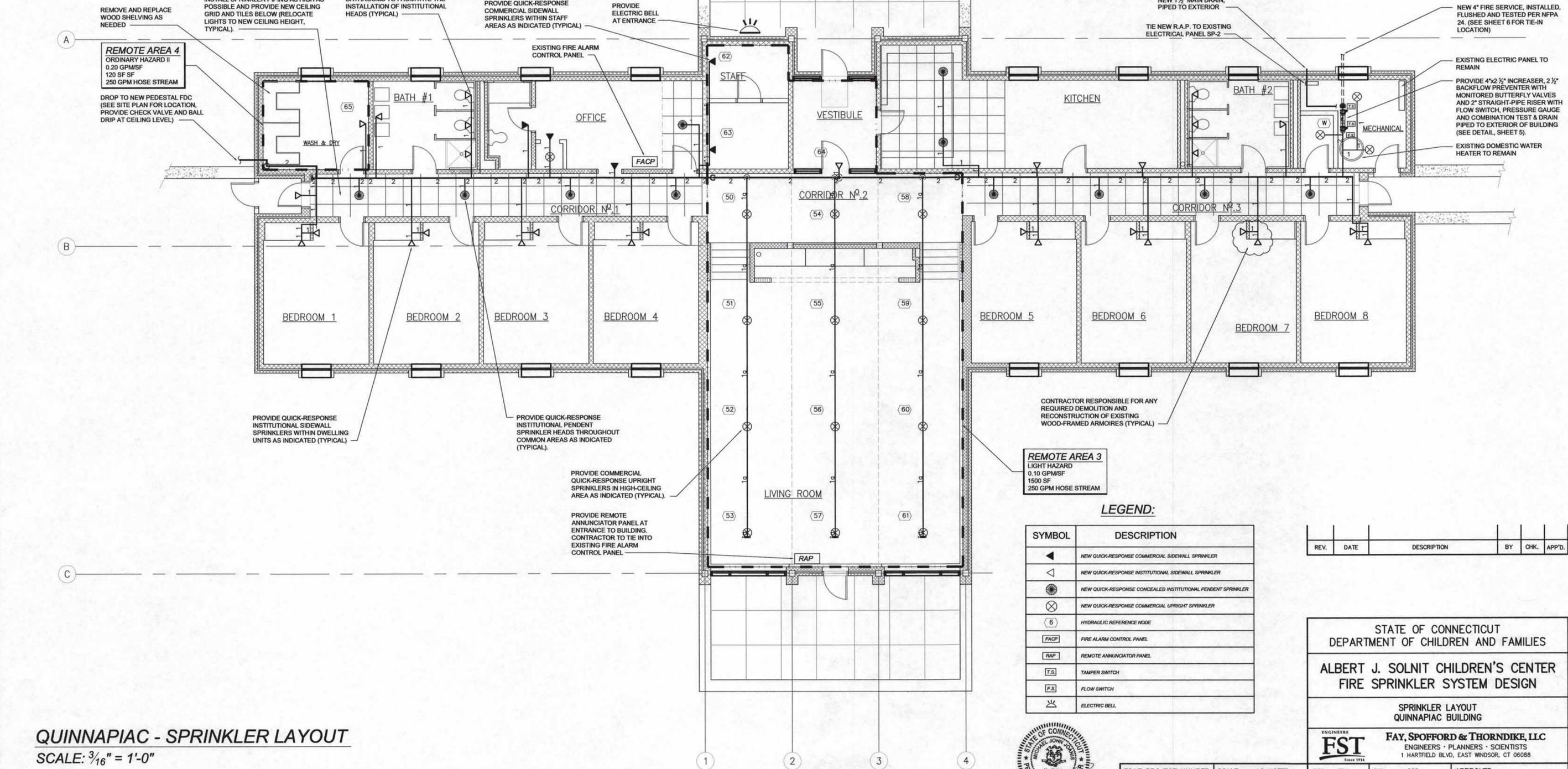
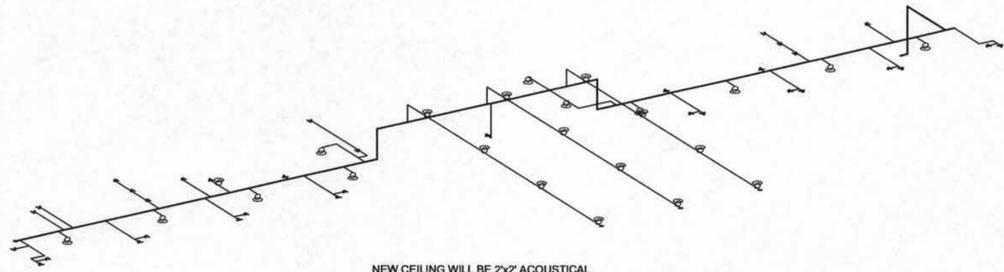
SPRINKLER LAYOUT
KIWANI BUILDING

ENGINEERS:
FST Since 1914
FAY, SPOFFORD & THORNDIKE, LLC
ENGINEERS • PLANNERS • SCIENTISTS
1 HARTFIELD BLVD, EAST WINDSOR, CT 06088

FS&T PROJECT NUMBER LG-413A	SCALE: AS NOTED DATE: JUNE 2014	DES. TDJ CHK. TDJ	DPB TDJ	APPROVED <i>Dennis P. Bouchard</i>
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SYSTEM ISOMETRIC
SCALE: NOT TO SCALE



REMOTE AREA 4
ORDINARY HAZARD II
0.20 GPM/SF
120 SF SF
250 GPM HOSE STREAM

DROP TO NEW PEDESTAL FDC
(SEE SITE PLAN FOR LOCATION,
PROVIDE CHECK VALVE AND BALL
DRIP AT CEILING LEVEL)

NEW CEILING WILL BE 2'x2' ACOUSTICAL
TILE CEILING GRID. OWNER TO PROVIDE
NEW LIGHT FIXTURES. OWNER TO
RELOCATE ITEMS IN CONFLICT WITH
NEW CEILING HEIGHT.

CONTRACTOR TO REMOVE EXISTING
CEILING TILES AND GRID IN CORRIDORS.
INSTALL SPRINKLER PIPING AS HIGH AS
POSSIBLE AND PROVIDE NEW CEILING
GRID AND TILES BELOW (RELOCATE
LIGHTS TO NEW CEILING HEIGHT,
TYPICAL).

PROVIDE SOFFIT AROUND
SPRINKLER PIPING IN
BATHROOMS TO FACILITATE THE
INSTALLATION OF INSTITUTIONAL
HEADS (TYPICAL)

PROVIDE QUICK-RESPONSE
COMMERCIAL SIDEWALL
SPRINKLERS WITHIN STAFF
AREAS AS INDICATED (TYPICAL)

PROVIDE ELECTRIC BELL
AT ENTRANCE

EXISTING FIRE ALARM
CONTROL PANEL

NEW 1 1/2" MAIN DRAIN,
PIPED TO EXTERIOR

TIE NEW R.A.P. TO EXISTING
ELECTRICAL PANEL SP-2

NEW 4" FIRE SERVICE, INSTALLED,
FLUSHED AND TESTED PER NFPA
24. (SEE SHEET 6 FOR TIE-IN
LOCATION)

EXISTING ELECTRIC PANEL TO
REMAIN

PROVIDE 4"x2 1/2" INCREASER, 2 1/2"
BACKFLOW PREVENTER WITH
MONITORED BUTTERFLY VALVES
AND 2" STRAIGHT-PIPE RISER WITH
FLOW SWITCH, PRESSURE GAUGE
AND COMBINATION TEST & DRAIN
PIPED TO EXTERIOR OF BUILDING
(SEE DETAIL, SHEET 5).

EXISTING DOMESTIC WATER
HEATER TO REMAIN

PROVIDE QUICK-RESPONSE
INSTITUTIONAL SIDEWALL
SPRINKLERS WITHIN DWELLING
UNITS AS INDICATED (TYPICAL)

PROVIDE QUICK-RESPONSE
INSTITUTIONAL PENDENT
SPRINKLER HEADS THROUGHOUT
COMMON AREAS AS INDICATED
(TYPICAL).

PROVIDE COMMERCIAL
QUICK-RESPONSE UPRIGHT
SPRINKLERS IN HIGH-CEILING
AREA AS INDICATED (TYPICAL).

PROVIDE REMOTE
ANNUNCIATOR PANEL AT
ENTRANCE TO BUILDING.
CONTRACTOR TO TIE INTO
EXISTING FIRE ALARM
CONTROL PANEL

CONTRACTOR RESPONSIBLE FOR ANY
REQUIRED DEMOLITION AND
RECONSTRUCTION OF EXISTING
WOOD-FRAMED ARMOIRES (TYPICAL)

REMOTE AREA 3
LIGHT HAZARD
0.10 GPM/SF
1500 SF
250 GPM HOSE STREAM

LEGEND:

SYMBOL	DESCRIPTION
◀	NEW QUICK-RESPONSE COMMERCIAL SIDEWALL SPRINKLER
◁	NEW QUICK-RESPONSE INSTITUTIONAL SIDEWALL SPRINKLER
⊙	NEW QUICK-RESPONSE CONCEALED INSTITUTIONAL PENDENT SPRINKLER
⊗	NEW QUICK-RESPONSE COMMERCIAL UPRIGHT SPRINKLER
(6)	HYDRAULIC REFERENCE NODE
FACP	FIRE ALARM CONTROL PANEL
RAP	REMOTE ANNUNCIATOR PANEL
T.S.	TAMPER SWITCH
F.S.	FLOW SWITCH
⚡	ELECTRIC BELL

REV.	DATE	DESCRIPTION	BY	CHK.	APP'D.

QUINNAPIAC - SPRINKLER LAYOUT
SCALE: 3/16" = 1'-0"



FS&T PROJECT NUMBER LG-413A	SCALE: AS NOTED DATE: JUNE 2014	DES. TDJ DR. TDJ	CHK. DPB PROJ. ENGR. TDJ	APPROVED <i>Dennis P. Barchi</i>
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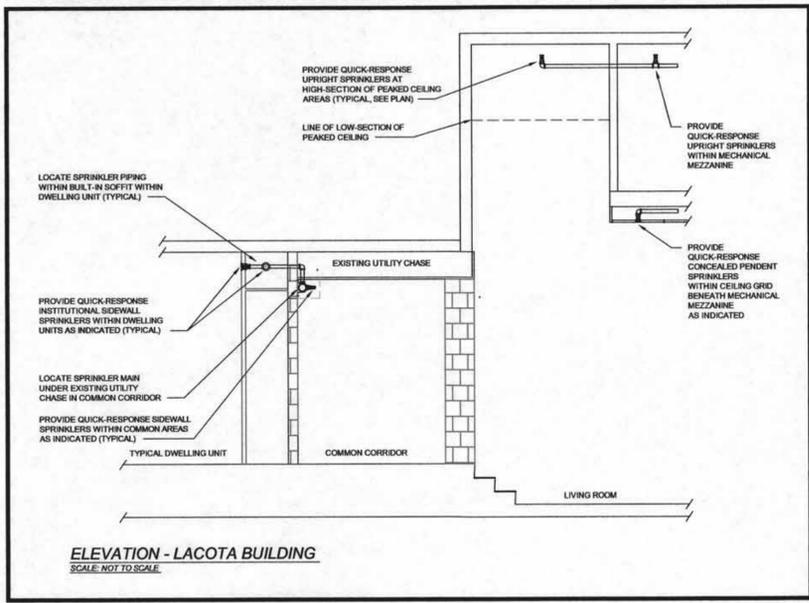
STATE OF CONNECTICUT
DEPARTMENT OF CHILDREN AND FAMILIES

**ALBERT J. SOLNIT CHILDREN'S CENTER
FIRE SPRINKLER SYSTEM DESIGN**

SPRINKLER LAYOUT
QUINNAPIAC BUILDING

ENGINEERS
FST
FAY, SPOFFORD & THORNDIKE, LLC
ENGINEERS • PLANNERS • SCIENTISTS
1 HARTFIELD BLVD, EAST WINDSOR, CT 06088

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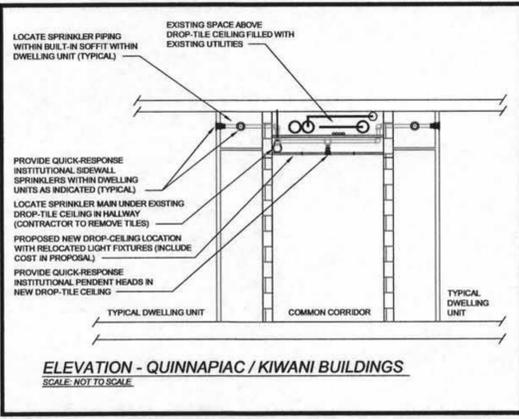


ELEVATION - LACOTA BUILDING
SCALE: NOT TO SCALE

HYDRAULIC CALCULATIONS:

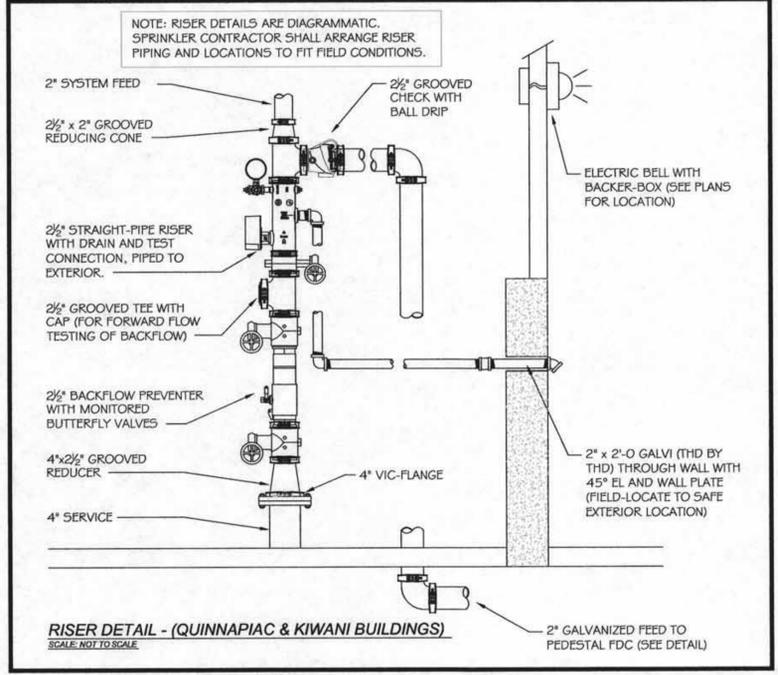
1. THE SPRINKLER SYSTEM(S) PROTECTING THESE BUILDINGS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA 13 (2007 EDITION) FOR LIGHT HAZARD OCCUPANCIES AND FOR ORDINARY HAZARD OCCUPANCIES (UTILITY AND MECHANICAL SPACES).
2. THE SYSTEMS HAVE BEEN CALCULATED USING A DESIGN DENSITY OF 0.10 GPM/SF OVER THE HYDRAULICALLY MOST DEMANDING 1500 SF WITH AN ADDITIONAL OUTSIDE HOSE STREAM ALLOWANCE OF 250 GPM (LIGHT HAZARD) AND A DENSITY OF 0.20 GPM/SF FOR ALL UTILITY AND MECHANICAL SPACES).

Hydraulic Information		System Volume	
Static Pressure	100	Flow Test Date	4/2/2013
Residual Pressure	70.0	Flow Test Location	PROJECT SITE
Residual Flow	1130	Tested by	JFP SOLUTIONS, INC.
Test Elevation (Relative to Source Elevation)	240	Available Well Flow	0.000
Tank Pressure	0.000	Tank Volume	0.000
Tank Elevation	0'-0"	Pump Rated Pressure	0.000
Pump Rated Pressure	0.000	Pump Rated Flow	0.000
Pump Elevation	0'-0"	Pump Manufacturer	
Construction	NON COMB	Pump Model	
Authorities Having Jurisdiction	CT STATE FIRE MARSHAL	Occupancy	ORD HAZ II

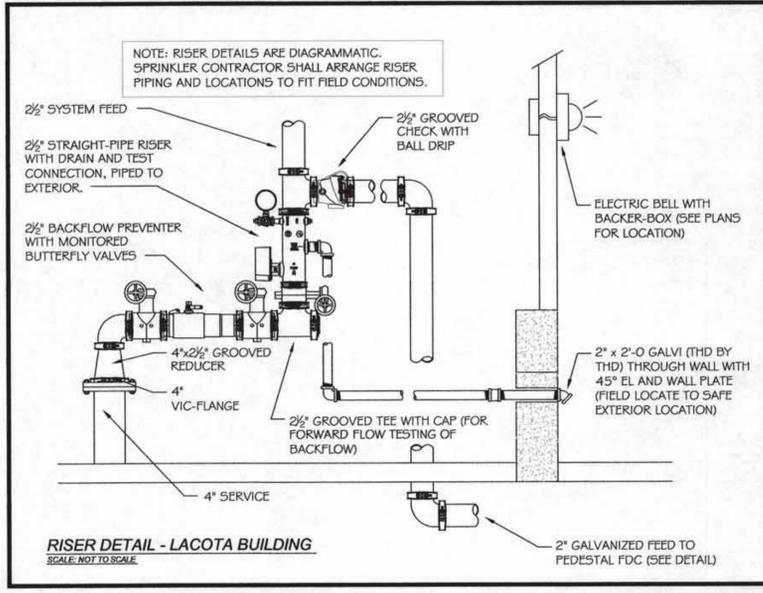


ELEVATION - QUINNAPIAC / KIWANI BUILDINGS
SCALE: NOT TO SCALE

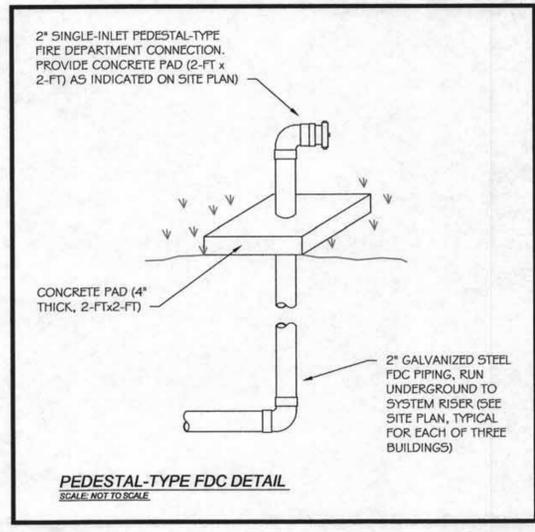
Remote Area 1		Flowing Heads 15		Start Head PSI 23.8	
Wet / Dry	WET	Density	0.100	Start Head GPM	24.0
Hazard	LIGHT	Area	1500	SOFT per Head	120
Code	NFPA 13	Len/Wid Ratio	1.20	Elev-Hd to Riser (') 139	
Construction		Max Velocity	22.5	PSI -Hd to Riser	5.02
Source Name or Location	City Supply	PSI Avail at Source	93.3	GPM Req'd at Source	503
PSI Req'd at Source	77.7	Duration of Source	0.000	Inside Hose	0.000
Safety PSI	24.3	Req'd Source Volume	0.000	Outside Hose	250
Pressure Summary	Available Pressure of 102 psi Exceeds Required Pressure of 77.7 psi This is a safety margin of 24.3 psi or 24 % of Supply				
Advanced Summary	Max Density Available 0.110 PSI loss - TOR to Source 12.2 GPM at Max Available Density 552 Rock Demand 0.000				



RISER DETAIL - (QUINNAPIAC & KIWANI BUILDINGS)
SCALE: NOT TO SCALE



RISER DETAIL - LACOTA BUILDING
SCALE: NOT TO SCALE



PEDESTAL-TYPE FDC DETAIL
SCALE: NOT TO SCALE

FIRE PROTECTION NOTES / NARRATIVE:

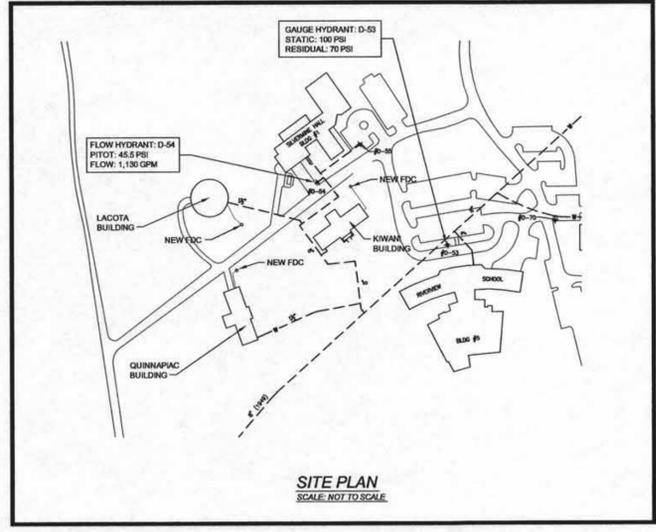
1. THE PURPOSE OF THESE FIRE PROTECTION DRAWINGS IS TO INDICATE THE PROPOSED FIRE PROTECTION SCOPE INCLUDED WITHIN THIS PROJECT.
2. THE FIRE PROTECTION SCOPE INCLUDES THE INSTALLATION OF A NEW AUTOMATIC WET-PIPE SPRINKLER SYSTEM IN EACH OF THREE INDEPENDENT EXISTING BUILDINGS LOCATED ON THE ALBERT J. SOLNIT CHILDREN'S CENTER CAMPUS IN MIDDLETOWN, CONNECTICUT. THE THREE BUILDINGS ARE: QUINNAPIAC, LACOTA AND KIWANI.
3. THIS PROJECT WILL BE OVERSEEN BY THE DEPARTMENT OF CHILDREN AND FAMILIES (D.C.F.). THE AUTHORITY HAVING JURISDICTION IS THE CONNECTICUT STATE FIRE MARSHAL.
4. EACH OF THE THREE SYSTEMS WILL BE FED FROM A NEW 4" FIRE SERVICE, INSTALLED FLUSHED AND TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA 24 (2007 EDITION).
5. EACH OF THE THREE SYSTEMS HAS BEEN DESIGNED AND WILL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA 13 (2007 EDITION), THE CONNECTICUT STATE BUILDING CODE, CONNECTICUT STATE FIRE CODE AND ANY OTHER APPLICABLE CODES AND STANDARDS.
6. EACH OF THE THREE EXISTING BUILDINGS ARE CURRENTLY USED AS LIVING QUARTERS FOR STUDENTS AND ARE SINGLE-STORY, SLAB-ON-GRADE STRUCTURES, CONSTRUCTED OF NON-COMBUSTIBLE MATERIALS. THE BUILDINGS ARE CLASSIFIED AS CLASS 19 BUILDINGS AND REQUIRED BY SECTION 19.3.5.1 OF THE 2005 CFSC GUIDEBOOK TO BE PROTECTED WITH AN AUTOMATIC SPRINKLER SYSTEM DESIGNED AND INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA 13.
7. EACH BUILDING TO BE PROVIDED WITH A FIRE ALARM CONTROL PANEL AND ELECTRIC BELL AND SHALL BE TIED INTO THE EXISTING FIRE ALARM SYSTEM. EACH PANEL SHALL BE ARRANGED TO REPORT TO A CENTRAL STATION MONITORING FACILITY (COORDINATE WITH OWNER).

INSTALLATION NOTES:

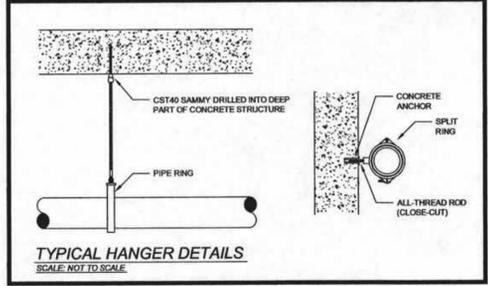
1. THE ARCHITECTURAL BACKGROUND OF THE BUILDINGS MAY DIFFER SLIGHTLY FROM ACTUAL LAYOUT. DRAWINGS ARE NOT INTENDED TO SHOW ALL OFFSETS AND PIPING ELEVATION CHANGES. CONTRACTOR SHALL FIELD VERIFY ALL MEASUREMENTS PRIOR TO FABRICATION.
2. THE SPRINKLER CONTRACTOR SHALL HYDROSTATICALLY TEST ALL SPRINKLER PIPING AT 200 PSI FOR 2 HOURS. SPRINKLER CONTRACTOR IS RESPONSIBLE FOR THE COMPLETION OF ALL ABOVE GROUND TEST CERTIFICATES, SUPPLIED TO THE OWNER.
3. ALL NEW SPRINKLER PIPING INSTALLED UNDER THE SCOPE OF THIS PROJECT SHALL BE UL LISTED BLACK STEEL PIPING. ALL NEW PIPING SHALL BE SUPPORTED PER NFPA-13 (2007 EDITION).
4. ALL SPRINKLER HEADS SHALL BE QUICK-RESPONSE AND AS NOTED IN THE SPRINKLER HEAD LEGEND. ALL SPRINKLERS WITHIN DWELLING UNITS AND IN AREAS WHERE STUDENTS WOULD OTHERWISE BE UNSUPERVISED BY FACILITY STAFF SHALL BE INSTITUTIONAL TYPE SPRINKLER HEADS. ALL SPRINKLER HEADS SHALL BE INSTALLED IN ACCORDANCE WITH THE SPRINKLER HEAD LISTING AND THE REQUIREMENTS OF NFPA 13 (2007 EDITION).
5. BUILDING OWNER IS RESPONSIBLE FOR PROVIDING HEAT IN ALL AREAS CONTAINING WATER-FILLED SPRINKLER PIPING AND HEADS TO PREVENT PIPES FROM FREEZING.
6. CONTRACTOR TO PROVIDE AND INSTALL FIRESTOPPING FOR ALL PENETRATIONS (TYPICAL, ALL BUILDINGS).

HYDRAULIC CALCULATIONS:

1. THE SPRINKLER SYSTEM(S) PROTECTING THESE BUILDINGS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA 13 (2007 EDITION) FOR LIGHT HAZARD OCCUPANCIES.
2. THE SYSTEMS HAVE BEEN CALCULATED USING A DESIGN DENSITY OF 0.10 GPM/SF OVER THE HYDRAULICALLY MOST DEMANDING 1500 SF WITH AN ADDITIONAL OUTSIDE HOSE STREAM ALLOWANCE OF 100 GPM.



SITE PLAN
SCALE: NOT TO SCALE



TYPICAL HANGER DETAILS
SCALE: NOT TO SCALE

PIPE TYPE	NOMINAL PIPE SIZE (IN)							
	3/4	1	1 1/4	1 1/2	2	2 1/2	4	8
SCH 7,10,40	N/A	12-0	12-0	15-0	15-0	15-0	15-0	15-0
SCH 30 LIGHT	N/A	12-0	12-0	12-0	12-0	12-0	N/A	N/A

36" MAX. FOR 1" DIA.
 48" MAX. FOR 1 1/4" DIA.
 60" MAX. FOR 1 1/2" DIA. OR LARGER
 THEN EXTEND HERE

DISTANCE BETWEEN SHALL NOT EXCEED ABOVE TABLE
 OMIT HGR ON STARTER PIPES 6" OR LESS, NO X-MAIN HGR OMISSIONS ALLOWED

IF GREATER THAN 36" MAX. FOR 1" DIA -
 IF GREATER THAN 48" MAX. FOR 1 1/4" DIA -
 IF GREATER THAN 60" FOR 1 1/2" DIA. OR LARGER -

FIRE ALARM NOTES:

1. FLOW SWITCHES SHALL BE FURNISHED AND INSTALLED BY THE FIRE PROTECTION CONTRACTOR AND WIRED BY THE ELECTRICAL CONTRACTOR. FURNISH AND INSTALL WHERE INDICATED ON THE PLANS. FLOW SWITCHES SHALL CONSIST OF A CAST ALUMINUM PIPE SADDLE WHICH HOUSES AN ELECTRO-MECHANICAL DEVICE TO WHICH IS ATTACHED A CORROSION-FREE, FLEXIBLE, LOW-DENSITY POLYETHYLENE PADDLE. THE PADDLE CONFORMS TO THE INSIDE DIAMETER OF THE SPRINKLER PIPE AND SENSES ALL WATER MOVEMENTS. TO PREVENT FALSE ALARMS, THE FLOW SWITCH SHALL INCORPORATE AN ADJUSTABLE TIME DELAY MECHANISM BETWEEN THE PADDLE-OPERATED STEM AND THE ALARM INITIATING CONTACTS.
2. A TAPPED 1/2" CONDUIT CONNECTION SHALL BE PROVIDED. FLOW SWITCH SHALL BE UL LISTED FOR ITS INTENDED PURPOSE. PROVIDE (1) ADDRESSABLE MODULE (FOR ADDRESSABLE FIRE ALARM SYSTEM) OR FIRE ALARM CONTROL PANEL ZONE MODULE (FOR ZONED NON-ADDRESSABLE FIRE ALARM SYSTEM) PER FLOW SWITCH IN EACH BUILDING.
3. SPRINKLER VALVE TAMPER SWITCHES SHALL BE FURNISHED AND INSTALLED BY THE FIRE PROTECTION CONTRACTOR AND WIRED BY THE ELECTRICAL CONTRACTOR. FURNISH AND INSTALL WHERE INDICATED ON THE PLANS. VALVE TAMPER SWITCHES SHALL CONSIST OF AN ACID TREATED CAST ALUMINUM HOUSING WITH NICKEL PLATED PARTS TO RESIST CORROSION. COVER REMOVAL SHALL BE SUPERVISED. SWITCH SHALL BE PROVIDED WITH EITHER ONE OR TWO SETS OF S.P.D.T. MICRO SWITCHES AS REQUIRED. TAMPER SWITCH SHALL BE UL LISTED FOR ITS INTENDED PURPOSE.
4. PROVIDE (1) ADDRESSABLE MODULE (FOR ADDRESSABLE FIRE ALARM SYSTEM) OR FIRE ALARM CONTROL PANEL ZONE MODULE (FOR ZONED NON-ADDRESSABLE FIRE ALARM SYSTEM) PER GROUP OF VALVE TAMPER SWITCHES IN EACH BUILDING.
5. PROVIDE ALL FIRE ALARM WIRING IN ACCORDANCE WITH ARTICLE 760 OF THE NATIONAL ELECTRICAL CODE AND LOCAL ELECTRICAL CODES. PROVIDE COMPLETE FIRE ALARM WIRING AND CONDUIT (EMT - ELECTRICAL METALLIC TUBING) BETWEEN ALL FIRE ALARM EQUIPMENT AND DEVICES. MINIMUM CONDUIT SIZE SHALL BE 3/4". ALL CONDUITS SHALL BE SURFACE MOUNTED. ALL DEVICES SHALL BE MOUNTED UPON AND SPLICES MADE IN UL LISTED BOXES. WIRING SPLICES AND TRANSPOSING OR CHANGING OF COLORS WILL NOT BE PERMITTED. ALL FIRE ALARM JUNCTION BOXES SHALL BE PAINTED RED AND LABELED AS "FIRE ALARM SYSTEM" WITH DECAL OR APPROVED MARKINGS.
6. REPROGRAM THE EXISTING FIRE ALARM CONTROL PANELS FOR THE ADDED WATER FLOW AND SPRINKLER VALVE TAMPER SWITCHES.

2" GALVANIZED STEEL FDC PIPING, RUN UNDERGROUND TO SYSTEM RISER (SEE SITE PLAN, TYPICAL FOR EACH OF THREE BUILDINGS)



REV.	DATE	DESCRIPTION	BY	CHK.	APP'D.

STATE OF CONNECTICUT
DEPARTMENT OF CHILDREN AND FAMILIES

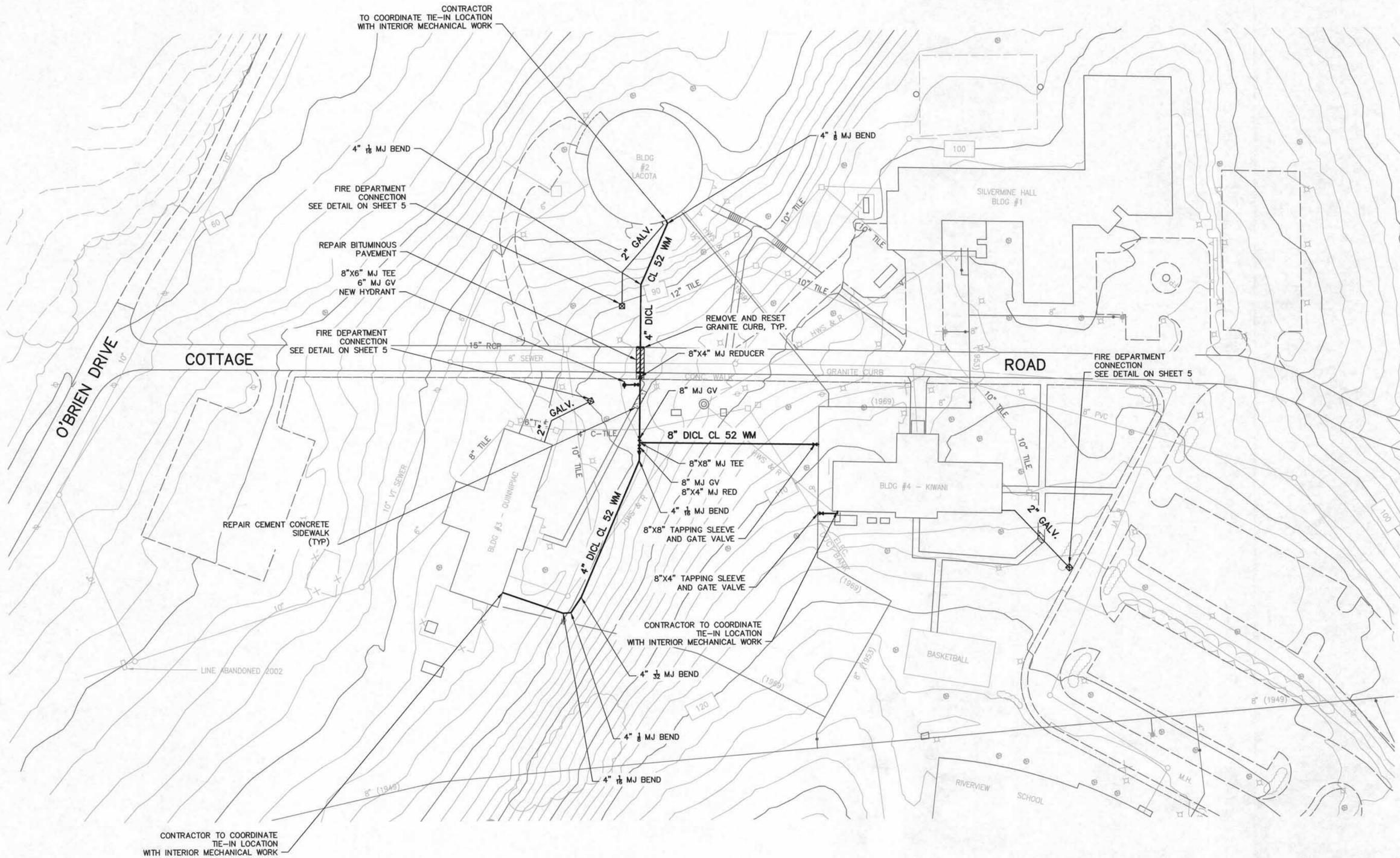
**ALBERT J. SOLNIT CHILDREN'S CENTER
FIRE SPRINKLER SYSTEM DESIGN**

FIRE PROTECTION
NOTES AND DETAILS

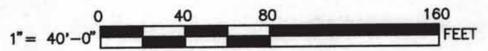
ENGINEERS
FST
FAY, SPOFFORD & THORNDIKE, LLC
ENGINEERS • PLANNERS • SCIENTISTS
1 HARTFIELD BLVD, EAST WINDSOR, CT 06088

FS&T PROJECT NUMBER	SCALE:	DES.	CHK.	DPB	APPROVED
LG-413A	AS NOTED	TDJ	TDJ	TDJ	<i>Quinn P. Boucher</i>
	DATE:	DR.	PROJ. ENGR.		
	JUNE 2014	TDJ			

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REV.	DATE	DESCRIPTION	BY	CHK.	APP'D.



- NOTE:**
- SILTATION CONTROL MEASURES SHALL BE INSTALLED AT ALL CATCH BASINS WITHIN THE PROJECT AREA TO PREVENT SILTATION OF THE DRAINAGE SYSTEM.
 - ALL DISTURBED LAWN AREAS SHALL BE LOAMED AND SEEDDED, UNLESS OTHERWISE SPECIFIED OR DIRECTED BY THE ENGINEER.
 - CONTRACTOR TO COORDINATE WITH THE OWNER TO CLOSE APPROPRIATE GATE VALVES FOR TEMPORARY SHUT DOWN OPERATIONS.



STATE OF CONNECTICUT
DEPARTMENT OF CHILDREN AND FAMILIES

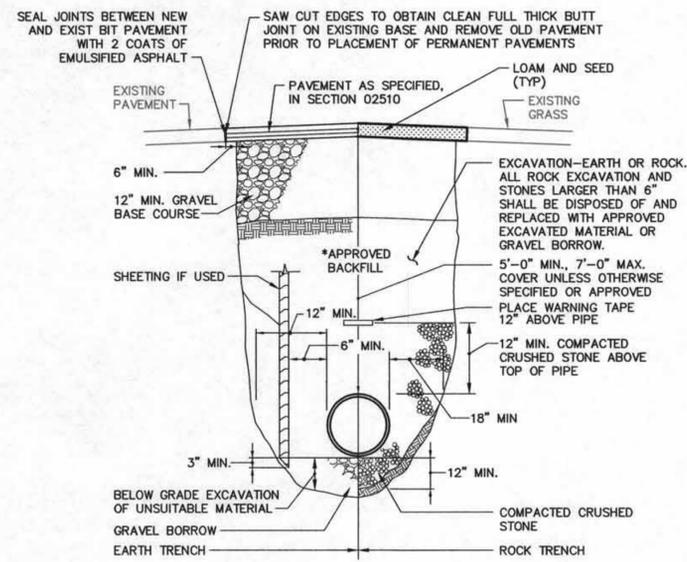
ALBERT J. SOLNIT CHILDREN'S CENTER
FIRE SPRINKLER SYSTEM DESIGN

SITE PLAN

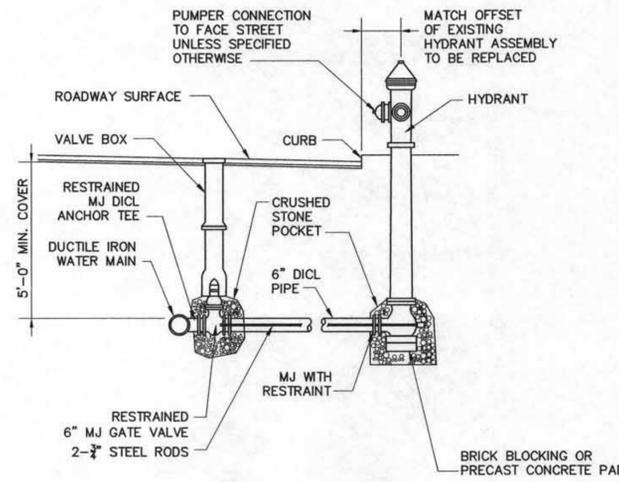
ENGINEERS
FST
FAY, SPOFFORD & THORNDIKE, LLC
ENGINEERS · PLANNERS · SCIENTISTS
1 HARTFIELD BLVD., EAST WINDSOR, CT 06088

FS&T PROJECT NUMBER LG-413A	SCALE: AS NOTED DATE: JUNE 2014	DES. DPR DR. JWH	CHK. DPB PROJ. ENGR. DPR	APPROVED <i>Dennis P. Boucher</i>
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TYPICAL WATER TRENCH SECTION
NOT TO SCALE

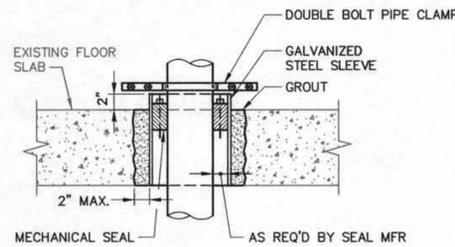


NOTES:
1. REFER TO SPECIFICATIONS FOR MATERIAL REQUIREMENTS
2. ALL JOINTS MECHANICALLY RESTRAINED.
3. CONTRACTOR TO PROVIDE GATE KEY FOR GATE VALVE.

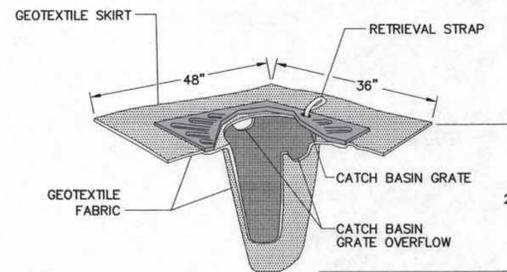
HYDRANT ASSEMBLY INSTALLATION
NOT TO SCALE

Fitting	Bare Length (ft)	Wrap Length (ft)	Fitting	Bare Length (ft)	Wrap Length (ft)
4" 11.25 Horizontal	2	2	8" 11.25 Horizontal	4	4
4" 22.5 Horizontal	4	5	8" 22.5 Horizontal	8	9
4" 30 Horizontal	6	7	8" 30 Horizontal	10	12
4" 45 Horizontal	9	10	8" 45 Horizontal	16	19
4" 60 Horizontal	12	14	8" 60 Horizontal	22	26
4" 90 Horizontal	21	25	8" 90 Horizontal	39	45
4" 11.25 Vertical Up	2	2	8" 11.25 Vertical Up	4	4
4" 22.5 Vertical Up	4	5	8" 22.5 Vertical Up	8	9
4" 30 Vertical Up	6	7	8" 30 Vertical Up	10	12
4" 45 Vertical Up	9	10	8" 45 Vertical Up	16	19
4" 60 Vertical Up	12	14	8" 60 Vertical Up	22	26
4" 90 Vertical Up	21	25	8" 90 Vertical Up	39	45
4" 11.25 Vertical Down	4	6	8" 11.25 Vertical Down	8	12
4" 22.5 Vertical Down	9	13	8" 22.5 Vertical Down	16	23
4" 30 Vertical Down	12	17	8" 30 Vertical Down	22	31
4" 45 Vertical Down	18	26	8" 45 Vertical Down	34	49
4" 60 Vertical Down	26	37	8" 60 Vertical Down	47	68
4" 90 Vertical Down	44	63	8" 90 Vertical Down	82	117
4" Dead End	44	63	8"X4" Tee	44	63
			8"X6" Tee	63	90
			8"X8" Tee	82	117
			8"X4" Reducer Large Side	59	84
			8"X6" Reducer Large Side	34	49
			8" Dead End	82	117

NOTES:
1. RESTRAINED LENGTHS SHOWN ON TABLE ARE MINIMUMS.
2. VALUES IN TABLE ASSUME A MINIMUM DEPTH OF 4.5-FT



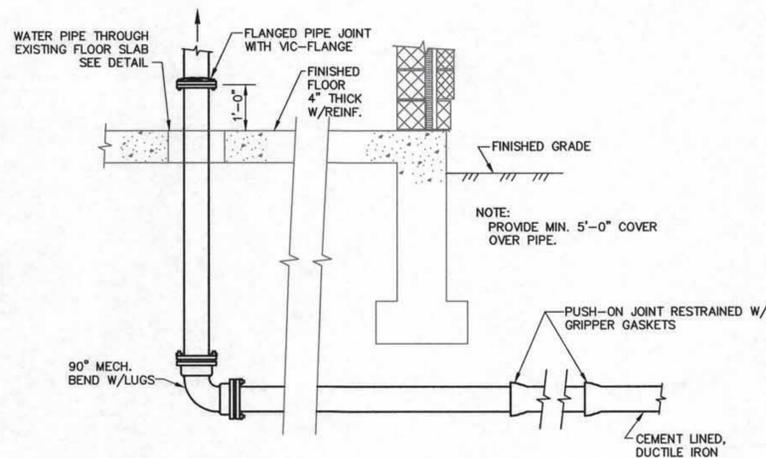
WATER PIPE THROUGH EXISTING FLOOR SLAB
NOT TO SCALE



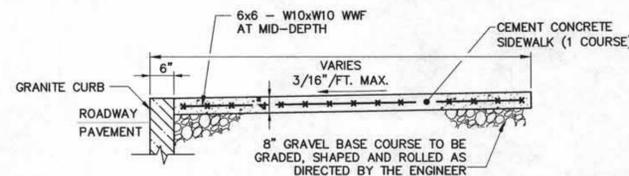
NOTE: CONTRACTOR TO INSTALL SEDIMENT FILTER INSERTS IN ALL CATCH BASINS DOWNSTREAM AND IN THE VICINITY OF THE PROJECT SITE.

CATCH BASIN SEDIMENT FILTER INSERT
NOT TO SCALE

JOINT THRUST RESTRAINT LENGTH TABLE
NOT TO SCALE



WATER PIPE BUILDING ENTRANCE
NOT TO SCALE



NOTE:
1. CEMENT CONCRETE SIDEWALKS SHALL BE REPLACED IN FULL PANELS.

SIDEWALKS

TYPICAL SECTIONS FOR CEMENT CONCRETE SIDEWALKS
NOT TO SCALE

REV.	DATE	DESCRIPTION	BY	CHK.	APP'D.



STATE OF CONNECTICUT
DEPARTMENT OF CHILDREN AND FAMILIES

ALBERT J. SOLNIT CHILDREN'S CENTER
FIRE SPRINKLER SYSTEM DESIGN

SITE DETAILS

ENGINEERS
FST
FAY, SPOFFORD & THORNDIKE, LLC
ENGINEERS · PLANNERS · SCIENTISTS
1 HARTFIELD BLVD, EAST WINDSOR, CT 06088

FS&T PROJECT NUMBER LG-413A	SCALE: AS NOTED DATE: JUNE 2014	DES. DPR DR. JWH	CHK. DPB PROJ. ENGR. DPR	APPROVED <i>Dennis P. Boucher</i>
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